Water-Data Report 2007

12358500 MIDDLE FORK FLATHEAD RIVER NEAR WEST GLACIER, MT

Pend Oreille Basin
Middle Fork Flathead Subbasin

LOCATION.--Lat 48°29′43″, long 114°00′33″ referenced to North American Datum of 1927, in S ½ SW ¼ NE ¼ sec.34, T.32 N., R.19 W., Flathead County, MT, Hydrologic Unit 17010207, on left bank 0.8 mi downstream from McDonald Creek, 1.3 mi west of West Glacier, and at river mile 3.8.

DRAINAGE AREA.--1,128 mi^2.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 1939 to current year. Prior to October 1947, published as "near Belton."

REVISED RECORDS.-- Water Supply Paper 1216: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 3,128.72 ft, referenced to the National Geodetic Vertical Datum of 1929. Prior to Nov. 22, 1950, non-recording gage at present site and elevation.

REMARKS.--Records are excellent. Bureau of Reclamation satellite telemeter is located at the station.

12358500 MIDDLE FORK FLATHEAD RIVER NEAR WEST GLACIER, MT—Continued

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007
DAILY MEAN VALUES
[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	533	411	1,600	717	601	550	4,260	7,470	7,660	3,440	1,070	551
2	519	401	1,510	846	569	540	3,970	8,780	8,810	3,230	1,030	558
3	506	395	1,440	958	565	527	3,650	11,100	9,840	3,110	988	553
4	494	410	1,380	924	575	528	3,330	10,400	10,600	3,030	951	549
5	482	463	1,320	876	606	542	3,110	8,410	11,800	2,950	927	537
6	473	965	1,270	878	628	541	2,900	7,100	12,500	2,880	892	526
7	466	10,200	1,210	857	608	564	2,760	6,470	10,400	2,860	864	515
8	457	15,700	1,170	859	589	620	2,710	6,520	8,560	2,760	845	514
9	454	8,950	1,120	831	585	689	2,890	8,980	7,420	2,550	821	506
10	444	6,420	1,080	826	580	699	3,190	11,700	8,000	2,370	794	489
11	439	5,290	1,060	755	580	779	3,120	11,200	8,550	2,220	775	473
12	429	4,450	1,050	706	582	1,790	3,000	11,700	7,340	2,120	747	463
13	424	3,880	1,070	628	566	5,220	2,870	12,600	6,510	2,070	726	455
14	416	3,400	1,080	672	560	4,630	2,780	11,500	5,860	2,010	722	442
15	410	2,990	1,170	665	572	3,750	2,870	9,770	5,370	1,970	720	438
16	428	2,930	1,180	675	599	3,240	3,010	9,300	5,050	1,900	708	429
17	435	2,750	1,010	682	597	3,010	3,180	10,100	5,080	1,820	691	425
18	425	2,440	886	714	585	3,630	3,450	11,800	5,460	1,810	682	438
19	426	2,220	890	724	589	4,650	3,580	12,200	5,530	1,830	672	441
20	458	2,310	901	746	596	5,180	3,470	11,100	5,280	1,760	663	448
21	493	2,710	913	724	597	5,400	3,270	9,680	5,320	1,640	669	462
22	497	2,780	980	707	576	4,800	3,140	8,320	5,410	1,560	672	454
23	481	2,650	965	709	580	4,230	3,110	7,190	5,240	1,510	655	443
24	468	2,510	944	719	580	3,930	3,430	6,650	4,890	1,480	643	463
25	459	e2,300	921	691	565	5,400	4,090	6,330	4,440	1,440	625	484
26	451	e2,100	923	663	569	7,980	5,040	5,860	4,010	1,360	597	470
27	442	e1,900	912	646	570	7,270	5,450	5,830	3,560	1,300	579	451
28	431	e1,800	891	603	558	6,210	5,570	6,580	3,430	1,260	567	440
29	428	e1,630	833	588	---	5,310	6,880	6,770	3,620	1,220	560	431
30	444	1,600	737	604	---	4,780	7,330	6,390	3,670	1,170	546	431
31	425	---	727	596	---	4,450	---	6,720	---	1,110	537	---
Total	14,137	98,955	33,143	22,789	16,327	101,439	111,410	274,520	199,210	63,740	22,938	14,279
Mean	456	3,298	1,069	735	583	3,272	3,714	8,855	6,640	2,056	740	476
Max	533	15,700	1,600	958	628	7,980	7,330	12,600	12,500	3,440	1,070	558
Min	410	395	727	588	558	527	2,710	5,830	3,430	1,110	537	425
Med	451	2,470	1,050	714	580	3,750	3,230	8,780	5,490	1,900	708	462
Ac-ft	28,040	196,300	65,740	45,200	32,380	201,200	221,000	544,500	395,100	126,400	45,500	28,320
Cfsm	0.40	2.92	0.95	0.65	0.52	2.90	3.29	7.85	5.89	1.82	0.66	0.42
In.	0.47	3.26	1.09	0.75	0.54	3.35	3.67	9.05	6.57	2.10	0.76	0.47

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 2007, BY WATER YEAR (WY)

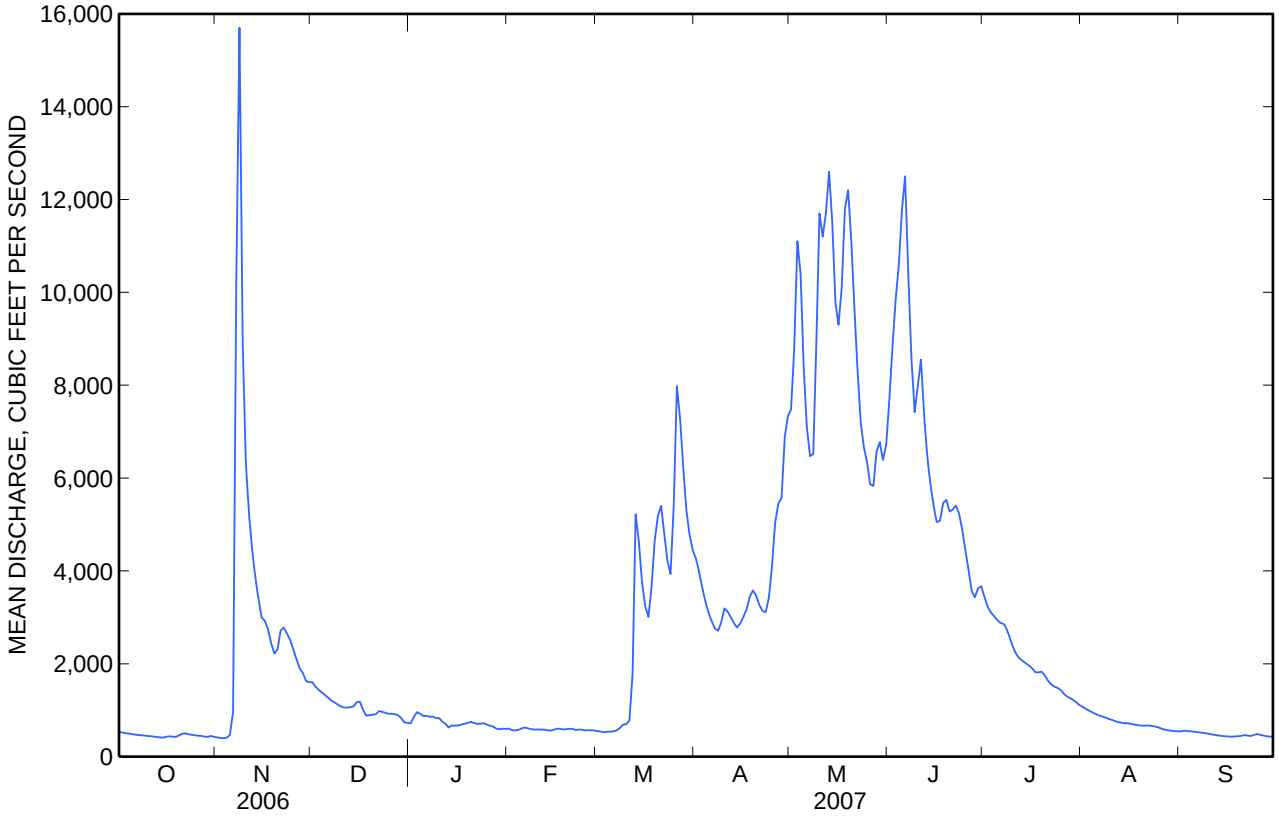
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	1,050	1,195	916	728	716	902	3,245	9,481	9,917	3,863	1,333	939
Max	3,004	5,598	3,750	2,420	2,686	3,272	7,093	14,670	19,870	8,162	2,364	2,510
(WY)	(1960)	(1990)	(1996)	(1974)	(1971)	(2007)	(1943)	(1957)	(1964)	(1954)	(1976)	(1968)
Min	367	279	262	282	244	307	664	5,259	3,576	1,249	576	420
(WY)	(1940)	(1953)	(1953)	(2001)	(2001)	(1944)	(1975)	(1941)	(1941)	(1944)	(1941)	(1988)

12358500 MIDDLE FORK FLATHEAD RIVER NEAR WEST GLACIER, MT—Continued

SUMMARY STATISTICS

	Calendar Year 2006		Water Year 2007		Water Years 1940 - 2007	
Annual total	1,134,744		972,887			
Annual mean	3,109		2,665		2,863	
Highest annual mean					4,071	1974
Lowest annual mean					1,437	1941
Highest daily mean	21,500	Jun 16	15,700	Nov 8	92,700	Jun 9, 1964
Lowest daily mean	395	Nov 3	395	Nov 3	189	Nov 27, 1952
Annual seven-day minimum	416	Oct 29	416	Oct 29	205	Nov 26, 1952
Maximum peak flow			18,700	Nov 8	[b]140,000	Jun 9, 1964
Maximum peak stage			8.05	Nov 8	36.46	Jun 9, 1964
Instantaneous low flow			[a]387	Nov 2	[c]173	Nov 27, 1952
Annual runoff (ac-ft)	2,251,000		1,930,000		2,074,000	
Annual runoff (cfsm)	2.76		2.36		2.54	
Annual runoff (inches)	37.42		32.08		34.48	
10 percent exceeds	9,230		7,290		8,310	
50 percent exceeds	1,200		1,050		1,110	
90 percent exceeds	500		458		439	

[a] Gage height, 1.55 ft.
[b] About 140,000 ft³/s, from rating extended above 31,000 ft³/s, on basis of a contracted opening measurement at gage height 19.42 ft, and flood volume-hydrographic comparison.
[c] Stage below intakes.



WATER-QUALITY RECORDS

PERIOD OF RECORD.--1949-50, 1970, 1998 to 2003, March 2007 to September 2007.

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

WATER-QUALITY DATA
WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007

Part 1 of 3

Date	Time	Instantaneous discharge, cfs (00061)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unf µS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)
Mar													
26...	1400	8,130	652	12.1	108	7.9	144	10.0	4.0	79	22.2	5.71	.34
Apr													
16...	1530	3,040	682	11.9	111	8.0	159	15.0	7.5	85	24.1	6.09	.31
30...	1500	7,340	687	11.7	106	8.1	152	19.5	6.5	77	21.9	5.54	.28
May													
14...	1545	11,200	687	11.4	107	8.1	135	17.0	8.0	70	19.9	5.04	.30
Jun													
04...	1400	10,700	680	11.7	122	8.0	121	26.0	12.0	61	17.2	4.39	.25
18...	1330	5,480	681	11.9	115	8.0	125	10.0	9.0	66	18.3	4.87	.25
Jul													
18...	0830	1,810	680	9.0	104	8.1	144	18.0	16.5	77	21.7	5.46	.36
Aug													
08...	1230	849	682	10.2	110	8.2	163	20.0	13.5	84	23.4	6.32	.31

12358500 MIDDLE FORK FLATHEAD RIVER NEAR WEST GLACIER, MT—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007
Part 2 of 3
[Remark codes: <, less than; E, estimated.]

Date	Sodium adsorption ratio (00931)	Sodium, water, fltrd, mg/L (00930)	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)	Dissolved, solids, sum of constituents mg/L (70301)	Dissolved, solids, tons/acre-ft (70303)	Dissolved, solids, tons/d (70302)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)
Mar													
26...	.0	.92	74	.49	<.10	4.51	3.24	83	.11	1,810	<.020	.199	<.002
Apr													
16...	.0	1.03	82	.38	<.10	4.37	3.54	90	.12	735	<.020	.135	<.002
30...	.0	.88	76	.46	<.10	4.38	3.04	83	.11	1,640	<.020	.201	<.002
May													
14...	.0	.80	69	E.09	<.10	4.11	2.48	E74	E.10	E2,240	<.020	.177	<.002
Jun													
04...	.0	.58	64	E.12	<.10	3.29	2.20	E67	E.09	E1,920	<.020	.124	<.002
18...	.0	.69	65	E.11	<.10	3.55	2.62	E69	E.09	E1,030	<.020	.104	<.002
Jul													
18...	.0	.85	73	.22	<.10	3.79	3.33	80	.11	391	<.020	.089	E.002
Aug													
08...	.0	.97	85	.29	<.10	3.82	3.90	90	.12	207	<.020	.066	E.001

WATER-QUALITY DATA
WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007
Part 3 of 3
[Remark codes: <, less than; E, estimated.]

Date	Total nitrogen, water, fltrd, mg/L (62855)	Orthophosphate, water, fltrd, mg/L as P (00671)	Total phosphorus, water, unfltrd mg/L (00665)	Organic carbon, water, unfltrd mg/L (00680)	Chlorophyll a phytoplankton, fluoro, µg/L (70953)	Pheophytin a, phytoplankton, µg/L (62360)	Suspnd. sediment, sieve diametr percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
Mar									
26...	.31	E.004	.049	--	--	--	67	119	2,610
Apr									
16...	.17	E.003	<.008	--	--	--	86	2	16
30...	.30	<.006	.033	--	--	--	71	51	1,010
May									
14...	.27	E.004	.059	2.2	.4	.2	68	60	1,810
Jun									
04...	.19	<.006	.027	--	--	--	62	48	1,390
18...	.19	E.004	E.005	--	--	--	86	9	133
Jul									
18...	.12	E.004	<.008	--	--	--	82	1	4.9
Aug									
08...	.12	<.006	<.008	.6	.3	.2	81	1	2.3