12447390 ANDREWS CREEK NEAR MAZAMA, WA

Upper Columbia Basin
Methow Subbasin

LOCATION.--Lat 48°49′23″, long 120°08′41″ referenced to North American Datum of 1927, in NE ¼ sec.1, T.38 N., R.21 E., Okanogan County, WA, Hydrologic Unit 17020008, Okanogan National Forest, on left bank 50 ft upstream from Blizzard Creek, 3.5 mi upstream from mouth, and 20 mi northeast of Mazama.

DRAINAGE AREA.--22.1 mi^2.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--June 1968 to current year.

REVISED RECORDS.--WDR WA-76-2: 1975. WDR WA-77-2: 1976.

GAGE.--Water-stage recorder. Elevation of gage is 4,300 ft above NGVD of 1929, from topographic map.

REMARKS.--Records poor. No regulation or diversion.

AVERAGE DISCHARGE FOR PERIOD OF RECORD.--40 years (water years 1969-2008), 31.7 ft^3/s, 19.51 in/yr, 22,990 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,120 ft^3/s, June 10, 1972, gage height, 4.00 ft, from rating curve extended above 440 ft^3/s; minimum discharge 0.97 ft^3/s, Oct. 30, 2002.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 200 ft^3/s and (or) maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)
May 18	1900	*613	*3.39
May 26	2200	307	2.64

Minimum daily discharge, 3.8 ft^3/s, Jan. 22.

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DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008
DAILY MEAN VALUES
[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	6.4	7.0	e6.5	e5.2	e4.6	e5.0	6.8	32	211	60	20	9.6
2	7.2	6.6	e6.8	e5.4	e4.6	e5.0	6.7	37	186	56	19	9.4
3	7.4	7.5	e7.7	e5.6	e4.6	e5.0	6.7	46	163	57	18	9.7
4	6.8	7.4	9.4	e5.8	e4.3	e4.8	6.2	61	150	67	17	9.3
5	6.5	7.1	11	e6.0	e4.5	e4.7	6.2	83	132	54	17	8.9
6	6.4	6.9	e8.8	e5.6	e4.6	e5.0	6.2	96	116	49	16	8.6
7	6.6	6.9	e8.0	e5.2	e4.6	e5.3	6.2	105	104	45	15	8.3
8	8.2	8.0	e7.0	e5.2	e4.6	e5.6	6.2	97	98	42	14	8.1
9	7.2	8.7	e7.3	e5.2	e4.6	5.8	6.2	88	96	40	16	7.9
10	8.7	8.7	e7.7	e5.2	e4.6	5.9	6.2	89	98	38	15	7.5
11	8.7	7.3	e8.2	e5.2	e4.6	5.9	6.6	86	96	37	14	7.2
12	7.6	7.1	e7.8	e5.0	e4.6	5.9	8.4	83	94	34	13	7.0
13	7.2	7.6	e8.0	e4.7	e4.6	6.0	14	91	99	33	13	6.9
14	7.0	7.5	e8.3	e4.6	e4.6	6.0	17	115	97	31	12	6.9
15	6.9	7.6	e8.5	e4.2	e4.6	6.0	14	197	96	30	12	6.6
16	7.3	7.4	e8.5	e4.0	e4.6	6.0	15	292	96	29	11	6.4
17	7.2	7.1	e8.2	e4.4	e4.5	6.1	18	410	93	28	11	6.2
18	7.1	7.0	e7.3	e4.6	e4.4	6.3	20	449	88	27	11	6.0
19	7.4	e6.8	e6.6	e4.8	e4.3	6.4	19	359	82	27	12	6.0
20	7.1	e6.2	e6.0	e4.6	e4.5	6.2	19	304	79	26	15	5.7
21	6.8	e5.8	e5.0	e4.2	e4.8	6.3	19	233	79	25	15	5.8
22	6.9	e5.1	e5.6	e3.8	e4.8	6.8	20	202	78	24	14	6.0
23	8.1	e5.4	e5.4	e4.3	e4.8	6.2	18	201	74	29	12	5.8
24	9.5	e6.0	e5.4	e4.6	e4.8	6.2	17	209	70	28	11	5.8
25	9.8	e5.4	e5.2	e4.5	e4.8	6.9	17	222	66	25	15	5.7
26	8.1	e5.6	e5.6	e4.3	e4.8	6.2	19	271	62	23	13	5.9
27	8.0	e6.0	e5.4	e4.4	e4.8	6.6	22	247	61	22	12	5.7
28	8.1	e5.8	e5.4	e4.5	e4.8	6.8	27	219	60	21	11	5.5
29	8.0	e6.4	e5.4	e4.6	e5.0	6.4	33	232	58	21	11	5.4
30	7.5	e6.4	e5.2	e4.6	---	6.2	32	224	57	21	10	5.1
31	7.3	---	e4.8	e4.0	---	6.5	---	209	---	20	10	---
Total	233.0	204.3	216.0	148.3	134.3	184.0	438.6	5,589	2,939	1,069	425	208.9
Mean	7.52	6.81	6.97	4.78	4.63	5.94	14.6	180	98.0	34.5	13.7	6.96
Max	9.8	8.7	11	6.0	5.0	6.9	33	449	211	67	20	9.7
Min	6.4	5.1	4.8	3.8	4.3	4.7	6.2	32	57	20	10	5.1
Ac-ft	462	405	428	294	266	365	870	11,090	5,830	2,120	843	414
Cfsm	0.34	0.31	0.32	0.22	0.21	0.27	0.66	8.16	4.43	1.56	0.62	0.32
In.	0.39	0.34	0.36	0.25	0.23	0.31	0.74	9.41	4.95	1.80	0.72	0.35

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 2008, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	7.43	7.22	5.51	4.59	4.11	4.76	20.0	116	144	43.4	13.8	8.45
Max	31.2	22.1	13.4	13.6	12.8	16.3	101	265	419	125	34.7	40.8
(WY)	(2004)	(2000)	(2000)	(2005)	(2005)	(2007)	(2004)	(2006)	(1974)	(1999)	(1976)	(1978)
Min	2.58	2.72	2.17	1.69	1.71	1.81	2.95	36.4	34.9	13.6	5.36	3.28
(WY)	(1971)	(1971)	(1971)	(1971)	(2001)	(2001)	(1975)	(1984)	(2001)	(2001)	(1973)	(1970)

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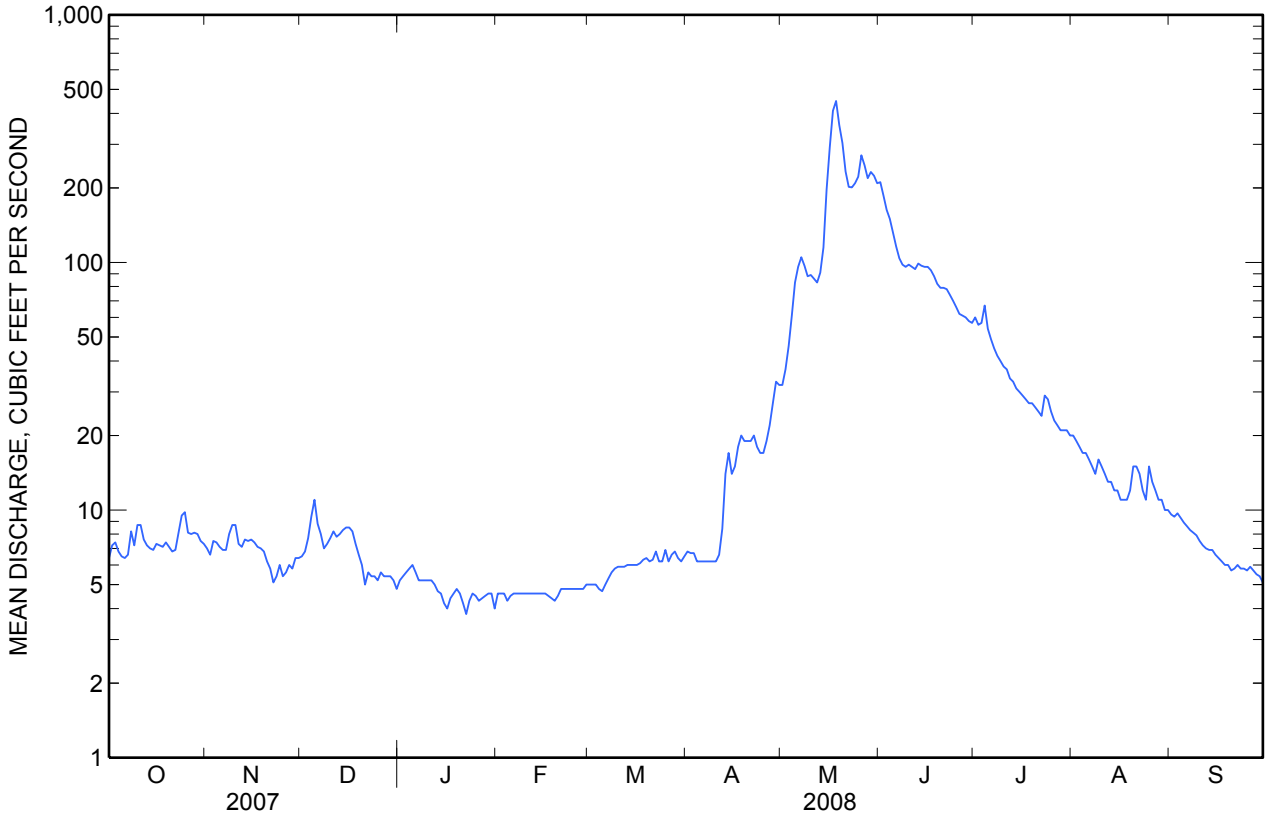
SUMMARY STATISTICS

	Calendar Year 2007		Water Year 2008		Water Years 1968 - 2008	
Annual total	13,311.7		11,789.4			
Annual mean	36.5		32.2		31.7	
Highest annual mean					59.1	1972
Lowest annual mean					10.7	2001
Highest daily mean	260	May 16	449	May 18	874	Jun 16, 1974
Lowest daily mean	4.8	Dec 31	3.8	Jan 22	1.2	Dec 30, 1968
Annual seven-day minimum	5.3	Dec 25	4.3	Jan 21	1.4	Apr 4, 1975
Annual runoff (ac-ft)	26,400		23,380		22,990	
Annual runoff (cfsm)	1.65		1.46		1.44	
Annual runoff (inches)	22.41		19.84		19.51	
10 percent exceeds	109		95		98	
50 percent exceeds	9.1		7.5		7.1	
90 percent exceeds	6.3		4.6		3.0	



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WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses water years 1972-96, 2004 to current year.

WATER-QUALITY DATA
WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008
Part 1 of 2
[Remark codes: E, estimated.]

Date	Time	Instantaneous discharge, ft3/s (00061)	pH, water, unfltrd lab, std units (00403)	Specif. conductance, wat unf lab, µS/cm 25 degC (90095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium adsorption ratio (00931)	Sodium fraction of cations percent (00932)	Sodium, water, fltrd, mg/L (00930)
Oct													
03...	1230	7.2	7.7	61	12.3	6.6	26	8.52	1.20	.783	.2	16	2.44
Nov													
27...	1250	5.7	7.7	55	.0	1.0	23	7.45	1.09	.666	.2	17	2.28
Mar													
05...	1150	4.7	7.7	60	7.9	1.1	24	7.71	1.17	.761	.2	17	2.42
May													
13...	0940	89	7.6	37	11.7	2.9	15	4.84	.735	.612	.2	17	1.53
Jun													
19...	1030	82	7.5	30	11.5	4.8	11	3.66	.563	.442	.2	19	1.26
Jul													
30...	1000	21	7.7	53	11.1	8.1	21	6.69	1.02	.659	.2	16	1.97

WATER-QUALITY DATA
WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008
Part 2 of 2
[Remark codes: E, estimated.]

Date	Alkalinity, wat flt Gran, lab, mg/L as CaCO3 (29803)	Chloride, water, fltrd, mg/L (00940)	Silica, water, fltrd, mg/L as SiO2 (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, dissolved, tons/d (70302)	Nitrate + nitrite water fltrd, mg/L as N (00631)	Total nitrogen, wat flt by analysis, mg/L (62854)	Organic carbon, water, fltrd, mg/L (00681)
Oct										
03...	25.8	.41	10.1	1.32	41	.06	.79	.095	.06	1.2
Nov										
27...	25.0	.33	10.7	1.51	40	.05	.61	.207	.27	.9
Mar										
05...	27.1	.34	11.3	1.64	43	.06	.54	.233	.27	.8
May										
13...	16.1	.21	9.42	1.28	29	.04	6.94	.098	.17	2.8
Jun										
19...	13.7	.10	7.31	.80	E22	E.03	E4.95	E.012	.08	1.8
Jul										
30...	25.4	.16	9.85	1.04	37	.05	2.10	.041	.07	1.2