

02011500 BACK CREEK NEAR MOUNTAIN GROVE, VA

LOCATION.--Lat 38°04'10", long 79°53'50", Bath County, Hydrologic Unit 02080201, on left bank 0.3 mi downstream from Cummings Run, 0.8 mi downstream from bridge on State Highway 39, and 2.1 mi south of Mountain Grove.

DRAINAGE AREA.--134 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1951 to current year.

REVISED RECORDS.--WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,701.45 ft above sea level.

REMARKS.--Records good except for period with ice effect, Jan. 6-8, which is fair. Flow regulated since October 1984 by Back Creek Lake 11.3 mi upstream, amount unknown, and since January 1985 by Little Back Creek Lake 14.4 mi upstream, amount unknown. Statistics of monthly mean data and summary statistics for water years 1952-1984 (unregulated flow) are available in previous data books, water years 1991-1998. Diversion 10.5 mi upstream from station by Virginia Power for recreation lakes, net averages 0.5 ft³/s. U.S. Army Corps of Engineers satellite water temperature and gage-height telemeter at station. Maximum discharge, 18,400 ft³/s, from rating curve extended above 14,000 ft³/s on basis of slope-area measurement of peak flow.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,700 ft³/s, Jan 24, gage height, 5.46 ft; minimum discharge, 5.3 ft³/s, Dec 30, gage height, 1.74 ft, result of freezeup.

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 | 18 | 19 | 9.2 | 11 | 79 | 106 | 129 | 90 | 37 | 15 | 16 | 22 |
| 2 | 18 | 19 | 9.4 | 11 | 303 | 118 | 125 | 84 | 36 | 14 | 16 | 21 |
| 3 | 17 | 24 | 8.9 | 27 | 340 | 186 | 122 | 73 | 35 | 14 | 16 | 20 |
| 4 | 17 | 22 | 9.2 | 28 | 279 | 418 | 117 | 63 | 22 | 14 | 15 | 19 |
| 5 | 17 | 12 | 9.4 | 24 | 248 | 424 | 91 | 54 | 21 | 13 | 15 | 78 |
| 6 | 17 | 9.8 | 9.5 | e24 | 231 | 414 | 75 | 51 | 20 | 13 | 14 | 213 |
| 7 | 18 | 9.4 | 9.5 | e23 | 224 | 408 | 73 | 48 | 19 | 14 | 14 | 130 |
| 8 | 25 | 9.3 | 14 | e22 | 236 | 326 | 72 | 52 | 18 | 14 | 14 | 76 |
| 9 | 20 | 9.1 | 18 | 31 | 248 | 247 | 73 | 42 | 18 | 13 | 14 | 51 |
| 10 | 19 | 8.9 | 15 | 38 | 232 | 232 | 71 | 40 | 17 | 13 | 14 | 39 |
| 11 | 19 | 11 | 13 | 33 | 220 | 188 | 69 | 40 | 17 | 14 | 13 | 32 |
| 12 | 19 | 9.4 | 12 | 31 | 209 | 170 | 70 | 38 | 16 | 14 | 13 | 27 |
| 13 | 19 | 8.9 | 17 | 33 | 190 | 167 | 89 | 43 | 16 | 14 | 13 | 24 |
| 14 | 19 | 8.9 | 20 | 85 | 119 | 169 | 90 | 138 | 16 | 14 | 16 | 23 |
| 15 | 19 | 11 | 18 | 467 | 112 | 195 | 82 | 162 | 16 | 14 | 19 | 21 |
| 16 | 19 | 15 | 16 | 188 | 94 | 268 | 69 | 104 | 15 | 13 | 19 | 20 |
| 17 | 19 | 9.9 | 15 | 97 | 78 | 454 | 90 | 80 | 17 | 12 | 19 | 19 |
| 18 | 19 | 9.9 | 14 | 133 | 86 | 785 | 57 | 83 | 15 | 12 | 18 | 18 |
| 19 | 19 | 11 | 13 | 280 | 92 | 816 | 44 | 87 | 15 | 13 | 17 | 18 |
| 20 | 19 | 12 | 13 | 242 | 91 | 675 | 83 | 67 | 15 | 10 | 21 | 17 |
| 21 | 19 | 9.6 | 13 | 219 | 85 | 402 | 75 | 87 | 15 | 11 | 22 | 17 |
| 22 | 19 | 10 | 13 | 223 | 81 | 470 | 62 | 86 | 14 | 11 | 22 | 16 |
| 23 | 19 | 8.4 | 12 | 305 | 78 | 464 | 58 | 57 | 14 | 11 | 21 | 15 |
| 24 | 20 | 8.6 | 12 | 1310 | 76 | 435 | 50 | 62 | 14 | 11 | 21 | 14 |
| 25 | 19 | 10 | 11 | 907 | 75 | 291 | 46 | 64 | 14 | 25 | 45 | 14 |
| 26 | 19 | 9.1 | 11 | 642 | 100 | 263 | 43 | 77 | 15 | 15 | 60 | 13 |
| 27 | 19 | 9.1 | 11 | 553 | 102 | 218 | 44 | 75 | 15 | 15 | 43 | 13 |
| 28 | 19 | 8.9 | 11 | 479 | 103 | 193 | 68 | 74 | 15 | 16 | 34 | 17 |
| 29 | 19 | 9.4 | 12 | 125 | --- | 136 | 96 | 71 | 15 | 18 | 30 | 20 |
| 30 | 19 | 9.6 | 11 | 102 | --- | 130 | 95 | 69 | 15 | 17 | 26 | 45 |
| 31 | 19 | --- | 11 | 89 | --- | 127 | --- | 59 | --- | 16 | 23 | --- |
| TOTAL | 586 | 342.2 | 391.1 | 6782 | 4411 | 9895 | 2328 | 2220 | 547 | 433 | 663 | 1072 |
| MEAN | 18.9 | 11.4 | 12.6 | 219 | 158 | 319 | 77.6 | 71.6 | 18.2 | 14.0 | 21.4 | 35.7 |
| MAX | 25 | 24 | 20 | 1310 | 340 | 816 | 129 | 162 | 37 | 25 | 60 | 213 |
| MIN | 17 | 8.4 | 8.9 | 11 | 75 | 106 | 43 | 38 | 14 | 10 | 13 | 13 |

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STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1985 - 1999, BY WATER YEAR (WY)

| | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 52.2 | 136 | 188 | 317 | 285 | 400 | 260 | 250 | 118 | 48.3 | 44.7 | 50.8 |
| MAX | 246 | 696 | 392 | 818 | 608 | 833 | 824 | 528 | 351 | 105 | 127 | 300 |
| (WY) | 1990 | 1986 | 1997 | 1996 | 1998 | 1993 | 1987 | 1996 | 1995 | 1994 | 1989 | 1996 |
| MIN | 18.9 | 11.4 | 12.6 | 77.7 | 107 | 92.8 | 77.6 | 62.9 | 18.2 | 14.0 | 17.9 | 16.5 |
| (WY) | 1999 | 1999 | 1999 | 1986 | 1993 | 1988 | 1999 | 1991 | 1999 | 1999 | 1987 | 1985 |

SUMMARY STATISTICS FOR 1998 CALENDAR YEAR FOR 1999 WATER YEAR WATER YEARS 1985 - 1999

| | | | |
|--------------------------|---------|---------|------|
| ANNUAL TOTAL | 75116.3 | 29670.3 | |
| ANNUAL MEAN | 206 | 81.3 | 179 |
| HIGHEST ANNUAL MEAN | | | 262 |
| LOWEST ANNUAL MEAN | | | 81.3 |
| HIGHEST DAILY MEAN | 4450 | Jan 8 | 9940 |
| LOWEST DAILY MEAN | 8.4 | Nov 23 | 8.4 |
| ANNUAL SEVEN-DAY MINIMUM | 9.1 | Nov 23 | 9.1 |
| INSTANTANEOUS PEAK FLOW | | | 1700 |
| INSTANTANEOUS PEAK STAGE | | | 5.46 |
| INSTANTANEOUS LOW FLOW | | | a5.3 |
| ANNUAL RUNOFF (CFSM) | 1.54 | | 1.33 |
| ANNUAL RUNOFF (INCHES) | 20.85 | | 8.24 |
| 10 PERCENT EXCEEDS | 487 | | 223 |
| 50 PERCENT EXCEEDS | 42 | | 21 |
| 90 PERCENT EXCEEDS | 12 | | 11 |

a Result of freezep.
e Estimated.

