

06036905 FIREHOLE RIVER NEAR WEST YELLOWSTONE, MT

LOCATION.--Lat 44°37'13", long 110°51'44" (NAD 27), Yellowstone National Park, Hydrologic Unit 10020007, on right bank 1.6 mi south of Madison Junction, 12 mi east of West Yellowstone, and at river mile 1.8.

DRAINAGE AREA.--282 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1983 to March 1996, October 2002 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 7,050 ft (NGVD 29).

REMARKS.--Water-discharge records good. No regulation or diversions upstream from station. U. S. Geological Survey satellite telemeter at station.

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	233	240	251	262	249	241	290	303	371	309	251	244
2	235	238	248	250	244	237	295	324	370	302	251	249
3	234	243	248	258	248	237	294	360	382	294	256	251
4	235	245	248	244	244	239	301	390	398	313	255	251
5	235	240	244	242	242	236	305	434	406	333	254	245
6	235	239	253	246	239	226	305	503	426	297	251	243
7	236	239	265	258	244	232	318	530	427	283	250	242
8	236	240	261	250	241	243	320	506	425	275	247	241
9	234	244	250	249	239	251	337	460	441	272	246	239
10	265	249	253	247	238	252	302	422	483	270	244	239
11	244	250	252	245	238	246	290	417	446	265	244	238
12	243	244	250	242	233	247	283	382	461	262	243	242
13	242	245	253	240	239	244	290	340	394	263	242	272
14	243	247	258	241	235	242	302	324	373	264	243	320
15	243	250	253	241	237	238	300	313	372	260	244	294
16	242	257	250	242	236	239	281	357	374	258	246	287
17	240	259	249	238	245	245	313	385	347	261	258	267
18	240	246	244	238	250	255	310	386	348	263	267	259
19	239	252	245	240	248	275	287	448	378	277	260	262
20	239	260	248	239	242	276	301	369	357	292	262	314
21	239	256	250	236	239	272	304	384	343	284	254	274
22	239	248	245	235	236	278	283	537	323	282	279	263
23	240	243	243	238	236	288	274	562	332	278	317	264
24	239	252	246	244	236	299	278	435	322	264	269	261
25	234	251	251	246	239	292	269	371	318	261	331	255
26	241	250	258	239	242	282	275	358	359	262	358	252
27	243	243	250	239	241	259	299	402	335	260	296	250
28	246	245	246	242	241	248	340	473	342	258	265	250
29	265	250	253	246	241	246	318	579	320	255	255	249
30	240	251	255	252	---	259	306	458	331	254	250	251
31	238	---	258	252	---	275	---	394	---	251	247	---
TOTAL	7,457	7,416	7,778	7,581	6,982	7,899	8,970	12,906	11,304	8,522	8,135	7,768
MEAN	241	247	251	245	241	255	299	416	377	275	262	259
MAX	265	260	265	262	250	299	340	579	483	333	358	320
MIN	233	238	243	235	233	226	269	303	318	251	242	238
AC-FT	14,790	14,710	15,430	15,040	13,850	15,670	17,790	25,600	22,420	16,900	16,140	15,410

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 2004, BY WATER YEAR (WY)*

MEAN	277	274	267	262	261	270	329	483	425	294	271	271
MAX	356	348	316	298	304	336	398	613	756	415	371	368
(WY)	(1984)	(1984)	(1984)	(1985)	(1986)	(1986)	(1986)	(1986)	(1986)	(1986)	(1986)	(1986)
MIN	225	227	220	223	226	239	276	367	273	221	212	217
(WY)	(1989)	(1993)	(1993)	(1993)	(1993)	(1992)	(1993)	(1987)	(1992)	(1988)	(1994)	(1988)

06036905 FIREHOLE RIVER NEAR WEST YELLOWSTONE, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1984 - 2004*	
ANNUAL TOTAL	100,622		102,718			
ANNUAL MEAN	276		281		306	
HIGHEST ANNUAL MEAN					399	1986
LOWEST ANNUAL MEAN					264	1988
HIGHEST DAILY MEAN	644	May 30	579	May 29	1,240	May 31, 1986
LOWEST DAILY MEAN	223	Aug 21	226	Mar 6	201	Dec 4, 1992
ANNUAL SEVEN-DAY MINIMUM	225	Aug 11	235	Oct 1	205	Aug 15, 1994
MAXIMUM PEAK FLOW			659	May 7	b,2,050	May 18, 1996
MAXIMUM PEAK STAGE			4.09	May 7	c,6.10	May 18, 1996
INSTANTANEOUS LOW FLOW			a,210	Mar 6	d,190	Dec 4, 1992
ANNUAL RUNOFF (AC-FT)	199,600		203,700		221,900	
10 PERCENT EXCEEDS	349		371		419	
50 PERCENT EXCEEDS	250		252		274	
90 PERCENT EXCEEDS	232		239		233	

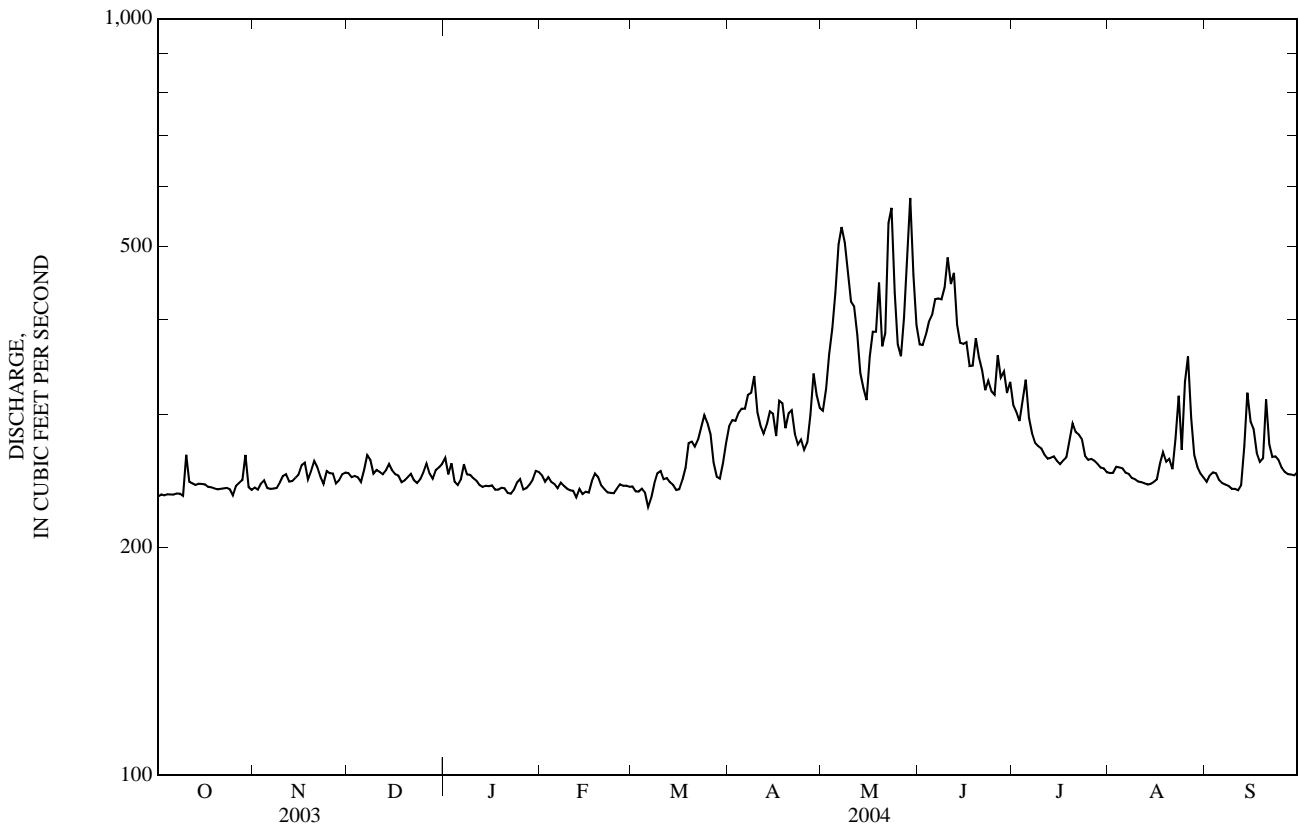
*--During periods of operation (October 1983 to March 1996, October 2002 to current year).

a--Gage height, 2.86 ft.

b--From rating curve extended above 1,540 ft³/s.

c--From floodmark.

d--Gage height, 3.03 ft.



WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1983 to 1993, October 2002 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: August 1983 to September 1986, October 1987 to September 1988.

WATER TEMPERATURE: October 1983 to September 1993, October 2002 to current year.

INSTRUMENTATION.--Temperature recorder installed Sept. 18, 2002.

REMARKS.--Daily water temperature records good. Unpublished records of instantaneous water temperature and specific conductance are available in files of the District office.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum 633 microsiemens per centimeter (µS/cm) at 25.0°C, Apr. 1, 1988; minimum 140 µS/cm at 25.0°C, June 5, 1986.

WATER TEMPERATURE: Maximum, 30.0°C, June 24, 1988; minimum, 0.5°C Dec. 21, 1990.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 29.0°C, July 16; minimum, 2.5°C, Jan. 6.

06036905 FIREHOLE RIVER NEAR WEST YELLOWSTONE, MT—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

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

MADISON RIVER BASIN

06036905 FIREHOLE RIVER NEAR WEST YELLOWSTONE, MT—Continued

TEMPERATURE, WATER, DEGREES CELSIUS—CONTINUED
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	21.5	14.5	17.5	25.5	18.5	22.0	26.5	19.5	23.0	23.0	18.0	20.5
2	22.5	16.0	19.0	24.5	18.5	21.5	26.5	20.5	23.0	21.5	17.5	19.0
3	22.0	16.0	19.5	24.5	18.0	21.0	26.5	20.5	23.0	18.0	16.5	17.0
4	21.0	17.5	19.5	22.5	20.0	21.0	25.5	19.5	22.0	22.0	15.0	18.0
5	22.0	16.5	19.5	23.0	17.5	20.0	27.0	20.5	23.5	20.0	16.0	18.0
6	20.0	16.5	18.0	24.5	18.0	21.0	24.5	18.5	21.5	22.5	15.5	19.0
7	20.5	15.0	18.0	24.5	19.0	21.5	23.5	18.0	20.5	22.0	15.5	19.0
8	22.5	16.0	19.0	24.0	17.5	20.5	25.5	17.5	21.5	22.0	16.5	19.0
9	20.0	16.5	18.5	24.0	17.0	20.5	26.0	18.5	22.0	22.0	16.0	19.0
10	18.0	12.5	14.5	26.0	18.5	22.0	25.5	19.0	22.0	20.0	16.5	18.0
11	15.0	12.0	13.0	25.0	19.5	22.0	26.0	18.5	22.0	22.0	15.5	18.5
12	18.0	13.0	15.0	27.0	18.0	22.5	25.5	18.0	22.0	19.0	17.0	18.0
13	18.0	15.0	16.5	24.0	20.0	22.0	26.0	18.5	22.0	18.0	16.0	17.0
14	21.0	15.0	18.0	28.5	19.5	23.5	26.5	18.5	22.5	16.5	13.0	14.5
15	20.0	14.5	17.5	28.0	22.5	25.0	24.0	19.5	22.0	17.0	12.5	14.5
16	18.5	14.5	16.5	29.0	20.5	24.5	25.0	19.0	21.5	19.0	15.5	17.0
17	21.5	14.0	17.5	27.0	21.0	24.0	23.5	20.5	22.0	21.0	15.5	18.0
18	18.5	15.5	17.0	27.0	20.5	23.5	23.0	20.5	21.5	20.5	17.0	19.0
19	19.5	15.0	17.0	26.5	23.0	24.5	25.0	20.0	22.5	19.0	16.5	17.5
20	19.5	17.0	18.5	25.5	20.5	22.5	23.0	18.5	21.0	16.5	14.0	15.0
21	22.0	15.0	18.5	27.0	20.0	23.0	24.0	19.0	21.5	17.5	13.0	15.0
22	24.0	16.0	20.0	24.5	21.0	23.0	22.0	18.5	20.5	15.0	12.5	13.5
23	24.0	18.0	21.0	26.0	19.5	22.5	19.5	15.0	16.5	17.5	14.0	15.5
24	25.0	18.5	21.5	27.5	19.0	23.0	20.0	14.5	17.0	20.5	15.0	17.5
25	24.5	19.0	21.5	27.0	20.0	23.5	18.5	14.5	17.0	21.5	15.5	18.5
26	23.5	17.0	20.5	26.5	21.5	23.5	18.5	13.5	15.5	21.5	15.0	18.5
27	22.0	19.0	20.5	26.5	20.0	23.0	21.0	15.5	17.5	21.5	16.5	19.0
28	23.5	18.0	20.5	27.0	20.5	23.5	21.5	16.0	19.0	20.5	16.5	18.5
29	25.0	18.5	21.5	26.0	20.0	23.0	24.0	17.0	20.5	20.5	15.0	18.0
30	23.0	19.5	21.0	26.0	19.5	23.0	24.5	18.0	21.0	19.5	17.5	18.5
31	---	---	---	26.5	19.5	23.0	25.0	17.5	21.5	---	---	---
MONTH	25.0	12.0	18.5	29.0	17.0	22.5	27.0	13.5	21.0	23.0	12.5	17.5

06036940 TANTALUS CREEK AT NORRIS JUNCTION, YELLOWSTONE NATIONAL PARK

LOCATION.--Lat 44°43'59", long 110°42'49" (NAD 27), Yellowstone National Park, Hydrologic Unit 10020007, on right bank 0.9 mi northwest of Norris Junction, Yellowstone National Park, and at river mile 0.3.

DRAINAGE AREA.--1.29 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 2004 to September 2004.

GAGE.--Water-stage recorder. Elevation of gage is 7,460 ft (NGVD 29).

REMARKS.--Water-discharge records good. No regulation or diversion upstream from station. U.S. Geological Survey satellite telemeter at station.

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										4.2	3.4	4.0
2										4.3	3.6	4.1
3										5.7	3.5	4.2
4										5.0	3.7	3.9
5										4.6	3.7	3.7
6										4.3	3.5	3.7
7										4.3	3.4	3.8
8										3.9	3.3	3.8
9										3.8	3.5	3.8
10										3.7	3.5	3.7
11										3.5	3.5	3.6
12										3.6	3.5	4.4
13										3.7	3.5	6.9
14										3.7	3.5	9.7
15										3.7	3.4	5.4
16										3.7	3.5	5.7
17										3.7	4.1	4.8
18										3.8	3.8	5.1
19										4.5	3.9	5.7
20										4.1	3.7	4.5
21										3.8	4.3	3.7
22										4.1	4.5	3.9
23										3.8	5.9	3.7
24										3.7	4.4	3.4
25										3.7	6.5	3.4
26										3.8	5.4	3.3
27										3.7	4.3	3.3
28										3.6	4.2	3.2
29										3.6	4.1	4.1
30										3.5	4.0	3.5
31										3.4	3.9	---
TOTAL										122.5	123.0	130.0
MEAN										3.95	3.97	4.33
MAX										5.7	6.5	9.7
MIN										3.4	3.3	3.2
AC-FT										243	244	258

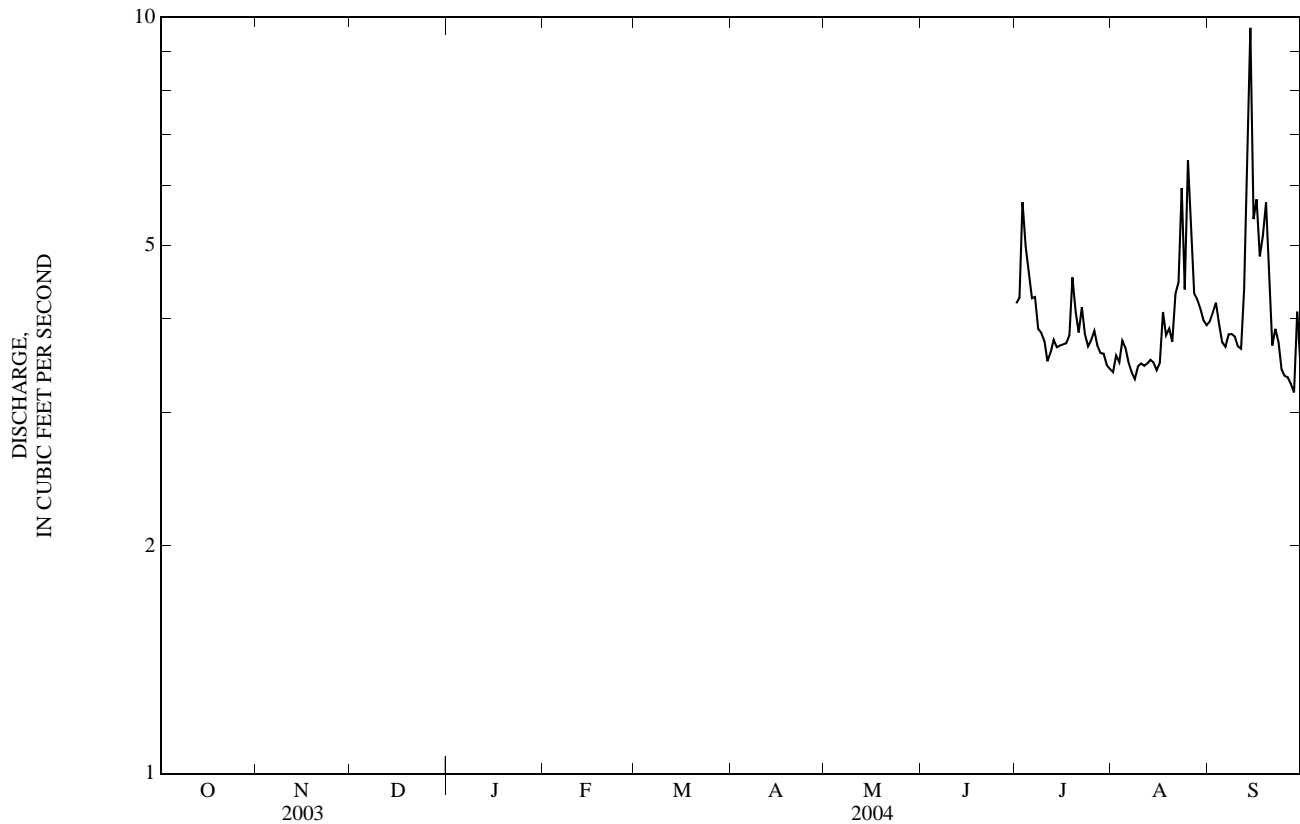
SUMMARY STATISTICS

FOR 2004 WATER YEAR

HIGHEST DAILY MEAN	9.7	Sep 14
LOWEST DAILY MEAN	3.2	Sep 28
MAXIMUM PEAK FLOW	22	Jul 3
MAXIMUM PEAK STAGE	2.60	Jul 3
INSTANTANEOUS LOW FLOW	a2.5	Jul 11

a--Gage height, 1.38 ft.

06036940 TANTALUS CREEK AT NORRIS JUNCTION, YELLOWSTONE NATIONAL PARK—Continued



WATER-QUALITY RECORDS

PERIOD OF RECORD.--June 25, 2004 to September 30, 2004.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: June 25, 2004 to September 30, 2004.

REMARKS.--Daily water temperature record rated excellent, except for June 28 to July 7, which is poor due to siltation of sensor. Unpublished records of instantaneous water temperature and specific conductance for many days are available in files of District office.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum, 37.5°C, July 16, 2004; minimum, 14.0°C, July 3, 2004.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 37.5°C, July 16; minimum, 14.0°C, July 3.

06036940 TANTALUS CREEK AT NORRIS JUNCTION, YELLOWSTONE NATIONAL PARK—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN	JUNE			JULY			AUGUST			SEPTEMBER		
				MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1				36.0	25.0	30.0	32.5	26.5	28.5	34.0	22.0	26.5			
2				36.5	25.5	29.0	31.0	26.5	28.5	27.5	21.0	24.0			
3				36.0	14.0	29.5	32.0	26.5	29.0	27.0	23.0	25.0			
4				33.5	27.0	29.5	32.5	26.0	28.5	32.0	22.5	25.5			
5				33.5	27.0	29.5	31.5	26.5	28.5	28.5	23.0	25.0			
6				33.0	27.5	29.5	31.0	26.0	27.5	30.5	22.5	25.5			
7				32.0	21.5	27.0	28.5	25.0	26.5	30.0	23.0	26.0			
8				29.0	23.5	26.5	31.0	24.5	27.5	31.0	23.5	25.5			
9				33.5	24.0	27.5	31.0	25.0	28.0	29.5	22.0	25.0			
10				33.5	25.0	28.0	32.0	25.5	28.5	29.5	23.5	25.5			
11				31.5	21.5	27.0	31.5	25.5	28.0	29.0	22.0	25.0			
12				33.5	24.5	28.5	32.0	25.0	28.0	27.0	21.5	24.5			
13				33.5	25.5	28.5	32.5	25.5	28.5	27.5	20.5	24.0			
14				36.5	26.5	30.5	32.5	26.0	29.0	27.5	20.0	23.5			
15				35.5	27.5	30.5	31.0	26.0	28.5	24.5	22.5	23.5			
16				37.5	27.0	31.0	32.0	27.0	28.5	26.5	21.5	24.5			
17				36.5	27.0	30.5	31.0	27.5	29.0	28.5	23.5	25.5			
18				34.5	27.0	30.5	30.0	27.5	28.5	28.5	24.5	26.5			
19				33.0	28.0	30.5	32.5	27.5	29.0	28.5	20.5	25.5			
20				33.0	28.5	29.5	30.5	27.0	28.5	26.0	21.5	23.0			
21				33.0	28.0	30.0	30.0	27.0	28.0	28.5	21.5	23.0			
22				32.0	27.5	29.5	30.0	25.5	28.0	24.0	21.5	22.5			
23				33.0	27.5	29.5	26.5	20.5	23.5	25.0	22.0	24.0			
24				34.5	26.0	30.0	28.0	21.5	25.0	31.5	23.5	26.0			
25	34.5	27.0	29.0	33.0	27.0	30.0	28.5	18.5	24.5	32.0	23.5	26.0			
26	35.0	26.0	29.5	33.5	27.0	29.5	29.0	18.0	25.0	33.5	23.0	27.0			
27	34.0	25.5	29.0	32.5	27.0	29.5	30.5	24.0	26.5	32.5	24.5	26.5			
28	37.0	26.5	30.0	33.5	27.0	29.5	29.0	23.5	25.5	29.5	22.5	25.0			
29	36.5	27.0	30.5	32.0	27.0	29.0	31.5	24.5	27.0	31.5	22.5	26.5			
30	34.5	28.0	30.0	31.5	26.0	28.5	32.0	25.0	28.0	32.0	22.0	26.5			
31	---	---	---	31.5	26.5	28.5	34.5	24.5	28.5	---	---	---			
MONTH	37.0	25.5	29.7	37.5	14.0	29.2	34.5	18.0	27.6	34.0	20.0	25.1			

06037100 GIBBON RIVER AT MADISON JUNCTION, YELLOWSTONE NATIONAL PARK

LOCATION.--Lat 44°38'26", long 110°51'38" (NAD 27), Yellowstone National Park, Hydrologic Unit 10020007, on left bank 40 ft downstream from highway bridge, 0.4 mi south of Madison Junction, 14 mi east of West Yellowstone, and at river mile 0.2.

DRAINAGE AREA.--126 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 2001 to September 2001, October 2002 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 6,800 ft (NGVD 29).

REMARKS.--Water-discharge records good. No regulation or diversions upstream from station. U. S. Geological Survey satellite telemeter at station.

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	87	81	86	92	84	88	132	141	191	122	91	86
2	88	83	86	91	85	82	133	148	173	123	91	86
3	88	85	87	87	88	87	139	170	161	119	93	86
4	88	87	86	84	88	87	163	187	157	135	91	86
5	88	80	81	e75	87	83	173	206	154	146	92	85
6	89	e80	91	e80	86	81	154	210	146	125	88	85
7	89	81	93	89	88	77	155	201	141	117	88	84
8	90	81	92	88	88	81	161	185	134	113	86	84
9	89	84	84	86	89	85	157	170	136	110	86	83
10	111	87	88	84	85	89	129	165	205	108	86	82
11	98	88	89	84	88	83	121	163	232	105	84	82
12	94	86	86	81	e82	82	122	165	204	102	83	83
13	92	82	87	80	85	80	135	148	169	101	82	106
14	91	87	93	82	84	79	145	140	150	102	81	186
15	90	85	88	79	88	79	140	138	137	100	81	159
16	89	86	81	79	87	77	125	159	134	101	81	155
17	89	90	88	79	90	78	137	198	132	99	85	131
18	88	85	79	78	92	81	146	178	130	101	90	109
19	88	85	83	81	91	87	140	201	141	113	88	105
20	87	90	86	81	86	91	141	154	135	111	85	133
21	87	88	89	77	86	91	134	149	129	108	87	113
22	87	81	84	76	87	95	123	259	123	114	94	106
23	88	80	81	80	89	114	118	301	141	111	108	105
24	87	87	81	83	90	121	123	233	124	102	110	104
25	83	87	89	87	91	118	116	187	129	99	109	99
26	87	87	91	82	91	117	118	182	136	99	130	97
27	88	82	88	82	93	108	137	190	126	98	117	99
28	90	83	84	83	90	100	170	205	141	94	98	97
29	104	86	89	84	86	96	148	280	122	93	94	94
30	89	87	89	89	---	101	146	259	121	92	90	98
31	83	---	89	86	---	116	---	214	---	91	88	---
TOTAL	2,786	2,541	2,688	2,569	2,544	2,834	4,181	5,886	4,454	3,354	2,857	3,108
MEAN	89.9	84.7	86.7	82.9	87.7	91.4	139	190	148	108	92.2	104
MAX	111	90	93	92	93	121	173	301	232	146	130	186
MIN	83	80	79	75	82	77	116	138	121	91	81	82
AC-FT	5,530	5,040	5,330	5,100	5,050	5,620	8,290	11,670	8,830	6,650	5,670	6,160

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2001 - 2004, BY WATER YEAR (WY)*

MEAN	93.3	88.6	89.6	88.5	90.6	92.5	140	250	167	110	92.1	92.9
MAX	96.8	92.6	92.5	94.2	93.6	93.6	152	315	216	114	96.5	104
(WY)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2004)
MIN	89.9	84.7	86.7	82.9	87.7	91.4	130	190	137	108	87.7	82.6
(WY)	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)	(2001)	(2004)	(2001)	(2004)	(2001)	(2001)

SUMMARY STATISTICS

FOR 2003 CALENDAR YEAR

FOR 2004 WATER YEAR

WATER YEARS 2001 - 2004*

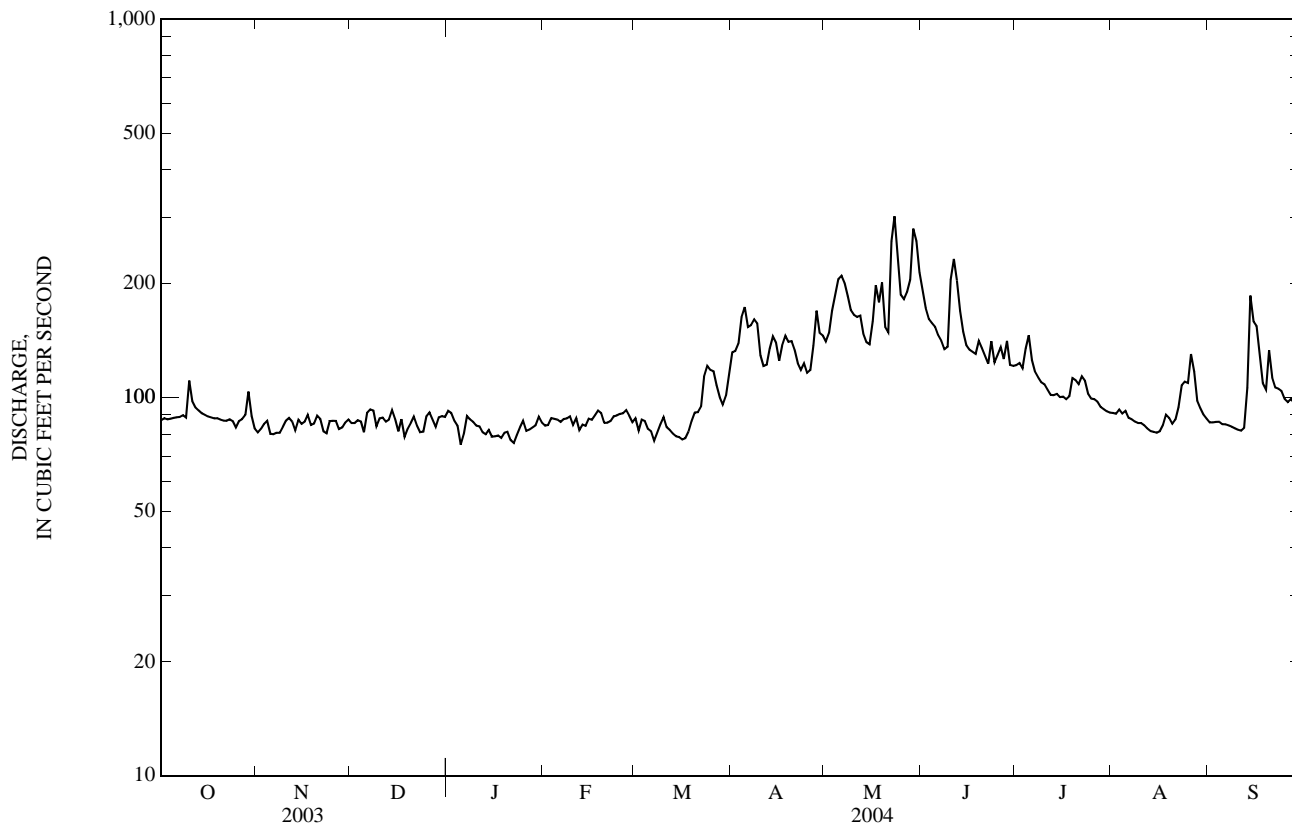
ANNUAL TOTAL	46,545	39,802		
ANNUAL MEAN	128	109	119	
HIGHEST ANNUAL MEAN			129	2003
LOWEST ANNUAL MEAN			109	2004
HIGHEST DAILY MEAN	506	May 27	301	May 23
LOWEST DAILY MEAN	79	Dec 18	75	Jan 5
ANNUAL SEVEN-DAY MINIMUM	82	Nov 1	79	Jan 16
MAXIMUM PEAK FLOW			334	May 23
MAXIMUM PEAK STAGE			4.79	May 23
INSTANTANEOUS LOW FLOW			72	Dec 18
ANNUAL RUNOFF (AC-FT)	92,320	78,950	86,200	
10 PERCENT EXCEEDS	203	159	185	
50 PERCENT EXCEEDS	95	90	95	
90 PERCENT EXCEEDS	86	81	84	

*--During periods of operation (April 2001 to September 2001, October 2002 to current year).

a--Gage height, 3.93 ft, but may have been lower during period of ice effect.

e--Estimated.

06037100 GIBBON RIVER AT MADISON JUNCTION, YELLOWSTONE NATIONAL PARK—Continued



WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 2002 to September 2003.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: October 2002 to September 2003.

INSTRUMENTATION.--Temperature recorder installed Sept. 19, 2002.

REMARKS.--Daily water temperature records good. Unpublished records of instantaneous water temperature and specific conductance are available in files of the District office.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum, 25.5°C, July 21, 2003; minimum, 0.0°C, several days during winter months.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 25.5°C, July 15, 16; minimum, 0.0°C, several days November through February.

06037100 GIBBON RIVER AT MADISON JUNCTION, YELLOWSTONE NATIONAL PARK—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

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

06037100 GIBBON RIVER AT MADISON JUNCTION, YELLOWSTONE NATIONAL PARK—Continued

TEMPERATURE, WATER, DEGREES CELSIUS—CONTINUED
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	18.0	11.0	14.0	23.0	14.0	18.0	23.0	14.5	18.5	20.5	13.0	16.5
2	20.0	12.0	15.5	21.0	14.5	18.0	23.5	16.0	19.0	18.5	14.5	16.0
3	20.0	12.5	16.0	21.5	13.5	17.5	23.5	16.5	19.5	14.5	12.0	13.5
4	18.5	14.0	16.5	19.5	15.5	17.5	22.0	15.5	18.5	18.0	10.0	13.5
5	20.5	13.5	17.0	19.5	13.5	16.5	23.5	16.0	19.5	17.0	11.5	14.5
6	18.5	14.0	16.0	21.0	14.0	17.5	22.0	14.5	18.0	18.5	11.0	14.5
7	20.5	13.0	16.5	20.5	14.5	17.5	20.0	13.5	17.0	18.5	11.0	14.5
8	21.0	13.5	17.0	21.0	13.5	17.0	22.0	13.0	17.0	19.0	11.5	15.0
9	19.5	14.0	16.5	20.5	12.5	16.5	22.5	14.0	18.0	18.5	11.5	15.0
10	15.5	11.0	13.0	23.0	14.0	18.0	22.5	14.5	18.5	18.0	12.0	14.5
11	13.0	10.0	11.5	22.0	15.0	18.5	22.5	14.5	18.5	18.5	11.5	15.0
12	15.0	10.5	12.5	23.5	13.5	18.5	22.5	13.0	18.0	16.0	12.5	14.0
13	17.0	12.0	14.0	20.5	15.0	18.0	22.5	13.5	18.0	13.5	12.0	12.5
14	19.0	12.0	15.5	25.0	14.5	19.5	23.0	14.5	18.5	12.0	8.5	10.0
15	17.5	11.5	14.5	25.5	17.5	21.0	20.5	14.5	17.5	12.5	8.5	10.5
16	17.0	11.5	13.5	25.5	16.0	20.5	21.5	15.0	18.0	15.0	11.0	12.5
17	18.5	11.0	14.5	25.0	16.5	20.5	20.0	17.0	18.5	17.0	11.0	13.5
18	15.0	11.5	13.5	24.0	17.0	20.5	20.0	16.0	18.0	17.5	13.0	15.0
19	17.5	12.0	14.5	22.0	19.0	20.5	23.0	15.5	18.5	15.5	12.5	13.5
20	18.5	12.5	15.5	23.0	16.5	19.0	21.5	14.5	18.0	13.0	10.5	11.5
21	20.5	12.5	16.0	24.0	15.0	19.5	19.5	14.5	16.5	13.5	8.5	11.0
22	21.5	12.5	16.5	21.0	16.5	18.5	19.0	14.0	16.5	10.0	8.0	9.0
23	21.0	13.0	17.0	22.0	15.5	18.5	16.0	12.5	13.5	13.5	9.5	11.0
24	21.5	14.5	18.0	24.0	14.5	19.0	17.0	11.0	13.5	17.0	10.0	13.0
25	20.0	15.0	17.5	22.5	15.5	19.5	14.5	12.0	13.5	17.5	10.5	14.0
26	22.0	13.5	17.5	23.0	17.0	19.5	15.5	11.0	13.0	17.5	10.5	14.0
27	19.5	15.5	17.5	22.5	15.5	19.0	17.5	11.5	14.0	18.0	12.5	15.0
28	22.5	14.0	18.0	23.5	15.5	19.5	18.0	12.0	15.0	17.0	11.5	14.0
29	22.5	15.0	18.5	22.0	15.0	18.5	20.0	13.0	16.5	16.5	10.5	13.5
30	20.0	16.0	18.0	23.0	14.5	18.5	21.0	13.0	17.0	15.5	13.0	14.0
31	---	---	---	22.5	15.0	18.5	21.5	13.0	17.0	---	---	---
MONTH	22.5	10.0	15.5	25.5	12.5	19.0	23.5	11.0	17.0	20.5	8.0	13.5

06037500 MADISON RIVER NEAR WEST YELLOWSTONE, MT

LOCATION.--Lat 44°39'25", long 111°04'03" (NAD 27), in NE $\frac{1}{4}$ NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.36, T.13 S., R.5 E., Gallatin County, Hydrologic Unit 10020007, Yellowstone National Park, on left bank 0.7 mi downstream from Montana-Wyoming stateline, 1.5 mi east of West Yellowstone, 16.4 mi downstream from Gibbon River, and at river mile 132.7.

DRAINAGE AREA.--420 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1913 to December 1917, July 1918 to October 1921, June 1922 to September 1973, August 1983 to September 1986, October 1988 to current year. Monthly discharge only for some periods, published in WSP 1309.

GAGE.--Water-stage recorder. Elevation of gage is 6,650 ft (NGVD 29). Prior to Oct. 20, 1918, nonrecording gage, and Oct. 20, 1918 to June 29, 1930, nonrecording gage or water-stage recorder at sites 2.5 mi upstream at different elevations. Supplementary nonrecording gage at site 0.3 mi downstream at different elevation used at time during 1927-30.

REMARKS.--Water-discharge records good except those for January to February, which are fair. No regulation or diversions upstream from station. U. S. Geological Survey satellite telemeter at station.

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	341	331	341	361	347	360	458	481	599	455	375	380
2	341	331	339	354	344	355	475	499	579	442	375	379
3	341	335	338	355	347	357	476	542	575	431	380	382
4	341	340	339	344	345	358	489	588	582	439	378	384
5	341	e330	333	289	337	357	503	638	594	466	380	378
6	341	e320	345	e250	334	349	506	692	599	446	375	375
7	341	e320	359	e300	336	348	504	724	603	415	373	376
8	342	330	359	340	338	363	510	717	589	405	369	376
9	341	334	345	336	333	373	522	678	593	401	369	375
10	371	340	344	334	330	385	482	630	648	398	369	375
11	366	346	348	330	337	377	458	609	704	393	364	375
12	352	343	345	328	e325	377	449	602	672	387	366	374
13	348	337	347	326	e330	377	460	552	614	387	369	410
14	347	342	356	326	334	372	480	521	567	388	369	490
15	347	341	354	327	336	371	479	512	541	387	369	496
16	347	347	343	329	339	369	457	521	536	387	369	455
17	345	356	346	327	349	379	470	626	525	382	374	441
18	341	342	336	325	354	387	504	568	505	387	395	415
19	341	341	341	326	358	407	477	678	535	403	386	406
20	341	356	341	326	346	428	473	587	525	427	387	467
21	341	354	346	322	342	418	485	573	504	418	386	435
22	341	344	340	321	344	423	461	694	477	413	405	412
23	341	e340	334	324	347	433	443	864	484	419	428	411
24	340	347	336	332	348	463	444	738	476	398	427	409
25	334	345	345	342	354	465	437	617	456	392	430	400
26	337	345	354	333	354	458	437	579	495	387	539	393
27	341	338	347	332	355	432	465	608	481	387	457	392
28	343	335	339	339	358	416	522	652	492	387	412	392
29	365	340	345	338	360	406	511	798	478	381	396	390
30	350	343	353	349	---	410	498	790	468	376	387	390
31	333	---	353	353	---	426	---	654	---	375	385	---
TOTAL	10,682	10,193	10,691	10,218	9,961	12,199	14,335	19,532	16,496	12,559	12,143	12,133
MEAN	345	340	345	330	343	394	478	630	550	405	392	404
MAX	371	356	359	361	360	465	522	864	704	466	539	496
MIN	333	320	333	250	325	348	437	481	456	375	364	374
AC-FT	21,190	20,220	21,210	20,270	19,760	24,200	28,430	38,740	32,720	24,910	24,090	24,070

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1913 - 2004, BY WATER YEAR (WY)*

MEAN	432	423	415	403	398	406	496	847	809	497	432	426
MAX	710	697	641	586	572	539	671	1,725	1,479	917	759	704
(WY)	(1914)	(1914)	(1997)	(1997)	(1914)	(1917)	(1925)	(1997)	(1997)	(1913)	(1913)	(1913)
MIN	297	297	304	304	303	313	369	388	341	282	273	282
(WY)	(1935)	(1932)	(1932)	(1932)	(1932)	(1943)	(1941)	(1934)	(1931)	(1931)	(1934)	(1934)

06037500 MADISON RIVER NEAR WEST YELLOWSTONE, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1913 - 2004*	
ANNUAL TOTAL	154,876		151,142			
ANNUAL MEAN	424		413		497	
HIGHEST ANNUAL MEAN					789	
LOWEST ANNUAL MEAN					337	
HIGHEST DAILY MEAN	1,120	May 27	864	May 23	2,750	May 18, 1996
LOWEST DAILY MEAN	320	Nov 6	250	Jan 6	245	Jan 1, 1942
ANNUAL SEVEN-DAY MINIMUM	329	Nov 2	311	Jan 5	267	Aug 6, 1931
MAXIMUM PEAK FLOW			909	May 23	a2,820	May 18, 1996
MAXIMUM PEAK STAGE			2.36	May 23	b10.00	Jan 8, 1937
INSTANTANEOUS LOW FLOW					c100	Feb 7, 1933
ANNUAL RUNOFF (AC-FT)	307,200		299,800		360,400	
10 PERCENT EXCEEDS	580		570		739	
50 PERCENT EXCEEDS	373		375		431	
90 PERCENT EXCEEDS	341		334		339	

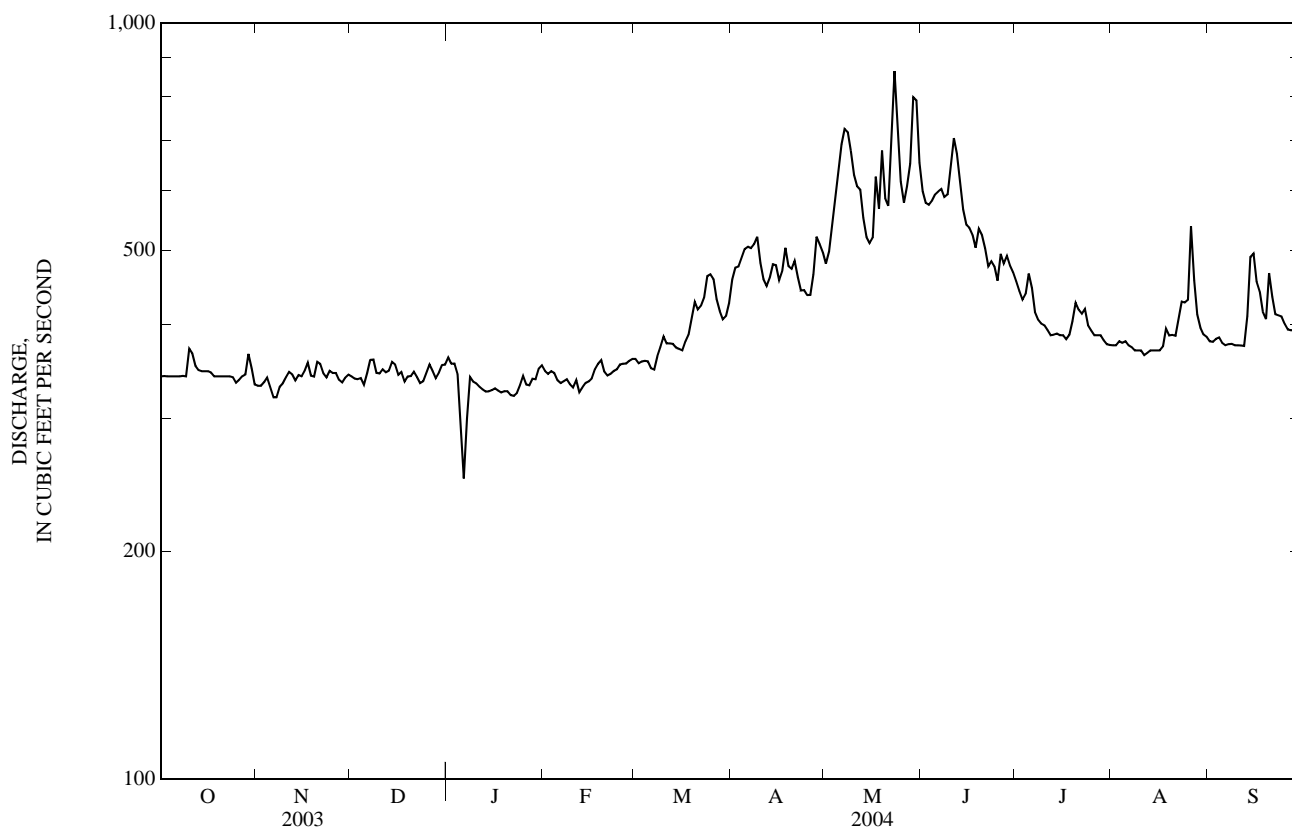
*--During periods of operation (June 1913 to December 1917, July 1918 to October 1921, June 1922 to September 1973, August 1983 to September 1986, October 1988 to current year).

a--Gage height, 3.78 ft.

b--About, backwater from ice.

c--Result of freezeup.

e--Estimated.



WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1983-86, 1989-95, April 2004, (discontinued).

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: July 1983 to July 1986.

WATER TEMPERATURE: July 1983 to July 1986.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 558 microsiemens per centimeter (µS/cm) at 25.0°C, Mar. 24, 25, 1986; minimum, 78 µS/cm at 25.0°C, May 30, 1986.

WATER TEMPERATURE: Maximum, 25.5°C, Aug. 6, 9, 1983; minimum, 0.0°C, many days during winter months.

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

Date	Time	Instantaneous discharge, cfs (00061)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water unfltrd uS/cm 25 degC (00095)	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)
APR 19...	1045	482	8.1	470	17	5.80	.712	8.29	9	86.0	87

Date	Alkalinity, water fltrd fxd end pt., lab, mg/L as CaCO3 (29801)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue water, fltrd, tons/ acre-ft (70303)	Residue water, fltrd, tons/d (70302)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Boron, water, fltrd, ug/L (01020)
APR 19...	106	60.0	6.8	87.5	15.9	336	.46	437	269	258	707

Date	Iron, water, fltrd, ug/L (01046)	Iron, water, unfltrd recover-able, ug/L (01045)	Lithium water, fltrd, ug/L (01130)	Manganese, water, fltrd, ug/L (01056)	Mercury water fltrd, ng/L* (50287)	Mercury water unfltrd ng/L* (50286)	Zinc, water, fltrd, ug/L (01090)	Filter pore size, um (81352)
APR 19...	125	330	443	12.1	4.99	26.3	.8	.10

*--Results for mercury are reported in nanograms per liter.

06038500 MADISON RIVER BELOW HEBGEN LAKE, NEAR GRAYLING, MT

LOCATION.--Lat 44°52'00", long 111°20'15" (NAD 27), NE $\frac{1}{4}$ NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec.22, T.11 S., R.3 E., Gallatin County, Hydrologic Unit 10020007, Gallatin National Forest, on right bank 1,500 ft downstream from Hebgen Dam, 8 mi northwest of Grayling, 17 mi upstream from West Fork, and at river mile 108.8.

DRAINAGE AREA.--905 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1909 to current year. Prior to October 1938 adjusted runoff only, published in WSP 1309. Prior to October 1949, published as "below Hebgen Reservoir".

REVISED RECORDS.--WSP 1509: 1948. WSP 1559: Drainage area. WSP 1629: 1943. WSP 1709: 1959. WSP 1729: 1943.

GAGE.--Water-stage recorder. Elevation of gage is 6,448.47 ft (after 1959 earthquake) (NGVD 29). Prior to July 13, 1943, nonrecording gage in stilling well.

REMARKS.--Water-discharge records excellent. Flow completely regulated by Hebgen Lake (station number 06038000). Diversions for irrigation of about 1,100 acres upstream from station. Bureau of Reclamation satellite telemeter at station.

AVERAGE DISCHARGE.--95 years, 1,018 ft³/s, 15.28 in/yr, 737,500 acre-ft/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,200 ft³/s, Aug. 17, 1959, caused by wave over Hebgen Dam during earthquake, gage height, 5.3 ft, from floodmark, from rating curve extended above 3,500 ft³/s on basis of slope-area measurement of peak flow; maximum observed unaffected by wave over dam, 5,090 ft³/s, June 3, 1943, gage height, 3.69 ft; minimum daily, 5.0 ft³/s, May 9-12, 1960.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,270 ft³/s, July 7, gage height, 2.00 ft; minimum daily, 406 ft³/s, May 10.

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	891	777	770	758	750	898	750	664	484	609	827	918
2	891	776	771	758	750	954	750	665	484	664	829	919
3	889	776	764	758	788	1,010	750	665	485	714	889	918
4	888	777	764	758	831	1,000	750	665	490	715	946	918
5	888	776	759	758	832	1,000	750	665	491	715	946	918
6	888	776	759	758	831	1,000	750	636	487	835	944	918
7	888	776	759	755	831	999	753	564	484	1,170	943	918
8	827	776	760	756	831	999	754	488	484	1,140	944	918
9	783	776	758	755	831	997	759	432	484	1,040	941	917
10	785	776	758	754	872	989	758	406	484	1,040	940	915
11	785	777	758	751	918	988	758	406	485	977	938	910
12	785	776	758	751	918	988	758	406	490	937	938	909
13	785	776	758	750	918	988	758	407	492	883	938	909
14	785	776	758	750	916	988	759	410	495	829	938	911
15	785	776	758	750	913	984	759	436	497	831	938	910
16	783	776	758	750	911	977	759	457	498	830	937	910
17	777	776	758	750	909	970	758	457	498	828	938	909
18	777	776	758	750	908	914	758	457	498	830	938	908
19	777	777	758	750	908	831	758	457	498	831	937	909
20	776	776	758	750	908	831	759	457	498	831	935	909
21	776	776	758	750	908	831	758	459	502	831	935	908
22	776	776	758	750	906	831	758	464	505	831	937	908
23	778	776	758	750	905	831	758	465	505	831	937	908
24	778	776	758	750	901	831	758	470	507	831	936	908
25	777	776	758	750	899	789	758	470	508	831	930	907
26	776	776	758	750	899	750	758	470	500	831	923	905
27	777	775	758	750	898	750	758	472	498	829	923	906
28	776	773	758	750	898	750	716	477	498	828	922	906
29	779	770	758	750	898	750	664	477	527	826	920	906
30	781	771	758	750	---	750	664	482	585	826	919	904
31	779	---	757	750	---	750	---	484	---	826	918	---
TOTAL	24,986	23,269	23,539	23,320	25,386	27,918	22,458	15,390	14,941	26,370	28,724	27,337
MEAN	806	776	759	752	875	901	749	496	498	851	927	911
MAX	891	777	771	758	918	1,010	759	665	585	1,170	946	919
MIN	776	770	757	750	750	750	664	406	484	609	827	904
AC-FT	49,560	46,150	46,690	46,260	50,350	55,380	44,550	30,530	29,640	52,300	56,970	54,220

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 2004, BY WATER YEAR (WY) (UNADJUSTED)

MEAN	1,357	1,396	983	898	838	838	926	856	1,263	1,030	1,080	1,132
MAX	2,477	2,535	2,838	1,407	1,905	1,574	2,343	2,494	2,940	2,058	1,722	1,688
(WY)	1962	1960	1960	1944	1973	1947	1948	1996	1943	1965	1939	1982
MIN	215	501	410	180	181	291	217	45.5	96.0	503	662	368
(WY)	1942	1941	1940	1940	1940	1941	1961	1962	1960	1978	1960	1941

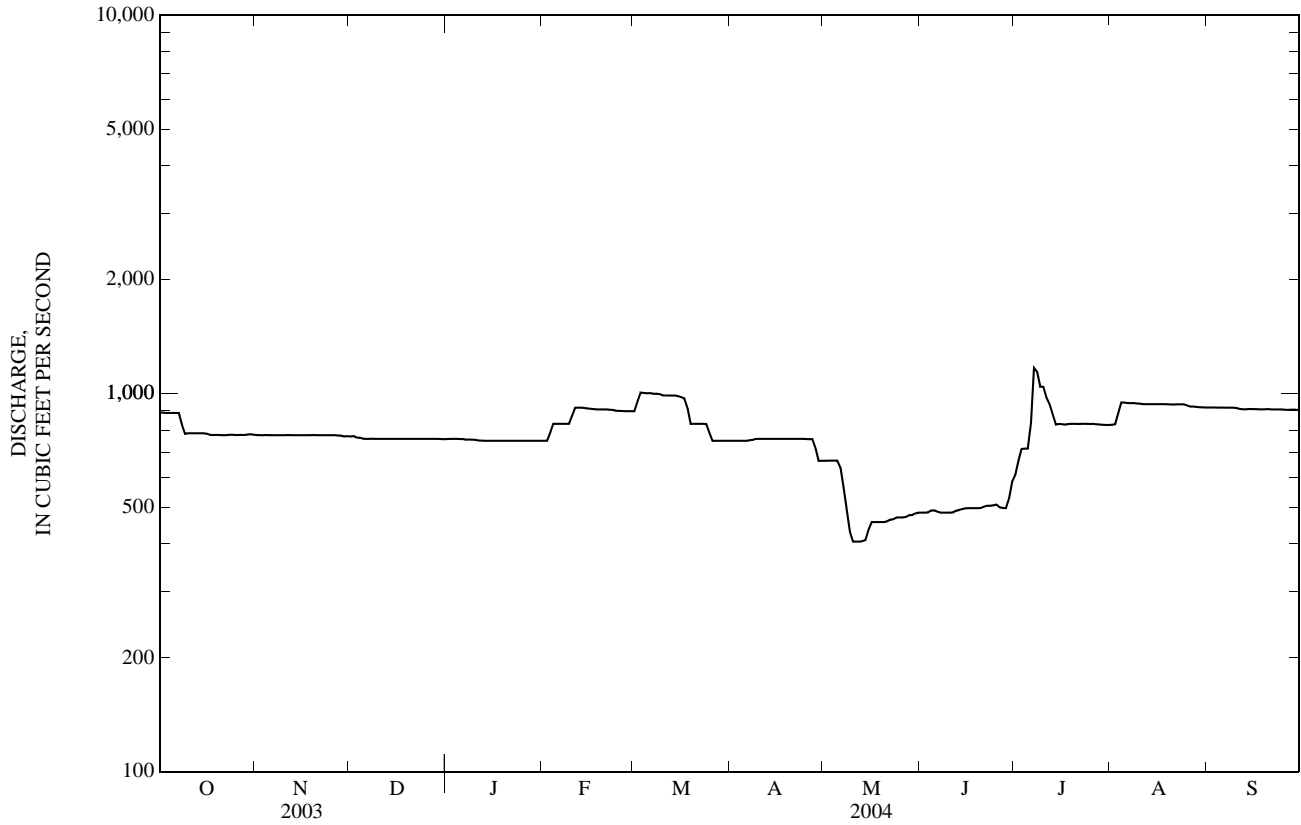
ADJUSTED FOR CHANGE IN CONTENTS IN HEBGEN LAKE

MEAN†	663	666	704	588	717	810	876	1,480	1,268	829	671	701
CFSTM†	0.73	0.74	0.78	0.65	0.79	0.89	0.97	1.64	1.40	0.92	0.74	0.77
IN†	0.84	0.82	0.90	0.75	0.85	1.03	1.08	1.89	1.56	1.06	0.86	0.86
AC-FT†	40,760	39,650	43,290	36,160	41,250	49,780	52,150	91,030	75,440	51,000	41,270	41,720

06038500 MADISON RIVER BELOW HEBGEN LAKE, NEAR GRAYLING, MT—Continued

				OBSERVED					
CALENDAR YEAR 2003	TOTAL	316,927	MEAN	868	MAX	1,780	MIN	608	AC-FT 628,600
WATER YEAR 2004	TOTAL	283,638	MEAN	775	MAX	1,170	MIN	406	AC-FT 562,600
				ADJUSTED					
CALENDAR YEAR 2003	TOTAL	308,999	MEAN	847	CFSM	0.94	IN	12.70	AC-FT 612,900
WATER YEAR 2004	TOTAL	304,260	MEAN	831	CFSM	0.92	IN	12.50	AC-FT 603,500

†--Adjusted for change in contents in Hebgen Lake.



06038500 MADISON RIVER BELOW HEBGEN LAKE, NEAR GRAYLING, MT—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1986-88, 1990-95, April 2004 (discontinued).

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

Date	Time	Instantaneous discharge, cfs (00061)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water unfltrd uS/cm 25 degC (00095)	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)
APR 19...	1200	758	7.9	352	39	11.5	2.57	5.61	4	54.2

Date	Sodium, percent (00932)	Alkalinity, wat flt fxd end lab, mg/L as CaCO3 (29801)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue water, fltrd, tons/ acre-ft (70303)	Residue water, fltrd, tons/d (70302)	Arsenic water, fltrd, ug/L (01000)
APR 19...	72	99	35.1	4.5	61.5	11.2	247	.34	505	158

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

Date	Arsenic water unfltrd ug/L (01002)	Boron, water, fltrd, ug/L (01020)	Iron, water, fltrd, ug/L (01046)	Iron, water, unfltrd recover-able, ug/L (01045)	Lithium water, fltrd, ug/L (01130)	Manganese, water, fltrd, ug/L (01056)	Mercury water, fltrd, ng/L (50287)	Mercury water, unfltrd, ng/L (50286)	Zinc, water, fltrd, ug/L (01090)
APR 19...	140	408	92	140	270	88.0	1.54	2.11	<.6

*--Results for mercury are reported in nanograms per liter.

06038800 MADISON RIVER AT KIRBY RANCH, NEAR CAMERON, MT

LOCATION.--Lat 44°53'22", long 111°34'46" (NAD 27), in NE $\frac{1}{4}$ NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.10, T.11 S., R.1 E., Madison County, Hydrologic Unit 10020007, 75 ft upstream from county bridge, 0.2 mi upstream from West Fork Madison River, and 22 mi south of Cameron, and at river mile 89.8.

DRAINAGE AREA.--1,065 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1959 to September 1963, May 1978 to September 1994 (seasonal records only), October 1995 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 5,860 ft (NGVD 29). Aug. 31, 1959 to Oct. 2, 1959, nonrecording gage 75 ft downstream at elevation 0.96 ft lower. Oct. 3, 1959 to September 1963, water-stage recorder at present site and elevation. May 1978 to September 1994, nonrecording gage 75 ft downstream at present elevation.

REMARKS.--Water-discharge records good. Flow regulated by Hebgen Lake (station 06038000). Diversions for irrigation of about 1,500 acres upstream from station. U.S. Geological Survey satellite telemeter at station.

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	926	808	813	821	805	943	857	833	e835	982	932	984
2	924	810	811	814	e800	951	859	866	e850	998	934	980
3	920	815	810	809	812	1,020	865	929	e880	1,060	947	982
4	924	821	810	e800	858	1,040	873	986	960	1,110	1,000	984
5	923	814	809	e790	877	1,040	882	1,050	1,050	1,120	1,020	975
6	924	814	815	e790	882	1,040	888	1,120	1,150	1,080	1,020	971
7	923	814	821	e800	881	1,040	890	1,090	1,160	1,300	1,010	969
8	910	815	812	813	879	1,040	903	1,030	1,100	1,440	1,010	959
9	846	818	808	808	881	1,040	903	917	1,110	1,310	1,010	954
10	844	818	808	804	892	1,040	888	834	1,200	1,260	1,010	954
11	834	822	811	803	936	1,040	881	825	1,140	1,230	1,000	947
12	830	823	809	804	e940	1,030	884	772	1,020	1,160	997	958
13	828	819	816	805	945	1,020	907	718	931	1,130	1,000	983
14	831	818	823	808	945	1,020	926	682	889	1,050	1,000	979
15	829	818	811	809	940	1,020	925	662	881	1,030	997	965
16	829	820	811	808	941	1,010	917	688	876	1,020	985	972
17	832	820	807	805	947	1,010	918	693	859	1,010	992	963
18	833	816	807	e800	958	1,010	917	712	856	998	992	958
19	831	818	805	799	958	946	907	742	857	1,010	991	971
20	831	815	808	799	945	923	899	737	856	1,020	987	985
21	834	811	810	808	946	919	885	770	853	1,010	986	968
22	832	804	810	e800	944	917	876	809	859	988	989	962
23	826	805	810	805	940	923	872	854	881	983	1,010	974
24	823	810	807	811	938	926	870	813	911	971	1,010	982
25	823	809	816	813	941	921	871	769	930	965	1,020	972
26	825	809	814	808	944	869	883	761	945	959	1,020	968
27	826	810	810	805	946	848	917	761	933	958	1,010	965
28	834	811	813	803	943	843	950	837	897	952	1,000	965
29	840	812	813	808	940	843	860	1,000	878	949	996	963
30	820	813	811	805	---	842	828	936	927	950	993	961
31	806	---	815	802	---	848	---	860	---	940	990	---
TOTAL	26,461	24,430	25,154	24,957	26,504	29,922	26,701	26,056	28,474	32,943	30,858	29,073
MEAN	854	814	811	805	914	965	890	841	949	1,063	995	969
MAX	926	823	823	821	958	1,040	950	1,120	1,200	1,440	1,020	985
MIN	806	804	805	790	800	842	828	662	835	940	932	947
AC-FT	52,490	48,460	49,890	49,500	52,570	59,350	52,960	51,680	56,480	65,340	61,210	57,670

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1959 - 2004, BY WATER YEAR (WY)*

MEAN	1,510	1,506	1,188	1,026	1,017	1,023	993	1,357	1,835	1,319	1,122	1,154
MAX	2,570	2,780	3,005	1,449	1,521	1,611	1,527	2,865	3,862	2,125	1,672	1,567
(WY)	(1962)	(1960)	(1960)	(1999)	(1999)	(1999)	(1995)	(1997)	(1997)	(1982)	(1997)	(1996)
MIN	854	736	739	737	626	525	370	445	619	716	734	732
(WY)	(2004)	(1961)	(1961)	(1961)	(1963)	(1963)	(1961)	(1961)	(1960)	(1979)	(1960)	(1960)

06038800 MADISON RIVER AT KIRBY RANCH, NEAR CAMERON, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1959 - 2004*	
ANNUAL TOTAL	363,068		331,533			
ANNUAL MEAN	995		906		1,267	
HIGHEST ANNUAL MEAN					1,896	
LOWEST ANNUAL MEAN					733	
HIGHEST DAILY MEAN	2,090	May 30	1,440	Jul 8	5,030	May 31, 1993
LOWEST DAILY MEAN	725	May 2	662	May 15	139	Sep 1, 1959
ANNUAL SEVEN-DAY MINIMUM	731	Apr 28	700	May 13	152	Sep 1, 1959
MAXIMUM PEAK FLOW			1,490	Jul 8	b5,030	May 30, 1993
MAXIMUM PEAK STAGE			2.30	Jul 8	3.97	Jun 7, 1996
INSTANTANEOUS LOW FLOW			a650	May 15	c139	Sep 1, 1959
ANNUAL RUNOFF (AC-FT)	720,100		657,600		918,100	
10 PERCENT EXCEEDS	1,420		1,020		2,020	
50 PERCENT EXCEEDS	900		890		1,140	
90 PERCENT EXCEEDS	810		806		740	

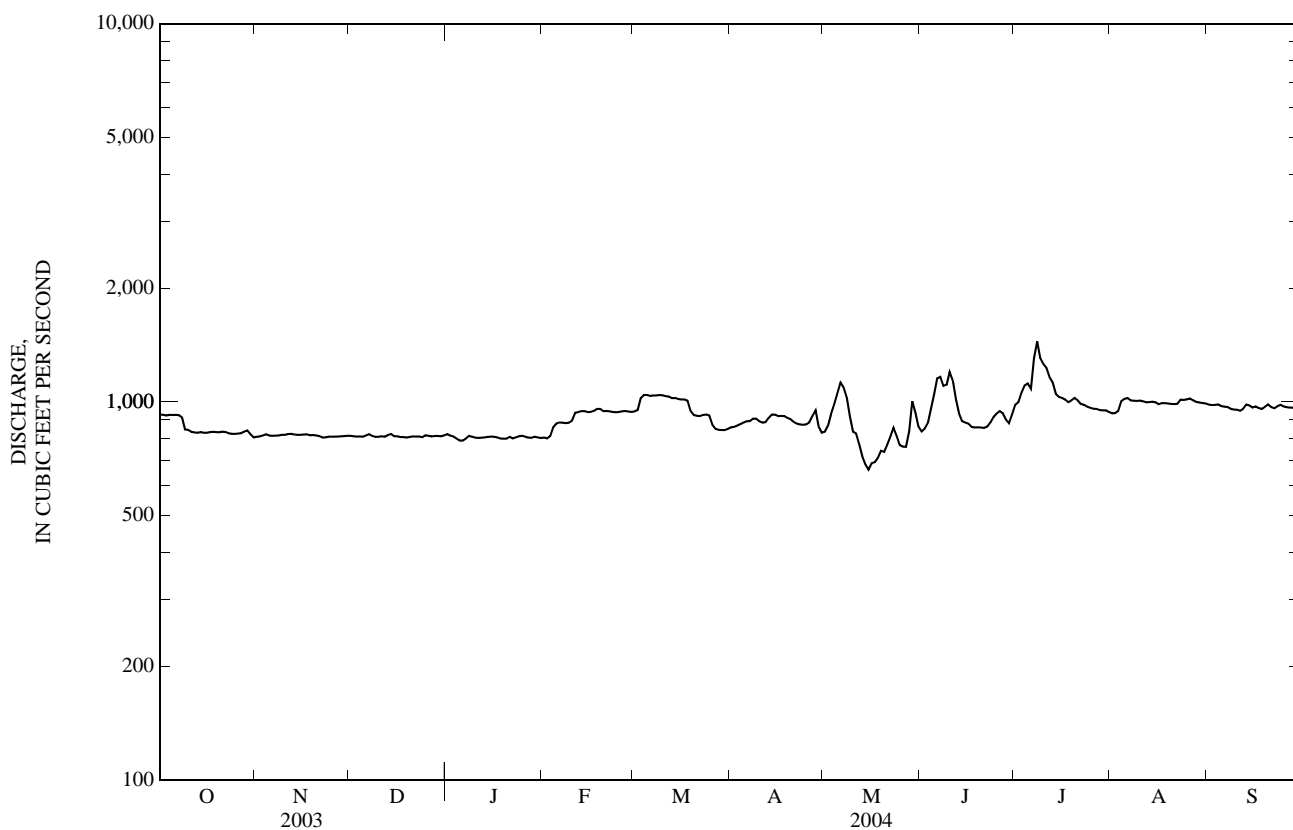
*--During periods of operation (September 1959 to September 1963, May 1978 to September 1994 (seasonal records only), October 1994 to current year).

a--Gage height, 1.54 ft.

b--Observed gage height, 3.15 ft, previous site at present datum.

c--Observed, present site and datum.

e--Estimated.



06038800 MADISON RIVER AT KIRBY RANCH, NEAR CAMERON, MT—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1994-2002, April 2004 (discontinued).

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: October 1994 to September 2002.

EXTREMES FOR PERIOD OF DAILY RECORD:

WATER TEMPERATURE: Maximum 21.5°C, July 2, 3, 2001, July 12, 2002; minimum, 0.0°C many days during winter months.

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

Date	Time	Instantaneous discharge, cfs (00061)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water unfltrd uS/cm 25 degC (00095)	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)
APR 19...	1315	892	8.3	356	47	13.6	3.25	5.63	4	55.4	69
Date	Alkalinity, water fltrd fxd end lab, mg/L as CaCO3 (29801)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue water, fltrd, tons/ acre-ft (70303)	Residue water, fltrd, tons/d (70302)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Boron, water, fltrd, ug/L (01020)
APR 19...	100	34.7	4.3	58.1	11.3	247	.34	596	153	145	406
Date	Iron, water, fltrd, ug/L (01046)	Iron, water, unfltrd recover-able, ug/L (01045)	Lithium water, fltrd, ug/L (01130)	Manganese, water, fltrd, ug/L (01056)	Mercury water, fltrd, ng/L (50287)	Mercury water unfltrd ng/L* (50286)	Zinc, water, fltrd, ug/L (01090)				
APR 19...	65	130	263	9.5	1.10	1.87	<.6				

*--Results for mercury are reported in nanograms per liter.

06040800 MADISON RIVER ABOVE POWERPLANT, NEAR MCALLISTER, MT

LOCATION.--Lat 45°29'12", long 111°37'59" (NAD 27), in NW¼NE¼SW¼ sec.17, T.4 S., R.1 E., Madison County, Hydrologic Unit 10020007, on right bank 160 ft upstream from Madison powerplant, 1.4 mi downstream from Ennis Lake, 5.6 mi northeast of McAllister, and at river mile 38.9.

DRAINAGE AREA.--2,186 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 2002 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 4,690 ft (NGVD 29).

REMARKS.--Water-discharge records good except those for estimated daily discharges, which are fair. Flow regulated by Hebgen Lake (station number 06038000) and Ennis Lake (station number 06040500). Diversions for irrigation of about 23,000 acres upstream from station. Flow through Madison Powerplant bypasses the station. U. S. Geological Survey satellite telemeter at station.

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	113	112	99	95	104	121	164	199	235	456	274	89
2	112	112	100	96	104	121	293	200	235	450	189	87
3	114	143	102	e90	101	121	205	203	233	594	183	87
4	115	114	104	e85	100	121	207	208	236	689	88	91
5	117	113	104	e80	101	121	209	213	243	811	163	93
6	119	112	103	e84	102	121	209	220	775	925	86	93
7	120	112	103	e87	103	121	211	238	1,500	940	86	94
8	122	116	103	89	103	121	214	243	1,010	534	86	232
9	121	124	102	89	104	121	217	240	588	383	88	206
10	123	144	99	90	107	123	220	226	1,220	605	90	95
11	122	123	98	92	116	124	222	222	2,140	715	92	94
12	120	121	97	92	e105	124	225	220	1,110	709	97	96
13	119	119	97	92	101	124	230	219	840	592	102	98
14	118	116	98	93	101	115	233	216	617	410	104	100
15	117	109	97	94	103	108	233	210	388	376	103	169
16	117	109	96	94	113	107	232	208	394	e290	105	209
17	116	109	94	95	125	107	233	206	395	e320	107	208
18	101	109	91	95	126	107	234	206	396	e320	110	172
19	91	109	91	95	131	107	235	205	396	e360	121	106
20	843	107	92	506	133	106	236	204	398	e120	132	136
21	1,170	106	92	1,110	132	105	236	204	398	95	133	400
22	1,180	e100	93	1,060	131	101	224	205	397	201	132	355
23	777	e98	96	133	129	94	211	209	397	323	134	255
24	116	e97	96	114	123	100	205	212	398	376	125	254
25	116	96	97	115	118	106	203	214	401	257	102	254
26	116	94	99	114	121	103	202	215	510	193	135	253
27	115	94	98	114	122	105	201	214	625	96	98	252
28	115	93	97	114	123	103	195	218	626	98	310	205
29	115	94	97	112	122	95	196	222	716	100	442	112
30	114	96	96	105	---	87	198	230	645	180	275	113
31	113	---	95	103	---	87	---	235	---	285	150	---
TOTAL	7,087	3,301	3,026	5,427	3,304	3,427	6,533	6,684	18,462	12,803	4,442	5,008
MEAN	229	110	97.6	175	114	111	218	216	615	413	143	167
MAX	1,180	144	104	1,110	133	124	293	243	2,140	940	442	400
MIN	91	93	91	80	100	87	164	199	233	95	86	87
AC-FT	14,060	6,550	6,000	10,760	6,550	6,800	12,960	13,260	36,620	25,390	8,810	9,930

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2002 - 2004, BY WATER YEAR (WY)

MEAN	251	183	91.6	144	108	116	265	530	875	458	175	172
MAX	273	255	97.6	175	114	122	351	1,031	1,076	560	203	247
(WY)	(2003)	(2003)	(2004)	(2004)	(2004)	(2003)	(2002)	(2003)	(2002)	(2002)	(2002)	(2002)
MIN	229	110	85.7	113	103	111	218	216	615	401	143	101
(WY)	(2004)	(2004)	(2003)	(2003)	(2003)	(2004)	(2004)	(2004)	(2004)	(2003)	(2004)	(2003)

SUMMARY STATISTICS

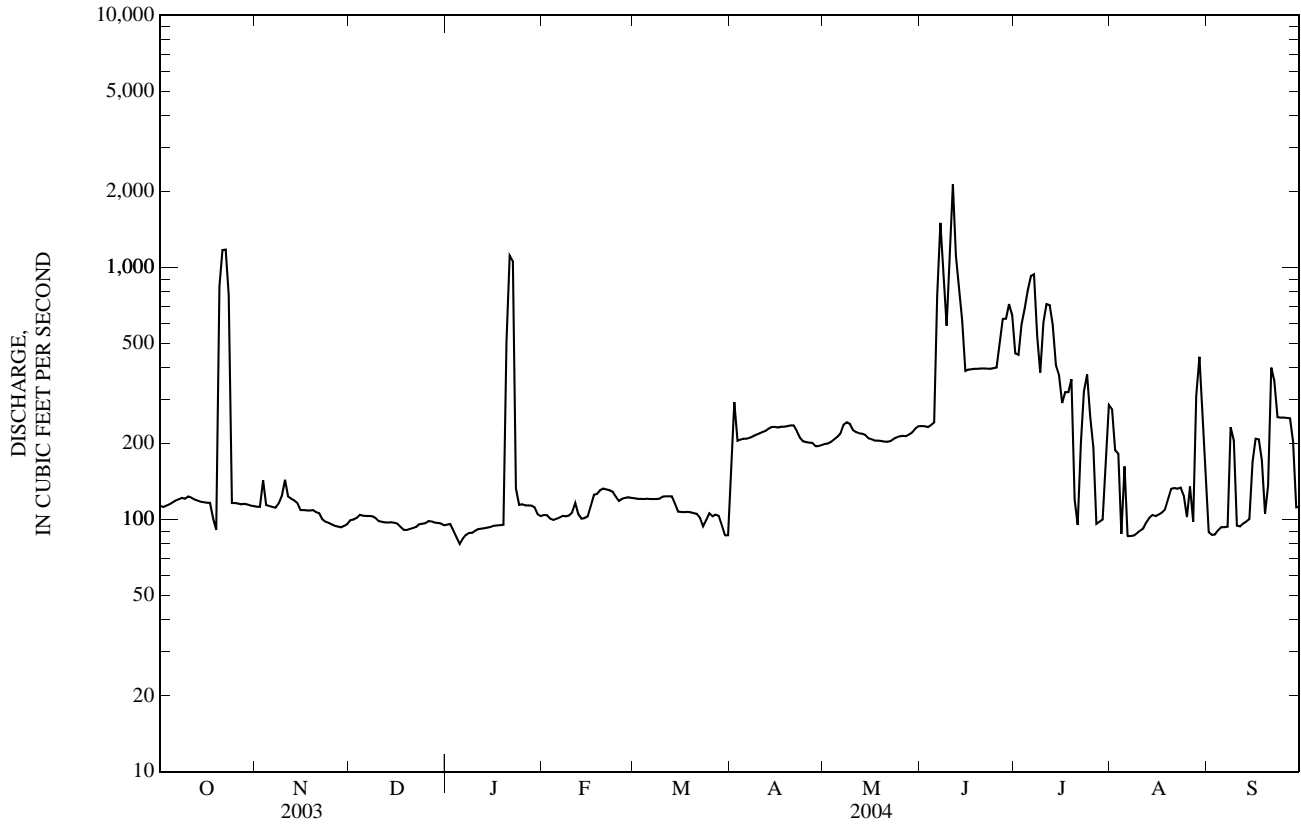
FOR 2003 CALENDAR YEAR

FOR 2004 WATER YEAR

WATER YEARS 2002 - 2004

ANNUAL TOTAL	111,371	79,504		
ANNUAL MEAN	305	217	268	
HIGHEST ANNUAL MEAN			320	2003
LOWEST ANNUAL MEAN			217	2004
HIGHEST DAILY MEAN	3,540	May 31	3,540	May 31, 2003
LOWEST DAILY MEAN	79	Jan 9	73	Dec 27, 2002
ANNUAL SEVEN-DAY MINIMUM	80	Jan 7	77	Dec 22, 2002
MAXIMUM PEAK FLOW		2,400	Jun 10	3,940
MAXIMUM PEAK STAGE		7.79	Jun 10	9.42
ANNUAL RUNOFF (AC-FT)	220,900	157,700	194,500	
10 PERCENT EXCEEDS	749	400	586	
50 PERCENT EXCEEDS	115	121	122	
90 PERCENT EXCEEDS	92	94	90	

e--Estimated.



WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 2004, (discontinued).

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

Date	Time	Instantaneous discharge, cfs (00061)	pH, water, unfltrd field, std units (00400)	Specif. conductance, water unfltrd uS/cm 25 degC (00095)	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)
APR 19...	1545	233	8.5	362	74	20.6	5.36	5.05	2	47.3	56
Date	Alkalinity, water fltrd fxd end lab, mg/L as CaCO3 (29801)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue water, fltrd, tons/ acre-ft (70303)	Residue water, fltrd, tons/d (70302)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Boron, water, fltrd, ug/L (01020)
APR 19...	113	29.6	3.6	44.6	14.1	239	.32	150	123	114	341

06040800 MADISON RIVER ABOVE POWERPLANT, NEAR MCALLISTER, MT—Continued

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

Date	Iron, water, fltrd, ug/L (01046)	Iron, water, unfltrd recover- able, ug/L (01045)	Lithium water, fltrd, ug/L (01130)	Mangan- ese, water, fltrd, ug/L (01056)	Mercury water fltrd, ng/L* (50287)	Mercury water unfltrd ng/L* (50286)	Zinc, water, fltrd, ug/L (01090)
APR 19...	40	280	247	6.1	.79	1.71	<.6

*--Results for mercury are reported in nanograms per liter.

06041000 MADISON RIVER BELOW ENNIS LAKE, NEAR MCALLISTER, MT

LOCATION.--Lat 45°29'25", long 111°38'00" (NAD 27), in SW¹/₄SE¹/₄NW¹/₄ sec.17, T.4 S., R.1 E., Madison County, Hydrologic Unit 10020007, on right bank 500 ft downstream from Madison powerplant, 1.5 mi downstream from Ennis Lake, 5.7 mi northeast of McAllister, and at river mile 38.8.

DRAINAGE AREA.--2,186 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1901 to December 1905, October 1906 to current year. Prior to October 1938 adjusted monthly runoff only, published in WSP 1309. Published as "below Madison Reservoir" 1938-49. Records published as "near Red Bluff" 1890-94 and as "near Norris" 1910 are not equivalent and are published as "near Norris" in WSP 1309.

REVISED RECORDS.--WSP 1559: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 4,689.03 ft (levels by U.S. Army Corps of Engineers) (NGVD 29). Prior to May 7, 1941, nonrecording gage in wooden stilling well at present site at different elevation. May 7, 1941, to Jan. 13, 1945, nonrecording gages in concrete stilling well at present site and elevation.

REMARKS.--Water-discharge records excellent. Flow regulated by Hebgen Lake (station number 06038000) and Ennis Lake (station number 06040500). Diversions for irrigation of about 23,000 acres upstream from station. U. S.Army Corps of Engineers satellite telemeter at station.

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

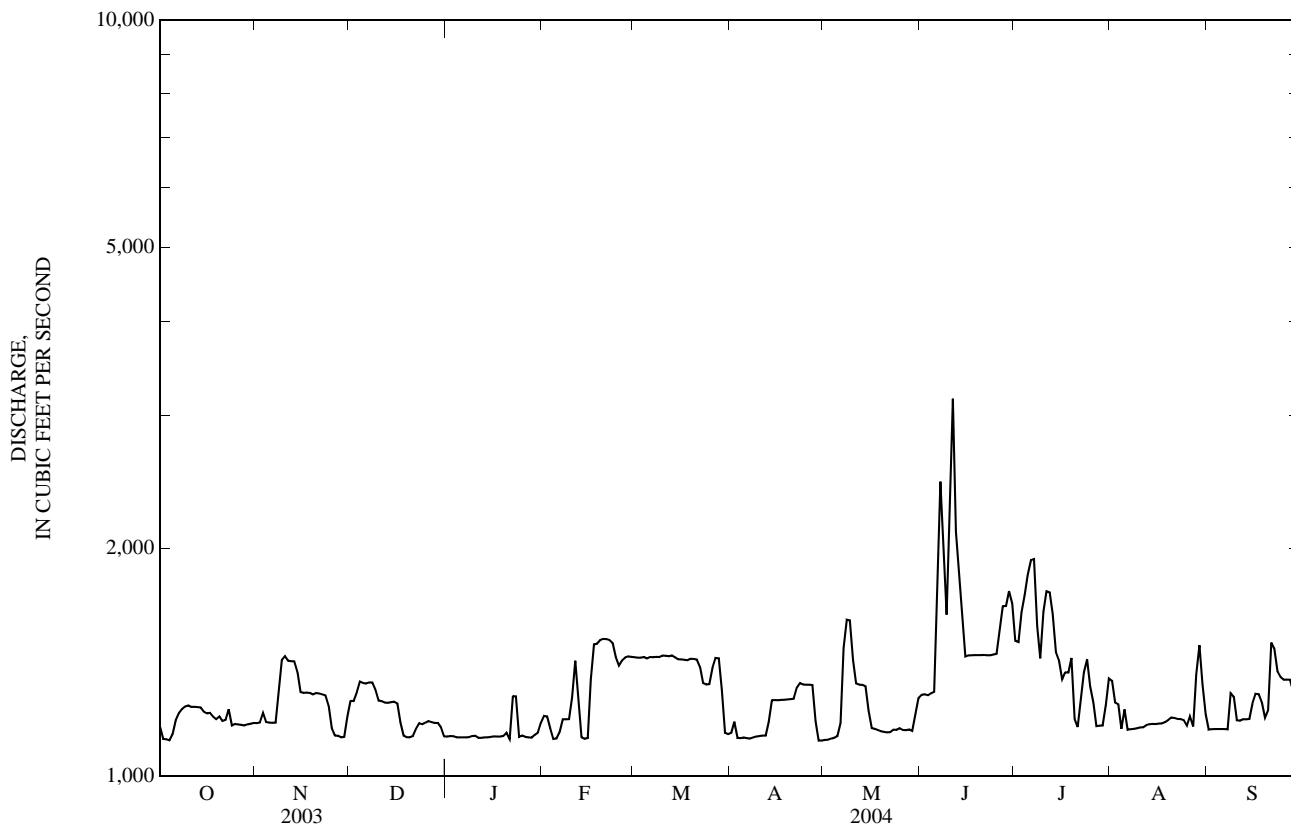
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,160	1,180	1,260	1,130	1,200	1,440	1,140	1,120	1,280	1,510	1,340	1,150
2	1,120	1,180	1,260	1,130	1,200	1,440	1,180	1,120	1,280	1,500	1,250	1,150
3	1,120	1,210	1,290	1,130	1,160	1,440	1,120	1,120	1,280	1,650	1,250	1,150
4	1,120	1,180	1,330	1,130	1,120	1,440	1,120	1,120	1,290	1,740	1,160	1,160
5	1,140	1,180	1,330	1,130	1,120	1,430	1,130	1,130	1,290	1,850	1,230	1,160
6	1,190	1,180	1,330	1,130	1,140	1,440	1,120	1,180	1,790	1,930	1,150	1,150
7	1,210	1,180	1,330	1,130	1,190	1,440	1,120	1,480	2,450	1,940	1,150	1,150
8	1,230	1,300	1,330	1,130	1,190	1,440	1,130	1,610	2,000	1,580	1,160	1,290
9	1,240	1,420	1,300	1,130	1,190	1,440	1,130	1,610	1,640	1,430	1,160	1,270
10	1,240	1,440	1,260	1,130	1,270	1,440	1,130	1,420	2,180	1,650	1,160	1,190
11	1,240	1,420	1,260	1,120	1,420	1,440	1,130	1,330	3,160	1,760	1,160	1,180
12	1,240	1,420	1,250	1,120	1,270	1,440	1,130	1,320	2,110	1,750	1,170	1,190
13	1,230	1,420	1,250	1,130	1,130	1,440	1,180	1,320	1,860	1,640	1,170	1,190
14	1,230	1,370	1,250	1,130	1,120	1,440	1,260	1,320	1,660	1,460	1,170	1,190
15	1,220	1,290	1,260	1,130	1,120	1,430	1,260	1,220	1,440	1,420	1,170	1,250
16	1,210	1,290	1,250	1,130	1,340	1,430	1,260	1,160	1,450	1,340	1,170	1,290
17	1,210	1,290	1,180	1,130	1,490	1,430	1,260	1,160	1,450	1,370	1,170	1,280
18	1,200	1,290	1,130	1,130	1,500	1,420	1,260	1,150	1,450	1,370	1,180	1,250
19	1,190	1,280	1,130	1,130	1,510	1,430	1,260	1,150	1,450	1,430	1,190	1,190
20	1,200	1,290	1,130	1,140	1,520	1,430	1,260	1,140	1,450	1,190	1,200	1,220
21	1,180	1,290	1,130	1,120	1,520	1,430	1,270	1,140	1,450	1,160	1,190	1,500
22	1,190	1,280	1,160	1,280	1,510	1,390	1,310	1,140	1,450	1,260	1,190	1,480
23	1,230	1,280	1,180	1,280	1,500	1,330	1,330	1,150	1,450	1,370	1,190	1,380
24	1,170	1,240	1,170	1,130	1,440	1,320	1,320	1,150	1,450	1,430	1,190	1,350
25	1,170	1,160	1,180	1,130	1,400	1,320	1,320	1,160	1,450	1,320	1,170	1,340
26	1,170	1,130	1,180	1,130	1,420	1,390	1,320	1,150	1,560	1,250	1,200	1,340
27	1,170	1,130	1,180	1,130	1,440	1,430	1,320	1,150	1,680	1,170	1,160	1,340
28	1,170	1,130	1,180	1,130	1,440	1,430	1,180	1,150	1,680	1,170	1,360	1,300
29	1,170	1,130	1,180	1,130	1,440	1,300	1,110	1,150	1,760	1,170	1,490	1,210
30	1,170	1,200	1,160	1,140	---	1,140	1,110	1,210	1,690	1,240	1,320	1,210
31	1,180	---	1,130	1,180	---	1,140	---	1,270	---	1,350	1,210	---
TOTAL	36,910	37,780	37,940	35,370	38,310	43,340	36,170	38,000	49,580	45,400	37,430	37,500
MEAN	1,191	1,259	1,224	1,141	1,321	1,398	1,206	1,226	1,653	1,465	1,207	1,250
MAX	1,240	1,440	1,330	1,280	1,520	1,440	1,330	1,610	3,160	1,940	1,490	1,500
MIN	1,120	1,130	1,130	1,120	1,120	1,140	1,110	1,120	1,280	1,160	1,150	1,150
AC-FT	73,210	74,940	75,250	70,160	75,990	85,960	71,740	75,370	98,340	90,050	74,240	74,380

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 2004, BY WATER YEAR (WY)

MEAN	1,916	1,985	1,515	1,388	1,394	1,445	1,550	2,004	2,967	1,853	1,522	1,612
MAX	2,963	3,318	3,243	2,061	2,336	2,087	3,008	4,189	6,135	3,454	2,339	2,298
(WY)	(1960)	(1960)	(1960)	(1999)	(1943)	(1939)	(1948)	(1969)	(1997)	(1965)	(1971)	(1972)
MIN	810	961	974	767	781	891	717	859	1,122	972	1,044	934
(WY)	(1942)	(1941)	(1940)	(1940)	(1940)	(1941)	(1941)	(1961)	(1992)	(1961)	(1961)	(1941)

06041000 MADISON RIVER BELOW ENNIS LAKE, NEAR MCALLISTER, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1939 - 2004	
ANNUAL TOTAL	506,980		473,730			
ANNUAL MEAN	1,389		1,294		1,763	
HIGHEST ANNUAL MEAN					2,530	
LOWEST ANNUAL MEAN					1,047	
HIGHEST DAILY MEAN	4,560	May 31	3,160	Jun 11	9,210	Jun 11, 1970
LOWEST DAILY MEAN	1,120	Feb 26	1,110	Apr 29	210	Aug 25, 1959
ANNUAL SEVEN-DAY MINIMUM	1,150	Feb 6	1,120	Apr 29	390	Aug 23, 1959
MAXIMUM PEAK FLOW			3,440		9,550	
MAXIMUM PEAK STAGE			4.70		8.01	
ANNUAL RUNOFF (AC-FT)	1,006,000		939,600		1,277,000	
10 PERCENT EXCEEDS	1,810		1,490		2,690	
50 PERCENT EXCEEDS	1,240		1,240		1,560	
90 PERCENT EXCEEDS	1,150		1,130		1,100	



WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1972-73, 1977 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: June 1977 to current year.

INSTRUMENTATION.--Temperature recorder since June 21, 1977.

REMARKS.--Daily water temperature records good. Unpublished records of instantaneous water temperature and specific conductance are available in files of the District office.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum, 24.5°C, July 22 and 23, 2003; minimum, 0.0°C several to many day during winter months most years.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 23.5°C, July 19, 20; minimum, 0.0°C, Nov. 23.

06041000 MADISON RIVER BELOW ENNIS LAKE, NEAR MCALLISTER, MT—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	12.5	12.0	12.5	2.0	1.0	1.0	2.0	2.0	2.0	1.5	1.0	1.0
2	12.5	12.0	12.5	2.0	1.0	1.5	2.0	2.0	2.0	1.0	1.0	1.0
3	12.5	12.0	12.0	2.5	2.0	2.0	2.0	2.0	2.0	1.0	0.5	1.0
4	12.5	11.5	12.0	2.0	2.0	2.0	2.0	1.5	2.0	1.0	0.5	0.5
5	12.5	11.5	12.0	2.0	2.0	2.0	2.0	2.0	2.0	1.0	1.0	1.0
6	12.5	12.0	12.0	2.0	2.0	2.0	2.5	2.0	2.5	1.0	1.0	1.0
7	12.5	12.5	12.5	2.5	2.0	2.0	2.0	2.0	2.0	1.0	1.0	1.0
8	12.5	12.0	12.5	2.5	2.0	2.0	2.0	1.5	2.0	1.5	1.0	1.0
9	12.5	12.0	12.5	2.5	2.0	2.0	2.0	1.5	2.0	1.5	1.0	1.5
10	12.0	11.5	11.5	2.5	2.0	2.5	2.0	2.0	2.0	1.5	1.0	1.5
11	11.5	10.0	10.5	2.5	2.0	2.5	2.0	1.5	2.0	1.5	1.0	1.0
12	10.0	9.5	10.0	2.5	2.0	2.0	2.0	1.5	2.0	1.0	1.0	1.0
13	9.5	9.0	9.5	2.5	2.0	2.5	2.5	2.0	2.0	1.5	1.0	1.0
14	9.0	9.0	9.0	3.0	2.5	2.5	2.0	1.5	2.0	1.5	1.0	1.0
15	9.0	8.5	8.5	3.0	2.5	3.0	1.5	1.5	1.5	1.5	1.0	1.0
16	9.0	8.5	8.5	3.0	3.0	3.0	1.5	1.0	1.5	1.5	1.0	1.5
17	8.5	8.5	8.5	3.0	3.0	3.0	1.5	1.5	1.5	1.5	1.0	1.5
18	8.5	8.5	8.5	3.0	3.0	3.0	1.5	1.5	1.5	1.5	1.0	1.5
19	9.0	8.5	9.0	3.0	2.0	3.0	2.0	1.5	1.5	1.5	1.5	1.5
20	9.5	9.0	9.5	2.0	0.5	1.5	2.0	2.0	2.0	1.5	1.0	1.5
21	10.5	9.5	9.5	0.5	0.5	0.5	2.5	2.0	2.5	1.5	1.0	1.0
22	10.5	10.0	10.0	0.5	0.5	0.5	2.5	2.0	2.0	1.5	0.5	1.0
23	11.5	10.0	10.0	0.5	0.0	0.5	2.5	2.0	2.0	1.5	1.0	1.5
24	10.0	9.5	9.5	0.5	0.5	0.5	2.5	2.0	2.0	1.5	1.5	1.5
25	9.5	9.0	9.0	0.5	0.5	0.5	2.5	2.0	2.5	1.5	1.0	1.0
26	9.0	8.5	9.0	1.0	0.5	1.0	2.0	1.5	2.0	1.5	1.0	1.0
27	9.0	8.5	9.0	1.0	1.0	1.0	1.5	1.5	1.5	1.5	1.0	1.0
28	8.5	8.5	8.5	1.0	1.0	1.0	2.0	1.5	1.5	1.5	1.0	1.5
29	8.5	7.5	8.0	2.0	1.0	1.5	2.0	1.5	1.5	1.5	1.5	1.5
30	7.5	4.0	6.0	2.0	1.5	2.0	1.5	1.0	1.5	1.5	1.0	1.5
31	4.0	2.0	2.5	---	---	---	1.5	1.0	1.5	1.5	1.0	1.0
MONTH	12.5	2.0	9.8	3.0	0.0	1.8	2.5	1.0	1.9	1.5	0.5	1.2
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	1.5	1.0	1.0	2.5	2.0	2.5	8.5	8.0	8.5	10.0	9.0	9.5
2	1.5	1.0	1.0	2.5	2.0	2.0	8.0	7.0	7.5	12.0	9.0	10.5
3	1.5	1.5	1.5	2.0	1.5	2.0	7.5	6.5	7.0	13.5	12.0	12.5
4	2.0	1.5	1.5	1.5	1.5	1.5	8.5	7.0	7.5	13.5	12.5	13.0
5	2.0	1.5	2.0	1.5	1.5	1.5	8.5	8.0	8.5	14.5	13.5	14.0
6	2.0	1.5	1.5	1.5	1.5	1.5	9.5	8.0	9.0	15.0	14.5	15.0
7	2.0	1.5	1.5	2.0	1.5	1.5	9.5	9.0	9.5	15.0	14.5	15.0
8	2.0	1.5	1.5	2.0	1.5	2.0	10.0	9.5	10.0	14.5	14.0	14.5
9	1.5	1.5	1.5	2.5	2.0	2.0	10.0	9.5	10.0	14.5	14.0	14.0
10	1.5	1.0	1.5	3.0	2.0	2.5	9.5	9.0	9.5	14.5	13.0	13.5
11	1.5	1.0	1.5	3.5	2.5	3.0	10.0	9.0	9.5	13.0	11.5	12.0
12	1.5	1.0	1.0	4.5	3.5	4.0	9.5	8.5	9.0	11.5	10.5	10.5
13	1.5	1.0	1.0	4.5	4.0	4.5	11.0	9.0	10.0	10.5	10.0	10.0
14	1.5	1.0	1.0	5.0	4.5	4.5	11.5	10.5	11.0	10.0	9.5	10.0
15	1.5	1.0	1.0	5.0	4.5	5.0	10.5	10.0	10.5	10.0	9.5	10.0
16	1.5	1.0	1.5	5.0	5.0	5.0	10.0	9.0	9.5	10.5	10.0	10.5
17	2.0	1.5	1.5	5.5	5.0	5.0	10.0	9.5	10.0	11.0	10.0	10.5
18	2.0	1.5	2.0	6.0	5.0	5.5	9.5	9.0	9.0	11.5	10.5	11.0
19	2.0	2.0	2.0	5.5	2.5	3.5	9.0	8.5	9.0	12.0	11.5	11.5
20	2.0	2.0	2.0	2.5	2.0	2.0	9.0	8.5	9.0	12.5	11.5	12.0
21	2.5	2.0	2.0	3.5	2.5	3.0	9.5	8.5	9.0	13.0	12.0	12.5
22	2.5	2.0	2.5	5.0	3.5	4.0	9.5	8.5	9.0	13.0	12.5	12.5
23	3.0	2.5	2.5	8.0	5.0	6.0	10.0	9.0	9.5	12.5	12.0	12.0
24	3.0	2.5	3.0	8.0	7.5	7.5	10.5	9.5	10.0	12.0	11.5	12.0
25	3.0	2.5	3.0	9.0	7.5	8.0	11.0	9.5	10.0	12.5	11.5	12.0
26	2.5	2.5	2.5	7.5	6.0	7.0	12.0	10.5	11.0	13.0	12.0	12.5
27	3.0	2.5	3.0	6.5	6.0	6.0	12.5	12.0	12.0	12.5	12.0	12.0
28	3.0	2.5	2.5	6.5	6.0	6.5	12.5	11.0	12.0	12.5	12.0	12.5
29	2.5	2.0	2.5	7.5	6.0	6.5	11.0	8.5	10.0	12.5	11.5	12.0
30	---	---	---	7.5	7.0	7.5	9.5	8.5	9.0	11.5	11.5	11.5
31	---	---	---	8.5	7.5	8.0	---	---	---	12.0	11.0	11.5
MONTH	3.0	1.0	2.0	9.0	1.5	4.0	12.5	6.5	9.5	15.0	9.0	12.0

06041000 MADISON RIVER BELOW ENNIS LAKE, NEAR MCALLISTER, MT—Continued

TEMPERATURE, WATER, DEGREES CELSIUS—CONTINUED
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	13.0	12.0	12.5	20.5	19.5	20.0	22.0	21.5	22.0	17.5	16.5	17.0
2	14.0	12.0	13.0	20.5	20.0	20.0	21.5	21.0	21.5	17.5	16.5	17.0
3	15.5	13.5	14.5	20.0	19.5	20.0	21.0	20.5	21.0	16.5	15.5	16.0
4	16.0	15.0	15.5	20.0	19.5	19.5	21.0	20.0	20.5	16.0	15.0	15.5
5	17.5	15.0	16.0	20.0	19.0	19.5	20.5	20.0	20.0	16.0	15.5	16.0
6	18.0	17.5	17.5	20.5	19.5	20.0	20.5	20.0	20.0	16.0	15.5	15.5
7	17.5	16.5	17.0	20.5	19.5	20.0	20.0	19.5	20.0	15.5	15.0	15.5
8	16.5	15.5	16.0	19.5	18.5	19.0	20.0	19.5	19.5	16.0	15.0	15.5
9	15.5	13.5	14.0	19.5	18.5	19.0	19.5	18.5	19.0	16.0	15.5	16.0
10	14.0	13.0	13.5	19.5	19.0	19.5	19.5	19.0	19.5	16.0	16.0	16.0
11	13.5	13.0	13.0	19.5	19.0	19.5	19.5	19.0	19.0	16.5	16.0	16.0
12	14.5	13.0	13.5	19.5	19.0	19.5	19.5	18.5	19.0	16.5	15.5	16.0
13	15.0	14.0	14.5	20.0	18.5	19.0	19.0	18.5	19.0	15.5	14.5	15.0
14	15.0	14.0	14.5	20.0	19.5	20.0	19.0	18.5	19.0	15.0	14.5	14.5
15	15.0	14.5	14.5	20.5	20.0	20.0	19.5	18.5	19.0	14.5	13.5	14.0
16	14.5	14.0	14.0	21.5	20.5	21.0	19.5	19.0	19.5	14.0	13.5	13.5
17	14.5	14.0	14.5	22.0	20.0	21.0	20.0	19.5	19.5	14.0	13.5	13.5
18	14.5	14.0	14.0	23.0	22.0	22.5	19.5	19.0	19.5	13.5	13.5	13.5
19	14.5	14.0	14.0	23.5	22.5	23.0	19.5	19.0	19.0	13.5	12.5	13.0
20	15.0	14.0	14.5	23.5	23.0	23.0	19.0	18.5	19.0	12.5	11.5	12.0
21	15.5	14.5	15.0	23.0	22.5	22.5	19.5	19.0	19.0	12.0	11.5	11.5
22	16.5	15.0	15.5	22.5	21.5	22.0	19.5	18.5	19.0	11.5	11.0	11.5
23	17.5	16.0	16.5	22.0	21.0	21.5	18.5	17.0	17.5	11.0	11.0	11.0
24	17.5	16.5	17.0	21.0	20.5	21.0	17.0	16.0	16.5	11.5	11.0	11.0
25	18.5	17.0	17.5	21.0	20.0	20.5	16.5	16.0	16.0	12.0	11.5	12.0
26	18.5	18.0	18.5	21.5	21.0	21.0	16.0	15.5	16.0	12.5	11.5	12.0
27	18.5	18.0	18.0	22.0	21.5	21.5	16.0	15.5	15.5	12.5	12.0	12.0
28	19.0	18.0	18.5	21.5	20.5	21.0	16.0	16.0	16.0	13.0	12.5	13.0
29	19.0	18.5	19.0	21.5	21.0	21.0	16.0	15.5	16.0	13.0	12.0	12.5
30	20.0	19.0	19.5	21.5	21.0	21.5	16.5	16.0	16.5	13.5	12.5	13.0
31	---	---	---	22.0	21.5	21.5	17.0	16.5	17.0	---	---	---
MONTH	20.0	12.0	15.5	23.5	18.5	20.6	22.0	15.5	18.7	17.5	11.0	14.0

06042600 MADISON RIVER AT THREE FORKS, MT

LOCATION.--Lat 44°54'05", long 111°31'29" (NAD 27), in SE¹/₄, NE¹/₄, NW¹/₄, sec. 30, T.2 N., R.2 E., Gallatin County, Hydrologic Unit 10020007, at bridge on old U.S. Highway 10, 1.5 mi east of Three Forks, and 3.0 mi upstream from mouth.

DRAINAGE AREA.--2,531 mi².

PERIOD OF RECORD.--Water years 1986-87, 1993-95, April 2004 (discontinued).

GAGE.--None. Elevation of site is 4,050 ft (NGVD 29).

REMARKS.--Water years 1986-87 published in Open-File Reports 87-124 and 87-697.

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

Date	Time	pH, water, unfltrd field, std units (00400)	Specif. conduc- tance, water, unfltrd uS/cm 25 degC (00095)	Hard- ness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnes- ium, water, fltrd, mg/L (00925)	Potas- sium, water, fltrd, mg/L (00935)	Sodium adsorp- tion ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Sodium, percent (00932)	Alkalinity, water, fltrd fxd end lab, mg/L as CaCO3 (29801)
APR 19...	1720	8.5	361	81	22.7	5.87	4.78	2	43.7	52	117
Date		Chlor- ide, water, fltrd, mg/L (00940)	Fluor- ide, water, fltrd, mg/L (00950)	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)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Boron, water, fltrd, ug/L (01020)	
APR 19...		27.7	3.3	40.8	14.6	234	.32	105	99	312	
Date		Iron, water, fltrd, ug/L (01046)	Iron, water, unfltrd recover- able, ug/L (01045)	Iron, water, unfltrd recover- able, ug/L (01045)	Lithium water, fltrd, ug/L (01130)	Mangan- ese, water, fltrd, ug/L (01056)	Mercury water, fltrd, ng/L* (50287)	Mercury water unfltrd ng/L* (50286)	Zinc, water, fltrd, ug/L (01090)		
APR 19...			30	400	241	10.8	.73	2.10	E.4		

*--Results for mercury are reported in nanograms per liter.
E--Estimated.

06043500 GALLATIN RIVER NEAR GALLATIN GATEWAY, MT

LOCATION.--Lat 45°29'51", long 111°16'11" (NAD 27), in SE $\frac{1}{4}$ SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.7, T.4 S., R.4 E., Gallatin County, Hydrologic Unit 10020008, on left bank 0.3 mi downstream from Spanish Creek, 7.3 mi south of Gallatin Gateway and at river mile 47.7.

DRAINAGE AREA.--825 mi².

PERIOD OF RECORD.--August 1889 to September 1894, June 1930 to September 1969, annual maximum, water years 1970-71, October 1971 to September 1981, October 1984 to current year. Monthly discharge only for some periods, published in WSP 1309. Published as West Gallatin River near Bozeman 1889-94.

REVISED RECORDS.--WSP 1389: 1892(M), 1893-94. WSP 1559: Drainage area. WDR MT-85-1 (M), WDR MT-02-1: 1970-71 (M).

GAGE.--Water-stage recorder. Elevation of gage is 5,167.67 ft (NGVD 29). Prior to Oct. 20, 1932, nonrecording gages at several different sites and elevations within 0.8 mi of present site.

REMARKS.--Records good. Diversions for irrigation of about 1,400 acres upstream from station. U.S. Geological Survey satellite telemeter at station. Several observations of water temperature and 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	314	224	270	268	240	252	428	630	1,380	1,650	542	408
2	313	246	266	254	229	245	433	703	1,450	1,550	545	439
3	309	282	264	224	244	243	400	869	1,630	1,460	587	468
4	309	283	272	e200	248	253	436	1,110	2,050	1,560	566	434
5	309	224	259	e180	247	252	478	1,380	2,530	1,620	531	417
6	308	199	283	e200	245	249	522	1,520	3,080	1,400	504	406
7	308	229	306	239	243	222	520	1,560	2,800	1,320	488	399
8	316	230	290	261	251	233	566	1,610	2,480	1,280	478	390
9	309	256	261	258	252	258	575	1,540	2,610	1,150	468	384
10	321	290	245	251	243	284	501	1,440	3,330	1,090	460	380
11	329	283	271	244	242	276	474	1,450	3,200	1,060	453	373
12	328	267	255	242	229	274	473	1,250	2,590	1,010	442	375
13	327	252	263	231	228	283	524	1,080	2,290	955	436	455
14	321	269	282	236	238	275	587	966	2,140	921	430	454
15	319	275	264	240	237	270	603	896	2,120	899	421	450
16	322	288	218	236	239	272	555	890	2,000	880	424	455
17	321	294	236	244	247	279	540	885	1,860	832	440	447
18	326	274	224	234	261	297	548	902	1,790	808	536	422
19	316	286	199	239	267	329	509	1,040	1,760	814	498	445
20	310	303	239	250	255	314	500	996	1,840	808	458	526
21	306	268	258	241	236	310	480	1,130	1,770	796	441	487
22	304	255	253	230	232	311	459	1,200	1,780	743	434	455
23	304	222	217	235	236	329	444	1,330	1,860	718	463	471
24	300	229	240	245	245	360	462	1,240	1,960	683	486	512
25	282	229	252	256	247	380	455	1,110	1,950	654	519	473
26	300	238	263	256	259	376	476	1,090	2,010	637	525	452
27	313	246	254	251	258	344	577	1,120	1,900	619	532	453
28	314	230	231	247	260	324	740	1,460	1,830	597	477	438
29	352	243	242	249	256	304	677	1,850	1,740	583	450	429
30	305	258	250	254	---	322	639	1,610	1,700	568	432	421
31	248	---	250	248	---	369	---	1,440	---	549	418	---
TOTAL	9,663	7,672	7,877	7,443	7,114	9,089	15,581	37,297	63,430	30,214	14,884	13,118
MEAN	312	256	254	240	245	293	519	1,203	2,114	975	480	437
MAX	352	303	306	268	267	380	740	1,850	3,330	1,650	587	526
MIN	248	199	199	180	228	222	400	630	1,380	549	418	373
AC-FT	19,170	15,220	15,620	14,760	14,110	18,030	30,900	73,980	125,800	59,930	29,520	26,020

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1889 - 2004, BY WATER YEAR (WY)*

MEAN	452	380	320	306	303	311	502	1,794	2,926	1,282	607	490
MAX	743	589	549	468	430	465	899	3,135	5,110	3,669	1,162	788
(WY)	(1893)	(1960)	(1893)	(1893)	(1893)	(1960)	(1990)	(1976)	(1997)	(1975)	(1993)	(1968)
MIN	238	247	214	200	220	206	263	873	643	345	269	233
(WY)	(1932)	(1937)	(1935)	(1931)	(1935)	(1935)	(1937)	(1953)	(1934)	(1934)	(1934)	(1931)

06043500 GALLATIN RIVER NEAR GALLATIN GATEWAY, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1889 - 2004*	
ANNUAL TOTAL	231,954		223,382			
ANNUAL MEAN	635		610		808	
HIGHEST ANNUAL MEAN					1,184	1976
LOWEST ANNUAL MEAN					408	1934
HIGHEST DAILY MEAN	5,860	May 30	3,330	Jun 10	8,970	Jun 17, 1974
LOWEST DAILY MEAN	196	Jan 11	180	Jan 5	153	Dec 25, 2002
ANNUAL SEVEN-DAY MINIMUM	213	Jan 7	223	Jan 2	182	Jan 18, 1931
MAXIMUM PEAK FLOW			3,810	Jun 10	b9,160	Jun 2, 1997
MAXIMUM PEAK STAGE			4.30	Jun 10	7.38	Jun 17, 1974
INSTANTANEOUS LOW FLOW			a167	Nov 6	c117	Jan 19, 1935
ANNUAL RUNOFF (AC-FT)	460,100		443,100		585,700	
10 PERCENT EXCEEDS	1,240		1,540		2,020	
50 PERCENT EXCEEDS	321		376		429	
90 PERCENT EXCEEDS	238		239		267	

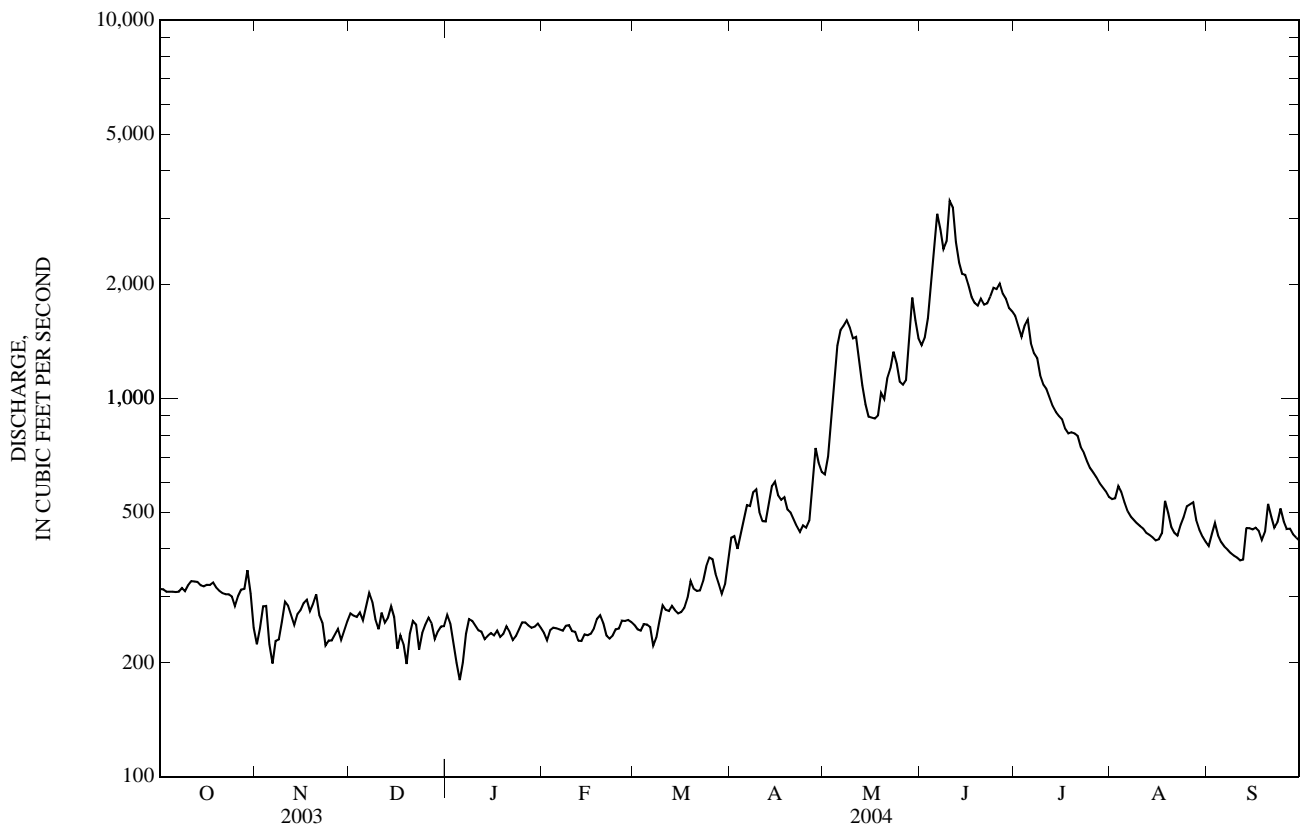
*--During periods of operation (August 1889 to September 1894, June 1930 to September 1969, October 1971 to October 1981, October 1984 to current year).

a--Gage height, 0.99 ft, result of freezeup.

b--Gage height, 6.71 ft.

c--Gage height, 0.68 ft, result of freezeup.

e--Estimated.



06048700 EAST GALLATIN RIVER BELOW BRIDGER CREEK, NEAR BOZEMAN, MT

LOCATION.--Lat 45°43'30", long 111°04'08" (NAD 27), in NE $\frac{1}{4}$ SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec.26, T.1 S., R.5 E., Gallatin County, Hydrologic Unit 10020008, on left bank 600 ft downstream from Bozeman Wastewater Treatment Plant, 0.2 mi downstream from bridge on Montana Secondary Highway 411, 3.2 mi downstream from Bridger Creek, 2.0 mi northwest of Bozeman, and at river mile 33.0.

DRAINAGE AREA.--226 mi².

PERIOD OF RECORD.--October 2001 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 4,610 ft (NGVD 29).

REMARKS.--Records good except those for estimated daily discharges, which are fair. Some regulation or diurnal effect from wastewater treatment plant upstream. Numerous diversions for irrigation upstream from station. U.S. Geological Survey satellite telemeter at station. Several observations of water temperature and 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	19	29	34	35	32	36	109	88	196	96	31	23
2	18	32	34	e28	31	35	109	83	182	96	33	23
3	18	32	33	e22	31	35	96	82	165	87	43	30
4	19	e30	32	e18	31	36	94	87	153	104	41	30
5	21	e27	31	e17	32	35	102	94	141	143	39	28
6	21	e25	35	e20	31	32	110	95	130	113	33	26
7	25	e28	40	e25	32	32	113	91	141	103	30	24
8	29	30	36	34	31	40	120	87	127	99	28	23
9	28	32	33	35	31	47	143	83	123	87	26	21
10	33	34	30	33	31	59	120	79	190	81	25	20
11	36	34	33	33	31	54	106	83	834	79	25	18
12	35	34	32	33	26	56	99	91	775	73	25	21
13	36	33	34	32	30	60	98	83	495	67	23	32
14	35	33	35	32	31	58	101	76	392	65	20	36
15	36	33	34	31	31	55	105	68	328	60	20	40
16	36	33	31	31	30	56	98	73	290	56	18	35
17	34	33	34	31	31	75	94	75	258	53	18	33
18	31	33	29	29	36	96	93	67	234	51	32	30
19	31	34	29	31	46	137	92	73	208	66	38	37
20	31	39	33	32	39	122	98	72	186	62	30	49
21	29	33	35	31	35	98	100	68	177	58	28	44
22	30	29	32	30	34	92	92	83	164	50	28	41
23	30	31	27	32	34	96	87	168	150	47	30	40
24	29	33	33	33	36	111	84	158	136	45	34	40
25	32	32	34	31	36	119	83	139	142	44	33	39
26	33	33	35	30	36	116	80	136	148	43	44	38
27	33	32	e30	32	38	112	81	149	127	42	43	36
28	34	32	e28	32	38	100	96	155	116	37	38	37
29	42	34	34	32	37	88	98	228	106	35	35	37
30	41	35	30	36	---	89	94	239	103	35	30	36
31	32	---	33	34	---	98	---	216	---	33	24	---
TOTAL	937	962	1,013	935	968	2,275	2,995	3,369	6,917	2,110	945	967
MEAN	30.2	32.1	32.7	30.2	33.4	73.4	99.8	109	231	68.1	30.5	32.2
MAX	42	39	40	36	46	137	143	239	834	143	44	49
MIN	18	25	27	17	26	32	80	67	103	33	18	18
AC-FT	1,860	1,910	2,010	1,850	1,920	4,510	5,940	6,680	13,720	4,190	1,870	1,920

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2002 - 2004, BY WATER YEAR (WY)

MEAN	36.6	36.4	32.0	33.1	34.8	60.7	141	216	220	61.7	29.9	29.5
MAX	40.6	41.2	33.0	36.0	37.4	73.4	224	328	265	70.6	37.5	36.5
(WY)	(2002)	(2002)	(2002)	(2002)	(2003)	(2004)	(2003)	(2003)	(2002)	(2002)	(2002)	(2002)
MIN	30.2	32.1	30.4	30.2	33.4	37.0	99.8	109	165	46.5	21.7	19.9
(WY)	(2004)	(2004)	(2003)	(2004)	(2004)	(2002)	(2004)	(2004)	(2003)	(2003)	(2003)	(2003)

SUMMARY STATISTICS

FOR 2003 CALENDAR YEAR

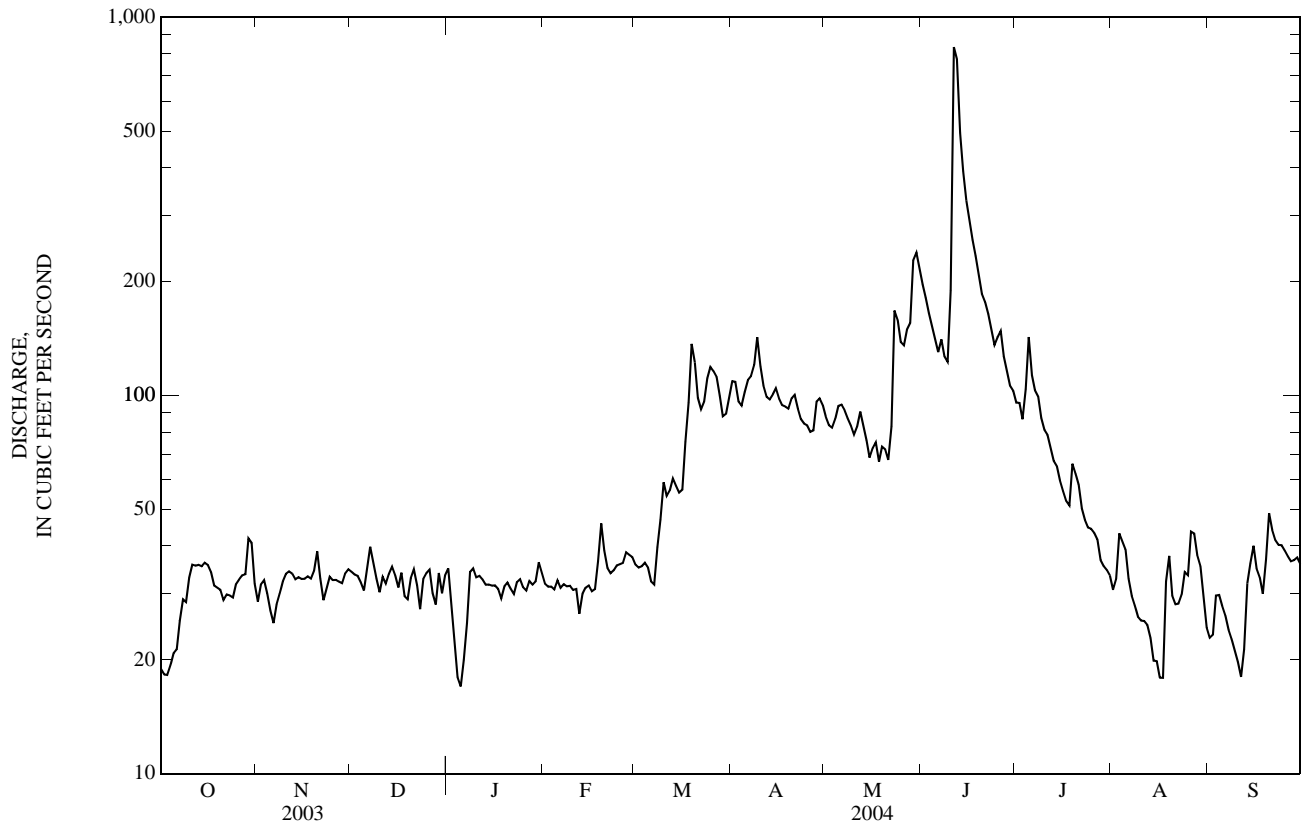
FOR 2004 WATER YEAR

WATER YEARS 2002 - 2004

ANNUAL TOTAL	31,758	24,393										
ANNUAL MEAN	87.0	66.6								77.7		
HIGHEST ANNUAL MEAN										87.9		2003
LOWEST ANNUAL MEAN										66.6		2004
HIGHEST DAILY MEAN	446	May 26	834	Jun 11	834	Jun 11, 2004						
LOWEST DAILY MEAN	15	Sep 5	17	Jan 5	15	Sep 5, 2003						
ANNUAL SEVEN-DAY MINIMUM	17	Aug 31	20	Oct 1	17	Aug 31, 2003						
MAXIMUM PEAK FLOW			1,100	Jun 11	1,100	Jun 11, 2004						
MAXIMUM PEAK STAGE			5.60	Jun 11	5.60	Jun 11, 2004						
INSTANTANEOUS LOW FLOW			a6.5	Feb 12	6.5	Feb 12, 2004						
ANNUAL RUNOFF (AC-FT)	62,990	48,380	56,300									
10 PERCENT EXCEEDS	267	128	190									
50 PERCENT EXCEEDS	34	36	38									
90 PERCENT EXCEEDS	20	28	26									

a--Gage height, 1.38 ft, result of freezeup.

e--Estimated.



SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1894 - 2004*	
ANNUAL TOTAL	279,676		227,631			
ANNUAL MEAN	766		622		1,060	
HIGHEST ANNUAL MEAN					1,673	1997
LOWEST ANNUAL MEAN					454	1934
HIGHEST DAILY MEAN	5,480	May 31	3,580	Jun 11	9,840	Jun 21, 1899
LOWEST DAILY MEAN	190	Jul 23	273	May 18	130	Jul 19, 1939
ANNUAL SEVEN-DAY MINIMUM	197	Jul 18	288	May 15	147	Jul 16, 1934
MAXIMUM PEAK FLOW			a3,700	Jun 11	d9,840	Jun 21, 1899
MAXIMUM PEAK STAGE			b7.40	Jan 8	f11.88	Feb 5, 1963
INSTANTANEOUS LOW FLOW			c259	Jul 18	g130	Jul 19, 1939
ANNUAL RUNOFF (AC-FT)	554,700		451,500		767,900	
10 PERCENT EXCEEDS	1,340		966		2,100	
50 PERCENT EXCEEDS	567		533		750	
90 PERCENT EXCEEDS	254		335		415	

*--During periods of operation (October 1893 to December 1905, August 1928 to current year).

a--Gage height, 7.02 ft.

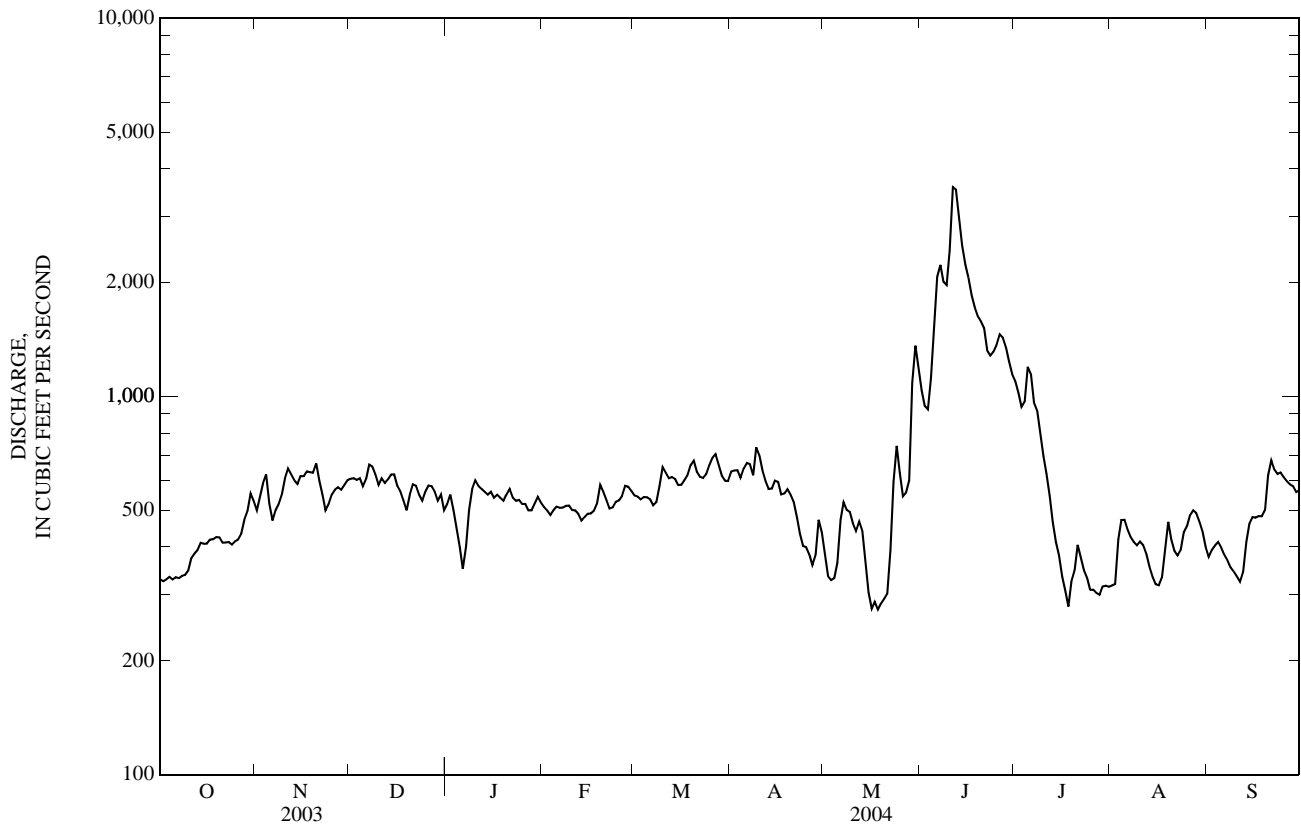
b--Backwater from ice.

d--Observed, gage height, 6.25 ft, site and datum then in use.

e--Estimated.

f--From floodmark, backwater from ice.

g--Observed, gage height, 2.04 ft.



WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1949, 1951, 1957, 1965, 1979-86, 1999 to present.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: August 1979 to September 1985, October 1999 to present (seasonal records 2001-2003).

INSTRUMENTATION.--Temperature probe installed Sept. 14, 1999.

REMARKS--Daily water temperature record rated good.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum, 28.5°C, July 19-21, 2003; minimum, 0.0°C, on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 26.0°C, July 15, 17; minimum 0.0°C, many days October through February.

06052500 GALLATIN RIVER AT LOGAN, MT—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

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

GALLATIN RIVER BASIN

06052500 GALLATIN RIVER AT LOGAN, MT—Continued

TEMPERATURE, WATER, DEGREES CELSIUS—CONTINUED
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	JUNE			JULY			AUGUST			SEPTEMBER		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	17.0	10.5	14.0	20.0	15.5	18.0	23.0	17.0	20.0	19.5	14.5	17.0
2	18.0	12.5	15.5	19.0	14.5	17.0	21.5	17.5	19.5	16.5	14.0	15.5
3	19.0	13.5	16.0	19.5	15.0	17.5	22.0	16.5	19.0	16.0	11.5	13.5
4	19.5	14.5	17.0	19.5	15.5	17.0	22.0	15.5	18.5	16.5	10.5	13.5
5	18.5	14.0	16.5	19.0	14.5	16.5	20.5	16.0	18.5	17.0	12.0	14.5
6	16.5	13.0	15.0	19.0	14.5	17.0	21.0	15.5	18.5	17.0	11.0	14.0
7	16.0	10.5	13.0	18.0	15.0	16.5	20.5	15.0	17.5	17.0	11.5	14.5
8	13.5	11.0	12.0	18.5	13.5	16.0	21.0	14.0	17.5	18.0	11.5	15.0
9	14.5	10.5	12.5	19.5	14.0	17.0	22.0	15.0	18.5	18.5	12.5	15.5
10	12.5	10.0	11.0	20.0	16.0	18.0	22.0	16.0	19.0	18.0	13.0	15.0
11	11.5	8.5	10.0	21.0	15.0	18.0	21.5	15.5	18.5	18.5	12.0	15.0
12	14.0	8.5	11.0	22.5	15.5	19.0	21.5	15.0	18.5	15.0	12.5	13.5
13	14.0	11.0	12.5	21.0	17.0	19.0	22.0	15.0	18.5	14.5	11.0	12.5
14	16.0	10.5	13.0	24.5	16.5	20.5	22.5	15.5	19.0	14.0	11.5	12.5
15	14.5	11.0	12.5	26.0	18.5	21.5	22.5	16.0	19.5	13.5	9.5	11.5
16	15.0	9.5	12.0	25.5	18.5	22.0	20.0	17.0	18.5	15.5	11.0	13.0
17	13.5	10.5	12.0	26.0	19.0	22.5	20.0	17.0	18.5	13.5	10.5	12.5
18	13.5	9.5	11.5	24.0	19.5	22.0	18.5	15.5	17.0	15.0	11.0	13.0
19	15.5	10.5	13.0	25.0	19.0	22.0	20.0	13.5	17.0	13.0	10.0	12.0
20	16.5	11.5	14.0	24.0	19.0	21.5	22.5	16.0	19.0	11.0	9.5	10.0
21	17.5	11.5	14.5	23.5	18.0	21.0	21.0	16.0	18.5	11.0	8.5	9.5
22	18.0	12.5	15.5	22.5	17.5	20.0	19.0	15.5	17.5	10.0	8.5	9.0
23	19.5	13.0	16.0	23.0	17.0	20.0	17.0	14.0	15.5	12.0	9.0	10.5
24	20.0	14.5	17.0	23.5	16.5	20.0	17.0	12.5	15.0	15.0	10.0	12.5
25	18.0	14.5	16.0	23.0	17.0	20.0	16.0	13.5	15.0	15.5	10.5	13.0
26	18.5	13.5	16.0	23.5	17.5	21.0	16.0	13.0	14.0	15.0	11.0	13.0
27	18.5	14.0	16.5	23.0	17.5	20.0	17.0	13.0	15.0	15.5	11.5	13.5
28	19.0	14.0	16.5	23.0	16.5	20.0	16.5	12.5	14.5	15.5	11.0	13.0
29	20.0	14.0	17.0	23.0	16.5	20.0	18.0	12.5	15.5	14.5	10.5	12.5
30	20.5	15.5	18.0	23.0	16.5	20.0	19.5	13.5	16.5	14.0	10.0	12.0
31	---	---	---	23.5	17.0	20.5	20.5	14.0	17.0	---	---	---
MONTH	20.5	8.5	14.0	26.0	13.5	19.5	23.0	12.5	17.5	19.5	8.5	13.0

06054500 MISSOURI RIVER AT TOSTON, MT

LOCATION.--Lat 46°08'46", long 111°25'11" (NAD 27), in NW¹/₄SE¹/₄NW¹/₄ sec.36, T.5 N., R.2 E., Broadwater County, Hydrologic Unit 10030101, on left bank 2.2 mi southeast of Toston, 4.8 mi upstream from Crow Creek, 7.8 mi downstream from Sixteenmile Creek, and at river mile 2,296.1.

DRAINAGE AREA.--14,669 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1890 to February 1891, April 1910 to December 1916, April 1941 to current year. Monthly discharge only for some periods, published in WSP 1309.

GAGE.--Water-stage recorder. Elevation of gage is 3,905.68 ft (NGVD 29). Prior to Dec. 20, 1916, nonrecording gages at site 2.5 mi downstream at different elevations.

REMARKS.--Water-discharge records good. Some regulation by six reservoirs on tributaries and Clark Canyon Reservoir (station 06015300). Diversions for irrigation of about 555,400 acres of which 12,000 acres lies downstream from station. U.S. Army Corps of Engineers satellite telemeter at station.

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	1,850	2,530	3,300	2,330	2,690	3,100	3,210	2,250	4,360	4,110	1,430	1,940
2	1,810	2,810	3,250	2,420	2,620	3,090	3,360	2,100	4,010	3,890	1,410	1,830
3	1,800	2,930	3,200	2,160	2,720	3,060	3,510	1,960	3,620	4,040	1,470	1,840
4	1,830	2,810	3,150	1,880	2,680	3,030	3,390	1,890	3,370	4,260	1,580	1,890
5	1,830	2,550	3,030	1,680	2,700	3,040	3,340	1,860	3,560	4,670	1,490	1,880
6	1,880	2,360	3,120	1,510	2,680	3,010	3,390	1,940	4,030	4,750	1,550	1,840
7	1,910	2,360	3,180	1,470	2,690	2,990	3,460	2,160	5,460	4,470	1,420	1,820
8	1,940	2,470	3,180	1,880	2,740	3,030	3,460	2,620	5,740	4,170	1,390	1,790
9	1,950	2,960	3,110	2,550	2,800	3,150	3,750	2,680	5,050	3,590	1,390	1,870
10	1,970	3,450	2,970	2,560	2,740	3,320	3,700	2,640	5,180	3,230	1,380	1,840
11	2,050	3,670	2,990	2,710	2,820	3,310	3,580	2,360	8,260	3,200	1,330	1,710
12	2,130	3,520	2,820	2,750	2,890	3,250	3,450	2,390	9,220	3,020	1,360	1,700
13	2,160	3,330	2,920	2,670	2,670	3,230	3,310	2,420	7,940	2,840	1,300	1,830
14	2,250	3,260	3,100	2,720	2,530	3,210	3,330	2,410	7,020	2,530	1,270	1,930
15	2,340	3,160	2,990	2,630	2,630	3,190	3,380	2,290	5,920	2,200	1,250	2,010
16	2,350	3,100	2,680	2,700	2,640	3,160	3,380	2,080	5,300	2,040	1,240	2,140
17	2,380	3,120	2,810	2,740	2,900	3,160	3,330	2,030	4,860	1,820	1,290	2,150
18	2,400	3,100	2,570	2,670	3,280	3,180	3,290	2,070	4,500	1,760	1,360	2,170
19	2,430	3,090	2,390	2,670	3,490	3,200	3,290	2,170	4,250	1,970	1,510	2,170
20	2,430	3,130	2,290	2,740	3,390	3,340	3,260	2,260	4,100	1,850	1,490	2,340
21	2,420	3,080	2,930	2,760	3,330	3,410	3,150	2,440	4,100	1,770	1,470	2,660
22	2,400	2,670	2,770	2,660	3,260	3,480	3,030	2,790	3,880	1,740	1,500	3,130
23	2,410	2,380	2,480	2,830	3,220	3,550	2,860	3,620	3,720	1,820	1,580	3,100
24	2,480	2,590	2,580	2,910	3,270	3,720	2,710	4,640	3,570	1,850	1,750	2,990
25	2,450	2,460	2,950	2,720	3,270	3,890	2,530	4,650	3,520	1,790	1,930	2,940
26	2,500	2,380	2,990	2,360	3,260	4,100	2,420	4,340	3,600	1,680	2,030	2,880
27	2,530	2,630	2,740	2,650	3,240	4,310	2,290	3,950	3,910	1,530	2,080	2,840
28	2,550	2,740	2,190	2,450	3,210	4,130	2,270	3,840	4,000	1,400	2,120	2,840
29	2,690	3,120	2,120	2,830	3,160	3,820	2,180	4,200	4,150	1,350	2,440	2,720
30	2,710	3,280	2,070	2,970	---	3,410	2,260	4,690	4,220	1,320	2,460	2,640
31	2,660	---	1,770	2,960	---	3,220	---	4,610	---	1,350	2,150	---
TOTAL	69,490	87,040	86,640	77,540	85,520	104,090	93,870	88,350	144,420	82,010	49,420	67,430
MEAN	2,242	2,901	2,795	2,501	2,949	3,358	3,129	2,850	4,814	2,645	1,594	2,248
MAX	2,710	3,670	3,300	2,970	3,490	4,310	3,750	4,690	9,220	4,750	2,460	3,130
MIN	1,800	2,360	1,770	1,470	2,530	2,990	2,180	1,860	3,370	1,320	1,240	1,700
AC-FT	137,800	172,600	171,900	153,800	169,600	206,500	186,200	175,200	286,500	162,700	98,020	133,700

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1890 - 2004, BY WATER YEAR (WY)*

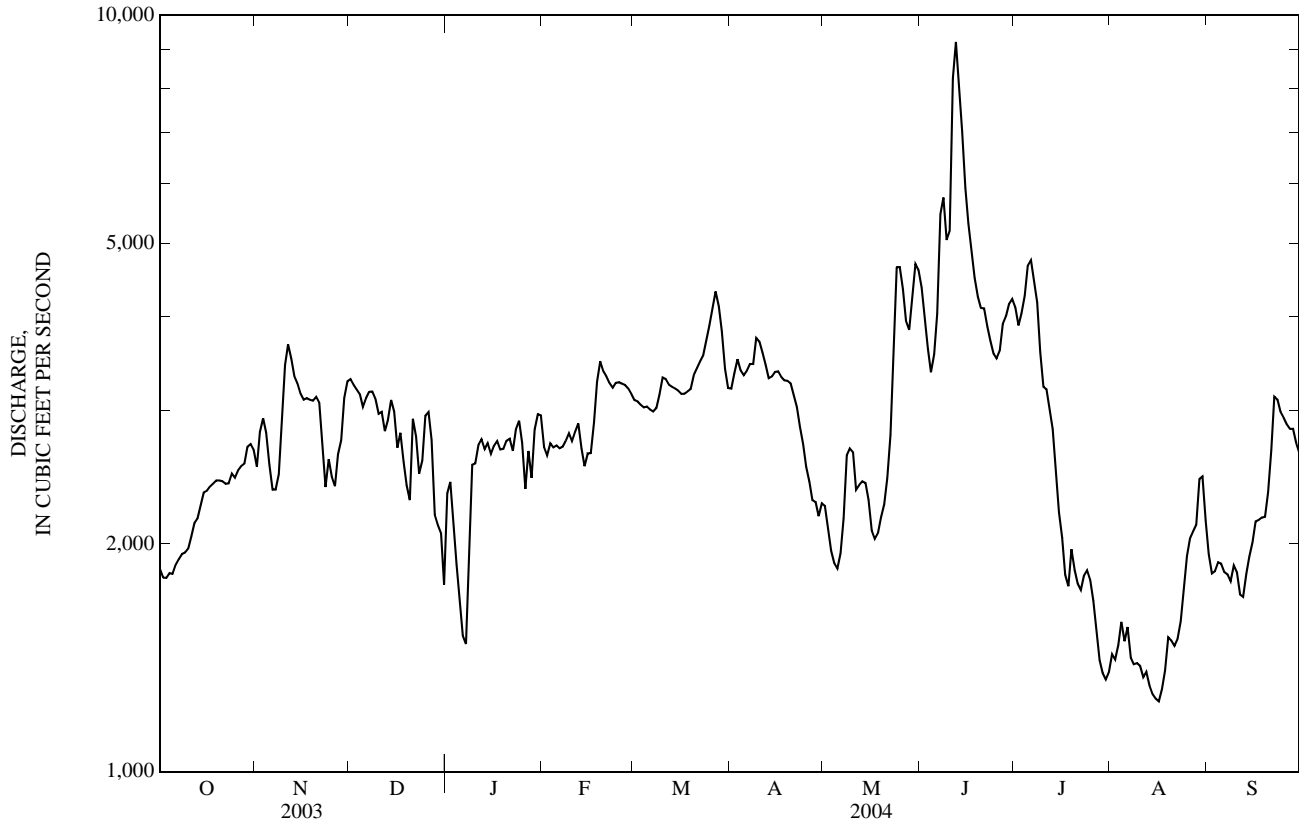
MEAN	4,361	4,669	3,733	3,358	3,684	4,103	5,560	8,701	12,280	5,132	2,710	3,370
MAX	6,778	7,028	5,968	4,893	5,217	6,900	10,090	18,400	24,520	14,240	5,729	5,813
(WY)	(1977)	(1984)	(1960)	(1984)	(1915)	(1916)	(1969)	(1976)	(1997)	(1975)	(1975)	(1984)
MIN	2,242	2,815	2,569	2,165	2,268	2,835	2,388	2,850	3,175	1,243	896	1,448
(WY)	(2004)	(1891)	(1891)	(1891)	(1989)	(1955)	(1961)	(2004)	(1987)	(1988)	(1988)	(1994)

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR	FOR 2004 WATER YEAR	WATER YEARS 1890 - 2004*
ANNUAL TOTAL	1,260,370	1,035,820	
ANNUAL MEAN	3,453	2,830	5,157
HIGHEST ANNUAL MEAN			7,742
LOWEST ANNUAL MEAN			2,830
HIGHEST DAILY MEAN	19,700	Jun 2	33,400
LOWEST DAILY MEAN	1,180	Aug 24	700
ANNUAL SEVEN-DAY MINIMUM	1,220	Aug 22	811
MAXIMUM PEAK FLOW			34,000
MAXIMUM PEAK STAGE		6.87	12.22
INSTANTANEOUS LOW FLOW		a905	b450
ANNUAL RUNOFF (AC-FT)	2,500,000	2,055,000	3,736,000
10 PERCENT EXCEEDS	5,810	4,000	9,250
50 PERCENT EXCEEDS	2,830	2,720	4,070
90 PERCENT EXCEEDS	1,390	1,760	2,340

*--During periods of operation (1911-16, 1942 to current year).

a--Gage height, 2.31 ft, result of regulation.

b--Gage height, 1.68 ft, result of regulation.



WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1949-53, 1965, 1972 to current year. Sampling location moved in October 1978, from old bridge on U. S. Highway 287 at Toston, to cableway 2.4 miles upstream.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: April 1973 to September 1981.

WATER TEMPERATURE: May 1949 to June 1953, April 1973 to current year.

SUSPENDED-SEDIMENT DISCHARGE: March 1949 to June 1953.

INSTRUMENTATION.--Temperature recorder since July 6, 1977.

REMARKS.--Daily water temperature record rated good.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE : Maximum daily, 524 microsiemens per centimeter ($\mu\text{S}/\text{cm}$) at 25°C, Mar. 4, 1978; minimum daily, 159 $\mu\text{S}/\text{cm}$ at 25°C, May 28, 1979.

WATER TEMPERATURE: Maximum, 29.0°C, July 31, 1988, July 20, 1989; minimum, 0.0°C on many days during winter.

SEDIMENT CONCENTRATION: Maximum daily mean, 670 mg/L, Mar. 22, 25, 1951; minimum daily mean, 5 mg/L, Jul. 12, 1951.

SEDIMENT LOAD: Maximum daily, 16,100 tons, May 5, 1952; minimum daily, 51 tons Feb. 1, 1951.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 25.5°C, July 18; minimum, 0.0°C, many days October through February.

06054500 MISSOURI RIVER AT TOSTON, MT—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

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

MISSOURI RIVER MAIN STEM

06054500 MISSOURI RIVER AT TOSTON, MT—Continued

TEMPERATURE, WATER, DEGREES CELSIUS—CONTINUED
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	15.5	13.0	14.0	21.5	20.5	21.0	24.0	21.0	22.0	20.0	18.5	19.0
2	17.5	15.5	16.5	21.0	19.0	20.0	24.0	21.5	22.5	19.0	16.5	18.0
3	19.0	17.5	18.0	20.5	19.0	20.0	23.5	20.5	21.5	17.0	15.0	16.0
4	20.0	19.0	19.5	20.5	19.5	20.0	22.5	20.5	21.5	16.0	14.5	15.5
5	20.5	20.0	20.0	19.5	19.0	19.5	22.5	20.0	21.0	16.5	14.5	15.5
6	20.0	17.5	19.0	20.0	19.0	19.5	22.5	20.0	21.0	17.0	15.0	16.0
7	17.5	16.5	17.0	20.5	19.0	20.0	22.0	19.0	20.5	17.0	15.0	16.0
8	16.5	14.0	15.5	19.0	18.0	18.5	21.5	18.5	20.0	17.0	15.5	16.0
9	15.0	13.5	14.5	19.5	18.5	19.0	21.5	18.0	19.5	17.5	15.5	16.5
10	15.5	13.5	15.0	21.0	19.5	20.0	22.5	18.5	20.0	17.5	16.0	16.5
11	13.5	12.0	12.5	20.5	20.0	20.5	22.5	19.0	20.5	18.0	16.0	16.5
12	14.5	12.5	13.0	21.0	19.5	20.5	22.5	19.0	20.5	17.0	15.5	16.5
13	15.5	14.5	15.0	22.5	21.0	21.5	23.0	19.0	20.5	15.5	14.0	15.0
14	16.0	15.0	15.5	22.5	21.0	22.0	23.0	19.0	21.0	14.5	13.5	14.0
15	16.0	14.5	15.5	24.0	22.0	23.0	23.5	19.5	21.5	14.0	13.0	13.5
16	15.0	14.0	14.5	24.5	23.0	23.5	23.0	20.0	21.0	14.0	13.0	13.5
17	15.5	13.5	15.0	25.0	23.0	24.0	22.5	20.0	21.0	15.5	13.5	14.5
18	14.0	13.5	14.0	25.5	23.5	24.5	21.0	19.5	20.0	14.5	13.5	14.0
19	15.0	14.0	14.5	25.0	23.0	24.0	20.5	18.0	19.0	14.0	12.5	13.5
20	16.5	14.5	15.5	25.0	23.0	23.5	21.5	18.0	19.5	12.5	10.5	11.5
21	17.0	16.0	16.5	24.5	22.5	23.5	22.0	19.5	20.5	11.0	10.0	10.5
22	18.5	17.0	18.0	23.0	21.0	22.5	22.0	19.5	20.5	10.5	10.0	10.0
23	19.5	18.0	19.0	22.5	20.5	21.5	19.5	17.5	18.5	11.0	10.0	10.5
24	20.0	19.0	19.5	22.5	21.0	21.5	17.5	15.5	16.5	13.5	11.0	12.5
25	20.5	19.5	20.0	23.5	21.5	22.5	17.0	15.5	16.5	14.5	13.0	14.0
26	20.0	18.5	19.5	23.5	22.0	22.5	16.5	15.5	16.0	15.0	14.0	14.5
27	19.5	19.0	19.5	24.0	21.0	22.5	16.0	15.0	15.5	15.0	14.0	14.5
28	20.0	19.0	19.5	23.0	20.5	21.5	16.5	15.0	16.0	15.0	14.0	14.5
29	20.5	19.5	20.0	23.5	20.0	21.5	17.0	15.5	16.5	14.5	14.0	14.0
30	21.5	20.0	21.0	23.5	20.5	22.0	18.5	17.0	17.5	14.5	13.0	13.5
31	---	---	---	23.5	21.0	22.0	19.5	18.0	18.5	---	---	---
MONTH	21.5	12.0	17.0	25.5	18.0	21.5	24.0	15.0	19.5	20.0	10.0	14.5

06058500 CANYON FERRY LAKE NEAR HELENA, MT

LOCATION.--Lat 46°38'57", long 111°43'39" (NAD 27), in SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.4, T.10 N., R.1 W., Lewis and Clark County, Hydrologic Unit 10030101, in block 17 of Canyon Ferry Dam, 15 mi east of Helena, and at river mile 2,252.8.

DRAINAGE AREA.--15,904 mi².

PERIOD OF RECORD.--April 1953 to current year (monthend contents only). Prior to October 1981, published as Canyon Ferry Reservoir near Helena. Records of monthend contents in Lake Sewell, submerged by present reservoir Apr. 8, 1953, available January 1936 to March 1953. Scattered daily elevations and contents for April to July 1953, published in WSP 1320-B. Daily elevations and contents for May to June 1964, published in WSP 1840-B. Daily elevations and contents on file in Helena district office.

REVISED RECORDS.--WSP 1559: Drainage area.

GAGE.--Water-stage recorder in powerhouse control room. Elevation of gage is 3,650.0 ft (NGVD 29).

REMARKS.--Reservoir is formed by concrete dam; construction began in 1949, completed in 1953. Storage began in March 1953. All elevations are referenced to the National Geodetic Vertical Datum of 1929. Usable capacity, 1,993,000 acre-ft between elevation 3,650.00 ft, contents at dead storage (1,060 acre-ft) and 3,800.00 ft, controlled spillway elevation. Minimum operating level, 396,000 acre-ft, at elevation 3,728.00 ft, for on-site power generation. Figures given herein represent usable contents. Water is used for power production, flood control, irrigation, and recreation.

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

EXTREMES FOR PERIOD OF RECORD.--Maximum daily contents, 2,043,000 acre-ft, July 15-29, 31, 1955, July 2, 5, 6, 8, 1956, July 16, 17, 1962, June 23, 1964, elevation, 3,800.0 ft; minimum since first filling, 1,017,000 acre-ft, Apr. 11, 1967, elevation, 3,764.70 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 1,545,000 acre-ft, Oct. 1, elevation, 3,786.27 ft; minimum, 1,346,000 acre-ft, May 21, 22, elevation, 3,779.58 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	3,786.31	1,546,000	--
October 31	3,785.08	1,508,000	-38,000
November 30	3,784.78	1,499,000	-9,000
December 31	3,783.86	1,471,000	-28,000
Calendar year 2003	--	--	-166,000
January 31	3,781.77	1,409,000	-62,000
February 29	3,780.93	1,385,000	-24,000
March 31	3,780.61	1,375,000	-10,000
April 30	3,780.65	1,376,000	1,000
May 31	3,780.58	1,374,000	-2,000
June 30	3,784.97	1,505,000	131,000
July 31	3,784.75	1,498,000	-7,000
August 31	3,782.14	1,420,000	-78,000
September 30	3,781.39	1,398,000	-22,000
Water year 2004	--	--	-148,000