

POTOMAC RIVER BASIN

01625000 MIDDLE RIVER NEAR GROTTOS, VA

LOCATION.--Lat 38°15'42", long 78°51'44", Augusta County, Hydrologic Unit 02070005, on left bank at upstream side of bridge on State Highway 769 at Mount Meridian, 1.8 mi upstream from mouth, and 2.0 mi west of Grottoes.

DRAINAGE AREA.--375 mi².

PERIOD OF RECORD.--April 1927 to current year. Records for February 1925 to September 1926, published in WSP 601 and 621, are unreliable and should not be used.

REVISED RECORDS.--WSP 1051: 1928-29, 1930(M), 1932, 1935-37, 1938(M), 1940. WSP 1171: 1933. WSP 1302: 1928-29(M), 1931-34(M). WSP 2103: Drainage area. See also PERIOD OF RECORD.

GAGE.--Water-stage recorder. Datum of gage is 1,061.51 ft above sea level. Prior to Sep. 1, 1938, nonrecording gage at same site and datum.

REMARKS.--Records good except those for periods with ice effect, Jan. 5-7 and Jan. 12, which are fair. There are discharges of about 6.9 ft³/s from wastewater treatment plants upstream from station. Most of water discharged from treatment plants was diverted from another drainage basin for industrial and municipal supply. Small diurnal fluctuation at low flow caused by mills and irrigation upstream from station. Maximum discharge, 44,300 ft³/s, from rating curve extended above 15,000 ft³/s on basis of slope-area measurement at gage height 33.09 ft. Minimum discharge, 18 ft³/s, result of freezeup. 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 OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1877, that of Sep. 7, 1996.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Sep 30	1730	*1,350	*6.68	No peak greater than base discharge.			

Minimum discharge, 32 ft³/s, Aug 13.

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	103	104	93	84	192	177	242	123	100	56	95	46
2	102	105	90	83	209	162	273	120	97	58	64	44
3	100	115	88	129	233	153	237	117	94	59	57	45
4	105	130	89	265	240	169	218	116	90	57	51	45
5	110	118	87	e170	230	168	208	115	87	56	45	196
6	112	111	88	e154	212	162	196	114	82	53	44	584
7	109	108	90	e145	200	167	186	113	83	57	42	514
8	133	107	95	132	206	164	180	142	81	76	42	338
9	164	106	155	169	193	160	175	318	73	67	45	209
10	131	107	136	659	179	173	173	289	69	62	43	167
11	115	111	111	306	170	174	169	230	68	66	40	140
12	110	121	98	e220	166	168	171	193	70	70	37	124
13	108	116	106	238	162	164	164	172	72	98	37	111
14	107	109	135	235	156	176	153	340	75	84	46	103
15	104	106	120	286	151	290	150	527	72	70	62	99
16	103	106	105	360	148	383	158	406	66	59	49	131
17	103	105	98	295	145	776	150	304	72	54	47	157
18	104	103	95	257	266	1200	143	244	91	50	41	113
19	105	102	91	260	360	924	138	207	81	57	38	99
20	102	101	91	245	338	643	138	183	79	48	49	95
21	102	104	90	218	293	609	137	161	85	45	156	190
22	101	100	91	206	256	886	138	150	84	64	91	250
23	101	97	90	199	222	655	139	184	77	70	70	193
24	100	99	90	535	206	539	150	183	71	57	62	148
25	101	96	92	884	192	457	136	181	65	82	65	126
26	103	96	90	516	183	386	129	148	64	66	65	113
27	105	101	89	362	173	338	129	133	63	56	63	105
28	102	96	95	293	172	310	124	121	63	49	60	165
29	104	96	91	253	---	281	128	115	60	79	56	178
30	102	92	92	222	---	261	129	110	56	73	52	942
31	105	---	90	202	---	239	---	105	---	58	49	---
TOTAL	3356	3168	3061	8582	5853	11514	4961	5964	2290	1956	1763	5770
MEAN	108	106	98.7	277	209	371	165	192	76.3	63.1	56.9	192
MAX	164	130	155	884	360	1200	273	527	100	98	156	942
MIN	100	92	87	83	145	153	124	105	56	45	37	44
CFSM	.29	.28	.26	.74	.56	.99	.44	.51	.20	.17	.15	.51
IN.	.33	.31	.30	.85	.58	1.14	.49	.59	.23	.19	.17	.57

01625000 MIDDLE RIVER NEAR GROTTOS, VA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1928 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	234	235	303	410	473	589	463	344	255	178	195	201
MAX	1138	2019	1111	1436	2288	1704	1674	963	993	705	1017	1887
(WY)	1980	1986	1949	1996	1998	1936	1987	1989	1972	1972	1940	1996
MIN	64.8	58.9	55.8	66.9	91.3	106	95.8	89.7	76.3	47.2	55.6	64.4
(WY)	1964	1931	1966	1981	1931	1981	1981	1969	1999	1966	1977	1932

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR	FOR 1999 WATER YEAR	WATER YEARS 1928 - 1999
ANNUAL TOTAL	220344	58238	
ANNUAL MEAN	604	160	323
HIGHEST ANNUAL MEAN			623
LOWEST ANNUAL MEAN			105
HIGHEST DAILY MEAN	6640	Feb 18	1200
LOWEST DAILY MEAN	87	Dec 5	37
ANNUAL SEVEN-DAY MINIMUM	89	Dec 1	41
INSTANTANEOUS PEAK FLOW			1350
INSTANTANEOUS PEAK STAGE			6.68
INSTANTANEOUS LOW FLOW			32
ANNUAL RUNOFF (CFSM)	1.61	.43	.86
ANNUAL RUNOFF (INCHES)	21.86	5.78	11.69
10 PERCENT EXCEEDS	1550	287	637
50 PERCENT EXCEEDS	261	111	190
90 PERCENT EXCEEDS	101	57	83

- a Also Aug 13, 1999.
- b From high-water mark in gage house.
- c Result of freezeup.
- e Estimated.

