Water-Data Report 2013

02026000 JAMES RIVER AT BENT CREEK, VA

James Basin
Middle James-Buffalo Subbasin

LOCATION.--Lat 37°32′10″, long 78°49′47″ referenced to North American Datum of 1927, Nelson County, VA, Hydrologic Unit 02080203, on left bank at town of Bent Creek, 150 ft downstream from Bent Creek, 525 ft upstream from bridge on U.S. Highway 60, 1.3 mi southeast of Gladstone, and at mile 227.8.

DRAINAGE AREA.--3,649 mi^2.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 1924 to current year. Monthly discharge only for some periods, published in WSP 1303. Prior to 1926,published as "at Bent Creek, near Gladstone."

REVISED RECORDS.--WSP 742: 1931(m). WSP 972: 1935-36. WSP 1066: 1940. WSP 1203: 1942. OFR 2006-1308: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 380.46 ft NAVD of 1988. Prior to Sept. 12, 1930, nonrecording gage at present site and datum.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Large diurnal fluctuation caused by powerplants upstream from station. Flow regulated since December 1979 by Lake Moomaw (station 02011795) 158.3 mi upstream; since October 1984 by Back Creek Lake 186.3 mi upstream; and since January 1985 by Little Back Creek Lake 189.4 mi upstream, amount unknown. Statistics of monthly mean data and summary statistics for water years 1925 - 1979 (unregulated flow) are available in previous data books, water years 1991 - 1998. National Weather Service gage-height telemeter at station. Maximum discharge, 226,000 ft^3/s, from rating curve extended above 77,000 ft^3/s on basis of slope-area measurement of peak flow. Water-quality records for some prior periods have been collected at this location.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 26,500 ft^3/s and (or) maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb 1	0230	53,800	13.93
May 8	1945	*63,000	*15.15
Jun 12	0200	30,100	10.33
Jul 5	0200	35,400	11.21

Suggested citation: U.S. Geological Survey, 2014, Water-resources data for the United States, Water Year 2013: U.S. Geological Survey Water-Data Report WDR-US-2013, site 02026000, accessed at http://wdr.water.usgs.gov/wy2013/pdfs/02026000.2013.pdf

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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	1,010	1,070	841	1,670	42,200	4,450	4,590	4,300	2,930	3,440	2,370	2,370
2	1,060	961	852	1,580	17,200	4,130	4,720	4,530	2,790	3,630	2,430	2,420
3	1,230	1,030	847	1,510	10,900	3,740	5,050	4,160	2,940	6,360	2,260	2,320
4	1,300	936	830	1,420	8,200	3,450	5,080	3,800	2,840	11,600	2,220	1,910
5	1,470	919	866	1,410	6,640	3,220	5,390	3,680	2,580	28,300	2,170	2,160
6	1,320	910	790	1,380	5,520	3,270	5,500	3,540	3,340	14,500	2,370	1,820
7	1,000	898	844	1,360	4,850	3,920	7,260	10,900	17,700	9,570	1,890	1,550
8	986	889	858	1,160	4,420	4,050	7,000	54,400	11,200	7,490	2,030	1,560
9	921	884	824	1,070	4,030	4,130	6,290	42,500	7,810	6,870	2,240	1,190
10	972	878	822	1,200	3,660	4,520	5,770	27,400	6,960	5,750	2,850	1,470
11	912	874	823	1,190	3,480	4,950	5,150	19,700	21,100	6,750	2,940	1,510
12	907	874	781	942	3,260	7,260	5,570	15,800	25,100	11,300	2,520	1,650
13	898	935	805	1,190	3,150	17,900	14,400	12,800	15,000	9,720	2,510	1,450
14	854	1,070	807	1,390	3,020	16,200	14,000	9,410	12,100	7,700	2,390	1,390
15	870	1,090	804	2,220	3,000	11,400	10,800	7,620	10,000	6,000	2,270	1,280
16	912	1,050	843	5,880	2,920	10,300	10,100	6,710	7,930	5,150	2,190	1,210
17	901	1,090	877	18,200	2,800	7,970	10,200	6,110	6,890	4,820	1,360	971
18	908	1,100	825	16,400	2,570	6,690	9,330	5,870	6,020	4,570	2,030	1,130
19	933	975	827	11,200	2,510	6,620	8,470	5,440	10,400	4,350	2,760	1,060
20	934	988	829	8,010	2,460	7,400	9,290	5,420	11,600	3,800	2,210	1,130
21	916	979	1,060	6,350	2,450	7,520	12,500	5,680	8,640	4,400	1,980	1,150
22	878	972	1,110	5,460	2,340	7,200	10,600	5,760	6,500	4,600	1,990	1,240
23	975	964	1,030	4,640	2,250	6,440	8,740	5,300	5,320	5,730	1,850	1,350
24	901	946	1,010	3,830	2,270	5,870	7,520	6,120	4,610	5,300	2,360	1,460
25	967	927	1,360	3,260	2,080	5,530	6,530	6,030	4,160	4,700	2,130	1,330
26	961	868	1,610	2,870	2,170	5,430	5,820	5,190	4,660	3,620	1,860	1,430
27	972	887	2,320	2,530	2,980	4,960	5,140	4,380	3,960	3,410	1,760	1,340
28	844	898	2,450	2,320	4,190	4,690	4,560	3,850	3,630	3,060	1,670	e1,100
29	1,040	858	2,350	2,490	---	4,550	4,400	3,660	3,360	2,990	1,800	e1,060
30	1,040	891	2,010	2,290	---	4,350	4,320	3,340	3,410	2,810	2,010	e1,020
31	995	---	1,820	28,800	---	4,310	---	3,170	---	2,470	2,130	---
Total	30,787	28,611	34,725	145,222	157,520	196,420	224,090	306,570	235,480	204,760	67,550	44,031
Mean	993	954	1,120	4,685	5,626	6,336	7,470	9,889	7,849	6,605	2,179	1,468
Max	1,470	1,100	2,450	28,800	42,200	17,900	14,400	54,400	25,100	28,300	2,940	2,420
Min	844	858	781	942	2,080	3,220	4,320	3,170	2,580	2,470	1,360	971
Cfsm	0.27	0.26	0.31	1.28	1.54	1.74	2.05	2.71	2.15	1.81	0.60	0.40
In.	0.31	0.29	0.35	1.48	1.61	2.00	2.28	3.13	2.40	2.09	0.69	0.45

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1980 - 2013, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	2,112	3,265	4,148	4,975	5,549	7,440	6,955	5,250	3,716	2,043	1,698	2,214
Max	9,173	16,910	11,000	11,680	17,200	18,860	24,090	13,990	12,860	6,605	6,027	9,873
(WY)	(1980)	(1986)	(2010)	(1991)	(1998)	(1993)	(1987)	(1989)	(2003)	(2013)	(1984)	(1996)
Min	683	749	987	858	1,125	1,626	1,842	1,883	963	904	632	727
(WY)	(2009)	(2009)	(1981)	(1981)	(2002)	(1981)	(1995)	(2006)	(2002)	(1999)	(2002)	(2002)

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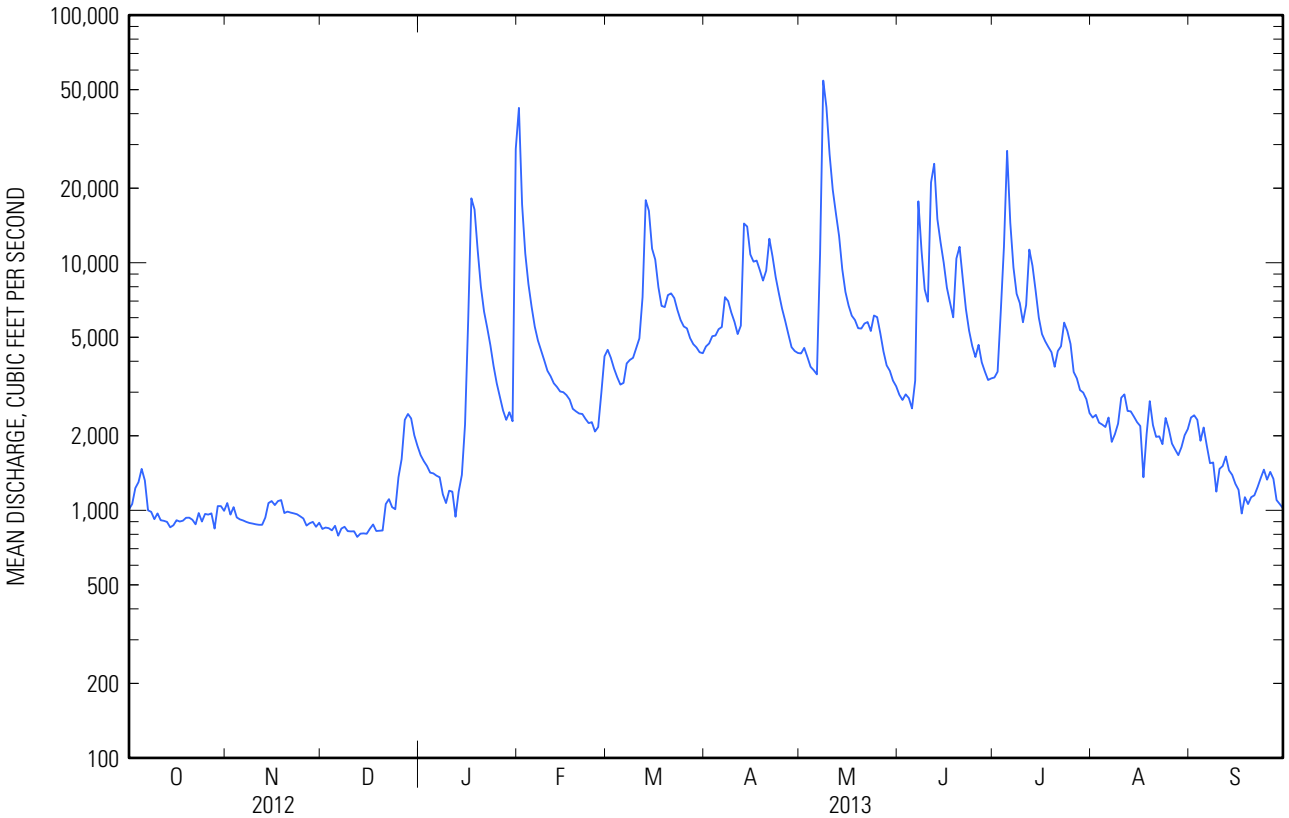
SUMMARY STATISTICS

	Calendar Year 2012		Water Year 2013		Water Years 1980 - 2013	
Annual total	1,168,360		1,675,766			
Annual mean	3,192		4,591		4,104	
Highest annual mean					6,855	2003
Lowest annual mean					1,562	2002
Highest daily mean	23,600	Mar 2	54,400	May 8	142,000	Nov 5, 1985
Lowest daily mean	[a]781	Dec 12	[a]781	Dec 12	[a]300	Nov 12, 2008
Annual seven-day minimum	809	Dec 9	809	Dec 9	460	Sep 8, 2002
Maximum peak flow			63,000	May 8	[b]226,000	Nov 5, 1985
Maximum peak stage			15.15	May 8	[b,c]30.76	Nov 5, 1985
Instantaneous low flow			[a]673	Oct 29	[a,d]238	Nov 12, 2008
Annual runoff (cfsm)	0.875		1.26		1.12	
Annual runoff (inches)	11.91		17.08		15.28	
10 percent exceeds	6,560		10,100		8,680	
50 percent exceeds	1,830		2,800		2,390	
90 percent exceeds	896		900		921	

[a] Result of regulation.
[b] Prior to regulation, 1925-79, maximum peak flow, 176,000 ft³/s, June 21, 1972, gage height, 27.13 ft, from floodmark.
[c] From floodmarks.
[d] Prior to regulation, 1925-79, instantaneous low flow, 222 ft³/s, Oct. 13, 14, 1930.