02035000 JAMES RIVER AT CARTERSVILLE, VA

LOCATION.--Lat 37°40'16", long 78°05'09", NAD83, Goochland County, Hydrologic Unit 02080205, on left bank 200 ft downstream from bridge on State Highway 45 at Cartersville, 1.8 mi downstream from Willis River, and at mile 156.4.

DRAINAGE AREA.--6,257 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1898 to current year. Monthly discharge only for some periods, published in WSP 1303.

REVISED RECORDS.--WSP 972: 1936(M). WSP 1203: 1901-2(M), 1923-25(M), 1928(M). WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 163.90 ft above sea level. Prior to June 4, 1927, nonrecording gage at same site and datum.

REMARKS.--Records fair. Moderate diurnal fluctuation caused by powerplants upstream from station. National Weather Service gage-height telemeter at station. Maximum discharge, 362,000 ft^3/s, from rating curve extended above 160,000 ft^3/s on basis of slope-conveyance study. Minimum gage height, 0.02 ft, Sept. 13, 14, 1966.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 40,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)

No peak greater than base discharge.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4640	1490	1850	2190	3440	3580	28400	2660	6970	2050	4300	1340
2	4120	1450	1870	2040	3310	3730	20800	2830	6060	1870	4390	1250
3	3430	1260	1880	2140	4090	3540	17600	2670	5660	1640	3090	1400
4	3300	1150	1660	2150	3820	3430	15200	2500	4990	1620	2070	1500
5	2970	1120	1680	1910	3430	3460	12900	2590	4430	1570	2170	1440
6	2900	1340	1850	2030	3300	3520	11000	2700	5060	1430	1640	1810
7	2560	1500	1560	2220	3090	3290	9760	2700	6190	1490	1570	1240
8	2390	1340	1640	2220	2950	3380	8730	2880	6210	1480	2170	1080
9	e2210	1430	1610	2260	2930	3170	8060	3120	5250	1430	1940	1120
10	e2160	1620	1610	2370	2830	2960	7330	2960	4410	1490	1410	1030
11	e2180	1690	1540	2180	2690	2840	7730	2320	3880	1540	1280	850
12	2030	2180	1560	2060	2600	2640	8320	2140	3380	1420	1460	778
13	1970	2240	1600	1970	2480	2750	8010	2130	3200	1490	1940	855
14	2110	2400	1520	1880	2480	2780	7590	2070	2750	1340	2770	997
15	1930	2420	1750	1990	2730	2940	7040	1910	2690	1190	2710	1050
16	1850	2050	2100	1880	2520	2990	6440	1790	3140	1070	2880	1050
17	1930	1890	e3000	1880	3190	3300	6030	1830	3280	995	2750	1130
18	1790	1920	e7000	1890	4560	3390	5290	2100	3420	1090	1740	994
19	1880	1920	8090	2170	3880	3140	4790	2820	2870	1210	1470	1310
20	1680	1880	9030	4830	3310	3560	4560	3610	2210	1430	1400	1000
21	1770	1500	6680	9140	3150	11800	4370	4760	2410	1400	1300	915
22	1660	1570	5350	11300	3220	29000	4240	8140	2500	1200	1320	782
23	1610	1220	4230	10100	3100	27000	4090	10400	3550	1220	1460	770
24	2500	1080	3610	7630	3150	18300	3910	27000	6280	1150	1320	912
25	2470	1460	3300	6210	3150	14700	3840	21600	4640	1070	1260	1030
26	1660	1660	2640	5410	3190	11800	3630	15900	3390	1010	1280	1460
27	1650	2610	2790	4580	3480	9250	3290	19900	2960	1280	1380	1650
28	1360	2580	2720	4130	3430	7730	3250	19800	2640	1370	1200	1410
29	1030	2230	2640	3670	---	7170	3080	14300	2060	1910	1240	1270
30	1450	2080	2390	3410	---	27100	3020	11300	1950	3600	1200	960
31	1420	---	2370	3410	---	30300	---	8950	---	4160	1580	---
TOTAL	68610	52280	93120	113250	89500	258540	242300	212380	118430	48215	59690	34383
MEAN	2213	1743	3004	3653	3196	8340	8077	6851	3948	1555	1925	1146
MAX	4640	2610	9030	11300	4560	30300	28400	27000	6970	4160	4390	1810
MIN	1030	1080	1520	1880	2480	2640	3020	1790	1950	995	1200	770
CFSM	.35	.28	.48	.58	.51	1.33	1.29	1.09	.63	.25	.31	.18
IN.	.41	.31	.55	.67	.53	1.54	1.44	1.26	.70	.29	.35	.20

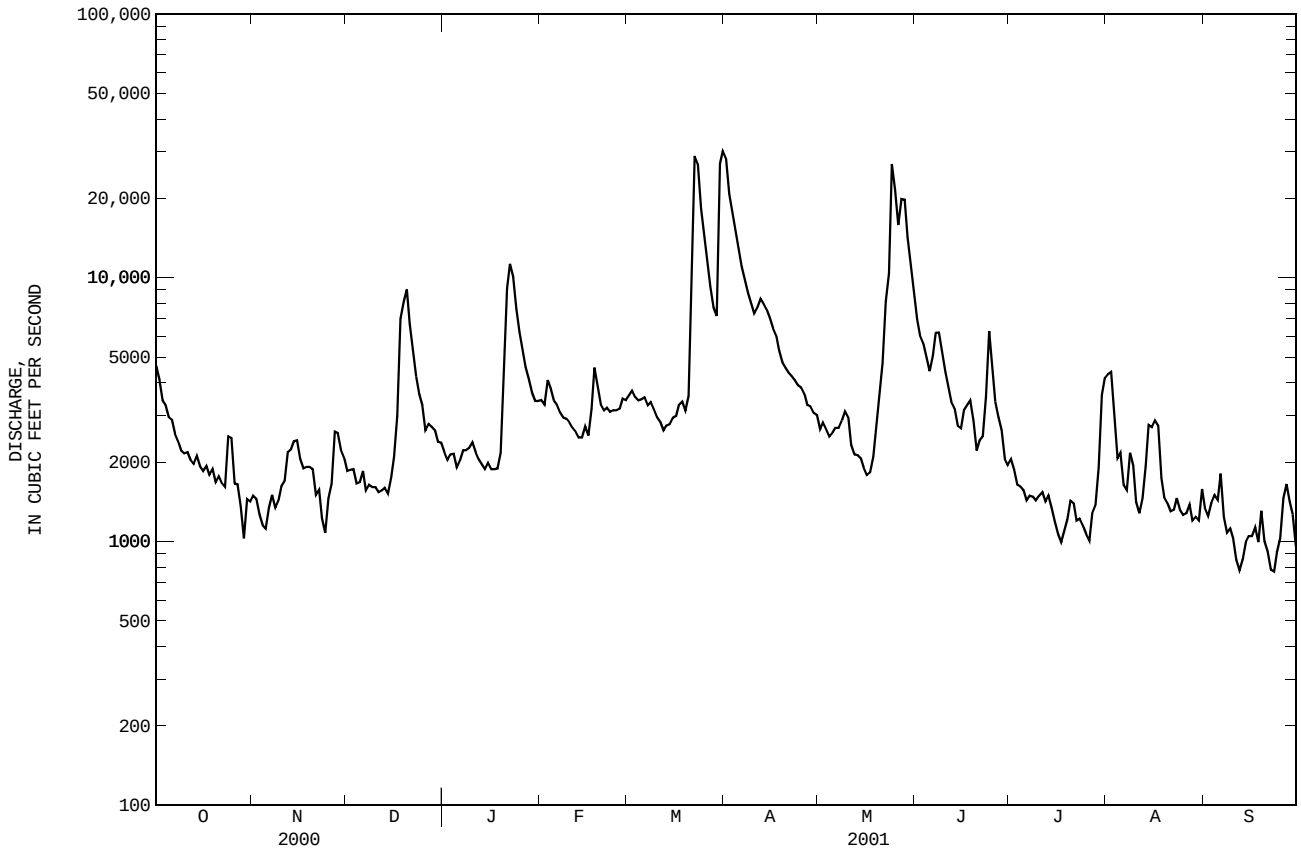
02035000 JAMES RIVER AT CARTERSVILLE, VA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1899 - 2001, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	4214	4720	6939	9515	10810	13060	11030	7922	6009	3766	3978	3560
MAX	20830	28210	25990	26480	33750	31810	33500	23530	30330	15070	20490	18140
(WY)	1907	1986	1949	1936	1998	1993	1987	1989	1972	1919	1969	1996
MIN	528	924	1054	1353	2055	2646	3286	2710	1544	605	652	561
(WY)	1931	1931	1966	1956	1934	1981	1995	1930	1999	1966	1930	1930

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1899 - 2001	
ANNUAL TOTAL	1756220		1390698			
ANNUAL MEAN	4798		3810		7107	
HIGHEST ANNUAL MEAN					12410	1973
LOWEST ANNUAL MEAN					2981	1981
HIGHEST DAILY MEAN	27600	Apr 20	30300	Mar 31	280000	Jun 22 1972
LOWEST DAILY MEAN	1030	Oct 29	770	Sep 23	330	Sep 14 1966
ANNUAL SEVEN-DAY MINIMUM	1310	Nov 3	944	Sep 10	386	Sep 8 1966
MAXIMUM PEAK FLOW			37800	Mar 30	362000	Jun 22 1972
MAXIMUM PEAK STAGE			13.44	Mar 30	a37.87	Jun 22 1972
INSTANTANEOUS LOW FLOW			b765	cSep 11	316	Sep 13 1966
ANNUAL RUNOFF (CFSM)	.77		.61		1.14	
ANNUAL RUNOFF (INCHES)	10.44		8.27		15.43	
10 PERCENT EXCEEDS	9240		7730		14900	
50 PERCENT EXCEEDS	3480		2470		4430	
90 PERCENT EXCEEDS	1730		1240		1440	

a From floodmarks.
b May have been affected by regulation.
c Also Sept. 12, 22, 23, 24, 2001.
e Estimated.



02035000 JAMES RIVER AT CARTERSVILLE, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1930, 1948, 1967 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: April 1968 to January 1976, October 1980 to May 1981, October 1991 to September 1994.
WATER TEMPERATURE: April 1968 to January 1976, October 1980 to May 1981, October 1991 to September 1994.
SUSPENDED-SEDIMENT DISCHARGE: October 1980 to May 1981.

COOPERATION.--Water samples, as noted, were collected by the U.S. Geological Survey and analyzed by the Virginia Division of Consolidated Laboratory Services (VDCLS), using analytical methods approved by the U.S. Geological Survey. Analyses performed by VDCLS are reported to U.S. Geological Survey rounding specifications. Results of chemical analyses provided by VDCLS were quality-assured and approved by the U.S. Geological Survey.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DATE	TIME	SAMPLE TYPE	TEMPER-ATURE WATER (DEG C) (00010)	TEMPER-ATURE AIR (DEG C) (00020)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	AGENCY COL-LECTING SAMPLE (CODE NUMBER) (00027)	AGENCY ANA-LYZING SAMPLE (CODE NUMBER) (00028)	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	GAGE HEIGHT (FEET) (00065)	TUR-BID-ITY (NTU) (00076)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	OXYGEN, DIS-SOLVED (MG/L) (00300)
OCT												
10...	1225	BLANK	--	--	--	USGS	VDCLS	--	--	1.1	--	--
10...	1230	ENVIRONMENTAL	15.3	15.5	753	USGS	VDCLS	2160	--	8.7	198	10.2
NOV												
09...	0945	ENVIRONMENTAL	13.4	18.0	749	USGS	VDCLS	1570	1.30	1.7	300	9.8
DEC												
06...	1000	ENVIRONMENTAL	3.6	1.5	760	USGS	VDCLS	1800	1.44	4.0	324	13.3
18...	0900	ENVIRONMENTAL	5.5	.5	757	USGS	VDCLS	8750	5.01	45	186	12.7
JAN												
03...	0815	ENVIRONMENTAL	.5	-3.5	760	USGS	VDCLS	2210	1.62	5.2	198	14.0
03...	0830	REPLICATE	.5	-3.5	760	USGS	VDCLS	2190	1.62	4.5	198	14.0
23...	0945	ENVIRONMENTAL	2.1	0.0	760	USGS	VDCLS	10400	5.57	33	335	13.0
23...	1000	REPLICATE	2.1	0.0	760	USGS	VDCLS	10300	5.57	28	335	13.0
FEB												
07...	0930	ENVIRONMENTAL	5.5	4.0	760	USGS	VDCLS	3110	2.33	4.4	239	12.5
MAR												
06...	0830	ENVIRONMENTAL	7.0	0.0	742	USGS	VDCLS	3650	2.66	3.5	217	13.9
06...	0835	REPLICATE	7.0	0.0	742	USGS	USGS	3650	2.66	--	217	13.9
22...	0915	ENVIRONMENTAL	8.0	9.0	759	USGS	VDCLS	30800	11.75	220	126	8.4

DATE	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	RESIDUE VOLA-TILE, SUS-PENDED (MG/L) (00535)	RESIDUE FIXED NON FILTER-ABLE (MG/L) (00540)	NITROGN TOTAL SEDIMNT SUSP TOTAL AS N (MG/L) (00601)	NITRO-GEN DIS-SOLVED (MG/L AS N) (00602)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)
OCT													
10...	--	<3	<3	<3	<.01	.02	<.004	<.002	.004	--	--	<.004	--
10...	7.0	<3	<3	<3	.02	.22	.009	<.002	.043	--	--	.043	--
NOV													
09...	7.8	<3	<3	<3	.02	.28	<.004	<.002	.006	--	--	.006	--
DEC													
06...	7.1	<3	<3	<3	.03	.23	<.004	<.002	.041	--	--	.042	--
18...	7.2	55	11	44	.35	.43	.011	<.002	.130	--	--	.131	--
JAN													
03...	7.0	<3	<3	<3	.04	.53	.086	.019	.359	--	--	.378	--
03...	7.0	<3	<3	<3	.03	.54	.056	.015	.352	--	--	.367	--
23...	7.3	40	7	33	.35	.39	.017	.004	.182	--	--	.186	--
23...	7.3	38	7	31	.02	.36	.010	.005	.185	--	--	.190	--
FEB													
07...	7.8	<3	<3	<3	.06	.31	<.004	<.002	.069	--	--	.069	--
MAR													
06...	7.2	3	<3	<3	.05	.21	<.004	<.002	.010	--	--	.010	--
06...	7.2	<10	--	--	--	.23	.008	--	--	.22	.22	.008	<.060
22...	6.8	401	58	343	1.5	.67	.067	.005	.254	--	--	.259	--

02035000 JAMES RIVER AT CARTERSVILLE, VA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DATE	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS TOTAL SEDIMNT SUSP TOTAL AS P (MG/L) (00667)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	CARBON, INORG + ORGANIC PARTIC. TOTAL (MG/L AS C) (00694)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	DATA BASE NUMBER
OCT							
10...	.002	.001	.002	.1	.1	--	02
10...	.035	.006	.027	.2	5.5	3	01
NOV							
09...	.060	.007	.004	.2	5.1	M	01
DEC							
06...	.051	.008	.034	.3	2.7	1	01
18...	.039	.107	.016	3.1	4.7	66	01
JAN							
03...	.057	.013	.046	.4	7.1	2	01
03...	.056	.013	.042	.3	7.2	2	02
23...	.048	.094	.023	2.7	4.1	46	01
23...	.041	.008	.028	.1	4.0	46	02
FEB							
07...	.037	.014	.026	.4	2.0	3	01
MAR							
06...	.013	.014	.013	.3	2.8	4	01
06...	E.039	--	E.005	--	3.0	--	02
22...	.031	.775	.012	13	4.9	373	01

Remark codes used in this report:
< -- Less than
E -- Estimated value

Null value remark codes used in this report:
M -- Presence verified, not quantified