JAMES RIVER BASIN

02041650 APPOMATTOX RIVER AT MATOACA, VA

LOCATION.--Lat 37°13'28", long 77°28'32", Chesterfield County, Hydrologic Unit 02080207, on left bank at upstream side of bridge on State Highway 600, 0.2 mi south of Matoaca, 2.0 mi upstream from Rohoic Creek, 2.8 mi downstream from Lake Chesdin, 3.5 mi west of Petersburg, and at mile 15.9.

DRAINAGE AREA.--1,344 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1969 to current year.

GAGE.--Water-stage recorder. Datum of gage is 68.30 ft above sea level.

REMARKS.--Records good except those for period of no gage-height record, Oct. 19, 20, which are fair. Flow regulated by Appomattox Water Authority at Lake Chesdin, capacity, 36,000 acre-ft, 2.8 mi upstream from which an average of 36.3 ft^3/s is diverted for industrial and municipal use. Records do not include flow of Upper Appomattox Canal of city of Petersburg which diverts around station. National Weather Service gage-height telemeter at station.

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

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 14,100 ft^3/s, Mar. 21, gage height, 11.97 ft; minimum, 64 ft^3/s, Sept. 11, result of regulation; minimum daily, 69 ft^3/s, Sept. 18, result of regulation.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	100	358	686	1440	9050	2140	1690	1200	731	311	119	96
2	101	366	656	1270	9250	1880	1650	1450	570	267	120	95
3	101	341	811	961	9330	1880	1270	1820	660	305	115	95
4	104	434	791	829	8970	1790	2420	1800	516	299	102	111
5	106	541	838	752	8820	1770	4260	1370	514	292	98	98
6	106	511	612	745	8930	1590	5390	1630	517	265	92	95
7	106	676	727	699	9230	1470	5300	2050	515	245	89	94
8	109	1080	589	1010	9030	1560	5000	2330	474	158	86	96
9	132	1450	577	1430	9050	4970	4400	5230	429	194	91	93
10	146	1740	618	1590	9050	8080	3190	5710	596	238	104	70
11	124	1470	598	1740	8180	7580	2610	5290	546	235	139	75
12	98	1050	700	1440	4670	6740	2180	4990	685	230	253	131
13	96	676	796	1290	3030	5690	1850	3930	650	274	349	134
14	96	749	680	1110	3280	3560	1640	2290	723	256	187	114
15	104	821	608	1200	2880	2200	1530	2060	724	228	104	83
16	102	932	560	2160	2150	1840	1410	1750	630	214	128	74
17	103	821	557	3390	2570	1640	1960	1370	541	152	133	70
18	101	672	515	4050	6420	2170	4190	1180	628	144	126	69
19	e100	590	524	3680	7430	6990	5340	936	533	142	260	74
20	e108	530	507	2560	7230	10800	5800	832	878	137	262	81
21	442	532	457	2000	6670	13600	5530	754	699	125	191	102
22	463	1060	597	1740	6390	13400	5170	675	669	121	119	101
23	254	1410	587	2050	6670	13200	3480	723	601	120	118	98
24	372	1570	583	5720	6120	13200	2420	692	885	116	116	99
25	329	1410	874	7100	6090	12100	2030	799	822	106	116	98
26	298	1140	1130	7040	5760	10500	1780	747	633	104	116	98
27	349	679	1330	6480	4030	8340	1600	1120	505	103	119	98
28	363	538	1660	8630	2610	3990	1420	1310	363	110	123	100
29	448	530	1890	9750	---	2420	1310	1310	400	116	113	101
30	467	686	1980	10200	---	2000	1250	1210	355	117	112	98
31	392	---	1710	9830	---	1770	---	1020	---	119	106	---
TOTAL	6320	25363	25748	103886	182890	170860	89070	59578	17992	5843	4306	2841
MEAN	204	845	831	3351	6532	5512	2969	1922	600	188	139	94.7
MAX	467	1740	1980	10200	9330	13600	5800	5710	885	311	349	134
MIN	96	341	457	699	2150	1470	1250	675	355	103	86	69
(†)	1293	1009	965	982	879	905	910	1089	1139	1340	1388	1343

CAL YR 1997	TOTAL	367556	MEAN	1007	MAX	7190	MIN	60	(†)	13481
WTR YR 1998	TOTAL	694697	MEAN	1903	MAX	13600	MIN	69	(†)	13242

† Total diversion, in cubic feet per second, at Lake Chesdin, provided by Appomattox Water Authority.
e Estimated.

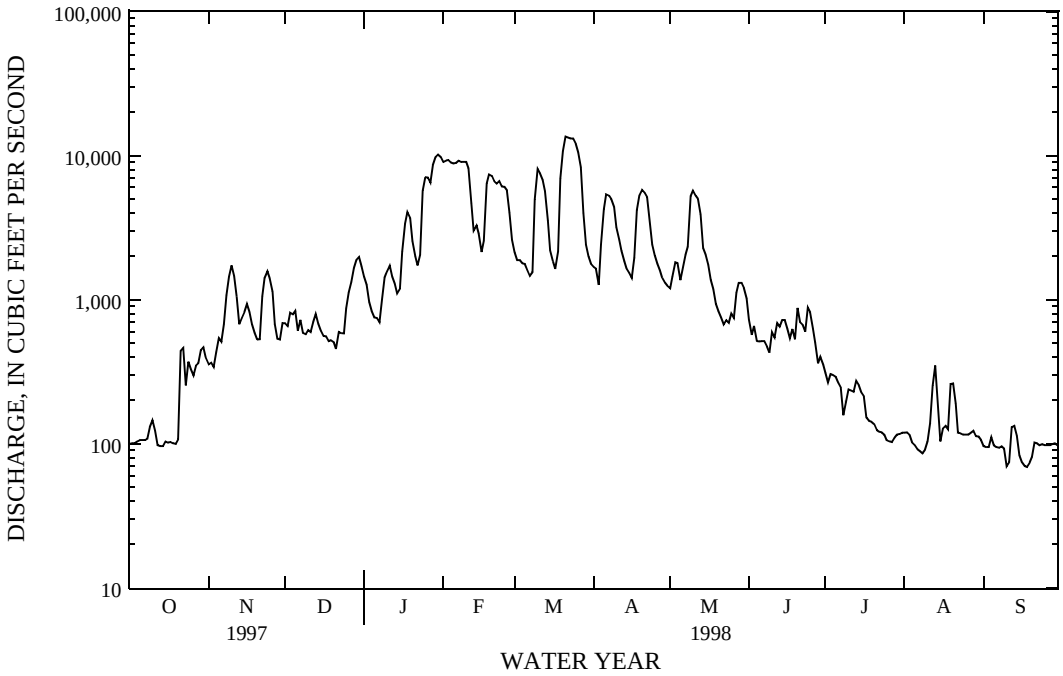
02041650 APPOMATTOX RIVER AT MATOACA, VA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1970 - 1998, BY WATER YEAR (WY) [REGULATED, UNADJUSTED]

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1099	1115	1454	2098	2325	2619	2140	1363	925	570	499	711
MAX	6869	5648	3857	5868	6532	6098	5003	4452	5293	2123	1818	5312
(WY)	1973	1986	1997	1978	1998	1993	1983	1978	1972	1995	1978	1979
MIN	87.8	200	398	384	889	478	498	411	161	99.2	84.5	85.1
(WY)	1994	1970	1981	1981	1977	1981	1985	1985	1970	1986	1987	1993

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1970 - 1998	
ANNUAL TOTAL	367556		694697			
ANNUAL MEAN	1007		1903		1405	
HIGHEST ANNUAL MEAN					2559	1973
LOWEST ANNUAL MEAN					460	1981
HIGHEST DAILY MEAN	7190	May 1	13600	Mar 21	39400	Oct 7 1972
LOWEST DAILY MEAN	a60	Sep 7	a69	Sep 18	a32	Aug 31 1993
ANNUAL SEVEN-DAY MINIMUM	a70	Sep 5	a79	Sep 15	a48	Aug 25 1980
INSTANTANEOUS PEAK FLOW			14100	Mar 21	40800	Oct 7 1972
INSTANTANEOUS PEAK STAGE			11.97	Mar 21	18.39	Oct 7 1972
INSTANTANEOUS LOW FLOW			a64	Sep 11	a26	Aug 31 1993
ANNUAL RUNOFF (CFSM)	.75		1.42		1.05	
ANNUAL RUNOFF (INCHES)	10.17		19.23		14.20	
10 PERCENT EXCEEDS	2080		6230		3500	
50 PERCENT EXCEEDS	612		699		703	
90 PERCENT EXCEEDS	104		101		161	

a Result of regulation.



02041650 APPOMATTOX RIVER AT MATOACA, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years l978 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1991 to September 1993.
WATER TEMPERATURE: October 1991 to September 1993.

COOPERATION.--Chemical data as noted were provided by the Virginia Division of Consolidated Laboratory Services (VDCLS) and reviewed by the U.S. Geological Survey.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	AGENCY ANA-LYZING SAMPLE (CODE NUMBER) (00028)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)
OCT 1997										
07...	1200	104	103	6.9	30.0	22.0	772	VDCLS	2.7	9.2
21...	1045	279	101	6.7	11.5	16.0	768	VDCLS	8.4	9.3
NOV										
06...	1015	665	99	6.7	11.0	14.0	773	VDCLS	14	10.4
10...	1230	1760	99	6.9	15.0	24.0	762	VDCLS	14	10.3
18...	1200	629	97	7.2	9.5	10.0	774	VDCLS	4.9	11.7
DEC										
02...	1215	653	95	7.1	9.0	9.0	770	VDCLS	4.8	12.1
*02...	1230	653	95	7.1	9.0	9.0	770	VDCLS	5.6	12.1
16...	1045	617	91	7.1	6.5	7.0	769	VDCLS	12	12.0
JAN 1998										
07...	1045	795	90	6.7	19.0	7.0	766	VDCLS	15	12.2
18...	0945	4060	88	7.2	8.0	8.0	768	VDCLS	24	11.9
21...	1030	2000	79	6.8	.00	6.0	774	VDCLS	29	13.6
24...	1230	6030	74	7.1	11.0	6.0	760	VDCLS	36	12.7
26...	1330	7030	66	7.8	10.0	6.0	774	VDCLS	43	13.0
*26...	1345	7020	66	7.8	10.0	6.0	774	VDCLS	42	13.0
29...	1015	9790	59	6.3	9.5	5.0	762	VDCLS	51	14.0
FEB										
01...	0930	9110	47	7.1	4.0	5.5	773	VDCLS	73	13.0
07...	0930	9280	47	6.3	4.5	5.0	762	VDCLS	70	14.5
18...	1315	6800	61	6.9	19.0	7.5	756	VDCLS	40	12.2
28...	0915	2650	55	6.0	9.5	9.5	763	VDCLS	34	12.3
MAR										
05...	1045	1810	58	6.9	9.0	10.0	766	VDCLS	25	11.6
17...	1145	1470	54	7.0	8.0	8.5	772	VDCLS	33	11.9
20...	1100	10700	59	6.7	14.5	9.0	759	VDCLS	33	12.0
*20...	1115	10700	59	6.7	14.5	9.0	759	USGS	--	12.0
21...	0830	13800	41	6.6	10.0	8.7	723	VDCLS	41	12.6
22...	1015	13400	37	6.7	8.8	9.0	728	VDCLS	83	12.5
APR										
02...	0800	1650	50	6.9	18.5	15.8	740	VDCLS	22	9.8
05...	0900	4120	59	5.4	7.0	16.0	763	VDCLS	16	10.2
19...	0930	5170	71	7.1	16.5	16.4	757	VDCLS	9.4	--
20...	1100	5860	66	6.8	17.0	17.0	766	VDCLS	18	8.5
*20...	1115	5860	66	6.8	17.0	17.0	766	VDCLS	17	8.5
21...	1145	5470	63	6.9	23.5	17.4	760	VDCLS	49	10.2
MAY										
04...	1000	1830	66	6.5	17.0	18.0	759	VDCLS	9.6	9.2
09...	0900	5200	73	6.2	18.0	18.0	758	VDCLS	8.7	9.2
19...	1045	774	62	7.5	27.0	20.0	767	VDCLS	--	9.6
*19...	1050	772	62	7.5	27.0	20.0	767	USGS	--	9.6
JUN										
08...	1215	617	77	7.6	24.0	24.0	770	VDCLS	4.8	9.4
14...	1000	795	83	6.4	25.0	23.5	757	VDCLS	3.7	7.8
19...	0945	429	84	6.2	24.0	25.0	764	VDCLS	3.0	7.0
*19...	1000	434	84	6.2	24.0	25.0	764	USGS	--	7.0
23...	1130	594	84	6.4	32.0	26.0	769	VDCLS	3.1	7.9
24...	1030	924	82	7.3	24.0	26.0	768	VDCLS	6.8	7.2
JUL										
07...	0945	261	87	7.1	25.0	27.0	768	VDCLS	4.3	7.2
21...	1130	123	99	6.4	34.5	26.0	755	VDCLS	4.3	6.8
AUG										
04...	0915	102	102	7.1	23.5	23.0	758	VDCLS	4.2	7.0
18...	1100	125	103	6.7	34.0	26.5	753	VDCLS	4.7	6.9
SEP										
08...	1000	93	101	7.4	22.0	25.0	745	VDCLS	12	7.1
22...	1130	100	96	6.3	26.5	25.0	748	VDCLS	2.9	7.3

* Replicate sample.

JAMES RIVER BASIN

02041650 APPOMATTOX RIVER AT MATOACA, VA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530) **	RESIDUE FIXED NON FILTER-ABLE (MG/L) (00540) **	RESIDUE VOLA-TILE, SUS-PENDED (MG/L) (00535) **	NITRO-GEN DIS-SOLVED (MG/L AS N) (00602) **	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613) **	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631) **	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608) **
OCT 1997										
07...	104	11	<3	<3	<3	.337	.130	.002	.130	.070
21...	93	18	5	<3	3	.381	.145	.004	.149	.016
NOV										
06...	99	19	14	11	3	.371	.110	.004	.114	.021
10...	122	18	18	14	4	.332	.075	.004	.079	.058
18...	102	18	3	<3	<3	.302	.087	.003	.090	.050
DEC										
02...	104	19	<3	<3	<3	.392	.159	<.002	.159	.032
*02...	104	19	<3	<3	<3	.374	.159	<.002	.159	.025
16...	98	19	5	4	<3	.437	.168	<.002	.168	.031
JAN 1998										
07...	100	18	6	4	<3	.538	.191	<.002	.191	.010
18...	100	17	22	18	4	--	.177	.002	.179	.210
21...	108	16	15	11	4	.564	.208	.002	.210	.018
24...	102	15	29	23	6	.580	.211	.004	.215	.014
26...	103	13	27	21	6	.550	.213	.002	.215	.026
*26...	103	13	26	21	5	.501	.215	.002	.217	.024
29...	110	12	24	19	5	.481	.173	<.002	.173	.012
FEB										
01...	102	9.1	23	18	5	.416	.155	.002	.157	.010
07...	113	9.5	23	18	5	.417	.164	.003	.167	.021
18...	103	14	3	3	<3	.375	.192	<.002	.192	.018
28...	107	11	16	13	3	.436	.157	.002	.159	.018
MAR										
05...	102	13	10	8	<3	.564	.158	<.002	.158	.019
17...	100	12	9	7	<3	.494	.130	<.002	.130	.025
20...	104	12	18	15	3	.418	.157	<.002	.157	.015
*20...	104	11	224	221	3	.34	--	--	.11	.015
21...	114	8.1	34	28	6	.447	.133	.002	.135	.024
22...	113	7.5	35	29	6	.496	.144	.003	.147	.024
APR										
02...	102	11	15	10	5	.326	.075	.002	.077	.024
05...	103	11	11	8	<3	.268	.047	<.002	.047	.024
19...	--	2.5	--	--	--	.337	.061	<.002	.061	.022
20...	87	2.4	10	<3	10	.486	.124	.003	.127	.037
*20...	87	2.4	--	--	--	.400	.124	.003	.127	.040
21...	107	12	--	--	--	.516	.152	.003	.155	.046
MAY										
04...	98	13	8	6	<3	.317	.044	<.002	.044	.015
09...	98	15	9	6	<3	.323	.062	<.002	.062	.026
19...	105	2.6	8	5	<3	.354	.092	.002	.094	.022
*19...	105	12	7	--	<1	.53	--	--	.071	.013
JUN										
08...	111	16	3	<3	<3	.348	.059	.003	.062	.010
14...	92	17	<3	<3	<3	.342	.082	.005	.087	.034
19...	85	18	6	<3	5	.355	.090	.005	.095	.027
*19...	85	17	1	--	7	.33	--	--	.061	.029
23...	97	18	4	<3	<3	.335	.077	.004	.081	.023
24...	88	18	6	3	3	.293	.058	.004	.062	.026
JUL										
07...	90	19	4	<3	<3	.386	.089	.003	.092	.022
21...	85	18	<3	<3	<3	.591	.303	.017	.320	.025
AUG										
04...	82	20	<3	<3	<3	.562	.370	.010	.380	.018
18...	87	20	<3	<3	<3	.607	.371	.016	.387	.041
SEP										
08...	88	19	<3	<3	<3	.576	.352	.009	.361	.014
22...	90	18	<3	<3	<3	.527	.218	.005	.223	--

* Replicate sample.
** For these constituents, there are differences in the minimum constituent reporting levels between the analyzing agencies.
< Actual value is known to be less than the value shown.

JAMES RIVER BASIN

02041650 APPOMATTOX RIVER AT MATOACA, VA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITROGN TOTAL SEDIMNT SUSP TOTAL AS N (MG/L) (00601)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666) **	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS TOTAL SEDIMNT SUSP TOTAL AS P (MG/L) (00667)	CARBON, INORG + ORGANIC SUSP. TOTAL (MG/L AS C) (00694)
OCT 1997								
07...	--	--	.008	--	.018	.011	.001	.20
21...	--	--	.062	--	.030	.015	.005	.42
NOV								
06...	--	--	.061	--	.016	.009	.007	.66
10...	--	--	.099	--	.016	.009	.013	.99
18...	--	--	.019	--	.012	.019	.004	.23
DEC								
02...	--	--	.027	--	.020	.010	.009	2.24
*02...	--	--	.028	--	.020	.009	.009	.23
16...	--	--	.040	--	.010	.016	.013	.41
JAN 1998								
07...	--	--	.058	--	.020	.007	.016	.46
18...	--	--	.099	--	.250	.010	.026	.85
21...	--	--	.073	--	.027	.012	.036	.64
24...	--	--	.145	--	.035	.012	.052	1.16
26...	--	--	.122	--	.024	.016	.051	1.06
*26...	--	--	.126	--	.024	.015	.051	1.10
29...	--	--	.121	--	.036	.013	.046	1.05
FEB								
01...	--	--	.182	--	.030	.017	.066	1.35
07...	--	--	.133	--	.023	.021	.055	1.13
18...	--	--	.072	--	.020	.010	.035	.66
28...	--	--	.086	--	.025	.014	.038	.87
MAR								
05...	--	--	.059	--	.023	.004	.031	.47
17...	--	--	.06	--	.020	.012	.030	.54
20...	--	--	.08	--	.020	.010	.034	.66
*20...	.3	.2	--	.03	<.01	.009	--	--
21...	--	--	.17	--	.030	.021	.056	1.34
22...	--	--	.170	--	.027	.019	.068	1.33
APR								
02...	--	--	.092	--	.040	.007	.024	.63
05...	--	--	.121	--	.014	.006	.023	.87
19...	--	--	.112	--	.019	.006	.022	.80
20...	--	--	.117	--	.022	.010	.029	.90
*20...	--	--	.122	--	.021	.011	.030	1.04
21...	--	--	.083	--	.029	.014	.030	.64
MAY								
04...	--	--	.103	--	.014	.006	.020	.69
09...	--	--	.116	--	.012	.006	.022	.76
19...	--	--	.078	--	.016	.011	.021	.55
*19...	.6	.5	--	.03	<.01	.005	--	--
JUN								
08...	--	--	.055	--	.014	.012	.011	.35
14...	--	--	.062	--	.011	.009	.014	.38
19...	--	--	.049	--	.013	.005	.012	.34
*19...	.3	.3	--	<.01	<.01	.007	--	--
23...	--	--	.062	--	.013	.010	.012	.51
24...	--	--	.094	--	.014	.004	.022	.61
JUL								
07...	--	--	.042	--	.026	.011	.011	.31
21...	--	--	.024	--	.044	.032	.007	.20
AUG								
04...	--	--	.009	--	.049	.038	.006	.11
18...	--	--	.170	--	.045	.035	.008	.19
SEP								
08...	--	--	.018	--	.036	.026	.006	.19
22...	--	--	.015	--	.021	.012	.005	.11

* Replicate sample.
** For these constituents, there are differences in the minimum constituent reporting levels between the analyzing agencies.
< Actual value is known to be less than the value shown.

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