



Water-Data Report 2009

**02037500 JAMES RIVER NEAR RICHMOND, VA**

James Basin  
Middle James-Willis Subbasin

LOCATION.--Lat 37°33'47", long 77°32'50" referenced to North American Datum of 1927, Henrico County, VA, Hydrologic Unit 02080205, on left bank 0.2 mi upstream from Huguenot Memorial Bridge, 0.5 mi southwest of Richmond city limits, 1.7 mi downstream from Boshier Dam, 3.3 mi upstream from Powwhite Creek, and at mile 116.6.

DRAINAGE AREA.--6,753 mi<sup>2</sup>.

**SURFACE-WATER RECORDS**

PERIOD OF RECORD.--October 1934 to current year. Gage-height records collected in vicinity of Mayós Bridge, at mile 109.5, 1876-1956, and at mile 108.7 since 1957, are contained in reports of the National Weather Service.

REVISED RECORDS.--WSP 972: 1936(M). WSP 1433: 1951(M). OFR 2006-1308: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 98.82 ft NGVD of 1929.

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

REMARKS.--Records good. Diversion from 40 ft<sup>3</sup>/s to 90 ft<sup>3</sup>/s from river downstream from gage except during periods of low flow. Flow regulated by powerplants upstream from station. Above 18.2 ft stage, there is interchange of flow with James River and Kanawha Canal. Records of daily discharge include diversion by city of Richmond but do not include flow in James River and Kanawha Canal (station 02037000) which diverts around station. National Weather Service gage-height telemeter at station. Maximum discharge, 313,000 ft<sup>3</sup>/s, includes canal flow. Minimum daily discharge of James River and James River and Kanawha Canal combined, 214 ft<sup>3</sup>/s, Oct. 5, 1941, caused by recharging of the pool above Boshier Dam after the canal gates were closed. Since 1982, low flows during summer months are augmented by releases from Lake Moomaw, station 02011795. Several measurements of water temperature were made during the year. 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 50,000 ft<sup>3</sup>/s and (or) maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
May 8	0400	*32,700	*10.66

## 02037500 JAMES RIVER NEAR RICHMOND, VA—Continued

**DISCHARGE, CUBIC FEET PER SECOND**  
**WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009**  
**DAILY MEAN VALUES**

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	2,400	1,460	2,080	2,690	4,230	2,400	8,800	5,140	11,200	2,670	2,460	1,470
2	1,940	1,340	2,690	2,540	4,180	2,730	7,990	4,850	8,840	2,740	2,400	1,500
3	1,740	1,300	3,620	2,430	4,060	2,940	7,420	4,960	7,610	2,720	2,330	1,440
4	1,430	1,290	3,070	2,350	3,640	3,050	8,480	6,820	6,890	2,670	2,170	1,410
5	1,280	1,310	2,670	2,210	3,560	2,810	15,900	9,400	6,690	2,500	1,930	1,370
6	1,310	1,240	2,450	2,190	3,290	3,090	17,400	20,300	9,820	2,570	2,040	1,090
7	1,180	1,250	2,220	2,610	2,960	3,350	13,700	24,700	14,700	2,650	2,170	1,070
8	976	1,340	2,100	8,230	2,700	4,050	11,400	28,500	13,100	3,060	2,630	1,340
9	896	1,320	2,030	14,700	2,770	3,620	9,720	23,600	10,100	3,170	2,440	1,300
10	954	1,230	1,960	16,900	2,860	3,510	8,480	20,700	8,530	3,070	2,470	1,230
11	990	1,230	2,930	11,300	2,380	3,580	7,450	18,300	9,820	2,580	2,240	1,250
12	936	1,200	12,800	8,490	2,690	3,470	6,670	17,500	8,340	2,290	2,780	1,130
13	916	1,240	21,800	6,990	2,710	3,410	6,200	14,100	7,070	2,300	2,200	1,170
14	892	1,290	12,900	5,890	2,720	3,370	5,930	11,100	6,700	2,080	1,730	1,220
15	876	3,070	10,900	5,720	2,690	3,740	5,750	9,170	7,720	2,150	1,610	1,160
16	849	3,800	7,890	5,210	2,420	5,210	6,020	11,100	7,230	1,920	1,620	1,050
17	849	3,780	6,810	4,280	2,860	7,930	5,690	11,000	7,150	1,820	1,570	1,010
18	897	4,140	6,320	3,480	2,780	13,000	5,170	16,200	6,910	1,790	1,250	1,050
19	861	3,370	6,050	3,590	2,910	14,100	4,850	22,900	12,800	1,760	1,130	1,160
20	885	2,770	5,280	3,250	2,710	12,300	4,820	15,500	14,000	1,980	1,360	1,150
21	1,050	2,390	6,390	3,140	2,810	9,950	9,470	11,700	11,200	1,930	1,380	1,060
22	1,200	1,900	6,060	3,070	2,640	8,070	15,500	9,500	8,450	2,060	1,410	1,010
23	1,140	1,840	5,720	2,930	2,460	6,750	18,100	7,930	6,710	2,390	2,210	1,030
24	1,010	1,780	4,970	2,790	2,460	6,020	14,600	6,680	5,490	2,180	3,480	1,070
25	935	1,700	4,610	2,800	2,560	5,360	11,900	5,640	4,680	1,900	3,000	1,330
26	867	1,580	4,440	2,620	2,460	4,740	10,000	5,210	4,120	1,680	2,480	1,260
27	926	1,770	3,920	2,410	2,330	4,710	8,670	5,430	4,430	2,280	2,010	1,720
28	2,340	1,840	3,580	2,730	2,350	5,650	7,590	8,300	6,270	1,920	1,420	2,470
29	2,180	1,710	3,420	3,530	---	6,890	6,510	10,000	3,640	1,750	1,520	4,430
30	1,800	1,730	3,260	3,910	---	7,540	5,900	10,700	3,030	1,920	1,640	4,460
31	1,610	---	3,020	4,170	---	8,200	---	11,900	---	2,130	1,340	---
<b>Total</b>	38,115	57,210	167,960	149,150	81,190	175,540	276,080	388,830	243,240	70,630	62,420	44,410
<b>Mean</b>	1,230	1,907	5,418	4,811	2,900	5,663	9,203	12,540	8,108	2,278	2,014	1,480
<b>Max</b>	2,400	4,140	21,800	16,900	4,230	14,100	18,100	28,500	14,700	3,170	3,480	4,460
<b>Min</b>	849	1,200	1,960	2,190	2,330	2,400	4,820	4,850	3,030	1,680	1,130	1,010
<b>Cfsm</b>	0.18	0.28	0.80	0.71	0.43	0.84	1.36	1.86	1.20	0.34	0.30	0.22
<b>In.</b>	0.21	0.32	0.93	0.82	0.45	0.97	1.52	2.14	1.34	0.39	0.34	0.24

**STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1937 - 2009, BY WATER YEAR (WY)**

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Mean</b>	4,064	4,960	6,945	8,962	10,450	12,430	10,860	7,856	5,650	3,198	3,463	3,420
<b>Max</b>	19,090	30,480	26,480	25,300	34,960	32,740	35,900	24,280	30,910	11,300	21,710	18,390
<b>(WY)</b>	(1938)	(1986)	(1949)	(1937)	(1998)	(1993)	(1987)	(1989)	(1972)	(1972)	(1969)	(1996)
<b>Min</b>	177	338	450	837	1,652	2,988	2,766	2,137	904	76.1	149	125
<b>(WY)</b>	(1942)	(1942)	(1966)	(1966)	(2002)	(1981)	(1966)	(1941)	(1964)	(1966)	(1966)	(1963)

02037500 JAMES RIVER NEAR RICHMOND, VA—Continued

SUMMARY STATISTICS

	Calendar Year 2008		Water Year 2009		Water Years 1937 - 2009	
<b>Annual total</b>	1,503,034		1,754,775			
<b>Annual mean</b>	4,107		4,808		6,835	
<b>Highest annual mean</b>					13,540	1973
<b>Lowest annual mean</b>					2,110	2002
<b>Highest daily mean</b>	33,600	Apr 30	28,500	May 8	<sup>a</sup> 296,000	Jun 23, 1972
<b>Lowest daily mean</b>	440	Aug 18	849	Oct 16 <sup>b</sup>	<sup>c</sup> 10	Many days <sup>d</sup>
<b>Annual seven-day minimum</b>	524	Aug 14	873	Oct 14	10	Many days
<b>Maximum peak flow</b>			32,700	May 8	313,000	Jun 23, 1972
<b>Maximum peak stage</b>			10.66	May 8	28.62	Jun 23, 1972
<b>Instantaneous low flow</b>			782	Oct 17	(e)	
<b>Annual runoff (cfsm)</b>	0.608		0.712		1.01	
<b>Annual runoff (inches)</b>	8.28		9.67		13.75	
<b>10 percent exceeds</b>	9,430		11,100		14,900	
<b>50 percent exceeds</b>	2,660		2,860		4,100	
<b>90 percent exceeds</b>	892		1,200		985	

<sup>a</sup> Includes canal flow.

<sup>b</sup> Also Oct. 17, 2008.

<sup>c</sup> Result of diversion.

<sup>d</sup> In September 1966, September and October 1968, and October 1970.

<sup>e</sup> Not determined.

