

01643395 SOPER BRANCH AT HYATTSTOWN, MD

Potomac Basin
Middle Potomac-Catoctin Subbasin

LOCATION.--Lat 39°16'31.1", long 77°18'13.2" referenced to North American Datum of 1983, Montgomery County, MD, Hydrologic Unit 02070008, on left bank 0.1 mi upstream of Little Bennett Creek, 0.3 mi upstream of Dark Branch, 0.95 mi south of Frederick County, MD, and within Little Bennett Regional Park.

DRAINAGE AREA.--1.17 mi².

SURFACE-WATER RECORDS

PERIOD OF RECORD.--February 2004 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 379.17 ft above North American Vertical Datum of 1988.

REMARKS.--Records fair, except those above 150 ft³/s and those for estimated daily discharges (erroneous record and missing record), which are poor. U.S. Geological Survey satellite data-collection platform at station. Several measurements of water temperature were made during the year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 25 ft³/s and (or) maximum (*):

| Date | Time | Discharge (ft ³ /s) | Gage height (ft) |
|--------|------|--------------------------------|------------------|
| Oct 29 | 2145 | 162 | 2.50 |
| Dec 26 | 1900 | 59 | 1.60 |
| Jan 31 | 0035 | *300 | *3.33 |
| Mar 12 | 1010 | 108 | 2.09 |
| Apr 19 | 2020 | 30 | 1.25 |
| May 23 | 1915 | 33 | 1.30 |
| Jun 10 | 1925 | 221 | 2.89 |

Minimum discharge, 0.35 ft³/s, on many days.

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DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013
DAILY MEAN VALUES
[e, estimated]

| Day | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep |
|-------------|-------|------|------|------|------|------|------|------|------|-------|------|------|
| 1 | e0.66 | 2.1 | 0.65 | 1.9 | 5.1 | 1.4 | 1.9 | 1.4 | 1.1 | 1.1 | 0.77 | 0.51 |
| 2 | 1.9 | 1.6 | 0.65 | 1.8 | 3.1 | 1.3 | 1.8 | 1.3 | 1.1 | 1.1 | 0.76 | 0.48 |
| 3 | 0.63 | 1.3 | 0.62 | 1.7 | 2.5 | 1.2 | 1.7 | 1.3 | 1.6 | 1.1 | 0.79 | 0.46 |
| 4 | 0.55 | 1.1 | 0.60 | 1.7 | 2.1 | 1.1 | 1.7 | 1.2 | 1.1 | 1.0 | 0.81 | 0.44 |
| 5 | 0.55 | 1.1 | 0.60 | 1.7 | 1.8 | 1.1 | 1.6 | 1.2 | 0.99 | 0.94 | 0.81 | 0.42 |
| 6 | 0.55 | 1.0 | 0.60 | 1.6 | 1.6 | 2.6 | 1.5 | 1.2 | 1.4 | 0.93 | 0.93 | 0.40 |
| 7 | 0.55 | 1.0 | 0.60 | 1.5 | 1.4 | 4.4 | 1.5 | 2.2 | 4.7 | 0.88 | 0.87 | 0.39 |
| 8 | 0.55 | 0.98 | 0.60 | 1.5 | 1.4 | 2.7 | 1.5 | 4.5 | 2.2 | 0.88 | 0.97 | 0.36 |
| 9 | 0.55 | 0.94 | 0.73 | 1.5 | 1.3 | 1.8 | 1.5 | 2.7 | 1.4 | 0.88 | 0.86 | 0.35 |
| 10 | 0.55 | 0.91 | 0.71 | 1.4 | 1.2 | 1.6 | 1.4 | 2.3 | 41 | 0.88 | 0.81 | 0.35 |
| 11 | 0.55 | 0.87 | 0.67 | 1.4 | 1.5 | 1.4 | 1.4 | 6.8 | 7.4 | 0.88 | 0.81 | 0.35 |
| 12 | 0.55 | 0.82 | 0.60 | 1.3 | 1.3 | 20 | 2.4 | 2.7 | 2.9 | 1.1 | 0.81 | 0.37 |
| 13 | 0.57 | 2.2 | 0.60 | 1.3 | 1.3 | 6.6 | 1.9 | 1.9 | 2.8 | 1.0 | 0.81 | 0.41 |
| 14 | 0.60 | 1.3 | 0.60 | 1.3 | 1.3 | 4.3 | 1.6 | 1.6 | 2.2 | 0.92 | 0.79 | 0.39 |
| 15 | 0.60 | 1.1 | 0.60 | 1.4 | 1.3 | 3.6 | 1.5 | 1.5 | 1.7 | 0.88 | 0.71 | 0.38 |
| 16 | 0.60 | 1.0 | 0.60 | 7.7 | 1.7 | 3.2 | 1.4 | 1.3 | 1.5 | 0.88 | 0.70 | 0.35 |
| 17 | 0.57 | 0.97 | 0.59 | 2.4 | 1.4 | 2.7 | 1.4 | 1.1 | 1.4 | 0.88 | 0.70 | 0.35 |
| 18 | 0.56 | 0.92 | 0.55 | 1.8 | 1.1 | 2.9 | 1.4 | 1.1 | 1.3 | 0.88 | 0.70 | 0.35 |
| 19 | 0.69 | 0.88 | 0.55 | 1.7 | 1.1 | 3.3 | 6.2 | 1.1 | 1.3 | 0.87 | 0.65 | 0.35 |
| 20 | 0.57 | 0.84 | 0.57 | 1.6 | 1.1 | 2.6 | 6.4 | 1.1 | 1.2 | 1.3 | 0.65 | 0.35 |
| 21 | 0.55 | 0.81 | 3.0 | 1.5 | 1.1 | 2.4 | 2.6 | 0.98 | 1.1 | 1.0 | 0.65 | 0.38 |
| 22 | 0.55 | 0.77 | 1.1 | 1.4 | 1.0 | 2.2 | 2.1 | 1.1 | 1.1 | e0.78 | 0.66 | 0.41 |
| 23 | 0.55 | 0.76 | 0.97 | 1.3 | 1.0 | 2.1 | 1.9 | 3.8 | 1.1 | e1.2 | 0.65 | 0.37 |
| 24 | 0.55 | 0.76 | 0.90 | 1.2 | 1.0 | 2.0 | 1.8 | 5.1 | 1.9 | e0.77 | 0.65 | 0.35 |
| 25 | 0.55 | 0.76 | 0.78 | 1.2 | 1.0 | 2.3 | 1.7 | 2.1 | 1.3 | 0.70 | 0.65 | 0.35 |
| 26 | 0.55 | 0.70 | 11 | 1.2 | 1.4 | 2.8 | 1.5 | 1.7 | 1.5 | 0.70 | 0.62 | 0.35 |
| 27 | 0.55 | 0.70 | 7.4 | 1.2 | 3.8 | 2.5 | 1.5 | 1.6 | 1.3 | 0.74 | 0.60 | 0.35 |
| 28 | 0.56 | 0.70 | 2.7 | 1.2 | 1.7 | 2.2 | 1.4 | 1.5 | 1.1 | 0.84 | 0.60 | 0.35 |
| 29 | 48 | 0.69 | 2.4 | 1.2 | --- | 2.1 | 1.5 | 1.5 | 1.1 | 0.88 | 0.57 | 0.35 |
| 30 | 24 | 0.65 | 2.3 | 32 | --- | 2.0 | 1.5 | 1.3 | 1.0 | 0.74 | 0.55 | 0.35 |
| 31 | 3.7 | --- | 2.1 | 52 | --- | 1.9 | --- | 1.2 | --- | 0.72 | 0.52 | --- |
| Mean | 3.00 | 1.01 | 1.51 | 4.31 | 1.66 | 3.04 | 1.97 | 1.98 | 3.09 | 0.91 | 0.72 | 0.38 |
| Max | 48 | 2.2 | 11 | 52 | 5.1 | 20 | 6.4 | 6.8 | 41 | 1.3 | 0.97 | 0.51 |
| Min | 0.55 | 0.65 | 0.55 | 1.2 | 1.0 | 1.1 | 1.4 | 0.98 | 0.99 | 0.70 | 0.52 | 0.35 |
| Cfsm | 2.56 | 0.86 | 1.29 | 3.68 | 1.42 | 2.60 | 1.69 | 1.69 | 2.64 | 0.78 | 0.62 | 0.33 |
| In. | 2.96 | 0.96 | 1.49 | 4.25 | 1.48 | 3.00 | 1.88 | 1.95 | 2.95 | 0.90 | 0.71 | 0.36 |

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2004 - 2013, BY WATER YEAR (WY)

| | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep |
|-------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Mean | 1.16 | 1.31 | 1.85 | 1.69 | 1.81 | 2.59 | 2.53 | 1.87 | 1.24 | 0.70 | 0.51 | 1.02 |
| Max | 3.00 | 3.31 | 4.14 | 4.31 | 3.53 | 4.34 | 4.29 | 3.89 | 3.09 | 1.42 | 0.97 | 5.50 |
| (WY) | (2013) | (2007) | (2010) | (2013) | (2004) | (2007) | (2011) | (2008) | (2013) | (2004) | (2004) | (2011) |
| Min | 0.31 | 0.49 | 0.78 | 0.41 | 0.66 | 0.93 | 0.95 | 0.71 | 0.66 | 0.38 | 0.23 | 0.23 |
| (WY) | (2008) | (2008) | (2008) | (2011) | (2009) | (2006) | (2012) | (2006) | (2010) | (2008) | (2006) | (2005) |

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SUMMARY STATISTICS

| | Calendar Year 2012 | | Water Year 2013 | | Water Years 2004 - 2013 | |
|---------------------------------|--------------------|---------------------|-----------------|--------------------|-------------------------|--------------------------|
| Annual mean | 1.34 | | 1.97 | | 1.47 | |
| Highest annual mean | | | | | 1.97 | 2013 |
| Lowest annual mean | | | | | 1.04 | 2006 |
| Highest daily mean | 48 | Oct 29 | 52 | Jan 31 | 100 | Sep 8, 2011 |
| Lowest daily mean | 0.42 | Sep 12 ^a | 0.35 | Sep 9 ^b | 0.10 | Oct 4, 2007 ^c |
| Annual seven-day minimum | 0.44 | Sep 10 | 0.35 | Sep 24 | 0.12 | Oct 2, 2007 |
| Maximum peak flow | | | 300 | Jan 31 | ^d 695 | Sep 8, 2011 |
| Maximum peak stage | | | 3.33 | Jan 31 | ^f 5.25 | Sep 8, 2011 |
| Instantaneous low flow | | | 0.35 | Sep 8 ^b | 0.08 | Oct 3, 2007 |
| Annual runoff (cfs) | 1.14 | | 1.69 | | 1.26 | |
| Annual runoff (inches) | 15.54 | | 22.90 | | 17.10 | |
| 10 percent exceeds | 1.8 | | 2.7 | | 2.6 | |
| 50 percent exceeds | 0.85 | | 1.1 | | 0.80 | |
| 90 percent exceeds | 0.51 | | 0.55 | | 0.34 | |

^a Sept. 12, 13.

^b On many days.

^c Oct. 4, 5, 2007.

^d From rating curve extended above 104 ft³/s on basis of slope-area measurement at gage-height 5.25 ft.

^f Affected by backwater.

