

JAMES RIVER BASIN

02018500 CATAWBA CREEK NEAR CATAWBA, VA

LOCATION.--Lat $37^{\circ}28'05''$, long $80^{\circ}00'20''$, 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 doubtful gage-height record, Oct. 21 to Dec. 2, and period with ice effect, Jan. 1, 2, 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. 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.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,590 ft³/s, Mar. 20, gage height, 6.98 ft; minimum, 1.5 ft³/s, Sept. 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.7	e10	e4.7	e4.9	38	72	50	61	23	8.1	5.7	3.8
2	5.4	e12	e4.5	e5.9	51	66	46	91	22	8.2	4.5	3.8
3	5.2	e8.2	4.6	6.3	105	60	43	83	21	7.7	4.3	3.9
4	5.1	e6.2	4.8	7.3	820	55	76	91	17	8.5	4.1	4.1
5	5.0	e5.4	4.7	7.7	585	51	78	99	11	9.2	4.9	4.7
6	4.7	e5.3	4.6	7.2	442	47	68	78	14	8.0	4.5	4.5
7	4.3	e6.1	4.3	8.1	283	45	61	69	13	8.1	4.0	4.0
8	4.2	e6.2	4.2	644	192	69	55	70	12	8.7	8.4	4.2
9	4.2	e6.4	4.3	45	153	231	63	62	12	8.2	8.5	3.9
10	4.6	e6.2	4.7	27	128	151	60	57	13	7.4	8.7	3.7
11	4.3	e5.8	4.8	23	123	103	56	75	13	7.0	9.4	2.9
12	4.5	e5.6	4.7	20	133	83	51	65	13	6.9	7.5	3.0
13	4.3	e5.5	4.4	19	129	72	48	60	12	6.6	6.6	3.7
14	4.3	e6.0	4.4	18	108	65	46	55	11	6.4	5.8	3.4
15	4.4	e6.8	4.2	25	86	58	44	49	12	6.1	5.2	3.4
16	4.3	e5.9	4.1	34	80	54	56	44	11	6.3	8.1	3.4
17	4.4	e5.4	4.2	30	967	50	397	40	11	5.9	8.0	3.8
18	4.5	e5.3	4.2	23	423	54	185	36	10	6.2	6.6	3.9
19	4.3	e5.2	4.1	21	221	202	253	34	9.6	5.6	5.3	5.0
20	3.9	e5.0	4.1	19	163	739	319	32	9.5	6.0	4.6	4.1
21	e4.9	e6.0	4.1	18	125	754	179	30	9.8	5.1	4.4	2.9
22	e4.8	e7.4	4.9	18	102	287	130	27	8.9	5.0	4.2	3.7
23	e4.7	e6.5	5.0	32	165	180	107	31	9.5	5.3	4.2	2.9
24	e5.0	e5.5	5.1	32	160	133	92	32	8.7	5.2	4.0	3.2
25	e5.5	e5.1	5.5	27	124	106	77	30	9.0	5.6	3.8	2.5
26	e6.0	e4.8	5.2	23	104	92	68	30	8.4	5.2	3.8	2.4
27	e6.5	e4.7	5.6	22	91	83	60	41	7.9	5.1	3.7	2.3
28	e5.4	e4.6	5.4	85	80	76	54	36	8.8	5.5	3.7	2.2
29	e5.0	e4.7	5.4	69	---	65	49	31	9.1	5.2	3.6	2.1
30	e4.7	e4.9	5.1	61	---	56	46	28	7.8	6.1	3.8	2.4
31	e6.0	---	5.0	49	---	52	---	26	---	5.5	3.8	---
TOTAL	150.1	182.7	144.9	1431.4	6181	4211	2917	1593	358.0	203.9	167.7	103.8
MEAN	4.84	6.09	4.67	46.2	221	136	97.2	51.4	11.9	6.58	5.41	3.46
MAX	6.5	12	5.6	644	967	754	397	99	23	9.2	9.4	5.0
MIN	3.9	4.6	4.1	4.9	38	45	43	26	7.8	5.0	3.6	2.1
(†)	0	40	0	1497	59.3	0	0	0	193	3.8	0	0
MEAN‡	4.84	7.42	4.67	94.5	223	136	97.2	51.4	18.4	6.7	5.41	3.46
CFSM‡	.14	.22	.14	2.76	6.50	3.96	2.83	1.50	.54	.20	.16	.10
IN.‡	.16	.24	.16	3.18	6.77	4.57	3.16	1.73	.60	.23	.18	.11
CAL YR 1997	TOTAL	10017.7	MEAN	27.4	MAX	703	MIN	3.9	MEAN‡	29.4	CFSM‡	.86
WTR YR 1998	TOTAL	17644.5	MEAN	48.3	MAX	967	MIN	2.1	MEAN‡	53.3	CFSM‡	1.55
										IN.‡	11.63	
											IN.‡	21.08

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

‡ Adjusted for diversion.

e Estimated.

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02018500 CATAWBA CREEK NEAR CATAWBA, VA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1944 - 1952, BY WATER YEAR (WY) [UNREGULATED]

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	23.7	27.4	40.1	52.2	65.6	69.0	67.0	47.1	33.3	24.4	20.0	22.9
MAX	106	93.2	134	104	104	103	152	114	108	107	46.5	62.2
(WY)	1948	1948	1949	1947	1948	1951	1951	1950	1949	1949	1949	1945
MIN	5.00	5.89	7.70	15.1	20.0	35.1	23.1	21.5	7.93	4.95	3.91	5.94
(WY)	1952	1944	1944	1951	1947	1950	1945	1945	1944	1944	1944	1951

SUMMARY STATISTICS

WATER YEARS 1944 - 1952

ANNUAL MEAN	40.9
HIGHEST ANNUAL MEAN	75.5
LOWEST ANNUAL MEAN	22.3
HIGHEST DAILY MEAN	1540
LOWEST DAILY MEAN	a2.2
ANNUAL SEVEN-DAY MINIMUM	a2.4
INSTANTANEOUS PEAK FLOW	3300
INSTANTANEOUS PEAK STAGE	c5.80
INSTANTANEOUS LOW FLOW	a2.2
ANNUAL RUNOFF (CFSM)	1.19
ANNUAL RUNOFF (INCHES)	16.21
10 PERCENT EXCEEDS	84
50 PERCENT EXCEEDS	21
90 PERCENT EXCEEDS	6.1

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1953 - 1998, BY WATER YEAR (WY) [REGULATED, UNADJUSTED]

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	17.4	28.1	28.6	40.9	60.8	82.4	65.7	39.8	28.0	11.7	12.3	14.5
MAX	82.2	390	127	131	221	278	337	138	160	52.2	75.5	105
(WY)	1990	1986	1973	1996	1998	1993	1987	1958	1972	1989	1985	1979
MIN	2.63	2.01	3.16	3.45	5.82	6.20	6.78	9.75	5.06	2.59	2.28	2.30
(WY)	1964	1982	1982	1981	1981	1981	1981	1963	1966	1966	1981	1981

SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

FOR 1998 WATER YEAR

WATER YEARS 1953 - 1998

ANNUAL TOTAL	10017.7	17644.5	
ANNUAL MEAN	27.4	48.3	35.7
HIGHEST ANNUAL MEAN			66.6
LOWEST ANNUAL MEAN			6.16
HIGHEST DAILY MEAN	703	Jun 1	967
LOWEST DAILY MEAN	3.9	Oct 20	2.1
ANNUAL SEVEN-DAY MINIMUM	4.1	Dec 15	2.4
INSTANTANEOUS PEAK FLOW			2590
INSTANTANEOUS PEAK STAGE			6.98
INSTANTANEOUS LOW FLOW			1.5
ANNUAL RUNOFF (CFSM)	.80		1.41
ANNUAL RUNOFF (INCHES)	10.86		19.14
10 PERCENT EXCEEDS	55		105
50 PERCENT EXCEEDS	12		8.2
90 PERCENT EXCEEDS	4.7		4.1

a Observed.

b Also Sept. 10, 1944.

c From floodmark or crest-stage indicator.

d Also Sept. 8-11, 1944.

f Also Nov. 17, 1963.

g From high-water mark.

h Regulation from unknown source.

