

02019500 JAMES RIVER AT BUCHANAN, VA

LOCATION.--Lat 37°31'50", long 79°40'45", Botetourt County, Hydrologic Unit 02080201, on left bank 300 ft upstream from bridge on U.S. Highway 11 at Buchanan, 1,000 ft upstream from Purgatory Creek, 1.5 mi downstream from Looney Creek, and at mile 306.4.

DRAINAGE AREA.--2,075 mi².

PERIOD OF RECORD.--February 1898 to current year. Monthly discharge only for some periods, published in WSP 1303. Records for August 1895 to Feb. 11, 1898, published in WSP 11, 15, and 27 are in error and should not be used. Gage-height records collected at this site since 1893 are contained in reports of the National Weather Service.

REVISED RECORDS.--WSP 602: 1917-24. WSP 972: 1935-36. WSP 1303: 1898-1916, 1917-20(M), 1922(M), 1924(M). WSP 1383: 1927. WSP 2104: Drainage area. WDR VA-72-1: 1913(M). See also PERIOD OF RECORD.

GAGE.--Water-stage recorder. Datum of gage is 802.90 ft above sea level. Prior to Jul. 1, 1927, nonrecording gage at same site and datum.

REMARKS.--Records good except for periods of doubtful gage-height record, May 8-13, and Jun. 3 to Aug. 11, which are fair. Flow regulated since December 1979 by Lake Moomaw (station 02011795) 79.6 mi upstream; since October 1984 by Back Creek Lake 107.6 mi upstream, amount unknown; and since January 1985 by Little Back Creek Lake 110.7 mi upstream, amount unknown. Statistics of monthly mean data and summary statistics for water years 1898 - 1979 (unregulated flow) are available in previous data books, water years 1991 - 1998. National Weather Service gage-height telemeter at station. Maximum discharge, 179,000 ft³/s, from rating curve extended above 110,000 ft³/s. Minimum gage height, 1.44 ft, Sep. 8, 1966. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in November 1877 reached a stage of 34.9 ft, from floodmark, discharge, about 142,000 ft³/s, from rating curve extended above 110,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 12,700 ft³/s, Jan 25, gage height, 9.58 ft; minimum discharge, 428 ft³/s, Nov 23-26, Dec 2-3, 5; minimum gage height, 2.13 ft, Aug 12-14; minimum daily, 428 ft³/s, Nov 25, Dec 3.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	549	493	441	478	1290	1070	1690	1380	744	557	577	558		
2	540	494	433	470	1590	1100	1750	1340	762	571	543	538		
3	497	521	428	587	2590	1170	1720	1290	761	575	517	502		
4	480	570	433	1060	2860	1540	1620	1230	730	565	497	499		
5	491	519	433	1000	2380	2430	1530	1180	707	550	485	847		
6	580	486	439	705	2000	2220	1440	1150	691	530	476	3340		
7	593	472	439	721	1720	2180	1360	1070	671	520	473	3690		
8	756	464	447	702	1630	2290	1290	e1500	655	514	469	2040		
9	983	457	530	660	1660	2080	1200	e2900	632	518	472	1390		
10	877	448	583	701	1610	1990	1190	e2700	630	517	471	1100		
11	698	453	564	893	1490	1840	1210	e2400	619	509	467	916		
12	605	471	536	887	1380	1680	1380	e2200	707	524	452	800		
13	556	462	570	855	1300	1640	1630	e1900	678	566	447	738		
14	533	452	655	990	1240	1650	1530	1750	622	571	450	694		
15	503	456	671	2060	1160	2830	1460	4870	595	567	460	678		
16	482	453	656	4200	1080	4900	1480	4000	581	565	455	700		
17	481	448	592	2600	1040	5830	1460	2990	608	554	472	689		
18	478	445	537	1830	1270	9070	1370	2430	604	637	472	648		
19	486	438	506	1550	2180	8630	1300	2100	578	598	459	618		
20	512	438	491	1790	2360	5950	1260	2000	577	573	527	613		
21	526	438	485	1500	2080	4650	1230	1780	590	553	589	888		
22	512	434	478	1270	1800	5160	1250	1570	586	554	552	841		
23	494	432	472	1160	1570	5250	1210	1420	578	547	580	820		
24	491	429	484	5330	1390	4580	1230	1330	565	544	613	695		
25	493	428	487	10000	1280	4040	1280	1310	554	564	605	643		
26	496	438	474	4520	1210	3350	1250	1230	552	569	718	612		
27	495	447	469	2950	1120	2830	1210	1090	554	528	796	643		
28	486	442	465	2290	1070	2570	1210	981	555	516	827	1990		
29	486	439	472	1890	---	2370	1300	901	555	534	703	1950		
30	488	441	480	1590	---	2100	1410	843	551	579	637	3910		
31	491	---	478	1400	---	1780	---	791	---	569	590	---		
TOTAL	17138	13808	15628	58639	45350	100770	41450	55626	18792	17138	16851	34590		
MEAN	553	460	504	1892	1620	3251	1382	1794	626	553	544	1153		
MAX	983	570	671	10000	2860	9070	1750	4870	762	637	827	3910		
MIN	478	428	428	470	1040	1070	1190	791	551	509	447	499		
(†)	-4134	-3176	-2823	+10680	+5848	+10587	0	-1008	-6756	-7915	-7008	-4689		
MEAN†	419	354	413	2236	1828	3592	1382	1762	401	298	318	997		
CFSM†	.20	.17	.20	1.08	.88	1.73	.67	.85	.19	.14	.15	.48		
IN. ‡	.23	.19	.23	1.24	.92	2.00	.74	.98	.22	.17	.18	.54		
CAL YR 1998	TOTAL	1264935	MEAN	3466	MAX	33200	MIN	428	MEAN†	3445	CFSM†	1.66	IN. ‡	22.54
WTR YR 1999	TOTAL	435780	MEAN	1194	MAX	10000	MIN	428	MEAN†	1165	CFSM†	.56	IN. ‡	7.62

† Total change in contents, equivalent in cubic feet per second, per month, in Lake Moomaw; provided by U.S. Army Corps of Engineers.

‡ Adjusted for change in contents.

02019500 JAMES RIVER AT BUCHANAN, VA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1980 - 1999, BY WATER YEAR (WY) [REGULATED, UNADJUSTED]

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1228	1952	2253	3623	4166	5334	4580	3197	2136	1049	1045	1128
MAX	5679	10190	6450	10310	11270	12790	16170	8908	5251	2236	3834	4288
(WY)	1990	1986	1997	1996	1998	1993	1987	1989	1982	1989	1984	1996
MIN	419	453	453	396	1260	922	1081	1515	626	553	338	361
(WY)	1981	1982	1981	1981	1981	1981	1995	1991	1999	1999	1981	1981

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR	FOR 1999 WATER YEAR	WATER YEARS 1980 - 1999
ANNUAL TOTAL	1264934	435780	
ANNUAL MEAN	3466	1194	2631
HIGHEST ANNUAL MEAN			3664
LOWEST ANNUAL MEAN			1092
HIGHEST DAILY MEAN	33200	Jan 9	102000
LOWEST DAILY MEAN	a428	Nov 25	257
ANNUAL SEVEN-DAY MINIMUM	434	Nov 19	268
INSTANTANEOUS PEAK FLOW			179000
INSTANTANEOUS PEAK STAGE			b38.84
INSTANTANEOUS LOW FLOW		c428	d230
ANNUAL RUNOFF (CFSM)	1.67	.58	1.27
ANNUAL RUNOFF (INCHES)	22.68	7.81	17.23
10 PERCENT EXCEEDS	8680	2320	5760
50 PERCENT EXCEEDS	1070	678	1300
90 PERCENT EXCEEDS	473	465	540

- a Also Dec 3, 1998.
- b From floodmarks.
- c Also Nov 24-26, Dec 2-3, 5, 1998.
- d Result of freezeup.
- e Estimated.
- f Also Jan 12, 1981.

