

JAMES RIVER BASIN

02037000 JAMES RIVER AND KANAWHA CANAL NEAR RICHMOND, VA

LOCATION.--Lat 37°33'52", long 77°34'28", Henrico County, Hydrologic Unit 02080205, on left bank 75 ft downstream from Canal bridge, 400 ft downstream from head gates, 1,200 ft north of north end of Boshier Dam on James River, 1.6 mi upstream from Huguenot Memorial Bridge, and 2.0 mi west of Richmond city limits.

PERIOD OF RECORD.--September 1936 to current year.

GAGE.--Water-stage recorder. Datum of gage is 106.07 ft above sea level. Prior to Oct. 1, 1938, at datum 3.06 ft higher.

REMARKS.--Records good except those for period of no gage-height record, Sep. 13, 14, which are fair. Canal diverts from James River 1,200 ft upstream from Boshier Dam and discharges into river at several points downstream from gaging station near Richmond. Beginning with the 1969 water year, the descriptive statement that above 2,540 ft³/s, gage height, 14.5 ft, there is interchange of flow with the James River and that discharge above 2,540 ft³/s is included in discharge for the James River near Richmond (station 02037500) has been used. Daily discharges in excess of 2,540 ft³/s for water years 1937-68 should be used with caution until historical records of canal construction and modifications can be reviewed. Figures given show flow in canal only. Probably no flow at times when head gates were closed. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

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

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 727 ft³/s, Sep 16, maximum gage height, 8.49 ft, Sep 16; minimum discharge, 4.8 ft³/s, Apr 9, result of head gates being opened.

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	135	150	10	7.2	7.7	246	5.4	196	144	267	266	155
2	135	151	10	7.2	7.7	248	5.5	194	143	267	265	156
3	135	155	10	24	7.6	247	5.3	194	143	264	261	154
4	137	153	10	21	55	248	5.2	192	143	268	249	157
5	139	155	10	12	260	200	5.2	192	142	266	224	201
6	138	157	10	8.9	262	72	5.1	191	141	264	217	192
7	139	159	10	8.4	259	26	5.2	184	142	264	219	179
8	141	158	10	8.3	252	8.7	5.1	171	141	263	219	154
9	142	159	12	8.2	248	5.5	5.1	169	135	263	219	150
10	148	159	10	7.9	244	5.3	6.0	170	126	264	217	147
11	151	161	10	7.7	240	5.2	5.4	176	126	264	217	145
12	147	163	10	7.7	242	5.1	5.3	180	126	266	217	142
13	150	164	36	7.6	241	5.0	5.4	176	125	265	216	e140
14	150	165	31	7.6	240	6.4	32	190	126	266	217	e136
15	148	165	14	11	237	55	196	197	125	268	220	141
16	149	165	7.4	8.8	234	51	203	194	126	272	218	414
17	146	124	7.0	8.2	234	30	200	204	174	267	217	129
18	145	26	7.0	8.6	238	15	198	197	273	265	220	115
19	147	12	7.0	8.5	248	8.1	197	187	268	265	221	124
20	147	12	6.9	8.2	260	6.4	197	180	277	269	247	158
21	147	12	6.8	8.0	261	7.4	198	175	275	264	206	192
22	149	12	6.8	7.8	264	12	198	174	279	265	182	197
23	149	12	7.0	7.7	258	9.5	197	192	279	264	184	175
24	148	11	8.7	39	254	7.1	200	183	272	266	198	160
25	146	11	7.9	70	248	6.2	198	177	266	268	196	159
26	145	11	7.5	52	246	5.8	198	172	264	265	161	157
27	149	11	7.4	36	245	5.6	197	170	263	265	157	157
28	147	11	7.4	22	245	5.6	196	164	267	269	161	185
29	147	10	7.4	14	---	5.5	197	150	275	265	159	153
30	149	10	7.2	9.6	---	5.3	197	147	275	265	157	175
31	150	---	7.2	8.1	---	5.2	---	145	---	264	156	---
TOTAL	4495	2824	319.6	471.2	6038.0	1568.9	3268.2	5583	5861	8237	6483	4999
MEAN	145	94.1	10.3	15.2	216	50.6	109	180	195	266	209	167
MAX	151	165	36	70	264	248	203	204	279	272	266	414
MIN	135	10	6.8	7.2	7.6	5.0	5.1	145	125	263	156	115

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STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1937 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	585	614	636	657	672	660	676	655	662	599	584	565
MAX	1078	1014	1220	1145	1086	1094	1108	1086	1061	956	1108	937
(WY)	1949	1948	1949	1949	1979	1951	1951	1952	1951	1940	1940	1949
MIN	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60
(WY)	a1981	a1980	a1980	a1980	a1980	a1980	a1980	a1980	a1980	a1980	a1980	a1980

SUMMARY STATISTICS FOR 1998 CALENDAR YEAR FOR 1999 WATER YEAR WATER YEARS 1937 - 1999

ANNUAL TOTAL	22289.8	50147.9	
ANNUAL MEAN	61.1	137	630
HIGHEST ANNUAL MEAN			1023
LOWEST ANNUAL MEAN			1.48
HIGHEST DAILY MEAN	165	Nov 14	414
LOWEST DAILY MEAN	c2.3	Jun 14	c5.0
ANNUAL SEVEN-DAY MINIMUM	c2.6	Jun 2	c5.2
INSTANTANEOUS PEAK FLOW			727
INSTANTANEOUS PEAK STAGE			8.49
INSTANTANEOUS LOW FLOW			4.8
10 PERCENT EXCEEDS	148		264
50 PERCENT EXCEEDS	21		153
90 PERCENT EXCEEDS	7.2		7.2

- a Estimated, leakage through head gates; also 1983.
- b See REMARKS.
- c Result of headgates being closed.
- d Probably no flow at times when headgates were closed prior to 1958.
- e Estimated.
- f Many days in 1937-38, 1949-50, 1952, 1954-55, and 1957.
- g Interchange of flow with James River makes maximum discharge indeterminate.
- h From floodmarks.

