

JAMES RIVER BASIN

02018500 CATAWBA CREEK NEAR CATAWBA, VA

LOCATION.--Lat 37°28'05", long 80°00'19", NAD83, Botetourt County, Hydrologic Unit 02080201, on right bank 80 ft upstream from bridge on State Highway 779, 1.0 mi downstream from Little Catawba Creek, 1.9 mi west of Haymakertown, and 8.2 mi northeast of Catawba.

DRAINAGE AREA.--34.3 mi².

PERIOD OF RECORD.--September 1943 to current year.

REVISED RECORDS.--WSP 1303: 1944-45(M). WSP 2104: Drainage area. WDR VA-72-1: 1954, 1955(P), 1957-58(P), 1959, 1960-62(P), 1963, 1964(M), 1965-67(P), 1968(M), 1969, 1970(M), 1971.

GAGE.--Water-stage recorder. Datum of gage is 1,299.96 ft above sea level. Prior to Aug. 1, 1953, nonrecording gage at site 80 ft downstream at same datum.

REMARKS.--Records good except those for period of no gage-height record, Dec. 20 to Jan. 18, and period with ice effect, Jan. 23-29, which are fair. At a point 5.3 mi upstream from station, there has been transmountain diversion through a tunnel into Roanoke River Basin for municipal water supply of city of Roanoke since December 1974. From October 1953 to October 1976, monthly means adjusted for pumping by Citadel Cement Corporation. Statistics of monthly mean data and summary statistics for water years 1944-1952 (unregulated flow) are available in previous data books, water years 1991-1998. Maximum discharge, 21,200 ft³/s, from rating curve extended above 1,700 ft³/s on basis of slope-area measurements at gage heights 10.35 ft and 19.19 ft. Minimum discharge, 0.28 ft³/s, Aug. 21, 1987, gage height, 0.99 ft, cause unknown. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records were provided by the Virginia Department of Environmental Quality - Water Division.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in August 1940 reached a stage of 13.26 ft, from information by observer.

**DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES**

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.3	5.4	4.1	e2.6	3.3	5.1	35	5.9	14	3.5	27	3.6
2	10	5.5	3.9	e2.4	3.2	5.1	35	5.8	13	3.2	14	3.4
3	8.4	5.6	3.8	e2.2	3.0	4.9	30	5.6	12	3.2	8.8	3.3
4	12	5.7	3.6	e2.3	3.0	5.3	24	5.9	11	3.2	4.6	3.5
5	12	5.6	3.7	e2.5	3.0	5.4	19	6.3	13	3.6	5.6	2.8
6	10	5.3	3.7	e2.6	2.8	5.2	17	5.6	12	3.1	7.6	2.5
7	12	5.5	3.8	e2.9	2.8	5.1	16	5.5	12	3.2	7.6	3.3
8	12	5.4	3.7	e3.0	2.8	5.3	13	5.2	12	4.5	5.8	2.8
9	11	6.9	3.7	e2.7	2.6	5.4	13	5.1	9.8	4.0	2.9	2.5
10	8.5	8.1	3.7	e2.5	2.5	4.9	13	5.1	8.7	3.5	3.2	2.9
11	6.0	6.3	3.8	e2.3	2.3	4.7	11	4.8	8.9	3.3	3.0	2.9
12	4.9	5.8	3.6	e2.4	2.3	6.1	15	4.6	8.9	3.2	5.4	2.4
13	4.8	5.4	3.4	e2.4	2.4	8.6	13	4.5	8.6	3.2	5.4	2.2
14	3.9	5.1	4.2	e2.5	2.5	8.0	11	4.5	8.4	3.0	4.5	2.4
15	3.8	4.5	4.9	e2.7	2.4	9.2	9.5	5.2	7.9	3.4	3.5	2.6
16	3.8	4.4	6.1	e2.5	2.6	10	14	11	7.3	3.5	4.0	2.3
17	4.0	4.4	13	e2.7	3.1	10	13	12	7.1	2.9	3.6	2.2
18	4.6	4.3	9.1	e2.8	2.9	9.7	12	13	7.1	3.1	3.6	2.6
19	5.5	4.1	10	10	2.8	9.3	13	11	6.9	3.3	3.5	2.3
20	5.9	4.0	e8.0	16	2.8	8.5	10	10	6.4	3.1	5.7	2.8
21	6.4	3.7	e7.0	13	2.8	48	7.7	12	5.7	2.8	4.9	3.2
22	6.8	3.4	e6.0	9.6	3.1	53	7.3	75	6.4	2.6	3.4	2.8
23	6.5	3.5	e4.7	e7.9	3.0	38	7.5	78	6.9	2.5	3.0	1.9
24	6.4	3.6	e5.5	e5.8	3.0	30	7.2	32	6.3	2.5	3.1	2.8
25	6.5	4.5	e4.2	e5.0	4.8	22	7.1	38	6.0	2.4	2.7	3.1
26	6.3	7.0	e3.7	e4.4	4.8	16	6.8	52	7.1	3.0	2.5	1.9
27	6.4	6.3	e4.3	e4.6	4.9	16	6.6	36	7.1	4.8	3.1	2.2
28	5.8	5.0	e3.9	e4.3	5.1	14	6.4	33	6.7	5.3	3.4	2.8
29	6.3	4.5	e3.6	e4.1	---	31	6.1	29	6.7	6.6	3.1	2.6
30	5.7	4.3	e3.3	3.8	---	196	6.3	25	6.1	6.7	3.8	2.5
31	5.6	---	e2.9	3.5	---	40	---	19	---	5.2	3.5	---
TOTAL	221.1	153.1	152.9	138.0	86.6	639.8	405.5	565.6	260.0	111.4	165.8	81.1
MEAN	7.13	5.10	4.93	4.45	3.09	20.6	13.5	18.2	8.67	3.59	5.35	2.70
MAX	12	8.1	13	16	5.1	196	35	78	14	6.7	27	3.6
MIN	3.8	3.4	2.9	2.2	2.3	4.7	6.1	4.5	5.7	2.4	2.5	1.9
(+)	0	0	8.90	101	14.8	675	270	876	467	27.6	62.5	0
MEAN‡	7.13	5.10	5.22	7.71	3.62	42.4	22.5	46.5	24.2	4.48	7.36	9.91
CFSM‡	.21	.15	.15	.22	.11	1.24	.66	1.36	.71	.13	.21	.29
IN.‡	.24	.17	.18	.26	.11	1.43	.73	1.56	.79	.15	.25	.32

CAL YR 2000 MEAN‡ 18.74 CFSM‡ .55 IN.‡ 7.72
WTR YR 2001 MEAN‡ 15.61 CFSM‡ .46 IN.‡ 6.18

† Total diversion, equivalent in cubic feet per second, per month, provided by city of Roanoke.

‡ Adjusted for diversion.

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STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1975 - 2001, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	14.5	30.2	21.4	36.8	52.9	79.5	71.5	38.9	29.7	10.9	11.3	17.3
MAX	82.2	390	105	131	221	278	337	122	142	52.2	75.5	105
(WY)	1990	1986	1997	1996	1998	1993	1987	1989	1992	1989	1985	1979
MIN	3.41	2.01	3.16	3.45	3.09	6.20	6.78	4.88	2.29	2.40	1.60	2.30
(WY)	1999	1982	1982	1981	2001	1981	1981	1999	1999	1999	1999	1981

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR	FOR 2001 WATER YEAR	WATER YEARS 1975 - 2001
ANNUAL TOTAL	5440.5	2980.9	
ANNUAL MEAN	14.9	8.17	34.4
HIGHEST ANNUAL MEAN			64.9
LOWEST ANNUAL MEAN			6.16
HIGHEST DAILY MEAN	582	Apr 18	7400
LOWEST DAILY MEAN	e2.9	Dec 31	.58
ANNUAL SEVEN-DAY MINIMUM	3.7	Dec 7	.82
MAXIMUM PEAK FLOW		196 Mar 30	21200
MAXIMUM PEAK STAGE		4.09 Mar 30	b19.19
INSTANTANEOUS LOW FLOW		1.5 Sep 27	c.28
ANNUAL RUNOFF (CFSM)	.43	.24	1.00
ANNUAL RUNOFF (INCHES)	5.90	3.23	13.63
10 PERCENT EXCEEDS	23	13	68
50 PERCENT EXCEEDS	8.2	5.1	11
90 PERCENT EXCEEDS	4.0	2.6	4.2

a Also Sept. 26, 2001.

b From high-water mark.

c Regulation from unknown source.

e Estimated.

