

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 Powhite Creek, and at mile 116.6.

DRAINAGE AREA.--6,753 mi².

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 ft³/s to 90 ft³/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 ft³/s, includes canal flow. Minimum daily discharge of James River and James River and Kanawha Canal combined, 214 ft³/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 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar 12	1315	64,400	14.78
Apr 18	1915	*67,400	*15.07

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DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011
DAILY MEAN VALUES

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	14,500	3,340	3,380	2,860	3,290	5,320	6,610	24,400	6,940	2,540	1,030	1,450
2	24,700	2,740	11,600	2,910	3,320	6,290	6,190	18,600	6,020	2,150	1,090	1,240
3	13,100	2,470	33,700	3,060	4,760	7,070	6,040	15,400	5,340	1,730	1,600	1,280
4	7,460	2,540	19,500	3,170	5,790	8,440	5,750	13,500	4,770	1,640	1,240	1,210
5	4,970	2,860	12,000	3,130	5,480	7,280	5,710	12,700	4,060	1,880	1,030	1,360
6	3,570	3,830	9,000	3,100	6,510	6,640	6,120	11,100	3,560	2,020	956	1,730
7	2,830	3,820	7,400	3,650	5,930	19,900	7,170	9,780	3,120	2,520	929	23,500
8	2,430	3,510	6,230	3,610	5,290	44,400	11,200	8,810	3,000	2,550	1,010	29,300
9	2,010	3,480	5,490	3,450	4,810	36,300	10,300	7,820	2,790	3,970	1,190	17,500
10	1,960	3,070	4,950	3,280	4,500	22,200	9,470	7,170	2,700	3,460	1,200	11,000
11	1,940	2,740	4,660	3,090	4,070	44,200	9,210	6,340	2,460	2,700	1,030	6,810
12	1,820	2,520	4,360	3,020	3,900	62,700	12,200	5,990	2,470	2,290	955	4,760
13	1,410	2,380	4,530	2,900	3,660	45,500	12,900	5,470	2,470	1,890	934	3,670
14	1,690	2,290	4,730	2,750	3,540	28,200	21,900	5,270	2,880	1,650	980	3,080
15	1,830	2,100	4,350	2,750	3,280	20,600	28,100	5,740	3,130	1,600	2,510	2,850
16	1,760	2,060	3,660	2,770	3,230	17,300	21,900	6,500	2,590	1,700	4,310	2,390
17	1,810	2,650	3,290	2,870	3,250	14,600	28,800	11,300	2,240	1,350	2,550	1,940
18	1,840	7,110	3,700	2,750	3,030	12,000	62,200	23,300	2,090	1,170	2,480	2,210
19	1,620	6,500	3,820	2,800	2,980	10,400	48,000	26,300	2,030	1,250	2,320	1,940
20	1,690	5,480	3,730	2,680	2,920	9,300	27,700	25,200	2,440	1,040	1,840	2,030
21	2,010	5,130	3,550	2,800	2,890	8,430	21,500	20,400	5,800	1,070	1,510	2,020
22	2,370	4,510	3,450	2,600	2,820	8,010	16,900	15,900	4,070	1,190	1,450	2,030
23	2,630	4,210	3,410	2,570	2,670	7,410	13,000	12,500	2,860	990	1,320	2,870
24	2,270	3,900	3,150	2,530	2,880	7,100	11,400	11,200	2,550	1,020	1,500	8,530
25	1,820	3,600	3,140	2,380	2,940	6,900	10,100	10,300	2,330	1,200	1,550	6,990
26	1,670	3,430	3,050	2,730	3,090	7,170	9,250	9,100	2,210	1,090	1,860	5,220
27	1,710	3,300	3,090	3,750	3,440	8,360	8,570	7,480	2,120	1,100	2,220	4,160
28	3,010	3,160	3,080	3,940	3,950	8,200	9,230	6,330	2,260	1,250	3,230	3,710
29	4,920	3,050	3,000	4,150	---	7,710	11,200	6,150	2,410	1,160	2,890	4,150
30	5,330	2,910	2,890	3,930	---	7,270	29,500	7,970	2,190	1,060	2,260	4,030
31	4,230	---	2,890	3,510	---	6,940	---	8,520	---	1,050	1,740	---
Total	126,910	104,690	188,780	95,490	108,220	512,140	488,120	366,540	95,900	53,280	52,714	164,960
Mean	4,094	3,490	6,090	3,080	3,865	16,520	16,270	11,820	3,197	1,719	1,700	5,499
Max	24,700	7,110	33,700	4,150	6,510	62,700	62,200	26,300	6,940	3,970	4,310	29,300
Min	1,410	2,060	2,890	2,380	2,670	5,320	5,710	5,270	2,030	990	929	1,210
Cfsm	0.61	0.52	0.90	0.46	0.57	2.45	2.41	1.75	0.47	0.25	0.25	0.81
In.	0.70	0.58	1.04	0.53	0.60	2.82	2.69	2.02	0.53	0.29	0.29	0.91

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1937 - 2011, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	4,036	5,042	7,142	9,005	10,390	12,570	10,910	7,874	5,578	3,151	3,415	3,415
Max	19,090	30,480	26,480	25,300	34,960	32,740	35,900	24,280	30,910	11,300	21,710	18,390
(WY)	(1938)	(1986)	(1949)	(1937)	(1998)	(1993)	(1987)	(1989)	(1972)	(1972)	(1969)	(1996)
Min	177	338	450	837	1,652	2,988	2,766	2,137	904	76.1	149	125
(WY)	(1942)	(1942)	(1966)	(1966)	(2002)	(1981)	(1966)	(1941)	(1964)	(1966)	(1966)	(1963)

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SUMMARY STATISTICS

	Calendar Year 2010		Water Year 2011		Water Years 1937 - 2011	
Annual total	2,550,813		2,357,744			
Annual mean	6,989		6,460		6,858	
Highest annual mean					13,540	1973
Lowest annual mean					2,110	2002
Highest daily mean	101,000	Jan 27	62,700	Mar 12	^a 296,000	Jun 23, 1972
Lowest daily mean	535	Sep 24	929	Aug 7	^b 10	Many days ^c
Annual seven-day minimum	619	Sep 20	1,040	Aug 7	10	Many days
Maximum peak flow			67,400	Apr 18	313,000	Jun 23, 1972
Maximum peak stage			15.07	Apr 18	28.62	Jun 23, 1972
Instantaneous low flow			861	Jul 23 ^d	(e)	
Annual runoff (cfsm)	1.03		0.957		1.02	
Annual runoff (inches)	14.05		12.99		13.80	
10 percent exceeds	15,500		13,900		15,000	
50 percent exceeds	3,730		3,380		4,090	
90 percent exceeds	976		1,480		990	

^a Includes canal flow.

^b Result of diversion.

^c In September 1966, September and October 1968, and October 1970.

^d Also July 24, 2011.

^e Not determined.

