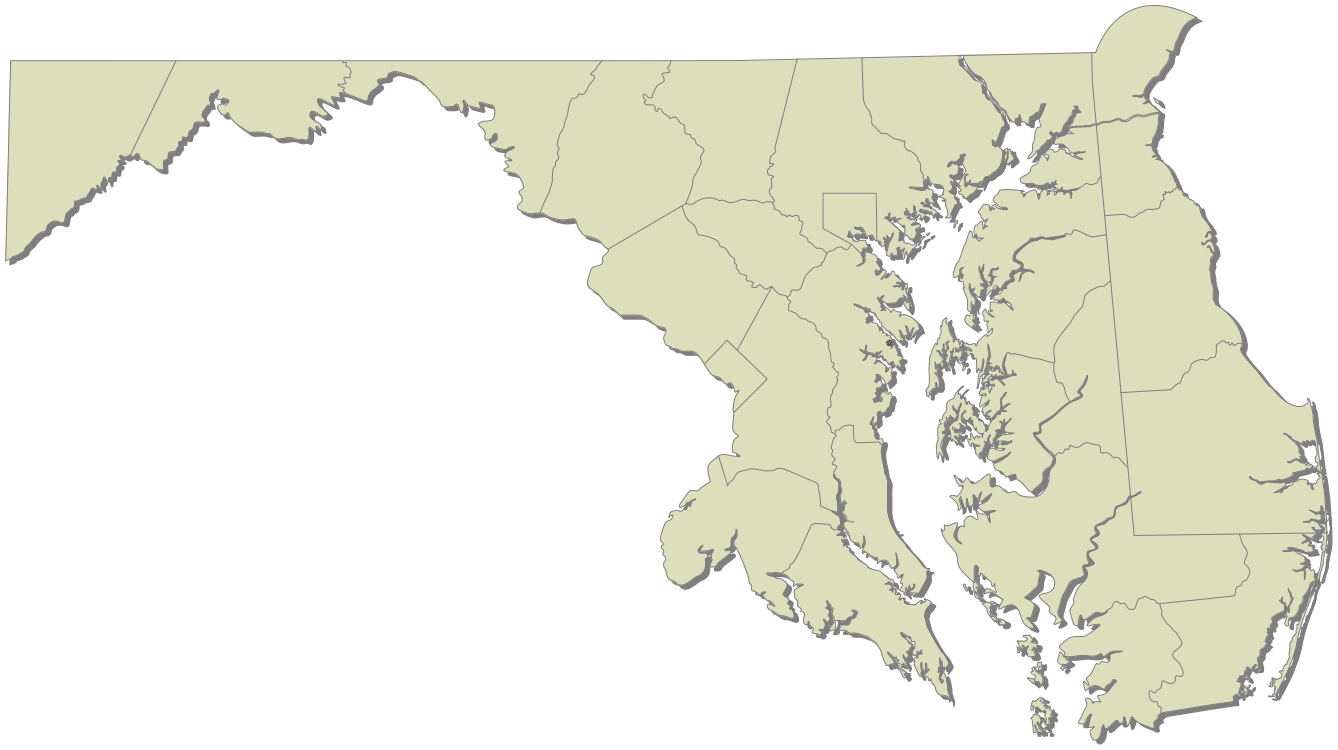
USGS
science for a changing world

Water Resources Data Maryland and Delaware Water Year 2001

Volume 1. Surface-Water Data

Water-Data Report MD-DE-01-1



U.S. Department of the Interior
U.S. Geological Survey

Prepared in cooperation with the States of Maryland and Delaware and with other agencies

CALENDAR FOR WATER YEAR 2001

2000

OCTOBER

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

NOVEMBER

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

DECEMBER

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

2001

JANUARY

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

FEBRUARY

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28			

MARCH

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

APRIL

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

MAY

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

JUNE

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

JULY

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

AUGUST

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

SEPTEMBER

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

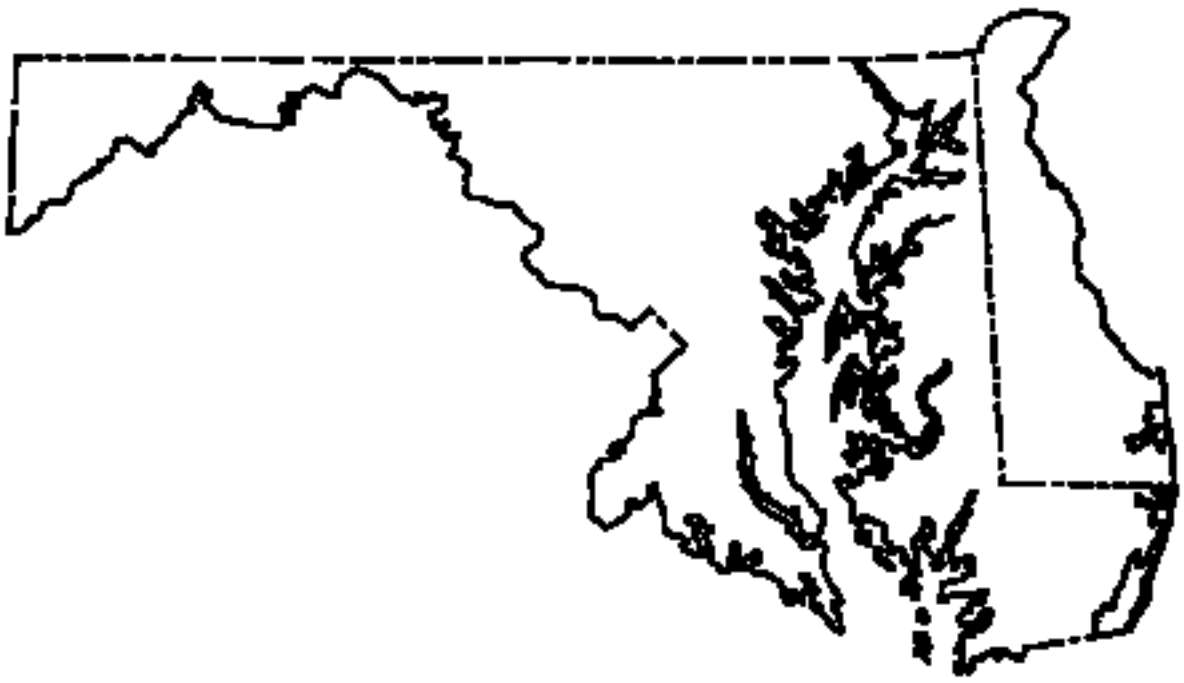
U.S. Department of the Interior
U.S. Geological Survey

Water Resources Data Maryland and Delaware Water Year 2001

Volume 1. Surface-Water Data

By Robert W. James, Richard W. Saffer, Robert H. Pentz, Anthony J. Tallman

Water-Data Report MD-DE-01-1



Prepared in cooperation with
the States of Maryland and Delaware and with other agencies

UNITED STATES DEPARTMENT OF THE INTERIOR

GAIL A. NORTON, Secretary

U.S. GEOLOGICAL SURVEY

Charles G. Groat, Director

Robert M. Hirsch, Chief Hydrologist

For additional information write to
District Chief, Water Resources Division
U.S. Geological Survey
8987 Yellow Brick Road
Baltimore, Maryland 21237

2002

PREFACE

This volume of the annual hydrologic data report for Maryland and Delaware is one of a series of annual reports that document hydrologic data gathered from the U.S. Geological Survey's surface- and ground-water data-collection networks in each State, Puerto Rico, and the Trust Territories. These records of streamflow, ground-water levels, and quality of water provide the hydrologic information needed by State, local, and Federal agencies, and the private sector for developing and managing our Nation's land and water resources. Hydrologic data for Maryland, Delaware, and the District of Columbia are contained in two volumes:

Volume 1. Surface-Water Data

Volume 2. Ground-Water Data

This report (Volume 1) is the culmination of a concerted effort by dedicated personnel of the U.S. Geological Survey, Maryland Geological Survey, and Delaware Geological Survey, who collected, compiled, analyzed, verified, and organized the data, and who typed, edited, and assembled the report. In addition to the authors, who had primary responsibility for assuring that the information contained herein is accurate, complete, and adheres to Geological Survey policy and established guidelines, the following individuals contributed significantly to the collection, processing, and tabulation of the data:

J. E. Beman	J. M. Fisher	E. H. Marchand
D. A. Bringman	J. L. Griffith	W. C. Lewis
J. E. Broadwater	D. C. Hudson	R. H. Pentz
D. P. Brower	J. R. Jeffries	A. J. Ruddy
F. A. Danner	J. P. Kempf	R. W. Saffer
J. R. Dine	J. J. Kvech	C. J. Strain
E. J. Doheny	B. F. Majedi	A. J. Tallman
J. B. Evans	J. J. Manning	

This report was prepared under the general supervision of J. M. Gerhart, District Chief, MD-DE-DC District, and Cathrine A. Hill, Northeastern Regional Executive, and in cooperation with the States of Maryland and Delaware and with other agencies.

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

1. AGENCY USE ONLY *(Leave blank)*	2. REPORT DATE	3. REPORT TYPE AND DATES COVERED
	February 2002	Annual - Oct. 1, 2000, to Sept. 30, 2001

4. TITLE AND SUBTITLE

Water Resources Data - Maryland and Delaware, Water Year 20001
Volume 1. Surface-Water Data

5. FUNDING NUMBERS

6. AUTHOR(S)

Robert W. James, Jr., Richard. W. Saffer, Robert H. Pentz, and Anthony. J. Tallman

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)

U.S. Geological Survey, Water Resources Division
8987 Yellow Brick Road
Baltimore, MD 21237

8. PERFORMING ORGANIZATION REPORT NUMBER

USGS-WDR-MD-DE-01-1

9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES)

U.S. Geological Survey, Water Resources Division
8987 Yellow Brick Road
Baltimore, MD 21237

10. SPONSORING / MONITORING AGENCY REPORT NUMBER

USGS-WDR-MD-DE-01-1

11. SUPPLEMENTARY NOTES

Prepared in cooperation with the states of Maryland and Delaware and with other agencies.

12a. DISTRIBUTION / AVAILABILITY STATEMENT

No restriction on distribution. This report may be purchased from the National Technical Information Service, Springfield, VA 22161

12b. DISTRIBUTION CODE

13. ABSTRACT *(Maximum 200 words)*

Water resources data for the 2001 water year for Maryland and Delaware consist of records of stage, discharge, and water quality of streams; stage and contents of lakes and reservoirs. This volume (Volume 1. Surface-Water Data) contains records for water discharge at 128 gaging stations; stage and contents of 1 reservoir; and water quality at 20 gaging stations. Also included are stage and discharge for 3 crest-stage partial-record stations and stage only for 10 tidal crest-stage partial-record stations. Additional water data were collected at various sites not involved in the systematic data-collection program and are published as miscellaneous measurements. These data represent that part of the National Water Data System operated by the U.S. Geological Survey and cooperating State, local, and Federal agencies in Maryland and Delaware.

14. SUBJECT TERMS

*Maryland, *Delaware, *District of Columbia, * Hydrologic data, *Surface water, *Water quality, Flow rate, Gaging stations, Lakes, Reservoirs, Chemical analyses, Sediments, Water temperatures, Sampling sites, Water analyses.

15. NUMBER OF PAGES

474

16. PRICE CODE

17. SECURITY CLASSIFICATION OF REPORT	18. SECURITY CLASSIFICATION OF THIS PAGE	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT
Unclassified			Unclassified

CONTENTS

ILLUSTRATIONS

[Letters after station name designate type of data collected: (d) discharge, (c) chemical, (b) biological, (m) microbiological, (t) water temperature, (s) sediment, (e) elevation and contents]

[Letters after station name designate type of data collected: (d) discharge, (c) chemical, (b) biological, (m) microbiological, (t) water temperature, (s) sediment, (e) elevation and contents]

[Letters after station name designate type of data collected: (d) discharge, (c) chemical, (b) biological, (m) microbiological, (t) water temperature, (s) sediment, (e) elevation and contents]

The following continuous-record surface-water discharge (gaging stations) in Maryland, Delaware, and the District of Columbia have been discontinued. Daily streamflow records (discharge) were collected and published for the period of record, expressed in water years, shown for each station.

NORTH ATLANTIC SLOPE BASINS	Station number	Drainage area (mi^2)	Period of record
DELAWARE RIVER BASIN			
Delaware River:			
Christina River near Bear, DE	01478040	40.6	1977-82
White Clay Creek above Newark, DE	01478500	66.7	1952-59, 1962-80
Mill Creek at Mill Creek Road at Hockessin, DE	01479197	3.66	1990-95
Mill Creek at Stanton, DE	01479500	12.4	1931-33
Little Mill Creek near Newport, DE	01480095	5.24	1991-95, 1997-98
Little Mill Creek at Elsmere, DE	01480100	6.70	1964-80
Army Creek at State Road, DE	01482200	2.42	1978-81
Red Lion Creek near Red Lion, DE	01482298	3.08	1978-81
Wiggins Millpond Outlet (head of Appoquinimink River):			
Noxontown Lake Outlet			
Drawyer Creek tributary near Odessa, MD	01483170	4.68	1978-80
LEIPSIC RIVER BASIN			
Leipsic River near Cheswold, DE	01483500	9.35	1931-33, 1943-57
ST. JONES RIVER BASIN			
Fork Branch (head of St. Jones River)			
Mudstone Branch at Chestnut Grove, DE	01483670	8.96	1993-94
MURDERKILL RIVER BASIN			
Murderkill River near Felton, DE	01484000	13.6	1931-34, 1960-85, 1997-99
BROADKILL RIVER BASIN			
Broadkill River:			
Beaverdam Creek near Milton, DE	01484270	6.10	1971-80
Sowbridge Branch (head of Primehook Creek) near Milton, DE	01484300	7.08	1957-78
INDIAN RIVER BASIN			
Cow Bridge Branch (head of Indian River):			
Swan Creek near Millsboro, DE	01484534	5.20	1998-2000
Vines Creek at Omar, DE	01484548	13.6	1985-88
Blackwater Creek near Clarkesville, DE	01484600	3.47	1998-2000
Bundicks Branch at Robinsville, DE	01484654	6.90	1998-2000
Munchy Branch near Rehoboth Beach, DE	01484668	0.52	1998-2000
WICOMICO RIVER BASIN			
Andrews Branch (head of Wicomico River):			
Beaverdam Creek near Salisbury, MD	01486500	19.5	1930-32, 1938-75
NANTICOKE RIVER BASIN			
Nanticoke River:			
James Branch (head of Broad Creek):			
Trap Pond Outlet (head of Hitch Pond Branch) near Laurel, DE	01487500	16.7	1951-71
Broad Creek:			
Holly Ditch near Laurel, DE	01488000	2.19	1951-56
Marshyhope Creek at Adamsville, DE	01488600	60.4	1969-71
Faulkner Branch at Federalsburg, MD	01489000	7.10	1950-92
Rewastico Creek near Hebron, MD	01489500	12.2	1950-56
TRANSQUAKING RIVER BASIN			
Transquaking River:			
Chicamacomico River near Salem, MD	01490000	15.0	1951-80
CHOPTANK RIVER BASIN			
Tappahanna Ditch (head of Choptank River):			
Tidy Island Creek (continuation of Tappahanna Ditch):			
Culbreth Marsh Ditch near Chapeltown, DE	01490500	11.6	1951-56
Choptank River:			
Kings Creek:			
Beaverdam Branch at Matthews, MD	01492000	5.85	1950-81
CHESTER RIVER BASIN			
Chester River:			
Southeast Creek at Church Hill, MD	01494000	12.5	1951-56
SASSAFRAS RIVER BASIN			
Sassafras River:			
Jacobs Creek near Sassafras, MD	01494500	5.39	1951-56

NORTH ATLANTIC SLOPE BASINS--Continued	Station number	Drainage area (mi^2)	Period of record
ELK RIVER BASIN			
Big Elk Creek (head of Elk River):			
Little Elk Creek at Childs, MD	01495500	26.8	1949-58
Long Creek near Chesapeake City, MD	01495800	4.36	1978-81
NORTHEAST RIVER BASIN			
Northeast Creek (head of Northeast River) at Leslie, MD	01496000	24.3	1949-84
PRINCIPIO CREEK BASIN			
Principio Creek near Principio Furnace, MD	01496200	9.03	1967-92
SUSQUEHANNA RIVER BASIN			
Susquehanna River:			
Broad Creek at Mill Creek, MD	01578000	16.4	1905-09
Octoraro Creek near Rising Sun, MD	01578500	193	1932-58, 1969-77
Basin Run at Liberty Grove, MD	01579000	5.31	1949-58
Octoraro Creek at Rowlandsville, MD	01579500	210	1896-99
Deer Creek near Kalmia, MD	01580200	125	1967-77
Deer Creek near Churchville, MD	01580500	141	1905-09
BUSH RIVER BASIN			
Bynum Run (head of Bush River):			
Church Creek:			
Cranberry Run at Aberdeen, MD	01581657	4.16	1988-89
Cranberry Run at Perryman, MD	01581658	5.22	1987-89
GUNPOWDER RIVER BASIN			
Gunpowder Falls (head of Gunpowder River):			
Western Run:			
Delaware Run:			
Slade Run near Glyndon, MD	01583000	2.09	1947-81
Gunpowder Falls near Carney, MD	01584000	314	1949-64
Little Gunpowder Falls near Bel Air, MD	01585000	43	1904-09
Bird River:			
Whitemarsh Run (head of Bird River):			
Honeygo Run at White Marsh, MD	01585105	2.65	1990-93
Windlass Run near White Marsh, MD	01585107	2.03	1992-93
BACK RIVER BASIN			
Herring Run (head of Back River):			
Stemmers Run (head of Northeast Creek) at Rossville, MD	01585300	4.46	1959-72, 1974-89
Brien Run at Stemmers Run, MD	01585400	1.97	1958-87
PATAPSCO RIVER BASIN			
North Branch Patapsco River near Reistertown, MD	01586500	91.0	1927-54
North Branch Patapsco River near Marriottsville, MD	01587000	165	1930-60
South Branch Patapsco River at Henryton, MD	01587500	64.4	1948-80
Piney Run near Sykesville, MD	01588000	11.4	1931-58
Patapsco River at Woodstock, MD	01588500	251	1896-1909
Gwynns Falls near Owings Mills, MD	01589200	4.90	1958-75
Jones Falls near mouth at Baltimore, MD	01589480	60.4	1981-82
Curtis Creek:			
Furnace Creek:			
Sawmill Creek at Crain Highway at Glen Burnie, MD	01589512	8.24	1984-85, 1990-94
Marley Creek at Harundale, MD	01589522	4.79	1984-85
SOUTH RIVER BASIN			
North River (head of South River) near Annapolis, MD	01590000	8.50	1932-74
Bacon Ridge Branch at Chesterfield, MD	01590500	6.92	1943-52, 1975-90
RHODE RIVER BASIN			
Rhode River:			
Muddy Creek:			
North Fork Muddy Creek at South River, MD	01590700	0.88	1972-76

NORTH ATLANTIC SLOPE BASINS--Continued	Station number	Drainage area (mi^2)	Period of record
PATUXENT RIVER BASIN			
Patuxent River:			
Cattail Creek near Cookesville, MD	01591350	8.37	1977-81
Cattail Creek at Roxbury Mills, MD	01591500	27.7	1944-56
Patuxent River near Burtonsville, MD	01592000	127	1911-45
Little Patuxent River:			
Middle Patuxent River near Simpsonville, MD	01593710	48.4	1987-95
Dorsey Run near Jessup, MD	01594400	11.6	1948-58
Western Branch near Largo, MD	01594500	30.2	1950-75
Cocktown Creek near Huntingtown, MD	01594600	3.85	1957-76
Hunting Creek near Huntingtown, MD	01594670	9.38	1989-98
Killpeck Creek at Huntersville, MD	01594710	3.26	1986-98
St. Leonard Creek near St. Leonard, MD	01594800	6.73	1957-68
POTOMAC RIVER BASIN			
North Branch Potomac River:			
South Fork Sand Run near Wilson, MD	01594934	1.55	1980-86
North Branch Potomac River at Kitzmiller, MD	01595500*	225	1950-85
North Branch Potomac River at Barnum, WV	01595800*	266	1966-85
North Branch Potomac River at Bloomington, MD	01596000	287	1925-27, 1929-50
Savage River:			
Crabtree Creek near Swanton, MD	01597000	16.7	1948-81
Savage River at Bloomington, MD	01598000	115	1906-07, 1925-27, 1929-50
North Branch Potomac River at Pinto, MD	01600000*	596	1939-85
Wills Creek below Hyndman, PA	01601000	146	1951-67
North Branch Potomac River at Cumberland, MD	01602500	873	1894-97
Evitts Creek near Centerville, PA	01603500	30.2	1932-82
Evitts Creek near Cumberland, MD	01604000	89.0	1929-32
Sawpit Run near Oldtown, MD	01609500	5.08	1948-58
Little Tonoloway Creek near Hancock, MD	01612500	16.9	1947-63
Antietam Creek near Waynesboro, PA	01619000	93.5	1948-51, 1966-81
Beaver Creek:			
Albert Powell Fish Hatchery Spring at Beaver Creek, MD	01619320		1987-98
Catoctin Creek:			
Little Catoctin Creek at Harmony, MD	01637000	8.83	1947-59, 1968
Catoctin Creek near Jefferson, MD	01638000	111	1928-31
Monocacy River:			
Toms Creek at Emmitsburg, MD	01639375	41.3	1986-90
Big Pipe Creek (head of Double Pipe Creek):			
Little Pipe Creek at Avondale, MD	01640000	8.10	1947-56
Owens Creek near Foxville, MD	01640456	1.01	1986-87
Owens Creek at Lantz, MD	01640500	5.93	1932-84
Hunting Creek near Foxville, MD	01640965	2.14	1982-94
Hunting Creek tributary near Foxville, MD	01640970	4.01	1982-91
Hunting Creek near Thurmont, MD	01640975	7.08	1982-86
Bear Branch near Thurmont, MD	01640980	0.38	1990-95
Hunting Creek at Jimtown, MD	01641000	18.4	1950-92
Fishing Creek near Lewistown, MD	01641500	7.29	1948-84
Fishing Creek Tributary near Lewistown, MD	01641510	0.40	1988-95
Monocacy River near Frederick, MD	01642000	665	1896-1930
Linganore Creek near Frederick, MD	01642500	82.3	1932, 1934-82
Bennett Creek:			
Bennett Creek tributary at Park Mills, MD	01643495	0.15	1992-93
Broad Run at Elmer, MD	01643615	14	**(b)**1978-80
Seneca Creek:			
Great Seneca Creek near Gaithersburg, MD	01644500	41.0	1925-31
Watts Branch at Rockville, MD	01645200	3.70	1957-87
Little Falls Branch near Bethesda, MD	01646550	4.10	1944-59, 1962-79
Rock Creek:			
North Branch Rock Creek:			
Williamsburg Run near Olney, MD	01647685	2.25	1967-74
North Branch Rock Creek near Norbeck, MD	01647720	9.73	1967-77
Manor Run near Norbeck, MD	01647725	1.01	1967-74
North Branch Rock Creek near Rockville, MD	01647740	12.5	1967-77

***** Currently operated as a crest-stage partial-record station.
a Estimated daily discharges October 1953 to June 1964.
b Daily values data unpublished, available at Baltimore, MD office.

NORTH ATLANTIC SLOPE BASINS--Continued	Station number	Drainage area (mi^2)	Period of record
POTOMAC RIVER BASIN--Continued			
Potomac River--Continued			
Rock Creek--Continued:			
Rock Creek near Beech Drive at Kensington, MD	01647970	46.7	**(b)**2001
Rock Creek at Beech Drive near Kensington, MD	01647975	49.0	**(b)**2001
Rock Creek at Cedar Lane near Kensington, MD	01647976	51.3	**(b)**2001
Rock Creek at Q Street, Washington, DC	01649000	75.8	1892-94, 1929-33
Northeast Branch Anacostia River:			
Northwest Branch Anacostia River at Norwood, MD	01650050	2.45	1967-74
Browns Creek:			
Nursery Run at Cloverly, MD	01650085	0.35	1967-74
North Creek:			
Batchellors Run at Oakdale, MD	01650190	0.47	**(a)**1967-70
Bel Pre Creek at Lay Hill, MD	01650450	1.69	1967-74
Lutes Run at Lutes, MD	01650470	0.47	**(a)**1967-70
Anacostia River:			
Beaverdam Branch Anacostia River at Kenilworth Avenue, Washington, DC	01652000	14	1911-12
Henson Creek (head of Broad Creek) at Oxon Hill, MD	01653500	16.7	1948-78
Wicomico River:			
Chaptico Creek at Chaptico, MD	01661000	10.4	1947-72
OHIO RIVER BASIN			
MONONGAHELA RIVER BASIN			
Monongahela River:			
Youghiogheny River:			
South Branch Casselman River near Bittenger, MD	03077940	3.22	1976-81
Casselman River:			
Big Piney Run near Salisbury, PA	03078500	24.5	1932-70

a Daily values data unpublished, available at Baltimore, MD office.
b Daily values data unpublished, available at Baltimore, MD office.

The following crest-stage partial-record stations in Maryland and Delaware have been discontinued. Annual maximum discharge and gage-height data were collected and published for the period of record, expressed in water years, shown for each station.

NORTH ATLANTIC SLOPE BASINS	Station number	Drainage area (mi^2)	Period of record
DELAWARE RIVER BASIN			
Delaware River:			
Christina River near Bear, DE	01478040	40.6	1983-91
White Clay Creek:			
Pike Creek near Newark, DE	01478950	6.04	1969-75
Mill Creek at Hockessin, DE	01479200	**a**4.19	1966-75
West Branch Red Clay Creek:			
Red Clay Creek tributary near Yorklyn, DE	01479950	0.38	1966-75
Brandywine Creek:			
Brandywine Creek tributary near Centerville, DE	01481200	0.97	1966-75
Husbands Run:			
Willow Run at Rockland, DE	01481450	0.37	1966-75
Red Lion Creek:			
Doll Run at Red Lion, DE	01482310	**b**1.2	1966-75
SMYRNA RIVER BASIN			
Providence Creek (head of Smyrna River):			
Paw Paw Branch:			
Paw Paw Branch tributary near Clayton, DE	01483290	**b**1.3	1966-75
Smyrna River:			
Sawmill Branch:			
Sawmill Branch tributary near Blackbird, DE	01483400	**b**0.6	1966-75
LEIPSIC RIVER BASIN			
Leipsic River near Cheswold, DE	01483500	9.35	1958-75
ST. JONES RIVER BASIN			
St. Jones River:			
Puncheon Branch at Dover, DE	01483720	**b**2.3	1966-75
MURDERKILL RIVER BASIN			
Murderkill River:			
Murderkill River tributary near Felton, DE	01484002	**b**1.0	1966-75
Hudson Branch (head of Spring Creek):			
Pratt Branch near Felton, DE	01484050	3.29	1966-75
BROADKILL RIVER BASIN			
Broadkill River:			
Beaverdam Creek near Milton, DE	01484270	6.10	1966-75
INDIAN RIVER BASIN			
Indian River:			
Whartons Branch near Millsboro, DE	01484531	5.8	1986-88
Pepper Creek at Dagsboro, DE	01484550	8.78	1960-75
Blackwater Creek near Clarksville, DE	01484600	3.5	1986-88
WICOMICO RIVER BASIN			
Andrews Branch (head of Wicomico River) near Delmar, MD	01486100	**b**4.1	1966-76
NANTICOKE RIVER BASIN			
Nanticoke River:			
Bridgeville Branch:			
Bridgeville Branch tributary at Bridgeville, DE	01486900	**b**0.8	1966-68
Gum Branch:			
Toms Dam Branch near Greenwood, DE	01486980	**b**6.4	1966-75
James Branch (head of Broad Creek):			
Trap Pond Outlet (head of Hitch Pond Branch) near Laurel, DE	01487500	16.7	1972-73, 1975
Broad Creek:			
Little Creek:			
Meadow Branch near Delmar, DE	01487900	**b**3.9	1967-75
Holly Ditch near Laurel, DE	01488000	2.19	1959-75
CHOPTANK RIVER BASIN			
Tappahanna Ditch (head of Choptank River) near Hartly, DE	01490470	5.93	1961-73
Tidy Island Creek (continuation of Tappahanna Creek):			
Culbreth Marsh Ditch:			
Beachy Neidig Ditch near Willow Grove, DE	01490490	**b**2.3	1966-75
Culbreth Marsh Ditch (Shades Branch) near Chapeltown, DE	**c**01490500	11.6	1957-68
Cow Marsh:			
Meredith Branch near Sandtown, DE	01490600	**b**8.4	1966-75
Broadway Branch:			
Oldtown Branch at Goldsboro, MD	01490800	3.9	1967-76
Gravelly Branch:			
Sangston Prong near Whiteleysburg, DE	01491010	**b**1.9	1966-75
Spring Branch near Greensboro, MD	01491050	**b**3.8	1966-76
Hunting Creek:			
Gravel Run at Beulah, MD	01492050	8.4	1966-76

a 0.15 square miles is probably noncontributing.
b Approximately.
c Prior to 1956 published as "Shades Branch".

NORTH ATLANTIC SLOPE BASINS--Continued	Station number	Drainage area (mi^2)	Period of record
WYE RIVER BASIN			
Wye River:			
Wye East River:			
Sallie Harris Creek near Carmichael, MD	01492500	8.09	1957-81
Skipton Creek:			
Mill Creek near Skipton, MD	01492550	**b**4.6	1966-76
CHESTER RIVER BASIN			
Andover Branch (head of Chester River):			
Southeast Creek at Church Hill, MD	01494000	12.5	1957-65
Browns Branch:			
Browns Branch tributary near Church Hill, MD	01494020	**b**1.7	1971-78
NORTHEAST RIVER BASIN			
Northeast Creek (head of Northeast River):			
Northeast River tributary near Charlestown, MD	01496080	**b**1.7	1967-76
SUSQUEHANNA RIVER BASIN			
Susquehanna River:			
Broad Creek:			
Broad Creek tributary at Whiteford, MD	01577940	0.77	1971-86
Octoraro Creek:			
Basin Run at West Nottinhgam, MD	01578800	**b**1.3	1967-76
Basin Run at Liberty Grove, MD	01579000	5.31	1965-76
Bush River Basin			
Bynum Run (head of Bush River) at Bel Air, MD	01581500	8.52	1971-72
GUNPOWDER RIVER BASIN			
Gunpowder Falls (head of Gunpowder River):			
Piney Creek near Hereford, MD	01582510	**b**1.5	1966-79
Western Run:			
Western Run tributary at Western Run, MD	01583495	0.26	1966-76
Beaverdam Run:			
Baisman Run at Broadmoor, MD	01583580	1.47	1970-76
Little Gunpowder Falls at Laurel Brook, MD	01584500	36.1	1971-86
PATAPSCO RIVER BASIN			
North Branch Patapsco River:			
South Branch Patapsco River:			
Hay Meadow Branch:			
Hay Meadow Branch tributary at Poplar Springs, MD	01587050	0.54	1966-76
Piney Run near Sykesville, MD	01588000	11.4	1959-74
Patapsco River:			
Gwynns Falls at Owings Mills, MD	01589220	9.12	1958-65, 1967-68
Gwynns Falls at McDonough, MD	01589240	19.3	1958-68, 1971-84
Jones Falls at Brooklandville, MD	01589400	19.7	1958-65, 1968
PATUXENT RIVER BASIN			
Patuxent River:			
Little Patuxent River:			
Little Patuxent River tributary at Guilford Downs, MD	01593350	0.95	1966-76
Dorsey Run near Jessup, MD	01594400	11.6	1959-68
Mill Branch near Mitchellville, MD	01594445	**b**1.1	1967-76
POTOMAC RIVER BASIN			
North Branch Potomac River:			
Savage River near Frostburg, MD	01596005	**b**1.5	1971-86
Wills Creek below Hyndman, PA	01601000	146	1968-86
Potomac River:			
Town Creek:			
Sawpit Run near Oldtown, MD	01609500	5.08	1963-76
Fifteen Mile Creek:			
Pratt Hollow:			
Pratt Hollow tributary at Pratt, MD	01610105	0.70	1971-86
Sideling Hill Creek:			
Bear Creek at Forest Park, MD	01610150	10.4	1965-69, 1971-83
Little Tonoloway Creek near Hancock, MD	01612500	16.9	1964
Ditch Run near Hancock, MD	01613150	**b**4.8	1965-86
Potomac River tributary near Hancock, MD	01613160	**b**1.2	1965-76
Antietam Creek:			
Little Antietam Creek:			
Dog Creek:			
Dog Creek tributary near Locust Grove, MD	01619475	0.10	1966-76

b Approximately.

NORTH ATLANTIC SLOPE BASINS--Continued	Station number	Drainage area (mi^2)	Period of record
POTOMAC RIVER BASIN --Continued			
Catoctin Creek:			
Little Catoctin Creek at Harmony, MD	01637000	8.8	1961-67, 1969-77
Hollow Road Creek (head of Cone Branch) near Middletown, MD	01637600	2.3	1965-74, 1977
Monocacy River:			
Piney Creek:			
Piney Creek tributary at Taneytown, MD	01639095	0.62	1967-76
Big Pipe Creek:			
Little Pipe Creek at Avondale, MD	01640000	8.10	1959-65, 1967-80
Owens Creek:			
Owens Creek tributary near Rocky Ridge, MD	01640700	**b**1.2	1967-77
Linganore Creek:			
Dollyhyde Creek at Libertytown, MD	01642400	**b**2.7	1969-76
Little Seneca Creek (head of Seneca Creek):			
Bucklodge Branch:			
Bucklodge Branch tributary near Barnesville, MD	01644420	0.27	1967-76
Little Falls Branch near Bethesda, MD	01646550	**b**4.1	1979-84
Northeast Branch Anacostia River:			
Northwest Branch Anacostia River at Norwood, MD	01650050	2.45	1975-76
Browns Creek:			
Nursery Run at Cloverly, MD	01650085	0.35	1975-76
North Creek:			
Batchellors Run at Oakdale, MD	01650190	0.47	1967-76
Mattawoman Creek near Pomonkey, MD	01658000	57.7	1973-86
Zekiah Swamp Run (head of Wicomico River):			
Wolf Den Branch near Cedarville, MD	01660900	**b**2.3	1966-80
Clark Run near Bel Alton, MD	01660930	10.4	1966-76
Herring Creek:			
Glebe Branch at Valley Lee, MD	01661430	**b**0.3	1968-78
OHIO RIVER BASIN			
MONONGAHELA RIVER BASIN			
Monongahela River:			
Youghiogheny River:			
Little Youghiogheny River:			
Little Youghiogheny River tributary near Deer Park, MD	03075450	0.57	1965-76
Toliver Run:			
Toliver Run tributary near Hoyes Run, MD	03075600	0.53	1965-86
Youghiogheny River tributary near Friendsville, MD	03076505	0.22	1965-76
North Branch Casselman River:			
North Branch Casselman River tributary at Foxtown, MD	03077700	**b**1.0	1965-77
Casselman River:			
Big Piney Run near Salisbury, PA	03078500	24.5	1974-86

b Approximately.

The following low-flow, partial-record stations have been operated in Maryland, Delaware, and the District of Columbia. Measurements at these sites were made during periods of base flow when streamflow was primarily from ground-water storage. The column headed "Period of record" shows the water years in which measurements were made.

NORTH ATLANTIC SLOPE BASINS	Station number	Drainage area (mi^2)	Period of record
DELAWARE RIVER BASIN			
Delaware River:			
Naaman Creek:			
South Branch Naaman Creek near Claymont, DE	01477400	3.83	1955-66, 1968-71
Christina River near Newark, DE	01477850	3.76	1981-83
West Branch Christina River near Newark, DE	01477860	4.20	1981-83
Belltown Run near Glascow, DE	01478009	3.35	1978-81
Muddy Run at Glascow, DE	01478024	5.43	1978-81
Muddy Run near Cooches Bridge, DE	01478028	8.21	1978-80
White Clay Creek:			
White Clay Creek tributary near Ogletown, DE	01478878	3.68	1978-80
Brandywine Creek:			
Rocky Run at Talleyville, DE	01481350	1.76	1957-59, 1966
Wilson Run at Guyencort, DE	01481400	1.62	1957-59
North Fork Wilson Run at Guyencort, DE	01481430	1.12	1957-59
Wilson Run at Rockland, DE	01481440	3.05	1957-63
Husbands Run at Rockland, DE	01481460	1.28	1957-59
Squirrel Run at Montchanin, DE	01481480	1.67	1957-59
Alapocas Run at Concord, DE	01481530	0.81	1957-59
Red Lion Creek at Red Lion, DE	01482300	3.20	1955-60, 1962-71
Dragon Creek at Kirkwood, DE	01482400	1.93	1978-81
Dragon Creek tributary at Kirkwood, DE	01482405	0.16	1978-81
Joy Run near Summit Bridge, DE	01482670	1.26	1978-80
Scott Run near Boyds Corner, DE	01482690	2.18	1978-81
Appoquinimink River:			
Wiggins Millpond Outlet (head of Appoquinimink River) at Townsend, DE	01483150	3.82	1957-60, 1962-66, 1968-71, 1978-80
Drawyer Creek near Mt. Pleasant, DE	01483160	1.54	1978-80
Spring Mill Branch near Armstrong, DE	**a**01483165@	4.68	1979-80
Dove Nest Branch near Odessa, DE	**a**01483170@	4.68	1978-80
SMYRNA RIVER BASIN			
Providence Creek (head of Smyrna River) at Clayton, DE	01483300	11.8	1955-60, 1962-63, 1966, 1968-69
Smyrna River:			
Mill Creek at Smyrna, DE	01483350	4.77	1955-57, 1959-60, 1962-63, 1966, 1968-69
ST. JONES RIVER BASIN			
Fork Branch (head of St. Jones River) at Dupont, DE	01483650	7.50	1955-57, 1959-60, 1962-66, 1968-71
Maidstone Branch at Dupont, DE	01483680	17.3	1955-57, 1959-60, 1962-66, 1968-71
MURDERKILL RIVER BASIN			
Murderkill River:			
Browns Branch near Houston, DE	01484020	12.4	1955-71
Spring Creek:			
Hudson Branch (head of Spring Creek) near Canterbury, DE	01484040	8.40	1955-60
Pratt Branch near Felton, DE	01484050*	3.29	1955-57, 1959-60, 1962-71
Double Run near Magnolia, DE	01484060	5.68	1955-57, 1959-60, 1962-64, 1966-71

a Prior to 2001 published as "Drawyer Creek tributary".
@ Currently a surface-water discharge station.
* Also a crest-stage partial-record station.

NORTH ATLANTIC SLOPE BASINS--Continued	Station number	Drainage area (mi^2)	Period of record
MISSPILLION RIVER BASIN			
Beaverdam Branch (head of Misspillion River):			
Cedar Creek near Lincoln, DE	01484200	7.21	1955-60, 1962-63, 1966, 1968-69
BROADKILL RIVER BASIN			
Pemberton Branch (head of Broadkill River) near Milton, DE	01484240	6.68	1955-66, 1968-71
Broadkill River:			
Beaverdam Creek near Milton, DE	01484270	6.10	1955-71
INDIAN RIVER BASIN			
Indian River:			
Sheep Pen Ditch near Shortly, DE	01484510	**b**5.4	1986-88, 1997-98
Iron Branch at Millsboro, DE	01484530	**b**8.0	1985-88, 1997-99, 2000
Whartons Branch near Millsboro, DE	01484531*	**b**5.8	1968-69, 1971, 1985-88, 1999-2000
Swan Creek near Warwick, DE	01484535	**b**5.6	1985-88, 1997-98
Pepper Creek at Dagsboro, DE	01484550*	8.78	1955-71, 1985-88, 1997-99, 2000
Blackwater Creek near Clarkesville, DE	01484600*	**b**3.5	1968-69, 1971, 1985-88, 1997-98
Love Creek at Robinsonville, DE	01484655	**b**11.1	1985-88, 1997-99, 2000
Chapel Branch at Angola, DE	01484677	**b**8.0	1985-88, 1997-99, 1997-99, 2000
Unity Branch at Angola, DE	01484678	4.2	1999-2000
MILLER CREEK BASIN			
Beaverdam Ditch (head of Miller Creek) near Millville, DE	01484695@	2.2	1997-98
DIRICKSON CREEK BASIN			
Bearhole Ditch (head of Dirickson Creek) at Bunting, DE	01484700	**b**6.4	1968-71, 1985-88, 1997-98
ST. MARTIN RIVER BASIN			
St. Martin River:			
Buntings Branch near Selbyville, DE	01484710	4.15	1999
Taylorville Creek near Berlin, MD	01484714	0.94	1999
TRAPPE CREEK BASIN			
Trappe Creek:			
Bottle Branch at Berlin, MD	01484716	0.35	1999-2000
NEWPORT CREEK BASIN			
Newport Creek near Berlin, MD	01484717	0.51	1999-2000
Beaverdam Creek at Ironshire, MD	01484718	1.33	1999-2000
BASSETT CREEK BASIN			
Bassett Creek near Ironshire, MD	01484719	1.22	1999-2000
Porter Creek near Newark, MD	01484720	0.76	1999-2000
MARSHALL CREEK BASIN			
Marshall Creek at Newark, MD	01484721	1.30	1999-2000
Massey Branch near Newark, MD	01484722	0.54	1999-2000
WATERWORKS CREEK BASIN			
Waterworks Creek:			
Waterworks Creek tributary near Cedartown, MD	01484723	0.09	1999-2000
SCARBORO CREEK BASIN			
Scarboro Creek at Spence, MD	01484725	0.27	1999-2000
PAWPAW CREEK BASIN			
Pawpaw Creek at Spence, MD	01484726	1.48	1999-2000

@ Currently a surface-water discharge station.
b Approximately.
* Also a crest-stage partial-record station.

NORTH ATLANTIC SLOPE BASINS--Continued	Station number	Drainage area (mi^2)	Period of record
TANHOUSE CREEK BASIN			
Tanhouse Creek near Boxiron, MD	01484727	0.45	1999-2000
BROCKATONORTON BAY BASIN			
Boxiron Creek (head of Brockatonorton Bay) at Boxiron, MD	01484728	0.41	1999-2000
Brockatonorton Bay tributary at Boxiron, MD	01484729	0.26	1999-2000
PIKES CREEK BASIN			
Pikes Creek near Stockton, MD	01484730	0.86	1999-2000
RILEY CREEK BASIN			
Riley Creek at Stockton, MD	01484731	0.12	1999-2000
SWANS GUT CREEK BASIN			
Little Mill Creek (head of Swans Gut Creek) near Stockton, MD	01484732	0.81	1999-2000
Marshall Ditch near Stockton, MD	01484733	0.28	1999-2000
LITTLE MOSQUITO CREEK BASIN			
Little Mosquito Creek:			
Wattsville Branch:			
Wattsville Branch tributary No. 1 at Wattsville, VA	0148473510	0.34	1999-2000
Snead Branch near Horntown, VA	0148474010	0.77	1999-2000
WICOMICO RIVER BASIN			
Andrews Branch (head of Wicomico River):			
Leonard Pond Run near Delmar, MD	01486200	13.4	1950-51, 1964, 1969-71
NANTICOKE RIVER BASIN			
Nanticoke River (Gravelly Fork):			
Deep Creek at Old Furnace, DE	01487100	33.0	1955-60, 1962-63, 1968
Tyndall Branch near Hardscrabble, De	01487120	12.7	1955-63, 1966
Lewes Creek:			
Butler Mill Branch near Woodland, De	01487300	6.96	1955-63, 1966, 1968-69
James Branch (head of Broad Creek):			
Elliott Pond Branch (Chipman Pond Branch) near Laurel, DE	01487700	8.55	1955-66, 1968-71
Chicone Creek at Reids Grove, MD	01489395	4.69	1951-53, 1969-71
Baron Creek at MD-DE State Corner	01489400	8.93	1950-52, 1969-70
CHOPTANK RIVER BASIN			
Choptank River near Choptank Mills, DE	01490550	**b**58	1985-87
Forge Branch at Greensboro, MD	01491060	9.84	1952-53
Watts Creek near Denton, MD	01491180	**b**11	1964-75
Tuckahoe CreeK:			
Knott Millpond near Hillsboro, MD	01491800	8.45	1952-53, 1968-71
Cabin Creek at Cabin Creek, MD	01492080	6.05	1952-53
WYE RIVER BASIN			
Wye River:			
Wye East River:			
Skipton Creek:			
Mill Creek near Wye Mills, MD	01492560	5.72	1952-53
CHESTER RIVER BASIN			
Andover Branch (head of Chester River):			
Cypress Branch at Millington, MD	01492980	**b**38	1964-66, 1968-75
Mills Branch near Millington, MD	01492990	9.98	1953-54, 1968-71
Chester River:			
Foreman Branch at Ewingville, MD	01493480	5.27	1953-54
Langford Creek:			
East Fork Langford Creek:			
Mill Pond Outlet near Langford, MD	01494035	5.10	1953-54, 1968-71
Old Mill Stream Branch (head of Corsica River) at Centerville, MD	01494100	11.2	1964-71
SASSAFRAS RIVER BASIN			
Sassafras River:			
Sassafras River tributary at Ginns Corner, MD	01494450	3.81	1982-83
Duffy Creek near Cecilton, MD	01494480	1.45	1968-71, 1982

b Approximately.

NORTH ATLANTIC SLOPE BASINS--Continued	Station number	Drainage area (mi^2)	Period of record
WORTON CREEK BASIN			
Mill Creek (head of Worton Creek) at Hanesville, MD	01494600	4.63	1953-54, 1968-71
ELK RIVER BASIN			
Big Elk Creek (head of Elk River):			
Gramies Run at Elk Mills, MD	01494995	3.05	1981-83
Little Elk Creek at Rock Church, MD	01495480	17.8	1982-83
Laurel Run near Elkton, MD	01495520	3.87	1982-83
Dogwood Run at Elkton, MD	01495525	1.62	1982-83
Mill Creek near Elkton, MD	01495540	4.32	1968-70, 1982
Elk River:			
Perch Creek near Elkton, MD	01495550	**b**6.0	1964-75, 1978-80, 1982-83
Back Creek near Mt. Pleasant, DE	01495700	4.40	1968-69
Bohemia River:			
Sandy Branch at Bohemia Creek, MD	01495925	2.58	1968-70, 1982
Little Bohemia Creek near Warwick, MD	01495935	2.45	1953-54
Scotchman Creek:			
Scotchman Creek tributary near Cecilton, MD	01495950	1.40	1982-83
NORTHEAST RIVER BASIN			
Northeast Creek (head of Northeast River):			
Little Northeast Creek:			
West Branch Little Northeast Creek at Zion, MD	01496030	3.32	1981-83
Little Northeast Creek at Mechanic Valley, MD	01496050	**b**14	1964-75
Northeast River:			
Northeast River tributary at North East, MD	01496055	1.55	1982-83
Stony Run near North East, MD	01496060	8.23	1982-83
Northeast River tributary at Charlestown, MD	01496085*	1.03	1982-83
Hance Point Creek at Hance Point, MD	01496100	1.36	1983
PRINCIPIO CREEK BASIN			
Principio Creek:			
Principio Creek tributary at Belvedere, MD	01496225	2.08	1982-83
MILL CREEK BASIN			
Mill Creek at Jackson, MD	01496250	3.73	1982-83
SUSQUEHANNA RIVER BASIN			
Susquehanna River:			
Broad Creek at Pylesville, MD	01577950	11.3	1956-59, 1962-63, 1966
Conowingo Creek at Oakwood, MD	01578300	34.4	1982-83
Octoraro Creek:			
Stone Run near Rising Sun, MD	01578475	2.24	1982-83
Stone Run at Rising Sun, MD	01578480	6.71	1982-83
Love Run at Richardsmere, MD	01578490	3.55	1982-83
Octoraro Creek tributary at Richardsmere, MD	01578515	3.27	1982-83
Deer Creek at Gorsuch Mills, MD	01579875	**b**25	1975-79
Big Branch at Harkins, MD	01579900	6.39	1975-79
Little Deer Creek near Federal Hill, MD	01579925	14.0	1975-79
Stout Bottle Branch near Ady, MD	01580170	7.13	1980-82
SWAN CREEK BASIN			
Swan Creek at Swan Creek, MD	01580700	13.2	1956-59, 1962-63, 1966
BUSH RIVER BASIN			
Bynum Run (head of Bush River) at Bush, MD	01581600	22.5	1956-59, 1962-63, 1966
James Run at Bush, MD	01581650	11.1	1956-59, 1962-63, 1966
Bush River:			
Grays Run at Stepney, MD	01581660	5.35	1956-59, 1962-63, 1966
Winters Run (head of Otter Point Creek) near Bel Air, MD	01581750	37.0	1954-59, 1962-63, 1966

b Approximately.
* Also a crest-stage partial-record station.

NORTH ATLANTIC SLOPE BASINS--Continued	Station number	Drainage area (mi^2)	Period of record
GUNPOWDER RIVER BASIN			
Gunpowder Falls (head of Gunpowder River):			
Grave Run near Beckleysville, MD	01581830@	7.68	1977-82
Georges Run at Armacost, MD	01581850	13.0	1956-59, 1962, 1966
Georges Run near Beckleysville, MD	01581870@	15.8	1977-82
Little Falls:			
Beetree Run at Bentley Springs, MD	01581960@	9.72	1975-79
Third Mine Branch near Stablersville, MD	01581980	5.27	1975-79
Green Branch at Phoenix, MD	01582900	4.45	1973, 1975-79
Western Run:			
Piney Run at Dover, MD	01583100@	12.3	1975-79
Blackrock Run at Coopersville, MD	01583200	9.38	1956-59, 1962-63, 1966
Beaverdam Run at Cockeysville, MD	01583600@	20.9	1956-59, 1962-63, 1966
Little Gunpowder Falls at Hess, MD	01584200	16.5	1956-59, 1962-63, 1966
PATAPSCO RIVER BASIN			
North Branch Patapsco River:			
Deep Run at Lawndale, MD	01585700	6.70	1975-82
Beaver Run at Finksburg, MD	01586200	12.7	1957-59, 1961-63, 1966
Middle Run near Finksburg, MD	01586550	6.18	1973, 1975-79
Morgan Run near Gamber, MD	01586600	26.0	1957-59, 1961-63, 1966
Little Morgan Run near Eldersburg, MD	01586650	7.13	1973, 1975-79
South Branch Patapsco River at Woodbine, MD	01587070	11.4	1975-79, 1988-90
Gillis Falls at Woodbine, MD	01587170	19.4	1957-59
PATAPSCO RIVER BASIN--Continued			
Patapsco River--Continued			
Rockburn Branch at Elkridge, MD	01589040	3.69	1988-90
Deep Run at Hanover, MD	01589080	18.0	1975-79, 1988-90
Stony Run at Elkridge, MD	01589090	**b**9.4	1955, 1964-67
Gwynns Falls:			
Red Run near Owings Mills, MD	01589230	7.39	1975-79
Gwynns Falls at Baltimore, MD	01589345	50.7	1980-82
Jones Falls at Eccleston, MD	01589370	2.86	1976-79
SEVERN RIVER BASIN			
Severn Run (head of Severn River) at Benfield, MD	01589800	**b**24	1964-67
PATUXENT RIVER BASIN			
Patuxent River at Mullinix, MD	01590800	10.7	1988-90
Cabin Branch near Florence, MD	01590900	8.36	1975-79, 1988-90
Cattail Creek:			
Cattail Creek tributary at Carrs Mill, MD	01591200	3.93	1956-59, 1961-63, 1966, 1988-90
Cattail Creek tributary at Daisy, MD	01591375	3.12	1977-82, 1988-90
Dorsey Branch near Knollwood, MD	01591475	3.78	1964, 1988-90
Hawlings River near Unity, MD	01591650	5.08	1977-82
Little Patuxent River at Pine Orchard, MD	01593200	7.03	1956-59, 1961-64, 1966, 1988-90

@ Currently a surface-water discharge station.
b Approximately.

NORTH ATLANTIC SLOPE BASINS--Continued	Station number	Drainage area (mi^2)	Period of record
PATUXENT RIVER BASIN--Continued			
Patuxent River--Continued			
Little Patuxent River -Continued:			
Red Hill Branch at Columbia, MD	01593300	5.98	1988-90
Middle Patuxent River near West Friendship, MD	01593600	11.4	1956-59, 1961-64, 1966, 1988-90
Middle Patuxent River tributary near Dayton, MD	01593650	4.25	1977-82
Middle Patuxent River tributary near Columbia, MD	01593675	9.12	1988-90
Middle Patuxent River tributary near Clarksville, MD	01593700	6.24	1977-82, 1988-90
Hammond Branch at Scaggsville, MD	01594100	3.01	1956-59, 1962-64, 1966, 1988-90
Hammond Branch near Laurel, MD	01594200	6.83	1988-90
Towsers Branch at Conoways, MD	01594300	5.69	1975-80
Dorsey Run at Jessup, MD	01594395	6.59	1964, 1989-91
Stocketts Run near Hardesty, MD	01594455	6.68	1977-80
Rock Branch at Bayard, MD	01594465	6.73	1977-80
Western Branch:			
Northeast Branch at Kolbes, MD	01594490	7.74	1977-80
Collington Branch at Upper Marlboro, MD	01594525	22.9	1964-66, 1975-79
Mataponi Creek near Naylor, MD	01594535	**b**14	1964-66, 1982
Lyons Creek at Lyons Creek, MD	01594545	**b**15	1964-67
POTOMAC RIVER BASIN			
North Branch Potomac River:			
Glade Run at Steyer, MD	01594975	8.86	1977-82
Savage River:			
Little Savage River near Avilton, MD	01596200	1.95	1979-82
Big Run near Swanton, MD	01596600	13.4	1977-82
Crabtree Creek:			
Middle Fork near Swanton, MD	01597100	10.8	1977-82
Georges Creek near Midland, MD	01598770	13.1	1979-82
Woodland Creek at Ocean, MD	01598775	5.49	1979-82
Mill Run at Morrison, MD	01598980	7.35	1979-82
Mill Run at Rawlings, MD	01599800	2.84	1979-82
Wills Creek at Ellerslie, MD	01601100	185	1979-82
Jennings Run:			
North Branch Jennings Run at Barrelsville, MD	01601300	**b**12	1964-74
Jennings Run at Corriganville, MD	01601325	37.7	1975-79
Collier Run at Spring Gap, MD	01604150	**b**11	1964-74
Mill Run at Oldtown, MD	01605425	10.6	1975-79
Seven Springs Run at Oldtown, MD	01605475	9.16	1975-82
Town Creek:			
Murley Branch near Flintstone, MD	01608950	11.9	1977-78, 1980-82
Maple Run near Town Creek, MD	01608975	7.10	1977-78, 1980-82
Fifteen Mile Creek near Piney Grove, MD	01610060	20.2	1975-79
Deep Run near Little Orleans, MD	01610065	6.26	1975-79
Fifteen Mile Creek at Little Orleans, MD	01610075	61.6	1975-79
Sideling Hill Creek:			
Bear Creek at Forest Park, MD	01610150*	10.4	1975-79, 1985-87
Potomac River tributary at Woodmont, MD	01610170	3.29	1985-87
Tonoloway Creek at Hancock, MD	01613100	113	1985-87
Ditch Run near Hancock, MD	01613150*	4.80	1975-79
Licking Creek:			
Lanes Run near Forsythe, MD	01613540	9.98	1980-82, 1985-87
Licking Creek near Pectonville, MD	01613545	212	1985-87
Conococheague Creek:			
Little Conocoheague Creek near Charlton, MD	01614050	18.1	1985-87
Rockdale Run at Fairview, MD	01614525	9.67	1976-79, 1981-82, 1985-87
Rush Run near Huyett, MD	01614575	5.20	1976-79, 1981-82, 1985-87
Meadow Brook at Conococheague, MD	01614625	6.77	1976-79, 1981-82

			1985-87
Conococheague Creek tributary near Huyett, MD	01614675	7.94	1977-79
			1981-82
			1985-87

b Approximately.
***** Also a crest-stage partial-record station.

NORTH ATLANTIC SLOPE BASINS--Continued	Station number	Drainage area (mi^2)	Period of record
POTOMAC RIVER BASIN--Continued			
Potomac River--Continued			
Conococheague Creek at Williamsport, MD	01614705	564	1985-87
Downey Branch near Downesville, MD	01617600	3.00	1976-79, 1981-82
Marsh Run:			
St. James Run at Spielman, MD	01617780	7.14	1977-79, 1981-82, 1985-87
Antietam Creek:			
Little Antietam Creek at Leitersburg, MD	01619050	24.5	1976-79, 1981-82, 1985-87
West Branch at Paramount, MD	01619145	5.07	1977-79, 1981-82
Marsh Run at Fiddlesburg, MD	01619150	**b**31	1965-74, 1976-79, 1985-87
Landis Spring Branch near Benevola, MD	01619275	6.60	1976-79, 1981-82, 1985-87
Beaver Creek at Benevola, MD	01619325	22.9	1975-79, 1985-87
Little Beaver Creek at Benevola, MD	01619350	8.70	1975-79, 1985-87
Little Antietam Creek at Keedysville, MD	01619480	**b**24	1964-67, 1976-79, 1985-87
Sharmans Branch near Antietam, MD	01619525	4.62	1977-79, 1981-82
Isreal Creek at Weverton, MD	01636730	13.2	1975-79, 1985-87
Catoctin Creek:			
Little Catoctin Creek near Brunswick, MD	01636850	8.64	1977-83
Middle Creek at Ellerton, MD	01636975	22.7	1977-82
Catoctin Creek at Olive, MD	01638050	112	1977-83
Potomac River tributary at Point of Rocks, MD	01638520	3.04	1982-83
Tuscarora Creek at Tuscarora, MD	01638600	20.3	1975-79, 1982-83
Monocacy River:			
Piney Creek at Taneytown, MD	01639100	22.9	1956-59, 1961-63, 1966
Piney Creek near Keysville, MD	01639150	34.4	1982-83
Toms Creek:			
Friends Creek near Emmitsburg, MD	01639325	12.2	1977-83
Toms Creek near Keysville, MD	01639390	88.1	1982-83
Double Pipe Creek:			
Big Pipe Creek (head of Double Pipe Creek) at Bachman Mills, MD	01639400	9.39	1956-59, 1961-63, 1966
Deep Run at Union Mills, MD	01639420	5.46	1975-79
Silver Run near Silver Run, MD	01639440	8.77	1975-82
Big Pipe Creek near Mayberry, MD	01639450	51.6	1956-59, 1962-63, 1966
Bear Branch near Mayberry, MD	01639465	13.9	1975-82
Meadow Branch near Uniontown, MD	01639470	12.6	1956-59, 1961-63, 1966
Little Pipe Creek:			
Wolfpit Branch at Linwood, MD	01640100	2.01	1956-59, 1961-63, 1966
Little Pipe Creek at Union Bridge, MD	01640150	40.4	1956-59, 1962-63, 1966
Beaver Dam Creek near Union Bridge, MD	01640160	7.04	1977-82
Little Pipe Creek at Keymar, MD	01640200	80.0	1982-83

b Approximately.

NORTH ATLANTIC SLOPE BASINS--Continued	Station number	Drainage area (mi^2)	Period of record
POTOMAC RIVER BASIN--Continued			
Monocacy River--Continued			
Owens Creek near Thurmont, MD	01640600	14.4	1975-79
Little Owens Creek near Thurmont, MD	01640650	6.16	1975-79
Beaver Branch at Rocky Ridge, MD	01640720	6.53	1977-82
Owens Creek near Rocky Ridge, MD	01640750	38.8	1982-83
Fishing Creek near Utica, MD	01641600	17.9	1982-83
Tuscarora Creek near Frederick, MD	01641900	16.5	1975-79 1982-83
Israel Creek near Walkersville, MD	01642050	**b**29	1964-66 1975-79 1982-83
Linganore Creek near New London, MD	01642430	45.2	1980-82
Bens Branch near New Market, MD	01642450	11.8	1975-82
Bush Creek at Ijamsville, MD	01643100	**b**17.5	1964-66
Bush Creek at Reels, MD	01643110	29.7	1982-83
Ballenger Creek near Lime Kiln, MD	01643125	20.2	1975-83
Bennett Creek:			
Little Bennett Creek at Hyattstown, MD	01643400	12.8	1968-69 1975-79
Broad Run at Elmer, MD	01643615	14.0	1975-82
Seneca Creek:			
Little Seneca Creek at Boyds, MD	01644400	**b**21	1964-67
Bucklodge Branch near Dawsonville, MD	01644425	8.47	1975-82
Great Seneca Creek:			
Goshen Branch at Goshen, MD	01644480	7.63	1975-77 1979
Dry Seneca Creek near Seneca, MD	01645050	19.2	1975-82
Rock Run near Cabin John, MD	01646220	**b**4.8	1964-67
Rock Creek at Redland, MD	01647620	7.45	1977-82
Northeast Branch Anacostia River:			
Paint Branch at College Park, MD	01649200	17.5	1980-82
Oxon Run (head of Oxon Creek) at Washington, DC	01652580	6.84	1980-82
Piscataway Creek:			
Tinkers Creek at Piscataway, MD	01653625	15.9	1975-82
Mattawoman Creek near Waldorf, MD	01657900	16.9	1980-82
Chicamuxen Creek:			
Reeder Run at Chicamuxen, MD	01658300	**b**5.6	1964-67
Nanjemoy Creek:			
Burgess Creek:			
Mill Run (head of Nanjemoy Creek) Welcome, MD	01660650	9.89	1980-82
Port Tobacco Creek (head of Port Tobacco River)			
near Marshalls Corner, MD	01660740	15.8	1977-82
Wicomico River:			
Zekiah Swamp Run (head of Wicomico River) near Malcolm, MD	01660905	12.1	1975-82
Clark Run near Bel Alton, MD	01660930	10.4	1975-79
Gilbert Swamp Run near Olivers Shop, MD	01660950	**b**32	1964-65
McIntosh Run:			
Brooks Run near Hollywood, MD	01661200	5.76	1980-82
Mcintosh Run at Tintop Hill, MD	01661300	12.1	1964-66 1982
Glebe Run at Leonardtown, MD	01661410	5.81	1980-82
OHIO RIVER BASIN			
MONONGAHELA RIVER BASIN			
Monongahela River:			
Youghiogheny River:			
Cherry Creek near Crellin, MD	03075350	16.7	1977-82
Snowy Creek:			
Laurel Run at Crellin, MD	03075400	10.9	1964-74
Little Youghiogheny River at Loch Lynn Heights, MD	03075475	13.2	1975-79
Muddy Creek at Swallow Falls State Park, MD	03075700	17.8	1977-82
Cherry Creek near McHenry, MD	03075900	12.3	1973, 1975-79
Bear Creek:			
South Branch Bear Creek near Accident, MD	03076580	6.01	1964-74
South Branch Bear Creek near Friendsville, MD	03076590	16.8	1975-79
Casselman River:			
North Branch Casselman River near Grantsville, MD	03077925	24.4	1975-80
South Branch Casselman River near Grantsville, MD	03077950	20.8	1975-79

b Approximately.

THIS IS A BLANK PAGE

WATER RESOURCES DATA - MARYLAND AND DELAWARE, 2001

VOLUME 1. SURFACE-WATER DATA

INTRODUCTION

The Water Resources Division of the U.S. Geological Survey, in cooperation with State agencies, obtains a large amount of data pertaining to the water resources of Maryland and Delaware each water year. These data, accumulated during many water years, constitute a valuable data base for developing an improved understanding of the water resources of the State. To make these data readily available to interested parties outside the Geological Survey, the data are published annually in this report series entitled **"Water Resources Data - Maryland and Delaware."**

This report series includes records of stage, discharge, and water quality of streams and stage, contents, and water quality of lakes and reservoirs. This volume contains records for water discharge at 128 gaging stations; stage and contents at 1 reservoir; and water quality at 19 gaging stations. Also included are stage and discharge for 3 crest-stage partial-record stations, and stage only for 10 tidal crest-gage partial-record stations. Locations of these sites are shown on figure 3. Locations of discontinued gaging stations are shown on figure 4. Additional water data were collected at various sites not part of the systematic data-collection program. These data represent that part of the National Water-Data System collected by the U.S. Geological Survey and cooperating State and Federal agencies in Maryland and Delaware.

This series of annual reports for Maryland and Delaware began with a report for the 1961 water year that contained only data relating to the quantities of surface water. For the 1964 water year, a similar report was introduced that contained only data relating to water quality. Beginning with the l975 water year, the report format was changed to present, in one volume, data on quantities of surface water, quality of surface and ground water, and ground-water levels. In the 1989 water year, the report format was changed to two volumes. Both volumes contained data on quantities of surface water, quality of surface and ground water, and ground-water levels. Volume 1 contained data on the Atlantic Slope Basins (Delaware River through Patuxent River) and Volume 2 contained data on the Monongahela and Potomac River Basins. Beginning with the 1991 water year, Volume 1 contains all information on quantities of surface water and surface-water-quality data and Volume 2 contains ground-water levels and ground-water-quality data.

Prior to the introduction of this series and for several water years concurrent with it, water resources data for Maryland and Delaware were published in U.S. Geological Survey Water-Supply Papers. Data on stream discharge and stage, and on lake or reservoir contents and stage, through September 1960, were published annually under the title **"Surface-Water Supply of the United States, Parts 6A and 6B."** For the 1961 through 1970 water years, the data were published in two 5-year reports. Data on chemical quality, temperature, and suspended sediment for the 1941 through 1970 water years were published annually under the title **"Quality of Surface Waters of the United States,"** and water levels for the 1935 through 1974 water years were published under the title **"Ground-Water Levels in the United States."** The above mentioned Water-Supply Papers may be consulted in the libraries of the principal cities of the United States, and may be purchased from the U.S. Geological Survey, Branch of Information Services, Federal Center, Box 25286, Denver, CO 80225.

Publications similar to this report are published annually by the U.S. Geological Survey for all States. These official Survey reports have an identification number consisting of the two-letter State abbreviation, the last two digits of the water year, and the volume number. For example, this volume is identified as **"U.S. Geological Survey Water-Data Report MD-DE-01-1."** For archiving and general distribution, the reports for l971-74 water years also are identified as water-data reports. These water-data reports are for sale in paper copy or on microfiche by the National Technical Information Service, U.S. Department of Commerce, Springfield, VA 22161.

Additional information including current prices for ordering specific reports may be obtained from the District Chief at the address given on the back of the title page or by telephone at (410) 238-4200.

COOPERATION

The U.S. Geological Survey and agencies of the State of Maryland had cooperative agreements for the collection of water-resource records from 1896 to 1909 and since 1924. Similar cooperative agreements have existed between the Survey and agencies of the State of Delaware since 1943. Organizations that assisted in collecting the data in this report through cooperative agreements with the Survey are:

Maryland Geological Survey, Emery T. Cleaves, Director.

Delaware Geological Survey, Robert R. Jordan, State Geologist.

Maryland Department of the Environment, Chesapeake Bay and Special Projects Program, Robert M. Summers, Division Chief.

District of Columbia Department of Public Works, Larry King, Director.

Maryland State Highway Administration, Parker F. Williams, Administrator.

Assistance with funds or services was given by the U.S. Army Corps of Engineers for collecting records at 10 gaging stations and 3 water-quality stations within Maryland.

The following organizations also aided in collecting records:

Delaware: Department of Natural Resources and Environmental Control, Water Resources Agency for New Castle County.

Maryland: Maryland Water Resources Administration, Washington Suburban Sanitary Commission, Interstate Commission Potomac River Basin, Upper Potomac River Commission, Baltimore County, Baltimore City, City of Aberdeen, Anne Arundel County, Harford County, Howard County, Montgomery County, Prince Georges County.

Organizations that provided data are acknowledged in station descriptions.

SUMMARY OF HYDROLOGIC CONDITIONS

Streamflow at the beginning of the 2001 water year was in the excessive range (upper 25 percent of the record) throughout Maryland and Delaware following above-normal rainfall (2.0 to 5.0 inches). During October 2000, streamflow returned to the normal range throughout Maryland and Delaware following below-normal rainfall (2.0 to 3.5 inches). During November 2000, streamflow fell into the deficient range (lower 25 percent of the record) following below-normal precipitation (0.5 to 2.2 inches) except for the Eastern Shore, where streamflow remained in the normal range. Streamflow during December 2000 was in the normal range in Maryland and Delaware except along the main stem of the Potomac River, where streamflow remained in the deficient range. This streamflow pattern continued throught January 2001. In February 2001, streamflow returned to the normal range throughout the area except for Central Maryland, where streamflow fell into the deficient range following below-normal rainfall (0.6 to 1.6 inches). During March and April 2001, streamflow was in the normal range throughout Maryland and Delaware. Rainfall was above normal in March and below normal in April. During May 2001, streamflow dropped into the deficient range in Northeastern Maryland and along the southern half of the main stem Potomac River. Flows in the remainder of Maryland and Delaware remined in the normal range. During June 2001, streamflow along all of the main stem Potomac River rose into the normal range following above-normal rainfall (1.5 to 4.3 inches). Streamflow in Northeaster Maryland remained in the deficient range. Streamflow on the Eastern Shore and in Central Maryland rose into the excessive range following above-normal rainfall (1.3 to 4.0 inches). Streamflow remained unchanged on the Eastern Shore and in Northeastern Maryland during July 2001. The remainder of Maryland was in the normal range. Streamflow fell on the Eastern Shore and rose in Northeastern Maryland into the normal range during August 2001. Streamflow in Western and Central Maryland rose into the excessive range follwing above-normal rainfall (1.5 to 6.0 inches). During September 2001, streamflow was in the normal range throughout Maryland and Delaware except in Northeastern Maryland, where streamflow fell into the deficient range following below-normal rainfall (0.5 to 2.0 inches).

During the 2001 water year, flows were in the deficient range at three of the five index stations: Potomac River at Paw Paw, WV, in western Maryland; Potomac River near Washington,D.C., in central Maryland; and Deer Creek at Rocks, in northeastern Maryland. At the Choptank River at Greensboro, on the Eastern Shore of Maryland, and Seneca Creek at Dawsonville, in central Maryland, flows were in the normal range. A record monthly mean and a new maximum daily mean were set for Choptank River at Greensboro during June 2001. The new record monthly mean was 119 percent greater than the record set in 1996. The new maximum daily mean was 61 percent greater than the record set in 1972.

Monthly and annual-mean discharges for water year 2001 were compared to long-term averages (reference period 1971-2000) for two representative streamflow-gaging stations in figure 1. Data for the station, Potomac River at Point of Rocks, in central Maryland, reflect runoff conditions in the Potomac River Basin, excluding the Coastal Plain. Data for the station, Choptank River near Greensboro, on the Eastern Shore of Maryland, reflect runoff from a 113 mi^2 (square mile) area, of which 21.6 mi^2 is located in Delaware in the central part of the Delmarva Peninsula.

Average freshwater inflow to the Chesapeake Bay was estimated to be 52,000 ft^3/s (cubic feet per second), on the basis of flows for the James, Potomac, and Susquehanna Rivers. This is 68 percent of the long-term average during the reference period (water years) 1952-2001. Flows for October averaged 38 percent ofnormal. During November, flows averaged 25 percent of normal. For December, flows averaged 46 percent of normal. For January, flows averaged 43 percent of normal. Flows in February averaged 61 percent of normal. Flows in March were 69 percent of normal while flows in April were 102 percent of normal. Flows for May were 54 percent of normal. June flows were 81 percent of normal. During July, flows were 67 percent of normal. August flows were 78 percent of normal. September flows were 57 percent of normal. No new flow records were set during the 2001 water year.

The combined storage in the three major water-supply reservoirs in the Baltimore City Municipal System (combined usable capacity of 75,850 million gallons [previously 85,430 million gallons, decrease in storage capacity due to increase in sediment storage]) decreased from 89 percent of capacity on September 30, 2000 to 81 percent of capacity on September 30, 2001.

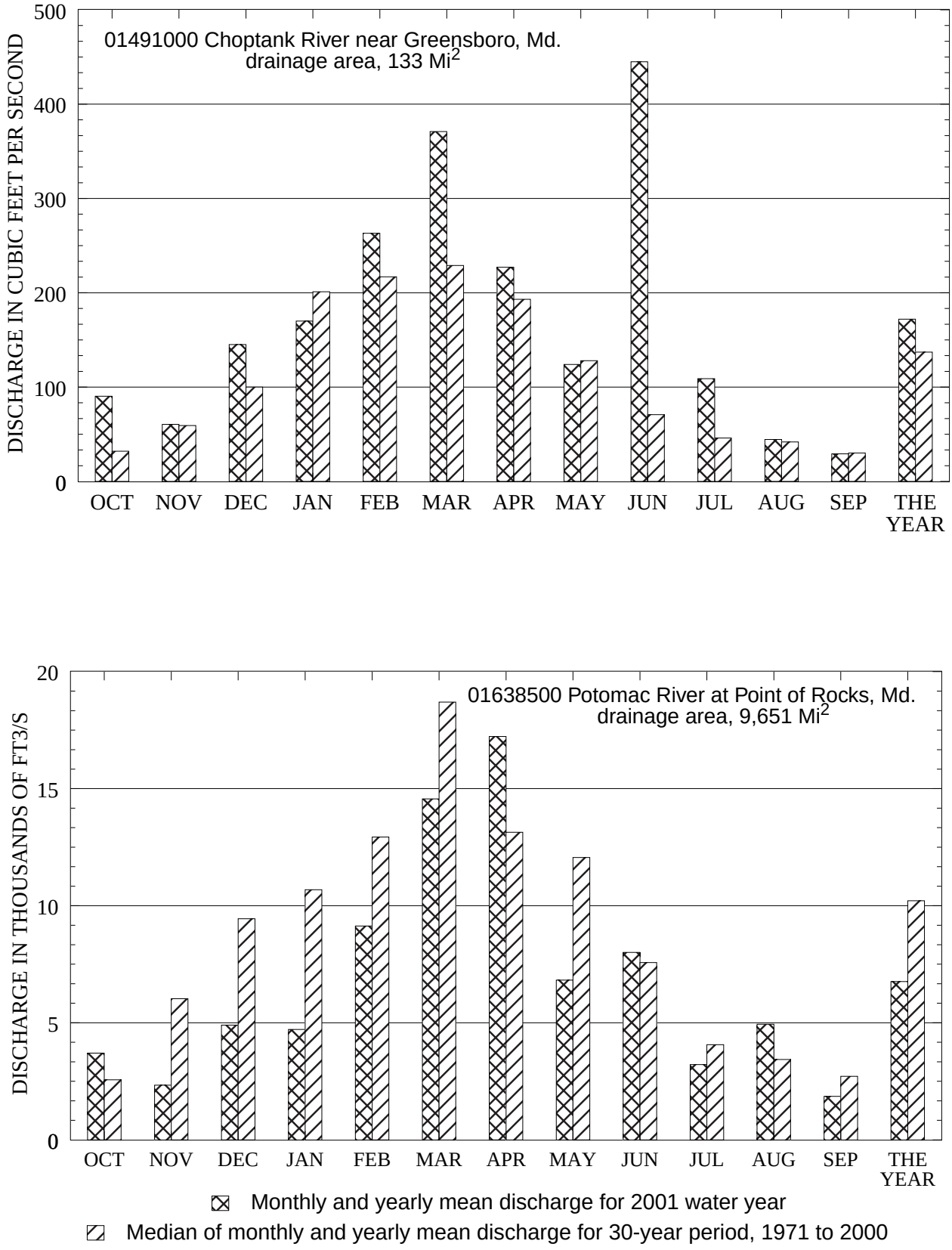


FIGURE 1. COMPARISON OF DISCHARGE AT TWO LONG-TERM REPRESENTATIVE GAGING STATIONS DURING THE 2001 WATER YEAR WITH MEDIAN DISCHARGE FOR INDICATED PERIOD.

SPECIAL NETWORKS AND PROGRAMS

National Stream-Quality Accounting Network (NASQAN) monitors the water quality of large rivers within the Nation's largest river basins. From 1995 through 1999, a network of approximately 40 stations were operated in the Mississippi, Columbia, Colorado, and Rio Grande. From 2000 through 2004, sampling was reduced to a few index stations on the Colorado and Columbia so that a network of 5 stations could be implemented on the Yukon River. Samples are collected with sufficient frequency that the flux of a wide range of constituents can be estimated. The objective of NASQAN is to characterize the water quality of these large rivers by measuring concentration and mass transport of a wide range of dissolved and suspended constituents, including nutrients,major ions, dissolved and sediment-bound heavy metals, common pesticides, and inorganic and organic forms of carbon. This information will be used (1) to describe the long-term trends and changes in concentration and transport of these constituents; (2) to test findings of the National Water-Quality Assessment Program (NAWQA); (3) to characterize processes unique to large-river systems such as storage and re-mobilization of sediments and associated contaminants; and (4) to refine existing estimates of off-continent transport of water, sediment, and chemicals for assessing human effects on the world's oceans and for determining global cycles of carbon, nutrients, and other chemicals.

Additional information about the NASQAN Program can be found at:

http://water.usgs.gov/nasqan/

The National Water-Quality Assessment (NAWQA) Program of the U.S. Geological Survey is a long-term program with goals to describe the status and trends of water-quality conditions for a large, representative part of the Nation's ground- and surface-water resources; provide an improved understanding of the primary natural and human factors affecting these observed conditions and trends; and provide information that supports development and evaluation of management, regulatory, and monitoring decisions by other agencies.

Assessment activities are being conducted in 59 study units (major watersheds and aquifer systems) that represent a wide range of environmental settings nationwide and that account for a large percentage of the Nation's water use. A wide array of chemical constituents will be measured in ground water, surface water, streambed sediments, and fish tissues. The coordinated application of comparative hydrologic studies at a wide range of spatial and temporal scales will provide information for decision making by water-resources managers and a foundation for aggregation and comparison of findings to address water-quality issues of regional and national interest.

Communication and coordination between USGS personnel and other local, State, and Federal interests are critical components of the NAWQA program. Each study unit has a local liaison committee consisting of representatives from key federal, State, and local water-resources agencies, Indian nations, and universities in the study unit. Liaison committees typically meet semiannually to discuss their information needs, monitoring plans and progress, desired information products, and opportunities to coordinate efforts among the agencies.

Additional information about the NAWQA program is available throughthe world wide web at:

http://water.usgs.gov/nawqa/nawqa_home.html

EXPLANATION OF THE RECORDS

The surface-water records published in this report are for the 2000 water year that began October 1, 2000, and ended September 30, 2001. A calendar of the water year is provided on the inside of the front cover. The records contain streamflow data, stage and content data for lakes and reservoirs, and water-quality data for surface water. The locations of the stations where the data were collected are shown in figure 3. The following sections of introductory text are presented to provide users with a more detailed explanation of how the hydrologic data published in this report were collected, analyzed, computed, and arranged for presentation.

Station Identification Numbers

Each data station in this report is assigned a unique identification number. This number is unique in that it applies specifically to a given station and to no other. The number usually is assigned when a station is first established and is retained for that station indefinitely. The systems used by the U.S. Geological Survey to assign identification numbers for surface-water stations are based on geographic location. The **"downstream order"** system is used for regular surface-water stations and the **"latitude-longitude"** system is used for surface-water stations where only miscellaneous measurements are made.

Downstream Order System

Since October 1, 1950, the order of listing hydrologic-station records in Survey reports is in a downstream direction along the main stream. All stations on a tributary entering upstream from a mainstream station are listed before that station. A station on a tributary that enters between two mainstream stations is listed between them. A similar order is followed in listing stations on first rank, second rank, and other ranks of tributaries. The rank of any tributary with respect to the stream to which it is immediately tributary is indicated by an indentation in the **"List of Stations"** in the front of this report. Each indentation represents one rank. This downstream order and system of indentation shows which stations are on tributaries between any two stations and the rank of the tributary on which each station is situated.

The station-identification number is assigned according to downstream order. In assigning station numbers, no distinction is made between partial-record stations and other stations; therefore, the station number for a partial-record station indicates downstream-order position in a list made up of both types of stations. Gaps are left in the series of numbers to allow for new stations that may be established; hence, the numbers are not consecutive. The complete eight-digit number for each station, such as 01477800, which appears just to the left of the station name, includes the two-digit part number **"01"** plus the six-digit downstream-order number **"477800."** The part number designates the major river basin; for example, part **"01"** is the North Atlantic Slope Basin.

Latitude-Longitude System

The identification numbers for miscellaneous surface-water sites are assigned according to the grid system of latitude and longitude. The number consists of 15 digits. The first six digits denote the degrees, minutes, and seconds of latitude, the next seven digits denote degrees, minutes, and seconds of longitude, and the last two digits (assigned sequentially) identify the sites within a 1-second grid. This site-identification number, once assigned, is a pure number and has no locational significance. In the rare instance where the initial determination of latitude and longitude are found to be in error, the station will retain its initial identification number; however, its true latitude and longitude will be listed in the **LOCATION** paragraph of the station description(See figure 2 below).

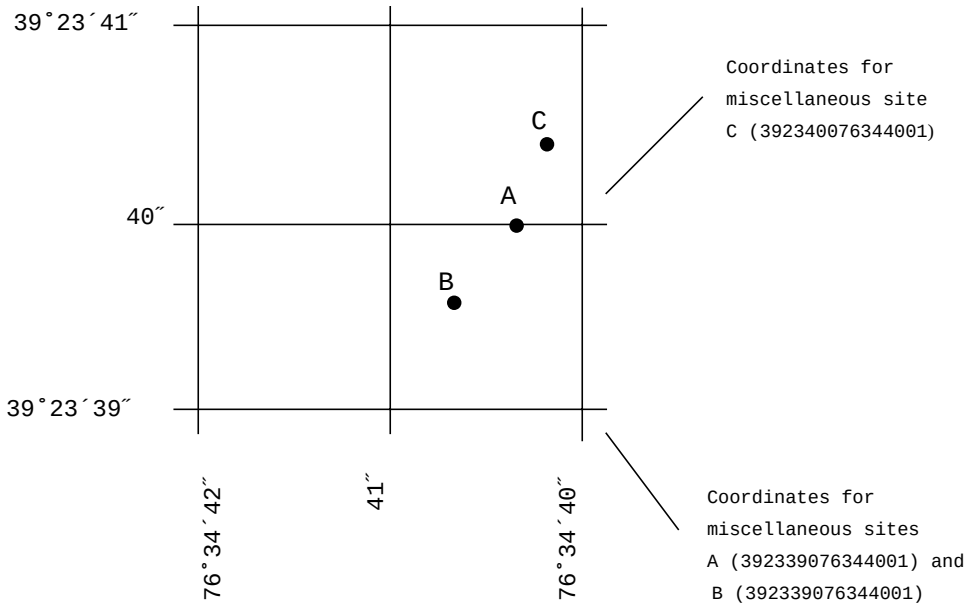


Figure 2. --System for numbering miscellaneous sites (latitude and longitude)

Records of Stage and Water Discharge

Records of stage and water discharge may be complete or partial. Complete records of discharge are those obtained using a continuous stage-recording device through which either instantaneous or mean-daily discharges may be computed for any time, or any period of time, during the period of record. Complete records of lake or reservoir content, similarly, are those for which stage or content may be computed or estimated with reasonable accuracy for any time, or period of time. They may be obtained using a continuous stage-recording device, but need not be. Because mean-daily discharges and end-of-day contents commonly are published for such stations, they are referred to as **"daily stations."**

By contrast, partial records are obtained through discrete measurements without using a continuous stage-recording device and pertain only to a few flow characteristics, or perhaps only one. The nature of the partial record is indicated by table titles such as **"Crest-stage partial records,"** or **"Low-flow partial records."** Records of miscellaneous discharge measurements or of measurements from special studies, such as low-flow seepage studies, may be considered partial records, but they are presented separately in this report. Locations of all complete-record and crest-stage partial-record stations for which data are given in this report are shown in figure 3.

Data Collection and Computation

The data obtained at a complete-record gaging station on a stream or canal consist of a continuous record of stage, individual measurements of discharge throughout a range of stages, and notations regarding factors that may affect the relation between stage and discharge. These data, together with supplemental information such as weather records are used to compute daily discharges. The data obtained at a complete-record gaging station on a lake or reservoir consist of a record of stage and of notations regarding factors that may affect the relationship between stage and lake content. These data are used with stage-area and stage-capacity curves or tables to compute water-surface areas and lake storage.

Continuous records of stage are obtained with analog recorders that trace continuous graphs of stage or with digital recorders that punch stage values on paper tapes at selected time intervals. Measurements of discharge are made with current meters using methods adopted by the U.S. Geological Survey as a result of experience accumulated since 1880. These methods are described in standard textbooks, in Water-Supply Paper 2175, and in U.S. Geological Survey Techniques of Water-Resources Investigations (**TWRI**'s), Book 3, Chapters A1 through A19 and Book 8, Chapters A2 and B2. The methods are consistent with the American Society for Testing and Materials (**ASTM**)standards and generally follow the standards of the International Organization for Standards (**ISO**).

In computing discharge records, results of individual measurements are plotted against the corresponding stages, and stage-discharge relation curves are then constructed. From these curves, rating tables indicating the approximate discharge for any stage within the range of the measurements are prepared. If it is necessary to define extremes of discharge outside the range of the current-meter measurements, the curves are extended using: (1) logarithmic plotting; (2) velocity-area studies; (3) results of indirect measurements of peak discharge, such as slope-area or contracted-opening measurements, and computations of flow over dams or weirs; or (4) step-backwater techniques.

Daily-mean discharges are computed by applying the daily mean stages (gage heights) to the stage-discharge curves or tables. If the stage-discharge relation is subject to change because of frequent or continual change in the physical features that form the control, the daily mean discharge is determined by the shifting-control method, in which correction factors based on the individual discharge measurements and notes of the personnel making the measurements are applied to the gage heights before the discharges are determined from the curves or tables. This shifting-control method also is used if the stage-discharge relation is changed temporarily because of aquatic growth or debris on the control. For some stations, formation of ice in the winter may so obscure the stage-discharge relations that daily mean discharges must be estimated from other information such as temperature and precipitation records, notes of observations, and records for other stations in the same or nearby basins for comparable periods.

At some stream-gaging stations, the stage-discharge relation is affected by the backwater from reservoirs, tributary streams, or other sources. This necessitates the use of the slope method in which the slope or fall in a reach of the stream is a factor in computing discharge. The slope or fall is obtained by means of an auxiliary gage set at some distance from the base gage. At some stations, the stage-discharge relation is affected by changing stage; at these stations, the rate of change in stage is used as a factor in computing discharge.

In computing records of lake or reservoir contents, it is necessary to have available curves or tables defining the relation of stage and content based on bathymetric surveys. The application of stage to the stage-content curves or tables gives the contents from which daily, monthly, or yearly changes are then determined. If the stage-content relation changes because of deposition of sediment in a lake or reservoir, periodic re-surveys may be necessary to redefine the relationship. Even when this is done, the contents computed may become increasingly inaccurate as the time lapsed since the last survey increases. Discharges over lake or reservoir spillways are computed from stage-discharge relations, similar to the methods by which other stream discharges are computed.

For some gaging stations, there are periods when no gage-height record is obtained, or the recorded gage height is so faulty that it cannot be used to compute daily discharge or contents. This happens when the recorder stops or otherwise fails to operate properly, intakes are plugged, the float is frozen in the well, or for various other reasons. For such periods, the daily discharges are estimated from the recorded range in stage, previous or following record, discharge measurements, weather records, and comparison with other station records from the same or nearby basins. Likewise, daily contents may be estimated from operator's logs, previous or following record, inflow-outflow studies, and other information. Information explaining how estimated daily-discharge values are identified in station records is included in the next two sections, **"Data Presentation"** (**REMARKS** paragraph) and **"Identifying Estimated Daily Discharge."**

Data Presentation

Streamflow data in this report are presented in a new format that is considerably different from the format in data reports prior to the 1991 water year. The major changes are that statistical characteristics of discharge now appear in tabular summaries following the water-year data table, and less information is provided in the text or station manuscript above the table. These changes represent the results of a pilot program to reformat the annual water-data report to meet current user needs and data preferences.

The records published for each continuous-record surface-water discharge station (gaging station) now consist of four parts, the manuscript or station description; the data table of daily-mean values of discharge for the current water year with summary data; a tabular statistical summary of monthly-mean flow data for a designated period, by water years; and a summary statistics table that includes statistical data of annual, daily, and instantaneous flows as well as data pertaining to annual runoff, 7-day low-flow minimums, and flow duration.

Station manuscript

The manuscript provides descriptive information under various headings such as station location, period of record, historical extremes outside the period of record, record accuracy, and other remarks pertinent to station operation and regulation. The following information, as appropriate, is provided with each continuous record of discharge or lake content. Comments which follow clarify information presented under the various headings of the station description.

LOCATION.--Information on locations is obtained from the most accurate maps available. The location of the gaging station in relation to the cultural and physical features in the vicinity and to the reference place mentioned in the station name is given. River mileages, given for only a few stations, were determined by methods given in **"River Mileage Measurement,"** Bulletin 14, Revision of October 1968, prepared by the Water Resources Council or were provided by the U.S. Army Corps of Engineers.

DRAINAGE AREA.--Drainage areas are measured using the most accurate maps available. Because the maps available vary from one drainage basin to another, the accuracy of drainage areas also varies. Drainage areas are updated as better maps become available.

PERIOD OF RECORD.--This indicates the period for which records have been published for the station or for an equivalent station. An equivalent station is one that was in operation at a time that the present station was not, and whose location was such that flow could reasonably be considered equivalent to flow at the present station.

REVISED RECORDS.--Because of new information, published records occasionally are found to be incorrect, and revisions are printed in later reports. Listed under this heading are all the reports in which revisions have been published for the station and the water years to which the revisions apply. If a revision did not include daily, monthly, or annual figures of discharge, that fact is noted after the year dates as follows: **"(M)"** means that only the instantaneous maximum discharge was revised; **"(m)"** that only the instantaneous minimum was revised; and **"(P)"** that only peak discharges were revised. If the drainage area has been revised, the report in which the most recently revised figure was first published is given.

GAGE.--The type of gage in current use, the datum of the current gage referred to National Geodetic Vertical Datum of 1929 (see Glossary), and a condensed history of the types, locations, and datums of previous gages are given under this heading.

REMARKS.--All periods of estimated daily-discharge record will either be identified by date in this paragraph of the station description for water-discharge stations or flagged in the daily-discharge table. (See next section, **"Identifying Estimated Daily Discharge"**). If a **REMARKS** paragraph is used to identify estimated record, the paragraph will begin with this information presented as the first entry. The paragraph is also used to present information relative to the accuracy of the records, to special methods of computation, and to conditions that affect natural flow at the station. In addition, information may be presented pertaining to average discharge data for the period of record, to extreme data for the period of record and the current year, and, possibly, to other pertinent items. For reservoir stations, information is given on the dam forming the reservoir, the capacity, outlet works and spillway, and purpose and use of the reservoir.

COOPERATION.--Records provided by a cooperating organization or obtained for the U.S. Geological Survey by a cooperating organization are identified here.

EXTREMES OUTSIDE PERIOD OF RECORD.--Included in this section is information concerning major floods or unusually low flows that occurred outside the stated period of record. The information may or may not have been obtained by the U.S. Geological Survey.

PEAK DISCHARGE(S) FOR CURRENT YEAR.--The maximum instantaneous discharge and any secondary peaks occurring during the current year are given. For stations meeting certain criteria, all peak discharges and stages occurring during the water year and greater than a selected base discharge are presented under this heading. The peaks greater than the base discharge, excluding the highest one, are referred to as secondary peaks. Peak discharges are not published for canals, ditches, drains, or streams for which the peaks are subject to substantial control by man. The time of occurrence for peaks is expressed in 24-hour local standard time. For example, 12:30 a.m. is 0030, and 1:30 p.m. is 1330.

REVISIONS.--If a critical error in published records is discovered, a revision is included in the first report published following discovery of the error.

Although rare, the records of a discontinued gaging station may occasionally need revision. Because there would be no current or, possibly, future station manuscript published for these stations to document the revision in a **"Revised Records"** entry, users of data for these stations who obtained the record from previously published data reports may wish to contact the District Office (address given on the back of the title page of this report) to determine if the published records were ever revised after the station was discontinued. If the data for a discontinued station were obtained by computer retrieval, however, the data would be current and there would be no need to check because any published revision of data is always accompanied by a revision of the corresponding data in computer storage.

Manuscript information for lake or reservoir stations differs from that for stream stations in the nature of the **"REMARKS"** and in the inclusion of a skeleton stage-capacity table when daily contents are given.

Headings for **AVERAGE DISCHARGE** and **EXTREMES FOR THE PERIOD OF RECORD** have been deleted and the information contained in these paragraphs is now presented in the tabular summaries following the discharge table or in the **REMARKS** paragraph, as appropriate. No changes have been made to the data presentation of lake contents.

Data table of daily-mean values

The daily table of discharge records for stream-gaging stations gives mean discharge for each day of the water year. In the monthly summary for the table, the line headed **"TOTAL"** gives the sum of the daily figures for each month, the line headed **"MEAN"** gives the average flow in cubic feet per second for the month, and the lines headed **"MAX"** and **"MIN"** give the maximum and minimum daily discharges, respectively, for each month. Discharge for the month also is usually expressed in cubic feet per second per square mile (line headed **"CFSM"**), or in inches (line headed **"IN."**), or in acre-feet (line headed **"AC-FT"**). Figures for cubic feet per second per square mile and runoff in inches or in acre-feet may be omitted if there is extensive regulation or diversion, or if the drainage area includes large non-contributing areas. At some stations, monthly and (or) yearly observed discharges are adjusted for reservoir storage or diversion, or diversion data or reservoir contents are given. These figures are identified by a symbol and corresponding footnote.

Statistics of monthly-mean data

A tabular summary of the mean (line headed **"MEAN"**), maximum (line headed **"MAX"**), and minimum (line headed **"MIN"**) of monthly-mean flows for each month for a designated period is provided below the mean values table. The water years of the first occurrence of the maximum and minimum monthly flows are provided immediately below those figures. The designated period is expressed as **"FOR WATER YEARS ____-____, BY WATER YEAR (WY),"** and lists the first and last water years of the range of years selected from the **PERIOD OF RECORD** paragraph in the station manuscript. It consists of all of the station record within the specified water years, inclusive, including complete months of record for partial water years, if any, and may coincide with the period of record for the station. The water years for which the statistics are computed are consecutive, unless a break in the station record is indicated in the manuscript.

Summary statistics

A table titled **"SUMMARY STATISTICS"** follows the statistics of monthly-mean data tabulation. This table consists of four columns, with the first column containing the line headings of the statistics being reported. The table provides a statistical summary of yearly, daily, and instantaneous flows, not only for the current water year but also for the previous calendar year and for a designated period, as appropriate. The designated period selected, **"WATER YEARS ____-____,"** will consist of all of the station record within the specified water years, inclusive, including complete months of record for partial water years, if any, and may coincide with the period of record for the station. The water years for which the statistics are computed are consecutive, unless a break in the station record is indicated in the manuscript. All of the calculations for the statistical characteristics designated **ANNUAL** (see line headings below), except for the **"ANNUAL 7-DAY MINIMUM"** statistic, are calculated for the designated period using complete water years. The other statistical characteristics may be calculated using partial water years.

The date or water year, as appropriate, of the first occurrence of each statistic reporting extreme values of discharge is provided adjacent to the statistic. Repeated occurrences may be noted in the **REMARKS** paragraph of the manuscript or in footnotes. Because the designated period may not be the same as in the station period of record published in the manuscript, occasionally the dates of occurrence listed for the daily and instantaneous extremes in the designated-period column may not be within the selected water years listed in the heading. When this occurs, it will be noted in the **REMARKS** paragraph or in footnotes. Selected streamflow-duration curve statistics and runoff data are also given. Runoff data may be omitted if there is extensive regulation or diversion of flow in the drainage area.

The following summary statistics data, as appropriate, are provided with each continuous record of discharge. Comments below clarify information presented under the various line headings of the summary statistics table.

ANNUAL TOTAL.--The sum of the daily-mean values of discharge for the year. At some stations, the annual total discharge is adjusted for reservoir storage or diversion. The adjusted figures are identified by a symbol and corresponding footnotes.

ANNUAL MEAN.--The arithmetic mean of the individual daily-mean discharges for the year noted or for the designated period. At some stations the yearly mean is adjusted for reservoir storage or diversion. The adjusted figures are identified by a symbol and corresponding footnotes.

HIGHEST ANNUAL MEAN.--The maximum annual-mean discharge occurring for the designated period.

LOWEST ANNUAL MEAN.--The minimum annual-mean discharge occurring for the designated period.

HIGHEST DAILY MEAN.--The maximum daily-mean discharge for the year or for the designated period.

LOWEST DAILY MEAN.--The minimum daily-mean discharge for the year or for the designated period.

ANNUAL 7-DAY MINIMUM.-- The lowest mean discharge for 7 consecutive days for a calendar year or a water year. (Note that most low-flow frequency analyses of annual 7-day minimum flows use a climatic year, April 1 to March 31). The date shown in the summary statistics table is the initial date of the 7-day period. (This value should not be confused with the 7-day 10-year low-flow statistic.)

INSTANTANEOUS PEAK FLOW.--The maximum instantaneous discharge occurring for the water year or for the designated period.

INSTANTANEOUS PEAK STAGE.--The maximum instantaneous stage occurring for the water year or for the designated period. If the dates of occurrence for the instantaneous peak flow and instantaneous peak stage differ, the **REMARKS** paragraph in the manuscript or a footnote may be used to provide further information.

INSTANTANEOUS LOW FLOW.--The minimum instantaneous discharge occurring for the water year or for the designated period.

ANNUAL RUNOFF.--Indicates the total quantity of water in runoff for a drainage area for the year. Data reports may use any of the following units of measurement in presenting annual runoff data:

Acre-foot (AC-FT, acre-ft) is the quantity of water required to cover 1 acre to a depth of 1 foot and is equivalent to 43,560 cubic feet or about 326,000 gallons or 1,233 cubic meters.

Cubic feet per second per square mile (CFSM, $ft^3/s/mi^2$) is the average number of cubic feet of water flowing per second from each square mile of area drained, assuming the runoff is distributed uniformly in time and area.

Inch (IN., in.) indicates the depth to which the drainage area would be covered if all of the runoff for a given time period were uniformly distributed on it.

10 PERCENT EXCEEDS.--The discharge that has been exceeded 10 percent of the time for the designated period.

50 PERCENT EXCEEDS.--The discharge that has been exceeded 50 percent of the time for the designated period.

90 PERCENT EXCEEDS.--The discharge that has been exceeded 90 percent of the time for the designated period.

Data collected at partial-record stations follow the information for continuous-record sites. Data for partial-record discharge stations are presented in two tables. The first is a table of annual maximum stage and discharge at crest-stage stations, and the second is a table of discharge measurements at low-flow partial-record stations. The tables of partial-record stations are followed by a listing of discharge measurements made at sites other than continuous-record or partial-record stations. These measurements are generally made during times of drought or flood to give better areal coverage of those events. These measurements and others collected for some special reasons are called measurements at miscellaneous sites.

Identifying Estimated Daily Discharge

Estimated daily-discharge values published in the water-discharge tables of annual State data reports are identified either by flagging individual daily values with the letter symbol **"e"** and printing a table footnote, **"e Estimated,"** or by listing the dates of the estimated record in the **REMARKS** paragraph of the station description.

Accuracy of the Records

The accuracy of streamflow records depends primarily on: (1) The stability of the stage-discharge relation or, if the control is unstable, the frequency of discharge measurements, and (2) the accuracy of measurements of stage, measurements of discharge, and interpretation of records.

The accuracy attributed to the records is indicated under **"REMARKS."** **"Excellent"** means that about 95 percent of the daily discharges are within 5 percent of their true values; **"good,"** within 10 percent; and **"fair,"** within 15 percent. Records that do not meet the criteria mentioned are rated **"poor."** Different accuracies may be attributed to different parts of a given record.

Daily mean discharges in this report are given to the nearest hundredth of a cubic foot per second (ft^3/s) for values less than 1 ft^3/s; to the nearest tenth between 1.0 and 10 ft^3/s; to whole numbers between 10 and 1,000 ft^3/s; and to 3 significant figures for more than 1,000 ft^3/s. The number of significant figures used is based solely on the magnitude of the discharge value. The same rounding rules apply to discharges listed for partial-record stations and miscellaneous sites.

Discharge at many stations, as indicated by the monthly mean, may not reflect natural runoff due to the effects of diversion, consumption, regulation by storage, increase or decrease in evaporation due to artificial causes, or to other factors. For such stations, figures of cubic feet per second per square mile and of runoff, in inches, are not published unless satisfactory adjustments can be made for diversions, for changes in contents of reservoirs, or for other changes affected by use and control. Evaporation from a reservoir is not included in the adjustments for changes in reservoir contents, unless it is so stated. Even at those stations where adjustments are made, large errors in computed runoff may occur if adjustments or losses are large when compared to the observed discharge.

Other Records Available

Information used in the preparation of the records in this publication, such as discharge-measurement notes, gage-height records, temperature measurements, and rating tables is on file in the Maryland and Delaware offices of the MD-DE-DC District. In addition, most of the daily-mean discharges are in computer-readable form and have been analyzed statistically. Information on the availability of the unpublished information or on the results of statistical analyses of the published records may be obtained from the offices whose addresses are given on the back of the title page of this report.

Records of Surface-Water Quality

Records of surface-water quality ordinarily are obtained at or near stream-gaging stations because interpretation of records of surface-water quality nearly always requires corresponding discharge data. Records of surface-water quality in this report may involve a variety of types of data and measurement frequencies.

Classification of records

Water-quality data for surface-water sites are grouped into one of three classifications. A **continuing-record station** is a site where data are collected on a regularly scheduled basis. Frequency may be once or more times daily, weekly, monthly, or quarterly. A **partial-record station** is a site where limited water-quality data are collected systematically over a period of years. Frequency of sampling is usually less than quarterly. A **miscellaneous** sampling site is a location other than a continuing or partial-record station where random samples are collected to give better areal coverage to define water-quality conditions in the river basin.

A careful distinction needs to be made between **"continuing records,"** as used in this report, and **"continuous recordings,"** which refers to a continuous graph or a series of discrete values punched at short intervals on a paper tape. Some records of water quality, such as temperature and specific conductance, may be obtained through continuous recordings; however, because of costs, most data are obtained only monthly or less frequently. Locations of stations for which records on the quality of surface water appear in this report are shown in figure 3.

Arrangement of Records

Water-quality records collected at a surface-water daily record station are published immediately following that record, regardless of the frequency of sample collection. Station number and name are the same for both records. Where a surface-water daily record station is not available, or where the water quality differs significantly from that of the nearby surface-water station, the continuing water-quality record is published with its own station number and name in the regular downstream-order sequence. Water-quality data for partial-record stations and for miscellaneous sampling sites appear in separate tables following the table of discharge measurements at miscellaneous sites.

On-Site Measurements and Sample Collection

In obtaining water-quality data, a major concern is to insure that the data obtained represent the in situ quality of the water. For this reason, certain measurements, such as water temperature, pH, and dissolved oxygen, need to be made on-site when the samples are taken. To assure that measurements made in the laboratory also represent the in situ water, carefully prescribed procedures need to be followed in collecting the samples, in treating the samples to prevent changes in quality pending analysis, and in shipping the samples to the laboratory. Procedures for on-site measurements and for collecting, treating, and shipping samples are given in publications on **"Techniques of Water-Resources Investigations,"** Book 1, Chap. D2; Book 3, Chap. A1, A3, and A4; Book 9, Chap. A1-A9. These references are listed under **"PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS"** (TWRI) section of this report. These methods are consistent with ASTM standards and generally follow ISO standards. Also, detailed information on collecting, treating, and shipping samples may be obtained from the U.S. Geological Survey Maryland and Delaware offices.

One sample can adequately define the water quality at a given time if the mixture of solutes throughout the stream cross section is homogeneous. However, the concentration of solutes at different locations in the cross section may vary widely with different rates of water discharge, depending on the source of material and the turbulence and mixing of the stream. Some streams must be sampled through several vertical sections to obtain a representative sample needed for an accurate mean concentration and for use in calculating load. All samples obtained for the National Stream-Quality Accounting Network (see definitions) are obtained from at least several verticals. Whether samples are obtained from the centroid of flow or from several verticals depends on flow conditions and other factors which must be evaluated by the collector.

Chemical-quality data published in this report are considered to be the most representative values available for the stations listed. The values reported represent water-quality conditions at the time of sampling as much as possible, consistent with available sampling techniques and methods of analysis. In the rare case where an apparent inconsistency exists between a reported pH value and the relative abundance of carbon dioxide species (carbonate and bicarbonate), the inconsistency is the result of a slight uptake of carbon dioxide from the air by the sample between measurement of pH in the field and determination of carbonate and bicarbonate in the laboratory.

For chemical-quality stations equipped with digital monitors, the records consist of daily maximum, minimum, and mean values for each constituent measured, and are based upon hourly punches beginning at 0100 hours and ending at 2400 hours for the day of record. More detailed records (hourly values) may be obtained from the U.S. Geological Survey Maryland office whose address is given on the back of the title page of this report.

Water temperature

Water temperatures are measured at most of the water-quality stations. In addition, water temperatures are taken at time of discharge measurements for water-discharge stations. For stations where water temperatures are taken manually once or twice daily, the water temperatures are taken at about the same time each day. Large streams have a small diurnal temperature change; shallow streams may have a daily range of several degrees and may closely follow the changes in air temperature. Some streams may be affected by waste-heat discharges.

At stations where recording instruments are used, either mean temperatures or maximum and minimum temperatures for each day are published. Water temperatures measured at the time of water-discharge measurements are on file in the Maryland and Delaware Offices of the U.S. Geological Survey.

Sediment

Suspended-sediment concentrations are determined from samples collected by using depth-integrating samplers. Samples usually are obtained at several verticals in the cross section, or a single sample may be obtained at a fixed point and a coefficient applied to determine the mean concentration in the cross sections.

During periods of rapidly changing flow or rapidly changing concentration, samples may have been collected more frequently (twice daily, or in some instances, hourly). The published sediment discharges for days of rapidly changing flow or concentration were computed by the subdivided-day method (time-discharge weighted average). Therefore, for those days when the published sediment discharge value differs from the value computed as the product of discharge times mean concentration times 0.0027, the reader can assume that the sediment discharge for that day was computed by the subdivided-day method. For periods when no samples were collected, daily discharges of suspended sediment were estimated on the basis of water discharge, sediment concentrations observed immediately before and after these periods, and suspended-sediment loads for other periods of similar discharge. Methods used in the computation of sediment records are descibed in TWRI Book 3, Chapters C1 and C3. These methods are consistent with ASTM standards and generally follow ISO standards.

At other stations, suspended-sediment samples were collected periodically at many verticals in the stream cross section. Although data collected periodically may only be representative of conditions at the time of observation, such data are useful in establishing seasonal relations between quality and streamflow, and in predicting long-term sediment-discharge characteristics of the stream.

In addition to the records of suspended-sediment discharge, records of the periodic measurements of the particle-size distribution of the suspended sediment and bed material are included for some stations.

Laboratory Measurements

Sediment samples, samples for biochemical-oxygen demand (**BOD**), samples for indicator bacteria, and daily samples for specific conductance are analyzed locally. All other samples are analyzed in the U.S. Geological Survey laboratory in Arvada, Colorado. Methods used to analyze sediment samples and to compute sediment records are described in TWRI Book 5, Chapter C1. Methods used by the U.S. Geological Survey laboratories are given in TWRI Book 1, Chapter D2; Book 3, Chapter C2; and Book 5, Chapters A1, A3, A4, and A5. These methods are consistent with ASTM standards and generally follow ISO standards.

Data Presentation

For continuing-record stations, information pertinent to the history of station operation is provided in descriptive headings preceding the tabular data. These descriptive headings give details regarding location, drainage area, period of record, type of data available, instrumentation, general remarks, cooperation, and extremes for parameters that are currently measured daily. Tables of chemical, physical, biological, radiochemical data, and so forth, obtained at a frequency less than daily are presented first. Tables of **"daily values"** of specific conductance, pH, water temperature, dissolved oxygen, and suspended sediment then follow in sequence.

In the descriptive headings, if the location is identical to that of the discharge-gaging station, neither the **LOCATION** nor the **DRAINAGE AREA** statements are repeated. The following information, as appropriate, is provided with each continuous-record station. Comments below describe information presented under the various headings of the station description.

LOCATION.--See Data Presentation under **"Records of Stage and Water Discharge;"** same comments apply.

DRAINAGE AREA.--See Data Presentation under **"Records of Stage and Water Discharge;"** same comments apply.

PERIOD OF RECORD.--This indicates the periods for which there are published water-quality records for the station. The periods are shown separately for records of parameters measured daily or continuously and those measured less than daily. For those measured daily or continuously, periods of record are given for the parameters individually.

INSTRUMENTATION.--Information on instrumentation is given only if a water-quality monitor temperature record, sediment pumping sampler, or other sampling device is in operation at a station.

REMARKS.--Remarks provide added information pertinent to the collection, analysis, or computation of the records.

COOPERATION.--Records provided by a cooperating organization or obtained for the U.S. Geological Survey by a cooperating organization are identified here.

EXTREMES.--Maximums and minimums are given only for parameters measured daily or more frequently. None are given for parameters measured weekly or less frequently, because the true maximums or minimums may not have been sampled. Extremes, when given, are provided for both the period of record and for the current water year.

REVISIONS.--If errors in published water-quality records are discovered after publication, appropriate updates are made in the U.S. Geological Survey's distributed data system, **NWIS**, and subsequently to its web-based National data system, **NWISWeb [http://water.usgs.gov/nwis/nwis]**. Because the usual volume of updates makes it impractical to document individual changes in the State data-report series or elsewhere, potential users of U.S. Geological Survey water-quality data are encouraged to obtain all required data from **NWIS** or **NWISWeb** to ensure the most recent updates. Updates to **NWISWeb** are currently made on an annual basis.

The surface-water-quality records for partial-record stations and miscellaneous sampling sites are published in separate tables following the table of discharge measurements at miscellaneous sites. No descriptive statements are given for these records. Each station is published with its own station number and name in the regular downstream-order sequence.

Remark Codes

The following remark codes may appear with the water-quality data in this report:

PRINTED OUTPUT	REMARK
E	Estimated value
>	Actual value is known to be greater than the value shown
<	Actual value is known to be less than the value shown
K	Results based on colony count outside the acceptance range (non-ideal colony count)
L	Biological organism count less than 0.5 percent (organism may be observed rather than counted)
D	Biological organism count equal to or greater than 15 percent (dominant)
&	Biological organism estimated as dominant
V	Analyte was detected in both the environmental sample and the associated blank.
M	Presence of material verified but not quantified.

WATER-QUALITY CONTROL DATA

Data generated from quality-control (QC) samples are a requisite for evaluating the quality of the sampling and processing techniques as well as data from the actual samples themselves. Without QC data, environmental sample data cannot be adequately interpreted because the errors associated with the sample data are unknown. The various types of QC samples collected by this District are described in the following section. Procedures have been established for the storage of water-quality-control data within the U.S. Geological Survey. These procedures allow for storage of all derived QC data and are identified so that they can be related to corresponding environmental samples.

Blank Samples

Blank samples are collected and analyzed to ensure that environmental samples have not been contaminated by the overall data-collection process. The blank solution used to develop specific types of blank samples is a solution that is free of the analytes of interest. Any measured value signal in a blank sample for an analyte (a specific component measured in a chemical analysis) that was absent in the blank solution is believed to be due to contamination. There are many types of blank samples possible, each designed to segregate a different part of the overall data-collection process. The types of blank samples collected in this District are:

Source solution blank - a blank solution that is transferred to a sample bottle in an area of the office laboratory with an atmosphere that is relatively clean and protected with respect to target analytes.

Ambient blank - a blank solution that is put in the same type of bottle used for an environmental sample, kept with the set of sample bottles before sample collection, and opened at the site and exposed to the ambient conditions.

Field blank - a blank solution that is subjected to all aspects of sample collection, field-processing preservation, transportation, and laboratory handling as an environmental sample.

Trip blank - a blank solution that is processed through the same type of bottle used for an environmental sample and kept with the set of sample bottles before and after sample collection.

Equipment blank -a blank solution that is processed through all equipment used for collecting and processing an environmental sample (similar to a field blank, but normally done in the more controlled conditions of the office.)

Sampler blank - a blank solution that is poured or pumped through the same field sampler used for collecting an environmental sample.

Filter blank - a blank solution that is filtered in the same manner and through the same filter apparatus used for an environmental sample.

Splitter blank - a blank solution that is mixed and separated using a field splitter in the same manner and through the same apparatus used for an environmental sample.

Preservation blank - a blank solution that is treated with the sampler preservatives used for an environmental sample.

Reference Samples

A Reference sample is a solution or material prepared by a laboratory whose composition is certified for one or more properties so that it can be used to assess a measurement method. Samples of reference material are submitted for analysis to insure that an analytical method is accurate for the known properties of the reference material. Generally, the selected reference material properties are similar to the environmental sample properties.

Replicate Samples

Replicate samples are a set of environmental samples collected in a manner so that the samples are considered to be essentially identical in composition. Replicate is the general case for which a duplicate is the special case consisting of two samples. Replicate samples are collected and analyzed to establish the amount of variability in the data contributed by some part of the collection and analytical process. There are many types of replicate samples possible, each of which may yield slightly different results in a dynamic hydrologic setting, such as a flowing stream. The types of replicate samples collected in this District are:

Concurrent sample - a type of replicate sample in which the samples are collected simultaneously with two or more samplers or by using one sampler and alternating collection of samples into two or more compositing containers.

Sequential sample - a type of replicate sample in which the samples are collected one after the other, typically over a short time.

Split sample - a type of replicate sample in which a sample is split into subsamples contemporaneous in time and space.

Spike Samples

Spike samples are samples to which known quanities of a solution with one or more well-established analyte concentrations have been added. These samples are analyzed to determine the extent of matrix interference or degradation on the analyte concentration during sample processing and analysis.

Concurrent sample - a type of spike sample that is collected at the same time with the same sampling and compositing devices then spiked with the same spike solution containing laboratory-certified concentrations of selected analytes.

Split sample - a type of spike sample in which a sample is split into subsamples contemporaneous in time and space then spiked with the same spike solution containing laboratory-certified concentrations of selected analytes.

ACCESS TO USGS DATA

The USGS provides near real-time stage and discharge data for many of the gaging stations equipped with the necessary telemetry and historic daily-mean and peak-flow discharge data for the most current or discontinued gaging stations on the world wide web (**WWW**). These data may be accessed at

http://water.usgs.gov/

Some water-quality and ground-water data also are available on the WWW. In addition, data can be provided in various machine-readable formats on magnetic tape or 3-1/2 inch floppy disk. Information about the availability of specific types of data or products, and user charges, can be obtained locally from each of the Water Resources Division District Offices (See address for MD-DE-DC District office on back of the title page).

DEFINITION OF TERMS

Specialized technical terms related to streamflow, water-quality, and other hydrologic data, as used in this report, are defined below. Terms such as algae, water level, precipitation are used in their common everyday meanings, definitions of which are given in standard dictionaries. Not all terms defined in this alphabetical list apply to every State. See also table for converting English units to International System (**SI**) Units on the inside of the back cover.

Acid neutralizing capacity (ANC) is the equivalent sum of all bases or base-producing materials, solutes plus particulates, in an aqueous system that can be titrated with acid to an equivalence point. This term designates titration of an "unfiltered" sample (formerly reported as alkalinity).

Acre-foot (AC-FT, acre-ft) is a unit of volume, commonly used to measure quantities of water used or stored, equivalent to the volume of water required to cover 1 acre to a depth of 1 foot and equivalent to 43,560 cubic feet, 325,851 gallons, or 1,233 cubic meters. (**See also "Annual runoff"**)

Adenosine triphosphate (ATP) is an organic, phosphate-rich, compound important in the transfer of energy in organisms. Its central role in living cells makes ATP an excellent indicator of the presence of living material in water. A measurement of ATP therefore provides a sensitive and rapid estimate of biomass. ATP is reported in micrograms per liter.

Algal growth potential (AGP) is the maximum algal dry weight biomass that can be produced in a natural water sample under standardized laboratory conditions. The growth potential is the algal biomass present at stationary phase and is expressed as milligrams dry weight of algae produced per liter of sample.

Alkalinity is the capacity of solutes in an aqueous system to neutralize acid. This term designates titration of a "**filtered**" sample.

Annual runoff is the total quantity of water that is discharged ("**runs off**") from a drainage basin in a year. Data reports may present annual runoff data as volumes in acre-feet, as discharges per unit of drainage area in cubic feet per second per square mile, or as depths of water on the drainage basin in inches.

Annual 7-day minimum is the lowest mean value for any 7-consecutive-day period in a year. Annual 7-day minimum values are reported herein for the calendar year and the water year (October 1 to September 30). Most low-flow frequency analyses use a climatic year (April 1-March 31), which tends to prevent the low-flow period from being artificially split between adjacent years. The date shown in the summary statistics table is the initial date of the 7-day period. (This value should not be confused with the 7-day 10-year low-flow statistic.)

Aroclor is the registered trademark for a group of polychlorinated biphenyls that were manufactured by the Monsanto Company prior to 1976. Aroclors are assigned specific 4-digit reference numbers dependent upon molecular type and degree of substitution of the biphenyl ring hydrogen atoms by chlorine atoms. The first two digits of a numbered aroclor represent the molecular type and the last two digits represent the weight percent of the hydrogen substituted chlorine.

Artificial substrate is a device that is purposely placed in a stream or lake for colonization of organisms. The artificial substrate simplifies the community structure by standardizing the substrate from which each sample is taken. Examples of artificial substrates are basket samplers (**made of wire cages filled with clean streamside rocks**) and multiplate samplers (**made of hardboard**) for benthic organism collection, and plexiglass strips for periphyton collection. (**See also "Substrate"**)

Ash mass is the mass or amount of residue present after the residue from the dry mass determination has been ashed in a muffle furnace at a temperature of 500 °C for 1 hour. Ash mass of zooplankton and phytoplankton is expressed in grams per cubic meter (**g/m^3**), and periphyton and benthic organisms in grams per square meter (**g/m^2**). (**See also "Biomass"**)

Bacteria are microscopic unicellular organisims, typically spherical, rodlike, or spiral and threadlike in shape, often clumped into colonies. Some bacteria cause disease, while others perform an essential role in nature in the recycling of materials; for example, by decomposing organic matter into a form available for reuse by plants.

Base discharge (for peak discharge) is a discharge value, determined for selected stations, above which peak discharge data are published. The base discharge at each station is selected so that an average of about three peaks per year will be published.

Base flow is sustained flow of a stream in the absence of direct runoff. It includes natural and human-induced streamflows. Natural base flow is sustained largely by ground-water discharge.

Bedload is material in transport that is supported primarily by the streambed. In this report, bedload is considered to consist of particles in transit from the bed to an elevation equal to the top of the bedload sampler nozzle (ranging from 0.25 to 0.5 ft) that are retained in the bedload sampler. A sample collected with a pressure-differential bedload sampler may also contain a component of the suspended load.

Bedload discharge (tons per day) is rate of sediment moving as bedload, reported as dry weight, that passes through a cross section in a given time. NOTE: Bedload discharge values in this report may include a component of the suspended-sediment discharge. A correction may be necessary when computing the total sediment discharge by summing the bedload discharge and the suspended-sediment discharge. (**See also "Bedload" and "Sediment"**)

Bed material is the sediment mixture of which a streambed, lake, pond, reservoir, or estuary bottom is composed. (**See also "Bedload" and "Sediment"**)

Benthic organisms are the group of organisms inhabiting the bottom of an aquatic environment. They include a number of types of organisms, such as bacteria, fungi, insect larvae and nymphs, snails, clams, and crayfish. They are useful as indicators of water quality.

Biochemical oxygen demand (BOD) is a measure of the quantity of dissolved oxygen, in milligrams per liter, necessary for the decomposition of organic matter by microorganisms, such as bacteria.

Biomass is the amount of living matter present at any given time, expressed as mass per unit area or volume of habitat.

Biomass pigment ratio is an indicator of the total proportion of periphyton which are autotrophic (plants). This is also called the Autotrophic Index.

Blue-green algae (*Cyanophyta*) are a group of phytoplankton organisms having a blue pigment, in addition to the green pigment called chlorophyll. Blue-green algae often cause nuisance conditions in water. Concentrations are expressed as a number of cells per milliliter (cells/mL) of sample. (See also "Phytoplankton")

Bottom material (See "Bed material")

Cells/volume refers to the number of cells of any organism that is counted by using a microscope and grid or counting cell. Many planktonic organisms are multicelled and are counted according to the number of contained cells per sample volume, and are generally reported as cells or units per milliliter (**mL**) or liter (**L**).

Cells volume (biovolume) determination is one of several common methods used to estimate biomass of algae in aquatic systems. Cell members of algae are frequently used in aquatic surveys as an indicator of algal production. However, cell numbers alone cannot represent true biomass because of considerable cell-size variation among the algal species. Cell volume (μm^3) is determined by obtaining critical cell measurements on cell dimensions (for example, length, width, height, or radius) for 20 to 50 cells of each important species to obtain an average biovolume per cell. Cells are categorized according to the correspondence of their cellular shape to the nearest geometric solid or combinations of simple solids (for example, spheres, cones, or cylinders). Representative formulae used to compute biovolume are as follows:

$$\text{sphere } 4/3\,\pi r^3 \qquad \text{cone } 1/3\,\pi r^3 h \qquad \text{cylinder } \pi r^3 h.$$

pi is the ratio of the circumference to the diameter of a circle; pi = 3.14159…
From cell volume, total algal biomass expressed as biovolume ($\mu m^3/mL$) is thus determined by multiplying the number of cells of a given species by its average cell volume and then summing these volumes over all species.

Cfs-day (**See "Cubic foot per second-day"**)

Chemical oxygen demand (COD) is a measure of the chemically oxidizable material in the water and furnishes an approximation of the amount of organic and reducing material present. The determined value may correlate with BOD or with carbonaceous organic pollution from sewage or industrial wastes. [**See also "Biochemical oxygen demand (BOD)"**]

Clostridium perfringens (C. perfringens) is a spore-forming bacterium that is common in the feces of human and other warm-blooded animals. Clostridial spores are being used experimentally as an indicator of past fecal contamination and presence of microorganisms that are resistant to disinfection and environmental stresses. (**See also "Bacteria"**)

Coliphages are viruses that infect and replicate in coliform bacteria. They are indicative of sewage contamination of waters and of the survival and transport of viruses in the environment.

Color unit is produced by 1 milligram per liter of platinum in the form of the chloroplatinate ion. Color is expressed in units of the platinum-cobalt scale.

Contents is the volume of water in a reservoir or lake. Unless otherwise indicated, volume is computed on the basis of a level pool and does not include bank storage.

Continuous-record station is a site where data are collected with sufficient frequency to define daily mean values and variations within a day.

Control designates a feature in the channel downstream from a gaging station that physically influences the water-surface elevation and thereby determines the stage-discharge relation at the gage. This feature may be a constriction of the channel, a bedrock outcrop, a gravel bar, an artificial structure, or a uniform cross section over a long reach of the channel.

Control structure as used in this report is a structure on a stream or canal that is used to regulate the flow or stage of the stream or to prevent the intrusion of saltwater.

Cubic foot per second (CFS, ft^3/s) is the rate of discharge representing a volume of 1 cubic foot passing a given point in 1 second. It is equivalent to approximately 7.48 gallons per second or approximately 449 gallons per minute, or 0.02832 cubic meters per second. The term "**second-feet**" sometimes is used synonymously with "**cubic feet per second**" but is now obsolete.

Cubic foot per second-day (CFS-DAY, Cfs-day, [(ft^3/s)/d]) is the volume of water represented by a flow of 1 cubic foot per second for 24 hours. It is equivalent to 86,400 cubic feet, 1.98347 acre-feet, 646,317 gallons, or 2,446.6 cubic meters. The daily-mean discharges reported in the daily-value data tables are numerically equal to the daily volumes in cfs-days, and the totals also represent volumes in cfs-days.

Cubic foot per second per square mile [CFSM, (ft^3/s)/mi^2] is the average number of cubic feet of water flowing per second from each square mile of area drained, assuming the runoff is distributed uniformly in time and area. (**See also "Annual runoff"**)

Daily mean suspended-sediment concentration is the time-weighted concentration of suspended sediment passing a stream cross section during a 24-hour day. (**See also "Daily mean suspended-sediment concentration," "Sediment," and "Suspended-sediment concentration"**)

Daily-record station is a site where data are collected with sufficient frequency to develop a record of one or more data values per day. The frequency of data collection can range from continuous recording to periodic sample or data collection on a daily or near-daily basis.

Data Collection Platform (DCP) is an electronic instrument that collects, processes, and stores data from various sensors, and transmits the data by satellite data relay, line-of-sight radio, and/or landline telemetry.

Data logger is a microprocessor-based data acquisition system designed specifically to acquire, process, and store data. Data are usually downloaded from onsite data loggers for entry into office data systems.

Datum is a surface or point relative to which measurements of height and/or horizontal position are reported. A vertical datum is a horizontal surface used as the zero point for measurements of gage height, stage, or elevation; a horizontal datum is a reference for positions given in terms of latitude-longitude, State Plane coordinates, or UTM coordinates. (**See also "Gage datum," "Land-surface datum," "National Geodetic Vertical Datum of 1929," and "North American Vertical Datum of 1988"**)

Diatoms are the unicellular or colonial algae having a siliceous shell. Their concentrations are expressed as number of cells per milliliter (**cells/mL**) of sample. (**See also "Phytoplankton"**)

Diel is of or pertaining to a 24-hour period of time; a regular daily cycle.

Discharge, or flow, is the rate that matter passes through a cross section of a stream channel or other water body per unit of time. The term commonly refers to the volume of water (including, unless otherwise stated, any sediments or other constituents suspended or dissolved in the water) that passes a cross section in a stream channel, canal, pipeline, etc., within a given period of time (**cubic feet per second**). Discharge also can apply to the rate at which constituents such as suspended sediment, bedload, and dissolved or suspended chemical constituents, pass through a cross section, in which cases the quantity is expressed as the mass of constituent that passes the cross section in a given period of time (**tons per day**).

Dissolved refers to that material in a representative water sample that passes through a 0.45-micrometer membrane filter. This is a convenient operational definition used by Federal and State agencies that collect water-quality data. Determinations of "**dissolved**" constituent concentrations are made on sample water that has been filtered.

Dissolved oxygen (DO) is the molecular oxygen (**oxygen gas**) dissolved in water. The concentration in water is a function of atmospheric pressure, temperature, and dissolved-solids concentration of the water. The ability of water to retain oxygen decreases with increasing temperature or dissolved-solids concentration. Photosynthesis and respiration by plants commonly cause diurnal variations in dissolved-oxygen concentration in water from some streams.

Dissolved-solids concentration in water is the quantity of dissolved material in a sample of water. It is determined either analytically by the "**residue-on-evaporation**" method, or mathematically by totaling the concentrations of individual constituents reported in a comprehensive chemical analysis. During the analytical determination, the bicarbonate (generally a major dissolved component of water) is converted to carbonate. In the mathematical calculation, the bicarbonate value, in milligrams per liter, is multiplied by 0.4926 to convert it to carbonate. Alternatively, alkalinity concentration (**as mg/L $CaCO_3$**) can be converted to carbonate concentration by multiplying by 0.60.

Diversity index (H) (Shannon Index) is a numerical expression of evenness of distribution of aquatic organisms. The formula for diversity index is:

$$\bar{d} = -\sum_{i \approx 1}^{s} \frac{n_i}{n} \log_2 \frac{n_i}{n}$$

where n_i is the number of individuals per taxon, n is the total number of individuals, and s is the total number of taxa in the sample of the community. Index values range from zero, when all the organisms in the sample are the same, to some positive number, when some or all of the organisms in the sample are different.

Drainage area of a stream at a specific location is that area upstream from the location, measured in a horizontal plane, that has a common outlet at the site for its surface runoff from precipitation that normally drains by gravity into a stream. Drainage areas given herein include all closed basins, or noncontributing areas, within the area unless otherwise specified.

Drainage basin is a part of the Earth's surface that contains a drainage system with a common outlet for its surface runoff. (**See "Drainage area"**)

Dry mass refers to the mass of residue present after drying in an oven at 105 °C, until the mass remains unchanged. This mass represents the total organic matter, ash and sediment, in the sample. Dry-mass values are expressed in the same units as ash mass. (**See also "Ash mass," "Biomass," and "Wet mass"**)

Dry weight refers to the weight of animal tissue after it has been dried in an oven at 65 ˚C until a constant weight is achieved. Dry weight represents total organic and inorganic matter in the tissue. (**See also "Wet weight"**)

Enterococcus bacteria are commonly found in the feces of humans and other warm-blooded animals. Although some strains are ubiquitous and not related to fecal pollution, the presence of enterococci in water is an indication of fecal pollution and the possible presence of enteric pathogens. Enterococcus bacteria are those bacteria that produce pink to red colonies with black or reddish-brown precipitate after incubation at 41 °C on mE agar and subsequent transfer to EIA medium. Enterococci include ***Streptococcus feacalis, Streptococcus feacium, Streptococcus avium,*** and their variants. (**See also "Bacteria"**)

EPT Index is the total number of distinct taxa within the insect orders Ephemeroptera, Plecoptera, and Trichoptera. This index summarizes the taxa richness within the aquatic insects that are generally considered pollution sensitive, the index usually decreases with pollution.

Escherichia coli (E. coli) are bacteria present in the intestine and feces of warm-blooded animals. *E. coli* are a member species of the fecal coliform group of indicator bacteria. In the laboratory, they are defined as those bacteria that produce yellow or yellow-brown colonies on a filter pad saturated with urea substrate broth after primary culturing for 22 to 24 hours at 44.5 ˚C on mTEC medium. Their concentrations are expressed as number of colonies per 100 mL of sample. (**See also "Bacteria"**)

Estimated (E) value of a concentration is reported when an analyte is detected and all criteria for a positive result are met. If the concentration is less than the method detection limit (**MDL**), an '**E**' code will be reported with the value. If the analyte is qualitatively identified as present, but the quantitative determination is substantially more uncertain, the National Water Quality Laboratory will identify the result with an '**E**' code even though the measured value is greater than the **MDL**. A value reported with an '**E**' code should be used with caution. When no analyte is detected in a sample, the default reporting value is the **MDL** preceded by a less than sign (<).

Euglenoids (*Euglenophyta*) are a group of algae that are usually free-swimming and rarely creeping. They have the ability to grow either photosynthetically in the light or heterotrophically in the dark. (**See also "Phytoplankton"**)

Extractable organic halides (EOX) are organic compounds that contain halogen atoms such as chlorine. These organic compounds are semi-volatile and extractable by ethyl acetate from air-dried streambed sediments. The ethyl acetate extract is combusted, and the concentration is determined by microcoulometric determination of the halides formed. The concentration is reported as micrograms of chlorine per gram of the dry weight of the streambed sediments.

Fecal coliform bacteria are present in the intestine or feces of warm-blooded animals. They are often used as indicators of the sanitary quality of the water. In the laboratory, they are defined as all organisms that produce blue colonies within 24 hours when incubated at 44.5 °C plus or minus 0.2 °C on M-FC medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample. (**See also "Bacteria"**)

Fecal streptococcal bacteria are present in the intestine of warm-blooded animals and are ubiquitous in the environment. They are characterized as gram-positive, cocci bacteria that are capable of growth in brain-heart infusion broth. In the laboratory, they are defined as all the organisms that produce red or pink colonies within 48 hours at 35 °C plus or minus 1.0 °C on KF-streptococcus medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample. (**See also "Bacteria"**)

Fire algae (Pyrrhophyta) are free-swimming unicells characterized by a red pigment spot. (**See also "Phytoplankton"**)

Flow-duration percentiles are values on a scale of 100 that indicate the percentage of time for which a flow is not exceeded. For example, the 90th percentile of river flow is greater than or equal to 90 percent of all recorded flow rates.

Gage datum is a horizontal surface used as a zero point for measurement of stage or gage height. This surface usually is located slightly below the lowest point of the stream bottom such that the gage height is usually slightly larger than the maximum depth of water. Because the gage datum itself is not an actual physical object, the datum usually is defined by specifying the elevations of permanent reference marks such as bridge abutments and survey monuments, and the gage is set to agree with the reference marks. Gage datum is a local datum that is maintained independently of any National geodetic datum. However, if the elevation of the gage datum relative to the National datum (North American Vertical Datum of 1988 or National Geodetic Vertical Datum of 1929 has been determined, then the gage readings can be converted to elevations above the National datum by adding the elevation of the gage datum to the gage reading.

Gage height (G.H.) is the water-surface elevation, in feet above the gage datum. If the water surface is below the gage datum, the gage height is negative. Gage height is often used interchangeably with the more general term **"stage,"** although gage height is more appropriate when used in reference to a reading on a gage.

Gage values are values that are recorded, transmitted and/or computed from a gaging station. Gage values typically are collected at 5-, 15-, or 30-minute intervals.

Gaging station is a site on a stream, canal, lake, or reservoir where systematic observations of stage, discharge, or other hydrologic data are obtained. When used in connection with a discharge record, the term is applied only to those gaging stations where a continuous record of discharge is computed.

Gas chromatography/flame ionization detector (GC/FID) is a laboratory analytical method used as a screening technique for semivolatile organic compounds that are extractable from water in methylene chloride.

Green algae have chlorophyll pigments similar in color to those of higher green plants. Some forms produce algae mats or floating **"moss"** in lakes. Their concentrations are expressed as number of cells per milliliter (**cells/mL**) of sample. (**See also "Phytoplankton"**)

Habitat quality index is the qualitative description (level 1) of instream habitat and riparian conditions surrounding the reach sampled. Scores range from 0 to 100 percent with higher scores indicative of desirable habitat conditions for aquatic life. Index only applicable to wadable streams.

Hardness of water is a physical-chemical characteristic that is commonly recognized by the increased quantity of soap required to produce lather. It is computed as the sum of equivalents of polyvalent cations (primarily calcium and magnesium) and is expressed as the equivalent concentration of calcium carbonate ($CaCO_3$).

High tide is the maximum height reached by each rising tide. The high-high and low-high tides are the higher and lower of the two high tides, respectively, of each tidal day. ***See NOAA web site: http://www.co-ops.nos.noaa.gov/tideglos.html***

Hilsenhoff's Biotic Index (HBI) is an indicator of organic pollution which uses tolerance values to weight taxa abundances; usually increases with pollution. It is calculated as follows:

$$HBI = sum\frac{(n)(a)}{N}$$

where n is the number of individuals of each taxon, a is the tolerance value of each taxon, and N is the total number of organisms in the sample.

Horizontal datum (**See "Datum"**)

Hydrologic benchmark station is one that provides hydrologic data for a basin in which the hydrologic regimen will likely be governed solely by natural conditions. Data collected at a benchmark station may be used to separate effects of natural from human-induced changes in other basins that have been developed and in which the physiography, climate, and geology are similar to those in the undeveloped benchmark basin.

Hydrologic index stations referred to in this report are four continuous-record gaging stations that have been selected as representative of streamflow patterns for their respective regions. Station locations are shown on index maps.

Hydrologic unit is a geographic area representing part or all of a surface drainage basin or distinct hydrologic feature as defined by the former Office of Water Data Coordination and delineated on the State Hydrologic Unit Maps by the USGS. Each hydrologic unit is identified by an 8-digit number.

Inch (IN., in.), as used in this report, refers to the depth to which the drainage area would be covered with water if all of the runoff for a given time period were uniformly distributed on it. (See also "Annual runoff")

Instantaneous discharge is the discharge at a particular instant of time. (**See also "Discharge"**)

Laboratory Reporting Level (LRL) is generally equal to twice the yearly determined long-term method detection level (LT-MDL). The **LRL** controls false negative error. The probability of falsely reporting a non-detection for a sample that contained an analyte at a concentration equal to or greater than the **LRL** is predicted to be less than or equal to 1 percent. The value of the **LRL** will be reported with a "less than" (**<**) remark code for samples in which the analyte was not detected. The National Water Quality Laboratory collects quality-control data from selected analytical methods on a continuing basis to determine LT-MDLs and to establish LRLs. These values are reevaluated annually based on the most current quality-control data and may, therefore, change. **[Note: In several previous NWQL documents (Connor and others, 1998; NWQL Technical Memorandum 98.07, 1998), the LRL was called the non-detection value or NDV—a term that is no longer used.)**

Land-surface datum (lsd) is a datum plane that is approximately at land surface at each ground-water observation well.

Light-attenuation coefficient, also known as the extinction coefficient, is a measure of water clarity. Light is attenuated according to the Lambert-Beer equation

$$I = I_o e^{-\lambda L},$$

where I_o is the source light intensity, I is the light intensity at length L (in meters) from the source, λ is the light-attenuation coefficient, and e is the base of the natural logarithm. The light attenuation coefficient is defined as

$$\lambda = -\frac{1}{L}\log_e \frac{I}{I_o}.$$

Lipid is any one of a family of compounds that are insoluble in water and that make up one of the principal components of living cells. Lipids include fats, oils, waxes, and steroids. Many environmental contaminants such as organochlorine pesticides are lipophilic.

Long-Term Method Detection Level (LT–MDL) is a detection level derived by determining the standard deviation of a minimum of 24 method detection limit (**MDL**) spike sample measurements over an extended period of time. **LT–MDL** data are collected on a continuous basis to assess year-to-year variations in the **LT–MDL**. The **LT–MDL** controls false positive error. The chance of falsely reporting a concentration at or greater than the **LT–MDL** for a sample that did not contain the analyte is predicted to be less than or equal to 1 percent.

Low tide is the minimum height reached by each falling tide. The high-low and low-low tides are the higher and lower of the two low tides, respectively, of each tidal day. ***See NOAA web site: http://www.co-ops.nos.noaa.gov/tideglos.html***

Macrophytes are the macroscopic plants in the aquatic environment. The most common macrophytes are the rooted vascular plants that are usually arranged in zones in aquatic ecosystems and restricted in the area by the extent of illumination through the water and sediment deposition along the shoreline.

Mean concentration of suspended sediment (Daily mean suspended-sediment concentration) is the time-weighted concentration of suspended sediment passing a stream cross section during a given time period. (**See also "Daily mean suspended-sediment concentration" and "Suspended-sediment concentration"**)

Mean discharge (MEAN) is the arithmetic mean of individual daily mean discharges during a specific period. (**See also "Discharge"**)

Mean high or low tide is the average of all high or low tides, respectively, over a specific period.

Mean sea level is a local tidal datum. It is the arithmetic mean of hourly heights observed over the National Tidal Datum Epoch. Shorter series are specified in the name; for example, monthly mean sea level and yearly mean sea level. In order that they may be recovered when needed, such datums are referenced to fixed points known as benchmarks. (**See also "Datum"**)

Membrane filter is a thin microporous material of specific pore size used to filter bacteria, algae, and other very small particles from water.

Metamorphic stage refers to the stage of development that an organism exhibits during its transformation from an immature form to an adult form. This developmental process exists for most insects, and the degree of difference from the immature stage to the adult form varies from relatively slight to pronounced, with many intermediates. Examples of metamorphic stages of insects are egg-larva-adult or egg-nymph-adult.

Method Detection Limit (MDL) is the minimum concentration of a substance that can be measured and reported with 99-percent confidence that the analyte concentration is greater than zero. It is determined from the analysis of a sample in a given matrix containing the analyte. At the **MDL** concentration, the risk of a false positive is predicted to be less than or equal to 1 percent.

Methylene blue active substances (MBAS) are apparent detergents. The determination depends on the formation of a blue color when methylene blue dye reacts with synthetic anionic detergent compounds.

Micrograms per gram (UG/G, µg/g) is a unit expressing the concentration of a chemical constituent as the mass (micrograms) of the element per unit mass (gram) of material analyzed.

Micrograms per kilogram (UG/KG, µg/kg) is a unit expressing the concentration of a chemical constituent as the mass (micrograms) of the constituent per unit mass (kilogram) of the material analyzed. One microgram per kilogram is equivalent to 1 part per billion.

Micrograms per liter (UG/L, µg/L) is a unit expressing the concentration of chemical constituents in water as mass (micrograms) of constituent per unit volume (liter) of water. One thousand micrograms per liter is equivalent to 1 milligram per liter. One microgram per liter is equivalent to 1 part per billion.

Microsiemens per centimeter (US/CM, µS/cm) is a unit expressing the amount of electrical conductivity of a solution as measured between opposite faces of a centimeter cube of solution at a specified temperature. Siemens is the International System of Units nomenclature. It is synonymous with mhos and is the reciprocal of resistance in ohms.

Milligrams per liter (MG/L, mg/L) is a unit for expressing the concentration of chemical constituents in water as the mass (milligrams) of constituent per unit volume (liter) of water. Concentration of suspended sediment also is expressed in mg/L and is based on the mass of dry sediment per liter of water-sediment mixture.

Minimum Reporting Level (MRL) is the smallest measured concentration of a constituent that may be reliably reported by using a given analytical method (**Timme, 1995**).

Miscellaneous site, miscellaneous station, or miscellaneous sampling site is a site where streamflow, sediment, and/or water-quality data or water-quality or sediment samples are collected once, or more often on a random or discontinuous basis to provide better areal coverage for defining hydrologic and water-quality conditions over a broad area in a river basin.

Most probable number (MPN) is an index of the number of coliform bacteria that, more probably than any other number, would give the results shown by the laboratory examination; it is not an actual enumeration. MPN is determined from the distribution of gas-positive cultures among multiple inoculated tubes.

Multiple-plate samplers are artificial substrates of known surface area used for obtaining benthic invertebrate samples. They consist of a series of spaced, hardboard plates on an eyebolt.

Nanograms per liter (NG/L, ng/L) is a unit expressing the concentration of chemical constituents in solution as mass (nanograms) of solute per unit volume (liter) of water. One million nanograms per liter is equivalent to 1 milligram per liter.

National Geodetic Vertical Datum of 1929 (NGVD of 1929) is a fixed reference adopted as a standard geodetic datum for elevations determined by leveling. It was formerly called “Sea Level Datum of 1929” or “mean sea level.” Although the datum was derived from the mean sea level at 26 tide stations, it does not necessarily represent local mean sea level at any particular place. ***See NOAA web site: http://www.ngs.noaa.gov/faq.shtml#WhatVD29VD88*** **(See “North American Vertical Datum of 1988”)**

Natural substrate refers to any naturally occurring immersed or submersed solid surface, such as a rock or tree, upon which an organism lives. (See also “Substrate.”)

Nekton are the consumers in the aquatic environment and consist of large free-swimming organisms that are capable of sustained, directed mobility.

Nephelometric turbidity unit (NTU) is the measurement for reporting turbidity that is based on use of a standard suspension of Formazin. Turbidity measured in **NTU** uses nephelometric methods that depend on passing specific light of a specific wavelength through the sample.

North American Vertical Datum of 1988 (NAVD 1988) is a fixed reference adopted as the official civilian vertical datum for elevations determined by Federal surveying and mapping activities in the U.S. This datum was established in 1991 by minimum-constraint adjustment of the Canadian, Mexican, and U.S. first-order terrestrial leveling networks.

Organic carbon (OC) is a measure of organic matter present in aqueous solution, suspension, or bottom sediments. May be reported as dissolved organic carbon (**DOC**), particulate organic carbon (**POC**), or total organic carbon (**TOC**).

Organic mass or volatile mass of the living substance is the difference between the dry mass and ash mass and represents the actual mass of the living matter. Organic mass is expressed in the same units as for ash mass and dry mass. (**See also “Ash mass,” “Biomass,” and “Dry mass”**)

Organism count/area refers to the number of organisms collected and enumerated in a sample and adjusted to the number per area habitat, usually square meter (**m^2**), acre, or hectare. Periphyton, benthic organisms, and macrophytes are expressed in these terms.

Organism count/volume refers to the number of organisms collected and enumerated in a sample and adjusted to the number per sample volume, usually milliliter (**mL**) or liter (**L**). Numbers of planktonic organisms can be expressed in these terms.

Organochlorine compounds are any chemicals that contain carbon and chlorine. Organochlorine compounds that are important in investigations of water, sediment, and biological quality include certain pesticides and industrial compounds.

Parameter Code is a 5-digit number used in the USGS computerized data system, National Water Information System (**NWIS**), to uniquely identify a specific constituent or property.

Partial-record station is a site where discrete measurements of one or more hydrologic parameters are obtained over a period of time without continuous data being recorded or computed. A common example is a crest-stage gage partial-record station at which only peak stages and flows are recorded.

Particle size is the diameter, in millimeters (**mm**), of a particle determined by sieve or sedimentation methods. The sedimentation method utilizes the principle of Stokes Law to calculate sediment particle sizes. Sedimentation methods (pipet, bottom-withdrawal tube, visual-accumulation tube, Sedigraph) determine fall diameter of particles in either distilled water (**chemically dispersed**) or in native water (**the river water at the time and point of sampling**).

Particle-size classification, as used in this report, agrees with the recommendation made by the American Geophysical Union Subcommittee on Sediment Terminology. The classification is as follows:

Classification	Size (mm)	Method of analysis
Clay	0.00024-0.004	Sedimentation
Silt	0.004 - 0.062	Sedimentation
Sand	0.062 - 2.0	Sedimentation/sieve
Gravel	2.0 -64.0	Sieve

The particle-size distributions given in this report are not necessarily representative of all particles in transport in the stream. Most of the organic matter is removed, and the sample is subjected to mechanical and chemical dispersion before analysis in distilled water. Chemical dispersion is not used for native water analysis.

Peak flow (peak stage) is an instantaneous local maximum value in the continuous time series of streamflows or stages, preceded by a period of increasing values and followed by a period of decreasing values. Several peak values ordinarily occur in a year. The maximum peak value in a year is called the annual peak; peaks lower than the annual peak are called secondary peaks. Occasionally, the annual peak may not be the maximum value for the year; in such cases, the maximum value occurs at midnight at the beginning or end of the year, on the recession from or rise toward a higher peak in the adjoining year. If values are recorded at a discrete series of times, the peak recorded value may be taken as an approximation to the true peak, which may occur between the recording instants. If the values are recorded with finite precision, a sequence of equal recorded values may occur at the peak; in this case, the first value is taken as the peak.

Percent composition or **percent of total** is a unit for expressing the ratio of a particular part of a sample or population to the total sample or population, in terms of types, numbers, weight, mass, or volume.

Percent shading is determined by using a clinometer to estimate left and right bank shading. The values are added together and divided by 180 to determine percent shading relative to a horizontal surface.

Periodic-record station is a site where stage, discharge, sediment, chemical, physical, or other hydrologic measurements are made one or more times during a year, but at a frequency insufficient to develop a daily record.

Periphyton is the assemblage of microorganisms attached to and living upon submerged solid surfaces. While primarily consisting of algae, they also include bacteria, fungi, protozoa, rotifers, and other small organisms. Periphyton are useful indicators of water quality.

Pesticides are chemical compounds used to control undesirable organisms. Major categories of pesticides include insecticides, miticides, fungicides, herbicides, and rodenticides.

pH of water is the negative logarithm of the hydrogen-ion activity. Solutions with pH less than 7 are termed “acidic,” and solutions with a pH greater than 7 are termed “basic.” Solutions with a pH of 7 are neutral. The presence and concentration of many dissolved chemical constituents found in water are, in part, influenced by the hydrogen-ion activity of water. Biological processes including growth, distribution of organisms, and toxicity of the water to organisms are also influenced, in part, by the hydrogen-ion activity of water.

Phytoplankton is the plant part of the plankton. They are usually microscopic, and their movement is subject to the water currents. Phytoplankton growth is dependent upon solar radiation and nutrient substances. Because they are able to incorporate as well as release materials to the surrounding water, the phytoplankton have a profound effect upon the quality of the water. They are the primary food producers in the aquatic environment and are commonly known as algae. (See also “Plankton”)

Picocurie (PC, pCi) is one trillionth (**1×10^{-12}**) of the amount of radioactive nuclide represented by a curie (**Ci**). A curie is the quantity of radioactive nuclide that yields 3.7×10^{10} radioactive disintegrations per second (**dps**). A picocurie yields 0.037 dps, or 2.22 dpm (**disintegrations per minute**).

Plankton is the community of suspended, floating, or weakly swimming organisms that live in the open water of lakes and rivers. Concentrations are expressed as a number of cells per milliliter (**cells/mL of sample**).

Polychlorinated biphenyls (PCBs) are industrial chemicals that are mixtures of chlorinated biphenyl compounds having various percentages of chlorine. They are similar in structure to organochlorine insecticides.

Polychlorinated naphthalenes (PCNs) are industrial chemicals that are mixtures of chlorinated naphthalene compounds. They have properties and applications similar to polychlorinated biphenyls (**PCBs**) and have been identified in commercial **PCB** preparations.

Primary productivity is a measure of the rate at which new organic matter is formed and accumulated through photosynthetic and chemosynthetic activity of producer organisms (**chiefly, green plants**). The rate of primary production is estimated by measuring the amount of oxygen released (**oxygen method**) or the amount of carbon assimilated (**carbon method**) by the plants.

Primary productivity (carbon method) is expressed as milligrams of carbon per area per unit time [**mg C/(m^2/time)**] for periphyton and macrophytes or per volume [**mg C/(m^3/time)**] for phytoplankton. Carbon method defines the amount of carbon dioxide consumed as measured by radioactive carbon (**carbon-14**). The carbon-14 method is of greater sensitivity than the oxygen light and dark bottle method and is preferred for use in unenriched waters. Unit time may be either the hour or day, depending on the incubation period. (**See also “Primary productivity”**)

Primary productivity (oxygen method) is expressed as milligrams of oxygen per area per unit time [**mg O/(m^2/time)**] for periphyton and macrophytes or per volume [**mg O/(m^3/time)**] for phytoplankton. Oxygen method defines production and respiration rates as estimated from changes in the measured dissolved-oxygen concentration. The oxygen light and dark bottle method is preferred if the rate of primary production is sufficient for accurate measurements to be made within 24 hours. Unit time may be either the hour or day, depending on the incubation period. (**See also "Primary productivity"**)

Radioisotopes are isotopic forms of an element that exhibit radioactivity. Isotopes are varieties of a chemical element that differ in atomic weight, but are very nearly alike in chemical properties. The difference arises because the atoms of the isotopic forms of an element differ in the number of neutrons in the nucleus; for example, ordinary chlorine is a mixture of isotopes having atomic weights of 35 and 37, and the natural mixture has an atomic weight of about 35.453. Many of the elements similarly exist as mixtures of isotopes, and a great many new isotopes have been produced in the operation of nuclear devices such as the cyclotron. There are 275 isotopes of the 81 stable elements, in addition to more than 800 radioactive isotopes.

Recoverable from bed (bottom) material is the amount of a given constituent that is in solution after a representative sample of bottom material has been digested by a method (usually using an acid or mixture of acids) that results in dissolution of readily soluble substances. Complete dissolution of all bottom material is not achieved by the digestion treatment and thus the determination represents less than the total amount (that is, less than 95 percent) of the constituent in the sample. To achieve comparability of analytical data, equivalent digestion procedures would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results. (**See also "Bed material"**)

Recurrence interval, also referred to as return period, is the average time, usually expressed in years, between occurrences of hydrologic events of a specified type (such as exceedances of a specified high flow or non-exceedance of a specified low flow). The terms "return period" and "**recurrence interval**" do not imply regular cyclic occurrence. The actual times between occurrences vary randomly, with most of the times being less than the average and a few being substantially greater than the average. For example, the 100-year flood is the flow rate that is exceeded by the annual maximum peak flow at intervals whose average length is 100 years (that is, once in 100 years, on average); almost two-thirds of all exceedances of the 100-year flood occur less than 100 years after the previous exceedance, half occur less than 70 years after the previous exceedance, and about one-eighth occur more than 200 years after the previous exceedance. Similarly, the 7-day 10-year low flow (**$7Q_{10}$**) is the flow rate below which the annual minimum 7-day-mean flow dips at intervals whose average length is 10 years (that is, once in 10 years, on average); almost two-thirds of the non-exceedances of the $7Q_{10}$ occur less than 10 years after the previous non-exceedance, half occur less than 7 years after, and about one-eighth occur more than 20 years after the previous non-exceedance. The recurrence interval for annual events is the reciprocal of the annual probability of occurrence. Thus, the 100-year flood has a 1-percent chance of being exceeded by the maximum peak flow in any year, and there is a 10-percent chance in any year that the annual minimum 7-day-mean flow will be less than the $7Q_{10}$.

Replicate samples are a group of samples collected in a manner such that the samples are thought to be essentially identical in composition.

Return period (**See "Recurrence interval"**)

River mileage is the curvilinear distance, in miles, measured upstream from the mouth along the meandering path of a stream channel in accordance with Bulletin No. 14 (**October 1968**) of the Water Resources Council, and typically used to denote location along a river.

Runoff is the quantity of water that is discharged ("runs off") from a drainage basin in a given time period. Runoff data may be presented as volumes in acre-feet, as mean discharges per unit of drainage area in cubic feet per second per square mile, or as depths of water on the drainage basin in inches. (**See also "Annual runoff"**)

Sea level, as used in this report, refers to one of the two commonly used national vertical datums, (**NGVD 1929 or NAVD 1988**). See separate entries for definitions of these datums. See conversion of units page (inside back cover) for identification of the datum used in this report.

Sediment is solid material that originates mostly from disintegrated rocks; when transported by, suspended in, or deposited from water, it is referred to as "**fluvial sediment**." Sediment includes chemical and biochemical precipitates and decomposed organic material, such as humus. The quantity, characteristics, and cause of the occurrence of sediment in streams are influenced by environmental and land-use factors. Some major factors are topography, soil characteristics, land cover, and depth and intensity of precipitation.

Seven-day 10-year low flow (7Q10) is the discharge below which the annual 7-day minimum flow falls in 1 year out of 10 on the long-run average. The recurrence interval of the 7Q10 is 10 years; the chance that the annual 7-day minimum flow will be less than the 7Q10 is 10 percent in any given year. (**See also "Recurrence interval" and "Annual 7-day minimum"**)

Sodium adsorption ratio (SAR) is the expression of relative activity of sodium ions in exchange reactions within soil and is an index of sodium or alkali hazard to the soil. Sodium hazard in water is an index that can be used to evaluate the suitability of water for irrigating crops.

Specific electrical conductance (conductivity) is a measure of the capacity of water (or other media) to conduct an electrical current. It is expressed in microsiemens per centimeter at 25 °C. Specific electrical conductance is a function of the types and quantity of dissolved substances in water and can be used for approximating the dissolved-solids content of the water. Commonly, the concentration of dissolved solids (**in milligrams per liter**) is from 55 to 75 percent of the specific conductance (in microsiemens). This relation is not constant from stream to stream, and it may vary in the same source with changes in the composition of the water.

Stable isotope ratio (per MILL/MIL) is a unit expressing the ratio of the abundance of two radioactive isotopes. Isotope ratios are used in hydrologic studies to determine the age or source of specific waters, to evaluate mixing of different waters, as an aid in determining reaction rates, and other chemical or hydrologic processes.

Stage (**See "Gage height"**)

Stage-discharge relation is the relation between the water-surface elevation, termed stage (gage height), and the volume of water flowing in a channel per unit time.

Streamflow is the discharge that occurs in a natural channel. Although the term "**discharge**" can be applied to the flow of a canal, the word "**streamflow**" uniquely describes the discharge in a surface stream course. The term "**streamflow**" is more general than "runoff" as streamflow may be applied to discharge whether or not it is affected by diversion or regulation.

Substrate is the physical surface upon which an organism lives.

Substrate Embeddedness Class is a visual estimate of riffle streambed substrate larger than gravel that is surrounded or covered by fine sediment (**<2mm, sand or finer**). Below are the class categories expressed as percent covered by fine sediment:

0	< no gravel or larger substrate
1	> 75%
2	51-75% 45-25%
3	26-50% 5 < 5%

Surface area of a lake is that area (**acres**) encompassed by the boundary of the lake as shown on USGS topographic maps, or other available maps or photographs. Because surface area changes with lake stage, surface areas listed in this report represent those determined for the stage at the time the maps or photographs were obtained.

Surficial bed material is the upper surface (**0.1 to 0.2 ft**) of the bed material such as that material which is sampled using U.S. Series Bed-Material Samplers.

Suspended (**as used in tables of chemical analyses**) refers to the amount (**concentration**) of undissolved material in a water-sediment mixture. It is operationally defined as the material retained on a 0.45-micrometer filter.

Suspended, recoverable is the amount of a given constituent that is in solution after the part of a representative suspended water-sediment sample that is retained on a 0.45-micrometer membrane filter has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily soluble substances. Complete dissolution of all the particulate matter is not achieved by the digestion treatment and thus the determination represents something less than the "total" amount (that is, less than 95 percent) of the constituent present in the sample. To achieve comparability of analytical data, equivalent digestion procedures are required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results. Determinations of "suspended, recoverable" constituents are made either by directly analyzing the suspended material collected on the filter or, more commonly, by difference, based on determinations of (1) dissolved and (2) total recoverable concentrations of the constituent. (See also "Suspended")

Suspended sediment is the sediment maintained in suspension by the upward components of turbulent currents or that exists in suspension as a colloid. (**See also "Sediment"**)

Suspended-sediment concentration is the velocity-weighted concentration of suspended sediment in the sampled zone (from the water surface to a point approximately 0.3 ft above the bed) expressed as milligrams of dry sediment per liter of water-sediment mixture (**mg/L**). The analytical technique uses the mass of all of the sediment and the net weight of the water-sediment mixture in a sample to compute the suspended-sediment concentration. (**See also "Sediment" and "Suspended sediment"**)

Suspended-sediment discharge (tons/day) is the rate of sediment transport, as measured by dry mass or volume, that passes a cross section in a given time. It is calculated in units of tons per day as follows: concentration (**mg/L**) x discharge (**ft^3/s**) x 0.0027. (**See also "Sediment," "Suspended sediment," and "Suspended-sediment concentration"**)

Suspended-sediment load is a general term that refers to a given characteristic of the material in suspension that passes a point during a specified period of time. The term needs to be qualified, such as "**annual suspended-sediment load**" or "**sand-size suspended-sediment load**," and so on. It is not synonymous with either suspended-sediment discharge or concentration. (**See also "Sediment"**)

Suspended, total is the total amount of a given constituent in the part of a water-sediment sample that is retained on a 0.45-micrometer membrane filter. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent determined. Knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to determine when the results should be reported as "**suspended, total**." Determinations of "**suspended, total**" constituents are made either by directly analyzing portions of the suspended material collected on the filter or, more commonly, by difference, based on determinations of (1) dissolved and (2) total concentrations of the constituent. (**See also "Suspended"**)

Suspended solids, total residue at 105 °C concentration is the concentration of inorganic and organic material retained on a filter, expressed as milligrams of dry material per liter of water (**mg/L**). An aliquot of the sample is used for this analysis.

Synoptic studies are short-term investigations of specific water-quality conditions during selected seasonal or hydrologic periods to provide improved spatial resolution for critical water-quality conditions. For the period and conditions sampled, they assess the spatial distribution of selected water-quality conditions in relation to causative factors, such as land use and contaminant sources.

Taxa richness is the total number of distinct species or groups and usually decreases with pollution. (**See also "Percent Shading"**)

Taxonomy is the division of biology concerned with the classification and naming of organisms. The classification of organisms is based upon a hierarchical scheme beginning with Kingdom and ending with Species at the base. The higher the classification level, the fewer features the organisms have in common. For example, the taxonomy of a particular mayfly, ***Hexagenia limbata,*** is the following:

Kingdom:	Animal
Phylum:	Arthropoda
Class:	Insecta
Order:	Ephemeroptera
Family:	Ephemeridae
Genus:	*Hexagenia*
Species:	*Hexagenia limbata*

Temperature preferences:

Cold – preferred water temperature for the species is less than 20 ˚C or spawning temperature preference less than 16 ˚C and native distribution is considered to be predominantly north of 45˚ N. latitude.

Warm – preferred water temperatures for the species is greater than 20 ˚C or spawning temperature preference greater than 16 ˚C and native distribution is considered to be predominantly south of 45˚ N. latitude.

Cool – intermediate between cold and warm water temperature preferences.

Thermograph is an instrument that continuously records variations of temperature on a chart. The more general term "temperature recorder' is used in the table descriptions and refers to any instrument that records temperature whether on a chart, a tape, or any other medium.

Time-weighted average is computed by multiplying the number of days in the sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the total number of days. A time-weighted average represents the composition of water resulting from the mixing of flow proportionally to the duration of the concentration.

Tons per acre-foot (T/acre-ft) is the dry mass (tons) of a constituent per unit volume (acre-foot) of water. It is computed by multiplying the concentration of the constituent, in milligrams per liter, by 0.00136.

Tons per day (T/DAY, tons/d) is a common chemical or sediment discharge unit. It is the quantity of a substance in solution, in suspension, or as bedload that passes a stream section during a 24-hour period. It is equivalent to 2,000 pounds per day, or 0.9072 metric tons per day.

Total is the amount of a given constituent in a representative whole-water (**unfiltered**) sample, regardless of the constituent's physical or chemical form. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent present in both the dissolved and suspended phases of the sample. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to judge when the results should be reported as "**total**." (**Note that the word "total" does double duty here, indicating both that the sample consists of a water-suspended sediment mixture and that the analytical method determined at least 95 percent of the constituent in the sample.**)

Total coliform bacteria are a particular group of bacteria that are used as indicators of possible sewage pollution. This group includes coliforms that inhabit the intestine of warm-blooded animals and those that inhabit soils. They are characterized as aerobic or facultative anaerobic, gram-negative, nonspore-forming, rod-shaped bacteria that ferment lactose with gas formation within 48 hours at 35 °C. In the laboratory, these bacteria are defined as all the organisms that produce colonies with a golden-green metallic sheen within 24 hours when incubated at 35 °C plus or minus 1.0 °C on M-Endo medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample. (**See also "Bacteria"**)

Total discharge is the quantity of a given constituent, measured as dry mass or volume, that passes a stream cross section per unit of time. When referring to constituents other than water, this term needs to be qualified, such as "total sediment discharge," "**total chloride discharge**," and so on.

Total in bottom material is the amount of a given constituent in a representative sample of bottom material. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent determined. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to judge when the results should be reported as "total in bottom material."

Total length (fish) is the straight-line distance from the anterior point of a fish specimen's snout, with the mouth closed, to the posterior end of the caudal (**tail**) fin, with the lobes of the caudal fin squeezed together.

Total load refers to all of a constituent in transport. When referring to sediment, it includes suspended load plus bed load.

Total organism count is the number of organisms collected and enumerated in any particular sample. (**See also "Organism count/volume"**)

Total recoverable is the amount of a given constituent in a whole-water sample after a sample has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily soluble substances. Complete dissolution of all particulate matter is not achieved by the digestion treatment, and thus the determination represents something less than the "total" amount (**that is, less than 95 percent**) of the constituent present in the dissolved and suspended phases of the sample. To achieve comparability of analytical data for whole-water samples, equivalent digestion procedures are required of all laboratories performing such analyses because different digestion procedures may produce different analytical results.

Total sediment discharge is the mass of suspended-sediment plus bed-load transport, measured as dry weight, that passes a cross section in a given time. It is a rate and is reported as tons per day. (**See also "Sediment," "Suspended sediment," "Suspended-Sediment Concentration," "Bedload," and "Bedload discharge"**)

Total sediment load or total load is the sediment in transport as bedload and suspended-sediment load. The term may be qualified, such as "**annual suspended-sediment load**" or "**sand-size suspended-sediment load**," and so on. It differs from total sediment discharge in that load refers to the material whereas discharge refers to the quantity of material, expressed in units of mass per unit time. (**See also "Sediment," "Suspended-Sediment Load," and "Total load"**)

Trophic group:

Filter feeder – diet composed of suspended plant and/or animal material.

Herbivore – diet composed predominantly of plant material.

Invertivore – diet composed predominantly of invertebrates.

Omnivore – diet composed of at least 25-percent plant and 25-percent animal material.

Piscivore – diet composed predominantly of fish.

Turbidity is the reduction in the transparency of a solution due to the presence of suspended and some dissolved substances. The measurement technique records the collective optical properties of the solution that cause light to be scattered and attenuated rather than transmitted in straight lines; the higher the intensity of scattered or attenuated light, the higher the value of the turbidity. Turbidity is expressed in nephelometric turbidity units (NTU). Depending on the method used, the turbidity units as NTU can be defined as the intensity of light of a specified wavelength scattered or attenuated by suspended particles or absorbed at a method specified angle, usually 90 degrees, from the path of the incident light. Currently approved methods for the measurement of turbidity in the USGS include those that conform to EPA Method 180.1, ASTM D1889-00, and ISO 7027. Measurements of turbidity by these different methods and different instruments are unlikely to yield equivalent values. Consequently, the method of measurement and type of instrument usedto derive turbidity records should be included in the "**REMARKS**" column of the Annual Data Report.

Ultraviolet (UV) absorbance (absorption) at 254 or 280 nanometers is a measure of the aggregate concentration of the mixture of **UV** absorbing organic materials dissolved in the analyzed water, such as lignin, tannin, humic substances, and various aromatic compounds. **UV** absorbance (**absorption**) at 254 or 280 nanometers is measured in **UV** absorption units per centimeter of pathlength of UV light through a sample.

Vertical datum (**See "Datum"**)

Volatile organic compounds (VOCs) are organic compounds that can be isolated from the water phase of a sample by purging the water sample with inert gas, such as helium, and subsequently analyzed by gas chromatography. Many **VOCs** are human-made chemicals that are used and produced in the manufacture of paints, adhesives, petroleum products, pharmaceuticals, and refrigerants. They are often components of fuels, solvents, hydraulic fluids, paint thinners, and dry cleaning agents commonly used in urban settings. **VOC** contamination of drinking-water supplies is a human health concern because many are toxic and are known or suspected human carcinogens (**U.S. Environmental Protection Agency, 1996**).

Water year in USGS reports dealing with surface-water supply is the 12-month period October 1 through September 30. The water year is designated by the calendar year in which it ends and which includes 9 of the 12 months. Thus, the year ending September 30, 2001, is called the "**2001 water year**."

WDR is used as an abbreviation for "**Water-Data Report**" in the "**REVISED RECORDS**" paragraph to refer to State annual hydrologic-data reports. (**WRD was used as an abbreviation for "Water-Resources Data" in reports published prior to 1976.**)

Weighted average is used in this report to indicate discharge-weighted average. It is computed by multiplying the discharge for a sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the sum of the discharges. A discharge-weighted average approximates the composition of water that would be found in a reservoir containing all the water passing a given location during the water year after thorough mixing in the reservoir.

Wet mass is the mass of living matter plus contained water. (**See also "Biomass" and "Dry mass"**)

Wet weight refers to the weight of animal tissue or other substance including its contained water. (**See also "Dry weight"**)

WSP is used as an acronym for "**Water-Supply Paper**" in reference to previously published reports.

Zooplankton is the animal part of the plankton. Zooplankton are capable of extensive movements within the water column and are often large enough to be seen with the unaided eye. Zooplankton are secondary consumers feeding upon bacteria, phytoplankton, and detritus. Because they are the grazers in the aquatic environment, the zooplankton are a vital part of the aquatic food web. The zooplankton community is dominated by small crustaceans and rotifers. (**See also "Plankton"**)

TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS OF THE U.S. GEOLOGICAL SURVEY

The U.S.G.S. publishes a series of manuals describing procedures for planning and conducting specialized work in water-resources investigations. The material is grouped under major subject headings called books and is further divided into sections and chapters. For example, Section A of Book 3 (Applications of Hydraulics) pertains to surface water. The chapter, the unit of publication, is limited to a narrow field of subject matter. This format permits flexibility in revision and publication as the need arises.

The reports listed below are for sale by the U.S.G.S., Information Services, Box 25286, Federal Center, Denver, Colorado 80225 (authorized agent of the Superintendent of Documents, Government Printing Office). Prepayment is required. Remittance should be made in the form of a check or money order payable to the **"U.S. Geological Survey."** Prices are not included because they are subject to change. Current prices can be obtained by writing to the above address. When ordering or inquiring about prices for any of these publications, please give the title, book number, chapter number, and mention the **"U.S. Geological Survey Techniques of Water-Resources Investigations."**

Book 1. Collection of Water Data by Direct Measurement

Section D. Water Quality

1-D1. **Water temperature--influential factors, field measurements, and data presentation**, by H. H. Stevens, Jr., J. F. Ficke, and G. F. Smoot: USGS--TWRI Book 1, Chapter D1. 1975. 65 pages.

1-D2. **Guidelines for collection and field analysis of ground-water samples for selected unstable constituents**, by W. W. Wood: USGS--TWRI Book 1, Chapter D2. 1976. 24 pages.

Book 2. Collection of Environmental Data

Section D. Surface Geophysical Methods

2-D1. **Application of surface geophysics to ground-water investigations**, by A. A. R. Zohdy, G. P. Eaton, and D. R. Mabey: USGS--TWRI Book 2, Chapter D1. 1974. 116 pages.

2-D2. **Application of seismic-refraction techniques to hydrologic studies**, by F. P. Haeni: USGS--TWRI Book 2, Chapter D2. 1988. 86 pages.

Section E. Subsurface Geophysical Methods

2-E1. **Application of borehole geophysics to water-resources investigations**, by W. S. Keys and L. M. MacCary: USGS--TWRI Book 2, Chapter E1. 1971. 126 pages.

2-E2. **Borehole geopphysics applied to ground-water investigations**, by W. S. Keys: USGS--TWRI Book 2, Chapter E2. 1990. 150 pages.

Section F. Drilling and Sample Methods

2-F1. **Application of drilling, coring, and sampling techniques to test holes and wells**, by Eugene Shuter and W. E. Teasdale: USGS-TWRI Book 2, Chapter F1. 1989. 97 pages.

Book 3. Application of Hydraulics

Section A. Surface-Water Techniques

3-A1. **General field and office procedures for indirect discharge measurements**, by M. A. Benson and Tate Dalrymple: USGS--TWRI Book 3, Chapter A1. 1967. 30 pages.

3-A2. **Measurement of peak discharge by the slope-area method**, by Tate Dalrymple and M. A. Benson: USGS--TWRI Book 3, Chapter A2. 1967. 12 pages.

3-A3. **Measurement of peak discharge at culverts by indirect methods**, by G. L. Bodhaine: USGS--TWRI Book 3, Chapter A3. 1968. 60 pages.

3-A4. **Measurement of peak discharge at width contractions by indirect methods**, by H. F. Matthai: USGS--TWRI Book 3, Chapter A4. 1967. 44 pages.

3-A5. **Measurement of peak discharge at dams by indirect methods**, by Harry Hulsing: USGS--TWRI Book 3, Chapter A5. 1967. 29 pages.

3-A6. **General procedure for gaging streams**, by R. W. Carter and Jacob Dividian: USGS--TWRI Book 3, Chapter A6. 1968. 13 pages.

3-A7. **Stage measurements at gaging stations**, T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A7. 1968. 28 pages.

3-A8. **Discharge measurements at gaging stations**, by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A8. 1969. 65 pages.

3-A9. **Measurement of time of travel and dispersion in streams by dye tracing**, by F. A. Kilpatrick, and J. F. Wilson, Jr.: USGS--TWRI Book 3, Chapter A9. 1989. 27 pages.

3-A10. **Discharge ratings at gaging stations**, E. J. Kennedy: USGS--TWRI Book 3, Chapter A10. 1984. 59 pages.

3-A11. **Measurement of discharge by moving-boat method**, by G. F. Smoot and C. E. Novak: USGS--TWRI Book 3, Chapter A11. 1969. 22 pages.

TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS OF THE U.S. GEOLOGICAL SURVEY

Book 3. Application of Hydraulics--Continued

***Section A. Surface-Water Techniques**--Continued*

3-A12. **Flurometric procedures for dye tracing**, by J. F. Wilson, Jr., E. D. Cobb, and F. A. Kilpatrick: USGS--TWRI Book 3, Chapter A12. 1986. 34 pages.

3-A13. **Computation of continuous records of streamflow**, by E. J. Kennedy: USGS--TWRI Book 3, Chapter A13. 1983. 53 pages.

3-A14. **Use of flumes in measuring discharge**, by F. A. Kilpatrick and V. R. Schneider: USGS--TWRI Book 3, Chapter A14. 1983. 46 pages.

3-A15. **Computation of water-surface profiles in open channels**, by Jacob Davidian: USGS--TWRI Book 3, Chapter A15. 1984. 48 pages.

3-A16. **Measurement of discharge using tracers**, by F. A. Kilpatrick and E. D. Cobb: USGS--TWRI Book 3, Chapter A16. 1985. 52 pages.

3-A17. **Acoustic velocity meter systems**, by Antonius Laenen: USGS--TWRI Book 3, Chapter A17. 1985. 38 pages.

3-A18. **Determination of stream reaeration coefficients by use of tracers**, by F. A. Kilpatrick, R. E. Rathbun, Nobuhiro Yotsukura, G. W. Parker, and L. L. Delong: USGS-TWRI Book 3, Chapter 18. 1989. 52 pages.

3-A19. **Levels of streamflow gaging stations**, by E. J. Kennedy: USGS--TWRI Book 3, Chapter A19. 1990. 31 pages.

3-A20. **Simulation of soluable waste transport and buildup in surface waters using tracers**, by F. A. Kilpratrick: USGS--TWRI Book 3, Chapter A20. 1993. 38 pages.

3-A21. **Stream-gaging cableways**, by C. Russell Wagner: USGS--TWRI Book 3, Chapter A21. 1995. 56 pages.

Section B. Ground-Water Techniques

3-B1. **Aquifer-test design, observation, and data analysis**, by R. W. Stallman: USGS--TWRI Book 3, Chapter B1. 1971. 26 pges.

3-B2. **Introduction to ground-water hydraulics, a programmed text for self-instruction**, by G. D. Bennett: USGS--TWRI Book 3, Chapter B2. 1976. 172 pages.

3-B3. **Type curves for selected problems of flow to wells in confined aquifers**, by J. E. Reed: USGS--TWRI Book 3, Chapter B3. 1980. 106 pages.

3-B4. **Regression modeling of ground-water flow**, by R. L. Cooley and Richard L. Naff: USGS--TWRI Book 3, Chapter B4. 1990. 232 pages.

3-B4. **Supplement 1. Regression modeling of ground-water flow - Modifications to the computer code for nonlinear regression solution of steady-state ground-water flow problems**, by R. L. Cooley: USGS--TWRI Book 3, Chapter B4. 1993. 8 pages.

3-B5. **Definition of boundary and initial conditions in the analysis of saturated ground-water flow systems--An introduction**, by O. L. Franke, T. E. Reilly, and G. D. Bennett: USGS--TWRI Book 3, Chapter B5. 1987. 15 pages.

3-B6. **The principle of superposition and its application in ground-water hydraulics**, by T. E. Reilly, O. L. Franke, and G. D. Bennett: USGS--TWRI Book 3, Chapter B6. 1987. 28 pages.

3-B7. **Analytical solutions for one-, two-, and three dimensional solute transport in ground-water systems with uniform flow**, by E¥ J. Wexler: USGS--TWRI Book 3, Chapter B7. 1992. 190 pages.

Section C. Sedimentation and Erosion Techniques

3-C1. **Fluvial sediment concepts**, by H. P. Guy: USGS--TWRI Book 3, Chapter C1. 1970. 55 pages.

3-C2. **Field methods of measurement of fluvial sediment**, by H. P. Guy and V. W. Norman: USGS--TWRI Book 3, Chapter C2. 1970. 59 pages.

3-C3. **Computation of fluvial-sediment discharge**, by George Porterfield: USGS--TWRI Book 3, Chapter C3. 1972. 66 pages.

Book 4. Htdrologic Analysis and Interpretation

Section A. Statistical Analysis

4-A1. **Some statistical tools in hydrology**, by H. C. Riggs: USGS--TWRI Book 4, Chapter A1. 1968. 39 pages.

4-A2. **Frequency curves**, by H. C. Riggs: USGS--TWRI Book 4, Chapter A2. 1968. 15 pages.

TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS OF THE U.S. GEOLOGICAL SURVEY

Book 4. Hydrologic Analysis and Interpretation--Continued

Section B. Surface Water

4-B1. **Low-flow investigations**, by H. C. Riggs: USGS--TWRI Book 4, Chapter B1. 1972. 18 pages.

4-B2. **Storage analyses for water supply**, by H. C. Riggs and C. H. Hardison: USGS--TWRI Book 4, Chapter B2. 1973. 20 pages.

4-B3. **Regional analyses of streamflow characteristics**, by H. C. Riggs: USGS--TWRI Book 4, Chapter B3. 1973. 15 pages.

Section D. Interrelated Phases of the Hydrologic Cycle

4-D1. **Computation of rate and volume of stream depletion by wells**, by C. T. Jenkins: USGS--TWRI Book 4, Chapter D1. 1970. 17 pages.

Book 5. Laboratory Analysis

Section A. Water Analysis

5-A1. **Methods for determination of inorganic substances in water and fluvial sediments**, by M. J. Fishman and L. C. Friedman: USGS--TWRI Book 5, Chapter A1. 1989. 545 pages.

5-A2. **Determination of minor elements in water by emission spectroscopy**, by P. R. Barnett and E. C. Mallory, Jr.: USGS--TWRI Book 5, Chapter A2. 1971. 31 pages.

5-A3. **Methods for determination of organic substances in water** and fluvial sediments, by R. L. Wershaw, M. J. Fishman, R. R. Grabbe, and L. E. Lowe: USGS--TWRI Book 5, Chapter A3. 1987. 80 pages.

5-A4. **Methods for collection and analysis of aquatic biological and microbiological samples**, by L. J. Britton and P. E. Greeson, editors: USGS--TWRI Book 5, Chapter A4. 1989. 363 pages.

5-A5. **Methods for determination of radioactive substances in water and fluvial sediments**, by L. L. Thatcher, V. J. Janzer, and K. W. Edwards: USGS--TWRI Book 5, Chapter A5. 1977. 95 pages.

5-A6. **Quality assurance practices for the chemical and biological analyses of water and fluvial sediments**, by L. C. Friedman and D. E. Erdmann: USGS--TWRI Book 5, Chapter A6. 1982. 181 pages.

Section C. Sediment Analysis

5-C1. **Laboratory theory and methods for sediment analysis**, by H. P. Guy: USGS--TWRI Book 5, Chapter C1. 1969. 58 pages.

Book 6. Modeling Techniques

Section A. Ground Water

6-A1. **A modular three-dimensional finite-difference ground-water flow model**, by M. G. McDonald and A. W. Harbaugh: USGS--TWRI Book 6, Chapter A1. 1988. 586 pages.

6-A2. **Documentation of a computer program to simulate aquifer-system compaction using the modular finite-difference ground-water flow model**, by S. A. Leake and D. E. Prudic: USGS--TWRI Book 6, Chapter A2. 1991. 68 pages.

6-A3. **A modular finite-element model (MODFE) for areal and axisymetric ground-water-flow problems, Part 1: Model Description and User's Manual**, by L. J. Torak: USGS--TWRI Book 6, Chapter A3. 1993. 136 pages.

6-A4. **A modular finite-element model (MODFE) for areal and axisymetric ground-water-flow problems, Part 2: Derivation of finite-element equations and comparisons with analytical solutions**, by R. L. Cooley: USGS-TWRI Book 6, Chapter A4. 1992. 108 pages.

6-A5. **A modular finite-element model (MODFE) for areal and axisymetric ground-water-flow problems, Part 3: Design philosophy and programming details**, by L. J. Torak: USGS--TWRI Book 6, Chapter A5. 1993. 243 pages.

6-A6. **A coupled surface-water and ground-water flow model (MODBRANCH) for simulation of stream-aquifer interaction**, by E.D. Swain and E.J. Wexler: USGS--TWRI Book 6, Chapter A6. 1995. 125 pages.

Book 7. Automated Data Processing and Computations

Section C. Computer Programs

7-C1. **Finite difference model for aquifer simulation in two dimensions with results of numerical experiments**, by P. C. Trescott, G. F. Pinder, and S. P. Larson: USGS--TWRI Book 7, Chapter C1. 1976. 116 pages.

7-C2. **Computer model of two-dimensional solute transport and dispersion in ground water**, by L. F. Konikow and J. D. Bredehoeft: USGS--TWRI Book 7, Chapter C2. 1978. 90 pages.

7-C3. **A model for simulation of flow in singular and interconnected channels**, by R. W. Schaffrannek, R. A. Baltzer, and D. E. Goldberg: USGS--TWRI Book 7, Chapter C3. 1981. 110 pages.

TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS OF THE U.S. GEOLOGICAL SURVEY

Book 8. Instrumentation

Section A. Instruments for Measurement of Water Level

8-A1. **Methods of measuring water levels in deep wells**, by M. S. Garber and F. C. Koopman: USGS--TWRI Book 8, Chapter A1. 1968. 23 pages.

8-A2. **Installation and service manual for U. S. Geological Survey manometers**, by J. D. Craig: USGS--TWRI Book 8, Chapter A2. 1983. 57 pages.

Section B. Instruments for Measurement of Discharge

8-B2. **Calibration and maintenance of vertical-axis type current meters**, by G. F. Smoot and C. E. Novak: USGS--TWRI Book 8, Chapter B2. 1968. 15 pages.

Book 9. Handbooks for Water-Resources Investigations

Section A. National Field Manual for the Collection of Water-Quality Data

9-A1. **National Field Manual for the Collection of Water-Quality Data: Preparations for Water Sampling**, by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS--TWRI Book 9, Chapter A1. 1998. 47 pages.

9-A2. **National Field Manual for the Collection of Water-Quality Data: Selection of Equipment for Water Sampling**, edited by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS--TWRI Book 9, Chapter A2. 1998. 94 pages.

9-A3. **National Field Manual for the Collection of Water-Quality Data: Cleaning of Equipment for Water Sampling**, edited by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS--TWRI Book 9, Chapter A3. 1998. 75 pages.

9-A4. **National Field Manual for the Collection of Water-Quality Data: Collection of Water Samples**, edited by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS--TWRI Book 9, Chapter A4. 1999. 166 pages.

9-A5. **National Field Manual for the Collection of Water-Quality Data: Processing of Water Samples**, edited by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS--TWRI Book 9, Chapter A5. 1999. 149 pages.

9-A6. **National Field Manual for the Collection of Water-Quality Data: Field Measurements**, edited by F.D. Wilde and D.B. Radtke: USGS--TWRI Book 9, Chapter A6. 1998. 48 pages.

9-A7. **National Field Manual for the Collection of Water-Quality Data: Biological Indicators**, edited by D.N. Myers and F.D. Wilde: USGS--TWRI Book 9, Chapter A7. 1997. 49 pages.

9-A8. **National Field Manual for the Collection of Water-Quality Data: Bottom-material samples**, edited by D.B. Radtke: USGS--TWRI Book 9, Chapter A8. 1998. 48 pages.

9-A9. **National Field Manual for the Collection of Water-Quality Data: Safety in Field Activities**, edited by S.L. Lane and R.G. Fay: USGS--TWRI Book 9, Chapter A9. 1998. 60 pages.

SELECTED U.S. GEOLOGICAL SURVEY REPORTS ON SURFACE-WATER RESOURCES IN DELAWARE

Listed below is a selection of reports on surface-water resources in Delaware which are available through the U.S. Geological Survey, Book and Open-File Reports, Federal Center, Building 41, Box 25425, Denver, Colorado 80225. **An asterick (*) indicates that the publication is out of print and is not purchasable from any official source.**

PROFESSIONAL PAPERS

P-822 Cushing, E.M., Kantrowitz, I.H., and Taylor K.R., 1973, **Water resources of the Delmarva Peninsula**, 58 p.

P-750-D Johnston, R. H., 1971, **Base flow as an indicator of aquifer characteristics in the Coastal Plain of Delaware**: Geological Survey Research, p. D212-D215.

P-600-B Williams, O.O., 1968, **Reservoir effects on downstream water temperatures in the upper Delaware River basin**: Geological Survey Research, p. B195-B199.

P-485-A* Sigafoos, R.S., 1964, **Botanical evidence of floods and flood-plain deposition**, p. A1-A35.

P-450-E Giustic, E.V., and Schneider. W.J., 1962, **Comparison of drainage on topographic maps of the Piedmont province in Short papers in geology, hydrology, and topography**: Geological Survey Research, article 212, p. E1-E189.

P-424-B Carter, R.W., 1961, **Magnitude and frequency of floods in suburban areas in Short papers in the geologic and hydrologic sciences**: Geological Survey Research, article 5, p. B9-B11.

P-417-B* Hely, A.G., and Olmsted, F.H., 1963, **Some relations between streamflow characteristics and the environment in the Delaware River region**, p. B1-B25.

P-381* Parker, G.G., Hely, A.G., Keighton, W.B., Olmsted, F.H., and others, 1965, **Water resources of the Delaware River basin**, 200 p.

WATER-SUPPLY PAPERS

W-2425 Hayes, M.A., 1997, **Delaware wetland resources, National Water Summary--Wetland Resources**, p. 147-152.

W-2400 **Delaware: Surface-Water Resources**

W-2375 **National Water Summary 1988-89--Floods and Droughts: Delaware**

W-2355-A Robert J. Shedlock, Judith M. Denver, Marta A. Hayes, Pixie A. Hamilton, Michael T. Koterba, Leon Joseph Bachman, Patrick J. Phillips, and William S.L. Banks, 1999, **Water-quality assessment of the Delmarva Peninsula, Delaware, Maryland, and Virginia: Results of Investigations**, 1987-91 41 p.

W-2300 Simmons, R.H., **Delaware surface-water resources *in* U.S. Geological Survey, 1986, National Water Summary 1985--Hydrologic events**, p. 181-186.

W-1871 Schneider, W.J., 1968, **Water data for metropolitan areas-A summary of data from 222 areas in the United States**, 397 p.

W-1849 Barnes, H.H., Jr., 1967, **Roughness characteristics of natural channels**, 213 p.

W-1838 Martin, R.O.R., and Hanson, R.L., 1966, **Reservoirs in the United States**, 115 p.

W-1813 Dalrymple, Tate, 1965, **Flood peak runoff and associated precipitation in selected drainage basins in the United States**, 406 p.

W-1812 Durfor, C.N., and Becker, Edith, 1964, **Public water supplies of the 100 largest cities in the United States, 1962**, 364 p.

W-1809-O Keighton, W.B., 1965, **Delaware River water quality, Bristol to Marcus Hook, Pennsylvania, August 1949 to December 1963**, 57 p.

W-1767* Rasmussen, W.C., Odell, J.W., and Beamer, N.H., 1966, **Delaware water**, 106 p.

W-1699-N Hardison, C.H., and Martin, R.O.R., 1963, **Water-supply characteristics of streams in the Delaware River basin and in southern New Jersey**, p. N1-N45.

W-1619-T Slaughter, T.H., 1962, **Beach-area water supplies between Ocean City, Maryland, and Rehoboth Beach, Delaware**, p. T1-T10.

W-1594-B Boggess, D.H., and Rima, D.H., 1962, **Experiments in water spreading at Newark, Delaware**, p. B1-B15.

W-1586-B* Cohen, Bernard, and McCarthy, L.T., Jr., 1962, **Salinity of the Delaware estuary**, p. B1-B57.

W-1586-C Miller, E.G., 1962, **Observations of tidal flow in the Delaware River**, p. C1-C26.

W-1586-E Lendo, A.C., 1966, **Record low tide of December 31, 1962, on the Delaware River**, p. E1-E20.

W-1586-G Keighton, W.B., 1966, **Fresh-water discharge-salinity relations in the tidal Delaware River**, p. G1-G16.

W-1473 Hem, J.D., 1959, **Study and interpretation of the chemical characteristics of natural water**, p. 269.

W-1420* Bogart, D.B., 1960, **Floods of August-October 1955, New England to North Carolina**, 854 p.

W-1302 Geological Survey Research, 1960, **Compilation of records of surface waters of the United States through September 1950-Part 1B, North Atlantic slope basins, New York to York River**, 679 p.

SELECTED U.S. GEOLOGICAL SURVEY REPORTS ON SURFACE-WATER RESOURCES IN DELAWARE--Contimued

WATER-SUPPLY PAPERS--Continued

W-1299 Lohr, E.W., and Love, S.K., 1954, **The industrial utility of public water supplies in the United States, 1952 *in* Part 1, States east of...**

W-1262 Durfor, C.N., and Keighton, W.B., 1954, **Chemical characteristics of Delaware River water, Trenton, New Jersey, to Marcus Hook, Pennsylvania**, 173 p.

W-995* Jones, B.E., and Helland, R.O., 1948, **Index to river surveys made by the United States Geological Survey and other agencies revised to July 1, 1947**, 145 p.

W-340* Wood, B.D., 1916, **Stream-gaging stations and publications relating to water resources, 1885-1913**, 195 p.

W-236* Dole, R.B., 1909, **The quality of the surface waters in the United States *in* Part 1, Analyses of waters east of the one-hundredth meridian**, 123 p.

W-57 U.S. Geological Survey, 1902, **Deep borings in the United States, Part I, Delaware**, p. 21.

W-44* Gannett, Henry, 1901, **Profiles of rivers in the United States**, 100 p.

CIRCULARS

C-381* Knox, C.F., 1956, **Index to surface-water records to September 30, 1955 *in* Part 1, North Atlantic slope basins**, 30 p.

C-190* Geological Survey Research, 1952, **Index to water-resources records in the Delaware River basin to September 30, 1951**, 19 p.

BULLETINS

B-1428 Marcus, P.A., 1976, **Directory to U.S. Geological Survey program activities in coastal areas, 1974-1976**, 154 p.

B-1245* Heck, l.W., Wraight, A.J., Orth, D.R., Carter, J.R., VanWinkle, L.G., 1966, **Delaware place names**, 124 p.

B-434* Geological Survey Research, 1910, **Results of spirit leveling in Delaware, District of Columbia, Maryland, and Virginia, 1896-1909 inclusive**, 74 p.

B-230* Gannett, Henry, 1904, **A gazetteer of Delaware**, 15 p.

HYDROLOGIC INVESTIGATIONS ATLASES

HA-335 Keighton, W.B., 1969, **Water quality in the Delaware estuary for two years of drought: 1965 and 1966 from Trenton, N.J., to Reedy Island, Del.**, scale 1:1,000,000.

HA-243 Barksdale, H.C., O'Bryan, Deric, Schneider, W.J., 1966, **Effect of drought on water resources in the Northeast**.

HA-61 Rainwater, F.H., 1962, **Stream composition of the conterminous United States**, 3 sheets, 1:24,000.

HA-11 Hely, A.G., Nordenson, T.J., and others, 1961, **Precipitation, water loss, and runoff in the Delaware River basin and New Jersey**, 11 p.

Wilmarth, M.G., 1937, **Delaware**, 1 sheet.

MISCELLANEOUS FIELD STUDIES MAPS

MF-798 Alexander, R.H., Fitzapatrick, K.A., Letke, K.S., Lins, H.F., Jr., and McGinty, H.K., III, 1976, **Land use and land cover in CARETS (Central Atlantic Regional Ecological Test Site) for Delaware, District of Columbia, and portions of Maryland, New Jersey, Pennsylvania, and Virginia**, scale 1:500,000 (1 inch - about 8 miles.)

FACT SHEETS

FS 01-073 Tallman, A.J., and Fisher, G.T., **Flooding in Delaware and the Eastern Shore of Maryland from Hurricane Floyd, September 1999**, 2001, 4 p.

FS 99-126 by Wheeler, J.C., **Freshwater Use In Delaware**, 1995, 2 p.

FS 97-126 Preston, S.D., **Evaluation of the stream-gaging network in Maryland, Delaware, and Washington, D.C.**, 4 p.

FS 96-140 Zynjuk, L.D., and Majedi, B.S., **January 1996 floods deliver large loads of nutrients and sediments to the Chesapeake Bay**, 2 p.

FS 96-008 **U.S. Geological Survey programs in Delaware**, 4p.

SELECTED U.S. GEOLOGICAL SURVEY REPORTS ON SURFACE-WATER RESOURCES IN DELAWARE--Continued

WATER-RESOURCES INVESTIGATIONS REPORTS

WRIR 97-4280 Ferrari, M.J., Ator, S.W., Blomquist, J.D., Dysart, J., **Pesticides in surface water of the Mid-Atlantic region**, 12 p.

WRIR 97-4139 Ator, S.W., and Ferrari, M.J., **Nitrate and selected pesticides in ground water of the Mid-Atlantic region**, 8 p.

WRIR 95-4153 Dillow, J.J.A., **Technique for estimating magnitude and frequency of peak flows in Delaware**, 26 p, 3 plates.

WRIR 94-4188 Paulachok, G.N., Simmons, R.H., and Tallmon, A.J., **Storm and flood of July 5, 1989 in Northern New Castle County, Delaware**, 29 p.

WRIR 94-4020 Carpenter, D.H., and Hayes, D.C., **Low flow characteristic of streams in Maryland and Delaware**, 113 p, 10 plates.

WRIR 90-4094 Phelan, D.J., **Water use in the St. Jones River basin, Kent County, Delaware 1983-86**, 30 p.

WRIR 87-4093 Carpenter, D.H., **Cost-effectiveness of the stream-gaging program in Maryland, Delaware, and the District of Columbia**, 85 p.

WRIR 78-93 Simmons, R.H., and Carpenter, D.H., **Technique for estimating magnitude and frequency of floods in Delaware**, 69 p.

OPEN-FILE REPORTS

OFR 96-554 Doheny, E.J., **A modified index for assessment of potential scour at bridges over waterways**, 16 p.

OFR 91-505 McFarland, J.A., Weiss, L.S., and others, **Water resources activities of the U.S. Geological Survey**, 130 p.

OFR 89-409 U.S. Geological Survey, **2nd National symposium--Water quality, Abstracts of the technical sessions, Orlando, Florida**, November 12-17, 1989, 150 p.

OFR 86-490 McGreevy, L.J., Hyatt, G.J., Cockey, E.J., **Water resources activities of the U.S. Geological Survey, Mid-Atlantic District 1984-1986**, 129 p.

OFR 78-93 Simmons, R.H., **Technique of estimating magnitude and frequency of floods in Delaware**, 69 p.

OFR 76-71 McKenzie, S.W., **Long-term water-quality trends in Delaware streams**, 72 p.

OFR 74-1015 Carpenter, D.H., **Floods of August and September 1971 in Maryland and Delaware**, 41 p.

1973 **Water resources of the Delmarva Peninsula, a summary report (White House document 93-68) to the Congress**, 59 p.

1972 Taylor, K.R., **A summary of peak stages and discharges in Maryland, Delaware, and District of Columbia for flood of June 1972,** 13 p.

1969 Simmons, R.H., **Floods of August 1967 in Maryland and Delaware**, 98 p.

SELECTED DELAWARE GEOLOGICAL SURVEY REPORTS ON SURFACE-WATER RESOURCES IN DELAWARE

Listed below is a selection of reports on surface-water resources in Delaware which are available through the Delaware Geological Survey, by writing: Publications, Delaware Geological Survey, University of Delaware, Newark, DE 19716-7501.

BULLETINS

DGS B 10 Cohen, B., and McCarthy, L.T., Jr., 1963, **Salinity of the Delaware estuary**, 54 p.

DGS B 8 Rasmussen, W.C., Wilkens, R.A., Beall, R.M., and others, 1960, **Water resources of Sussex County, Delaware**, 228 p.

DGS B 6 Rasmussen, W.C., Groot, J.J., Martin, R.O.R., McCarren, E.F. Behn, V.C., and others, 1957, **The water resources of northern Delaware**, 223 p.

REPORTS OF INVESTIGATIONS

DGS RI 57 Doheny, E.J., 1998, **Evaluation of the stream-gaging network in Delaware**, 47 p.

DGS RI 8 Baker, W.W., Varrin, R.D., Groot, J.J., and Jordan, R.R., 1966, **Evaluation of the water resources of Delaware**, 47 p.

DGS RI 1 Cohen, B., 1957, **Salinity of the Delaware Estuary**, 85 p.

OPEN-FILE REPORTS

DGS OFR 40 Ramsey, K.W., Leathers, D.J., Wells, D.V., and Talley, J.H., **Summary Report, The Coastal Storms of January 27-29 and February 4-6, 1998, Delaware and Maryland**, 43 p.

DGS OFR 37 Ramsey, K.W., Talley, J.H., and Wells, D.V., **Summary Report: The coastal storm of December 10-14, 1992, Delaware and Maryland**, 29 p.

DGS OFR 36 Ramsey, K.W., qnd Talley, J.H., **Summary Report for the Coastal Storm of January 4, 1992**, 19 p.

DGS OFR 31 Talley, J.H., 1989, **The storm of July 5, 1989: Hydrologic conditions**, 29 p.

DGS OFR 18 Jordan, R.R., and Woodruff, K.D., 1982, **A numerical indicator of water conditions for northern Delaware**, 17 p.

DGS OFR 17 Schenck, W.S., 1982, **A guide to information on benchmarks in Delaware**,

INFORMATION SERIES

DGS I-6 Schenck, W.S., 1989, **Delaware's State boundaries**.

DGS I-5 Woodruff, K.D., 1988, **Earthquakes in Delaware**.

DGS I-1 Schenck, W.S., 1986, **Delaware Geological Survey Cartographic Information Center**.

SPECIAL PUBLICATIONS

DGS SP 17 Groot, J.J., 1988, **The Delaware Geological Survey: The formative years, 1951-1969**, 28 p.

DGS SP 14 Talley, J.H., and Andres, A.S., 1987, **Basic hydrologic data for Coastal Sussex County, Delaware**, 101 p.

DGS SP 3 Woodruff, K.D., and Talley, J.H., **Summary of water conditions in Delaware**, 4 p.

DGS SP 2 **Long range plan for Water Resources Investigations in Delaware, 1961**, 29 p.

DGS SP 1 **The story of your State Geological Survey's search for water**, 12 p.

UNPUBLISHED

Talley, J.H., **Summary report and data compilation for the storm of July 29, 1980 near Smyrna, Delaware**, 17 p.

SELECTED U.S. GEOLOGICAL SURVEY REPORTS ON SURFACE-WATER RESOURCES IN MARYLAND

Listed below is a selection of reports on surface-water resources in Maryland which are available through the U.S. Geological Survey, Book and Open-File Reports, Federal Center, Building 41, Box 25425, Denver, Colorado 80225. **An asterick (*) indicates that the publication is out of print and is not purchasable from any official source.**

PROFESSIONAL PAPERS

P-1003 Yorke, T.H., and Herb, W.J., 1978, **Effects of urbanization on streamflow and sediment transport in the Rock Creek and Anacostia River basins**, Montgomery County, Maryland, 1962-74, 71 p.

P-800-C Breger, I.A., Zubovic, Peter, Chandler, J.C., 1972, **Preliminary studies of collodial substances in the water and sediments of the Chesapeake Bay**: Geological Survey Research, p. C263.

P-750-B Yorke, T.H., and Davis, W.J., 1971, **Effects of urbanization on sediment transport in Bel Pre Creek basin, Maryland**: Geological Survey Research, p. B218-B223.

P-650-C Trainer, F.W., 1969, **Drainage density as an indicator of base flow in part of the Potomac River basin**: Geological Survey Research, p. C177.

P-650-D Trainer, F.W., 1970, **Precipitation and base runoff, Big Pipe Creek basin, Maryland**: Geological Survey Research, p. D222.

P-575-C* Hanson, R.L., 1967, **Characteristics of summer baseflow of the Potomac River**: Geological Survey Research, p. C212-C215.

P-485-A* Sigafoos, R.S., 1964, **Botanical evidence of floods and flood-plain deposition**, p. A1-A35.

P-475-D* Cory, R.L., 1964, **Environmental factors affecting attached microorganisms, Patuxent River estuary, Maryland in Short papers in geology and hydrology**: Geological Survey Research, article 165, p. D194-D197.

P-450-C* Keller, F.J., 1962, **Effect of urban growth on sediment discharge, Northwest Branch Anacostia River basin, Maryland in Short papers in geology and hydrology**: Geological Survey Research, article 113, p. C129-C131.

P-450-D Eisenlohr, W.S., 1962, **Use of short records of runoff to estimate a 25-year average runoff in the Potomac River basin in Short papers in geology and hydrology**: Geological Survey Research, article 173, p. D178-D179.

P-450-D Feltz, H.R., and Wark, J.W., 1962, **Solute degradation in the Potomac River basin in Short papers in geology and hydrology**: Geological Survey Research, article 177, p. D186-D187.

P-450-E Giustic, E.V., and Schneider. W.J., 1962, **Comparison of drainage on topographic maps of the Piedmont province in Short papers in geology, hydrology, and topography**: Geological Survey Research, article 212, p. E1-E189.

P-424-B Carter, R.W., 1961, **Magnitude and frequency of floods in suburban areas in Short papers in the geologic and hydrologic sciences**: Geological Survey Research, article 5, p. B9-B11.

P-424-C* Sigafoos, R.S., 1961, **Vegetation in relation to flood frequency near Washington, D.C. in Short papers in the geologic and hydrologic sciences**: Geological Survey Research, article 238, p. C248.

P-294-B* Hack, J.T., 1957, **Studies of longitudinal stream profiles in Virginia and Maryland**, p. 45-97.

P-154* Wells, R.C., Bailey, R.K., and Henderson, E.P., 1928, **Salinity of the water of Chesapeake Bay in Shorter contributions to general geology**: Geological Survey Research, p. 105-152.

P-90-B* Hunter, J.R., 1915, **Erosion and sedimentation in Chesapeake Bay around the mouth of Choptank River in Shorter contributions to general geology**: Geological Survey Research, p. 7-15.

P-72* Glenn, L.C., 1911, **Denudation and erosion in the southern Appalachian region and the Monongahela basin**, 137 p.

WATER-SUPPLY PAPERS

W-2425 Hayes, M.A., 1997, **Maryland and the District of Columbia wetland resources**, p. 219-224.

w-2400 **Maryland and the District of Columbia: Surface-Water Resources**

w-2375 **National Water Summary 1988-89--Floods and Droughts: Maryland and the District of Columbia**

W-2355-A Robert J. Shedlock, Judith M. Denver, Marta A. Hayes, Pixie A. Hamilton, Michael T. Koterba, Leon Joseph Bachman, Patrick J. Phillips, and William S.L. Banks, 1999, **Water-quality assessment of the Delmarva Peninsula, Delaware, Maryland, and Virginia: Results of Investigations**, 1987-91 41 p.

W-2347 Fisher, G.T., and Katz, B.G., 1988, **Urban stormwater runoff--Selected background information and techniques for problem assessment, with a Baltimore, Maryland, case study**, 30 p.

W-2296 Lantrip, B.M., and others, 1987, **Sediment/water-column flux of nutrients and oxygen in the tidal Patuxent River and estuary, Maryland**, 76 p.

W-2234 Glenn, J.L., 1988, **Bottom sediments and nutrients in the tidal Potomac system, Maryland and Virginia**, 74 p.

W-2234-A Carter, Virginia, Paschal, J.E., Jr., and Bartow, N.C., 1985, **Distribution and abundance of submersed aquatic vegetation in the tidal Potomac River and estuary, Maryland and Virginia, May 1978 to November 1981**, 46 p.

SELECTED U.S. GEOLOGICAL SURVEY REPORTS ON SURFACE-WATER RESOURCES IN MARYLAND--Continued

WATER-SUPPLY PAPERS--Continued

W-2234-E Miller, A.J., 1987, **Shore erosion as a sediment source to the tidal Potomac River, Maryland and Virginia**, 45 p.

W-2234-G Hickman, R.E., 1987, **Loads of suspended sediment and nutrients from local nonpoint sources to the tidal Potomac River and estuary, Maryland and Virginia, 1979-1981 water years**, 35 p.

W-2234-I Dresler, P.V., 1980, **Benthic communities of the tidal Potomac River and Estuary, Maryland and Virginia, November 1977 through August 1979**, 149 p.

W-2234-J Shultz, D.J., 1989, **Nitrogen dynamics in the tidal freshwater Potomac River, Maryland and Virginia, water years 1979-1981**, 99 p.

W-2257 Taylor, K.R., James, R.W., Jr., and Helinsky, B.M., 1985, **Traveltime and dispersion in the Potomac River, Cumberland, Maryland to Washington, D.C.**, 30 p.

W-2071 Herb, W.J., 1980, **Sediment-trap efficiency of a multiple-purpose impoundment, North Branch Rock Creek basin, Montgomery County, Maryland, 1968-76**, 41 p.

W-1871 Schneider, W.J., 1968, **Water data for metropolitan areas-A summary of data from 222 areas in the United States**, 397 p.

W-1849 Barnes, H.H., Jr., 1967, **Roughness characteristics of natural channels**, 213 p.

W-1838 Martin, R.O.R., and Hanson, R.L., 1966, **Reservoirs in the United States**, 115 p.

W-1815 O'Bryan, Deric, and McAvoy, R.L., 1966, **Gunpowder Falls, Maryland: Uses of a water resource today and tomorrow**, 90 p.

W-1813 Dalrymple, Tate, 1965, **Flood peak runoff and associated precipitation in selected drainage basins in the United States**, 406 p.

W-1812 Durfor, C.N., and Becker, Edith, 1964, **Public water supplies of the 100 largest cities in the United States, 1962**, 364 p.

W-1619-T Slaughter, T.H., 1962, **Beach-area water supplies between Ocean City, Maryland, and Rehoboth Beach, Delaware**, p. T1-T10.

W-1532-F Williams, K.F., and Reed, L.A., 1972, **Appraisal of stream sedimentation in the Susquehanna River basin**, F1-F24.

W-1499-F Otton, E.G., Martin, R.O.R., and Durum, W.H., 1964, **Water resources of the Baltimore area, Maryland**, F1-F105.

W-1473 Hem, J.D., 1959, **Study and interpretation of the chemical characteristics of natural water**, p. 269.

W-1472 Rasmussen, W.C., and Andreasen, G.E., 1959, **Hydrologic budget of the Beaverdam Creek basin, Maryland**, 106 p.

W-1420* Bogart, D.B., 1960, **Floods of August-October 1955, New England to North Carolina**, 854 p.

W-1302 Geological Survey Research, 1960, **Compilation of records of surface waters of the United States through September 1950-Part 1B, North Atlantic slope basins, New York to York River**, 679 p.

W-1299 Lohr, E.W., and Love, S.K., 1954, **The industrial utility of public water supplies in the United States, 1952 *in* Part 1, States east of...**

W-995* Jones, B.E., and Helland, R.O., 1948, **Index to river surveys made by the United States Geological Survey and other agencies revised to July 1, 1947**, 145 p.

W-800* Geological Survey Research, 1937, **The floods of March 1936 *in* Part 3, Potomac, James, and upper Ohio Rivers**, 351 p.

W-340* Wood, B.D., 1916, **Stream-gaging stations and publications relating to water resources, 1885-1913**, 195 p.

W-236* Dole, R.B., 1909, **The quality of the surface waters in the United States *in* Part 1, Analyses of waters east of the one-hundredth meridian**, 123 p.

W-192* Parker, H.N. and others, 1907, **The Potomac River basin**, 364 p.

W-145* Stose, G.W., and Martin, G.C., 1905, **Water resources of the Pawpaw and Hancock quadrangles, West Virginia, Maryland, and Pennsylvania in Contributions to the hydrology of the Eastern United States:** Geological Survey Research, p. 58-63.

W-110 Martin, G.C., 1904, **Water resources of the Accident and Grantsville Quadrangles, Maryland**, p. 168-173.

W-57 U.S. Geological Survey, 1902, **Deep borings in the United States, Part I, Maryland**, p. 50.

W-110-A* Martin, G.C., 1905, **Water resources of the Accident and Grantsville quadrangles, Maryland in Contributions to the hydrology of the Eastern United States**: Geological Survey Research, p. 168-170.

W-110-B* Martin, G.C., 1905, **Water resources of the Frostburg and Flintstone quadrangles, Maryland and West Virginia in Contributions to the hydrology of the Eastern United States**: Geological Survey Research, p. 171-173.

W-44* Gannett, Henry, 1901, **Profiles of rivers in the United States**, 100 p.

SELECTED U.S. GEOLOGICAL SURVEY REPORTS ON SURFACE-WATER RESOURCES IN MARYLAND--Continued

CIRCULARS

C-1166 Ator, S.W., Blomquist, J.D., Brakebill, J.W., Denis, J.M., Ferrari, M.J., Miller, C.V., Zappia, H., **Water quality in the Potomac River basin, Maryland, Pennsylvania, Virginia, West Virginia, and the District of Columbia, 1992-96**, 38 p.

C-529-A Durum, W.H., and Langbein, W.B., 1966, **Water quality of the Potomac River estuary at Washington, D.C.**, 9 p.

C-529-B Wilson, J.F., Jr., Cobb, E.D., and Yotsukura, Nobuhiro, 1969, **Movement of a solute in the Potomac River estuary at Washington, D.C., at low inflow conditions**, 14 p.

C-526* Biesecker, J.E., and George, J.R., 1966, **Stream quality in Appalachia as related to coalmine drainage, 1965**, 27 p.

C-438 Searcy, J.K., and Davis, L.C., Jr., 1961, **Time of travel of water in the Potomac River, Cumberland to Washington**, 12 p.

C-381* Knox, C.F., 1956, **Index to surface-water records to September 30, 1955 *in* Part 1, North Atlantic slope basins**, 30 p.

C-204* Geological Survey Research, 1952, **Floods in Youghiogheny and Kiskiminetas River basins, Pennsylvania and Maryland, frequency and magnitude**, 22 p.

BULLETINS

B-434* Geological Survey Research, 1910, **Results of spirit leveling in Delaware, District of Columbia, Maryland, and Virginia, 1896-1909 inclusive**, 74 p.

B-231* Gannett, Henry, 1904, **A gazetteer of Maryland**, 15 p.

HYDROLOGIC INVESTIGATIONS ATLASES

HA-365 Weigle, J.M., Webb, W.E., and Gardner, R.A., 1970, **Water resources of southern Maryland**, scale 1:250,000.

HA-244 Crooks, J.W., O'Bryan, Deric, and others, 1967, **Water resources of the Patuxent River basin, Maryland**, scale 1:250,000, 5 sheets.

HA-243 Barksdale, H.C., O'Bryan, Deric, Schneider, W.J., 1966, **Effect of drought on water resources in the Northeast**.

HA-198 Schneider, W.J., 1965, **Water resources of the Appalachian Region, Pennsylvania to Alabama**.

HA-61 Rainwater, F.H., 1962, **Stream composition of the conterminous United States**, 3 sheets, 1:24,000.

Wilmarth, M.G., 1937, **Maryland**, 2 sheets.

MISCELLANEOUS GEOLOGIC INVESTIGATIONS MAPS

I-1313-H Lynch, D.D., Nuckels, E.H., Zenone, Chester, 1987, **Low-flow characteristics and chemical quality of streams in the Culpeper geologic basin, Virginia and Maryland**, 2 sheets.

I-858-A 1970, **Land use map, Washington urban area, District of Columbia, Maryland, and Virginia**, scale 1:100,000.

I-858-C 1970, **Census tracts, Washington urban area, District of Columbia, Maryland, and Virginia**, scale 1:100,000.

I-858-D 1976, **Land use change map, 1970-72, Washington urban area, D.C., Md., and Va.**, scale 1:100,000 (1 inch = about 1.6 miles.)

MISCELLANEOUS FIELD STUDIES MAPS

MF-798 Alexander, R.H., Fitzapatrick, K.A., Letke, K.S., Lins, H.F., Jr., and McGinty, H.K., III, 1976, **Land use and land cover in CARETS (Central Atlantic Regional Ecological Test Site) for Delaware, District of Columbia, and portions of Maryland, New Jersey, Pennsylvania, and Virginia**, scale 1:500,000 (1 inch - about 8 miles.)

FACT SHEETS

FS 01-073 Tallman, A.J., and Fisher, G.T., **Flooding in Delaware and the Eastern Shore of Maryland from Hurricane Floyd, September 1999**, 4 p.

FS 00-157 by Scott W. Ator and Judith M. Denver (U.S. Geological Survey) and Ann M. Pitchford (U.S. Environmental Protection Agency), **Developing landscape-indicator models for pesticides and nutrients in streams of the Mid-Atlantic Coastal Plain**

FS 98-115 Wheeler, J.C., **Freshwater use in Maryland**, 2 p.

FS 98-003 Langland, M.J., **Changes in sediment and nutrient storage in three reservoirs in the lower Susquehanna River Basin and implications for the Chesapeake Bay**, 4 p.

FS 97-126 Preston, S.D., **Evaluation of the stream-gaging network in Maryland, Delaware, and Washington, D.C.**, 4 p.

SELECTED U.S. GEOLOGICAL SURVEY REPORTS ON SURFACE-WATER RESOURCES IN MARYLAND--Continued

FACT SHEETS--Continued

FS 96-140 Zynjuk, L.D., and Majedi, B.S., **January 1996 floods deliver large loads of nutrients and sediments to the Chesapeake Bay**, 2 p.

FS 96-020 **U.S. Geological Survey Programs in Maryland and the District of Columbia**, 4 p.

FS 95-161 Denis, J.D., and Blomquist, J.D., **Nitrate in streams in the Great Valley carbonate subunit of the Potomac River Basin**, 4 p.

FS 95-136 Rice, K.C., and Bricker, O.P., **Seasonal cycles in streamwater quality on Catoctin Mountain, Maryland**, 2 p.

FS 95-107 Fisher, G.T., **Selected herbicides in major streams in the Potomac River Basin upstream from Washington, D.C.**, 4 p.

WATER-RESOURCES INVESTIGATIONS REPORTS

A pound sign (#) indicates that a report was published as an USGS Water-Resources Investigations Report and a USGS Open-File Report.

WRIR 00-4218 Sprague, L.I., Langland, M.J., ochum, S.E., Edwards, R.E., Blomquist, J.D., Phillips, S.W., Shenk, G.W., and Preston, S.D., **Factors Affecting Nutrient Trends in Major Rivers of the Chesapeake Bay Watershed**, 98 p.

WRIR 00-4156 Yochum, S.E., **A Revised Load Estimation Procedure for the Susquehanna, Potomac, Patuxent, and Choptank Rivers**, 49 p.

WRIR 99-4238 Belval, D.L. and Sprague, L.A., **Monitoring Nutrients in the Major Rivers Draining to Chesapeake Bay**, 8 p.

WRIR 99-4054 Preston, J.D. and Brakebill, J.W., **Application of Spatially Referenced Regression Modeling for the Evaluation of Total Nitrogen Loading in the Chesapeake Bay Watershed**, 12 p.

WRIR 98-4177 Darrell, L.C., Majedi, B.F., Lizarraga, J.S., and Blomquist, J.D., **Nutrient and Suspended-Sediment Concentrations, Trends, Loads, and Yields From the Nontidal Part of the Susquehanna, Potomac, Patuxent, and Choptank Rivers, 1985-96**, 38 p.

WRIR 97-4279 Dillow, J.J.A., **Technique for simulating peak-flow hydrographs in Maryland**, 39 p.

WRIR 97-4171 Lorah, M.M., Olsen, L.D., Smith, B.L., Johnson, M.A., Fleck, W.B., **Natural attenuation of chlorinated volatile organic compounds in a freshwater tidal wetland, Aberdeen Proving Ground, Maryland**, 95 p.

WRIR 97-4154 Lizarraga, J.S., **Estimation and analysis of nutrient and suspended-sediment Loads at selected sites in the Potomac River basin, 1993-95**, 23 p.

WRIR 97-4139 Ator, S.W., and Ferrari, M.J., **Nitrate and selected pesticides in ground water of the Mid Atlantic region**, 8 p.

WRIR 97-4051, Zappia, H., Fisher, G.T., **Water-quality assessment of the Potomac River basin: Analysis of available pesticide data, 1972-90**, 80 p.

WRIR 96-4273 Preston, S.D., **Study of Nonpoint source nutrient loading in the Patuxent River Basin, Maryland**, 6 p.

WRIR 96-4210 Zappia, Humbert, **Chlordane, DDT, PCb's, and other selected organic compounds in asiatic clams and yellow bullhead in the Potomac River Basin, Maryland, 1992**, 6 p.

WRIR 96-4175 Preston, S.D., and Summers, R.M., **Estimation of nutrient and suspended sediment loads in the Patuxent River Basin, Maryland, water years 1986-90**, 69 p.

WRIR 96-4169 Tenbus, F.J., and Phillips, S.W., **Hydrogeology and chemical quality of water and soil at Carroll Island, Aberdeen Proving Ground, Maryland**, 156 p.

WRIR 96-4034 Gerhart, J.M., and Brakebill, J.W., **Design and implementation of a sampling strategy for a water-quality assessment of the Potomac River Basin**, 31 p.

WRIR 95-4267 Gerhart, J.M., and Blomquist, J.D., **Selected trace-element and organic contaminants in streambed sediments of the Potomac River Basin**, 12 p.

WRIR 95-4221 Blomquist, J.D., and others, **Water-quality assessment of the Potomac River Basin: Basin description and analysis of available nutrient data, 1970-90**, 88 p.

WRIR 95-4155 Rice, K.C., and Bricker, O.P., **Hydrologic and geochemical factors affecting the chemistry of small headwater streams in response to acidic deposition on Catoctin Mountain, North-Central Maryland**, 63 p.

WRIR 95-4154 Dillow, J.J.A., **Technique for estimating magnitude and frequency of peak flows in Maryland**, 55 p.

WRIR 94-4020 Carpenter, D.H., and Hayes, D.C., **Low flow characteristic of streams in Maryland and Delaware**, 113 p, 10 plates.

WRIR 89-4139 Trombley, T.J., **Areal and temporal variations in surface-water quality in the Upper Potomac River basin**, 78 p.

WRIR 88-4213 Carpenter, D.H., **Floods in West Virginia, Pennsylvania, and Maryland, November 1985**, 86 p.

WRIR 87-4093 Carpenter, D.H., **Cost-effectiveness of the stream-gaging program in Maryland, Delaware, and the District of Columbia**, 85 p.

SELECTED U.S. GEOLOGICAL SURVEY REPORTS ON SURFACE-WATER RESOURCES IN MARYLAND--Continued

WATER-RESOURCES INVESTIGATIONS REPORTS--Continued

WRIR 86-4097 Hopkins, H.T., Fisher, G.T., and McGreevy, L.J., **Reconnaissance of the ground-water, surface-water system in the Zekiah Swamp Run Basin, Charles and Prince Georges Counties, Maryland**, 48 p, 1 plate.

WRIR 85-4241 Trombley, T.J., and Zynjuk, L.D., **Hydrogeology and water quality of the Catoctin Mountain National Park area, Frederick County, Maryland**, 41 p.

WRIR 84-4203 James, R.W., Jr., and Helinsky, B.M., **Time of travel and dispersion in the Jones Falls, Baltimore, Maryland**, 29 p.

WRIR 84-4099 Fisher, G.T., and Katz, B.G., **Analysis of urban storm-water runoff characteristics of four basins in the Baltimore metropolitan area, Maryland**, 58 p.

WRIR 83-4255 Cohen, R.R.H., and Pollock, S.O., **Primary productivity by phytoplankton in the tidal, fresh Potomac River, Maryland, May 1980 to August 1981**, 76 p.

WRIR 82-4062 Trombley, T.J., **Downstream effects of reservoir releases to the Potomac River from Luke, Maryland to Washington, D.C.**, 35 p.

WRIR 82-32 Lang, D.J., **Water quality of the three major tributaries to the Chesapeake Bay, the Susquehanna, Potomac, and James Rivers, January 1979 - April 1981**, 64 p.

WRIR 81-1200# Katz, B.G., **Analysis and characterization of urban storm-water runoff for selected basins in the Baltimore Metropolitan Area--a project plan**, 49 p. (see page 31).

WRIR 81-10 Cory, R.L., and Dressler, P.V., **Diel oxygen variations in the Rhode River Estuary, Maryland, 1970-78**, 19 p.

WRIR 80-1016# Carpenter, D.H., **Technique for estimating magnitude and frequency of floods in Maryland**, 79 p. (see page 32)

WRIR 80-78 Lang, D.J., **Water quality monitoring of three major tributaries to the Chesapeake Bay-interim data report**, 66 p.

WRIR 77-20 Cory, R.L., **Water quality in Rhode River at Smithsonian pier near Annapolis, Maryland, January 1974 through December 1975**, 48 p.

WRIR 30-75 Redding, M.J., and Cory, R.L., **Macroscopic benthic fauna of three tidal creeks adjoining the Rhode River, Maryland**.

WRIR 10-74 Cory, R.L, and Redding, J.M., **Water quality in Rhode River at Smithsonian Institute pier near Annapolis, Maryland, April 1970 - December 1974**.

OPEN-FILE REPORTS

A pound sign (#) indicates that a report was published as an USGS Open-File Report and a USGS Water-Resources Investigations Report.

OFR 01-292 Phelan, D.J., Olsen, L.D., Senus, M.P., and Spencer, T.A., **Assessment of volatile organic compounds in surface water at Canal Creek, Aberdeen Proving Grounds, Maryland, November 1999-September 2000**, 49 p.

OFR 00-461 Doheny, E.J., and Fisher, G.T., **Estimated flood frequency and corresponding surface elevations at the confluence of the Potomac and Shenandoah Rivers, Harpers Ferry, West Virginia**, 20 p.

OFR-00-282 Spencer, T.A., Olsen, L.D., Lorah, M.M., and Mount, M.M., **Water-quality and Water-level Data for a Freshwater Tidal Wetland, West Branch Canal Creek, Aberdeen Proving Ground, Maryland, October 1998-September 1999**, 185 p.

OFR-00-203 Olsen, L.D., and Spencer, T.A., **Assessment of Volatile Organic Compounds in Surface Water at West Branch Canal Creek, Aberdeen Proving Ground, Maryland, 1999**, 15 p.

OFR-99-213 Doheny, Edward J., **Index of Hydrologic Characteristics and Data Resources for the Gwynns Falls Watershed, Baltimore County and Baltimore City, Maryland,** 17 p.

OFR-99-60 John W. Brakebill and Stephen D. Preston, **Digital Data Used to Relate Nutrient Inputs to Water Quality in the Chesapeake Bay Watershed**, Version 1.0.

OFR 99-57 Miller, C.V., Foster, G.D., Huff, T.B., Garbarino, John R., **Organic Compounds and Trace Elements in the Pocomoke River and Tributaries, Maryland**

OFR 98-180 A.L. Derosier, J.W. Brakebill, J.M. Denis, and S.K. Kelley, **Water-Quality Assessment of the Potomac River Basin: Water-Quality and Selected Spatial Data, 1992-96.**

OFR 97-777 Doheny, E.J., Auer, T.W., and Lamotte, Andrew, **Flood tracking chart for the Potomac River Basin**, 1 oversized sheet.

OFR 97-560 Olsen, L.D., Lorah, M.M., Marchand, E.H., Smith, B.L., and Johnson, M.A., **Hydrogeologic, water-quality, and sediment-quality data for a freshwater tidal wetland, West Branch Canal Creek, Aberdeen Proving Ground, Maryland, 1992-1996**, 267 p.

OFR 97-200 Doheny, E.J., **Flood-hydrology data for the Potomac River and selected tributaries in the vicinity of the Chesapeake and Ohio Canal National Historical Park, Maryland, West Virginia, and the District of Columbia**, 33 p.

SELECTED U.S. GEOLOGICAL SURVEY REPORTS ON SURFACE-WATER RESOURCES IN MARYLAND--Continued

OPEN-FILE REPORTS--Continued

OFR 95-560 Olsen, L.D., Lorah, M.M., Marchand, E.H., Smith, B.L., Johnson, M.A., **Hydrogeologic, Eater-quality, and sediment-quality data for a freshwater tidal wetland, West Branch Canal Creek, Aberdeen Proving Ground, Maryland, 1992-96**, 267 p.

OFR 97-200 Doheny, E.J., **Flood-hydrology data for the Potomac River and selected tributaries in the vicinity of the Chesapeake and Ohio Canal National Historical Park, Maryland, West Virginia, and the District of Columbia**, 33 p.

OFR 96-554 Doheny, E.J., **A modified index for assessment of potential scour at bridges over waterways**, 16 p.

OFR 95-282 Lorah, M.M., and Clark, J.S., **Contamination of ground water, surface water, and soil, and evaluation of selected ground-water pumping alternatives in the Canal Creek Area of Aberdeen Proving Ground, Maryland**, 318 p.

OFR 95-151 Rice, K.C., and others, **Hydrologic and water-quality data for two small watersheds on Catoctin Mountain, North-Central Maryland, 1987-93**, 195 p.

OFR 95-135 Doheny, E.J., Helinsky, B.M., and McGregor, R.A., **A technique for preliminary appraisal of potential and observed scour as applied to State-maintained highway bridges in Maryland**, 75 p.

OFR 92-649 Rice, K.C., and Bricker, O.P., **Acid-rain induced changes in stream water quality during storms on Catoctin Mountain, Maryland**, 2 p.

OFR 91-505 McFarland, J.A., Weiss, L.S., and others, **Water resources activities of the U.S. Geological Survey**, 130 p.
OFR 91-157 Gerhart, J.M., **National water-quality assessment program--the Potomac River Basin** (fact sheet).

OFR 89-409 U.S. Geological Survey, **2nd National symposium--Water quality, Abstracts of the technical sessions, Orlando, Florida**, November 12-17, 1989, 150 p.

OFR-88-709 Carter, Virginia, and others, **Data on physical, chemical, and biological characteristics of hydrilla beds, mixed vegetation beds, and unvegetated sites in the tidal Potomac River, Maryland and Virginia**, 196 p.

OFR-88-307 Rybicki, N.B., Anderson, R.T., and Carter, Virginia, **Data on the distribution and abundance of submersed aquatic vegetation in the tidal Potomac River and transition zone of the Potomac estuary, Maryland, Virginia, and the District of Columbia**, 31 p.

OFR 87-379 Fisher, G.T., and Simmons, R.H., **Data base development for water-quality modeling of the Patuxent River basin, Maryland**, 18 p.

OFR 86-490 McGreevy, L.J., Hyatt, G.J., Cockey, E.J., **Water resources activities of the U.S. Geological Survey, Mid-Atlantic District 1984-1986**, 129 p.

OFR 86-486 Lescinsky, J.B., **Floods of November 1985 in West Virginia, Pennsylvania, Maryland, and Virginia**, 33 p.

OFR 85-197 Hodges, A.L., Jr., **Estimated average annual alkalinity of six streams entering Deep Creek Lake, Garrett County, Maryland**, 63 p.

OFR 85-82 Carter, Virginia; Rybicki, N.B.; Anderson, R,T.; Trombley, T.J.; and Zynjuk, G.L., **Data on distribution and abundance of submerged aquatic vegetation in the tidal Potomac River and transition zone of the Potomac estuary, Maryland, Virginia, and the District of Columbia, 1983 and 1984**.

OFR 84-859 Cohen, R.R.H., Pollock, S.O., Stoelzel, V.E., and Boulukos, K.E., **Phytoplankton-abundance and generic-composition date for the Potomac River and Estuary, Maryland**, 29 p.

OFR 84-426 Hilleary, J.T., Hydrologic data: **South Branch Casselman River, Garrett County, and Marsh Run, Washington County, Maryland**, 63 p.

OFR-83-873 Hickman, R.E., **Water quality data for selected streams tributary to the tidal Potomac River and estuary, Maryland and Virginia, 1979-1983 water years**, 69 p.

OFR 83-861 Taylor, K.R., James, R.W., Jr., Helinsky, B.M., **Traveltime and dispersion in the Potomac River, Cumberland, Maryland, to Washington, D.C.**, 71 p.
OFR 83-33 Staubitz, W.W., and Sobashinski, J.R., **Hydrology of Area 6, eastern Coal Province, Maryland, West Virginia, and Pennsylvania**, 131 p.

OFR 81-1200# Katz, B.G., and Fisher, G.T., **Analysis and characterization of urban storm-water runoff for selected basins in the Baltimore, Maryland metropolitan area--a project plan**, 58 p. (see page 27)

OFR 81-812 Staubitz, W.W., **Quality of surface water in the coal mining areas of western Maryland and adjacent areas of Pennsylvania and West Virginia from April 1979 to June 1980**, 106 p.

OFR-81-538 Herb, W.J., Shaw, L.C., and Brown, D.E., **Hydrology of area 5, Eastern Coal Province, Pennsylvania, Maryland, and West Virginia**, 92 p.

OFR 81-10 Cory, R.L., **Diel oxygen variations in the Rhode River Estuary, Maryland, 1970-1978**, 14 p.

OFR 80-1016# Carpenter, D.H., **Technique for estimating magnitude and frequency of floods in Maryland**, 119 p. (see page 28)

OFR 78-171 Herb, W.J., **Excedence probability - Depth relationships of floods for Maryland streams west of Chesapeake Bay**, 14 p.

OFR 76-884 Herb, W.J., **Availability of hydrologic data for Montgomery County, Maryland**, 15 p., 1 sheet, 1:62,500 (1 inch = 1 mile).

SELECTED U.S. GEOLOGICAL SURVEY REPORTS ON SURFACE-WATER RESOURCES IN MARYLAND--Continued

OPEN-FILE REPORTS--Continued

OFR 76-178 Herb, W.J., **Availability of hydrologic data for Prince Georges County, Maryland**, 7 p.

1974 Carpenter, D.H., **Flood characteristics of small drainage basins in Maryland**, 90 p.

OFR 74-1015 Carpenter, D.H., **Floods of August and September 1971 in Maryland and Delaware**, 41 p.

1973 **Water resources of the Delmarva Peninsula, a summary report (White House document 93-68) to the Congress**, 59 p.

1972 **Sediment yields of urban construction sources, Montgomery County, Maryland, a progress report, Rock Creek Anacostia River basins**, 39 p.

1972 Taylor, K.R., **A summary of peak stages and discharges in Maryland, Delaware, and District of Columbia for flood of June 1972,** 13 p.

1969 Simmons, R.H., **Floods of August 1967 in Maryland and Delaware**, 98 p.

1959 Darling, J.M., **Floods in Maryland, Magnitude and Frequency**, 9 p.

SELECTED MARYLAND GEOLOGICAL SURVEY REPORTS ON SURFACE-WATER RESOURCES IN MARYLAND

Listed below is a selection of reports on surface-water resources in Maryland which are available through the Maryland Geological Survey, 2300 St. Paul Street, Baltimore, Maryland 21218.

BULLETINS

MGS B 36 Duigon, M.T., and Dine, J.R., 1991, **Water resources of Washington County, Maryland**, 109 p.

MGS B 35 Werkheiser, W.H., 1990, **Hydrogeology and ground-water resources of Somerset County, Maryland**, 156 p.

MGS B 34 Otton, E.G., Wiley, R.E., McGregor, R.A., Achmad, G.J., Hiortdahl, S.N., and Gerhart, J.M., 1989, **Water resources and estimated effects of ground-water development, Duigon M.TCecil County, Maryland**, 133 p.

MGS B 33 Duigon, M.T., and Dine, J.R., 1987, **Water resources of Frederick County, Maryland**, 106 p.

MGS B 25 Darling, J.M., 1961, **Maryland streamflow characteristics**, 136 p.

MGS B 24 Slaughter, T.H., and Darling, J.M., 1961, **Water resources of Allegany and Washington Counties**, 408 p.

MGS B 22 Meyer, Gerald, and Beall, R.M., 1958, **Water resources of Carroll and Frederick Counties**, 355 p.

MGS B 21 Overbeck, R.M., Slaughter, T.H., and Hulme, A.E., 1958, **Water resources of Cecil, Kent, and Queen Annes Counties**, 478 p.

MGS B 18 Rasmussen, W.C., Slaughter, T.H., Hulme, A.E., and Murphy, J.J., 1956, **Water resources of Caroline, Dorchester, and Talbot Counties**, 465 p.

MGS B 17 Dingman, R.J., Ferguson, H.F., and Martin, R.O.R., 1956, **Water resources of Baltimore and Harford Counties**, 233 p.

MGS B 16 Rasmussen, W.C., Slaughter, T.H., Bennett, R.R., Meyer, R.R., and Hulme, G.E., 1955, **Water resources of Somerset, Wicomico, and Worchester Counties**, 535 p.

MGS B 14 Dingman, R.J., Meyer, Gerald, and Martin, R.O.R., 1954, **Water resources of Howard and Montgomery Counties**, 260 p.

MGS B 13 Amsden, T.W., Overbeck, R.M., and Martin, R.O.R., 1954, **Geology and water resources of Garrett County**, 349 p.

MGS B 11 Martin, R.O.R., and Ferguson, H.F., 1953, **Water resources of St. Marys County**, 195 p.

MGS B 10 Cooke, C., Wythe, Martin, R.O.R., and Meyer, Gerald, 1952, **Geology and water resources of Prince Georges's County**, 270 p.

MGS B 8 Bennion, V.R., Dougherty, D.F., and Overbeck, R.M., 1951, **Water resources of Calvert County**, 100 p.

MGS B 5 Bennion, V.R., and Brookhart, J.W., 1949, **Water resources of Anne Arundel County**, 14 p.

SELECTED MARYLAND GEOLOGICAL SURVEY REPORTS ON SURFACE-WATER RESOURCES IN MARYLAND--Continued

REPORTS OF INVESTIGATIONS--Continued

REPORTS OF INVESTIGATIONS

MGS RI 71 Cleaves, E.T., and Doheny, E.J., 2000, **A Strategy for improving the Stream-Gaging Network in Maryland**, 72 p.

MGS RI 48 Kerhin, R.T., and others, 1988, **The surficial sediments of Chesapeake Bay, Maryland: Physical characteristics and sediment budget**, 82 p.

MGS RI 45 Wiley, R.E., and Achmad, G.J., 1986, **Simulation of ground-water flow and base flow in weathered crystalline rock, Upper Cattail Creek, Howard County, Maryland**, 68 p.

MGS RI 42 Otton, E.G., and Hilleary, J.T., 1985, **Maryland springs--their physical, thermal, and chemical characteristics**, 151 p.

MGS RI 41-A Hiortdahl, S.N., 1988, **Hydrologic and mining data from an area of underground coal mining in Garrett County, Maryland**, 81 p.

MGS RI 41 Duigon, M.T., and Smigaj, M.J., 1985, **First report on the hydrologic effects of underground coal mining in southern Garrett County, Maryland**, 99 p.

MGS RI 40 **The Columbia aquifer of the Eastern Shore of Maryland**, 1984, Part 1, Bachman, L.J., and Wilson, J.M., Hydrogeology, Part 2, Wilson, J.M., and Bachman, L.J., **Selected water-well records, chemical analyses, water-level measurements, lithologic logs and geophysical logs**, 144 p.

MGS RI 35 Carpenter, D.H., 1983, **Characteristics of streamflow in Maryland**, 237 p.

MGS RI 17 Mack, F.K., Webb, W.E., and Gardner, R.A., 1971, **Water resources of Dorchester and Talbot Counties, Maryland, with special emphasis on the ground-water potential of the Cambridge and Easton areas**, 107 p.

MGS RI 16 Walker, P.N., 1971, **Flow characteristics of Maryland streams**, 160 p.

MGS RI 13 Webb, W.E., and Heddle, S.G., 1970, **Extent of brackish water in the tidal rivers of Maryland**, 46 p.

MGS RI 9 Thomas, J.D., and Heidel, S.G., 1969, **Chemical and physical character of municipal water supplies in Maryland**, 52 p.

MGS RI 5 Thomas, J.D., 1966, **Chemical quality reconnaissance of water of Maryland streams**, 61 p.

MGS RI 3 Boggess, D.H., and Heidel, S.G., 1968, **Water resources of the Salisbury area, Maryland**, 69 p.

MGS RI 1 Heidel, S.G., and Fernier, W.W., 1965, **Chemical quality of water and trace elements in the Patuxent River basin**, 40 p.

BASIC DATA REPORTS

MGS BDR 19 Dine, J.R., Adamski, J.C., Tompkins, M.D., 1992, **Hydrologic data for Howard County, Maryland**, 240 p.

MGS BDR 18 Duigon, M.T., Dine, J.R., and Tompkins, M.D., 1989, **Ground-water and surface-water data for Washington County, Maryland**, 273 p.

MGS BDR 16 Wiley, R.E., McGregor, R.A., deGrouchy, Joanne, and Tompkins, M.D., 1987, **Hydrologic data for Cecil County, Maryland**, 150 p.

MGS BDR 15 Dine, J.R., Tompkins, M.D., and Duigon, M.T., 1985, **Ground-water and surface-water data for Frederick County, Maryland**, 240 p.

MGS BDR 12 Hilleary, J.T., and Weigle, J.W., 1981, **Carroll County ground-water information: well records, spring records, and chemical-quality data**, 252 p.

MGS BDR 11 Nutter, L.J., Smigaj, M.J., and Knobel, L.L., 1980, **Garrett County water-well records, chemical-quality data, ground-water use, coal test-hole data, and surface-water data: with a section on gas-well records,** 102 p.

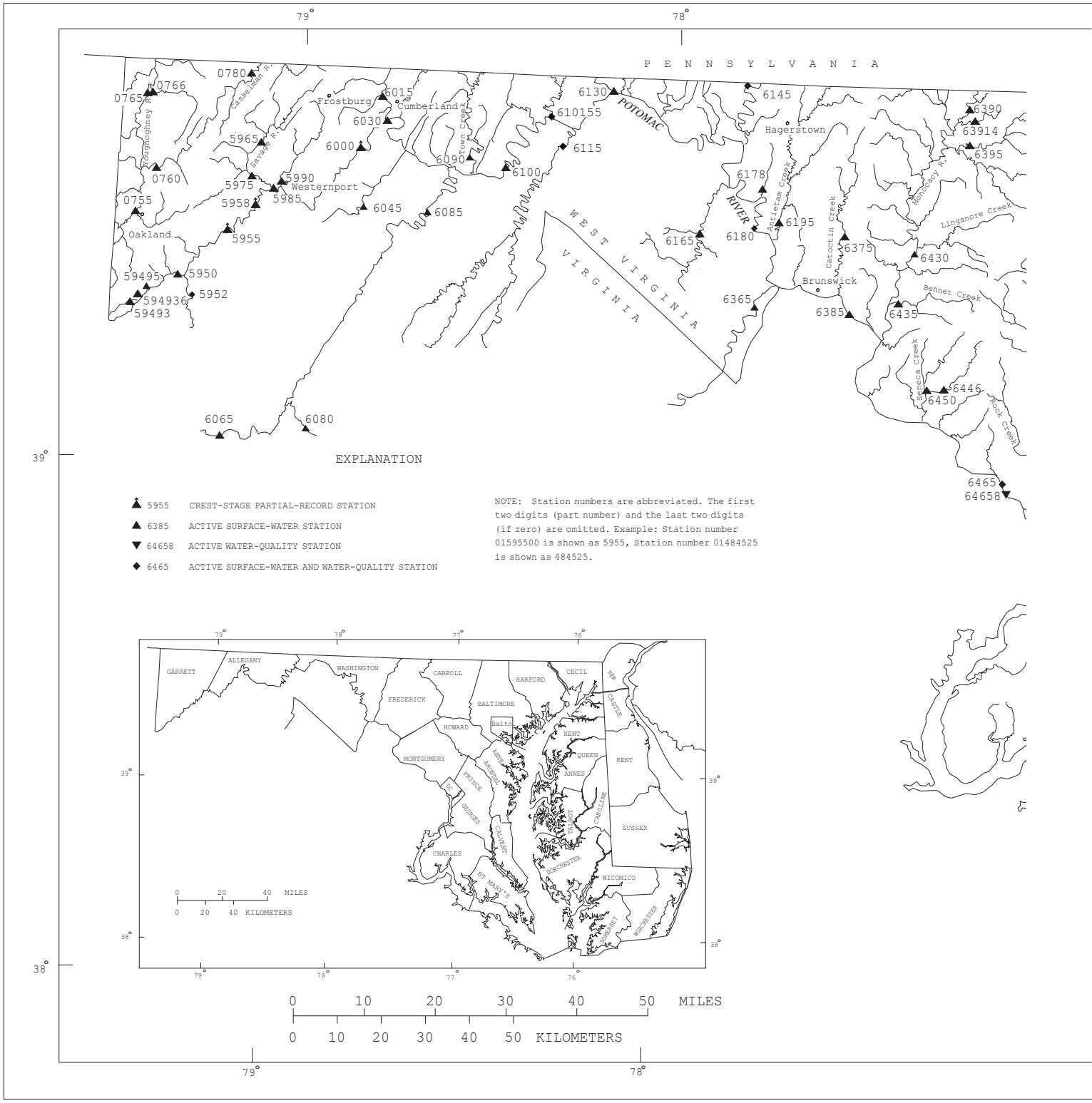
MGS BDR 2 Slaughter, T.H., and Laughlin, C.P., 1966, **Records of wells and springs in Charles County, Maryland**, 93 p.

MGS BDR 1 Laughlin, C.P., 1966, **Records of wells and springs in Baltimore County, Maryland**, 406 p.

INFORMATION CIRCULARS

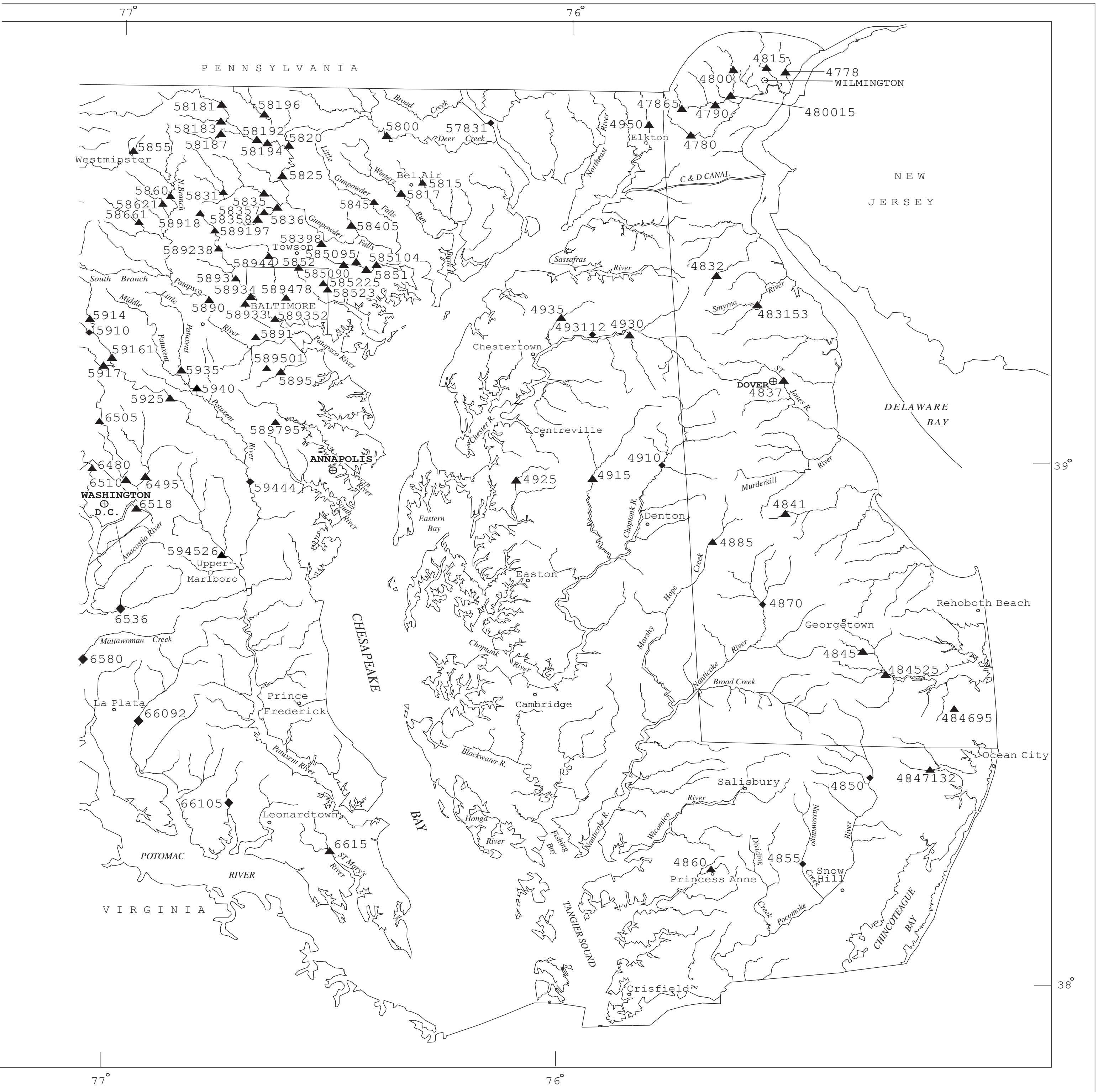
MGS IC 12 Taylor, K.R., and Solley, W.B., 1972, **Traveltime and concentration attenuation of a soluble dye in Antietam and Conococheague Creeks, Maryland**, 25 p.

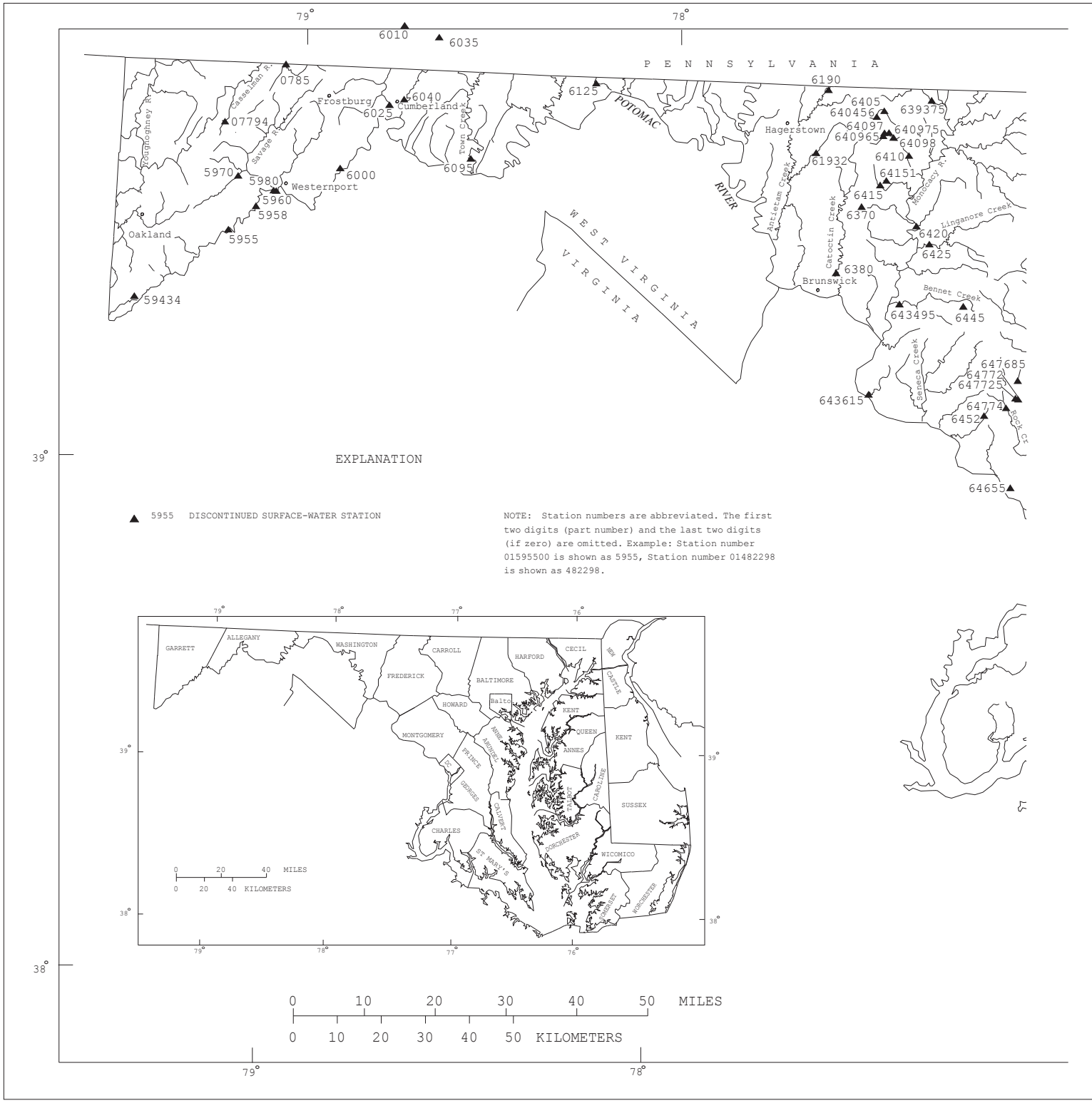
MGS IC 9 Taylor, K.R., 1970, **Traveltime and concentration attenuation of a soluble dye in the Monocacy River, Maryland**, 23 p.



Base map modified from U.S. Geological Survey 1:100,000 DLG

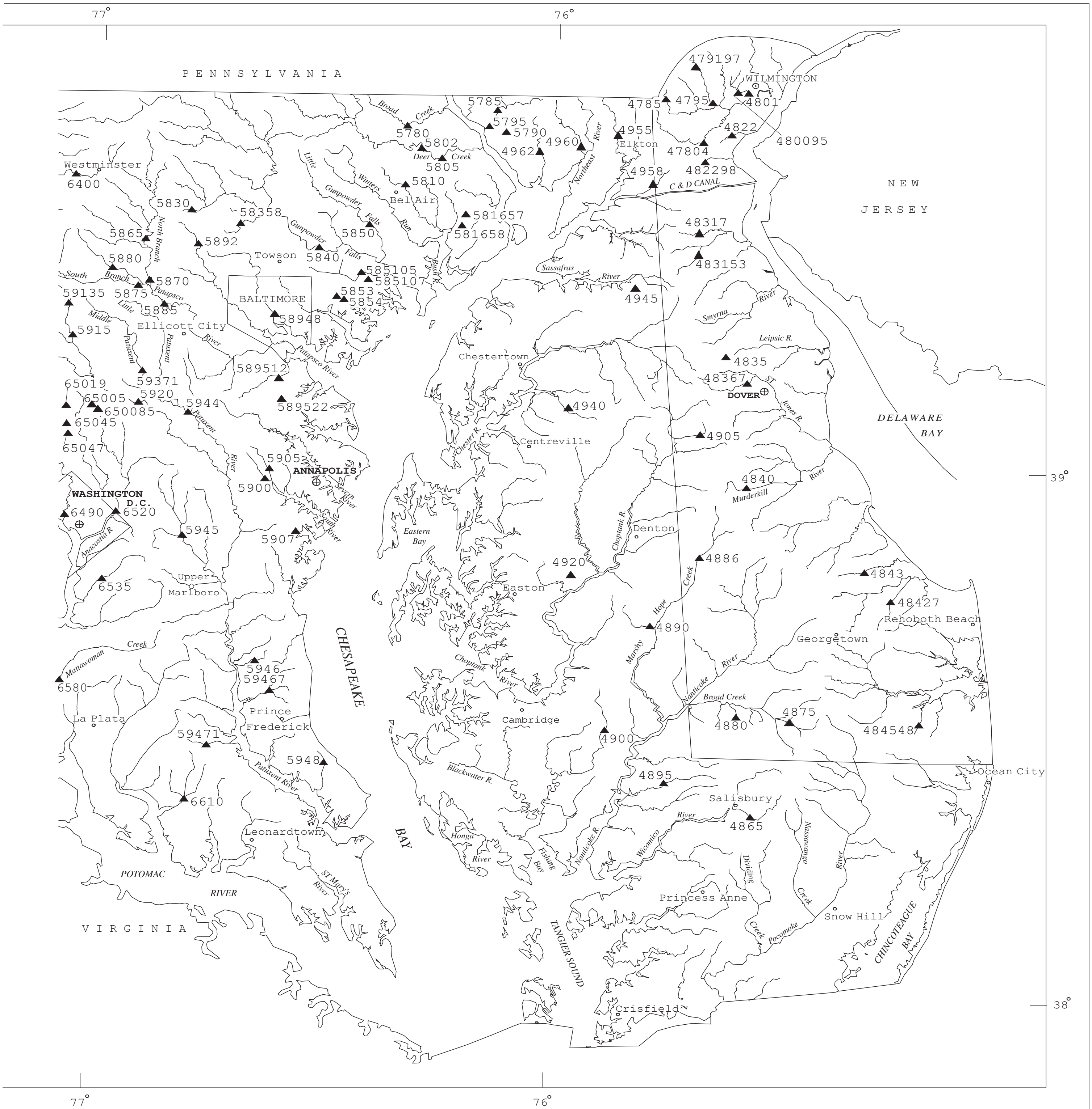
Figure 3. Map of Maryland and Delaware showing location of surface-water, water-quality and crest-stage partial-record stations.


77°
76°
PENNSYLVANIA
NEW JERSEY
DELAWARE BAY
VIRGINIA
WILMINGTON
4815
4778
4800
480015
47865
4790
4950
Elkton
4780
C & D CANAL
58181
58196
58183
58192
58187
5820
58194
5855
Westminster
5800
57831
Broad Creek
Deer Creek
Bel Air
5815
5817
5825
5860
5831
58621
58661
5835
58357
58358
5836
58918
589197
5845
58405
58398
Towson
589238
585095
585104
58944
5852
585090
5851
5893
585225
58934
589478
58523
5890
BALTIMORE
58933
589352
5914
5910
5891
59161
5917
589501
5935
5895
5940
5925
6505
589795
6480
ANNAPOLIS
6510
6495
WASHINGTON D.C.
6518
59444
594526
Upper Marlboro
6536
6580
La Plata
66092
Prince Frederick
66105
Leonardtown
6615
POTOMAC RIVER
CHESAPEAKE BAY
Eastern Bay
Sassafras River
4832
Smyrna River
483153
4935
493112
4930
Chestertown
DOVER
4837
St. Jones R.
Centreville
4910
4925
4915
Murderkill River
4841
Denton
4885
Easton
4870
Rehoboth Beach
Georgetown
4845
484525
Broad Creek
Cambridge
484695
Ocean City
Salisbury
4850
4847132
4860
Princess Anne
4855
Snow Hill
Crisfield
TANGIER SOUND
CHINCOTEAGUE BAY
39°
38°



Base map modified from U.S. Geological Survey 1:100,000 DLG

Figure 4. Map of Maryland and Delaware showing location of discontinued surface-water stations.


77°
76°
PENNSYLVANIA
NEW JERSEY
VIRGINIA
WILMINGTON
Elkton
C & D CANAL
Westminster
Bel Air
Towson
BALTIMORE
Ellicott City
Chestertown
Centreville
DOVER
DELAWARE BAY
39°
WASHINGTON D.C.
ANNAPOLIS
Denton
Easton
Upper Marlboro
Rehoboth Beach
Georgetown
La Plata
Prince Frederick
Cambridge
Ocean City
Salisbury
Leonardtown
Princess Anne
Snow Hill
Crisfield
38°
CHESAPEAKE BAY
Eastern Bay
TANGIER SOUND
CHINCOTEAGUE BAY
POTOMAC RIVER
Broad Creek
Deer Creek
Little Gunpowder Falls
Winters Run
Gunpowder Falls
Bynum Run
Northeast River
Sassafras River
Smyrna River
Leipsic R.
St. Jones R.
Murderkill River
Chester R.
Choptank R.
Choptank River
Marshy Hope Creek
Nanticoke River
Nanticoke R.
Broad Creek
Blackwater R.
Honga River
Fishing Bay
Wicomico River
Dividing Creek
Nassawango Creek
Pocomoke River
North Branch
South Branch
Little Patuxent
Middle Patuxent
Patapsco River
Patuxent River
Severn River
South River
Anacostia R.
Mattawoman Creek
St Mary's River
479197
4785
4795
4801
4822
480095
4955
47804
482298
4958
4960
4962
5785
5795
5790
5780
5802
5805
5810
581657
581658
5850
5840
585105
585107
5853
5854
58948
5830
58358
5892
5865
5880
5870
5875
5885
59135
5915
589512
589522
59371
5920
5944
65019
65005
650085
65045
65047
5905
5900
6490
6520
5945
5907
6535
5946
59467
6580
59471
5948
6610
48317
483153
4945
4835
48367
4940
4905
4840
4886
4920
4843
48427
4890
4875
4880
484548
4900
4895
4865

THIS IS A BLANK PAGE.

SURFACE-WATER-DISCHARGE AND SURFACE-WATER-QUALITY RECORDS

REMARK CODES

The following remark codes may appear with the water-quality data in this section:

PRINTED OUTPUT	REMARK
E	Estimated value
>	Actual value is known to be greater than the value shown.
<	Actual value is known to be less than the value shown.
K	Results based on colony count outside the acceptance range (non-ideal colony count).
L	Biological organism count less than 0.5 percent (organism may be observed rather than counted).
D	Biological organism count egual to or greater than 15 percent (dominant).
&	Biological organism estimated as dominant.
V	Analyte was detected in both the environmental sample and the associated blank.
M	Presence of material verified but not quantified.

Dissolved Trace-Element Concentrations

NOTE--Traditionally, dissolved trace-element concentrations have been reported at the microgram per liter (ug/L) level. Recent evidence, mostly from large rivers, indicates that actual dissolved-phase concentrations for a number of trace elements are within the range of 10's to 100's of nanograms per liter (ng/L). Data above the ug/L level should be viewed with caution. Such data may actually represent elevated environmental concentrations from natural or human causes; however, these data could reflect contamination introduced during sampling, processing, or analysis. To confidently produce dissolved trace-element data with insignificant contamination, the U.S. Geological Survey began using new trace-element protocols in water year 1994.

Change in National Trends Network Procedures

NOTE--Sample handling procedures at all national Trends Network stations were changed substantially on January 11, 1994, in order to reduce contamination from the sample shipping container. The data for samples before and after that date are different and not directly comparable. A tabular summary of the differences based on a special intercomparison study, is available from the NADP/NTN Coordination Office, Colorado State University, Fort Collins, CO 80523 (Telephone: 303-491-5643).

NORTH ATLANTIC SLOPE BASINS

DELAWARE RIVER BASIN

01477800 SHELLPOT CREEK AT WILMINGTON, DE

LOCATION.--Lat 39°45'39.4", long 75°31'07.3", New Castle County, Hydrologic Unit 02040205, on right bank 100 ft east of intersection of 44th and Pine Streets in Clifton Park, 700 ft downstream from bridge on North Market Street in Wilmington, 0.2 mi downstream from Matson Run, and 2.3 mi upstream from mouth.

DRAINAGE AREA.--7.46 mi^2.

PERIOD OF RECORD.--December 1945 to current year.

REVISED RECORDS.--WSP 1382: 1948(m).

GAGE.--Water-stage recorder and concrete control. Datum of gage is 15.16 ft above sea level.

REMARKS.--Records good below 100 ft^3/s and above 4,000 ft^3/s except those between 100 and 4,000 ft^3/s, which are fair, and those for estimated daily discharges (backwater and ice), which are poor. Occasional regulation at low flow from unknown source upstream from station. U.S. Geological Survey gage-height telemeter at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known since at least 1940, that of July 5, 1989. Flood of Aug. 1, 1945, reached a stage of about 8.5 ft, from floodmarks.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 17	0755	1,220	4.74	Jun 16	1615	*1,340	*4.95
Mar 30	0310	1,300	4.88				

Minimum discharge, 0.43 ft^3/s, Sept. 13, 14.

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	1.2	e.86	2.4	e1.4	5.0	3.9	7.4	2.3	21	3.7	.46	.63
2	1.3	e.86	2.1	e1.4	4.2	3.6	5.7	2.2	22	2.6	.44	.51
3	1.3	e.90	2.0	e1.4	3.5	3.5	4.5	2.2	4.9	1.6	.43	.47
4	2.8	e.84	2.1	e1.3	3.0	21	3.8	2.0	3.4	2.3	.43	12
5	5.3	e.74	2.1	e1.3	172	30	3.4	1.9	2.9	10	.45	2.7
6	1.6	e.70	2.1	e1.4	38	9.5	3.8	1.8	2.7	2.5	.45	.61
7	1.3	e.80	2.1	1.6	13	10	3.4	1.7	2.5	1.7	.44	.52
8	1.1	e.72	2.1	3.6	6.8	6.4	3.2	1.7	2.2	1.7	.43	.50
9	1.1	8.7	2.1	5.5	5.4	6.9	8.5	2.0	2.0	1.8	.43	.48
10	1.1	17	2.3	4.9	7.2	4.3	7.8	1.8	1.8	13	54	.52
11	1.2	2.1	2.3	1.8	4.0	3.6	24	1.7	6.7	2.1	6.4	1.2
12	1.2	1.6	3.0	1.7	3.4	3.9	12	1.7	6.8	.68	16	.49
13	1.1	1.9	3.3	1.6	5.8	64	5.8	1.5	2.2	.59	2.9	.44
14	1.1	12	44	1.5	4.2	6.9	4.0	1.4	1.9	.56	.97	8.2
15	1.1	4.0	5.1	6.6	4.4	11	6.7	1.4	1.9	.55	.72	1.0
16	1.1	1.8	7.1	3.0	13	14	19	1.3	158	.54	.66	.54
17	1.5	1.7	219	2.1	23	15	6.7	1.2	97	.54	.62	.47
18	8.5	1.6	9.0	2.1	4.9	6.8	7.2	1.3	5.6	.51	.61	.45
19	1.7	1.6	3.8	63	4.0	4.4	3.9	1.4	3.5	.52	.62	.45
20	.94	2.3	3.2	40	3.8	4.0	3.5	1.3	2.9	.47	.65	8.4
21	.86	3.2	2.4	15	3.4	137	3.5	23	2.8	.44	.62	7.8
22	.84	2.2	e2.2	e5.60	3.6	18	3.2	65	2.7	.48	.55	.82
23	.86	1.9	2.0	e4.10	5.4	6.8	3.2	13	5.8	.52	.54	.58
24	1.0	1.9	1.8	e3.20	4.4	5.0	3.1	2.7	2.8	.53	.55	3.3
25	.99	1.9	1.7	e3.0	24	4.2	2.9	2.2	2.2	.60	.52	15
26	.92	64	1.7	e2.9	16	4.0	2.7	205	2.0	.60	.48	1.3
27	e.84	5.6	e1.7	e2.8	5.7	3.5	2.6	39	1.8	.72	1.1	.82
28	e.80	2.8	e1.6	e2.7	4.5	3.3	2.5	13	1.8	.51	1.6	.75
29	e.75	2.8	e1.6	2.7	---	11	2.3	5.0	1.6	.56	.53	.77
30	e.78	6.2	e1.5	55	---	325	2.3	3.8	1.6	1.1	1.7	1.1
31	e.83	---	e1.5	9.6	---	14	---	3.1	---	.58	1.9	---
TOTAL	47.01	155.22	340.9	253.80	395.6	764.5	172.6	408.6	377.0	54.60	98.20	72.82
MEAN	1.52	5.17	11.0	8.19	14.1	24.7	5.75	13.2	12.6	1.76	3.17	2.43
MAX	8.5	64	219	63	172	325	24	205	158	13	54	15
MIN	.75	.70	1.5	1.3	3.0	3.3	2.3	1.2	1.6	.44	.43	.44
CFSM	.20	.69	1.47	1.10	1.89	3.31	.77	1.77	1.68	.24	.42	.33
IN.	.23	.77	1.70	1.27	1.97	3.81	.86	2.04	1.88	.27	.49	.36

e Estimated

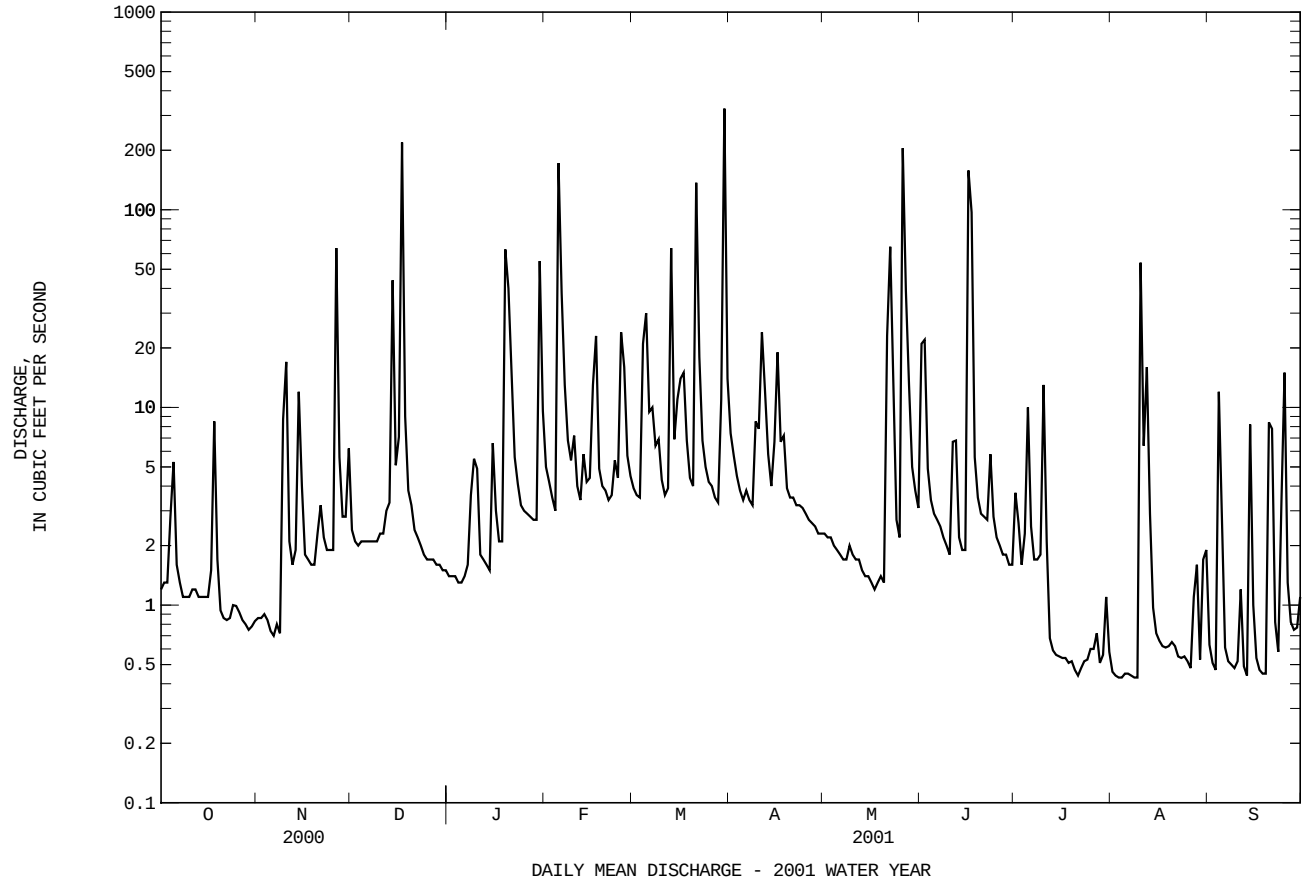
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1946 - 2001, BY WATER YEAR (WY)

MEAN	5.08	8.42	11.7	12.7	13.1	16.6	12.8	10.7	7.24	8.43	6.93	7.47
MAX	22.5	27.7	48.7	37.9	34.1	46.4	32.7	31.6	34.8	69.5	62.8	58.3
(WY)	1996	1973	1997	1979	1979	2000	1983	1947	1975	1989	1967	1971
MIN	.62	1.35	1.03	1.18	2.95	2.93	2.55	1.76	1.09	.65	.32	.90
(WY)	1964	1966	1956	1981	1980	1985	1985	1955	1966	1957	1966	1951

NORTH ATLANTIC SLOPE BASINS--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1946 - 2001	
ANNUAL TOTAL	4217.83		3140.85			
ANNUAL MEAN	11.5		8.61		10.1	
HIGHEST ANNUAL MEAN					16.2	1989
LOWEST ANNUAL MEAN					5.52	1963
HIGHEST DAILY MEAN	535	Mar 22	325	Mar 30	1480	Sep 16 1999
LOWEST DAILY MEAN	.70	Nov 6	.43	(a)	.09	(b)
ANNUAL SEVEN-DAY MINIMUM	.79	Nov 2	.44	Aug 3	.10	Aug 27 1966
MAXIMUM PEAK FLOW			1340	Jun 16	(c)8040	Jul 5 1989
MAXIMUM PEAK STAGE			4.95	Jun 16	13.76	Jul 5 1989
INSTANTANEOUS LOW FLOW			.43	(d)	.09	Oct 2 1968
ANNUAL RUNOFF (CFSM)	1.54		1.15		1.35	
ANNUAL RUNOFF (INCHES)	21.03		15.66		18.33	
10 PERCENT EXCEEDS	17		13		18	
50 PERCENT EXCEEDS	3.2		2.2		2.9	
90 PERCENT EXCEEDS	1.1		.55		.80	

a Aug. 3, 4, 8, 9.
b Oct. 2, 4, 1968.
c From rating curve extended above 200 ft^3/s on basis of culvert and flow-over-road measurements at gage heights 9.10 and 11.91 ft.
d Sept. 13, 14.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01478000 CHRISTINA RIVER AT COOCHS BRIDGE, DE

LOCATION.--Lat 39°38'14.6", long 75°43'40.4", New Castle County, Hydrologic Unit 02040205, on right bank 60 ft downstream from highway bridge, 0.5 mi southeast of Coochs Bridge, 3.3 mi south of Newark, 3.6 mi upstream from Belltown Run, and 22.6 mi upstream from mouth.

DRAINAGE AREA.--20.5 mi^2.

PERIOD OF RECORD.--April 1943 to current year.

REVISED RECORDS.--WDR MD-DE-79-1: 1943-70(P). WDR MD-DE-87-1: 1980-82(P).

GAGE.--Water-stage recorder. Datum of gage is 25.54 ft above sea level. Prior to Sept. 14, 1944, nonrecording gage on upstream side of bridge at same datum. Sept. 14, 1944, to May 13, 1969, recording gage at site on left bank at downstream side of highway bridge at same datum. May 26, 1969, to Dec. 5, 1973, recording gage on left bank 82 ft downstream from highway bridge at same datum.

REMARKS.--No estimated daily discharges. Records good. Low and medium flow regulated by mill upstream from station. National Weather Service gage-height telemeter at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 17	1045	*2,350	*12.20	Mar 30	0530	1,250	10.76

Minimum discharge, 1.9 ft^3/s, July 28.

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	6.6	5.1	5.8	10	19	17	31	13	31	8.6	4.4	4.9
2	6.5	5.5	5.0	9.9	15	16	24	12	75	6.5	4.2	3.9
3	6.5	3.9	4.7	9.0	13	15	21	12	20	6.1	3.9	3.7
4	6.2	3.7	4.6	9.5	12	34	19	12	14	6.3	3.9	53
5	5.9	4.0	4.6	9.3	304	91	18	12	12	13	3.8	17
6	6.2	4.1	4.5	9.9	74	36	18	11	12	7.8	3.8	5.6
7	5.9	4.4	4.4	9.9	34	23	18	11	12	6.2	3.7	4.5
8	5.5	4.2	4.4	12	22	20	17	11	11	6.9	3.6	4.2
9	5.0	3.9	4.3	14	19	19	24	11	10	32	3.4	4.1
10	5.8	13	4.3	10	20	17	36	11	10	9.6	97	4.1
11	5.6	6.3	4.6	9.6	17	16	64	11	9.9	10	101	4.0
12	5.9	4.4	4.2	9.9	16	15	46	10	15	6.7	68	3.8
13	5.2	4.2	4.1	9.4	17	108	25	10	16	6.0	38	3.6
14	4.2	10	46	9.3	17	28	20	9.9	10	5.6	8.3	6.7
15	5.2	6.7	11	15	18	22	20	10	9.5	5.3	6.1	4.6
16	5.0	4.7	8.6	13	25	36	50	9.4	159	5.3	5.3	3.6
17	5.0	4.5	876	11	58	31	26	9.5	90	5.4	4.7	3.5
18	8.6	4.4	48	10	21	22	21	9.8	20	6.0	4.5	3.4
19	7.4	4.2	24	138	16	18	18	10	12	6.0	4.6	3.3
20	5.5	4.3	18	116	16	17	17	9.9	11	5.0	6.2	11
21	5.1	7.1	14	59	16	288	17	28	10	4.7	4.7	18
22	5.4	4.5	13	21	15	75	16	64	10	4.5	4.3	5.4
23	4.9	4.2	12	15	18	29	16	43	10	4.5	4.1	4.1
24	4.3	4.0	12	14	17	21	15	13	9.8	4.5	4.0	8.5
25	4.5	4.0	11	13	34	19	16	11	8.5	4.5	3.9	32
26	4.5	51	10	12	54	18	14	275	8.0	4.5	3.8	7.2
27	4.5	12	11	12	24	17	14	106	7.6	4.0	11	4.8
28	4.0	7.1	11	12	18	16	13	32	7.2	2.7	7.6	4.0
29	3.7	6.1	10	11	---	20	13	17	6.8	3.1	4.2	3.8
30	4.1	7.9	10	148	---	561	13	15	9.8	4.6	7.4	3.7
31	3.9	---	10	38	---	55	---	13	---	4.7	11	---
TOTAL	166.6	213.4	1215.1	799.7	949	1720	680	832.5	647.1	210.6	444.4	244.0
MEAN	5.37	7.11	39.2	25.8	33.9	55.5	22.7	26.9	21.6	6.79	14.3	8.13
MAX	8.6	51	876	148	304	561	64	275	159	32	101	53
MIN	3.7	3.7	4.1	9.0	12	15	13	9.4	6.8	2.7	3.4	3.3
CFSM	.26	.35	1.91	1.26	1.65	2.71	1.11	1.31	1.05	.33	.70	.40
IN.	.30	.39	2.20	1.45	1.72	3.12	1.23	1.51	1.17	.38	.81	.44

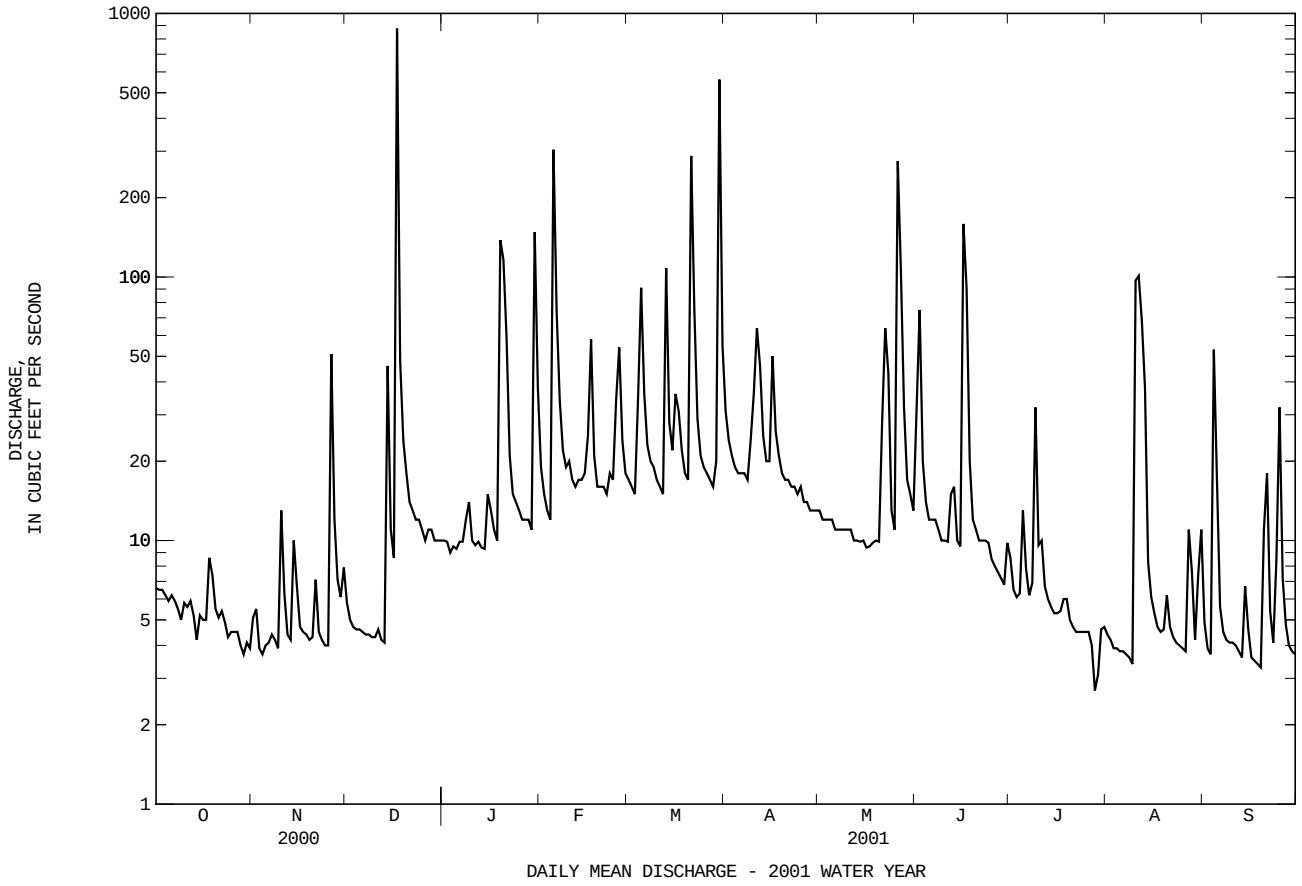
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1943 - 2001, BY WATER YEAR (WY)

MEAN	14.7	23.8	34.3	39.9	42.0	48.6	36.5	31.0	20.9	21.3	17.3	16.4
MAX	62.9	82.8	122	165	154	121	107	77.6	76.5	165	117	107
(WY)	1972	1973	1997	1979	1979	1978	1983	1990	1972	1989	1967	1999
MIN	2.25	2.76	3.98	5.35	10.1	8.35	10.5	8.10	4.57	2.48	1.29	2.85
(WY)	1964	1966	1966	1981	1947	1981	1963	1965	1966	1963	1966	1965

01478000 CHRISTINA RIVER AT COOCHS BRIDGE, DE--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1943 - 2001	
ANNUAL TOTAL	9560.0		8122.4			
ANNUAL MEAN	26.1		22.3		28.8	
HIGHEST ANNUAL MEAN					53.4	1978
LOWEST ANNUAL MEAN					14.2	1981
HIGHEST DAILY MEAN	1040	Mar 22	876	Dec 17	2650	Sep 16 1999
LOWEST DAILY MEAN	3.7	Oct 29	2.7	Jul 28	.20	(a)
ANNUAL SEVEN-DAY MINIMUM	4.0	Nov 3	3.7	Aug 3	.50	Aug 25 1966
MAXIMUM PEAK FLOW			2350	Dec 17	(b)7050	Sep 16 1999
MAXIMUM PEAK STAGE			12.20	Dec 17	13.73	Sep 16 1999
INSTANTANEOUS LOW FLOW			1.9	Jul 28	.00	Sep 4 1993
ANNUAL RUNOFF (CFSM)	1.27		1.09		1.41	
ANNUAL RUNOFF (INCHES)	17.35		14.74		19.10	
10 PERCENT EXCEEDS	37		36		48	
50 PERCENT EXCEEDS	13		10		13	
90 PERCENT EXCEEDS	4.6		4.1		4.4	

a Aug. 7, 17, 18, 21, 27, 28, 1966.
b From rating curve extended above 1,500 ft^3/s.



01478650 WHITE CLAY CREEK AT NEWARK, DE

LOCATION.--Lat 39°41'21.2", long 75°44'55.5", New Castle County, Hydrologic Unit 02040205, on right bank 200 ft upstream from highway bridge on Paper Mill Road, at Newark, and 10.3 mi upstream from mouth.

DRAINAGE AREA.--69.0 mi^2.

PERIOD OF RECORD.--March 1994 to current year.

GAGE.--Water-stage recorder. Datum of gage is 56.45 ft above sea level.

REMARKS.--Records good except those for estimated daily discharges (backwater, ice effect), which are poor. Flow affected by City of Newark municipal water plant upstream from station. Records do not include a negligible diversion upstream from station by MBNA America. U.S. Geological Survey gage-height telemeter at station. Several measurements of water temperature were made during the year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,600 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 17	1145	*4,450	*10.71	Aug 20	1000	1,640	8.43

Minimum discharge, 18 ft^3/s, Aug. 9, 10.

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	49	e40	e37	e44	112	76	148	72	72	36	24	25
2	46	e37	e34	e43	89	76	128	68	178	39	21	23
3	44	e35	e33	43	77	74	114	65	86	35	20	22
4	42	e33	e32	e43	66	87	105	62	70	36	21	55
5	41	e32	e31	46	404	140	102	60	63	45	21	62
6	42	e31	e30	50	227	104	102	59	59	42	21	29
7	40	e30	e30	47	157	96	103	59	60	36	21	25
8	37	e30	e29	49	128	108	96	58	56	36	20	25
9	e36	34	e29	53	103	95	97	59	52	60	19	23
10	e35	71	e29	45	118	86	116	58	49	51	73	24
11	e34	e35	e28	44	93	78	118	55	47	86	297	25
12	e33	e32	e30	44	82	77	140	53	65	40	218	23
13	e32	e37	e28	43	87	214	109	52	55	36	116	22
14	32	44	e161	42	88	111	96	48	45	34	53	27
15	32	51	81	69	89	92	92	48	45	32	40	28
16	32	e33	60	63	90	114	148	47	319	30	34	26
17	34	e32	1760	52	161	153	119	48	248	29	32	24
18	41	e31	163	47	92	103	109	52	88	30	31	24
19	44	e30	78	389	80	88	97	56	68	33	32	25
20	39	e30	60	388	80	83	92	53	59	28	36	125
21	e37	e34	e58	160	80	293	91	88	57	27	29	184
22	e34	e31	e56	84	72	236	88	128	56	26	27	35
23	e33	e30	54	71	82	121	86	107	56	25	26	25
24	38	e30	e52	70	78	103	83	64	53	24	27	25
25	e34	e24	e50	64	89	96	78	57	51	24	25	165
26	e33	152	e49	58	156	89	78	317	47	24	24	49
27	e32	79	e48	59	103	85	76	384	44	26	26	31
28	e31	53	e47	57	84	83	75	117	40	23	30	26
29	e32	e39	e46	53	---	87	73	83	36	24	24	24
30	41	e46	e45	541	---	794	73	72	37	28	27	24
31	44	---	e45	209	---	207	---	63	---	26	31	---
TOTAL	1154	1246	3313	3070	3167	4249	3032	2612	2261	1071	1446	1250
MEAN	37.2	41.5	107	99.0	113	137	101	84.3	75.4	34.5	46.6	41.7
MAX	49	152	1760	541	404	794	148	384	319	86	297	184
MIN	31	24	28	42	66	74	73	47	36	23	19	22
CFSM	.54	.60	1.55	1.44	1.64	1.99	1.46	1.22	1.09	.50	.68	.60
IN.	.62	.67	1.79	1.66	1.71	2.29	1.63	1.41	1.22	.58	.78	.67

e Estimated

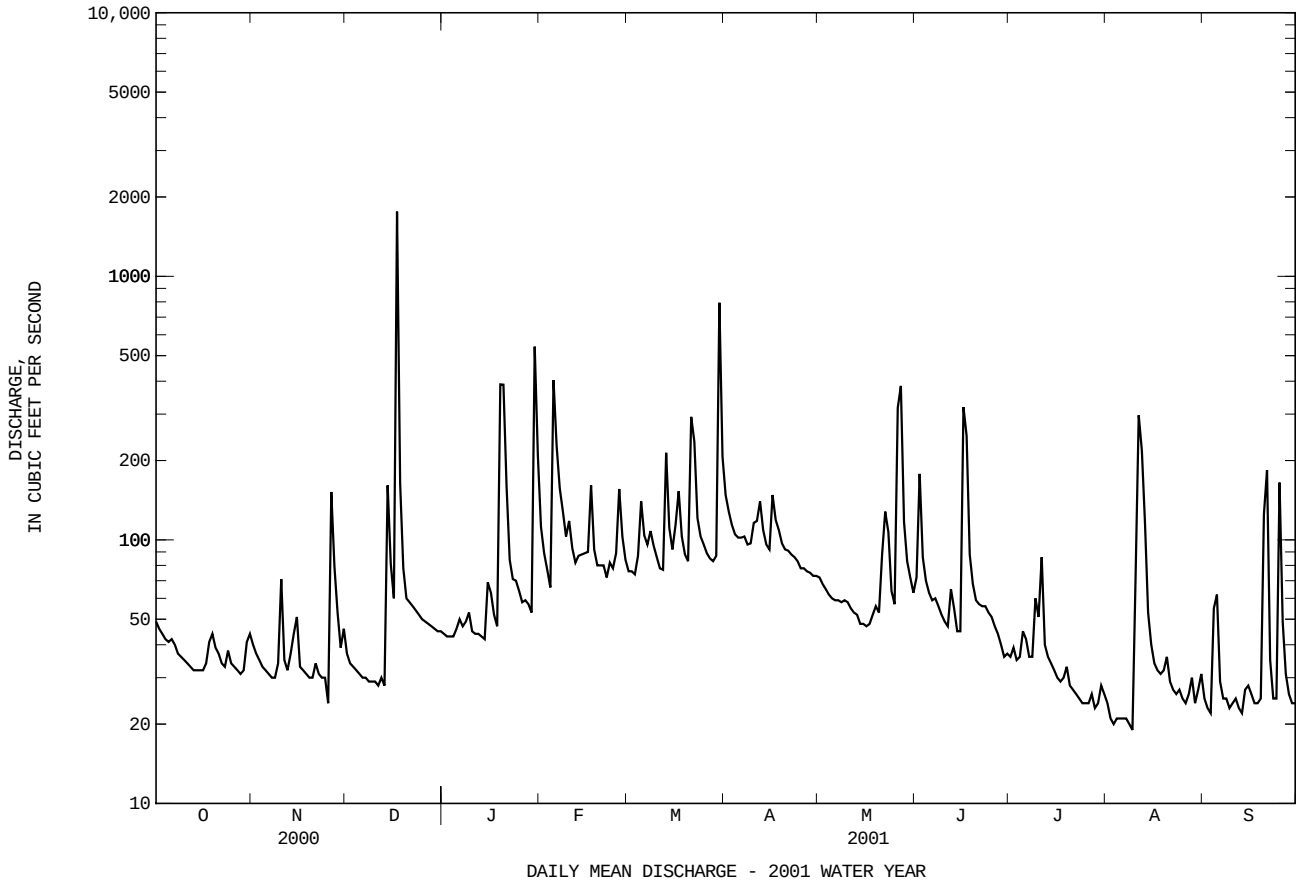
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1994 - 2001, BY WATER YEAR (WY)

MEAN	63.1	63.1	97.9	127	102	171	113	88.6	60.8	45.6	43.6	69.1
MAX	185	144	326	256	159	345	171	145	115	104	119	267
(WY)	1997	1997	1997	1996	1997	1994	1996	1996	1996	1996	1996	1999
MIN	23.2	27.1	29.0	71.8	48.7	95.2	45.3	48.9	25.7	22.7	13.3	15.8
(WY)	1995	1999	1999	2000	1995	1995	1995	1995	1995	1999	1995	1995

01478650 WHITE CLAY CREEK AT NEWARK, DE--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1994 - 2001	
ANNUAL TOTAL	32440		27871			
ANNUAL MEAN	88.6		76.4		85.7	
HIGHEST ANNUAL MEAN					129	1997
LOWEST ANNUAL MEAN					42.0	1995
HIGHEST DAILY MEAN	2740	Mar 22	1760	Dec 17	5750	Sep 16 1999
LOWEST DAILY MEAN	(e)24	Nov 25	19	Aug 9	4.5	Sep 12 1995
ANNUAL SEVEN-DAY MINIMUM	29	Dec 7	20	Aug 3	6.1	Sep 1 1995
MAXIMUM PEAK FLOW			4450	Dec 17	(a)16800	Sep 16 1999
MAXIMUM PEAK STAGE			10.71	Dec 17	17.13	Sep 16 1999
INSTANTANEOUS LOW FLOW			18	(b)	2.6	Sep 13 1995
ANNUAL RUNOFF (CFSM)	1.28		1.11		1.24	
ANNUAL RUNOFF (INCHES)	17.49		15.03		16.87	
10 PERCENT EXCEEDS	145		126		155	
50 PERCENT EXCEEDS	60		51		54	
90 PERCENT EXCEEDS	32		26		22	

e Estimated
a From rating curve extended above 2,500 ft^3/s on basis of runoff comparison with White Clay Creek above Newark, DE (01478500).
b Aug. 9, 10.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01479000 WHITE CLAY CREEK NEAR NEWARK, DE

LOCATION.--Lat 39°41'57.2" long 75°40'30.1", New Castle County, Hydrologic Unit 02040205, on left bank 35 ft downstream from bridge on private road at Delaware Park Race Track, 0.4 mi downstream from the Baltimore and Ohio Railroad bridge, 1.1 mi downstream from Pike Creek, 3.8 mi east of Newark, and 5.0 mi upstream from mouth.

DRAINAGE AREA.--89.1 mi^2.

PERIOD OF RECORD.--October 1931 to September 1936, June 1943 to September 1957, October 1959 to current year. Monthly discharge only for some periods, published in WSP 1302.

REVISED RECORDS.--WSP 1051: 1933(M). WSP 1382: 1932, 1934. WDR MD-DE-83-1: 1978-82(P).

GAGE.--Water-stage recorder. Datum of gage is 9.00 ft above sea level. Nov. 17, 1931, to Sept. 30, 1936, June 4, 1943, to Sept. 30, 1957, and Oct. 1, 1959, to Apr. 7, 1976, at site 0.5 mi upstream at datum 2.6 ft higher.

REMARKS.--Records good except those for estimated daily discharges (backwater, ice effect), which are fair. Flow affected by City of Newark municipal water plant upstream from station. Slight diurnal fluctuation at low flow caused by mills upstream from station. Records do not include a negligible diversion upstream from station by MBNA America. National Weather Service gage-height telemeter at station. Several measurements of water temperature were made during the year. Water-quality records for some periods have been collected at this location.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known, 23 ft, previous site and datum, in July 1937 (probably affected by backwater from railroad bridge which has since been raised and widened), from information by Baltimore & Ohio Railroad.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 17	1030	*4,970	*14.60	No other peak greater than base discharge.			

Minimum discharge, 19 ft^3/s, Aug. 10.

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	49	37	42	e55	123	88	178	85	111	50	28	31
2	48	e36	38	e54	99	86	153	83	216	52	25	26
3	46	e35	35	e53	90	83	140	79	109	45	23	25
4	44	e34	34	e52	79	116	129	78	89	46	24	127
5	44	e33	35	59	576	191	122	76	81	69	25	97
6	45	33	33	64	274	122	123	74	77	57	25	38
7	43	33	32	61	182	105	124	72	80	46	23	30
8	40	33	32	70	139	116	117	72	73	47	23	29
9	e39	33	32	72	114	104	124	72	68	104	21	27
10	e38	67	31	59	124	95	143	70	65	69	195	26
11	e38	46	32	56	104	87	159	67	65	106	534	26
12	e38	33	33	56	92	86	168	68	85	54	332	24
13	e37	33	30	54	96	273	131	66	73	47	200	23
14	e37	48	229	54	96	140	116	62	61	43	71	37
15	e36	46	86	81	98	123	115	62	62	41	54	29
16	e37	36	58	81	103	148	171	61	625	39	45	26
17	39	34	2320	64	174	172	140	61	382	37	40	25
18	50	33	273	59	102	128	128	64	115	40	38	25
19	43	32	140	453	89	110	113	68	87	41	39	25
20	38	33	111	489	88	104	108	65	77	36	48	69
21	e37	34	90	193	88	404	108	115	84	33	37	270
22	e36	32	e80	102	81	305	105	192	72	32	34	55
23	36	31	75	94	91	151	101	148	71	31	32	39
24	38	31	e70	94	86	128	98	85	66	30	33	41
25	39	31	e66	79	106	117	93	75	61	29	31	193
26	e37	250	e63	78	158	112	92	496	59	29	29	70
27	e36	89	e61	68	107	106	90	462	55	30	39	47
28	e35	48	e60	68	93	105	89	149	51	27	40	38
29	e34	43	e58	66	---	114	85	109	49	28	29	35
30	34	49	e57	578	---	1070	85	94	54	35	33	33
31	36	---	e56	267	---	249	---	82	---	31	50	---
TOTAL	1227	1386	4392	3733	3652	5338	3648	3412	3223	1404	2200	1586
MEAN	39.6	46.2	142	120	130	172	122	110	107	45.3	71.0	52.9
MAX	50	250	2320	578	576	1070	178	496	625	106	534	270
MIN	34	31	30	52	79	83	85	61	49	27	21	23
CFSM	.44	.52	1.59	1.35	1.46	1.93	1.36	1.24	1.21	.51	.80	.59
IN.	.51	.58	1.83	1.56	1.52	2.23	1.52	1.42	1.35	.59	.92	.66

e Estimated

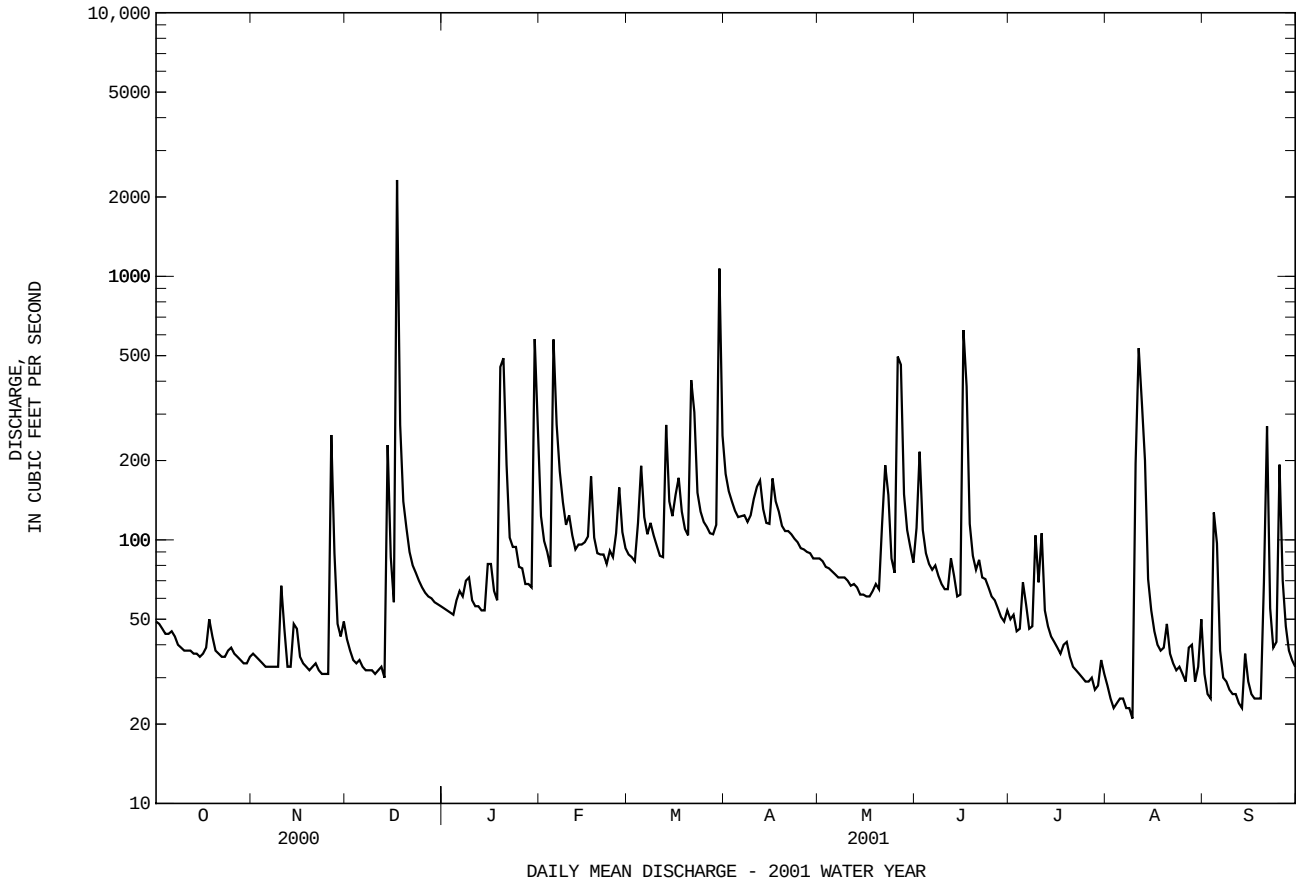
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1932 - 1936, 1943 - 1957, 1960 - 2001, BY WATER YEAR (WY)

MEAN	65.6	91.1	115	148	160	177	151	128	97.6	94.1	78.1	77.0
MAX	234	221	405	493	542	402	342	265	311	540	301	416
(WY)	1997	1973	1997	1979	1979	1994	1983	1989	1972	1975	1967	1999
MIN	17.6	28.4	28.1	32.8	52.4	57.5	59.7	42.3	33.7	16.6	13.6	15.0
(WY)	1964	1966	1966	1966	1934	1981	1963	1955	1995	1963	1966	1932

01479000 WHITE CLAY CREEK NEAR NEWARK, DE--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1932 - 1936, 1943 - 1957, 1960 - 2001	
ANNUAL TOTAL	43965		35201			
ANNUAL MEAN	120		96.4		115	
HIGHEST ANNUAL MEAN					193	1975
LOWEST ANNUAL MEAN					55.9	1966
HIGHEST DAILY MEAN	4030	Mar 22	2320	Dec 17	8220	Sep 16 1999
LOWEST DAILY MEAN	30	Dec 13	21	Aug 9	5.0	Sep 10 1966
ANNUAL SEVEN-DAY MINIMUM	32	Dec 7	23	Aug 3	5.7	Sep 7 1966
MAXIMUM PEAK FLOW			4970	Dec 17	(a)19500	Sep 16 1999
MAXIMUM PEAK STAGE			14.60	Dec 17	(b)17.74	Jun 22 1972
INSTANTANEOUS LOW FLOW			19	Aug 10	4.7	Sep 11 1966
ANNUAL RUNOFF (CFSM)	1.35		1.08		1.29	
ANNUAL RUNOFF (INCHES)	18.36		14.70		17.56	
10 PERCENT EXCEEDS	203		158		192	
50 PERCENT EXCEEDS	77		65		76	
90 PERCENT EXCEEDS	36		31		32	

a From rating curve extended above 6,700 ft^3/s on basis of contracted-opening and flow-over-road measurement at a gage height of 15.9 ft and on basis of runoff comparisons with nearby stations.
b At previous site and datum.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01480000 RED CLAY CREEK AT WOODDALE, DE

LOCATION.--Lat 39°45'46.1", long 75°38'11.4", New Castle County, Hydrologic Unit 02040205, on right bank 230 ft downstream from bridge on State Highway 48, 0.3 mi south of Wooddale, 2.3 mi north of Marshallton, and 4.9 mi upstream from mouth.

DRAINAGE AREA.--47.0 mi^2.

PERIOD OF RECORD.--April 1943 to current year.

REVISED RECORDS.--WSP 1141: 1948. WSP 1272: 1951(m). WSP 1432: 1944(M), 1945, 1946(M), 1948, 1949(M). WSP 2102: 1960(M), 1964(M), 1966-67(M).

GAGE.--Water-stage recorder. Datum of gage is 80.61 ft above sea level. April 1943 to September 20, 1950, nonrecording gage and September 21, 1950 to April 10, 2000, water-stage recorder, at site 250 ft upstream at datum 0.85 ft higher.

REMARKS.--Records good except those for estimated daily discharges (missing record, ice effect), which are poor. Low flows augmented at times by inflow from Hoopes Reservoir located 1.7 miles upstream from gage on unnamed tributary to Red Clay Creek, capacity 2,000,000,000 gal. Water from Brandywine Creek is pumped into Hoopes Reservoir and is released into Red Clay Creek during periods of low flow. No releases were observed during the 2001 water year. Water from Red Clay Creek is used for municipal supply. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,200 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 17	UNKNOWN	*UNKNOWN	*UNKNOWN	Jan 30	1700	1,380	4.90

Minimum discharge, 15 ft^3/s, Aug. 9.

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	27	e22	e21	e35	64	47	e90	47	48	32	19	21
2	25	e20	e20	e34	54	47	e76	46	120	35	18	18
3	24	e20	e19	e34	48	46	e70	45	57	31	18	17
4	24	e20	e19	e34	43	57	e66	43	47	31	18	35
5	24	e20	e20	e33	313	87	e63	44	e43	36	18	45
6	24	e20	e21	e33	133	66	e64	41	e43	33	18	21
7	23	e20	e19	e32	92	61	e64	40	e43	30	17	19
8	21	e20	e18	e32	77	61	e62	40	e42	30	16	18
9	21	e21	e17	e32	68	59	e63	41	e42	33	15	18
10	21	e34	e17	e32	82	53	e76	40	e41	92	53	18
11	21	e21	e17	e31	59	50	e78	38	e49	58	90	18
12	20	e18	e17	e31	51	e46	e82	37	e91	32	111	17
13	20	e17	e17	31	53	e130	e66	35	e43	29	63	16
14	21	e21	e70	31	53	e70	e60	34	e41	28	31	19
15	20	e24	e33	47	53	e67	60	34	e40	26	25	19
16	20	e21	e26	40	55	e92	95	34	e360	25	23	17
17	21	e18	e900	34	96	e112	69	33	e76	24	22	16
18	24	e18	e100	31	55	e72	67	35	e74	24	22	16
19	25	e19	e62	300	49	e64	60	37	59	25	21	16
20	22	e19	55	239	48	e60	57	35	52	24	29	46
21	21	e19	45	97	48	e185	56	73	50	22	22	123
22	21	e19	43	60	44	e146	56	86	48	22	20	26
23	e21	e18	e42	63	48	e74	54	71	46	21	19	21
24	e20	e18	e40	52	46	e68	53	44	43	21	20	20
25	e21	e18	39	42	56	e64	49	39	40	21	19	66
26	e21	e92	e38	41	89	e62	49	247	37	21	18	29
27	e21	e30	e38	37	59	e60	49	200	35	21	23	22
28	e22	e24	e37	37	52	e57	49	68	34	20	26	21
29	e22	e21	e36	34	---	e60	47	55	33	20	19	20
30	e21	e24	e36	436	---	e380	47	51	33	22	18	19
31	e21	---	e36	118	---	e111	---	44	---	20	30	---
TOTAL	680	696	1918	2163	1988	2614	1897	1757	1810	909	881	797
MEAN	21.9	23.2	61.9	69.8	71.0	84.3	63.2	56.7	60.3	29.3	28.4	26.6
MAX	27	92	900	436	313	380	95	247	360	92	111	123
MIN	20	17	17	31	43	46	47	33	33	20	15	16
†	0	0	0	0	0	0	0	0	0	0	0	0
CFSM	.47	.49	1.32	1.48	1.51	1.79	1.35	1.21	1.28	.62	.60	.57
IN.	.54	.55	1.52	1.71	1.57	2.07	1.50	1.39	1.43	.72	.70	.63

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1943 - 2001, BY WATER YEAR (WY)

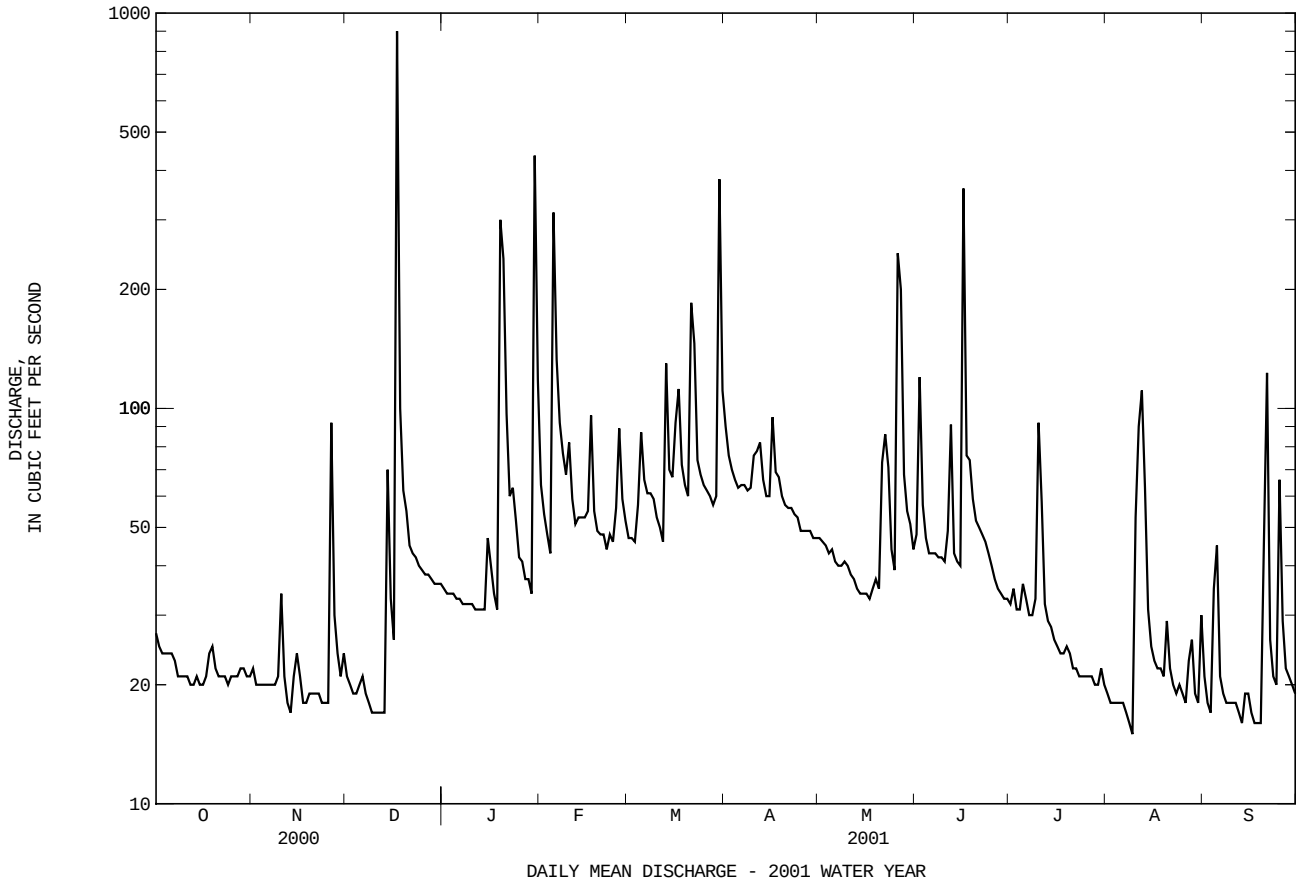
MEAN	36.5	48.8	63.3	77.3	86.4	94.0	84.8	72.9	56.2	50.1	42.8	42.4
MAX	129	115	212	232	237	209	167	156	147	279	180	196
(WY)	1972	1973	1997	1979	1979	1994	1958	1958	1972	1975	1955	1999
MIN	11.1	17.1	16.5	16.8	33.3	27.3	33.8	24.2	21.7	12.7	9.79	13.7
(WY)	1964	1999	1999	1981	1969	1981	1995	1955	1966	1963	1966	1964

† Inflow in cubic feet per second, from Hoopes Reservoir for municipal supply.

01480000 RED CLAY CREEK AT WOODDALE, DE--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1943 - 2001	
ANNUAL TOTAL	21828		18110			
ANNUAL MEAN	59.6		49.6		62.8	
ANNUAL MEAN‡	59.6		49.6		62.8	
HIGHEST ANNUAL MEAN					104	1975
LOWEST ANNUAL MEAN					32.3	1995
HIGHEST DAILY MEAN	1870	Mar 22	(e)900	Dec 17	(e)3440	Sep 16 1999
LOWEST DAILY MEAN	(e)17	(a)	15	Aug 9	4.5	Sep 4 1966
ANNUAL SEVEN-DAY MINIMUM	17	Dec 7	17	Sep 13	4.9	Sep 7 1966
MAXIMUM PEAK FLOW			UNKNOWN	Dec 17	(b)7650	Sep 16 1999
MAXIMUM PEAK STAGE			UNKNOWN	Dec 17	(c)13.93	Sep 16 1999
INSTANTANEOUS LOW FLOW			15	Aug 9	2.9	Sep 4 1966
ANNUAL RUNOFF (CFSM)	1.27		1.06		1.34	
ANNUAL RUNOFF (CFSM)‡	1.27		1.06		1.34	
ANNUAL RUNOFF (INCHES)	17.28		14.33		18.16	
ANNUAL RUNOFF (INCHES)‡	17.28		14.33		18.16	
10 PERCENT EXCEEDS	98		77		107	
50 PERCENT EXCEEDS	38		35		43	
90 PERCENT EXCEEDS	20		19		19	

‡ Adjusted for inflow since June 1994.
e Estimated.
a Nov. 13, Dec. 9-13.
b From rating curve extended above 3,900 ft^3/s on basis of contracted opening measurement at a gage height of 9.93 ft.
c From high-water mark in well.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01480015 RED CLAY CREEK NEAR STANTON, DE

LOCATION.--Lat 39°42'56.7", long 75°38'23.8", New Castle County, Hydrologic Unit 02040205, on right bank at downstream side of westbound lane of bridge on State Highway 4, near Stanton, and 0.9 mi upstream from mouth.

DRAINAGE AREA.--52.4 mi^2.

PERIOD OF RECORD.--October 1988 to current year.

GAGE.--Water-stage recorder. Datum of gage is 0.00 ft above sea level.

REMARKS.--Records good except those for estimated daily discharges (ice effect, missing record), which are fair. Low flows augmented at times by inflow from Hoopes Reservoir located 5.7 miles upstream from gage on unnamed tributary to Red Clay Creek, capacity 2,000,000,000 gal. Water from Brandywine Creek is pumped into Hoopes Reservoir and is released into Red Clay Creek during periods of low flow. Water from Red Clay Creek is used for municipal supply. U.S. Geological Survey gage-height telemeter at station. Several measurements of water temperature were made during the year.

*****DATA UNAVAILABLE AT TIME OF PUBLICATION*****

THIS IS A BLANK PAGE

01481500 BRANDYWINE CREEK AT WILMINGTON, DE

LOCATION.--Lat 39°46'09.9, long 75°34'23.8", New Castle County, Hydrologic Unit 02040205, on right bank in Rockford Park, 0.2 mi downstream from Rising Sun Bridge, in Wilmington, and 4.2 mi upstream from mouth.

DRAINAGE AREA.--314 mi^2.

PERIOD OF RECORD.--October 1946 to current year. Prior to December 1946 monthly discharge only, published in WSP 1302.

REVISED RECORDS.--WSP 1432: 1948, 1950.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 68.23 ft above sea level.

REMARKS.--Records good except those for estimated daily discharges (ice effect and doubtful gage-height record), which are fair Some diurnal fluctuation at low flow caused by mills upstream from station. Flow regulated since November 1973 by Marsh Creek Reservoir, capacity 7,230,000,000 gal, about 27 mi upstream. No diversion just upstream from station by plant of E. I. duPont deNemours & Co. since June l3, 1960. National Weather Service gage-height telemeter at station. U.S. Geological Survey satellite collection platform at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 18	0115	*9,190	*9.68	Mar 30	1530	4,790	7.55

Minimum discharge, 91 ft^3/s, Aug. 6.

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	314	197	345	e240	892	411	943	365	386	182	132	123
2	263	203	325	e230	628	405	863	349	796	220	135	113
3	234	203	258	e220	497	395	764	346	496	154	126	103
4	218	203	184	e220	401	433	702	341	385	147	125	131
5	1060	203	199	e210	1150	642	615	338	359	207	251	246
6	400	201	199	e210	1050	549	609	334	347	221	139	131
7	291	219	180	e210	808	474	618	322	342	167	125	110
8	243	203	169	e210	741	552	564	323	329	147	119	110
9	225	208	164	e240	636	572	556	325	316	168	111	104
10	210	323	162	e220	1370	526	657	325	297	226	199	104
11	203	323	175	e210	861	434	612	311	317	337	246	107
12	193	226	161	e215	603	406	762	305	346	281	478	111
13	189	207	137	e220	564	1030	677	290	311	223	762	100
14	183	222	637	e220	555	748	603	277	288	193	383	123
15	180	287	654	318	577	527	564	274	277	167	241	137
16	183	226	365	348	574	617	735	268	794	163	184	103
17	187	207	4420	297	843	921	664	261	770	161	164	e94
18	210	199	3490	272	600	627	680	286	427	165	154	e90
19	273	194	625	853	469	498	682	301	349	208	152	e90
20	241	194	459	2160	459	454	590	290	320	173	167	e100
21	235	194	e380	697	459	1010	501	493	296	154	178	670
22	200	193	e350	380	429	1750	474	825	297	146	149	288
23	184	187	e310	321	434	863	449	700	447	141	138	141
24	179	187	e300	e310	409	730	436	423	425	138	141	129
25	180	187	e280	e300	425	642	406	351	312	131	132	615
26	180	697	e270	e290	722	582	391	1180	264	129	127	441
27	182	629	e260	e280	560	531	390	2260	240	138	132	301
28	185	339	e260	e270	447	498	451	829	224	130	131	271
29	186	339	e250	e260	---	486	437	578	207	126	118	251
30	185	363	e250	1120	---	3270	423	432	188	144	113	167
31	186	---	e240	1770	---	1420	---	381	---	135	175	---
TOTAL	7582	7763	16458	13321	18163	23003	17818	14683	11152	5422	5927	5604
MEAN	245	259	531	430	649	742	594	474	372	175	191	187
MAX	1060	697	4420	2160	1370	3270	943	2260	796	337	762	670
MIN	179	187	137	210	401	395	390	261	188	126	111	90
(†)	-7.6	-5.0	-4.2	3.7	-4.5	19.5	-6.7	5.4	-3.9	-4.6	1.8	-7.9
MEAN‡	237	254	527	434	644	762	587	479	368	170	193	179
CFSM‡	.75	.81	1.68	1.38	2.05	2.43	1.87	1.53	1.17	.54	.61	.57
IN‡	.86	.90	1.94	1.59	2.14	2.80	2.09	1.76	1.30	.62	.70	.64

e Estimated

† Change in contents in Marsh Creek Reservoir, equivalent in cubic feet per second, provided by Pennsylvania Department of Environmental Resources.

‡ Adjusted for change in reservoir contents.

01481500 BRANDYWINE CREEK AT WILMINGTON, DE--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1947 - 1973, BY WATER YEAR (WY) [UNREGULATED]

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	223	356	434	498	681	734	696	559	435	330	315	284
MAX	860	794	979	1052	1454	1206	1406	1087	1343	749	1436	1403
(WY)	1972	1972	1973	1953	1971	1958	1958	1958	1972	1958	1955	1971
MIN	80.6	117	129	173	225	333	259	190	149	92.5	81.9	99.6
(WY)	1964	1966	1966	1955	1954	1969	1963	1963	1963	1963	1957	1964

SUMMARY STATISTICS	WATER YEARS 1947 - 1973	
ANNUAL MEAN	461	
HIGHEST ANNUAL MEAN	732	1972
LOWEST ANNUAL MEAN	252	1954
HIGHEST DAILY MEAN	14300	Jun 23 1972
LOWEST DAILY MEAN	56	Aug 23 1972
ANNUAL SEVEN-DAY MINIMUM	59	Aug 18 1957
INSTANTANEOUS PEAK FLOW	(a)29000	Jun 23 1972
INSTANTANEOUS PEAK STAGE	15.49	Jun 23 1972
INSTANTANEOUS LOW FLOW	(b)30	Dec 26 1948
ANNUAL RUNOFF (CFSM)	1.47	
ANNUAL RUNOFF (INCHES)	19.93	
10 PERCENT EXCEEDS	864	
50 PERCENT EXCEEDS	316	
90 PERCENT EXCEEDS	125	

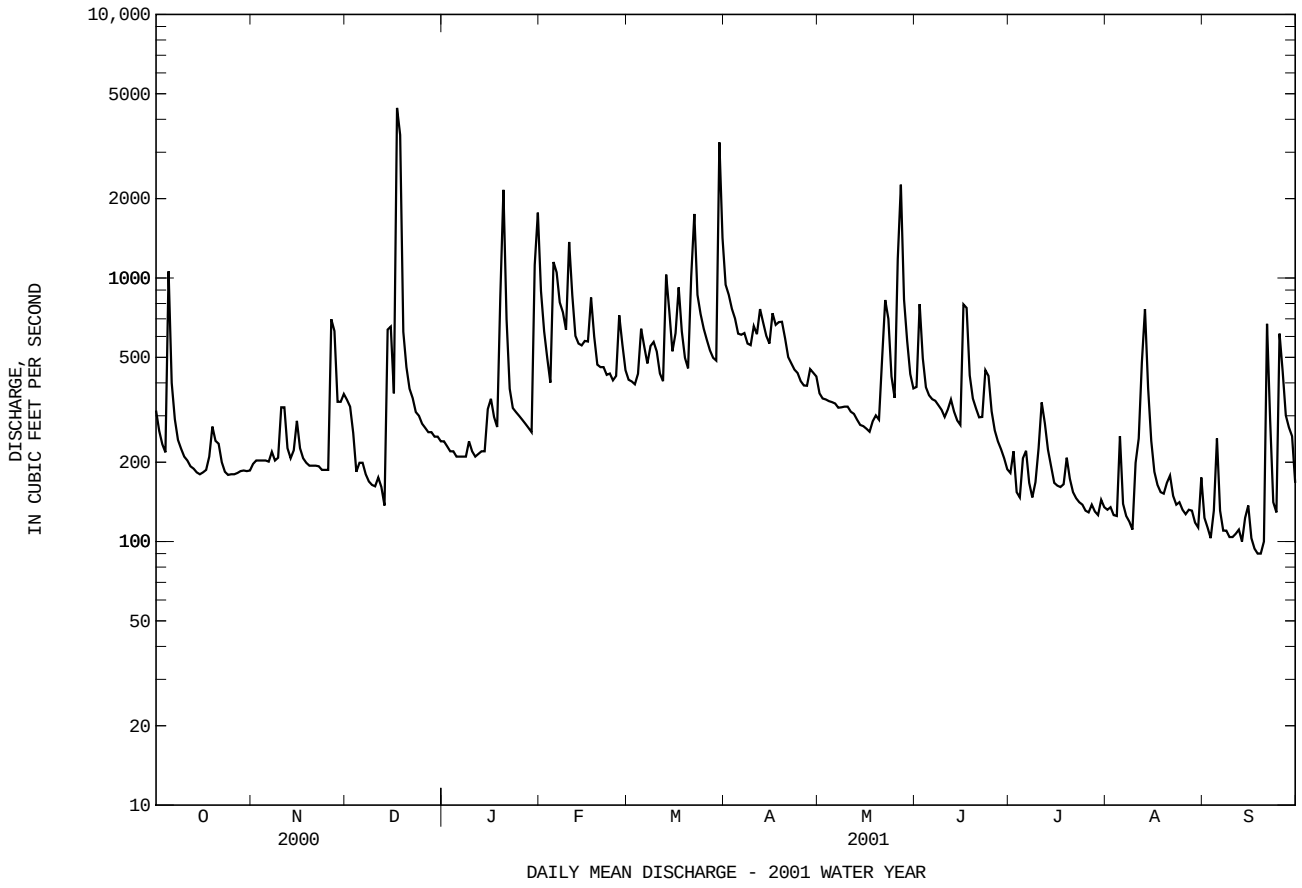
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1974 - 2001, BY WATER YEAR (WY) [REGULATED]

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	304	364	531	629	633	769	724	594	439	380	260	317
MAX	1022	856	1927	1868	1610	1839	1773	1168	1079	1243	572	1099
(WY)	1997	1997	1997	1979	1979	1994	1983	1989	1975	1975	1996	1999
MIN	125	157	145	119	246	230	223	304	172	101	103	108
(WY)	1987	1982	1981	1981	1992	1981	1985	1977	1985	1999	1995	1980

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1974 - 2001	
ANNUAL TOTAL	189639		146896			
ANNUAL MEAN	518		402		495	
ANNUAL MEAN‡	518		401		495	
HIGHEST ANNUAL MEAN					835	1984
LOWEST ANNUAL MEAN					228	1981
HIGHEST DAILY MEAN	11500	Mar 22	4420	Dec 17	14200	Sep 17 1999
LOWEST DAILY MEAN	137	Dec 13	(e)90	(c)	52	Sep 13 1995
ANNUAL SEVEN-DAY MINIMUM	164	Dec 7	105	Sep 13	54	Aug 3 1999
MAXIMUM PEAK FLOW			9180	Dec 18	(a)28700	Sep 17 1999
MAXIMUM PEAK STAGE			9.68	Dec 18	15.43	Sep 17 1999
INSTANTANEOUS LOW FLOW					40	Aug 26 1995
ANNUAL RUNOFF (CFSM)	1.65		1.28		1.58	
ANNUAL RUNOFF (CFSM)‡	1.65		1.28		1.58	
ANNUAL RUNOFF (INCHES)	22.47		17.40		21.40	
ANNUAL RUNOFF (INCHES)‡	22.40		17.36		21.42	
10 PERCENT EXCEEDS	837		732		906	
50 PERCENT EXCEEDS	360		290		349	
90 PERCENT EXCEEDS	193		135		142	

a From rating curve extended above 18,000 ft^3/s.
b During period of ice effect.
‡ Adjusted for change in reservoir contents since November 1973.
e Estimated
c Sept. 18, 19.

01481500 BRANDYWINE CREEK AT WILMINGTON, DE--Continued



DAILY MEAN DISCHARGE - 2001 WATER YEAR

THIS IS A BLANK PAGE

01483153 NOXONTOWN LAKE OUTLET NEAR MIDDLETOWN, DE

LOCATION.--Lat 39°26'00.4", long 75°40'59.8", New Castle County, Hydrologic Unit 02040205, on right bank just upstream from Noxontown Lake Dam, 15 ft upstream from from bridge on State Road 38, 2.0 mi southwest of Odessa, 2.4 mi southeast of Middletown, and 10.1 mi upstream from mouth of Appoquinimink River.

DRAINAGE AREA.--8.85 mi^2.

PERIOD OF RECORD.--October 1992 to September 1994, November 1999 to September 2001.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 5 ft above sea level, from topographic map.

REMARKS.--Records good except those for estimated daily discharges (missing record, backwater and ice effect), which are poor. Outflow of lake controlled by stop logs at outlet. Several measurements of water temperature were made during the year.

EXTREMES FOR 2000 WATER YEAR.--Maximum discharge, 341 ft^3/s, Mar. 22, gage height, 2.50 ft; minimum discharge, 1.1 ft^3/s, Sept. 6.

EXTREMES FOR 2001 WATER YEAR.--Maximum discharge, 126 ft^3/s, May 26, 27, gage height, 2.00 ft; minimum discharge, 0.52 ft^3/s, Sept. 3, 4 (may have been lower during period of missing record).

DISCHARGE, CUBIC FEET PER SECOND, NOVEMBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	7.9	7.0	11	9.6	16	14	e6.8	9.1	12	e2.0
2	---	---	8.2	7.6	8.7	8.7	15	13	e6.6	6.9	9.5	1.9
3	---	---	8.2	7.2	8.1	8.1	15	13	e6.4	5.5	12	2.8
4	---	---	8.9	10	8.2	7.9	16	13	e6.2	7.0	9.0	5.2
5	---	---	9.6	18	8.0	7.7	14	13	e6.2	6.1	6.1	2.2
6	---	---	9.5	14	7.6	6.8	14	13	e7.0	4.6	4.7	1.5
7	---	---	9.7	10	7.4	7.1	14	13	e11	3.0	5.1	1.4
8	---	---	9.5	9.2	8.1	7.1	14	12	e7.0	2.6	9.7	16
9	---	---	9.5	8.4	8.0	7.1	18	12	e6.0	2.6	11	17
10	---	---	11	11	8.3	6.1	16	12	e5.5	4.4	8.6	7.5
11	---	9.4	12	12	11	7.0	14	13	e5.0	4.2	e7.0	3.2
12	---	9.5	11	9.0	13	14	14	12	e4.5	2.8	e5.6	2.4
13	---	9.5	10	7.8	11	11	13	12	e4.0	2.7	e4.5	1.9
14	---	8.3	26	6.3	17	8.8	13	14	e5.0	4.4	e100	1.7
15	---	5.6	31	7.0	23	7.0	14	12	e9.0	11	e35	18
16	---	3.8	18	7.3	16	7.1	16	10	e6.0	10	e20	9.8
17	---	2.9	13	6.0	12	21	38	11	e5.0	7.8	e12	4.0
18	---	3.4	10	6.3	16	15	34	11	e6.0	5.4	e9.0	2.0
19	---	4.5	9.3	6.0	32	11	25	10	e15	4.7	e10	21
20	---	5.0	10	8.5	26	8.2	20	10	e7.0	8.5	e8.0	34
21	---	5.3	11	8.7	16	47	21	11	5.0	6.3	e6.0	16
22	---	5.6	10	7.2	12	228	33	12	8.4	11	e4.5	9.1
23	---	6.2	9.1	7.0	11	61	23	12	7.3	7.5	e4.0	8.0
24	---	7.0	8.0	7.0	15	28	19	13	5.4	4.8	e3.5	7.7
25	---	7.8	7.4	13	14	21	18	9.5	4.9	4.7	e3.0	12
26	---	9.7	7.6	12	15	18	17	7.4	6.6	15	e2.5	84
27	---	21	7.6	8.1	13	17	16	e6.9	9.3	16	e8.0	69
28	---	16	7.1	6.1	13	49	16	e8.0	22	11	e55	34
29	---	12	7.2	5.6	11	28	15	e12	14	8.5	e20	17
30	---	9.0	7.0	7.5	---	20	14	e8.5	13	7.8	e10	10
31	---	---	7.0	13	---	17	---	e7.0	---	11	e6.0	---
TOTAL	---	---	331.3	273.8	380.4	720.3	545	350.3	231.1	216.9	421.3	422.3
MEAN	---	---	10.7	8.83	13.1	23.2	18.2	11.3	7.70	7.00	13.6	14.1
MAX	---	---	31	18	32	228	38	14	22	16	100	84
MIN	---	---	7.0	5.6	7.4	6.1	13	6.9	4.0	2.6	2.5	1.4
CFSM	---	---	1.21	1.00	1.48	2.63	2.05	1.28	.87	.79	1.54	1.59
IN.	---	---	1.39	1.15	1.60	3.03	2.29	1.47	.97	.91	1.77	1.78

e Estimated

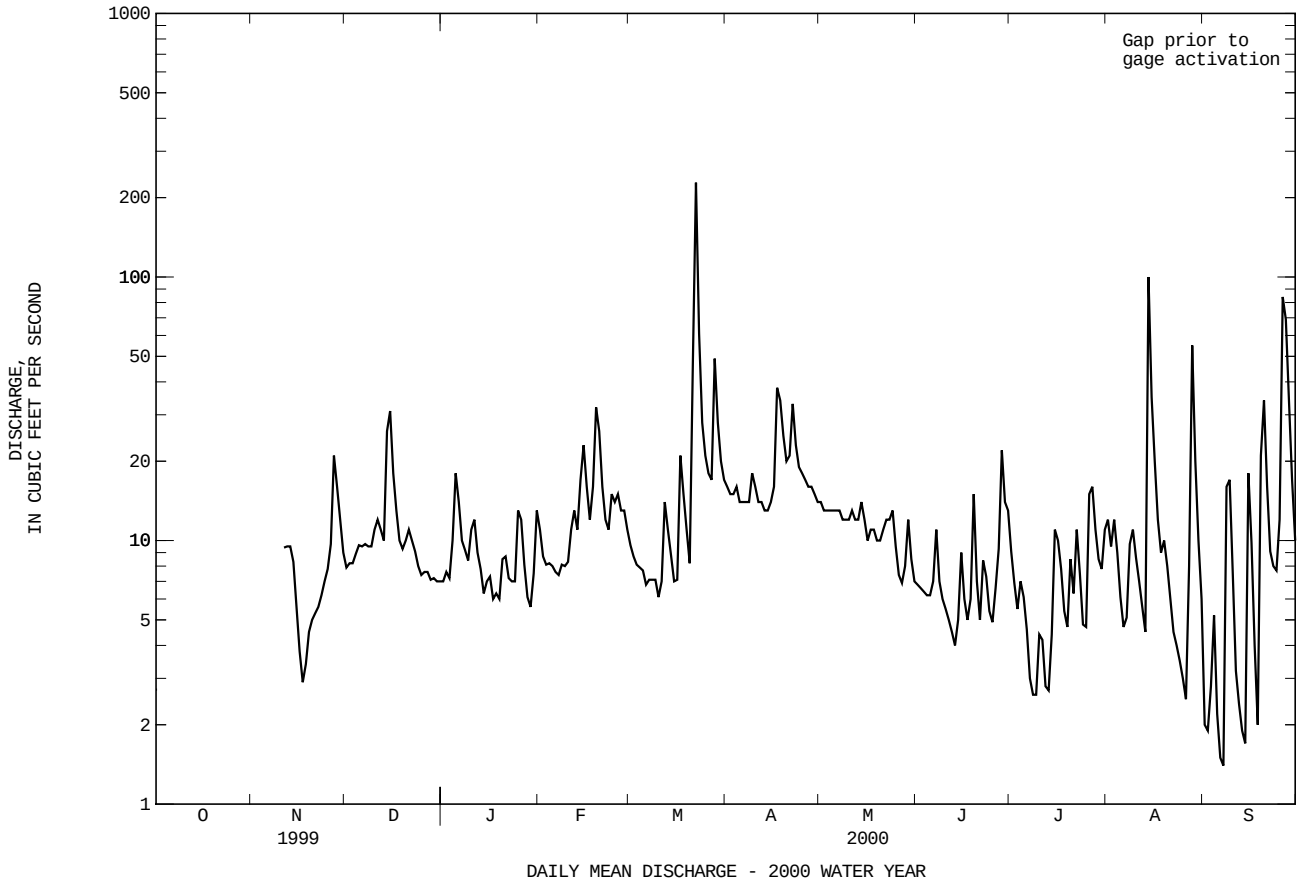
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1993 - 1994, 2000, BY WATER YEAR (WY)

MEAN	4.54	8.34	12.7	13.7	19.6	30.5	20.4	12.6	7.73	6.35	10.6	8.98
MAX	5.04	8.57	16.7	21.1	32.7	37.4	27.9	15.7	9.55	7.00	13.6	14.1
(WY)	1994	1993	1993	1994	1994	1994	1993	1993	1993	2000	2000	2000
MIN	4.03	8.12	10.7	8.83	13.1	23.2	15.2	10.9	5.92	5.08	4.65	5.10
(WY)	1993	1994	2000	2000	2000	2000	1994	1994	1994	1993	1993	1993

01483153 NOXONTOWN LAKE OUTLET NEAR MIDDLETOWN, DE--Continued

SUMMARY STATISTICS	FOR 2000 WATER YEAR		WATER YEARS 1993 - 2000	
ANNUAL MEAN			13.6	
HIGHEST ANNUAL MEAN			14.5	1994
LOWEST ANNUAL MEAN			12.7	1993
HIGHEST DAILY MEAN	228	Mar 22	359	Mar 3 1994
LOWEST DAILY MEAN	1.4	Sep 7	1.4	Sep 7 2000
ANNUAL SEVEN-DAY MINIMUM	2.4	Sep 1	2.4	Sep 1 2000
MAXIMUM PEAK FLOW	341	Mar 22	(a)602	Mar 3 1994
MAXIMUM PEAK STAGE	2.50	Mar 22	2.92	Mar 3 1994
INSTANTANEOUS LOW FLOW	1.1	Sep 6	(b).38	Jun 19 1994
ANNUAL RUNOFF (CFSM)			1.54	
ANNUAL RUNOFF (INCHES)			20.90	
10 PERCENT EXCEEDS	20		21	
50 PERCENT EXCEEDS	9.5		8.9	
90 PERCENT EXCEEDS	4.6		3.8	

a From rating curve extended above 250 ft^3/s.
b Wind effect.



01483153 NOXONTOWN LAKE OUTLET NEAR MIDDLETOWN, DE--Continued

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	9.5	2.7	8.8	e5.0	e15	11	21	e6.8	13	2.9	e1.5	1.2
2	9.5	2.6	7.8	e5.1	e11	10	15	e6.8	27	2.3	e1.4	.95
3	9.0	2.6	7.3	e5.0	e9.0	9.6	12	e6.6	20	2.3	e1.3	.83
4	8.2	2.7	8.0	6.5	e8.0	15	11	e6.6	14	3.7	e1.2	3.2
5	8.1	3.3	8.0	8.7	e20	28	11	e6.4	11	9.1	e1.1	11
6	8.7	4.4	7.6	8.9	e30	20	11	e6.2	9.9	7.1	e1.0	6.2
7	7.5	4.9	7.4	8.2	e20	15	11	e6.0	11	4.1	e.95	2.2
8	5.3	6.0	7.0	9.1	e17	13	11	e6.0	10	2.8	e.90	1.6
9	4.2	7.7	7.0	10	e16	12	12	e6.0	9.1	7.9	e.85	1.4
10	4.5	11	7.0	8.6	e14	10	18	e6.0	8.2	5.4	e1.2	1.5
11	5.4	7.9	7.6	8.1	e12	9.8	17	e6.0	8.2	3.3	e1.8	1.5
12	5.6	7.0	7.6	8.2	e10	6.8	19	e6.0	7.8	1.9	e3.0	1.4
13	6.4	7.1	5.7	8.2	e12	12	16	5.9	8.1	1.6	e2.4	1.3
14	7.6	8.3	14	8.2	e11	9.3	13	5.8	6.7	1.4	e2.1	1.4
15	9.8	7.5	13	10	e12	9.3	12	5.4	6.7	1.4	e2.0	1.5
16	6.2	7.2	11	8.8	e18	12	16	5.7	7.2	1.4	e1.5	1.4
17	4.3	7.9	25	7.8	e25	12	15	5.4	51	1.5	e1.4	1.4
18	4.4	10	20	7.2	e18	10	11	4.5	23	e2.0	e1.3	1.4
19	4.4	9.5	14	19	12	9.4	10	4.8	12	e1.6	e2.0	1.4
20	7.6	e7.0	10	35	11	9.3	9.4	6.3	8.6	e1.5	2.7	3.6
21	9.5	8.3	8.2	28	10	31	9.4	11	7.5	e1.3	1.7	15
22	8.6	7.1	7.8	17	11	46	9.6	15	8.3	e1.2	1.3	8.4
23	e7.0	6.5	6.8	13	13	22	9.5	22	7.8	e1.2	1.1	3.2
24	e5.5	7.0	7.0	11	11	15	9.0	13	6.1	e1.3	1.1	2.7
25	e4.0	7.5	6.4	10	12	12	7.6	8.7	5.6	e1.2	1.1	5.3
26	e3.5	22	5.6	9.5	18	12	e7.2	53	5.5	e1.4	1.0	2.7
27	6.2	16	e5.4	9.6	15	11	e7.2	81	4.7	e2.5	.98	1.7
28	6.0	11	e5.2	8.9	12	10	e7.0	53	2.6	e2.3	1.0	1.4
29	4.1	9.7	e5.2	e8.0	---	11	e7.0	24	2.6	e1.6	.86	1.3
30	2.7	10	e5.2	e12	---	79	e7.0	15	2.6	e1.8	.86	1.3
31	3.0	---	e5.0	e22	---	41	---	11	---	e1.6	1.3	---
TOTAL	196.3	232.4	271.6	344.6	403.0	533.5	351.9	425.9	325.8	82.6	43.90	89.38
MEAN	6.33	7.75	8.76	11.1	14.4	17.2	11.7	13.7	10.9	2.66	1.42	2.98
MAX	9.8	22	25	35	30	79	21	81	51	9.1	3.0	15
MIN	2.7	2.6	5.0	5.0	8.0	6.8	7.0	4.5	2.6	1.2	.85	.83
CFSM	.72	.88	.99	1.26	1.63	1.94	1.33	1.55	1.23	.30	.16	.34
IN.	.83	.98	1.14	1.45	1.69	2.24	1.48	1.79	1.37	.35	.18	.38

e Estimated

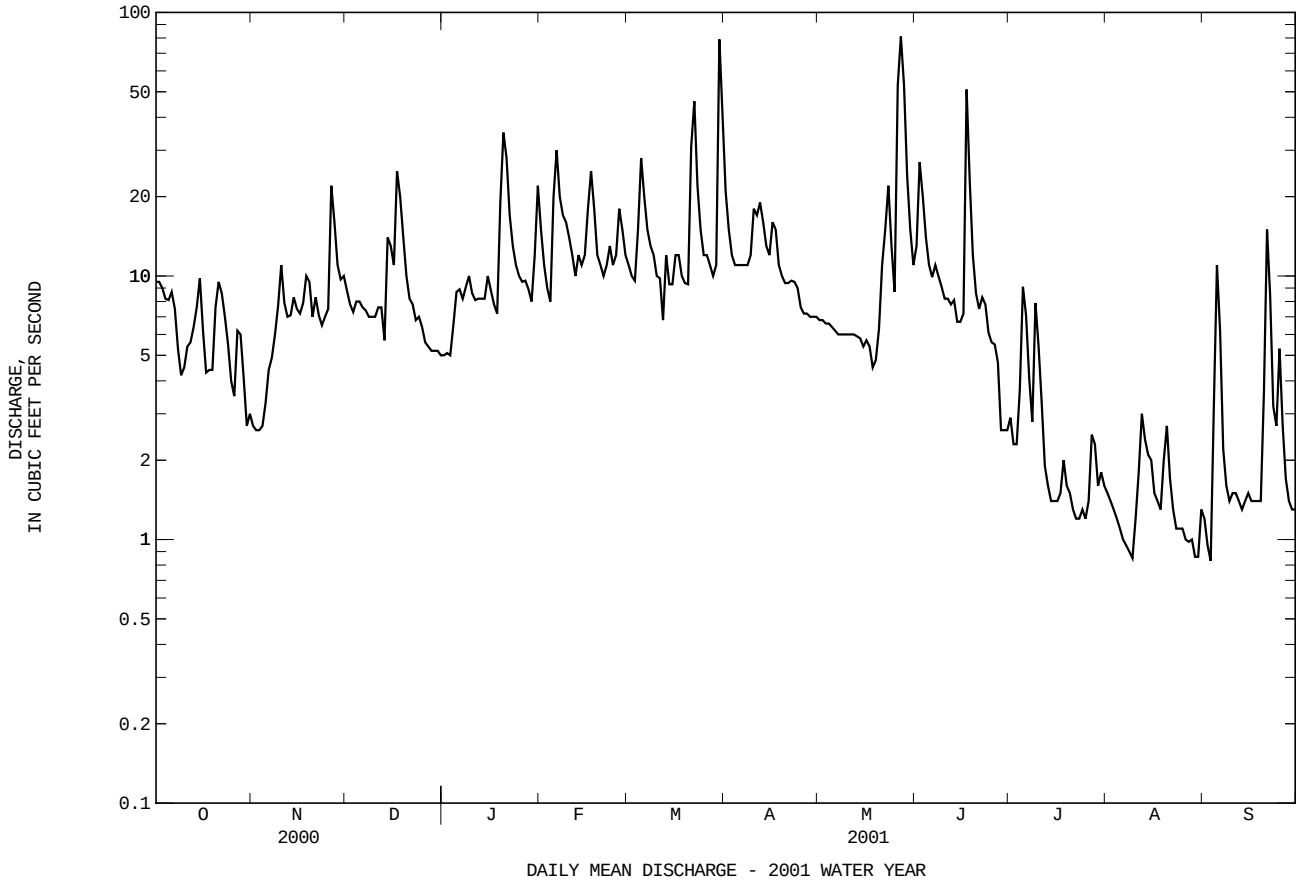
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1993 - 1994, 2000 - 2001, BY WATER YEAR (WY)

MEAN	5.14	8.14	11.7	13.0	18.3	27.2	18.2	12.9	8.51	5.43	8.27	7.48
MAX	6.33	8.57	16.7	21.1	32.7	37.4	27.9	15.7	10.9	7.00	13.6	14.1
(WY)	2001	1993	1993	1994	1994	1994	1993	1993	2001	2000	2000	2000
MIN	4.03	7.75	8.76	8.83	13.1	17.2	11.7	10.9	5.92	2.66	1.42	2.98
(WY)	1993	2001	2001	2000	2000	2001	2001	1994	1994	2001	2001	2001

01483153 NOXONTOWN LAKE OUTLET NEAR MIDDLETOWN, DE--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1993 - 1994, 2000 - 2001	
ANNUAL TOTAL	4261.7		3300.88			
ANNUAL MEAN	11.6		9.04		12.1	
HIGHEST ANNUAL MEAN					14.5	1994
LOWEST ANNUAL MEAN					9.04	2001
HIGHEST DAILY MEAN	228	Mar 22	81	May 27	359	Mar 3 1994
LOWEST DAILY MEAN	1.4	Sep 7	.83	Sep 3	.83	Sep 3 2001
ANNUAL SEVEN-DAY MINIMUM	2.4	Sep 1	.99	Aug 24	.99	Aug 24 2001
MAXIMUM PEAK FLOW			126	May 26	(a)602	Mar 3 1994
MAXIMUM PEAK STAGE			2.00	May 26	2.92	Mar 3 1994
INSTANTANEOUS LOW FLOW			(b).52	(c)	(d).38	Jun 19 1994
ANNUAL RUNOFF (CFSM)	1.32		1.02		1.37	
ANNUAL RUNOFF (INCHES)	17.91		13.87		18.56	
10 PERCENT EXCEEDS	18		16		20	
50 PERCENT EXCEEDS	8.3		7.6		8.4	
90 PERCENT EXCEEDS	4.4		1.4		2.8	

a From rating curve extended above 250 ft^3/s.
b May have been lower during period of missing record.
c Sept. 3, 4.
d Wind effect.



01483200 BLACKBIRD CREEK AT BLACKBIRD, DE

LOCATION.--Lat 39°21'58.6", long 75°40'09.8", New Castle County, Hydrologic Unit 02040205, on left bank 15 ft downstream from highway culverts, 0.5 mi upstream from Barlow Branch, 0.6 mi southwest of Blackbird, 5.6 mi northwest of Smyrna, and 13.8 mi upstream from mouth.

DRAINAGE AREA.--3.85 mi^2.

PERIOD OF RECORD.--Annual maximum, water years 1952-56, and occasional low-flow measurements, water years 1952-53, 1955-56. October 1956 to current year.

REVISED RECORDS.--WRD MD-DE-89-1: 1987-88(P).

GAGE.--Water-stage recorder. Concrete control since May 23, 1968. Datum of gage is 17.89 ft above sea level. Mar. 5, 1951, to Oct. 16, 1956, nonrecording gage and crest-stage gage at site 15 ft upstream at datum 1.0 ft higher. Oct. 17, 1956, to June 16, 1986, recording gage at same site on right bank at datum 1.0 ft higher.

REMARKS.--Records good except those for estimated daily discharges (backwater, ice effect), which are fair. Occasional regulation at low and medium flow by Blackbird Lake Dam upstream from station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 50 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 21	2330	70	2.46	May 27	0015	89	2.73
Mar 30	1215	95	2.83	Jun 17	0915	*105	*2.98

Minimum discharge, 0.23 ft^3/s, Sept. 19, 20.

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	4.7	e1.7	3.6	e2.8	7.6	6.7	13	3.8	8.5	1.3	1.1	.57
2	4.6	e1.8	3.2	e2.9	6.2	6.6	11	3.7	24	1.8	.93	.60
3	4.5	e2.0	3.0	e2.8	5.6	6.2	9.9	3.5	11	1.3	.86	.54
4	3.8	e3.0	2.8	e2.9	5.1	7.9	8.9	3.0	5.7	3.7	.80	.37
5	3.9	e2.3	2.8	3.1	25	16	8.4	2.8	4.5	6.1	.74	2.9
6	4.2	e1.6	2.8	3.4	26	11	8.3	2.7	3.9	2.4	.66	1.1
7	4.9	e2.3	2.8	3.5	11	8.5	8.2	2.6	5.1	1.5	.57	.69
8	3.5	3.2	2.8	4.3	8.8	7.0	7.7	2.6	4.1	1.4	.40	.64
9	3.1	3.7	2.8	5.5	8.0	7.0	8.8	2.6	3.0	3.2	.36	.63
10	3.5	8.6	2.8	3.9	8.0	6.5	12	2.6	2.6	2.0	.34	.53
11	3.5	7.0	3.2	3.6	6.7	6.0	11	2.3	2.4	1.8	.36	.56
12	3.0	e3.5	3.4	3.7	6.2	5.7	12	2.1	2.1	1.3	.41	.52
13	2.9	e3.0	3.0	3.3	7.6	12	9.8	1.9	2.2	1.2	.52	.46
14	2.9	7.0	8.1	3.2	7.2	9.8	7.8	1.8	2.0	1.2	1.3	.45
15	2.6	8.9	6.4	5.3	7.5	8.0	6.7	1.6	1.9	1.2	1.4	.43
16	2.7	5.3	5.1	5.3	9.7	9.5	11	1.6	3.0	1.4	.83	.40
17	2.7	5.2	21	4.0	19	8.2	11	1.7	58	1.6	.74	.37
18	3.1	e4.0	17	3.7	11	7.3	8.9	1.9	11	1.4	.67	.32
19	3.9	e3.1	7.1	15	8.0	6.3	6.7	2.3	3.9	1.3	1.4	.25
20	3.6	e2.8	5.6	31	7.7	6.0	6.1	2.0	2.9	1.3	5.3	.24
21	e3.0	e3.3	4.4	18	7.4	30	5.5	5.7	2.7	1.2	1.3	.34
22	e2.7	e2.8	4.4	9.9	6.4	32	5.5	8.6	3.8	1.1	.75	.48
23	e2.2	e2.6	3.7	7.2	7.0	12	5.5	9.0	2.7	.88	.71	.46
24	e1.9	e2.4	3.5	6.4	7.6	9.8	4.9	3.1	2.2	.84	.70	.56
25	e1.9	e3.0	3.5	6.3	9.6	8.9	4.3	2.5	2.0	.84	.62	2.0
26	e1.8	17	3.0	5.8	14	8.6	4.4	39	1.8	.97	.51	1.0
27	e2.4	11	e2.9	6.0	9.0	8.2	4.4	43	1.7	1.8	.48	.55
28	e3.3	5.1	e2.9	5.8	7.4	7.4	4.2	28	1.6	1.8	.45	.46
29	e1.9	3.6	e2.8	5.2	---	8.0	3.9	11	1.4	1.3	.46	.45
30	e1.7	3.9	e2.8	11	---	64	4.1	7.2	1.3	1.4	.48	.49
31	e1.6	---	e2.8	11	---	21	---	4.6	---	1.3	.49	---
TOTAL	96.0	134.7	146.0	205.8	270.3	372.1	233.9	210.8	183.0	51.83	26.64	19.36
MEAN	3.10	4.49	4.71	6.64	9.65	12.0	7.80	6.80	6.10	1.67	.86	.65
MAX	4.9	17	21	31	26	64	13	43	58	6.1	5.3	2.9
MIN	1.6	1.6	2.8	2.8	5.1	5.7	3.9	1.6	1.3	.84	.34	.24
CFSM	.80	1.17	1.22	1.72	2.51	3.12	2.03	1.77	1.58	.43	.22	.17
IN.	.93	1.30	1.41	1.99	2.61	3.60	2.26	2.04	1.77	.50	.26	.19

e Estimated

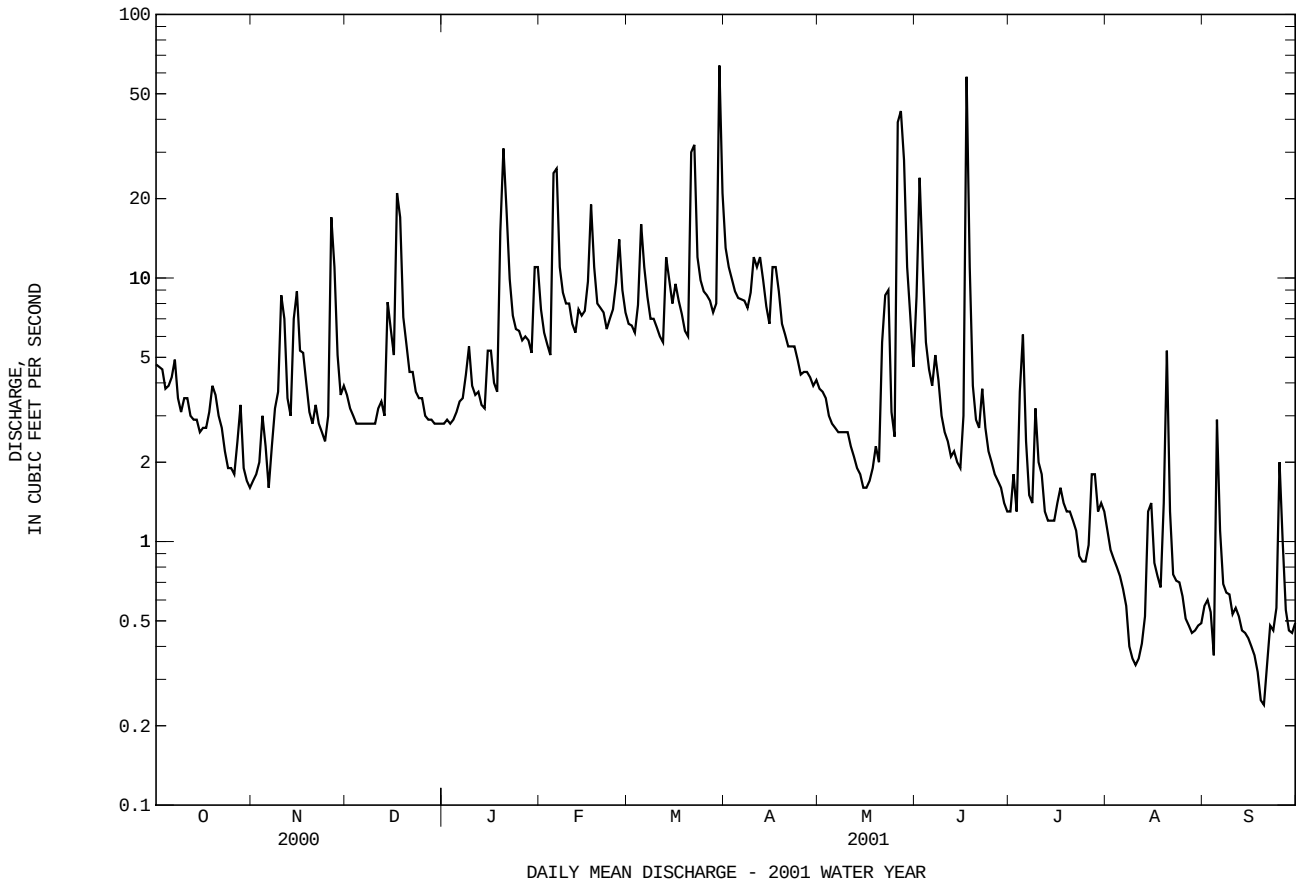
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1957 - 2001, BY WATER YEAR (WY)

MEAN	2.46	3.46	5.07	6.25	7.26	8.90	7.56	5.42	3.69	2.89	2.13	2.53
MAX	8.83	10.4	23.5	18.1	19.2	20.3	21.0	13.9	24.4	17.0	7.10	20.1
(WY)	1972	1957	1997	1978	1979	1958	1983	1989	1972	1989	2000	1999
MIN	.30	.73	.71	1.51	2.44	1.98	2.16	1.26	.54	.077	.013	.21
(WY)	1969	1966	1966	1981	1992	1966	1966	1977	1966	1966	1966	1968

01483200 BLACKBIRD CREEK AT BLACKBIRD, DE--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1957 - 2001	
ANNUAL TOTAL	2370.6		1950.43			
ANNUAL MEAN	6.48		5.34		4.79	
HIGHEST ANNUAL MEAN					9.05	1972
LOWEST ANNUAL MEAN					1.40	1966
HIGHEST DAILY MEAN	129	Mar 22	64	Mar 30	397	Sep 16 1999
LOWEST DAILY MEAN	1.3	(a)	.24	Sep 20	.00	(b)
ANNUAL SEVEN-DAY MINIMUM	1.4	Jul 7	.34	Sep 15	.00	Jul 17 1966
MAXIMUM PEAK FLOW			105	Jun 17	(c)789	Sep 16 1999
MAXIMUM PEAK STAGE			2.98	Jun 17	6.47	Sep 16 1999
INSTANTANEOUS LOW FLOW			.23	(d)	.00	(f)
ANNUAL RUNOFF (CFSM)	1.68		1.39		1.24	
ANNUAL RUNOFF (INCHES)	22.91		18.85		16.90	
10 PERCENT EXCEEDS	12		11		9.8	
50 PERCENT EXCEEDS	4.1		3.3		2.8	
90 PERCENT EXCEEDS	2.2		.61		.53	

a July 8, 9, 2000.
b Sept. 11, 1965; July 12-15, 17-31, Aug. 1-12, 14, 15, 18-31, Sept. 1-20, 1966.
c From rating curve extended above 600 ft^3/s.
d Sept. 19, 20.
f No flow at times during 1964-66.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01483700 ST. JONES RIVER AT DOVER, DE

LOCATION.--Lat 39°09'49.4", long 75°31'08.7", Kent County, Hydrologic Unit 02040207, on left bank 150 ft upstream from Division Street Bridge in Dover, 1,950 ft downstream from Silver Lake, and 12.5 mi upstream from mouth.

DRAINAGE AREA.--31.9 mi^2.

PERIOD OF RECORD.--January 1958 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 0.00 ft above sea level. Prior to June 1973, at datum 0.50 ft higher.

REMARKS.--Records good except those for estimated daily discharges (backwater from tides), which are fair. Flow affected by Silver Lake. Flow occasionally affected by tide and wind effect. U.S. Geological Survey gage-height telemeter at station. Several measurements of water temperature were made during the year. Water-quality data for some prior years have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 516 ft^3/s, Mar. 22, gage height, 5.39 ft; minimum discharge, 2.0 ft^3/s, Sept. 17-20.

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	35	9.5	e21	18	63	51	201	18	33	15	12	5.9
2	32	11	19	18	51	59	121	18	70	22	8.0	3.8
3	30	11	16	17	40	51	88	17	93	17	6.4	e3.3
4	26	11	15	16	35	57	72	16	60	22	5.9	e8.0
5	25	11	15	16	90	e82	62	15	39	34	5.4	23
6	25	8.5	14	17	186	88	56	13	28	36	5.1	13
7	23	10	14	18	140	e67	53	e12	44	26	5.0	7.9
8	21	12	13	21	84	e57	53	11	47	16	4.6	5.6
9	20	14	14	26	61	53	53	11	35	13	4.2	4.3
10	17	36	14	24	56	46	60	12	23	11	7.2	4.0
11	17	27	15	22	48	43	70	12	17	9.5	15	4.0
12	17	e19	17	19	43	37	86	11	15	7.5	21	e2.5
13	17	e14	12	18	47	64	84	9.6	13	7.1	16	e2.5
14	16	19	30	19	48	73	66	8.3	12	6.6	18	e6.0
15	15	21	35	23	49	62	55	8.0	13	5.8	22	e3.9
16	15	19	37	26	57	62	62	7.2	14	5.2	11	e2.5
17	e14	18	134	25	117	61	67	e7.7	159	5.3	7.1	e2.2
18	17	13	160	23	125	53	60	8.8	269	e7.4	5.9	e2.0
19	15	13	101	47	81	44	51	10	131	e7.4	8.9	e2.0
20	14	13	57	151	60	38	45	11	54	e7.1	e12	e7.9
21	14	13	38	195	54	167	41	35	30	e6.2	7.8	10
22	13	12	34	120	50	464	39	54	22	e5.4	6.2	7.2
23	11	11	27	78	47	251	35	46	32	e4.8	5.1	5.9
24	11	11	25	59	50	134	34	29	37	5.5	5.3	5.7
25	11	11	24	51	55	86	29	18	27	5.1	e3.9	9.6
26	11	e51	21	45	73	71	27	89	19	24	3.5	6.8
27	12	56	19	42	72	63	26	242	15	69	3.6	5.5
28	13	41	20	38	58	58	25	226	12	58	3.4	5.1
29	11	28	19	35	---	58	22	110	10	23	e3.0	e5.0
30	10	26	19	45	---	279	20	58	9.8	21	3.7	e5.0
31	8.7	---	19	62	---	387	---	37	---	16	e4.6	---
TOTAL	536.7	570.0	1018	1334	1940	3166	1763	1180.6	1382.8	518.9	250.8	180.1
MEAN	17.3	19.0	32.8	43.0	69.3	102	58.8	38.1	46.1	16.7	8.09	6.00
MAX	35	56	160	195	186	464	201	242	269	69	22	23
MIN	8.7	8.5	12	16	35	37	20	7.2	9.8	4.8	3.0	2.0
CFSM	.54	.60	1.03	1.35	2.17	3.20	1.84	1.19	1.44	.52	.25	.19
IN.	.63	.66	1.19	1.56	2.26	3.69	2.06	1.38	1.61	.61	.29	.21

e Estimated

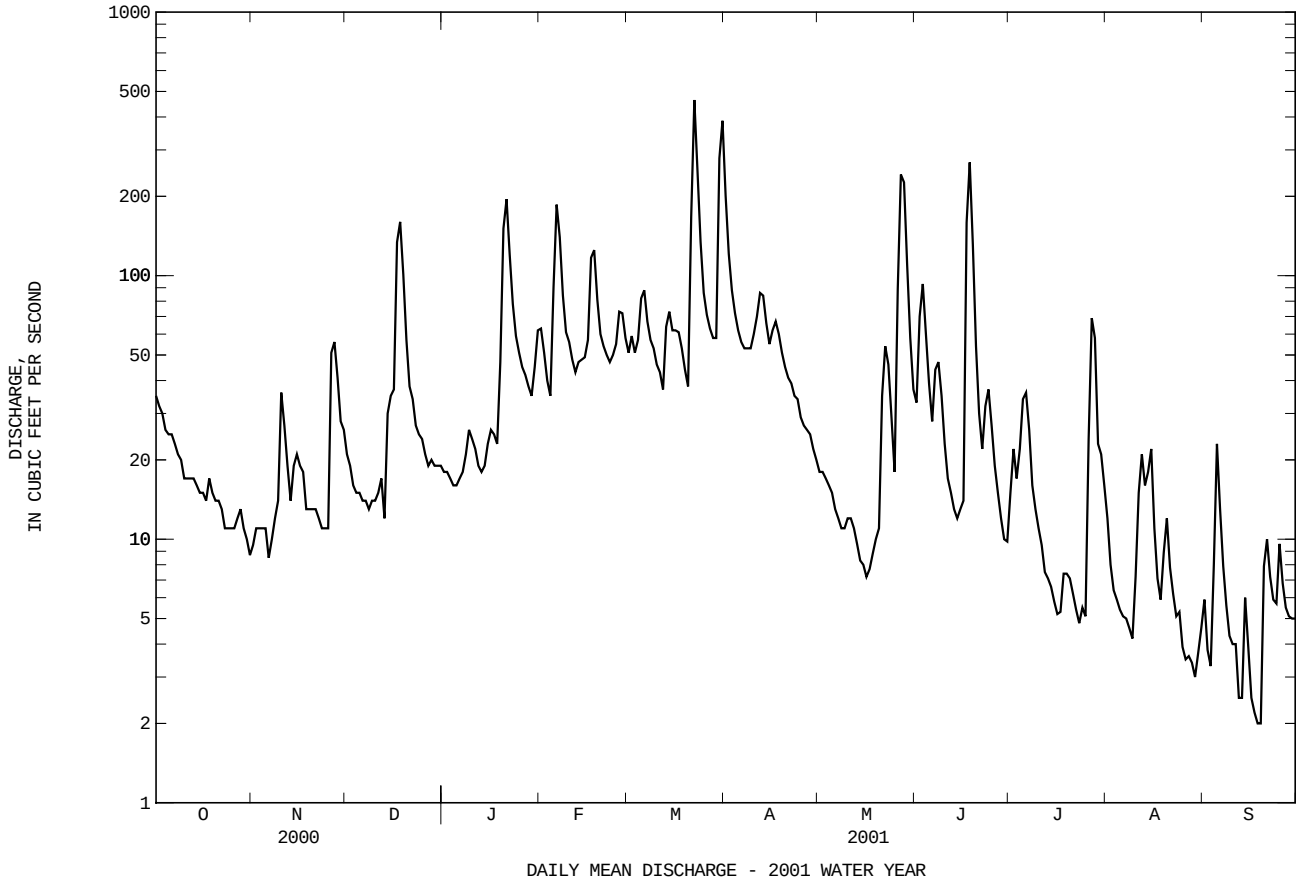
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1958 - 2001, BY WATER YEAR (WY)

MEAN	18.8	23.8	36.9	50.2	60.4	76.8	58.2	37.3	29.0	18.0	24.3	20.5
MAX	93.5	103	145	156	143	187	180	117	138	88.6	144	128
(WY)	1972	1973	1997	1978	1998	1994	1983	1989	1996	1975	1958	1960
MIN	.40	1.91	1.35	1.64	11.0	10.7	13.5	9.86	4.36	2.10	.69	1.92
(WY)	1964	1962	1966	1966	1966	1966	1966	1963	1986	1966	1966	1970

01483700 ST. JONES RIVER AT DOVER, DE--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1958 - 2001	
ANNUAL TOTAL	15103.5		13840.9			
ANNUAL MEAN	41.3		37.9		37.0	
HIGHEST ANNUAL MEAN					69.3	1972
LOWEST ANNUAL MEAN					6.14	1966
HIGHEST DAILY MEAN	826	Mar 22	464	Mar 22	1460	Sep 13 1960
LOWEST DAILY MEAN	3.1	Jul 9	(e)2.0	(a)	.00	(b)
ANNUAL SEVEN-DAY MINIMUM	3.7	Jul 8	3.0	Sep 13	.40	Sep 30 1963
MAXIMUM PEAK FLOW			516	Mar 22	1900	Sep 13 1960
MAXIMUM PEAK STAGE			5.39	Mar 22	(c)9.45	Sep 13 1960
INSTANTANEOUS LOW FLOW			2.0	(d)	.00	(f)
ANNUAL RUNOFF (CFSM)	1.29		1.19		1.16	
ANNUAL RUNOFF (INCHES)	17.61		16.14		15.78	
10 PERCENT EXCEEDS	77		75		85	
50 PERCENT EXCEEDS	24		20		20	
90 PERCENT EXCEEDS	11		5.6		3.8	

e Estimated
a Sept. 18, 19.
b July 9, 1959, May 9, 10, 1961.
c From floodmark.
d Sept. 17-20.
f No flow at times in 1959, 1961, 1962.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01484100 BEAVERDAM BRANCH AT HOUSTON, DE

LOCATION.--Lat 38°54'20.8", long 75°30'45.9", Kent County, Hydrologic Unit 02040207, on left bank 15 ft upstream from culverts on State Highway 384, 0.8 mi south of Houston, and 1.2 mi upstream from Blairs Pond and mouth.

DRAINAGE AREA.--2.83 mi^2.

PERIOD OF RECORD.--May 1958 to current year.

REVISED RECORDS.--WDR MD-DE-84-1: 1981, 1983 (M).

GAGE.--Water-stage recorder and concrete control; timber control prior to Nov. 8, 1979. Datum of gage is 35.67 ft above sea level.

REMARKS.--Records good except those for estimated daily discharges (missing record), which are fair. Diversion for irrigation of about l50 acres upstream from station during some years. Several measurements of water temperature were made during this year. Water-quality data for some prior years have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 30 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 17	1815	37	3.44	Jun 17	1045	*89	*4.47
Mar 21	2015	51	3.72	Jul 18	0945	47	3.66

Minimum discharge, 1.3 ft^3/s, Nov. 24.

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	3.7	2.0	1.9	2.9	3.9	4.6	7.9	3.5	2.9	4.8	3.7	e3.2
2	3.6	2.0	1.9	2.8	3.8	4.5	6.9	3.6	3.4	4.8	3.6	e3.1
3	3.4	2.0	2.0	2.8	3.6	4.4	6.4	3.5	3.2	4.1	3.4	e3.0
4	3.3	2.0	2.1	2.7	3.6	4.8	6.0	3.6	2.8	4.2	3.4	e3.0
5	3.3	1.9	2.4	2.8	9.5	6.4	5.8	3.4	2.8	4.4	3.2	e3.4
6	3.2	1.8	1.9	2.8	6.9	5.2	5.8	3.3	2.7	4.9	2.9	e3.3
7	2.9	1.9	2.0	2.7	5.4	4.8	5.4	3.2	4.7	3.9	2.8	e3.2
8	2.8	1.9	2.0	3.1	4.9	4.6	5.4	3.3	3.7	4.0	2.8	e3.1
9	2.8	1.8	2.7	3.1	5.0	4.7	5.6	3.3	3.3	3.9	2.6	e3.0
10	2.8	2.2	2.4	2.8	4.7	4.5	6.2	3.5	3.1	3.5	2.6	e2.9
11	2.7	1.9	2.2	2.7	4.2	4.3	7.6	3.0	2.9	3.4	6.3	e2.8
12	2.5	1.9	2.1	2.7	4.2	4.1	7.7	3.0	2.7	3.2	5.5	e2.7
13	2.5	1.9	1.9	2.6	4.7	6.7	6.5	2.6	2.6	3.1	11	e2.6
14	2.5	2.2	3.3	2.6	4.2	5.3	6.0	2.6	2.5	2.9	6.3	e2.6
15	2.4	2.0	2.3	2.9	4.2	5.2	5.8	2.5	2.4	2.8	4.6	e2.5
16	2.4	1.9	2.4	2.9	4.5	6.1	5.9	2.5	2.4	2.4	4.0	e2.5
17	2.4	1.8	17	2.7	6.8	5.3	5.8	2.5	55	2.3	3.7	e2.4
18	2.4	1.7	6.4	2.6	5.0	4.9	5.8	2.6	13	26	3.7	e2.3
19	2.3	1.7	4.2	4.5	4.5	4.5	5.4	2.6	7.3	6.2	3.7	e2.3
20	2.3	1.6	4.0	10	4.4	4.2	5.1	2.5	6.1	4.6	3.6	e2.2
21	2.3	1.6	3.7	6.6	4.3	23	5.1	2.8	11	4.1	e3.4	e2.3
22	2.2	1.6	3.7	4.9	4.2	17	5.1	2.9	11	4.0	e3.2	e2.4
23	2.2	1.5	3.5	4.6	4.2	8.4	4.8	2.9	7.8	3.9	e2.9	e2.3
24	2.2	1.5	3.5	4.4	4.1	7.1	4.6	2.2	6.9	3.8	e8.0	e2.2
25	2.2	1.5	3.4	4.3	5.8	6.2	4.4	2.1	5.8	3.5	e5.4	e2.3
26	2.2	4.2	3.2	4.1	6.0	6.3	4.3	9.0	5.2	6.0	e4.2	e2.2
27	2.2	2.2	3.3	4.1	5.2	6.2	4.3	8.3	5.0	8.1	e3.9	2.1
28	2.1	1.8	3.3	3.9	5.0	5.8	4.2	4.2	4.9	4.6	e3.7	2.0
29	2.1	1.8	3.2	3.8	---	6.0	4.4	3.5	4.7	5.2	e3.6	2.0
30	2.1	1.8	3.3	4.4	---	17	4.2	3.0	4.5	5.5	e3.4	2.0
31	2.1	---	3.0	4.3	---	9.4	---	2.8	---	4.3	e3.3	---
TOTAL	80.1	57.6	104.2	114.1	136.8	211.5	168.4	104.3	196.3	152.4	128.4	77.9
MEAN	2.58	1.92	3.36	3.68	4.89	6.82	5.61	3.36	6.54	4.92	4.14	2.60
MAX	3.7	4.2	17	10	9.5	23	7.9	9.0	55	26	11	3.4
MIN	2.1	1.5	1.9	2.6	3.6	4.1	4.2	2.1	2.4	2.3	2.6	2.0
CFSM	.91	.68	1.19	1.30	1.73	2.41	1.98	1.19	2.31	1.74	1.46	.92
IN.	1.05	.76	1.37	1.50	1.80	2.78	2.21	1.37	2.58	2.00	1.69	1.02

e Estimated

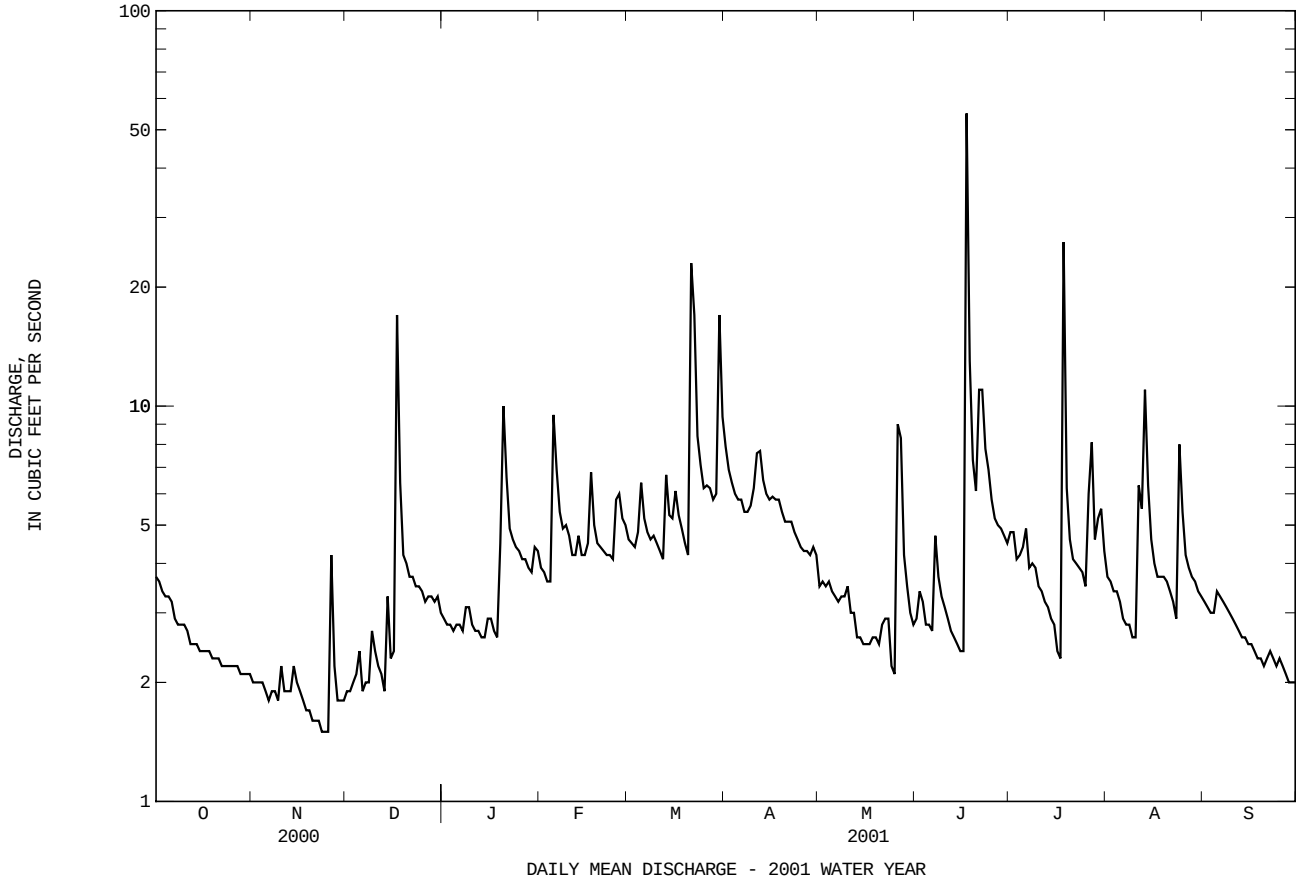
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1958 - 2001, BY WATER YEAR (WY)

MEAN	1.84	2.17	3.19	4.50	5.49	6.51	5.63	4.39	3.09	2.73	2.41	2.08
MAX	4.69	7.56	11.5	10.7	16.2	18.0	11.0	10.5	6.54	16.8	9.38	10.1
(WY)	1959	1998	1973	1978	1998	1994	1983	1984	2001	1975	1967	1960
MIN	.37	.44	.48	.57	1.06	1.70	1.90	1.88	1.22	.42	.51	.44
(WY)	1987	1988	1966	1966	1966	1966	1985	1977	1986	1977	1987	1986

01484100 BEAVERDAM BRANCH AT HOUSTON, DE--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1958 - 2001	
ANNUAL TOTAL	1269.2		1532.0			
ANNUAL MEAN	3.47		4.20		3.63	
HIGHEST ANNUAL MEAN					5.92	1998
LOWEST ANNUAL MEAN					1.20	1966
HIGHEST DAILY MEAN	43	Mar 22	55	Jun 17	98	May 30 1984
LOWEST DAILY MEAN	1.5	(a)	1.5	(a)	(b).00	Jul 28 1977
ANNUAL SEVEN-DAY MINIMUM	1.6	Nov 19	1.6	Nov 19	.06	Jul 19 1977
MAXIMUM PEAK FLOW			89	Jun 17	(c)176	Sep 12 1960
MAXIMUM PEAK STAGE			4.47	Jun 17	5.55	Sep 12 1960
INSTANTANEOUS LOW FLOW			1.3	Nov 24	(b).00	(d)
ANNUAL RUNOFF (CFSM)	1.23		1.48		1.28	
ANNUAL RUNOFF (INCHES)	16.68		20.14		17.43	
10 PERCENT EXCEEDS	5.8		6.3		6.6	
50 PERCENT EXCEEDS	2.7		3.4		2.8	
90 PERCENT EXCEEDS	1.9		2.1		.83	

a Nov. 23-25, 2000.
b Result of pumpage for irrigation.
c From rating curve extended above 75 ft^3/s.
d July 18-30, 1977.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01484500 STOCKLEY BRANCH AT STOCKLEY, DE

LOCATION.--Lat 38°38'19.9", long 75°20'31.1", Sussex County, Hydrologic Unit 02060010, on left bank at highway bridge in Stockley, 1.6 mi upstream from mouth, and 4.4 mi southeast of Georgetown.

DRAINAGE AREA.--5.24 mi^2.

PERIOD OF RECORD.--April 1943 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 24.54 ft above sea level. Prior to Aug. 16, 1950, nonrecording gage at same site and datum.

REMARKS.--No estimated daily discharges. Records good. Natural flow of stream affected by inflow from sand mine dewatering process. U.S. Geological Survey gage-height telemeter at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 45 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 21	2200	55	3.63	Aug 14	0515	*227	*5.63
Jun 17	1215	49	3.52	Aug 19	0630	45	3.44
Aug 12	0115	123	4.61				

Minimum discharge, 1.8 ft^3/s, Jan. 3.

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	4.7	6.1	5.2	3.9	8.9	9.1	14	11	8.2	6.5	5.5	9.5
2	4.4	5.9	4.6	5.4	8.5	8.2	16	8.0	8.0	8.3	5.2	9.1
3	4.5	5.7	3.7	4.1	7.9	8.1	12	7.6	7.8	9.2	4.4	10
4	4.7	5.5	4.1	4.5	7.0	7.8	11	8.4	9.1	5.9	4.7	11
5	6.8	5.3	5.2	3.4	18	12	11	8.8	8.0	9.2	4.9	8.4
6	5.7	4.3	5.0	4.1	14	9.6	13	8.6	7.8	9.6	4.4	9.1
7	4.7	5.0	4.2	3.7	11	8.6	10	8.1	15	5.9	4.3	6.9
8	4.9	5.5	5.4	3.9	9.8	9.0	10	7.8	11	5.8	4.4	7.4
9	6.2	6.4	6.5	4.4	9.8	9.5	14	7.1	8.8	7.2	4.0	7.6
10	6.6	6.4	3.9	4.8	8.7	8.9	16	6.8	8.2	5.3	5.2	7.8
11	4.8	8.0	4.1	4.8	7.8	7.6	18	6.6	8.8	5.2	27	7.3
12	4.7	7.7	5.3	5.0	8.3	7.5	18	7.7	8.9	5.6	65	7.3
13	4.2	7.0	5.6	4.8	8.0	15	14	7.7	7.9	5.1	39	7.3
14	4.0	7.0	6.6	4.0	9.6	11	12	6.7	8.7	5.1	145	7.4
15	3.0	7.5	6.7	4.1	6.8	9.6	11	6.4	8.6	5.2	31	7.1
16	3.3	7.4	6.5	4.0	8.8	15	16	6.4	9.1	5.5	20	7.1
17	7.3	6.4	13	4.4	12	10	15	7.5	36	4.4	19	7.2
18	8.1	7.8	5.0	4.0	8.6	8.9	11	7.6	19	5.8	17	7.1
19	8.0	7.6	5.4	8.7	9.0	9.7	10	9.0	10	4.8	35	7.0
20	6.8	6.5	5.4	17	8.6	8.3	9.7	8.1	8.7	5.0	22	6.2
21	4.4	5.9	4.5	13	6.5	28	9.5	9.0	8.9	5.0	19	8.9
22	3.8	6.1	6.7	11	8.6	35	9.3	9.0	9.3	5.0	19	7.1
23	7.4	7.0	6.5	7.5	11	19	13	11	10	6.1	16	6.8
24	7.2	5.3	3.6	8.1	8.1	15	9.5	7.2	8.5	4.5	14	7.1
25	6.2	3.4	4.8	7.7	8.4	13	9.9	6.7	8.1	4.8	13	7.6
26	6.2	8.8	5.4	6.1	13	14	9.1	9.0	7.1	5.6	12	7.0
27	6.6	5.2	3.7	7.4	9.6	12	11	9.3	7.0	7.7	12	6.1
28	7.0	6.2	5.1	6.1	9.7	11	8.7	7.5	6.2	6.2	13	5.5
29	6.5	6.1	5.8	6.7	---	15	8.0	9.0	6.1	5.8	10	6.7
30	6.7	5.7	3.2	7.5	---	23	14	7.6	6.5	6.2	10	6.7
31	6.3	---	4.3	6.9	---	17	---	7.2	---	6.8	12	---
TOTAL	175.7	188.7	165.0	191.0	266.0	395.4	363.7	248.4	295.3	188.3	617.0	227.3
MEAN	5.67	6.29	5.32	6.16	9.50	12.8	12.1	8.01	9.84	6.07	19.9	7.58
MAX	8.1	8.8	13	17	18	35	18	11	36	9.6	145	11
MIN	3.0	3.4	3.2	3.4	6.5	7.5	8.0	6.4	6.1	4.4	4.0	5.5
CFSM	1.08	1.20	1.02	1.18	1.81	2.43	2.31	1.53	1.88	1.16	3.80	1.45
IN.	1.25	1.34	1.17	1.36	1.89	2.81	2.58	1.76	2.10	1.34	4.38	1.61

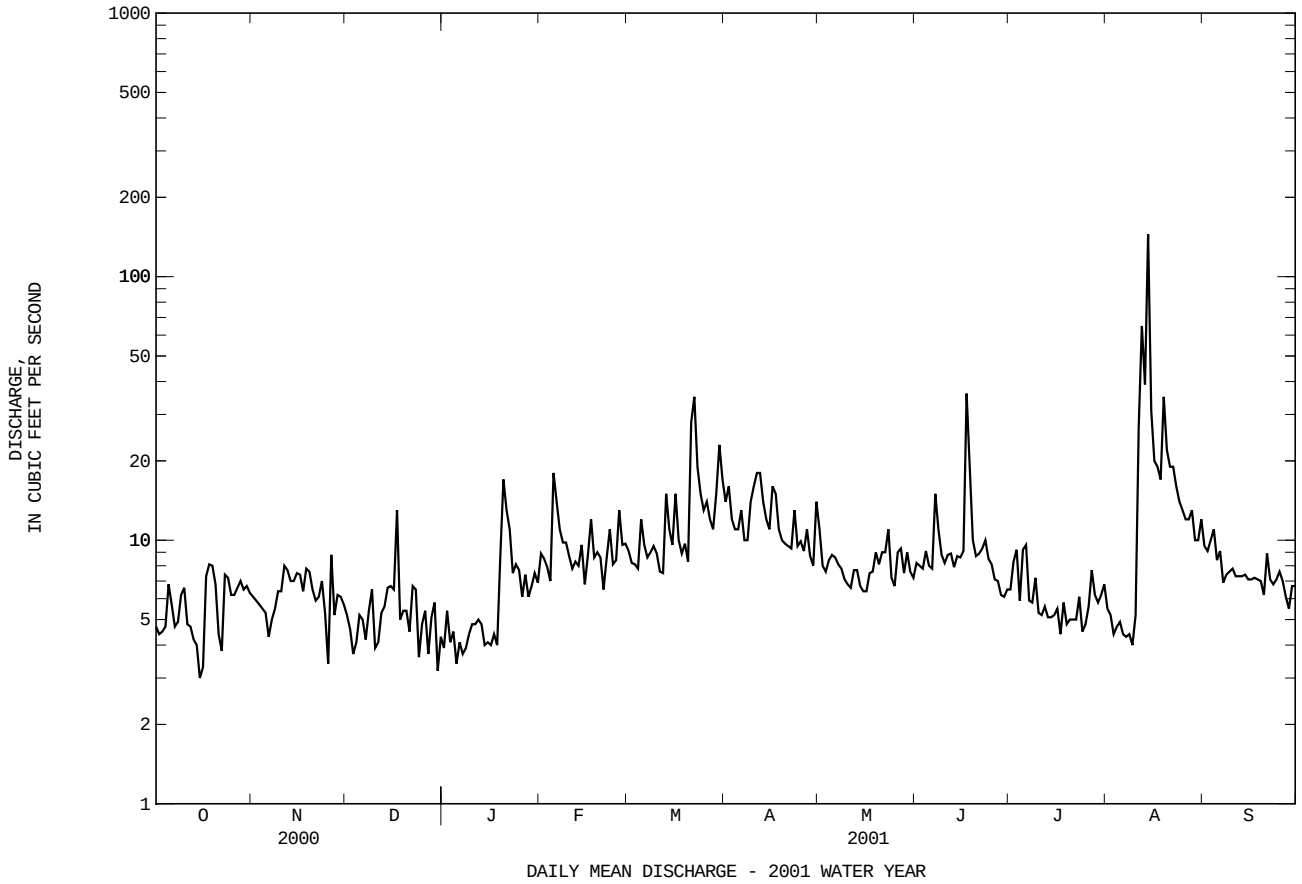
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1943 - 2001, BY WATER YEAR (WY)

MEAN	3.50	4.76	6.74	9.42	10.6	12.7	10.5	7.83	5.74	4.27	5.19	3.62
MAX	10.5	14.3	22.8	24.8	29.9	31.2	24.4	19.7	25.3	17.5	24.8	12.2
(WY)	1972	1957	1946	1978	1998	1994	1983	1948	1948	1945	1989	1992
MIN	.67	.77	.76	.92	1.19	4.05	3.78	2.36	1.80	1.21	.65	.67
(WY)	1989	1989	1989	1989	1989	1966	1985	1985	1977	1977	1944	1988

01484500 STOCKLEY BRANCH AT STOCKLEY, DE--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1943 - 2001	
ANNUAL TOTAL	3268.5		3321.8			
ANNUAL MEAN	8.93		9.10		7.08	
HIGHEST ANNUAL MEAN					12.0	1958
LOWEST ANNUAL MEAN					3.24	1966
HIGHEST DAILY MEAN	91	Mar 22	145	Aug 14	195	Mar 3 1994
LOWEST DAILY MEAN	2.2	Jul 14	3.0	Oct 15	.13	(a)
ANNUAL SEVEN-DAY MINIMUM	3.4	Aug 25	4.0	Jan 3	.13	Sep 2 1944
MAXIMUM PEAK FLOW			227	Aug 14	(b)303	Mar 3 1994
MAXIMUM PEAK STAGE			5.63	Aug 14	5.63	Aug 14 2001
INSTANTANEOUS LOW FLOW			1.8	Jan 3	.13	(c)
ANNUAL RUNOFF (CFSM)	1.70		1.74		1.35	
ANNUAL RUNOFF (INCHES)	23.20		23.58		18.36	
10 PERCENT EXCEEDS	14		14		14	
50 PERCENT EXCEEDS	8.1		7.5		5.2	
90 PERCENT EXCEEDS	4.2		4.5		1.6	

a Sept. 2-11, 1944.
b From rating curve extended above 150 ft^3/s.
c Sept. 1-11, 1944.



01484525 MILLSBORO POND OUTLET AT MILLSBORO, DE

LOCATION.--Lat 38°35'40.4", long 75°17'27.7", Sussex County, Hydrologic Unit 02060010, on right bank just upstream from Millsboro Pond Dam, 10 ft upstream from bridge on State Highway 24, at Millsboro.

DRAINAGE AREA.--66.0 mi^2.

PERIOD OF RECORD.--May 1986 to September 1988, March 1991 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1.98 ft above sea level.

REMARKS.--No estimated daily discharges. Records good. Outflow from lake controlled by sluice gates at outlet. No gate openings during water year. Natural flow of stream affected by inflow from sand mine dewatering process. U.S. Geological Survey gage-height telemeter at station. Several measurements of water temperature were made during the period.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 755 ft^3/s, Aug. 14, gage height, 4.08 ft; minimum discharge, 34 ft^3/s, July 25, 26, Aug. 10.

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	113	60	57	53	91	98	203	116	71	67	52	80
2	108	60	57	56	86	98	179	113	83	70	47	80
3	103	60	54	53	82	98	166	109	92	67	41	74
4	97	60	54	51	81	100	153	104	78	64	40	70
5	93	61	54	52	120	122	146	96	80	63	40	65
6	95	60	54	53	161	117	140	85	92	73	40	61
7	88	60	53	52	145	108	137	84	126	70	40	58
8	84	60	51	54	125	101	135	84	166	62	40	55
9	76	61	51	59	108	99	141	84	132	60	37	54
10	72	68	51	57	106	95	150	84	97	60	35	54
11	67	64	51	53	98	90	155	81	86	56	77	54
12	64	60	52	51	93	84	177	77	80	47	281	54
13	64	60	51	51	100	118	179	75	79	44	303	52
14	64	62	62	52	102	134	164	74	74	44	548	48
15	64	62	66	57	98	120	151	73	74	44	509	47
16	64	60	63	57	98	136	148	70	75	44	257	47
17	64	54	81	56	120	136	153	70	167	40	166	47
18	70	54	86	55	117	122	144	70	206	45	141	47
19	70	54	71	72	102	111	134	79	134	53	144	47
20	67	54	64	140	98	105	125	82	103	45	171	50
21	65	52	64	171	97	159	123	89	89	44	142	57
22	64	49	63	148	97	358	123	102	88	44	115	56
23	64	47	63	119	103	322	123	140	92	44	103	51
24	64	47	61	104	102	222	131	106	115	41	102	46
25	64	47	58	101	100	181	134	87	94	37	102	54
26	64	87	57	97	113	168	122	93	85	55	94	54
27	64	96	55	93	110	160	120	102	79	92	88	45
28	64	74	56	88	98	153	118	91	70	67	88	44
29	64	64	56	84	---	150	114	85	69	67	85	42
30	62	61	56	91	---	198	113	84	67	86	81	41
31	60	---	55	96	---	226	---	74	---	66	80	---
TOTAL	2286	1818	1827	2376	2951	4489	4301	2763	2943	1761	4089	1634
MEAN	73.7	60.6	58.9	76.6	105	145	143	89.1	98.1	56.8	132	54.5
MAX	113	96	86	171	161	358	203	140	206	92	548	80
MIN	60	47	51	51	81	84	113	70	67	37	35	41
CFSM	1.12	.92	.89	1.16	1.60	2.19	2.17	1.35	1.49	.86	2.00	.83
IN.	1.29	1.02	1.03	1.34	1.66	2.53	2.42	1.56	1.66	.99	2.30	.92

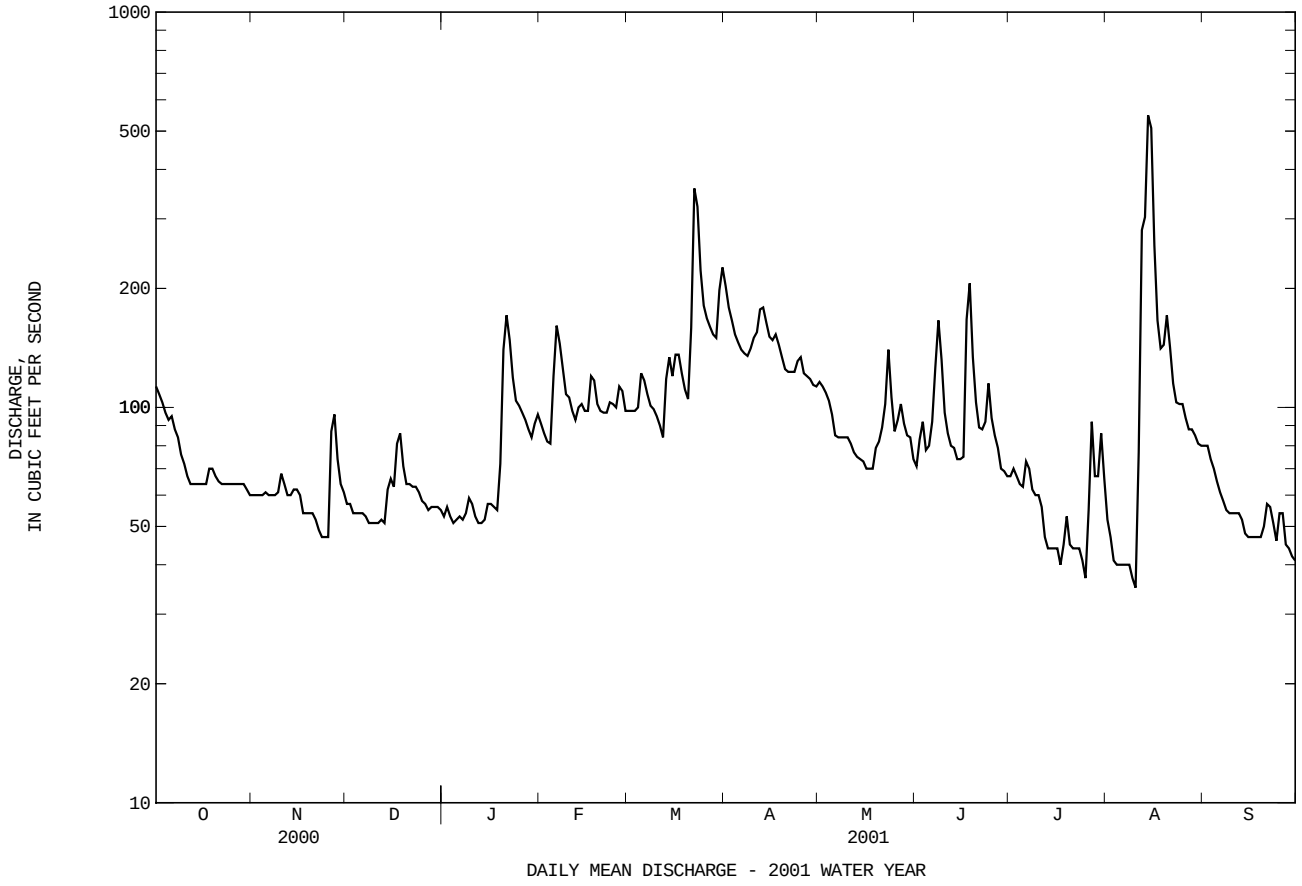
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 1988, 1991 - 2001, BY WATER YEAR (WY)

MEAN	52.5	54.5	77.8	103	145	167	137	98.3	67.9	50.6	57.3	53.5
MAX	109	81.6	198	174	428	373	184	151	98.1	75.8	132	122
(WY)	1997	1998	1997	1998	1998	1994	1994	1996	2001	1996	2001	2000
MIN	20.8	24.3	33.2	49.6	68.1	94.1	69.1	47.3	34.0	23.2	22.1	20.1
(WY)	1987	1988	1988	1999	1999	1992	1995	1986	1986	1986	1999	1986

01484525 MILLSBORO POND OUTLET AT MILLSBORO, DE--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1986 - 1988, 1991 - 2001	
ANNUAL TOTAL	33376		33238			
ANNUAL MEAN	91.2		91.1		89.8	
HIGHEST ANNUAL MEAN					132	1998
LOWEST ANNUAL MEAN					55.0	1988
HIGHEST DAILY MEAN	550	Mar 23	548	Aug 14	1260	Mar 4 1994
LOWEST DAILY MEAN	47	(a)	35	Aug 10	(b, e).00	Aug 30 1998
ANNUAL SEVEN-DAY MINIMUM	50	Nov 19	39	Aug 4	15	Aug 7 1999
MAXIMUM PEAK FLOW			755	Aug 14	(c)1770	Mar 3 1994
MAXIMUM PEAK STAGE			4.08	Aug 14	4.94	Mar 3 1994
INSTANTANEOUS LOW FLOW			34	(d)	.00	(f)
ANNUAL RUNOFF (CFSM)	1.38		1.38		1.36	
ANNUAL RUNOFF (INCHES)	18.81		18.73		18.49	
10 PERCENT EXCEEDS	164		147		158	
50 PERCENT EXCEEDS	71		78		70	
90 PERCENT EXCEEDS	57		49		27	

a Nov. 23-25.
b As a result of lake being filled after gages were closed.
e Estimated.
c From rating curve extended above 1,500 ft^3/s.
d July 25, 26, Aug. 10.
f Aug. 29-31, 1998.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01484695 BEAVERDAM DITCH NEAR MILLVILLE, DE

LOCATION.--Lat 38°31'17.2", long 75°08'00.2", Sussex County, Hydrologic Unit 02060010, at culverts on Road No. 368, 1.6 mi upstream from mouth, and 2.1 mi southwest of Millville.

DRAINAGE AREA.--2.25 mi^2.

PERIOD OF RECORD.--August 1998 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 10 ft above sea level, from topographic map.

REMARKS.--Records good except those for estimated daily discharges (missing record, ice effect), which are fair. Flow occasionally affected by releases from sand pits located upstream from station. U.S. Geological Survey gage-height telemeter at station. Several measurements of water temperature were made during the year. Water-quality data for some prior years have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 50 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Aug 14	0415	*63	*3.35	No other peak greater than base discharge.			

Minimum discharge, 0.14 ft^3/s, Sept. 24, 27, 29, 30.

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	7.3	.36	1.6	e.40	2.0	4.4	10	1.1	.83	1.0	.55	.41
2	6.3	.33	1.2	e.37	1.5	3.9	8.4	1.1	1.0	1.5	.37	.36
3	5.3	.32	.93	e.34	1.2	3.4	6.8	.99	.97	.84	.32	.33
4	4.7	.32	.79	.32	.95	3.8	5.7	.92	.68	.65	.29	.31
5	4.0	.30	.71	.30	16	9.9	5.1	.82	.99	.64	.27	.29
6	4.9	.30	.62	.26	17	8.2	4.5	.75	2.9	.88	.25	.27
7	9.9	.29	.55	.26	9.9	6.3	4.3	.68	14	.53	.24	.25
8	7.4	.28	.47	.28	7.3	5.2	3.9	.67	14	.41	.21	.24
9	5.6	.28	.42	.32	6.2	4.5	4.0	.68	8.1	.39	.20	.22
10	4.7	.37	.41	.29	5.6	3.9	4.5	.65	6.2	.34	.20	.21
11	3.9	.32	.42	.26	4.6	3.3	7.2	.58	4.8	.31	.21	.20
12	3.3	.27	.45	.26	3.9	2.8	12	.55	3.9	.28	.23	.19
13	2.7	.26	.39	.26	5.0	11	10	.49	3.1	.26	5.4	.18
14	2.2	e.40	1.8	.30	5.3	9.1	8.8	.43	2.4	.25	56	.19
15	1.8	e.38	3.1	1.1	5.1	7.8	6.7	.40	1.7	.24	25	.19
16	1.7	.31	3.3	1.1	4.5	16	6.4	.39	1.6	.22	10	.18
17	1.5	.30	6.4	.83	6.8	11	6.4	.38	12	.20	6.2	.17
18	1.8	.29	6.8	.79	5.8	8.0	5.9	.40	11	.21	4.3	.17
19	2.2	.28	4.6	8.8	4.8	6.1	4.6	.66	6.3	.23	3.7	.16
20	1.8	.26	e3.5	28	4.2	5.1	4.0	.73	4.9	.21	3.0	.16
21	1.5	.26	e2.5	26	3.8	16	3.7	.91	3.7	.20	2.1	.17
22	1.1	.25	e1.9	11	3.5	27	3.3	1.1	2.7	.20	1.5	.17
23	1.1	.25	e1.5	6.7	4.2	14	3.1	2.9	3.9	.19	1.2	.16
24	.93	.24	e1.2	5.2	4.2	8.9	2.7	2.3	12	.18	1.4	.15
25	.90	.24	e1.0	4.3	5.7	6.9	2.6	1.7	9.4	.18	1.1	.18
26	.89	7.0	e.82	3.5	8.0	6.1	2.2	2.3	6.7	.45	.82	.17
27	.87	5.1	.72	3.2	6.1	5.6	1.8	2.3	4.8	.86	.68	.16
28	.84	3.5	e.62	2.5	5.1	4.8	1.5	2.4	3.3	.33	.66	.16
29	.48	2.5	e.55	1.9	---	4.5	1.0	1.9	2.1	.79	.55	.15
30	.41	2.1	e.49	2.4	---	20	1.1	1.4	1.2	3.5	.47	.15
31	.38	---	e.44	2.9	---	15	---	.99	---	1.2	.43	---
TOTAL	92.40	27.66	50.20	114.44	158.25	262.5	152.2	33.57	151.17	17.67	127.85	6.30
MEAN	2.98	.92	1.62	3.69	5.65	8.47	5.07	1.08	5.04	.57	4.12	.21
MAX	9.9	7.0	6.8	28	17	27	12	2.9	14	3.5	56	.41
MIN	.38	.24	.39	.26	.95	2.8	1.0	.38	.68	.18	.20	.15
CFSM	1.34	.41	.73	1.66	2.53	3.80	2.28	.49	2.26	.26	1.85	.09
IN.	1.54	.46	.84	1.91	2.64	4.38	2.54	.56	2.52	.29	2.13	.11

e Estimated

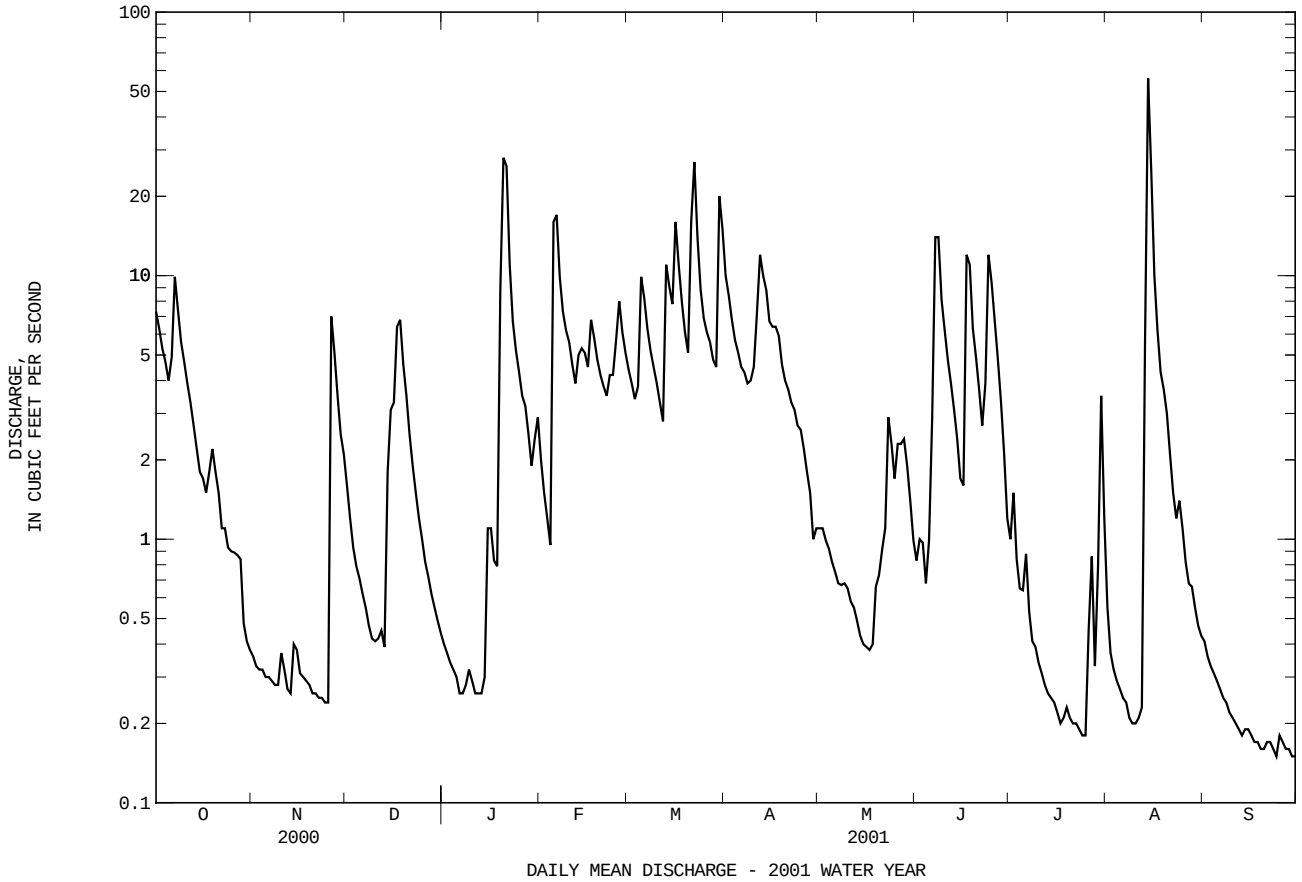
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1998 - 2001, BY WATER YEAR (WY)

MEAN	2.85	1.27	1.87	4.00	5.18	8.91	5.13	1.70	3.99	2.73	2.98	2.74
MAX	5.47	2.74	3.61	5.13	5.65	11.3	7.52	3.22	6.73	7.47	4.74	5.88
(WY)	2000	2000	2000	1999	2001	2000	2000	2000	2000	2000	2000	2000
MIN	.095	.14	.37	3.16	4.55	6.99	2.80	.78	.22	.13	.061	.15
(WY)	1999	1999	1999	2000	1999	1999	1999	1999	1999	1999	1999	1998

01484695 BEAVERDAM DITCH NEAR MILLVILLE, DE--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1998 - 2001	
ANNUAL TOTAL	1855.48		1194.21			
ANNUAL MEAN	5.07		3.27		3.67	
HIGHEST ANNUAL MEAN					5.60	2000
LOWEST ANNUAL MEAN					2.15	1999
HIGHEST DAILY MEAN	119	Mar 22	56	Aug 14	119	Mar 22 2000
LOWEST DAILY MEAN	.24	(a)	.15	(b)	.02	(c)
ANNUAL SEVEN-DAY MINIMUM	.25	Nov 19	.16	Sep 24	.02	Aug 7 1999
MAXIMUM PEAK FLOW			63	Aug 14	(d)147	Mar 22 2000
MAXIMUM PEAK STAGE			3.35	Aug 14	4.97	Mar 22 2000
INSTANTANEOUS LOW FLOW			.14	(f)	.02	(g)
ANNUAL RUNOFF (CFSM)	2.27		1.47		1.65	
ANNUAL RUNOFF (INCHES)	30.95		19.92		22.38	
10 PERCENT EXCEEDS	10		8.0		7.8	
50 PERCENT EXCEEDS	2.8		1.2		1.5	
90 PERCENT EXCEEDS	.44		.23		.11	

a Nov. 24, 25.
b Sept. 24, 29, 30.
c Aug. 7-13, 1999.
d From rating curve extended above 55 ft^3/s.
f Sept. 24, 27, 29, 30.
g Aug. 1, 8-14, 1999.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

0148471320 BIRCH BRANCH AT SHOWELL, MD

LOCATION.--Lat 38°24'33.6", long 75°12'44.6", Worchester County, Hydrologic Unit 02060010, on left bank at highway bridge 0.75 mi north of Showel, and 1.1 mi upstream from mouth.

DRAINAGE AREA.--6.38 mi^2.

PERIOD OF RECORD.--December 1999 to September 2001.

GAGE.--Water-stage recorder. Datum of gage is 10 ft above sea level, from topographic map.

REMARKS.--Records good except those for estimated daily discharges (missing record, ice effect, backwater), which are poor. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT PERIOD.--Peak discharges greater than base discharge of 100 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 22, 2000	0115	*563	*9.38	Feb 5, 2001	1445	119	7.49
Jul 20, 2000	0730	103	6.85	Jun 17, 2001	1045	112	8.02
				Mar 21, 2001	1745	*203	*8.98

December 1999 to September 2000 Minimum discharge, 0.96 ft^3/s, June 2.
2001 Water Year Minimum discharge, 0.47 ft^3/s, Sept. 29.

DISCHARGE, CUBIC FEET PER SECOND, DECEMBER 1999 to SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	e3.0	2.4	20	e7.0	13	8.4	1.2	8.3	e5.8	1.8
2	---	---	e2.7	2.3	14	e6.0	11	7.6	1.1	5.6	e5.6	1.7
3	---	---	e2.6	2.3	12	e5.5	11	6.5	1.5	4.0	e6.5	3.1
4	---	---	e2.4	2.4	13	e4.9	11	5.7	1.4	3.9	11	19
5	---	---	e2.2	7.5	12	e4.4	9.6	5.2	1.3	3.5	22	12
6	---	---	e2.0	5.2	11	e4.0	8.7	4.5	2.0	2.8	11	6.4
7	---	---	e4.5	4.5	12	e3.6	8.0	3.8	1.9	2.3	7.2	4.6
8	---	---	e4.0	3.7	e11	e3.4	7.4	3.3	1.5	1.9	5.3	3.7
9	---	---	e3.5	3.5	e11	e3.2	10	2.9	1.3	1.7	4.0	3.1
10	---	---	e3.0	6.4	e11	e3.0	8.8	2.5	1.1	1.8	e3.0	2.6
11	---	---	e6.0	9.2	e11	e2.8	7.8	2.6	1.0	2.6	e3.5	2.2
12	---	---	e5.0	6.0	e10	e3.0	7.2	2.2	1.2	2.0	e4.0	2.0
13	---	---	e4.0	5.0	e9.0	e2.6	6.3	2.1	1.6	1.7	e3.5	1.9
14	---	---	e25	3.7	e12	e2.4	6.0	1.9	1.3	2.0	e12	1.8
15	---	---	e17	3.0	e10	e2.3	11	1.7	1.3	5.4	9.4	4.2
16	---	---	e11	3.1	e9.0	e2.2	28	1.6	2.8	5.2	6.1	2.7
17	---	---	8.1	2.7	e8.0	6.7	16	1.6	1.6	3.6	4.4	2.1
18	---	---	6.6	2.6	e33	6.1	35	1.5	7.5	2.7	3.5	e1.7
19	---	---	5.7	2.4	e20	4.7	29	1.4	3.5	2.3	3.4	1.5
20	---	---	5.9	2.6	e15	4.3	19	1.5	2.7	49	2.9	1.5
21	---	---	6.9	2.4	e11	106	16	1.8	2.0	15	2.5	1.4
22	---	---	6.1	2.3	e9.5	311	19	4.4	2.4	8.4	2.2	1.4
23	---	---	5.3	2.1	e8.5	93	14	3.8	2.0	5.8	2.0	1.4
24	---	---	4.8	2.0	e7.5	40	11	3.1	1.6	4.6	1.9	1.5
25	---	---	4.0	3.1	e7.0	26	25	2.7	1.4	5.0	1.8	3.1
26	---	---	3.7	3.3	e6.6	22	38	2.3	1.2	10	1.6	39
27	---	---	3.5	3.2	e6.4	18	19	1.9	1.1	e9.5	1.5	13
28	---	---	3.2	2.7	e10	43	15	1.9	3.3	e8.5	1.9	7.6
29	---	---	3.0	2.3	e8.5	24	13	2.4	40	e7.5	1.9	5.4
30	---	---	2.7	4.4	---	17	10	1.9	17	e6.8	1.8	4.4
31	---	---	2.6	32	---	15	---	1.4	---	e6.2	1.9	---
TOTAL	---	---	170.0	140.3	339.0	797.1	443.8	96.1	110.8	199.6	155.1	157.8
MEAN	---	---	5.48	4.53	11.7	25.7	14.8	3.10	3.69	6.44	5.00	5.26
MAX	---	---	25	32	33	311	38	8.4	40	49	22	39
MIN	---	---	2.0	2.0	6.4	2.2	6.0	1.4	1.0	1.7	1.5	1.4
CFSM	---	---	.86	.71	1.83	4.03	2.32	.49	.58	1.01	.78	.82
IN.	---	---	.99	.82	1.98	4.65	2.59	.56	.65	1.16	.90	.92

e Estimated

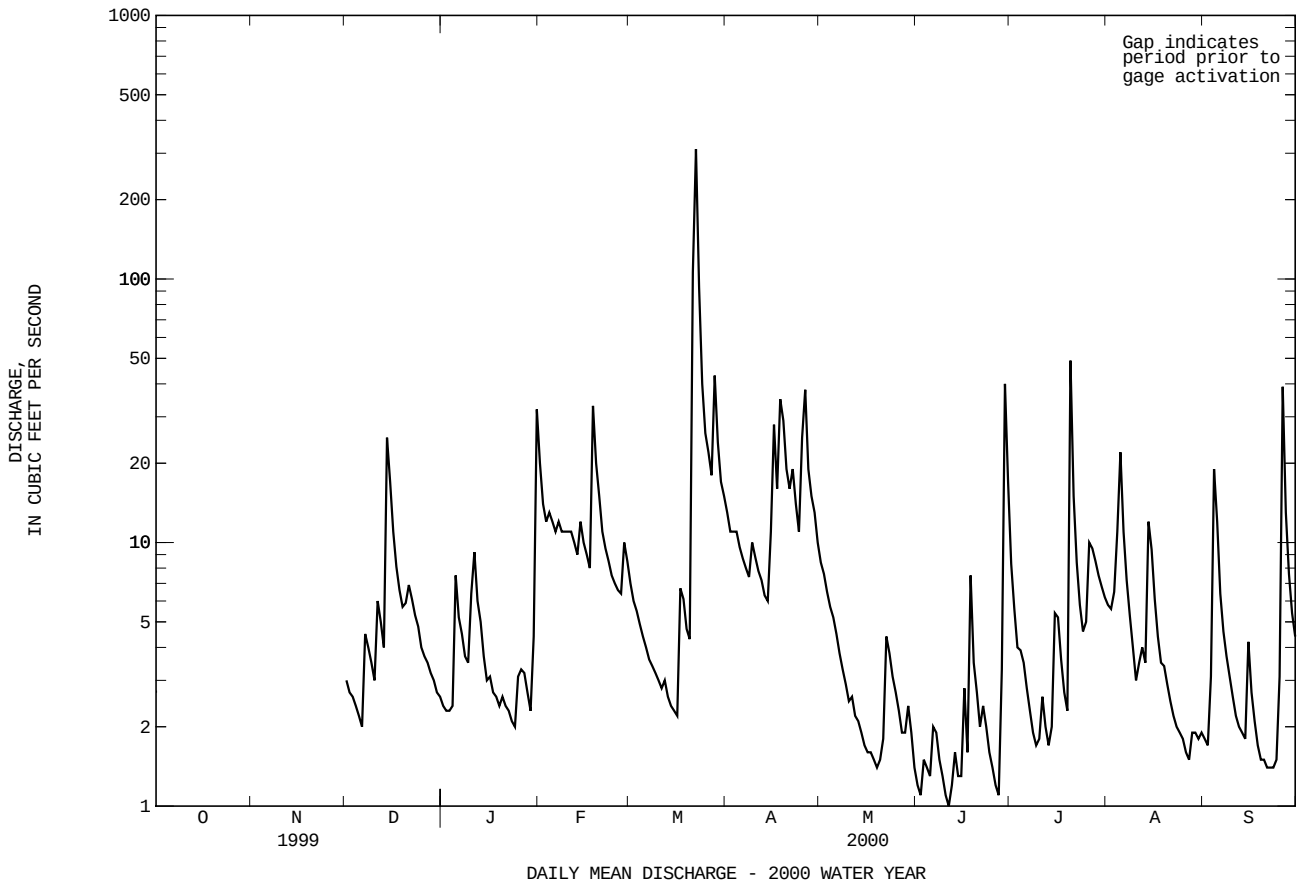
STATISTICS OF MONTHLY MEAN DATA FOR DECEMBER 1999 TO SEPTEMBER 2000

MEAN	---	---	5.48	4.53	11.7	25.7	14.8	3.10	3.69	6.44	5.00	5.26
MAX	---	---	5.48	4.53	11.7	25.7	14.8	3.10	3.69	6.44	5.00	5.26
(WY)	---	---	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
MIN	---	---	5.48	4.53	11.7	25.7	14.8	3.10	3.69	6.44	5.00	5.26
(WY)	---	---	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000

0148471320 BIRCH BRANCH AT SHOWELL, MD--Continued

SUMMARY STATISTICS	FOR PERIOD DECEMBER 1999 to SEPTEMBER 2000	
HIGHEST DAILY MEAN	311	Mar 22
LOWEST DAILY MEAN	1.0	Jun 11
ANNUAL SEVEN-DAY MINIMUM	1.3	Jun 9
MAXIMUM PEAK FLOW	(a)563	Mar 22
MAXIMUM PEAK STAGE	9.38	Mar 22
INSTANTANEOUS LOW FLOW	.96	Jun 2
10 PERCENT EXCEEDS	16	
50 PERCENT EXCEEDS	4.0	
90 PERCENT EXCEEDS	1.6	

a From rating curve extended above 230 ft^3/s.



DAILY MEAN DISCHARGE - 2000 WATER YEAR

0148471320 BIRCH BRANCH AT SHOWELL, MD--Continued

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	3.8	e1.1	2.3	e1.5	8.1	7.2	14	5.1	4.6	4.0	2.4	.92
2	3.4	e1.0	2.2	e1.5	7.4	6.7	11	4.9	5.0	4.1	1.9	.85
3	3.1	e1.0	2.1	e1.4	7.1	6.2	9.0	4.7	4.7	3.8	1.7	.81
4	2.7	e1.0	2.1	e1.4	6.7	6.5	7.9	4.6	e4.0	3.8	1.6	.78
5	2.5	e1.0	2.0	e1.4	55	13	7.0	4.5	7.4	3.9	1.4	.76
6	2.3	e1.0	e1.9	e1.4	38	11	6.6	4.4	12	4.4	1.3	.73
7	2.2	e1.0	e1.9	e1.4	e20	8.7	6.3	4.3	24	3.7	1.2	.72
8	2.0	e1.0	e1.8	e1.4	e15	7.7	6.0	4.3	13	3.7	1.2	.69
9	1.9	1.4	e1.8	e1.6	e11	7.3	7.1	4.2	8.0	3.6	1.1	.67
10	1.8	1.6	e1.8	e1.4	10	6.7	7.4	4.2	6.3	3.6	1.0	.66
11	1.7	e1.3	e1.8	e1.4	8.8	6.1	12	4.1	5.4	3.5	1.1	.64
12	1.7	e1.2	e1.8	e1.4	7.6	5.8	15	4.1	5.0	3.4	1.0	.62
13	1.6	e1.2	e1.8	e1.4	9.7	27	12	4.0	4.6	3.0	5.8	.60
14	1.6	e1.3	4.2	e1.4	9.3	14	10	3.9	4.4	e2.7	24	.62
15	1.5	1.8	6.2	e4.8	8.5	e20	8.0	3.9	4.3	e2.4	4.4	.61
16	1.4	e1.3	8.2	e5.0	7.6	e32	8.5	3.8	4.2	e2.1	2.9	.57
17	1.4	e1.2	14	e4.3	12	16	9.7	3.9	51	e1.9	2.3	.57
18	1.4	e1.2	11	e3.8	9.0	12	8.5	3.9	15	2.1	2.1	.55
19	1.4	e1.2	8.1	19	7.7	9.7	6.6	4.8	8.2	2.0	2.3	.54
20	1.4	e1.1	7.1	57	7.1	8.8	5.8	4.3	6.3	1.4	2.0	.55
21	1.4	e1.1	6.1	41	6.8	69	5.4	4.7	5.4	1.3	1.7	.62
22	1.3	e1.0	e5.0	17	6.4	60	5.1	5.8	4.9	1.2	1.5	.56
23	1.3	e1.0	e3.9	12	7.0	25	5.5	11	5.8	1.2	1.3	.53
24	1.3	e1.0	e3.0	9.9	7.6	13	5.8	6.3	13	1.2	1.4	.57
25	e1.2	e1.0	e2.3	8.8	9.8	9.2	5.7	5.4	7.2	1.0	1.2	.74
26	e1.2	4.8	e2.0	7.8	12	8.4	5.4	6.0	5.7	1.3	1.2	.54
27	e1.2	3.0	e1.9	7.6	9.1	7.9	5.1	6.7	5.0	1.4	1.1	.50
28	e1.2	2.7	e1.8	7.0	8.0	7.0	5.0	6.9	4.5	1.2	1.1	.51
29	e1.2	2.5	e1.7	6.6	---	6.9	5.2	6.3	4.3	2.3	1.0	.49
30	e1.1	2.4	e1.6	7.1	---	55	5.1	5.6	4.1	11	.95	.51
31	e1.1	---	e1.5	8.6	---	25	---	4.9	---	3.8	.94	---
TOTAL	54.3	44.4	114.9	247.3	332.3	518.8	231.7	155.5	257.3	90.0	76.09	19.03
MEAN	1.75	1.48	3.71	7.98	11.9	16.7	7.72	5.02	8.58	2.90	2.45	.63
MAX	3.8	4.8	14	57	55	69	15	11	51	11	24	.92
MIN	1.1	1.0	1.5	1.4	6.4	5.8	5.0	3.8	4.0	1.0	.94	.49
CFSM	.27	.23	.58	1.25	1.86	2.62	1.21	.79	1.34	.46	.38	.10
IN.	.32	.26	.67	1.44	1.94	3.02	1.35	.91	1.50	.52	.44	.11

e Estimated

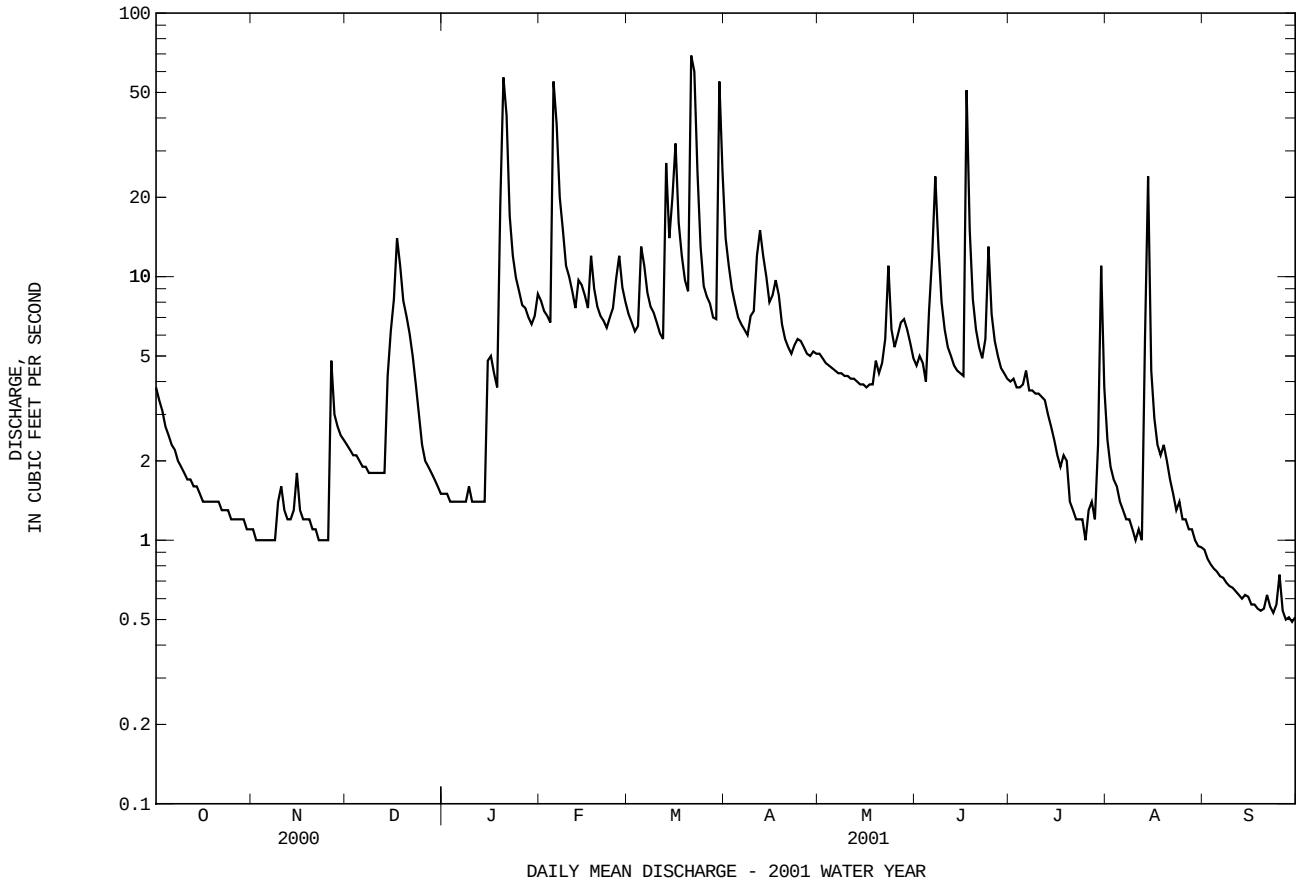
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2000 - 2001, BY WATER YEAR (WY)

MEAN	1.75	1.48	4.60	6.25	11.8	21.2	11.3	4.06	6.14	4.67	3.73	2.95
MAX	1.75	1.48	5.48	7.98	11.9	25.7	14.8	5.02	8.58	6.44	5.00	5.26
(WY)	2001	2001	2000	2001	2001	2000	2000	2001	2001	2000	2000	2000
MIN	1.75	1.48	3.71	4.53	11.7	16.7	7.72	3.10	3.69	2.90	2.45	.63
(WY)	2001	2001	2001	2000	2000	2001	2001	2000	2000	2001	2001	2001

0148471320 BIRCH BRANCH AT SHOWELL, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 2000 - 2001	
ANNUAL TOTAL	2653.2		2141.62			
ANNUAL MEAN	7.25		5.87		5.87	
HIGHEST ANNUAL MEAN					5.87	2001
LOWEST ANNUAL MEAN					5.87	2001
HIGHEST DAILY MEAN	311	Mar 22	69	Mar 21	311	Mar 22 2000
LOWEST DAILY MEAN	(e)1.0	(a)	.49	Sep 29	.49	Sep 29 2001
ANNUAL SEVEN-DAY MINIMUM	1.0	Nov 2	.55	Sep 24	.55	Sep 24 2001
MAXIMUM PEAK FLOW			203	Mar 21	(b)563	Mar 22 2000
MAXIMUM PEAK STAGE			8.98	Mar 21	9.38	Mar 22 2000
INSTANTANEOUS LOW FLOW			.47	Sep 29	.47	Sep 29 2001
ANNUAL RUNOFF (CFSM)	1.14		.92		.92	
ANNUAL RUNOFF (INCHES)	15.47		12.49		12.50	
10 PERCENT EXCEEDS	14		11		13	
50 PERCENT EXCEEDS	3.0		3.9		4.0	
90 PERCENT EXCEEDS	1.3		1.0		1.2	

e Estimated.
a June 11, Nov. 2-8, 22-25, 2000.
b From rating curve extended above 230 ft^3/s.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01485000 POCOMOKE RIVER NEAR WILLARDS, MD

LOCATION.--Lat 38°23'20.4", long 75°19'28.0", Worcester County, Hydrologic Unit 02060009, on left bank 30 ft downstream from bridge on State Highway 346, 0.6 mi upstream from Burnt Mill Branch, 1.3 mi east of Willards, 1.3 mi west of Whaleysville, and 50.3 mi upstream from mouth.

DRAINAGE AREA.--60.5 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1949 to current year.

GAGE.--Water-stage recorder. Datum of gage is 13.95 ft above sea level.

REMARKS.--No estimated daily discharges. Records good. U.S. Geological Survey gage-height telemeter at station.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 22	0100	*659	*10.31	No other peak greater than base discharge.			

Minimum discharge, 11 ft^3/s, July 17, 18.

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	75	18	28	25	82	85	251	40	37	27	57	24
2	65	17	26	24	74	77	203	38	40	25	40	22
3	58	17	24	22	70	70	170	37	47	23	33	21
4	51	17	23	22	64	64	145	34	39	21	29	20
5	45	17	25	24	126	85	128	32	49	21	27	19
6	42	17	23	21	213	98	115	30	87	24	27	18
7	39	17	22	21	157	87	106	29	132	22	25	17
8	35	17	22	21	127	76	96	28	166	19	22	17
9	32	17	21	21	112	70	97	27	104	19	19	16
10	30	20	20	20	104	65	102	26	76	17	18	16
11	29	20	21	19	90	59	112	24	58	16	18	15
12	27	19	21	19	79	53	180	23	48	15	29	14
13	25	20	20	19	84	90	167	22	42	14	162	14
14	23	22	24	19	94	115	165	21	37	14	435	14
15	23	22	35	23	94	99	134	20	33	13	305	14
16	21	20	39	27	87	204	123	20	31	12	172	14
17	21	20	59	27	110	171	120	19	113	12	118	13
18	21	20	90	26	113	141	118	19	129	15	91	13
19	22	19	69	55	95	115	103	24	78	46	83	12
20	21	19	60	233	86	98	91	24	57	30	76	12
21	20	19	48	290	80	308	82	25	47	22	62	13
22	20	18	44	205	73	637	76	29	44	19	52	13
23	19	17	40	156	73	496	69	117	51	17	44	12
24	19	17	35	134	74	330	63	72	91	16	44	12
25	19	17	34	118	85	235	60	53	69	15	41	14
26	19	28	31	103	126	187	56	57	50	14	36	13
27	19	41	29	96	110	167	52	80	40	23	33	12
28	19	35	29	88	96	146	48	68	35	22	31	12
29	19	31	28	80	---	133	44	61	31	22	29	12
30	18	29	27	81	---	319	41	52	29	97	26	12
31	18	---	26	90	---	332	---	42	---	96	25	---
TOTAL	914	627	1043	2129	2778	5212	3317	1193	1890	768	2209	450
MEAN	29.5	20.9	33.6	68.7	99.2	168	111	38.5	63.0	24.8	71.3	15.0
MAX	75	41	90	290	213	637	251	117	166	97	435	24
MIN	18	17	20	19	64	53	41	19	29	12	18	12
CFSM	.49	.35	.56	1.14	1.64	2.78	1.83	.64	1.04	.41	1.18	.25
IN.	.56	.39	.64	1.31	1.71	3.20	2.04	.73	1.16	.47	1.36	.28

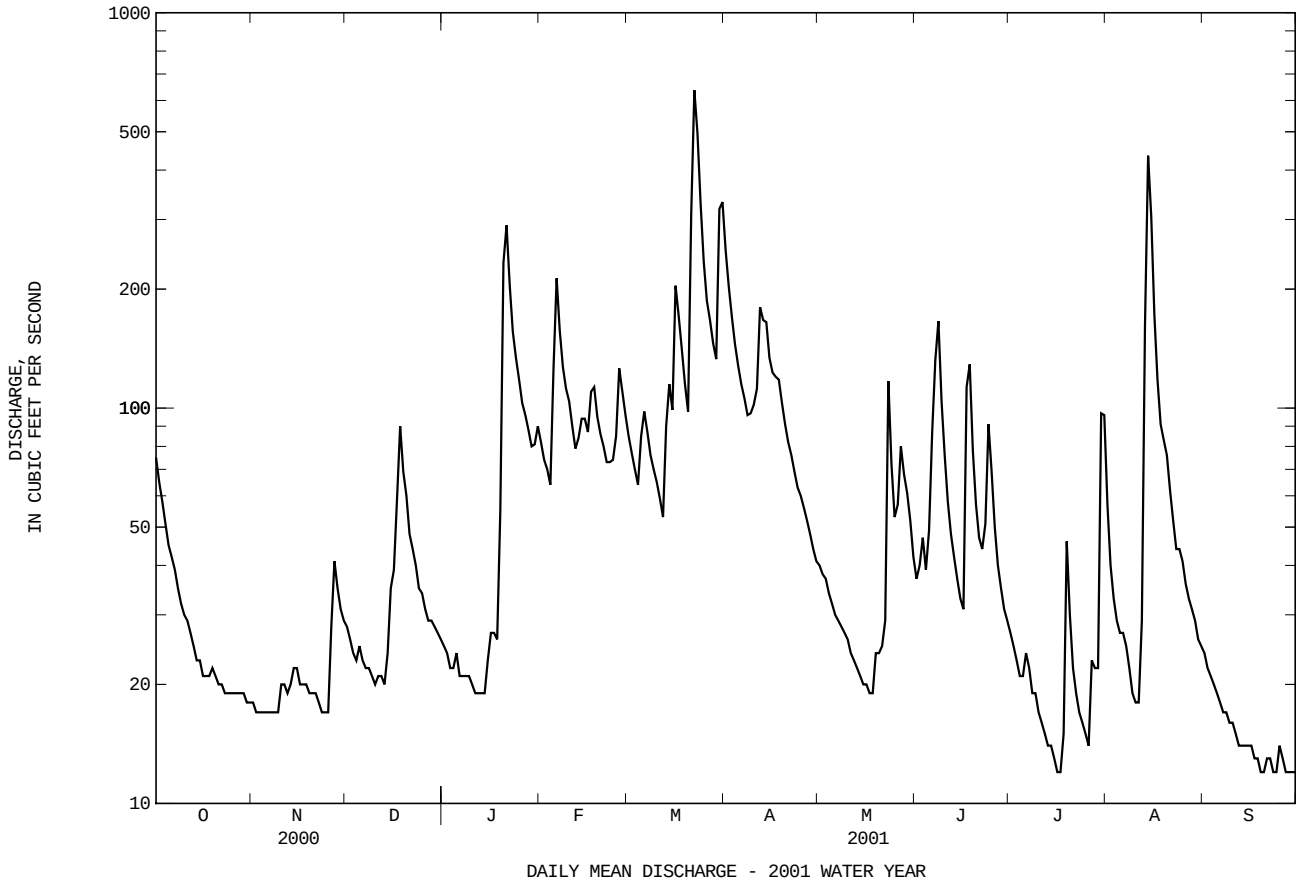
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1950 - 2001, BY WATER YEAR (WY)

MEAN	35.7	48.3	80.3	112	128	147	101	58.7	44.2	34.8	50.6	26.0
MAX	164	221	306	322	482	393	277	236	216	217	507	128
(WY)	1977	1980	1997	1978	1998	1994	1983	1978	1972	1975	1989	1979
MIN	2.47	3.36	7.16	15.5	50.0	49.7	29.5	16.1	9.31	6.29	2.89	3.13
(WY)	1999	1999	1999	1981	1981	1981	1995	1985	1986	1986	1999	1995

01485000 POCOMOKE RIVER NEAR WILLARDS, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1950 - 2001	
ANNUAL TOTAL	26781		22530			
ANNUAL MEAN	73.2		61.7		72.6	
HIGHEST ANNUAL MEAN					130	1979
LOWEST ANNUAL MEAN					24.8	1981
HIGHEST DAILY MEAN	1360	Mar 23	637	Mar 22	2580	Aug 20 1989
LOWEST DAILY MEAN	17	Sep 2	12	(a)	1.3	Sep 15 1995
ANNUAL SEVEN-DAY MINIMUM	17	Nov 2	12	Sep 18	1.8	Sep 10 1995
MAXIMUM PEAK FLOW			659	Mar 22	(b)2820	Aug 20 1989
MAXIMUM PEAK STAGE			10.31	Mar 22	15.41	Aug 20 1989
INSTANTANEOUS LOW FLOW			11	(c)	1.2	(d)
ANNUAL RUNOFF (CFSM)	1.21		1.02		1.20	
ANNUAL RUNOFF (INCHES)	16.47		13.85		16.30	
10 PERCENT EXCEEDS	133		128		158	
50 PERCENT EXCEEDS	39		33		40	
90 PERCENT EXCEEDS	20		17		8.5	

a July 16, 17, Sept. 19, 20, 23, 24, 27-30.
b From rating curve extended above 1,600 ft^3/s.
c July 17, 18.
d Sept. 12, 15, 16, 1995.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01485000 POCOMOKE RIVER NEAR WILLARDS, MD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1974-78, 1991, 1999 to current year.

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

DATE	TIME	SAMPLE TYPE	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)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)
OCT												
23...	1000	ENVIRONMENTAL	20	95	5.8	14.5	12.0	785	7.7	69	28	7.38
NOV												
21...	1200	ENVIRONMENTAL	19	111	5.1	3.5	5.0	771	11.4	88	26	7.03
DEC												
20...	1300	ENVIRONMENTAL	59	181	5.3	-3.5	5.0	768	8.5	66	41	10.3
JAN												
25...	1200	ENVIRONMENTAL	118	149	5.4	4.0	5.0	767	9.2	72	40	10.2
FEB												
21...	*1150*	*BLANK*	--	--	--	--	--	--	--	--	--	--
21...	1200	ENVIRONMENTAL	80	127	5.5	10.5	9.0	767	8.8	76	36	9.17
MAR												
19...	*1055*	*BLANK*	--	--	--	--	--	--	--	--	--	*.03*
19...	1100	ENVIRONMENTAL	116	122	5.2	11.0	8.0	776	9.5	79	35	8.86
30...	1300	ENVIRONMENTAL	383	120	5.4	10.5	11.0	761	9.1	83	34	8.65
APR												
09...	1100	ENVIRONMENTAL	100	125	6.0	31.0	13.5	761	8.1	78	30	7.62
24...	1000	ENVIRONMENTAL	64	104	5.7	27.0	18.0	763	6.4	68	29	7.38
24...	*1001*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
MAY												
07...	1030	ENVIRONMENTAL	29	99	5.8	14.5	14.0	774	8.0	76	27	7.01
23...	1100	ENVIRONMENTAL	140	129	6.0	25.0	18.5	--	5.2	--	30	7.61
JUN												
11...	0900	ENVIRONMENTAL	60	120	5.5	29.0	19.0	763	6.2	67	37	9.25
25...	0900	ENVIRONMENTAL	72	148	6.2	21.5	24.0	770	5.8	68	36	9.05
25...	*0905*	*REPLICATE*	--	--	--	--	--	--	--	--	*36*	*9.01*
JUL												
09...	1000	ENVIRONMENTAL	19	--	--	--	--	760	6.2	--	28	7.53
23...	1100	ENVIRONMENTAL	18	121	5.5	31.0	21.5	767	6.9	78	29	7.60
AUG												
13...	1000	ENVIRONMENTAL	103	74	5.5	--	22.5	765	5.5	63	22	5.62
20...	0900	ENVIRONMENTAL	78	124	5.6	30.0	22.0	763	5.9	67	33	8.55
SEP												
04...	1100	ENVIRONMENTAL	20	93	5.6	26.0	20.0	760	7.6	84	27	7.29
19...	1000	ENVIRONMENTAL	12	77	5.9	23.0	16.0	768	8.1	81	23	6.16

01485000 POCOMOKE RIVER NEAR WILLARDS, MD--Continued

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

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	BICAR-BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)
OCT													
23...	2.25	8.9	4.27	22	26	8.4	11.6	E.1	22.5	93	1.3	--	E.004
NOV													
21...	2.16	8.9	3.82	23	28	8.0	10.4	<.2	24.5	93	1.1	.640	.008
DEC													
20...	3.73	9.9	7.16	15	18	18.7	16.3	<.2	18.8	132	3.9	3.03	.016
JAN													
25...	3.65	8.7	5.03	10	13	17.3	13.1	<.2	18.0	130	5.8	4.93	.018
FEB													
21...	--	--	--	--	--	--	--	--	--	--	--	--	--
21...	3.08	8.7	4.47	12	14	16.1	12.8	<.2	15.9	114	4.6	3.78	.019
MAR													
19...	*<.008*	*M*	*<.09*	--	--	*<.1*	*<.1*	*<.2*	*<.1*	*<10*	--	--	*<.006*
19...	3.04	8.2	4.54	8	10	14.9	13.1	<.2	13.7	134	5.1	4.17	.009
30...	2.96	7.7	5.89	8	9	14.1	11.2	<.2	7.9	119	5.6	4.00	.020
APR													
09...	2.60	7.8	3.77	9	10	12.7	11.6	E.1	13.7	105	3.9	3.04	.011
24...	2.51	7.9	4.01	10	12	11.7	11.9	<.2	14.9	101	2.7	1.87	.010
24...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAY													
07...	2.20	8.6	3.23	23	28	8.2	10.7	<.2	18.9	91	1.9	1.02	.015
23...	2.61	7.3	7.83	19	23	14.2	10.4	<.2	9.4	120	5.0	2.57	.084
JUN													
11...	3.26	9.1	4.78	17	21	14.5	13.4	E.1	19.1	127	3.4	2.44	.020
25...	3.27	8.6	6.29	21	25	12.9	13.2	<.2	15.6	117	3.2	2.01	.025
25...	*3.26*	*8.5*	*6.25*	--	--	*12.9*	*13.6*	*E.1*	*15.7*	*120*	*3.2*	*2.04*	*.026*
JUL													
09...	2.28	8.7	3.22	--	--	7.2	10.5	<.2	20.7	101	1.1	.577	.010
23...	2.41	9.3	3.73	16	20	10.6	11.5	<.2	19.9	104	1.4	.661	.007
AUG													
13...	1.86	6.0	4.28	16	19	6.8	8.2	<.2	12.6	77	1.8	.640	.012
20...	2.90	8.8	5.44	15	19	13.2	11.8	E.1	19.9	139	2.8	1.92	.014
SEP													
04...	2.17	9.0	3.23	22	26	7.0	10.2	<.2	24.3	91	--	--	E.009
19...	1.77	8.8	2.43	21	26	6.7	9.6	<.2	26.5	94	1.1	.762	.009

DATE	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN DIS-SOLVED (MG/L AS N) (00602)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	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)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)
OCT													
23...	.853	<.041	.48	.42	1.3	--	--	.058	.017	E.013	--	41	<2.0
NOV													
21...	.648	.053	.43	.43	1.1	.38	.38	.052	.013	E.011	--	32	<2.0
DEC													
20...	3.05	.077	.81	.62	3.7	.74	.54	.058	.016	<.018	--	150	<2.0
JAN													
25...	4.95	.093	.84	.78	5.7	.74	.69	.053	.020	E.012	--	338	<2.0
FEB													
21...	--	--	--	--	--	--	--	--	--	--	--	--	--
21...	3.80	.050	.76	.66	4.5	.70	.61	.051	.013	E.009	--	288	<2.0
MAR													
19...	*<.047*	*<.041*	*<.08*	*<.10*	--	--	--	*<.004*	*<.006*	*<.018*	--	*<15*	*<2.0*
19...	4.18	.043	.88	.76	4.9	.84	.71	.051	.015	E.013	--	421	<2.0
30...	4.02	.302	1.6	1.3	5.3	1.3	.96	.313	.107	.086	--	316	<2.0
APR													
09...	3.06	.070	.82	.71	3.8	.75	.64	.063	.017	E.014	--	305	<2.0
24...	1.88	E.039	.79	.76	2.6	--	--	.072	.012	<.018	--	225	<2.0
24...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAY													
07...	1.03	.179	.88	.77	1.8	.70	.59	.102	.039	E.017	--	126	<2.0
23...	2.65	.758	2.4	1.7	4.4	1.6	.97	.474	.082	.039	--	98	E1.2
JUN													
11...	2.46	.096	.89	.68	3.1	.80	.59	.120	.024	E.011	--	136	<2.0
25...	2.03	.047	1.2	.91	2.9	1.1	.86	.148	.035	E.017	13	165	<2.0
25...	*2.07*	*.054*	*1.1*	*.94*	*3.0*	*1.0*	*.89*	*.145*	*.045*	*.024*	--	*164*	*<2.0*
JUL													
09...	.587	E.030	.53	.45	1.0	--	--	.097	.029	.018	8.1	59	<2.0
23...	.668	.058	.76	.47	1.1	.70	.41	.094	.027	.020	8.2	54	E1.3
AUG													
13...	.652	.065	1.1	.62	1.3	1.0	.56	.354	.033	.021	--	62	E1.1
20...	1.93	.101	.85	.78	2.7	.75	.68	.127	.020	E.017	--	177	<2.0
SEP													
04...	E.971	<.040	.45	.40	--	--	--	.086	E.031	E.018	7.6	70	<2.0
19...	.771	E.023	.31	.31	1.1	--	--	.069	.019	E.009	5.0	36	<2.0

E Estimated value.
< Actual value is known to be less than the value shown.
M Presence of material verified but not quantified.

01485000 POCOMOKE RIVER NEAR WILLARDS, MD--Continued

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

DATE	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	2,6-DI-ETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)	ACETO-CHLOR ESA FLTRD 0.7 UM GF REC (UG/L) (61029)	ACETO-CHLOR OA FLTRD 0.7 UM GF REC (UG/L) (61030)	ACETO-CHLOR, WATER FLTRD REC (UG/L) (49260)	ALA-CHLOR OA FLTRD 0.7 UM GF REC (UG/L) (61031)	ALA-CHLOR, (ESA) WAT FLT GF 0.7U REC (UG/L) (50009)	ALA-CHLOR, WATER, DISS, REC, (UG/L) (46342)
OCT													
23...	--	400	30.6	<.23	<2.4	--	<.002	<.05	.16	<.004	.25	1.38	.012
NOV													
21...	--	370	47.1	<.20	<2.0	--	<.002	.39	.19	<.004	.36	1.12	.012
DEC													
20...	--	380	74.5	<.23	<2.4	--	<.002	1.33	.39	<.004	.25	.850	.007
JAN													
25...	--	400	96.5	<.23	<2.4	--	<.002	.72	.22	<.004	.15	.710	.011
FEB													
21...	--	--	--	--	--	--	*<.002*	*<.05*	*<.05*	*<.004*	*<.05*	*<.050*	*<.002*
21...	--	350	69.2	<.23	<2.4	--	<.002	.58	.22	<.004	.05	.990	.009
MAR													
19...	--	*<10*	*<3.2*	*<.23*	*<2.4*	--	--	--	--	--	--	--	--
19...	--	360	58.2	<.23	<2.4	--	<.002	.68	.22	<.004	.15	.790	.010
30...	--	320	70.3	<.23	<2.4	--	<.002	.55	.18	<.004	.10	.510	<.002
APR													
09...	1.6	380	74.1	<.01	<2.4	18	<.002	.52	.15	<.004	.14	.830	.013
24...	--	340	51.6	<.01	E1.2	--	<.002	.34	.14	.014	.16	.980	.011
24...	--	--	--	--	--	--	*<.002*	*.56*	*.18*	*.013*	*.15*	*1.01*	*.011*
MAY													
07...	--	1350	76.1	<.01	<2.4	--	<.002	.36	.12	.053	.21	1.22	.010
23...	--	680	141	<.01	<2.0	--	<.002	1.04	1.18	<.004	.12	.620	<.002
JUN													
11...	5.7	390	75.3	<.01	<2.0	9	<.002	.95	.41	.029	.17	1.00	.009
25...	--	670	50.3	<.01	<2.0	--	<.002	1.12	.54	.066	.19	1.03	.009
25...	--	*690*	*50.3*	*<.002*	*<2.0*	--	--	--	--	--	--	--	--
JUL													
09...	--	810	38.8	<.01	<2.0	--	<.002	.45	.17	<.004	.24	1.36	.008
23...	--	500	44.5	<.01	<2.0	--	<.002	.41	.17	.014	.20	1.14	.010
AUG													
13...	1.0	630	48.5	<.01	<2.0	4	<.002	.45	.13	<.004	<.05	.660	<.002
20...	--	670	65.9	<.01	<2.0	--	<.002	1.05	.36	.006	.22	1.04	.009
SEP													
04...	--	930	30.4	<.01	<2.0	--	<.002	.34	.12	<.004	.24	1.29	.014
19...	--	410	27.0	<.01	<2.0	--	<.002	.11	.08	<.004	.15	.280	.011

DATE	ALPHA BHC DIS-SOLVED (UG/L) (34253)	ATRA-ZINE, WATER, DISS, REC (UG/L) (39632)	BEN-FLUR-ALIN WAT FLD 0.7 U GF, REC (UG/L) (82673)	BUTYL-ATE, WATER, DISS, REC (UG/L) (04028)	CAR-BARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBO-FURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)	CHLOR-PYRIFOS DIS-SOLVED (UG/L) (38933)	CYANA-ZINE, WATER, DISS, REC (UG/L) (04041)	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)	DEETHYL ATRA-ZINE, WATER, DISS, REC (UG/L) (04040)	DIAZ-INON D10 SRG WAT FLT 0.7 U GF, REC PERCENT (91063)	DI-AZINON, DIS-SOLVED (UG/L) (39572)	DI-ELDRIN DIS-SOLVED (UG/L) (39381)
OCT													
23...	<.005	E.003	<.010	<.002	<.041	<.020	<.005	<.018	<.003	E.004	111	<.005	<.005
NOV													
21...	<.005	<.007	<.010	<.002	<.041	<.020	<.005	<.018	<.003	<.006	110	<.005	<.005
DEC													
20...	<.005	.011	<.010	<.002	<.041	<.020	<.005	<.018	<.003	E.006	99	<.005	<.005
JAN													
25...	<.005	.019	<.010	<.002	<.041	<.020	<.005	<.018	<.003	E.007	103	<.005	<.005
FEB													
21...	*<.005*	*<.007*	*<.010*	*<.002*	*<.041*	*<.020*	*<.005*	*<.018*	*<.003*	*<.006*	*89*	*<.005*	*<.005*
21...	<.005	.015	<.010	<.002	<.041	<.020	<.005	<.018	<.003	E.005	90	<.005	<.005
MAR													
19...	--	--	--	--	--	--	--	--	--	--	--	--	--
19...	<.005	.010	<.010	<.002	<.041	<.020	<.005	<.018	<.003	E.003	109	<.005	<.005
30...	<.005	<.007	<.010	<.002	<.041	<.020	<.005	<.018	<.003	<.006	88	<.005	<.005
APR													
09...	<.005	.012	<.010	<.002	<.041	<.020	<.005	<.018	<.003	E.003	120	<.005	<.005
24...	<.005	.096	<.010	<.002	<.041	<.020	<.005	<.018	<.003	E.005	90	<.005	<.005
24...	*<.005*	*.097*	*<.010*	*<.002*	*<.041*	*<.020*	*<.005*	*<.018*	*<.003*	*E.005*	*100*	*<.005*	*<.005*
MAY													
07...	<.005	.339	<.010	<.002	<.041	<.020	<.005	<.018	<.003	E.009	103	<.005	<.005
23...	<.005	E.005	<.010	<.002	E.186	<.020	<.005	<.018	<.003	<.006	96	.031	<.005
JUN													
11...	<.005	.490	<.010	<.002	E.004	<.020	<.005	<.018	<.003	E.053	101	<.005	<.005
25...	<.005	.541	<.010	<.002	<.041	<.020	<.005	<.018	<.003	E.025	109	<.005	<.005
25...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
09...	<.005	.032	<.010	<.002	<.041	<.020	<.005	<.018	<.003	<.006	99	<.005	<.005
23...	<.005	.146	<.010	<.002	<.041	<.020	<.005	<.018	<.003	E.011	125	<.005	<.005
AUG													
13...	<.005	.144	<.010	<.002	<.041	<.020	<.005	<.018	<.003	E.219	108	<.005	<.005
20...	<.005	.026	<.010	<.002	<.041	<.020	<.005	<.018	<.003	E.008	109	<.005	<.005
SEP													
04...	<.005	.014	<.010	<.002	<.041	<.020	<.005	<.018	<.003	E.004	109	<.005	<.005
19...	<.005	E.006	<.010	<.002	<.041	<.020	<.005	<.018	<.003	<.006	106	<.005	<.005

E Estimated value.
< Actual value is known to be less than the value shown.

01485000 POCOMOKE RIVER NEAR WILLARDS, MD--Continued

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

DATE	DIMETH-ENAMID OXA, WATER FLT, REC (UG/L) (62482)	DIMETH-ENAMID, ESA, WAT FLT (UG/L) (61951)	DISUL-FOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ETHAL-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)	ETHO-PROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FLUFEN-ACET, ESA, WAT FLT (UG/L) (61952)	FLUFE-NACET OXA WATER FLT, REC (UG/L) (62483)	FONOFOS WATER DISS REC (UG/L) (04095)	HCH ALPHA D6 SRG WAT FLT 0.7 U GF, REC PERCENT (91065)	LINDANE DIS-SOLVED (UG/L) (39341)	LIN-URON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)	MALA-THION, DIS-SOLVED (UG/L) (39532)
OCT													
23...	--	--	<.021	<.005	<.009	<.005	--	--	<.003	106	<.004	<.035	<.027
NOV													
21...	--	--	<.021	<.002	<.009	<.005	--	--	<.003	93	<.004	<.035	<.027
DEC													
20...	--	--	<.021	<.002	<.009	<.005	--	--	<.003	104	<.004	<.035	<.027
JAN													
25...	--	--	<.021	<.002	<.009	<.005	--	--	<.003	92	<.004	<.035	<.027
FEB													
21...	--	--	*<.021*	*<.002*	*<.009*	*<.005*	--	--	*<.003*	*92*	*<.004*	*<.035*	*<.027*
21...	--	--	<.021	<.002	<.009	<.005	--	--	<.003	87	<.004	<.035	<.027
MAR													
19...	--	--	--	--	--	--	--	--	--	--	--	--	--
19...	<.0500	<.05	<.021	<.002	<.009	<.005	<.05	<.0500	<.003	90	<.004	<.035	<.027
30...	<.0500	<.05	<.021	<.002	<.009	<.005	<.05	<.0500	<.003	81	<.004	<.035	<.027
APR													
09...	<.0500	<.05	<.021	<.002	<.009	<.005	<.05	<.0500	<.003	120	<.004	<.035	<.027
24...	<.0500	<.05	<.021	<.002	<.009	<.005	<.05	<.0500	<.003	76	<.004	<.035	<.027
24...	*<.0500*	*<.05*	*<.021*	*<.002*	*<.009*	*<.005*	*<.05*	*<.0500*	*<.003*	*80*	*<.004*	*<.035*	*<.027*
MAY													
07...	<.0500	<.05	<.021	<.010	<.009	<.005	<.05	<.0500	<.003	88	<.004	<.035	<.027
23...	<.0500	<.05	<.021	<.002	<.009	<.005	<.05	<.0500	<.003	74	<.004	<.035	<.027
JUN													
11...	<.0500	<.05	<.021	<.002	<.009	<.005	<.05	<.0500	<.003	99	<.004	<.035	<.027
25...	<.0500	<.05	<.021	<.002	<.009	<.005	<.05	<.0500	<.003	92	<.004	<.035	<.027
25...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
09...	<.0500	<.05	<.021	<.002	<.009	<.005	<.05	<.0500	<.003	117	<.004	<.035	<.027
23...	<.0500	<.05	<.021	<.002	<.009	<.005	<.05	<.0500	<.003	108	<.004	<.035	<.027
AUG													
13...	<.0500	<.05	<.021	<.002	<.009	<.005	<.05	<.0500	<.003	102	<.004	<.035	<.027
20...	<.0500	<.05	<.021	<.002	<.009	<.005	<.05	<.0500	<.003	98	<.004	<.035	<.027
SEP													
04...	<.0500	<.05	<.021	<.002	<.009	<.005	<.05	<.0500	<.003	99	<.004	<.035	<.027
19...	<.0500	<.05	<.021	<.002	<.009	<.005	<.05	<.0500	<.003	80	<.004	<.035	<.027

DATE	METHYL AZIN-PHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)	METHYL PARA-THION WAT FLT 0.7 U GF, REC (UG/L) (82667)	METOLA-CHLOR ESA FLTRD 0.7 UM GF REC (UG/L) (61043)	METOLA-CHLOR OA FLTRD 0.7 UM GF REC (UG/L) (61044)	METO-LACHLOR WATER DISSOLV (UG/L) (39415)	METRI-BUZIN SENCOR WATER DISSOLV (UG/L) (82630)	MOL-INATE WATER FLTRD 0.7 U GF, REC (UG/L) (82671)	NAPROP-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82684)	P,P' DDE DISSOLV (UG/L) (34653)	PARA-THION, DIS-SOLVED (UG/L) (39542)	PEB-ULATE WATER FILTRD 0.7 U GF, REC (UG/L) (82669)	PENDI-METH-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82683)	PER-METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)
OCT													
23...	<.050	<.006	3.67	1.32	.031	<.006	<.002	<.007	<.003	<.007	<.002	<.010	<.006
NOV													
21...	<.050	<.006	4.35	1.35	.026	<.006	<.002	<.007	<.003	<.007	<.002	<.010	<.006
DEC													
20...	<.050	<.006	8.07	2.74	.062	<.006	<.002	<.007	<.003	<.007	<.002	<.010	<.006
JAN													
25...	<.050	<.006	8.42	2.31	.079	<.006	<.002	<.007	<.003	<.007	<.002	<.010	<.006
FEB													
21...	*<.050*	*<.006*	*<.05*	*<.05*	*<.013*	*<.006*	*<.002*	*<.007*	*<.003*	*<.007*	*<.002*	*<.010*	*<.006*
21...	<.050	<.006	5.60	2.09	.060	<.006	<.002	<.007	<.003	<.007	<.002	<.010	<.006
MAR													
19...	--	--	--	--	--	--	--	--	--	--	--	--	--
19...	<.050	<.006	8.42	2.03	.051	<.006	<.002	<.007	<.003	<.007	<.002	<.010	<.006
30...	<.050	<.006	5.71	1.88	<.013	<.006	<.005	<.007	<.003	<.007	<.002	<.010	<.006
APR													
09...	<.050	<.006	5.75	1.84	.057	<.006	<.002	<.007	<.003	<.007	<.002	<.010	<.006
24...	<.050	<.006	5.21	1.86	.050	<.006	<.002	<.007	<.003	<.007	<.002	<.010	<.006
24...	*<.050*	*<.006*	*5.51*	*1.95*	*.054*	*<.006*	*<.002*	*<.007*	*<.003*	*<.007*	*<.002*	*<.010*	*<.006*
MAY													
07...	<.050	<.006	3.66	1.40	.179	<.006	<.002	<.007	<.003	<.007	<.002	<.010	<.006
23...	<.050	<.006	5.09	2.55	E.003	<.006	<.002	<.007	<.003	<.007	<.002	<.010	<.006
JUN													
11...	<.050	<.006	4.65	2.76	.214	.007	<.002	<.007	<.003	<.007	<.002	<.010	<.006
25...	<.050	<.006	5.92	3.05	.372	.008	<.002	<.007	<.003	<.007	<.002	<.010	<.006
25...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
09...	<.050	<.006	3.31	1.56	.045	<.006	<.002	<.007	<.003	<.007	<.002	<.010	<.006
23...	<.050	<.006	3.49	1.44	.100	<.006	<.002	<.007	<.003	<.007	<.002	<.010	<.006
AUG													
13...	<.050	<.006	3.33	1.27	.033	<.006	<.002	<.007	<.003	<.007	<.002	<.010	<.006
20...	<.050	<.006	5.00	2.05	.060	<.006	<.002	<.007	<.003	<.007	<.002	<.010	<.006
SEP													
04...	<.050	<.006	3.18	.93	.029	<.006	<.002	<.007	<.003	<.007	<.002	<.010	<.006
19...	<.050	<.006	.42	1.06	.024	<.006	<.002	<.007	<.003	<.007	<.002	<.010	<.006

E Estimated value.
< Actual value is known to be less than the value shown.

01485000 POCOMOKE RIVER NEAR WILLARDS, MD--Continued

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

DATE	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L) (82664)	PRO-METON, WATER, DISS, REC (UG/L) (04037)	PRON-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)	PROPA-CHLOR, WATER, DISS, REC (UG/L) (04024)	PRO-PANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)	PRO-PARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	SI-MAZINE, WATER, DISS, REC (UG/L) (04035)	TEBU-THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TER-BACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TER-BUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)	THIO-BENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)	TRIAL-LATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)	TRI-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)
OCT													
23...	<.011	<.015	<.004	<.010	<.011	<.023	<.011	<.016	<.034	<.017	<.005	<.002	<.009
NOV													
21...	<.011	<.015	<.004	<.010	<.011	<.023	<.011	<.016	<.034	<.017	<.005	<.002	<.009
DEC													
20...	<.011	<.015	<.004	<.010	<.011	<.023	<.011	<.016	<.034	<.017	<.005	<.002	<.009
JAN													
25...	<.011	E.009	<.004	<.010	<.011	<.023	<.011	<.016	<.034	<.017	<.005	<.002	<.009
FEB													
21...	*<.011*	*<.015*	*<.004*	*<.010*	*<.011*	*<.023*	*<.011*	*<.016*	*<.034*	*<.017*	*<.005*	*<.002*	*<.009*
21...	<.011	E.003	<.004	<.010	<.011	<.023	<.011	<.016	<.034	<.017	<.005	<.002	<.009
MAR													
19...	--	--	--	--	--	--	--	--	--	--	--	--	--
19...	<.011	<.015	<.004	<.010	<.011	<.023	<.011	<.016	<.034	<.017	<.005	<.002	<.009
30...	<.011	<.015	<.004	<.010	<.011	<.023	<.011	<.016	<.034	<.017	<.005	<.002	<.009
APR													
09...	<.011	E.002	<.004	<.010	<.011	<.023	E.004	<.016	<.034	<.017	<.005	<.002	<.009
24...	<.011	E.004	<.004	<.010	<.011	<.023	.125	<.016	<.034	<.017	<.005	<.002	<.009
24...	*<.011*	*E.004*	*<.004*	*<.010*	*<.011*	*<.023*	*.131*	*<.016*	*<.034*	*<.017*	*<.005*	*<.002*	*<.009*
MAY													
07...	<.011	E.004	<.004	<.010	<.011	<.023	.130	<.016	<.034	<.017	<.005	<.002	<.009
23...	<.011	E.006	<.004	<.010	<.011	<.023	<.011	<.016	<.034	<.017	<.005	<.002	<.009
JUN													
11...	<.011	.048	<.004	<.010	<.011	<.023	.213	<.016	<.034	<.017	<.005	<.002	<.009
25...	<.011	.017	<.004	<.010	<.011	<.023	.146	<.016	<.034	<.017	<.005	<.002	<.009
25...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
09...	<.011	.025	<.004	<.010	<.011	<.023	.017	<.016	<.034	<.017	<.005	<.002	<.009
23...	<.011	.020	<.004	<.010	<.011	<.023	.086	<.016	<.034	<.017	<.005	<.002	<.009
AUG													
13...	<.011	E.004	<.004	<.010	<.011	<.023	.051	<.016	<.034	<.017	<.005	<.002	<.009
20...	<.011	.019	<.004	<.010	<.011	<.023	.011	<.016	<.034	<.017	<.005	<.002	<.009
SEP													
04...	<.011	E.005	<.004	<.010	<.011	<.023	E.005	<.016	<.034	<.017	<.005	<.002	<.009
19...	<.011	<.015	<.004	<.010	<.011	<.023	<.011	<.016	<.034	<.017	<.005	<.002	<.009

E Estimated value.
< Actual value is known to be less than the value shown.

01485000 POCOMOKE RIVER NEAR WILLARDS, MD--Continued

DATE	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY) (80155)
OCT		
23...	4	.22
NOV		
21...	5	.26
DEC		
20...	7	1.1
JAN		
25...	7	2.2
FEB		
21...	--	--
21...	8	1.7
MAR		
19...	--	--
19...	7	2.2
30...	39	40
APR		
09...	7	1.9
24...	6	1.0
24...	--	--
MAY		
07...	4	.31
23...	60	23
JUN		
11...	8	1.3
25...	10	1.9
25...	--	--
JUL		
09...	4	.21
23...	4	.19
AUG		
13...	--	
20...	7	1.5
SEP		
04...	3	.16
19...	1	.03

01485500 NASSAWANGO CREEK NEAR SNOW HILL, MD

LOCATION.--Lat 38°13'44.1", long 75°28'17.2", Worcester County, Hydrologic Unit 02060009, on right bank 15 ft downstream from bridge on State Highway 12, 0.5 mi upstream from Furnace Branch, 0.6 mi downstream from Millville Creek, 5.5 mi northwest of Snow Hill, and 7.3 mi upstream from mouth.

DRAINAGE AREA.--44.9 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1949 to current year.

REVISED RECORDS.--WSP 1332: 1953.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 12.29 ft above sea level.

REMARKS.--No estimated daily discharges. Water-discharge records good. U.S. Geological Survey gage-height telemeter at station.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 280 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 22	2100	*781	*6.61	Mar 31	2100	299	5.39

Minimum discharge, 2.7 ft^3/s, July 17, 18.

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	40	6.7	11	11	32	49	256	22	46	13	23	10
2	33	6.7	11	11	31	41	173	21	43	13	14	9.3
3	27	6.7	10	10	30	37	120	20	42	12	10	8.3
4	24	6.8	9.6	9.7	28	35	89	17	37	11	8.0	7.5
5	22	6.7	9.3	9.5	43	43	73	15	46	10	7.7	7.1
6	21	6.7	9.1	10	65	50	63	14	55	8.7	9.2	6.5
7	19	6.7	9.1	11	79	52	57	13	66	7.5	6.8	5.8
8	17	6.7	8.9	12	74	46	52	13	74	6.7	5.5	5.2
9	15	6.7	8.6	14	59	39	60	12	67	6.9	4.4	5.0
10	14	7.3	8.9	14	48	36	58	12	50	6.2	5.0	4.8
11	13	7.2	10	13	39	33	73	12	36	6.4	12	4.7
12	11	7.5	9.9	13	35	31	131	11	28	5.5	21	4.2
13	10	7.6	9.1	13	38	56	152	10	22	4.8	43	4.3
14	9.0	8.8	19	13	39	72	140	9.6	17	4.3	127	4.0
15	8.4	10	24	22	41	75	108	9.4	15	3.8	230	4.4
16	8.0	10	25	23	42	116	84	9.3	15	3.3	176	4.2
17	7.4	9.6	28	21	55	144	77	8.2	33	2.8	82	3.9
18	7.5	9.0	28	20	58	121	77	7.8	42	4.1	46	3.3
19	7.3	8.6	28	34	55	83	73	23	44	6.0	61	3.0
20	7.1	8.4	26	68	47	64	65	32	34	6.6	46	3.2
21	6.9	8.6	22	105	39	156	56	30	23	5.2	36	9.3
22	6.7	8.0	21	127	35	662	48	33	16	4.0	28	9.2
23	6.7	7.6	19	95	35	644	42	98	28	3.5	22	6.1
24	6.7	7.6	16	73	38	334	37	140	57	3.5	35	5.4
25	6.8	7.7	14	59	45	184	35	90	43	3.2	28	11
26	7.1	20	12	47	59	123	34	78	31	4.2	22	9.7
27	7.2	19	11	38	64	96	31	97	22	11	17	6.4
28	7.6	16	11	35	61	79	29	105	16	8.4	15	5.5
29	7.2	14	11	32	---	71	26	102	13	15	13	4.6
30	6.9	12	11	32	---	138	24	83	12	43	11	4.3
31	6.7	---	11	33	---	264	---	63	---	34	10	---
TOTAL	397.2	274.9	461.5	1028.2	1314	3974	2343	1210.3	1073	277.6	1174.6	180.2
MEAN	12.8	9.16	14.9	33.2	46.9	128	78.1	39.0	35.8	8.95	37.9	6.01
MAX	40	20	28	127	79	662	256	140	74	43	230	11
MIN	6.7	6.7	8.6	9.5	28	31	24	7.8	12	2.8	4.4	3.0
CFSM	.29	.20	.33	.74	1.05	2.86	1.74	.87	.80	.20	.84	.13
IN.	.33	.23	.38	.85	1.09	3.29	1.94	1.00	.89	.23	.97	.15

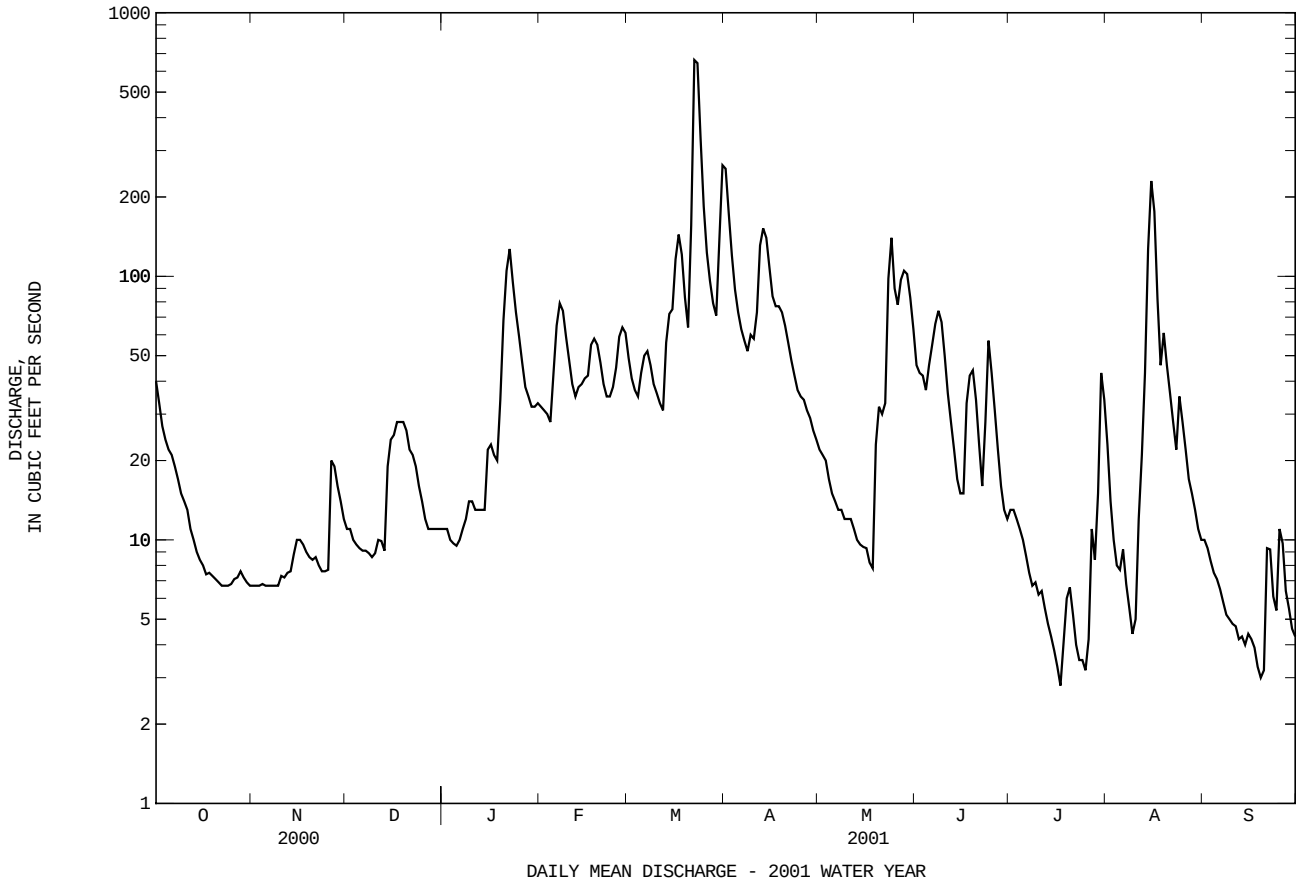
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1950 - 2001, BY WATER YEAR (WY)

MEAN	25.3	34.8	56.2	84.9	97.7	117	76.7	43.6	27.8	21.3	38.3	18.3
MAX	150	175	196	261	322	302	202	183	160	120	346	177
(WY)	1977	1980	1997	1978	1998	1994	1983	1978	1972	1975	1989	1979
MIN	1.62	2.39	6.33	10.8	32.1	29.5	17.6	7.10	2.52	2.02	1.59	1.64
(WY)	1999	1999	1966	1966	1991	1986	1985	1986	1986	1986	1966	1980

01485500 NASSAWANGO CREEK NEAR SNOW HILL, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1950 - 2001	
ANNUAL TOTAL	17581.5		13708.5			
ANNUAL MEAN	48.0		37.6		53.8	
HIGHEST ANNUAL MEAN					116	1979
LOWEST ANNUAL MEAN					20.8	1981
HIGHEST DAILY MEAN	1180	Mar 23	662	Mar 22	2590	Aug 19 1989
LOWEST DAILY MEAN	6.1	Jun 27	2.8	Jul 17	.80	(a)
ANNUAL SEVEN-DAY MINIMUM	6.7	Oct 31	3.7	Sep 14	.86	Sep 7 1966
MAXIMUM PEAK FLOW			781	Mar 22	(b)3930	Aug 19 1989
MAXIMUM PEAK STAGE			6.61	Mar 22	9.07	Aug 19 1989
INSTANTANEOUS LOW FLOW			2.7	(c)	.77	(d)
ANNUAL RUNOFF (CFSM)	1.07		.84		1.20	
ANNUAL RUNOFF (INCHES)	14.57		11.36		16.28	
10 PERCENT EXCEEDS	108		80		124	
50 PERCENT EXCEEDS	24		17		26	
90 PERCENT EXCEEDS	8.0		6.2		3.4	

a Sept. 8-10, 1966.
b From rating curve extended above 1,300 ft^3/s on basis of contracted-opening measurement at gage height 9.07 ft.
c July 17, 18.
d Oct. 2, 3, 1998.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01485500 NASSAWANGO CREEK NEAR SNOW HILL, MD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1974-78, 1991, 1999 to current year.

REMARKS.--Chemical analyses were performed at the Maryland Department of Health and Mental Hygiene laboratory (DHMH), Baltimore, MD.

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

DATE	TIME	SAMPLE TYPE	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)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (LOW LEVEL) (MG/L) (00335)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)
OCT												
16...	1015	ENVIRONMENTAL	8.6	60.9	6.46	22	12.9	12.3	8.05	--	34	--
NOV												
20...	1200	ENVIRONMENTAL	8.6	72	6.06	8	6.4	9	8.42	--	37	--
20...	*1201*	*REPLICATE*	*8.6*	--	--	--	--	*9.2*	--	--	*36*	--
DEC												
18...	1630	ENVIRONMENTAL	28	71	6.03	1	6.35	5.8	8.97	--	31	--
JAN												
20...	0445	ENVIRONMENTAL	60	--	--	--	--	--	--	--	--	--
22...	0445	ENVIRONMENTAL	130	--	--	--	--	9.3	--	--	49	--
22...	1430	ENVIRONMENTAL	128	--	--	--	--	8.1	--	--	41	--
FEB												
20...	*1229*	*BLANK*	--	--	--	--	--	*<.5*	--	--	*<10*	--
20...	1230	ENVIRONMENTAL	46	91	5.81	15.5	3.77	2.9	--	--	37	--
MAR												
20...	1215	ENVIRONMENTAL	64	77	5.22	--	6.54	3	10.58	86.2	41	--
21...	1230	ENVIRONMENTAL	128	--	--	--	--	14.4	--	--	50	--
22...	1130	ENVIRONMENTAL	685	--	--	--	--	10	--	--	65	--
25...	1100	ENVIRONMENTAL	186	--	--	--	--	3.3	--	--	50	<1.4
26...	1100	ENVIRONMENTAL	123	--	--	--	--	2.5	--	--	46	<1.4
APR												
23...	1145	ENVIRONMENTAL	42	71	5.13	28.5	18.58	4.3	7.48	79.9	57	2.2
MAY												
09...	1100	ENVIRONMENTAL	12	74	5.96	24	13.66	8.7	7.87	75.8	53	2.8
21...	1045	ENVIRONMENTAL	30	--	--	--	--	--	--	--	--	--
22...	1045	ENVIRONMENTAL	32	--	--	--	--	--	--	--	--	--
23...	1045	ENVIRONMENTAL	90	--	--	--	--	12	--	--	75	--
24...	0830	ENVIRONMENTAL	147	--	--	--	--	7.4	--	--	75	--
JUN												
13...	1145	ENVIRONMENTAL	22	78	5.65	30	21.5	9.3	6.28	70.8	64	<1.5
JUL												
16...	1130	ENVIRONMENTAL	3.1	76	5.52	28	18.66	21	7.00	--	34	<1.2
AUG												
13...	2145	ENVIRONMENTAL	61	--	--	--	--	27	--	--	79	--
14...	1345	ENVIRONMENTAL	127	59	5.18	27	22.56	6.8	6.01	--	60	2.3
SEP												
18...	1030	ENVIRONMENTAL	3.4	76	5.4	22	14.77	--	--	--	21	<1.3

< Actual value is known to be less than the value shown.

01485500 NASSAWANGO CREEK NEAR SNOW HILL, MD--Continued

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

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	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)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN DIS-SOLVED (MG/L AS N) (00602)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)
OCT													
16...	26.52	8	.68	.08	.004	.084	.02	.6	.5	.58	.58	.48	.125
NOV													
20...	27.8	2	--	--	.002	<.017	.009	.62	.5	--	.61	.49	.167
20...	*27.89*	*2*	--	--	*.002*	*<.018*	*.01*	*.64*	*.57*	--	*.63*	*.56*	*.163*
DEC													
18...	19.63	7	.83	.03	.002	.033	.01	.8	.6	.63	.79	.59	.138
JAN													
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
22...	11.12	17	2.56	1.37	.006	1.379	.052	1.18	.79	2.17	1.13	.74	.103
22...	10.9	13	2.74	1.62	.007	1.623	.074	1.12	.85	2.47	1.05	.78	.084
FEB													
20...	*<.05*	*<1*	--	--	*<.001*	*<.0*	*<.002*	*<.13*	*<.03*	--	--	--	*<.008*
20...	10.95	1	1.28	.71	.002	.712	.011	.57	.51	1.22	.56	.50	.032
MAR													
20...	6.69	1	1.02	.48	.002	.485	.014	.53	.48	.96	.52	.47	.042
21...	6.95	23	1.13	.26	.003	.264	.018	.87	.45	.71	.85	.43	.11
22...	4.02	22	1.31	.26	.004	.261	.021	1.05	.57	.83	1.03	.55	.118
25...	5.92	5	1.34	.49	.003	.489	.009	.85	.7	1.19	.84	.69	.056
26...	6.31	4	1.19	.48	.003	.485	.025	.7	.64	1.12	.67	.61	.051
APR													
23...	5.58	8	1.04	.13	.005	.134	.022	.91	.69	.82	.89	.67	.083
MAY													
09...	17.22	6	.94	.12	.007	.13	.087	.81	.69	.82	.72	.60	.15
21...	--	--	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--	--	--
23...	10.9	22	1.41	.17	.009	.181	.102	1.23	.82	1.00	1.13	.72	.212
24...	9.07	28	1.53	.16	.008	.167	.093	1.36	.95	1.12	1.27	.86	.07
JUN													
13...	16.15	16	1.27	.24	.008	.246	.065	1.02	.81	1.06	.96	.75	.18
JUL													
16...	26.95	4	.79	.20	.004	.205	.044	.59	.47	.67	.55	.43	.195
AUG													
13...	17.01	53	1.87	.17	.006	.171	.05	1.7	.69	.86	1.65	.64	.27
14...	10.27	11	1.25	.17	.004	.172	.032	1.08	.83	1.00	1.05	.80	.122
SEP													
18...	28.23	4	.58	.13	.003	.134	.026	.45	.35	.48	.42	.32	.156

DATE	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
OCT						
16...	.06	.024	13.4	11	.8	.02
NOV						
20...	.09	.071	13	11.6	3.6	.08
20...	*.09*	*.077*	*13.2*	*11.7*	--	--
DEC						
18...	.038	.029	12.1	11.3	4.3	.33
JAN						
20...	--	--	--	--	28.3	4.58
22...	.029	.015	13.1	12.2	23.1	8.11
22...	.031	.019	13.2	13	15.1	5.22
FEB						
20...	*<.003*	*<.003*	*<.47*	*<.38*	*<1*	--
20...	.029	.006	10.8	10.1	3.1	.39
MAR						
20...	.024	.011	13.8	13	3.7	.64
21...	.02	.012	13.2	12.4	24.8	8.57
22...	.041	.023	18.9	18.3	54.5	101
25...	.036	.021	19.7	19.4	10	5.02
26...	.035	.019	18.2	17.9	6.0	1.99
APR						
23...	.04	.019	19.2	16.9	7.3	.83
MAY						
09...	.104	.024	18	15.3	8.7	.28
21...	--	--	--	--	25.3	2.05
22...	--	--	--	--	18	1.56
23...	.072	.042	19.5	18.2	36.4	8.85
24...	.07	.041	21.3	20.6	43	17.1
JUN						
13...	.084	.051	19.25	18.5	9.4	.56
JUL						
16...	.054	.035	11	8.56	3.5	.03
AUG						
13...	.056	.027	17.6	14.4	51.8	8.53
14...	.051	.036	18.7	17.7	13.5	4.63
SEP						
18...	.052	.036	8.67	7	1.6	.01

< Actual value is known to be less than the value shown.

01486000 MANOKIN BRANCH NEAR PRINCESS ANNE, MD

LOCATION.--Lat 38°12'50.4", long 75°40'17.0", Somerset County, Hydrologic Unit 02060009, on right bank 45 ft downstream from farm bridge, 1.4 mi northeast of Princess Anne, and 1.6 mi upstream from confluence with Loretto Branch.

DRAINAGE AREA.--4.80 mi^2.

PERIOD OF RECORD.--April 1951 to September 1971, October 1974 to current year.

REVISED RECORDS.--WDR MD-DE-75-1: Drainage area. WDR MD-DE-85-1: 1983-84 (P).

GAGE.--Water-stage recorder. Datum of gage is 7.03 ft above sea level. Artificial control since Apr. 30, 1975. Nov. 26, 1968, to Sept. 30, 1971, water-stage recorder above and nonrecording gage below gage height 1.4 ft. Prior to Nov. 26, 1968, recording gage at site 40 ft upstream at datum 1.0 ft higher.

REMARKS.--Records good below 170 ft^3/s and poor above. Several measurements of water temperature were made during the year. Water-quality data for some prior years have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 50 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 21	1415	*314	*5.73	Apr 11	1630	64	3.20
Mar 30	1115	62	3.18				

Minimum discharge, 0.54 ft^3/s, July 17, 25, 26, Aug. 9, 10.

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	2.0	.66	.70	1.0	2.8	4.6	17	3.0	4.5	1.1	.82	2.5
2	1.8	.66	.67	1.0	2.7	4.2	14	2.8	6.2	1.2	.74	2.3
3	1.7	.66	.65	.98	2.5	3.8	11	2.5	5.3	.98	.72	2.0
4	1.6	.66	.66	.98	2.4	3.7	9.1	2.3	4.0	.99	.72	1.9
5	1.6	.65	.69	1.0	6.4	5.7	7.0	2.3	6.0	.96	.71	1.8
6	1.6	.61	.69	1.0	7.7	6.4	6.3	2.0	4.7	.87	.67	1.7
7	1.4	.60	.69	.98	5.4	5.0	5.8	1.9	5.1	.82	.63	1.6
8	1.2	.60	.69	1.0	4.4	4.2	5.3	2.0	5.9	.86	.60	1.6
9	e1.1	.65	.64	1.0	4.1	3.9	5.6	1.9	8.9	.84	.56	1.5
10	e1.0	.73	.65	.98	3.9	3.6	5.6	1.9	4.8	.78	.75	1.5
11	e.95	.67	.70	.97	3.3	3.3	31	1.8	3.5	1.1	1.5	1.4
12	e.90	.62	.71	.98	3.1	3.1	28	1.8	3.0	.77	2.4	1.3
13	e.86	.61	.63	.97	3.6	6.1	21	1.7	2.6	.71	17	1.2
14	e.84	.72	.98	1.0	3.9	6.2	17	1.6	2.4	.69	28	1.2
15	e.82	.75	1.2	1.3	4.1	6.9	12	1.6	2.3	.66	10	1.1
16	.81	.66	1.3	1.5	4.2	18	11	1.5	2.3	.61	5.3	1.1
17	.80	.69	1.9	1.5	7.1	11	13	1.5	2.3	.57	3.7	1.1
18	.80	.65	2.4	1.5	5.7	8.4	12	1.5	1.8	.89	3.5	1.0
19	.82	.63	1.9	3.1	4.5	6.6	9.1	2.1	1.7	.94	8.6	.99
20	.82	.63	1.7	8.8	4.2	5.9	7.1	1.7	1.7	.69	6.1	.99
21	.81	.63	1.4	8.8	3.9	137	6.3	1.9	1.6	.63	4.1	1.4
22	.79	.60	1.5	5.5	3.7	72	5.9	3.4	1.5	.60	3.2	1.2
23	.73	.59	1.3	4.3	4.0	31	5.3	8.9	1.5	.65	3.2	.99
24	.74	.57	1.3	3.9	4.6	19	4.8	4.5	1.5	.66	13	1.0
25	.76	.62	1.2	3.6	6.3	13	5.1	3.6	1.4	.57	7.6	1.3
26	.76	1.1	1.1	3.2	8.7	11	4.7	9.4	1.2	.72	4.6	1.1
27	.76	.93	1.1	3.2	6.4	9.2	4.1	15	1.2	.90	3.6	.98
28	.75	.81	1.2	2.9	5.4	8.0	3.6	10	1.1	.59	3.3	.98
29	.70	.73	1.1	2.7	---	8.0	3.2	9.0	1.1	1.1	3.1	.97
30	.68	.73	1.2	3.0	---	41	3.1	6.7	1.0	1.5	2.8	.93
31	.66	---	1.1	3.2	---	24	---	5.0	---	1.0	2.6	---
TOTAL	31.56	20.42	33.65	75.84	129.0	493.8	294.0	116.8	92.1	25.95	144.12	40.63
MEAN	1.02	.68	1.09	2.45	4.61	15.9	9.80	3.77	3.07	.84	4.65	1.35
MAX	2.0	1.1	2.4	8.8	8.7	137	31	15	8.9	1.5	28	2.5
MIN	.66	.57	.63	.97	2.4	3.1	3.1	1.5	1.0	.57	.56	.93
CFSM	.21	.14	.23	.51	.96	3.32	2.04	.78	.64	.17	.97	.28
IN.	.24	.16	.26	.59	1.00	3.83	2.28	.91	.71	.20	1.12	.31

e Estimated

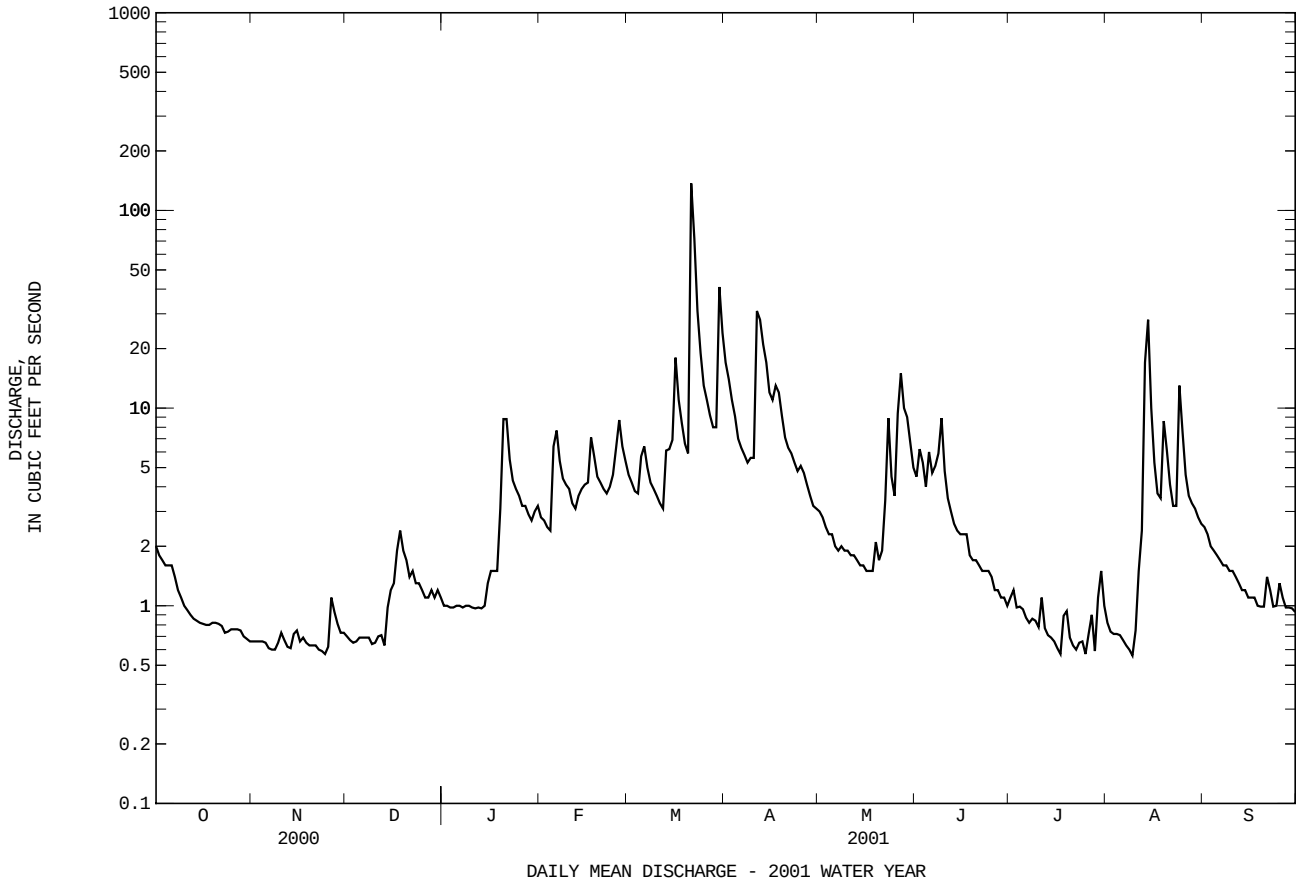
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1951 - 2001, BY WATER YEAR (WY)

MEAN	1.87	2.45	4.97	8.30	9.43	11.3	7.41	3.91	2.42	1.72	3.63	1.93
MAX	10.5	17.5	22.5	24.9	29.1	30.3	17.3	12.2	12.7	9.20	27.8	18.7
(WY)	1980	1980	1997	1998	1998	1994	1983	1978	1979	1975	1969	1979
MIN	.030	.050	.13	.51	2.40	2.64	1.64	.62	.39	.16	.003	.017
(WY)	1967	1967	1967	1966	1981	1981	1967	1957	1964	1953	1966	1966

01486000 MANOKIN BRANCH NEAR PRINCESS ANNE, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1951 - 2001	
ANNUAL TOTAL	2053.05		1497.87			
ANNUAL MEAN	5.61		4.10		4.93	
HIGHEST ANNUAL MEAN					10.3	1979
LOWEST ANNUAL MEAN					1.41	1981
HIGHEST DAILY MEAN	141	Mar 22	137	Mar 21	255	Jan 28 1998
LOWEST DAILY MEAN	.57	Nov 24	.56	Aug 9	.00	(a)
ANNUAL SEVEN-DAY MINIMUM	.61	Nov 19	.61	Nov 19	.00	Aug 23 1963
MAXIMUM PEAK FLOW			314	Mar 21	(b)547	Aug 20 1969
MAXIMUM PEAK STAGE			5.73	Mar 21	(c)7.08	Aug 19 1985
INSTANTANEOUS LOW FLOW			.54	(d)	.00	(a)
ANNUAL RUNOFF (CFSM)	1.17		.85		1.03	
ANNUAL RUNOFF (INCHES)	15.91		11.61		13.96	
10 PERCENT EXCEEDS	12		8.7		11	
50 PERCENT EXCEEDS	2.6		1.6		2.1	
90 PERCENT EXCEEDS	.70		.66		.33	

a No flow during 1954, 1963, 1964, 1966.
b From rating curve extended above 170 ft^3/s on basis of channel-conveyance study.
c Gage height of 5.44 ft occurred on Aug. 20, 1969 following ditching of channel.
d July 17, 25, 26, Aug. 9, 10.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01487000 NANTICOKE RIVER NEAR BRIDGEVILLE, DE

LOCATION.--Lat 38°43'42.0", long 75°33'42.7", Sussex County, Hydrologic Unit 02060008, on left bank at downstream side of highway bridge on county road No. 545, 800 ft downstream from Gum Branch, 2.5 mi southeast of Bridgeville, and 50.5 mi upstream from mouth.

DRAINAGE AREA.--75.4 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1943 to current year. Prior to October 1955, published as Gravelly Fork near Bridgeville.

REVISED RECORDS.--WSP 1111: 1947. WSP 1232: 1945-49.

GAGE.--Water-stage recorder. Datum of gage is 13.64 ft above sea level (levels by Soil Conservation Service). Prior to Apr. 19, 1947, nonrecording gage, and Apr. 19, 1947 to Dec. 18, 1969, recording gage at present site and datum. Timber control Sept. 3, 1947 to Dec. 18, 1969. Feb. 18, 1970 to Oct. 1, 1973, recording gage at site 300 ft downstream at same datum.

REMARKS.--No estimated daily discharges. Water-discharge records good. U.S. Geological Survey gage-height telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known, about 11.0 ft in September 1935, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 360 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 17	2230	368	6.20	Aug 12	1000	*997	*7.62
Mar 22	0045	653	6.96	Aug 14	0145	809	7.28
Mar 30	1630	427	6.38	Aug 24	1215	377	6.23
Jun 18	0245	946	7.53				

Minimum discharge, 47 ft^3/s, Dec. 13, 14.

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	103	55	53	82	118	137	261	109	71	113	99	133
2	99	54	52	80	112	133	237	103	84	120	88	127
3	95	53	50	78	109	128	219	98	96	107	82	120
4	91	53	50	79	104	126	208	94	78	102	74	116
5	87	54	50	79	153	145	198	90	73	101	74	136
6	87	53	50	79	209	151	193	85	78	119	69	118
7	85	53	50	77	170	142	189	81	147	105	65	109
8	79	52	49	78	159	131	181	79	166	99	61	105
9	77	52	48	79	148	128	178	77	117	94	55	100
10	77	60	48	75	145	126	184	73	101	86	56	96
11	75	56	48	73	134	120	185	71	91	82	186	94
12	72	54	48	72	127	117	220	68	85	78	851	86
13	70	53	47	71	132	155	207	63	79	74	631	82
14	68	56	62	70	130	165	195	58	73	73	709	87
15	67	56	59	73	131	152	185	54	69	70	387	86
16	66	53	59	75	125	167	183	54	71	65	273	82
17	67	53	171	73	151	164	177	51	488	60	232	77
18	67	51	243	72	148	155	175	52	792	176	224	75
19	66	51	147	89	138	145	168	55	325	178	210	73
20	64	50	124	184	132	141	160	55	234	116	201	76
21	62	50	111	202	129	269	156	59	204	96	188	88
22	61	49	109	165	123	491	158	61	201	87	174	78
23	61	48	101	147	127	288	152	62	193	79	166	72
24	59	48	97	142	120	244	148	53	181	71	308	73
25	57	48	95	135	125	222	147	49	167	68	244	88
26	58	76	90	127	162	215	137	80	154	75	197	77
27	60	69	90	125	149	210	130	192	142	180	179	71
28	59	61	91	118	142	202	125	117	134	134	167	69
29	57	56	88	113	---	197	115	92	124	116	156	65
30	57	56	88	122	---	345	112	83	115	125	146	64
31	56	---	86	129	---	319	---	75	---	113	140	---
TOTAL	2209	1633	2554	3163	3852	5830	5283	2393	4933	3162	6692	2723
MEAN	71.3	54.4	82.4	102	138	188	176	77.2	164	102	216	90.8
MAX	103	76	243	202	209	491	261	192	792	180	851	136
MIN	56	48	47	70	104	117	112	49	69	60	55	64
CFSM	.95	.72	1.09	1.35	1.82	2.49	2.34	1.02	2.18	1.35	2.86	1.20
IN.	1.09	.81	1.26	1.56	1.90	2.88	2.61	1.18	2.43	1.56	3.30	1.34

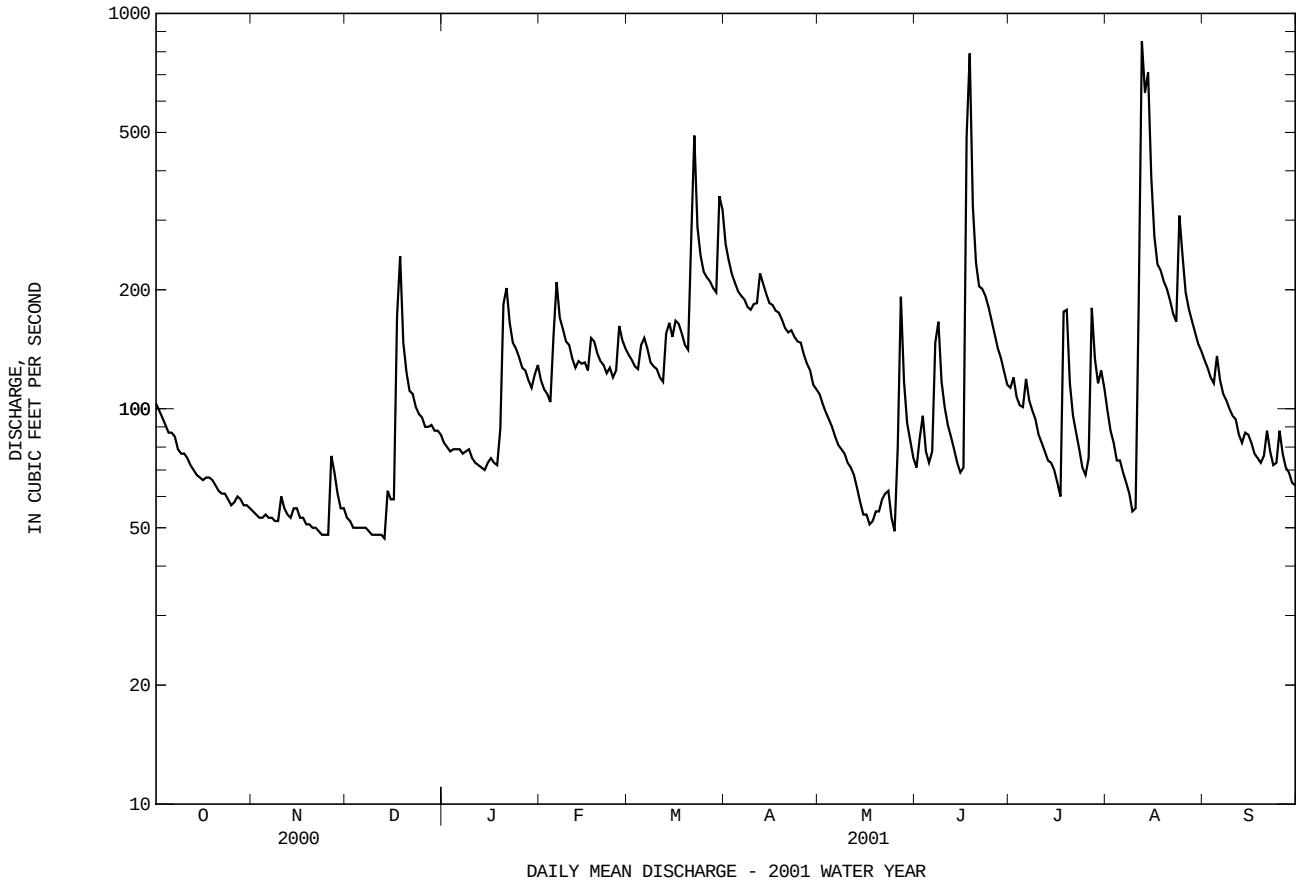
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1943 - 2001, BY WATER YEAR (WY)

MEAN	46.3	60.0	87.5	119	137	164	140	102	75.7	58.2	63.9	48.7
MAX	137	192	294	311	388	421	300	219	298	210	412	234
(WY)	1980	1957	1949	1978	1998	1994	1958	1990	1948	1959	1967	1960
MIN	17.9	21.2	23.6	23.8	50.9	61.5	47.8	45.8	29.3	17.5	13.6	10.1
(WY)	1944	1988	1999	1966	1950	1977	1985	1951	1986	1944	1943	1943

01487000 NANTICOKE RIVER NEAR BRIDGEVILLE, DE--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1943 - 2001	
ANNUAL TOTAL	35400		44427			
ANNUAL MEAN	96.7		122		92.0	
HIGHEST ANNUAL MEAN					170	1958
LOWEST ANNUAL MEAN					43.8	1985
HIGHEST DAILY MEAN	673	Mar 22	851	Aug 12	2880	Feb 26 1979
LOWEST DAILY MEAN	39	Jul 9	47	Dec 13	6.6	Sep 29 1943
ANNUAL SEVEN-DAY MINIMUM	40	Jul 8	48	Dec 7	7.8	Sep 23 1943
MAXIMUM PEAK FLOW			997	Aug 12	3020	Feb 26 1979
MAXIMUM PEAK STAGE			7.62	Aug 12	10.31	Feb 26 1979
INSTANTANEOUS LOW FLOW			47	Dec 13	6.3	Sep 29 1943
ANNUAL RUNOFF (CFSM)	1.28		1.61		1.22	
ANNUAL RUNOFF (INCHES)	17.47		21.92		16.57	
10 PERCENT EXCEEDS	171		199		176	
50 PERCENT EXCEEDS	82		96		67	
90 PERCENT EXCEEDS	51		54		26	

a Dec. 13, 14.
b Minimum discharge observed.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01487000 NANTICOKE RIVER NEAR BRIDGEVILLE, DE--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1961-72, 1974-80, 1991, 1994, 1995, 1998 to current year.

REMARKS.--Nutrient analyses were performed at the Maryland Department of Health and Mental Hygiene laboratory (DHMH), Baltimore, MD.

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

DATE	TIME	SAMPLE TYPE	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)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (LOW LEVEL) (MG/L) (00335)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)
OCT												
11...	1030	ENVIRONMENTAL	75	114	6.3	16.0	11.9	2.0	10.6	--	<10	<.9
NOV												
20...	1515	ENVIRONMENTAL	50	139	6.5	8.0	9.1	1.7	12.1	--	<10	--
20...	*1516*	*REPLICATE*	*50*	--	--	--	--	*1.5*	--	--	*<10*	--
DEC												
17...	1100	ENVIRONMENTAL	92	--	--	--	--	22	--	--	<10	--
18...	0500	ENVIRONMENTAL	296	--	--	--	--	13	--	--	43	--
18...	1330	ENVIRONMENTAL	219	105	6.0	1.5	7.5	85	8.4	--	22	--
18...	2300	ENVIRONMENTAL	175	--	--	--	--	48	--	--	20	--
19...	1700	ENVIRONMENTAL	138	--	--	--	--	21	--	--	<10	<1.2
20...	1055	ENVIRONMENTAL	125	--	--	--	--	9.8	--	--	<10	2.9
FEB												
05...	1630	ENVIRONMENTAL	179	--	--	--	--	20	--	--	22	--
06...	1030	ENVIRONMENTAL	212	--	--	--	--	30	--	--	24	--
06...	1545	ENVIRONMENTAL	197	--	--	--	--	20	--	--	16	--
20...	*1459*	*BLANK*	--	--	--	--	--	*<.5*	--	--	*<10*	--
20...	1500	ENVIRONMENTAL	132	127	5.9	16.0	10.1	2.5	--	--	13	--
MAR												
20...	1530	ENVIRONMENTAL	141	123	5.7	11.0	10.6	1.8	13.5	--	<10	--
21...	1545	ENVIRONMENTAL	240	--	--	--	--	47	--	--	42	--
22...	0945	ENVIRONMENTAL	517	--	--	--	--	110	--	--	63	--
25...	0800	ENVIRONMENTAL	224	--	--	--	--	5.5	--	--	15	<1.6
26...	0200	ENVIRONMENTAL	214	--	--	--	--	5.1	--	--	10	1.7
APR												
23...	1415	ENVIRONMENTAL	153	121	5.8	30.0	--	2.0	11.8	131	12	<1.1
MAY												
09...	1445	ENVIRONMENTAL	76	129	6.3	24.0	17.0	3.0	11.3	117	11	<1.7
JUN												
11...	*1014*	*BLANK*	--	--	--	--	--	*<.5*	--	--	*<10*	*<1.2*
11...	1015	ENVIRONMENTAL	92	127	5.5	26.0	19.4	5.3	8.3	90	10	<1.6
17...	0515	ENVIRONMENTAL	152	--	--	--	--	65	--	--	50	--
17...	2315	ENVIRONMENTAL	907	--	--	--	--	92	--	--	67	--
18...	1215	ENVIRONMENTAL	851	--	--	--	--	26	--	--	36	--
18...	1715	ENVIRONMENTAL	685	--	--	--	--	30	--	--	38	--
19...	1115	ENVIRONMENTAL	310	--	--	--	--	19	--	--	30	--
20...	0515	ENVIRONMENTAL	246	--	--	--	--	14	--	--	24	--
JUL												
16...	1345	ENVIRONMENTAL	66	129	6.1	30.0	22.8	3.6	10.6	--	14	<1.3
18...	0915	ENVIRONMENTAL	135	--	--	--	--	37	--	--	28	--
19...	0315	ENVIRONMENTAL	219	--	--	--	--	22	--	--	26	--
19...	1500	ENVIRONMENTAL	161	--	--	--	--	12	--	--	22	--
AUG												
11...	1845	ENVIRONMENTAL	315	--	--	--	--	--	--	--	--	--
12...	1245	ENVIRONMENTAL	980	--	--	--	--	57	--	--	44	--
13...	0645	ENVIRONMENTAL	521	--	--	--	--	36	--	--	36	--
13...	1245	ENVIRONMENTAL	636	61	5.8	24.0	22.5	33	6.5	--	38	3.9
SEP												
04...	*0829*	*BLANK*	--	--	--	--	--	*<.5*	--	--	*<10*	--
04...	0830	ENVIRONMENTAL	117	117	6.1	23.0	18.7	4.4	9.5	98	<10	--

01487000 NANTICOKE RIVER NEAR BRIDGEVILLE, DE--Continued

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

DATE	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ANC WATER UNFLTRD IT FIELD MG/L AS CACO3 (00419)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)
OCT													
11...	--	--	--	--	--	12	--	--	--	18.4	3	5.1	4.92
NOV													
20...	--	--	--	--	--	--	--	--	--	18.0	2	5.6	5.27
20...	--	--	--	--	--	--	--	--	--	*18.2*	*2*	*5.5*	*5.33*
DEC													
17...	--	--	--	--	--	--	--	--	--	15.9	28	5.6	4.62
18...	--	--	--	--	--	--	--	--	--	10.1	174	5.0	2.38
18...	--	--	--	--	--	--	--	--	--	12.2	45	4.5	2.95
18...	--	--	--	--	--	--	--	--	--	14.2	36	5.0	3.34
19...	--	--	--	--	--	--	--	--	--	16.9	21	--	3.92
20...	--	--	--	--	--	--	--	--	--	18.6	6	9.5	4.35
FEB													
05...	--	--	--	--	--	--	--	--	--	16.4	29	5.0	3.86
06...	--	--	--	--	--	--	--	--	--	15.0	24	4.1	3.31
06...	--	--	--	--	--	--	--	--	--	15.6	6	4.5	3.61
20...	--	--	--	--	--	--	--	--	--	*<.1*	*1*	--	--
20...	--	--	--	--	--	--	--	--	--	16.5	1	4.5	4.26
MAR													
20...	--	--	--	--	--	--	--	--	--	14.4	<1	4.4	4.28
21...	--	--	--	--	--	--	--	--	--	11.2	2	5.5	3.62
22...	--	--	--	--	--	--	--	--	--	10.1	244	5.5	2.81
25...	--	--	--	--	--	--	--	--	--	16.5	7	4.6	4.12
26...	--	--	--	--	--	--	--	--	--	16.0	8	5.0	4.23
APR													
23...	--	--	--	--	--	--	--	--	--	13.1	3	4.1	3.81
MAY													
09...	--	--	--	--	--	--	--	--	--	15.0	5	5.0	4.49
JUN													
11...	--	--	--	--	--	--	--	--	--	*<.1*	*<1*	--	--
11...	--	--	--	--	--	--	--	--	--	16.6	5	4.6	4.02
17...	--	--	--	--	--	--	--	--	--	7.6	215	4.9	2.12
17...	--	--	--	--	--	--	--	--	--	5.3	258	3.7	1.26
18...	--	--	--	--	--	--	--	--	--	8.2	34	3.0	1.64
18...	--	--	--	--	--	--	--	--	--	10.2	68	3.3	1.88
19...	--	--	--	--	--	--	--	--	--	14.5	54	4.0	2.97
20...	--	--	--	--	--	--	--	--	--	16.3	32	4.4	3.44
JUL													
16...	--	--	--	--	--	--	--	--	--	16.4	4	4.8	4.38
18...	--	--	--	--	--	--	--	--	--	15.5	85	4.6	3.48
19...	--	--	--	--	--	--	--	--	--	10.4	29	2.9	1.91
19...	--	--	--	--	--	--	--	--	--	13.5	10	3.2	2.37
AUG													
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	5.2	152	2.3	.635
13...	--	--	--	--	--	--	--	--	--	10.2	95	3.1	1.44
13...	--	--	--	--	--	--	--	--	--	8.2	51	2.3	.946
SEP													
04...	--	*<.01*	*<.008*	*<.1*	*<.09*	--	*<.1*	*<.1*	*<.2*	*<.5*	*<1*	--	--
04...	33	7.72	3.35	8.6	2.80	--	7.1	11.6	<.2	16.6	4	4.4	4.06

< Actual value is known to be less than the value shown.

01487000 NANTICOKE RIVER NEAR BRIDGEVILLE, DE--Continued

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

DATE	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)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN DIS-SOLVED (MG/L AS N) (00602)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	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)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)
OCT													
11...	.007	4.93	.026	.17	.15	5.1	.14	.12	.036	.023	.020	--	2.1
NOV													
20...	.010	5.28	.017	.27	<.09	--	.25	--	.068	.050	.043	--	2.3
20...	*.010*	*5.34*	*.017*	*.15*	*.15*	*5.5*	*.13*	*.13*	*.068*	*.048*	*.042*	--	*2.3*
DEC													
17...	.010	4.63	.048	1.0	.43	5.1	.96	.38	.145	.033	.019	--	2.8
18...	.014	2.39	.149	2.6	1.0	3.4	2.4	.89	.643	.144	.119	--	8.6
18...	.013	2.96	.139	1.6	1.0	4.0	1.4	.88	.311	.123	.111	--	7.0
18...	.010	3.35	.113	1.6	1.1	4.4	1.5	.98	.269	.238	.050	--	5.3
19...	.010	3.93	.085	--	--	--	--	--	--	--	.026	--	4.1
20...	.010	4.36	.071	5.1	.53	4.9	5.0	.46	.063	.026	.022	--	3.2
FEB													
05...	.009	3.87	.090	1.1	.26	4.1	1.0	.17	.125	.020	.014	--	3.2
06...	.008	3.32	.080	.77	.47	3.8	.69	.39	.126	.036	.014	--	4.1
06...	.007	3.61	.065	.84	.65	4.3	.77	.58	.081	.018	.014	--	4.0
20...	*<.001*	*<.001*	*<.002*	*<.04*	*<.07*	--	--	--	*<.004*	*<.009*	*<.002*	--	*.56*
20...	.006	4.26	.012	.24	.24	4.5	.23	.23	.026	.013	.011	--	2.2
MAR													
20...	.005	4.29	.010	.13	<.02	--	.12	--	.024	.016	.012	--	2.5
21...	.011	3.63	.251	1.8	.46	4.1	1.6	.21	.343	.044	.030	--	4.7
22...	.011	2.82	.263	2.7	.79	3.6	2.4	.53	.756	.056	.028	--	9.1
25...	.046	4.16	.030	.44	.28	4.4	.41	.25	.052	.018	.010	--	4.5
26...	.068	4.30	.022	.72	.32	4.6	.70	.30	.056	.023	.007	--	3.9
APR													
23...	.012	3.82	.012	.31	.25	4.1	.30	.24	.030	.015	.010	--	3.2
MAY													
09...	.016	4.51	.039	.50	.22	4.7	.46	.18	.042	.023	.014	--	2.8
JUN													
11...	*<.001*	*<.001*	*<.002*	*<.05*	*<.08*	--	--	--	*<.004*	*<.003*	*<.003*	--	*.59*
11...	.015	4.03	.051	.53	.52	4.6	.48	.47	.062	.018	.012	--	3.2
17...	.025	2.14	.506	2.7	.94	3.1	2.2	.43	.787	.187	.145	--	4.4
17...	.024	1.29	.209	2.5	.84	2.1	2.3	.63	.830	.168	.154	--	8.6
18...	.027	1.66	.205	1.3	.90	2.6	1.1	.70	.301	.179	.154	--	11
18...	.028	1.91	.198	1.4	.85	2.8	1.2	.65	.265	.100	.082	--	9.7
19...	.021	2.99	.137	1.0	.69	3.7	.86	.55	.193	.039	.029	--	7.9
20...	.020	3.46	.126	.95	.66	4.1	.82	.53	.121	.035	.021	--	6.6
JUL													
16...	.014	4.39	.029	.46	.20	4.6	.43	.17	.055	.030	.025	--	2.8
18...	.014	3.49	.064	1.1	.43	3.9	1.1	.37	.208	.017	.007	--	3.8
19...	.022	1.93	.134	.92	.67	2.6	.79	.54	.142	.043	.031	--	5.8
19...	.019	2.39	.136	.86	.70	3.1	.72	.56	.096	.046	.024	--	5.7
AUG													
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
12...	.013	.648	.085	1.7	.89	1.5	1.6	.81	.408	.130	.094	--	8.3
13...	.013	1.45	.123	1.6	.70	2.1	1.5	.58	.283	.090	.064	--	8.7
13...	.013	.959	.097	1.3	.96	1.9	1.2	.86	.276	.159	.141	--	9.7
SEP													
04...	*<.001*	*<.001*	*<.003*	*<.03*	*<.06*	--	--	--	*<.005*	*.010*	*<.002*	--	*1.1*
04...	.008	4.07	.028	.35	.29	4.4	.32	.26	.033	.013	<.008	24	3.7

< Actual value is known to be less than the value shown.

01487000 NANTICOKE RIVER NEAR BRIDGEVILLE, DE--Continued

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

DATE	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
OCT						
11...	2.1	--	--	--	1	.26
NOV						
20...	2.3	--	--	--	2	.28
20...	*2.2*	--	--	--	--	--
DEC						
17...	2.5	--	--	--	26	6.4
18...	7.1	--	--	--	160	128
18...	6.7	--	--	--	53	32
18...	5.0	--	--	--	45	21
19...	4.0	--	--	--	20	7.6
20...	3.2	--	--	--	8	2.5
FEB						
05...	2.9	--	--	--	32	16
06...	3.9	--	--	--	--	--
06...	3.9	--	--	--	--	--
20...	*.54*	--	--	--	*<1*	--
20...	2.1	--	--	--	--	--
MAR						
20...	2.4	--	--	--	3	1.2
21...	4.5	--	--	--	99	64
22...	6.5	--	--	--	236	330
25...	4.2	--	--	--	10	5.7
26...	3.8	--	--	--	11	6.2
APR						
23...	3.1	--	--	--	3	1.4
MAY						
09...	2.6	--	--	--	6	1.3
JUN						
11...	*.57*	--	--	--	--	--
11...	2.8	--	--	--	9	2.3
17...	4.0	--	--	--	223	91
17...	8.4	--	--	--	365	895
18...	11	--	--	--	51	118
18...	9.4	--	--	--	72	133
19...	7.6	--	--	--	60	51
20...	6.3	--	--	--	30	20
JUL						
16...	2.6	--	--	--	9	1.6
18...	3.2	--	--	--	82	30
19...	5.7	--	--	--	34	20
19...	5.6	--	--	--	15	6.5
AUG						
11...	--	--	--	--	344	293
12...	7.9	--	--	--	532	1410
13...	8.5	--	--	--	462	650
13...	9.6	--	--	--	44	76
SEP						
04...	*.89*	*<15*	*<10*	*<3.0*	*<1*	--
04...	3.3	E13	150	45.6	4	1.2

E Estimated value.
< Actual value is known to be less than the value shown.

01488500 MARSHYHOPE CREEK NEAR ADAMSVILLE, DE

LOCATION.--Lat 38°50'58.9", long 75°40'23.2", Kent County, Hydrologic Unit 02060008, on left bank 45 ft upstream from highway bridge, 1.4 mi upstream from Cattail Branch, 1.6 mi northeast of Adamsville, 4.9 mi northwest of Greenwood, and 33 mi upstream from mouth.

DRAINAGE AREA.--43.9 mi^2.

PERIOD OF RECORD.--April 1943 to March 1969, October 1971 to current year.

REVISED RECORDS.--WSP 1141: 1948(P). WSP 1432: 1946(M), 1948, 1952.

GAGE.--Water-stage recorder. Datum of gage is 26.21 ft above sea level. Prior to Nov. 24, 1953, nonrecording gage and crest-stage gage, and Nov. 24, 1953, to March 1969, recording gage at site on old channel about 240 ft southeast of present site at datum 2.00 ft higher.

REMARKS.--No estimated daily discharges. Records good. Several measurements of water temperature were made during the year. Water-quality data for some prior years have been collected at this location.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known, 16.5 ft, present datum, in September 1935, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 450 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 17	1745	781	6.11	Mar 30	0715	624	5.55
Mar 21	1900	1,610	8.61	Jun 17	1145	*2,260	*10.31

Minimum discharge, 15 ft^3/s, Nov. 24, 25.

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	60	25	21	36	64	72	152	45	41	56	55	54
2	56	25	21	35	59	67	125	44	44	76	51	53
3	53	24	20	34	55	62	107	41	44	55	49	51
4	49	24	20	34	52	61	96	40	39	52	47	49
5	46	23	20	34	185	99	87	38	36	53	45	57
6	45	21	20	34	186	98	82	37	35	82	40	54
7	43	21	20	33	119	79	79	35	64	60	39	52
8	40	21	20	33	97	70	74	34	61	54	36	49
9	39	21	19	34	90	68	72	34	47	52	35	47
10	37	21	18	33	85	64	82	33	42	49	38	46
11	37	21	19	32	72	60	108	31	38	49	55	46
12	36	19	19	31	65	57	142	30	36	45	104	42
13	34	18	18	29	67	94	113	28	34	41	129	41
14	33	19	20	29	66	93	95	25	46	40	105	40
15	33	19	26	31	67	79	85	27	35	37	72	40
16	32	18	26	32	65	102	86	27	34	37	62	40
17	31	18	293	30	140	89	83	26	1510	34	58	38
18	30	18	174	30	99	77	88	27	474	205	57	36
19	30	17	90	48	82	67	78	27	163	100	57	35
20	30	17	75	264	76	63	70	25	114	61	59	34
21	29	16	61	171	71	601	67	28	91	52	57	37
22	29	16	58	114	65	454	63	29	108	47	55	37
23	28	16	52	94	64	199	61	29	127	42	54	36
24	28	16	49	86	60	146	60	25	168	40	227	35
25	28	16	47	80	74	120	58	24	105	37	99	36
26	27	27	43	70	121	109	53	63	83	66	72	35
27	27	35	43	68	91	103	52	156	69	183	65	33
28	27	27	43	61	80	93	50	97	62	78	62	32
29	25	24	40	57	---	88	47	64	57	64	59	31
30	25	23	40	65	---	387	46	52	54	74	57	30
31	25	---	38	78	---	204	---	44	---	64	55	---
TOTAL	1092	626	1473	1840	2417	4025	2461	1265	3861	1985	2055	1246
MEAN	35.2	20.9	47.5	59.4	86.3	130	82.0	40.8	129	64.0	66.3	41.5
MAX	60	35	293	264	186	601	152	156	1510	205	227	57
MIN	25	16	18	29	52	57	46	24	34	34	35	30
CFSM	.80	.48	1.08	1.35	1.97	2.96	1.87	.93	2.93	1.46	1.51	.95
IN.	.93	.53	1.25	1.56	2.05	3.41	2.09	1.07	3.27	1.68	1.74	1.06

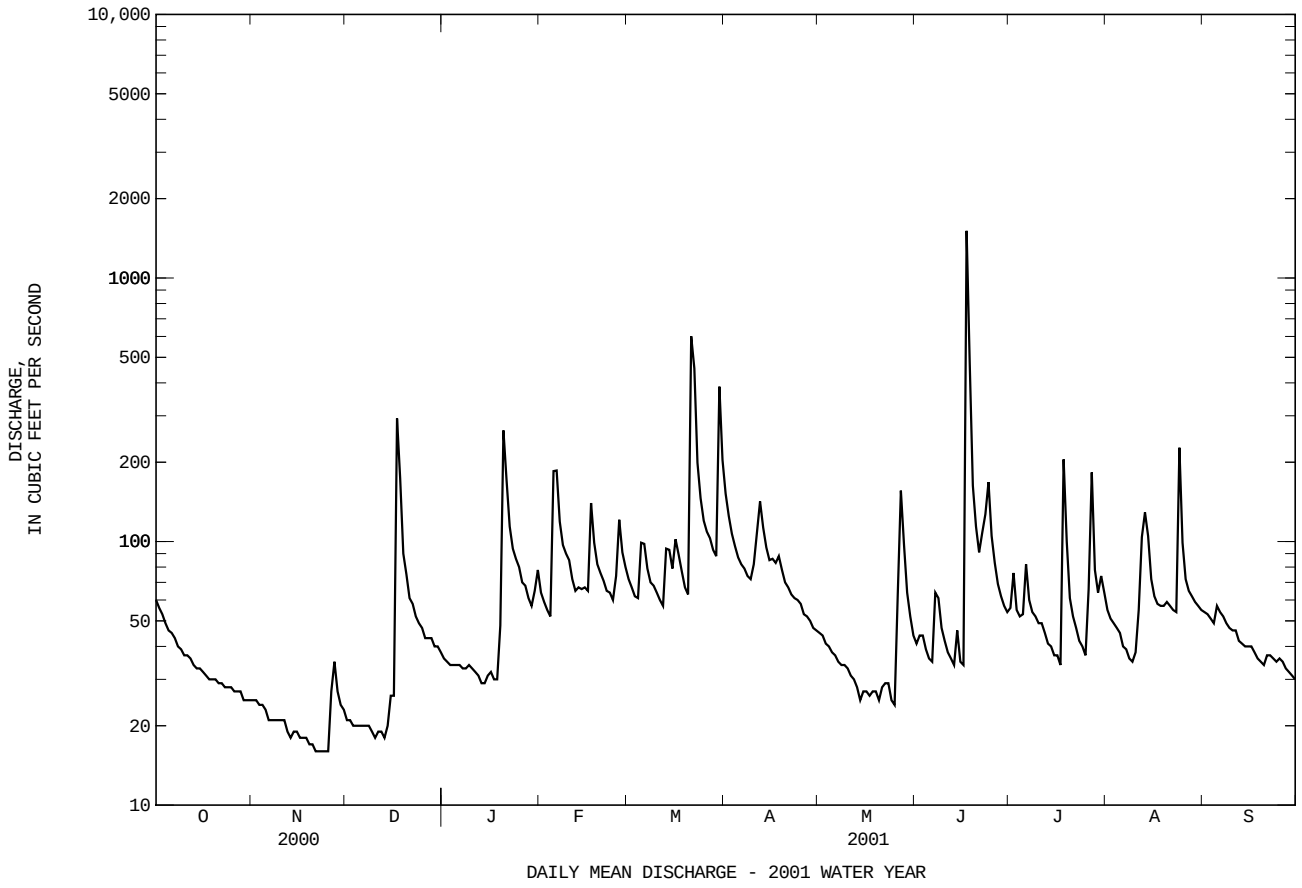
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1943 - 1969, 1972 - 2001, BY WATER YEAR (WY)

MEAN	20.1	34.8	59.6	83.8	90.6	112	77.3	52.8	37.1	34.7	36.8	23.7
MAX	101	190	219	258	279	284	226	178	156	297	340	197
(WY)	1972	1957	1997	1978	1998	1994	1983	1989	1948	1975	1967	1999
MIN	3.46	4.95	3.22	4.30	27.8	27.8	21.7	15.5	7.32	4.58	2.83	2.78
(WY)	1966	1966	1966	1966	1966	1966	1985	1957	1965	1944	1964	1964

01488500 MARSHYHOPE CREEK NEAR ADAMSVILLE, DE--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1943 - 1969, 1972 - 2001	
ANNUAL TOTAL	20553		24346			
ANNUAL MEAN	56.2		66.7		55.7	
HIGHEST ANNUAL MEAN					111	1958
LOWEST ANNUAL MEAN					16.2	1966
HIGHEST DAILY MEAN	1270	Mar 22	1510	Jun 17	2710	Aug 5 1967
LOWEST DAILY MEAN	14	Jul 14	16	(a)	1.2	(b)
ANNUAL SEVEN-DAY MINIMUM	16	Nov 19	16	Nov 19	1.3	Sep 5 1964
MAXIMUM PEAK FLOW			2260	Jun 17	(c)3700	Jul 13 1975
MAXIMUM PEAK STAGE			10.31	Jun 17	13.98	Aug 5 1967
INSTANTANEOUS LOW FLOW			15	(d)	1.0	(f)
ANNUAL RUNOFF (CFSM)	1.28		1.52		1.27	
ANNUAL RUNOFF (INCHES)	17.42		20.63		17.24	
10 PERCENT EXCEEDS	94		106		114	
50 PERCENT EXCEEDS	37		49		30	
90 PERCENT EXCEEDS	20		24		7.6	

a Nov. 21-25.
b Sept. 9, 10, 1964.
c From rating curve extended above 3,300 ft^3/s.
d Nov. 24, 25.
f Sept. 9, 10, 1964; Aug. 20, 1965.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01491000 CHOPTANK RIVER NEAR GREENSBORO, MD

LOCATION.--Lat 38°59'49.9", long 75°47'08.9", Caroline County, Hydrologic Unit 02060005, on left bank at highway bridge (removed), 0.1 mi upstream from Gravelly Branch, 2.0 mi northeast of Greensboro, and 60 mi upstream from mouth.

DRAINAGE AREA.--113 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1948 to current year.

REVISED RECORDS.--WSP 1622: 1948. WDR MD-DE-79-1: 1961(P).

GAGE.--Water-stage recorder and concrete control. Datum of gage is 3.51 ft above sea level.

REMARKS.--Water-discharge records good except those for estimated daily discharges (ice effect, missing record), which are poor. Diversions for irrigation of about 500 acres upstream from station. U.S. Geological Survey gage-height telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1935 is believed to have been higher than that of Aug. 4, 1967, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 22	1300	2,250	9.01	Jun 17	2400	*5,240	*12.66
Mar 31	0430	1,730	8.12				

Minimum discharge, 20 ft^3/s, Sept. 30.

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	220	48	87	96	244	208	698	101	142	111	65	36
2	184	51	81	92	199	186	483	98	216	138	57	31
3	162	49	76	e81	171	171	363	91	281	123	46	28
4	145	48	72	e77	154	185	289	88	225	117	41	28
5	131	48	72	83	215	210	246	84	164	178	41	41
6	125	47	71	84	607	275	223	79	141	380	43	39
7	122	45	69	82	552	265	213	70	176	249	35	35
8	110	44	68	82	348	220	191	68	236	164	33	28
9	102	47	67	90	260	190	184	65	191	142	30	27
10	96	60	72	87	232	177	212	66	143	126	31	27
11	93	64	78	83	213	165	235	64	119	113	40	27
12	89	57	59	83	182	153	301	62	104	98	82	25
13	85	53	57	80	177	180	304	57	95	95	110	23
14	81	55	70	77	182	236	260	47	88	82	92	22
15	78	60	97	82	184	219	222	50	85	73	52	26
16	75	56	106	86	192	219	208	48	82	68	44	24
17	71	55	251	85	371	228	220	48	3140	60	40	23
18	70	53	760	84	511	208	226	49	3830	78	43	23
19	68	51	521	106	325	177	214	55	1120	97	41	23
20	66	50	290	379	256	158	182	53	531	75	49	23
21	65	49	216	747	226	397	163	60	354	61	39	27
22	62	48	180	547	202	1850	156	79	338	55	33	27
23	59	47	e148	348	189	1020	149	82	298	48	32	25
24	57	46	e140	263	185	559	141	69	278	47	43	48
25	58	47	e125	232	e189	400	135	59	229	46	37	50
26	57	86	e122	211	e270	308	128	137	191	57	33	34
27	56	131	e113	187	298	269	121	574	165	142	33	29
28	56	125	115	174	240	241	118	606	145	103	31	32
29	54	99	112	160	---	245	111	402	127	77	27	26
30	51	92	104	166	---	768	104	251	114	89	25	22
31	50	---	100	229	---	1400	---	172	---	77	32	---
TOTAL	2798	1811	4499	5263	7374	11487	6800	3834	13348	3369	1380	879
MEAN	90.3	60.4	145	170	263	371	227	124	445	109	44.5	29.3
MAX	220	131	760	747	607	1850	698	606	3830	380	110	50
MIN	50	44	57	77	154	153	104	47	82	46	25	22
CFSM	.80	.53	1.28	1.50	2.33	3.28	2.01	1.09	3.94	.96	.39	.26
IN.	.92	.60	1.48	1.73	2.43	3.78	2.24	1.26	4.39	1.11	.45	.29

e Estimated

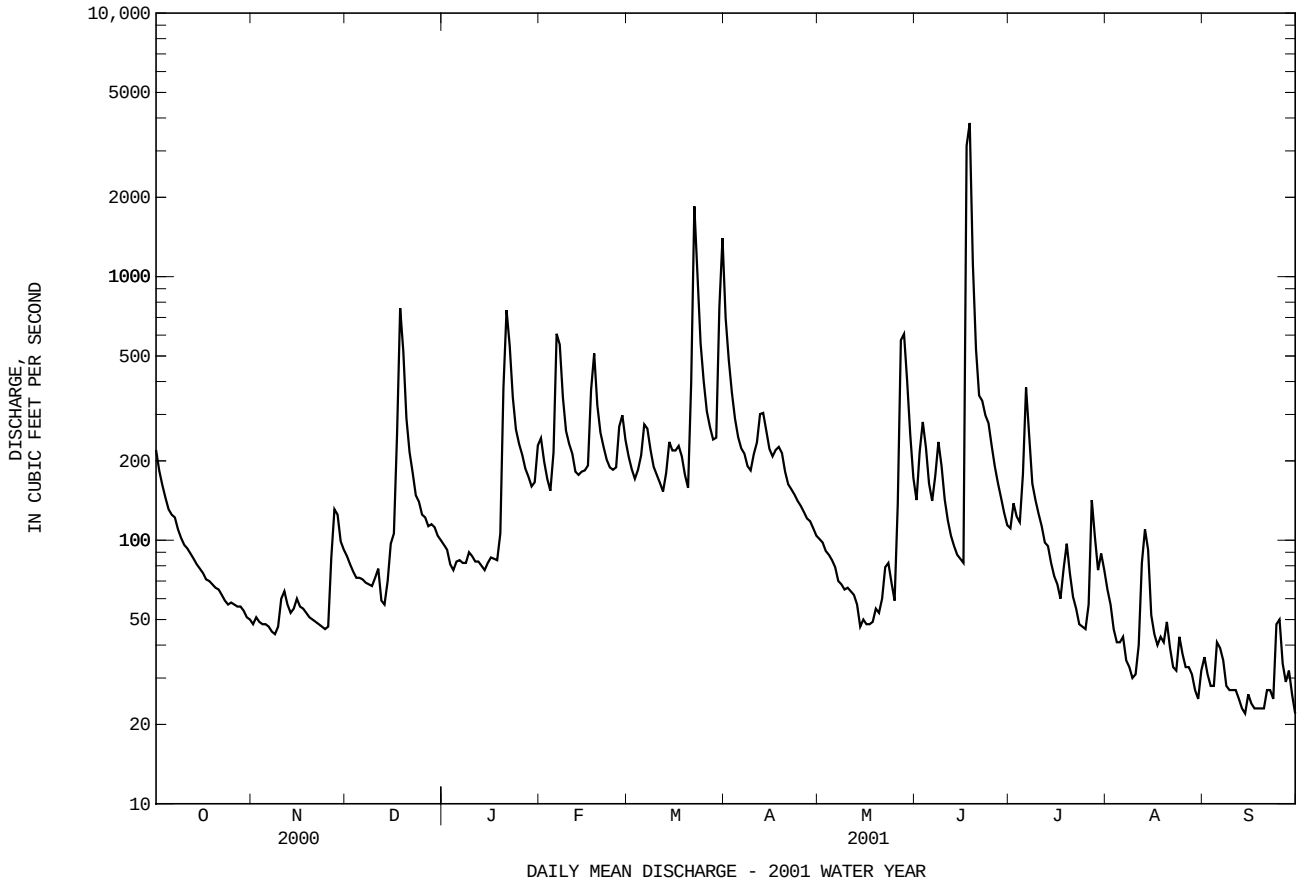
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1948 - 2001, BY WATER YEAR (WY)

MEAN	54.8	87.0	150	199	226	273	202	133	99.8	59.1	82.7	55.4
MAX	402	476	680	559	646	826	649	457	445	421	829	425
(WY)	1972	1957	1997	1978	1979	1994	1983	1989	2001	1975	1967	1999
MIN	9.85	10.9	13.3	17.9	42.8	43.7	47.2	30.3	19.5	9.49	5.31	9.38
(WY)	1966	1966	1966	1966	1966	1966	1966	1977	1986	1977	1966	1987

01491000 CHOPTANK RIVER NEAR GREENSBORO, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1948 - 2001	
ANNUAL TOTAL	60071		62842			
ANNUAL MEAN	164		172		134	
HIGHEST ANNUAL MEAN					237	1972
LOWEST ANNUAL MEAN					26.6	1966
HIGHEST DAILY MEAN	2350	Mar 22	3830	Jun 18	6160	Aug 4 1967
LOWEST DAILY MEAN	26	Jul 14	22	(a)	1.0	Aug 13 1999
ANNUAL SEVEN-DAY MINIMUM	30	Jul 8	23	Sep 13	2.2	Aug 26 1966
MAXIMUM PEAK FLOW			5240	Jun 17	(b)6970	Aug 4 1967
MAXIMUM PEAK STAGE			12.66	Jun 17	14.47	Aug 4 1967
INSTANTANEOUS LOW FLOW			20	Sep 30	.83	Aug 13 1999
ANNUAL RUNOFF (CFSM)	1.45		1.52		1.19	
ANNUAL RUNOFF (INCHES)	19.78		20.69		16.13	
10 PERCENT EXCEEDS	307		298		288	
50 PERCENT EXCEEDS	100		96		74	
90 PERCENT EXCEEDS	53		35		16	

a Sept. 14, 30.
b From rating curve extended above 3,600 ft^3/s.



01491000 CHOPTANK RIVER NEAR GREENSBORO, MD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1965 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1974 to September 1981, October 1984 to September 1991.
WATER TEMPERATURE: October 1974 to September 1991.
SUSPENDED-SEDIMENT DISCHARGE: October 1980 to September 1991.

REMARKS.--On May 5 and Nov. 15, 1994 samples were collected and analyzed using ultraclean methodologies. Data on trace metals for these dates are available from the University of Delaware. Data on organics for these dates are available from George Mason University.Sample for Sept. 17, 1999 was collected at highway bridge on MD State Rte. 287, approximately 3 mi upstream from gaging station.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE (water years 1975-81, 1988, 1990-91): Maximum daily, 313 microsiemens, Dec. 20, 1987; minimum daily, 40 microsiemens, Jan. 31, 1980.
WATER TEMPERATURE (water years 1975-81, 1985, 1988-91): Maximum daily, 28.5°C, Aug. 14, 1988; minimum daily, 0.0°C, on many days during winter periods.
SEDIMENT CONCENTRATION: Maximun daily mean, 107 mg/L, Dec. 26, 1986; minimum daily mean, 1 mg/L, on many days during water years 1982-91.
SEDIMENT LOAD: Maximum daily, 448 tons, Dec. 26, 1986; minimum daily, 0.02 ton, Aug. 30, Sept. 7, 1982, July 25, 1986, Oct. 16, 23, 26, 27, 1987, Sept. 23, 1988.

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

DATE	TIME	SAMPLE TYPE	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)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)
OCT												
04...	1045	ENVIRONMENTAL	146	107	6.9	27.0	18.0	761	7.4	79	37	9.49
NOV												
07...	1215	ENVIRONMENTAL	47	159	7.4	14.5	9.0	764	10.1	87	--	--
DEC												
04...	1030	ENVIRONMENTAL	72	153	6.8	5.5	2.0	753	12.6	92	--	--
18...	1250	ENVIRONMENTAL	867	91	7.4	3.0	6.5	768	9.3	75	--	--
JAN												
03...	*0930*	*BLANK*	--	--	--	--	--	--	--	--	--	--
03...	1000	ENVIRONMENTAL	106	144	6.8	1.0	.00	771	13.8	93	--	--
20...	1300	ENVIRONMENTAL	413	126	6.3	3.0	3.0	757	11.8	88	--	--
FEB												
06...	*0855*	*BLANK*	--	--	--	--	--	--	--	--	--	*E.01*
06...	0945	ENVIRONMENTAL	604	113	6.8	7.5	3.5	762	12.6	95	31	7.85
MAR												
08...	0930	ENVIRONMENTAL	225	129	6.8	8.0	5.0	763	12.0	94	--	--
08...	*0931*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
22...	1725	ENVIRONMENTAL	2090	62	6.3	11.0	8.0	751	9.4	81	--	--
APR												
04...	1145	ENVIRONMENTAL	289	95	7.1	18.5	11.5	768	10.8	98	--	--
MAY												
03...	*0900*	*BLANK*	--	--	--	--	--	--	--	--	--	--
03...	0930	ENVIRONMENTAL	91	142	6.7	26.5	19.0	767	7.0	75	--	--
31...	0930	ENVIRONMENTAL	175	123	6.7	18.5	16.0	765	8.7	87	35	8.91
31...	*0931*	*REPLICATE*	--	--	--	--	--	--	--	--	*35*	*8.90*
JUN												
18...	0845	ENVIRONMENTAL	4450	48	6.2	25.0	23.0	767	5.7	66	--	--
18...	*0846*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
JUL												
02...	0900	ENVIRONMENTAL	140	129	6.7	17.0	22.5	766	--	--	39	9.85
AUG												
01...	*1035*	*BLANK*	--	--	--	--	--	--	--	--	--	--
01...	1040	ENVIRONMENTAL	65	145	6.9	27.0	21.5	771	9.5	106	--	--
SEP												
10...	0930	ENVIRONMENTAL	27	149	7.1	--	22.0	765	7.8	89	--	--
10...	*0931*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--

E Estimated value.

01491000 CHOPTANK RIVER NEAR GREENSBORO, MD--Continued

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

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	BICAR-BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)
OCT													
04...	3.11	6.7	2.66	--	--	15.7	11.2	<.1	19.6	<10	94	1.6	1.27
NOV													
07...	--	--	--	24	29	--	--	--	18.9	<10	--	1.7	1.40
DEC													
04...	--	--	--	18	22	--	--	--	19.4	<10	--	1.4	1.29
18...	--	--	--	--	--	--	--	--	10.8	53	--	1.1	.629
JAN													
03...	--	--	--	--	--	--	--	--	*<.5*	*<10*	--	--	--
03...	--	--	--	16	20	--	--	--	22.6	<10	--	2.0	1.80
20...	--	--	--	12	15	--	--	--	12.7	19	--	2.3	1.35
FEB													
06...	*<.008*	*<.1*	*<.24*	--	--	*<.1*	*M*	*<.2*	*<.1*	*<10*	*<10*	--	--
06...	2.71	6.5	3.11	11	14	14.1	11.3	<.2	13.1	13	99	2.0	1.22
MAR													
08...	--	--	--	10	12	--	--	--	14.5	<10	--	1.8	1.34
08...	--	--	--	--	--	--	--	--	*14.7*	*<10*	--	*1.8*	*1.36*
22...	--	--	--	--	--	--	--	--	5.5	38	--	2.0	.573
APR													
04...	--	--	--	10	12	--	--	--	13.9	<10	--	1.9	1.34
MAY													
03...	--	--	--	--	--	--	--	--	*<.5*	*<10*	--	--	--
03...	--	--	--	--	--	--	--	--	14.5	<10	--	1.8	1.23
31...	3.04	6.2	3.02	--	--	15.0	10.3	<.2	17.3	<10	112	2.1	1.23
31...	*3.03*	*6.2*	*2.95*	--	--	*14.9*	*10.3*	*<.2*	*17.3*	*<10*	*109*	*2.0*	*1.21*
JUN													
18...	--	--	--	--	--	--	--	--	4.0	<10	--	1.6	.622
18...	--	--	--	--	--	--	--	--	*4.1*	*16*	--	*1.6*	*.635*
JUL													
02...	3.60	7.0	10.2	17	21	13.4	19.6	<.2	17.3	<10	120	1.9	1.40
AUG													
01...	--	--	--	--	--	--	--	--	*<.5*	*<10*	--	--	--
01...	--	--	--	--	--	--	--	--	15.9	<10	--	1.9	1.54
SEP													
10...	--	--	--	--	--	--	--	--	14.4	<10	--	1.9	1.50
10...	--	--	--	--	--	--	--	--	*14.1*	*<10*	--	*1.8*	*1.49*

DATE	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)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN DIS-SOLVED (MG/L AS N) (00602)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	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)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	IRON, DIS-SOLVED (UG/L AS FE) (01046)
OCT													
04...	.003	1.27	<.020	.37	.34	1.6	--	--	.076	.028	.024	6.1	390
NOV													
07...	.010	1.41	<.041	.26	.22	1.6	--	--	.047	.017	.014	--	--
DEC													
04...	.004	1.29	<.041	.16	.22	1.5	--	--	.034	.009	.010	4.1	--
18...	.010	.639	E.022	.51	.56	1.2	--	--	.144	.056	.034	17	--
JAN													
03...	*<.001*	*<.047*	*<.041*	*<.08*	*<.10*	--	--	--	*<.004*	*<.006*	*<.007*	--	--
03...	.008	1.81	.086	.23	.22	2.0	.14	.14	.038	.010	E.005	3.2	--
20...	.013	1.36	.265	.94	.67	2.0	.67	.41	.132	.036	.024	8.5	--
FEB													
06...	*<.006*	*<.047*	*<.041*	*<.08*	*<.10*	--	--	--	*E.002*	*<.006*	*<.007*	*<.60*	*<10*
06...	.008	1.23	.090	.79	.49	1.7	.70	.40	.120	.026	.014	8.7	260
MAR													
08...	.004	1.34	<.040	.45	.31	1.6	--	--	.052	.020	.010	6.9	--
08...	*.004*	*1.36*	*<.040*	*.42*	*.30*	*1.7*	--	--	*.051*	*.018*	*.009*	*6.9*	--
22...	.008	.581	.133	1.4	.68	1.3	1.3	.55	.261	.044	.027	14	--
APR													
04...	.009	1.35	.054	.55	.46	1.8	.50	.40	.066	.028	.019	8.3	--
MAY													
03...	*<.001*	*<.047*	*<.041*	*<.08*	*<.10*	--	--	--	*<.004*	*<.006*	*<.007*	*<.60*	--
03...	.019	1.24	.106	.53	.44	1.7	.42	.33	.080	.026	.016	6.2	--
31...	.043	1.27	.116	.85	.63	1.9	.73	.51	.124	.037	.027	10	770
31...	*.044*	*1.25*	*.165*	*.74*	*.66*	*1.9*	*.58*	*.49*	*.125*	*.039*	*.029*	*10*	*720*
JUN													
18...	.019	.641	.098	.97	.69	1.3	.87	.59	.195	.105	.084	13	--
18...	*.018*	*.653*	*.111*	*.97*	*.69*	*1.3*	*.86*	*.57*	*.192*	*.104*	*.087*	*13*	--
JUL													
02...	.022	1.42	.053	.52	.39	1.8	.47	.34	.120	.040	.027	6.9	400
AUG													
01...	*<.001*	*E.023*	*<.040*	*<.08*	*<.10*	--	--	--	*<.004*	*<.006*	*<.007*	*<.60*	--
01...	.011	1.55	<.040	.39	.35	1.9	--	--	.080	.022	.016	5.2	--
SEP													
10...	.005	1.50	<.040	.36	.33	1.8	--	--	.058	.022	.010	4.8	--
10...	*.005*	*1.49*	*<.040*	*.36*	*.31*	*1.8*	--	--	*.057*	*.022*	*.012*	*4.3*	--

E Estimated value.
< Actual value is known to be less than the value shown.
M Presence of material verified but not quantified.

01491000 CHOPTANK RIVER NEAR GREENSBORO, MD--Continued

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

DATE	MANGANESE, DIS-SOLVED (UG/L AS MN) (01056)	SEDIMENT, SUS-PENDED (MG/L) (80154)	SEDIMENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT				
04...	29.0	2	.79	--
NOV				
07...	--	2	.27	--
DEC				
04...	--	2	.35	--
18...	--	66	154	90
JAN				
03...	--	--	--	--
03...	--	1	.37	--
20...	--	19	21	--
FEB				
06...	*<3.2*	--	--	--
06...	46.0	21	34	--
MAR				
08...	--	8	5.0	--
08...	--	--	--	--
22...	--	65	367	97
APR				
04...	--	7	5.3	--
MAY				
03...	--	--	--	--
03...	--	3	.84	--
31...	70.8	5	2.5	--
31...	*71.4*	*11*	--	--
JUN				
18...	--	25	300	86
18...	--	*29*	--	*92*
JUL				
02...	71.7	9	3.6	--
AUG				
01...	--	--	--	--
01...	--	5	.95	--
SEP				
10...	--	2	.14	--
10...	--	*3*	--	--

< Actual value is known to be less than the value shown.

THIS IS A BLANK PAGE

01491500 TUCKAHOE CREEK NEAR RUTHSBURG, MD

LOCATION.--Lat 38°58'00.5", long 75°56'35.0", Queen Annes County, Hydrologic Unit 02060005, on right bank 100 ft upstream from highway bridge on Crouse Mill Road, 0.1 mi downstream from Blockston Branch, 2.6 mi downstream from confluence of German Branch and Mason Branch, and 2.6 mi south of Ruthsburg.

DRAINAGE AREA.--85.2 mi^2.

PERIOD OF RECORD.--March 1951 to September 1956, November 2000 to September 2001.

GAGE.--Water-stage recorder. Elevation of gage is 10 ft above sea level, from topographic map.

REMARKS.--Records good except those for estimated daily discharges (missing record, ice effect), which are fair. Several measurements of water temperature were made during the year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 750 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan 20	2330	881	4.71	May 27	1030	1,120	5.12
Mar 22	0445	*2,110	*6.46	Jun 17	2245	1,210	5.28
Mar 30	1930	1,510	5.73	Aug 12	1315	1,140	5.15

Minimum discharge, 28 ft^3/s, Aug. 8.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	e60	73	e60	161	133	487	68	106	55	59	46
2	---	e58	67	e60	122	121	343	67	328	74	52	43
3	---	e56	63	e58	107	114	255	63	274	83	47	39
4	---	e54	60	e58	93	113	205	61	159	80	38	37
5	---	e54	58	58	196	240	171	58	128	333	35	46
6	---	e53	57	59	610	300	156	55	112	481	33	43
7	---	53	56	59	313	187	155	51	288	222	33	41
8	---	54	55	61	193	142	142	50	378	126	29	40
9	---	55	54	69	153	126	141	50	169	111	29	37
10	---	74	52	65	143	118	191	49	118	96	31	36
11	---	75	53	61	127	107	217	44	98	97	66	36
12	---	65	55	61	109	102	386	38	87	75	864	34
13	---	58	52	59	112	145	267	32	82	61	678	33
14	---	61	75	58	117	171	195	31	77	51	245	34
15	---	69	107	61	117	134	154	30	74	47	120	36
16	---	64	90	64	137	158	162	29	72	44	83	33
17	---	60	165	63	506	149	185	33	652	40	70	30
18	---	57	371	62	400	133	222	35	980	51	63	30
19	---	55	183	97	204	113	178	39	431	70	58	31
20	---	53	131	546	162	99	135	40	225	62	59	33
21	---	52	109	699	144	533	123	45	163	51	57	37
22	---	50	98	346	129	1680	115	55	174	37	50	36
23	---	49	91	196	122	658	109	62	176	32	51	33
24	---	49	81	150	130	383	102	50	132	30	75	32
25	---	49	e75	137	150	269	93	40	108	30	55	45
26	---	118	70	122	291	215	85	206	94	66	47	44
27	---	157	e68	108	203	190	81	927	78	327	44	37
28	---	105	e66	102	150	163	78	489	68	109	42	35
29	---	81	e64	93	---	153	73	253	62	72	41	34
30	---	76	e62	114	---	971	69	153	56	91	41	32
31	---	---	e62	223	---	924	---	111	---	73	45	---
TOTAL	---	1974	2723	4029	5401	9044	5275	3314	5949	3177	3240	1103
MEAN	---	65.8	87.8	130	193	292	176	107	198	102	105	36.8
MAX	---	157	371	699	610	1680	487	927	980	481	864	46
MIN	---	49	52	58	93	99	69	29	56	30	29	30
CFSM	---	.77	1.03	1.53	2.26	3.42	2.06	1.25	2.33	1.20	1.23	.43
IN.	---	.86	1.19	1.76	2.36	3.95	2.30	1.45	2.60	1.39	1.41	.48

e Estimated

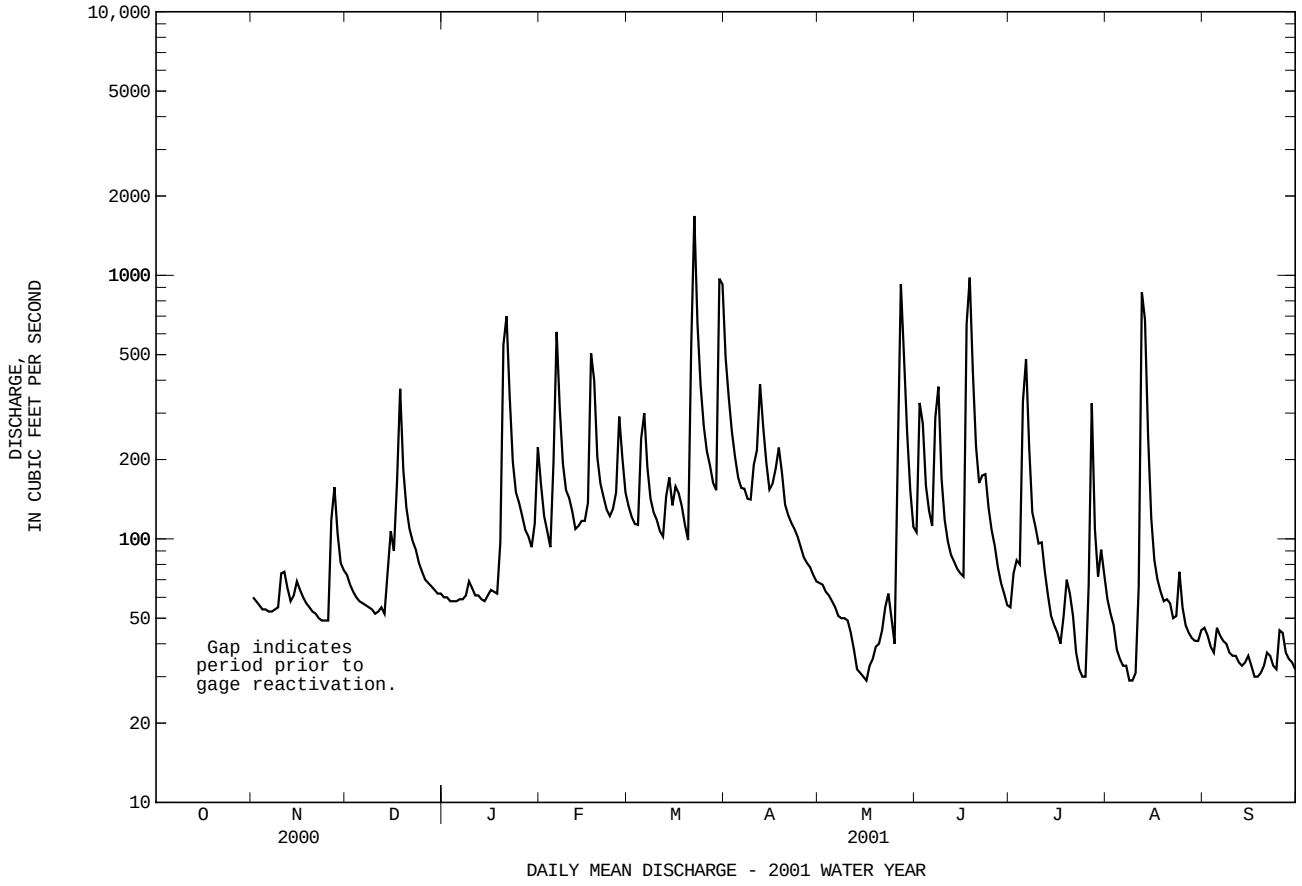
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1951 - 1956, NOVEMBER 2000 - SEPEMBER 2001, BY WATER YEAR (WY)

MEAN	30.9	69.1	106	130	142	204	149	96.2	82.5	55.3	75.7	37.5
MAX	37.4	131	233	230	195	292	266	191	198	102	181	87.6
(WY)	1956	1952	1952	1952	1953	2001	1952	1953	2001	2001	1955	1952
MIN	18.1	28.3	30.5	36.8	70.0	117	68.5	34.5	29.4	26.3	19.3	16.5
(WY)	1955	1955	1956	1955	1955	1955	1955	1955	1954	1956	1954	1956

01491500 TUCKAHOE CREEK NEAR RUTHSBURG, MD--Continued

SUMMARY STATISTICS	WATER YEARS 1951 - 1956 2001 - 2001	
ANNUAL MEAN	94.3	
HIGHEST ANNUAL MEAN	155	1952
LOWEST ANNUAL MEAN	54.9	1956
HIGHEST DAILY MEAN	1680	Mar 22 2001
LOWEST DAILY MEAN	14	(a)
ANNUAL SEVEN-DAY MINIMUM	14	Sep 21 1956
MAXIMUM PEAK FLOW	(b)2110	Mar 22 2001
MAXIMUM PEAK STAGE	6.46	Mar 22 2001
INSTANTANEOUS LOW FLOW	13	Sep 15 1956
ANNUAL RUNOFF (CFSM)	1.11	
ANNUAL RUNOFF (INCHES)	15.03	
10 PERCENT EXCEEDS	204	
50 PERCENT EXCEEDS	56	
90 PERCENT EXCEEDS	20	

a Aug. 1, Sept. 6, 7, 28-30, Oct. 5, 12-14, 1954, Aug. 14, 1955, Aug. 19, Sept. 3-5, 13-16, 21-24, 26, 26, 1956.
b From rating curve extended above 1,730 ft^3/s.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01492500 SALLIE HARRIS CREEK NEAR CARMICHAEL, MD

LOCATION.--Lat 38°57'53.6", long 76°06'31.8", Queen Anne County, Hydrologic Unit 02060002, on left bank at downstream side of eastbound lanes of bridge on U.S. Route 50, 2.0 mi northeast of Carmichael, 2.2 mi northwest of Wye Mills, and 2.4 mi upstream from mouth.

DRAINAGE AREA.--8.09 mi^2.

PERIOD OF RECORD.--June 1951 to September 1956. Annual maximum, water years 1957-81. October 2000 to September 2001.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 5.96 ft above sea level. June 1951 to September 1956 recording gage at site 30 ft upstream from present site at datum 9.38 ft higher.

REMARKS.--Records good except those for estimated daily discharges (backwater, ice effect) which are poor. Several measurements of water temperature were made during the year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 150 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 21	2045	310	5.24	May 26	2115	*313	*5.26
Mar 30	0945	165	4.18	Aug 11	1730	233	4.73

Minimum discharge, 2.6 ft^3/s, Sept. 16-19.

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	5.5	e4.3	6.2	e4.7	8.5	8.3	16	7.0	9.9	5.1	4.6	3.5
2	5.3	e4.2	5.7	e4.6	7.2	8.0	12	7.0	24	4.9	4.1	3.3
3	5.0	e4.2	5.7	e4.6	6.3	7.8	11	6.7	10	4.5	4.0	3.1
4	5.0	e4.2	5.1	4.6	6.0	8.6	10	6.2	7.5	9.1	4.0	3.1
5	4.9	5.8	5.1	4.6	33	25	9.7	6.1	8.5	29	4.0	3.4
6	5.1	4.7	5.2	4.9	31	17	9.6	5.8	7.1	17	3.8	3.1
7	4.8	4.9	5.0	5.0	11	11	9.9	6.0	53	6.1	3.5	3.0
8	4.3	5.2	5.0	5.7	8.7	9.3	9.5	6.1	19	6.2	3.2	3.0
9	4.4	5.5	5.1	7.1	7.8	9.0	9.9	5.9	8.7	5.7	3.2	2.9
10	4.6	9.9	5.1	5.7	7.5	8.4	14	5.9	7.0	6.4	3.5	3.0
11	4.6	9.2	5.4	5.3	6.7	8.2	24	5.6	6.2	8.6	52	3.1
12	4.6	6.3	5.2	5.5	6.2	8.0	27	5.4	5.9	5.1	41	2.8
13	5.5	6.1	5.0	5.3	7.4	16	14	5.0	5.7	4.5	13	2.8
14	5.7	8.6	14	5.2	7.4	11	11	4.8	5.4	4.2	11	3.0
15	4.5	9.9	11	5.6	7.5	9.7	10	4.8	5.3	3.9	5.8	3.0
16	4.4	7.4	9.4	6.2	11	13	11	4.8	5.4	3.8	4.6	2.8
17	4.3	6.7	44	6.2	44	11	12	4.9	42	3.8	4.1	2.8
18	4.2	e6.4	30	5.9	14	10	19	5.1	9.1	7.2	3.9	2.7
19	4.1	e6.2	11	16	9.2	8.9	12	5.8	6.3	5.4	3.8	2.7
20	4.0	e6.1	8.4	65	8.7	8.5	10	5.7	5.6	4.4	3.8	11
21	4.1	e6.0	7.2	39	8.2	111	9.7	6.6	5.2	4.1	3.4	13
22	5.9	5.9	e6.8	14	7.7	111	9.4	8.2	4.9	3.7	3.3	4.5
23	4.3	5.8	e6.2	9.5	8.0	22	9.0	9.7	5.0	3.5	4.1	3.3
24	4.2	6.6	e5.6	8.5	9.8	13	8.4	5.8	4.9	3.5	8.1	3.7
25	e4.1	6.3	e5.2	8.4	13	11	8.0	5.3	4.5	3.3	4.1	7.3
26	e4.1	23	5.0	7.4	17	11	7.9	126	4.3	16	3.5	4.2
27	e4.1	13	5.0	7.0	9.9	10	7.6	113	4.2	17	3.4	3.2
28	5.2	7.2	e4.9	6.8	9.0	9.5	7.4	27	4.0	4.9	3.3	3.2
29	4.6	6.2	e4.8	6.5	---	11	7.0	11	3.8	5.6	3.2	3.0
30	4.4	6.8	e4.7	12	---	105	7.0	8.4	4.2	9.2	3.2	3.1
31	e4.3	---	e4.7	13	---	34	---	6.8	---	5.4	3.5	---
TOTAL	144.1	212.6	256.7	309.8	331.7	665.2	343.0	442.4	296.6	221.1	224.0	116.6
MEAN	4.65	7.09	8.28	9.99	11.8	21.5	11.4	14.3	9.89	7.13	7.23	3.89
MAX	5.9	23	44	65	44	111	27	126	53	29	52	13
MIN	4.0	4.2	4.7	4.6	6.0	7.8	7.0	4.8	3.8	3.3	3.2	2.7
CFSM	.57	.88	1.02	1.24	1.46	2.65	1.41	1.76	1.22	.88	.89	.48
IN.	.66	.98	1.18	1.42	1.53	3.06	1.58	2.03	1.36	1.02	1.03	.54

e Estimated

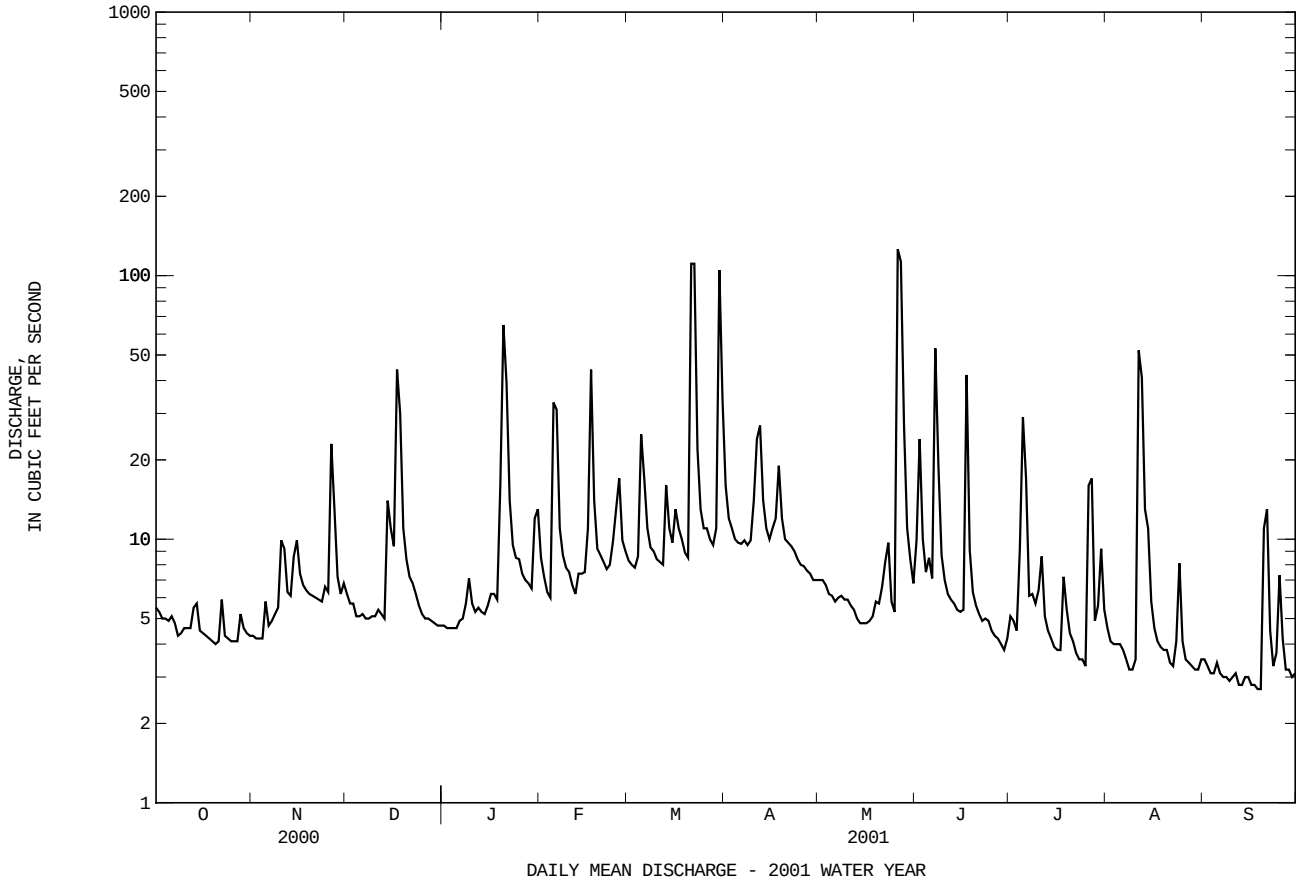
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1951 - 1956, 2001, BY WATER YEAR (WY)

MEAN	3.79	6.96	9.32	10.2	10.7	15.2	12.9	8.80	5.97	4.20	8.08	4.22
MAX	4.86	10.0	16.7	17.2	15.7	21.5	29.8	14.3	9.89	7.13	24.3	13.0
(WY)	1956	1953	1952	1953	1953	2001	1952	2001	2001	2001	1955	1952
MIN	2.15	4.55	3.66	3.65	6.70	8.08	5.03	2.68	2.67	2.33	2.40	2.03
(WY)	1955	1955	1956	1955	1955	1955	1955	1955	1956	1955	1956	1954

01492500 SALLIE HARRIS CREEK NEAR CARMICHAEL, MD--Continued

SUMMARY STATISTICS	FOR 2001 WATER YEAR		WATER YEARS 1951 - 2001	
ANNUAL TOTAL	3563.8			
ANNUAL MEAN	9.76		8.48	
HIGHEST ANNUAL MEAN			12.0	1952
LOWEST ANNUAL MEAN			5.54	1956
HIGHEST DAILY MEAN	126	May 26	428	Aug 13 1955
LOWEST DAILY MEAN	2.7	(a)	1.5	(b)
ANNUAL SEVEN-DAY MINIMUM	2.8	Sep 13	1.6	Jul 31 1955
MAXIMUM PEAK FLOW	(c)313	May 26	(d)1030	Aug 13 1955
MAXIMUM PEAK STAGE	5.26	May 26	(f)7.02	Aug 13 1955
INSTANTANEOUS LOW FLOW	2.6	(g)	1.3	Sep 29 1954
ANNUAL RUNOFF (CFSM)	1.21		1.05	
ANNUAL RUNOFF (INCHES)	16.39		14.24	
10 PERCENT EXCEEDS	14		15	
50 PERCENT EXCEEDS	6.0		4.5	
90 PERCENT EXCEEDS	3.5		2.1	

a Sept. 18, 19.
b Aug. 3-6, 1955.
c From rating curve extended above 130 ft^3/s.
d From rating curve extended above 370 ft^3/s by logarithmic plotting at previous site and datum.
f At previous site and datum.
g Sept. 16-19.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01493000 UNICORN BRANCH NEAR MILLINGTON, MD

LOCATION.--Lat 39°14'58.9", long 75°51'40.7", Queen Annes County, Hydrologic Unit 02060002, on right bank 20 ft upstream from bridge on State Highway 313, 0.9 mi upstream from mouth, and 1.4 mi southwest of Millington.

DRAINAGE AREA.--19.7 mi^2.

PERIOD OF RECORD.--January 1948 to current year.

REVISED RECORDS.--WSP 1382: 1952(P). WRD MD-DE-95-1: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 3.57 ft above sea level.

REMARKS.--No estimated daily discharges. Records good. Occasional regulation at low and medium flow by Unicorn Lake Dam upstream from station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 180 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 22	0430	324	4.24	May 27	0630	251	3.95
Mar 30	2015	288	4.11	Jun 17	1730	*649	*5.14
May 22	0900	541	4.88				

Minimum discharge, 1.2 ft^3/s, Dec. 4, 5.

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	35	16	55	18	36	31	98	20	27	24	15	14
2	31	14	28	18	35	30	66	19	81	29	14	11
3	28	16	13	16	32	28	52	18	65	20	14	10
4	25	15	12	14	27	30	42	18	38	35	12	13
5	23	15	6.3	12	33	51	37	17	29	37	14	17
6	27	15	15	13	72	56	35	16	25	35	13	12
7	23	15	17	13	70	41	34	17	33	25	11	11
8	20	15	20	13	51	34	32	17	33	23	9.8	10
9	20	16	19	13	48	30	32	17	25	21	11	11
10	20	19	13	13	45	29	38	15	22	19	11	11
11	19	17	13	15	42	27	41	15	20	18	15	10
12	19	16	22	18	35	25	59	14	18	16	22	9.8
13	18	16	13	17	20	38	50	14	18	15	19	9.7
14	19	18	8.8	17	17	41	40	13	18	15	27	9.5
15	18	18	13	16	18	34	35	11	19	14	17	9.9
16	18	17	17	16	29	38	39	11	19	13	14	9.1
17	17	16	32	13	91	36	40	13	306	13	13	9.4
18	17	16	85	12	75	31	39	14	278	23	13	9.1
19	17	16	47	24	42	27	35	14	83	19	15	9.1
20	17	16	38	63	38	24	31	15	40	17	15	11
21	17	14	35	128	34	67	30	19	36	16	12	15
22	16	14	33	68	32	240	28	29	34	15	12	12
23	17	14	31	42	29	115	27	23	28	14	11	10
24	17	14	29	36	31	67	25	16	24	14	11	11
25	16	16	27	35	37	50	23	15	21	12	10	14
26	16	42	16	34	57	43	23	74	20	29	11	12
27	16	38	13	33	43	39	22	196	19	26	11	11
28	16	23	13	36	35	36	21	120	17	17	11	10
29	16	19	14	35	---	37	20	62	17	17	10	10
30	15	36	14	34	---	174	20	35	17	19	11	10
31	15	---	15	36	---	180	---	27	---	16	12	---
TOTAL	608	552	727.1	871	1154	1729	1114	924	1430	626	416.8	331.6
MEAN	19.6	18.4	23.5	28.1	41.2	55.8	37.1	29.8	47.7	20.2	13.4	11.1
MAX	35	42	85	128	91	240	98	196	306	37	27	17
MIN	15	14	6.3	12	17	24	20	11	17	12	9.8	9.1
CFSM	1.00	.93	1.19	1.43	2.09	2.83	1.89	1.51	2.42	1.03	.68	.56
IN.	1.15	1.04	1.37	1.65	2.18	3.27	2.11	1.75	2.70	1.18	.79	.63

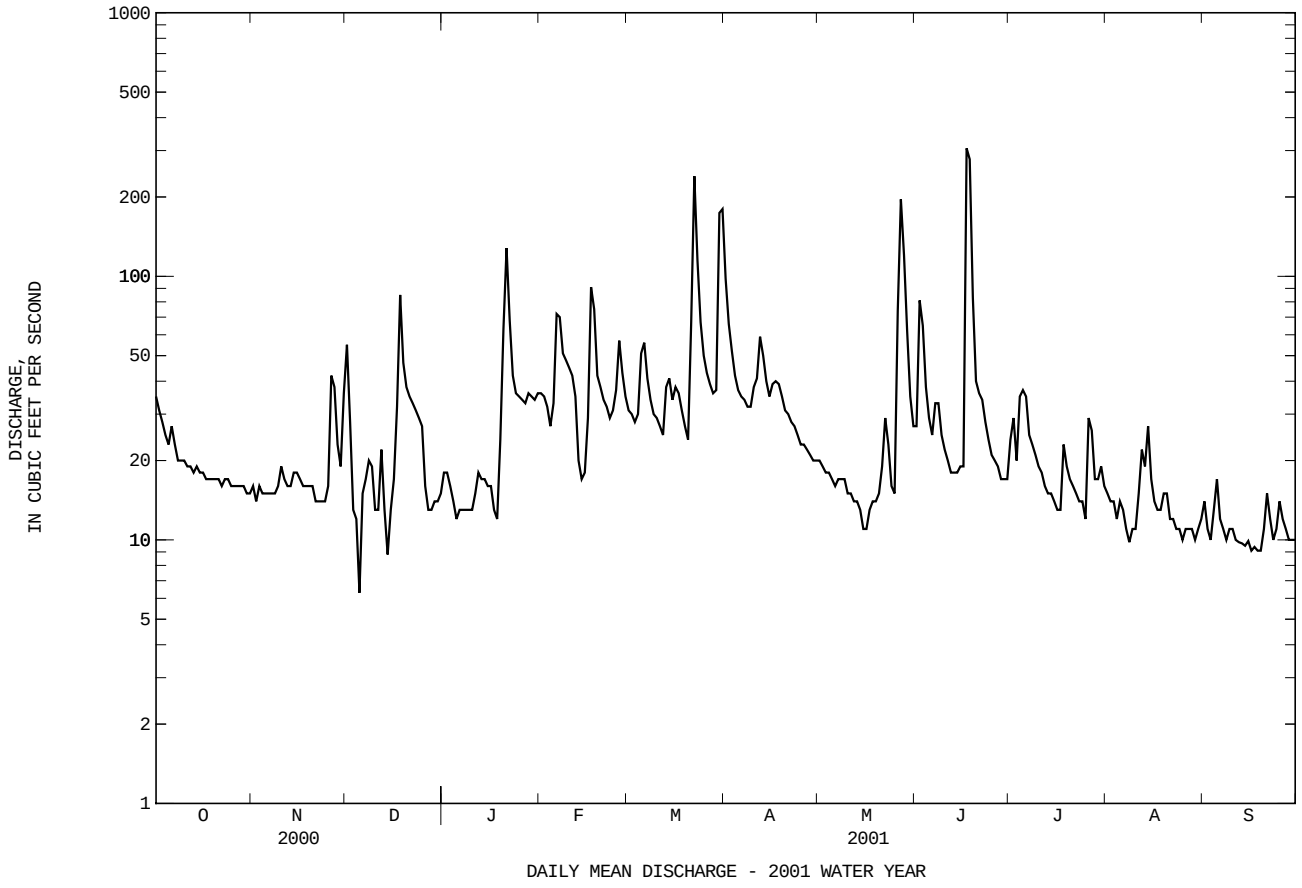
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1948 - 2001, BY WATER YEAR (WY)

MEAN	14.8	17.3	25.6	32.4	37.0	44.3	37.0	26.9	21.5	16.5	17.5	16.6
MAX	91.5	65.4	124	83.7	83.7	105	109	66.8	86.9	52.5	62.5	112
(WY)	1972	1972	1997	1978	1961	1994	1983	1989	1996	1972	1967	1999
MIN	5.27	4.99	5.32	5.80	12.1	9.29	10.7	8.64	4.51	5.22	3.15	4.79
(WY)	1966	1966	1966	1966	1966	1966	1966	1977	1966	1977	1966	1977

01493000 UNICORN BRANCH NEAR MILLINGTON, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1948 - 2001	
ANNUAL TOTAL	13068.1		10483.5			
ANNUAL MEAN	35.7		28.7		25.5	
HIGHEST ANNUAL MEAN					51.8	1972
LOWEST ANNUAL MEAN					7.08	1966
HIGHEST DAILY MEAN	410	Mar 22	306	Jun 17	1200	Sep 16 1999
LOWEST DAILY MEAN	6.3	Dec 5	6.3	Dec 5	.10	Jun 9 1965
ANNUAL SEVEN-DAY MINIMUM	12	Jul 7	9.4	Sep 13	.14	Jun 8 1965
MAXIMUM PEAK FLOW			649	Jun 17	(a)2600	Sep 16 1999
MAXIMUM PEAK STAGE			5.14	Jun 17	9.40	Sep 16 1999
INSTANTANEOUS LOW FLOW			1.2	(b)	.00	(c)
ANNUAL RUNOFF (CFSM)	1.81		1.46		1.30	
ANNUAL RUNOFF (INCHES)	24.70		19.82		17.60	
10 PERCENT EXCEEDS	68		46		48	
50 PERCENT EXCEEDS	24		19		17	
90 PERCENT EXCEEDS	15		11		7.4	

a From rating curve extended above 600 ft^3/s on basis of USGS Cap Culvert Analysis Program of peak flow.
b Dec. 4, 5.
c No flow for part of each day June 13, 14, 1965, and Jan. 6, 7, 10, 13-16,20, 21, 23, 24, 27, 31, Feb. 2, 3, 14, 20, 1997, caused by regulation at Unicorn Lake Dam.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01493112 CHESTERVILLE BRANCH NEAR CRUMPTON, MD

LOCATION.--Lat 39°15'25.4", long 75°56'24.5", Queen Annes County, Hydrologic Unit 02060002, on right bank 20 ft upstream from bridge on State Highway 313, 0.9 mi upstream from mouth, and 1.4 mi southwest of Millington.

DRAINAGE AREA.--6.12 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1996 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2.00 ft above sea level.

REMARKS.--Water-discharge records good except those for estimated daily discharges (doubtful gage-height record, backwater), which are poor. U.S. Geological Survey gage-height telemeter at station.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 60 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 17	1300	86	5.21	Jun 22	0215	110	5.60
May 26	2000	116	5.69	Jul 26	2000	*123	*5.79
May 28	0530	73	4.97	Aug 11	2345	88	5.25

Minimum discharge, 4.0 ft^3/s, Dec. 12.

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	e5.0	e4.8	4.6	5.4	5.8	6.6	11	7.2	6.6	8.4	6.0	5.8
2	e6.0	e4.7	4.4	5.3	5.4	7.4	9.3	7.0	12	13	5.8	4.9
3	e6.0	e4.6	4.5	5.2	5.2	5.9	8.3	6.9	8.8	6.4	5.8	4.7
4	e5.9	e4.6	4.4	5.2	5.1	6.1	8.1	6.8	7.3	14	5.9	4.9
5	e5.8	e4.6	4.7	5.2	12	6.9	8.0	6.6	7.2	16	5.9	8.1
6	e5.8	e4.8	4.7	5.3	11	5.7	8.0	6.4	7.0	7.3	5.8	4.8
7	e5.8	e5.0	4.8	5.3	6.5	5.7	8.0	6.4	9.3	6.5	5.5	4.6
8	e5.8	e4.8	4.8	5.5	5.7	5.7	8.0	6.5	7.7	6.6	5.5	e4.7
9	e5.6	e5.0	4.6	5.6	5.5	5.6	8.1	6.8	7.0	6.6	5.5	e4.7
10	e5.4	6.4	4.6	5.3	5.5	7.3	9.5	6.8	6.6	6.3	6.4	e4.6
11	e5.2	6.1	4.8	5.3	5.3	6.9	11	6.4	6.6	7.2	22	e4.6
12	e5.0	5.5	4.4	5.2	5.2	5.7	12	6.6	6.6	6.4	25	e4.5
13	e4.8	5.4	4.3	5.0	5.6	6.2	9.6	6.4	6.8	6.2	7.7	e4.5
14	e4.7	6.1	7.9	5.0	5.4	5.4	8.7	6.1	6.6	6.1	6.4	e4.5
15	e4.7	6.0	6.4	5.3	5.6	8.4	8.2	6.0	6.9	6.1	5.7	e4.5
16	e4.6	5.3	5.1	5.3	6.5	6.8	9.8	6.0	8.7	6.1	5.4	e4.5
17	e4.6	5.3	43	5.2	11	6.7	10	5.7	12	5.8	5.4	e4.5
18	e4.6	5.2	9.4	5.1	6.8	6.1	9.3	5.7	7.7	6.0	5.2	4.5
19	e4.6	4.9	6.8	16	6.1	5.7	8.4	5.8	6.5	6.8	5.3	4.4
20	e5.0	4.8	6.2	17	8.2	5.5	8.1	6.1	5.8	7.3	5.9	5.0
21	e5.0	4.9	5.9	8.6	6.2	22	7.9	7.5	16	6.5	5.2	9.2
22	e4.8	5.0	5.8	6.4	5.5	16	7.7	10	46	5.4	5.1	5.0
23	e4.8	5.1	5.5	5.7	5.7	7.4	7.5	20	9.1	5.3	5.1	4.6
24	e4.8	5.1	5.4	5.5	5.7	6.9	7.4	7.7	7.1	5.5	5.0	4.6
25	e4.8	5.4	5.5	5.4	6.1	9.6	7.4	6.0	6.6	5.8	4.9	6.1
26	e5.0	11	5.3	5.3	6.2	8.0	7.4	56	5.8	41	5.1	4.9
27	e4.9	7.3	5.3	5.3	5.3	7.6	7.4	37	5.6	28	5.0	4.6
28	e4.8	5.1	5.4	5.2	5.2	7.5	7.4	38	5.5	6.8	4.7	4.5
29	e4.8	4.6	5.4	5.1	---	8.2	7.1	11	5.7	6.3	4.7	4.5
30	e6.0	5.3	5.4	7.1	---	36	7.1	8.4	6.1	6.7	5.5	e4.6
31	e5.0	---	5.4	7.1	---	14	---	7.0	---	6.3	12	---
TOTAL	159.6	162.7	204.7	194.4	179.3	269.5	255.7	336.8	267.2	278.7	214.4	149.9
MEAN	5.15	5.42	6.60	6.27	6.40	8.69	8.52	10.9	8.91	8.99	6.92	5.00
MAX	6.0	11	43	17	12	36	12	56	46	41	25	9.2
MIN	4.6	4.6	4.3	5.0	5.1	5.4	7.1	5.7	5.5	5.3	4.7	4.4
CFSM	.84	.89	1.08	1.02	1.05	1.42	1.39	1.78	1.46	1.47	1.13	.82
IN.	.97	.99	1.24	1.18	1.09	1.64	1.55	2.05	1.62	1.69	1.30	.91

e Estimated

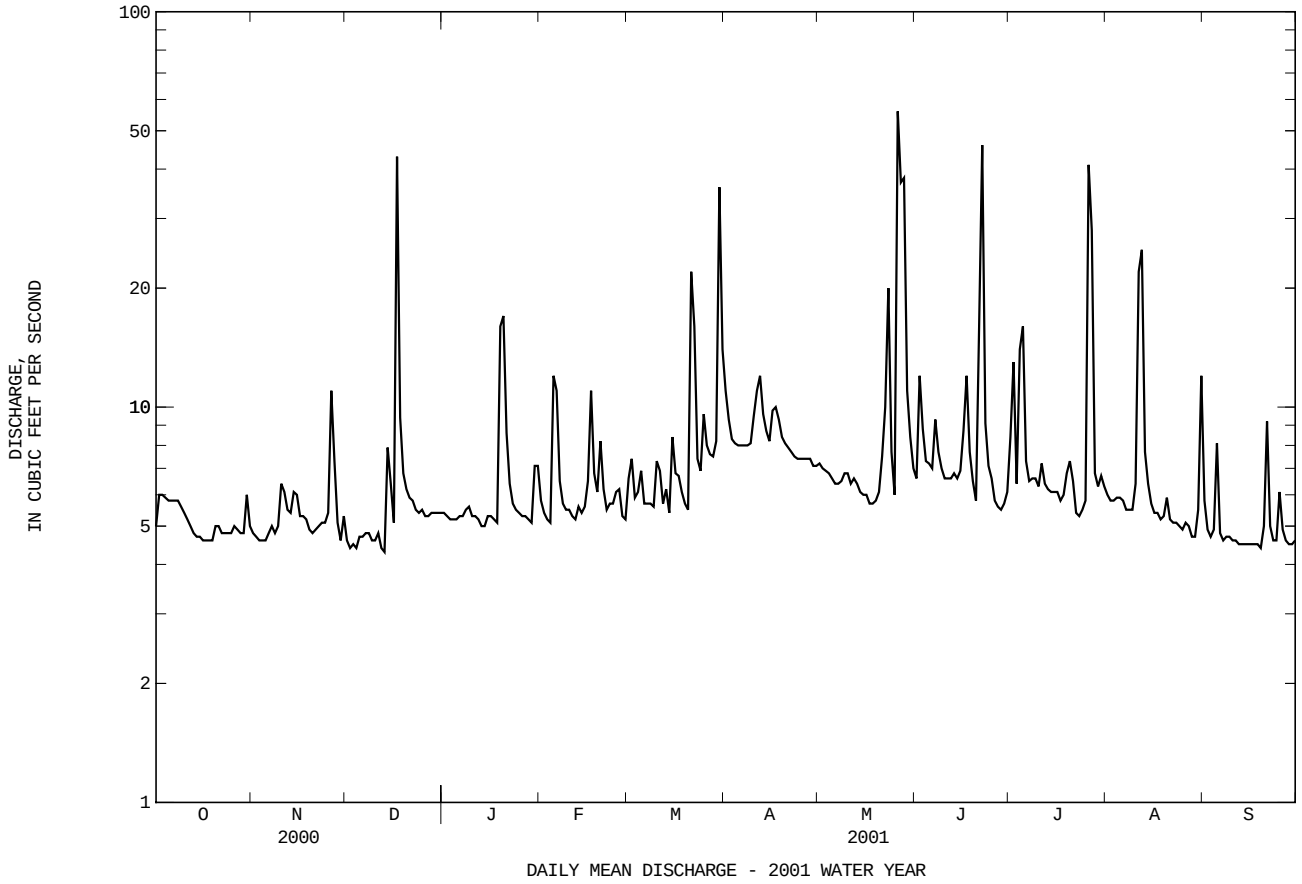
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 2001, BY WATER YEAR (WY)

MEAN	5.54	6.08	7.39	8.48	8.55	10.7	8.98	8.75	8.22	6.90	5.45	10.2
MAX	7.21	8.59	14.3	12.3	11.9	15.0	11.1	10.9	10.3	8.99	6.92	31.1
(WY)	1997	1997	1997	1998	1997	1998	2000	2001	1998	2001	2001	1999
MIN	4.89	4.26	3.84	6.05	5.77	6.33	5.37	5.46	4.71	5.51	3.35	3.48
(WY)	1998	1999	1999	2000	1999	1999	1999	1999	1999	1999	1999	1997

01493112 CHESTERVILLE BRANCH NEAR CRUMPTON, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1996 - 2001	
ANNUAL TOTAL	2779.5		2672.9			
ANNUAL MEAN	7.59		7.32		7.98	
HIGHEST ANNUAL MEAN					9.00	1997
LOWEST ANNUAL MEAN					7.26	1999
HIGHEST DAILY MEAN	56	Mar 22	56	May 26	722	Sep 16 1999
LOWEST DAILY MEAN	2.7	Aug 26	4.3	Dec 13	1.7	Aug 30 1999
ANNUAL SEVEN-DAY MINIMUM	3.0	Aug 21	4.5	Sep 13	2.3	Aug 4 1999
MAXIMUM PEAK FLOW			123	Jul 26	(a)3220	Sep 16 1999
MAXIMUM PEAK STAGE			5.79	Jul 26	10.22	Sep 16 1999
INSTANTANEOUS LOW FLOW			UNKNOWN		1.1	Aug 30 1999
ANNUAL RUNOFF (CFSM)	1.24		1.20		1.30	
ANNUAL RUNOFF (INCHES)	16.90		16.25		17.71	
10 PERCENT EXCEEDS	11		9.5		12	
50 PERCENT EXCEEDS	5.8		5.8		5.9	
90 PERCENT EXCEEDS	4.3		4.7		3.8	

a From rating curve extended above 60 ft^3/s on basis of culvert determination of peak flow.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01493112 CHESTERVILLE BRANCH NEAR CRUMPTON, MD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1996 to current year.

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

DATE	TIME	SAMPLE TYPE	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)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)
OCT												
17...	1000	ENVIRONMENTAL	4.7	189	5.8	19.0	16.0	775	7.9	79	58	15.2
NOV												
08...	1045	ENVIRONMENTAL	5.1	171	7.1	18.5	10.4	764	9.5	85	--	--
14...	1100	ENVIRONMENTAL	5.9	164	5.5	11.0	11.0	766	9.3	84	60	15.8
DEC												
05...	1000	ENVIRONMENTAL	4.5	177	6.6	8.5	3.4	762	11.6	87	--	--
11...	1100	ENVIRONMENTAL	4.7	194	5.3	5.0	5.0	775	10.1	78	63	17.0
14...	1100	ENVIRONMENTAL	10	164	6.5	4.2	4.5	760	11.7	91	--	--
17...	1025	ENVIRONMENTAL	78	126	--	--	--	--	--	--	--	--
JAN												
02...	*1030*	*BLANK*	--	--	--	--	--	--	--	--	--	--
02...	1130	ENVIRONMENTAL	5.3	181	6.7	.00	2.6	770	12.6	92	--	--
17...	1200	ENVIRONMENTAL	5.1	178	6.0	8.0	4.5	772	--	--	59	16.0
19...	*1300*	*BLANK*	--	--	--	--	--	--	--	--	--	*E.01*
19...	1430	ENVIRONMENTAL	21	133	6.8	--	3.1	760	11.9	89	42	11.0
19...	1745	ENVIRONMENTAL	27	136	--	--	--	--	--	--	--	--
FEB												
05...	1927	ENVIRONMENTAL	21	150	--	--	--	--	--	--	--	--
MAR												
07...	0900	ENVIRONMENTAL	5.7	137	6.2	12.0	5.2	755	--	--	--	--
07...	*0901*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
12...	*1055*	*BLANK*	--	--	--	--	--	--	--	--	--	*.01*
12...	1100	ENVIRONMENTAL	5.9	202	5.9	12.0	7.0	773	11.2	91	60	15.7
21...	1945	ENVIRONMENTAL	46	--	--	--	--	--	--	--	--	--
22...	0840	ENVIRONMENTAL	14	118	6.5	11.0	7.4	750	10.0	85	--	--
30...	0920	ENVIRONMENTAL	53	95	6.9	11.0	8.3	751	10.0	87	--	--
APR												
04...	0930	ENVIRONMENTAL	8.2	144	6.8	--	10.5	769	10.1	90	--	--
12...	0930	ENVIRONMENTAL	12	160	5.9	23.0	12.0	766	8.0	74	59	15.0
16...	*0950*	*BLANK*	--	--	--	--	--	--	--	--	--	--
16...	1000	ENVIRONMENTAL	10	174	6.5	10.5	--	760	7.9	--	60	15.7
MAY												
02...	*0900*	*BLANK*	--	--	--	--	--	--	--	--	--	--
02...	0930	ENVIRONMENTAL	7.0	154	6.9	28.7	16.7	764	8.2	84	--	--
14...	1000	ENVIRONMENTAL	6.1	160	5.9	26.5	12.0	769	8.0	74	65	17.5
14...	*1005*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
30...	0900	ENVIRONMENTAL	8.4	--	6.9	21.0	17.1	760	7.9	--	48	12.6
30...	*0901*	*REPLICATE*	--	--	--	--	--	--	--	--	*49*	*12.7*
30...	*1000*	*BLANK*	--	--	--	--	--	--	--	--	--	*.01*
JUN												
12...	0930	ENVIRONMENTAL	6.5	151	5.9	24.0	21.0	761	7.0	79	59	15.5
22...	0145	ENVIRONMENTAL	108	112	--	--	--	--	--	--	--	--
JUL												
03...	0900	ENVIRONMENTAL	6.4	168	6.9	27.0	18.3	768	7.4	78	58	15.3
16...	1000	ENVIRONMENTAL	6.2	177	6.0	34.0	20.5	766	8.0	88	60	16.3
16...	*1005*	*REPLICATE*	--	--	--	--	--	--	--	--	*59*	*15.9*
26...	2045	ENVIRONMENTAL	123	120	--	--	--	--	--	--	--	--
30...	*0955*	*BLANK*	--	--	--	--	--	--	--	--	--	--
30...	1000	ENVIRONMENTAL	6.8	157	7.3	27.0	18.8	763	8.9	96	--	--
AUG												
11...	2345	ENVIRONMENTAL	88	--	--	--	--	--	--	--	--	--
11...	*2346*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
14...	0900	ENVIRONMENTAL	5.9	145	5.7	26.5	21.0	763	6.5	73	52	13.7
SEP												
07...	1000	ENVIRONMENTAL	4.7	172	6.2	--	18.0	765	6.0	63	--	--
07...	*1001*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
07...	*1005*	*BLANK*	--	--	--	--	--	--	--	--	--	--
10...	1000	ENVIRONMENTAL	4.9	163	5.7	27.0	20.0	769	7.3	80	59	15.9

E Estimated value.

01493112 CHESTERVILLE BRANCH NEAR CRUMPTON, MD--Continued

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

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	ANC WATER UNFLTRD IT FIELD MG/L AS CACO3 (00419)	BICAR-BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	ANC BICAR-BONATE IT FIELD MG/L AS HCO3 (00450)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)
OCT													
17...	4.73	5.3	3.61	33	--	40	--	3.9	12.4	<.2	8.0	--	105
NOV													
08...	--	--	--	27	--	33	--	--	--	--	9.5	<10	--
14...	5.05	5.5	4.41	32	--	39	--	3.6	13.4	E.1	9.2	--	109
DEC													
05...	--	--	--	24	--	30	--	--	--	--	10.4	<10	--
11...	4.89	5.5	3.49	27	--	33	--	3.9	12.1	.2	9.6	--	105
14...	--	--	--	24	--	29	--	--	--	--	8.7	19	--
17...	--	--	--	--	--	--	--	--	--	--	--	368	--
JAN													
02...	--	--	--	--	--	--	--	--	--	--	*<.5*	*<10*	--
02...	--	--	--	25	--	30	--	--	--	--	11.1	<10	--
17...	4.55	5.2	3.14	--	27	--	33	4.0	12.0	<.2	9.7	--	114
19...	*<.008*	*<.1*	*<.24*	--	--	--	--	*<.1*	*<.1*	*<.2*	*<.1*	--	*<10*
19...	3.59	4.6	7.01	23	--	28	--	5.2	11.1	<.2	5.7	96	87
19...	--	--	--	--	--	--	--	--	--	--	5.8	81	--
FEB													
05...	--	--	--	--	--	--	--	--	--	--	6.6	122	--
MAR													
07...	--	--	--	22	--	27	--	--	--	--	8.8	10	--
07...	--	--	--	--	--	--	--	--	--	--	*8.6*	*12*	--
12...	*<.008*	*<.1*	*<.09*	--	--	--	--	*<.1*	*<.1*	*<.2*	*<.1*	--	*<10*
12...	5.05	6.1	3.34	26	--	32	--	6.5	13.9	<.2	7.4	--	116
21...	--	--	--	--	--	--	--	--	--	--	--	172	--
22...	--	--	--	--	--	--	--	--	--	--	4.6	82	--
30...	--	--	--	--	--	--	--	--	--	--	4.9	14	--
APR													
04...	--	--	--	22	--	26	--	--	--	--	7.7	12	--
12...	5.23	5.2	3.72	27	--	33	--	7.3	12.6	<.2	7.0	--	116
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
16...	4.93	5.9	3.32	32	--	39	--	5.2	13.2	<.2	5.9	--	130
MAY													
02...	--	--	--	--	--	--	--	--	--	--	*<.5*	*<10*	--
02...	--	--	--	--	--	--	--	--	--	--	8.3	<10	--
14...	5.09	5.9	3.39	36	--	43	--	4.1	13.2	E.1	10.7	--	139
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
30...	4.05	4.1	4.58	--	--	--	--	5.5	9.1	E.1	8.2	10	99
30...	*4.07*	*4.3*	*4.44*	--	--	--	--	*5.6*	*9.1*	*E.1*	*8.3*	*18*	*102*
30...	*<.008*	*<.1*	*<.09*	--	--	--	--	*<.1*	*<.1*	*<.2*	*<.1*	--	*<10*
JUN													
12...	4.82	5.5	3.47	24	--	30	--	3.9	13.0	<.2	9.3	--	133
22...	--	--	--	--	--	--	--	--	--	--	5.0	332	--
JUL													
03...	4.87	4.8	6.29	34	--	41	--	4.9	65.0	E.1	8.6	<10	137
16...	4.71	5.1	3.66	30	--	36	--	3.5	12.4	<.2	7.7	--	120
16...	*4.75*	*5.1*	*3.62*	--	--	--	--	*3.6*	*12.6*	*<.2*	*7.7*	--	*119*
26...	--	--	--	--	--	--	--	--	--	--	4.2	228	--
30...	--	--	--	--	--	--	--	--	--	--	*<.5*	*<10*	--
30...	--	--	--	--	--	--	--	--	--	--	9.2	13	--
AUG													
11...	--	--	--	--	--	--	--	--	--	--	5.5	108	--
11...	--	--	--	--	--	--	--	--	--	--	*5.6*	*62*	--
14...	4.20	4.5	5.49	29	--	35	--	4.7	11.0	E.1	9.2	--	93
SEP													
07...	--	--	--	--	--	--	--	--	--	--	9.3	<10	--
07...	--	--	--	--	--	--	--	--	--	--	*9.1*	*<10*	--
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
10...	4.57	5.1	4.06	28	--	34	--	4.1	12.8	E.1	9.3	--	119

E Estimated value.
< Actual value is known to be less than the value shown.

01493112 CHESTERVILLE BRANCH NEAR CRUMPTON, MD--Continued

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

DATE	NITRO-GEN, TOTAL (MG/L AS N) (00600)	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)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN DIS-SOLVED (MG/L AS N) (00602)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	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)
OCT													
17...	6.4	6.09	.015	6.10	<.041	.29	.15	6.3	--	--	.029	.006	<.018
NOV													
08...	6.9	6.68	.014	6.69	<.041	.23	.20	6.9	--	--	.020	<.006	<.007
14...	6.7	6.29	.023	6.31	E.030	.34	.17	6.5	--	--	.025	E.003	<.018
DEC													
05...	7.4	7.10	.018	7.12	E.031	.28	.33	7.5	--	--	.023	E.005	E.005
11...	7.7	7.38	.020	7.40	E.033	.27	.19	7.6	--	--	.020	E.003	<.018
14...	7.1	6.49	.022	6.51	.049	.54	.32	6.8	.49	.27	.073	.042	.034
17...	4.1	3.26	.030	3.29	.124	.81	.75	4.0	.69	.62	.629	.232	.217
JAN													
02...	--	--	*<.006*	*<.047*	*<.041*	*<.08*	*<.10*	--	--	--	*<.004*	*<.006*	*<.007*
02...	8.4	7.91	.036	7.95	.144	.44	.30	8.2	.30	.15	.046	.011	E.005
17...	--	7.46	.052	7.51	.129	<.08	.32	7.8	--	.19	.029	E.004	E.010
19...	--	--	--	--	--	--	--	--	--	--	--	--	--
19...	6.6	4.56	.041	4.60	.679	2.0	1.2	5.8	1.3	.53	.868	.466	.503
19...	6.1	4.26	.043	4.31	.525	1.8	1.2	5.5	1.2	.67	.468	.142	.124
FEB													
05...	6.2	4.43	.051	4.48	.384	1.7	1.0	5.5	1.3	.62	.440	.043	.031
MAR													
07...	7.5	6.86	.039	6.90	.125	.61	.36	7.3	.49	.23	.076	.013	.007
07...	*7.5*	*6.98*	*.038*	*7.02*	*.130*	*.49*	*.45*	*7.5*	*.36*	*.32*	*.076*	*.013*	*E.006*
12...	--	--	*<.006*	*<.047*	*<.041*	*.16*	*E.06*	--	--	--	*<.004*	*<.006*	*<.018*
12...	7.6	7.17	.043	7.21	<.041	.38	.26	7.5	--	--	.047	.008	<.018
21...	4.5	2.60	.032	2.63	.293	1.9	.87	3.5	1.6	.57	.654	.078	.055
22...	4.2	2.87	.031	2.90	.281	1.3	.79	3.7	1.1	.50	.450	.054	.034
30...	4.8	3.25	.035	3.29	.281	1.5	.86	4.2	1.2	.58	.478	.070	.049
APR													
04...	6.8	6.12	.062	6.18	.107	.65	.42	6.6	.54	.32	.087	.017	.010
12...	6.1	5.27	.074	5.34	.120	.73	.51	5.9	.61	.39	.086	.018	<.018
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
16...	6.1	5.62	.048	5.67	E.037	.47	.34	6.0	--	--	.055	.014	<.018
MAY													
02...	--	--	*<.006*	*<.047*	*<.041*	*<.08*	*<.10*	--	--	--	*<.004*	*<.006*	*<.007*
02...	6.8	6.36	.040	6.40	<.041	.39	.25	6.7	--	--	.047	.009	<.007
14...	3.5	2.96	.055	3.01	.079	.52	.39	3.4	.45	.31	.045	.013	<.018
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
30...	6.0	4.78	.126	4.91	.366	1.1	.84	5.7	.72	.47	.169	.029	.015
30...	*6.5*	*5.28*	*.126*	*5.41*	*.359*	*1.0*	*.82*	*6.2*	*.68*	*.46*	*.166*	*.028*	*.014*
30...	--	--	*<.006*	*<.050*	*<.040*	*<.08*	*<.10*	--	--	--	*<.004*	*<.006*	*<.020*
JUN													
12...	--	--	.039	--	.059	.43	.26	--	.37	.20	.041	.011	<.020
22...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
03...	6.3	5.71	.049	5.76	E.037	.56	.48	6.2	--	--	.087	.037	.011
16...	6.8	6.41	.014	6.43	E.021	.37	.20	6.6	--	--	.037	.009	<.020
16...	*6.8*	*6.39*	*.015*	*6.40*	*<.040*	*.39*	*.22*	*6.6*	--	--	*.037*	*.010*	*<.020*
26...	4.4	2.98	.081	3.07	.161	1.3	.78	3.8	1.2	.62	.633	.109	.095
30...	--	--	*<.006*	*E.027*	*<.040*	*E.04*	*<.10*	--	--	--	*<.004*	*<.006*	*.009*
30...	6.0	5.42	.056	5.48	.153	.50	.44	5.9	.35	.29	.089	.017	.011
AUG													
11...	4.0	2.50	.062	2.56	.098	1.4	.63	3.2	1.3	.53	.552	.117	.101
11...	*3.7*	*2.29*	*.056*	*2.34*	*.056*	*1.4*	*.64*	*3.0*	*1.3*	*.59*	*.590*	*.113*	*.099*
14...	5.7	5.02	.059	5.08	.132	.62	.58	5.7	.49	.45	.134	.027	<.020
SEP													
07...	6.7	6.39	.015	6.41	E.026	.27	.25	6.7	--	--	.030	.009	<.007
07...	*7.0*	*6.58*	*.015*	*6.60*	*E.021*	*.35*	*.25*	*6.8*	--	--	*.032*	*.008*	*<.007*
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
10...	7.3	6.92	.015	6.93	<.040	.33	.27	7.2	--	--	.032	.009	<.020

E Estimated value.
< Actual value is known to be less than the value shown.

01493112 CHESTERVILLE BRANCH NEAR CRUMPTON, MD--Continued

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

DATE	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	2,6-DI-ETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)	ACETO-CHLOR ESA FLTRD 0.7 UM GF REC (UG/L) (61029)	ACETO-CHLOR OA FLTRD 0.7 UM GF REC (UG/L) (61030)
OCT													
17...	1.8	--	--	--	--	20	70.4	--	--	--	<.002	<.05	<.05
NOV													
08...	--	--	--	--	--	--	--	--	--	--	--	--	--
14...	2.6	--	--	--	--	90	76.4	--	--	--	<.002	<.05	<.05
DEC													
05...	1.9	--	--	--	--	--	--	--	--	--	--	--	--
11...	1.7	--	--	--	--	120	137	--	--	--	<.002	<.05	<.05
14...	4.0	--	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
02...	1.9	--	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	140	227	--	--	--	<.002	<.05	<.05
19...	--	--	--	--	--	*<10*	*<3.2*	--	--	--	--	--	--
19...	11	--	--	--	--	260	283	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
07...	3.6	--	--	--	--	--	--	--	--	--	--	--	--
07...	*4.1*	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	*M*	*<3.2*	--	--	--	--	--	--
12...	--	--	--	--	--	90	144	--	--	--	<.002	<.05	<.05
21...	--	--	--	--	--	--	--	--	--	--	--	--	--
22...	12	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
04...	3.8	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	<15	<2.0	.8	200	233	<.01	<2.4	3	<.002	<.05	<.05
16...	--	--	--	--	--	--	--	--	--	--	*<.002*	*<.05*	*<.05*
16...	--	--	--	--	--	250	214	--	--	--	<.002	<.05	<.05
MAY													
02...	*<.60*	--	--	--	--	--	--	--	--	--	--	--	--
02...	2.8	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	150	189	--	--	--	<.002	<.05	<.05
14...	--	--	--	--	--	--	--	--	--	--	*<.002*	*<.05*	*<.05*
30...	7.0	--	--	--	--	170	282	--	--	--	--	--	--
30...	*6.3*	--	--	--	--	*180*	*283*	--	--	--	--	--	--
30...	--	--	--	--	--	*<10*	*<3.0*	--	--	--	--	--	--
JUN													
12...	--	--	<15	<2.0	2.0	50	147	<.01	<2.0	3	<.002	<.05	<.05
22...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
03...	5.2	--	--	--	--	50	122	--	--	--	--	--	--
16...	--	2.8	--	--	--	10	89.3	--	--	--	<.002	<.05	<.05
16...	--	--	--	--	--	*20*	*87.3*	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
30...	*<.60*	--	--	--	--	--	--	--	--	--	--	--	--
30...	4.5	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	<15	<2.0	1.0	60	135	<.01	<2.0	4	<.002	<.05	<.05
SEP													
07...	2.3	--	--	--	--	--	--	--	--	--	--	--	--
07...	*2.3*	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	1.8	--	--	--	20	81.4	--	--	--	<.002	<.05	<.05

< Actual value is known to be less than the value shown.
M Presence of material verified but not quantified.

01493112 CHESTERVILLE BRANCH NEAR CRUMPTON, MD--Continued

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

DATE	ACETO-CHLOR, WATER FLTRD REC (UG/L) (49260)	ALA-CHLOR OA FLTRD 0.7 UM GF REC (UG/L) (61031)	ALA-CHLOR, (ESA) WAT FLT GF 0.7U REC (UG/L) (50009)	ALA-CHLOR, WATER, DISS, REC, (UG/L) (46342)	ALPHA BHC DIS-SOLVED (UG/L) (34253)	ATRA-ZINE, WATER, DISS, REC (UG/L) (39632)	BEN-FLUR-ALIN WAT FLD 0.7 U GF, REC (UG/L) (82673)	BUTYL-ATE, WATER, DISS, REC (UG/L) (04028)	CAR-BARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBO-FURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)	CHLOR-PYRIFOS DIS-SOLVED (UG/L) (38933)	CYANA-ZINE, WATER, DISS, REC (UG/L) (04041)	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)
OCT													
17...	<.004	.55	1.74	.040	<.005	.029	<.010	<.002	<.041	E.011	<.005	<.018	<.003
NOV													
08...	--	--	--	--	--	--	--	--	--	--	--	--	--
14...	<.004	.75	2.88	.045	<.005	.029	<.010	<.002	<.041	<.020	<.005	<.018	<.003
DEC													
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	<.004	.72	2.29	.052	<.005	.038	<.010	<.002	<.041	<.020	<.005	<.018	<.003
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
17...	<.004	.46	1.67	.061	<.005	.034	<.010	<.002	<.041	E.043	<.005	<.018	<.003
19...	--	--	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
12...	<.004	.61	2.87	.300	<.005	.032	<.010	<.002	<.041	E.011	<.005	<.018	<.003
21...	--	--	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
12...	<.004	.80	3.31	.438	<.005	.039	<.010	<.002	<.041	<.020	<.005	<.018	<.003
16...	*<.004*	*<.05*	*<.050*	*<.002*	*<.005*	*<.007*	*<.010*	*<.002*	*<.041*	*<.020*	*<.005*	*<.018*	*<.003*
16...	<.004	.57	2.46	.230	<.005	.039	<.010	<.002	<.041	E.009	<.005	<.018	<.003
MAY													
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
14...	<.004	.80	2.72	.086	<.005	.051	<.010	<.002	<.041	E.006	<.005	<.018	<.003
14...	*<.004*	*.73*	*2.45*	*.083*	*<.005*	*.052*	*<.010*	*<.002*	*<.041*	*E.008*	*<.005*	*<.018*	*<.003*
30...	--	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
12...	<.004	.67	2.51	.045	<.005	.899	<.010	<.002	E.023	E.008	<.005	<.018	<.003
22...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
16...	<.004	.63	2.53	.083	<.005	.128	<.010	<.002	E.033	<.020	<.005	<.018	<.003
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
14...	<.004	.71	2.09	.482	<.005	.444	<.010	<.002	E.064	<.020	<.005	<.018	<.003
SEP													
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
10...	<.004	.32	.460	.055	<.005	.037	<.010	<.002	<.041	E.010	<.005	<.018	<.003

E Estimated value.
< Actual value is known to be less than the value shown.

01493112 CHESTERVILLE BRANCH NEAR CRUMPTON, MD--Continued

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

DATE	DEETHYL ATRA-ZINE, WATER, DISS, REC (UG/L) (04040)	DIAZ-INON D10 SRG WAT FLT 0.7 U GF, REC PERCENT (91063)	DI-AZINON, DIS-SOLVED (UG/L) (39572)	DI-ELDRIN DIS-SOLVED (UG/L) (39381)	DIMETH-ENAMID OXA, WATER FLT, REC (UG/L) (62482)	DIMETH-ENAMID, ESA, WAT FLT (UG/L) (61951)	DISUL-FOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ETHAL-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)	ETHO-PROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FLUFEN-ACET, ESA, WAT FLT (UG/L) (61952)	FLUFE-NACET OXA WATER FLT, REC (UG/L) (62483)	FONOFOS WATER DISS REC (UG/L) (04095)
OCT													
17...	E.104	86	<.005	<.005	--	--	<.021	<.002	<.009	<.005	--	--	<.003
NOV													
08...	--	--	--	--	--	--	--	--	--	--	--	--	--
14...	E.131	101	<.005	<.005	--	--	<.021	<.002	<.009	<.005	--	--	<.003
DEC													
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	E.159	111	<.005	<.005	--	--	<.021	<.002	<.009	<.005	--	--	<.003
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
17...	E.158	110	<.005	<.005	--	--	<.021	<.002	<.009	<.005	--	--	<.003
19...	--	--	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
12...	E.118	101	<.005	<.005	<.0500	<.05	<.021	<.002	<.009	<.005	<.05	<.0500	<.003
21...	--	--	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
12...	E.090	100	<.005	<.005	<.0500	<.05	<.021	<.002	<.009	<.005	<.05	<.0500	<.003
16...	*<.006*	*89*	*<.005*	*<.005*	*<.0500*	*<.05*	*<.021*	*<.002*	*<.009*	*<.005*	*<.05*	*<.0500*	*<.003*
16...	E.087	91	<.005	<.005	<.0500	<.05	<.021	<.002	<.009	<.005	<.05	<.0500	<.003
MAY													
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
14...	E.088	89	<.005	<.005	<.0500	<.05	<.021	<.002	<.009	<.005	<.05	<.0500	<.003
14...	*E.089*	*86*	*<.005*	*<.005*	*<.0500*	*<.05*	*<.021*	*<.004*	*<.009*	*<.005*	*<.05*	*<.0500*	*<.003*
30...	--	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
12...	E.198	103	<.005	<.005	<.0500	<.05	<.021	<.002	<.009	<.005	<.05	<.0500	<.003
22...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
16...	E.099	117	<.005	<.005	<.0500	<.05	<.021	<.002	<.009	<.005	<.05	<.0500	<.003
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
14...	E.089	113	<.005	<.005	<.0500	<.05	<.021	<.002	<.009	<.005	<.05	<.0500	<.003
SEP													
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
10...	E.079	98	<.005	<.005	<.0500	<.05	<.021	<.002	<.009	<.005	<.05	<.0500	<.003

E Estimated value.
< Actual value is known to be less than the value shown.

01493112 CHESTERVILLE BRANCH NEAR CRUMPTON, MD--Continued

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

DATE	HCH ALPHA D6 SRG WAT FLT 0.7 U GF, REC PERCENT (91065)	LINDANE DIS-SOLVED (UG/L) (39341)	LIN-URON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)	MALA-THION, DIS-SOLVED (UG/L) (39532)	METHYL AZIN-PHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)	METHYL PARA-THION WAT FLT 0.7 U GF, REC (UG/L) (82667)	METOLA-CHLOR ESA FLTRD 0.7 UM GF REC (UG/L) (61043)	METOLA-CHLOR OA FLTRD 0.7 UM GF REC (UG/L) (61044)	METO-LACHLOR WATER DISSOLV (UG/L) (39415)	METRI-BUZIN SENCOR WATER DISSOLV (UG/L) (82630)	MOL-INATE WATER FLTRD 0.7 U GF, REC (UG/L) (82671)	NAPROP-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82684)	P,P' DDE DISSOLV (UG/L) (34653)
OCT													
17...	83	<.004	<.035	<.027	<.050	<.006	2.39	.66	.099	<.006	<.002	<.007	<.003
NOV													
08...	--	--	--	--	--	--	--	--	--	--	--	--	--
14...	92	<.004	<.035	<.027	<.050	<.006	3.74	.76	.113	<.006	<.002	<.007	<.003
DEC													
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	101	<.004	<.035	<.027	<.050	<.006	3.77	.81	.165	<.006	<.002	<.007	<.003
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
17...	91	<.004	<.035	<.027	<.050	<.006	2.83	.58	.133	<.006	<.002	<.007	<.003
19...	--	--	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
12...	91	<.004	<.035	<.027	<.050	<.006	3.38	.99	1.14	<.006	<.002	<.007	<.003
21...	--	--	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
12...	91	<.004	<.035	<.027	<.050	<.006	3.86	1.29	2.91	<.006	<.002	<.007	<.003
16...	*78*	*<.004*	*<.035*	*<.027*	*<.050*	*<.006*	*<.05*	*<.05*	*<.013*	*<.006*	*<.002*	*<.007*	*<.003*
16...	73	<.004	<.035	<.027	<.050	<.006	2.97	.91	2.24	.061	<.002	<.007	<.003
MAY													
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
14...	84	<.004	<.035	<.027	<.050	<.006	2.75	.75	.484	<.006	<.002	<.007	<.003
14...	*82*	*<.004*	*<.035*	*<.027*	*<.050*	*<.006*	*2.43*	*.64*	*.480*	*<.006*	*<.002*	*<.007*	*<.003*
30...	--	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
12...	95	<.004	<.035	<.027	<.050	<.006	2.96	1.08	.623	<.006	<.002	<.007	<.003
22...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
16...	113	<.004	<.035	<.027	<.050	<.006	3.02	1.04	.553	<.006	<.002	<.007	<.003
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
14...	101	<.004	<.035	<.027	<.050	<.006	2.51	.93	.809	<.006	<.002	.053	<.003
SEP													
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
10...	85	<.004	<.035	<.027	<.050	<.006	.53	1.14	.237	<.006	<.002	<.007	<.003

< Actual value is known to be less than the value shown.

01493112 CHESTERVILLE BRANCH NEAR CRUMPTON, MD--Continued

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

DATE	PARA-THION, DIS-SOLVED (UG/L) (39542)	PEB-ULATE WATER FILTRD 0.7 U GF, REC (UG/L) (82669)	PENDI-METH-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82683)	PER-METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L) (82664)	PRO-METON, WATER, DISS, REC (UG/L) (04037)	PRON-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)	PROPA-CHLOR, WATER, DISS, REC (UG/L) (04024)	PRO-PANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)	PRO-PARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	SI-MAZINE, WATER, DISS, REC (UG/L) (04035)	TEBU-THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TER-BACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)
OCT													
17...	<.007	<.002	<.010	<.006	<.011	<.015	<.004	<.010	<.011	<.023	.090	<.016	<.034
NOV													
08...	--	--	--	--	--	--	--	--	--	--	--	--	--
14...	<.007	<.002	<.010	<.006	<.011	<.015	<.004	<.010	<.011	<.023	.056	<.016	<.034
DEC													
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	<.007	<.002	<.010	<.006	<.011	<.015	.025	<.010	<.011	<.023	.103	<.016	<.034
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
17...	<.007	<.002	<.010	<.006	<.011	<.015	.070	<.010	<.011	<.023	.063	<.016	<.034
19...	--	--	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
12...	<.007	<.002	<.010	<.006	<.011	<.015	.041	<.010	<.011	<.023	.346	<.016	<.034
21...	--	--	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
12...	<.007	<.002	<.010	<.006	<.011	<.015	.038	<.010	<.011	<.023	3.78	<.016	<.034
16...	*<.007*	*<.002*	*<.010*	*<.006*	*<.011*	*<.015*	*<.004*	*<.010*	*<.011*	*<.023*	*<.011*	*<.016*	*<.034*
16...	<.007	<.002	<.010	<.006	<.011	<.015	.023	<.010	<.011	<.023	2.15	<.016	<.034
MAY													
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
14...	<.007	<.002	<.010	<.006	<.011	<.015	.013	<.010	<.011	<.023	.490	<.016	<.034
14...	*<.007*	*<.002*	*<.010*	*<.006*	*<.011*	*<.015*	*.015*	*<.010*	*<.011*	*<.023*	*.492*	*<.016*	*<.034*
30...	--	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
12...	<.007	<.002	<.010	<.006	<.011	<.015	.010	<.010	<.011	<.023	.352	<.016	<.034
22...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
16...	<.007	<.002	<.010	<.006	<.011	<.015	.007	<.010	<.011	<.023	.787	<.016	<.034
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
14...	<.007	<.002	<.010	<.006	<.011	<.015	<.004	<.010	<.011	<.023	3.04	<.016	<.034
SEP													
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
10...	<.007	<.002	<.010	<.006	<.011	<.015	.005	<.010	<.011	<.023	.272	<.016	<.034

< Actual value is known to be less than the value shown.

01493112 CHESTERVILLE BRANCH NEAR CRUMPTON, MD--Continued

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

DATE	TER-BUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)	THIO-BENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)	TRIAL-LATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)	TRI-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT							
17...	<.017	<.005	<.002	<.009	7	.09	--
NOV							
08...	--	--	--	--	3	.04	--
14...	<.017	<.005	<.002	<.009	6	.10	--
DEC							
05...	--	--	--	--	7	.09	--
11...	<.017	<.005	<.002	<.009	5	.06	--
14...	--	--	--	--	16	.45	--
17...	--	--	--	--	--	--	--
JAN							
02...	--	--	--	--	--	--	--
02...	--	--	--	--	15	.21	--
17...	<.017	<.005	<.002	<.009	6	.08	--
19...	--	--	--	--	--	--	--
19...	--	--	--	--	108	6.1	--
19...	--	--	--	--	--	--	--
FEB							
05...	--	--	--	--	--	--	--
MAR							
07...	--	--	--	--	14	.21	--
07...	--	--	--	--	*13*	--	--
12...	--	--	--	--	--	--	--
12...	<.017	<.005	<.002	<.009	5	.08	--
21...	--	--	--	--	--	--	--
22...	--	--	--	--	159	6.0	89
30...	--	--	--	--	156	22	96
APR							
04...	--	--	--	--	12	.27	--
12...	<.017	<.005	<.002	E.006	18	.58	--
16...	*<.017*	*<.005*	*<.002*	*<.009*	--	--	--
16...	<.017	<.005	<.002	<.009	11	.30	--
MAY							
02...	--	--	--	--	--	--	--
02...	--	--	--	--	14	.26	--
14...	<.017	<.005	<.002	<.009	7	.12	--
14...	*<.017*	*<.005*	*<.002*	*<.009*	--	--	--
30...	--	--	--	--	27	.61	--
30...	--	--	--	--	*27*	--	--
30...	--	--	--	--	--	--	--
JUN							
12...	<.017	<.005	<.002	E.005	12	.21	--
22...	--	--	--	--	--	--	--
JUL							
03...	--	--	--	--	14	.24	--
16...	<.017	<.005	<.002	<.009	8	.13	--
16...	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--
30...	--	--	--	--	16	.29	--
AUG							
11...	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--
14...	<.017	<.005	<.002	<.009	24	.38	--
SEP							
07...	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--
07...	--	--	--	--	*M*	--	--
10...	<.017	<.005	<.002	<.009	8	.11	--

E Estimated value.
< Actual value is known to be less than the value shown.

THIS IS A BLANK PAGE

01493500 MORGAN CREEK NEAR KENNEDYVILLE, MD

LOCATION.--Lat 39°16'48.1", long 76°00'52.4", Kent County, Hydrologic Unit 02060002, on right bank 200 ft upstream from highway bridge, 2.0 mi southwest of Kennedyville, and 4.5 mi upstream from mouth.

DRAINAGE AREA.--12.7 mi^2.

PERIOD OF RECORD.--May 1951 to current year.

REVISED RECORDS.--WSP 1552: 1952, 1953(P), 1954(M), 1955, 1956-57(M). WDR MD-DE-76-1: Drainage area. WDR MD-DE- 79-1: 1961(M). WDR MD-DE-80-1: 1976(P).

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1.76 ft above sea level.

REMARKS.--Records good except those for estimated daily discharges (backwater from storm tides), which are fair. Several measurements of water temperature were made during the year. Water-quality data for some prior years have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 200 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 17	1545	*210	*4.19	No other peak greater than base discharge.			

Minimum discharge, 3.4 ft^3/s, on several days.

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	5.7	5.4	6.1	5.8	9.3	e7.5	13	6.2	8.4	8.9	4.6	6.0
2	6.5	5.7	5.8	5.9	8.0	e7.5	10	6.2	19	11	4.1	4.7
3	6.4	5.5	5.8	5.8	7.2	7.1	9.1	6.1	11	5.6	3.8	4.1
4	6.4	5.5	6.0	5.8	7.0	9.6	8.5	5.8	7.6	9.4	4.1	4.1
5	6.3	5.2	6.3	5.8	32	21	8.0	5.8	7.0	12	4.2	6.4
6	6.2	5.4	6.2	6.2	37	13	8.3	5.7	6.8	8.2	4.1	4.8
7	6.3	5.7	6.2	6.2	13	9.4	8.6	5.7	14	6.0	3.9	3.9
8	5.9	5.6	6.6	7.2	9.2	e8.0	8.5	6.3	9.1	e5.9	3.7	3.8
9	5.4	5.8	6.0	7.8	8.7	e8.0	e9.0	6.4	6.8	5.7	3.7	4.0
10	5.4	e8.0	6.1	6.6	8.4	8.3	e11	5.8	6.1	5.5	3.7	4.0
11	5.4	10	6.8	6.5	7.1	8.0	13	5.5	6.0	7.7	e25	3.9
12	5.0	6.4	6.3	6.7	7.0	7.6	13	5.4	5.7	5.4	e65	3.6
13	5.1	5.7	7.0	6.3	8.8	14	10	5.1	5.7	4.6	e34	3.7
14	5.1	8.1	14	6.3	8.3	10	8.6	5.0	5.6	4.2	11	5.8
15	5.1	6.6	9.6	7.7	8.8	9.1	8.2	5.1	8.0	4.1	6.8	4.1
16	5.2	6.7	8.2	8.0	12	9.9	11	5.1	8.4	4.0	5.8	e4.0
17	e5.1	5.8	e134	7.1	25	8.9	11	5.1	e18	4.1	e5.5	e3.7
18	5.7	6.5	53	6.6	12	8.1	9.2	5.3	8.5	5.2	5.1	3.7
19	5.7	6.4	13	23	9.1	7.8	8.0	5.8	5.7	5.9	4.8	3.7
20	5.5	5.8	9.2	e46	9.1	8.2	7.5	6.2	5.2	5.1	6.1	e6.2
21	5.5	5.8	7.6	25	8.3	45	7.6	8.9	5.7	e4.7	5.1	e9.7
22	5.5	5.8	7.7	12	6.9	50	7.7	e9.7	5.8	4.2	4.2	6.0
23	5.5	5.9	6.6	9.0	9.6	13	7.3	24	e5.8	4.2	3.9	4.4
24	5.6	6.2	6.5	8.4	9.1	9.6	7.4	8.1	5.8	4.2	4.0	5.8
25	5.8	6.4	6.1	8.1	11	8.7	7.1	6.5	5.4	4.1	3.5	e18
26	5.8	e13	5.8	7.4	14	8.4	6.8	e65	4.8	e14	3.5	8.1
27	5.8	9.5	5.9	7.5	9.3	7.9	6.7	e90	4.6	33	e3.7	5.2
28	5.8	6.6	6.1	7.1	8.6	7.5	6.3	e60	4.5	e9.1	3.6	4.5
29	5.8	6.0	5.8	6.9	---	9.6	5.8	21	5.6	8.4	3.6	4.3
30	11	7.1	6.1	17	---	78	6.2	10	5.2	7.3	4.9	4.4
31	6.5	---	5.8	15	---	28	---	7.1	---	5.6	7.4	---
TOTAL	182.0	198.1	392.2	310.7	323.8	456.7	262.4	423.9	225.8	227.3	256.4	158.6
MEAN	5.87	6.60	12.7	10.0	11.6	14.7	8.75	13.7	7.53	7.33	8.27	5.29
MAX	11	13	134	46	37	78	13	90	19	33	65	18
MIN	5.0	5.2	5.8	5.8	6.9	7.1	5.8	5.0	4.5	4.0	3.5	3.6
CFSM	.46	.52	1.00	.79	.91	1.16	.69	1.08	.59	.58	.65	.42
IN.	.53	.58	1.15	.91	.95	1.34	.77	1.24	.66	.67	.75	.46

e Estimated

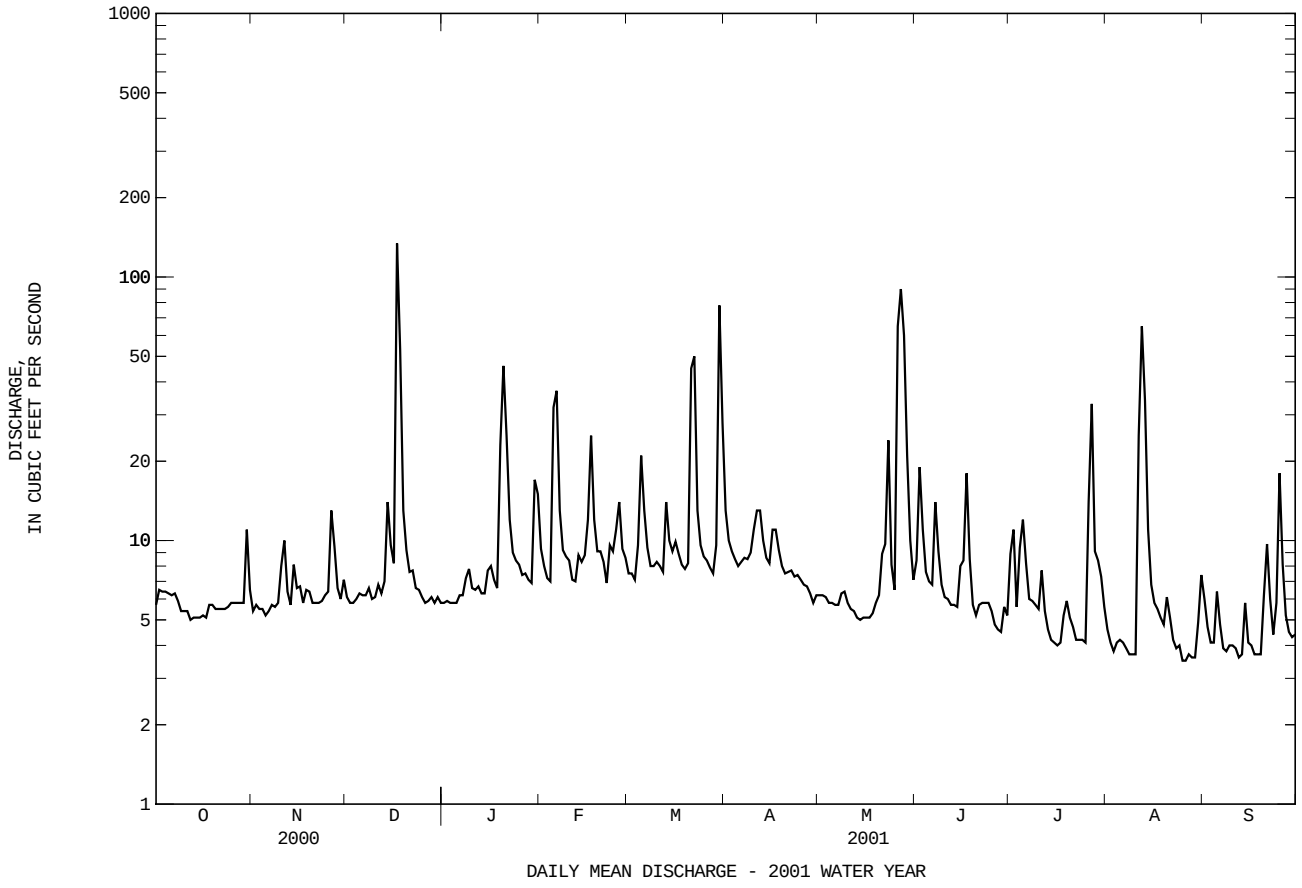
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1951 - 2001, BY WATER YEAR (WY)

MEAN	7.59	9.08	12.1	13.8	14.1	14.5	11.0	9.45	13.1	8.62	8.52	10.2
MAX	32.3	30.7	51.3	45.6	47.1	36.7	29.5	20.6	113	26.9	27.8	135
(WY)	1972	1973	1997	1978	1979	1994	1983	1990	1972	1989	1971	1999
MIN	2.98	3.14	3.21	3.74	5.09	4.47	4.49	3.77	1.96	1.11	1.41	2.07
(WY)	1964	1966	1966	1966	1968	1966	1966	1955	1966	1966	1966	1967

01493500 MORGAN CREEK NEAR KENNEDYVILLE, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1951 - 2001	
ANNUAL TOTAL	3895.2		3417.9			
ANNUAL MEAN	10.6		9.36		11.0	
HIGHEST ANNUAL MEAN					24.2	1972
LOWEST ANNUAL MEAN					3.67	1966
HIGHEST DAILY MEAN	210	Mar 22	134	Dec 17	(e)3600	Sep 16 1999
LOWEST DAILY MEAN	(e)4.1	Aug 27	3.5	(a)	.70	(b)
ANNUAL SEVEN-DAY MINIMUM	4.8	Aug 21	3.7	Aug 23	.71	Sep 7 1966
MAXIMUM PEAK FLOW			210	Dec 17	(c)11200	Sep 16 1999
MAXIMUM PEAK STAGE			4.19	Dec 17	(d)15.03	Sep 16 1999
INSTANTANEOUS LOW FLOW			3.4	(f)	.60	(g)
ANNUAL RUNOFF (CFSM)	.84		.74		.87	
ANNUAL RUNOFF (INCHES)	11.41		10.01		11.76	
10 PERCENT EXCEEDS	14		13		16	
50 PERCENT EXCEEDS	6.9		6.4		6.4	
90 PERCENT EXCEEDS	5.2		4.2		3.2	

e Estimated
a Aug. 25, 26.
b July 21, Aug. 28-31, Sept. 4, 8-13, 1966.
c From rating curve extended above 640 ft^3/s on basis of USGS Cap Culvert Analysis and flow-over-road measurement of peak flow.
d From floodmark.
f Many days.
g Aug. 28, 29, 1966.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01495000 BIG ELK CREEK AT ELK MILLS, MD

LOCATION.--Lat 39°39'25.4", long 75°49'20.5", Cecil County, Hydrologic Unit 02060002, on right bank 100 ft downstream from highway bridge at Elk Mills (State Highway 277), 3.5 mi north of Elkton, and 7 mi upstream from confluence with Little Elk Creek.

DRAINAGE AREA.--52.6 mi^2.

PERIOD OF RECORD.--April 1932 to current year. Monthly discharge only for some periods, published in WSP 1302.

REVISED RECORDS.--WSP 1432: 1932-33, 1934(M), 1935, 1936(M), 1938, 1919-40(M), 1942(M), 1943-51, 1952-53(P).

GAGE.--Water-stage recorder. Datum of gage is 68.69 ft above sea level. Prior to May 17, 1946, nonrecording gage at bridge 100 ft upstream at same datum.

REMARKS.--Records good except those for estimated daily discharges (backwater, ice effect), which are fair. Slight diurnal fluctuation caused by mills upstream from station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 1884 reached a stage of about 19 ft, from information by local residents; discharge, about 18,000 ft^3/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,700 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 17	1215	*3,360	*7.27	Jan 30	1815	1,710	5.73

Minimum discharge, 13 ft^3/s, Aug. 10, Sept. 14, 18-20.

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	32	e26	29	e35	84	44	122	53	61	31	19	19
2	31	e26	26	e35	61	42	100	51	123	31	18	17
3	29	e25	25	e35	51	41	89	50	67	30	17	16
4	29	e27	e25	e35	43	49	82	48	54	30	17	19
5	27	e26	e24	e35	331	90	77	47	48	38	18	27
6	28	e25	e23	e48	202	64	77	45	46	37	18	20
7	26	e25	23	e42	127	56	79	44	48	31	16	16
8	25	e26	23	e42	103	70	73	44	44	32	15	16
9	25	e27	23	48	71	57	76	45	41	59	14	16
10	25	45	23	39	80	50	95	45	39	40	51	16
11	26	38	23	36	61	45	98	43	38	93	99	16
12	25	26	23	36	50	42	115	42	40	36	129	16
13	24	26	22	34	51	138	88	41	41	31	74	15
14	23	30	117	33	51	71	77	38	37	29	34	16
15	23	37	60	53	53	56	72	39	37	28	27	17
16	23	28	38	49	54	68	111	38	99	27	25	15
17	24	27	1440	36	105	93	94	38	155	27	23	14
18	28	26	168	33	57	63	87	40	55	28	23	14
19	30	25	75	364	48	52	76	43	43	30	23	14
20	26	25	58	342	46	48	70	42	40	27	28	67
21	26	27	50	128	45	231	70	59	38	26	24	98
22	25	26	e42	64	40	193	68	108	38	25	22	29
23	24	26	e41	e56	51	85	65	98	49	25	21	22
24	24	25	e39	e50	42	67	62	53	43	24	21	21
25	25	26	e39	e44	48	60	59	44	36	23	21	194
26	26	88	e38	e41	96	55	58	209	34	23	19	45
27	26	59	e37	38	59	51	57	387	33	23	23	28
28	27	33	e37	45	49	49	55	103	32	21	22	24
29	26	29	e36	48	---	51	52	68	31	20	18	21
30	e25	32	e36	556	---	541	52	59	31	24	20	19
31	e25	---	e36	176	---	174	---	49	---	22	22	---
TOTAL	808	937	2699	2656	2159	2796	2356	2113	1521	971	921	887
MEAN	26.1	31.2	87.1	85.7	77.1	90.2	78.5	68.2	50.7	31.3	29.7	29.6
MAX	32	88	1440	556	331	541	122	387	155	93	129	194
MIN	23	25	22	33	40	41	52	38	31	20	14	14
CFSM	.50	.59	1.66	1.63	1.47	1.71	1.49	1.30	.96	.60	.56	.56
IN.	.57	.66	1.91	1.88	1.53	1.98	1.67	1.49	1.08	.69	.65	.63

e Estimated

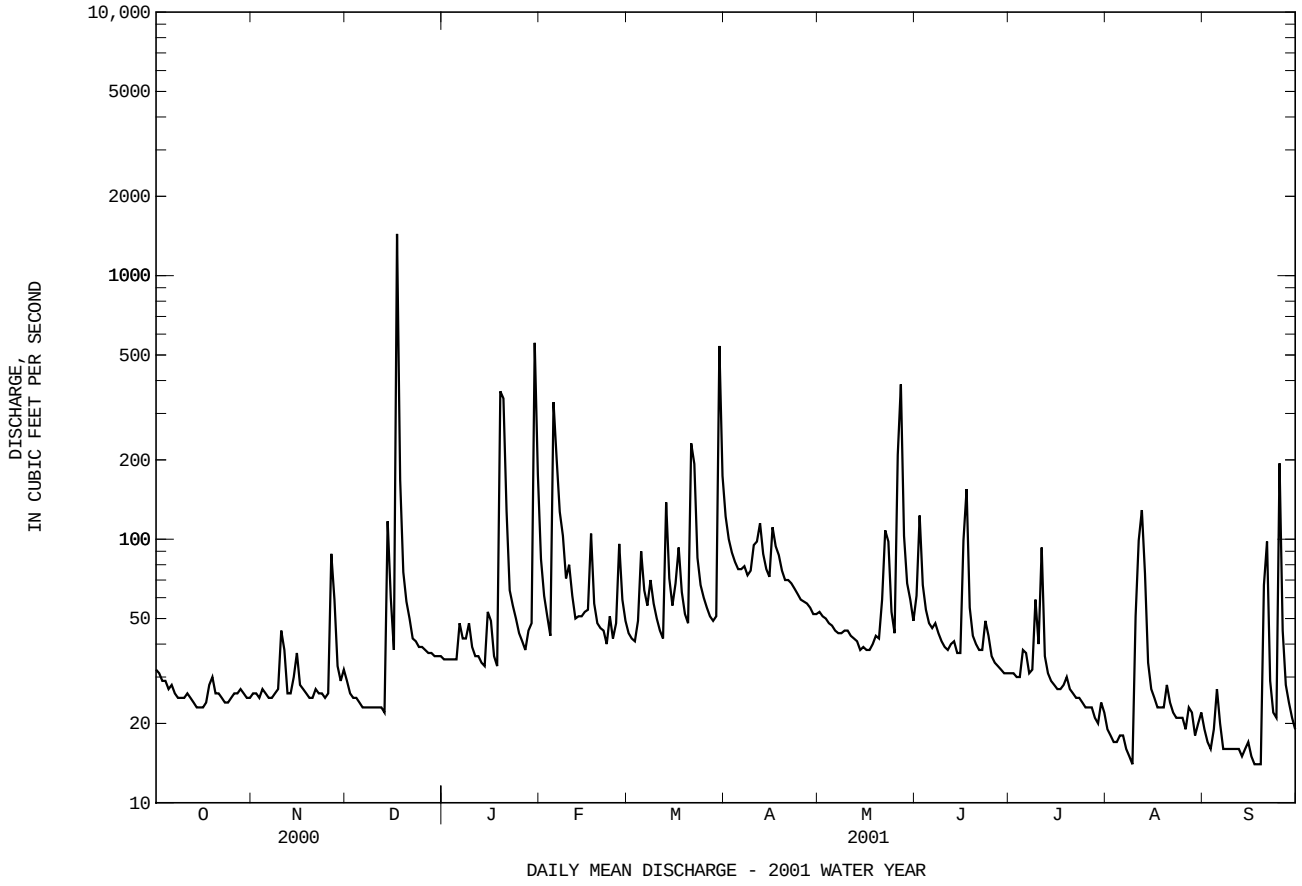
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1932 - 2001, BY WATER YEAR (WY)

MEAN	41.9	54.5	69.2	87.2	97.8	102	90.2	76.5	58.4	55.7	51.0	45.6
MAX	152	125	276	283	236	247	191	160	216	248	241	205
(WY)	1997	1997	1997	1979	1936	1994	1993	1958	1972	1975	1933	1999
MIN	11.1	17.1	18.7	19.2	41.4	35.6	34.5	26.8	21.4	10.5	8.32	9.95
(WY)	1964	1966	1966	1966	1947	1981	1963	1955	1963	1963	1966	1932

01495000 BIG ELK CREEK AT ELK MILLS, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1932 - 2001	
ANNUAL TOTAL	25822		20824			
ANNUAL MEAN	70.6		57.1		69.2	
HIGHEST ANNUAL MEAN					109	1972
LOWEST ANNUAL MEAN					35.4	1966
HIGHEST DAILY MEAN	1900	Mar 22	1440	Dec 17	4570	Sep 16 1999
LOWEST DAILY MEAN	20	Aug 26	14	(a)	4.8	(b)
ANNUAL SEVEN-DAY MINIMUM	20	Sep 6	15	Sep 13	4.9	Sep 7 1966
MAXIMUM PEAK FLOW			3360	Dec 17	(c)10600	Jul 5 1937
MAXIMUM PEAK STAGE			7.27	Dec 17	(d)14.54	Sep 16 1999
INSTANTANEOUS LOW FLOW			13	(f)	(g)4.5	Jan 21 1955
ANNUAL RUNOFF (CFSM)	1.34		1.08		1.32	
ANNUAL RUNOFF (INCHES)	18.26		14.73		17.88	
10 PERCENT EXCEEDS	116		95		114	
50 PERCENT EXCEEDS	46		38		46	
90 PERCENT EXCEEDS	25		21		20	

a Aug. 9, Sept. 17-19.
b Sept. 8-10, 1966.
c From rating curve extended above 1,700 ft^3/s on basis of velocity-area and conveyance studies.
d From floodmarks.
f Aug. 10, Sept. 14, 18-20.
g Result of freezeup.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01578310 SUSQUEHANNA RIVER AT CONOWINGO, MD

LOCATION.--Lat 39°39'28.1", long 76°10'28.2", Harford County, Hydrologic Unit 02050306, at downstream side of Conowingo Dam, 1.0 mi southwest of Conowingo, and 9.9 mi upstream from mouth.

DRAINAGE AREA.--27,100 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1967 to current year.

GAGE.--Water-stage recorder. Datum of gage is 5.00 ft above sea level.

REMARKS.--Water-discharge records good. Flow regulated by Conowingo Reservoir beginning October 1928, usable capacity, 55,070,000,000 gal; dead storage, 45,290,000,000 gal. Records do not include a small infrequent diversion upstream from station to augment municipal supply of city of Baltimore. Records of diversion available from Baltimore Department of Public Works. U.S. Geological Survey gage-height telemeter at station.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 170,000 ft^3/s, Apr. 12, gage height, 20.36 ft; minimum discharge, 780 ft^3/s, Dec. 9, 16.

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	4300	16400	22900	14800	26800	29800	80300	29900	19800	18900	5390	5310
2	10600	11800	17400	18200	22800	29100	108000	33900	18100	22300	5460	5340
3	14300	11400	7140	18900	23000	27700	82700	31700	12500	17500	5480	5330
4	10800	4530	17900	19400	15800	16500	69200	25500	21600	17200	5360	8670
5	7490	4500	15300	15600	38800	35400	65600	20100	23300	21100	5410	5480
6	14100	6280	18900	15700	33300	33400	55800	10100	24700	15200	5490	5430
7	4330	9150	16100	3100	26500	21000	62300	24400	20800	12600	5310	7200
8	4570	8180	17100	20700	25300	23800	65600	21600	16900	15100	8770	5350
9	4560	12800	6990	20200	28100	28800	88600	20300	12700	19500	8890	5180
10	15300	16100	5150	21400	19200	19800	110000	17400	8040	12600	5350	4970
11	10800	7780	11100	15400	21100	17700	126000	24900	15000	12000	5130	5080
12	22100	6860	15600	15000	44800	28800	138000	11200	13100	10300	5260	4770
13	17400	19300	15700	13300	43000	31500	115000	10800	16100	11500	5260	4610
14	4470	19800	17300	8480	47400	38000	104000	12400	16800	7640	5290	4560
15	4430	15900	17400	11000	39700	43900	86700	20300	14900	7730	5330	4630
16	8840	20200	11700	15300	52200	53100	83800	20000	10300	13000	5350	4630
17	20700	16100	32900	16100	46500	54600	93400	11600	7960	13800	5180	4420
18	7230	4640	75800	17200	50300	47300	96800	10200	9140	7650	5270	4590
19	18300	4670	94700	17300	56200	61600	90600	18900	19000	7230	4750	4650
20	20200	17400	91900	24800	45300	56200	82200	10400	23400	6970	5110	4610
21	9850	17700	69400	12500	47400	55500	64900	10500	14200	6800	5360	4680
22	13200	14200	67500	18100	41200	53400	57200	17900	21800	6800	6140	4340
23	29300	4760	47300	14800	42500	73500	59600	14600	30300	6760	7330	4240
24	31000	4720	33100	15300	25100	84600	60100	15300	34200	6720	8840	4340
25	14100	9520	26900	20000	21200	88600	60400	17200	50300	6810	5300	13300
26	15900	8140	22200	16100	37500	91400	58500	10700	61600	6170	5310	15100
27	17900	14800	21200	10100	34100	73000	47200	14400	68400	5870	5330	20000
28	7970	12100	29600	7540	32500	66300	42100	19800	30900	6160	5330	30300
29	4380	16000	19900	12100	---	53500	31500	29600	33100	5840	4970	23400
30	10200	18600	17100	20100	---	61200	37900	25900	21600	5670	4980	14800
31	11600	---	9040	21400	---	65700	---	21700	---	5330	4790	---
TOTAL	390220	354330	892220	489920	987600	1464700	2324000	583200	690540	338750	176520	239310
MEAN	12590	11810	28780	15800	35270	47250	77470	18810	23020	10930	5694	7977
MAX	31000	20200	94700	24800	56200	91400	138000	33900	68400	22300	8890	30300
MIN	4300	4500	5150	3100	15800	16500	31500	10100	7960	5330	4750	4240
CFSM	.46	.44	1.06	.58	1.30	1.74	2.86	.69	.85	.40	.21	.29
IN.	.54	.49	1.22	.67	1.36	2.01	3.19	.80	.95	.47	.24	.33

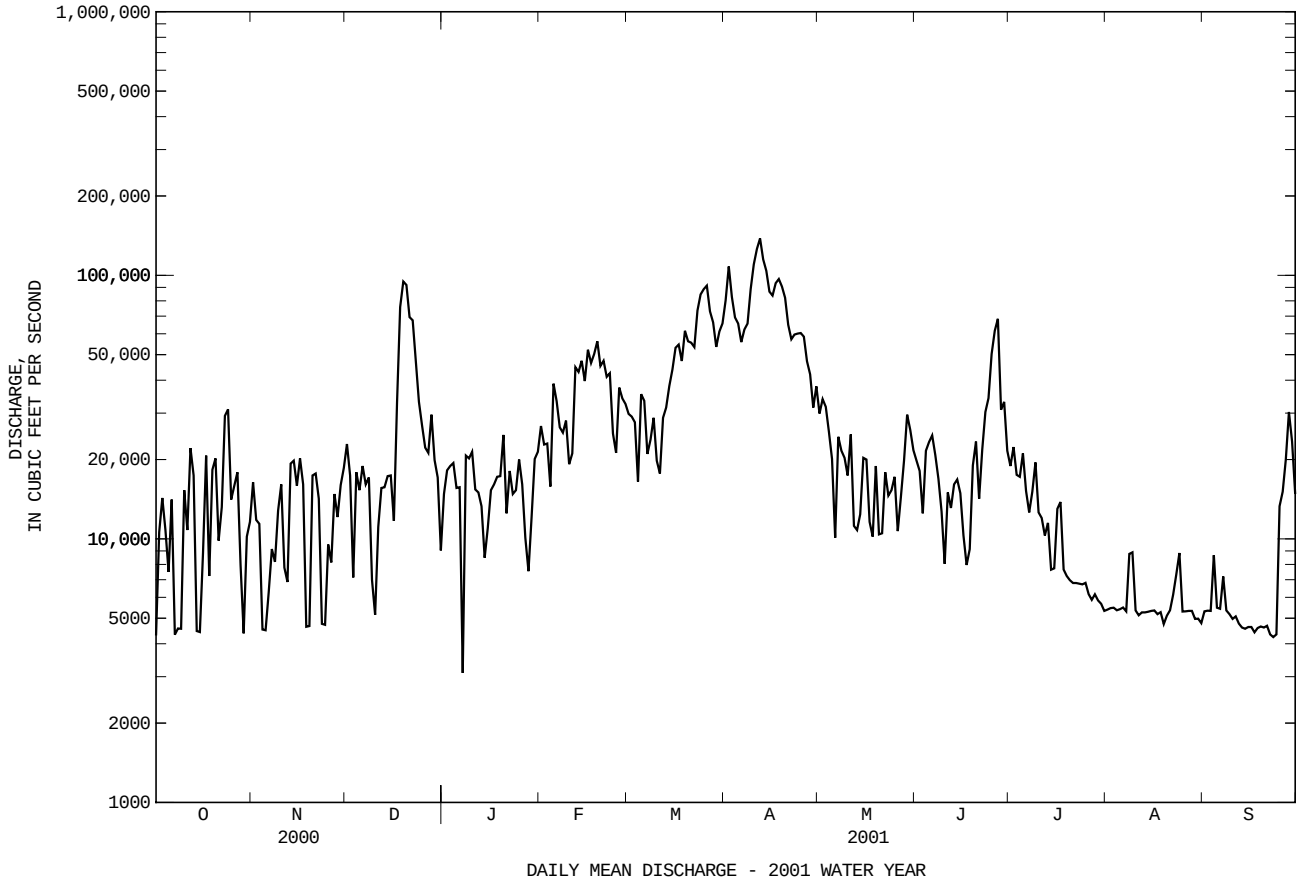
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 2001, BY WATER YEAR (WY)

MEAN	22870	34750	48110	42300	52240	73480	79450	47420	34390	19340	13460	15930
MAX	81800	73170	113700	122500	115800	147800	250100	108200	208000	59050	48580	88450
(WY)	1977	1978	1997	1996	1984	1994	1993	1989	1972	1972	1994	1975
MIN	5557	5465	6733	7164	13050	28320	33850	18810	7691	5338	5304	3476
(WY)	1970	1999	1999	1981	1980	1969	1995	2001	1999	1999	1999	1995

01578310 SUSQUEHANNA RIVER AT CONOWINGO, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1968 - 2001	
ANNUAL TOTAL	12572060		8931310			
ANNUAL MEAN	34350		24470		40210	
HIGHEST ANNUAL MEAN					61090	1978
LOWEST ANNUAL MEAN					22850	1999
HIGHEST DAILY MEAN	199000	Mar 1	138000	Apr 12	1120000	Jun 24 1972
LOWEST DAILY MEAN	3760	Sep 17	3100	Jan 7	269	Jul 13 1969
ANNUAL SEVEN-DAY MINIMUM	7790	Sep 6	4490	Sep 18	1810	Sep 24 1980
MAXIMUM PEAK FLOW			170000	Apr 12	1130000	Jun 24 1972
MAXIMUM PEAK STAGE			20.36	Apr 12	36.83	Jun 24 1972
INSTANTANEOUS LOW FLOW			780	(a)	144	Mar 2 1969
ANNUAL RUNOFF (CFSM)	1.27		.90		1.48	
ANNUAL RUNOFF (INCHES)	17.26		12.26		20.16	
10 PERCENT EXCEEDS	73300		60700		84400	
50 PERCENT EXCEEDS	20600		16500		26900	
90 PERCENT EXCEEDS	7200		5170		5550	

a Dec. 9, 16.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01578310 SUSQUEHANNA RIVER AT CONOWINGO, MD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1978 to current year.
PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: June 1979 to April 1981, July 1984 to September 1992.
WATER TEMPERATURE: June 1979 to April 1981, July 1984 to September 1992.
SUSPENDED-SEDIMENT DISCHARGE: October 1979 to April 1981, July 1984 to September 1992.
REMARKS.--During the period Oct. 1994 to Jan. 1995, monthly samples were collected and analyzed using ultraclean methodologies. Data on trace metals for this period are available from the University of Delaware. Data on organics for this period are available from George Mason University.
EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE (water years 1980, 1985-89, 1991-92): Maximum daily, 475 microsiemens, Nov. 13-15, 1980 and Aug. 31, 1991; minimum daily, 100 microsiemens, May 1, 1991.
WATER TEMPERATURE (water years 1980, 1985-89, 1991-92): Maximum daily, 30.5°C, Aug. 18, 1988; minimum daily, 1.0°C, Feb. 5, 6, 9, 1980, Feb. 12, 1988.
SEDIMENT CONCENTRATION: Maximun daily mean, 207 mg/L, Mar. 17, 1986; minimum daily mean, 1 mg/L, June 27, 1987, May 27, 28, 30, Nov. 1-3, 10, 11, Dec. 22-24, 27, 30, 31, 1991.
SEDIMENT LOAD: Maximum daily, 197,000 tons, Mar. 16, 17, 1986; minimum daily, 4.4 tons, Feb. 10, 1985.

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

DATE	TIME	SAMPLE TYPE	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)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)
OCT												
03...	1030	ENVIRONMENTAL	18500	328	7.8	25.0	19.8	758	7.8	86	120	30.6
18...	1015	ENVIRONMENTAL	4720	362	7.7	19.0	18.4	757	9.2	99	--	--
NOV												
02...	1145	ENVIRONMENTAL	5500	--	8.0	17.0	15.0	762	9.6	--	110	30.6
20...	1130	ENVIRONMENTAL	5150	301	8.0	6.5	11.1	757	10.8	99	--	--
DEC												
06...	1230	ENVIRONMENTAL	4910	298	8.2	5.0	5.4	762	13.6	107	110	29.9
06...	*1231*	*REPLICATE*	--	--	--	--	--	--	--	--	*110*	*29.8*
06...	*1232*	*REPLICATE*	--	--	--	--	--	--	--	--	*110*	*30.0*
06...	*1233*	*REPLICATE*	--	--	--	--	--	--	--	--	*110*	*30.0*
18...	1215	ENVIRONMENTAL	65900	276	8.0	-0.5	3.6	761	13.6	103	--	--
JAN												
03...	1145	ENVIRONMENTAL	18500	199	7.5	-2.0	1.8	770	13.8	98	67	18.8
03...	*1146*	*REPLICATE*	--	--	--	--	--	--	--	--	*67*	*18.8*
24...	1115	ENVIRONMENTAL	17600	280	7.9	2.0	2.5	761	14.0	103	--	--
FEB												
06...	1130	ENVIRONMENTAL	51400	317	7.9	6.5	2.0	761	13.9	101	100	29.1
21...	*1000*	*BLANK*	--	--	--	--	--	--	--	--	--	*.04*
21...	1100	ENVIRONMENTAL	65200	217	7.8	10.0	5.5	757	14.1	113	71	20.0
MAR												
06...	1015	ENVIRONMENTAL	65500	230	7.9	1.0	4.0	745	13.2	103	--	--
17...	1000	ENVIRONMENTAL	65600	270	8.0	7.5	7.0	760	12.5	103	--	--
21...	1100	ENVIRONMENTAL	59800	244	7.9	8.2	6.8	755	13.2	109	77	21.3
21...	*1105*	*REPLICATE*	--	*237*	*7.9*	*6.5*	*7.0*	*761*	--	--	*77*	*21.2*
23...	1145	ENVIRONMENTAL	65600	231	7.8	13.5	9.0	755	--	--	--	--
24...	0915	ENVIRONMENTAL	79400	216	7.8	8.0	7.5	756	--	--	--	--
24...	*0916*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
26...	1245	ENVIRONMENTAL	110000	191	--	3.0	7.0	763	--	--	--	--
27...	1215	ENVIRONMENTAL	94300	181	7.7	6.0	7.5	767	--	--	--	--
28...	1115	ENVIRONMENTAL	66700	182	7.6	7.0	7.5	769	--	--	--	--
APR												
03...	0945	ENVIRONMENTAL	108000	183	7.6	10.0	9.0	764	--	--	59	16.9
03...	*1046*	*REPLICATE*	--	--	--	--	--	--	--	--	*61*	*17.6*
11...	0945	ENVIRONMENTAL	138000	160	7.6	10.5	11.0	766	--	--	--	--
13...	1000	ENVIRONMENTAL	121000	136	7.5	16.5	11.5	754	--	--	--	--
18...	*1015*	*BLANK*	--	--	--	--	--	--	--	--	--	--
18...	1110	ENVIRONMENTAL	135000	160	7.5	11.8	11.4	753	11.1	103	58	16.8
18...	*1111*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
MAY												
01...	*1129*	*BLANK*	--	--	--	--	--	--	--	--	--	*<.01*
01...	1130	ENVIRONMENTAL	9960	199	8.2	25.0	19.0	765	--	--	73	20.7
16...	0845	ENVIRONMENTAL	11800	258	8.4	13.7	21.2	751	7.9	90	100	29.4
16...	*0846*	*REPLICATE*	--	--	--	--	--	--	--	--	*100*	*29.5*
JUN												
12...	0900	ENVIRONMENTAL	11300	298	8.0	25.5	23.5	756	7.5	89	110	29.6
12...	*0901*	*REPLICATE*	--	--	--	--	--	--	--	--	*110*	*30.2*
12...	*0902*	*REPLICATE*	--	--	--	--	--	--	--	--	*110*	*30.0*
12...	*0903*	*REPLICATE*	--	--	--	--	--	--	--	--	*110*	*30.5*
27...	0920	ENVIRONMENTAL	68800	254	7.2	27.0	26.1	765	7.3	90	94	25.9
JUL												
12...	*0959*	*BLANK*	--	--	--	--	--	--	--	--	--	*<.01*
12...	1000	ENVIRONMENTAL	7440	215	6.9	25.0	28.0	759	8.4	108	80	22.6
18...	0830	ENVIRONMENTAL	7610	235	7.4	26.2	26.9	750	6.8	87	87	24.5
AUG												
07...	1045	ENVIRONMENTAL	5390	290	--	32.5	28.5	763	6.5	84	--	--
07...	*1046*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
22...	0950	ENVIRONMENTAL	5390	335	7.6	23.4	29.3	753	5.5	73	120	31.5
22...	*0951*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
SEP												
10...	*1044*	*BLANK*	--	--	--	--	--	--	--	--	--	--
10...	1045	ENVIRONMENTAL	5050	377	7.6	26.5	27.5	762	7.5	95	--	--
19...	1120	ENVIRONMENTAL	4630	394	7.6	27.9	25.1	753	6.0	74	140	35.0

< Actual value is known to be less than the value shown.

01578310 SUSQUEHANNA RIVER AT CONOWINGO, MD--Continued

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

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	BICAR-BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)
OCT													
03...	9.80	15.9	2.86	--	--	46.5	21.6	<.1	2.8	<10	182	1.7	1.22
18...	--	--	--	71	87	--	--	--	--	--	--	1.8	1.34
NOV													
02...	9.01	13.0	2.53	58	71	47.0	21.1	E.1	1.1	<10	179	1.5	1.15
20...	--	--	--	61	74	--	--	--	.6	<10	--	1.2	.893
DEC													
06...	8.30	13.9	2.03	--	--	43.5	19.0	E.1	.7	<10	169	1.3	1.06
06...	*8.27*	*13.9*	*1.99*	--	--	*43.1*	*19.0*	*<.2*	*.7*	*<10*	*169*	*1.3*	*1.07*
06...	*8.33*	*14.1*	*2.01*	--	--	*43.3*	*19.1*	*<.2*	*.7*	*<10*	*169*	*1.3*	*1.08*
06...	*8.36*	*14.2*	*2.02*	--	--	*43.5*	*19.6*	*<.2*	*.7*	*<10*	*171*	*1.3*	*1.09*
18...	--	--	--	55	67	--	--	--	.7	16	--	1.4	1.19
JAN													
03...	4.76	8.9	2.00	--	--	24.3	14.2	<.2	4.7	<10	111	1.8	1.44
03...	*4.74*	*8.8*	*2.07*	--	--	*24.5*	*14.1*	*<.2*	*4.7*	*<10*	*112*	*1.8*	*1.47*
24...	--	--	--	--	--	--	--	--	4.1	<10	--	2.1	1.68
FEB													
06...	7.71	16.6	2.15	58	70	36.1	28.6	<.2	3.2	<10	191	2.6	2.10
21...	*E.004*	*M*	*<.24*	--	--	*<.1*	*.8*	*<.2*	*<.1*	--	*<10*	--	--
21...	5.05	11.1	1.51	38	46	25.6	19.9	<.2	3.9	<10	125	1.7	1.35
MAR													
06...	--	--	--	--	--	--	--	--	3.0	<10	--	1.6	1.32
17...	--	--	--	--	--	--	--	--	1.6	<10	--	1.7	1.45
21...	5.76	12.1	1.51	39	48	30.3	20.9	<.2	3.4	<10	146	1.7	1.42
21...	*5.78*	*12.1*	*1.51*	--	--	*30.3*	*21.0*	*<.2*	*3.4*	*<10*	*140*	*1.7*	*1.42*
23...	--	--	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	3.8	10	--	1.7	1.34
24...	--	--	--	--	--	--	--	--	*3.8*	*<10*	--	*1.7*	*1.35*
26...	--	--	--	--	--	--	--	--	4.0	10	--	1.6	1.20
27...	--	--	--	--	--	--	--	--	4.3	10	--	1.5	--
28...	--	--	--	--	--	--	--	--	4.5	<10	--	1.4	1.07
APR													
03...	4.10	9.2	1.61	29	35	20.3	16.9	<.2	3.9	197	105	1.6	1.25
03...	*4.20*	*9.0*	*1.48*	--	--	*20.2*	*16.2*	*<.2*	*3.9*	--	*110*	--	--
11...	--	--	--	--	--	--	--	--	4.1	26	--	1.2	.817
13...	--	--	--	--	--	--	--	--	4.2	37	--	1.3	.758
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	3.78	6.2	1.40	33	40	18.1	9.9	<.2	4.1	28	87	1.5	1.10
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAY													
01...	*<.008*	*<.1*	*<.09*	--	--	*<.1*	*<.1*	*<.2*	*<.1*	*<10*	*<10*	--	--
01...	5.14	7.4	1.38	39	48	26.1	12.4	<.2	3.3	12	126	1.3	.894
16...	7.34	10	1.65	56	69	33.4	16.2	<.2	.2	<10	156	1.1	.743
16...	*7.38*	*10.1*	*1.62*	*56*	*68*	*33.8*	*16.2*	*E.1*	*.2*	*<10*	*150*	*1.2*	*.740*
JUN													
12...	8.65	12.3	2.00	58	71	45.7	19.7	<.2	1.6	<10	167	1.4	.711
12...	*8.74*	*12.7*	*2.02*	--	--	*44.7*	*22.1*	*<.2*	*1.8*	*<10*	*166*	*1.3*	*.703*
12...	*8.75*	*12.3*	*2.00*	--	--	*45.5*	*19.8*	*E.1*	*1.7*	*<10*	*167*	*1.4*	*.706*
12...	*8.83*	*12.8*	*2.08*	--	--	*44.3*	*20.6*	*<.2*	*1.8*	*<10*	*165*	*1.3*	*.695*
27...	6.94	11.8	2.57	--	--	29.9	17.5	E.1	3.4	16	141	1.8	1.11
JUL													
12...	*<.008*	*<.1*	*<.09*	--	--	*<.1*	*<.1*	*<.2*	*<.1*	*<10*	*<10*	--	--
12...	5.64	9.3	1.87	48	59	25.8	14.3	<.2	2.8	<10	138	1.3	.685
18...	6.33	10.0	2.00	53	65	28.4	15.7	<.2	2.1	14	151	1.3	.574
AUG													
07...	--	--	--	--	--	--	--	--	2.3	<10	--	1.1	.595
07...	--	--	--	--	--	--	--	--	*2.2*	*<10*	--	*1.1*	*.592*
22...	9.64	16.7	2.37	68	82	45.4	25.8	E.1	2.1	<10	191	1.2	.604
22...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
10...	--	--	--	--	--	--	--	--	*<.5*	*<10*	--	--	--
10...	--	--	--	--	--	--	--	--	2.3	13	--	1.1	.512
19...	12.2	20.3	3.11	68	83	65.2	33.7	E.1	2.5	<10	234	1.1	.556

E Estimated value.
< Actual value is known to be less than the value shown.
M Presence of material verified but not quantified.

01578310 SUSQUEHANNA RIVER AT CONOWINGO, MD--Continued

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

DATE	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)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN DIS-SOLVED (MG/L AS N) (00602)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	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)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	IRON, DIS-SOLVED (UG/L AS FE) (01046)
OCT													
03...	.068	1.29	.021	.37	.27	1.6	.35	.25	.054	.024	.017	3.0	<10
18...	.027	1.36	.069	.39	.27	1.6	.32	.21	.041	.010	E.005	3.3	--
NOV													
02...	.015	1.17	.045	.35	.24	1.4	.30	.19	.032	.014	E.005	--	M
20...	.008	.901	.050	.34	.18	1.1	.29	.13	.024	.010	.010	3.1	--
DEC													
06...	.006	1.07	<.041	.21	.16	1.2	--	--	.023	.010	E.005	2.8	50
06...	*.006*	*1.08*	*<.041*	*.23*	*.17*	*1.2*	--	--	*.023*	*.009*	*E.005*	*3.1*	*40*
06...	*.007*	*1.08*	*<.041*	*.24*	*.14*	*1.2*	--	--	*.021*	*.009*	*E.005*	*3.0*	*50*
06...	*.007*	*1.09*	*<.041*	*.23*	*.16*	*1.3*	--	--	*.021*	*.009*	*E.005*	*3.2*	*50*
18...	.007	1.19	E.023	.25	.20	1.4	--	--	.061	.023	.016	4.0	--
JAN													
03...	.007	1.45	.088	.35	.25	1.7	.27	.17	.039	.017	.009	3.7	40
03...	*.007*	*1.48*	*.092*	*.32*	*.25*	*1.7*	*.23*	*.16*	*.040*	*.016*	*.009*	*3.7*	*40*
24...	.011	1.69	.146	.36	.28	2.0	.21	.13	.048	.029	.022	2.8	--
FEB													
06...	.019	2.12	.135	.47	.35	2.5	.33	.22	.056	.033	.027	2.9	60
21...	*.001*	*<.047*	*<.041*	*<.08*	*<.10*	--	--	--	*<.004*	*<.006*	*<.007*	--	*<10*
21...	.009	1.36	.081	.31	.19	1.5	.23	.11	.031	.012	E.005	--	50
MAR													
06...	.011	1.33	.042	.23	.22	1.6	.19	.18	.028	.011	E.006	2.3	--
17...	.012	1.46	E.033	.24	.17	1.6	--	--	.027	.013	E.006	2.8	--
21...	.009	1.42	.050	.29	.19	1.6	.24	.14	.029	.009	E.005	--	80
21...	*.010*	*1.43*	*.042*	*.29*	*.17*	*1.6*	*.24*	*.13*	*.030*	*.008*	*<.007*	--	*80*
23...	--	--	--	--	--	--	--	--	--	--	E.005	--	--
24...	.010	1.35	.055	.32	.20	1.6	.27	.14	.045	.014	E.006	3.2	--
24...	*.010*	*1.36*	*.053*	*.32*	*.21*	*1.6*	*.27*	*.15*	*.044*	*.014*	*E.006*	*3.4*	--
26...	.008	1.21	.059	.41	.23	1.4	.35	.17	.048	.012	<.007	3.8	--
27...	<.001	1.13	.060	.32	.19	1.3	.26	.13	.043	.010	<.007	3.4	--
28...	.007	1.07	.049	.29	.17	1.2	.24	.12	.038	.009	E.005	3.2	--
APR													
03...	.009	1.26	.058	.35	.24	1.5	.29	.18	.055	.013	.007	3.3	40
03...	--	--	--	--	--	--	--	--	--	--	--	--	*40*
11...	.009	.826	E.039	.38	.21	1.0	--	--	.063	.015	E.006	--	--
13...	.009	.767	.058	.49	.23	1.0	.44	.18	.086	.014	.009	4.5	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	.010	1.11	E.036	.41	.21	1.3	--	--	.062	.016	.011	--	30
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAY													
01...	*.001*	*<.047*	*<.041*	*<.08*	*<.10*	--	--	--	*<.004*	*<.006*	*<.007*	*<.60*	*<10*
01...	.012	.906	E.024	.38	.17	1.1	--	--	.042	.008	<.007	2.9	50
16...	.017	.760	.049	.38	.22	.98	.33	.17	.031	.007	<.007	--	10
16...	*.017*	*.757*	*.045*	*.40*	*.19*	*.95*	*.36*	*.15*	*.031*	*.007*	*<.007*	--	*10*
JUN													
12...	.023	.734	.284	.62	.51	1.2	.34	.23	.047	.020	.010	4.2	10
12...	*.023*	*.726*	*.281*	*.59*	*.51*	*1.2*	*.31*	*.22*	*.044*	*.017*	*.007*	*3.8*	*M*
12...	*.023*	*.729*	*.294*	*.71*	*.48*	*1.2*	*.42*	*.19*	*.051*	*.016*	*.007*	*4.4*	*10*
12...	*.023*	*.718*	*.283*	*.60*	*.49*	*1.2*	*.32*	*.21*	*.041*	*.016*	*.007*	*4.7*	*M*
27...	.031	1.14	.068	.65	.39	1.5	.58	.32	.078	.016	.008	--	20
JUL													
12...	*<.001*	*<.050*	*<.040*	*E.06*	*<.10*	--	--	--	*<.004*	*<.006*	*<.007*	*<.60*	*<10*
12...	.062	.747	.111	.56	.36	1.1	.45	.24	.027	.008	<.007	4.4	<10
18...	.187	.761	.105	.49	.36	1.1	.39	.25	.035	.012	<.007	--	M
AUG													
07...	.071	.666	.115	.44	.41	1.1	.33	.29	.023	.008	<.007	3.4	--
07...	*.071*	*.663*	*.118*	*.44*	*.39*	*1.1*	*.32*	*.27*	*.023*	*.007*	*<.007*	*3.5*	--
22...	.064	.668	.081	.52	.33	1.0	.44	.25	.033	E.005	<.007	--	<10
22...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
10...	*<.001*	*<.050*	*<.040*	*<.08*	*<.10*	--	--	--	*<.004*	*<.006*	*<.007*	*<.60*	--
10...	.077	.589	.098	.52	.37	.96	.42	.28	.043	.008	<.007	4.0	--
19...	.041	.597	.069	.51	.36	.96	.44	.29	.038	.011	E.006	--	M

E Estimated value.
< Actual value is known to be less than the value shown.
M Presence of material verified but not quantified.

01578310 SUSQUEHANNA RIVER AT CONOWINGO, MD--Continued

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

DATE	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	STRONTIUM, DISSOLVED (UG/L AS SR) (01080)	2,6-DIETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)	ACETOCHLOR, WATER FLTRD REC (UG/L) (49260)	ALACHLOR, WATER, DISS, REC, (UG/L) (46342)	ALPHA BHC DISSOLVED (UG/L) (34253)	ATRAZINE, WATER, DISS, REC (UG/L) (39632)	BENFLURALIN WAT FLD 0.7 U GF, REC (UG/L) (82673)	BUTYLATE, WATER, DISS, REC (UG/L) (04028)	CARBARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBOFURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)	CHLORPYRIFOS DISSOLVED (UG/L) (38933)	CYANAZINE, WATER, DISS, REC (UG/L) (04041)
OCT													
03...	25.6	187	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
02...	6.7	178	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
06...	E1.9	157	--	--	--	--	--	--	--	--	--	--	--
06...	*<3.2*	*158*	--	--	--	--	--	--	--	--	--	--	--
06...	*E1.9*	*159*	--	--	--	--	--	--	--	--	--	--	--
06...	*E2.4*	*160*	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
03...	35.9	79.4	--	--	--	--	--	--	--	--	--	--	--
03...	*35.1*	*78.6*	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
06...	48.5	--	--	--	--	--	--	--	--	--	--	--	--
21...	*<3.2*	*E.59*	--	--	--	--	--	--	--	--	--	--	--
21...	96.0	95.6	--	--	--	--	--	--	--	--	--	--	--
MAR													
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--	--	--
21...	125	108	<.002	<.004	<.002	<.005	.014	<.010	<.002	<.041	<.020	<.005	<.018
21...	*121*	*108*	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
03...	104	71.4	--	--	--	--	--	--	--	--	--	--	--
03...	*107*	*70.9*	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	*<.002*	*<.004*	*<.002*	*<.005*	*<.007*	*<.010*	*<.002*	*<.041*	*<.020*	*<.005*	*<.018*
18...	42.3	65.1	<.002	<.004	<.002	<.005	.012	<.010	<.002	<.041	<.020	<.005	<.018
18...	--	--	*<.002*	*<.004*	*<.002*	*<.005*	*.013*	*<.010*	*<.002*	*<.041*	*<.020*	*<.005*	*<.018*
MAY													
01...	*<3.2*	*<.80*	--	--	--	--	--	--	--	--	--	--	--
01...	143	89.4	--	--	--	--	--	--	--	--	--	--	--
16...	4.5	128	<.002	<.004	<.002	<.005	.022	<.010	<.002	<.041	<.020	<.005	<.018
16...	*4.5*	*129*	--	--	--	--	--	--	--	--	--	--	--
JUN													
12...	250	162	--	--	--	--	--	--	--	--	--	--	--
12...	*235*	*166*	--	--	--	--	--	--	--	--	--	--	--
12...	*248*	*164*	--	--	--	--	--	--	--	--	--	--	--
12...	*237*	*168*	--	--	--	--	--	--	--	--	--	--	--
27...	17.7	152	<.002	.023	.009	<.005	.512	<.010	<.002	<.041	<.020	E.001	<.018
JUL													
12...	*<3.0*	*<.80*	--	--	--	--	--	--	--	--	--	--	--
12...	11.1	106	--	--	--	--	--	--	--	--	--	--	--
18...	E2.3	122	<.002	<.004	<.002	<.005	.129	<.010	<.002	<.041	<.020	<.005	<.018
AUG													
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
22...	E2.3	189	<.002	<.004	<.002	<.005	.071	<.010	<.002	<.041	<.020	<.005	<.018
22...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
19...	14.4	229	<.002	<.004	<.002	<.005	.041	<.010	<.002	<.041	<.020	<.005	<.018

E Estimated value.
< Actual value is known to be less than the value shown.

01578310 SUSQUEHANNA RIVER AT CONOWINGO, MD--Continued

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

DATE	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)	DEETHYL ATRA-ZINE, WATER, DISS, REC (UG/L) (04040)	DIAZ-INON D10 SRG WAT FLT 0.7 U GF, REC PERCENT (91063)	DI-AZINON, DIS-SOLVED (UG/L) (39572)	DI-ELDRIN DIS-SOLVED (UG/L) (39381)	DISUL-FOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ETHAL-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)	ETHO-PROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FONOFOS WATER DISS REC (UG/L) (04095)	HCH ALPHA D6 SRG WAT FLT 0.7 U GF, REC PERCENT (91065)	LINDANE DIS-SOLVED (UG/L) (39341)	LIN-URON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)
OCT													
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--	--	--
21...	<.003	E.014	87	<.005	<.005	<.021	<.002	<.009	<.005	<.003	81	<.004	<.035
21...	--	--	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	*<.003*	*<.006*	*95*	*<.005*	*<.005*	*<.021*	*<.002*	*<.009*	*<.005*	*<.003*	*63*	*<.004*	*<.035*
18...	<.003	E.012	66	<.005	<.005	<.021	<.002	<.009	<.005	<.003	63	<.004	<.035
18...	*<.003*	*E.012*	*105*	*<.005*	*<.005*	*<.021*	*<.002*	*<.009*	*<.005*	*<.003*	*89*	*<.004*	*<.035*
MAY													
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
16...	<.003	E.020	109	<.005	<.005	<.021	<.002	<.009	<.005	<.003	77	<.004	<.035
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
27...	E.001	E.033	95	E.003	<.005	<.021	<.020	<.009	<.005	<.003	87	<.004	<.035
JUL													
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	<.003	E.013	117	E.001	<.005	<.021	<.002	<.009	<.005	<.003	105	<.004	<.035
AUG													
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
22...	<.003	<.006	96	E.002	<.005	<.021	<.075	<.009	<.005	<.003	94	<.004	<.035
22...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
19...	<.003	E.028	114	<.005	<.005	<.021	<.002	<.009	<.005	<.003	76	<.004	<.035

E Estimated value.
< Actual value is known to be less than the value shown.

01578310 SUSQUEHANNA RIVER AT CONOWINGO, MD--Continued

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

DATE	MALA-THION, DIS-SOLVED (UG/L) (39532)	METHYL AZIN-PHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)	METHYL PARA-THION WAT FLT 0.7 U GF, REC (UG/L) (82667)	METO-LACHLOR WATER DISSOLV (UG/L) (39415)	METRI-BUZIN SENCOR WATER DISSOLV (UG/L) (82630)	MOL-INATE WATER FLTRD 0.7 U GF, REC (UG/L) (82671)	NAPROP-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82684)	P,P' DDE DISSOLV (UG/L) (34653)	PARA-THION, DIS-SOLVED (UG/L) (39542)	PEB-ULATE WATER FILTRD 0.7 U GF, REC (UG/L) (82669)	PENDI-METH-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82683)	PER-METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L) (82664)
OCT													
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--	--	--
21...	<.027	<.050	<.006	E.009	<.006	<.002	<.007	<.003	<.007	<.002	<.010	<.006	<.011
21...	--	--	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	*<.027*	*<.050*	*<.006*	*<.013*	*<.006*	*<.002*	*<.007*	*<.003*	*<.007*	*<.002*	*<.010*	*<.006*	*<.011*
18...	<.027	<.050	<.006	E.009	<.006	<.002	<.007	<.003	<.007	<.002	<.010	<.006	<.011
18...	*<.027*	*<.050*	*<.006*	*E.012*	*<.006*	*<.002*	*<.007*	*<.003*	*<.007*	*<.002*	*E.005*	*<.006*	*<.011*
MAY													
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
16...	<.027	<.050	<.006	.014	<.006	<.002	<.007	<.003	<.007	<.002	<.010	<.006	<.011
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
27...	<.027	<.050	<.006	.208	<.006	<.002	<.007	<.003	<.007	<.002	E.005	<.006	<.011
JUL													
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	<.027	<.050	<.006	.066	<.006	<.002	<.007	<.003	<.007	<.002	<.010	<.006	<.011
AUG													
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
22...	<.027	<.050	<.006	.018	<.006	<.002	<.007	<.003	<.007	<.002	<.010	<.006	<.011
22...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
19...	<.027	<.050	<.006	E.013	<.006	<.002	<.007	<.003	<.007	<.002	<.010	<.006	<.011

E Estimated value.
< Actual value is known to be less than the value shown.

01578310 SUSQUEHANNA RIVER AT CONOWINGO, MD--Continued

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

DATE	PRO-METON, WATER, DISS, REC (UG/L) (04037)	PRON-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)	PROPA-CHLOR, WATER, DISS, REC (UG/L) (04024)	PRO-PANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)	PRO-PARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	SI-MAZINE, WATER, DISS, REC (UG/L) (04035)	TEBU-THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TER-BACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TER-BUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)	TER-BUTHYL-AZINE, WATER, DISS, REC (UG/L) (04022)	THIO-BENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)	TRIAL-LATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)	TRI-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)
OCT													
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--	--	--
21...	<.015	<.004	<.010	<.011	<.023	<.011	<.016	<.034	<.017	--	<.005	<.002	<.009
21...	--	--	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	*<.015*	*<.004*	*<.010*	*<.011*	*<.023*	*<.011*	*<.016*	*<.034*	*<.017*	--	*<.005*	*<.002*	*<.009*
18...	E.001	<.004	<.010	<.011	<.023	E.007	<.016	<.034	<.017	--	<.005	<.002	<.009
18...	*E.003*	*<.004*	*<.010*	*<.011*	*<.023*	*E.008*	*<.016*	*<.034*	*<.017*	--	*<.005*	*<.002*	*<.009*
MAY													
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
16...	E.003	<.004	<.010	<.011	<.023	.013	E.002	<.034	<.017	--	<.005	<.002	<.009
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
27...	E.015	<.004	<.010	<.011	<.023	.052	E.004	<.034	<.017	--	<.005	<.002	<.009
JUL													
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	E.011	<.004	<.010	<.011	<.023	.020	<.016	<.034	<.017	E.003	<.005	<.002	<.009
AUG													
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
22...	.016	<.004	<.010	<.011	<.023	.016	E.005	<.034	<.017	--	<.005	<.002	<.009
22...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
19...	E.015	<.004	<.010	<.011	<.023	E.010	<.016	<.034	<.017	--	<.005	<.002	<.009

E Estimated value.
< Actual value is known to be less than the value shown.

01578310 SUSQUEHANNA RIVER AT CONOWINGO, MD--Continued

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

DATE	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT			
03...	4	220	--
18...	6	76	--
NOV			
02...	5	71	--
20...	5	68	--
DEC			
06...	2	28	--
06...	*2*	--	--
06...	*2*	--	--
06...	*2*	--	--
18...	16	2830	--
JAN			
03...	6	310	--
03...	*5*	--	--
24...	3	157	--
FEB			
06...	3	430	--
21...	--	--	--
21...	6	1060	83
MAR			
06...	5	937	--
17...	6	1030	--
21...	8	1290	92
21...	*7*	--	--
23...	10	1720	--
24...	12	2660	--
24...	*14*	--	--
26...	16	4870	--
27...	12	3080	--
28...	11	2050	--
APR			
03...	21	6070	--
03...	--	--	--
11...	28	10200	--
13...	41	13500	--
18...	--	--	--
18...	35	12800	88
18...	--	--	--
MAY			
01...	*<1*	--	--
01...	11	307	--
16...	10	319	73
16...	--	--	--
JUN			
12...	5	162	--
12...	*8*	--	--
12...	*7*	--	--
12...	*7*	--	--
27...	11	2080	--
JUL			
12...	*<1*	--	--
12...	--	--	--
18...	12	247	79
AUG			
07...	3	47	--
07...	*4*	--	--
22...	4	51	--
22...	*4*	--	--
SEP			
10...	*<1*	--	--
10...	7	100	--
19...	9	113	--

01580000 DEER CREEK AT ROCKS, MD

LOCATION.--Lat 39°37'48", long 76°24'12", Harford County, Hydrologic Unit 02050306, on right bank 0.3 mi upstream from bridge on Cherry Hill Road, 0.8 mi southeast of Rocks, 1.2 mi upstream from Stirrup Run, and 23.5 mi upstream from mouth.

DRAINAGE AREA.--94.4 mi^2.

PERIOD OF RECORD.--October 1926 to current year. Monthly discharge only for November and December 1926, published in WSP 1302.

REVISED RECORDS.--WSP 726: Drainage area. WSP 1502: 1927-36 (maximum and minimum only 1927-29, maximum only 1930-32, 1936).

GAGE.--Water-stage recorder. Concrete control since Sept. 7, 1938. Datum of gage is 250.40 ft above sea level (Baltimore City bench mark).

REMARKS.--Records good except those for estimated daily discharges (recorder malfunction, ice effect), which are fair. Prior to 1965, some regulation at low flow by mills upstream from station. U.S. Geological Survey gage-height telemeter at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1888, that of Aug. 23, 1933.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,900 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 17	1215	*2,450	*6.75	No other peak greater than base discharge.			

Minimum discharge, 23 ft^3/s, Sept. 18.

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	64	46	54	e48	140	85	215	103	88	59	39	36
2	63	47	51	e48	116	84	189	101	127	60	38	33
3	60	45	e50	e47	101	82	170	98	96	56	36	32
4	61	46	e55	e47	88	94	157	94	85	57	38	32
5	58	46	e55	e48	119	144	147	92	79	60	41	31
6	58	45	e52	e52	119	113	146	89	77	55	42	29
7	58	45	47	e51	113	103	144	92	80	52	43	28
8	53	46	47	e49	115	100	138	89	75	56	40	28
9	52	47	47	e48	125	95	146	95	72	57	35	28
10	52	75	46	e48	e140	89	160	89	70	61	53	31
11	52	63	47	e56	113	86	163	85	69	82	135	42
12	51	53	47	e52	97	84	171	83	69	55	128	30
13	49	54	45	e50	96	151	147	80	85	51	123	28
14	49	61	178	60	98	120	135	78	70	48	129	27
15	49	57	110	65	101	105	132	78	69	47	63	27
16	49	53	82	66	102	107	191	77	85	45	52	26
17	50	51	e877	56	149	116	166	77	104	46	47	25
18	62	49	231	52	e100	110	183	80	70	46	46	24
19	59	49	130	206	e94	98	152	84	65	47	45	24
20	50	49	108	283	97	95	144	82	65	44	60	30
21	49	49	e96	e120	94	456	140	130	94	42	51	49
22	47	47	e84	e76	85	374	133	160	82	40	44	37
23	46	e47	e75	e64	e94	199	129	168	234	39	41	30
24	46	e48	e70	e72	e90	166	123	101	105	38	42	34
25	47	e50	e66	e66	93	148	117	89	80	38	40	116
26	47	111	e58	e68	120	135	114	156	72	37	38	52
27	47	82	e55	e62	98	124	112	188	69	41	37	39
28	47	60	e52	e58	91	120	110	131	66	37	37	35
29	45	55	e50	e56	---	126	106	103	63	38	35	34
30	46	59	e49	323	---	637	103	95	61	43	35	33
31	46	---	e48	219	---	266	---	84	---	41	37	---
TOTAL	1612	1635	3062	2616	2988	4812	4383	3151	2526	1518	1670	1050
MEAN	52.0	54.5	98.8	84.4	107	155	146	102	84.2	49.0	53.9	35.0
MAX	64	111	877	323	149	637	215	188	234	82	135	116
MIN	45	45	45	47	85	82	103	77	61	37	35	24
CFSM	.55	.58	1.05	.89	1.13	1.64	1.55	1.08	.89	.52	.57	.37
IN.	.64	.64	1.21	1.03	1.18	1.90	1.73	1.24	1.00	.60	.66	.41

e Estimated

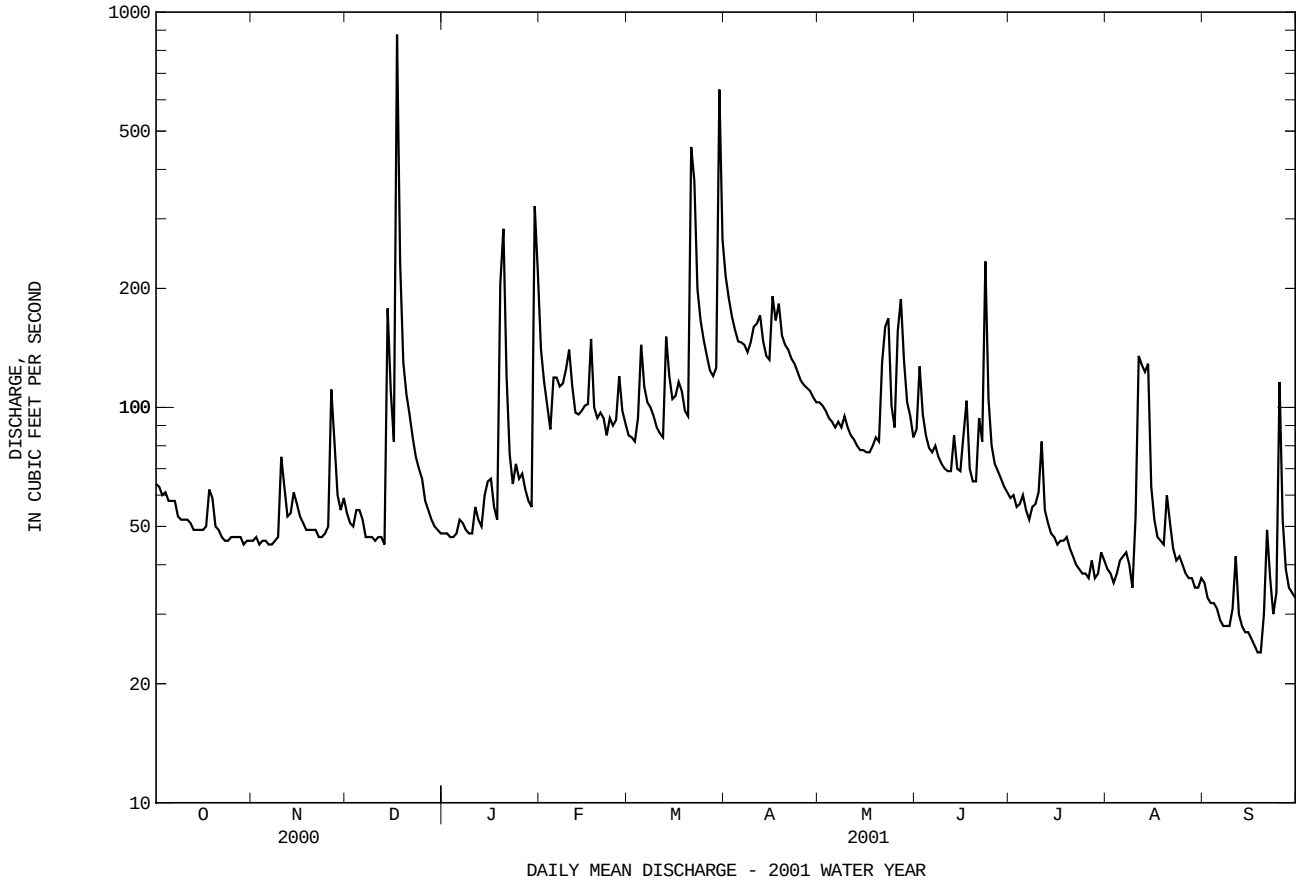
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1927 - 2001, BY WATER YEAR (WY)

MEAN	83.5	102	117	143	162	171	169	150	123	103	93.5	86.6
MAX	317	266	392	422	415	486	379	421	576	279	362	345
(WY)	1980	1927	1997	1996	1979	1994	1984	1989	1972	1972	1933	1975
MIN	26.0	32.5	37.8	41.7	60.2	62.2	63.2	50.9	42.8	21.0	17.4	29.0
(WY)	1964	1932	1966	1966	1932	1981	1963	1963	1966	1966	1966	1986

01580000 DEER CREEK AT ROCKS, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1927 - 2001	
ANNUAL TOTAL	38564		31023			
ANNUAL MEAN	105		85.0		125	
HIGHEST ANNUAL MEAN					224	1972
LOWEST ANNUAL MEAN					58.2	1966
HIGHEST DAILY MEAN	892	Mar 21	877	Dec 17	6610	Jun 22 1972
LOWEST DAILY MEAN	45	(a)	24	(b)	8.6	(c)
ANNUAL SEVEN-DAY MINIMUM	46	Nov 1	26	Sep 13	9.0	Sep 7 1966
MAXIMUM PEAK FLOW			2450	Dec 17	(d)13600	Aug 23 1933
MAXIMUM PEAK STAGE			6.75	Dec 17	(f)17.70	Aug 23 1933
INSTANTANEOUS LOW FLOW			23	Sep 18	8.0	(g)
ANNUAL RUNOFF (CFSM)	1.12		.90		1.33	
ANNUAL RUNOFF (INCHES)	15.20		12.23		18.01	
10 PERCENT EXCEEDS	170		145		210	
50 PERCENT EXCEEDS	80		63		93	
90 PERCENT EXCEEDS	48		38		45	

a Aug. 26, Oct. 29, Nov. 3, 6, 7, Dec. 13.
b Sept. 18, 19.
c Sept. 11, 12, 1966.
d From rating curve extended above 3,000 ft^3/s, on basis of slope-area measurements at gage heights 13.3 and 17.7 ft.
f From floodmarks.
g Dec. 16, 1930, Jan. 26, 1939, result of regulation.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01581500 BYNUM RUN AT BEL AIR, MD

LOCATION.--Lat 39°32'29.3", long 76°19'48.4", Harford County, Hydrologic Unit 02060003, on right bank 30 ft downstream from bridge on State Highway 22, 1.0 mi east of Bel Air, and 8.5 mi upstream from mouth.

DRAINAGE AREA.--8.52 mi^2.

PERIOD OF RECORD.--June 1944 to April 1951, July 1955 to September 1970, June 1999 to current year.

GAGE.--Water-stage recorder. Datum of gage is 251.43 ft above sea level.

REMARKS.--Records good except those for estimated daily discharges (missing record, backwater, ice effect), which are fair. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 440 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 17	0730	*1,900	*5.96	Jun 16	1400	520	3.70
Mar 21	1600	747	4.23	Aug 11	1415	880	4.49
Mar 30	0230	737	4.21				

Minimum discharge, 0.45 ft^3/s, Aug. 8, 9, 10.

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	3.1	e2.4	3.5	3.4	11	6.6	17	5.0	16	3.4	.91	1.8
2	2.8	e2.4	2.9	3.4	7.8	6.3	13	4.8	25	3.1	.82	1.2
3	e2.7	e2.4	2.7	3.2	6.2	5.9	11	4.4	7.0	2.5	.76	1.2
4	e2.7	e2.3	2.7	e3.2	5.1	18	9.1	4.2	5.0	4.1	.88	1.1
5	e2.6	e2.3	2.7	e3.2	78	36	8.1	4.0	4.2	5.9	.68	1.2
6	e2.5	e2.3	2.7	e3.4	26	14	8.8	3.7	4.3	2.6	.68	1.2
7	e2.5	e2.3	2.7	3.6	17	9.4	8.2	3.7	7.5	2.2	.62	1.1
8	e2.5	e2.3	2.7	4.5	12	7.8	7.6	3.7	4.8	2.9	.54	1.1
9	e2.5	e2.6	2.6	3.9	10	8.6	16	3.7	3.8	2.7	.52	1.1
10	e2.5	e6.0	2.6	3.4	9.6	7.1	17	3.5	3.4	2.9	.58	13
11	e2.4	2.9	2.8	3.4	6.5	6.5	32	3.4	3.2	3.9	101	4.7
12	e2.4	2.6	3.1	3.5	5.5	6.6	19	3.3	32	2.3	16	1.5
13	e2.4	2.6	2.9	3.3	6.8	36	12	3.1	20	2.0	24	1.2
14	e2.4	5.9	59	3.3	8.0	11	8.9	3.1	6.0	1.8	11	9.8
15	e2.4	3.3	7.3	5.3	8.1	10	9.4	3.0	5.3	1.7	3.5	2.0
16	e2.4	2.6	11	4.6	18	10	29	2.8	79	1.7	2.4	1.4
17	e2.8	3.0	327	4.0	25	8.7	13	2.9	31	1.6	1.9	1.2
18	e4.0	2.8	20	3.9	8.4	7.2	21	3.0	8.6	1.6	1.6	1.1
19	e3.0	2.5	9.9	74	6.7	6.1	9.5	3.2	5.4	1.6	1.6	1.1
20	e2.6	2.6	7.3	50	6.4	5.7	7.8	3.4	7.4	1.3	2.0	34
21	e2.5	2.7	5.5	18	6.0	180	7.7	14	7.3	1.1	1.4	13
22	e2.5	2.6	4.8	e8.0	6.1	42	7.6	26	4.4	1.1	1.3	3.1
23	e2.4	2.5	e4.3	e6.0	7.8	15	7.1	19	9.3	1.1	1.2	2.1
24	e2.4	2.5	e3.9	e5.5	6.3	10	6.8	4.5	4.9	1.0	1.2	39
25	e2.3	2.8	e3.7	e5.0	16	7.9	6.3	3.7	3.7	1.0	1.2	32
26	e2.3	35	e3.6	e4.7	23	7.0	6.1	65	3.2	3.8	1.1	5.6
27	e2.3	5.6	e3.5	e5.0	11	6.4	6.1	79	3.0	1.6	1.1	3.1
28	e2.3	3.8	e3.5	e5.0	7.9	6.3	5.2	16	2.8	1.1	1.1	2.5
29	e2.3	4.1	3.6	4.6	---	31	5.2	7.8	2.8	1.1	1.0	2.1
30	e2.3	5.2	3.8	87	---	210	5.7	5.7	2.7	1.2	22	2.2
31	e2.4	---	3.5	21	---	28	---	4.4	---	1.1	4.4	---
TOTAL	79.2	124.9	521.8	360.3	366.2	771.1	341.2	317.0	323.0	67.0	208.99	186.7
MEAN	2.55	4.16	16.8	11.6	13.1	24.9	11.4	10.2	10.8	2.16	6.74	6.22
MAX	4.0	35	327	87	78	210	32	79	79	5.9	101	39
MIN	2.3	2.3	2.6	3.2	5.1	5.7	5.2	2.8	2.7	1.0	.52	1.1
CFSM	.30	.49	1.98	1.36	1.54	2.92	1.33	1.20	1.26	.25	.79	.73
IN.	.35	.55	2.28	1.57	1.60	3.37	1.49	1.38	1.41	.29	.91	.82

e Estimated

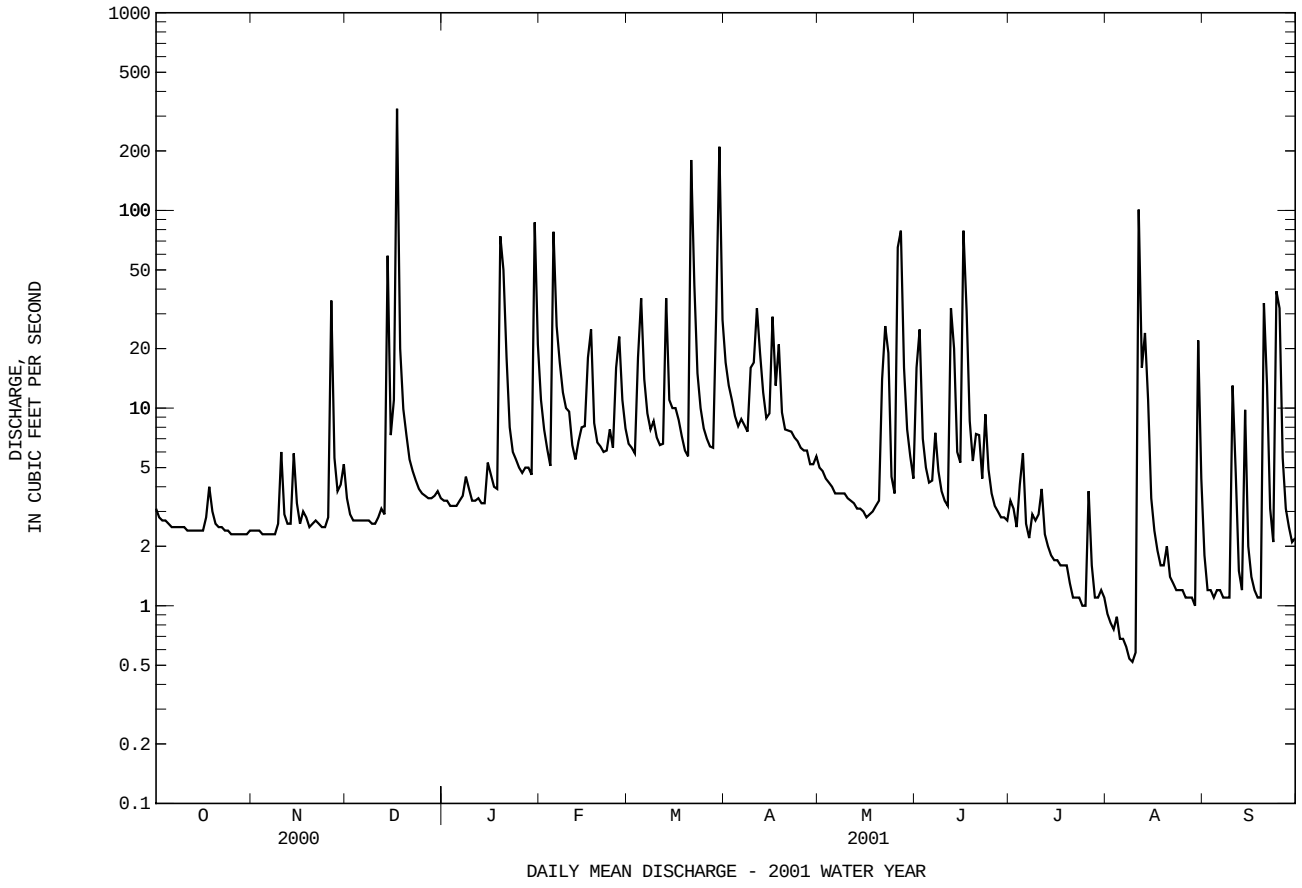
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1944 - 1951, 1955 - 1970, 1999 - 2001, BY WATER YEAR (WY)

MEAN	4.59	8.30	12.5	12.8	16.8	17.9	13.9	10.1	7.61	6.23	8.28	9.94
MAX	14.3	20.8	36.5	33.4	35.2	38.2	29.7	25.2	16.5	21.7	63.0	90.1
(WY)	2000	1957	1958	1958	1961	1958	1961	1948	1970	1945	1967	1999
MIN	.95	1.74	1.74	2.46	5.24	5.68	4.17	2.89	2.07	.92	.96	.97
(WY)	1964	1966	1966	1966	1947	1966	1963	1963	1969	1963	1966	1962

01581500 BYNUM RUN AT BEL AIR, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1944 - 1951, 1955 - 1970, 1999 - 2001	
ANNUAL TOTAL	4307.3		3667.39			
ANNUAL MEAN	11.8		10.0		10.4	
HIGHEST ANNUAL MEAN					19.2	1958
LOWEST ANNUAL MEAN					5.58	1969
HIGHEST DAILY MEAN	593	Mar 21	327	Dec 17	2320	Sep 16 1999
LOWEST DAILY MEAN	1.7	Aug 26	.52	Aug 9	.02	Aug 13 1999
ANNUAL SEVEN-DAY MINIMUM	1.9	Aug 20	.64	Aug 4	.11	Aug 7 1999
MAXIMUM PEAK FLOW			1900	Dec 17	(a)7330	Sep 16 1999
MAXIMUM PEAK STAGE			5.96	Dec 17	9.91	Sep 16 1999
INSTANTANEOUS LOW FLOW			.45	(b)	.00	(c)
ANNUAL RUNOFF (CFSM)	1.38		1.18		1.22	
ANNUAL RUNOFF (INCHES)	18.81		16.01		16.55	
10 PERCENT EXCEEDS	18		19		19	
50 PERCENT EXCEEDS	5.6		3.8		4.9	
90 PERCENT EXCEEDS	2.4		1.2		1.6	

a From rating curve extended above 560 ft^3/s on basis of contracted-opening measurement at gage height 6.18 ft.
b Aug. 8-10.
c Sept. 8-10, 1966.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01581700 WINTERS RUN NEAR BENSON, MD

LOCATION.--Lat 39°31'11.8", long 76°22'22.7", Harford County, Hydrologic Unit 02060003, on left bank 30 ft downstream from bridge on U.S. Highway 1, 0.1 mi upstream from Heavenly Waters, 1.2 mi northeast of Benson, 1.8 mi southwest of Bel Air, and 10.5 mi upstream from mouth.

DRAINAGE AREA.--34.8 mi^2.

PERIOD OF RECORD.--August 1967 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 195 ft above sea level, from topographic map.

REMARKS.--Records good below 200 ft^3/s and fair above, except those for estimated daily discharges (ice effect, equipment malfunction), which are fair. U.S. Geological Survey gage-height telemeter at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 17	1030	1,100	4.58	Aug 11	1515	*1,110	*4.60

Minimum discharge, 6.6 ft^3/s, Sep 7-10, 13-14, 18.

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	22	16	20	e23	41	30	62	31	33	19	12	11
2	21	16	19	e22	35	28	53	31	44	19	11	9.1
3	20	15	18	e22	32	26	48	29	30	17	9.9	9.4
4	20	15	17	e22	29	37	44	29	27	18	17	8.7
5	18	15	18	e22	97	65	42	28	25	22	12	8.8
6	20	15	17	e22	60	41	42	27	25	18	12	8.1
7	19	14	17	e21	48	35	40	27	29	16	11	7.8
8	17	16	17	e21	43	32	39	27	24	e20	9.5	7.6
9	17	15	16	e21	38	32	45	28	23	e18	9.0	7.6
10	18	30	16	22	40	29	51	27	22	16	9.1	22
11	18	19	17	23	33	28	63	26	23	19	168	13
12	17	17	16	22	30	28	58	25	58	17	43	9.0
13	17	15	16	21	31	60	47	24	60	e15	41	7.1
14	16	21	109	21	32	38	43	24	28	e14	34	12
15	16	19	38	24	32	34	40	24	25	e14	19	8.1
16	16	17	33	24	39	34	59	25	52	e13	14	7.5
17	17	17	370	22	55	33	48	23	50	e15	13	7.4
18	21	16	74	21	35	30	56	25	29	17	13	7.2
19	19	16	e42	180	32	27	44	26	25	18	13	7.3
20	18	16	e34	110	30	26	41	25	24	15	15	32
21	18	16	e31	50	29	248	39	40	28	13	13	25
22	16	16	e33	e41	28	121	38	50	24	13	11	12
23	16	14	e28	e38	37	57	38	66	31	13	11	10
24	17	14	e27	e29	30	46	36	31	25	13	11	28
25	17	16	e26	e27	35	40	33	28	23	12	11	38
26	16	79	e26	e26	47	37	34	88	20	13	9.7	17
27	17	35	e25	e24	37	35	33	93	20	13	10	12
28	16	23	e25	26	32	33	32	47	19	12	11	12
29	16	21	e24	28	---	50	31	33	19	12	8.9	10
30	16	23	e24	187	---	323	31	30	18	14	19	11
31	16	---	e23	68	---	81	---	27	---	13	14	---
TOTAL	548	597	1216	1230	1087	1764	1310	1064	883	481	615.1	385.7
MEAN	17.7	19.9	39.2	39.7	38.8	56.9	43.7	34.3	29.4	15.5	19.8	12.9
MAX	22	79	370	187	97	323	63	93	60	22	168	38
MIN	16	14	16	21	28	26	31	23	18	12	8.9	7.1
CFSM	.51	.57	1.13	1.14	1.12	1.64	1.25	.99	.85	.45	.57	.37
IN.	.59	.64	1.30	1.31	1.16	1.89	1.40	1.14	.94	.51	.66	.41

e Estimate

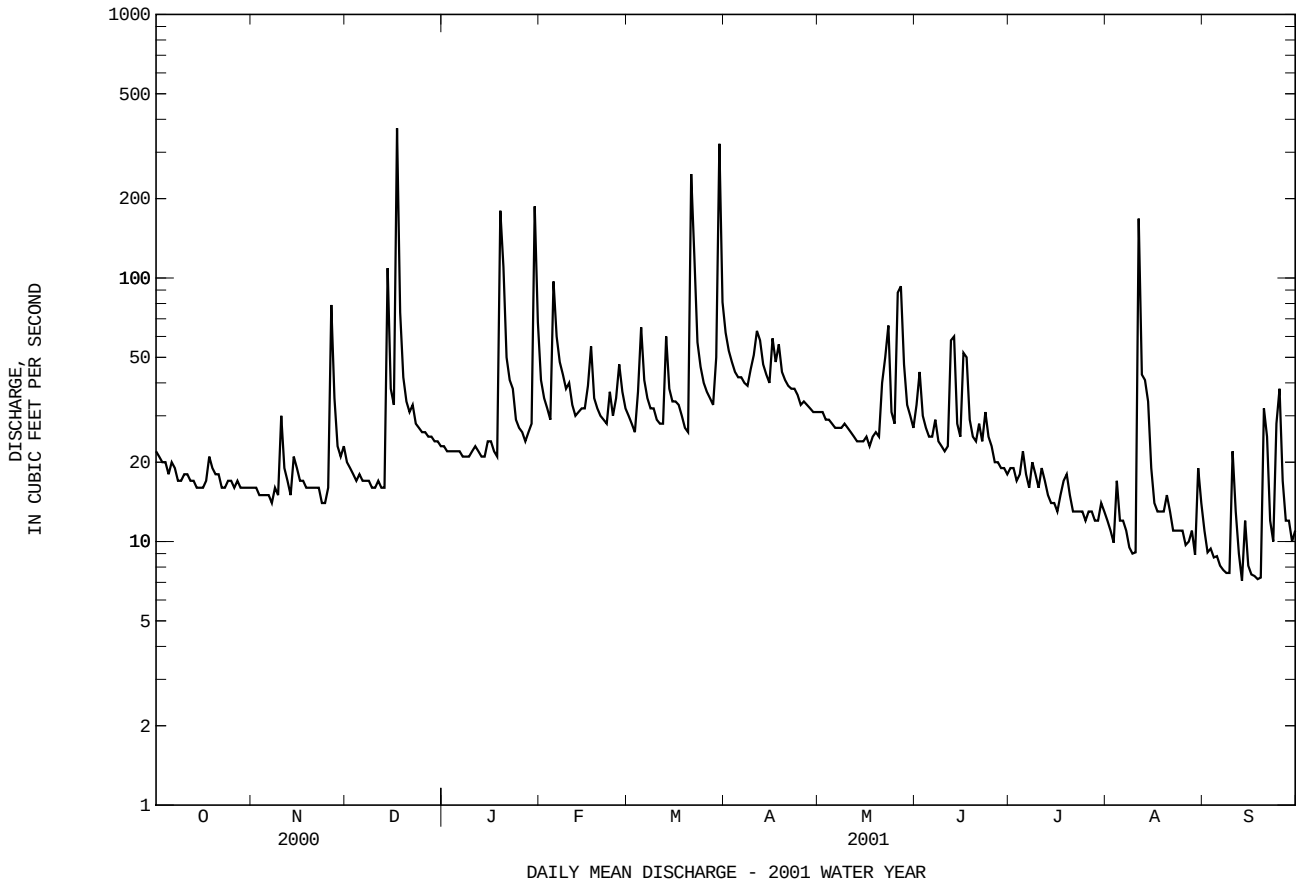
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 2001, BY WATER YEAR (WY)

MEAN	36.1	45.2	54.2	64.1	67.9	70.3	64.0	59.4	50.6	42.7	36.6	40.5
MAX	94.0	93.5	149	167	151	163	134	162	204	133	137	140
(WY)	1980	1997	1997	1996	1979	1994	1983	1989	1972	1975	1971	1975
MIN	13.4	12.5	18.2	16.9	28.1	22.5	28.8	17.9	12.9	10.8	11.6	10.4
(WY)	1970	1982	1981	1981	1992	1981	1969	1969	1969	1999	1981	1986

01581700 WINTERS RUN NEAR BENSON, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1967 - 2001	
ANNUAL TOTAL	16079		11180.8			
ANNUAL MEAN	43.9		30.6		52.3	
HIGHEST ANNUAL MEAN					86.0	1972
LOWEST ANNUAL MEAN					22.9	1981
HIGHEST DAILY MEAN	665	Mar 21	370	Dec 17	3000	Jun 22 1972
LOWEST DAILY MEAN	14	(a)	7.1	Sep 13	4.5	(b)
ANNUAL SEVEN-DAY MINIMUM	15	Nov 3	8.1	Sep 13	5.2	Aug 7 1999
MAXIMUM PEAK FLOW			1110	Aug 11	(c)7600	Jun 22 1972
MAXIMUM PEAK STAGE			4.60	Aug 11	11.60	Jun 22 1972
INSTANTANEOUS LOW FLOW			6.6	(d)	(f)3.0	Jan 10 1982
ANNUAL RUNOFF (CFSM)	1.26		.88		1.50	
ANNUAL RUNOFF (INCHES)	17.19		11.95		20.44	
10 PERCENT EXCEEDS	69		49		87	
50 PERCENT EXCEEDS	33		24		37	
90 PERCENT EXCEEDS	17		12		16	

a Nov. 7, 23, 24, 2000.
b Aug. 12, 13, 19, 1999.
c From rating curve extended above 4,600 ft^3/s.
d Sept. 7-10, 13, 14, 18.
f Result of freezeup.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01581810 GUNPOWDER FALLS AT HOFFMANVILLE, MD

LOCATION.--Lat 39°41'23.3", long 76°46'53.3", Baltimore County, Hydrologic Unit 02060003, on left bank 500 ft upstream from bridge on Gunpowder Road, 0.4 mi upstream from Walker Run, 0.5 mi north of Hoffmanville, and 0.7 mi upstream from Prettyboy Reservoir.

DRAINAGE AREA.--27.0 mi^2.

PERIOD OF RECORD.--May 2000 to September 2001.

GAGE.--Water-stage recorder. Datum of gage is 555 ft above sea level, from topographic map.

REMARKS.--Records good except those for estimated daily discharges (missing record, ice effect), which are poor. Several measurements of water temperature were made during the year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 200 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Sep 15, 2000	0100	286	3.25	Mar 30, 2001	0400	295	3.29
Sep 19, 2000	1715	210	2.89	May 26, 2001	2300	234	3.01
				Jun 23, 2001	0030	*643	*4.55
Dec 17, 2000	0930	365	3.58	Sep 24, 2001	2145	559	4.28
Mar 21, 2001	1900	200	2.84				

May - September 2000 Minimum discharge, 11 ft^3/s, Aug. 26, 27.
2001 Water Year Minimum discharge, 6.6 ft^3/s, Sept. 18, 19.

DISCHARGE, CUBIC FEET PER SECOND, MAY TO SEPTEMBER 2000
DAILY MEAN VALUES

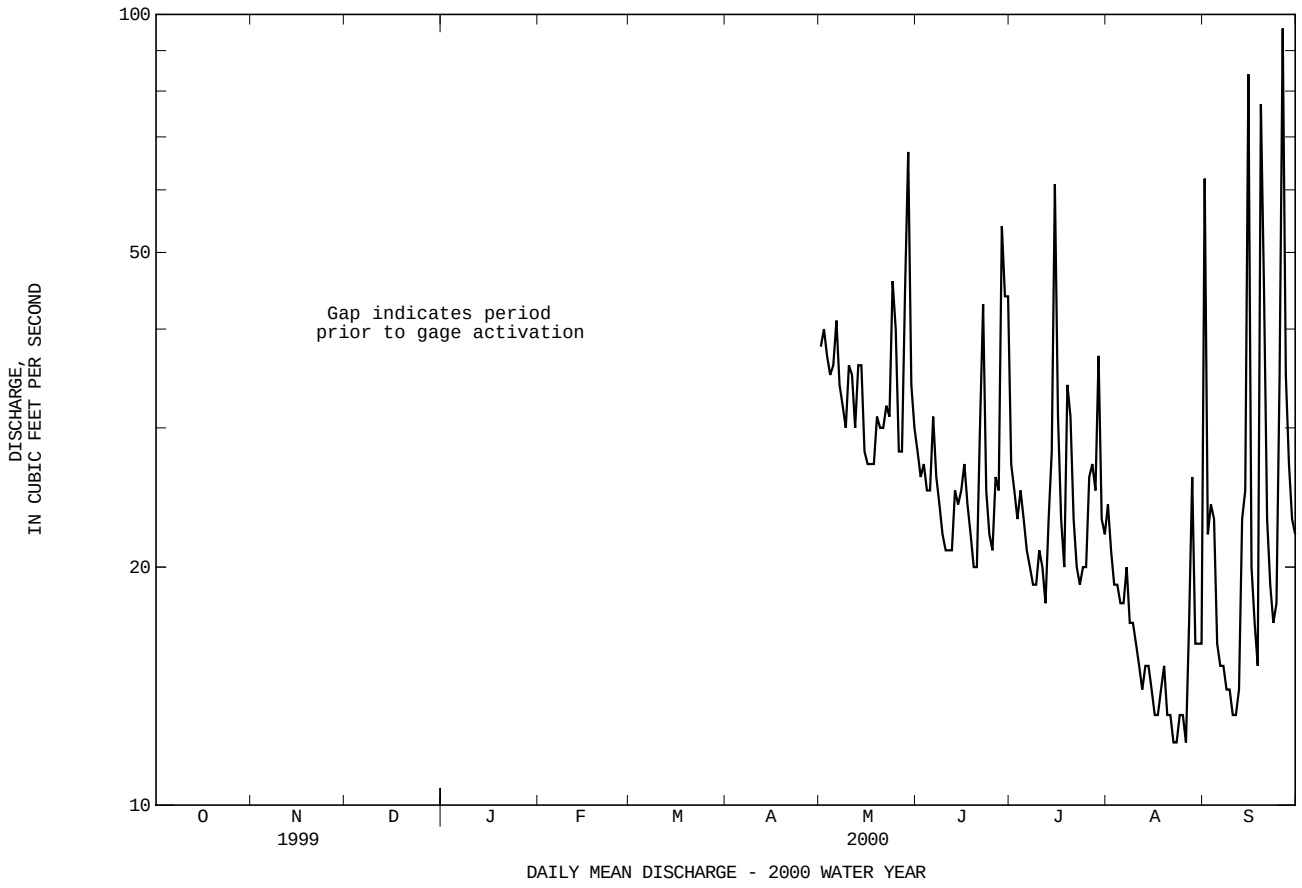
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	e38	28	27	24	62
2	---	---	---	---	---	---	---	e40	26	25	21	22
3	---	---	---	---	---	---	---	e37	27	23	19	24
4	---	---	---	---	---	---	---	35	25	25	19	23
5	---	---	---	---	---	---	---	36	25	23	18	16
6	---	---	---	---	---	---	---	41	31	21	18	15
7	---	---	---	---	---	---	---	34	26	20	20	15
8	---	---	---	---	---	---	---	32	24	19	17	14
9	---	---	---	---	---	---	---	30	22	19	17	14
10	---	---	---	---	---	---	---	36	e21	21	16	13
11	---	---	---	---	---	---	---	35	e21	20	15	13
12	---	---	---	---	---	---	---	30	e21	18	14	14
13	---	---	---	---	---	---	---	36	e25	23	15	23
14	---	---	---	---	---	---	---	36	e24	28	15	25
15	---	---	---	---	---	---	---	28	e25	61	14	84
16	---	---	---	---	---	---	---	27	e27	31	13	20
17	---	---	---	---	---	---	---	27	e24	23	13	17
18	---	---	---	---	---	---	---	27	e22	20	14	15
19	---	---	---	---	---	---	---	31	e20	34	15	77
20	---	---	---	---	---	---	---	30	e20	31	13	45
21	---	---	---	---	---	---	---	30	e30	23	13	23
22	---	---	---	---	---	---	---	32	e43	20	12	19
23	---	---	---	---	---	---	---	31	25	19	12	17
24	---	---	---	---	---	---	---	46	22	20	13	18
25	---	---	---	---	---	---	---	40	21	20	13	35
26	---	---	---	---	---	---	---	28	26	26	12	96
27	---	---	---	---	---	---	---	28	25	27	17	35
28	---	---	---	---	---	---	---	45	54	25	26	27
29	---	---	---	---	---	---	---	67	44	37	16	23
30	---	---	---	---	---	---	---	34	44	23	16	22
31	---	---	---	---	---	---	---	30	---	22	16	---
TOTAL	---	---	---	---	---	---	---	1077	818	774	496	866
MEAN	---	---	---	---	---	---	---	34.7	27.3	25.0	16.0	28.9
MAX	---	---	---	---	---	---	---	67	54	61	26	96
MIN	---	---	---	---	---	---	---	27	20	18	12	13
CFSM	---	---	---	---	---	---	---	1.29	1.01	.92	.59	1.07
IN.	---	---	---	---	---	---	---	1.48	1.13	1.07	.68	1.19

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR MAY TO SEPTEMBER 2000

MEAN	---	---	---	---	---	---	---	34.7	27.3	25.0	16.0	28.9
MAX	---	---	---	---	---	---	---	34.7	27.3	25.0	16.0	28.9
(WY)	---	---	---	---	---	---	---	2000	2000	2000	2000	2000
MIN	---	---	---	---	---	---	---	34.7	27.3	25.0	16.0	28.9
(WY)	---	---	---	---	---	---	---	2000	2000	2000	2000	2000

01581810 GUNPOWDER FALLS AT HOFFMANVILLE, MD--Continued



DAILY MEAN DISCHARGE - 2000 WATER YEAR

01581810 GUNPOWDER FALLS AT HOFFMANVILLE, MD--Continued

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	21	16	17	e16	47	26	57	29	22	19	11	9.0
2	20	15	16	e15	42	26	52	28	29	21	10	8.4
3	19	15	15	e15	33	26	47	27	24	18	9.4	8.3
4	18	15	14	e15	29	31	45	27	22	19	17	8.2
5	18	15	15	e16	31	46	42	27	21	20	14	7.8
6	19	15	14	e15	30	34	42	26	20	18	11	7.6
7	18	15	14	e15	31	32	42	25	21	16	11	7.6
8	18	14	13	e15	32	30	40	24	20	21	9.9	7.5
9	18	15	13	e16	39	29	45	26	18	18	9.3	7.3
10	18	31	13	e16	48	27	46	24	18	19	11	7.3
11	18	18	13	e15	33	27	52	23	17	18	16	7.2
12	18	16	14	e15	29	26	49	23	20	15	15	7.2
13	18	16	13	e15	29	52	42	23	31	14	23	7.0
14	18	18	67	e15	32	35	38	21	20	14	18	7.2
15	17	17	30	e16	33	32	37	21	18	14	12	7.5
16	17	16	26	e18	35	35	60	21	30	13	12	7.2
17	18	16	159	17	47	40	51	21	25	13	11	7.2
18	23	16	40	16	31	36	55	22	19	13	10	6.7
19	21	15	29	58	29	31	44	23	17	14	10	6.7
20	19	15	e26	62	29	29	41	22	16	13	15	8.9
21	18	15	e24	42	29	87	40	40	16	12	11	11
22	18	14	e22	36	28	75	39	37	72	12	10	8.3
23	17	14	21	26	33	51	36	42	179	11	9.8	8.0
24	17	14	e19	e24	27	45	35	25	39	11	9.9	86
25	17	14	e18	e22	33	41	34	24	29	11	9.4	76
26	17	38	e17	e21	36	38	33	50	25	11	9.4	18
27	16	23	e17	e20	29	35	32	62	23	11	8.8	13
28	17	19	e17	e20	28	34	31	32	22	11	8.5	12
29	17	17	e16	20	---	41	30	26	21	10	8.2	11
30	16	21	e16	66	---	153	29	24	19	12	9.1	11
31	16	---	e16	54	---	66	---	22	---	12	9.3	---
TOTAL	560	518	764	752	932	1316	1266	867	873	454	359.0	406.1
MEAN	18.1	17.3	24.6	24.3	33.3	42.5	42.2	28.0	29.1	14.6	11.6	13.5
MAX	23	38	159	66	48	153	60	62	179	21	23	86
MIN	16	14	13	15	27	26	29	21	16	10	8.2	6.7
CFSM	.67	.64	.91	.90	1.23	1.57	1.56	1.04	1.08	.54	.43	.50
IN.	.77	.71	1.05	1.04	1.28	1.81	1.74	1.19	1.20	.63	.49	.56

e Estimated

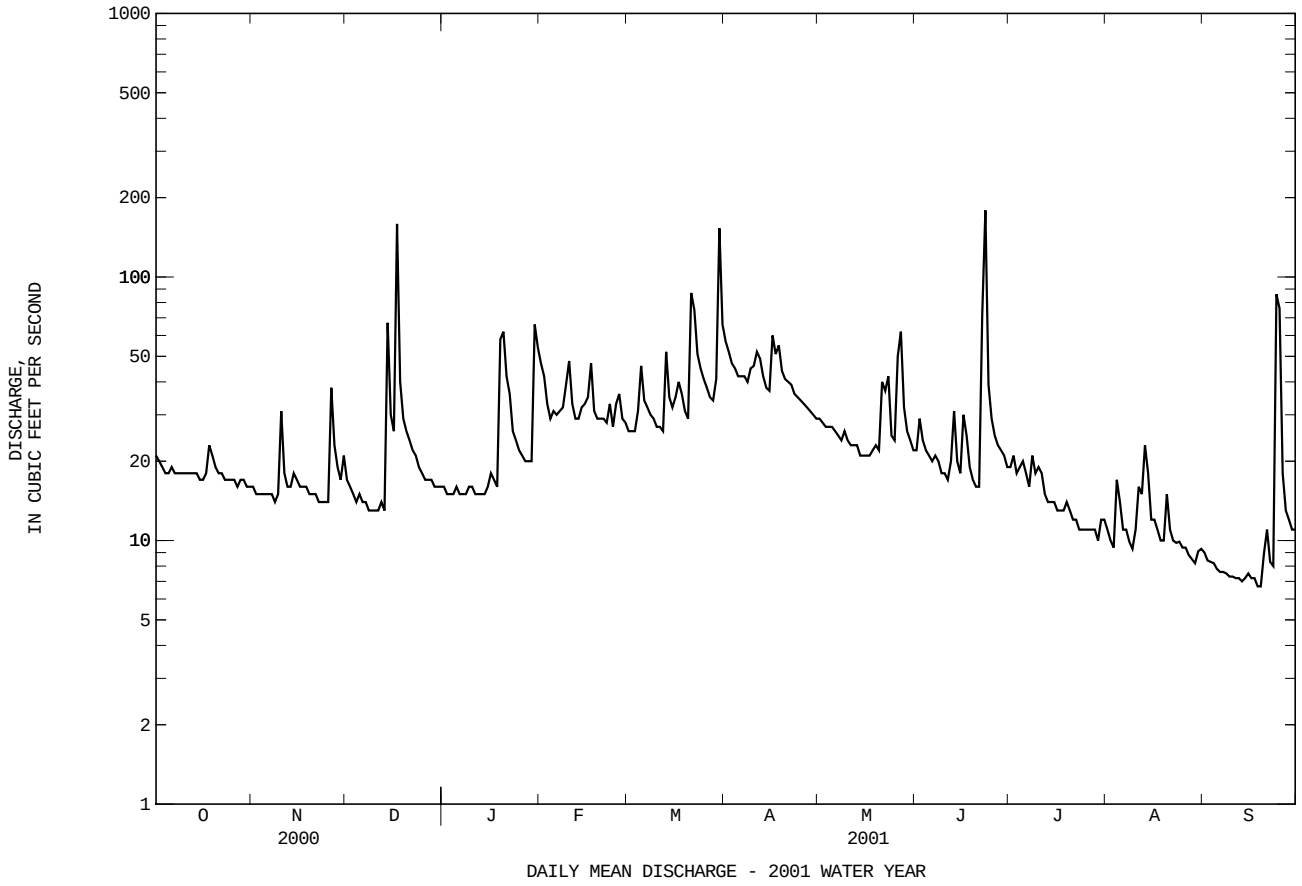
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2000 - 2001, BY WATER YEAR (WY)

MEAN	18.1	17.3	24.6	24.3	33.3	42.5	42.2	31.4	28.2	19.8	13.8	21.2
MAX	18.1	17.3	24.6	24.3	33.3	42.5	42.2	34.7	29.1	25.0	16.0	28.9
(WY)	2001	2001	2001	2001	2001	2001	2001	2000	2001	2000	2000	2000
MIN	18.1	17.3	24.6	24.3	33.3	42.5	42.2	28.0	27.3	14.6	11.6	13.5
(WY)	2001	2001	2001	2001	2001	2001	2001	2001	2000	2001	2001	2001

01581810 GUNPOWDER FALLS AT HOFFMANVILLE, MD--Continued

SUMMARY STATISTICS	FOR 2001 WATER YEAR		WATER YEARS 2000 - 2001	
ANNUAL TOTAL	9067.1			
ANNUAL MEAN	24.8		24.8	
HIGHEST ANNUAL MEAN			24.8	2001
LOWEST ANNUAL MEAN			24.8	2001
HIGHEST DAILY MEAN	179	Jun 23	179	Jun 23 2001
LOWEST DAILY MEAN	6.7	(a)	6.7	(a)
ANNUAL SEVEN-DAY MINIMUM	7.1	Sep 13	7.1	Sep 13 2001
MAXIMUM PEAK FLOW	(b)643	Jun 23	(b)643	Jun 23 2001
MAXIMUM PEAK STAGE	4.55	Jun 23	4.55	Jun 23 2001
INSTANTANEOUS LOW FLOW	6.6	(a)	6.6	(a)
ANNUAL RUNOFF (CFSM)	.92		.92	
ANNUAL RUNOFF (INCHES)	12.49		12.50	
10 PERCENT EXCEEDS	42		42	
50 PERCENT EXCEEDS	19		21	
90 PERCENT EXCEEDS	10		11	

a Sept. 18, 19, 2001.
b From rating curve extended above 67 ft^3/s.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01581830 GRAVE RUN NEAR BECKLEYSVILLE, MD

LOCATION.--Lat 39°39'17.3", long 76°46'51.3", Baltimore County, Hydrologic Unit 02060003, on left bank off of Gunpowder Road (formerly Upper Beckleysville Road), 1000 ft upstream from Pretty Boy Reservoir, 0.9 mi north of Beckleysville, 1.7 mi downstream from Indian Run.

DRAINAGE AREA.--7.68 mi^2.

PERIOD OF RECORD.--March 2000 to September 2001.

GAGE.--Water-stage recorder. Datum of gage is 540 ft above sea level, from topographic map. Previously operated as a low-flow site during water years 1977-82 at same site.

REMARKS.--Records good except those for estimated daily discharges (ice effect, recorder malfunction, which are poor. Several measurements of water temperature were made during the year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 50 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Sep 1, 2000	0715	51	1.84	Mar 21, 2001	1800	53	1.50
Sep 14, 2000	2400	101	3.42	Mar 30, 2001	0330	77	1.89
Sep 19, 2000	1530	71	2.46	May 27, 2001	0000	129	2.61
				Aug 11, 2001	1300	128	2.60
Dec 17 2000	1000	118	2.48	Sep 24, 2001	2130	*212	*3.57

March-September 2000 Minimum discharge, 3.2 ft^3/s, Aug. 22, 23, 26, 27.
2001 Water Year Minimum discharge, 2.2 ft^3/s, Sept. 17-20.

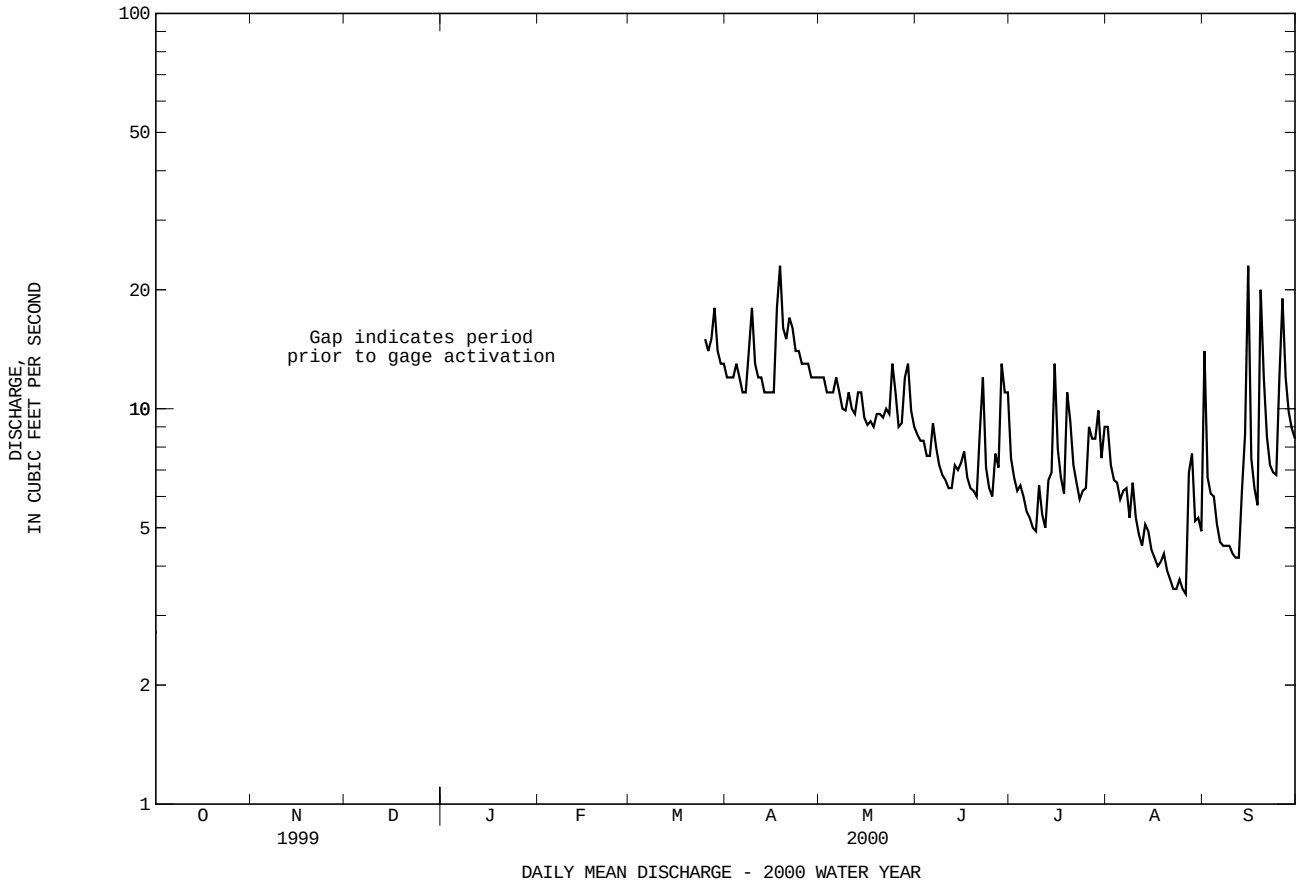
DISCHARGE, CUBIC FEET PER SECOND, MARCH 2000 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	12	12	8.6	7.5	9.0	14
2	---	---	---	---	---	---	12	12	8.3	6.7	7.2	6.7
3	---	---	---	---	---	---	12	11	8.3	6.2	6.6	6.1
4	---	---	---	---	---	---	13	11	7.6	6.4	6.5	6.0
5	---	---	---	---	---	---	12	11	7.6	6.0	5.9	5.1
6	---	---	---	---	---	---	11	12	9.2	5.5	6.2	4.6
7	---	---	---	---	---	---	11	11	8.0	5.3	6.3	4.5
8	---	---	---	---	---	---	14	10	7.2	5.0	5.3	4.5
9	---	---	---	---	---	---	18	9.9	6.8	4.9	6.5	4.5
10	---	---	---	---	---	---	13	11	6.6	6.4	5.3	4.3
11	---	---	---	---	---	---	12	10	6.3	5.4	4.8	4.2
12	---	---	---	---	---	---	12	9.7	6.3	5.0	4.5	4.2
13	---	---	---	---	---	---	11	11	7.2	6.6	5.1	6.2
14	---	---	---	---	---	---	11	11	7.0	6.9	4.9	8.6
15	---	---	---	---	---	---	11	9.5	7.3	13	4.4	23
16	---	---	---	---	---	---	11	9.1	7.8	7.9	4.2	7.5
17	---	---	---	---	---	---	18	9.3	6.7	6.7	4.0	6.3
18	---	---	---	---	---	---	23	9.0	6.3	6.1	4.1	5.7
19	---	---	---	---	---	---	16	9.7	6.2	11	4.3	20
20	---	---	---	---	---	---	15	9.7	6.0	9.3	3.9	12
21	---	---	---	---	---	---	17	9.5	8.7	7.2	3.7	8.5
22	---	---	---	---	---	---	16	10	12	6.5	3.5	7.2
23	---	---	---	---	---	---	14	9.7	7.1	5.9	3.5	6.9
24	---	---	---	---	---	---	14	13	6.3	6.2	3.7	6.8
25	---	---	---	---	---	15	13	11	6.0	6.3	3.5	12
26	---	---	---	---	---	14	13	9.0	7.7	9.0	3.4	19
27	---	---	---	---	---	15	13	9.2	7.1	8.4	6.9	12
28	---	---	---	---	---	18	12	12	13	8.4	7.7	9.8
29	---	---	---	---	---	14	12	13	11	9.9	5.2	8.9
30	---	---	---	---	---	13	12	9.9	11	7.5	5.3	8.4
31	---	---	---	---	---	13	---	9.0	---	9.0	4.9	---
TOTAL	---	---	---	---	---	---	404	324.2	235.2	222.1	160.3	257.5
MEAN	---	---	---	---	---	---	13.5	10.5	7.84	7.16	5.17	8.58
MAX	---	---	---	---	---	---	23	13	13	13	9.0	23
MIN	---	---	---	---	---	---	11	9.0	6.0	4.9	3.4	4.2
CFSM	---	---	---	---	---	---	1.75	1.36	1.02	.93	.67	1.12
IN.	---	---	---	---	---	---	1.96	1.57	1.14	1.08	.78	1.25

STATISTICS OF MONTHLY MEAN DATA FOR APRIL TO SEPTEMBER 2000

MEAN	---	---	---	---	---	---	13.5	10.5	7.84	7.16	5.17	8.58
MAX	---	---	---	---	---	---	13.5	10.5	7.84	7.16	5.17	8.58
(WY)	---	---	---	---	---	---	2000	2000	2000	2000	2000	2000
MIN	---	---	---	---	---	---	13.5	10.5	7.84	7.16	5.17	8.58
(WY)	---	---	---	---	---	---	2000	2000	2000	2000	2000	2000

01581830 GRAVE RUN NEAR BECKLEYSVILLE, MD--Continued



DAILY MEAN DISCHARGE - 2000 WATER YEAR

01581830 GRAVE RUN NEAR BECKLEYSVILLE, MD--Continued

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	8.1	5.4	5.8	e5.7	12	8.5	15	9.3	8.8	5.6	3.3	3.4
2	7.7	5.4	5.6	e5.5	11	8.5	14	9.1	9.4	5.6	3.1	e3.2
3	7.4	5.4	5.6	e5.4	9.6	8.2	13	9.0	8.5	5.4	3.1	3.1
4	7.1	5.4	6.8	e5.4	8.9	9.9	13	8.7	7.9	5.4	6.5	3.1
5	7.1	5.4	5.1	e5.5	9.6	12	12	8.6	7.5	5.5	4.3	3.0
6	7.1	5.2	5.0	e5.5	9.2	9.8	12	8.5	7.4	5.3	3.8	2.8
7	6.8	5.1	4.9	e5.4	9.3	9.4	12	8.3	8.3	4.9	3.6	2.8
8	6.6	5.1	4.9	e5.5	9.4	8.9	12	8.2	7.4	6.3	3.2	2.7
9	6.6	5.5	4.9	e5.6	9.7	8.8	13	8.8	7.1	5.6	3.1	2.7
10	6.8	9.2	4.8	e5.6	11	8.5	13	8.4	6.9	5.3	5.2	2.8
11	6.7	6.3	4.9	e5.5	9.2	8.4	14	8.0	6.7	5.3	18	2.7
12	6.5	5.8	5.0	e5.4	8.6	8.3	13	7.8	9.3	4.7	8.1	2.5
13	6.3	5.7	4.7	e5.4	8.8	13	12	7.7	9.0	4.5	7.9	2.5
14	6.3	6.2	15	5.4	9.3	10	11	7.5	7.1	4.5	6.2	2.5
15	6.2	5.9	8.7	5.7	9.1	9.4	11	7.5	6.9	4.3	5.0	2.6
16	6.0	5.7	8.0	6.1	10	9.9	14	7.2	8.8	4.2	4.6	2.4
17	6.4	5.7	40	5.8	12	11	13	7.1	7.9	4.0	4.3	2.4
18	7.6	5.7	12	5.7	9.2	11	14	7.4	6.8	4.7	4.1	2.3
19	6.7	5.7	9.6	15	9.2	9.4	12	7.6	6.4	4.7	4.3	2.3
20	6.2	5.6	8.8	16	8.7	9.2	12	7.6	6.2	4.2	5.6	3.3
21	6.0	5.3	e8.2	11	8.8	23	11	12	6.1	4.0	4.3	4.3
22	5.8	5.1	7.6	e10	8.5	18	11	11	8.9	3.8	4.0	3.1
23	5.7	5.4	e7.2	e9.0	9.2	14	11	11	13	3.7	3.9	2.8
24	5.8	5.6	e6.9	e8.4	8.4	13	10	8.4	7.7	3.5	4.0	33
25	5.7	5.2	e6.6	e7.8	10	12	10	7.9	6.8	3.5	3.8	16
26	5.7	11	e6.3	e7.4	10	11	10	22	6.5	3.5	3.6	6.3
27	5.7	7.0	e6.1	e7.0	9.1	11	10	23	6.2	3.6	3.6	5.2
28	5.6	6.1	e5.9	6.6	8.8	11	9.7	11	5.9	3.3	3.4	4.9
29	5.4	5.8	e5.8	7.4	---	13	9.4	9.8	5.7	3.4	3.4	4.2
30	5.4	6.5	e5.8	18	---	34	9.4	9.1	5.7	3.7	3.5	4.1
31	5.4	---	e5.8	13	---	17	---	8.5	---	3.6	3.6	---
TOTAL	198.4	178.4	242.3	236.7	266.6	369.1	356.5	296.0	226.8	139.6	148.4	139.0
MEAN	6.40	5.95	7.82	7.64	9.52	11.9	11.9	9.55	7.56	4.50	4.79	4.63
MAX	8.1	11	40	18	12	34	15	23	13	6.3	18	33
MIN	5.4	5.1	4.7	5.4	8.4	8.2	9.4	7.1	5.7	3.3	3.1	2.3
CFSM	.83	.77	1.02	.99	1.24	1.55	1.55	1.24	.98	.59	.62	.60
IN.	.96	.86	1.17	1.15	1.29	1.79	1.73	1.43	1.10	.68	.72	.67

e Estimated

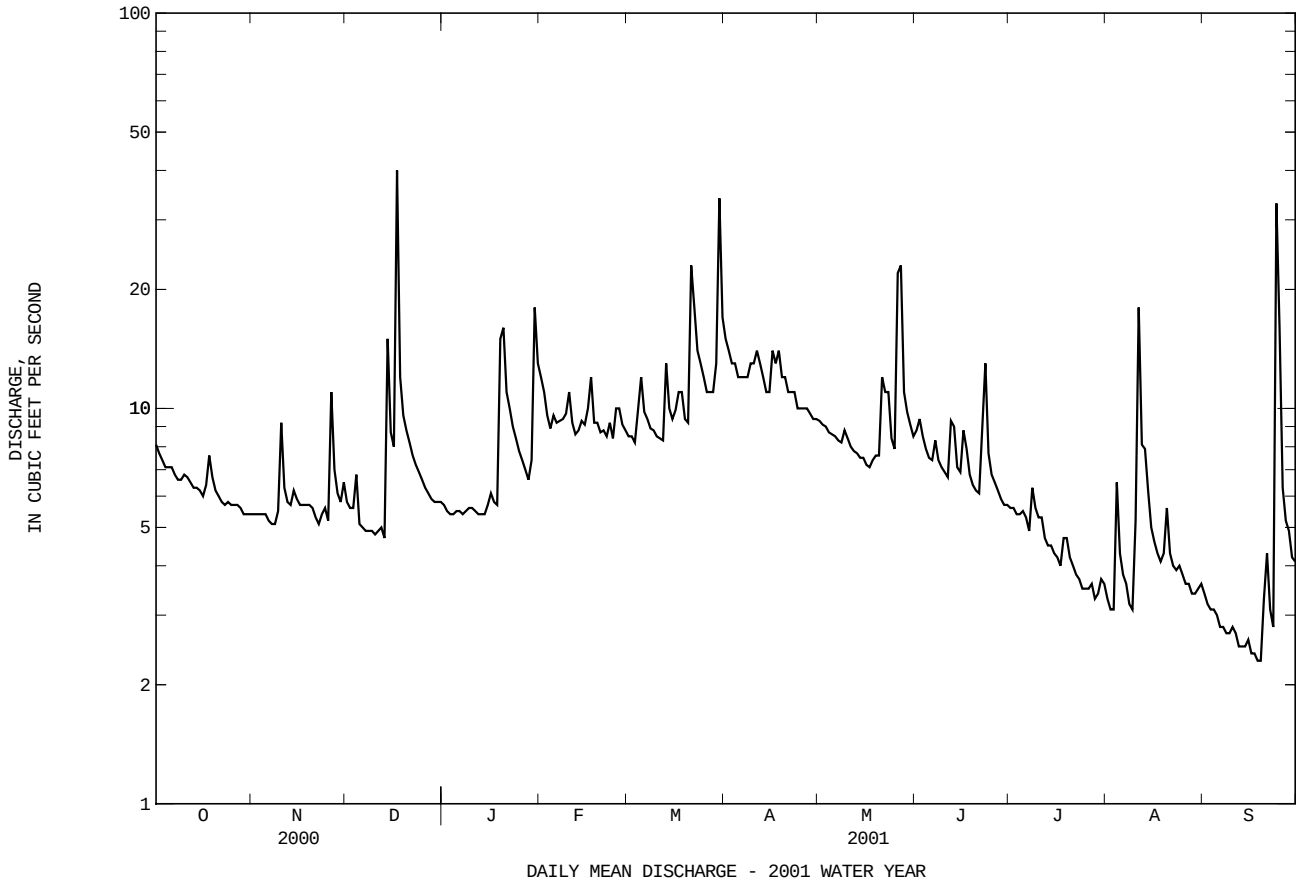
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2000 - 2001, BY WATER YEAR (WY)

MEAN	6.40	5.95	7.82	7.64	9.52	11.9	12.7	10.0	7.70	5.83	4.98	6.61
MAX	6.40	5.95	7.82	7.64	9.52	11.9	13.5	10.5	7.84	7.16	5.17	8.58
(WY)	2001	2001	2001	2001	2001	2001	2000	2000	2000	2000	2000	2000
MIN	6.40	5.95	7.82	7.64	9.52	11.9	11.9	9.55	7.56	4.50	4.79	4.63
(WY)	2001	2001	2001	2001	2001	2001	2001	2001	2001	2001	2001	2001

01581830 GRAVE RUN NEAR BECKLEYSVILLE, MD--Continued

SUMMARY STATISTICS	FOR 2001 WATER YEAR		WATER YEARS 2000 - 2001	
ANNUAL TOTAL	2797.8			
ANNUAL MEAN	7.67		7.67	
HIGHEST ANNUAL MEAN			7.67	2001
LOWEST ANNUAL MEAN			7.67	2001
HIGHEST DAILY MEAN	40	Dec 17	40	Dec 17 2000
LOWEST DAILY MEAN	2.3	(a)	2.3	(a)
ANNUAL SEVEN-DAY MINIMUM	2.4	Sep 13	2.4	Sep 13 2001
MAXIMUM PEAK FLOW	212	Sep 24	(b)212	Sep 24 2001
MAXIMUM PEAK STAGE	3.57	Sep 24	3.57	Sep 24 2001
INSTANTANEOUS LOW FLOW	2.2	(c)	2.2	(c)
ANNUAL RUNOFF (CFSM)	1.00		1.00	
ANNUAL RUNOFF (INCHES)	13.55		13.56	
10 PERCENT EXCEEDS	12		13	
50 PERCENT EXCEEDS	6.7		7.2	
90 PERCENT EXCEEDS	3.6		4.0	

a Sept. 18, 19, 2001.
b From rating curve extended above 32 ft^3/s.
c Sept. 17-20, 2001.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01581870 GEORGES RUN NEAR BECKLEYSVILLE, MD

LOCATION.--Lat 39°37'32.5", long 76°46'21.8", Baltimore County, Hydrologic Unit 02060003, on left bank, 20 ft downstream from bridge on Georges Creek Road, 1000 ft upstream from Pretty Boy Reservoir, 1.0 mi southeast of Beckleysville.

DRAINAGE AREA.--15.8 mi^2.

PERIOD OF RECORD.--March 2000 to September 2001.

GAGE.--Water-stage recorder. Datum of gage is 540 ft above sea level, from topographic map. Previously operated as a low-flow site during water years 1977-82 at same site.

REMARKS.--Records good except those for estimated daily discharges (ice effect), which are poor. Several measurements of water temperature were made during the year.

EXTREMES FOR CURRENT PERIOD.--Peak discharges greater than base discharge of 400 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Sep 15, 2000	0330	*447	*2.67	Dec 17, 2000	0930	539	2.96
Sep 19, 2000	1630	447	2.67	May 26, 2001	2330	*837	*3.81
				Sep 24, 2001	2315	664	3.33

March-September 2000 Minimum discharge, 6.3 ft^3/s, Aug. 26, 27.
2001 Water Year Minimum discharge, 3.0 ft^3/s, Sept. 13, 14.

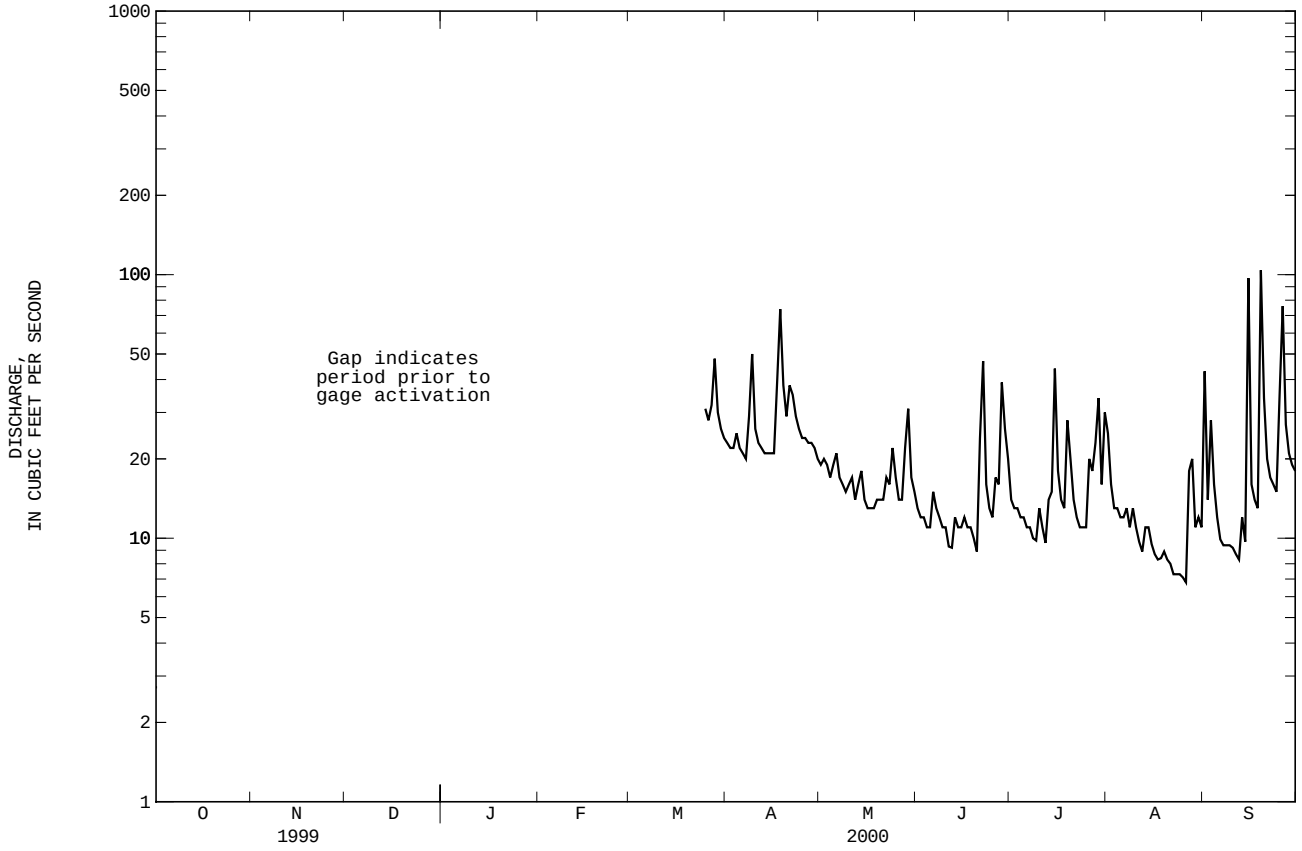
DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR MARCH 2000 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	23	19	13	14	25	43
2	---	---	---	---	---	---	22	20	12	13	16	14
3	---	---	---	---	---	---	22	19	12	13	13	28
4	---	---	---	---	---	---	25	17	11	12	13	16
5	---	---	---	---	---	---	22	19	11	12	12	12
6	---	---	---	---	---	---	21	21	15	11	12	9.9
7	---	---	---	---	---	---	20	17	13	11	13	9.4
8	---	---	---	---	---	---	29	16	12	10	11	9.4
9	---	---	---	---	---	---	50	15	11	9.8	13	9.4
10	---	---	---	---	---	---	26	16	11	13	11	9.2
11	---	---	---	---	---	---	23	17	9.3	11	9.7	8.7
12	---	---	---	---	---	---	22	14	9.2	9.6	8.9	8.3
13	---	---	---	---	---	---	21	16	12	14	11	12
14	---	---	---	---	---	---	21	18	11	15	11	9.7
15	---	---	---	---	---	---	21	14	11	44	9.5	97
16	---	---	---	---	---	---	21	13	12	18	8.7	16
17	---	---	---	---	---	---	39	13	11	14	8.3	14
18	---	---	---	---	---	---	74	13	11	13	8.4	13
19	---	---	---	---	---	---	38	14	10	28	8.9	104
20	---	---	---	---	---	---	29	14	8.9	20	8.3	34
21	---	---	---	---	---	---	38	14	24	14	8.0	20
22	---	---	---	---	---	---	35	17	47	12	7.3	17
23	---	---	---	---	---	---	29	16	16	11	7.3	16
24	---	---	---	---	---	---	26	22	13	11	7.3	15
25	---	---	---	---	---	31	24	17	12	11	7.1	35
26	---	---	---	---	---	28	24	14	17	20	6.8	76
27	---	---	---	---	---	32	23	14	16	18	18	27
28	---	---	---	---	---	48	23	22	39	23	20	21
29	---	---	---	---	---	30	22	31	26	34	11	19
30	---	---	---	---	---	26	20	17	20	16	12	18
31	---	---	---	---	---	24	---	15	---	30	11	---
TOTAL	---	---	---	---	---	---	833	524	456.4	505.4	347.5	741.0
MEAN	---	---	---	---	---	---	27.8	16.9	15.2	16.3	11.2	24.7
MAX	---	---	---	---	---	---	74	31	47	44	25	104
MIN	---	---	---	---	---	---	20	13	8.9	9.6	6.8	8.3
CFSM	---	---	---	---	---	---	1.76	1.07	.96	1.03	.71	1.56
IN.	---	---	---	---	---	---	1.96	1.23	1.07	1.19	.82	1.74

STATISTICS OF MONTHLY MEAN DATA FOR APRIL TO SEPTEMBER 2000, BY WATER YEAR (WY)

MEAN	---	---	---	---	---	---	27.8	16.9	15.2	16.3	11.2	24.7
MAX	---	---	---	---	---	---	27.8	16.9	15.2	16.3	11.2	24.7
(WY)	---	---	---	---	---	---	2000	2000	2000	2000	2000	2000
MIN	---	---	---	---	---	---	27.8	16.9	15.2	16.3	11.2	24.7
(WY)	---	---	---	---	---	---	2000	2000	2000	2000	2000	2000

01581870 GEORGES RUN NEAR BECKLEYSVILLE, MD--Continued



01581870 GEORGES RUN NEAR BECKLEYSVILLE, MD--Continued

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	16	12	12	e11	32	16	31	15	16	10	5.7	5.8
2	16	12	13	e11	25	15	28	15	19	11	4.9	5.4
3	15	12	13	e11	20	15	25	15	16	9.9	4.7	5.0
4	15	11	13	e11	18	19	23	14	14	10	7.4	5.1
5	14	11	11	e12	19	27	22	14	14	11	8.9	5.1
6	15	11	11	e11	19	19	22	13	14	10	6.0	5.5
7	14	11	11	e11	24	18	22	13	15	9.0	5.2	4.6
8	14	10	11	e11	21	17	22	13	13	15	4.2	4.5
9	14	11	10	e12	21	16	24	13	12	11	4.2	4.5
10	14	21	9.9	e12	23	15	26	13	12	12	5.3	4.8
11	14	11	9.9	e11	18	15	30	13	11	12	42	4.8
12	13	11	10	e11	17	15	28	12	32	9.7	23	4.3
13	12	11	10	e11	17	33	23	11	30	8.8	21	4.4
14	12	11	53	e11	18	20	21	11	16	8.4	14	4.3
15	12	11	24	e12	18	18	20	11	15	7.9	11	4.5
16	12	10	20	13	21	19	29	11	20	7.5	9.6	4.3
17	13	11	159	12	28	22	25	11	16	7.0	9.0	4.1
18	17	10	32	12	19	19	27	11	14	8.3	8.8	4.0
19	15	9.9	24	69	18	17	22	11	13	9.5	8.5	3.9
20	14	10	21	59	17	16	21	11	12	7.8	11	4.6
21	14	11	e19	32	16	75	21	22	11	7.1	8.3	7.9
22	13	10	e18	e23	22	44	20	22	18	6.4	7.2	4.8
23	13	11	e16	e21	42	28	19	24	39	6.3	7.3	4.4
24	12	12	e15	e19	17	24	18	14	16	6.1	7.7	87
25	12	11	e14	e17	20	22	17	12	14	5.9	7.3	70
26	13	27	e13	e16	22	20	17	57	13	5.8	6.4	11
27	14	16	e12	15	18	19	17	88	12	5.9	5.8	8.4
28	13	13	e12	14	16	19	16	24	11	5.5	5.8	7.7
29	12	12	e12	15	---	26	16	18	11	5.8	5.6	7.6
30	12	13	e12	83	---	121	16	16	11	6.8	5.2	7.3
31	12	---	e12	48	---	38	---	15	---	6.2	5.7	---
TOTAL	421	363.9	632.8	637	586	807	668	563	480	263.6	286.7	309.6
MEAN	13.6	12.1	20.4	20.5	20.9	26.0	22.3	18.2	16.0	8.50	9.25	10.3
MAX	17	27	159	83	42	121	31	88	39	15	42	87
MIN	12	9.9	9.9	11	16	15	16	11	11	5.5	4.2	3.9
CFSM	.86	.77	1.29	1.30	1.32	1.65	1.41	1.15	1.01	.54	.59	.65
IN.	.99	.86	1.49	1.50	1.38	1.90	1.57	1.33	1.13	.62	.68	.73

e Estimated

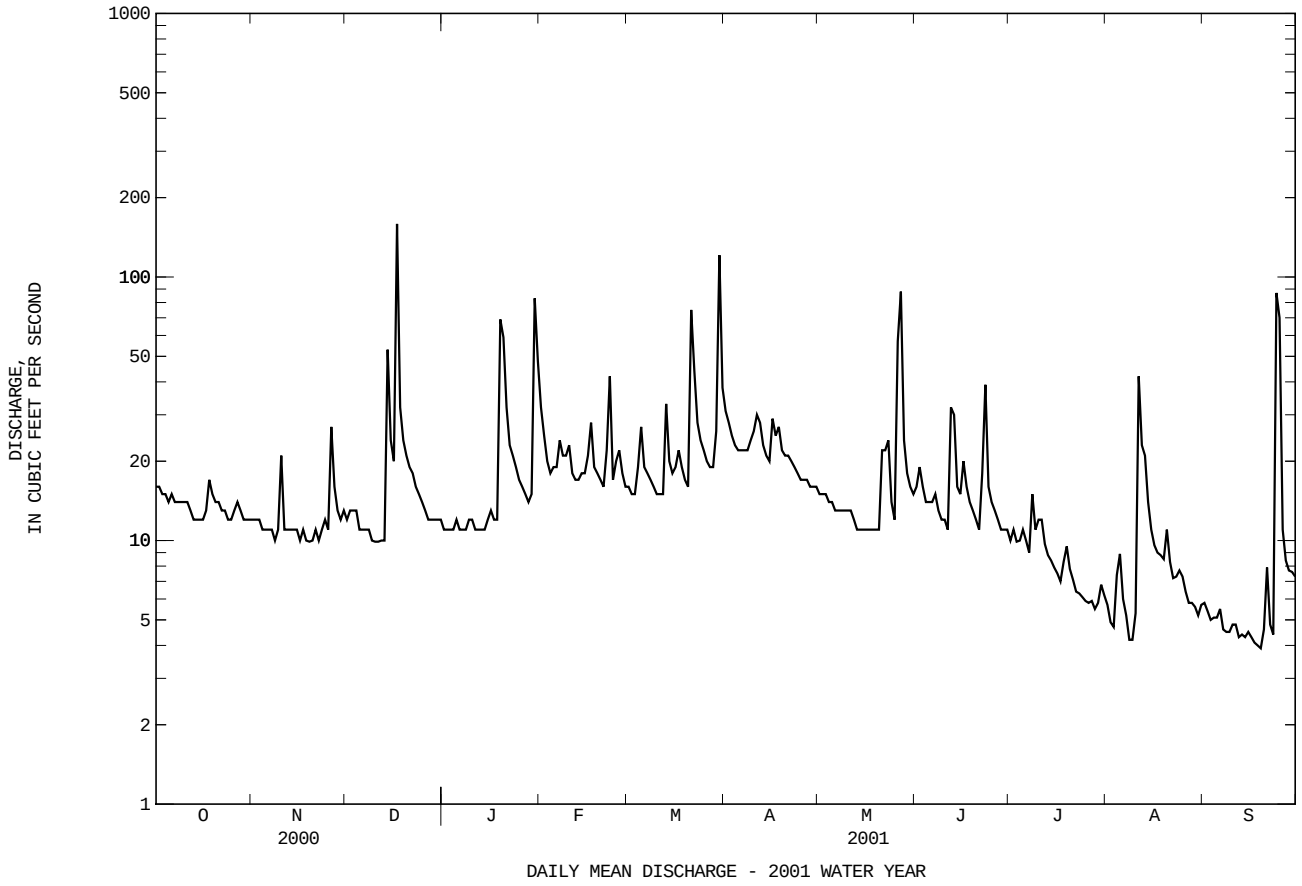
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2000 - 2001, BY WATER YEAR (WY)

MEAN	13.6	12.1	20.4	20.5	20.9	26.0	25.0	17.5	15.6	12.4	10.2	17.5
MAX	13.6	12.1	20.4	20.5	20.9	26.0	27.8	18.2	16.0	16.3	11.2	24.7
(WY)	2001	2001	2001	2001	2001	2001	2000	2001	2001	2000	2000	2000
MIN	13.6	12.1	20.4	20.5	20.9	26.0	22.3	16.9	15.2	8.50	9.25	10.3
(WY)	2001	2001	2001	2001	2001	2001	2001	2000	2000	2001	2001	2001

01581870 GEORGES RUN NEAR BECKLEYSVILLE, MD--Continued

SUMMARY STATISTICS	FOR 2001 WATER YEAR		WATER YEARS 2000 - 2001	
ANNUAL TOTAL	6018.6			
ANNUAL MEAN	16.5		16.5	
HIGHEST ANNUAL MEAN			16.5	2001
LOWEST ANNUAL MEAN			16.5	2001
HIGHEST DAILY MEAN	159	Dec 17	159	Dec 17 2000
LOWEST DAILY MEAN	3.9	Sep 19	3.9	Sep 19 2001
ANNUAL SEVEN-DAY MINIMUM	4.2	Sep 13	4.2	Sep 13 2001
MAXIMUM PEAK FLOW	837	May 26	(a)837	May 26 2001
MAXIMUM PEAK STAGE	3.81	May 26	3.81	May 26 2001
INSTANTANEOUS LOW FLOW	3.0	(b)	3.0	(b)
ANNUAL RUNOFF (CFSM)	1.04		1.04	
ANNUAL RUNOFF (INCHES)	14.17		14.18	
10 PERCENT EXCEEDS	25		28	
50 PERCENT EXCEEDS	13		14	
90 PERCENT EXCEEDS	5.8		7.3	

a From rating curve extended above 138 ft^3/s.
b Sept. 13, 14, 2001.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01581920 GUNPOWDER FALLS NEAR PARKTON, MD

LOCATION.--Lat 39°37'08.0", long 76°41'25.1", Baltimore County, Hydrologic Unit 02060003, on left bank at downstream side of Falls Road bridge, 1.0 mi downstream from Prettyboy Reservoir.

DRAINAGE AREA.--81.5 mi^2.

PERIOD OF RECORD.--July 2000 to September 2001.

GAGE.--Water-stage recorder. Datum of gage is 360.0 ft above sea level. November 1982 to November 1990, nonrecording gage 100 ft downstream..

REMARKS.--No estimated daily discharges. Records good. Flow regulated by Prettyboy Reservoir 1.0 mi upstream, beginning April 10, 1933, for water supply of Baltimore City (usable capacity, 20,000,000,000 gal; dead storage, 1,080,000,000 gal). Several measurements of water temperature were made during the year.

EXTREMES FOR JULY 2000 to September 2000--Maximum discharge, 248 ft^3/s, Sept. 20; minimum discharge, 40 ft^3/s, July 27, 28.
EXTREMES FOR 2001 WATER YEAR.--Maximum discharge, 449 ft^3/s, Sept. 28, gage height, 3.01 ft; minimum discharge, 21 ft^3/s, May 10.

DISCHARGE, CUBIC FEET PER SECOND, JULY 2000 TO SEPTEMBER 2000
DAILY MEAN VALUES

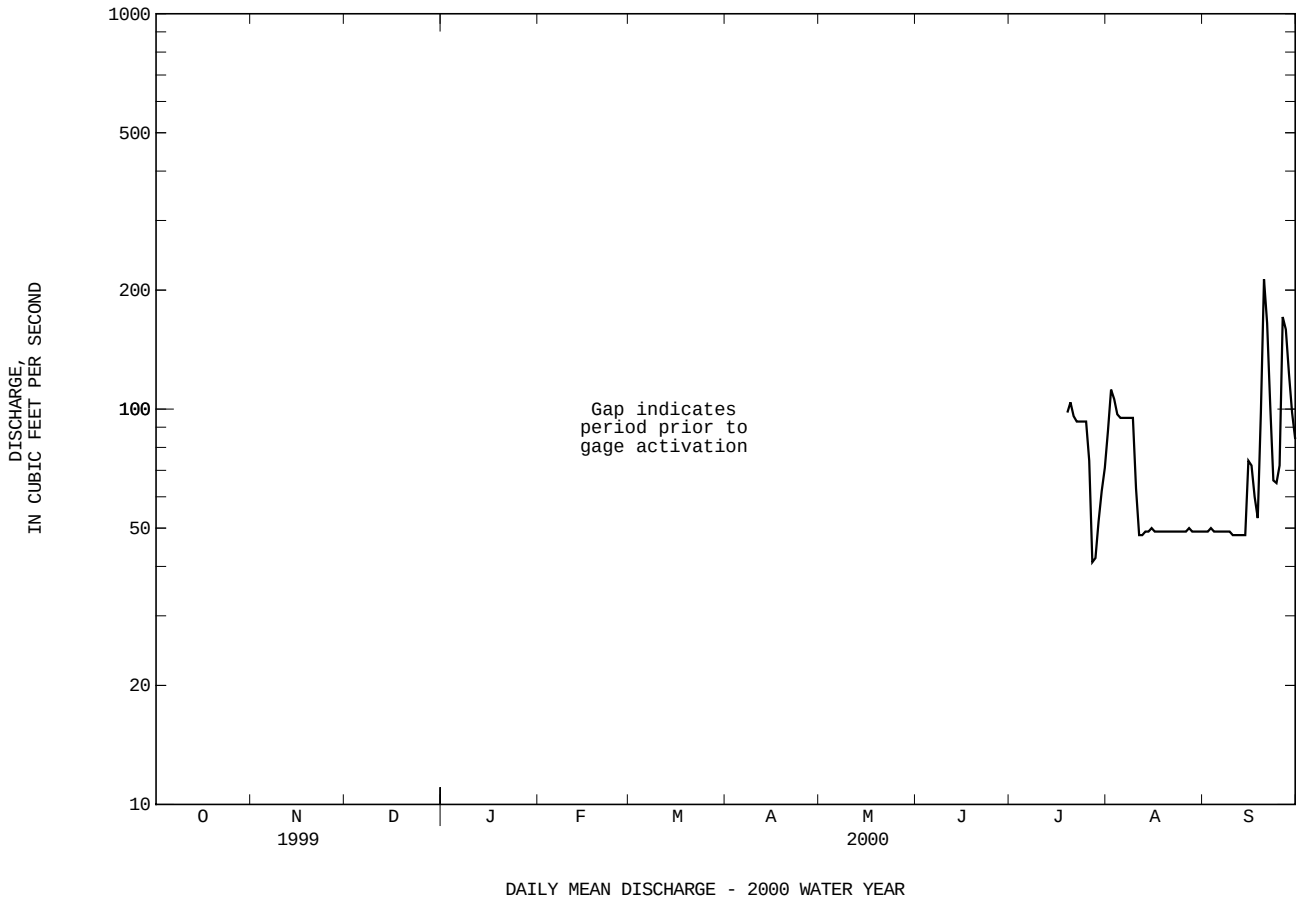
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	---	---	88	49
2	---	---	---	---	---	---	---	---	---	---	112	49
3	---	---	---	---	---	---	---	---	---	---	106	50
4	---	---	---	---	---	---	---	---	---	---	97	49
5	---	---	---	---	---	---	---	---	---	---	95	49
6	---	---	---	---	---	---	---	---	---	---	95	49
7	---	---	---	---	---	---	---	---	---	---	95	49
8	---	---	---	---	---	---	---	---	---	---	95	49
9	---	---	---	---	---	---	---	---	---	---	95	49
10	---	---	---	---	---	---	---	---	---	---	63	48
11	---	---	---	---	---	---	---	---	---	---	48	48
12	---	---	---	---	---	---	---	---	---	---	48	48
13	---	---	---	---	---	---	---	---	---	---	49	48
14	---	---	---	---	---	---	---	---	---	---	49	48
15	---	---	---	---	---	---	---	---	---	---	50	74
16	---	---	---	---	---	---	---	---	---	---	49	72
17	---	---	---	---	---	---	---	---	---	---	49	60
18	---	---	---	---	---	---	---	---	---	---	49	53
19	---	---	---	---	---	---	---	---	---	98	49	98
20	---	---	---	---	---	---	---	---	---	104	49	213
21	---	---	---	---	---	---	---	---	---	96	49	165
22	---	---	---	---	---	---	---	---	---	93	49	102
23	---	---	---	---	---	---	---	---	---	93	49	66
24	---	---	---	---	---	---	---	---	---	93	49	65
25	---	---	---	---	---	---	---	---	---	93	49	72
26	---	---	---	---	---	---	---	---	---	74	49	171
27	---	---	---	---	---	---	---	---	---	41	50	159
28	---	---	---	---	---	---	---	---	---	42	49	123
29	---	---	---	---	---	---	---	---	---	52	49	98
30	---	---	---	---	---	---	---	---	---	62	49	84
31	---	---	---	---	---	---	---	---	---	71	49	---
TOTAL	---	---	---	---	---	---	---	---	---	---	1970	2357
MEAN	---	---	---	---	---	---	---	---	---	---	63.5	78.6
MAX	---	---	---	---	---	---	---	---	---	---	112	213
MIN	---	---	---	---	---	---	---	---	---	---	48	48
(†)	---	---	---	---	---	---	---	---	---	---	19851	19916

STATISTICS OF MONTHLY MEAN DATA FOR JULY 2000 to SEPTEMBER 2000, BY WATER YEAR (WY)

MEAN	---	---	---	---	---	---	---	---	---	---	63.5	78.6
MAX	---	---	---	---	---	---	---	---	---	---	63.5	78.6
(WY)	---	---	---	---	---	---	---	---	---	---	2000	2000
MIN	---	---	---	---	---	---	---	---	---	---	63.5	78.6
(WY)	---	---	---	---	---	---	---	---	---	---	2000	2000

(†) Monthend contents, in millions of gallons, in Prettyboy Reservoir (contents on Sept. 30, 2000, 19,916,000,000 gal). Records furnished by Baltimore Department of Public Works.

01581920 GUNPOWDER FALLS NEAR PARKTON, MD--Continued



DAILY MEAN DISCHARGE - 2000 WATER YEAR

01581920 GUNPOWDER FALLS NEAR PARKTON, MD

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	74	141	156	54	139	63	43	41	73	91	261	220
2	69	144	156	54	123	63	42	41	91	91	261	221
3	67	150	156	54	123	63	40	41	86	91	261	221
4	64	150	155	54	123	63	40	41	74	91	260	184
5	63	153	155	54	123	63	40	41	69	91	260	144
6	64	156	158	54	123	63	41	41	67	91	259	144
7	64	159	162	54	124	63	41	41	71	91	259	143
8	63	159	159	55	124	63	40	41	88	91	259	143
9	63	159	157	55	101	63	40	40	101	91	258	143
10	62	160	157	55	63	63	40	37	92	91	259	143
11	62	160	158	55	63	63	41	37	85	91	261	143
12	62	159	161	55	63	63	41	37	90	91	259	143
13	62	159	160	55	63	64	41	37	89	90	234	153
14	62	159	160	55	64	63	41	37	92	90	222	167
15	62	158	158	55	64	63	41	37	91	90	233	167
16	84	158	158	55	64	63	41	37	92	90	244	167
17	108	158	172	90	64	63	41	37	93	90	168	189
18	109	158	146	150	64	63	41	37	91	91	69	215
19	108	157	123	151	64	63	41	37	91	90	69	147
20	108	157	97	151	64	63	41	37	91	167	101	204
21	108	157	55	150	63	60	41	39	91	230	129	182
22	109	157	55	150	63	56	41	38	92	229	140	96
23	123	157	54	150	63	48	41	36	107	236	150	97
24	144	157	54	149	63	40	41	36	108	247	163	98
25	143	157	54	149	63	39	41	36	98	247	178	98
26	138	158	54	149	63	39	41	37	93	249	178	160
27	141	157	54	149	63	38	41	96	92	255	196	324
28	142	157	54	149	63	38	41	113	92	262	220	440
29	142	157	55	149	---	40	41	98	91	262	220	441
30	141	156	54	151	---	48	41	92	91	262	220	316
31	141	---	54	150	---	44	---	74	---	262	220	---
TOTAL	2952	4684	3661	3060	2307	1751	1227	1470	2672	4631	6471	5653
MEAN	95.2	156	118	98.7	82.4	56.5	40.9	47.4	89.1	149	209	188
MAX	144	160	172	151	139	64	43	113	108	262	261	441
MIN	62	141	54	54	63	38	40	36	67	90	69	96
(†)	19016	16971	16216	15843	16100	17554	19082	19979	19902	17671	14497	11906

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2000 - 2001, BY WATER YEAR (WY)

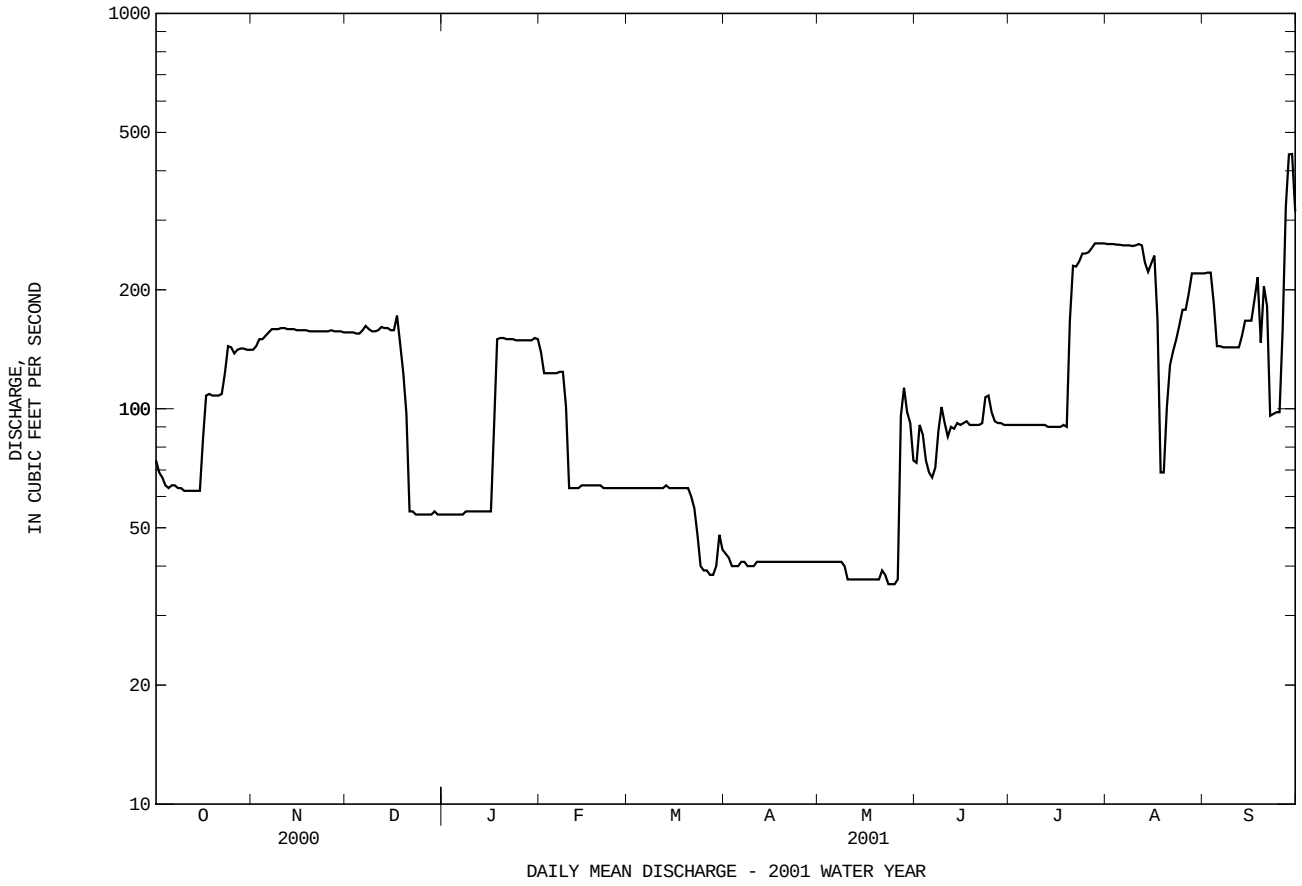
MEAN	95.2	156	118	98.7	82.4	56.5	40.9	47.4	89.1	149	136	134
MAX	95.2	156	118	98.7	82.4	56.5	40.9	47.4	89.1	149	209	188
(WY)	2001	2001	2001	2001	2001	2001	2001	2001	2001	2001	2001	2001
MIN	95.2	156	118	98.7	82.4	56.5	40.9	47.4	89.1	149	63.5	78.6
(WY)	2001	2001	2001	2001	2001	2001	2001	2001	2001	2001	2000	2000

(†) Monthend contents, in millions of gallons, in Prettyboy Reservoir (contents on Sept. 30, 2000, 19,916,000,000 gal). Records furnished by Baltimore Department of Public Works.

01581920 GUNPOWDER FALLS NEAR PARKTON, MD--Continued

SUMMARY STATISTICS	FOR 2001 WATER YEAR		WATER YEARS 2000 - 2001	
ANNUAL TOTAL	40539			
ANNUAL MEAN	111		111	
HIGHEST ANNUAL MEAN			111	2001
LOWEST ANNUAL MEAN			111	2001
HIGHEST DAILY MEAN	441	Sep 29	441	Sep 29,2001
LOWEST DAILY MEAN	36	(a)	36	(a)
ANNUAL SEVEN-DAY MINIMUM	37	May 10	37	May 10 2001
MAXIMUM PEAK FLOW	(b)449	Sep 28	(b)449	Sep 28 2001
MAXIMUM PEAK STAGE	3.01	Sep 28	3.01	Sep 28 2001
INSTANTANEOUS LOW FLOW	21	May 10	21	May 10 2001
ANNUAL RUNOFF (CFSM)	1.36		1.36	
ANNUAL RUNOFF (INCHES)	18.50		18.52	
10 PERCENT EXCEEDS	220		184	
50 PERCENT EXCEEDS	91		90	
90 PERCENT EXCEEDS	41		41	

a May 23-25, 2001
b From rating curve extended above 230 ft^3/s.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01581940 MINGO BRANCH NEAR HEREFORD, MD

LOCATION.--Lat 39°36'40.5", long 76°40'30.8", Baltimore County, Hydrologic Unit 02060003, on right bank 0.2 mi upstream from mouth, 1.5 mis. northwest of Hereford, MD.

DRAINAGE AREA.--0.78 mi^2.

PERIOD OF RECORD.--October 1999 to current year.

GAGE.--Water-stage recorder. Datum of gage is 399 ft above sea level, from topographic map.

REMARKS.--Records good except those for estimated daily discharges (backwater, ice effect), which are fair. Several measurements of water temperature were made during the year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 25 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 17	0830	*164	*1.80	No other peak greater than base discharge.			

Minimum discharge, 0.02 ft^3/s, Sept. 8, 9.

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	.35	e.23	.43	e.44	.73	.51	1.8	.86	1.2	.59	.31	.15
2	.35	e.22	.41	e.42	.74	.51	1.7	.95	1.2	.62	.29	.11
3	.31	e.21	.41	e.41	.63	.51	1.7	1.0	1.1	.51	.25	.09
4	.23	e.20	.35	e.41	.76	.73	1.6	1.0	1.2	.61	.23	.09
5	.20	e.20	.29	e.42	.76	.77	1.4	1.0	.94	.64	.23	.08
6	.23	.19	.32	e.43	.64	.65	1.3	1.0	.73	.51	.21	.08
7	.27	.20	.35	.41	.67	.61	1.3	1.0	.96	.51	.18	.07
8	.29	.19	.35	.41	.63	.61	1.3	1.0	.73	.68	.17	.07
9	.32	.24	.35	.41	.65	.56	1.3	1.1	.73	.51	.17	.04
10	.31	.97	.35	.41	.64	.51	1.6	1.1	.73	.60	.59	.71
11	.29	e.48	.35	.41	.61	.51	1.7	1.0	.73	.48	.84	.32
12	e.29	e.44	.38	.41	.52	.43	1.5	1.0	1.3	.41	.90	.22
13	e.29	e.49	.45	.41	.51	1.0	1.3	.94	1.1	.41	.70	.19
14	e.30	.61	2.0	.41	.57	.73	1.2	.86	.86	.41	.55	.22
15	e.33	.46	.76	.41	.51	.73	1.2	.86	.86	.41	.33	.18
16	.49	.41	.71	.41	.61	.85	1.4	.86	1.4	.41	.29	.16
17	.88	e.39	8.5	.41	.70	.74	1.3	.86	1.0	.41	.28	.16
18	1.3	e.39	1.4	.41	.62	.73	1.3	.86	.77	.48	.23	.13
19	.37	e.38	1.0	1.9	.80	.73	1.2	.86	.61	.47	.39	.15
20	.31	e.37	1.0	1.1	.52	.73	1.2	.91	.61	.41	.52	.30
21	.29	e.37	.77	e1.0	.51	2.4	1.2	1.7	.58	.41	.34	.30
22	.29	e.37	e.72	e.90	.65	1.4	1.0	1.8	.72	.39	.26	.23
23	.29	e.37	e.70	e.76	1.1	1.1	1.0	1.4	1.5	.36	.23	.23
24	.27	e.38	e.64	e.64	.55	.91	1.0	1.2	.86	.35	.18	.74
25	e.27	.42	e.60	.61	.64	.86	1.0	1.2	.76	.33	.09	.86
26	e.27	.78	e.54	e.58	.66	.86	1.0	1.6	.57	.30	.09	.35
27	e.27	.38	e.50	e.56	.60	.86	1.0	1.5	.51	.33	.11	.29
28	e.26	.35	e.48	e.54	.51	.86	1.0	1.0	.51	.32	.11	.23
29	e.26	.39	e.47	.53	---	1.5	.94	.80	.51	.31	.11	.19
30	e.24	.52	e.46	2.1	---	3.7	.86	.93	.51	.33	.13	.17
31	e.24	---	e.45	.84	---	2.1	---	1.0	---	.32	.11	---
TOTAL	10.66	11.60	26.49	19.51	18.04	29.70	38.30	33.15	25.79	13.83	9.42	7.11
MEAN	.34	.39	.85	.63	.64	.96	1.28	1.07	.86	.45	.30	.24
MAX	1.3	.97	8.5	2.1	1.1	3.7	1.8	1.8	1.5	.68	.90	.86
MIN	.20	.19	.29	.41	.51	.43	.86	.80	.51	.30	.09	.04
CFSM	.44	.50	1.10	.81	.83	1.23	1.64	1.37	1.10	.57	.39	.30
IN.	.51	.55	1.26	.93	.86	1.42	1.83	1.58	1.23	.66	.45	.34

e Estimated

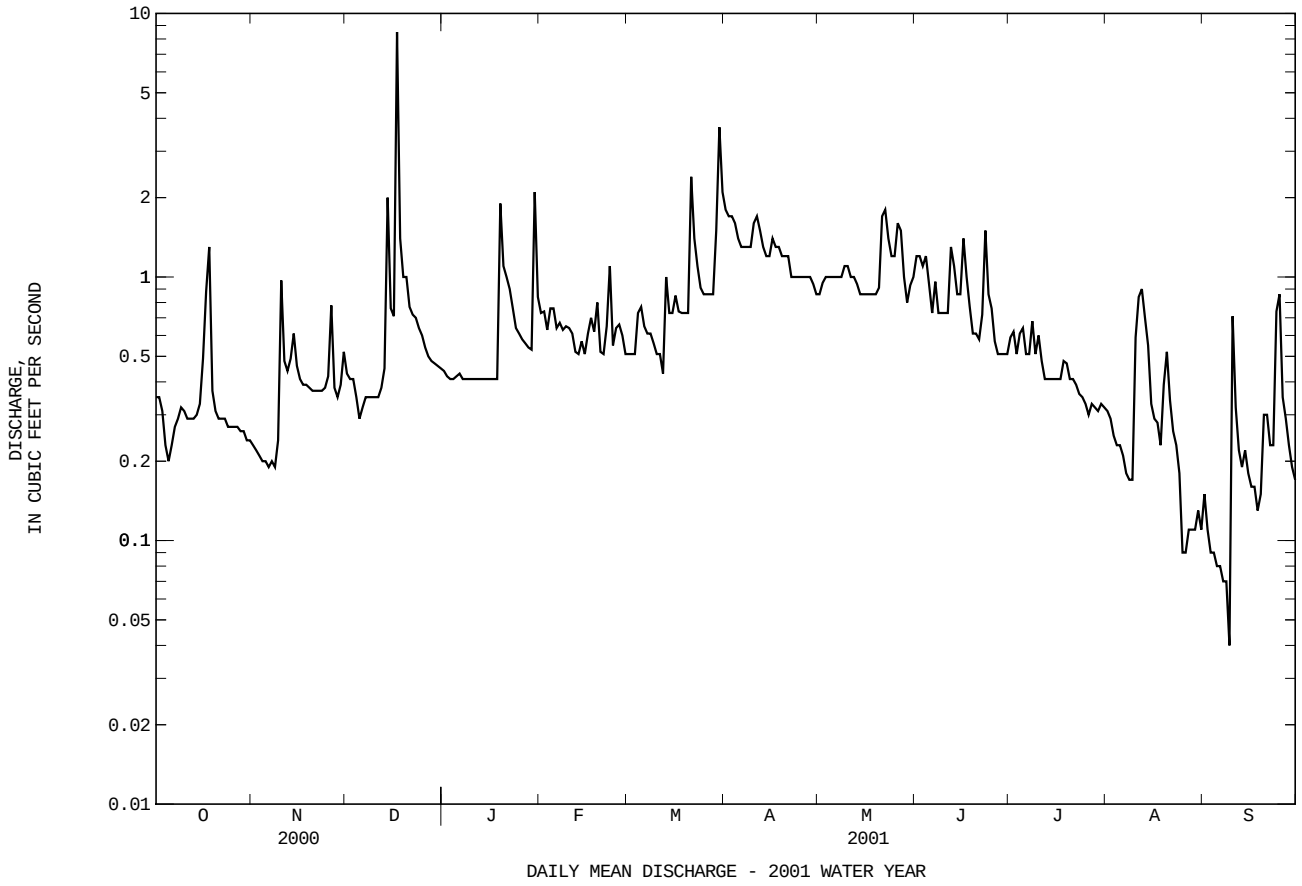
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2000 - 2001, BY WATER YEAR (WY)

MEAN	.49	.52	.90	.59	.73	1.31	1.65	1.22	.85	.66	.40	.43
MAX	.64	.65	.94	.63	.82	1.66	2.02	1.36	.86	.87	.51	.62
(WY)	2000	2000	2000	2001	2000	2000	2000	2000	2001	2000	2000	2000
MIN	.34	.39	.85	.54	.64	.96	1.28	1.07	.83	.45	.30	.24
(WY)	2001	2001	2001	2000	2001	2001	2001	2001	2000	2001	2001	2001

01581940 MINGO BRANCH NEAR HEREFORD, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 2000 - 2001	
ANNUAL TOTAL	329.47		243.60			
ANNUAL MEAN	.90		.67		.81	
HIGHEST ANNUAL MEAN					.95	2000
LOWEST ANNUAL MEAN					.67	2001
HIGHEST DAILY MEAN	8.5	Dec 17	8.5	Dec 17	8.5	Dec 17 2000
LOWEST DAILY MEAN	.19	Nov 6	.04	Sep 9	.04	Sep 9 2001
ANNUAL SEVEN-DAY MINIMUM	.20	Nov 2	.07	Sep 3	.07	Sep 3 2001
MAXIMUM PEAK FLOW			164	Dec 17	(a)164	Dec 17 2000
MAXIMUM PEAK STAGE			1.80	Dec 17	1.80	Dec 17 2000
INSTANTANEOUS LOW FLOW			.02	(b)	.02	(b)
ANNUAL RUNOFF (CFSM)	1.15		.86		1.04	
ANNUAL RUNOFF (INCHES)	15.71		11.62		14.13	
10 PERCENT EXCEEDS	1.9		1.2		1.6	
50 PERCENT EXCEEDS	.64		.52		.62	
90 PERCENT EXCEEDS	.31		.22		.27	

a From rating curve extended above 11 ft^3/s
b Sept. 8, 9, 2001.



01581960 BEETREE RUN AT BENTLEY SPRINGS, MD

LOCATION.--Lat 39°40'23.1", long 76°40'30.7", Baltimore County, Hydrologic Unit 02060003, on left, downstream side of bridge on Bentley Road, 0.43 mi upstream from mouth.

DRAINAGE AREA.--9.72 mi^2.

PERIOD OF RECORD.--October 1999 to current year.

GAGE.--Water-stage recorder. Datum of gage is 775 ft above sea level, from topographic map.

REMARKS.--Records good except those for estimated daily discharges (ice effect, missing record), which are fair. Several measurements of water temperature were made during the year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 400 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 17	1015	680	3.16	Aug 11	1345	*1,130	*3.85

Minimum discharge, 3.9 ft^3/s, Aug. 9.

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	7.9	6.4	6.6	e6.8	14	9.8	20	11	12	e7.4	5.0	5.6
2	7.7	6.4	6.5	e6.6	13	9.7	18	12	13	e7.4	4.8	5.3
3	7.5	6.5	6.4	e6.4	11	9.5	17	11	11	e7.0	4.7	5.3
4	7.2	6.2	6.1	e6.4	10	12	16	11	9.8	e7.6	5.0	5.4
5	7.3	6.2	5.9	e6.5	12	14	14	11	9.3	e8.0	5.0	5.3
6	7.5	6.2	6.0	e6.6	11	11	15	11	9.2	e7.0	4.8	5.0
7	7.1	6.0	5.9	e6.6	11	11	14	10	9.4	e6.8	4.5	5.0
8	6.9	6.1	6.0	e6.7	11	10	14	10	e9.0	e7.4	4.3	5.0
9	6.9	6.5	5.9	e6.9	14	10	16	11	e8.4	e7.0	4.3	4.9
10	7.0	12	5.9	e6.9	16	9.8	16	10	e8.2	9.7	8.7	5.2
11	7.0	7.4	6.0	e6.6	12	9.8	17	9.9	e8.2	7.8	109	5.2
12	6.8	6.9	6.2	6.5	11	9.4	16	10	e9.0	6.6	15	4.8
13	6.8	6.8	6.0	e6.5	11	18	14	9.8	e10	6.4	23	4.7
14	6.8	7.6	21	e6.5	11	12	13	9.6	e8.4	6.1	13	4.9
15	6.8	7.3	9.6	6.8	11	11	14	9.5	e8.2	6.0	8.6	4.8
16	6.9	6.9	9.4	7.3	13	11	19	9.6	e9.6	5.9	7.7	4.5
17	7.3	6.8	122	6.9	15	12	16	9.8	e9.0	5.9	7.3	4.5
18	8.9	6.8	20	6.8	11	11	18	10	e8.0	6.0	7.0	4.4
19	7.7	6.8	14	23	12	10	15	10	e7.4	6.0	7.0	4.4
20	7.4	6.7	13	23	10	10	14	10	e7.4	5.7	9.5	5.0
21	7.1	6.8	e12	14	10	41	14	19	e8.0	5.4	7.0	7.2
22	6.7	6.3	11	e12	10	24	13	15	e11	5.4	6.7	5.0
23	6.5	6.2	e10	11	12	17	13	15	e26	5.3	6.6	4.7
24	6.7	6.2	e9.2	e10	9.6	15	13	10	e11	5.2	6.5	19
25	6.8	6.3	e8.6	e9.0	11	14	12	10	e8.6	5.1	6.3	18
26	6.7	13	e8.1	e8.5	12	13	12	16	e8.2	5.2	6.1	6.4
27	6.8	8.0	e7.6	8.2	11	12	12	35	e7.8	5.3	6.1	5.7
28	6.8	7.0	e7.4	7.8	10	12	12	14	e7.6	5.0	6.1	5.5
29	6.7	6.8	e7.2	9.6	---	15	11	11	e7.4	5.2	5.9	5.3
30	6.5	7.5	e7.1	22	---	58	11	11	e7.4	5.5	6.0	5.1
31	6.5	---	e7.1	17	---	24	---	9.9	---	5.2	6.0	---
TOTAL	219.2	212.6	383.7	295.4	325.6	466.0	439	372.1	287.5	195.5	327.5	181.1
MEAN	7.07	7.09	12.4	9.53	11.6	15.0	14.6	12.0	9.58	6.31	10.6	6.04
MAX	8.9	13	122	23	16	58	20	35	26	9.7	109	19
MIN	6.5	6.0	5.9	6.4	9.6	9.4	11	9.5	7.4	5.0	4.3	4.4
CFSM	.73	.73	1.27	.98	1.20	1.55	1.51	1.23	.99	.65	1.09	.62
IN.	.84	.81	1.47	1.13	1.25	1.78	1.68	1.42	1.10	.75	1.25	.69

e Estimated

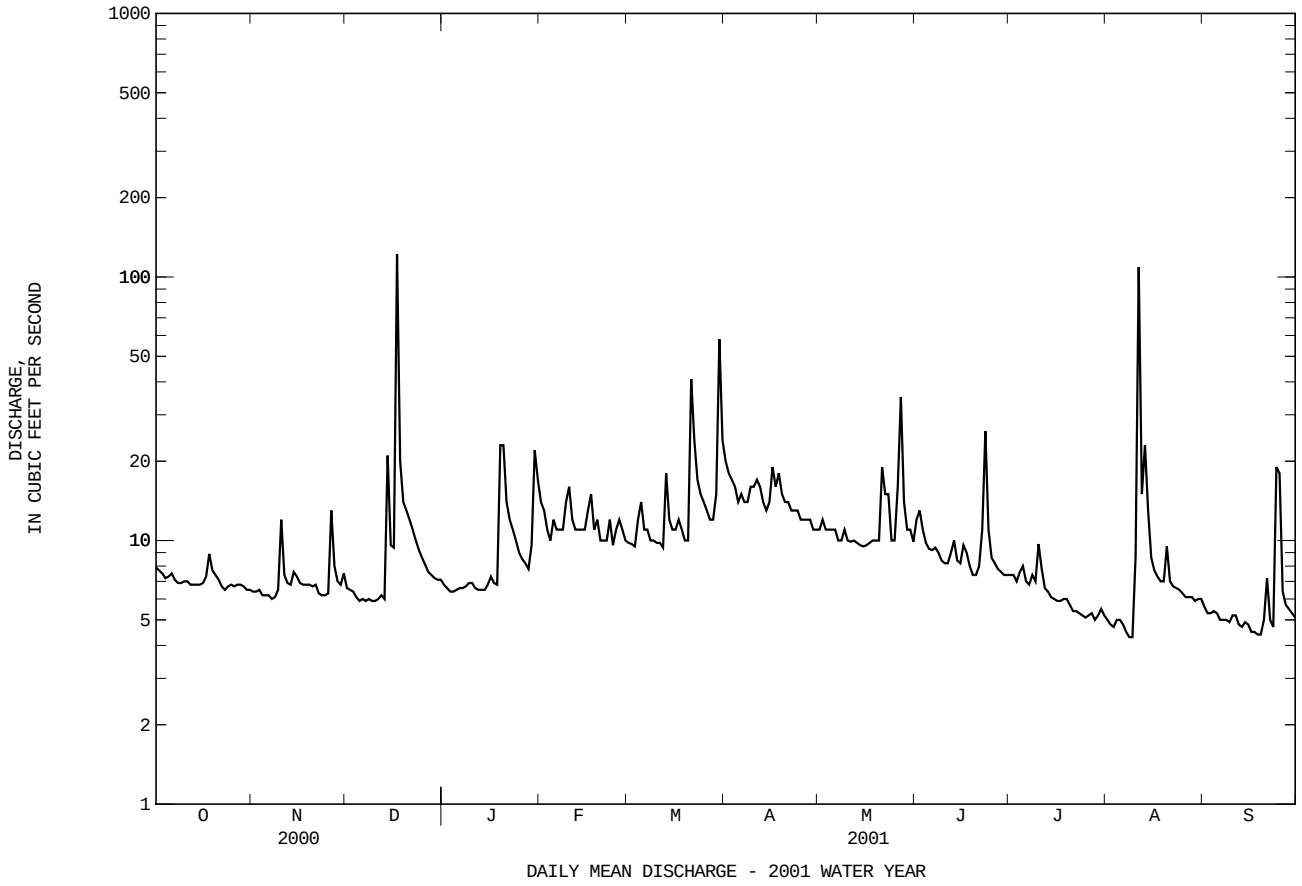
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2000 - 2001, BY WATER YEAR (WY)

MEAN	7.62	6.96	11.8	8.81	13.0	15.9	18.4	13.0	10.1	8.24	8.67	8.54
MAX	8.18	7.09	12.4	9.53	14.3	16.7	22.1	14.0	10.6	10.2	10.6	11.0
(WY)	2000	2001	2001	2001	2000	2000	2000	2000	2000	2000	2001	2000
MIN	7.07	6.83	11.3	8.08	11.6	15.0	14.6	12.0	9.58	6.31	6.77	6.04
(WY)	2001	2000	2000	2000	2001	2001	2001	2001	2001	2001	2000	2001

01581960 BEETREE RUN AT BENTLEY SPRINGS, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 2000 - 2001	
ANNUAL TOTAL	4268.6		3705.2			
ANNUAL MEAN	11.7		10.2		10.9	
HIGHEST ANNUAL MEAN					11.6	2000
LOWEST ANNUAL MEAN					10.2	2001
HIGHEST DAILY MEAN	122	Dec 17	122	Dec 17	122	Dec 17 2000
LOWEST DAILY MEAN	5.3	Aug 22	4.3	(a)	4.3	(a)
ANNUAL SEVEN-DAY MINIMUM	5.5	Aug 20	4.6	Sep 13	4.6	Sep 13 2001
MAXIMUM PEAK FLOW			1130	Aug 11	(b)1150	Apr 17 2000
MAXIMUM PEAK STAGE			3.85	Aug 11	3.87	Apr 17 2000
INSTANTANEOUS LOW FLOW			3.9	Aug 9	3.9	Aug 9 2001
ANNUAL RUNOFF (CFSM)	1.20		1.04		1.12	
ANNUAL RUNOFF (INCHES)	16.34		14.18		15.23	
10 PERCENT EXCEEDS	17		15		16	
50 PERCENT EXCEEDS	8.7		8.0		8.7	
90 PERCENT EXCEEDS	6.3		5.3		5.4	

a Aug. 8, 9, 2001.
b From rating curve extended above 185 ft^3/s.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01582000 LITTLE FALLS AT BLUE MOUNT, MD

LOCATION.--Lat 39°36'14.7", long 76°37'13.7", Baltimore County, Hydrologic Unit 02060003, on left bank at downstream side of Pennsylvania Railroad bridge, 0.2 mi north of Blue Mount, 0.6 mi upstream from mouth, 0.9 mi downstream from First Mine Branch, and 1.2 mi south of White Hall.

DRAINAGE AREA.--52.9 mi^2.

PERIOD OF RECORD.--June 1944 to current year.

REVISED RECORDS.--WSP 111: 1944(M), 1945-47(P). WDR MD-DE-85-1: 1984(P).

GAGE.--Water-stage recorders. Elevation of gage is 305 ft above sea level, from topographic map.

REMARKS.--Records good except those for estimated daily discharges (ice effect, missing record), which are fair. Slight diurnal fluctuation at low flow caused by mill upstream from station. U.S. Geological Survey satellite collection platform at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 17	1115	*2,340	*6.78	Aug 11	1630	1,230	4.56

Minimum discharge, 15 ft^3/s, Aug. 10.

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	39	32	35	e38	81	51	112	59	54	34	21	22
2	39	31	33	e37	71	50	99	59	67	34	19	20
3	37	31	32	e36	62	49	90	57	53	32	19	20
4	35	31	40	e38	54	59	84	56	48	33	21	20
5	35	31	36	e38	69	81	79	54	45	35	21	19
6	36	30	36	e37	65	64	79	53	45	31	20	18
7	35	31	34	e36	68	59	77	52	48	29	18	18
8	34	31	31	e38	64	56	74	52	44	35	17	18
9	34	32	30	e40	68	54	81	56	41	33	16	18
10	35	55	30	e38	87	51	87	52	40	35	29	25
11	35	37	31	e37	64	50	92	50	39	39	228	20
12	34	33	31	e36	57	49	89	50	46	30	71	17
13	34	32	29	e35	57	91	81	48	52	28	85	17
14	33	37	108	e35	60	65	74	46	41	27	58	17
15	33	35	57	e35	60	58	74	46	40	27	36	17
16	34	33	50	e34	64	62	99	45	49	26	31	16
17	36	32	575	e34	84	66	88	46	46	26	29	16
18	45	31	117	e34	61	61	94	48	39	27	28	16
19	38	31	78	156	56	56	80	49	36	27	29	16
20	35	31	66	147	55	54	75	48	36	25	39	19
21	34	31	e60	e84	54	214	73	82	37	24	28	29
22	34	30	54	e62	46	156	71	80	43	23	26	19
23	33	32	e50	e52	60	100	68	83	95	23	25	17
24	33	36	e47	e48	50	86	67	54	49	22	25	21
25	33	35	e45	e46	57	76	65	52	43	22	24	134
26	33	61	e43	e45	67	71	64	78	39	21	23	31
27	33	44	e41	44	57	66	64	123	37	22	23	25
28	33	37	e39	e43	53	64	62	68	36	20	23	23
29	32	36	e38	e43	---	72	60	57	35	22	22	22
30	32	39	e40	175	---	300	59	52	34	24	22	21
31	32	---	e40	106	---	136	---	48	---	22	23	---
TOTAL	1078	1048	1976	1707	1751	2527	2361	1803	1357	858	1099	711
MEAN	34.8	34.9	63.7	55.1	62.5	81.5	78.7	58.2	45.2	27.7	35.5	23.7
MAX	45	61	575	175	87	300	112	123	95	39	228	134
MIN	32	30	29	34	46	49	59	45	34	20	16	16
CFSM	.66	.66	1.20	1.04	1.18	1.54	1.49	1.10	.86	.52	.67	.45
IN.	.76	.74	1.39	1.20	1.23	1.78	1.66	1.27	.95	.60	.77	.50

e Estimated

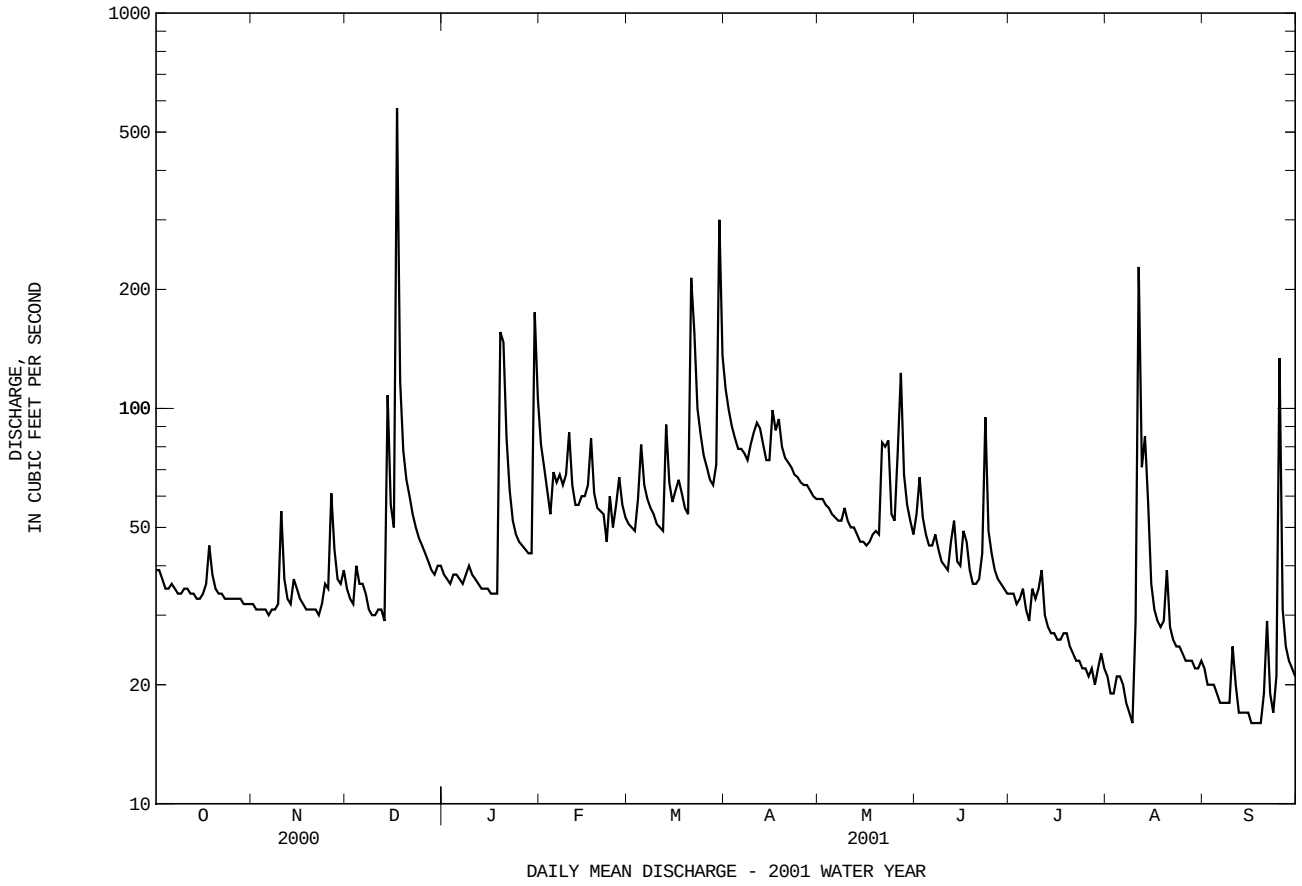
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1944 - 2001, BY WATER YEAR (WY)

MEAN	45.5	55.6	65.3	77.2	87.6	93.8	92.3	83.4	69.2	56.6	46.6	47.1
MAX	203	129	198	190	187	261	194	202	353	158	159	227
(WY)	1980	1972	1997	1996	1979	1994	1952	1952	1972	1972	1971	1975
MIN	16.7	22.8	20.9	22.1	37.9	40.3	38.4	29.4	24.3	12.2	9.44	17.2
(WY)	1964	1982	1966	1981	1967	1981	1963	1969	1966	1966	1966	1986

01582000 LITTLE FALLS AT BLUE MOUNT, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1944 - 2001	
ANNUAL TOTAL	21918		18276			
ANNUAL MEAN	59.9		50.1		68.3	
HIGHEST ANNUAL MEAN					132	1972
LOWEST ANNUAL MEAN					31.8	1966
HIGHEST DAILY MEAN	575	Dec 17	575	Dec 17	4730	Jun 22 1972
LOWEST DAILY MEAN	28	Aug 26	16	(a)	4.5	Sep 11 1966
ANNUAL SEVEN-DAY MINIMUM	30	Aug 21	16	Sep 13	4.8	Sep 6 1966
MAXIMUM PEAK FLOW			2340	Dec 17	(b)8280	Jun 22 1972
MAXIMUM PEAK STAGE			6.78	Dec 17	18.54	Jun 22 1972
INSTANTANEOUS LOW FLOW			15	Aug 10	1.9	Aug 26 1966
ANNUAL RUNOFF (CFSM)	1.13		.95		1.29	
ANNUAL RUNOFF (INCHES)	15.41		12.85		17.54	
10 PERCENT EXCEEDS	91		81		117	
50 PERCENT EXCEEDS	47		39		52	
90 PERCENT EXCEEDS	32		22		25	

a Aug. 9, Sept. 16-19.
b From rating curve extended above 1,600 ft^3/s on basis of contracted-opening measurement of peak flow.



01582500 GUNPOWDER FALLS AT GLENCOE, MD

LOCATION.--Lat 39°32'58.9", long 76°38'10.0", Baltimore County, Hydrologic Unit 02060003, on right downstream wingwall of bridge on Glencoe Road at intersection of Upper Glencoe Road and Lower Glencoe Road in Glencoe, and 0.7 mi upstream from Piney Creek.

DRAINAGE AREA.--160 mi^2.

PERIOD OF RECORD.--October 1977 to June 1980, December 1982 to current year.

REVISED RECORDS.--WDR MD-DE-89-1: 1985(M).

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 250 ft above sea level, from topographic map.

REMARKS.--Records good except those for estimated daily discharges (ice effect), which are fair. Flow regulated by Prettyboy Reservoir, 12 mi upstream, beginning Apr. 10, 1933, for water supply of Baltimore City (usable capacity, 20,000,000,000 gal; dead storage, 1,080,000,000 gal). Several measurements of water temperature were made during the year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,960 ft^3/s, Dec. 17, gage height, 9.57 ft; minimum discharge, 95 ft^3/s, Jan. 14.

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	131	186	203	e113	246	132	203	125	142	137	268	231
2	125	186	201	e110	215	131	185	124	179	137	265	228
3	116	194	199	e108	205	130	170	122	159	134	264	228
4	112	195	198	e110	195	139	161	119	145	135	266	215
5	110	196	200	e113	222	174	155	118	135	140	267	167
6	109	197	199	e110	213	149	154	115	131	134	265	165
7	109	202	203	e108	213	143	153	114	142	130	263	163
8	106	202	201	e110	210	138	149	113	141	139	260	163
9	106	203	199	116	203	136	153	121	163	136	260	163
10	106	235	198	112	175	133	164	113	150	133	272	179
11	106	213	199	112	149	131	168	108	141	144	459	169
12	105	205	203	103	140	129	169	106	152	130	314	163
13	104	204	200	104	139	179	156	104	177	128	301	164
14	104	212	303	101	142	151	148	101	152	128	279	180
15	104	208	242	104	144	141	146	101	149	127	253	181
16	111	203	229	107	146	143	175	100	163	125	261	180
17	154	202	995	111	175	153	162	99	161	125	233	186
18	167	201	313	194	146	144	169	101	147	129	105	215
19	161	200	230	330	139	137	154	104	144	130	104	182
20	156	200	208	339	139	135	149	102	143	160	137	183
21	155	200	133	244	137	321	148	142	146	247	159	234
22	154	199	e127	226	131	284	145	154	146	246	173	117
23	156	198	e122	222	139	192	141	157	220	248	173	112
24	188	197	e118	212	131	159	138	113	176	259	188	116
25	189	199	e114	209	136	146	135	106	155	259	202	235
26	182	241	e112	203	152	137	134	145	145	259	202	152
27	187	220	e111	205	141	132	132	224	141	261	207	264
28	187	207	e111	203	135	128	130	208	140	267	231	343
29	186	204	e115	200	---	137	127	179	138	268	230	346
30	185	208	e120	365	---	447	126	165	137	272	230	322
31	185	---	e118	286	---	237	---	147	---	269	232	---
TOTAL	4356	6117	6424	5290	4658	5168	4599	3950	4560	5536	7323	5946
MEAN	141	204	207	171	166	167	153	127	152	179	236	198
MAX	189	241	995	365	246	447	203	224	220	272	459	346
MIN	104	186	111	101	131	128	126	99	131	125	104	112
(†)	19016	16971	16216	15843	16100	17554	19082	19979	19902	17671	14497	11906

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1978 - 1980, 1983 - 2001, BY WATER YEAR (WY)

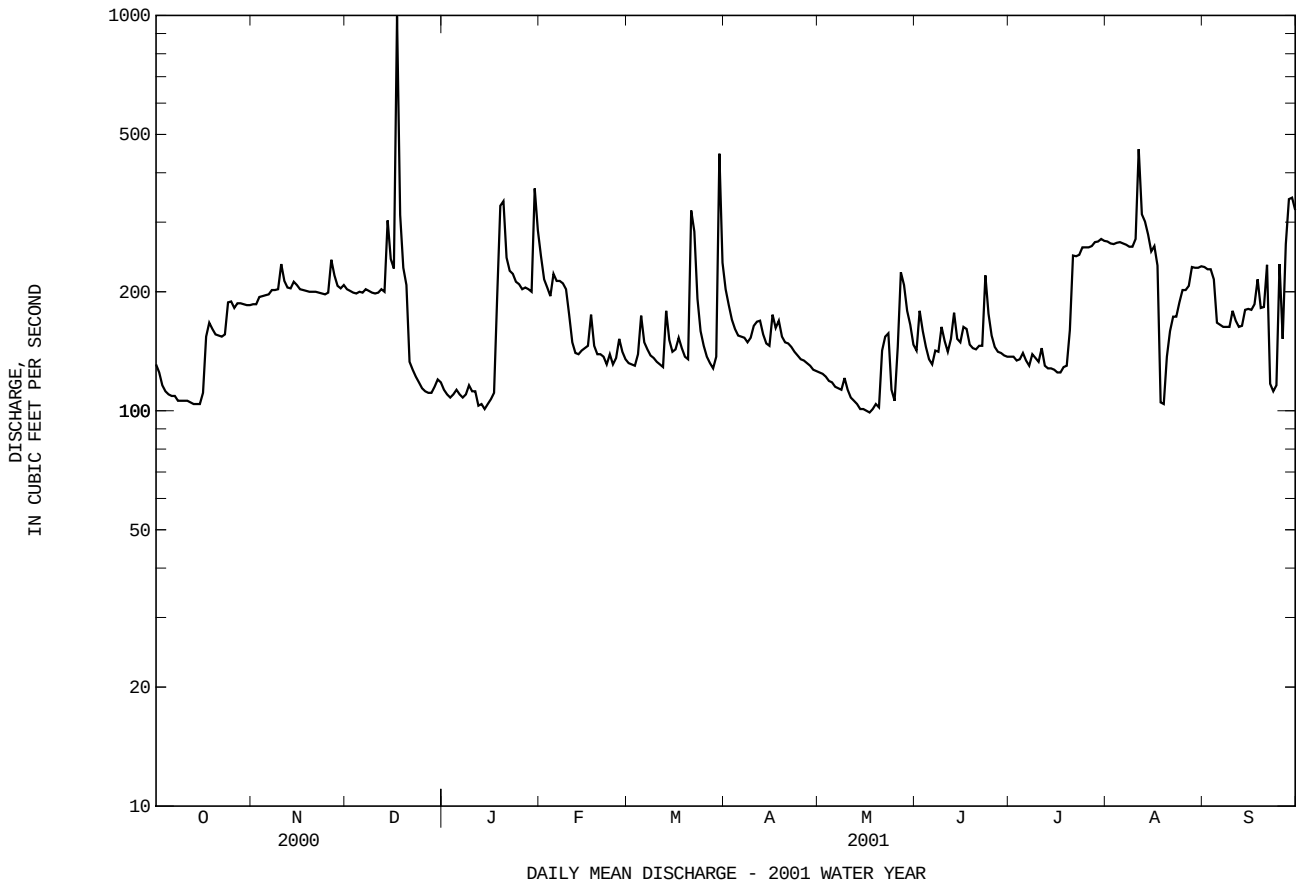
MEAN	161	171	194	229	234	266	265	252	185	177	156	161
MAX	603	342	604	625	598	755	586	476	284	280	267	512
(WY)	1980	1997	1997	1979	1979	1994	1993	1989	1989	1986	1996	1979
MIN	52.4	76.4	84.6	63.3	85.8	127	114	85.5	82.4	94.8	70.8	69.6
(WY)	1987	2000	1998	1983	1983	1992	1992	1992	1992	1985	1985	1983

(†) Monthend contents, in millions of gallons, in Prettyboy Reservoir (contents on Sept. 30, 2000, 19,916,000,000 gal). Records furnished by Baltimore Department of Public Works.

01582500 GUNPOWDER FALLS AT GLENCOE, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1978 - 1980, 1983 - 2001	
ANNUAL TOTAL	59042		63927			
ANNUAL MEAN	161		175		205	
HIGHEST ANNUAL MEAN					314	1980
LOWEST ANNUAL MEAN					118	1987
HIGHEST DAILY MEAN	995	Dec 17	995	Dec 17	4500	Sep 6 1979
LOWEST DAILY MEAN	68	(a)	99	May 17	31	Sep 3 1999
ANNUAL SEVEN-DAY MINIMUM	72	Jan 14	101	May 14	35	Aug 29 1999
MAXIMUM PEAK FLOW			2960	Dec 17	(b)6110	Sep 6 1979
MAXIMUM PEAK STAGE			9.57	Dec 17	15.30	Sep 6 1979
INSTANTANEOUS LOW FLOW			95	Jan 14	30	Sep 3 1999
ANNUAL RUNOFF (CFSM)	1.01		1.09		1.28	
ANNUAL RUNOFF (INCHES)	13.73		14.86		17.41	
10 PERCENT EXCEEDS	235		259		352	
50 PERCENT EXCEEDS	152		156		163	
90 PERCENT EXCEEDS	90		111		83	

a Jan. 8, 9.
b From rating curve extended above 2,400 ft^3/s on basis of slope-area measurement at gage height of 12.65 ft.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01583100 PINEY RUN AT DOVER, MD

LOCATION.--Lat 39°31'14.2", long 76°46'00.8", Baltimore County, Hydrologic Unit 02060003, on right bank 400 ft downstream from bridge on Maryland Route 128, 0.7 mi upstream from mouth, and 2.4 mi southwest of Butler.

DRAINAGE AREA.--12.3 mi^2.

PERIOD OF RECORD.--May 1982 to February 1988. October 1996 to current year.

REVISED RECORDS.--WDR MD-DE-87-1: 1984-86(P).

GAGE.--Water-stage recorder. Elevation of gage is 380 ft above sea level, from topographic map.

REMARKS.--Records good except those for estimated daily discharges (ice effect), which are fair. Several measurements of water temperature were made during the year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 300 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 17	0845	*515	*4.98	May 27	0030	433	4.69

Minimum discharge, 4.0 ft^3/s, Sept. 23.

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	7.7	7.3	8.0	7.9	20	11	22	12	9.9	7.8	5.7	5.9
2	7.6	7.3	7.7	7.7	17	11	20	11	12	7.8	5.4	5.5
3	7.3	7.5	7.5	e7.2	15	11	18	11	9.7	7.3	5.3	5.6
4	7.1	7.7	7.7	6.9	14	12	16	11	9.0	7.4	6.9	5.5
5	7.0	7.2	7.7	8.9	17	17	15	10	8.8	8.1	6.8	5.2
6	7.0	6.9	7.5	7.4	17	13	15	10	8.4	7.3	5.7	5.1
7	6.9	7.0	7.4	6.6	17	12	15	10	11	7.0	5.6	4.9
8	6.9	7.3	7.3	6.9	16	11	14	10	8.8	8.6	5.1	4.7
9	6.9	7.6	7.3	7.0	15	11	15	10	8.0	7.9	5.1	4.6
10	7.0	15	7.3	6.9	16	11	16	9.9	8.0	9.1	4.8	4.9
11	6.9	9.8	7.4	6.9	14	10	18	9.5	7.9	9.0	21	4.9
12	6.7	8.6	8.0	6.7	13	10	18	9.2	7.9	7.3	14	4.6
13	6.7	8.3	8.2	7.8	12	18	16	9.3	8.8	6.7	20	4.6
14	6.7	9.0	27	6.5	13	13	15	9.2	8.8	6.4	11	4.6
15	6.7	9.5	15	6.8	12	11	14	9.1	8.8	6.2	7.2	4.7
16	6.7	8.6	13	7.1	14	13	18	8.8	8.8	6.1	7.0	4.7
17	7.0	8.7	106	6.6	17	14	16	8.9	8.8	6.0	6.9	4.4
18	10	8.0	20	6.6	13	12	17	9.1	8.8	7.3	6.6	4.4
19	7.7	7.8	15	49	12	11	15	9.2	8.7	8.1	6.6	4.4
20	7.2	7.4	12	31	12	11	14	9.3	8.4	6.5	7.6	4.9
21	7.0	7.2	11	15	11	47	14	16	8.2	6.0	6.3	5.4
22	6.7	7.0	11	e13	10	29	14	16	8.1	5.8	5.8	4.7
23	6.7	6.9	e10	e12	12	20	13	18	8.8	5.7	5.8	4.6
24	6.7	6.9	9.6	10	11	17	13	11	8.8	5.6	5.8	30
25	6.7	7.1	e9.2	9.0	12	16	13	10	8.6	5.5	5.5	25
26	6.8	14	e8.8	e9.0	13	14	12	19	8.3	5.4	5.5	7.5
27	6.9	9.7	8.6	9.4	12	12	12	54	8.0	e5.4	5.6	6.0
28	7.0	8.5	8.3	9.0	11	12	12	15	8.3	5.4	5.7	5.5
29	7.0	8.0	8.3	8.9	---	15	12	11	7.8	5.3	5.5	5.3
30	7.3	8.7	8.1	61	---	78	12	9.6	7.7	5.9	5.7	5.4
31	7.3	---	9.2	30	---	27	---	8.7	---	5.8	5.9	---
TOTAL	219.8	250.5	409.1	394.7	388	530	454	384.8	261.9	209.7	227.4	197.5
MEAN	7.09	8.35	13.2	12.7	13.9	17.1	15.1	12.4	8.73	6.76	7.34	6.58
MAX	10	15	106	61	20	78	22	54	12	9.1	21	30
MIN	6.7	6.9	7.3	6.5	10	10	12	8.7	7.7	5.3	4.8	4.4
CFSM	.58	.68	1.07	1.04	1.13	1.39	1.23	1.01	.71	.55	.60	.54
IN.	.66	.76	1.24	1.19	1.17	1.60	1.37	1.16	.79	.63	.69	.60

e Estimated

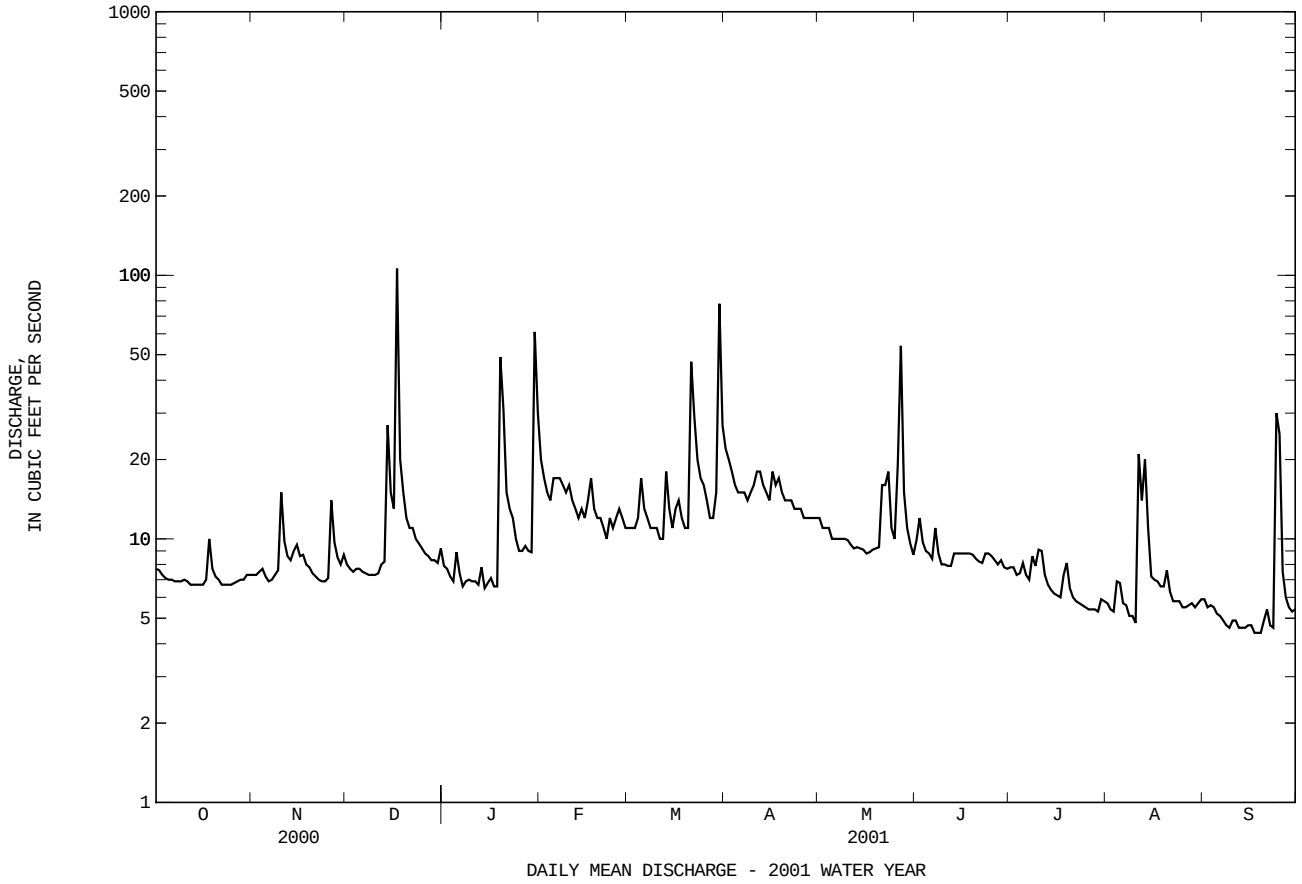
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1982 - 1988, 1997 - 2001, BY WATER YEAR (WY)

MEAN	10.1	13.0	17.0	16.2	20.0	19.8	20.5	16.5	12.2	10.2	8.17	9.21
MAX	26.0	28.7	49.8	31.1	37.9	35.5	36.1	28.5	20.0	25.7	18.2	21.3
(WY)	1997	1997	1997	1997	1985	1998	1983	1998	1998	1984	1984	1987
MIN	4.68	7.36	7.13	8.26	11.2	12.5	11.7	7.57	5.57	4.75	5.05	3.95
(WY)	1987	1999	1999	1983	1999	1999	1985	1999	1986	1999	1986	1986

01583100 PINEY RUN AT DOVER, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1982 - 1988, 1997 - 2001	
ANNUAL TOTAL	4237.5		3927.4			
ANNUAL MEAN	11.6		10.8		14.4	
HIGHEST ANNUAL MEAN					21.6	1997
LOWEST ANNUAL MEAN					9.56	1986
HIGHEST DAILY MEAN	106	Dec 17	106	Dec 17	599	Feb 12 1985
LOWEST DAILY MEAN	5.7	Sep 18	4.4	(a)	2.6	Aug 15 1986
ANNUAL SEVEN-DAY MINIMUM	6.1	Aug 20	4.5	Sep 13	3.0	Aug 9 1986
MAXIMUM PEAK FLOW			515	Dec 17	(b)3220	Sep 8 1987
MAXIMUM PEAK STAGE			4.98	Dec 17	8.28	Sep 8 1987
INSTANTANEOUS LOW FLOW			4.0	Sep 23	2.4	Aug 15 1986
ANNUAL RUNOFF (CFSM)	.94		.87		1.17	
ANNUAL RUNOFF (INCHES)	12.82		11.88		15.91	
10 PERCENT EXCEEDS	17		16		25	
50 PERCENT EXCEEDS	9.8		8.6		10	
90 PERCENT EXCEEDS	6.8		5.5		5.5	

a Sept. 17-19.
b From rating curve extended above 2,000 ft^3/s.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01583500 WESTERN RUN AT WESTERN RUN, MD

LOCATION.--Lat 39°30'38.8", long 76°40'35.4", Baltimore County, Hydrologic Unit 02060003, on right bank 100 ft downstream from bridge on Western Run Road, 0.3 mi southeast of Western Run, 2.5 mi northwest of Cockeysville, 3.2 mi upstream from Beaverdam Run, and 5.0 mi upstream from mouth.

DRAINAGE AREA.--59.8 mi^2.

PERIOD OF RECORD.--September 1944 to current year.

REVISED RECORDS.--WSP 1502: 1945-46, 1948(M).

GAGE.--Water-stage recorder. Datum of gage is 262.78 ft above sea level (Baltimore County bench mark).

REMARKS.--Records good except those for estimated daily discharges (ice effect), which are fair. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 17	1100	*1,750	*5.62	No other peak greater than base discharge.			

Minimum discharge, 13 ft^3/s, Sept. 18, gage height, 0.07 ft.

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	39	32	35	e38	89	49	108	54	48	33	19	20
2	38	32	33	e37	71	48	93	53	60	36	18	17
3	36	31	32	e35	63	47	83	51	49	31	17	17
4	35	32	33	e36	56	51	76	50	45	31	19	17
5	34	31	32	e37	76	78	72	49	44	34	22	16
6	36	30	31	e37	76	60	71	47	43	30	19	15
7	33	30	30	e37	72	54	69	46	60	28	17	15
8	32	34	30	e39	68	51	67	47	47	35	15	15
9	33	36	30	39	63	50	72	50	42	35	15	15
10	34	57	29	37	66	47	78	47	40	31	15	15
11	34	41	30	e36	57	46	84	45	38	39	60	15
12	32	32	30	e35	54	45	83	44	52	28	51	14
13	31	32	28	35	54	75	73	43	129	26	67	14
14	31	44	105	34	55	58	66	41	51	25	55	14
15	30	39	65	36	56	52	64	41	46	24	30	14
16	31	30	54	38	57	55	81	41	96	23	26	14
17	33	31	544	36	76	65	72	41	69	23	24	13
18	44	29	116	35	58	55	73	42	49	24	23	13
19	40	29	78	180	54	51	65	43	44	30	24	13
20	35	29	66	160	52	50	63	42	40	24	30	15
21	33	29	e60	76	50	213	63	68	39	23	22	17
22	33	29	e54	59	47	167	62	73	40	22	20	15
23	32	30	e50	e56	51	97	62	87	87	21	20	14
24	32	30	e48	e52	48	80	61	51	49	21	20	18
25	32	31	e44	e49	53	72	58	48	42	20	19	120
26	32	64	e42	e47	64	66	58	72	39	19	19	29
27	32	58	e41	45	54	61	57	157	37	20	19	21
28	32	38	e39	44	51	59	56	70	35	19	20	20
29	31	36	e38	42	---	68	54	56	34	19	18	19
30	32	39	e38	222	---	364	54	50	33	23	23	18
31	32	---	e39	133	---	137	---	46	---	21	25	---
TOTAL	1044	1065	1924	1822	1691	2471	2098	1695	1527	818	791	592
MEAN	33.7	35.5	62.1	58.8	60.4	79.7	69.9	54.7	50.9	26.4	25.5	19.7
MAX	44	64	544	222	89	364	108	157	129	39	67	120
MIN	30	29	28	34	47	45	54	41	33	19	15	13
CFSM	.56	.59	1.04	.98	1.01	1.33	1.17	.91	.85	.44	.43	.33
IN.	.65	.66	1.20	1.13	1.05	1.54	1.31	1.05	.95	.51	.49	.37

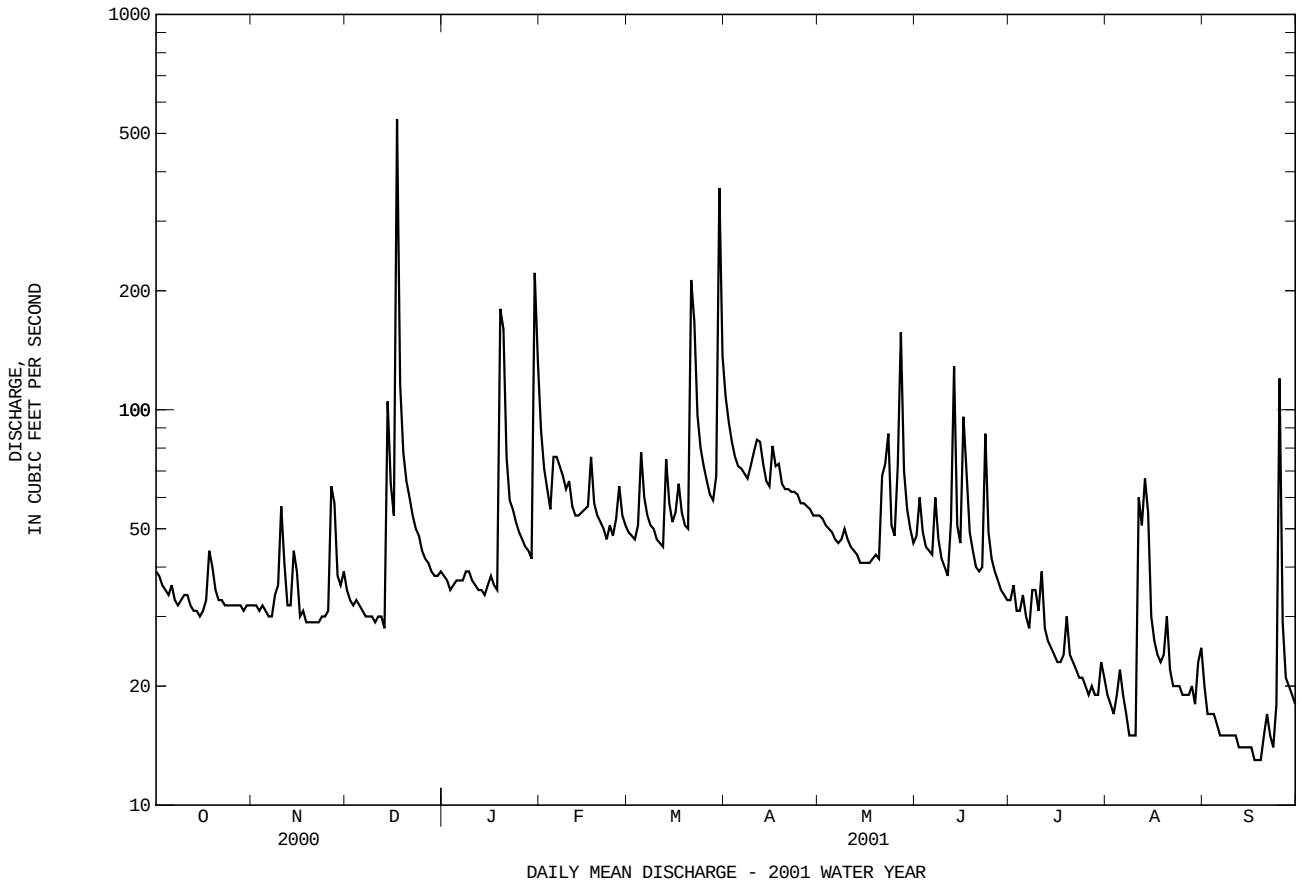
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1944 - 2001, BY WATER YEAR (WY)

MEAN	45.9	56.5	68.2	81.5	91.6	96.4	90.4	81.8	69.7	55.0	48.6	47.2
MAX	209	143	217	222	240	237	209	227	395	164	183	261
(WY)	1980	1997	1997	1979	1979	1994	1952	1952	1972	1972	1971	1975
MIN	16.4	20.4	19.0	20.5	34.4	45.9	39.8	31.5	21.1	11.3	7.78	14.8
(WY)	1964	1966	1966	1966	1967	1981	1963	1963	1966	1966	1966	1963

01583500 WESTERN RUN AT WESTERN RUN, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1944 - 2001	
ANNUAL TOTAL	21001		17538			
ANNUAL MEAN	57.4		48.0		69.3	
HIGHEST ANNUAL MEAN					138	1972
LOWEST ANNUAL MEAN					28.9	1966
HIGHEST DAILY MEAN	544	Dec 17	544	Dec 17	7000	Jun 22 1972
LOWEST DAILY MEAN	23	Aug 26	13	(a)	2.5	Sep 12 1966
ANNUAL SEVEN-DAY MINIMUM	26	Aug 20	14	Sep 13	3.8	Sep 6 1966
MAXIMUM PEAK FLOW			1750	Dec 17	(b)38000	Jun 22 1972
MAXIMUM PEAK STAGE			5.62	Dec 17	(c)26.00	Jun 22 1972
INSTANTANEOUS LOW FLOW			13	Sep 18	2.4	Sep 12 1966
ANNUAL RUNOFF (CFSM)	.96		.80		1.16	
ANNUAL RUNOFF (INCHES)	13.06		10.91		15.75	
10 PERCENT EXCEEDS	87		73		118	
50 PERCENT EXCEEDS	50		39		52	
90 PERCENT EXCEEDS	30		19		23	

a Sept. 17-19.
b From rating curve extended above 3,200 ft^3/s, on basis of slope-area measurement and contracted-opening measurement of peak flow.
c From floodmarks.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01583570 POND BRANCH AT OREGON RIDGE, MD

LOCATION.--Lat 39°28'49.1", long 76°41'15.0", Baltimore County, Hydrologic Unit 02060003, on left bank 500 ft upstream from pond, 600 ft above mouth, 1.0 mi southwest of Beaver Dam Road and Ivy Hill Road interchange, and 2.3 mi west of Cockeysville.

DRAINAGE AREA.--0.12 mi^2, revised.

PERIOD OF RECORD.--January 1983 to September 1986, April 1998 to current year.

GAGE.--Water-stage recorder, crest-stage gage, and triple V-notch sharp-crested weir plate. Datum of gage is 450 ft above sea level, from topographic map.

REMARKS.--Records fair except those for estimated daily discharges (ice effect, missing or doubtful record), which are poor. Several measurements of water temperature were made during the year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2.7 ft^3/s, Dec. 17, gage height, 1.69 ft; minimum discharge, 0.03 ft^3/s, Aug. 23-27, Sept. 4, 6-9, 11-13, 15-19.

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	.08	.08	.10	e.07	e.11	.09	.20	.10	.16	.06	.05	.08
2	.09	.08	.10	e.07	e.10	.09	.18	.10	.14	.06	.05	.06
3	.09	.08	.10	e.07	e.09	.09	.16	.10	.11	.05	.05	.05
4	.08	.07	.09	e.07	.09	.14	.16	.10	.10	.05	.05	.04
5	.09	.07	.09	e.07	.14	.15	.14	.10	.10	.05	.05	.04
6	.09	.07	.09	e.07	.12	.09	.14	.10	.10	.05	.05	.04
7	.09	.07	.09	e.07	.12	.09	.14	.10	.19	.05	.04	.04
8	.09	.07	.09	.09	.11	.09	.14	.09	.10	.05	.04	.04
9	.08	.10	.09	.08	.10	.09	.21	.10	.09	.05	.04	.04
10	.09	.16	.09	.08	.10	.09	.16	.10	.09	.05	.04	.04
11	.09	.11	.08	.09	.10	.09	.20	.10	.09	.04	.20	.04
12	.09	.10	.08	.08	.10	.10	.15	.10	.17	.04	.11	.04
13	.08	.09	.08	.08	.10	.16	.13	.10	.12	.04	.19	.04
14	.08	.13	.24	.08	.10	.09	.12	.10	.09	.05	.12	.04
15	.08	.10	.12	.09	.10	.09	.13	.10	.08	.05	.07	.04
16	.07	.08	.13	.08	.12	.10	.14	.10	.30	.05	.07	.04
17	.10	.08	.60	.08	e.13	.10	.12	.10	.14	.05	.07	.04
18	.11	.08	.18	.08	e.10	.09	.13	.10	.10	.05	.06	.03
19	.08	.08	e.14	.14	e.09	.09	.12	.10	.08	.05	.07	.03
20	.08	.08	e.12	.15	e.09	.09	.13	.11	.07	.05	.08	e.04
21	.08	.08	e.11	.13	e.09	.45	.13	.19	.06	.05	.05	e.06
22	.08	.08	.11	e.11	e.09	.24	.13	.27	.09	.05	.04	e.05
23	.08	.08	.10	e.10	e.11	.19	.12	.18	.15	.05	.03	e.04
24	.09	.08	e.09	e.09	.12	.18	.11	.14	.10	.05	.03	e.09
25	.08	.09	e.08	.09	.14	.16	.12	.15	.07	.05	.03	e.11
26	.08	.22	e.08	.09	.10	.16	.11	.25	.06	.05	.03	e.06
27	.08	.13	e.08	.09	.09	.12	.11	.17	.05	.05	.12	e.05
28	.08	.11	e.08	.09	.09	.12	.11	.14	.05	.05	.06	e.05
29	.08	.11	e.08	.09	---	.24	.10	.12	.05	.05	.05	e.05
30	.08	.11	e.07	.14	---	.51	.10	.10	.05	.05	.17	e.04
31	.08	---	e.07	.12	---	.25	---	.09	---	.05	.10	---
TOTAL	2.62	2.87	3.65	2.83	2.94	4.63	4.14	3.80	3.15	1.54	2.21	1.45
MEAN	.085	.096	.12	.091	.11	.15	.14	.12	.11	.050	.071	.048
MAX	.11	.22	.60	.15	.14	.51	.21	.27	.30	.06	.20	.11
MIN	.07	.07	.07	.07	.09	.09	.10	.09	.05	.04	.03	.03
CFSM	.70	.80	.98	.76	.88	1.24	1.15	1.02	.88	.41	.59	.40
IN.	.81	.89	1.13	.88	.91	1.44	1.28	1.18	.98	.48	.69	.45

e Estimated

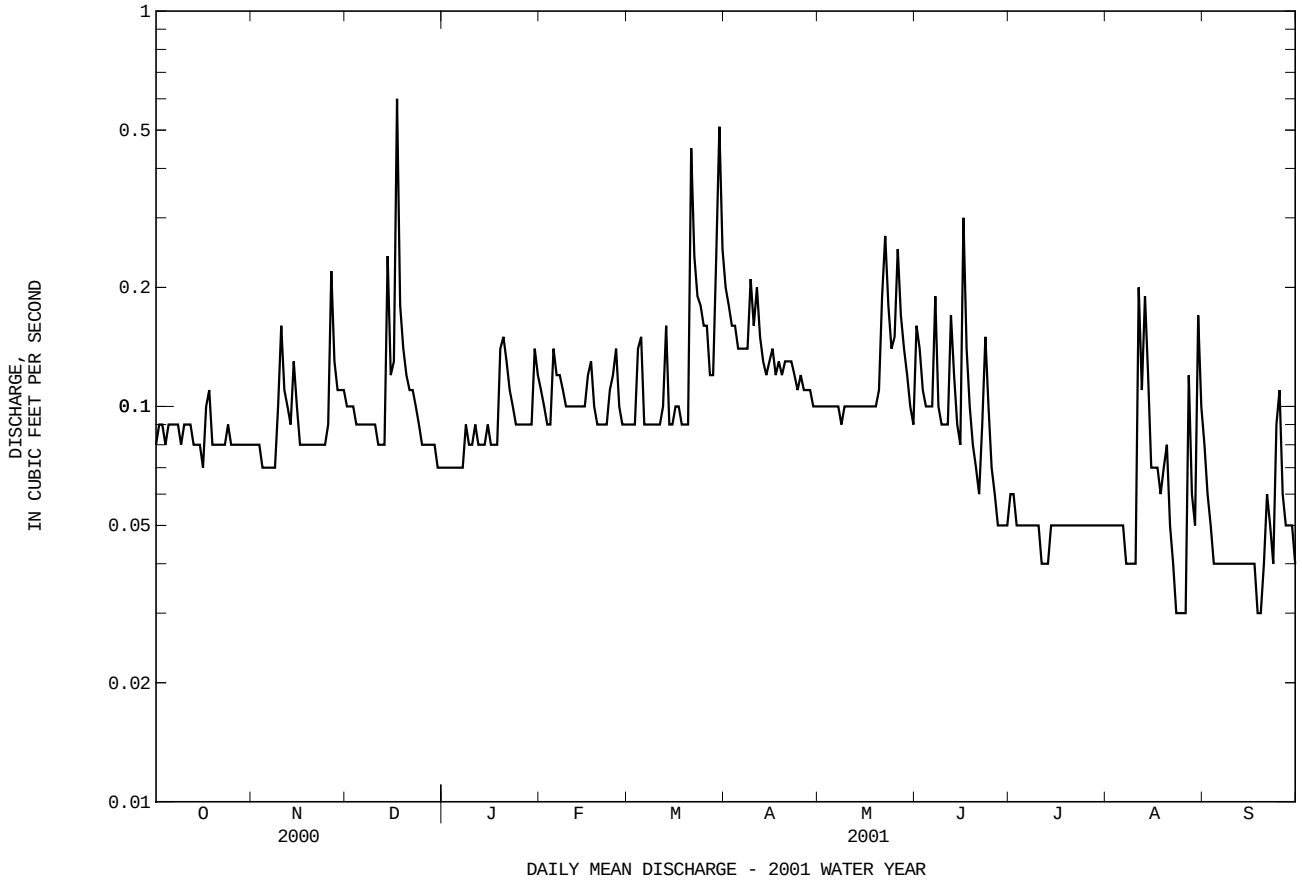
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 1986, 1988 - 2001, BY WATER YEAR (WY)

MEAN	.10	.12	.14	.11	.14	.16	.21	.22	.16	.11	.090	.075
MAX	.13	.20	.30	.17	.20	.24	.40	.41	.28	.27	.16	.13
(WY)	1985	1984	1984	1999	1984	1983	1983	1984	1983	1984	1984	1984
MIN	.077	.077	.081	.078	.10	.098	.099	.069	.040	.014	.008	.009
(WY)	1986	1999	1986	1986	1986	1986	1985	1986	1986	1986	1986	1986

01583570 POND BRANCH AT OREGON RIDGE, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1983 - 1986, 1988 - 2001	
ANNUAL TOTAL	51.06		35.83			
ANNUAL MEAN	.14		.098		.12	
HIGHEST ANNUAL MEAN					.23	1984
LOWEST ANNUAL MEAN					.065	1986
HIGHEST DAILY MEAN	.60	Dec 17	.60	Dec 17	1.8	Jul 1 1984
LOWEST DAILY MEAN	.07	(a)	.03	(b)	.00	(c)
ANNUAL SEVEN-DAY MINIMUM	.07	Sep 8	.04	Sep 13	.00	Jul 11 1986
MAXIMUM PEAK FLOW			2.7	Dec 17	18	Jul 1 1984
MAXIMUM PEAK STAGE			1.69	Dec 17	2.19	Jul 1 1984
INSTANTANEOUS LOW FLOW			.03	(d)	.00	(f)
ANNUAL RUNOFF (CFSM)	1.16		.82		1.04	
ANNUAL RUNOFF (INCHES)	15.83		11.11		14.11	
10 PERCENT EXCEEDS	.23		.15		.28	
50 PERCENT EXCEEDS	.11		.09		.10	
90 PERCENT EXCEEDS	.08		.05		.05	

a Sept. 8-14, 16-18, Oct. 16, Nov. 4-8.
b Aug. 23-26, Sept. 18, 19.
c July 7-9, 10-19, 31, Aug. 1, 3-16, 18, 19, 24-27, Sept. 11-30, 1986.
d Aug. 23-27, Sept. 4, 6-9, 11-13, 15-19.
f No flow at times in 1986.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01583580 BAISMAN RUN AT BROADMOOR, MD

LOCATION.--Lat 39°28'46.1", long 76°40'40.9", Baltimore County, Hydrologic Unit 02060003, on right bank at upstream side of bridge on Ivy Hill Road, 0.3 mi upstream from mouth, 0.6 mi southwest of Broadmoor, and 1.8 mi west of Cockeysville.

DRAINAGE AREA.--1.47 mi^2.

PERIOD OF RECORD.--August 1964 to September 1969, November 1999 to current year.

GAGE.--Water-stage recorder, crest-stage gage, weir plate. Datum of gage is 330 ft above sea level, from topographic map.

REMARKS.--Records good except those for estimated daily discharges (ice effect, missing record), which are poor. Several measurements of water temperature were made during the year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 25 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 17	0815	*49	*2.40	No other peak greater than base discharge.			

Minimum discharge, 0.17 ft^3/s, Aug. 8-10.

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	.80	.73	.73	e.79	1.1	1.0	2.4	1.3	1.5	.88	.49	.61
2	.78	.72	.70	e.76	1.0	1.0	2.2	1.2	1.3	.78	.43	.51
3	.75	.72	.72	e.74	.96	.99	1.9	1.2	1.1	.73	.42	.50
4	.73	.76	1.3	e.70	1.7	1.4	1.8	1.2	1.0	.77	.45	.50
5	.74	.76	.68	e.72	1.5	1.6	1.7	1.1	.99	.79	.48	.45
6	.74	.77	.65	e.72	1.3	1.2	1.7	1.1	.99	.71	.43	.45
7	.68	.77	.65	e.72	1.2	1.1	1.7	1.1	1.9	.69	.36	.44
8	.67	.78	.67	.76	1.2	1.1	1.6	1.1	1.1	.80	.32	.43
9	.71	.84	.69	.72	1.1	1.1	2.3	1.2	.98	.76	.32	.43
10	.72	1.2	.71	.70	1.1	1.0	2.0	1.1	.94	.89	.30	.46
11	.69	.74	.69	.75	.99	1.0	2.3	1.1	.91	.75	1.7	.40
12	.67	.70	.63	.72	.99	1.0	2.0	1.1	1.3	.67	.84	.37
13	.65	.69	.63	.70	.99	1.7	1.8	1.0	1.1	.64	1.6	.35
14	.65	.89	2.4	.70	1.0	1.2	1.6	1.0	.91	.61	.78	.37
15	.63	.74	.99	.81	1.0	1.2	1.8	1.0	.91	.60	.64	.33
16	.66	.71	1.1	.79	1.2	1.3	2.1	1.0	3.1	.59	.58	.34
17	.75	.69	8.4	.74	1.3	1.3	1.8	1.0	1.3	.58	.59	.32
18	.88	.68	1.6	.75	1.0	1.1	1.9	1.0	1.0	.71	.55	.33
19	.73	.66	1.2	2.4	1.6	1.1	1.7	1.0	.92	.67	.67	.34
20	.72	.67	e1.1	1.8	.99	1.0	1.6	1.1	.87	.61	.82	.52
21	.72	.66	e1.0	1.3	.95	6.2	1.6	2.0	.86	.56	.56	.49
22	.68	.63	e.96	e1.1	e1.0	2.9	1.6	2.5	1.0	.54	.50	.39
23	.68	.71	e.90	e1.0	1.1	2.1	1.6	1.7	1.5	.54	.51	.35
24	.73	.80	e.86	e.92	1.2	1.8	1.5	1.2	.92	.52	.49	.98
25	.77	.71	e.83	e.86	1.2	1.6	1.5	1.2	.86	.49	.47	1.1
26	.77	1.7	e.80	e.82	1.2	1.5	1.4	2.4	.82	.52	.44	.49
27	.77	.93	e.78	e.86	1.1	1.4	1.3	1.6	.80	.49	1.4	.44
28	.78	.81	e.76	.81	1.0	1.3	1.3	1.3	.77	.46	.67	.44
29	.78	.80	e.78	.92	---	2.6	1.3	1.2	.77	.57	.49	.43
30	.75	.81	e.80	1.9	---	7.1	1.3	1.1	.75	.58	1.9	.41
31	.73	---	e.80	1.3	---	2.9	---	1.0	---	.54	.80	---
TOTAL	22.51	23.78	35.51	29.28	31.97	54.79	52.3	39.1	33.17	20.04	21.00	13.97
MEAN	.73	.79	1.15	.94	1.14	1.77	1.74	1.26	1.11	.65	.68	.47
MAX	.88	1.7	8.4	2.4	1.7	7.1	2.4	2.5	3.1	.89	1.9	1.1
MIN	.63	.63	.63	.70	.95	.99	1.3	1.0	.75	.46	.30	.32
CFSM	.49	.54	.78	.64	.78	1.20	1.19	.86	.75	.44	.46	.32
IN.	.57	.60	.90	.74	.81	1.39	1.32	.99	.84	.51	.53	.35

e Estimated

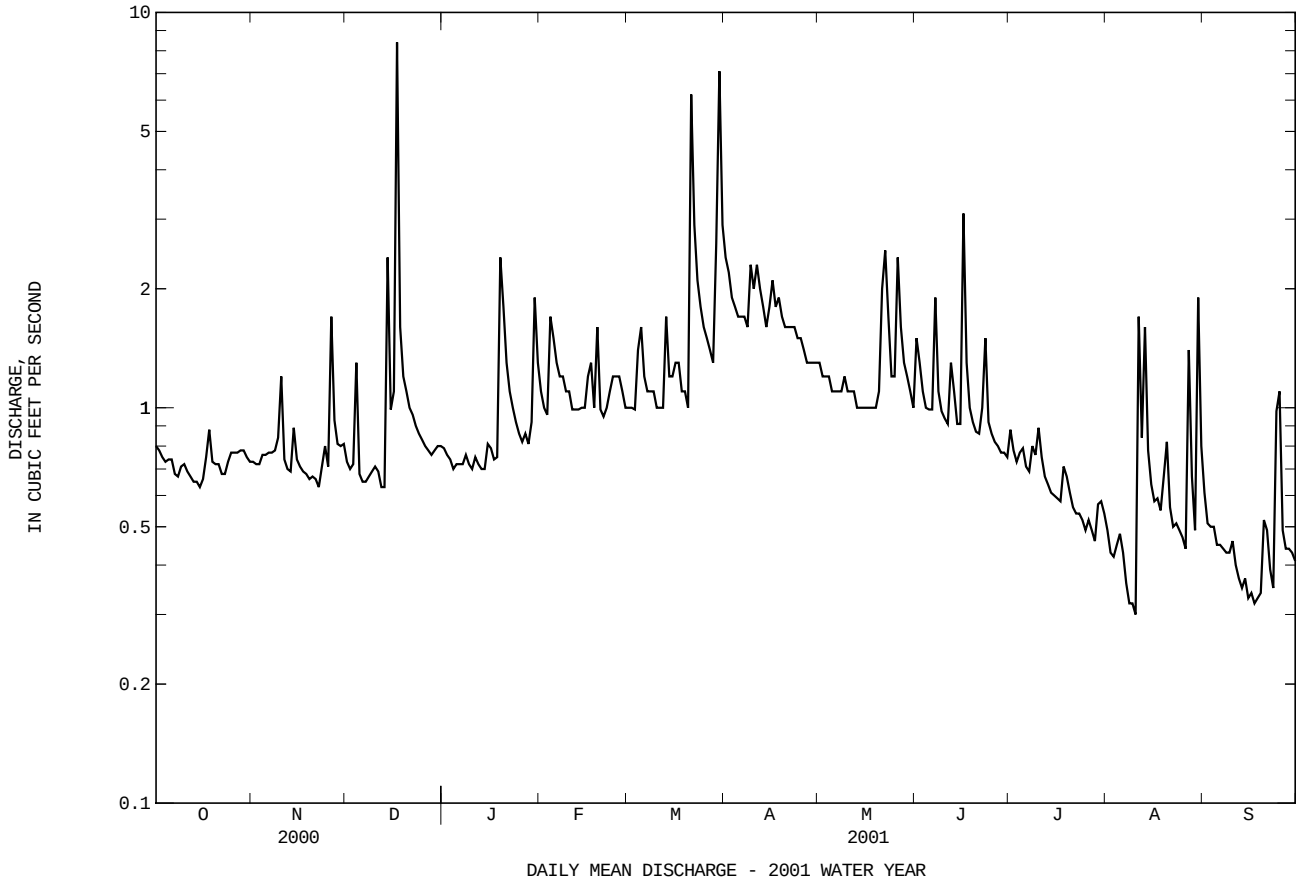
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 1969, 2000 - 2001, BY WATER YEAR (WY)

MEAN	.81	.90	1.13	1.06	1.25	1.70	1.68	1.49	1.08	.76	.94	.87
MAX	1.52	1.37	1.95	1.69	1.98	2.61	3.45	2.79	2.02	1.30	3.08	2.19
(WY)	2000	2000	2000	1968	2000	2000	2000	2000	1968	2000	1967	1968
MIN	.49	.44	.41	.46	.93	.96	1.01	.74	.49	.19	.12	.38
(WY)	1967	1966	1966	1966	1969	1966	1969	1969	1966	1966	1966	1966

01583580 BAISMAN RUN AT BROADMOOR, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1964 - 1969, 2000 - 2001	
ANNUAL TOTAL	610.33		377.42			
ANNUAL MEAN	1.67		1.03		1.15	
HIGHEST ANNUAL MEAN					1.85	2000
LOWEST ANNUAL MEAN					.61	1966
HIGHEST DAILY MEAN	8.4	Dec 17	8.4	Dec 17	41	Sep 10 1968
LOWEST DAILY MEAN	.63	Oct 15	.30	Aug 10	.00	(a)
ANNUAL SEVEN-DAY MINIMUM	.67	Oct 10	.34	Sep 13	.00	Aug 28 1966
MAXIMUM PEAK FLOW			49	Dec 17	(b)490	Sep 10 1968
MAXIMUM PEAK STAGE			2.40	Dec 17	5.43	Sep 10 1968
INSTANTANEOUS LOW FLOW			.17	(c)	.00	(d)
ANNUAL RUNOFF (CFSM)	1.13		.70		.78	
ANNUAL RUNOFF (INCHES)	15.45		9.55		10.58	
10 PERCENT EXCEEDS	3.0		1.7		1.9	
50 PERCENT EXCEEDS	1.4		.84		.91	
90 PERCENT EXCEEDS	.72		.49		.40	

a No flow Aug. 28-31, Sept. 1-4, 7-12, 1966.
b From rating curve extended above 30 ft^3/s on basis of culvert and flow-over-road measurement at gage height of 5.43 ft and on basis of slope-area measurement at gage height of 2.87 ft.
c Aug. 8-10.
d No flow Aug. 27 to Sept. 13, 1966.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01583600 BEAVERDAM RUN AT COCKEYSVILLE, MD

LOCATION.--Lat 39°29'08.1", long 76°38'44.6", Baltimore County, Hydrologic Unit 02060003, on left bank of bridge on Maryland Route 45 at Cockeysville, and 0.45 mi upstream from mouth.

DRAINAGE AREA.--20.9 mi^2.

PERIOD OF RECORD.--October 1982 to current year.

REVISED RECORDS.--WDR MD-DE-88: 1983-87.

GAGE.--Water-stage recorder. Datum of gage is 240.42 ft above sea level. Previously operated as a low-flow site during water years 1955-59 and 1962-64 at same site. Dec. 15, 1982 to June 15, 1993, water-stage recorder 600 ft downstream and 50 ft upstream from bridge on Beaverdam Run Lane at datum 1.38 ft lower.

REMARKS.--Records good except those for estimated daily discharges (ice effect), which are fair. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 650 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 17	1100	*991	*6.70	Aug 27	1945	896	6.26
Aug 11	1400	802	5.82	Aug 30	1745	673	5.19

Minimum discharge, 6.3 ft^3/s, Aug. 3, 9, 10, Sept. 16, 18, 19, 24.

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	19	14	14	13	25	17	38	16	31	18	8.8	12
2	17	14	15	13	21	17	33	16	25	11	8.0	9.8
3	15	14	15	13	19	17	29	16	19	9.8	7.0	8.8
4	14	15	13	13	18	36	26	16	15	13	34	8.3
5	16	14	14	13	61	42	24	17	15	15	12	7.7
6	16	12	13	13	30	22	25	18	16	11	7.8	7.5
7	16	13	13	13	24	19	24	16	55	11	7.3	7.4
8	16	12	13	15	21	18	22	14	20	14	7.6	7.2
9	15	18	12	14	20	18	58	16	18	20	7.8	8.0
10	16	38	13	13	22	18	42	13	17	19	7.3	11
11	17	16	13	12	18	17	56	12	12	12	148	7.9
12	15	15	12	13	17	18	33	13	47	9.8	30	7.2
13	15	13	13	12	19	45	27	11	25	9.5	61	7.5
14	17	21	98	12	20	20	23	11	16	9.7	22	8.4
15	16	14	23	13	21	21	26	11	16	11	12	7.8
16	13	13	31	13	33	24	37	10	132	9.7	11	7.6
17	17	13	344	13	32	23	27	11	32	8.7	11	7.5
18	22	13	39	13	20	20	30	13	19	13	11	7.5
19	16	14	26	94	18	17	21	14	17	11	14	7.0
20	16	13	23	62	18	17	20	18	24	9.9	19	12
21	16	13	e20	32	18	219	20	43	18	9.2	11	8.8
22	16	13	e18	22	16	60	20	60	22	9.9	10	8.5
23	15	13	e17	20	22	30	19	36	44	7.9	11	8.4
24	14	13	e16	18	18	24	18	17	19	8.1	12	32
25	14	18	e15	17	31	23	18	20	15	8.2	11	35
26	15	59	e14	16	27	19	17	77	12	7.9	11	9.4
27	14	20	e14	17	19	18	17	40	12	8.0	107	8.4
28	16	15	e13	16	17	18	17	25	12	8.2	22	8.2
29	15	18	13	15	---	63	16	17	11	8.8	10	8.5
30	14	17	14	83	---	221	16	17	11	8.6	68	8.6
31	13	---	14	34	---	53	---	15	---	9.1	17	---
TOTAL	486	508	925	680	645	1194	799	649	747	340.0	736.6	303.9
MEAN	15.7	16.9	29.8	21.9	23.0	38.5	26.6	20.9	24.9	11.0	23.8	10.1
MAX	22	59	344	94	61	221	58	77	132	20	148	35
MIN	13	12	12	12	16	17	16	10	11	7.9	7.0	7.0
CFSM	.75	.81	1.43	1.05	1.10	1.84	1.27	1.00	1.19	.52	1.14	.48
IN.	.87	.90	1.65	1.21	1.15	2.13	1.42	1.16	1.33	.61	1.31	.54

e Estimated

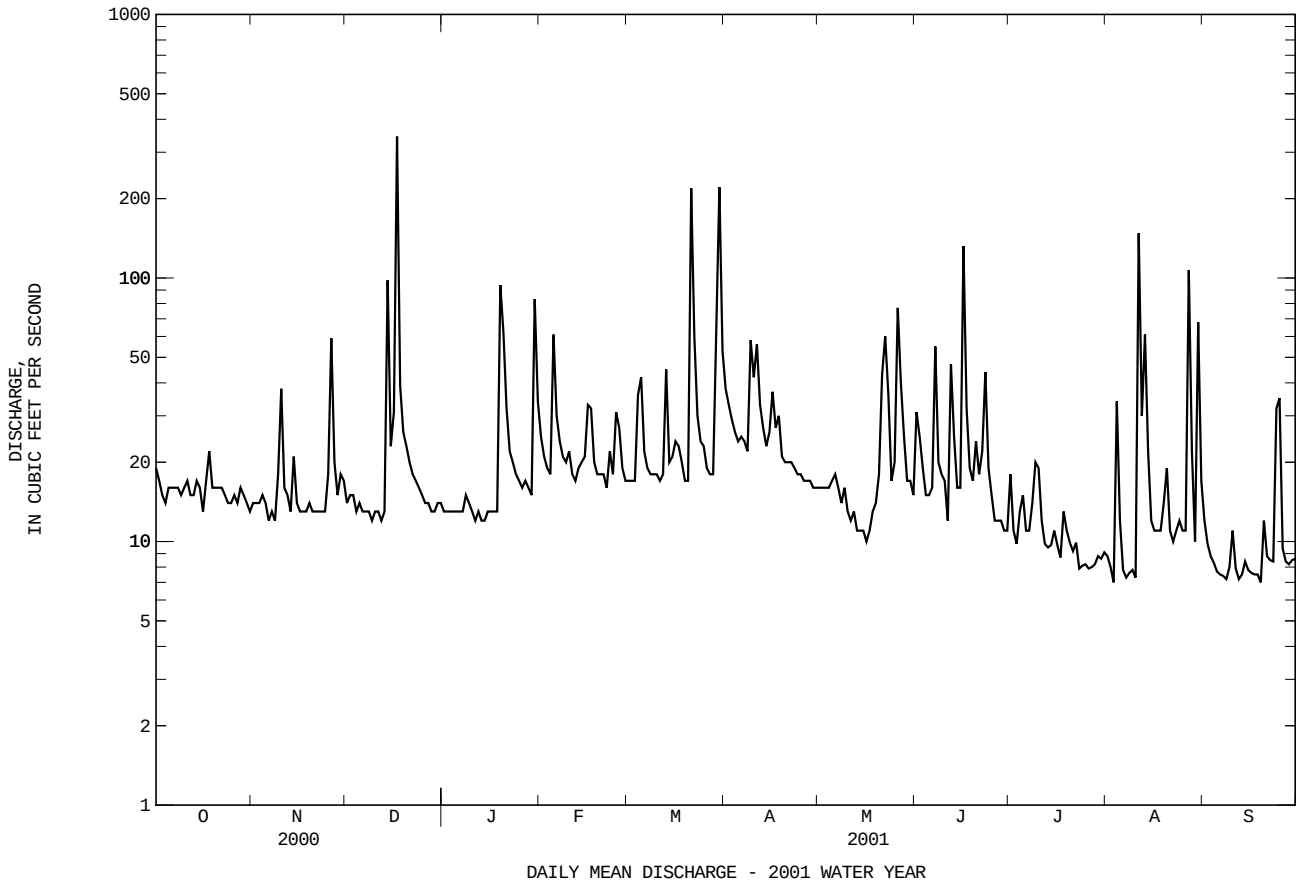
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 2001, BY WATER YEAR (WY)

MEAN	20.9	28.9	31.2	32.8	33.6	43.1	37.9	36.3	25.6	25.5	21.7	22.6
MAX	45.3	55.4	91.0	69.5	57.5	90.2	81.6	80.5	50.7	72.7	46.0	60.9
(WY)	1997	1997	1997	1996	1994	1994	1983	1989	1996	1996	1996	1999
MIN	10.4	14.1	12.7	16.9	18.5	21.4	18.5	14.5	9.23	8.94	10.0	7.29
(WY)	1983	1999	1999	1992	1992	1985	1985	1986	1986	1986	1985	1986

01583600 BEAVERDAM RUN AT COCKEYSVILLE, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1983 - 2001	
ANNUAL TOTAL	9832		8013.5			
ANNUAL MEAN	26.9		22.0		30.0	
HIGHEST ANNUAL MEAN					45.8	1996
LOWEST ANNUAL MEAN					17.2	1986
HIGHEST DAILY MEAN	344	Dec 17	344	Dec 17	903	Jan 19 1996
LOWEST DAILY MEAN	10	Aug 25	7.0	(a)	5.5	(b)
ANNUAL SEVEN-DAY MINIMUM	12	Aug 20	7.6	Sep 13	5.8	Aug 10 1986
MAXIMUM PEAK FLOW			991	Dec 17	(c)3360	Jul 1 1984
MAXIMUM PEAK STAGE			6.70	Dec 17	(d)12.10	Jul 1 1984
INSTANTANEOUS LOW FLOW			6.3	(f)	4.1	Oct 1 1986
ANNUAL RUNOFF (CFSM)	1.29		1.05		1.44	
ANNUAL RUNOFF (INCHES)	17.50		14.26		19.51	
10 PERCENT EXCEEDS	42		34		51	
50 PERCENT EXCEEDS	19		16		21	
90 PERCENT EXCEEDS	13		8.8		11	

a Aug. 3, Sept. 19.
b Aug. 16, 1986, Sept. 1, 1992.
c From rating curve extended above 1,000 ft^3/s.
d From floodmarks.
f Aug. 3, 9, 10, Sept. 16, 18, 19, 24.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01583980 MINEBANK RUN AT LOCH RAVEN, MD

LOCATION.--Lat 39°25'00.0", long 76°32'46.7", Baltimore County, Hydrologic Unit 02060003, on left bank 15 ft downstream from bridge on lane leading to Cromwell Valley Park-Willow Grove Farm, 0.3 mi off Cromwell Bridge Road, 0.4 mi west of Loch Raven, and 0.6 mi upstream from mouth.

DRAINAGE AREA.--2.90 mi^2.

PERIOD OF RECORD.--October 1996 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 185 ft above sea level, from topographic map.

REMARKS.--Records good except those above 150 ft^3/s and estimated daily discharges (questionable record, ice effect), which are fair. Several measurements of water temperature were made during the year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
July 10	1700	*239	*3.58	No peak greater than base discharge.			

Minimum discharge, unknown.

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	.99	.50	.72	e.80	1.6	1.3	4.5	e1.4	4.3	1.8	.78	.85
2	.95	.50	.72	e.74	1.5	1.3	3.7	1.3	2.8	1.6	.72	.81
3	.85	.50	.72	e.73	1.4	1.3	3.0	1.3	1.7	1.3	.65	.62
4	.81	.50	.72	e.73	1.2	4.5	2.8	1.3	1.4	1.5	.57	.57
5	.81	.50	.67	e.73	13	5.4	2.6	1.3	1.1	3.6	.54	.57
6	.77	.50	.64	e.73	3.1	1.6	2.4	1.3	.95	.96	.50	.57
7	.72	.50	.64	1.1	1.9	1.4	2.1	1.3	7.1	.81	.50	.57
8	.72	.50	.64	2.0	1.6	1.2	2.0	1.3	1.4	3.6	.54	.57
9	.72	1.0	.64	1.0	1.5	1.7	3.6	1.9	1.2	2.6	.53	.57
10	.67	3.2	.64	.81	1.4	1.4	2.7	1.3	.95	6.5	.50	2.0
11	.69	.72	.61	.81	1.3	1.2	6.7	1.3	.95	1.1	4.5	.79
12	.69	.72	.67	.81	1.3	1.4	3.0	1.3	1.7	.95	1.2	.70
13	.68	.68	.72	.81	1.7	7.0	2.5	1.2	1.4	.81	4.8	.57
14	.68	1.2	11	.75	1.6	1.6	2.0	1.1	1.1	.81	1.0	1.4
15	.66	.68	1.3	.72	1.7	3.2	2.9	1.1	.99	.81	.88	.72
16	.64	.64	2.8	.72	4.6	1.8	4.6	1.1	16	.81	.81	.65
17	.64	.64	26	.72	3.7	2.0	2.9	1.1	2.0	.81	.81	.57
18	.74	.64	4.1	.72	1.4	1.5	4.2	1.1	1.5	4.4	.81	.54
19	.57	.64	2.6	13	1.1	1.4	2.3	1.0	1.3	1.0	1.1	.50
20	.57	.64	2.0	7.0	1.1	1.3	2.0	3.0	1.6	.95	2.9	3.9
21	.53	.64	1.7	3.0	1.1	30	2.0	7.0	1.6	.81	.84	1.5
22	.50	.64	1.5	1.4	1.1	7.0	1.8	11	1.3	.81	e.52	.80
23	.50	.64	1.3	1.3	1.9	4.2	e1.7	3.2	2.2	.81	e.52	.72
24	.50	.64	e1.2	1.2	1.2	3.4	e1.7	1.3	1.3	.81	e.52	.93
25	.50	.72	e1.1	1.1	4.6	2.9	e1.6	2.0	1.3	.79	e.52	3.4
26	.50	5.6	e.96	.99	2.3	2.6	e1.6	15	1.1	.79	e.52	.81
27	.50	.95	e.92	.95	1.4	2.1	e1.5	8.7	.95	.78	e.52	.73
28	.50	.76	e.86	.95	1.3	1.7	e1.5	2.8	.95	.81	.50	2.9
29	.50	1.2	e.92	.88	---	11	e1.4	1.7	1.1	.80	.50	.81
30	.50	.87	e.90	12	---	25	e1.4	1.2	1.3	.76	.50	.62
31	.50	---	e.84	2.3	---	6.3	---	1.1	---	.81	1.1	---
TOTAL	20.10	28.06	70.75	61.50	62.6	139.7	78.7	82.0	64.54	45.50	31.20	31.26
MEAN	.65	.94	2.28	1.98	2.24	4.51	2.62	2.65	2.15	1.47	1.01	1.04
MAX	.99	5.6	26	13	13	30	6.7	15	16	6.5	4.8	3.9
MIN	.50	.50	.61	.72	1.1	1.2	1.4	1.0	.95	.76	.50	.50
CFSM	.22	.32	.79	.68	.77	1.55	.90	.91	.74	.51	.35	.36
IN.	.26	.36	.91	.79	.80	1.79	1.01	1.05	.83	.58	.40	.40

e Estimated

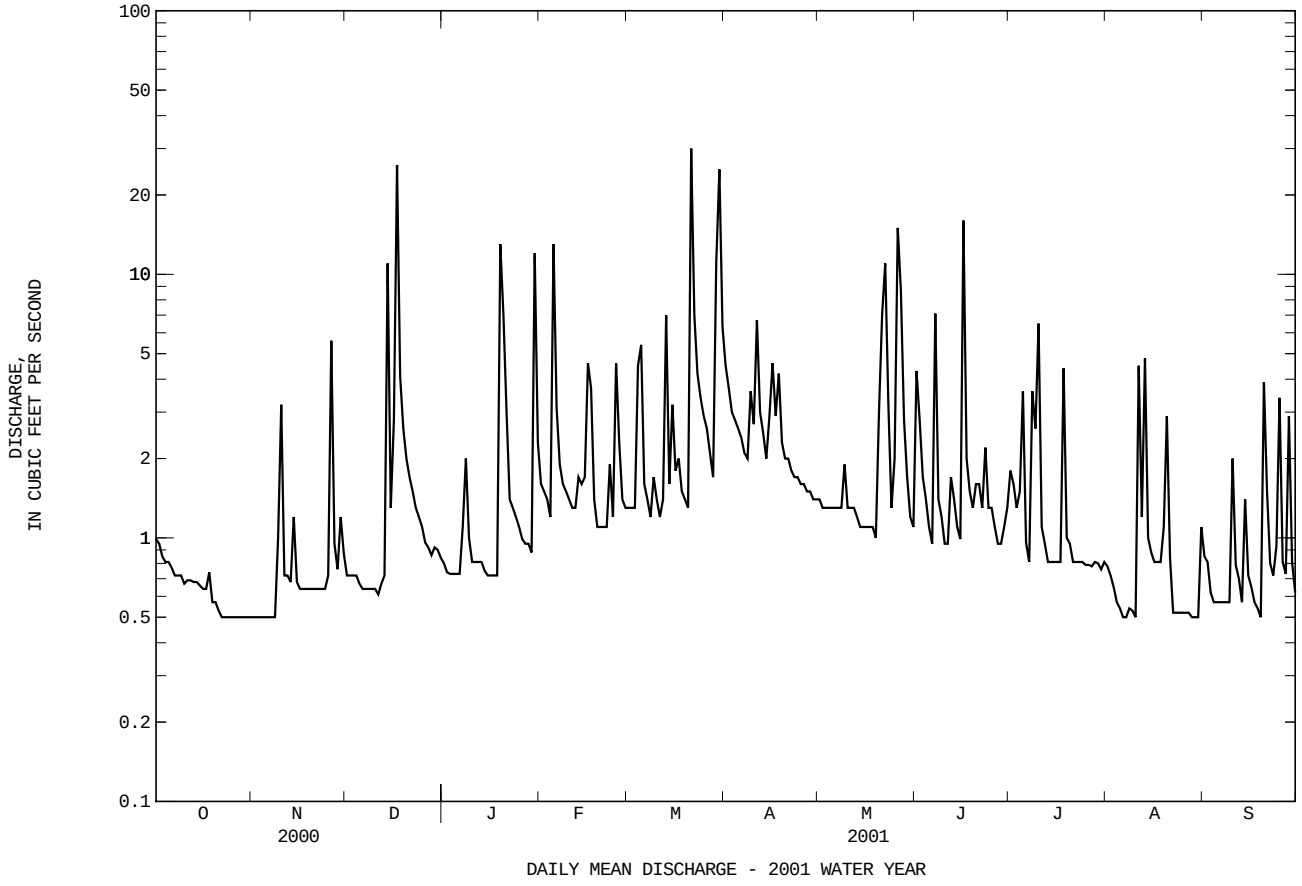
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1997 - 2001, BY WATER YEAR (WY)

MEAN	1.93	2.64	3.59	3.73	4.30	5.70	3.53	3.01	2.86	2.11	2.30	4.31
MAX	3.69	5.01	9.99	5.83	8.31	9.03	4.32	4.94	5.51	4.37	4.55	11.6
(WY)	1997	1998	1997	1998	1998	1998	1997	1998	1998	2000	1999	1999
MIN	.65	.78	.70	1.90	2.24	3.34	2.59	1.48	1.29	.96	1.01	1.04
(WY)	2001	1999	1999	2000	2001	1999	1999	1999	1999	1997	2001	2001

01583980 MINEBANK RUN AT LOCH RAVEN, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1997 - 2001	
ANNUAL TOTAL	988.16		715.91			
ANNUAL MEAN	2.70		1.96		3.33	
HIGHEST ANNUAL MEAN					4.37	1997
LOWEST ANNUAL MEAN					1.96	2001
HIGHEST DAILY MEAN	30	Mar 21	30	Mar 21	150	Sep 16 1999
LOWEST DAILY MEAN	.50	(a)	.50	(b)	.31	(c)
ANNUAL SEVEN-DAY MINIMUM	.50	Oct 22	.50	Oct 22	.41	Aug 7 1999
MAXIMUM PEAK FLOW			239	Jul 10	(d)1960	Sep 2 1997
MAXIMUM PEAK STAGE			3.58	Jul 10	7.94	Sep 2 1997
INSTANTANEOUS LOW FLOW			UNKNOWN		.08	Jul 20 1999
ANNUAL RUNOFF (CFSM)	.93		.68		1.15	
ANNUAL RUNOFF (INCHES)	12.68		9.18		15.59	
10 PERCENT EXCEEDS	5.3		3.7		6.3	
50 PERCENT EXCEEDS	1.5		1.1		1.6	
90 PERCENT EXCEEDS	.64		.56		.65	

a Oct. 22-31, Nov. 1-8.
b Cot. 22-31, Nov. 1-8, Aug. 6-10, 28-30, Sept. 19.
c July 21, Aug. 12, 13, 1999.
d From rating curve extended above 150 ft^3/s on basis of contracted-opening and flow-over-road measurement of peak flow.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01584050 LONG GREEN CREEK AT GLEN ARM, MD

LOCATION.--Lat 39°27'16.9", long 76°28'44.0", Baltimore County, Hydrologic Unit 02060003, on right bank 0.5 mi downstream from bridge on Glen Arm Road, 0.6 mi upstream from State Highway 147 (Harford Road), 0.8 mi east of Glen Arm, and 1.6 mi upstream from mouth.

DRAINAGE AREA.--9.40 mi^2.

PERIOD OF RECORD.--October 1975 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 230 ft above sea level, from topographic map.

REMARKS.--Records good except those for estimated daily discharges (missing or questionable data), which are fair/poor. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 300 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 21	1630	*201	*3.12	No peak greater than base discharge.			

Minimum discharge, unknown.

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	4.9	4.0	4.0	e3.9	8.1	6.9	14	7.6	7.0	4.4	2.4	e2.1
2	4.7	3.8	3.9	e3.9	7.5	6.7	12	7.4	8.0	4.3	2.3	e2.0
3	4.5	3.8	3.7	e3.9	6.7	6.5	11	6.8	6.3	4.1	2.2	e2.0
4	4.3	3.8	3.7	e3.8	6.3	7.7	11	6.5	5.7	4.3	2.7	e1.9
5	4.4	3.7	3.8	e3.8	24	11	10	6.4	5.6	5.2	2.4	e1.9
6	4.4	3.7	3.7	e4.0	12	8.2	10	6.2	5.4	4.3	2.3	e1.9
7	4.2	3.7	3.7	e3.9	e9.4	7.5	10	6.1	7.9	3.8	2.1	e1.8
8	4.0	3.5	3.7	e3.8	e8.3	7.1	9.8	6.0	5.6	4.6	1.9	e1.8
9	4.1	3.8	3.5	e3.8	8.1	7.2	13	6.1	5.2	4.0	1.9	e1.8
10	4.1	6.1	3.6	e3.8	8.0	6.7	13	5.8	5.0	3.7	1.8	e3.5
11	4.2	3.6	3.8	e3.9	7.0	6.6	16	5.6	4.8	3.7	8.0	e2.5
12	3.9	3.6	3.6	e4.2	6.8	6.5	13	5.6	13	3.4	5.1	e2.1
13	3.9	3.6	3.5	e3.9	7.1	12	12	5.3	10	3.3	3.6	e2.0
14	3.8	4.2	20	e3.9	7.2	7.9	11	5.2	5.8	3.3	3.2	e2.8
15	3.7	3.5	6.7	e3.9	7.1	7.5	11	5.2	5.5	3.2	2.8	e2.3
16	3.8	3.4	7.2	e4.3	8.5	7.7	12	5.1	12	3.1	2.6	e2.0
17	4.0	3.5	58	e4.0	10	7.4	11	5.3	8.4	3.1	2.5	e1.8
18	4.5	3.5	10	e3.9	7.5	6.9	13	5.5	6.0	3.2	2.5	e1.8
19	3.9	3.5	7.9	e22	7.1	6.7	10	5.6	5.5	3.4	2.6	e1.8
20	3.7	3.5	6.9	e14	6.9	6.6	9.9	5.6	5.3	3.2	2.8	e3.7
21	3.7	3.6	6.2	e7.0	6.4	61	9.7	7.9	5.4	2.9	2.4	e2.6
22	3.6	3.5	6.0	e6.0	6.0	21	9.3	9.2	5.2	2.9	2.2	e2.1
23	3.5	3.5	5.6	e5.5	6.9	12	9.2	9.7	6.0	2.8	2.2	e1.9
24	3.7	3.5	5.3	e5.0	6.2	10	8.9	5.9	5.3	2.8	e2.2	e2.4
25	3.7	3.6	4.9	e4.8	8.1	11	8.5	5.8	4.9	2.7	e2.1	e4.4
26	3.7	14	5.0	e4.7	9.5	11	8.2	15	4.7	2.8	e2.0	e3.2
27	3.8	e5.8	4.4	e4.6	7.7	10	8.2	e11	4.6	2.8	e1.9	e2.5
28	3.7	4.9	e4.2	e4.6	7.2	9.6	7.9	9.5	4.5	2.4	e2.1	e2.2
29	3.7	4.4	e4.1	e4.5	---	12	7.7	7.2	4.3	2.6	e1.9	e2.1
30	4.0	4.6	e4.0	e25	---	68	7.7	6.4	4.2	2.9	e3.0	e2.3
31	4.1	---	e4.0	e11	---	17	---	5.9	---	2.6	e2.3	---
TOTAL	124.2	127.2	218.6	189.3	231.6	393.9	318.0	212.4	187.1	105.8	82.0	69.2
MEAN	4.01	4.24	7.05	6.11	8.27	12.7	10.6	6.85	6.24	3.41	2.65	2.31
MAX	4.9	14	58	25	24	68	16	15	13	5.2	8.0	4.4
MIN	3.5	3.4	3.5	3.8	6.0	6.5	7.7	5.1	4.2	2.4	1.8	1.8
CFSM	.43	.45	.75	.65	.88	1.35	1.13	.73	.66	.36	.28	.25
IN.	.49	.50	.87	.75	.92	1.56	1.26	.84	.74	.42	.32	.27

e Estimated

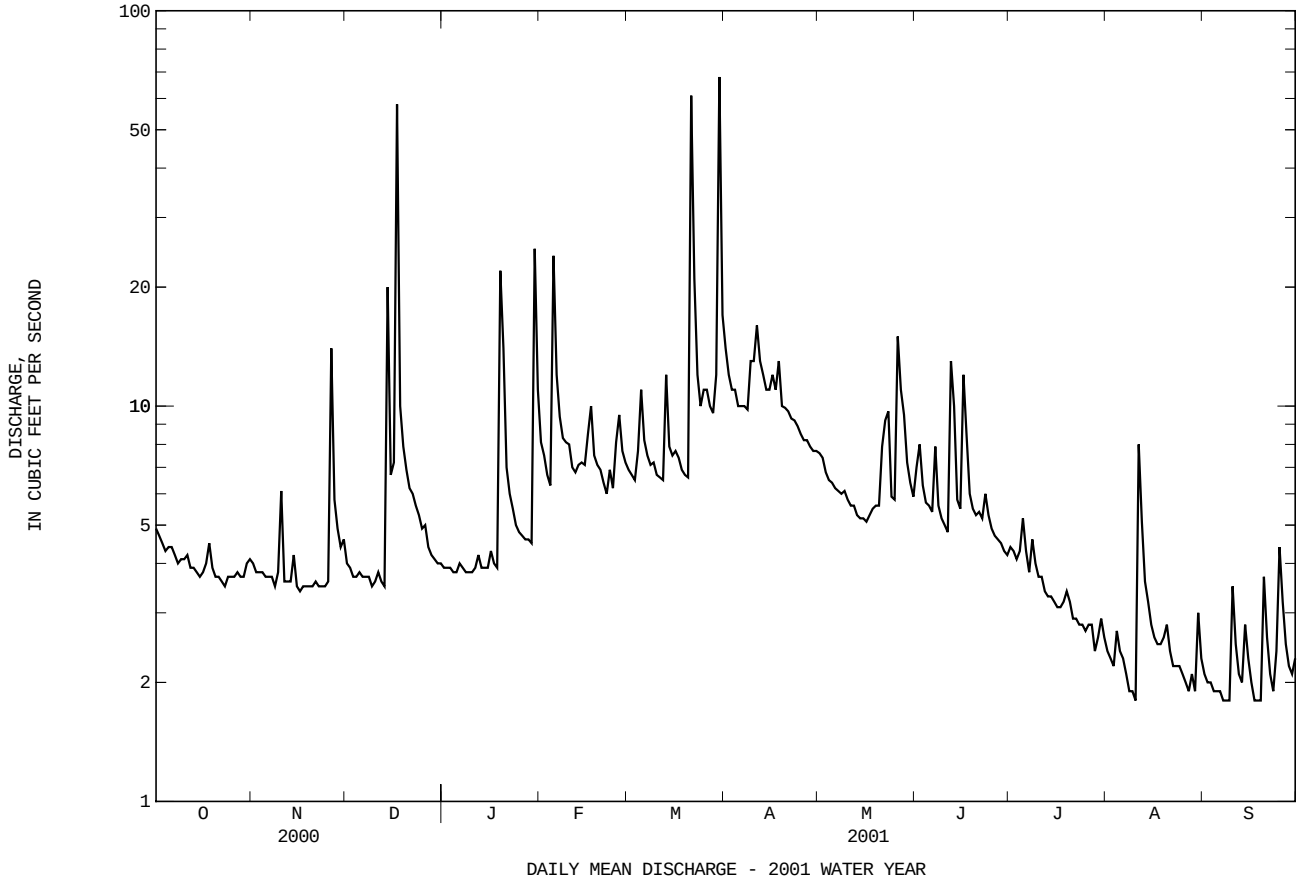
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1976 - 2001, BY WATER YEAR (WY)

MEAN	7.79	8.85	11.5	14.5	14.5	17.0	14.2	12.6	9.92	8.70	7.47	8.03
MAX	25.1	18.0	33.0	38.4	39.3	39.2	35.3	28.1	18.5	28.0	26.9	32.2
(WY)	1980	1980	1997	1979	1979	1994	1983	1989	1996	1989	1978	1979
MIN	2.85	3.05	3.43	3.67	6.16	6.02	7.35	4.79	3.43	2.07	2.65	2.31
(WY)	1998	1982	1999	1981	1992	1981	1999	1999	1999	1999	2001	2001

01584050 LONG GREEN CREEK AT GLEN ARM, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1976 - 2001	
ANNUAL TOTAL	3458.8		2259.3			
ANNUAL MEAN	9.45		6.19		11.3	
HIGHEST ANNUAL MEAN					18.1	1979
LOWEST ANNUAL MEAN					5.33	1981
HIGHEST DAILY MEAN	111	Mar 21	68	Mar 30	408	Jan 26 1978
LOWEST DAILY MEAN	3.4	Nov 16	1.8	(a)	1.2	(b)
ANNUAL SEVEN-DAY MINIMUM	3.5	Nov 15	1.9	Sep 3	1.3	Aug 7 1999
MAXIMUM PEAK FLOW			201	Mar 21	(c)3250	Jul 1 1984
MAXIMUM PEAK STAGE			3.12	Mar 21	6.70	Jul 1 1984
INSTANTANEOUS LOW FLOW			UNKNOWN		(d)1.0	Jan 29 1977
ANNUAL RUNOFF (CFSM)	1.01		.66		1.20	
ANNUAL RUNOFF (INCHES)	13.69		8.94		16.26	
10 PERCENT EXCEEDS	16		11		18	
50 PERCENT EXCEEDS	7.4		4.6		8.2	
90 PERCENT EXCEEDS	3.7		2.3		3.4	

a Aug. 10, Sept. 7 - 9, 17 - 19.
b Aug. 7, 12, 13, 1999.
c From rating curve extended above 1,300 ft^3/s.
d Result of freezeup.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01584500 LITTLE GUNPOWDER FALLS AT LAUREL BROOK, MD

LOCATION.--Lat 39°30'19.2", long 76°25'54.4", Baltimore County, Hydrologic Unit 02060003, on right bank 700 ft upstream from Laurel Brook, 750 ft upstream from bridge on Bottom Road, 5 mi southwest of Bel Air, and 10.5 mi upstream from mouth.

DRAINAGE AREA.--36.1 mi^2.

PERIOD OF RECORD.--October 1926 to September 1970, October 1998 to current year. Monthly discharge only for some periods, published in WSP 1302. Annual maximums, water years 1971-86.

REVISED RECORDS.--WSP 726: 1927-31, drainage area. WSP 1502: 1936 (M), 1944-46, 1947-48 (P), 1949 (M), 1950-51.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 261.43 ft above mean sea level (city of Baltimore benchmark).

REMARKS.--Records good except those for estimated daily discharges (ice effect, questionable record), which are fair. Several measurements of water temperature were made during the year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,400 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 21	1900	*703	*3.98	No peak greater than base discharge.			

Minimum discharge, unknown.

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	25	20	24	e25	46	33	62	34	30	20	14	16
2	25	20	23	e25	40	33	54	33	41	21	e13	15
3	24	20	22	e25	37	32	50	32	32	19	e13	15
4	23	20	23	e25	34	35	47	31	29	19	17	14
5	23	20	22	e25	73	67	45	31	27	23	15	14
6	23	20	22	e25	62	45	46	30	26	20	14	e13
7	23	20	21	e25	49	38	46	29	32	18	e13	e13
8	22	20	21	e25	45	36	44	29	27	21	e13	e12
9	22	20	21	e25	41	35	46	32	25	20	e13	e12
10	22	37	21	e25	43	34	54	30	24	18	e13	22
11	22	25	21	27	37	32	61	28	23	19	101	21
12	22	22	21	27	34	32	58	27	30	17	36	e13
13	22	22	21	26	35	56	49	27	61	17	26	14
14	21	24	101	26	37	40	45	26	28	16	33	14
15	21	24	41	27	39	36	43	26	26	16	19	e13
16	21	22	35	28	40	36	58	26	35	16	18	e13
17	21	22	262	27	58	39	50	26	38	15	17	e12
18	24	21	63	26	40	35	57	27	27	17	17	e11
19	25	21	e43	156	36	33	47	28	24	18	16	e11
20	23	21	e38	120	36	32	44	27	23	17	18	17
21	22	21	e35	52	34	231	43	41	29	15	17	18
22	21	21	e31	e39	30	126	42	50	24	15	16	15
23	21	21	e32	e33	39	59	40	70	33	15	15	e13
24	21	21	e29	e32	33	49	38	34	26	15	e14	15
25	21	21	e28	e31	35	45	37	31	23	15	e13	25
26	21	66	e27	e30	49	43	37	71	22	14	e13	17
27	21	35	e27	30	40	40	36	60	21	14	18	15
28	20	27	e26	29	36	39	35	49	20	14	20	15
29	20	25	e26	29	---	42	34	35	20	15	15	e14
30	20	26	e26	187	---	276	34	32	19	15	20	e13
31	20	---	e26	70	---	78	---	29	---	15	21	---
TOTAL	682	725	1179	1302	1158	1787	1382	1081	845	529	621	445
MEAN	22.0	24.2	38.0	42.0	41.4	57.6	46.1	34.9	28.2	17.1	20.0	14.8
MAX	25	66	262	187	73	276	62	71	61	23	101	25
MIN	20	20	21	25	30	32	34	26	19	14	13	11
CFSM	.61	.67	1.05	1.16	1.15	1.60	1.28	.97	.78	.47	.55	.41
IN.	.70	.75	1.21	1.34	1.19	1.84	1.42	1.11	.87	.55	.64	.46

e Estimated.

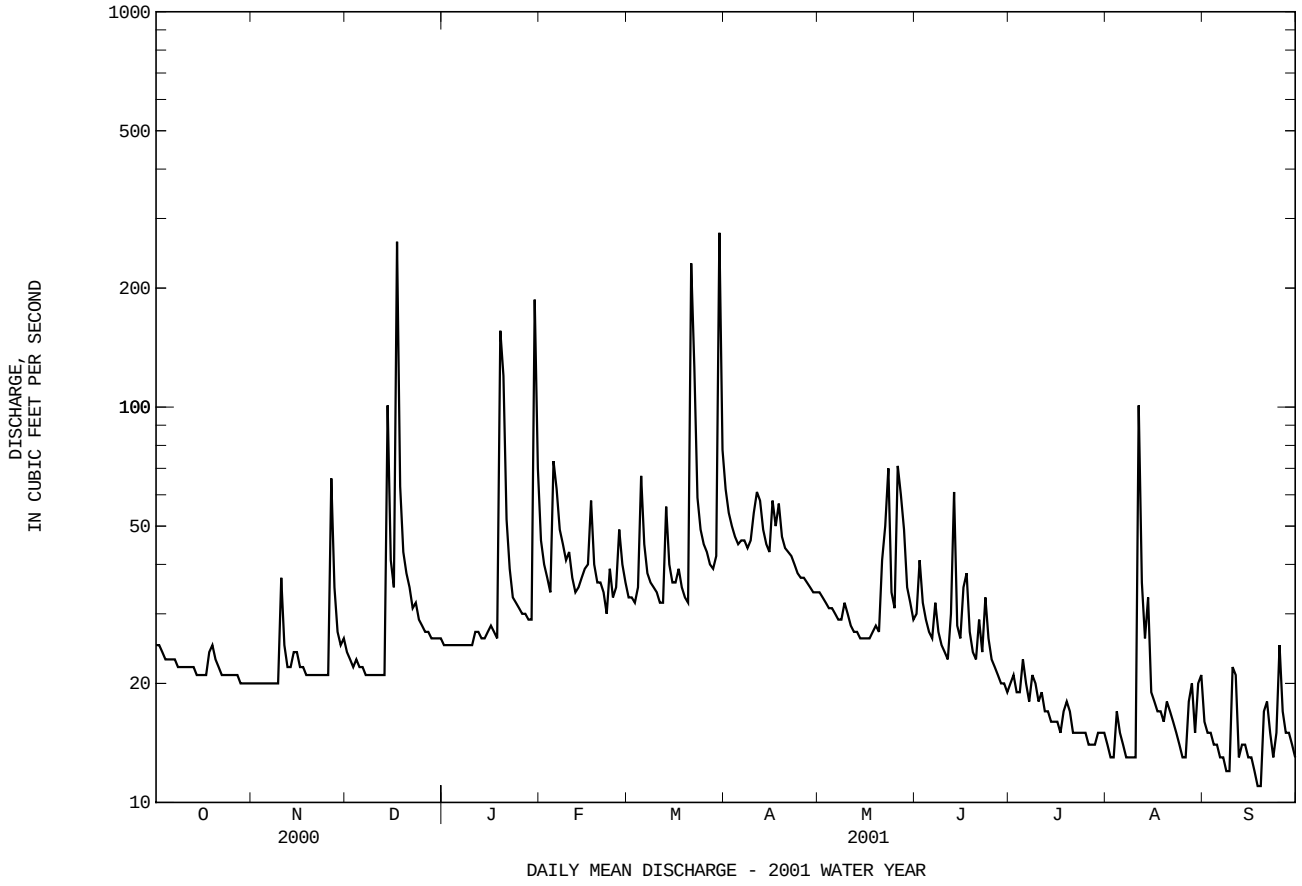
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1927 - 1970, 1999 - 2001, BY WATER YEAR (WY)

MEAN	30.2	38.7	40.2	49.5	56.9	59.3	59.1	49.1	41.7	35.0	37.9	32.0
MAX	81.8	118	80.9	110	115	129	120	133	161	88.5	215	117
(WY)	1930	1927	1951	1936	1936	1936	1952	1952	1928	1952	1928	1934
MIN	7.83	9.29	12.1	16.2	20.8	29.1	23.8	17.2	14.3	7.44	5.33	8.79
(WY)	1932	1932	1932	1966	1932	1931	1963	1963	1969	1966	1966	1932

01584500 LITTLE GUNPOWDER FALLS AT LAUREL BROOK, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1927 - 1970, 1999 - 2001	
ANNUAL TOTAL	16839		11736			
ANNUAL MEAN	46.0		32.2		43.8	
HIGHEST ANNUAL MEAN					81.5	1952
LOWEST ANNUAL MEAN					20.2	1931
HIGHEST DAILY MEAN	376	Mar 21	276	Mar 30	2800	Aug 23 1933
LOWEST DAILY MEAN	20	(a)	(e)11	(b)	(e)3.0	(c)
ANNUAL SEVEN-DAY MINIMUM	20	Oct 28	13	Sep 13	3.2	Sep 6 1966
MAXIMUM PEAK FLOW			703	Mar 21	(d)9200	Aug 23 1933
MAXIMUM PEAK STAGE			3.98	Mar 21	10.30	Aug 23 1933
INSTANTANEOUS LOW FLOW			UNKNOWN		(f)3.1	(g)
ANNUAL RUNOFF (CFSM)	1.27		.89		1.21	
ANNUAL RUNOFF (INCHES)	17.35		12.09		16.50	
10 PERCENT EXCEEDS	71		49		72	
50 PERCENT EXCEEDS	37		26		32	
90 PERCENT EXCEEDS	21		15		15	

a Aug. 26, Sept. 16-18, 22, 23, Oct. 28-31, Nov. 1-9.
e Estimated.
b Sept. 18, 19.
c Sept. 7-11, 1966.
d From rating curve extended above 2,300 ft^3/s on basis of slope-area measurement of peak flow.
f Minimum recorded as a result of freezeup.
g Feb. 15, 1931, March 15, 1932, and Feb. 20, 1947.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01585090 WHITEMARSH RUN NEAR FULLERTON, MD

LOCATION.--Lat 39°22'46.5", long 76°29'44.9", Baltimore County, Hydrologic Unit 02060003, on right bank 200 ft downstream of Route 43 bridge, 1.0 mi west of White Marsh. and 5.0 mi upstream from mouth.

DRAINAGE AREA.--2.73 mi^2.

PERIOD OF RECORD.--January 1995 to current year.

GAGE.--Water-stage recorder. Datum of gage is 125 ft above sea level, from topographic map.

REMARKS.--Records good except those for estimated daily discharges (ice effect, missing record, backwater), which are poor. Several measurements of water temperature were made during the year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 750 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 17	0600	*452	*3.50	No peak greater than base discharge.			

Minimum discharge, unknown.

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	e.80	e.35	.82	.68	1.4	1.1	3.9	1.3	14	3.6	.91	1.5
2	e.70	e.38	.68	.73	1.4	1.1	3.2	1.3	6.0	1.5	1.2	.80
3	.60	e.42	.59	.67	1.0	1.0	2.7	1.1	1.7	1.3	1.2	.72
4	1.5	e.35	.56	.60	.86	5.6	2.3	1.2	1.4	3.9	1.1	.90
5	.75	e.35	.82	.58	30	6.3	1.8	1.2	1.4	6.5	1.1	1.3
6	e.62	.36	.60	.82	3.6	1.6	1.9	1.4	1.3	1.9	1.1	1.6
7	e.50	.36	.52	.69	1.9	1.2	1.9	1.7	10	1.1	1.1	1.9
8	e.46	.36	.49	3.7	1.4	1.0	1.7	1.7	1.5	5.3	1.1	1.8
9	e.45	2.6	.49	5.1	1.2	1.3	6.5	1.9	1.2	5.7	1.4	1.7
10	e.45	7.2	.57	.64	1.2	.97	4.0	1.6	1.0	15	2.3	3.5
11	e.50	.91	.73	.62	.95	.86	13	1.4	1.3	2.9	5.8	1.6
12	e.50	.86	.73	.60	.97	1.4	4.3	1.2	1.3	1.9	2.8	2.8
13	e.48	1.0	.61	.58	2.0	11	2.7	1.1	1.3	1.4	12	e.80
14	e.44	4.3	27	.58	1.4	1.4	2.1	1.1	.90	1.9	2.4	e8.0
15	e.42	.82	1.4	1.1	1.7	4.5	3.5	1.1	1.3	.78	2.1	e.86
16	e.41	.64	3.4	1.0	7.1	2.1	4.8	.89	30	.76	2.1	e.64
17	e.41	.60	64	.57	6.1	1.7	3.3	.74	3.9	.96	1.7	e.54
18	2.5	.56	2.7	.58	1.6	1.2	5.3	1.3	2.3	2.3	.86	e.50
19	1.2	.56	1.4	27	1.3	1.1	2.2	1.0	1.7	1.4	1.5	e.70
20	e.50	.57	1.3	14	1.2	1.1	2.1	3.5	5.7	e1.1	3.8	e20
21	e.44	.62	1.1	6.2	1.1	62	1.8	11	6.8	e1.0	1.1	e4.0
22	e.43	.56	.93	2.4	1.1	8.0	1.7	19	1.6	e.96	.94	e1.2
23	e.42	.56	.68	2.0	3.6	3.0	1.7	4.3	4.9	e.94	1.8	e.90
24	e.42	.56	.70	1.9	1.7	2.3	1.8	1.7	1.5	e.91	e1.0	e12
25	e.43	.93	.70	1.6	6.8	1.8	1.6	2.9	1.3	e.88	e.94	e17
26	e.48	24	.68	1.5	2.9	1.6	1.7	29	1.3	1.2	e.91	e4.0
27	e.49	1.4	.69	1.4	1.5	1.6	1.6	19	1.9	.94	e1.0	e1.2
28	e.50	1.0	.74	1.4	1.2	1.6	1.4	4.1	1.9	.71	e1.1	e1.0
29	e.41	2.5	.67	1.3	---	23	1.3	2.1	2.0	1.6	e.92	e.90
30	e.39	1.6	.73	21	---	53	1.3	1.4	1.4	1.5	e1.8	e.80
31	e.41	---	.73	2.4	---	5.9	---	1.4	---	.99	2.1	---
TOTAL	19.01	57.28	117.76	103.94	88.18	211.33	89.1	123.63	113.80	72.83	61.18	95.16
MEAN	.61	1.91	3.80	3.35	3.15	6.82	2.97	3.99	3.79	2.35	1.97	3.17
MAX	2.5	24	64	27	30	62	13	29	30	15	12	20
MIN	.39	.35	.49	.57	.86	.86	1.3	.74	.90	.71	.86	.50
CFSM	.22	.70	1.39	1.23	1.15	2.50	1.09	1.46	1.39	.86	.72	1.16
IN.	.26	.78	1.60	1.42	1.20	2.88	1.21	1.68	1.55	.99	.83	1.30

e Estimated

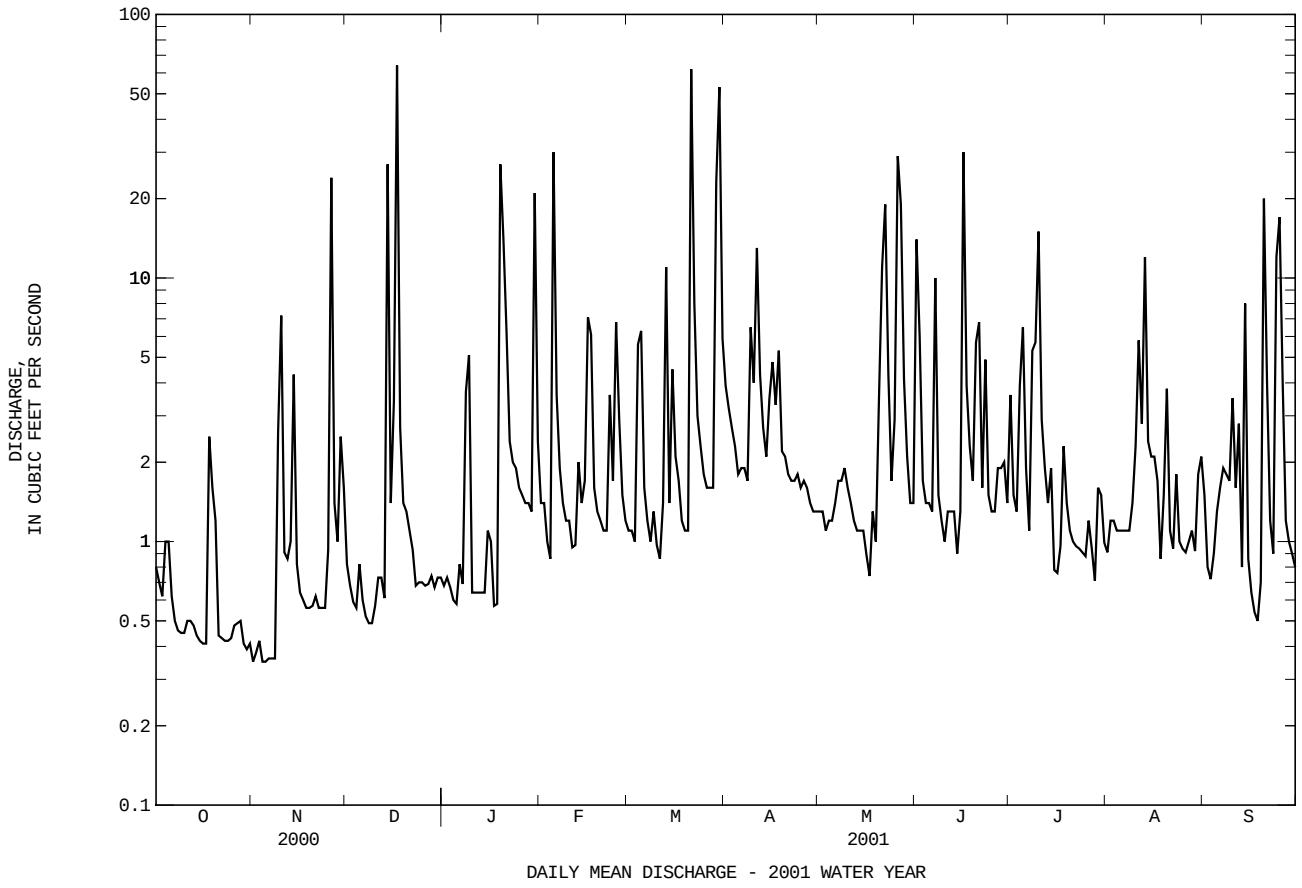
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1995 - 2001, BY WATER YEAR (WY)

MEAN	4.18	4.14	4.72	6.92	5.45	7.49	4.03	4.11	4.58	3.71	3.49	5.65
MAX	10.8	7.49	12.6	13.2	12.0	13.1	6.58	6.88	13.5	10.3	9.81	20.2
(WY)	1996	1998	1997	1996	1998	1998	1996	1996	1996	2000	1999	1999
MIN	.61	1.02	.95	2.44	2.95	4.61	1.99	1.64	1.44	.41	.96	2.41
(WY)	2001	1999	1999	2000	1995	1995	1995	1997	1995	1997	1995	1995

01585090 WHITEMARSH RUN NEAR FULLERTON, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1995 - 2001	
ANNUAL TOTAL	1602.71		1153.20			
ANNUAL MEAN	4.38		3.16		5.12	
HIGHEST ANNUAL MEAN					7.35	1996
LOWEST ANNUAL MEAN					3.16	2001
HIGHEST DAILY MEAN	126	Jul 16	64	Dec 17	418	Sep 16 1999
LOWEST DAILY MEAN	(e).25	Sep 22	.35	(a)	.01	(b)
ANNUAL SEVEN-DAY MINIMUM	.37	Nov 1	.37	Nov 1	.02	Aug 23 1995
MAXIMUM PEAK FLOW			452	Dec 17	(c)3480	Jul 16 2000
MAXIMUM PEAK STAGE			3.50	Dec 17	5.99	Jul 16 2000
INSTANTANEOUS LOW FLOW			UNKNOWN		.00	(d)
ANNUAL RUNOFF (CFSM)	1.60		1.16		1.88	
ANNUAL RUNOFF (INCHES)	21.84		15.71		25.50	
10 PERCENT EXCEEDS	9.3		5.9		10	
50 PERCENT EXCEEDS	1.4		1.3		1.5	
90 PERCENT EXCEEDS	.48		.55		.39	

e Estimated.
a Nov. 1, 4, 5.
b Aug. 25-27, 1995.
c From rating curve extended above 120 ft^3/s.
d Aug. 26, 1995, Aug. 14, 1999.



01585095 NORTH FORK WHITEMARSH RUN NEAR WHITE MARSH, MD

LOCATION.--Lat 39°23'09", long 76°28'08", Baltimore County, Hydrologic Unit 02060003, on left bank 100 ft upstream of culverts under Baconsfield Drive, 0.6 mi upstream from confluence with Whitemarsh Run, 0.9 mi southeast of Perry Hall, and 2.1 mi east of White Marsh.

DRAINAGE AREA.--1.34 mi^2.

PERIOD OF RECORD.--April 1992 to current year.

GAGE.--Water-stage recorder. Datum of gage is 75 ft above sea level, from topographic map.

REMARKS.--Records good above 0.5 ft^3/s and fair below except those for estimated daily discharges (ice effect), which are fair. Several measurements of water temperature were made during the year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 250 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 17	0545	*412	*4.40	No other peak greater than base discharge.			

Minimum discharge, 0.02 ft^3/s, Aug. 29, Sept. 6-9.

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	.22	.17	.26	e.16	1.0	.59	1.2	.30	6.1	1.2	.07	.39
2	.22	.16	.18	e.15	.90	.54	.85	.27	2.6	.25	.05	.06
3	.22	.16	.16	e.15	.67	.51	.76	.26	.57	.11	.06	.05
4	.26	.15	.16	e.15	.51	3.3	.60	.26	.37	2.7	.07	.05
5	.22	.15	.15	e.15	18	3.9	.59	.25	.36	3.2	.06	.03
6	.22	.21	.13	e.21	2.1	.77	.61	.22	.38	.52	.08	.02
7	.22	.17	.13	e.16	1.1	.56	.59	.22	5.6	.16	.05	.02
8	.22	.18	.13	e.40	.76	.46	.59	.22	.55	.96	.05	.02
9	.22	1.8	.13	e.24	.72	.72	4.2	.46	.28	.59	.05	.02
10	.22	3.3	.16	e.20	.65	.59	1.6	.27	.20	2.2	.36	2.8
11	.22	.16	.16	.18	.46	.59	6.5	.20	.71	.31	2.3	.24
12	.22	.15	.23	.16	.56	.65	1.9	.20	3.5	.18	.43	.05
13	.17	.16	.32	.16	1.1	1.4	1.3	.16	.86	.16	3.6	.03
14	.13	2.0	14	.13	.90	.77	.80	.17	.22	.09	.36	1.2
15	.13	.31	.67	.16	1.0	.87	1.6	.19	.20	.09	.10	.08
16	.13	.22	2.2	.18	4.6	1.1	2.4	.24	19	.09	.09	.04
17	.13	.16	43	.18	4.0	.88	1.7	.26	2.0	.11	.11	.03
18	1.1	.13	1.4	.17	.77	.68	2.4	.26	.52	.39	.07	.03
19	.18	.11	.66	16	.60	.64	.77	.39	.41	.23	.24	.03
20	.13	.13	.60	9.8	.59	.59	.60	1.9	3.3	.09	.69	8.2
21	.14	.17	.38	3.5	.51	30	.59	5.2	4.0	.09	.08	1.8
22	.16	.16	.36	.86	.44	4.1	.59	8.1	.37	.09	.06	.21
23	.13	.16	.22	.63	1.8	1.4	.55	1.6	1.9	.09	.05	.09
24	.14	.16	e.20	.62	.82	.95	.48	.31	.34	.09	.03	5.3
25	.16	.59	e.19	.53	4.4	.69	.44	1.1	.30	.09	.03	4.8
26	.14	12	.18	.34	1.7	.58	.44	19	.26	.21	.03	.13
27	.15	.65	e.17	.31	.72	.44	.44	14	.25	.19	.03	.06
28	.16	.27	e.20	.31	.67	.44	.41	2.0	.22	.08	.03	.05
29	.14	1.4	.18	.57	---	.47	.36	.83	.30	.57	.02	.06
30	.13	.68	e.16	13	---	.51	.32	.48	.27	.29	.56	.20
31	.13	---	e.16	1.8	---	2.0	---	.33	---	.08	.85	---
TOTAL	6.36	26.22	67.23	51.56	52.05	61.69	36.18	59.65	55.94	15.50	10.66	26.09
MEAN	.21	.87	2.17	1.66	1.86	1.99	1.21	1.92	1.86	.50	.34	.87
MAX	1.1	12	43	16	18	30	6.5	19	19	3.2	3.6	8.2
MIN	.13	.11	.13	.13	.44	.44	.32	.16	.20	.08	.02	.02
CFSM	.15	.65	1.62	1.24	1.39	1.49	.90	1.44	1.39	.37	.26	.65
IN.	.18	.73	1.87	1.43	1.44	1.71	1.00	1.66	1.55	.43	.30	.72

e Estimated

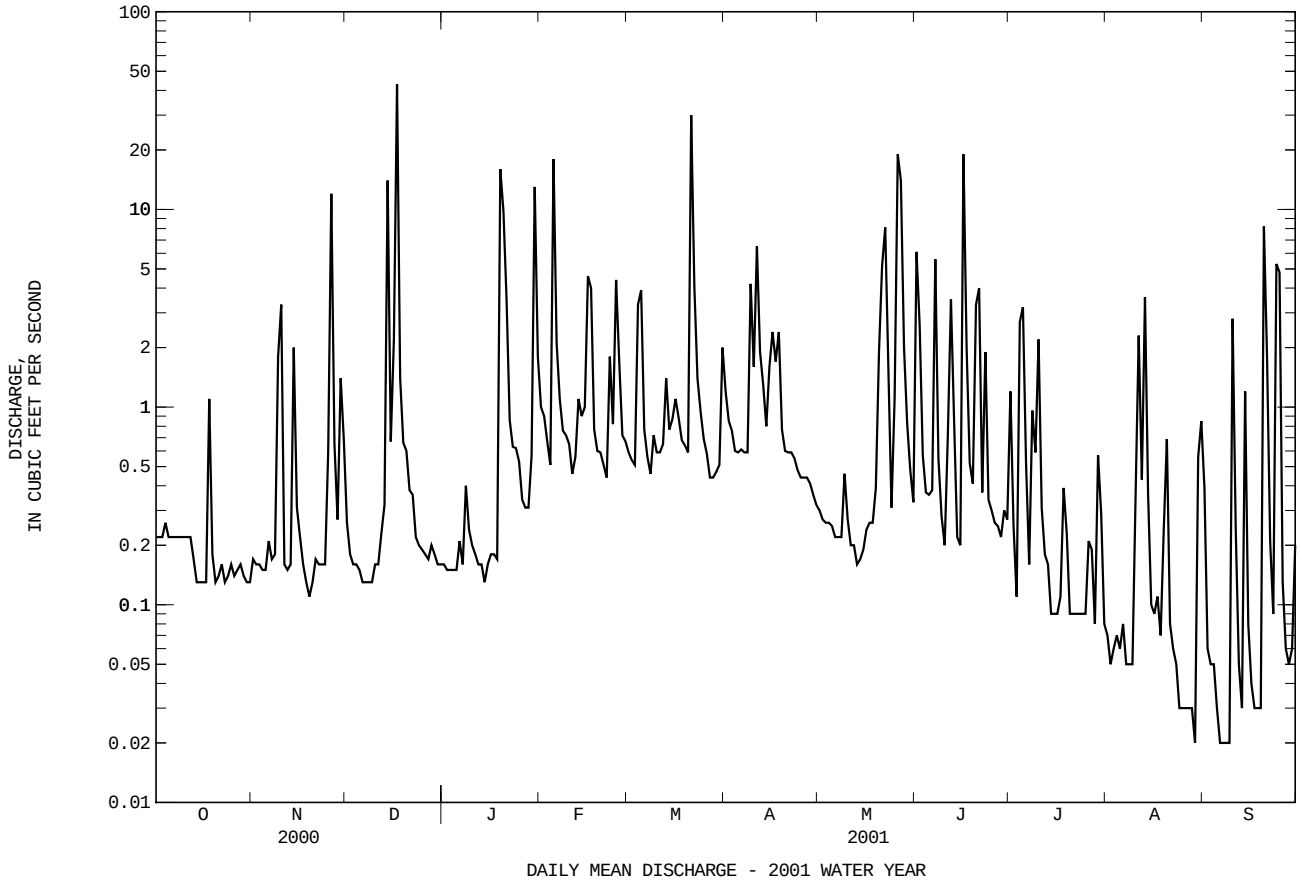
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 2001, BY WATER YEAR (WY)

MEAN	1.55	2.18	2.58	3.19	2.68	4.19	2.01	1.81	1.59	1.66	1.42	2.14
MAX	4.75	3.46	6.03	5.39	4.74	6.79	3.61	3.11	4.72	3.82	3.67	7.80
(WY)	1996	1998	1997	1996	1998	1993	1996	1996	1996	1996	1994	1999
MIN	.21	.56	.41	1.04	1.53	1.99	.92	.74	.59	.14	.34	.82
(WY)	2001	1999	1999	2000	1995	2001	1995	1997	1994	1997	2001	1997

01585095 NORTH FORK WHITEMARSH RUN NEAR WHITE MARSH, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1992 - 2001	
ANNUAL TOTAL	710.26		469.13			
ANNUAL MEAN	1.94		1.29		2.27	
HIGHEST ANNUAL MEAN					3.39	1996
LOWEST ANNUAL MEAN					1.29	2001
HIGHEST DAILY MEAN	57	Mar 21	43	Dec 17	140	Sep 16 1999
LOWEST DAILY MEAN	.09	(a)	.02	(b)	.00	(c)
ANNUAL SEVEN-DAY MINIMUM	.11	Aug 20	.03	Sep 3	.03	Sep 3 2001
MAXIMUM PEAK FLOW			412	Dec 17	(d)502	Jun 19 1996
MAXIMUM PEAK STAGE			4.40	Dec 17	5.05	Jun 19 1996
INSTANTANEOUS LOW FLOW			.02	(f)	.00	(g)
ANNUAL RUNOFF (CFSM)	1.45		.96		1.70	
ANNUAL RUNOFF (INCHES)	19.72		13.02		23.04	
10 PERCENT EXCEEDS	4.5		2.5		4.9	
50 PERCENT EXCEEDS	.42		.30		.64	
90 PERCENT EXCEEDS	.16		.08		.15	

a Aug. 26, Sept. 14.
b Aug. 29, Sept. 6-9.
c Aug. 7, 10-13, 1999.
d From rating curve extended above 200 ft^3/s.
f Aug. 24-30, Sept. 5-9.
g Aug. 6-8, 10-14, 1999.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01585100 WHITEMARSH RUN AT WHITE MARSH, MD

LOCATION.--Lat 39°22'15", long 76°26'46", Baltimore County, Hydrologic Unit 02060003, on left bank at upstream side of bridge on State Highway 7, 1.0 mi southwest of White Marsh, and 3.0 mi upstream from mouth.

DRAINAGE AREA.--7.61 mi^2.

PERIOD OF RECORD.--February 1959 to September 1989, March 1992 to current year.

REVISED RECORDS.--WDR MD-DE-73-1: 1960(M), 1967-68, 1969(M). WDR MD-DE-79-1: 1965-66(M).

GAGE.--Water-stage recorder and concrete control. Datum of gage is 38.96 ft above sea level.

REMARKS.--Records good except those for estimated daily discharges (ice effect) and period affected by bridge construction (July 24 through Sept. 30), which are fair. Low flow affected by operations of sand and gravel plant in vicinity of gage. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 750 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 17	0700	*1,250	*6.57	No other peak greater than base discharge.			

Minimum discharge, 0.70 ft^3/s, Oct. 9, 11, 17.

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	2.3	1.5	2.7	e2.2	5.3	3.9	9.3	3.0	29	11	2.5	7.3
2	2.3	1.8	2.3	e2.2	4.4	3.8	7.1	2.9	24	3.5	2.7	1.3
3	2.2	1.7	2.1	e2.1	3.8	3.7	6.0	2.6	4.8	2.2	2.8	1.1
4	3.0	1.5	2.0	e2.0	3.3	16	5.1	2.7	3.4	9.8	2.6	1.0
5	2.1	1.5	2.1	e2.4	87	23	4.4	2.6	3.4	20	2.6	1.3
6	2.1	1.7	2.2	e3.0	14	7.5	4.4	2.9	3.1	5.8	2.7	1.3
7	1.7	1.7	2.0	e2.3	6.6	4.3	4.2	3.1	27	2.2	2.7	2.1
8	1.7	1.7	2.0	e5.0	4.8	3.6	3.8	3.0	4.5	6.0	2.7	2.1
9	1.7	5.9	1.8	e3.6	4.3	4.1	17	3.8	3.1	17	3.2	2.1
10	1.9	20	2.0	e2.6	3.9	3.0	12	2.9	2.7	31	5.7	16
11	1.9	2.4	2.4	e2.3	3.4	3.0	35	2.7	3.3	7.7	24	3.9
12	1.7	2.0	2.0	e2.2	3.2	3.1	12	2.5	7.5	3.1	9.0	2.2
13	1.5	2.0	2.1	e2.1	7.2	28	7.2	2.0	5.9	2.5	33	1.3
14	1.4	11	72	2.0	5.3	4.9	5.1	2.2	2.7	2.8	5.1	18
15	1.4	2.7	5.8	3.7	6.6	12	8.0	2.1	3.6	1.6	2.9	1.5
16	1.4	2.0	11	2.5	21	8.7	15	1.9	86	1.3	3.4	1.2
17	1.5	1.8	232	2.3	26	5.6	9.4	1.9	13	1.4	2.6	1.1
18	5.1	1.7	12	2.2	5.7	4.8	14	2.5	4.1	4.1	1.4	.70
19	2.1	1.7	5.8	76	4.5	3.4	5.0	2.6	2.8	2.5	2.6	.85
20	1.6	1.8	6.1	49	3.9	3.3	4.7	7.3	2.6	2.1	11	53
21	1.7	1.8	3.9	21	3.6	161	4.4	31	21	1.9	1.6	21
22	1.6	3.5	e3.1	8.2	4.1	25	4.3	49	2.9	1.9	1.3	1.9
23	1.6	1.7	e3.3	e6.4	12	8.5	4.3	16	11	2.0	2.0	1.4
24	1.6	1.7	e2.9	e5.0	6.5	5.9	4.0	3.7	2.5	2.2	2.0	28
25	1.9	2.1	e2.7	e4.4	19	5.0	3.4	7.1	2.6	2.0	1.8	41
26	1.9	58	e2.6	e4.0	12	4.5	3.7	93	2.1	2.8	1.6	2.7
27	2.0	6.3	e2.5	3.6	5.3	4.4	3.4	77	2.7	3.0	1.6	1.9
28	1.7	3.4	e2.8	3.9	4.3	4.4	3.2	15	2.7	2.1	1.8	1.6
29	1.5	6.0	e2.6	3.9	---	48	3.0	5.6	2.9	5.7	1.4	1.2
30	1.7	7.0	e2.4	60	---	163	3.0	3.5	2.2	6.8	4.8	1.2
31	1.4	---	e2.3	10	---	17	---	3.4	---	2.9	5.1	---
TOTAL	59.2	159.6	403.5	302.1	291.0	596.4	225.4	361.5	289.1	170.9	150.2	221.25
MEAN	1.91	5.32	13.0	9.75	10.4	19.2	7.51	11.7	9.64	5.51	4.85	7.38
MAX	5.1	58	232	76	87	163	35	93	86	31	33	53
MIN	1.4	1.5	1.8	2.0	3.2	3.0	3.0	1.9	2.1	1.3	1.3	.70
CFSM	.25	.70	1.71	1.28	1.37	2.53	.99	1.53	1.27	.72	.64	.97
IN.	.29	.78	1.97	1.48	1.42	2.92	1.10	1.77	1.41	.84	.73	1.08

e Estimated

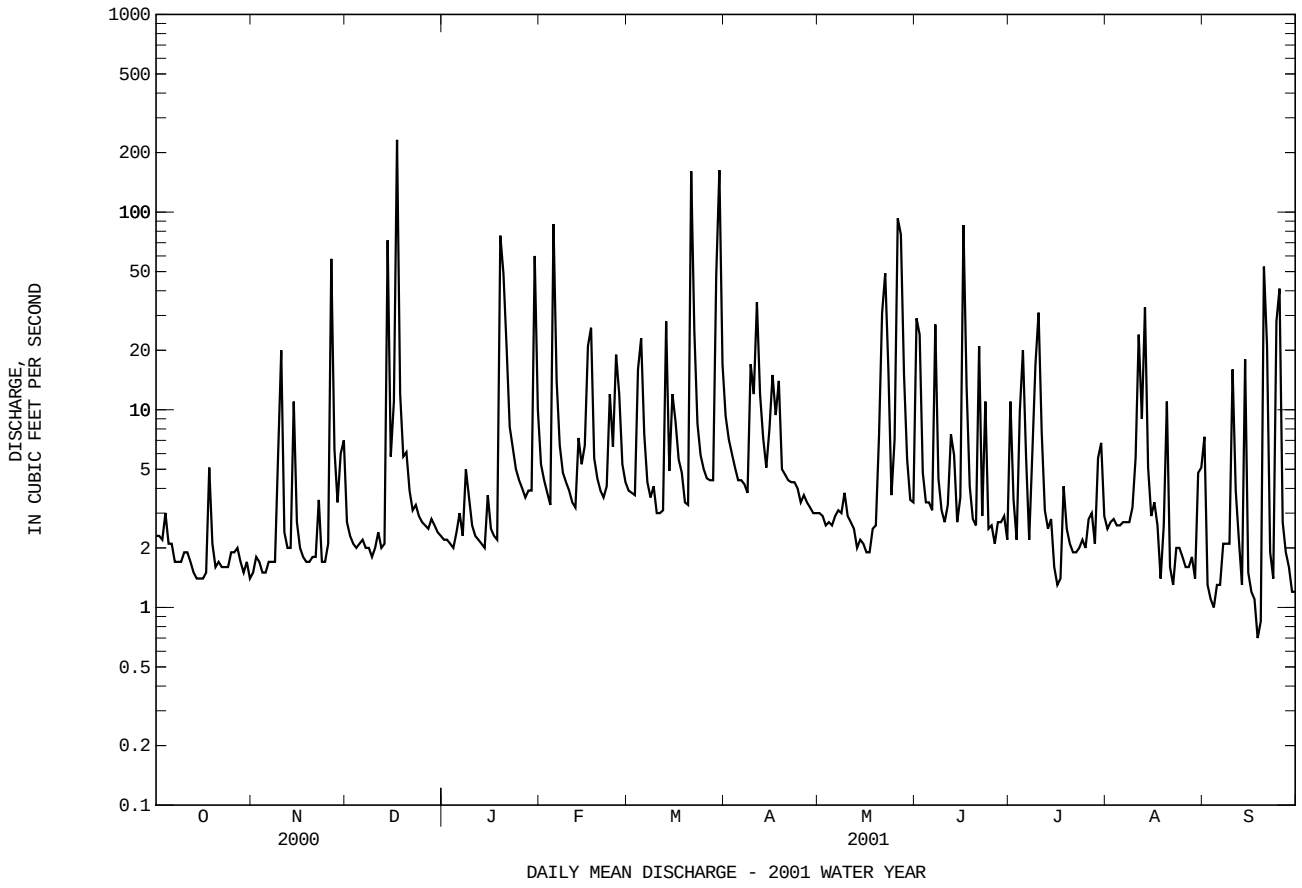
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1959 - 1989, 1992 - 2001, BY WATER YEAR (WY)

MEAN	7.44	10.4	13.2	14.6	15.7	17.3	12.9	11.3	9.22	9.43	10.1	10.6
MAX	27.2	31.8	41.5	45.2	42.7	43.2	43.5	43.7	44.5	45.4	90.1	48.6
(WY)	1972	1973	1984	1978	1979	1993	1983	1989	1972	1989	1971	1999
MIN	1.91	1.82	1.69	1.82	4.11	4.66	4.35	2.24	2.01	1.34	1.18	1.41
(WY)	2001	1966	1966	1981	1968	1969	1985	1969	1986	1966	1962	1980

01585100 WHITEMARSH RUN AT WHITE MARSH, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1959 - 1989, 1992 - 2001	
ANNUAL TOTAL	4800.3		3230.15			
ANNUAL MEAN	13.1		8.85		12.1	
HIGHEST ANNUAL MEAN					21.0	1971
LOWEST ANNUAL MEAN					4.27	1969
HIGHEST DAILY MEAN	351	Jul 26	232	Dec 17	980	Sep 16 1999
LOWEST DAILY MEAN	1.4	(a)	.70	Sep 18	.10	Sep 11 1966
ANNUAL SEVEN-DAY MINIMUM	1.5	Oct 11	1.5	Sep 2	.39	Sep 1 1966
MAXIMUM PEAK FLOW			1250	Dec 17	(b)8000	Aug 1 1971
MAXIMUM PEAK STAGE			6.57	Dec 17	14.05	Aug 1 1971
INSTANTANEOUS LOW FLOW			.70	(c)	(d).00	Mar 20 1965
ANNUAL RUNOFF (CFSM)	1.72		1.16		1.59	
ANNUAL RUNOFF (INCHES)	23.47		15.79		21.58	
10 PERCENT EXCEEDS	23		18		21	
50 PERCENT EXCEEDS	3.8		3.1		4.0	
90 PERCENT EXCEEDS	1.7		1.6		1.5	

a Sept. 14, Oct. 14 - 16, 30.
b From rating curve extended above 1,300 ft^3/s on the basis of a culvert measurement at a gage height of 10.04 ft and on the basis of a culvert and flow-over-road measurement of peak flow.
c Oct. 9, 11, 17.
d Result of construction work upstream from station.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01585104 HONEYGO RUN NEAR WHITE MARSH, MD

LOCATION.--Lat 39°22'58.8", long 76°25'58.7", Baltimore County, Hydrologic Unit 02060003, on left bank at upstream side of bridge on State Highway 7, and 0.55 mi upstream from mouth.

DRAINAGE AREA.--2.50 mi^2.

PERIOD OF RECORD.--October 1999 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 25 ft above sea level, from topographic map.

REMARKS.--No estimated daily discharges. Records good. Several measurements of water temperature were made during the year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 100 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 17	0645	*216	*3.38	Mar 30	0215	109	1.95
Dec 17	0945	135	2.30	May 27	0045	105	1.90
Mar 21	1600	106	1.91				

Minimum discharge, 0.07 ft^3/s, Sept. 8-10, 13.

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	.52	.41	.45	.30	2.5	1.6	3.3	1.1	3.7	.68	.66	.45
2	.47	.41	.45	.30	2.0	1.4	2.3	1.0	6.6	.80	.30	.19
3	.45	.41	.45	.37	1.8	1.4	1.8	.70	1.8	.45	.27	.13
4	.54	.41	.45	.45	1.7	2.8	1.8	.43	1.2	.93	.30	.13
5	.52	.41	.45	.45	23	6.7	1.8	.45	.87	3.4	.35	.13
6	.54	.40	.45	.45	7.1	2.3	1.7	.37	.78	1.4	.39	.13
7	.45	.39	.45	.45	3.6	1.8	1.5	.33	5.6	.45	.36	.13
8	.45	.42	.43	.79	2.5	1.8	1.4	.36	1.8	.51	.39	.12
9	.45	.57	.42	1.3	2.2	1.8	3.5	.41	.96	.54	.30	.11
10	.51	2.7	.41	.62	2.2	1.6	4.6	.42	.74	.90	.32	.96
11	.49	.57	.42	.54	1.8	1.4	8.5	.35	.73	.64	1.1	.55
12	.45	.57	.47	.45	1.6	1.5	5.1	.34	1.9	.41	1.0	.17
13	.47	.52	.47	.45	2.1	6.4	3.2	.34	2.4	.30	2.7	.12
14	.60	.74	9.2	.45	1.9	2.1	2.3	.30	.73	.30	1.5	.50
15	.57	.52	.90	.72	1.9	2.7	2.0	.34	.45	.31	.41	.27
16	.52	.45	.86	.78	5.3	3.3	4.2	.34	19	.43	.19	.16
17	.52	.45	43	.48	9.0	2.3	3.0	.42	4.5	.30	.19	.13
18	.61	.45	1.7	.45	2.3	1.9	3.2	.51	1.5	.61	.20	.20
19	.49	.45	1.1	24	2.0	1.5	1.6	.68	.95	.54	.20	.20
20	.38	.45	1.5	24	1.8	1.4	1.4	.65	.78	.22	.42	3.2
21	.36	.42	1.1	11	1.8	33	1.4	3.3	6.4	.20	.34	2.4
22	.36	.41	1.1	5.5	1.6	9.2	1.4	5.6	1.0	.20	.19	.40
23	.41	.41	.98	2.2	2.1	3.5	1.4	4.1	1.8	.25	.13	.22
24	.37	.41	.64	2.0	1.9	2.3	1.2	1.0	.98	.28	.13	2.8
25	.41	.41	.45	1.7	5.7	1.7	1.1	1.1	.70	.29	.13	4.4
26	.42	6.1	.45	1.2	5.3	1.4	1.1	18	.56	.30	.13	.83
27	.43	.65	.48	1.4	2.3	1.1	1.1	21	.45	.40	.13	.32
28	.42	.53	.52	1.1	1.9	.83	1.1	4.7	.45	.31	.13	.20
29	.40	.53	.45	.65	---	6.4	.78	1.8	.45	.40	.13	.20
30	.36	.57	.45	16	---	39	.85	1.2	.45	.73	.33	.20
31	.39	---	.44	4.4	---	5.8	---	.79	---	.43	.30	---
TOTAL	14.33	22.14	71.09	104.95	100.9	151.93	69.63	72.43	70.23	17.91	13.62	19.95
MEAN	.46	.74	2.29	3.39	3.60	4.90	2.32	2.34	2.34	.58	.44	.67
MAX	.61	6.1	43	24	23	39	8.5	21	19	3.4	2.7	4.4
MIN	.36	.39	.41	.30	1.6	.83	.78	.30	.45	.20	.13	.11
CFSM	.18	.30	.92	1.35	1.44	1.96	.93	.93	.94	.23	.18	.27
IN.	.21	.33	1.06	1.56	1.50	2.26	1.04	1.08	1.05	.27	.20	.30

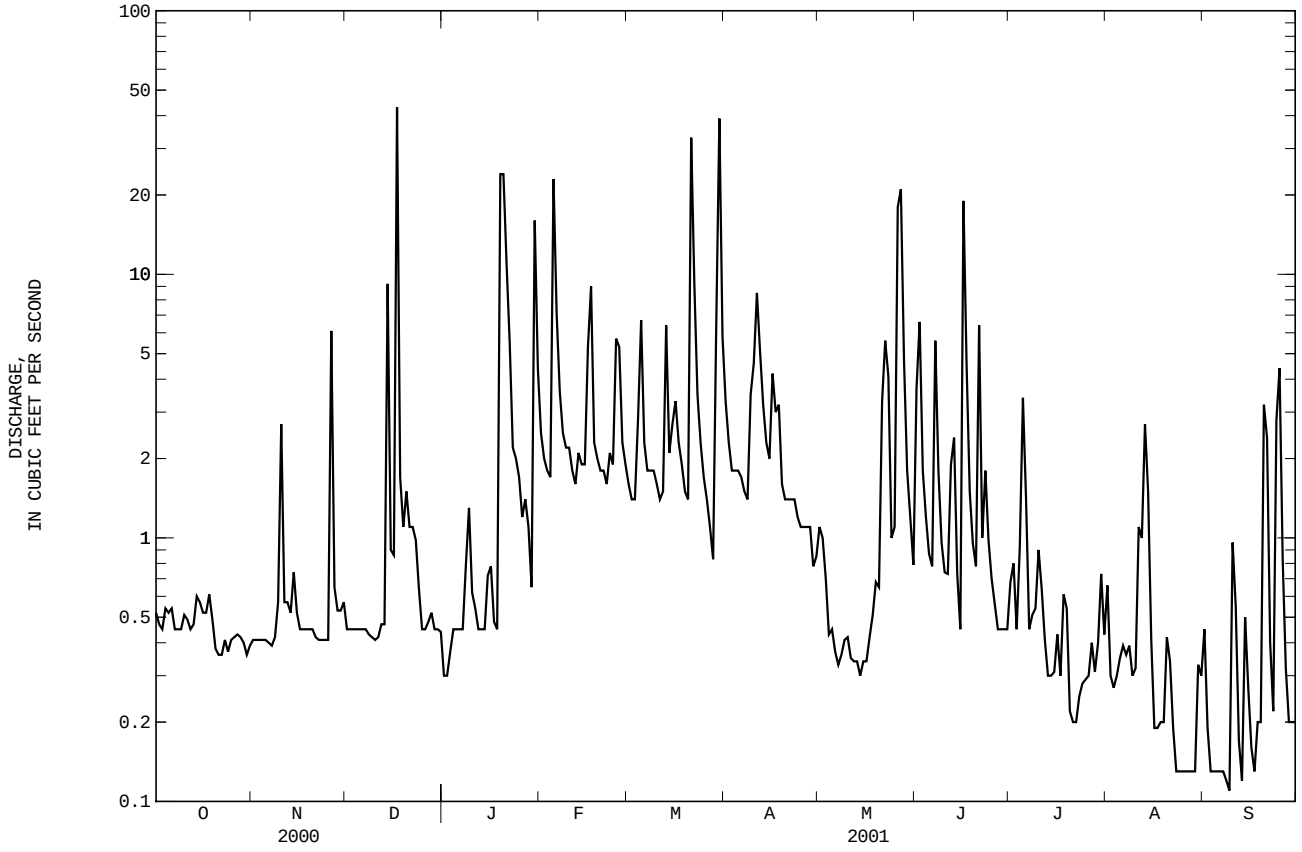
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2000 - 2001, BY WATER YEAR (WY)

MEAN	2.52	1.63	3.92	3.23	5.99	6.78	4.39	2.40	2.38	2.47	.83	1.17
MAX	4.57	2.52	5.55	3.39	8.29	8.65	6.47	2.46	2.42	4.36	1.21	1.67
(WY)	2000	2000	2000	2001	2000	2000	2000	2000	2000	2000	2000	2000
MIN	.46	.74	2.29	3.07	3.60	4.90	2.32	2.34	2.34	.58	.44	.67
(WY)	2001	2001	2001	2000	2001	2001	2001	2001	2001	2001	2001	2001

01585104 HONEYGO RUN NEAR WHITE MARSH, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 2000 - 2001	
ANNUAL TOTAL	1277.35		729.11			
ANNUAL MEAN	3.49		2.00		3.13	
HIGHEST ANNUAL MEAN					4.26	2000
LOWEST ANNUAL MEAN					2.00	2001
HIGHEST DAILY MEAN	63	Mar 21	43	Dec 17	63	Mar 21 2000
LOWEST DAILY MEAN	.36	(a)	.11	Sep 9	.11	Sep 9 2001
ANNUAL SEVEN-DAY MINIMUM	.39	Oct 20	.13	Sep 3	.13	Sep 3 2001
MAXIMUM PEAK FLOW			216	Dec 17	(b)216	Dec 17 2000
MAXIMUM PEAK STAGE			3.38	Dec 17	3.38	Dec 17 2000
INSTANTANEOUS LOW FLOW			.07	(c)	.07	(c)
ANNUAL RUNOFF (CFSM)	1.40		.80		1.25	
ANNUAL RUNOFF (INCHES)	19.01		10.85		17.01	
10 PERCENT EXCEEDS	9.2		4.1		7.6	
50 PERCENT EXCEEDS	1.1		.61		1.2	
90 PERCENT EXCEEDS	.45		.28		.39	

a Oct. 21, 22.
b From rating curve extended above 90 ft^3/s.
c Sept. 8-10, 13, 2001.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01585200 WEST BRANCH HERRING RUN AT IDLEWYLDE, MD

LOCATION.--Lat 39°22'25.1", long 76°35'03.6", Baltimore County, Hydrologic Unit 02060003, on left bank 40 ft downstream from bridge on Regester Avenue, at Idlewylde, 0.1 mi north of Baltimore city limits, 1.0 mi upstream from mouth, and 1.3 mi east of State Highway 45.

DRAINAGE AREA.--2.13 mi^2.

PERIOD OF RECORD.--July 1957 to May 1965, January 1966 to September 1987, October 1996 to current year.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 285 ft above sea level, from topographic map. Prior to May 31, 1965, at site 40 ft upstream at datum 3.24 ft higher.

REMARKS.--Records good except those for estimated daily discharges (ice effect), which are fair. Diurnal fluctuation (occasionally extensive) caused by ready-mixed concrete plant upstream from station. Several measurements of water temperature were made during the year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 290 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jul 10	1650	335	3.62	Aug 13	1630	*374	*3.77

Minimum discharge, 0.04 ft^3/s.

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	.61	.39	.54	.61	.91	.80	1.9	.81	4.5	2.0	.16	.40
2	.58	.39	.50	e.56	1.1	.75	1.7	.80	1.6	.41	.13	.13
3	.53	.38	.49	e.54	.79	.72	1.5	.77	.72	.34	.14	.13
4	.50	.37	.50	e.54	.76	6.1	1.3	.74	.63	1.6	.81	.12
5	.52	.36	.48	e.54	14	5.6	1.2	.68	.67	4.3	.38	.15
6	.49	.38	.46	e.52	1.4	.98	1.3	.61	.54	.59	.18	.07
7	.44	.42	.46	e.52	1.0	.86	1.1	.70	7.6	.35	.20	.08
8	.44	.48	.48	e2.5	.92	.80	2.0	.69	.66	4.5	.10	.09
9	.55	2.1	.46	e1.3	.89	1.2	6.2	1.4	.57	1.4	.09	.07
10	.67	6.4	.55	e.50	.83	.75	1.4	.78	.54	9.0	.15	1.7
11	.65	.50	.51	e.50	.78	.73	7.5	.58	.51	.80	6.7	.19
12	.59	.47	.44	e.48	.82	2.7	1.7	.55	.82	.48	1.3	.14
13	.48	.47	.43	e.58	1.2	6.9	1.5	.54	.59	.35	10	.08
14	.38	2.6	18	.69	1.2	.88	1.4	.52	.47	.30	.63	1.9
15	.38	.55	.83	.79	1.2	3.3	2.5	.55	.58	.29	.28	.15
16	.37	.53	2.9	.60	3.9	1.1	3.2	.52	16	.25	.12	.11
17	.40	.47	28	.56	2.1	1.7	1.7	.52	.81	.22	.11	.10
18	1.3	.46	1.7	.61	.85	.85	2.4	.52	.53	6.7	.09	.15
19	.41	.46	1.3	19	.82	.79	1.1	.71	.48	.52	1.7	.10
20	.42	.45	e1.1	6.7	.81	.77	1.1	3.3	2.0	.33	4.9	7.2
21	.42	.45	.88	2.4	.72	38	1.0	7.7	.91	.28	.22	.98
22	.39	.45	.81	1.0	.74	3.2	1.0	14	.50	.26	.19	.23
23	.40	.50	.75	.88	2.2	1.7	1.0	2.1	1.9	.25	.22	.30
24	.42	.48	e.72	e.80	1.0	1.3	.97	.74	.49	.24	.18	1.8
25	.42	1.8	e.68	e.74	4.2	1.1	.88	2.1	.41	.24	.16	5.1
26	.41	13	.63	e.70	1.4	1.1	.88	19	.38	.79	.13	.26
27	.42	1.0	e.60	e.68	1.1	.97	.87	8.2	.36	.27	.16	.19
28	.37	.58	e.60	e.66	.86	.93	.83	1.7	.36	.21	.21	.21
29	.36	2.1	e.58	e.64	---	16	.81	1.2	.35	1.0	.11	.21
30	.40	.82	e.56	12	---	24	.84	.77	.33	.52	.66	.56
31	.38	---	e.56	1.2	---	3.0	---	.73	---	.24	1.6	---
TOTAL	15.10	39.81	67.50	60.34	48.50	129.58	52.78	74.53	46.81	39.03	32.01	22.90
MEAN	.49	1.33	2.18	1.95	1.73	4.18	1.76	2.40	1.56	1.26	1.03	.76
MAX	1.3	13	28	19	14	38	7.5	19	16	9.0	10	7.2
MIN	.36	.36	.43	.48	.72	.72	.81	.52	.33	.21	.09	.07
CFSM	.23	.62	1.02	.91	.81	1.96	.83	1.13	.73	.59	.48	.36
IN.	.26	.70	1.18	1.05	.85	2.26	.92	1.30	.82	.68	.56	.40

e Estimated

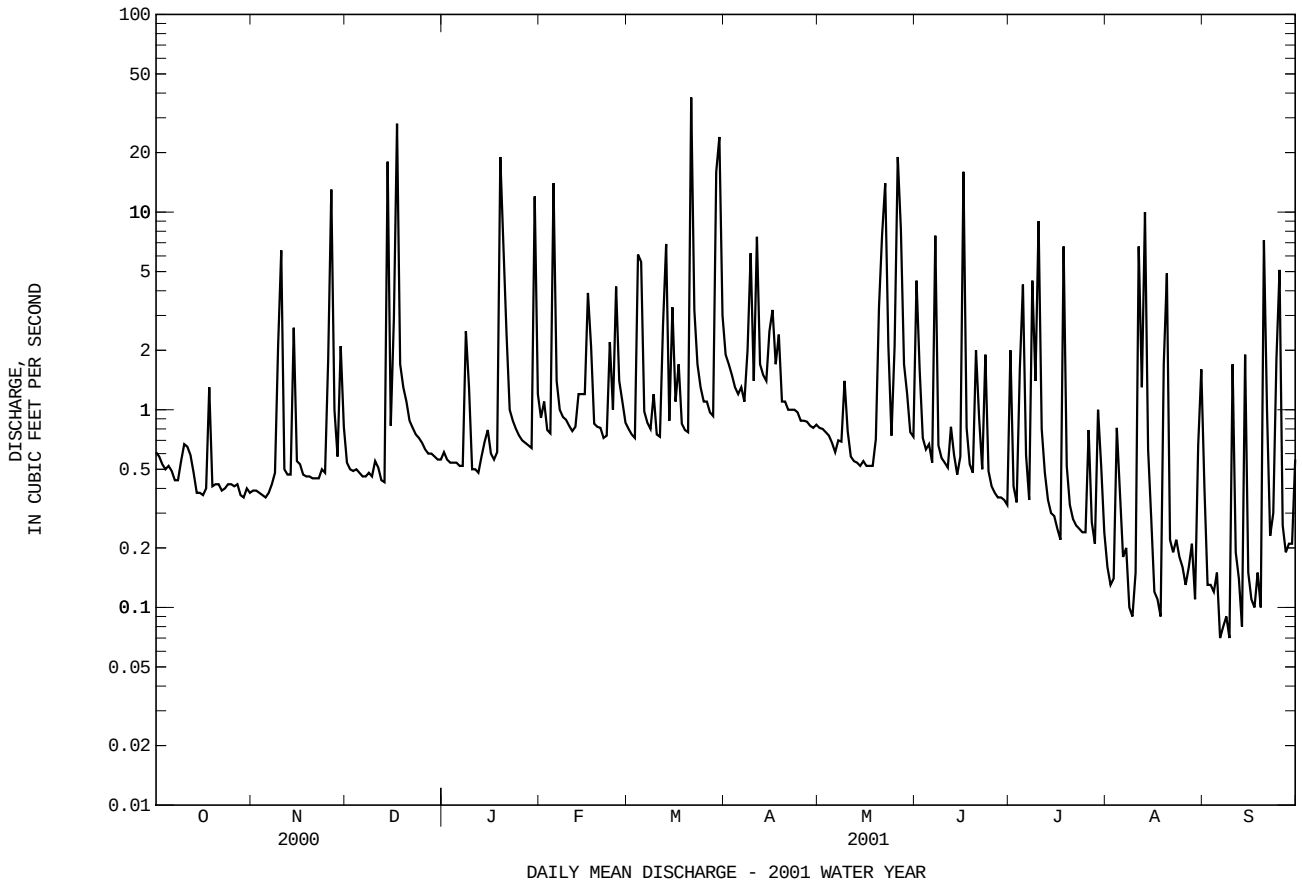
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1957 - 1987, 1997 - 2001, BY WATER YEAR (WY)

MEAN	1.80	2.25	2.74	2.68	3.14	3.41	3.03	2.66	2.43	2.13	2.28	2.59
MAX	5.74	6.59	6.71	9.14	7.41	6.82	7.80	5.06	9.61	5.64	12.2	10.6
(WY)	1972	1973	1997	1979	1979	1998	1983	1984	1972	1975	1971	1999
MIN	.49	.43	.51	.26	1.12	1.06	1.12	.88	.79	.38	.40	.41
(WY)	2001	1982	1981	1981	1968	1981	1985	1963	1966	1966	1966	1970

01585200 WEST BRANCH HERRING RUN AT IDLEWYLDE, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1957 - 1987 1997 - 2001	
ANNUAL TOTAL	942.78		628.89			
ANNUAL MEAN	2.58		1.72		2.64	
HIGHEST ANNUAL MEAN					4.26	1972
LOWEST ANNUAL MEAN					1.42	1959
HIGHEST DAILY MEAN	37	Mar 21	38	Mar 21	137	Jun 22 1972
LOWEST DAILY MEAN	.36	(a)	.07	(b)	.00	(c)
ANNUAL SEVEN-DAY MINIMUM	.38	Oct 31	.10	Sep 3	.00	Aug 14 1957
MAXIMUM PEAK FLOW			374	Aug 13	(d)1740	Sep 11 1971
MAXIMUM PEAK STAGE			3.77	Aug 13	6.80	Sep 11 1971
INSTANTANEOUS LOW FLOW			.04	(f)	.00	(c)
ANNUAL RUNOFF (CFSM)	1.21		.81		1.24	
ANNUAL RUNOFF (INCHES)	16.47		10.98		16.83	
10 PERCENT EXCEEDS	5.9		3.2		5.2	
50 PERCENT EXCEEDS	.97		.66		1.1	
90 PERCENT EXCEEDS	.46		.21		.40	

a Oct. 29, Nov. 5.
b Sept. 6, 9.
c Aug. 14-24, 1957.
d From rating curve extended above 90 ft^3/s on basis of slope-area measurement at gage height of 6.37 ft.
f Aug. 8-10, Sept. 10.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01585225 MOORES RUN TRIBUTARY NEAR TODD AVE AT BALTIMORE, MD

LOCATION.--Lat 39°20'12.1", long 76°32'26.2", Baltimore City, Hydrologic Unit 02060003, on left bank at upstream side of culvert inlet off of Todd Ave, at Baltimore, and 20 ft upstream from mouth.

DRAINAGE AREA.--0.21 mi^2.

PERIOD OF RECORD.--July 1996 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 45 ft above sea level, from topographic map.

REMARKS.--Records good between 0.20 and 20 ft^3/s, poor above and below, except those for estimated daily discharges (ice effect, missing record), which are fair. Baltimore City gage-height telemeter at station. Several measurements of water temperature were made during the year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 50 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jun 16	1150	59	1.76	Sep 20	2217	*87	*2.28

Minimum discharge, 0.00 ft^3/s, Sept. 11-14, 17-20.

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	.05	.01	.05	.02	.02	.05	.06	.02	.76	.30	.01	e.03
2	.05	.03	.05	.02	.03	.05	.05	.02	.08	.03	.01	e.02
3	.05	.01	.05	.02	.02	.05	.05	.02	.05	.02	.01	e.02
4	.05	.01	.05	.02	.02	.32	.05	.02	.05	.29	.05	e.05
5	.05	.01	.05	.04	1.0	.24	.05	.02	.05	e.05	.02	e.02
6	.04	.01	.05	.03	.07	.11	.05	.02	.05	e.02	.01	e.01
7	.02	.01	.05	.02	.05	.11	.05	.02	.34	.02	.01	e.01
8	.03	.01	.04	.09	.05	.11	.05	.02	.04	.54	.01	e.01
9	.02	.13	.02	.02	.05	.09	.48	.06	.02	.03	.01	e.01
10	.02	.38	.02	.02	.05	.05	.11	.05	.02	.35	.06	e.03
11	.02	.02	.02	.02	.05	.05	.60	.03	.01	.05	.36	.01
12	.02	.02	.02	.02	.08	.25	.14	.05	.01	.05	.21	.01
13	.02	.02	.02	.02	.09	.28	.11	.05	.01	.05	.32	.00
14	.02	.21	.99	.02	.10	.05	.11	.05	.01	.05	.02	e.30
15	.02	.05	.11	.05	.13	.29	.22	.05	.07	.05	.02	.03
16	.02	.04	.11	.02	.55	.10	.23	.03	1.5	.05	.02	.02
17	.02	.02	2.0	.02	.21	.05	.17	.01	.05	.05	.02	.00
18	.16	.02	e.10	.02	.11	.02	.22	.01	.05	.47	.02	.00
19	.11	.02	e.05	1.2	.11	.02	.07	.01	.05	.03	.07	.00
20	.08	.02	e.02	e.20	.11	.04	.03	.14	.46	.02	.29	1.3
21	.05	.02	e.02	e.05	.11	2.2	.02	.56	.06	.02	.02	.05
22	.05	.02	e.02	e.02	.11	.14	.02	1.5	.05	.03	e.02	.02
23	.05	.02	e.02	e.02	.30	.11	.02	.06	.31	.04	e.02	.02
24	.03	.01	e.02	e.02	.11	.11	.02	.02	.05	.03	e.02	.06
25	.02	.15	.02	e.02	.29	.11	.02	.19	.05	.02	e.02	.44
26	.02	.71	.02	e.02	.12	.11	.02	1.5	.05	.03	e.01	.02
27	.01	.05	.02	e.02	.06	.11	.02	.69	.05	.05	e.01	.01
28	.01	.04	.02	.02	.05	.11	.02	.08	.05	.03	e.01	.01
29	.01	.17	.02	.02	---	1.3	.02	.05	.02	.14	e.01	.01
30	.01	.07	.02	.76	---	1.6	.02	.05	.22	.03	e.02	.07
31	.01	---	.02	.03	---	.11	---	.05	---	.01	e.32	---
TOTAL	1.14	2.31	4.09	2.89	4.05	8.34	3.10	5.45	4.59	2.95	2.03	2.59
MEAN	.037	.077	.13	.093	.14	.27	.10	.18	.15	.095	.065	.086
MAX	.16	.71	2.0	1.2	1.0	2.2	.60	1.5	1.5	.54	.36	1.3
MIN	.01	.01	.02	.02	.02	.02	.02	.01	.01	.01	.01	.00
CFSM	.18	.37	.63	.44	.69	1.28	.49	.84	.73	.45	.31	.41
IN.	.20	.41	.72	.51	.72	1.48	.55	.97	.81	.52	.36	.46

e Estimated

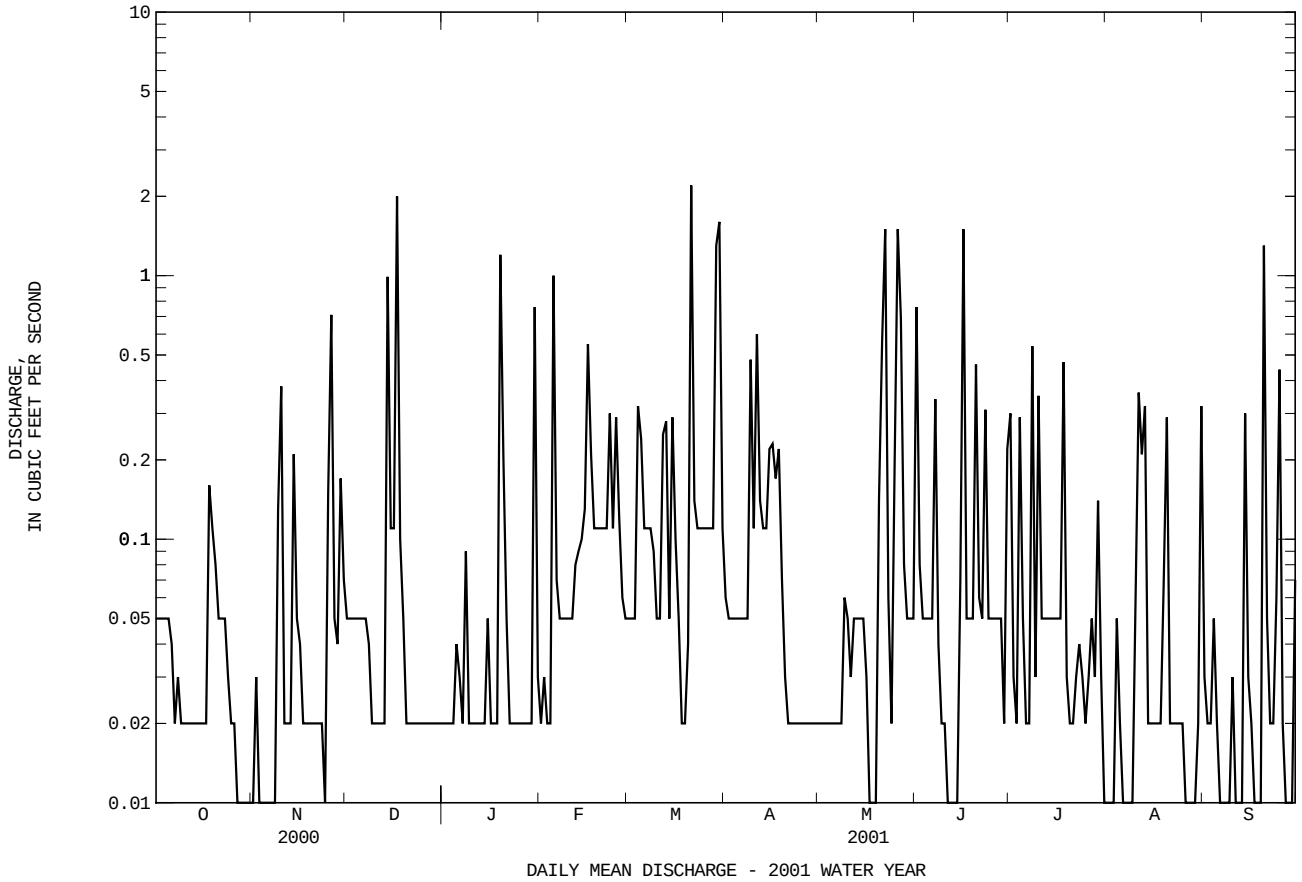
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 2001, BY WATER YEAR (WY)

MEAN	.13	.17	.19	.29	.33	.32	.19	.15	.14	.18	.17	.25
MAX	.25	.41	.44	.53	.57	.40	.32	.29	.17	.47	.29	.73
(WY)	2000	1998	1997	1999	1998	1997	2000	1998	1998	2000	1999	1999
MIN	.037	.076	.045	.093	.14	.25	.10	.074	.086	.025	.065	.086
(WY)	2001	2000	1999	2001	2001	1999	2001	1999	1999	1997	1998	2001

01585225 MOORES RUN TRIBUTARY NEAR TODD AVE AT BALTIMORE, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1996 - 2001	
ANNUAL TOTAL	73.17		43.53			
ANNUAL MEAN	.20		.12		.21	
HIGHEST ANNUAL MEAN					.25	1998
LOWEST ANNUAL MEAN					.12	2001
HIGHEST DAILY MEAN	5.0	Jul 14	2.2	Mar 21	13	Sep 16 1999
LOWEST DAILY MEAN	.01	(a)	.00	(b)	.00	(c)
ANNUAL SEVEN-DAY MINIMUM	.01	Oct 26	.01	Oct 26	.00	Dec 15 1998
MAXIMUM PEAK FLOW			87	Sep 20	(d)247	Sep 2 1998
MAXIMUM PEAK STAGE			2.28	Sep 20	5.38	Sep 2 1998
INSTANTANEOUS LOW FLOW			.00	(f)	.00	(g)
ANNUAL RUNOFF (CFSM)	.95		.57		.99	
ANNUAL RUNOFF (INCHES)	12.96		7.71		13.45	
10 PERCENT EXCEEDS	.41		.29		.45	
50 PERCENT EXCEEDS	.06		.04		.07	
90 PERCENT EXCEEDS	.02		.01		.02	

a Oct. 27-31, Nov. 1, 3-8, 24.
b Sept. 13, 17-19.
c Many days.
d From rating curve extended above 20 ft^3/s on basis of runoff comparison with nearby station.
f Sept. 11-14, 17-20.
g No flow at times during 1997-2001.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01585230 MOORES RUN AT RADECKE AVE AT BALTIMORE, MD

LOCATION.--Lat 39°19'48.3", long 76°32'05.6", Baltimore City, Hydrologic Unit 02060003, on right downstream side of bridge on Radecke Avenue, at Baltimore, and 2.0 mi upstream from mouth.

DRAINAGE AREA.--3.52 mi^2.

PERIOD OF RECORD.--July 1996 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 45 ft above sea level, from topographic map.

REMARKS.--Records good below 300 ft^3/s and fair above, except those for estimated daily discharges (missing and questionable record, ice effect), which are poor. Baltimore City gage-height telemeter at station. Several measurements of water temperature were made during the year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 600 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jun 16	1152	*1,270	*6.09	Aug 13	1627	882	5.49
Jul 1	1546	819	5.37				

Minimum discharge, 0.17 ft^3/s, Sept. 15-17.

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	.54	.49	.48	e.78	1.5	1.1	1.8	.94	18	11	.49	.56
2	.54	.52	.44	e.76	1.7	1.1	1.4	.93	2.9	.72	.48	.44
3	.51	.47	.45	e.74	1.1	1.1	1.2	.90	1.1	.62	.45	.45
4	.50	.45	.45	e.73	1.0	4.1	1.2	1.2	.98	7.3	.51	.83
5	.55	.41	.45	e.76	32	5.2	1.2	.89	1.1	7.5	.48	.46
6	.56	.41	.45	e.84	3.0	1.5	1.1	.84	1.3	.76	.46	.42
7	.56	.41	.45	e1.0	1.7	1.2	1.0	.84	8.7	.67	.70	.43
8	.54	.41	.48	4.0	1.4	1.1	.99	.84	.96	6.2	.48	.43
9	.50	3.3	.54	1.3	1.2	1.2	e7.4	1.4	.86	1.2	.47	.41
10	.53	6.6	.69	1.2	1.2	1.0	e1.8	.80	.84	7.0	.95	.57
11	.79	.43	.94	1.1	1.1	.96	13	.82	.76	.69	6.1	.40
12	.65	.41	e.80	.96	e1.0	e5.2	2.0	1.1	.82	.59	2.6	.38
13	.42	.42	e.74	.91	e1.0	e8.7	1.7	.77	.84	.57	12	.41
14	.41	4.5	27	.90	e1.1	1.2	1.2	.75	.84	.57	.60	4.5
15	.41	.42	.71	1.5	e1.5	2.7	3.9	.75	2.3	.57	.52	.23
16	.41	.38	4.2	.96	e13	1.8	e5.3	.78	38	.58	.46	.19
17	.44	.39	57	.91	e2.0	1.4	e3.3	.74	1.5	.56	.47	.22
18	2.4	.37	1.7	.94	e1.5	1.1	e3.7	.75	.97	6.9	.42	.26
19	.46	.37	e1.2	33	e1.1	.99	1.1	1.0	1.4	.60	1.3	.22
20	.45	.37	e1.0	16	e1.0	1.0	1.0	3.6	5.7	.54	4.0	17
21	.47	.37	e.92	5.8	e1.0	e64	1.0	12	1.7	.54	.43	1.2
22	.41	.37	e.86	e1.5	1.1	4.4	.99	26	.86	.51	.41	.32
23	.41	.37	e.82	e1.3	4.9	1.9	.97	2.1	6.6	.50	.42	.41
24	.41	.45	e.84	e1.2	1.5	1.4	.96	.86	.85	.51	.42	1.5
25	.41	2.6	e.82	e1.1	5.7	1.2	.94	3.4	.75	.56	.42	7.8
26	.42	18	e.78	1.1	2.0	1.2	.94	33	.71	1.0	.42	.63
27	.48	.96	e.76	1.1	1.2	1.2	.94	15	.70	.62	.45	.32
28	.42	.46	e.76	1.1	1.1	1.2	.94	2.0	.69	.50	.45	.33
29	.45	3.9	e.74	1.0	---	28	.94	1.0	.66	2.2	.45	.31
30	.45	1.1	e.74	24	---	46	.94	.94	1.9	.74	.45	1.1
31	.45	---	e.76	2.4	---	3.1	---	.88	---	.52	6.0	---
TOTAL	16.95	50.11	108.97	110.89	88.6	197.25	64.85	117.82	105.29	63.34	44.26	42.73
MEAN	.55	1.67	3.52	3.58	3.16	6.36	2.16	3.80	3.51	2.04	1.43	1.42
MAX	2.4	18	57	33	32	64	13	33	38	11	12	17
MIN	.41	.37	.44	.73	1.0	.96	.94	.74	.66	.50	.41	.19
CFSM	.16	.47	1.00	1.02	.90	1.81	.61	1.08	1.00	.58	.41	.40
IN.	.18	.53	1.15	1.17	.94	2.08	.69	1.25	1.11	.67	.47	.45

e Estimated

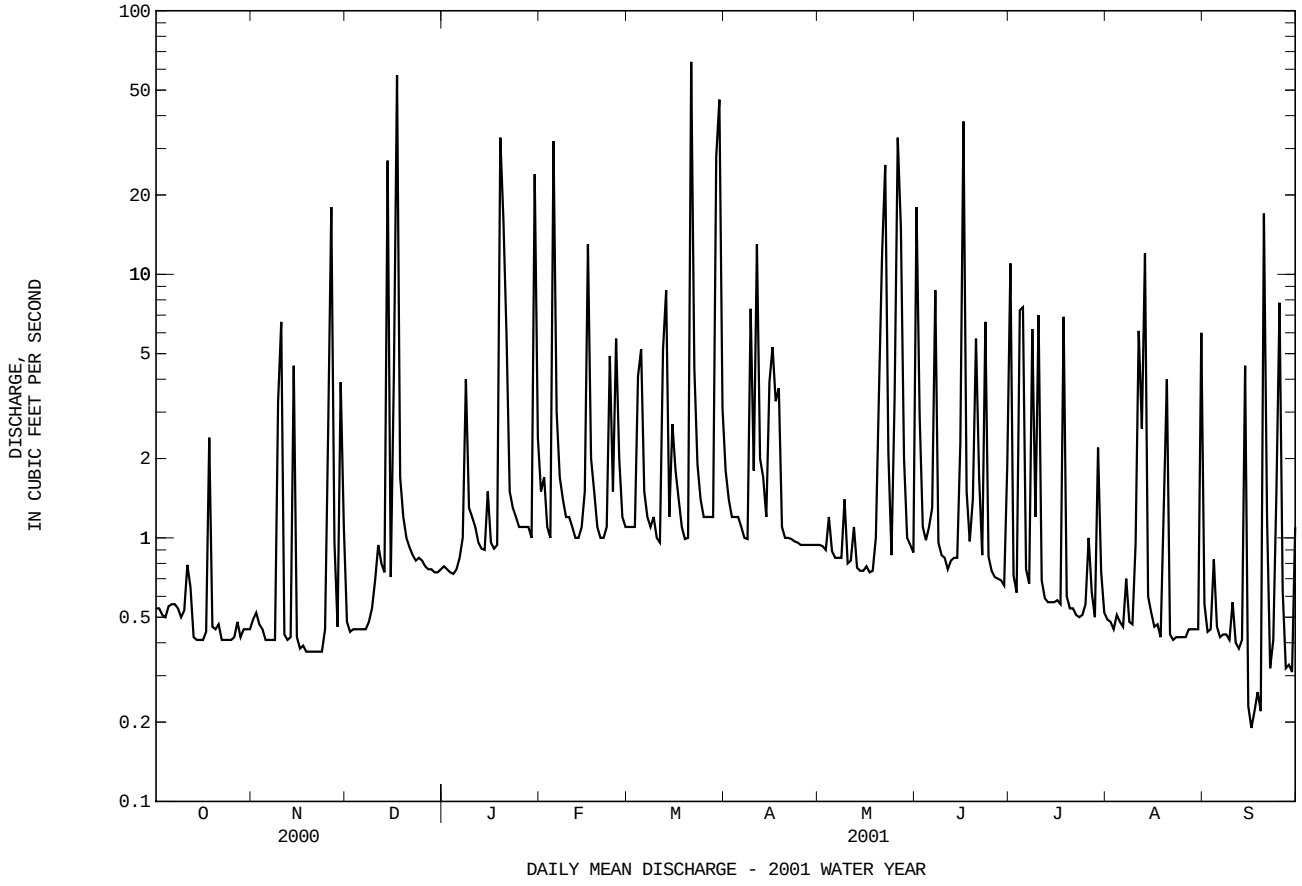
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 2001, BY WATER YEAR (WY)

MEAN	2.36	3.36	4.21	5.17	5.58	7.42	3.27	2.76	2.57	3.21	3.69	4.85
MAX	4.16	7.36	10.5	9.43	11.5	11.3	5.46	4.30	3.51	8.47	8.16	15.5
(WY)	1997	1998	1997	1998	1998	1998	2000	1998	2001	2000	1999	1999
MIN	.55	1.25	.96	3.05	3.16	4.73	2.16	1.06	1.57	.36	1.43	1.42
(WY)	2001	1999	1999	2000	2001	1999	2001	1997	1999	1997	2001	2001

01585230 MOORES RUN AT RADECKE AVE AT BALTIMORE, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1996 - 2001	
ANNUAL TOTAL	1488.00		1011.06			
ANNUAL MEAN	4.07		2.77		4.03	
HIGHEST ANNUAL MEAN					4.99	1998
LOWEST ANNUAL MEAN					2.77	2001
HIGHEST DAILY MEAN	96	Mar 21	64	Mar 21	310	Sep 16 1999
LOWEST DAILY MEAN	.37	(a)	.19	Sep 16	.17	(b)
ANNUAL SEVEN-DAY MINIMUM	.37	Nov 17	.37	Nov 17	.18	Oct 1 1997
MAXIMUM PEAK FLOW			1270	Jun 16	(c)4160	Aug 14 1999
MAXIMUM PEAK STAGE			6.09	Jun 16	8.60	Aug 14 1999
INSTANTANEOUS LOW FLOW			.17	(d)	.15	(f)
ANNUAL RUNOFF (CFSM)	1.15		.79		1.14	
ANNUAL RUNOFF (INCHES)	15.73		10.69		15.54	
10 PERCENT EXCEEDS	9.3		5.7		8.7	
50 PERCENT EXCEEDS	1.2		.92		.95	
90 PERCENT EXCEEDS	.45		.42		.43	

a Nov. 18-23.
b Oct. 1, 2, 1997.
c From rating curve extended above 320 ft^3/s.
d Sept. 15-17.
f Oct. 20, 1997, Aug. 12, 1999.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01585500 CRANBERRY BRANCH NEAR WESTMINSTER, MD

LOCATION.--Lat 39°35'36.0", long 76°58'03.1", Carroll County, Hydrologic Unit 02060003, on left bank 80 ft upstream from culvert, 0.7 mi upstream from mouth, and 1.8 mi northeast of Westminster.

DRAINAGE AREA.--3.29 mi^2.

PERIOD OF RECORD.--October 1949 to current year.

REVISED RECORDS.--WSP 1432: Drainage area, 1954-55. WDR MD-DE-75-1: 1972(M). WDR MD-DE-79-1: 1973-78(P).

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 670 ft above sea level, from topographic map.

REMARKS.--Records good except those for estimated daily discharges (ice effect), which are poor. Occasional small diversions to and releases from Cranberry Reservoir located 1 mi upstream from station since August 1957, capacity, 113,700,000 gal. Beginning October l972 occasional large diversions past the gaging station from the reservoir through a 30-inch pipe. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 80 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 17	0730	86	2.80	Jun 22	1930	*120	*3.00

Minimum discharge, 0.13 ft^3/s, Sept. 2-9.

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	.76	1.7	1.5	e.43	e3.3	.66	5.2	1.7	.98	.95	.35	.24
2	1.4	1.3	1.4	e.42	e2.7	.55	4.1	1.7	1.3	.59	.33	.17
3	1.5	.53	.47	e.41	e2.2	.53	4.3	1.2	.68	.53	.35	.15
4	.67	.58	.68	e.45	2.0	1.2	4.0	1.0	.67	.56	.44	.18
5	.67	.46	.70	.39	e1.5	2.7	3.8	.75	.64	.58	.39	.18
6	.58	.46	.82	e.40	e1.2	.85	3.9	1.0	.63	.50	.36	.16
7	.68	.46	1.1	e.41	1.0	.67	3.9	.69	2.0	.46	.32	.18
8	.75	.46	.45	e.41	2.5	.61	3.8	.58	.88	.53	.31	.18
9	.71	.47	1.7	e.42	3.6	.60	4.4	.72	.63	.50	.29	.17
10	.83	.60	1.9	e.39	3.6	.60	4.2	.88	.56	1.3	.30	.27
11	.63	.46	1.8	e.38	3.0	.58	6.0	.64	.53	1.2	.39	.31
12	.75	.56	.88	e.41	2.2	.55	4.2	.53	1.0	.46	1.5	.30
13	.46	.82	.39	e.42	3.1	3.4	3.0	.80	1.5	.46	2.5	.31
14	.54	1.4	9.1	e.40	3.3	1.6	2.5	.66	.58	.46	1.2	.32
15	.48	1.7	2.6	e.60	2.6	.67	3.1	.53	.53	.49	.27	.30
16	.47	1.1	1.2	.85	1.7	.86	4.4	.50	7.3	.45	.24	.32
17	.71	.42	23	1.3	4.4	.89	3.9	.46	3.1	.39	.23	.30
18	1.0	.48	4.2	.39	3.0	.82	4.4	.51	1.1	.46	.20	.28
19	.71	.61	2.5	9.4	2.9	.75	3.8	.53	.57	.44	.20	.29
20	.71	.79	1.7	8.3	1.5	.74	3.7	.54	.50	.45	.24	.40
21	.47	1.4	e1.0	3.5	3.0	13	3.6	2.8	.53	.44	.20	.38
22	.46	.69	e.89	2.8	3.1	5.1	3.5	3.1	18	.44	.21	.25
23	.68	.82	e.80	e1.6	2.3	1.6	3.3	3.7	15	.46	.20	.18
24	.53	1.4	e.72	e1.2	.98	4.0	3.1	.74	1.2	.46	.21	3.9
25	.64	1.7	e.67	e.92	4.5	3.7	2.8	.74	.78	.43	.19	2.0
26	.76	5.0	.50	e.74	2.4	3.2	2.5	3.1	1.1	.46	.18	.32
27	.73	2.5	e.49	.57	.60	3.2	2.5	2.3	.71	.49	.19	.29
28	.52	1.4	e.55	.64	.60	2.9	1.5	2.9	.67	.43	.19	.46
29	1.2	1.0	e.47	1.4	---	7.0	1.3	.79	.64	.49	.19	.29
30	.91	1.1	e.50	14	---	22	1.6	.84	.60	.55	.38	.29
31	1.6	---	e.45	4.3	---	5.6	---	.66	---	.44	.54	---
TOTAL	23.51	32.37	65.13	58.25	68.78	91.13	106.3	37.59	64.91	16.85	13.09	13.37
MEAN	.76	1.08	2.10	1.88	2.46	2.94	3.54	1.21	2.16	.54	.42	.45
MAX	1.6	5.0	23	14	4.5	22	6.0	3.7	18	1.3	2.5	3.9
MIN	.46	.42	.39	.38	.60	.53	1.3	.46	.50	.39	.18	.15
CFSM	.23	.33	.64	.57	.75	.89	1.08	.37	.66	.17	.13	.14
IN.	.27	.37	.74	.66	.78	1.03	1.20	.43	.73	.19	.15	.15

e Estimated

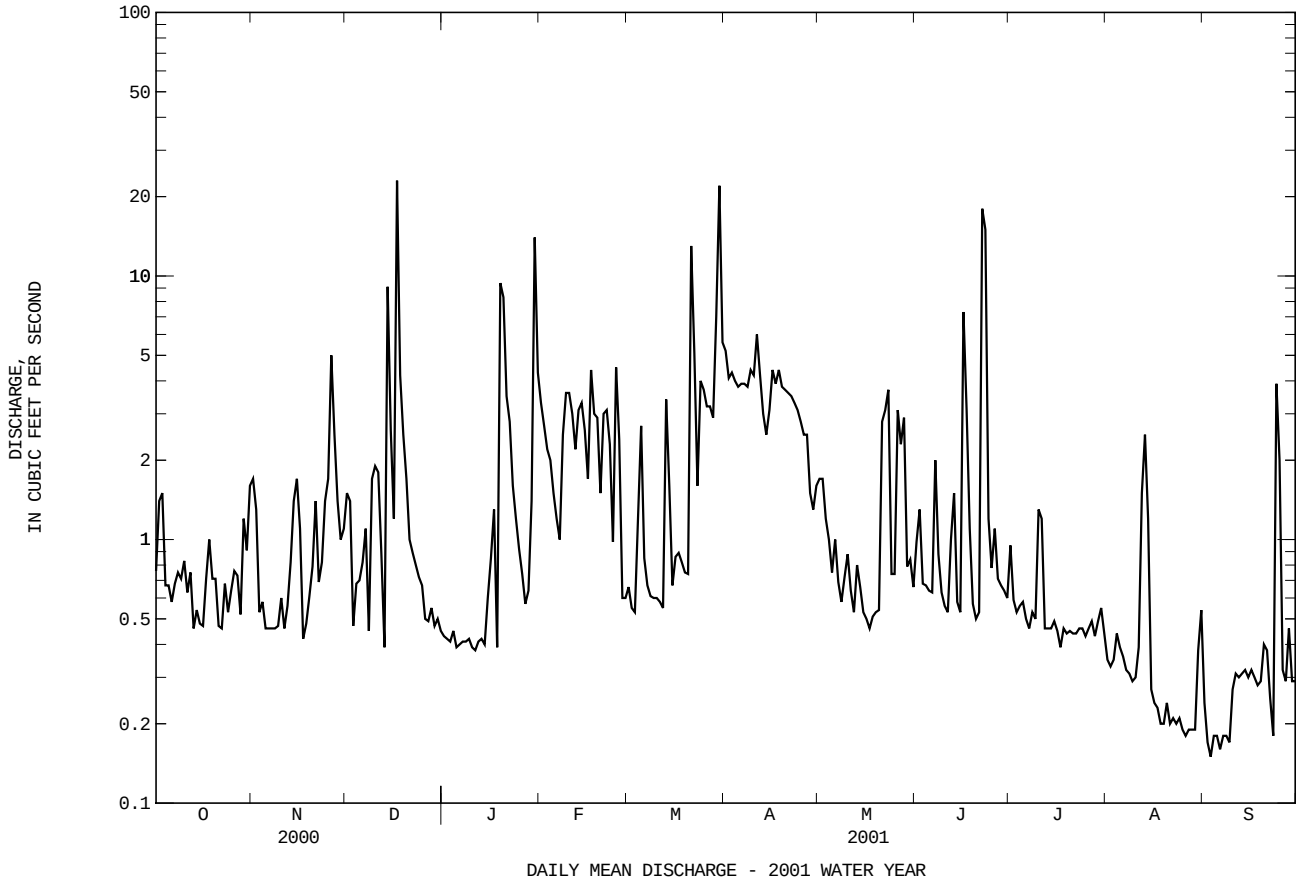
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1950 - 2001, BY WATER YEAR (WY)

MEAN	2.10	2.42	3.08	3.56	4.37	4.70	4.64	4.00	3.51	2.65	2.04	2.33
MAX	9.96	6.66	11.4	13.2	10.7	12.9	12.3	11.3	29.5	11.1	6.91	21.7
(WY)	1980	1953	1997	1996	1974	1994	1993	1952	1972	1972	1955	1975
MIN	.31	.46	.53	.56	.70	.77	.89	.88	.64	.46	.36	.30
(WY)	1998	1999	1999	1992	1992	1981	1992	1986	1986	1997	1986	1977

01585500 CRANBERRY BRANCH NEAR WESTMINSTER, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1950 - 2001	
ANNUAL TOTAL	843.86		591.28			
ANNUAL MEAN	(a)2.31		(a)1.62		3.28	
HIGHEST ANNUAL MEAN					7.82	1972
LOWEST ANNUAL MEAN					.86	1992
HIGHEST DAILY MEAN	38	Sep 19	23	Dec 17	440	Jun 22 1972
LOWEST DAILY MEAN	.22	Aug 26	.15	Sep 3	.01	(b)
ANNUAL SEVEN-DAY MINIMUM	.31	Jan 28	.17	Sep 2	.01	Sep 6 1995
MAXIMUM PEAK FLOW			120	Jun 22	(c)2220	Sep 26 1975
MAXIMUM PEAK STAGE			3.00	Jun 22	7.47	Sep 26 1975
INSTANTANEOUS LOW FLOW			.13	(d)	(f).00	Sep 5 1995
ANNUAL RUNOFF (CFSM)	.70		.49		1.00	
ANNUAL RUNOFF (INCHES)	9.54		6.69		13.53	
10 PERCENT EXCEEDS	4.7		3.7		5.9	
50 PERCENT EXCEEDS	1.0		.71		2.2	
90 PERCENT EXCEEDS	.44		.30		.60	

a Unadjusted for storage and diversions.
b Sept. 6-16, 1995.
c From rating curve extended above 200 ft^3/s on basis of culvert measurement at gage heights 5.54 and 7.47 ft.
d Sept. 2-9.
f Result of regulation.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01586000 NORTH BRANCH PATAPSCO RIVER AT CEDARHURST, MD

LOCATION.--Lat 39°30'13.2", long 76°53'05.5", Carroll County, Hydrologic Unit 02060003, on left bank at downstream side of private footbridge at Cedarhurst, 0.8 mi downstream from Roaring Run, 8 mi southeast of Westminster, and 16.5 mi upstream from confluence with South Branch.

DRAINAGE AREA.--56.6 mi^2.

PERIOD OF RECORD.--September 1945 to current year.

REVISED RECORDS.--WSP 1903: 1959-60.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 420.70 ft above sea level.

REMARKS.--Records good except those for estimated daily discharges (ice effect), which are poor. Slight diurnal fluctuation at low and medium flow caused by mill upstream from station. Low flow affected slightly by Cranberry Reservoir since August 1957, capacity, 113,700,000 gal. Records do not include a mean discharge of 2.81 ft^3/s diverted upstream from station for municipal supply of Westminster; sewage effluent discharged into Little Pipe Creek in Monocacy River basin. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 17	1030	*1,510	*5.16	Jun 22	2315	1,030	4.16
Mar 30	0445	1,000	4.10	Sep 24	2300	1,290	4.71
May 27	0045	1,090	4.30				

Minimum discharge, 8.0 ft^3/s, Aug. 2.

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	40	28	28	e30	94	42	113	45	47	41	19	21
2	39	29	26	e29	82	42	98	43	69	44	17	16
3	37	28	25	e29	63	41	86	41	49	37	16	15
4	37	28	24	e29	53	47	78	40	43	37	25	15
5	36	27	26	e30	62	88	72	40	38	43	25	13
6	37	26	24	30	60	57	72	39	37	35	18	13
7	35	26	24	30	62	49	71	38	63	31	16	12
8	35	26	25	29	62	46	65	37	46	40	15	13
9	34	26	25	29	61	45	79	38	40	37	14	13
10	35	60	25	27	74	42	82	36	37	40	15	12
11	34	39	25	27	55	41	97	35	36	46	40	12
12	32	29	27	28	49	40	91	34	59	30	50	12
13	31	26	25	28	49	96	75	33	136	29	62	12
14	32	29	136	28	54	60	67	32	43	28	42	13
15	32	28	66	e28	54	50	65	32	39	27	24	14
16	30	26	48	e30	56	55	101	31	116	26	20	13
17	32	26	487	e29	95	71	86	31	80	26	20	12
18	49	26	105	28	55	54	92	34	49	27	18	12
19	36	26	65	148	50	47	73	36	40	30	18	12
20	32	26	55	166	49	45	71	35	37	26	22	13
21	32	26	e50	76	48	236	68	75	35	24	18	17
22	31	25	e45	e54	43	173	64	81	198	23	16	14
23	30	24	e40	e48	48	100	60	104	338	21	16	13
24	30	24	e36	e42	45	86	57	46	95	21	17	173
25	30	25	e33	e38	56	77	53	40	68	20	16	260
26	30	76	e31	e35	65	67	53	142	61	19	16	40
27	30	45	e30	e33	48	58	52	277	54	19	15	25
28	30	31	e29	e32	45	56	50	79	51	17	16	21
29	29	28	e29	35	---	70	48	57	46	18	15	20
30	28	33	e29	228	---	418	46	49	42	22	16	19
31	28	---	e29	147	---	141	---	42	---	20	24	---
TOTAL	1033	922	1672	1600	1637	2540	2185	1722	2092	904	681	870
MEAN	33.3	30.7	53.9	51.6	58.5	81.9	72.8	55.5	69.7	29.2	22.0	29.0
MAX	49	76	487	228	95	418	113	277	338	46	62	260
MIN	28	24	24	27	43	40	46	31	35	17	14	12
CFSM	.59	.54	.95	.91	1.03	1.45	1.29	.98	1.23	.52	.39	.51
IN.	.68	.61	1.10	1.05	1.08	1.67	1.44	1.13	1.37	.59	.45	.57

e Estimated

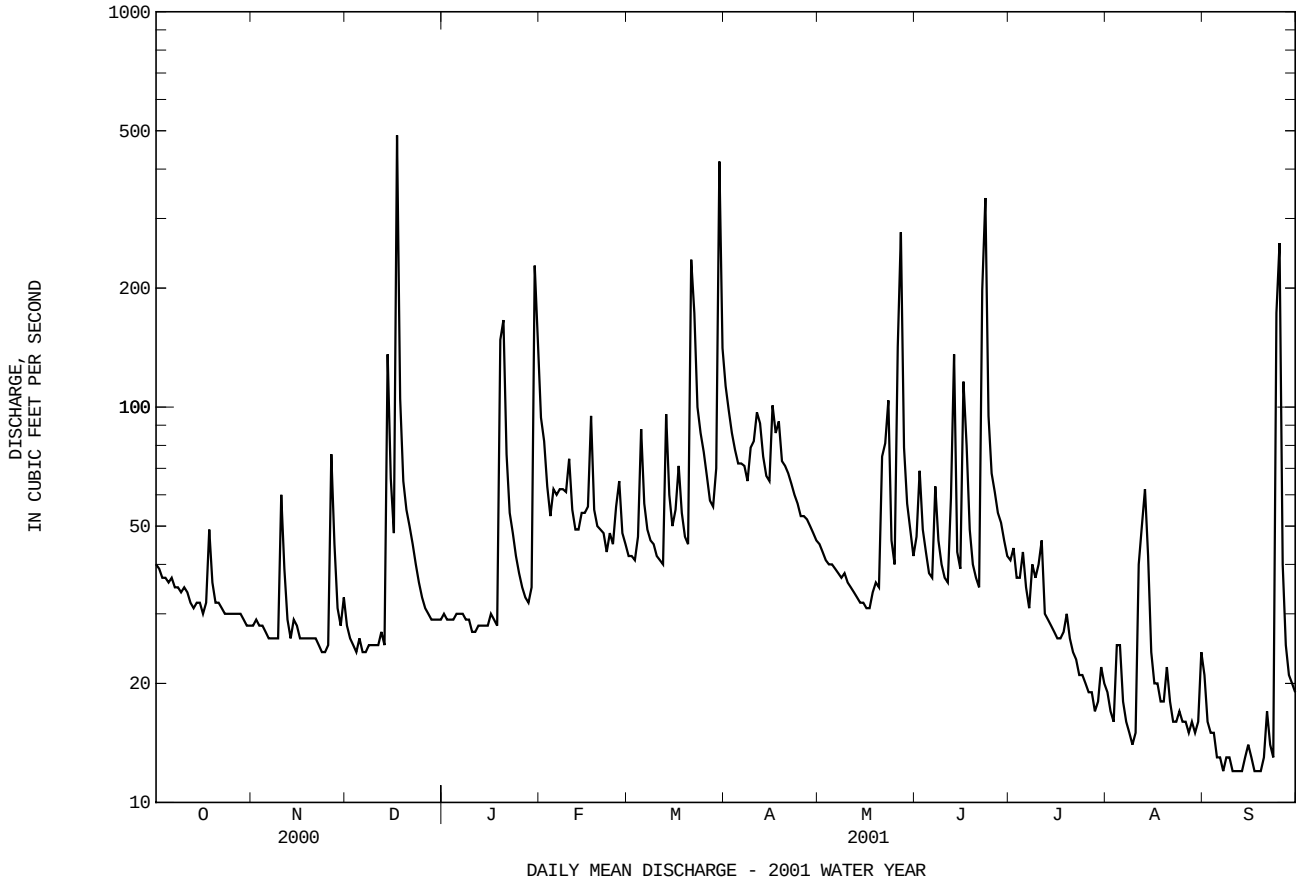
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1945 - 2001, BY WATER YEAR (WY)

MEAN	42.0	50.7	62.6	75.2	86.4	96.1	87.4	75.8	63.9	49.0	41.4	43.1
MAX	214	114	240	225	212	243	213	201	390	149	165	356
(WY)	1980	1953	1997	1996	1979	1994	1993	1952	1972	1972	1955	1975
MIN	11.8	15.8	15.5	17.6	36.4	37.1	36.3	26.3	19.5	9.72	6.91	12.4
(WY)	1964	1966	1966	1966	1992	1959	1969	1969	1969	1966	1966	1964

01586000 NORTH BRANCH PATAPSCO RIVER AT CEDARHURST, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1945 - 2001	
ANNUAL TOTAL	21598		17858			
ANNUAL MEAN	59.0		48.9		64.0	
HIGHEST ANNUAL MEAN					121	1972
LOWEST ANNUAL MEAN					30.1	1966
HIGHEST DAILY MEAN	559	Mar 21	487	Dec 17	6000	Jun 22 1972
LOWEST DAILY MEAN	18	(a)	12	(b)	3.1	(c)
ANNUAL SEVEN-DAY MINIMUM	19	Aug 20	12	Sep 7	3.5	Sep 7 1966
MAXIMUM PEAK FLOW			1510	Dec 17	(d)27800	Jun 22 1972
MAXIMUM PEAK STAGE			5.16	Dec 17	(f)20.75	Jun 22 1972
INSTANTANEOUS LOW FLOW			8.0	Aug 2	(g)1.3	(h)
ANNUAL RUNOFF (CFSM)	1.04		.86		1.13	
ANNUAL RUNOFF (INCHES)	14.20		11.74		15.36	
10 PERCENT EXCEEDS	100		82		114	
50 PERCENT EXCEEDS	40		36		44	
90 PERCENT EXCEEDS	26		17		19	

a Aug. 22, 23.
b Sept. 7, 10-13, 17-19.
c Sept. 10, 12, 1966.
d From rating curve extended above 4,100 ft^3/s on basis of contracted-opening measurement of peak flow.
f From high-water mark in well.
g Result of regulation.
h Sept. 17, 1983 and Aug. 10, 1985.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01586210 BEAVER RUN NEAR FINKSBURG, MD

LOCATION.--Lat 39°29'22.0", long 76°54'l0.6", Carroll County, Hydrologic Unit 02060003, on downstream center line of bridge pier on Hughes Road, 0.25 mi northwest of intersection of Hughes Road and Maryland Route 91, and 0.75 mi southwest of Finksburg.

DRAINAGE AREA.--14.0 mi^2.

PERIOD OF RECORD.--October 1982 to current year.

GAGE.--Water-stage recorder. Datum of gage is 428.70 ft above sea level.

REMARKS.--Records good except those for estimated daily discharges (missing record, ice effect), which are fair. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
May 26	2230	*478	*3.40	No peak greater than base discharge.			

Minimum discharge, 3.1 ft^3/s, Sept. 13, 14, 18-20.

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	9.2	6.2	7.4	e7.4	20	11	34	12	12	8.3	5.0	5.9
2	8.6	6.2	7.1	e7.0	17	11	29	12	15	8.3	4.8	4.7
3	7.8	6.2	6.6	e7.0	15	10	26	11	11	7.7	4.5	4.5
4	7.4	6.4	7.2	e7.2	14	11	24	11	10	7.8	5.8	4.3
5	7.1	6.2	7.0	e7.4	15	17	23	11	10	7.9	5.1	4.2
6	7.2	6.2	6.1	e8.4	14	13	22	10	9.1	7.5	4.9	4.0
7	7.0	5.9	5.9	e7.8	14	11	22	10	16	6.9	4.5	4.0
8	6.5	5.6	5.9	e7.4	14	11	20	10	10	7.7	4.2	4.0
9	6.5	5.8	5.9	e7.2	14	11	29	10	9.0	8.9	3.7	3.8
10	6.5	16	5.6	e7.0	16	10	25	10	8.0	7.9	3.7	3.6
11	6.5	8.3	5.5	e7.0	13	10	30	9.7	8.0	8.6	4.8	3.5
12	6.3	7.2	5.9	e7.0	12	10	27	9.4	7.7	6.8	9.6	3.4
13	6.2	6.3	6.0	e7.0	12	19	25	9.3	7.6	6.7	10	3.3
14	6.0	6.7	32	e7.0	13	13	23	8.9	7.2	6.4	7.4	3.2
15	5.9	6.8	16	e6.9	13	12	24	8.9	7.2	6.2	5.7	3.3
16	5.9	6.2	13	e6.9	14	14	36	8.7	25	6.1	5.3	3.3
17	6.0	6.2	80	e6.9	19	15	33	8.7	12	5.9	5.3	3.3
18	11	6.0	23	8.7	13	12	35	8.7	8.5	6.1	5.1	3.1
19	8.0	5.9	e16	40	13	12	31	9.0	8.0	6.4	5.1	3.1
20	6.7	5.9	e13	33	12	11	29	9.2	7.9	5.9	5.3	3.5
21	6.8	5.9	e11	17	12	44	28	18	8.0	5.8	4.8	4.3
22	6.8	5.6	e9.8	e14	11	35	25	20	48	5.6	4.5	4.2
23	6.5	5.6	e9.0	e13	11	24	19	23	46	5.3	4.5	4.0
24	6.5	5.9	e8.4	e12	11	21	17	11	16	5.4	4.4	45
25	6.3	5.8	e8.0	e11	13	18	16	10	12	5.1	4.3	31
26	6.2	18	e7.6	e10	14	16	15	48	11	5.0	4.2	7.5
27	6.2	10	e7.4	e9.4	12	15	16	38	9.9	5.0	4.2	6.0
28	6.5	8.2	e7.2	e9.0	11	14	16	17	9.2	4.8	4.7	5.6
29	6.5	7.3	e7.1	10	---	20	12	13	8.6	4.9	4.0	5.3
30	6.4	8.2	e7.0	51	---	88	12	12	8.4	5.3	8.0	4.6
31	6.2	---	e7.0	29	---	41	---	11	---	5.3	8.3	---
TOTAL	213.2	216.7	364.6	389.6	382	580	723	418.5	386.3	201.5	165.7	193.5
MEAN	6.88	7.22	11.8	12.6	13.6	18.7	24.1	13.5	12.9	6.50	5.35	6.45
MAX	11	18	80	51	20	88	36	48	48	8.9	10	45
MIN	5.9	5.6	5.5	6.9	11	10	12	8.7	7.2	4.8	3.7	3.1
CFSM	.49	.52	.84	.90	.97	1.34	1.72	.96	.92	.46	.38	.46
IN.	.57	.58	.97	1.04	1.02	1.54	1.92	1.11	1.03	.54	.44	.51

e Estimated

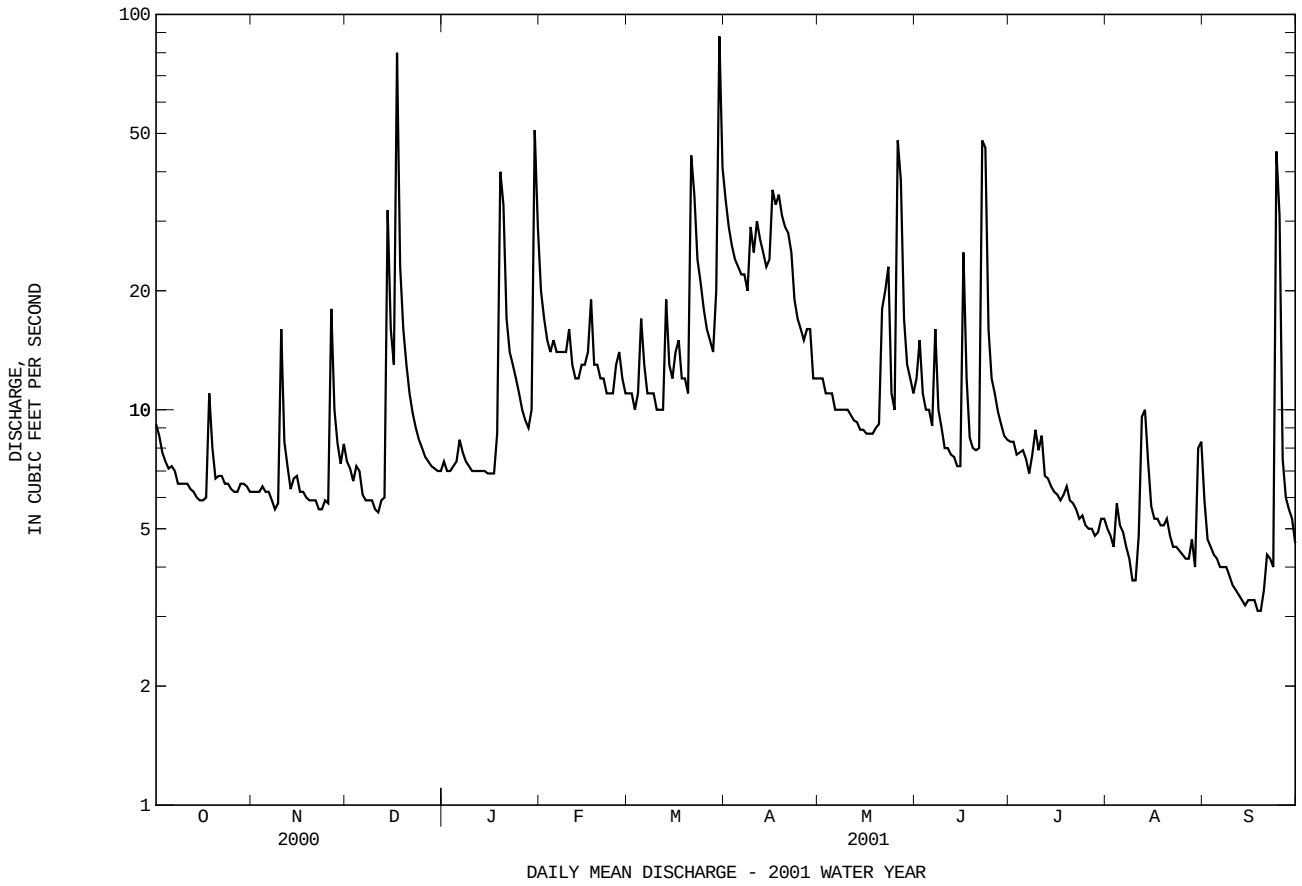
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 2001, BY WATER YEAR (WY)

MEAN	9.94	13.6	17.7	19.5	21.6	26.2	25.0	21.5	13.0	10.4	9.39	8.76
MAX	30.0	27.5	56.0	49.6	41.4	62.0	54.7	51.9	25.3	32.4	29.9	25.1
(WY)	1997	1997	1997	1996	1994	1993	1993	1989	1989	1996	1984	1996
MIN	3.73	5.41	4.94	8.41	10.7	13.8	11.9	8.18	5.14	3.61	4.00	2.78
(WY)	1987	1999	1999	1983	1992	1990	1985	1999	1999	1999	1997	1986

01586210 BEAVER RUN NEAR FINKSBURG, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1983 - 2001	
ANNUAL TOTAL	4828.5		4234.6			
ANNUAL MEAN	13.2		11.6		16.4	
HIGHEST ANNUAL MEAN					25.2	1996
LOWEST ANNUAL MEAN					9.21	1999
HIGHEST DAILY MEAN	98	Mar 21	88	Mar 30	528	Jan 19 1996
LOWEST DAILY MEAN	3.5	Aug 26	3.1	(a)	1.6	(b)
ANNUAL SEVEN-DAY MINIMUM	4.5	Aug 20	3.2	Sep 13	1.9	Aug 7 1999
MAXIMUM PEAK FLOW			478	May 26	(c)2150	May 6 1989
MAXIMUM PEAK STAGE			3.40	May 26	(d)5.70	May 6 1989
INSTANTANEOUS LOW FLOW			3.1	(f)	1.5	(b)
ANNUAL RUNOFF (CFSM)	.94		.83		1.17	
ANNUAL RUNOFF (INCHES)	12.83		11.25		15.87	
10 PERCENT EXCEEDS	23		23		30	
50 PERCENT EXCEEDS	9.2		8.3		12	
90 PERCENT EXCEEDS	6.0		4.8		5.0	

a Sept. 18, 19.
b Aug. 12, 13, 1999.
c From rating curve extended above 600 ft^3/s.
d From floodmarks.
f Sept. 13, 14, 18-20.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01586610 MORGAN RUN NEAR LOUISVILLE, MD

LOCATION.--Lat 39°27'06.8", long 76°57'19.1", Carroll County, Hydrologic Unit 02060003, on right downstream wingwall of bridge on London Bridge Road, 1.4 mi southwest of Gamber, and 1.65 mi south of the intersection of Maryland Route 32, and 1.7 mi west of Louisville.

DRAINAGE AREA.--28.0 mi^2.

PERIOD OF RECORD.--October 1982 to current year.

REVISED RECORDS.--WRD MD-DE-84: 1983(P).

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 430 ft above sea level, from topographic map.

REMARKS.--Records good except those for estimated daily discharges (ice effect), which are poor. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 750 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 17	0900	*577	*3.76	No peak greater than base discharge.			

Minimum discharge, 4.8 ft^3/s, Sept. 17-20, 24.

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	15	11	12	e12	39	20	55	23	22	17	9.0	9.5
2	14	11	12	e12	33	19	47	23	26	16	8.1	8.0
3	13	11	11	e12	28	19	42	23	20	15	7.8	7.6
4	13	11	11	e13	24	21	38	22	18	16	12	7.6
5	12	11	11	e13	27	30	35	21	17	17	9.6	7.2
6	13	11	11	e14	e25	24	35	21	16	15	8.9	6.5
7	12	11	11	e13	e24	21	34	20	34	13	7.9	6.5
8	12	11	11	e12	e24	20	32	20	20	15	7.3	6.5
9	12	11	11	e12	e24	20	44	21	18	18	7.2	6.4
10	13	20	10	e12	30	19	41	20	16	17	7.0	6.3
11	12	13	11	e11	23	19	47	19	15	16	8.3	6.1
12	11	12	11	e11	21	18	44	19	14	13	20	5.9
13	11	12	10	e11	22	33	39	18	14	12	21	5.2
14	11	12	42	e11	23	24	36	18	13	12	15	5.3
15	11	12	24	e11	23	21	35	18	17	11	10	5.3
16	11	11	20	e11	25	24	45	17	88	11	9.8	5.1
17	12	11	143	e12	34	29	39	17	37	11	9.7	5.1
18	18	11	33	e12	24	23	40	18	22	12	9.4	4.9
19	14	11	23	60	23	21	35	18	19	12	9.5	4.9
20	12	11	e20	56	22	21	33	18	17	11	10	5.8
21	12	11	e18	e29	21	62	32	32	16	10	8.9	6.6
22	12	10	e17	e26	19	59	31	33	49	9.9	8.0	5.9
23	12	10	e16	e22	22	42	29	40	94	9.7	7.9	5.2
24	12	10	e14	e19	20	36	29	22	34	9.6	8.0	63
25	12	11	e13	e19	24	32	28	20	26	9.2	7.5	50
26	12	29	e13	18	26	30	27	51	23	9.0	7.2	12
27	12	17	e12	e16	21	28	26	39	20	9.1	8.0	9.7
28	12	13	e12	e15	20	27	25	27	19	8.5	9.3	9.2
29	12	13	e12	16	---	36	24	22	18	9.3	7.2	8.4
30	12	13	e12	81	---	192	24	19	17	11	19	8.0
31	12	---	e12	54	---	66	---	18	---	9.8	13	---
TOTAL	384	372	599	646	691	1056	1071	717	779	385.1	311.5	303.7
MEAN	12.4	12.4	19.3	20.8	24.7	34.1	35.7	23.1	26.0	12.4	10.0	10.1
MAX	18	29	143	81	39	192	55	51	94	18	21	63
MIN	11	10	10	11	19	18	24	17	13	8.5	7.0	4.9
CFSM	.44	.44	.69	.74	.88	1.22	1.27	.83	.93	.44	.36	.36
IN.	.51	.49	.80	.86	.92	1.40	1.42	.95	1.03	.51	.41	.40

e Estimated

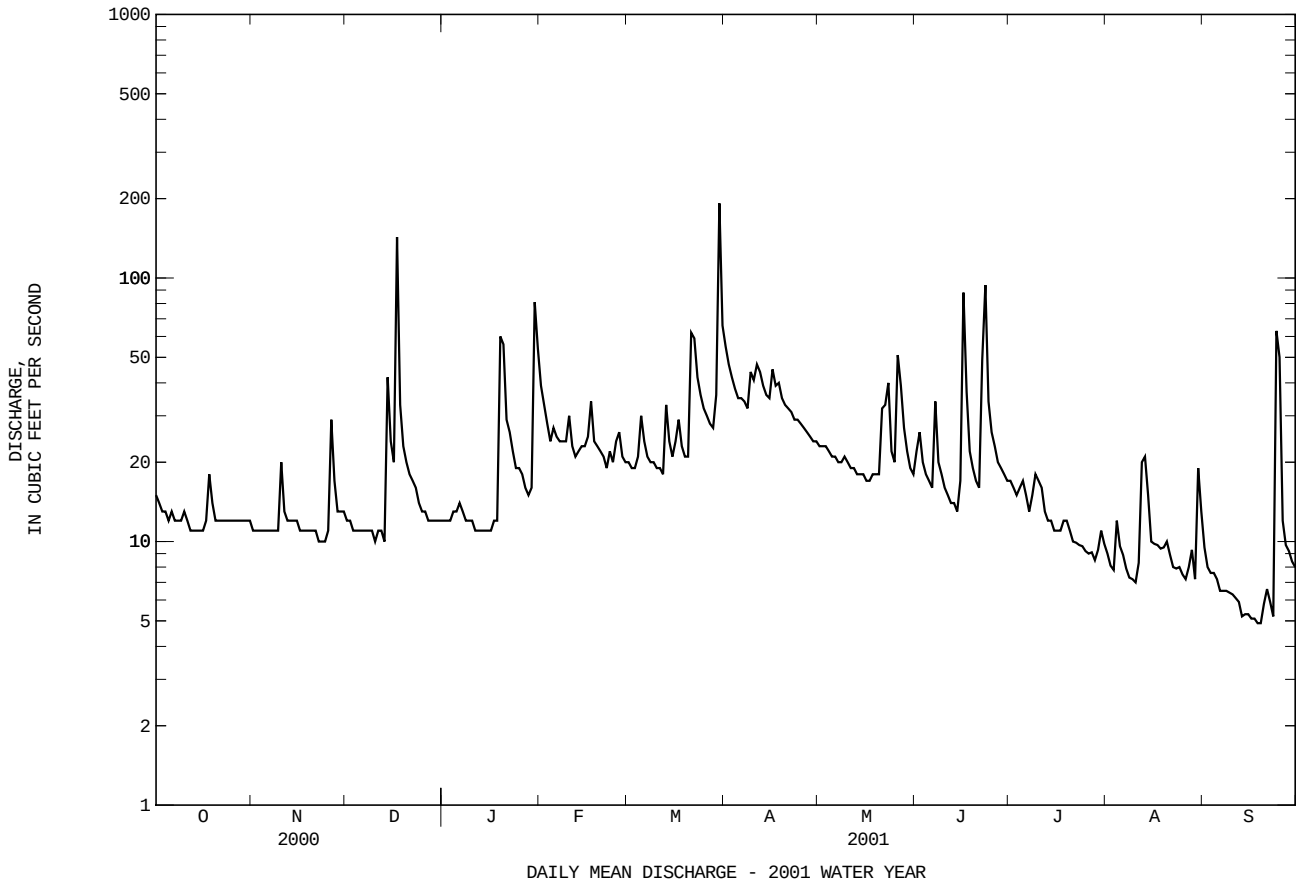
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 2001, BY WATER YEAR (WY)

MEAN	19.7	26.2	37.0	41.1	44.2	58.9	55.4	44.3	28.3	20.5	17.6	17.7
MAX	65.7	63.0	132	117	91.2	154	141	111	71.4	71.8	59.0	77.8
(WY)	1997	1997	1997	1996	1984	1993	1993	1989	1996	1996	1996	1996
MIN	5.69	10.3	9.70	17.0	20.6	29.1	27.0	18.0	10.2	5.90	6.44	5.15
(WY)	1987	1999	1999	1992	1992	1985	1985	1999	1999	1999	1999	1986

01586610 MORGAN RUN NEAR LOUISVILLE, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1983 - 2001	
ANNUAL TOTAL	9429.9		7315.3			
ANNUAL MEAN	25.8		20.0		34.2	
HIGHEST ANNUAL MEAN					58.3	1996
LOWEST ANNUAL MEAN					18.4	1999
HIGHEST DAILY MEAN	217	Mar 21	192	Mar 30	1370	Jan 19 1996
LOWEST DAILY MEAN	8.2	Aug 26	4.9	(a)	2.4	(b)
ANNUAL SEVEN-DAY MINIMUM	8.6	Aug 20	5.1	Sep 13	3.3	Aug 7 1999
MAXIMUM PEAK FLOW			577	Dec 17	(c)3550	Jan 19 1996
MAXIMUM PEAK STAGE			3.76	Dec 17	8.45	Jan 19 1996
INSTANTANEOUS LOW FLOW			4.8	(d)	2.2	(f)
ANNUAL RUNOFF (CFSM)	.92		.72		1.22	
ANNUAL RUNOFF (INCHES)	12.53		9.72		16.58	
10 PERCENT EXCEEDS	50		35		65	
50 PERCENT EXCEEDS	17		16		23	
90 PERCENT EXCEEDS	11		8.2		9.4	

a Sept. 18, 19.
b Aug. 13, 19, 1999.
c From rating curve extended above 1,900 ft^3/s.
d Aug. 12, 13, 19, 20, 1999.
f Sept. 17-20, 24.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01589000 PATAPSCO RIVER AT HOLLOFIELD, MD

LOCATION.--Lat 39°18'37.0", long 76°47'32.7", Baltimore County, Hydrologic Unit 02070003, on left bank at downstream side of highway bridge at Hollofield,0.3 mi downstream from Dogwood Run, 3.0 mi north of Ellicott City, and 28 mi upstream from mouth.
DRAINAGE AREA.--285 mi^2.

PERIOD OF RECORD.--May 1944 to January 1992, March 1994 to September 1995, January 2000 to September 2001.

GAGE.--Water-stage recorder. Datum of gage is 187.7 ft above sea level. June 26 to December 8, 1972, nonrecording gage at same site and datum. Prior to June 22, 1972, water-stage recorder at site on opposite bank at same datum.

REMARKS.--Records good except those for estimated daily discharges (missing record, backwater, ice effect), which are fair. Flow regulated by Liberty Reservoir, 11 mi upstream, beginning July 22, 1954, usable capacity 42,070,000,000 gallons; dead storage 1,260,000,000 gallons. Diversions upstream from station for municipal supply of Westminster (sewage effluent discharged into Little Pipe Creek), and from Liberty Reservoir beginning February 26, 1953, for municipal supply of Baltimore, and beginning February 1970 for small municipal supply for part of Carroll County. U.S. Geological Survey satellite telemeter at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT PERIOD.--
Maximum discharge January-September 2000, 3,240 ft^3/s, Mar. 22, gage height, 5.38 ft.
Maximum discharge 2001 Water Year, 3,410 ft^3/s, June 23, gage height, 5.26 ft.

Minimum discharge January - September 2000, 47 ft^3/s, Aug. 26.
Minimum discharge 2001 Water Year, 26 ft^3/s, Sept. 18-20.

DISCHARGE, CUBIC FEET PER SECOND, JANUARY TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	e80	101	159	170	142	110	e100	149	184
2	---	---	---	e80	94	148	161	140	101	e86	115	106
3	---	---	---	85	90	136	162	137	94	e81	85	210
4	---	---	---	99	95	130	209	133	91	e78	80	242
5	---	---	---	121	94	125	167	132	95	e70	73	122
6	---	---	---	91	90	119	150	127	122	e66	85	86
7	---	---	---	88	91	116	141	121	111	e61	105	75
8	---	---	---	86	95	116	171	115	97	e58	108	71
9	---	---	---	87	89	114	374	111	90	e56	78	69
10	---	---	---	146	104	111	213	114	83	e78	72	66
11	---	---	---	183	148	145	181	139	80	e67	67	64
12	---	---	---	121	189	214	173	113	75	e56	63	64
13	---	---	---	107	137	144	160	135	89	e55	60	66
14	---	---	---	97	159	129	156	147	88	e98	62	65
15	---	---	---	89	220	123	155	109	109	167	59	81
16	---	---	---	96	156	122	165	102	296	86	57	63
17	---	---	---	89	156	170	312	99	118	69	53	62
18	---	---	---	84	206	140	576	96	100	65	62	61
19	---	---	---	92	617	126	359	103	119	72	63	345
20	---	---	---	95	327	124	254	112	93	89	55	319
21	---	---	---	92	213	732	264	109	87	69	53	115
22	---	---	---	97	182	1310	273	167	258	62	51	88
23	---	---	---	98	165	425	221	136	117	58	50	80
24	---	---	---	93	153	314	195	163	94	64	53	79
25	---	---	---	91	144	246	182	166	87	69	52	230
26	---	---	---	103	138	223	172	119	255	112	49	672
27	---	---	---	95	143	216	168	116	e110	90	57	224
28	---	---	---	92	356	345	165	173	e102	104	189	146
29	---	---	---	93	189	230	158	212	e170	261	92	120
30	---	---	---	90	---	196	149	137	e128	103	82	106
31	---	---	---	100	---	185	---	120	---	145	76	---
TOTAL	---	---	---	3060	4941	7133	6356	4045	3569	2695	2355	4281
MEAN	---	---	---	98.7	170	230	212	130	119	86.9	76.0	143
MAX	---	---	---	183	617	1310	576	212	296	261	189	672
MIN	---	---	---	80	89	111	141	96	75	55	49	61
(†)				28565	31367	35429	38474	38600	38636	37818	37028	37675
(‡)				119	124	121	143	169	154	150	142	151

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1944 - 1992, 1994 - 1995, 2000, BY WATER YEAR (WY)

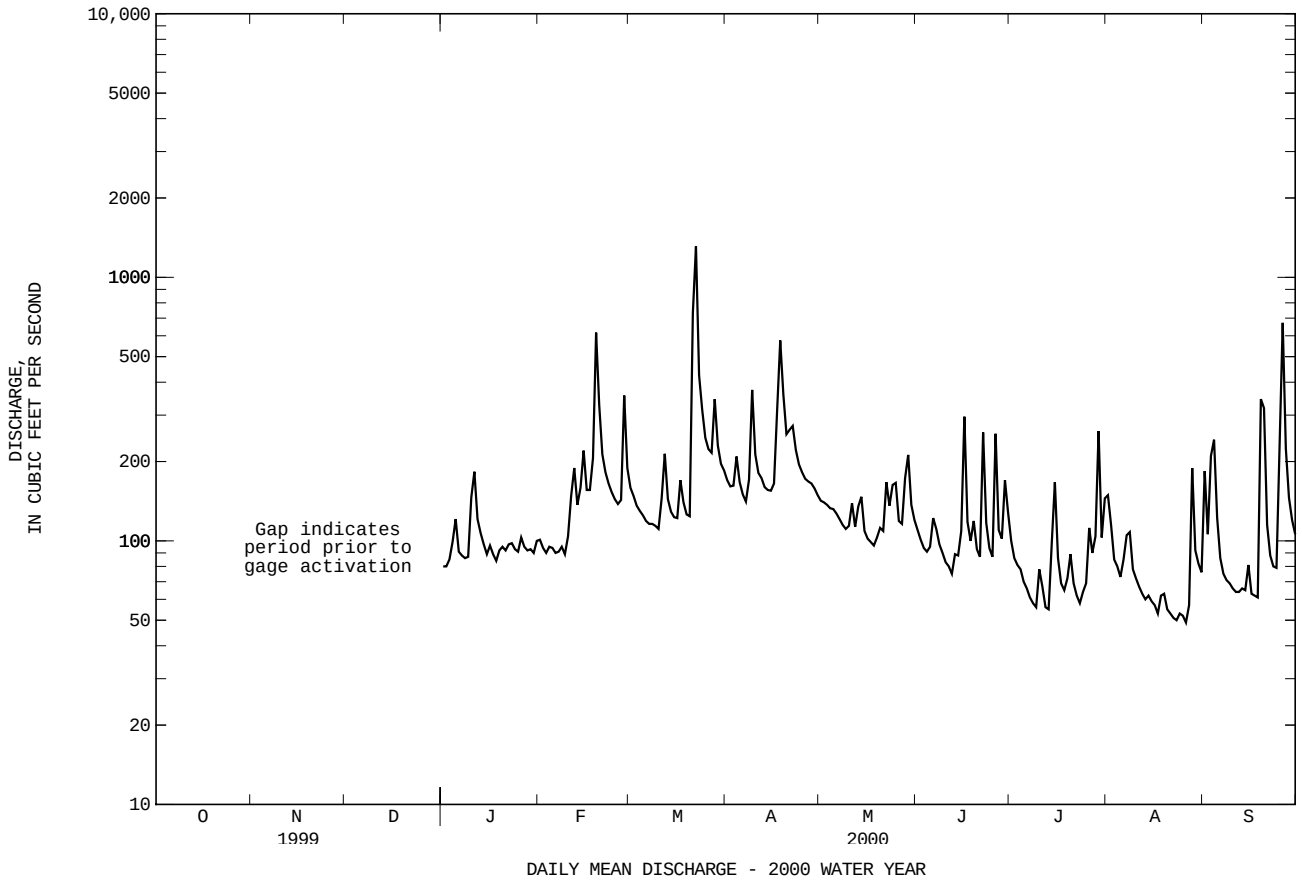
MEAN	119	142	186	215	262	280	282	251	217	149	116	136
MAX	857	590	675	770	724	804	1071	1102	2024	601	516	1493
(WY)	1980	1953	1973	1949	1951	1953	1952	1952	1972	1956	1971	1975
MIN	14.7	35.2	32.7	33.3	92.0	74.3	85.3	58.3	33.5	22.4	20.1	19.4
(WY)	1987	1966	1966	1966	1969	1981	1963	1963	1986	1966	1966	1986

† Month-end contents, in millions of gallons in Liberty Reservoir. Records furnished by Baltimore City Department of Public Works.
‡ Diversions, in cubic feet per second, upstream from station for municipal supply for city of Westminster; and from Liberty Reservoir for municipal supply of city of Baltimore, and for part of Carroll County. Records provided by cities of Westminster and Baltimore, respectively.

01589000 PATAPSCO RIVER AT HOLLOFIELD, MD--Continued

SUMMARY STATISTICS	WATER YEARS 1944 - 1992 1994 - 1995 2000	
ANNUAL MEAN	*197	
ANNUAL MEAN DIVERSIONS‡	167	
HIGHEST ANNUAL MEAN	*524	1972
LOWEST ANNUAL MEAN	*64.3	1966
HIGHEST DAILY MEAN	30000	Jun 22 1972
LOWEST DAILY MEAN	7.9	Oct 12 1986
ANNUAL SEVEN-DAY MINIMUM	9.7	Oct 6 1986
MAXIMUM PEAK FLOW	(a)80600	Jun 22 1972
MAXIMUM PEAK STAGE	(b)31.30	Jun 22 1972
INSTANTANEOUS LOW FLOW	6.0	Sep 6 1944
ANNUAL RUNOFF (CFSM)	.69	
ANNUAL RUNOFF (INCHES)	9.40	
10 PERCENT EXCEEDS	407	
50 PERCENT EXCEEDS	111	
90 PERCENT EXCEEDS	39	

* Unadjusted for diversions.
‡ Diversions, in cubic feet per second, upstream from station for municipal supply for city of Westminster; and from Liberty Reservoir for municipal supply of city of Baltimore, and for part of Carroll County. Records provided by cities of Westminster and Baltimore, respectively.
a From rating curve extended above 27,000 ft^3/s on basis of slope-area measurement of peak flow.
b From floodmarks.



DAILY MEAN DISCHARGE - 2000 WATER YEAR

01589000 PATAPSCO RIVER AT HOLLOFIELD, MD--Continued

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	102	e78	174	75	207	114	252	100	119	146	50	67
2	98	e80	131	73	152	112	209	98	163	227	47	47
3	91	e98	127	e72	134	109	184	96	134	106	45	42
4	87	e78	121	72	116	118	168	92	117	94	46	41
5	86	e76	86	75	198	193	156	89	105	123	54	40
6	89	e73	79	79	171	147	156	86	93	132	47	38
7	88	e71	78	73	147	125	160	83	289	88	43	37
8	85	e71	78	75	133	117	150	83	174	93	41	36
9	85	e71	77	76	123	114	150	86	128	93	39	35
10	89	e140	76	74	128	109	168	84	106	85	39	35
11	89	e93	78	74	117	105	211	79	92	84	131	34
12	85	e74	78	75	111	104	213	75	83	72	149	31
13	83	e72	74	e75	116	170	172	74	78	68	154	28
14	83	e83	254	73	118	142	153	72	76	65	94	32
15	83	e83	181	76	125	128	147	72	79	63	66	30
16	84	e78	171	80	135	134	182	71	e173	61	60	28
17	e83	e152	986	75	185	160	166	70	e538	59	56	28
18	e86	e150	263	74	137	140	167	73	e272	64	54	27
19	e100	e150	141	372	124	132	148	82	189	94	54	27
20	e90	e148	120	380	124	125	137	80	131	66	104	33
21	e108	e80	105	186	118	493	134	152	106	59	62	41
22	e106	e74	e100	123	111	391	131	219	199	55	64	36
23	e103	e74	e96	146	120	214	127	294	1490	53	64	31
24	e103	e74	94	160	116	178	124	126	535	52	65	70
25	e90	e76	92	132	130	158	131	108	324	50	53	342
26	e84	186	e88	120	168	145	117	220	222	49	49	73
27	e84	135	e85	94	130	134	114	484	164	50	48	49
28	e84	104	82	94	121	129	120	397	125	47	69	43
29	e83	98	80	92	---	164	108	255	98	52	48	41
30	e80	185	78	402	---	960	102	182	89	63	51	39
31	e78	---	83	323	---	326	---	128	---	55	62	---
TOTAL	2769	3005	4356	3970	3815	5890	4657	4210	6491	2468	2008	1481
MEAN	89.3	100	141	128	136	190	155	136	216	79.6	64.8	49.4
MAX	108	186	986	402	207	960	252	484	1490	227	154	342
MIN	78	71	74	72	111	104	102	70	76	47	39	27
(†)	36551	35806	36902	38097	39310	40864	43410	43452	43419	42095	41313	40846
(‡)	139	128	106	107	109	109	127	179	142	150	126	153

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1944 - 1992, 1994 - 1995, 2000 - 2001, BY WATER YEAR (WY)

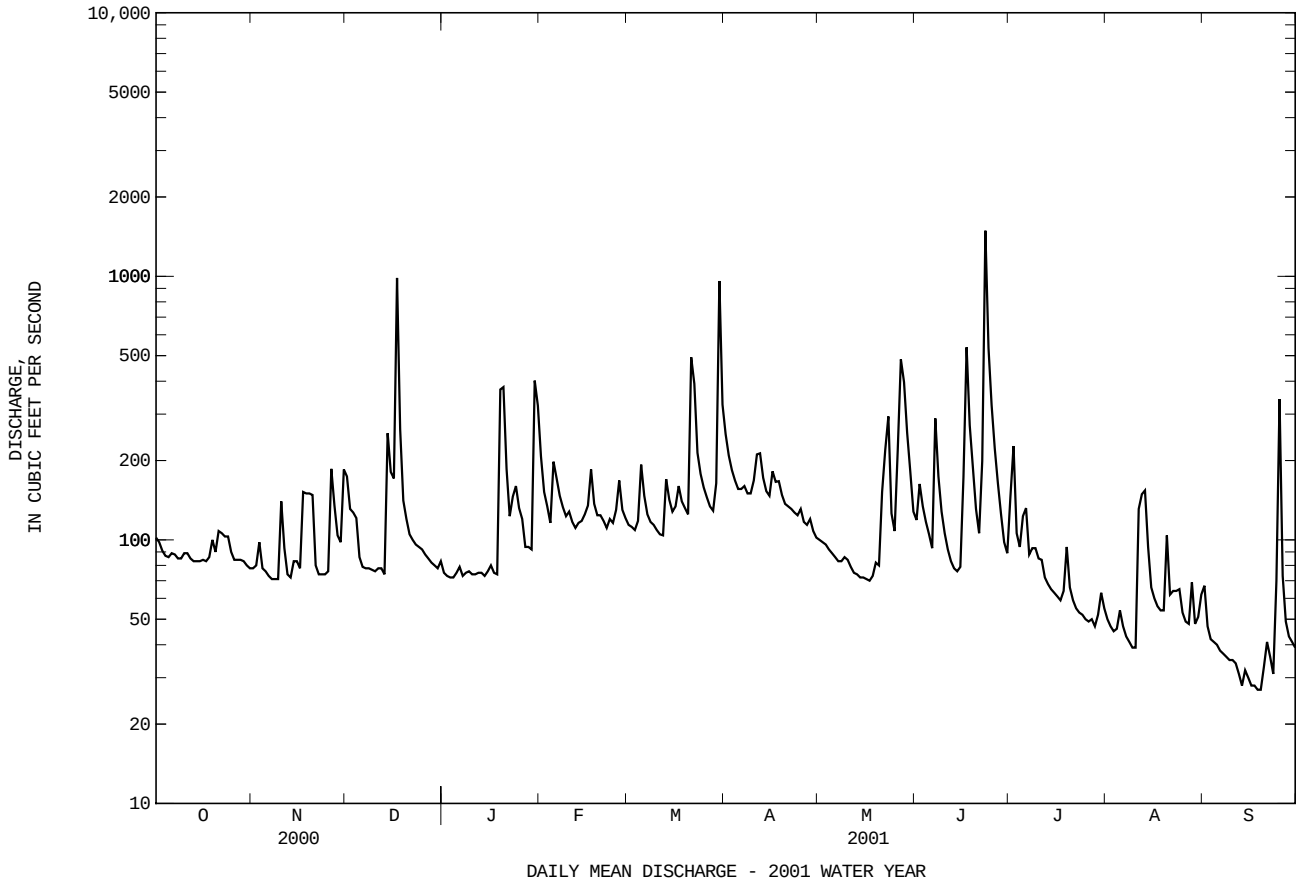
MEAN	118	141	185	213	259	278	279	249	217	148	115	135
MAX	857	590	675	770	724	804	1071	1102	2024	601	516	1493
(WY)	1980	1953	1973	1949	1951	1953	1952	1952	1972	1956	1971	1975
MIN	14.7	35.2	32.7	33.3	92.0	74.3	85.3	58.3	33.5	22.4	20.1	19.4
(WY)	1987	1966	1966	1966	1969	1981	1963	1963	1986	1966	1966	1986

† Month-end contents, in millions of gallons in Liberty Reservoir. Records furnished by Baltimore City Department of Public Works.
‡ Diversions, in cubic feet per second, upstream from station for municipal supply for city of Westminster; and from Liberty Reservoir for municipal supply of city of Baltimore, and for part of Carroll County. Records provided by cities of Westminster and Baltimore, respectively.

01589000 PATAPSCO RIVER AT HOLLOFIELD, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1944 - 1992, 1994 - 1995, 2000 - 2001	
ANNUAL TOTAL	48565		45120			
ANNUAL MEAN	133		124		*196	
ANNUAL MEAN DIVERSIONS‡	137		131		166	
HIGHEST ANNUAL MEAN					*524	1972
LOWEST ANNUAL MEAN					*64.3	1966
HIGHEST DAILY MEAN	1310	Mar 22	1490	Jun 23	30000	Jun 22 1972
LOWEST DAILY MEAN	49	Aug 26	27	(a)	7.9	Oct 12 1986
ANNUAL SEVEN-DAY MINIMUM	52	Aug 20	29	Sep 13	9.7	Oct 6 1986
MAXIMUM PEAK FLOW			3410	Jun 23	(b)80600	Jun 22 1972
MAXIMUM PEAK STAGE			5.38	Jun 23	(c)31.30	Jun 22 1972
INSTANTANEOUS LOW FLOW			26	(d)	6.0	Sep 6 1944
ANNUAL RUNOFF (CFSM)	.47		.43		.69	
ANNUAL RUNOFF (INCHES)	6.34		5.89		9.33	
10 PERCENT EXCEEDS	213		187		404	
50 PERCENT EXCEEDS	100		94		111	
90 PERCENT EXCEEDS	68		49		39	

* Unadjusted for diversions.
‡ Diversions, in cubic feet per second, upstream from station for municipal supply for city of Westminster; and from Liberty Reservoir for municipal supply of city of Baltimore, and for part of Carroll County. Records provided by cities of Westminster and Baltimore, respectively.
a Sept. 18, 19.
b From rating curve extended above 27,000 ft^3/s on basis of slope-area measurement of peak flow.
c From floodmarks.
d Sept. 18-20.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01589100 EAST BRANCH HERBERT RUN AT ARBUTUS, MD

LOCATION.--Lat 39°14'24.0", long 76°41'31.9", Baltimore County, Hydrologic Unit 02060003, on left bank 50 ft upstream from bridge on Tom Day Boulevard at U.S. Route 1 in Arbutus, 0.5 mi upstream from mouth, and 2 mi south of Baltimore city limits.

DRAINAGE AREA.--2.47 mi^2.

PERIOD OF RECORD.--August 1957 to September 1989, October 1998 to current year.

REVISED RECORDS.--WDR MD-DE-81: 1979.

GAGE.--Water-stage recorder and V-notch sharp crested weir. Elevation of gage is 45 ft above sea level, from topographic map. Prior to August 1981 at site 100 ft downstream at same datum.

REMARKS.--Records good except those for estimated daily discharges (ice effect, backwater from leaves), which are fair. Slight regulation at low flow from unknown source upstream from station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 400 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Aug 11	UNKNOWN	*666	*5.30(a)	No other peak greater than base discharge.			

a From floodmark.

Minimum discharge, 0.22 ft^3/s, Dec. 12.

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	.85	.47	.49	e.68	e1.3	.95	2.6	.86	8.1	4.2	.44	2.2
2	.80	.43	.49	e.68	e1.3	.88	1.9	.85	2.3	.76	.49	.67
3	.77	.43	.47	e.68	e1.0	.84	1.7	.81	1.0	.53	.57	.60
4	.72	.43	.48	e.68	e.96	5.9	1.5	.79	.90	2.6	e8.0	.61
5	.72	.44	.46	e.74	e16	4.6	1.4	.75	1.1	2.2	e1.3	.54
6	.75	.42	.41	e.80	e2.7	1.3	1.8	.75	.79	.70	e.70	.48
7	.64	.48	.40	e.80	e1.5	1.0	1.3	.78	25	.53	e.60	.53
8	.54	.50	.39	2.6	e1.2	.96	1.3	.82	2.0	3.4	e.54	.59
9	.50	1.4	.39	.95	e1.1	1.1	5.3	.97	1.1	.63	e.62	.57
10	.52	5.5	.57	.80	1.1	.96	2.1	.70	.90	1.0	e1.0	.63
11	.48	.47	.44	e.88	.96	.94	12	.66	.85	.85	e39	.56
12	.48	.58	.47	e.86	1.2	2.5	2.3	.63	.81	.99	e6.5	.82
13	.53	.72	.55	e.86	1.4	8.2	2.1	.63	.77	.54	e27	.43
14	.47	3.5	17	e.86	1.3	1.4	1.5	.63	.74	.60	e2.0	3.4
15	.48	.48	.99	e.84	2.2	4.9	2.4	.63	1.7	.74	e.84	.48
16	.49	.46	2.2	e.84	11	2.1	2.6	.63	17	.44	.68	.72
17	.50	.46	34	e.84	7.1	2.0	2.3	.63	1.9	.51	.64	.43
18	1.7	.47	2.0	e.84	1.5	1.1	2.8	.71	.88	3.1	.59	.44
19	.53	.47	1.4	e21	1.2	.96	1.2	1.1	.71	.53	1.5	.51
20	.57	.47	1.2	e7.9	1.1	1.0	1.2	2.8	5.8	.48	3.9	7.7
21	.52	.47	e.96	e3.0	1.0	44	1.2	10	1.8	.49	.61	2.3
22	.46	.47	e.80	e1.5	1.1	6.1	1.1	35	.91	.48	.58	.71
23	.45	.47	e.76	e1.2	3.5	2.6	1.1	4.5	2.1	.51	.58	.50
24	.48	.47	e.72	e1.1	1.5	1.7	1.0	1.3	.82	.51	.58	2.8
25	.46	2.7	e.70	e1.0	3.5	1.5	.97	2.3	.81	.43	.55	6.3
26	.46	12	e.68	e.94	1.5	1.3	.96	26	.73	.48	.55	.62
27	.43	.84	e.80	e.90	1.1	1.2	1.0	18	.67	.48	.51	.50
28	.44	.52	e.74	e.86	.97	1.1	.96	3.8	.65	.50	.47	.49
29	.41	2.8	e.72	e.86	---	24	.85	1.5	.65	6.0	.48	.98
30	.44	.95	e.70	e16	---	38	.87	1.1	.66	1.8	11	.77
31	.47	---	e.70	e2.0	---	4.5	---	.92	---	.50	6.1	---
TOTAL	18.06	40.27	73.08	74.49	71.29	169.59	61.31	121.55	84.15	37.51	118.92	38.88
MEAN	.58	1.34	2.36	2.40	2.55	5.47	2.04	3.92	2.81	1.21	3.84	1.30
MAX	1.7	12	34	21	16	44	12	35	25	6.0	39	7.7
MIN	.41	.42	.39	.68	.96	.84	.85	.63	.65	.43	.44	.43
CFSM	.24	.54	.95	.97	1.03	2.21	.83	1.59	1.14	.49	1.55	.52
IN.	.27	.61	1.10	1.12	1.07	2.55	.92	1.83	1.27	.56	1.79	.59

e Estimated

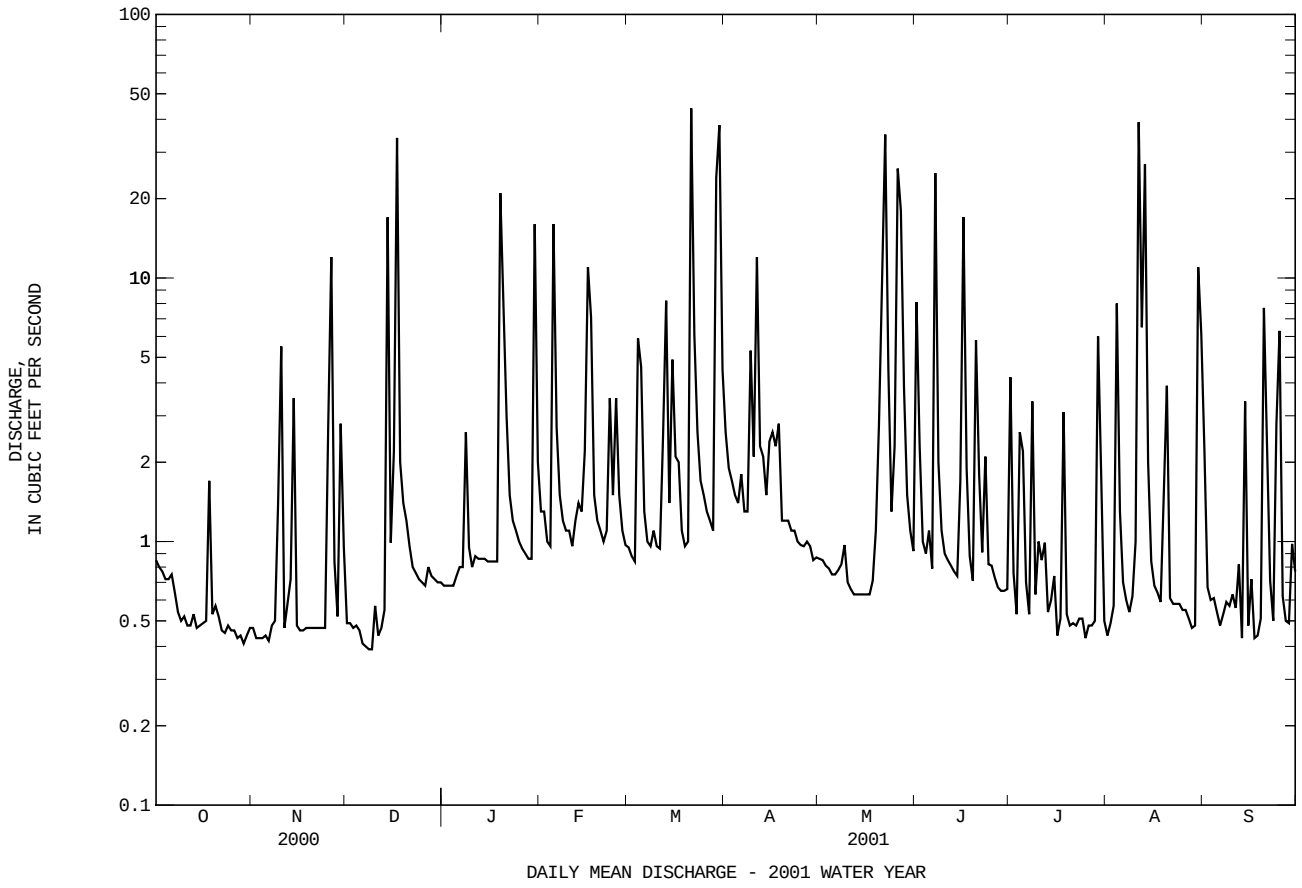
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1957 - 1989, 1999 - 2001, BY WATER YEAR (WY)

MEAN	2.24	2.77	3.24	3.30	4.03	4.19	3.62	3.44	3.01	2.80	3.11	3.59
MAX	7.62	8.39	7.54	13.4	11.0	10.7	11.8	10.6	13.5	10.2	13.5	15.7
(WY)	1972	1973	1984	1979	1979	1958	1983	1989	1972	1975	1979	1979
MIN	.58	.63	.70	.56	1.28	1.41	1.20	.89	.95	.78	.80	.63
(WY)	2001	1982	1981	1981	1977	1981	1985	1986	1986	1966	1982	1986

01589100 EAST BRANCH HERBERT RUN AT ARBUTUS, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1957 - 1989, 1999 - 2001	
ANNUAL TOTAL	1105.86		909.10			
ANNUAL MEAN	3.02		2.49		3.27	
HIGHEST ANNUAL MEAN					6.85	1979
LOWEST ANNUAL MEAN					2.02	1977
HIGHEST DAILY MEAN	45	Mar 21	44	Mar 21	200	Jun 22 1972
LOWEST DAILY MEAN	.39	(a)	.39	(a)	.21	Aug 10 1999
ANNUAL SEVEN-DAY MINIMUM	.43	Dec 3	.43	Dec 3	.24	Aug 6 1999
MAXIMUM PEAK FLOW			666	Aug 11	(b)2460	Sep 6 1979
MAXIMUM PEAK STAGE			(c)5.30	Aug 11	(c)13.70	Sep 6 1979
INSTANTANEOUS LOW FLOW			.22	Dec 12	.16	(d)
ANNUAL RUNOFF (CFSM)	1.22		1.01		1.33	
ANNUAL RUNOFF (INCHES)	16.66		13.69		18.01	
10 PERCENT EXCEEDS	6.6		4.7		5.8	
50 PERCENT EXCEEDS	1.2		.85		1.4	
90 PERCENT EXCEEDS	.48		.47		.63	

a Dec. 8, 9.
b From rating curve extended above 2803,600 ft^3/s on basis of culvert measurement at gage height 5.0 ft, present site, and culvert and flow-over-road measurement of peak flow at gage height 13.7 ft, present site.
c From floodmarks.
d Aug. 7, 10, 1999.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01589180 GWYNNS FALLS AT GLYNDON, MD

LOCATION.--Lat 39°28'18.1", long 76°49'00.8", Baltimore County, Hydrologic Unit 02060003, on left bank, 375 ft downstream of bridge on Chatsworth Avenue, 125 ft off Wabash Avenue, in the town of Glyndon, and 0.9 mile northeast of Reistertown.

DRAINAGE AREA.--0.32 mi^2.

PERIOD OF RECORD.--October 1998 to current year.

GAGE.--Water-stage recorder. Datum of gage is 660 ft above sea level, from topographic map.

REMARKS.--Records good except those above 5.0 ft^3/s, which are poor, and those for estimated daily discharge (ice effect), which are poor. Occasional pumpage from unknown sources may effect discharges. Several measurements of water temperature were made during the year.

*****DATA UNAVAILABLE AT TIME OF PUBLICATION*****

THIS IS A BLANK PAGE

01589197 GWYNNS FALLS NEAR DELIGHT, MD

LOCATION.--Lat 39°26'34.6", long 76°47'00.3", Baltimore County, Hydrologic Unit 02060003, on downstream side of bridge on Gwynbrook Avenue, 1.2 mi east of Delight, and 1.6 mi north of Owings Mills, and 1.6 miles northeast of Belltown.

DRAINAGE AREA.--4.23 mi^2.

PERIOD OF RECORD.--October 1998 to current year.

GAGE.--Water-stage recorder. Datum of gage is 534.20 ft above sea level.

REMARKS.--Records good except those for estimated daily discharges (ice effect), which are poor. Several measurements of water temperature were made during the year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 150 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 17	0930	*660	*5.78	Jun 16	1200	413	4.47
Mar 21	1630	170	2.78	Aug 11	1500	284	3.66
Mar 30	0200	250	3.42				

Minimum discharge, 1.2 ft^3/s, Sept. 30.

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	1.9	1.8	2.1	e1.8	4.6	2.7	4.8	2.5	4.1	5.2	1.7	1.7
2	1.9	1.8	2.0	e1.8	4.0	2.7	4.1	2.3	3.5	2.2	1.7	1.5
3	1.8	1.8	1.9	e1.8	3.2	2.6	3.7	2.2	2.2	1.8	1.7	1.5
4	1.8	1.7	1.8	e1.8	2.6	6.3	3.4	2.1	2.0	1.7	2.5	1.5
5	1.8	1.7	1.8	e1.8	9.4	8.1	3.3	2.0	1.9	2.1	1.7	1.4
6	1.8	1.7	1.8	e1.9	5.3	3.9	3.5	1.9	1.9	1.8	1.7	1.4
7	1.8	1.6	1.8	2.0	4.5	3.1	3.6	1.9	11	1.7	1.6	1.4
8	1.7	1.7	1.7	2.2	3.7	2.9	3.3	1.9	2.5	5.8	1.6	1.4
9	1.8	2.0	1.7	2.1	3.5	2.8	5.6	2.8	2.0	4.2	1.6	1.4
10	1.8	9.4	1.7	1.8	3.7	2.7	4.4	2.0	1.8	6.3	1.6	1.4
11	1.8	2.3	1.7	1.8	3.0	2.5	9.7	1.9	1.8	2.5	31	1.4
12	1.7	2.0	1.7	1.9	2.7	2.6	4.8	2.3	2.0	1.6	10	1.4
13	1.7	1.9	1.6	1.9	2.8	10	3.9	1.9	2.2	1.8	12	1.4
14	1.7	4.4	22	1.7	3.3	3.5	3.5	1.8	1.7	1.6	3.2	1.4
15	1.7	2.3	3.8	2.0	3.4	3.4	3.8	1.8	1.7	1.6	2.0	1.4
16	1.8	1.9	4.5	2.1	6.2	6.0	6.5	1.8	78	1.6	1.8	1.4
17	2.4	1.9	109	2.0	6.2	4.8	4.3	1.8	6.5	1.6	1.8	1.4
18	4.9	1.8	6.9	2.0	3.2	3.3	4.8	1.8	3.5	1.6	1.8	1.4
19	2.2	1.8	4.2	24	2.8	2.8	3.4	2.0	2.6	1.6	2.1	1.3
20	1.9	1.8	e3.2	12	2.7	2.5	3.1	2.8	2.3	1.6	3.1	1.6
21	1.9	1.8	e2.7	5.2	2.6	56	3.1	12	2.1	1.6	1.8	1.4
22	1.9	1.8	e2.5	4.1	2.5	9.6	2.9	19	4.7	1.6	1.8	1.3
23	1.9	1.8	e2.4	3.2	3.5	4.8	3.0	8.7	13	1.6	1.7	1.3
24	1.8	1.8	e2.2	2.9	2.9	3.9	2.7	3.1	2.8	1.6	1.7	18
25	1.8	2.3	e2.1	2.5	6.4	3.3	2.5	3.2	2.1	1.6	1.7	8.8
26	1.7	11	e2.0	e2.2	5.0	3.1	2.5	15	1.9	1.6	1.6	1.5
27	1.8	3.7	e1.9	e2.0	3.3	2.9	2.5	11	1.8	1.7	4.2	1.2
28	1.8	2.5	e1.8	e1.8	3.0	2.7	2.4	3.9	1.8	1.7	2.0	1.2
29	1.8	2.7	e1.8	2.2	---	16	2.4	2.7	1.8	1.7	1.6	1.2
30	1.8	3.0	e1.8	21	---	53	2.4	2.3	1.8	1.7	3.3	1.2
31	1.8	---	e1.8	8.0	---	7.8	---	2.1	---	1.7	2.0	---
TOTAL	59.9	79.7	199.9	125.5	110.0	242.3	113.9	124.5	169.0	68.0	109.6	65.8
MEAN	1.93	2.66	6.45	4.05	3.93	7.82	3.80	4.02	5.63	2.19	3.54	2.19
MAX	4.9	11	109	24	9.4	56	9.7	19	78	6.3	31	18
MIN	1.7	1.6	1.6	1.7	2.5	2.5	2.4	1.8	1.7	1.6	1.6	1.2
CFSM	.46	.63	1.52	.96	.93	1.85	.90	.95	1.33	.52	.84	.52
IN.	.53	.70	1.76	1.10	.97	2.13	1.00	1.09	1.49	.60	.96	.58

e Estimated

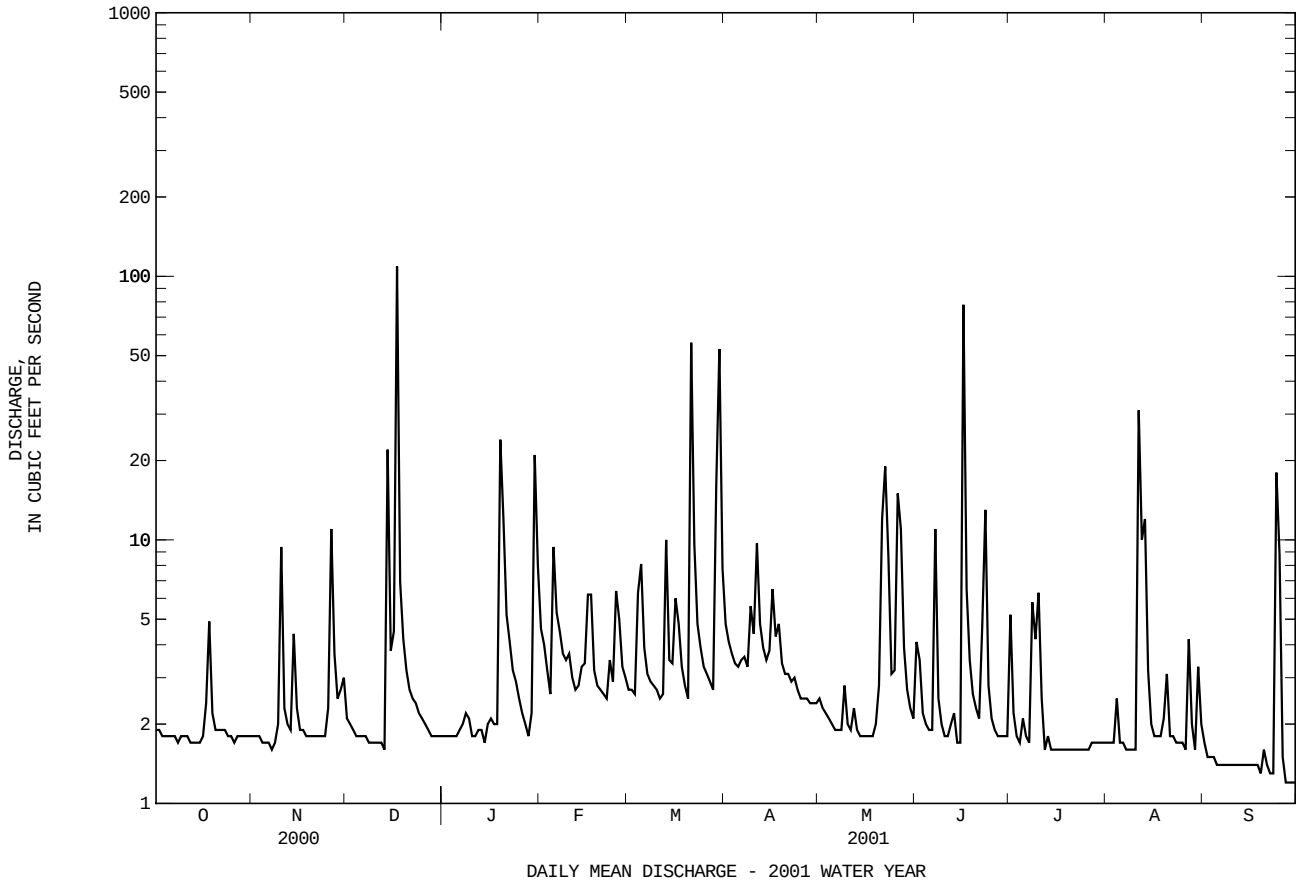
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1999 - 2001, BY WATER YEAR (WY)

MEAN	3.09	3.16	4.88	4.80	4.09	6.43	4.77	3.40	3.88	3.58	4.43	5.89
MAX	5.18	4.76	6.45	7.92	5.12	7.82	5.95	4.02	5.63	5.48	6.79	11.1
(WY)	2000	2000	2001	1999	1999	2001	2000	2001	2001	1999	1999	1999
MIN	1.93	2.08	2.09	2.43	3.25	4.32	3.80	2.57	1.89	2.19	2.98	2.19
(WY)	2001	1999	1999	2000	2000	1999	2001	1999	1999	2001	2000	2001

01589197 GWYNNS FALLS NEAR DELIGHT, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1999 - 2001	
ANNUAL TOTAL	1463.7		1468.1			
ANNUAL MEAN	4.00		4.02		4.37	
HIGHEST ANNUAL MEAN					4.67	1999
LOWEST ANNUAL MEAN					4.02	2001
HIGHEST DAILY MEAN	109	Dec 17	109	Dec 17	151	Sep 16 1999
LOWEST DAILY MEAN	1.3	(a)	1.2	(b)	.79	Jul 19 1999
ANNUAL SEVEN-DAY MINIMUM	1.4	Aug 20	1.4	Sep 13	.84	Jul 15 1999
MAXIMUM PEAK FLOW			660	Dec 17	(c)856	Jul 22 1999
MAXIMUM PEAK STAGE			5.78	Dec 17	6.65	Jul 22 1999
INSTANTANEOUS LOW FLOW			1.2	Sep 30	.76	(d)
ANNUAL RUNOFF (CFSM)	.95		.95		1.03	
ANNUAL RUNOFF (INCHES)	12.87		12.91		14.04	
10 PERCENT EXCEEDS	5.8		6.2		6.2	
50 PERCENT EXCEEDS	2.5		2.0		2.5	
90 PERCENT EXCEEDS	1.7		1.6		1.5	

a Aug. 25, 26, Sept. 12.
b Sept. 27-30.
c From rating curve extended above 380 ft^3/s.
d July 9, 10, 15-20, 1999.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01589238 GWYNNS FALLS TRIBUTARY AT MCDONOGH, MD

LOCATION.--Location -Lat 39 24'01.6", long 76 46'13.6", Baltimore County, Hydrologic Unit 02060003, on left bank 650 ft upstream of confluence with Gwynns Falls, on grounds of McDonogh School, 0.7 mile northwest of McDonogh, 0.8 mile southwest of Garrison, 1.4 miles southeast of Owings Mills, and 650 ft upstream from mouth.

DRAINAGE AREA.--0.03 mi^2.

PERIOD OF RECORD.--November 1999 to September 2001.

GAGE.--Water-stage recorder. Datum of gage is 472 ft above sea level, from topographic map.

REMARKS.--Records good between 0.004 and 0.65 ft^3/s and poor above except those for estimated daily discharges (missing record, ice effect), which are poor. Several measurements of water temperature were made during the year.

EXTREMES FOR CURRENT PERIOD.--Peak discharges greater than base discharge of 1.2 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 14, 1999	1245	*1.6	*0.66	Dec 17, 2000	0800	*2.6	*0.74
Jun 21, 2000	2145	1.6	0.66	Jan 19, 2001	0915	1.5	0.64

2000 Water Year Minimum discharge, 0.015 ft^3/s, Aug. 25-29, Sept. 7-11, 13-15, 17-19. May have been lower during period of missing record.
2001 Water Year Minimum discharge, 0.002 ft^3/s, Sept. 16-18, 23.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e.025	e.014	.027	.027	.027	.038	.032	.032	.029	.027	.027	.015
2	e.022	e.068	.026	.027	.023	.037	.033	.032	.027	.027	.027	.017
3	e.017	e.052	.022	.027	.022	.032	.040	.032	.027	.027	.027	.019
4	e.046	e.033	.022	.051	.024	.032	.048	.034	.027	.027	.024	.018
5	e.027	e.020	.024	.038	.026	.032	.040	.035	.027	.027	.022	.015
6	e.017	e.017	.039	.027	.022	.030	.035	.032	.031	.023	.023	.016
7	e.017	e.017	.032	.027	.024	.027	.039	.032	.028	.022	.022	.015
8	e.017	e.018	.029	.027	.027	.027	.076	.032	.029	.022	.022	.015
9	e.025	e.020	.027	.027	.027	.027	.084	.032	.031	.022	.022	.015
10	e.060	e.017	.038	.042	.029	.027	.062	.036	.027	.022	.022	.017
11	e.080	e.017	.034	.034	.042	.044	.059	.038	.027	.022	.019	.016
12	e.037	e.017	.032	.032	.035	.045	.059	.038	.029	.022	.018	.020
13	e.020	e.017	.043	.031	.032	.033	.059	.045	.027	.022	.018	.018
14	e.020	e.017	.16	.027	.058	.032	.050	.034	.027	.025	.018	.017
15	e.020	e.017	.047	.027	.045	.032	.038	.032	.039	.029	.018	.019
16	e.020	e.017	.040	.029	.040	.034	.037	.032	.035	.030	.018	.022
17	e.017	e.017	.038	.027	.034	.036	.069	.032	.030	.027	.018	.017
18	e.029	e.017	.033	.024	.051	.042	.10	.032	.030	.022	.019	.015
19	e.017	e.017	.032	.024	.10	.044	.054	.032	.032	.023	.018	.024
20	e.033	e.017	.036	.027	.048	.044	.047	.032	.027	.023	.018	.020
21	e.023	e.017	.033	.027	.042	.18	.048	.032	.056	.022	.018	.018
22	e.019	e.017	.032	.027	.036	.13	.047	.038	.038	.022	.018	.018
23	e.017	e.017	.032	.027	.032	.053	.044	.032	.029	.022	.018	.019
24	e.020	e.017	.032	.027	.032	.048	.041	.034	.027	.022	.018	.018
25	e.017	e.017	.032	.027	.035	.044	.038	.031	.033	.022	.018	.040
26	e.020	e.10	.038	.027	.034	.042	.038	.027	.048	.031	.015	.035
27	e.017	e.070	.038	.027	.040	.056	.038	.029	.031	.027	.016	.023
28	e.017	e.034	.035	.025	.062	.058	.038	.040	.027	.032	.015	.019
29	e.016	e.030	.032	.024	.040	.047	.034	.037	.027	.030	.017	.018
30	e.014	.027	.032	.028	---	.040	.032	.032	.027	.027	.015	.018
31	e.013	---	.031	.027	---	.032	---	.032	---	.027	.015	---
TOTAL	0.759	0.792	1.148	0.895	1.089	1.425	1.459	1.040	0.929	0.775	0.603	0.576
MEAN	.024	.026	.037	.029	.038	.046	.049	.034	.031	.025	.019	.019
MAX	.080	.10	.16	.051	.10	.18	.10	.045	.056	.032	.027	.040
MIN	.013	.014	.022	.024	.022	.027	.032	.027	.027	.022	.015	.015
CFSM	.82	.88	1.23	.96	1.25	1.53	1.62	1.12	1.03	.83	.65	.64
IN.	.94	.98	1.42	1.11	1.35	1.77	1.81	1.29	1.15	.96	.75	.71

e Estimated

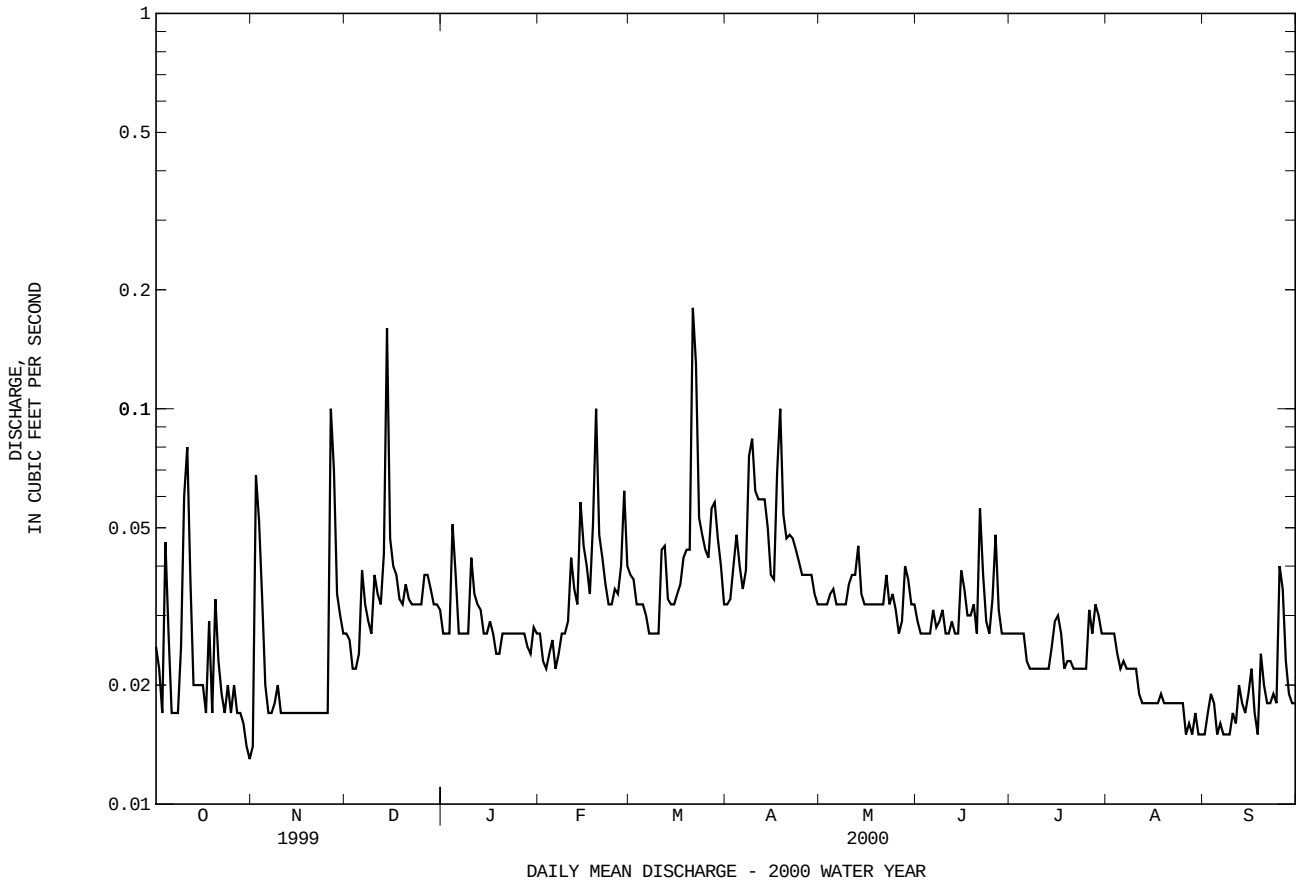
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2000 - 2000, BY WATER YEAR (WY)

MEAN	.026	.028	.037	.030	.038	.046	.049	.033	.033	.025	.020	.019
MAX	.026	.028	.037	.030	.038	.046	.049	.033	.033	.025	.020	.019
(WY)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
MIN	.026	.028	.037	.030	.038	.046	.049	.033	.033	.025	.020	.019
(WY)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000

01589238 GWYNNS FALLS TRIBUTARY AT MCDONOGH, MD--Continued

SUMMARY STATISTICS	FOR 2000 WATER YEAR	
ANNUAL TOTAL	11.490	
ANNUAL MEAN	.031	
HIGHEST DAILY MEAN	.18	Mar 21
LOWEST DAILY MEAN	(e).013	Oct 31
ANNUAL SEVEN-DAY MINIMUM	.02	Aug 26
MAXIMUM PEAK FLOW	1.6	(a)
MAXIMUM PEAK STAGE	.66	Dec 14
INSTANTANEOUS LOW FLOW	.015	(b)
ANNUAL RUNOFF (CFSM)	1.05	
ANNUAL RUNOFF (INCHES)	14.25	
10 PERCENT EXCEEDS	.05	
50 PERCENT EXCEEDS	.03	
90 PERCENT EXCEEDS	.02	

e Estimated
a Dec. 14, 1999, June 21, 2000.
b Aug. 25-29, Sept. 7-11, 13-15, 17-19, 2000. May have been lower during period of missing record.



01589238 GWYNNS FALLS TRIBUTARY AT MCDONOGH, MD--Continued

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	.021	.010	.013	.012	.031	.022	.044	.022	.029	.022	.008	.008
2	.012	.010	.012	.012	.027	.022	.040	.022	.027	.020	.008	.007
3	.011	.010	.016	.016	.025	.022	.030	.022	.025	.018	.009	.007
4	.011	.010	.018	.015	.022	.025	.027	.022	.020	.018	.009	.005
5	.013	.010	.018	.016	.079	.032	.027	.022	.018	.019	.008	.003
6	.013	.010	.018	.018	.039	.027	.027	.022	.018	.012	.005	.003
7	.012	.010	.015	.018	.028	.027	.027	.022	.029	.012	.003	.003
8	.015	.010	.012	.017	.027	.024	.027	.022	.024	.013	.003	.003
9	.012	.013	.012	.014	.027	.022	.035	.026	.022	.012	.003	.004
10	.012	.017	.010	.012	.026	.022	.032	.027	.022	.018	.003	.007
11	.012	.012	.010	.012	.022	.022	.042	.025	.022	.015	.009	.005
12	.012	.017	.011	.012	.022	.023	.041	.022	.022	.012	.008	.003
13	.011	.019	.010	.012	.022	.028	.038	.022	.019	.012	.011	.003
14	.012	.025	.030	.012	.022	.027	.033	.022	.018	.015	.010	.003
15	.016	.010	.020	.012	.022	.026	.028	.022	.019	.017	.010	.003
16	.018	.011	.018	.012	.024	.027	.039	.022	.042	.012	.010	.003
17	.018	.011	.21	.012	.027	.027	.035	.020	.021	.012	.009	.002
18	.015	.010	.027	.012	.026	.027	.038	.018	.018	.017	.010	.003
19	.018	.010	.027	.25	.022	.024	.038	.021	.018	.016	.009	.003
20	.017	.011	.025	.067	.022	.022	.038	.022	.016	.018	.011	.004
21	.018	.011	.022	.019	.022	.12	.038	.025	.012	.018	.008	.003
22	.012	.010	.020	.016	.022	.049	.032	.034	.017	.018	.007	.003
23	.011	.010	.018	.015	.022	.040	.027	.030	.025	.018	.003	.003
24	.010	.010	.018	.015	.022	.036	.035	.024	.019	.018	.003	.010
25	.011	.013	.018	.017	.024	.027	.044	.022	.018	.018	.003	.008
26	.010	.025	.018	.018	.027	.027	.033	.040	.017	.018	.003	.006
27	.012	.021	.018	.018	.024	.027	.027	.032	.014	.011	.004	.003
28	.011	.020	.018	.018	.022	.027	.025	.027	.012	.010	.003	.003
29	.012	.019	.018	.018	---	.051	.022	.022	.016	.010	.003	.003
30	.010	.018	.017	.22	---	.12	.022	.022	.018	.010	.003	.003
31	.010	---	.012	.10	---	.049	---	.022	---	.010	.006	---
TOTAL	0.408	0.403	0.729	1.037	0.747	1.071	0.991	0.745	0.617	0.469	0.202	0.127
MEAN	.013	.013	.024	.033	.027	.035	.033	.024	.021	.015	.007	.004
MAX	.021	.025	.21	.25	.079	.12	.044	.040	.042	.022	.011	.010
MIN	.010	.010	.010	.012	.022	.022	.022	.018	.012	.010	.003	.002
CFSM	.44	.45	.78	1.12	.89	1.15	1.10	.80	.69	.50	.22	.14
IN.	.51	.50	.90	1.29	.93	1.33	1.23	.92	.77	.58	.25	.16

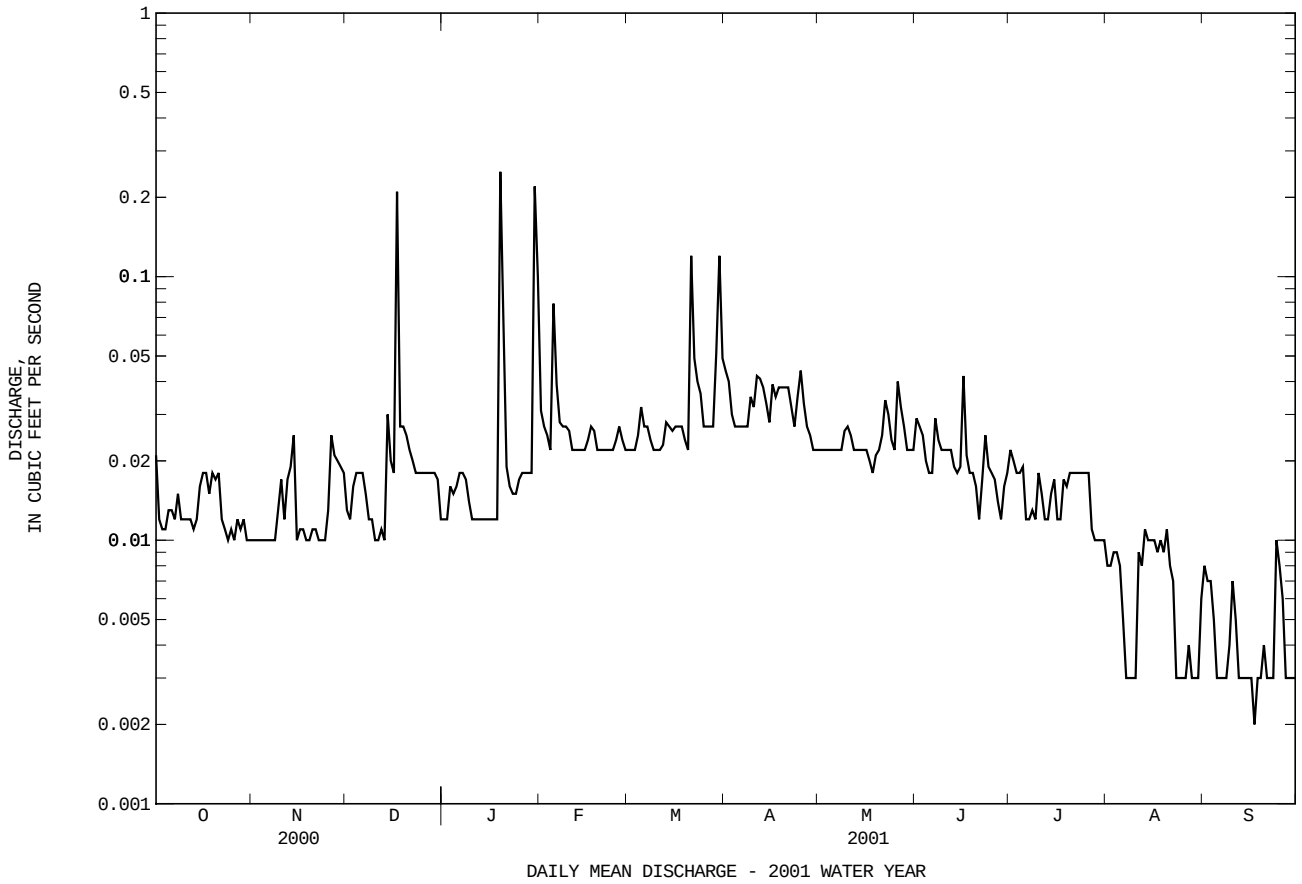
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2000 - 2001, BY WATER YEAR (WY)

MEAN	.019	.021	.030	.032	.032	.040	.041	.028	.027	.020	.013	.011
MAX	.026	.028	.037	.033	.038	.046	.049	.033	.033	.025	.020	.019
(WY)	2000	2000	2000	2001	2000	2000	2000	2000	2000	2000	2000	2000
MIN	.012	.014	.024	.030	.026	.035	.034	.023	.021	.015	.006	.002
(WY)	2001	2001	2001	2000	2001	2001	2001	2001	2001	2001	2001	2001

01589238 GWYNNS FALLS TRIBUTARY AT MCDONOGH, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR	FOR 2001 WATER YEAR	WATER YEARS 2000 - 2001
ANNUAL TOTAL	10.331	7.546	
ANNUAL MEAN	.028	.021	.026
HIGHEST ANNUAL MEAN			.032 2000
LOWEST ANNUAL MEAN			.021 2001
HIGHEST DAILY MEAN	.21 Dec 17	.25 Jan 19	.25 Jan 19 2001
LOWEST DAILY MEAN	.010 (a)	.002 Sep 17	.002 Sep 17 2001
ANNUAL SEVEN-DAY MINIMUM	.01 Oct 30	.003 Sep 12	.003 Sep 12 2001
MAXIMUM PEAK FLOW		2.6 Dec 17	2.6 Dec 17 2000
MAXIMUM PEAK STAGE		.74 Dec 17	.74 Dec 17 2000
INSTANTANEOUS LOW FLOW		.002 (b)	.002 (b)
ANNUAL RUNOFF (CFSM)	.94	.69	.87
ANNUAL RUNOFF (INCHES)	12.81	9.36	11.87
10 PERCENT EXCEEDS	.04	.03	.04
50 PERCENT EXCEEDS	.03	.02	.02
90 PERCENT EXCEEDS	.01	.01	.01

a Oct. 24, 26, 30, 31, Nov. 1-8, 15, 18, 19, 22-24, Dec. 10, 11, 13.
b Sept. 16-18, 23, 2001.



01589300 GWYNNS FALLS AT VILLA NOVA, MD

LOCATION.--Lat 39°20'45.2", long 76°43'59.5", Baltimore County, Hydrologic Unit 02060003, on right bank 300 ft downstream from bridge on Essex Road, 300 ft north of State Highway 26 (Liberty Road), in Villa Nova, 1.1 mi west of Baltimore city limits, and 11.5 mi upstream from mouth.

DRAINAGE AREA.--32.5 mi^2.

PERIOD OF RECORD.--February 1957 to September 1988, October 1996 to current year.

REVISED RECORDS.--WDR MD-DE-83: 1981-82(P). WDR MD-DE-84: 1981(P).

GAGE.--Water-stage recorder. Datum of gage is 361.32 ft above sea level (Baltimore County bench mark). Prior to Aug. 27, 1963 and Oct. 25, 1972, to Sept. 20, 1973, water-stage recorder, and June 26, 1972 to Oct. 24, 1972, nonrecording gage, at site 300 ft upstream at same datum.

REMARKS.--Records good except those for estimated daily discharges (ice effect), which are fair. Slight diurnal fluctuation at times from unknown source upstream from station. Small diversion for irrigation upstream from station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 21, 1956, reached a stage of 12.6 ft, discharge, 5,270 ft^3/s on basis of contracted-opening measurement

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 900 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 17	1000	*1,870	*7.23	Mar 30	0200	1,220	5.71
Mar 21	1630	1,030	5.20	Jun 16	1715	1,100	5.39

Minimum discharge, 6.0 ft^3/s, Aug. 9, 10.

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	21	14	20	18	46	25	49	20	43	55	9.8	24
2	19	15	19	17	35	24	41	19	48	33	8.6	12
3	17	13	18	e16	31	24	36	18	25	17	8.0	10
4	16	14	17	e17	26	43	34	17	21	17	12	10
5	16	12	17	e16	116	92	31	17	20	41	13	9.3
6	17	12	15	16	58	37	31	17	18	26	8.9	8.6
7	15	12	15	16	39	30	31	17	81	16	7.8	8.4
8	15	13	15	20	31	27	29	17	27	25	7.0	7.2
9	17	15	14	20	30	27	45	21	20	25	6.9	6.9
10	17	64	13	24	31	25	51	17	18	62	6.5	7.3
11	17	21	14	15	27	24	95	15	17	42	115	8.2
12	16	16	14	16	25	24	56	15	16	18	59	6.6
13	16	15	14	18	28	81	39	16	16	15	75	6.6
14	16	30	175	16	29	34	33	14	14	14	36	12
15	15	20	42	16	31	32	33	14	15	12	17	8.0
16	15	17	40	17	45	37	63	14	324	12	14	7.5
17	17	16	757	16	70	49	42	14	68	11	12	7.4
18	29	15	74	16	30	33	44	14	30	19	11	7.0
19	20	14	40	190	26	28	32	18	24	14	13	7.4
20	16	15	32	128	26	27	29	21	25	12	45	19
21	17	15	27	54	24	466	28	80	22	11	15	18
22	15	15	24	34	22	137	27	124	28	11	13	13
23	14	15	e21	29	29	52	24	126	126	10	11	12
24	14	17	e20	28	27	40	24	31	29	10	11	98
25	14	16	e19	25	48	33	23	27	22	9.7	11	134
26	14	109	e18	23	51	30	23	144	19	9.5	10	29
27	14	33	18	22	30	29	22	79	17	9.4	17	20
28	13	22	18	23	27	27	22	47	16	8.6	32	17
29	13	20	e17	22	---	90	21	29	15	13	12	15
30	13	27	17	162	---	517	20	24	15	16	17	15
31	14	---	e17	73	---	79	---	20	---	11	32	---
TOTAL	502	652	1581	1123	1038	2223	1078	1066	1179	605.2	666.5	564.4
MEAN	16.2	21.7	51.0	36.2	37.1	71.7	35.9	34.4	39.3	19.5	21.5	18.8
MAX	29	109	757	190	116	517	95	144	324	62	115	134
MIN	13	12	13	15	22	24	20	14	14	8.6	6.5	6.6
CFSM	.50	.67	1.57	1.11	1.14	2.21	1.11	1.06	1.21	.60	.66	.58
IN.	.57	.75	1.81	1.29	1.19	2.54	1.23	1.22	1.35	.69	.76	.65

e Estimated

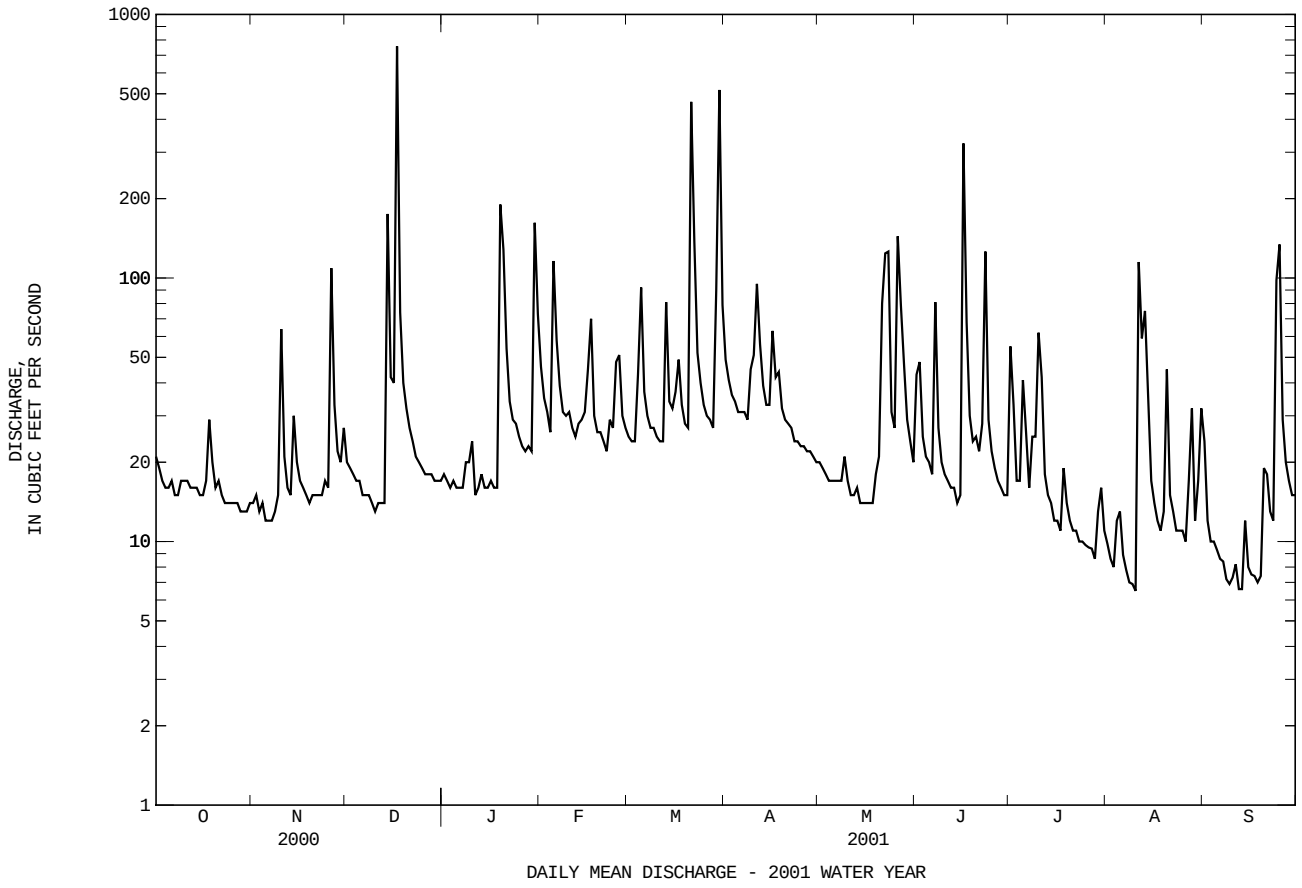
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1957 - 1988, 1997 - 2001, BY WATER YEAR (WY)

MEAN	26.4	33.6	42.2	44.5	52.8	56.5	50.1	42.3	36.4	26.1	28.8	33.3
MAX	111	82.1	135	146	130	107	129	78.9	244	79.5	186	173
(WY)	1980	1997	1997	1979	1979	1998	1973	1983	1972	1975	1984	1979
MIN	7.10	10.4	9.18	10.5	23.0	21.4	20.7	14.4	8.95	6.37	5.02	7.35
(WY)	1964	1966	1966	1981	1969	1981	1963	1969	1986	1966	1966	1986

01589300 GWYNNS FALLS AT VILLA NOVA, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1957 - 1988, 1997 - 2001	
ANNUAL TOTAL	14102		12278.1			
ANNUAL MEAN	38.5		33.6		39.6	
HIGHEST ANNUAL MEAN					76.8	1972
LOWEST ANNUAL MEAN					20.5	1959
HIGHEST DAILY MEAN	757	Dec 17	757	Dec 17	5000	Jun 22 1972
LOWEST DAILY MEAN	10	Aug 26	6.5	Aug 10	1.7	Sep 7 1966
ANNUAL SEVEN-DAY MINIMUM	11	Aug 20	7.3	Sep 7	2.1	Sep 6 1966
MAXIMUM PEAK FLOW			1870	Dec 17	(a)16200	Jun 22 1972
MAXIMUM PEAK STAGE			7.23	Dec 17	(b)21.50	Jun 22 1972
INSTANTANEOUS LOW FLOW			6.0	(c)	1.7	(d)
ANNUAL RUNOFF (CFSM)	1.19		1.04		1.22	
ANNUAL RUNOFF (INCHES)	16.14		14.05		16.54	
10 PERCENT EXCEEDS	66		57		66	
50 PERCENT EXCEEDS	24		19		22	
90 PERCENT EXCEEDS	14		11		9.8	

a From rating curve extended above 4,200 ft^3/s on basis of contracted-opening measurement of peak flow.
b From floodmarks.
c Aug. 9, 10.
d Sept. 7, 8, 1966.



01589330 DEAD RUN AT FRANKLINTOWN, MD

LOCATION.--Lat 39°18'40.4", long 76°42'59.9", Baltimore County, Hydrologic Unit 02060003, on right bank at downstream side of bridge on Colonial Road at Security Boulevard at Franklintown, 0.3 mi west of Baltimore city limits, and 1.2 mi southwest of Woodlawn, and 2.5 mi upstream from mouth.

DRAINAGE AREA.--5.52 mi^2.

PERIOD OF RECORD.--October 1959 to September 1987, July 1998 to current year.

REVISED RECORDS.--WDR MD-DE-80-1: 1979(m).

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 310 ft above sea level, from topographic map.

REMARKS.--Records good except those for estimated daily discharges (ice effect, missing record), which are fair. Occasional regulation at low flow from unknown source upstream from station. Several measurements of water temperature were made during the year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 650 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 17	0915	*1,410	*6.25	Jun 16	1300	652	4.03
Mar 30	0130	770	4.49	Jun 20	2015	985	5.13
May 22	2045	906	4.91	Aug 11	1500	1,330	6.04

Minimum discharge, 0.33 ft^3/s, Sept. 12, 13, 17, 19.

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	1.2	.64	1.1	e1.3	2.8	2.2	5.3	1.4	13	6.8	.72	4.2
2	1.2	.62	.76	e1.3	2.5	2.0	4.0	1.5	5.0	2.1	.62	.96
3	1.0	.61	.74	e1.3	2.1	1.9	3.3	1.4	1.9	1.2	.54	.78
4	1.0	.67	.71	e1.2	1.9	15	2.9	1.4	1.4	4.0	24	.75
5	1.0	.61	.74	e1.4	35	16	2.7	1.4	2.6	24	2.1	.67
6	1.0	.66	.72	e1.4	5.5	3.6	3.4	1.2	1.5	3.9	1.0	.57
7	.88	.67	.62	e1.4	3.0	2.7	2.8	1.2	51	1.3	.77	.57
8	.83	.63	.62	12	2.4	2.3	2.5	1.3	3.0	9.3	.69	.56
9	.89	1.4	.71	e2.0	2.2	4.2	15	2.5	1.9	1.5	.84	.63
10	.93	14	.66	e1.4	2.2	2.1	5.6	1.3	1.7	3.4	1.5	.62
11	.81	.89	.65	e1.2	1.9	1.9	31	1.2	1.5	1.7	115	.53
12	.71	.73	.67	e1.4	2.0	3.6	6.8	1.1	1.5	1.0	19	.44
13	.73	.59	.70	1.4	4.1	20	5.0	1.1	1.5	.91	e75	.44
14	.73	6.4	61	1.2	3.7	2.7	3.1	1.0	1.4	.72	e4.0	5.0
15	.73	1.2	2.6	1.4	4.7	9.1	5.4	1.1	6.9	.74	e1.4	.72
16	.80	.89	7.3	1.4	16	4.6	9.1	1.2	59	.72	e1.2	.42
17	.86	.60	162	1.2	14	5.8	5.9	1.5	3.7	.71	1.1	.45
18	2.8	.58	5.8	1.4	2.7	2.9	8.1	1.0	1.8	2.1	1.0	.58
19	.81	.65	3.5	59	2.3	2.2	2.3	3.4	1.5	1.3	1.6	.45
20	.80	.61	3.7	25	2.2	2.0	2.2	5.3	44	.79	23	20
21	.82	.62	2.0	9.9	2.0	137	2.1	29	6.2	.65	1.3	6.1
22	.85	.63	1.8	3.7	2.4	14	2.4	92	16	.62	.99	.95
23	.77	.56	1.4	2.8	6.5	5.0	2.0	11	18	.65	.97	.61
24	.76	.58	e1.4	2.9	3.2	3.5	1.8	2.1	2.4	.78	1.0	46
25	1.8	4.0	e1.2	2.5	12	2.9	1.7	3.8	1.8	.71	.85	28
26	.89	35	e1.2	1.9	5.4	2.5	1.7	62	1.6	.82	.69	1.8
27	.79	2.9	e1.6	2.1	2.9	2.2	1.7	23	1.4	.67	.72	.98
28	.77	1.3	e1.4	1.9	2.4	2.2	1.5	5.8	1.4	.51	.82	.79
29	.70	4.5	e1.4	1.7	---	68	1.4	2.4	1.3	7.2	.62	.78
30	.65	3.3	e1.4	35	---	122	1.4	1.8	1.5	5.0	7.9	.87
31	.67	---	e1.3	4.9	---	10	---	1.6	---	.95	13	---
TOTAL	29.18	87.04	271.40	188.6	150.0	476.1	144.1	267.0	257.4	86.75	303.94	126.22
MEAN	.94	2.90	8.75	6.08	5.36	15.4	4.80	8.61	8.58	2.80	9.80	4.21
MAX	2.8	35	162	59	35	137	31	92	59	24	115	46
MIN	.65	.56	.62	1.2	1.9	1.9	1.4	1.0	1.3	.51	.54	.42
CFSM	.17	.53	1.59	1.10	.97	2.78	.87	1.56	1.55	.51	1.78	.76
IN.	.20	.59	1.83	1.27	1.01	3.21	.97	1.80	1.73	.58	2.05	.85

e Estimated

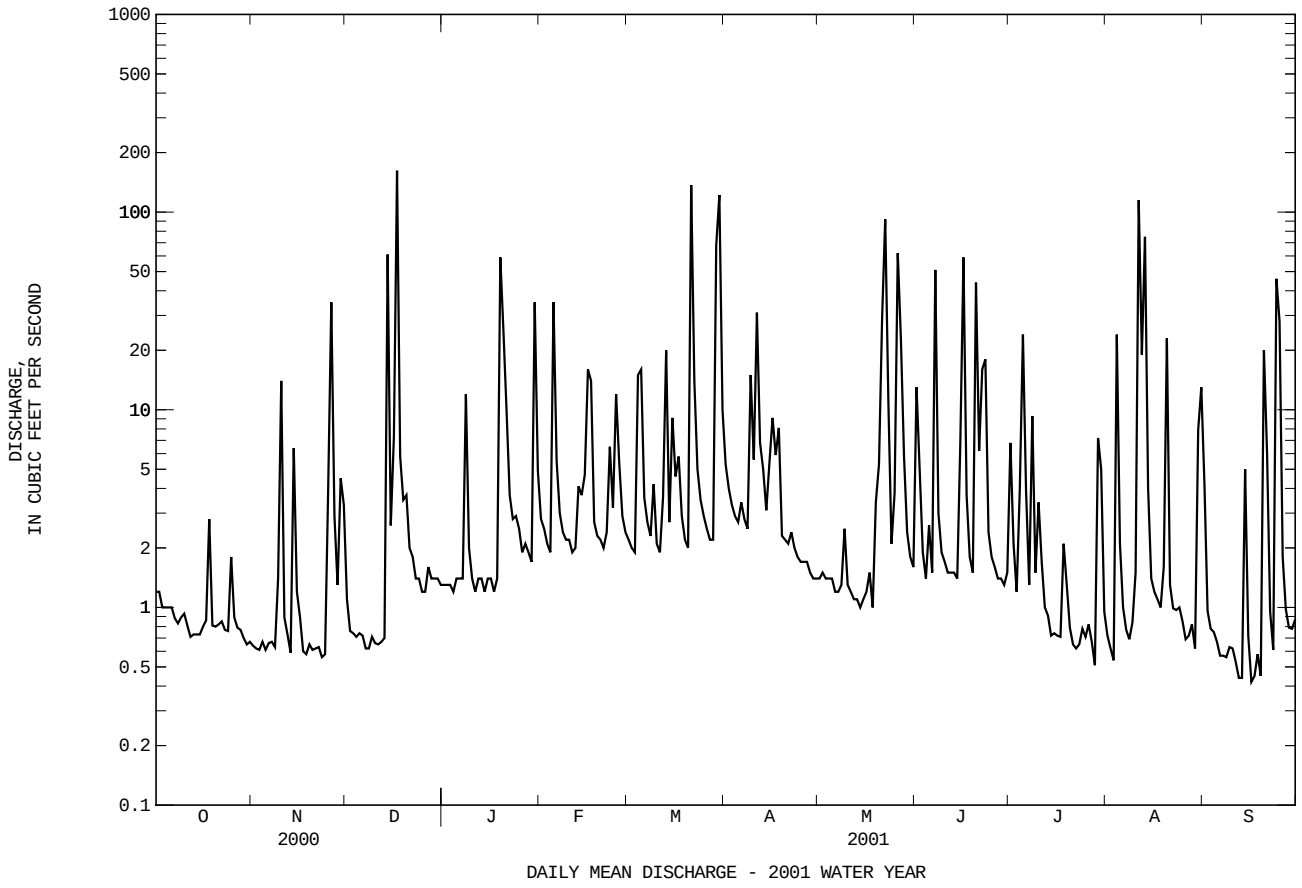
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 1987, 1998 - 2001, BY WATER YEAR (WY)

MEAN	5.37	6.30	8.34	9.07	11.1	10.8	9.03	7.35	6.57	5.01	6.70	8.61
MAX	21.8	20.6	24.0	38.1	31.3	25.9	29.6	16.3	28.4	27.7	33.9	39.5
(WY)	1977	1973	1978	1979	1979	1983	1983	1983	1972	1975	1984	1979
MIN	.33	.69	.57	.67	2.55	3.39	1.27	1.15	1.62	.66	.85	.81
(WY)	1964	1966	1966	1981	1968	1966	1963	1963	1966	1963	1966	1970

01589330 DEAD RUN AT FRANKLINTOWN, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1960 - 1987, 1998 - 2001	
ANNUAL TOTAL	2570.99		2387.73			
ANNUAL MEAN	7.02		6.54		7.86	
HIGHEST ANNUAL MEAN					15.5	1979
LOWEST ANNUAL MEAN					3.78	1963
HIGHEST DAILY MEAN	162	Dec 17	162	Dec 17	800	Aug 13 1984
LOWEST DAILY MEAN	.43	Aug 26	.42	Sep 16	.20	Aug 5 1963
ANNUAL SEVEN-DAY MINIMUM	.53	Aug 20	.54	Sep 7	.20	Aug 24 1966
MAXIMUM PEAK FLOW			1410	Dec 17	(a)7400	Jun 22 1972
MAXIMUM PEAK STAGE			6.25	Dec 17	(b)12.50	Jun 22 1972
INSTANTANEOUS LOW FLOW			.33	(c)	.10	(d)
ANNUAL RUNOFF (CFSM)	1.27		1.19		1.42	
ANNUAL RUNOFF (INCHES)	17.33		16.09		19.35	
10 PERCENT EXCEEDS	16		14		15	
50 PERCENT EXCEEDS	2.2		1.5		2.0	
90 PERCENT EXCEEDS	.70		.65		.70	

a From rating curve extended above 1,600 ft^3/s on basis of contracted-opening measurement of peak flow at bridge 0.6 mi downstream, adjusted for flow from intervening area.
b From floodmarks.
c Sept. 12, 13, 17, 19.
d Sept. 11, 12, 1966.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01589340 ROGNEL HEIGHTS STORM SEWER OUTFALL AT BALTIMORE, MD

LOCATION.--Lat 39°17'59.5", long 76°41'24.5", Baltimore City, Hydrologic Unit 02060003, on left wingwall of culvert at downstream side of storm sewer outfall on Seminole Avenue, 0.3 mi upstream from confluence with Dead Run, 0.6 mi southeast of Leakin Park, and 1.5 mi southwest of Walbrook.

DRAINAGE AREA.--0.03 mi^2.

PERIOD OF RECORD.--November 1998 to current year.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 318 ft above sea level, from topographic map.

REMARKS.--Records fair. Several measurements of water temperature were made during the year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 11 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb 23	0220	*18	*1.04	Aug 10	UNKNOWN	(a)13	UNKNOWN

a Discharge from indirect discharge measurement.

Minimum discharge, 0.000 ft^3/s, on many days.

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	.000	.000	.000	.000	.004	.000	.001	.000	.10	.019	e.000	.000
2	.000	.000	.000	.000	.004	.000	.001	.001	.003	.000	e.000	.000
3	.000	.000	.000	.000	.003	.000	.001	.001	.000	.000	.000	.000
4	.000	.000	.000	.000	.003	.20	.000	.000	.000	.036	.078	.000
5	.000	.000	.000	.000	.19	.064	.000	.000	.003	.017	.000	.000
6	.000	.000	.000	.001	.003	.000	.001	.000	.001	.000	.000	.000
7	.000	.000	.000	.007	.001	.000	.001	.000	.14	.000	.000	.000
8	.000	.056	.000	.042	.001	.001	.000	.000	.000	.029	.000	.000
9	.000	.015	.000	.001	.000	.011	.072	.012	.000	.000	.000	.000
10	.000	.012	.000	.002	.000	.000	.002	.001	.005	.006	.037	.004
11	.000	.000	.000	.005	.000	.000	.12	.000	.000	.000	.23	.000
12	.000	.000	.000	.000	.009	.13	.000	.000	.000	.000	.020	.000
13	.000	.000	.000	.001	.004	.089	.004	.000	.000	.000	.11	.000
14	.000	.018	.10	.000	.007	.000	.001	.000	.002	.000	.000	.021
15	.000	.000	.000	.002	.014	.080	.043	.000	.017	.000	.000	.000
16	.000	.000	.010	.000	.084	.002	.047	.000	.090	.000	.000	.000
17	.000	.000	.075	.000	.004	.033	.030	.000	.001	.000	.000	.000
18	.013	.000	.000	.004	.000	.000	.026	.000	.000	.005	.000	.000
19	.000	.000	.002	.42	.000	.000	.000	.015	.000	.000	.016	.000
20	.000	.000	.000	.093	.000	.022	.000	.10	.073	.000	.053	.19
21	.000	.000	.000	.025	.000	.89	.000	.20	.012	.000	.000	.001
22	.000	.000	.000	.010	4.7	.004	.000	.22	.023	.000	.000	.000
23	.000	.000	.000	.011	2.3	.000	.000	.004	.010	.000	.000	.000
24	.000	.000	.000	.012	.009	.000	.000	.000	.000	.000	.000	.076
25	.000	.035	.016	.005	.076	.000	.000	.027	.000	.000	.000	.086
26	.001	.095	.000	.005	.003	.000	.000	.25	.000	.000	.000	.000
27	.001	.001	.000	.005	.000	.015	.000	.051	.000	.000	.000	.000
28	.000	.000	.000	.003	.000	.002	.000	.001	.000	.000	.000	.000
29	.000	.022	.000	.003	---	.45	.000	.003	.000	.049	.000	.000
30	.000	.000	.000	.18	---	.18	.000	.000	.000	.001	.011	.014
31	.000	---	.000	.006	---	.007	---	.000	---	.000	.069	---
TOTAL	0.015	0.254	0.203	0.843	7.419	2.180	0.350	0.886	0.480	0.162	0.624	0.392
MEAN	.000	.008	.007	.027	.26	.070	.012	.029	.016	.005	.020	.013
MAX	.013	.095	.10	.42	4.7	.89	.12	.25	.14	.049	.23	.19
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
CFSM	.02	.28	.22	.91	8.83	2.34	.39	.95	.53	.17	.67	.44
IN.	.02	.31	.25	1.05	9.20	2.70	.43	1.10	.60	.20	.77	.49

e Estimated

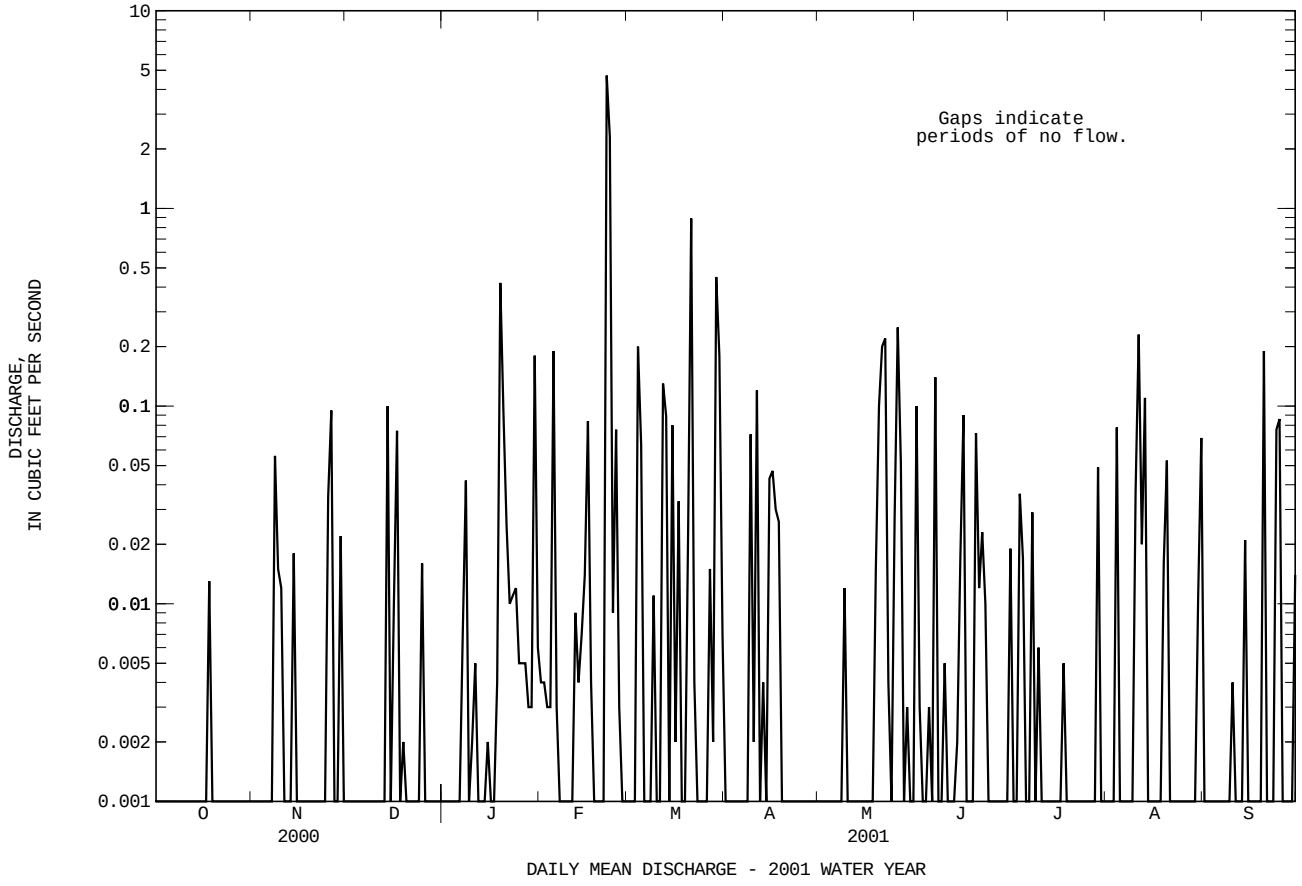
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1999 - 2001, BY WATER YEAR (WY)

MEAN	.009	.008	.008	.023	.10	.032	.018	.015	.015	.012	.028	.034
MAX	.015	.009	.014	.031	.26	.070	.026	.028	.017	.018	.056	.071
(WY)	2000	2000	2000	1999	2001	2001	2000	2001	1999	2000	1999	1999
MIN	.000	.008	.002	.012	.006	.009	.011	.005	.013	.005	.009	.013
(WY)	2001	1999	1999	2000	1999	1999	2001	1999	2000	2001	2000	2001

01589340 ROGNEL HEIGHTS STORM SEWER OUTFALL AT BALTIMORE, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1999 - 2001	
ANNUAL TOTAL	5.738		13.808			
ANNUAL MEAN	.016		.038		.025	
HIGHEST ANNUAL MEAN					.038	2001
LOWEST ANNUAL MEAN					.017	2000
HIGHEST DAILY MEAN	.30	Sep 25	4.7	Feb 22	4.7	Feb 22 2001
LOWEST DAILY MEAN	.000	(a)	.000	(a)	.000	(a)
ANNUAL SEVEN-DAY MINIMUM	.00	Aug 19	.00	Oct 1	.00	Oct 16 1998
MAXIMUM PEAK FLOW			18	Feb 23	(b)18	Feb 23 2001
MAXIMUM PEAK STAGE			1.04	Feb 23	(c)3.34	Jan 21 2000
INSTANTANEOUS LOW FLOW			.00	(a)	.00	(d)
ANNUAL RUNOFF (CFSM)	.52		1.26		.83	
ANNUAL RUNOFF (INCHES)	7.12		17.12		11.33	
10 PERCENT EXCEEDS	.05		.06		.05	
50 PERCENT EXCEEDS	.00		.00		.00	
90 PERCENT EXCEEDS	.00		.00		.00	

a Many days.
b From rating curve extended above 0.8 ft^3/s on basis of slope-area measurements at gage heights of 0.80 and 0.82 ft.
c Backwater from ice.
d No flow at times each year.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01589352 GWYNNS FALLS AT WASHINGTON BOULEVARD AT BALTIMORE, MD

LOCATION.--Lat 39°16'17.4", long 76°38'54.8", Baltimore City, Hydrologic Unit 02060003, on left bank at Carroll Park Municipal Golf Course, 350 ft upstream from bridge on Washington Boulevard, 0.9 mi northwest of Morrell Park, and approximately 1.6 mi upstream from mouth..

DRAINAGE AREA.--65.9 mi^2.

PERIOD OF RECORD.--October 1998 to current year.

GAGE.--Water-stage recorder. Datum of gage is 10 ft above sea level, from topographic map.

REMARKS.--Records good except those for estimated daily discharges (ice effect), which are poor. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 17	1015	*3,630	*8.45	Jun 16	1245	2,020	6.49
Mar 30	0200	2,690	7.37				

Minimum discharge, 11 ft^3/s, Aug. 9, Sept. 12-14, 18-20.

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	35	20	31	29	75	42	88	33	86	86	18	67
2	31	21	28	e28	53	41	70	33	95	71	17	21
3	29	19	26	27	49	39	60	32	42	29	15	16
4	27	20	25	31	41	85	54	31	35	37	87	16
5	27	20	25	31	248	171	51	29	37	115	32	16
6	26	19	25	34	108	67	52	28	31	62	21	15
7	25	31	24	31	65	49	52	28	255	26	17	16
8	23	23	24	49	50	45	48	28	52	62	16	17
9	24	28	23	41	47	49	102	35	36	40	17	15
10	25	121	25	28	46	41	99	33	32	72	52	16
11	24	36	25	29	41	40	205	28	30	85	282	15
12	23	24	24	30	39	47	104	26	30	32	121	14
13	23	23	23	27	48	167	71	26	30	26	199	14
14	23	54	353	28	47	59	54	25	30	24	81	43
15	22	38	72	31	56	76	57	24	42	23	30	18
16	22	26	65	32	114	67	109	24	491	25	24	16
17	23	25	1090	29	149	80	75	25	118	25	22	15
18	41	25	126	29	54	56	80	27	49	44	20	15
19	36	24	66	363	45	43	50	36	38	33	33	15
20	23	26	55	248	43	41	47	43	156	22	119	93
21	23	28	42	116	41	776	45	192	81	20	31	62
22	22	23	40	61	39	246	45	367	38	19	23	22
23	21	23	32	49	64	91	43	219	188	19	20	19
24	21	27	e31	e40	53	67	41	53	49	19	19	97
25	21	33	e31	e39	81	55	38	52	37	21	18	259
26	22	240	30	38	91	50	38	374	32	24	17	45
27	21	59	e30	38	52	47	37	227	30	22	16	31
28	21	38	e30	38	45	45	35	97	29	16	42	27
29	18	44	e30	36	---	216	33	49	27	36	21	24
30	19	53	e29	271	---	973	33	41	34	46	26	25
31	20	---	29	114	---	146	---	35	---	22	96	---
TOTAL	761	1191	2509	2015	1884	4017	1916	2300	2260	1203	1552	1084
MEAN	24.5	39.7	80.9	65.0	67.3	130	63.9	74.2	75.3	38.8	50.1	36.1
MAX	41	240	1090	363	248	973	205	374	491	115	282	259
MIN	18	19	23	27	39	39	33	24	27	16	15	14
CFSM	.37	.60	1.23	.99	1.02	1.97	.97	1.13	1.14	.59	.76	.55
IN.	.43	.67	1.42	1.14	1.06	2.27	1.08	1.30	1.28	.68	.88	.61

e Estimated

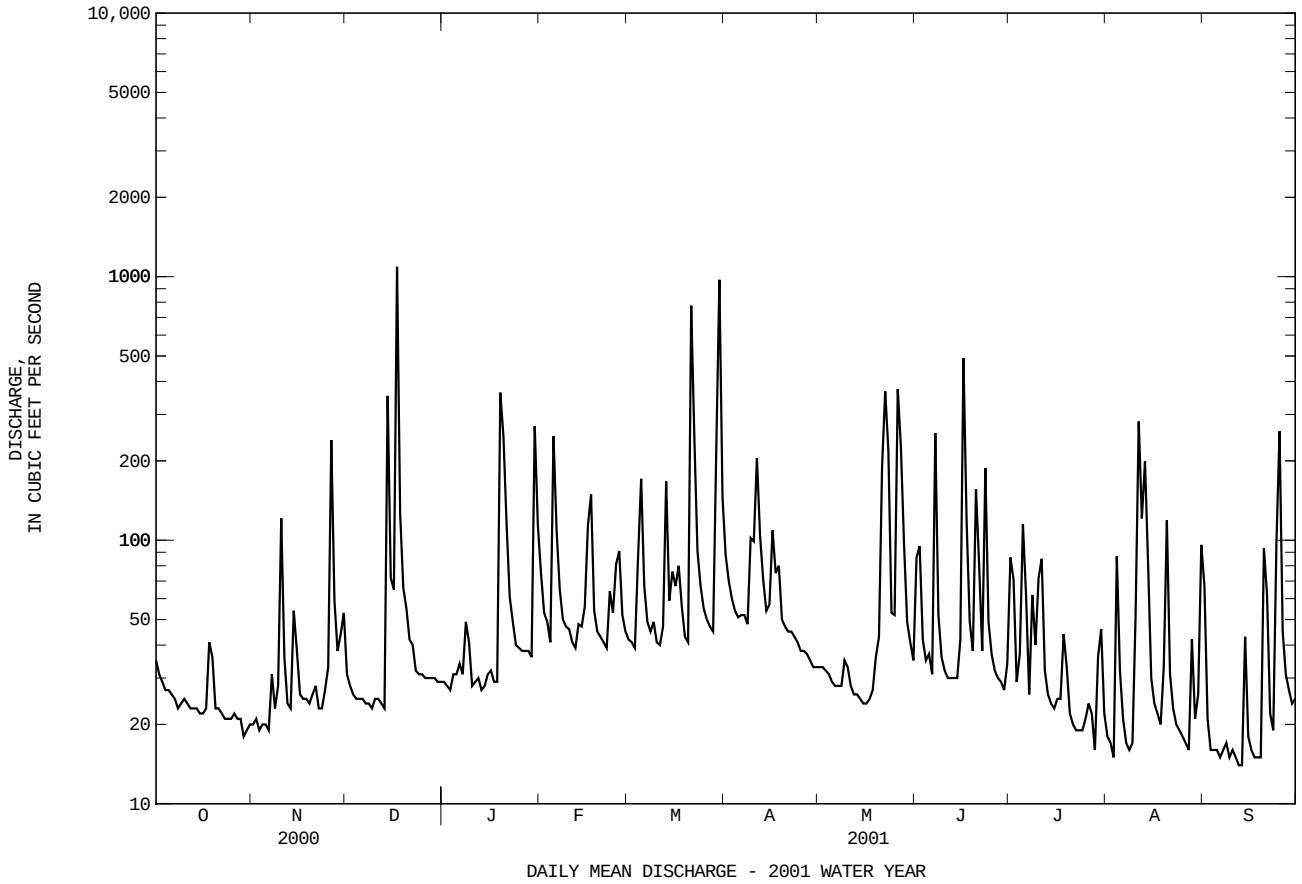
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1999 - 2001, BY WATER YEAR (WY)

MEAN	52.1	44.5	70.6	81.6	83.6	126	95.7	68.8	69.2	64.8	79.4	131
MAX	85.4	57.0	92.3	127	108	132	121	74.2	75.3	79.7	144	278
(WY)	2000	2000	2000	1999	2000	2000	2000	2001	2001	1999	1999	1999
MIN	24.5	36.8	38.6	52.3	67.3	116	63.9	64.5	64.4	38.8	44.6	36.1
(WY)	2001	1999	1999	2000	2001	1999	2001	1999	1999	2001	2000	2001

01589352 GWYNNS FALLS AT WASHINGTON BOULEVARD AT BALTIMORE, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1999 - 2001	
ANNUAL TOTAL	27168		22692			
ANNUAL MEAN	74.2		62.2		80.5	
HIGHEST ANNUAL MEAN					97.7	1999
LOWEST ANNUAL MEAN					62.2	2001
HIGHEST DAILY MEAN	1090	Dec 17	1090	Dec 17	3520	Sep 16 1999
LOWEST DAILY MEAN	18	Oct 29	14	(a)	13	Oct 2 1998
ANNUAL SEVEN-DAY MINIMUM	20	Oct 29	15	Sep 7	15	Sep 7 2001
MAXIMUM PEAK FLOW			3630	Dec 17	(b)23900	Aug 26 1999
MAXIMUM PEAK STAGE			8.45	Dec 17	20.03	Aug 26 1999
INSTANTANEOUS LOW FLOW			11	(c)	11	Aug 9 2001
ANNUAL RUNOFF (CFSM)	1.13		.94		1.22	
ANNUAL RUNOFF (INCHES)	15.34		12.81		16.60	
10 PERCENT EXCEEDS	146		114		150	
50 PERCENT EXCEEDS	42		35		45	
90 PERCENT EXCEEDS	23		20		23	

a Sept. 12, 13.
b From rating curve extended above 6,200 ft^3/s on basis of slope-area measurement of peak flow.
c Aug. 9, Sept. 12-14, 18-20.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01589440 JONES FALLS AT SORRENTO, MD

LOCATION.--Lat 39°23'30.2", long 76°39'39.4", Baltimore County, Hydrologic Unit 02060003, on right bank 0.3 mi downstream from bridge on State Highway 25 (Falls Road), 0.4 mi downstream from Slaughterhouse Branch and Sorrento, and 12.5 mi upstream from mouth.

DRAINAGE AREA.--25.2 mi^2.

PERIOD OF RECORD.--Annual maximum, water years 1958-66. April 1966 to September 1988, October 1996 to current year.

GAGE.--Water-stage recorder. Datum of gage is 240 ft above sea level, from topographic map. January 1958 to April 1966, non-recording gage at site 450 ft upstream at same gage datum.

REMARKS.--Records good except those for estimated daily discharges (ice effect, lagging intakes), which are poor. Several measurements of water temperature were made during the year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 600 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 17	0945	*1,450	*8.41	Mar 30	0300	853	7.17
Mar 21	1700	706	6.79				

Minimum discharge, 4.8 ft^3/s, Sept. 19, 20.

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	13	10	12	e13	25	17	43	21	25	14	8.2	12
2	13	10	11	e12	22	17	37	20	28	16	7.4	8.5
3	12	9.9	11	e12	19	16	34	19	20	12	6.9	7.8
4	12	10	11	e12	16	23	31	18	17	12	6.8	7.6
5	11	10	11	e12	39	39	30	17	16	17	7.6	7.2
6	12	10	11	e12	35	23	29	17	16	15	7.8	6.7
7	11	10	11	e12	26	20	29	17	35	12	7.1	6.2
8	11	9.6	11	e18	23	19	28	17	20	17	6.2	5.8
9	11	9.0	11	e13	22	18	31	17	17	20	5.7	5.5
10	12	23	11	e12	21	17	36	17	16	17	5.5	6.7
11	12	12	11	e12	18	16	48	16	15	21	67	9.1
12	11	10	11	e12	17	16	43	15	14	14	22	7.0
13	10	11	11	e12	19	35	31	15	14	12	39	6.2
14	9.8	14	92	e12	19	20	30	15	14	11	18	7.6
15	9.7	12	e31	e12	19	18	29	15	14	11	11	7.4
16	9.7	11	e30	e12	24	21	38	14	124	9.8	10	6.5
17	11	11	428	e12	31	22	34	15	32	9.9	9.6	6.1
18	13	10	82	e12	20	19	35	15	19	11	9.4	5.6
19	11	10	e36	e82	18	17	29	16	17	11	11	5.0
20	10	10	e22	e48	18	16	27	17	17	10	18	7.1
21	11	11	e19	e34	17	244	27	32	18	9.4	11	8.5
22	11	11	e17	e25	16	79	25	59	15	9.2	9.6	7.5
23	10	11	e15	e22	18	40	25	51	35	9.2	8.7	6.7
24	10	11	e14	e21	17	31	24	21	17	8.7	8.4	7.2
25	11	11	e14	e19	25	27	24	20	15	8.4	7.8	18
26	11	15	e13	e18	27	24	23	67	14	8.5	7.5	13
27	10	17	e13	e17	20	22	22	37	13	8.8	7.9	9.9
28	9.8	17	e13	e18	19	21	21	29	13	8.1	13	8.7
29	9.9	16	e12	e17	---	41	21	21	12	8.6	9.0	8.1
30	10	16	e12	53	---	315	21	19	12	9.9	8.5	8.0
31	9.8	---	e12	35	---	56	---	18	---	8.4	9.4	---
TOTAL	338.7	358.5	1019	633	610	1309	905	707	654	369.9	385.0	237.2
MEAN	10.9	11.9	32.9	20.4	21.8	42.2	30.2	22.8	21.8	11.9	12.4	7.91
MAX	13	23	428	82	39	315	48	67	124	21	67	18
MIN	9.7	9.0	11	12	16	16	21	14	12	8.1	5.5	5.0
CFSM	.43	.47	1.30	.81	.86	1.68	1.20	.91	.87	.47	.49	.31
IN.	.50	.53	1.50	.93	.90	1.93	1.34	1.04	.97	.55	.57	.35

e Estimated

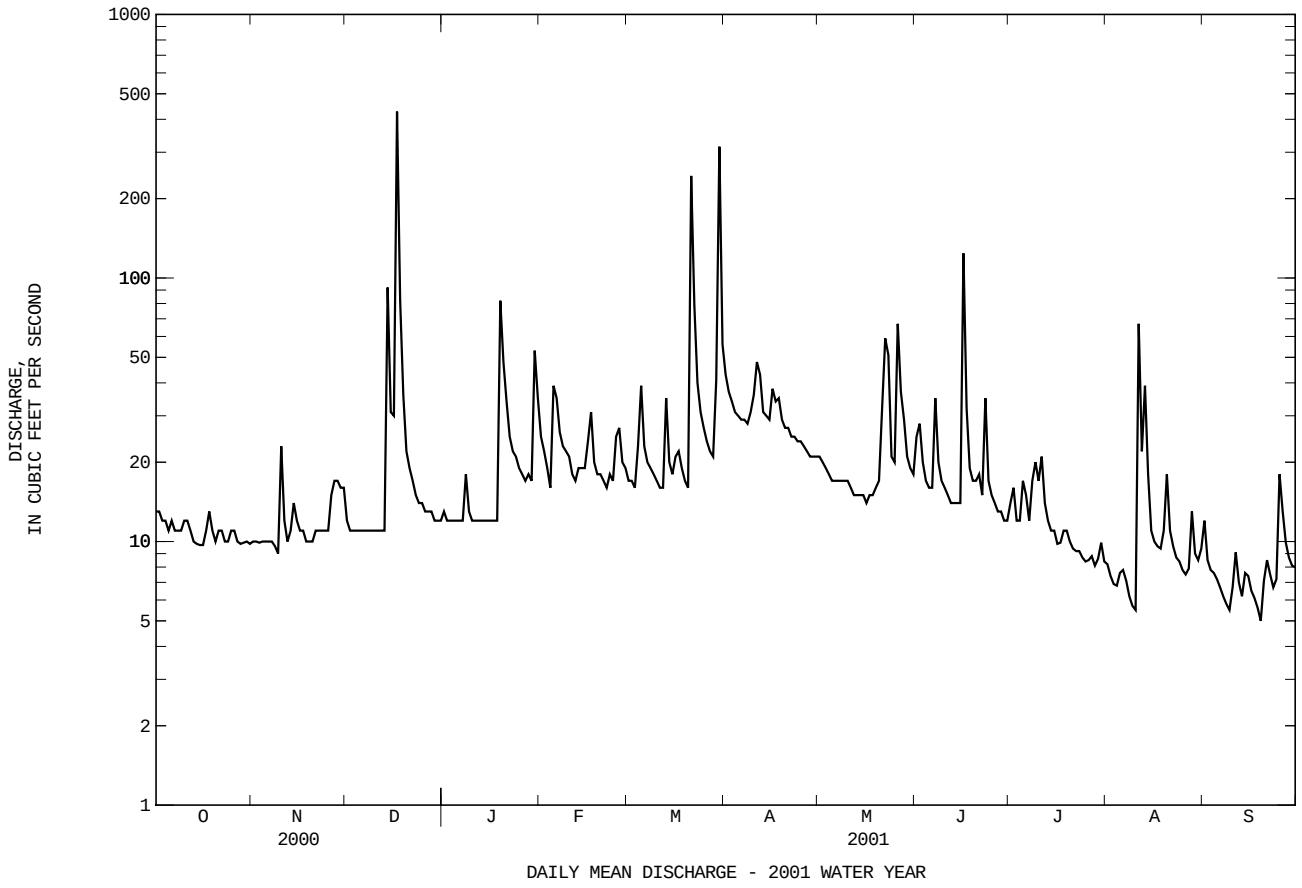
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 1988, 1997 - 2001, BY WATER YEAR (WY)

MEAN	23.9	26.7	34.0	35.3	39.8	43.4	40.7	33.9	30.0	24.3	22.6	27.0
MAX	100	60.4	94.9	105	97.9	82.6	95.7	66.7	150	73.0	72.3	132
(WY)	1980	1973	1997	1979	1979	1998	1973	1973	1972	1984	1971	1979
MIN	6.47	10.2	11.3	9.92	18.5	17.5	18.7	13.0	7.98	4.74	3.85	6.26
(WY)	1987	1982	1981	1981	1969	1981	1969	1969	1986	1966	1966	1986

01589440 JONES FALLS AT SORRENTO, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1966 - 1988, 1997 - 2001	
ANNUAL TOTAL	9712.2		7526.3			
ANNUAL MEAN	26.5		20.6		32.1	
HIGHEST ANNUAL MEAN					62.5	1972
LOWEST ANNUAL MEAN					17.0	1986
HIGHEST DAILY MEAN	428	Dec 17	428	Dec 17	2600	Jun 22 1972
LOWEST DAILY MEAN	9.0	Aug 26	5.0	Sep 19	2.1	(a)
ANNUAL SEVEN-DAY MINIMUM	9.7	Aug 20	6.3	Sep 13	2.2	Aug 28 1966
MAXIMUM PEAK FLOW			1450	Dec 17	(b)13800	Jun 22 1972
MAXIMUM PEAK STAGE			8.41	Dec 17	(c)18.11	Jun 22 1972
INSTANTANEOUS LOW FLOW			4.8	(d)	1.8	(f)
ANNUAL RUNOFF (CFSM)	1.05		.82		1.27	
ANNUAL RUNOFF (INCHES)	14.34		11.11		17.29	
10 PERCENT EXCEEDS	43		34		53	
50 PERCENT EXCEEDS	17		15		22	
90 PERCENT EXCEEDS	11		8.3		9.5	

a Sept. 2, 3, 7, 1966.
b From rating curve extended above 1,400 ft^3/s on basis of slope-area measurement of peak flow.
c From floodmarks.
d Sept. 19, 20.
f Sept. 7, 8, 1966.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01589478 JONES FALLS AT MARYLAND AVENUE AT BALTIMORE, MD

LOCATION.--Lat 39°18'33.4", long 76°37'09.9", Baltimore City, Hydrologic Unit 02060003, on left bank 300 ft downstream from Howard Street bridge.

DRAINAGE AREA.--54.9 mi^2.

PERIOD OF RECORD.--May 1981 to September 1982, December 1999 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 43.0 ft above sea level, from topographic map

REMARKS.--Records good below 300 ft^3/s and fair above except those for estimated daily discharges (missing record), which are poor. Several measurements of water temperature were made during the year.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 17	0930	*3,890	*4.62	Mar 30	0245	3,060	4.28

Minimum discharge, 18 ft^3/s, Sept. 12, 13, 16, 17, 19, 20.

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	33	26	29	28	56	39	90	e40	75	77	23	42
2	33	26	27	28	48	38	74	e39	86	49	22	22
3	32	26	26	27	44	37	65	e38	43	28	21	21
4	31	26	26	27	38	72	60	37	37	38	22	21
5	31	25	26	29	225	145	57	35	37	96	38	21
6	31	25	26	30	91	56	58	34	35	52	23	19
7	29	25	26	29	56	45	56	34	152	28	23	19
8	28	25	27	40	47	42	53	34	46	79	21	19
9	28	31	27	34	44	45	95	39	37	62	22	19
10	29	107	27	28	44	39	e120	35	34	115	e110	20
11	29	33	27	28	38	37	e180	34	34	79	e250	28
12	28	25	27	28	37	46	e93	32	34	31	e108	20
13	28	24	26	27	44	137	e60	31	36	28	e175	18
14	28	45	354	27	44	49	e54	30	33	63	e45	37
15	27	32	60	28	48	62	e70	31	33	21	e27	21
16	27	26	65	30	85	60	e96	30	422	20	26	18
17	27	25	1170	28	104	55	e66	30	86	20	25	18
18	40	24	100	28	44	45	e70	31	41	62	24	20
19	32	24	62	309	40	38	e54	36	37	40	46	19
20	28	25	53	183	40	37	e51	46	145	26	79	81
21	27	25	40	94	38	892	e49	147	93	24	27	40
22	27	25	38	52	37	225	e49	250	38	24	23	22
23	26	24	33	43	53	85	e48	194	99	24	23	20
24	27	24	33	41	44	64	e46	44	39	24	22	36
25	27	31	31	39	72	55	e44	52	33	24	22	146
26	28	193	30	35	72	50	e43	351	31	28	21	28
27	28	50	32	36	46	46	e42	164	30	24	21	22
28	26	33	31	34	42	44	e41	85	29	22	46	21
29	24	38	30	33	---	182	e40	50	28	30	24	21
30	25	42	31	222	---	1140	e40	43	30	32	24	22
31	25	---	29	88	---	135	---	38	---	23	59	---
TOTAL	889	1110	2569	1733	1621	4042	1964	2114	1933	1293	1442	881
MEAN	28.7	37.0	82.9	55.9	57.9	130	65.5	68.2	64.4	41.7	46.5	29.4
MAX	40	193	1170	309	225	1140	180	351	422	115	250	146
MIN	24	24	26	27	37	37	40	30	28	20	21	18
CFSM	.49	.63	1.42	.96	.99	2.24	1.12	1.17	1.11	.72	.80	.50
IN.	.57	.71	1.64	1.11	1.03	2.58	1.25	1.35	1.23	.83	.92	.56

e Estimated

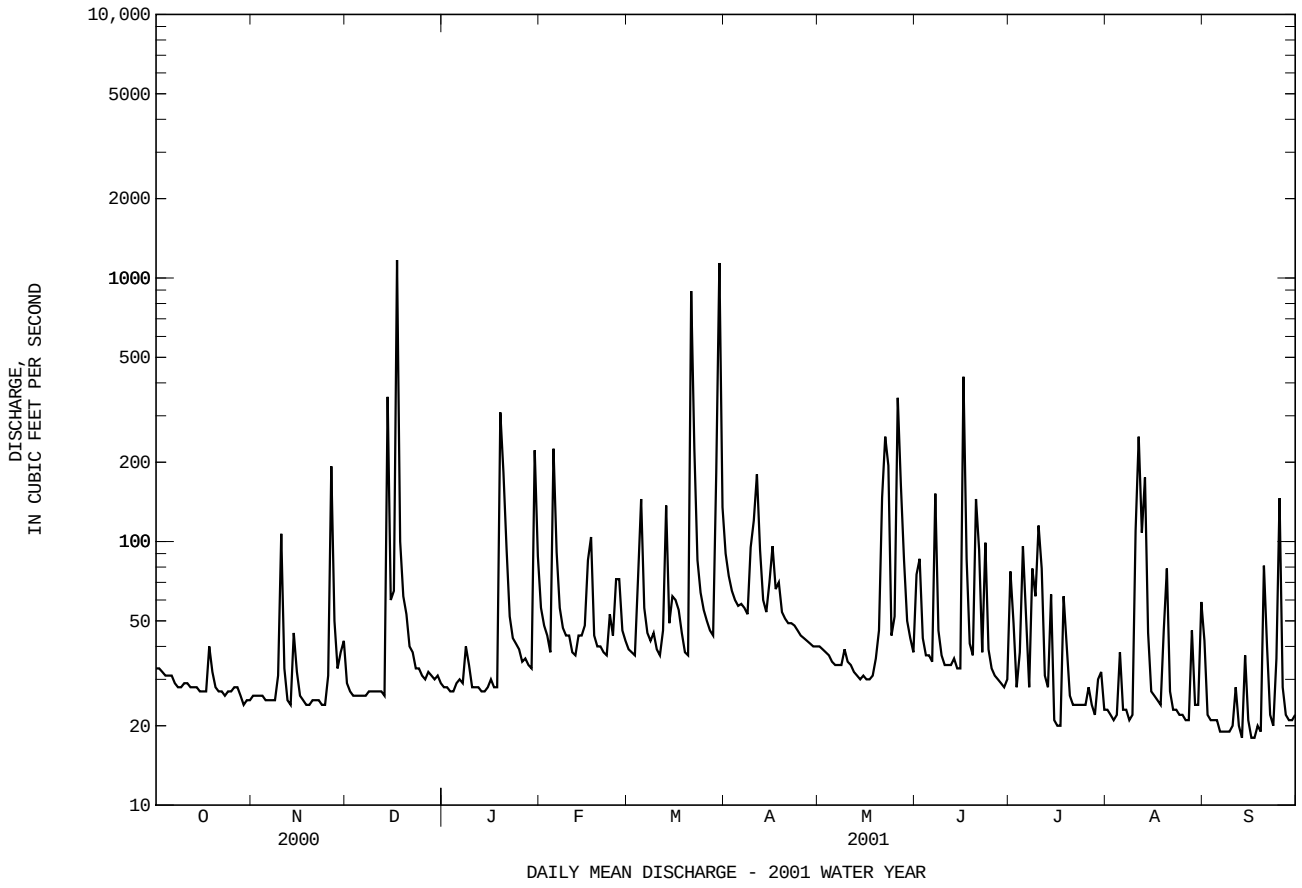
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1981 - 1982, 2000 - 2001, BY WATER YEAR (WY)

MEAN	30.5	31.0	61.3	54.7	89.6	113	86.4	64.3	93.5	69.8	45.4	48.8
MAX	32.2	37.0	82.9	56.4	109	156	119	77.1	123	105	55.0	91.4
(WY)	1982	2001	2001	2000	2000	2000	2000	2000	1982	2000	1982	2000
MIN	28.7	25.0	39.7	51.7	57.9	52.8	65.5	54.2	64.4	41.7	31.7	29.4
(WY)	2001	1982	1982	1982	2001	1982	2001	1982	2001	2001	1981	2001

01589478 JONES FALLS AT MARYLAND AVENUE AT BALTIMORE, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1981 - 1982 2000 - 2001	
ANNUAL TOTAL	30088		21591			
ANNUAL MEAN	82.2		59.2		58.6	
HIGHEST ANNUAL MEAN					59.2	2001
LOWEST ANNUAL MEAN					58.0	1982
HIGHEST DAILY MEAN	1300	Mar 21	1170	Dec 17	1300	Mar 21 2000
LOWEST DAILY MEAN	22	Aug 26	18	(a)	(e)13	(b)
ANNUAL SEVEN-DAY MINIMUM	24	Nov 18	20	Sep 4	14	Oct 9 1981
MAXIMUM PEAK FLOW			3890	Dec 17	(c)10600	Jun 25 1981
MAXIMUM PEAK STAGE			4.62	Dec 17	6.41	Jun 25 1981
INSTANTANEOUS LOW FLOW			18	(d)	UNKNOWN	
ANNUAL RUNOFF (CFSM)	1.41		1.01		1.00	
ANNUAL RUNOFF (INCHES)	19.20		13.78		13.65	
10 PERCENT EXCEEDS	146		95		120	
50 PERCENT EXCEEDS	50		35		41	
90 PERCENT EXCEEDS	27		23		23	

a Sept. 13, 16, 17.
e Estimated.
b Oct. 4, 12-14, 1981.
c From rating curve extended above 300 ft^3/s on basis of slope-area measurement of peak flow 3,200 ft downstream.
d Sept. 12, 13, 16, 17, 19, 20.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01589500 SAWMILL CREEK AT GLEN BURNIE, MD

LOCATION.--Lat 39°10'12", long 76°37'50", Anne Arundel County, Hydrologic Unit 02060003, on left bank 300 ft upstream from bridge on State Highway 648, 0.25 mi southeast of State Highway 3, and 0.5 mi northwest of Glen Burnie.

DRAINAGE AREA.--4.97 mi^2.

PERIOD OF RECORD.--May 1944 to September 1952. Annual maximum, water years 1965-70. September 1983 to current year.

REVISED RECORDS.--WDR MD-DE-89-1: 1984-88.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 26.07 ft above sea level.

REMARKS.--No estimated daily discharges. Records good. Low flow affected by ground-water diversions from Anne Arundel County municipal well fields upstream from station. Several measurements of water temperature were made during the year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of August 1933 reached a stage of about 14 ft.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 30 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 17	0845	74	2.95	May 26	1215	38	2.48
Mar 21	1530	50	2.71	Jun 7	0830	64	2.95
Mar 30	0315	48	2.68	Aug 30	2115	*84	*3.25
May 22	2245	39	2.50	Sep 1	0030	36	2.44

Minimum discharge, 2.4 ft^3/s, Aug. 8-10, 28-30.

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	3.8	3.4	3.0	2.7	3.9	3.2	5.3	3.5	6.1	3.3	2.9	18
2	3.9	3.4	2.9	2.7	3.6	3.2	4.6	3.5	8.4	3.1	2.8	4.8
3	3.7	3.4	2.8	2.7	3.3	3.2	4.3	3.4	6.2	2.9	2.8	3.7
4	3.5	3.2	2.8	2.7	3.2	4.0	3.9	3.3	4.5	4.6	2.8	3.4
5	3.5	3.2	2.9	2.9	8.4	5.9	3.7	3.3	4.1	7.8	2.8	3.1
6	3.6	3.5	2.9	3.0	6.1	4.1	4.0	3.2	3.8	4.3	2.7	3.0
7	3.4	3.4	2.9	3.0	4.3	3.5	4.1	3.2	40	3.1	2.6	3.0
8	3.2	3.5	2.9	3.3	3.6	3.4	3.8	3.3	12	4.6	2.5	3.0
9	3.3	3.5	2.8	3.3	3.6	3.4	4.1	3.3	5.6	3.5	2.4	3.0
10	3.4	5.3	2.9	3.0	3.5	3.2	4.7	3.2	4.8	3.1	2.5	3.0
11	3.4	3.9	3.0	2.9	3.2	3.1	7.4	3.1	4.3	3.1	3.3	3.0
12	3.3	3.6	3.0	2.9	3.0	3.1	6.3	3.1	4.1	2.9	5.7	2.9
13	3.4	3.5	2.9	2.9	3.3	5.2	5.0	3.0	4.1	2.9	3.9	2.9
14	3.4	4.7	7.8	2.9	3.3	3.7	4.2	3.0	3.7	2.9	3.7	3.0
15	3.3	4.0	4.2	3.0	3.9	3.6	3.9	3.1	3.8	2.8	3.0	3.0
16	3.4	3.6	3.8	3.1	6.5	4.0	4.9	3.0	4.5	2.8	2.8	2.9
17	3.4	3.6	29	3.0	10	3.5	4.5	3.0	4.4	2.8	2.7	2.9
18	3.4	3.4	7.3	3.0	4.7	3.5	4.3	3.2	3.5	9.0	2.8	2.9
19	3.5	3.4	4.3	10	3.7	3.0	3.8	3.3	3.5	6.0	3.1	2.8
20	3.3	3.4	3.7	11	3.6	3.0	3.6	3.5	3.5	3.4	3.1	3.6
21	3.3	3.3	3.6	7.6	3.4	27	3.6	6.7	3.5	3.0	2.8	5.0
22	3.2	3.2	3.2	4.4	3.3	16	3.6	14	3.5	2.8	2.6	3.3
23	3.3	3.2	2.9	3.7	3.8	5.7	3.8	15	4.1	2.8	2.6	3.0
24	3.7	3.0	2.9	3.5	3.7	4.5	3.8	4.7	3.6	2.8	3.5	2.9
25	4.3	3.0	2.8	3.3	4.2	3.8	3.6	5.5	3.4	2.8	2.7	4.6
26	3.6	6.5	2.7	3.1	4.2	3.6	3.6	26	3.3	2.9	2.6	3.2
27	3.5	3.9	3.0	3.1	3.4	3.4	3.6	21	3.2	2.9	2.6	3.0
28	3.3	3.3	2.9	3.0	3.4	3.4	3.5	15	3.0	2.8	2.5	3.0
29	3.2	3.1	2.8	3.1	---	5.8	3.6	6.4	3.1	4.2	2.5	2.9
30	3.3	3.5	2.9	7.5	---	30	3.5	4.7	3.2	4.6	21	2.9
31	3.4	---	2.8	5.3	---	8.2	---	4.1	---	3.3	35	---
TOTAL	107.2	108.9	130.3	121.6	118.1	184.2	126.6	187.6	168.8	113.8	141.3	111.7
MEAN	3.46	3.63	4.20	3.92	4.22	5.94	4.22	6.05	5.63	3.67	4.56	3.72
MAX	4.3	6.5	29	11	10	30	7.4	26	40	9.0	35	18
MIN	3.2	3.0	2.7	2.7	3.0	3.0	3.5	3.0	3.0	2.8	2.4	2.8
CFSM	.70	.73	.85	.79	.85	1.20	.85	1.22	1.13	.74	.92	.75
IN.	.80	.82	.98	.91	.88	1.38	.95	1.40	1.26	.85	1.06	.84

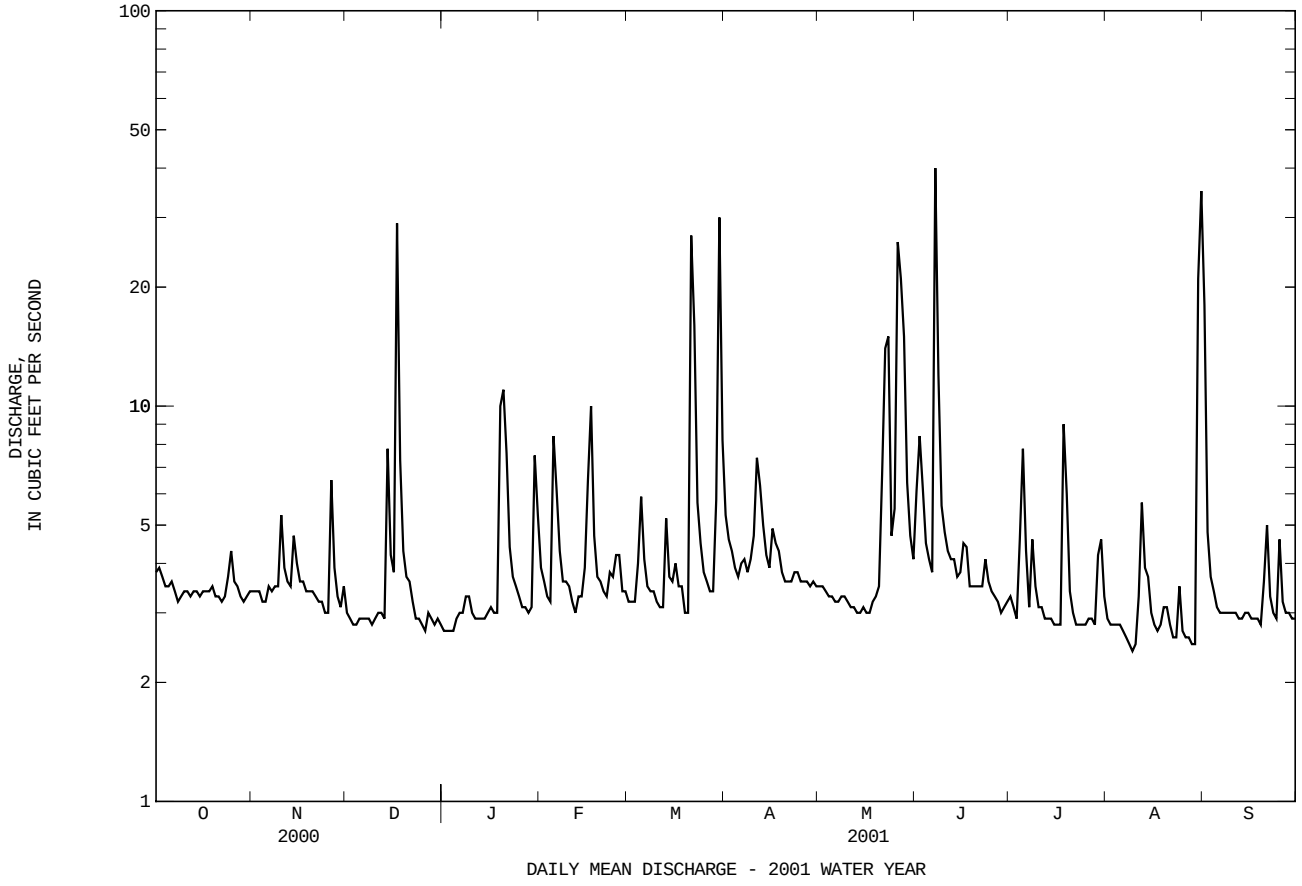
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1944 - 1952, 1983 - 2001, BY WATER YEAR (WY)

MEAN	3.66	4.24	4.66	5.02	5.17	6.15	5.73	5.70	4.99	4.53	4.45	4.62
MAX	9.03	10.3	13.0	14.4	14.4	13.5	13.8	13.3	11.4	9.45	12.4	13.1
(WY)	1949	1952	1949	1949	1949	1949	1952	1952	1948	1952	1948	1952
MIN	.030	.19	.13	.30	.76	.76	.75	.11	.081	.10	.15	.024
(WY)	1987	1987	1989	1989	1989	1986	1985	1986	1986	1985	1986	1986

01589500 SAWMILL CREEK AT GLEN BURNIE, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1944 - 1952, 1983 - 2001	
ANNUAL TOTAL	1895.5		1620.1			
ANNUAL MEAN	5.18		4.44		4.90	
HIGHEST ANNUAL MEAN					11.0	1949
LOWEST ANNUAL MEAN					.43	1986
HIGHEST DAILY MEAN	32	Jul 26	40	Jun 7	155	Sep 16 1999
LOWEST DAILY MEAN	2.7	Dec 26	2.4	Aug 9	.01	(a)
ANNUAL SEVEN-DAY MINIMUM	2.8	Dec 25	2.6	Aug 4	.01	Jul 25 1986
MAXIMUM PEAK FLOW			84	Aug 30	(b)294	Sep 16 1999
MAXIMUM PEAK STAGE			3.25	Aug 30	5.74	Sep 16 1999
INSTANTANEOUS LOW FLOW			2.4	(c)	.00	(d)
ANNUAL RUNOFF (CFSM)	1.04		.89		.99	
ANNUAL RUNOFF (INCHES)	14.19		12.13		13.41	
10 PERCENT EXCEEDS	7.7		5.9		9.3	
50 PERCENT EXCEEDS	4.1		3.4		4.0	
90 PERCENT EXCEEDS	3.2		2.8		.53	

a Many days in 1985-1987.
b From rating curve extended above 40 ft^3/s on basis of Culvert Type IV measurement of peak flow.
c Aug. 8-10, 28-30.
d Part of each day Sept. 6, 7, 1985, July 29, Aug. 2, 1986.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01589501 SAWMILL CREEK TRIBUTARY AT BWI AIRPORT NEAR FERNDALE, MD

LOCATION.--Lat 39°10'40", long 76°39'04", Anne Arundel County, Hydrologic Unit 02060003, on right bank 2,000 ft upstream from culvert on Hammond Ferry Road, 1.2 mi southwest of Ferndale.

DRAINAGE AREA.--0.58 mi^2.

PERIOD OF RECORD.--November 1994 to September 1995. October 1996 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 100 ft above sea level, from topographic map.

REMARKS.--Records good below 30 ft^3/s and fair above except those for estimated daily values (backwater), which are fair. Several measurements of water temperature were made during the year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 50 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Aug 30	1845	*34	*1.44	No peak greater than base discharge.			

Minimum discharge, 0.06 ft^3/s, Sept. 19.

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	.24	e.13	.24	.13	.36	.27	.62	.27	4.0	.36	.34	11
2	.24	e.13	.24	.13	.30	.24	.57	.17	2.1	.21	.30	.76
3	.19	.13	.21	.13	.25	.24	.49	.14	.58	.13	.22	.52
4	.14	e.13	.19	.13	.11	2.6	.49	.14	.43	3.3	.23	.46
5	.14	e.13	.19	.13	6.7	1.6	.49	.14	.48	2.5	.25	.36
6	.18	e.13	.19	.28	.50	.43	.66	.14	.37	.43	.16	.29
7	.19	.11	.19	.13	.37	.37	.40	.14	16	.32	.14	.17
8	.17	.09	.19	1.2	.33	.35	.37	.14	2.5	2.0	.14	.13
9	.14	.65	.19	.33	.30	.31	1.5	.13	.49	.34	.17	.13
10	.14	3.2	.28	.25	.35	.27	.65	.13	.49	.27	1.1	.13
11	.13	.28	.16	.15	.30	.24	4.5	.13	.43	.24	1.9	.13
12	.13	.20	.13	.13	.36	.51	.77	.13	.37	.15	1.1	.13
13	.14	.15	.13	.13	.48	2.7	.66	.14	.37	.13	2.2	.11
14	.14	2.1	7.8	.13	.41	.49	.49	.13	.32	.13	.51	.73
15	.14	.26	.37	.25	1.2	1.6	.73	.23	.24	.13	.37	.17
16	.14	.14	1.4	.13	5.3	.57	1.3	.24	2.1	.12	.32	.11
17	.13	.14	15	.11	3.1	1.4	.62	.19	.43	.13	.45	.09
18	.15	.14	1.1	.09	.41	.51	.72	.13	.33	7.4	.20	.09
19	.14	.14	.67	9.9	.37	.37	.30	.28	.27	1.0	.63	.09
20	.14	.14	.51	5.4	.34	.43	.30	.62	.18	.43	.82	1.9
21	.14	.14	.49	1.5	.30	19	.30	4.7	.19	.34	.25	1.6
22	.14	.13	.48	.50	.27	12	.26	6.7	.13	.30	.16	.25
23	.14	.12	.36	.40	1.3	.65	.25	9.9	.82	.27	.15	.19
24	.13	.16	.25	.37	.42	.55	.24	.52	.24	.20	.17	.33
25	e.13	1.3	.15	.27	1.2	.49	.24	2.6	.13	.13	.13	2.9
26	e.13	5.0	.13	.11	.44	.43	.26	13	.13	.30	.13	.24
27	e.13	.33	.13	.11	.30	.33	.30	10	.13	.20	.14	.24
28	e.13	.30	.13	.10	.30	.30	.30	3.8	.13	.13	.14	.18
29	e.13	1.2	.13	.09	---	3.8	.30	.56	.13	3.3	.13	.14
30	e.13	.44	.13	5.8	---	16	.29	.49	.92	1.2	12	.18
31	e.13	---	.13	.48	---	.90	---	.49	---	.37	21	---
TOTAL	4.61	17.64	31.89	28.99	26.37	69.95	19.37	56.52	35.43	26.46	45.95	23.75
MEAN	.15	.59	1.03	.94	.94	2.26	.65	1.82	1.18	.85	1.48	.79
MAX	.24	5.0	15	9.9	6.7	19	4.5	13	16	7.4	21	11
MIN	.13	.09	.13	.09	.11	.24	.24	.13	.13	.12	.13	.09
CFSM	.26	1.01	1.77	1.61	1.62	3.89	1.11	3.14	2.04	1.47	2.56	1.36
IN.	.30	1.13	2.05	1.86	1.69	4.49	1.24	3.63	2.27	1.70	2.95	1.52

e Estimated

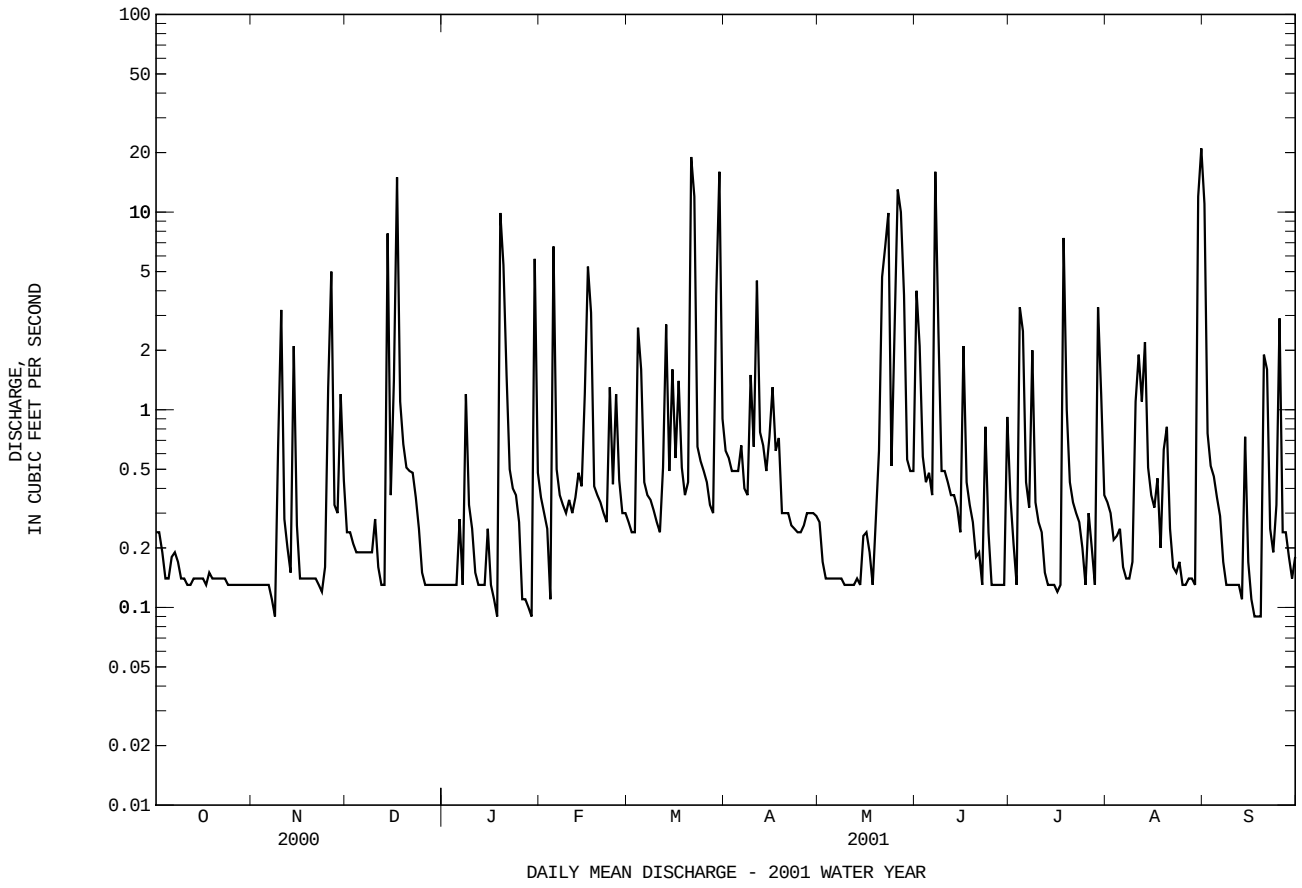
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1995, 1997 - 2001, BY WATER YEAR (WY)

MEAN	.82	1.13	1.24	1.46	1.39	1.90	1.00	1.10	.96	.84	1.22	1.85
MAX	1.75	2.45	3.23	2.51	3.41	2.54	1.90	1.82	1.65	1.75	2.24	6.09
(WY)	1997	1998	1997	1998	1998	1998	2000	2001	2000	2000	1999	1999
MIN	.15	.46	.51	.75	.44	1.18	.65	.55	.45	.43	.38	.41
(WY)	2001	1999	1999	2000	1995	1995	2001	1999	1999	1997	1998	1998

01589501 SAWMILL CREEK TRIBUTARY AT BWI AIRPORT NEAR FERNDALE, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1995 - 1995, 1997 - 2001	
ANNUAL TOTAL	458.13		386.93			
ANNUAL MEAN	1.25		1.06		1.31	
HIGHEST ANNUAL MEAN					1.43	1997
LOWEST ANNUAL MEAN					1.06	2001
HIGHEST DAILY MEAN	18	Sep 3	21	Aug 31	82	Sep 16 1999
LOWEST DAILY MEAN	.07	(a)	.09	(b)	.06	(c)
ANNUAL SEVEN-DAY MINIMUM	.09	Aug 20	.12	Nov 2	.08	Aug 20 1995
MAXIMUM PEAK FLOW			34	Aug 30	(d)298	Sep 16 1999
MAXIMUM PEAK STAGE			1.44	Aug 30	3.38	Sep 16 1999
INSTANTANEOUS LOW FLOW			.06	Sep 19	.06	(f)
ANNUAL RUNOFF (CFSM)	2.16		1.83		2.26	
ANNUAL RUNOFF (INCHES)	29.38		24.82		30.68	
10 PERCENT EXCEEDS	3.5		2.1		2.9	
50 PERCENT EXCEEDS	.28		.27		.30	
90 PERCENT EXCEEDS	.13		.13		.14	

a Sept. 22, 23.
b Nov. 8, Jan. 18, 29, Sept. 17-19.
c Mar. 4, 5, 1995.
d From rating curve extended above 20 ft^3/s.
f Mar. 4-6, 1995, Sept. 22-25, 2000, Sept. 19, 2001.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01589795 SOUTH FORK JABEZ BRANCH AT MILLERSVILLE, MD

LOCATION.--Lat 39°04'05.7", long 76°39'05.5", Anne Arundel County, Hydrologic Unit 02060004, on left bank 300 ft upstream from the confluence with the West Branch Jabez Branch, 0.5 mi northwest of Millersville, 1.0 mi west of Gambrills, and 1.6 mi upstream from mouth.

DRAINAGE AREA.--1.0 mi^2.

PERIOD OF RECORD.--August 1989 to September 1990, July 1997 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 60 ft above sea level, from topographic map.

REMARKS.--Records good except those for estimated daily discharges (questionable record), which are fair. Several measurements of water temperature were made during the year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 20 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jun 30	1710	21	5.04	Aug 30	1745	*77	*5.91

Minimum discharge, unknown.

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	.20	e.20	.20	.36	.20	.24	.55	.22	.33	.23	.14	.94
2	.20	e.20	.20	.36	.20	.24	.47	.21	.34	.20	.14	e.14
3	.20	e.20	.20	.36	.20	.24	.45	.20	.25	.20	.14	e.13
4	.20	.20	.19	.36	.20	.25	.42	.20	.16	.75	.14	e.13
5	.20	.20	.17	.36	.78	.40	.41	.20	.15	.91	.14	e.13
6	.24	.20	.17	.36	.33	.25	.40	.20	.16	.38	.14	e.13
7	e.20	.19	.17	.36	.25	.24	.40	.20	4.9	.20	.14	e.13
8	e.20	.17	.17	.36	.24	.24	.40	.20	.37	.21	.13	e.13
9	e.20	.20	.17	.36	.24	.24	.42	.20	.26	.49	.13	e.13
10	e.20	.22	.18	.35	.24	.23	.42	.20	.24	.21	.16	e.20
11	e.20	.20	.18	.33	.24	.22	1.6	.19	.24	.21	.35	e.13
12	e.20	.20	.19	.31	.24	.23	.58	.14	.24	.18	.21	e.13
13	e.20	.20	.20	.31	.24	.24	.45	.14	.22	.17	.20	e.13
14	e.20	.21	.45	.31	.24	.23	.41	.14	.17	.15	.20	e.35
15	e.20	.20	.24	.31	.24	.26	.37	.14	.14	.14	.17	e.14
16	e.20	.20	.24	.31	.51	.24	.44	.14	.21	.14	.14	e.13
17	e.20	.20	3.7	.31	1.0	.24	.42	.14	.19	.14	.14	e.13
18	e.20	.20	.47	.31	.27	.24	.38	.14	.14	.34	.14	e.13
19	e.20	.20	.36	.74	.23	.22	.37	.14	.14	.19	.17	e.13
20	e.20	.20	.36	.68	.20	.20	.33	.16	.14	.16	.17	e.50
21	e.20	.20	.36	.43	.20	6.4	.31	.26	.14	.14	.12	e1.5
22	e.20	.20	.36	.28	.20	1.5	.27	.99	.14	.14	.12	e.40
23	e.20	.20	.36	.27	.20	.50	.26	.38	.16	.14	.14	e.27
24	e.20	.20	.36	.27	.20	.42	.24	.24	.14	.14	.17	e.45
25	e.20	.22	.36	.27	.26	.34	.24	.24	.14	.14	.14	e1.1
26	e.20	.28	.36	.27	.27	.25	.24	1.3	.14	.16	.14	e.40
27	e.20	.22	.36	.27	.24	.24	.24	1.9	.14	.15	.13	e.14
28	e.20	.21	.36	.27	.24	.24	.24	.64	.14	.14	.13	e.13
29	e.20	.22	.36	.27	---	.76	.24	.23	.14	.20	.13	e.13
30	e.20	.22	.36	.52	---	5.6	.23	.20	.88	.18	5.4	e.12
31	e.20	---	.36	.26	---	.77	---	.20	---	.14	1.8	---
TOTAL	6.24	6.16	12.17	10.89	8.10	21.91	12.20	10.08	11.15	7.27	11.71	8.73
MEAN	.20	.21	.39	.35	.29	.71	.41	.33	.37	.23	.38	.29
MAX	.24	.28	3.7	.74	1.0	6.4	1.6	1.9	4.9	.91	5.4	1.5
MIN	.20	.17	.17	.26	.20	.20	.23	.14	.14	.14	.12	.12
CFSM	.20	.21	.39	.35	.29	.71	.41	.33	.37	.23	.38	.29
IN.	.23	.23	.45	.41	.30	.82	.45	.37	.41	.27	.44	.32

e Estimated

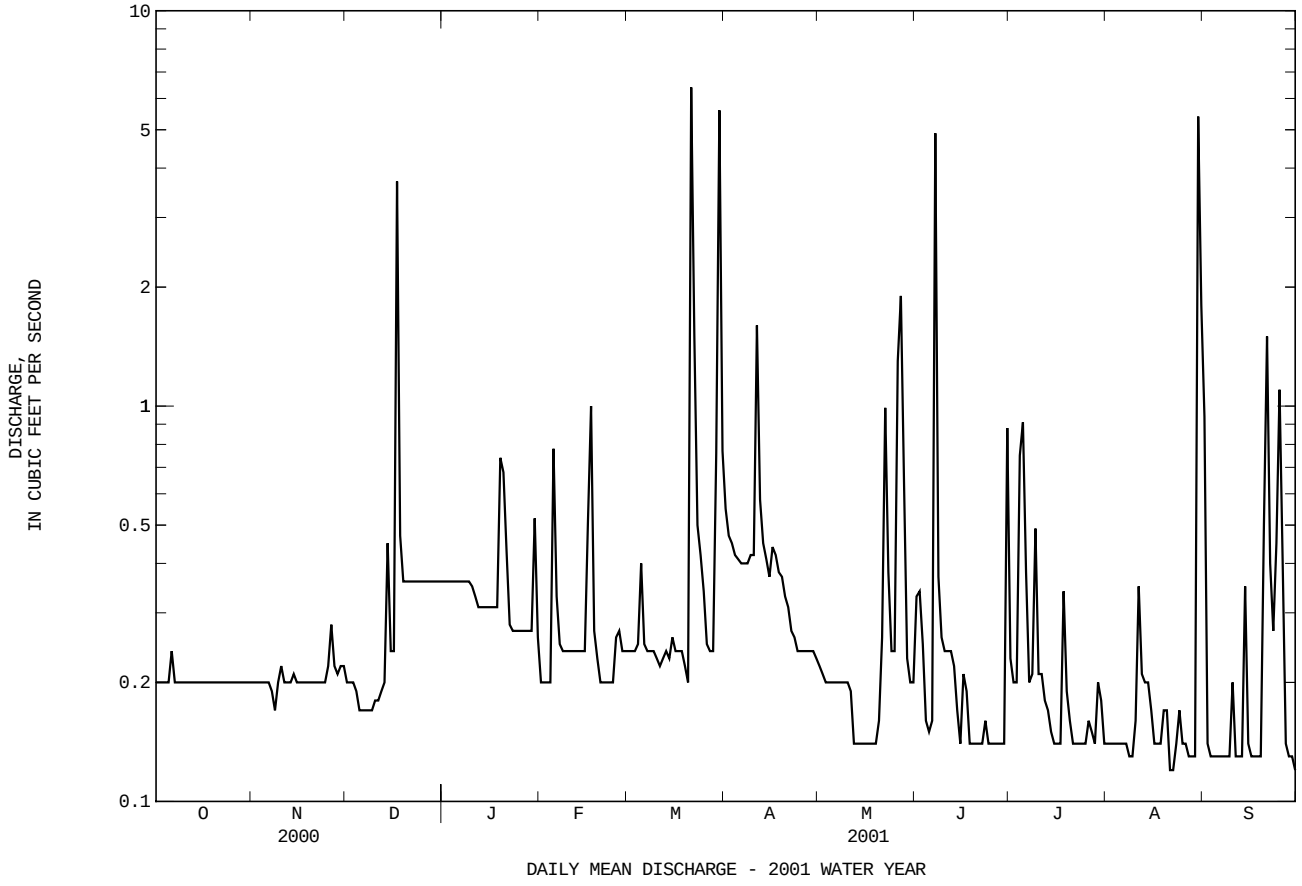
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 1990, 1997 - 2001, BY WATER YEAR (WY)

MEAN	.38	.41	.40	.68	.73	.73	.50	.46	.34	.39	.39	.75
MAX	.52	.77	.41	1.60	2.02	1.47	.75	.80	.46	.65	.52	3.22
(WY)	1990	1998	1998	1998	1998	1998	2000	1990	1998	2000	1997	1999
MIN	.20	.21	.38	.31	.29	.37	.32	.27	.25	.22	.19	.25
(WY)	2001	2001	1990	2000	2001	1990	1999	1999	1999	1999	2000	2000

01589795 SOUTH FORK JABEZ BRANCH AT MILLERSVILLE, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1989 - 1990, 1997 - 2001	
ANNUAL TOTAL	145.99		126.61			
ANNUAL MEAN	.40		.35		.52	
HIGHEST ANNUAL MEAN					.78	1998
LOWEST ANNUAL MEAN					.35	2001
HIGHEST DAILY MEAN	5.8	Jul 15	6.4	Mar 21	82	Sep 16 1999
LOWEST DAILY MEAN	.17	(a)	.12	(b)	.12	(b)
ANNUAL SEVEN-DAY MINIMUM	.17	Aug 11	.13	Sep 3	.13	Sep 3 2001
MAXIMUM PEAK FLOW			77	Aug 30	(c)300	Sep 16 1999
MAXIMUM PEAK STAGE			5.91	Aug 30	6.97	Sep 16 1999
INSTANTANEOUS LOW FLOW			UNKNOWN		(d).09	Aug 28 2001
ANNUAL RUNOFF (CFSM)	.40		.35		.52	
ANNUAL RUNOFF (INCHES)	5.43		4.71		7.08	
10 PERCENT EXCEEDS	.58		.45		.53	
50 PERCENT EXCEEDS	.25		.20		.36	
90 PERCENT EXCEEDS	.20		.14		.20	

a Aug. 11-26.
b Aug. 21, 22, 2000.
c From rating curve extended above 15 ft^3/s.
d May have been lower during period of questionable record, Sept. 2-30, 2001.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01591000 PATUXENT RIVER NEAR UNITY, MD

LOCATION.--Lat 39°14'18", long 77°03'21", Montgomery County, Hydrologic Unit 02060006, on right bank at downstream side of bridge on State Highway 97, 0.6 mi upstream from Cattail Creek, 0.8 mi upstream from Triadelphia Reservoir, 1.1 mi northeast of Unity, and 97 mi upstream from mouth.

DRAINAGE AREA.--34.8 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1944 to current year.

REVISED RECORDS.--WSP 1111: 1947. WSP 1432: 1948.

GAGE.--Water stage recorder and concrete control. Datum of gage is 364.76 ft above sea level (Washington Suburban Sanitary Commission bench mark). Prior to Aug. 14, 1946, non-recording gage at same site and datum.

REMARKS.--Water-discharge records good except those for estimated daily discharges (ice effect), which are fair.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 770 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jun 22	2315	*799	*5.50	Aug 11	1915	772	5.43

Minimum discharge, 7.6 ft^3/s, Sept. 17-20.

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	28	17	18	15	59	31	74	29	27	24	15	15
2	27	17	17	15	48	30	63	28	37	23	13	12
3	25	17	17	e16	41	29	56	27	29	21	12	11
4	23	17	17	17	36	31	52	26	25	22	12	11
5	22	16	16	17	45	48	48	25	24	26	12	11
6	22	16	16	17	45	37	49	24	24	24	12	9.8
7	20	16	16	17	41	34	50	23	230	20	11	9.5
8	20	16	16	18	37	31	46	23	64	22	10	9.3
9	20	16	15	18	35	30	45	23	44	35	9.5	9.0
10	21	35	15	17	35	29	46	22	36	21	9.2	8.9
11	20	20	15	17	31	28	67	21	31	20	121	8.9
12	19	18	15	18	29	28	60	21	28	18	48	8.6
13	19	17	15	18	31	43	52	21	26	17	32	8.4
14	19	19	45	17	32	38	46	19	25	16	22	8.5
15	18	18	38	18	34	34	45	19	24	15	17	8.3
16	18	17	27	19	36	35	53	19	78	15	15	8.0
17	18	17	177	18	50	38	47	19	48	15	14	7.8
18	21	16	58	18	35	33	51	21	32	17	14	7.8
19	20	16	38	108	32	30	44	24	27	19	14	7.8
20	19	16	31	96	32	30	42	22	25	16	55	9.3
21	18	16	e25	53	31	87	41	55	23	15	19	17
22	18	15	e21	e30	29	83	39	58	119	14	15	9.8
23	17	15	e19	e25	31	57	37	75	224	13	14	8.9
24	17	15	e18	e24	30	49	36	33	55	13	14	36
25	18	16	e18	e24	37	45	35	27	41	13	13	87
26	18	37	17	e25	45	41	34	53	35	12	12	18
27	18	27	17	26	35	38	33	64	31	12	12	14
28	17	21	17	25	33	36	31	44	29	11	13	12
29	17	19	16	23	---	46	30	33	27	18	12	11
30	17	20	16	149	---	283	29	28	25	18	12	11
31	17	---	15	90	---	93	---	25	---	15	12	---
TOTAL	611	558	821	1008	1035	1525	1381	951	1493	560	615.7	414.6
MEAN	19.7	18.6	26.5	32.5	37.0	49.2	46.0	30.7	49.8	18.1	19.9	13.8
MAX	28	37	177	149	59	283	74	75	230	35	121	87
MIN	17	15	15	15	29	28	29	19	23	11	9.2	7.8
CFSM	.57	.53	.76	.93	1.06	1.41	1.32	.88	1.43	.52	.57	.40
IN.	.65	.60	.88	1.08	1.11	1.63	1.48	1.02	1.60	.60	.66	.44

e Estimated.

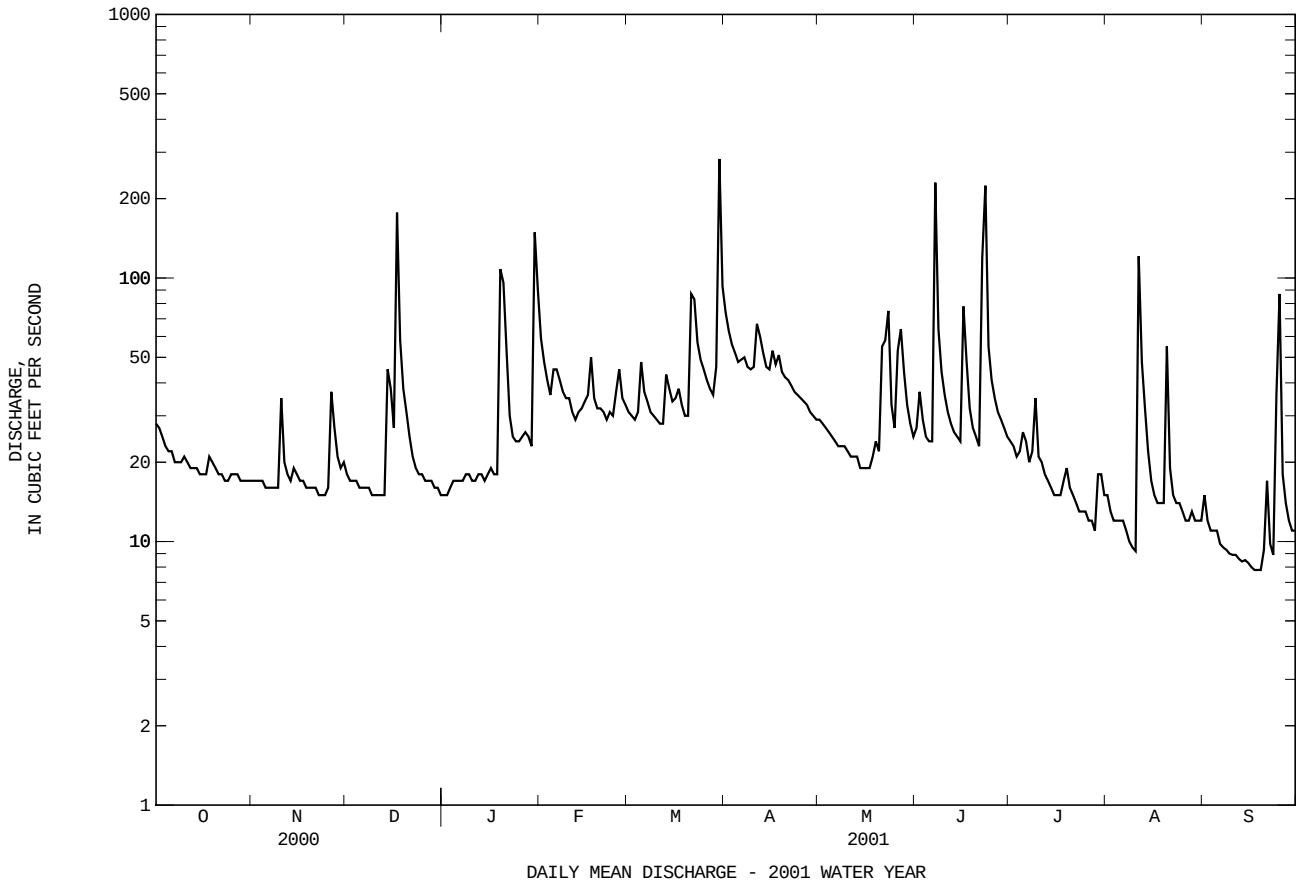
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1944 - 2001, BY WATER YEAR (WY)

MEAN	21.9	28.7	40.1	47.2	54.5	62.4	57.9	48.8	36.1	25.7	21.9	26.8
MAX	150	82.8	155	139	152	173	158	141	206	102	120	214
(WY)	1980	1953	1997	1996	1979	1993	1993	1952	1972	1956	1971	1971
MIN	4.19	9.09	8.51	10.0	19.6	23.9	21.6	15.2	7.53	2.78	2.79	4.51
(WY)	1987	1966	1966	1966	1947	1981	1963	1963	1999	1999	1966	1986

01591000 PATUXENT RIVER NEAR UNITY, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1944 - 2001	
ANNUAL TOTAL	12172		10973.3			
ANNUAL MEAN	33.3		30.1		39.3	
HIGHEST ANNUAL MEAN					82.3	1972
LOWEST ANNUAL MEAN					18.6	1999
HIGHEST DAILY MEAN	335	Mar 22	283	Mar 30	2590	Sep 26 1975
LOWEST DAILY MEAN	12	Aug 26	7.8	(a)	.20	(b)
ANNUAL SEVEN-DAY MINIMUM	13	Aug 20	8.1	Sep 13	.23	Aug 9 1999
MAXIMUM PEAK FLOW			799	Jun 22	(c)21800	Sep 11 1971
MAXIMUM PEAK STAGE			5.50	Jun 22	18.60	Sep 11 1971
INSTANTANEOUS LOW FLOW			7.6	(d)	.20	(f)
ANNUAL RUNOFF (CFSM)	.96		.86		1.13	
ANNUAL RUNOFF (INCHES)	13.01		11.73		15.33	
10 PERCENT EXCEEDS	59		50		71	
50 PERCENT EXCEEDS	22		22		25	
90 PERCENT EXCEEDS	16		12		8.9	

a Sept. 17-19.
b Sept. 10, 11, 1966.
c From rating curve extended above 1,500 ft^3/s on basis of slope-area measurement at gage height 13.00 ft.
d Sept. 17-20.
f Sept. 10-12, 1966.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01591000 PATUXENT RIVER NEAR UNITY, MD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 1985 to current year.

REMARKS.--Chemical analyses were performed at the Maryland Department of Health and Mental Hygiene laboratory (DHMH), Baltimore, MD.

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

DATE	TIME	SAMPLE TYPE	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)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (LOW LEVEL) (MG/L) (00335)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)
OCT												
17...	1045	ENVIRONMENTAL	18	127	6.7	15.0	13.7	2.6	10.0	--	<10	7.5
17...	*1046*	*REPLICATE*	*18*	--	--	--	--	*2.5*	--	--	*<10*	*7.5*
NOV												
02...	1245	ENVIRONMENTAL	17	122	6.5	19.5	8.2	1.4	11.6	--	<10	--
DEC												
06...	1415	ENVIRONMENTAL	16	6	6.4	1.5	1.5	1.9	14.3	--	<10	--
FEB												
21...	*1159*	*BLANK*	--	--	--	--	--	*<.5*	--	--	*<10*	--
21...	1200	ENVIRONMENTAL	30	125	6.2	9.0	6.1	4.2	--	--	<10	--
MAR												
29...	1145	ENVIRONMENTAL	37	114	6.1	6.0	4.9	3.8	13.2	103	<10	4.4
APR												
26...	*1144*	*BLANK*	--	--	--	--	--	*<.5*	--	--	*<10*	--
26...	1145	ENVIRONMENTAL	34	111	5.5	20.5	12.3	3.7	--	--	<10	--
26...	*1146*	*REPLICATE*	*34*	--	--	--	--	*4.0*	--	--	*<10*	--
MAY												
22...	1015	ENVIRONMENTAL	48	112	5.9	23.0	14.6	22	9.8	97	16	2.2
JUN												
26...	1030	ENVIRONMENTAL	37	124	6.1	28.0	18.1	12	10.9	--	<10	<.9
JUL												
23...	1000	ENVIRONMENTAL	14	123	6.3	28.5	--	8.0	10.1	--	<10	2.0
AUG												
23...	1315	ENVIRONMENTAL	14	122	6.1	25.0	20.1	6.1	8.6	--	<10	<1.1
SEP												
26...	1015	ENVIRONMENTAL	18	130	5.7	14.0	13.3	12	96.7	--	12	<1.4

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	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)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN DIS-SOLVED (MG/L AS N) (00602)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)
OCT													
17...	8.7	5	2.9	2.69	.004	2.69	.045	.19	<.08	--	.15	--	.122
17...	*8.6*	*3*	--	*2.82*	*.004*	*2.83*	*.008*	*<.09*	*<.08*	--	--	--	*.012*
NOV													
02...	8.8	<1	2.8	2.70	.003	2.71	<.007	.11	.11	2.8	--	--	.011
DEC													
06...	8.6	3	4.7	2.99	.003	3.00	<.005	1.7	.57	3.6	--	--	.019
FEB													
21...	*<.1*	*1*	--	--	*<.001*	*<.001*	*<.004*	*<.03*	*<.03*	--	--	--	*<.004*
21...	3.7	5	3.1	2.93	.004	2.94	.008	.15	.13	3.1	.14	.12	.010
MAR													
29...	7.2	3	3.0	2.83	.005	2.84	.011	.14	.11	2.9	.13	.10	.013
APR													
26...	*<.1*	*<.1*	--	--	*.002*	*<.003*	*.008*	*<.03*	*<.03*	--	--	--	*.010*
26...	7.1	4	2.8	2.68	.006	2.69	.015	.12	.09	2.8	.10	.07	.020
26...	*7.1*	*5*	*2.9*	*2.65*	*.006*	*2.66*	*.013*	*.20*	*.13*	*2.8*	*.19*	*.12*	*.018*
MAY													
22...	8.0	39	2.3	1.81	.014	1.82	.084	.45	.37	2.2	.37	.29	.058
JUN													
26...	9.1	11	3.1	2.79	.005	2.79	.019	.29	.20	3.0	.27	.18	.030
JUL													
23...	8.5	11	3.3	2.99	.004	2.99	.016	.29	.28	3.3	.27	.26	.019
AUG													
23...	7.7	6	2.7	2.53	.003	2.53	<.006	.16	.11	2.6	--	--	.024
SEP													
26...	7.9	12	2.5	2.01	.003	2.01	.018	.54	.37	2.4	.52	.35	.060

< Actual value is known to be less than the value shown.

01591000 PATUXENT RIVER NEAR UNITY, MD--Continued

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

DATE	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
OCT						
17...	<.006	.004	2.1	1.8	5	.25
17...	*<.006*	*.004*	*2.1*	*1.7*	*5*	*.23*
NOV						
02...	.007	.005	2.0	2.1	2	.09
DEC						
06...	<.005	.005	1.6	1.6	1	.06
FEB						
21...	*<.004*	*<.003*	*.52*	*<.45*	*<1*	--
21...	<.006	.004	1.2	1.1	4	.36
MAR						
29...	<.007	.004	1.2	1.2	5	.49
APR						
26...	*<.008*	*<.003*	*.84*	*.70*	*<1*	--
26...	.011	<.003	1.6	1.6	5	.47
26...	*<.007*	*<.003*	*1.7*	*1.6*	*6*	*.51*
MAY						
22...	.010	.007	4.3	4.1	27	3.5
JUN						
26...	.014	.007	1.7	1.7	14	1.4
JUL						
23...	.015	.005	1.6	1.5	9	.34
AUG						
23...	.011	.008	--	--	5	.19
SEP						
26...	.040	.015	4.1	3.9	9	.42

< Actual value is known to be less than the value shown.

01591400 CATTAIL CREEK NEAR GLENWOOD, MD

LOCATION (REVISED).--Lat 39°15'21.4", long 77°03'03.8", Howard County, Hydrologic Unit 02060006, on right bank at downstream side of bridge on State Highway 97, 1.2 mi upstream from mouth.

DRAINAGE AREA.--22.9 mi^2.

PERIOD OF RECORD.--June 1978 to September 1983 (published as "at Roxbury Mills Road at Roxbury Mills, MD"), October 1983 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 400 ft above sea level, from topographic map. Prior to Dec. 28, 1983, at site 800 ft upstream at datum 1.76 ft lower.

REMARKS.--Records good except those for estimated daily discharges (backwater, ice effect), which are fair. Several measurements of water temperature were made during the year. Water-quality records for some prior years have been collected at this station.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 30	0500	772	4.47	Jun 23	0045	*2,330	*6.65
Jun 7	0745	511	3.86	Aug 11	2115	2,110	6.42

Minimum discharge, 6.1 ft^3/s, Sept. 17-20, 24.

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	16	e11	e13	13	35	19	36	17	18	18	11	13
2	16	e11	e12	13	28	18	31	17	27	17	9.6	9.9
3	15	e11	e12	13	24	18	29	16	21	15	9.0	9.2
4	15	e11	e11	13	21	19	27	16	18	15	8.8	9.2
5	14	e11	e11	13	27	31	26	15	16	18	8.6	8.9
6	14	e11	e11	13	29	23	26	15	16	18	8.0	8.6
7	14	e11	e11	13	27	20	28	15	158	15	7.7	8.0
8	13	e10	e11	13	24	19	26	14	34	17	7.3	8.0
9	13	e10	e11	13	22	18	25	14	25	27	6.7	8.0
10	13	28	e10	13	22	17	25	14	21	17	6.3	7.7
11	13	15	e10	14	20	17	43	14	18	15	351	7.7
12	12	14	e10	13	18	16	36	14	17	14	55	7.1
13	12	13	e10	13	19	27	30	13	17	13	32	6.6
14	12	14	43	12	20	21	26	12	17	12	23	6.6
15	12	14	25	12	20	19	25	13	16	12	16	6.5
16	12	12	19	13	23	20	30	12	43	12	14	6.3
17	12	11	133	13	32	22	27	11	29	11	13	6.1
18	14	11	34	12	22	19	27	12	20	12	12	6.1
19	15	11	24	97	20	18	24	14	17	15	12	6.1
20	14	11	22	60	20	17	23	13	16	13	50	6.6
21	14	11	22	32	19	64	23	33	15	12	17	13
22	14	11	19	28	18	47	22	42	283	11	13	7.8
23	13	11	e17	23	19	29	22	50	486	11	12	6.6
24	13	e10	16	20	19	24	21	21	38	10	12	38
25	12	e10	15	19	25	22	20	18	27	10	11	54
26	12	25	15	19	28	21	19	38	24	9.8	10	14
27	12	19	16	17	22	20	19	43	22	9.5	9.9	11
28	12	15	15	17	20	19	18	30	21	9.0	11	10
29	e11	14	14	16	---	26	17	22	19	10	9.8	9.5
30	e11	14	14	124	---	223	17	19	18	11	9.5	9.1
31	e11	---	13	58	---	45	---	17	---	11	9.6	---
TOTAL	406	391	619	762	643	938	768	614	1517	420.3	785.8	329.2
MEAN	13.1	13.0	20.0	24.6	23.0	30.3	25.6	19.8	50.6	13.6	25.3	11.0
MAX	16	28	133	124	35	223	43	50	486	27	351	54
MIN	11	10	10	12	18	16	17	11	15	9.0	6.3	6.1
CFSM	.57	.57	.87	1.07	1.00	1.32	1.12	.86	2.21	.59	1.11	.48
IN.	.66	.64	1.01	1.24	1.04	1.52	1.25	1.00	2.46	.68	1.28	.53

e Estimated

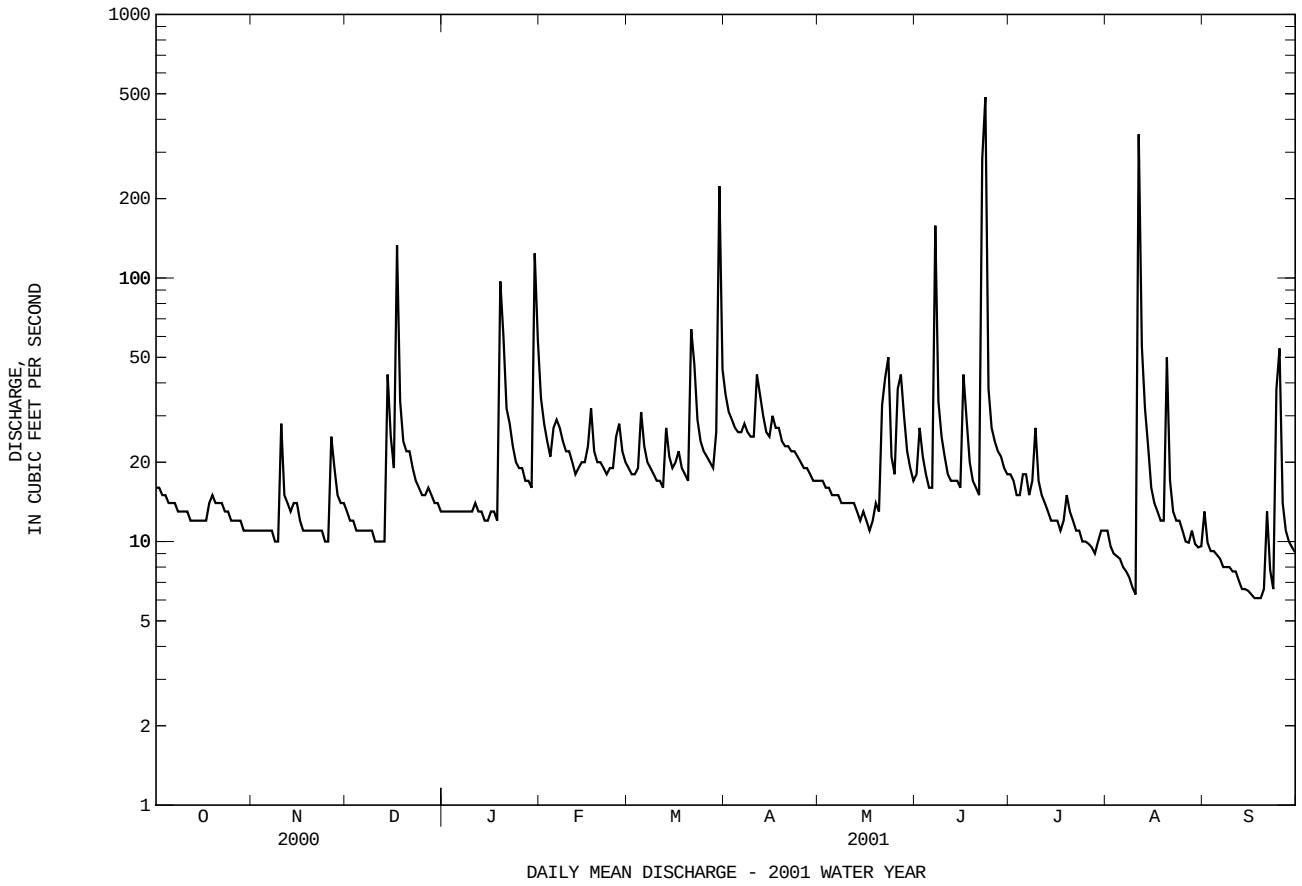
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1978 - 2001, BY WATER YEAR (WY)

MEAN	18.2	21.8	28.5	33.5	37.4	39.6	35.7	31.3	22.8	16.2	13.6	17.1
MAX	76.6	62.8	103	113	103	109	112	92.5	50.6	55.1	41.5	81.6
(WY)	1980	1994	1997	1996	1979	1993	1993	1989	2001	1996	1996	1979
MIN	3.73	5.96	7.49	8.38	14.6	14.5	14.9	10.1	5.60	2.87	2.79	3.81
(WY)	1987	1982	1999	1981	1992	1981	1985	1999	1999	1999	1999	1995

01591400 CATTAIL CREEK NEAR GLENWOOD, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1978 - 2001	
ANNUAL TOTAL	7761.3		8193.3			
ANNUAL MEAN	21.2		22.4		26.3	
HIGHEST ANNUAL MEAN					45.7	1996
LOWEST ANNUAL MEAN					13.1	1981
HIGHEST DAILY MEAN	262	Mar 22	486	Jun 23	2100	Jan 19 1996
LOWEST DAILY MEAN	8.2	Aug 26	6.1	(a)	.13	Aug 19 1999
ANNUAL SEVEN-DAY MINIMUM	9.0	Aug 20	6.3	Sep 13	.37	Aug 8 1999
MAXIMUM PEAK FLOW			2330	Jun 23	(b)5210	Jan 19 1996
MAXIMUM PEAK STAGE			6.65	Jun 23	8.96	Jan 19 1996
INSTANTANEOUS LOW FLOW			6.1	(c)	.07	(d)
ANNUAL RUNOFF (CFSM)	.93		.98		1.15	
ANNUAL RUNOFF (INCHES)	12.61		13.31		15.62	
10 PERCENT EXCEEDS	32		30		41	
50 PERCENT EXCEEDS	16		15		17	
90 PERCENT EXCEEDS	11		9.8		6.5	

a Sept. 17-19.
b From rating curve extended above 175 ft^3/s on basis of contracted-opening and flow-over-road measurement at gage height of 8.41 ft.
c Sept. 17-20, 24.
d Aug. 14, 19, 20, 1999.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01591610 PATUXENT RIVER BELOW BRIGHTON DAM NEAR BRIGHTON, MD

LOCATION.--Lat 39°11'31.9", long 77°00'15.8", Montgomery County, Hydrologic Unit 02060006, on right bank at Brighton Dam, 500 ft downstream from Triadelphia Reservoir, 1.3 mi east of Brighton, and 92 mi upstream from mouth.

DRAINAGE AREA.--78.6 mi^2.

PERIOD OF RECORD.--October 1980 to current year.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 310 ft above sea level, from topographic map. June 1978 to October 1980, nonrecording gage 300 ft upstream on left bank at different datum.

REMARKS.--No estimated daily discharges. Records good. Flow completely regulated by Triadelphia Reservoir, 500 ft upstream, usable capacity, 6,200,000,000 gal; no dead storage. U.S. Geological Survey gage-height telemeter at station. Several measurements of water temperature were made during the year. Water-quality records for some prior years have been collected at this station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 22, 1972, reached a discharge of 17,800 ft^3/s. Data provided by Washington Suburban Sanitary Commission.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 562 ft^3/s, June 23, gage height, 3.33 ft; minimum discharge, 12 ft^3/s, Oct. 31, Nov. 1, 2.

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	60	13	56	103	59	100	59	90	54	243	56	50
2	60	13	56	104	59	98	147	90	54	183	56	48
3	59	33	56	103	59	96	214	90	53	97	56	59
4	60	58	56	90	59	96	133	90	53	97	56	59
5	60	57	56	56	59	97	93	90	53	98	56	70
6	59	57	56	56	59	97	93	89	53	97	56	93
7	59	57	56	56	69	94	93	89	110	97	56	93
8	59	58	56	56	106	93	93	90	122	96	56	93
9	59	58	79	56	106	93	93	89	57	97	56	93
10	59	57	102	56	98	94	91	91	56	91	56	93
11	59	57	103	56	85	93	90	90	56	74	57	93
12	59	56	90	56	84	93	90	90	56	98	57	91
13	59	56	103	56	83	95	89	89	55	96	57	91
14	59	56	103	56	83	96	88	89	60	96	57	91
15	59	57	102	56	83	93	88	90	59	96	55	90
16	59	58	103	56	83	93	88	89	88	96	55	90
17	58	57	91	56	81	94	88	88	179	96	55	90
18	59	80	103	56	80	95	88	87	187	96	56	90
19	33	102	103	56	81	94	87	87	209	94	56	90
20	29	104	103	56	81	94	86	88	159	94	56	90
21	59	106	103	56	81	152	86	72	83	83	56	90
22	59	105	103	57	81	116	86	52	70	55	56	90
23	60	106	103	58	81	65	85	53	275	55	56	90
24	60	88	103	58	84	65	86	53	306	55	56	81
25	60	56	103	58	100	65	84	56	409	55	56	60
26	60	58	103	48	100	65	84	56	163	56	56	59
27	60	57	103	58	100	65	84	57	63	56	56	59
28	59	56	103	58	100	64	83	57	63	55	56	59
29	58	56	101	58	---	62	87	55	63	55	56	57
30	38	56	103	58	---	58	90	54	170	55	56	68
31	13	---	103	58	---	59	---	54	---	56	57	---
TOTAL	1713	1888	2764	1921	2284	2734	2846	2404	3438	2768	1738	2370
MEAN	55.3	62.9	89.2	62.0	81.6	88.2	94.9	77.5	115	89.3	56.1	79.0
MAX	60	106	103	104	106	152	214	91	409	243	57	93
MIN	13	13	56	48	59	58	59	52	53	55	55	48
(†)	5620	5630	5140	5540	5740	6100	6020	5830	5900	4930	4890	4020

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1981 - 2001, BY WATER YEAR (WY)

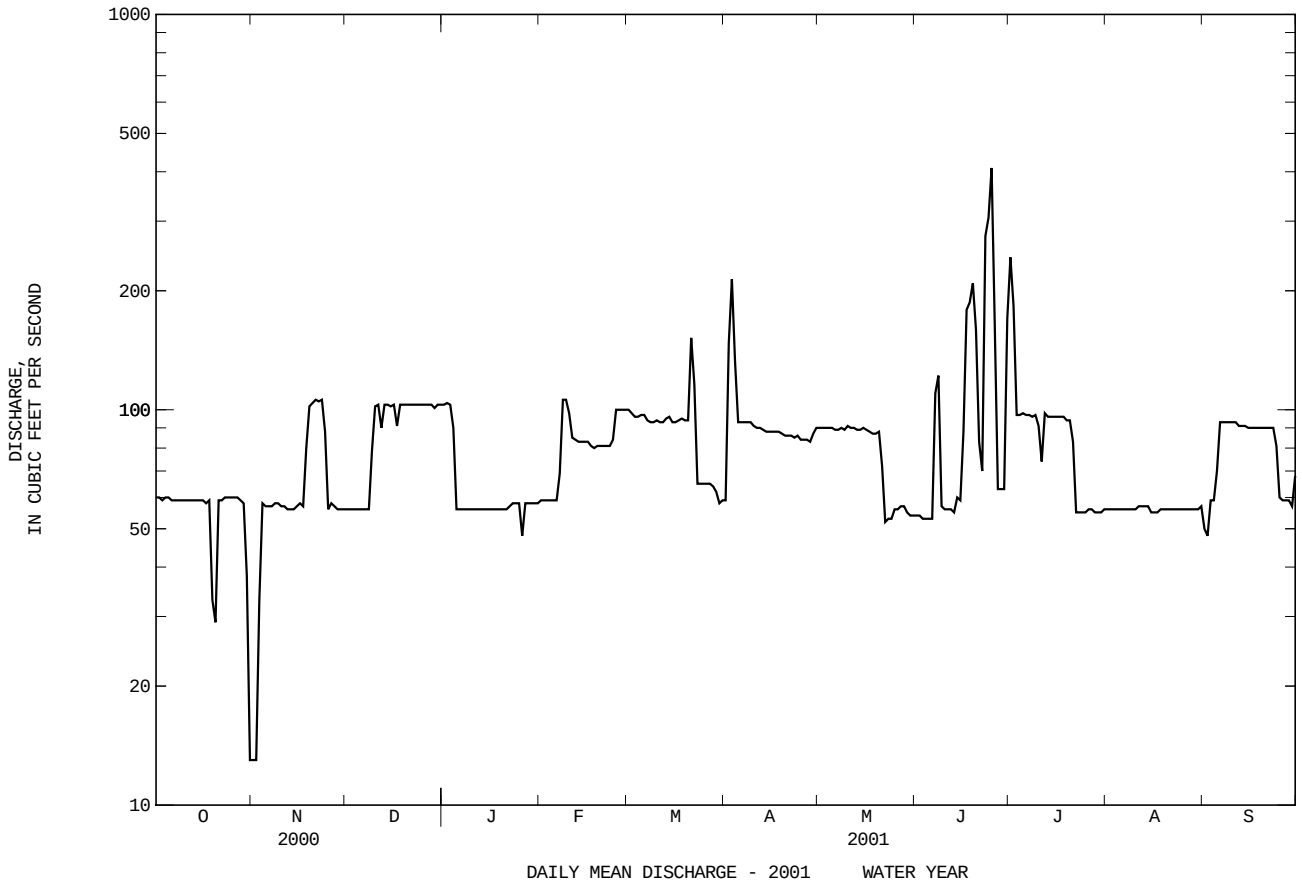
MEAN	63.8	58.8	85.5	75.0	81.2	117	128	95.0	76.4	62.9	67.0	75.9
MAX	138	166	373	183	256	320	304	229	170	135	143	219
(WY)	1997	1997	1984	1991	1994	1993	1993	1989	1989	1996	1996	1996
MIN	7.87	17.1	14.9	9.33	9.57	8.90	8.49	8.63	22.4	30.3	18.1	26.1
(WY)	1987	1989	1992	1982	1999	1981	1981	1981	1981	1995	1987	1991

† Monthend contents, in millions of gallons, in Triadelphia Reservoir (contents on Sept. 30, 2000, 5,770,000,000 gal). Records provided by Washington Suburban Sanitary Commission.

01591610 PATUXENT RIVER BELOW BRIGHTON DAM NEAR BRIGHTON, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1981 - 2001	
ANNUAL TOTAL	26497		28868			
ANNUAL MEAN	72.4		79.1		82.2	
ANNUAL MEAN‡	78.8		71.7		80.4	
HIGHEST ANNUAL MEAN					134	1984
LOWEST ANNUAL MEAN					47.5	1992
HIGHEST DAILY MEAN	239	Mar 27	409	Jun 25	1730	May 6 1989
LOWEST DAILY MEAN	11	(a)	13	(b)	2.1	(c)
ANNUAL SEVEN-DAY MINIMUM	13	Jun 19	32	Oct 30	4.0	Oct 16 1980
MAXIMUM PEAK FLOW			562	Jun 23	2650	May 6 1989
MAXIMUM PEAK STAGE			3.33	Jun 23	10.26	May 6 1985
INSTANTANEOUS LOW FLOW			12	(b)	1.2	Dec 3 1985
ANNUAL RUNOFF (CFSM)	.92		1.01		1.05	
ANNUAL RUNOFF (INCHES)	12.54		13.66		14.21	
10 PERCENT EXCEEDS	107		103		165	
50 PERCENT EXCEEDS	59		69		55	
90 PERCENT EXCEEDS	21		56		9.9	

‡ Adjusted for change in reservoir contents.
a Sept. 7, 8.
b Oct. 31, Nov. 1, 2.
c Jan. 27, 28, 1983



01591700 HAWLINGS RIVER NEAR SANDY SPRING, MD

LOCATION.--Lat 39°10'28.8", long 77°01'17.7", Montgomery County, Hydrologic Unit 02060006, on right bank at downstream side of bridge on State Highway 650, 1.0 mi upstream from mouth, and 1.7 mi north of Sandy Spring.

DRAINAGE AREA.--27.0 mi^2.

PERIOD OF RECORD.--June 1978 to current year.

GAGE.--Water-level recorder. Elevation of gage is 320 ft above sea level, from topographic map.

REMARKS--Records good except those for estimated daily discharges (missing record), which are poor. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 700 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jun 7	0730	729	4.59	Jun 22	2215	*4,290	*8.79

Minimum discharge, 5.7 ft^3/s, Sept. 24.

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	17	8.4	13	e12	42	23	50	18	21	20	11	44
2	16	8.1	11	e12	31	23	40	18	29	18	9.5	15
3	16	7.9	10	e13	26	24	35	17	35	16	8.9	11
4	15	8.3	10	14	23	24	32	17	22	17	8.9	10
5	14	8.1	9.7	13	39	49	29	16	20	26	8.7	9.4
6	15	7.9	9.4	14	44	32	29	15	18	21	8.3	8.3
7	14	7.9	9.4	14	35	27	30	14	351	16	7.6	7.0
8	13	7.9	9.4	15	28	24	28	14	72	18	6.9	6.9
9	12	8.1	9.4	16	26	23	27	14	40	50	6.5	6.9
10	13	29	8.9	14	25	22	28	14	29	20	6.5	7.3
11	13	12	9.4	14	22	22	55	13	24	17	83	7.7
12	12	9.4	9.4	14	21	21	48	12	21	14	49	6.9
13	11	8.7	9.0	14	23	37	38	12	20	13	24	6.2
14	11	10	51	14	23	28	31	12	18	13	21	6.9
15	11	10	31	15	26	26	29	12	18	13	14	7.0
16	11	8.8	20	15	36	34	40	12	29	12	12	6.5
17	11	8.4	173	15	69	30	35	11	25	11	11	6.5
18	11	8.2	52	15	35	26	35	12	18	15	11	6.5
19	11	7.9	e28	115	29	24	30	15	16	15	11	6.6
20	9.9	7.9	e21	92	28	23	28	14	15	13	41	10
21	9.8	8.1	e18	50	26	87	26	31	14	12	16	23
22	9.6	8.0	e16	40	23	71	25	73	568	11	12	8.1
23	9.4	8.2	e15	26	25	41	24	86	468	9.7	11	6.8
24	9.4	8.4	e14	23	26	32	23	28	62	9.4	10	15
25	9.4	8.6	e13	22	30	28	21	21	37	9.3	9.1	51
26	9.3	34	e13	19	35	26	21	61	28	8.9	8.8	14
27	9.2	20	e13	19	27	24	21	85	25	9.2	8.5	9.5
28	9.0	15	e13	19	25	23	20	68	22	8.4	10	8.0
29	8.9	13	e12	18	---	34	19	33	20	14	8.5	7.4
30	8.9	15	e12	106	---	229	19	24	19	16	16	7.1
31	8.8	---	e12	66	---	69	---	20	---	12	22	---
TOTAL	358.6	331.2	655.0	868	848	1206	916	812	2104	477.9	491.7	346.5
MEAN	11.6	11.0	21.1	28.0	30.3	38.9	30.5	26.2	70.1	15.4	15.9	11.6
MAX	17	34	173	115	69	229	55	86	568	50	83	51
MIN	8.8	7.9	8.9	12	21	21	19	11	14	8.4	6.5	6.2
CFSM	.43	.41	.78	1.04	1.12	1.44	1.13	.97	2.60	.57	.59	.43
IN.	.49	.46	.90	1.20	1.17	1.66	1.26	1.12	2.90	.66	.68	.48

e Estimated

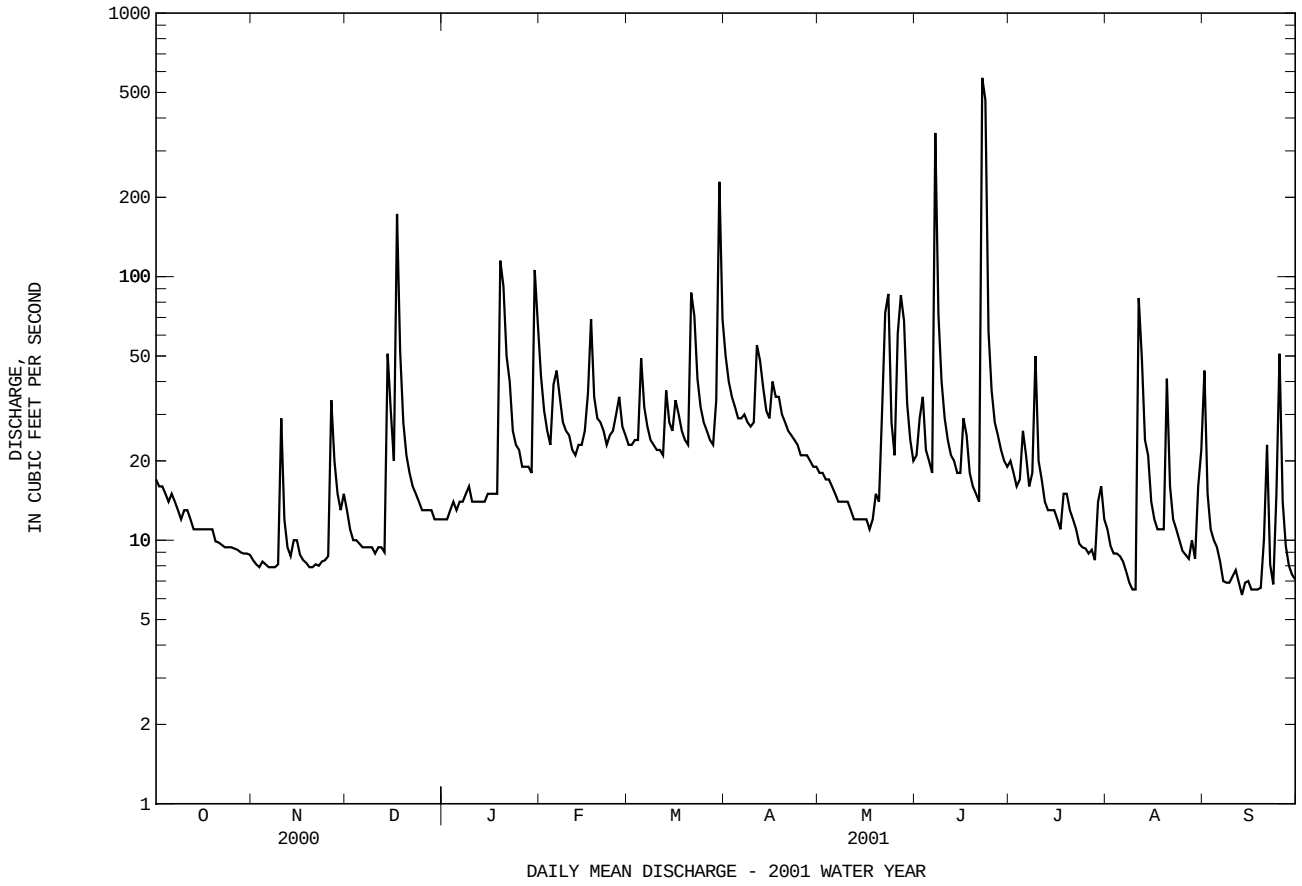
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1978 - 2001, BY WATER YEAR (WY)

MEAN	21.2	27.8	32.7	38.5	43.4	49.1	41.0	35.6	29.9	16.5	13.3	18.7
MAX	129	68.8	104	115	112	116	90.7	94.3	73.0	52.4	36.6	90.2
(WY)	1980	1994	1997	1996	1979	1993	1993	1989	1998	1996	1996	1996
MIN	2.68	7.27	8.86	9.31	20.3	18.8	18.5	12.1	4.71	2.16	3.95	3.11
(WY)	1987	1982	1999	1981	1992	1981	1995	1999	1999	1999	1999	1986

01591700 HAWLINGS RIVER NEAR SANDY SPRING, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1978 - 2001	
ANNUAL TOTAL	9866.1		9415.1			
ANNUAL MEAN	27.0		25.8		30.5	
HIGHEST ANNUAL MEAN					52.9	1996
LOWEST ANNUAL MEAN					16.0	1986
HIGHEST DAILY MEAN	257	Mar 22	568	Jun 22	1840	Jan 19 1996
LOWEST DAILY MEAN	7.2	Jul 9	6.2	Sep 13	.29	Aug 13 1999
ANNUAL SEVEN-DAY MINIMUM	8.0	Nov 2	6.6	Sep 13	.34	Aug 7 1999
MAXIMUM PEAK FLOW			4290	Jun 22	(a)5180	Jan 19 1996
MAXIMUM PEAK STAGE			8.79	Jun 22	9.24	Jan 19 1996
INSTANTANEOUS LOW FLOW			5.7	Sep 24	.23	(b)
ANNUAL RUNOFF (CFSM)	1.00		.96		1.13	
ANNUAL RUNOFF (INCHES)	13.59		12.97		15.34	
10 PERCENT EXCEEDS	49		40		51	
50 PERCENT EXCEEDS	20		16		19	
90 PERCENT EXCEEDS	8.7		8.3		5.6	

a From rating curve extended above 1,300 ft^3/s on basis of contracted-opening and flow-over-road measurement of peak flow.
b Aug. 13, 14, 1999.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01592500 PATUXENT RIVER NEAR LAUREL, MD

LOCATION.--Lat 39°06'56.6", long 76°52'25.5", Prince Georges County, Hydrologic Unit 02060006, on right bank at Rocky Gorge pumping station, 600 ft downstream from T. Howard Duckett Reservoir, 0.7 mi upstream from Walker Branch, 1.3 mi northwest of Laurel, and 81 mi upstream from mouth.

DRAINAGE AREA.--132 mi^2.

PERIOD OF RECORD.--October 1944 to current year.

REVISED RECORDS.--WDR MD-DE-78-1: 1976(M). WDR MD-DE-89-1: 1978(M), 1979(M).

GAGE.--Water-stage recorder. Datum of gage is 153.5 ft above sea level (levels by Washington Suburban Sanitary Commission). Prior to Oct. 1, 1955, water-stage recorder and concrete control at site 0.3 mi downstream at different datum. Oct. 1, 1955 to Sept. 30, 1956, nonrecording gage at present site at datum 1.2 ft lower. Oct. 1, 1956 to Jan. 27, 1957, nonrecording gage at present site and datum. Jan. 28, 1957 to May 3, 1972, water-stage recorder and concrete control at present site and datum. May 4, 1972 to Sept. 4, 1973, nonrecording gage at present site and datum.

REMARKS.--Records good. Records do not include diversion at Patuxent (formerly Willis School) filtration plant for supply of Washington Suburban Sanitary District. Flow regulated by Triadelphia Reservoir, and since March 1954 by T. Howard Duckett Reservoir, combined usable capacity, 11,800,000,000 gal; dead storage, 80,000,000 gal. U.S. Geological Survey gage-height telemeter at station.Several measurements of water temperature were made during the year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,220 ft^3/s, June 23, gage height, 7.93 ft; minimum discharge, 9.0 ft^3/s, Nov. 30.

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	86	20	21	22	88	148	207	21	138	150	22	21
2	86	20	21	22	88	150	189	21	145	111	22	21
3	86	20	21	23	88	150	167	20	122	91	21	21
4	86	20	21	23	88	150	152	20	84	91	21	21
5	86	20	21	23	117	127	152	20	54	89	21	21
6	80	21	21	23	153	146	152	20	21	87	20	21
7	53	20	21	23	152	146	152	22	110	89	20	21
8	21	20	21	23	152	148	150	21	146	89	21	21
9	21	20	21	22	106	147	125	21	145	89	21	21
10	21	21	21	22	84	148	152	21	147	89	21	e21
11	21	21	21	22	64	117	150	21	147	91	21	e21
12	21	21	20	23	21	47	150	21	146	90	21	21
13	21	21	20	23	20	20	150	21	146	89	21	21
14	20	21	21	23	20	20	149	21	147	89	21	21
15	20	22	21	23	20	21	137	21	145	89	21	21
16	20	23	20	23	52	21	87	21	146	89	21	21
17	20	22	22	23	87	21	86	21	116	88	20	22
18	20	22	21	23	88	20	81	21	84	88	20	21
19	20	22	21	62	88	21	86	21	148	88	20	22
20	20	22	22	88	88	21	86	21	115	87	20	22
21	20	22	22	87	87	21	86	21	79	86	20	22
22	20	22	22	87	88	21	86	26	85	86	20	22
23	20	22	22	88	86	21	86	87	1040	57	20	22
24	20	22	22	86	86	21	86	84	806	20	20	24
25	20	22	22	84	86	21	87	86	258	20	20	26
26	20	22	22	88	86	21	88	86	145	20	20	25
27	20	21	22	87	122	50	88	87	133	20	20	24
28	20	21	22	88	150	87	88	91	137	21	20	24
29	21	26	22	88	---	99	89	147	150	21	21	24
30	20	25	22	88	---	186	45	148	150	21	21	24
31	20	---	22	88	---	207	---	149	---	23	21	---
TOTAL	1050	644	661	1518	2455	2544	3589	1429	5435	2258	639	660
MEAN	33.9	21.5	21.3	49.0	87.7	82.1	120	46.1	181	72.8	20.6	22.0
MAX	86	26	22	88	153	207	207	149	1040	150	22	26
MIN	20	20	20	22	20	20	45	20	21	20	20	21
(†)	9980	9950	10040	10490	10730	11430	10830	11040	10920	9510	9360	8780
(‡)	73.4	75.2	72.6	60.6	45.5	58.7	61.1	71.7	73.3	74.1	75.6	68.3

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1945 - 2001, BY WATER YEAR (WY)

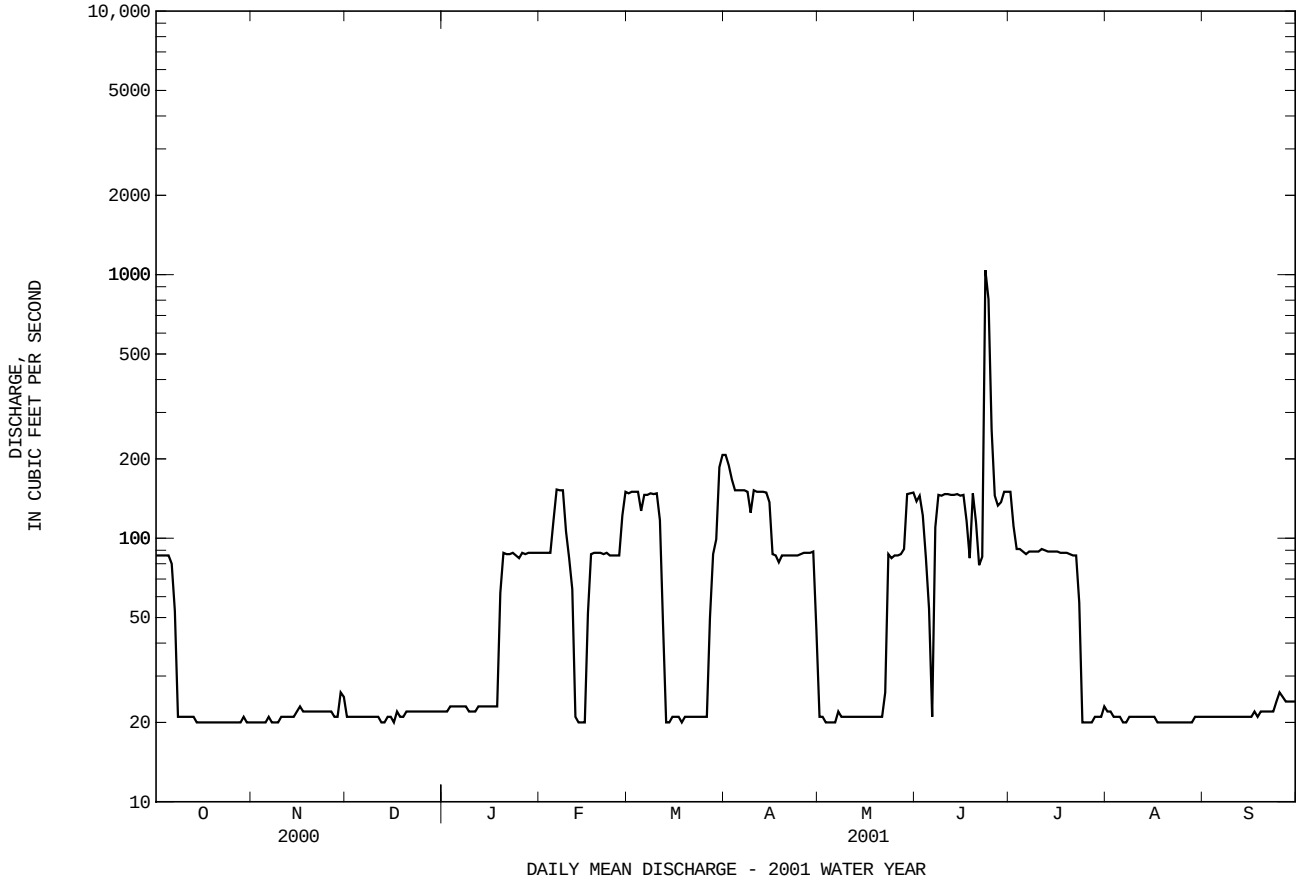
MEAN	44.0	48.6	76.2	102	115	135	139	110	86.9	58.8	48.7	63.0
MAX	379	272	457	480	462	557	444	397	822	280	226	587
(WY)	1980	1953	1997	1978	1979	1993	1952	1989	1972	1945	1971	1979
MIN	7.76	7.21	8.45	7.84	7.92	7.88	7.47	9.04	7.88	7.81	5.72	4.91
(WY)	1968	1985	1966	1966	1966	1966	1966	1985	1967	1967	1966	1966

† Combined month-end total contents, in millions of gallons, in Triadelphia and T. Howard Duckett Reservoirs (contents on Sept. 30, 2000, 10,800,000,000 gal). Records provided by Washington Suburban Sanitary Commission.
‡ Diversions, in cubic feet per second, upstream from station at Patuxent (formerly Willis School) filtration plant for supply of Washington Suburban Sanitary District. Records provided by Washington Suburban Sanitary Commission.

01592500 PATUXENT RIVER NEAR LAUREL, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1945 - 2001	
ANNUAL TOTAL	15640		22882			
ANNUAL MEAN	42.7		62.7		85.5	
ANNUAL MEAN‡	121		133			
HIGHEST ANNUAL MEAN					241	1972
LOWEST ANNUAL MEAN					9.09	1966
HIGHEST DAILY MEAN	267	Mar 27	1040	Jun 23	13000	Jun 22 1972
LOWEST DAILY MEAN	19	(a)	20	(b)	1.1	Jun 26 1956
ANNUAL SEVEN-DAY MINIMUM	19	Mar 14	20	Oct 14	3.7	Aug 29 1966
MAXIMUM PEAK FLOW			1220	Jun 23	(c)26000	Jun 22 1972
MAXIMUM PEAK STAGE			7.93	Jun 23	(d)25.00	Jun 22 1972
INSTANTANEOUS LOW FLOW			9.0	Nov 30	(f).05	Jul 18 1985
ANNUAL RUNOFF (CFSM)	.32		.47		.65	
ANNUAL RUNOFF (INCHES)	4.41		6.45		8.80	
10 PERCENT EXCEEDS	116		147		188	
50 PERCENT EXCEEDS	21		22		22	
90 PERCENT EXCEEDS	20		20		12	

‡ Adjusted for diversions.
a Jan. 8, 9, 31, Feb. 1, 2, 20, 21, 29, Mar. 17-20.
b Many days.
c From rating curve extended above 6,600 ft^3/s on basis of contracted-opening measurement of peak flow.
d From floodmarks.
f Valve closed for repair.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01593500 LITTLE PATUXENT RIVER AT GUILFORD, MD

LOCATION.--Lat 39°10'03.9", long 76°51'04.5", Howard County, Hydrologic Unit 02060006, on left bank 25 ft downstream from bridge on Guilford Road (formerly State Highway 32), 1 mi west of Guilford, 3 mi upstream from Middle Patuxent River, 4 mi north of Laurel, and 20.1 mi upstream from mouth.

DRAINAGE AREA.--38.0 mi^2.

PERIOD OF RECORD.--April 1932 to current year. Monthly discharge only for April 1932, published in WSP 1302.

REVISED RECORDS.--WSP 1502: 1933, 1934(M), 1939(M), 1945(M), 1948(P).

GAGE.--Water-stage recorder. Concrete control since June 20, 1946. Datum of gage is 259.26 ft above sea level. Prior to June 25, 1946, nonrecording gage at same site and datum.

REMARKS.--Records good except those for estimated daily discharges (ice effect), which are fair. Low flow affected by regulation from unknown source. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 800 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 17	1130	*1,750	*9.31	Jun 7	0830	882	6.46
Mar 30	0400	872	6.41				

Minimum discharge, 3.5 ft^3/s, Aug. 10.

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	18	12	17	16	41	26	62	22	32	15	12	60
2	18	13	15	15	33	26	49	22	64	17	9.2	18
3	17	13	14	16	28	25	43	20	34	14	7.9	14
4	16	13	14	15	25	34	39	18	26	15	9.3	12
5	16	13	14	16	96	81	36	19	25	28	11	10
6	16	12	14	16	68	43	39	19	23	23	8.0	8.3
7	15	12	14	15	39	33	45	18	412	15	6.3	7.3
8	14	12	14	21	32	32	38	17	74	29	5.0	7.1
9	15	13	14	23	29	33	38	18	38	54	4.2	6.8
10	15	30	13	e18	29	28	55	18	27	18	4.5	12
11	15	22	13	e16	25	26	103	18	23	13	115	10
12	14	15	14	16	23	25	75	19	22	11	94	6.9
13	14	14	14	15	28	67	51	20	20	11	31	6.1
14	14	17	102	15	28	37	41	19	20	10	33	7.4
15	14	20	49	16	36	38	38	19	20	9.6	16	6.3
16	14	15	33	17	58	48	54	18	80	9.6	14	4.4
17	14	14	770	16	113	37	48	19	56	8.9	12	4.4
18	16	14	104	16	43	35	43	21	26	37	12	4.4
19	16	14	43	183	34	27	35	26	21	29	15	4.1
20	14	13	35	140	32	25	33	31	17	15	70	17
21	14	13	e27	75	30	300	32	107	41	13	22	54
22	14	12	25	e39	27	143	31	167	34	11	14	16
23	14	12	e23	e33	34	58	30	188	345	9.8	12	12
24	13	12	20	29	33	42	30	41	57	8.7	11	150
25	13	12	e17	28	41	36	27	29	30	7.5	9.4	216
26	13	45	e16	24	49	33	26	153	24	6.9	7.9	34
27	14	40	e17	25	33	31	25	143	20	7.3	8.8	33
28	14	22	17	25	29	30	25	99	18	6.5	18	18
29	13	17	17	23	---	65	23	42	17	33	9.6	16
30	13	27	16	130	---	523	22	29	17	40	79	14
31	13	---	17	72	---	97	---	24	---	16	101	---
TOTAL	453	513	1532	1124	1116	2084	1236	1423	1663	541.8	782.1	789.5
MEAN	14.6	17.1	49.4	36.3	39.9	67.2	41.2	45.9	55.4	17.5	25.2	26.3
MAX	18	45	770	183	113	523	103	188	412	54	115	216
MIN	13	12	13	15	23	25	22	17	17	6.5	4.2	4.1
CFSM	.38	.45	1.30	.95	1.05	1.77	1.08	1.21	1.46	.46	.66	.69
IN.	.44	.50	1.50	1.10	1.09	2.04	1.21	1.39	1.63	.53	.77	.77

e Estimated

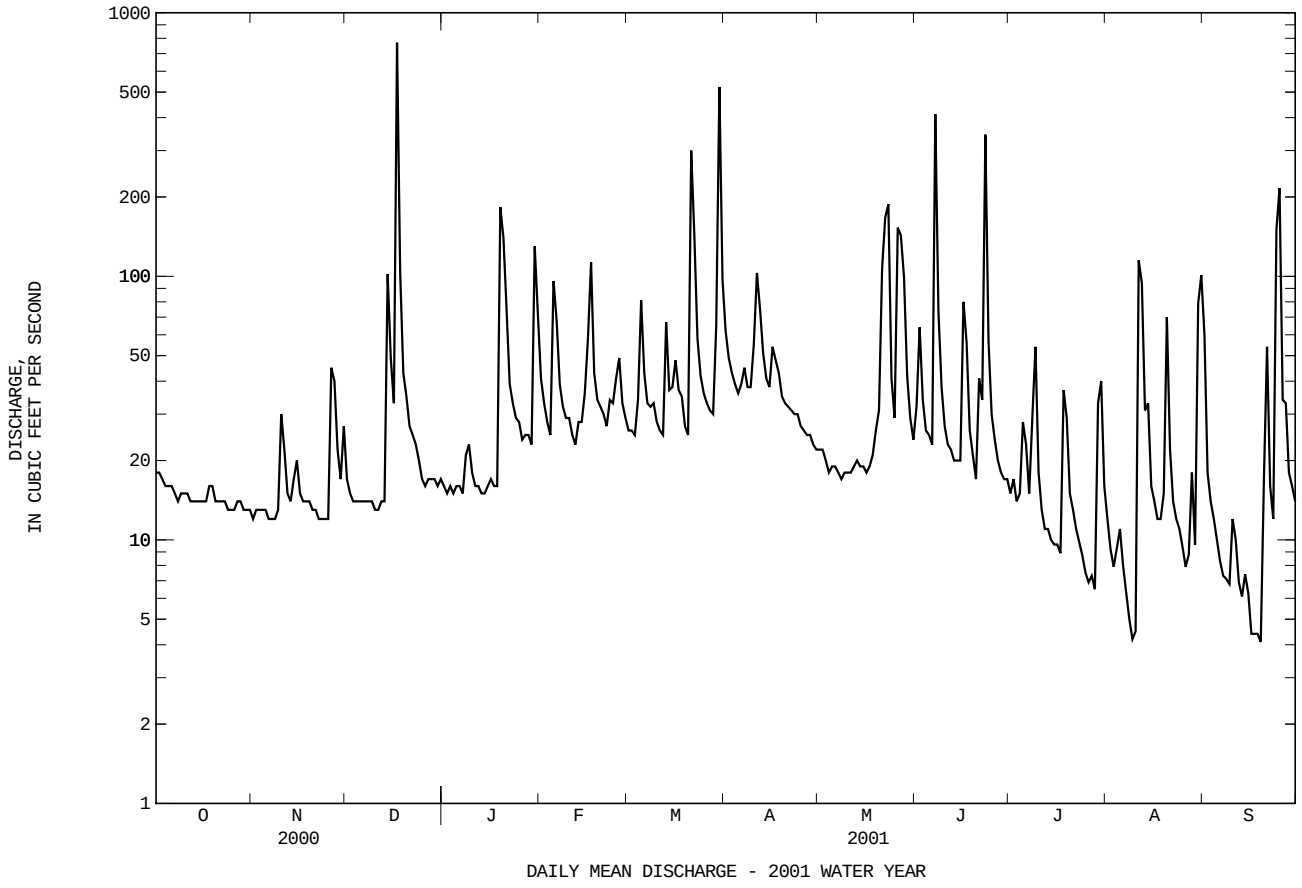
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1932 - 2001, BY WATER YEAR (WY)

MEAN	26.4	37.6	45.1	53.1	60.6	66.5	58.4	49.2	38.8	29.4	27.6	32.0
MAX	107	108	130	145	147	181	160	197	265	119	130	214
(WY)	1980	1973	1997	1978	1979	1993	1973	1989	1972	1945	1955	1975
MIN	5.90	9.31	11.6	12.9	19.7	24.9	21.0	15.7	9.32	6.66	4.91	3.88
(WY)	1942	1942	1966	1955	1947	1981	1947	1955	1986	1966	1957	1932

01593500 LITTLE PATUXENT RIVER AT GUILFORD, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1932 - 2001	
ANNUAL TOTAL	14699.3		13257.4			
ANNUAL MEAN	40.2		36.3		43.8	
HIGHEST ANNUAL MEAN					93.7	1972
LOWEST ANNUAL MEAN					23.3	1947
HIGHEST DAILY MEAN	770	Dec 17	770	Dec 17	4680	Jun 22 1972
LOWEST DAILY MEAN	8.7	Aug 23	4.1	Sep 19	.00	Sep 8 1966
ANNUAL SEVEN-DAY MINIMUM	10	Aug 20	5.3	Sep 13	.73	Sep 6 1966
MAXIMUM PEAK FLOW			1750	Dec 17	(a)12400	Jun 22 1972
MAXIMUM PEAK STAGE			9.31	Dec 17	(b)18.38	Jun 22 1972
INSTANTANEOUS LOW FLOW			3.5	Aug 10	.00	(c)
ANNUAL RUNOFF (CFSM)	1.06		.96		1.15	
ANNUAL RUNOFF (INCHES)	14.39		12.98		15.66	
10 PERCENT EXCEEDS	72		66		72	
50 PERCENT EXCEEDS	25		20		26	
90 PERCENT EXCEEDS	13		11		10	

a From rating curve extended above 1,800 ft^3/s on basis of contracted-opening measurement at gage height 13.26 ft and contracted-opening and flow-over-embankment measurement at gage height 18.38 ft.
b From high-water mark in well.
c Sept. 6-12, 1966.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01594000 LITTLE PATUXENT RIVER AT SAVAGE, MD

LOCATION.--Lat 39°08'03.8", long 76°48'58.2", Howard County, Hydrologic Unit 02060006, on left bank 20 ft downstream from bridge on southbound lanes of U.S. Highway 1, 0.4 mi southeast of Savage, 0.9 mi downstream from Middle Patuxent River, and 16.2 mi upstream from mouth.

DRAINAGE AREA.--98.4 mi^2.

PERIOD OF RECORD.--October 1939 to September 1958. Annual maximums, water years 1959-66, 68, 72, 75. October 1975 to September 1980. May 1985 to current year. Prior to December 1939 monthly discharge only, published in WSP 1302.

REVISED RECORDS.--WRD MD-DE-89: 1985, 1987-88(P).

GAGE.--Water-stage recorder. Elevation of gage is 125 ft above sea level, from topographic maps. Prior to October 1958, water-stage recorder at site 400 ft downstream at same datum. October 1958 to September 1972, crest-stage gage at site 400 ft downstream on right bank at same datum. October 1975 to September 1980, water-stage recorder at site 500 ft downstream at same datum.

REMARKS.--Records good except those for estimated daily discharges (ice effect, buried orifice), which are poor. Some diurnal fluctuation at low flow caused by plant 0.5 mi upstream. U.S. Geological Survey gage-height telemeter at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 17	1300	4,280	11.36	Jun 7	0900	2,120	8.91
Mar 30	0630	2,020	8.76	Jun 23	0430	*5,340	*12.30

Minimum discharge, 16 ft^3/s, Sept. 16-20.

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	61	43	59	e56	124	81	150	65	77	57	38	162
2	59	44	53	e55	97	81	121	65	133	56	32	47
3	55	47	49	52	87	79	108	61	85	50	28	34
4	51	48	49	e54	79	85	100	58	71	53	29	30
5	48	44	49	e56	211	175	93	58	67	79	33	28
6	49	44	47	e58	181	112	94	55	63	65	29	24
7	45	43	45	e60	112	91	106	54	930	51	27	22
8	42	45	45	69	96	85	95	54	191	69	23	21
9	42	50	45	79	91	87	93	55	107	144	21	21
10	44	100	43	e60	89	79	115	55	84	72	18	34
11	45	69	44	e56	82	75	218	52	73	61	223	28
12	43	48	46	e56	76	74	180	51	67	47	221	21
13	41	43	44	e56	84	136	120	47	63	44	76	20
14	41	53	246	e57	84	97	102	45	59	41	78	20
15	42	58	132	61	95	90	94	44	59	39	46	20
16	41	45	85	62	136	116	120	44	166	39	39	17
17	40	43	1560	57	288	98	110	43	144	38	36	16
18	45	43	267	56	118	93	102	46	73	69	35	16
19	50	43	117	462	96	80	89	56	62	73	42	17
20	44	42	98	393	90	76	85	56	54	e48	161	31
21	43	44	e82	196	87	498	85	158	75	e40	58	102
22	43	43	e72	109	80	371	83	293	153	e37	38	38
23	43	43	e67	e90	88	142	81	431	1990	e35	34	27
24	42	44	e62	e76	91	109	78	97	176	e34	34	246
25	43	44	e58	e75	97	98	73	73	102	30	29	397
26	44	181	e56	e74	126	90	71	336	82	28	27	74
27	44	100	e58	e72	96	84	70	368	72	28	26	54
28	44	67	e56	e71	86	82	69	249	66	26	48	41
29	42	59	e56	70	---	118	66	106	62	64	29	37
30	42	76	e56	368	---	1090	65	82	60	88	136	33
31	42	---	e56	227	---	232	---	70	---	50	188	---
TOTAL	1400	1696	3802	3343	3067	4804	3036	3327	5466	1655	1882	1678
MEAN	45.2	56.5	123	108	110	155	101	107	182	53.4	60.7	55.9
MAX	61	181	1560	462	288	1090	218	431	1990	144	223	397
MIN	40	42	43	52	76	74	65	43	54	26	18	16
CFSM	.46	.57	1.25	1.10	1.11	1.57	1.03	1.09	1.85	.54	.62	.57
IN.	.53	.64	1.44	1.26	1.16	1.82	1.15	1.26	2.07	.63	.71	.63

e Estimated

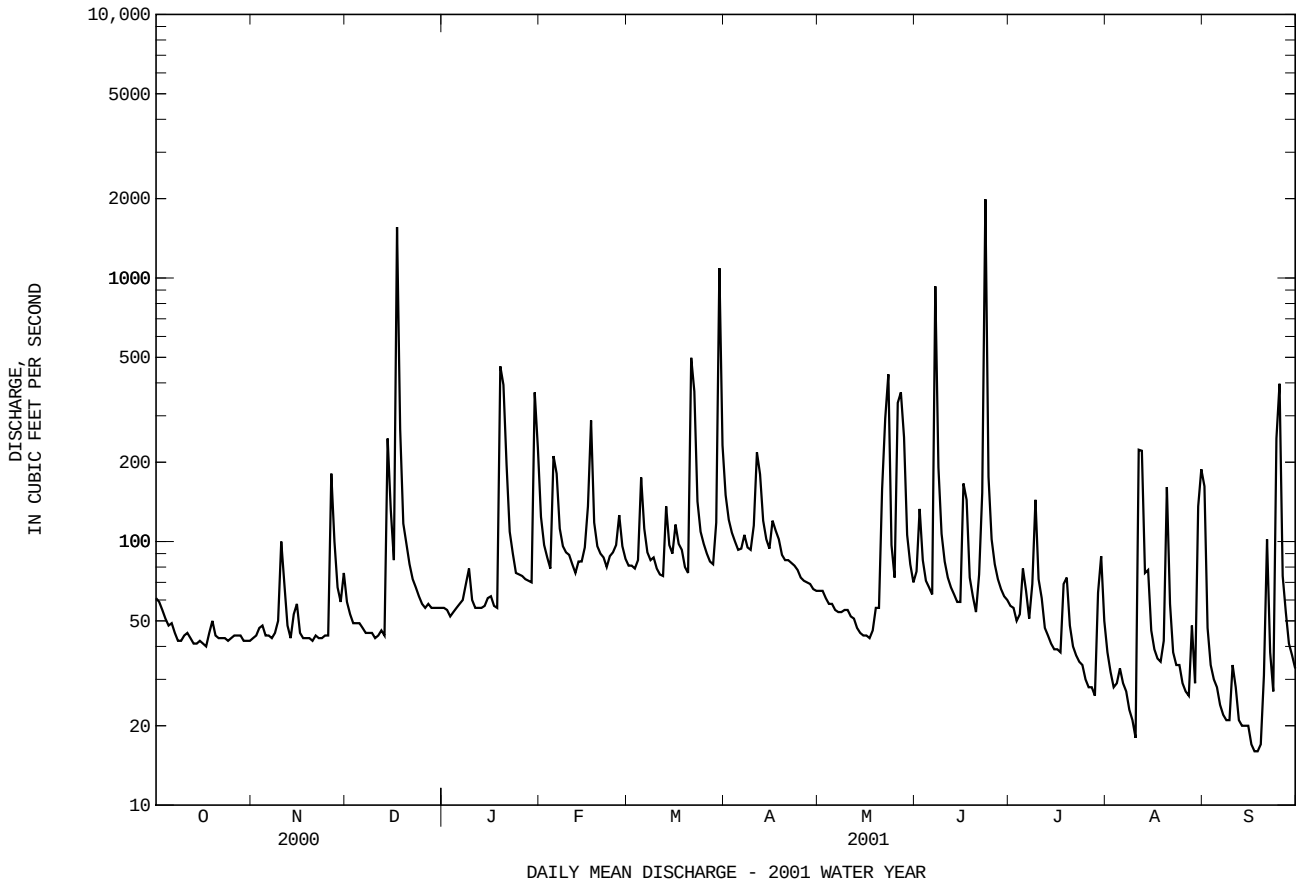
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 1958, 1976 - 1980, 1985 - 2001, BY WATER YEAR (WY)

MEAN	71.7	98.4	119	148	144	170	140	126	95.9	74.7	63.7	72.2
MAX	336	260	386	386	375	368	351	367	294	312	315	432
(WY)	1980	1997	1997	1979	1979	1994	1952	1989	1951	1945	1955	1979
MIN	14.7	22.5	35.4	34.0	57.7	85.3	60.0	39.5	25.5	13.8	15.1	12.8
(WY)	1942	1942	1999	1942	1942	1947	1947	1955	1986	1999	1957	1986

01594000 LITTLE PATUXENT RIVER AT SAVAGE, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1940 - 1958, 1979 - 1980, 1985 - 2001	
ANNUAL TOTAL	39811		35156			
ANNUAL MEAN	109		96.3		110	
HIGHEST ANNUAL MEAN					196	1979
LOWEST ANNUAL MEAN					59.3	1942
HIGHEST DAILY MEAN	1560	Dec 17	1990	Jun 23	5250	Sep 6 1979
LOWEST DAILY MEAN	28	Sep 18	16	(a)	2.9	Aug 19 1999
ANNUAL SEVEN-DAY MINIMUM	32	Aug 20	18	Sep 13	4.1	Aug 13 1999
MAXIMUM PEAK FLOW			5340	Jun 23	(b)35400	Jun 22 1972
MAXIMUM PEAK STAGE			12.30	Jun 23	(c)25.40	Jun 22 1972
INSTANTANEOUS LOW FLOW			16	(d)	1.6	Aug 26 1944
ANNUAL RUNOFF (CFSM)	1.11		.98		1.12	
ANNUAL RUNOFF (INCHES)	15.05		13.29		15.22	
10 PERCENT EXCEEDS	181		159		188	
50 PERCENT EXCEEDS	79		61		72	
90 PERCENT EXCEEDS	42		34		27	

a Sept. 17, 18.
b From rating curve extended above 11,000 ft^3/s on basis of contracted-opening measurement of peak flow.
c From floodmarks.
d Sept. 16-20.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01594440 PATUXENT RIVER NEAR BOWIE, MD

LOCATION.--Lat 38°57'21.2", long 76°41'37.3", Anne Arundel County, Hydrologic Unit 02060006, on left bank 45 ft upstream from bridge on U.S. Highway 50 (John Hanson Highway), 3.0 mi east of Bowie City Hall, 3.1 mi downstream from mouth of Little Patuxent River, 4.2 mi northwest of Davidsonville, and 60 mi upstream from mouth.

DRAINAGE AREA.--348 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1955 to June 1977 (gage heights and discharge measurements only), June 1977 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 13.10 ft above sea level. Prior to June 27, 1977, nonrecording gage at same site and datum.

REMARKS.--Water-discharge records good except those for estimated daily discharges (missing record), which are fair. Flow regulated by T. Howard Duckett Reservoir, usable capacity 5,600,000,000 gal, 21 mi upstream from station. U.S. Geological Survey gage-height telemeter at station.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,800 ft^3/s, June 8, gage height, 12.05 ft; minimum discharge, 91 ft^3/s, Sept.19.

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	249	141	191	177	424	362	746	207	350	351	140	499
2	243	141	165	182	351	355	537	188	521	319	127	260
3	232	143	159	164	326	351	475	178	524	241	117	156
4	229	145	154	170	306	356	429	173	359	321	115	141
5	220	145	153	168	448	501	400	168	309	819	148	127
6	228	146	154	172	769	468	390	163	251	603	122	116
7	228	142	151	177	463	391	405	161	1250	313	113	110
8	183	143	151	186	402	363	399	157	2640	298	107	110
9	152	145	150	235	383	357	377	157	e608	552	103	108
10	157	191	147	192	331	352	408	159	e420	339	176	110
11	153	231	152	179	308	342	549	154	e366	314	162	135
12	149	166	150	180	274	309	925	150	347	252	583	108
13	142	154	146	174	248	346	505	147	334	224	302	100
14	141	168	335	175	251	325	437	143	321	212	282	111
15	141	193	481	183	263	261	401	140	316	209	182	109
16	144	163	268	191	325	337	435	139	354	198	146	101
17	140	151	967	186	919	298	422	137	667	196	134	98
18	142	148	2360	177	594	302	380	141	329	222	132	95
19	149	147	604	383	382	255	341	157	286	292	173	96
20	146	149	357	1420	357	228	323	162	306	224	293	108
21	143	148	283	961	338	696	317	265	296	199	241	347
22	143	146	272	479	317	1840	312	410	472	189	140	188
23	144	144	216	365	324	633	307	1300	983	185	124	129
24	142	143	213	347	356	380	300	561	2110	151	242	116
25	143	146	207	336	350	325	288	328	1370	119	138	548
26	143	298	177	306	415	299	276	766	526	117	120	366
27	145	369	192	310	357	273	272	1400	335	131	115	172
28	145	211	194	302	362	287	266	1310	294	116	117	154
29	144	177	179	294	---	325	258	588	304	156	122	132
30	145	200	183	441	---	1770	256	403	317	280	176	127
31	143	---	175	857	---	2010	---	353	---	182	579	---
TOTAL	5148	5134	9686	10069	10943	15697	12136	10865	17865	8324	5771	5077
MEAN	166	171	312	325	391	506	405	350	596	269	186	169
MAX	249	369	2360	1420	919	2010	925	1400	2640	819	583	548
MIN	140	141	146	164	248	228	256	137	251	116	103	95
CFSM	.48	.49	.90	.93	1.12	1.46	1.16	1.01	1.71	.77	.53	.49
IN.	.55	.55	1.04	1.08	1.17	1.68	1.30	1.16	1.91	.89	.62	.54

e Estimated

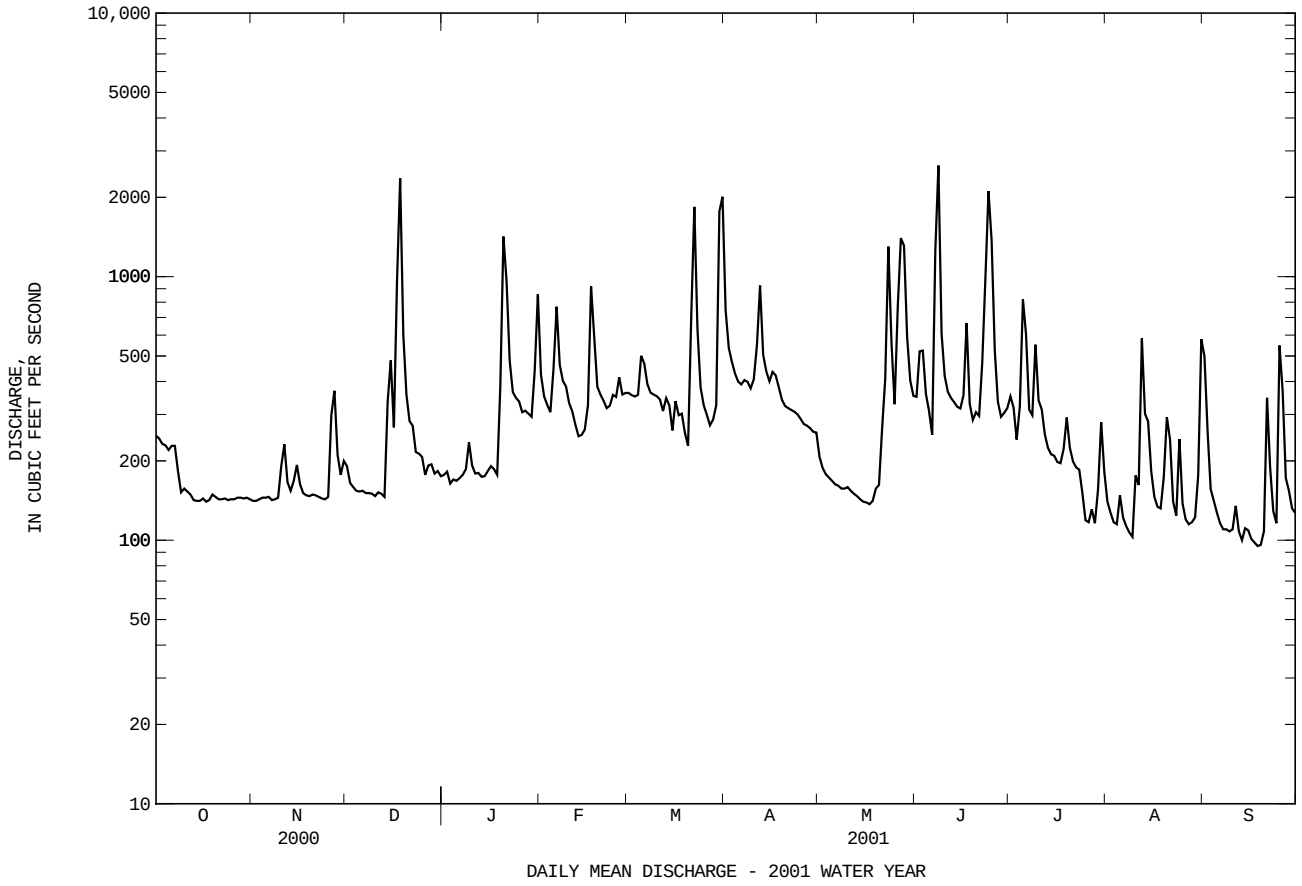
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1977 - 2001, BY WATER YEAR (WY)

MEAN	245	299	397	490	473	609	508	460	335	216	205	255
MAX	1093	747	1357	1316	1232	1358	1247	1291	846	579	532	1358
(WY)	1980	1997	1997	1978	1979	1993	1983	1989	1989	1996	1979	1979
MIN	80.4	108	128	119	228	173	167	154	115	97.3	86.1	65.2
(WY)	1987	1982	1999	1981	1995	1981	1985	1986	1991	1999	1987	1986

01594440 PATUXENT RIVER NEAR BOWIE, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1977 - 2001	
ANNUAL TOTAL	118770		116715			
ANNUAL MEAN	325		320		375	
HIGHEST ANNUAL MEAN					637	1979
LOWEST ANNUAL MEAN					175	1981
HIGHEST DAILY MEAN	2940	Mar 22	2640	Jun 8	8860	Jan 27 1978
LOWEST DAILY MEAN	118	Aug 23	95	Sep 18	56	(a)
ANNUAL SEVEN-DAY MINIMUM	125	Aug 20	101	Sep 13	57	Sep 15 1986
MAXIMUM PEAK FLOW			3800	Jun 8	(b)31100	Jun 22 1972
MAXIMUM PEAK STAGE			12.05	Jun 8	(c)27.90	Jun 22 1972
INSTANTANEOUS LOW FLOW			91	Sep 19	32	Aug 9 1966
ANNUAL RUNOFF (CFSM)	.93		.92		1.08	
ANNUAL RUNOFF (INCHES)	12.70		12.48		14.64	
10 PERCENT EXCEEDS	551		541		769	
50 PERCENT EXCEEDS	232		232		223	
90 PERCENT EXCEEDS	143		133		103	

a Sept. 17-19, 1986.
b From rating curve extended above 9,200 ft^3/s on basis of contracted-opening measurement of peak flow.
c From floodmarks.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01594440 PATUXENT RIVER NEAR BOWIE, MD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1978-80, 1985 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: December 1977 to September 1980, October 1984 to September 1991.
WATER TEMPERATURE: December 1977 to September 1980, October 1984 to September 1991.
SUSPENDED-SEDIMENT DISCHARGE: October 1985 to September 1991.

REMARKS.--Water-quality samples are collected from bridge on Governor Bridge Road located 0.3 mi downstream from U.S. Highway 50 (John Hanson Highway). On May 6 and Nov. 16, 1994 samples were collected and analyzed using ultraclean methodologies. Data on trace metals for these dates are available from the University of Delaware. Data on organics for these dates are available from George Mason University.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE (water years 1985-91): Maximum daily, 954 microsiemens, Dec. 15, 1989; minimum daily, 100 microsiemens, May 7, 1989.
WATER TEMPERATURE (water years 1985-91): Maximum daily, 29.0°C, July 25, 1987; minimum daily, 0.0°C, on many days during winter periods.
SEDIMENT CONCENTRATION: Maximun daily mean, 700 mg/L, June 3, 1985; minimum daily mean, 1 mg/L, Jan. 22,1990.
SEDIMENT LOAD: Maximum daily, 4,050 tons, May 7, 1989; minimum daily, 0.55 ton, Jan. 22, 1990.

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

DATE	TIME	SAMPLE TYPE	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)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)
OCT												
05...	0900	ENVIRONMENTAL	218	237	7.3	19.0	19.0	761	7.8	84	65	18.2
NOV												
03...	1030	ENVIRONMENTAL	141	322	7.6	18.0	10.0	762	9.3	83	--	--
DEC												
22...	0945	ENVIRONMENTAL	286	593	7.3	1.0	3.0	763	12.3	91	--	--
JAN												
02...	1115	ENVIRONMENTAL	181	341	7.7	-1.0	2.0	768	12.3	88	75	21.1
02...	*1116*	*REPLICATE*	--	--	--	--	--	--	--	--	*74*	*21.1*
19...	1330	ENVIRONMENTAL	386	336	7.3	5.0	4.0	756	11.6	89	--	--
FEB												
05...	1400	ENVIRONMENTAL	460	298	7.4	5.5	4.0	757	12.0	93	--	--
22...	1030	ENVIRONMENTAL	311	294	7.5	-3.5	4.5	772	11.6	89	--	--
MAR												
05...	1230	ENVIRONMENTAL	528	359	7.5	2.5	6.0	748	11.6	95	--	--
22...	1000	ENVIRONMENTAL	2220	263	7.3	11.0	9.0	750	--	--	--	--
30...	1000	ENVIRONMENTAL	1380	218	7.3	8.0	8.0	753	--	--	--	--
30...	*1001*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
APR												
04...	1000	ENVIRONMENTAL	430	249	7.5	14.0	12.0	767	--	--	60	16.4
04...	*1001*	*REPLICATE*	--	--	--	--	--	--	--	--	*60*	*16.5*
12...	1000	ENVIRONMENTAL	1100	225	7.2	17.0	13.5	758	--	--	--	--
MAY												
03...	*0959*	*BLANK*	--	--	--	--	--	--	--	--	--	*<.01*
03...	1000	ENVIRONMENTAL	181	316	7.6	28.0	21.0	764	--	--	77	21.7
22...	0845	ENVIRONMENTAL	374	495	7.5	19.0	16.0	758	8.4	86	--	--
23...	0900	ENVIRONMENTAL	1210	198	7.3	19.5	18.0	758	7.2	76	--	--
23...	*0901*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
26...	1215	ENVIRONMENTAL	711	204	--	17.0	17.0	761	8.3	86	--	--
JUN												
05...	0915	ENVIRONMENTAL	310	257	7.5	21.0	18.0	760	8.4	89	--	--
05...	*0916*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
07...	0845	ENVIRONMENTAL	817	176	7.4	17.5	18.5	759	8.2	88	--	--
JUL												
11...	*1014*	*BLANK*	--	--	--	--	--	--	--	--	--	*<.01*
11...	1015	ENVIRONMENTAL	354	261	7.3	27.0	23.0	753	7.7	90	67	18.9
AUG												
09...	0930	ENVIRONMENTAL	100	330	7.5	33.5	25.0	760	6.6	81	--	--
09...	*0931*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
SEP												
18...	0815	ENVIRONMENTAL	94	325	7.6	15.5	16.5	760	8.2	84	--	--
25...	0930	ENVIRONMENTAL	690	154	7.2	16.0	20.5	756	7.2	81	--	--

< Actual value is known to be less than the value shown.

01594440 PATUXENT RIVER NEAR BOWIE, MD--Continued

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

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	BICAR-BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)
OCT													
05...	4.64	18.4	4.33	--	--	15.8	31.4	.2	8.2	<10	147	1.9	1.42
NOV													
03...	--	--	--	56	69	--	--	--	9.2	<10	--	2.0	1.61
DEC													
22...	--	--	--	45	55	--	--	--	10.7	<10	--	2.3	1.61
JAN													
02...	5.31	31.9	5.07	--	--	19.4	50.1	.3	10.4	<10	190	3.0	1.73
02...	*5.30*	*30.7*	*4.89*	--	--	*19.5*	*50.1*	*.3*	*10.5*	*<10*	*190*	*3.0*	*1.78*
19...	--	--	--	--	--	--	--	--	8.1	46	--	2.6	1.66
FEB													
05...	--	--	--	--	--	--	--	--	7.7	23	--	2.0	1.19
22...	--	--	--	--	--	--	--	--	8.0	<10	--	1.9	1.43
MAR													
05...	--	--	--	--	--	--	--	--	6.3	25	--	2.1	1.46
22...	--	--	--	--	--	--	--	--	5.5	67	--	1.6	.693
30...	--	--	--	--	--	--	--	--	4.9	178	--	1.8	.815
30...	--	--	--	--	--	--	--	--	--	--	--	*1.9*	*.819*
APR													
04...	4.59	21.3	3.12	35	43	14.3	37.2	E.1	6.7	15	140	1.8	--
04...	*4.67*	*21.8*	*3.07*	--	--	*14.9*	*36.5*	*E.1*	*6.9*	--	*148*	--	--
12...	--	--	--	--	--	--	--	--	5.4	61	--	1.4	.786
MAY													
03...	*<.008*	*<.1*	*<.09*	--	--	*E.1*	*<.1*	*<.2*	*<.1*	*<10*	*<10*	--	--
03...	5.54	27.6	4.40	50	61	17.1	45.9	.2	6.6	11	181	2.1	1.55
22...	--	--	--	--	--	--	--	--	8.2	39	--	2.1	1.32
23...	--	--	--	--	--	--	--	--	5.2	176	--	2.0	.775
23...	--	--	--	--	--	--	--	--	*5.2*	*168*	--	*1.9*	*.777*
26...	--	--	--	--	--	--	--	--	6.2	97	--	1.8	.901
JUN													
05...	--	--	--	--	--	--	--	--	8.2	19	--	1.6	1.15
05...	--	--	--	--	--	--	--	--	*8.3*	*17*	--	*1.6*	*1.15*
07...	--	--	--	--	--	--	--	--	6.2	244	--	2.2	.903
JUL													
11...	*<.008*	*<.1*	*<.09*	--	--	*<.1*	*<.1*	*<.2*	*<.1*	*<10*	*<10*	--	--
11...	4.78	21.1	4.39	--	--	14.9	36.0	.2	8.0	32	159	1.8	1.29
AUG													
09...	--	--	--	--	--	--	--	--	8.5	<10	--	1.9	1.39
09...	--	--	--	--	--	--	--	--	*8.4*	*<10*	--	*1.9*	*1.38*
SEP													
18...	--	--	--	--	--	--	--	--	7.7	<10	--	2.0	1.41
25...	--	--	--	--	--	--	--	--	3.2	620	--	2.8	.690

E Estimated value.
< Actual value is known to be less than the value shown.

01594440 PATUXENT RIVER NEAR BOWIE, MD--Continued

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

DATE	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)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN DIS-SOLVED (MG/L AS N) (00602)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	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)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	IRON, DIS-SOLVED (UG/L AS FE) (01046)
OCT													
05...	.013	1.43	.089	.48	.37	1.8	.40	.28	.087	.021	.015	4.2	60
NOV													
03...	.009	1.62	.046	.40	.33	1.9	.35	.28	.075	.022	E.016	--	--
DEC													
22...	.021	1.63	.328	.69	.64	2.3	.36	.31	.076	.020	E.013	4.9	--
JAN													
02...	.099	1.83	.605	1.1	1.0	2.9	.53	.44	.078	.031	.018	4.0	280
02...	*.100*	*1.88*	*.607*	*1.2*	*1.0*	*2.9*	*.56*	*.43*	*.076*	*.028*	*E.017*	*4.2*	*280*
19...	.076	1.74	.314	.88	.64	2.4	.56	.32	.188	.026	E.014	6.4	--
FEB													
05...	.012	1.20	.153	.75	.56	1.8	.60	.41	.098	.017	<.018	4.6	--
22...	.016	1.45	.071	.41	.34	1.8	.34	.27	.048	.019	E.012	3.4	--
MAR													
05...	.014	1.48	.093	.60	.37	1.8	.51	.28	.096	.019	E.014	5.1	--
22...	.013	.706	.110	.91	.43	1.1	.80	.32	.161	.025	E.015	8.9	--
30...	.010	.825	.097	1.0	.43	1.3	.90	.34	.277	.023	E.014	10	--
30...	*.011*	*.830*	*.100*	*1.0*	*.44*	*1.3*	*.93*	*.34*	*.285*	*.025*	*E.013*	*11*	--
APR													
04...	E.006	1.35	.062	.47	.30	1.7	.41	.24	.065	.019	E.015	3.8	130
04...	--	--	--	--	--	--	--	--	--	--	--	--	*140*
12...	.010	.796	.056	.62	.41	1.2	.56	.35	.131	.023	<.018	7.4	--
MAY													
03...	*<.006*	*<.047*	*<.041*	*E.05*	*<.10*	--	--	--	*<.004*	*<.006*	*<.018*	--	*<10*
03...	.027	1.58	.117	.49	.49	2.1	.37	.37	.073	.029	E.012	4.0	260
22...	.030	1.35	.137	.78	.50	1.9	.65	.37	.171	.064	.043	6.7	--
23...	.024	.799	.117	1.2	.50	1.3	1.0	.39	.338	.033	E.015	15	--
23...	*.024*	*.801*	*.114*	*1.1*	*.47*	*1.3*	*1.0*	*.36*	*.324*	*.034*	*E.014*	*14*	--
26...	.024	.925	.164	.85	.55	1.5	.69	.38	.229	.035	E.014	11	--
JUN													
05...	.021	1.17	.053	.45	.37	1.5	.39	.32	.091	.031	E.014	6.2	--
05...	*.021*	*1.17*	*.055*	*.46*	*.36*	*1.5*	*.41*	*.30*	*.095*	*.029*	*E.014*	*5.5*	--
07...	.016	.919	.073	1.3	.36	1.3	1.2	.28	.616	.029	E.011	19	--
JUL													
11...	*<.006*	*<.050*	*<.040*	*<.08*	*<.10*	--	--	--	*<.004*	*<.006*	*<.020*	*<.60*	*<10*
11...	.009	1.30	.048	.52	.37	1.7	.47	.32	.156	.055	.042	5.5	100
AUG													
09...	.017	1.41	.047	.49	.42	1.8	.45	.38	.123	.062	.047	4.0	--
09...	*.017*	*1.40*	*.053*	*.52*	*.42*	*1.8*	*.46*	*.37*	*.120*	*.066*	*.051*	*4.0*	--
SEP													
18...	.007	1.42	E.037	.54	.39	1.8	--	--	.106	.038	.022	4.9	--
25...	.009	.699	.045	2.1	.33	1.0	2.1	.29	.898	.034	.021	20	--

E Estimated value.
< Actual value is known to be less than the value shown.

01594440 PATUXENT RIVER NEAR BOWIE, MD--Continued

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

DATE	MANGANESE, DIS-SOLVED (UG/L AS MN) (01056)	SEDIMENT, SUS-PENDED (MG/L) (80154)	SEDIMENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT				
05...	104	11	6.2	--
NOV				
03...	--	4	1.6	--
DEC				
22...	--	10	7.6	--
JAN				
02...	220	4	2.0	--
02...	*220*	*5*	--	--
19...	--	46	48	--
FEB				
05...	--	27	34	--
22...	--	5	4.1	--
MAR				
05...	--	29	41	--
22...	--	88	529	--
30...	--	210	782	88
30...	--	*215*	--	*86*
APR				
04...	96.5	15	18	--
04...	*99.8*	--	--	--
12...	--	68	203	--
MAY				
03...	*<3.2*	*<1*	--	--
03...	142	13	6.4	--
22...	--	45	45	--
23...	--	226	738	87
23...	--	*227*	--	*87*
26...	--	120	230	--
JUN				
05...	--	22	18	--
05...	--	*22*	--	--
07...	--	291	642	92
JUL				
11...	*<3.0*	*<1*	--	--
11...	77.4	73	70	--
AUG				
09...	--	10	2.7	--
09...	--	*12*	--	--
SEP				
18...	--	12	3.1	--
25...	--	740	1380	--

< Actual value is known to be less than the value shown.

01594526 WESTERN BRANCH AT UPPER MARLBORO, MD

LOCATION.--Lat 38°48'51.2", long 76°44'55.4", Prince Georges County, Hydrologic Unit 02060006, on left bank 1000 ft upstream from bridge on Water Street, 0.2 mi south of Upper Marlboro, and 4.7 mi upstream from mouth.

DRAINAGE AREA.--89.7 mi^2.

PERIOD OF RECORD.--October 1985 to April 1989, April 1992 to current year.

GAGE.--Water-stage recorder elevation of gage is 5 ft above sea level, from topographic map.

REMARKS.--Records good except those for estimated daily discharges (ice effect), which are fair. U.S. Geological Survey gage-height telemeter at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 17	2115	*1,340	*10.34	Jun 7	2130	1,010	8.95
Mar 21	2345	1,110	9.45				

Minimum discharge, 8.1 ft^3/s, Sept. 19, 20.

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	55	21	33	e37	95	59	172	40	64	70	33	44
2	51	21	30	37	72	55	129	38	162	132	26	27
3	49	21	27	e37	59	53	106	39	80	41	22	21
4	44	22	26	e37	51	59	92	37	54	67	20	19
5	39	21	26	e37	228	148	83	34	65	612	19	17
6	38	21	26	e38	230	109	84	30	52	308	18	14
7	43	21	25	39	117	78	88	29	654	90	18	13
8	33	22	26	43	86	66	78	29	605	88	16	26
9	31	23	26	67	75	61	78	29	140	291	14	47
10	31	72	25	e56	69	55	100	29	80	114	62	69
11	30	46	28	e52	55	52	247	28	62	109	231	76
12	28	30	27	50	51	50	285	26	52	41	96	65
13	28	25	23	47	59	117	142	36	48	32	97	51
14	26	47	157	45	61	97	104	24	43	27	183	76
15	25	49	112	46	74	77	89	23	40	24	51	33
16	27	33	91	46	89	132	117	22	120	22	32	12
17	27	30	797	40	347	86	118	21	187	21	25	9.9
18	26	26	730	38	150	70	101	27	68	23	22	9.0
19	27	25	171	239	97	60	81	84	47	30	55	8.5
20	24	24	109	485	80	57	75	42	38	23	99	15
21	24	24	79	320	70	573	69	57	72	24	40	108
22	22	24	71	155	60	771	65	112	53	20	25	37
23	21	22	60	107	74	212	61	698	116	18	33	21
24	22	21	55	85	87	132	57	176	58	17	221	16
25	23	24	e52	75	95	104	52	112	38	16	58	72
26	23	199	e49	63	103	93	49	577	31	96	32	36
27	24	98	45	61	76	82	49	505	27	134	26	21
28	24	55	46	54	66	77	45	209	26	33	22	18
29	22	40	e43	51	---	93	41	114	25	104	18	15
30	21	37	e41	173	---	340	40	73	49	143	41	13
31	22	---	e39	165	---	260	---	53	---	52	119	---
TOTAL	930	1144	3095	2825	2776	4278	2897	3353	3156	2822	1774	1009.4
MEAN	30.0	38.1	99.8	91.1	99.1	138	96.6	108	105	91.0	57.2	33.6
MAX	55	199	797	485	347	771	285	698	654	612	231	108
MIN	21	21	23	37	51	50	40	21	25	16	14	8.5
CFSM	.33	.43	1.11	1.02	1.11	1.54	1.08	1.21	1.17	1.01	.64	.38
IN.	.39	.47	1.28	1.17	1.15	1.77	1.20	1.39	1.31	1.17	.74	.42

e Estimated

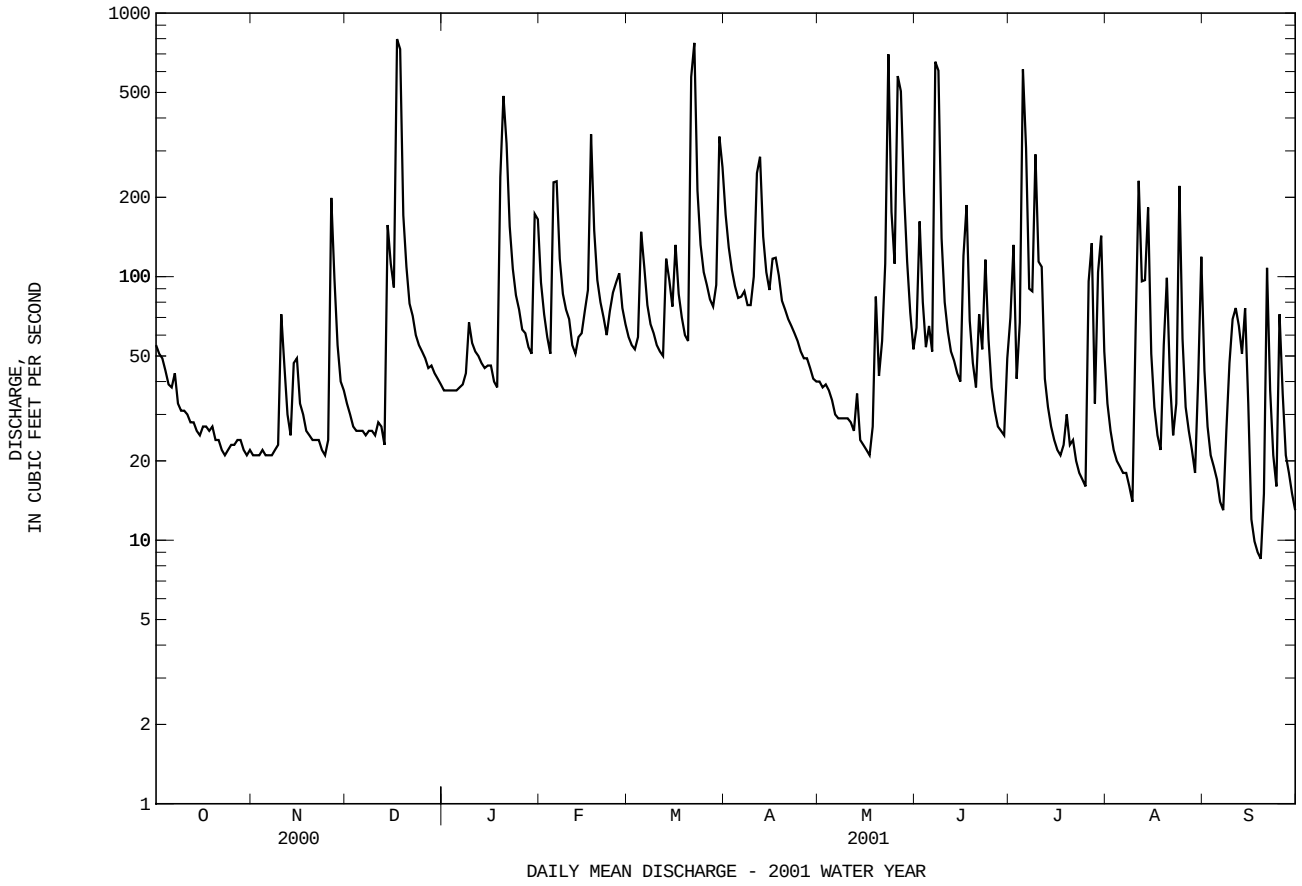
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 1989, 1992 - 2001, BY WATER YEAR (WY)

MEAN	47.8	83.5	95.5	125	138	185	113	87.5	56.4	55.6	45.9	66.0
MAX	145	178	261	260	333	445	191	164	118	162	95.5	322
(WY)	1996	1998	1997	1996	1998	1994	1993	1996	1996	2000	1994	1999
MIN	6.54	11.0	24.5	54.5	59.0	76.8	49.1	21.4	9.42	5.61	9.74	9.35
(WY)	1999	1999	1999	1986	1999	1986	1995	1999	1986	1999	1995	1986

01594526 WESTERN BRANCH AT UPPER MARLBORO, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1986 - 1982, 1992 - 2001	
ANNUAL TOTAL	37154		30059.4			
ANNUAL MEAN	102		82.4		93.5	
HIGHEST ANNUAL MEAN					133	1996
LOWEST ANNUAL MEAN					54.8	1986
HIGHEST DAILY MEAN	1100	Sep 26	797	Dec 17	4090	Sep 16 1999
LOWEST DAILY MEAN	17	Jun 12	8.5	Sep 19	1.2	Aug 7 1999
ANNUAL SEVEN-DAY MINIMUM	20	Jun 9	18	Aug 3	1.4	Aug 4 1999
MAXIMUM PEAK FLOW			1340	Dec 17	(a)10400	Sep 16 1999
MAXIMUM PEAK STAGE			10.34	Dec 17	15.39	Sep 16 1999
INSTANTANEOUS LOW FLOW			8.1	(b)	1.1	(c)
ANNUAL RUNOFF (CFSM)	1.13		.92		1.04	
ANNUAL RUNOFF (INCHES)	15.41		12.47		14.16	
10 PERCENT EXCEEDS	225		156		187	
50 PERCENT EXCEEDS	56		50		50	
90 PERCENT EXCEEDS	23		21		10	

a From rating curve extended above 2,400 ft^3/s.
b Sept. 19, 20.
c Aug. 7, 10, 11, 14, 1999.



01594930 LAUREL RUN AT DOBBIN ROAD NEAR WILSON, MD

LOCATION.--Lat 39°14'37.0", long 79°25'41.9", Garrett County, Hydrologic Unit 02070002, on left bank at downstream side of bridge (abandoned) on Dobbin Road, 0.6 mi south of intersection of Kempton Road, 1.2 mi from mouth, and 3.0 mi southwest of Wilson.

DRAINAGE AREA.--8.23 mi^2.

PERIOD OF RECORD.--May 1980 to current year.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 2,600 ft above sea level, from topographic map.

REMARKS.--Records good except those for estimated daily discharges (beaver dams, ice effect, missing record), which are poor. Natural flow of stream affected by inflow from deep coal mine dewatering process. Several measurements of water temperature were made during the year. Water-quality records for some prior years have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 170 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan 30	1600	201	4.01	Apr 11	1330	230	4.24
Feb 10	0745	265	4.50	Jun 7	0830	234	4.27
Feb 15	1015	211	4.09	Jul 1	2215	191	3.97
Feb 17	0045	175	3.80	Jul 29	0800	*491	*6.27
Apr 10	0215	188	3.91				

Minimum discharge, unknown.

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	e14	e4.3	e23	e8.0	44	19	44	11	e15	57	37	e8.2
2	e14	e4.3	e17	e7.4	31	e17	43	11	e18	80	27	e7.4
3	e13	e4.2	e14	e7.0	26	e16	39	10	e16	34	21	e6.4
4	e11	e4.1	e13	e6.6	22	e20	34	e9.6	e15	43	18	e6.8
5	e9.4	e4.1	e12	e6.4	19	e23	29	e9.2	e19	57	17	e7.2
6	e8.4	e4.0	e11	e6.0	18	e19	52	e8.8	39	76	15	e5.6
7	e7.4	e4.0	e11	e5.8	17	e18	47	e8.4	141	43	13	e5.8
8	e6.6	e4.0	e10	e5.8	18	e17	37	e8.0	69	54	e11	e5.4
9	e7.6	e10	e10	e5.6	34	e16	44	e7.6	42	39	e10	e5.0
10	e6.4	e30	e9.6	e5.6	157	e16	130	e7.4	30	27	e11	e4.8
11	e5.2	e24	e9.6	e5.5	67	e28	155	e7.2	22	60	e13	e4.7
12	e4.5	e19	e14	e5.4	44	e58	96	e7.4	18	34	e40	e4.5
13	e4.2	e16	13	e5.4	38	e110	58	e7.0	16	25	e30	e4.4
14	e4.0	e12	99	e5.6	48	66	43	e6.6	16	19	e21	e4.3
15	e3.8	e10	52	6.6	175	42	36	e6.2	14	15	e16	e4.2
16	e3.7	e9.2	41	8.1	108	38	37	e7.0	12	12	e13	e4.2
17	e8.0	e9.6	45	7.6	115	52	36	e7.6	12	11	e11	e4.3
18	29	e9.2	34	7.4	63	42	33	e7.4	10	31	e9.8	e4.4
19	10	e8.0	29	15	48	35	31	e30	11	23	e9.0	e4.2
20	7.2	e7.0	25	23	41	29	28	e19	13	15	e8.4	e5.8
21	e6.6	e6.0	27	17	36	34	25	e13	14	12	e8.0	e5.2
22	e6.2	e5.8	18	e12	30	38	23	e25	17	12	e8.4	e4.7
23	e5.8	e5.6	21	e11	26	33	21	e46	29	13	e9.0	e4.4
24	e5.6	e8.0	16	e10	23	33	19	e30	24	14	e8.4	e6.0
25	e5.4	e13	13	e10	30	28	18	57	18	15	e7.2	e9.0
26	e5.2	e20	e12	e9.6	26	25	16	62	16	76	e8.0	e6.2
27	e5.0	e30	e11	e9.4	22	21	15	e36	39	58	e9.6	e6.6
28	e4.9	e20	e10	e9.4	21	20	14	e31	33	39	e8.4	e6.2
29	e4.7	e25	e9.8	9.3	---	21	12	e25	13	276	e7.2	e6.0
30	e4.6	e33	e9.0	111	---	60	12	e19	8.9	106	e6.2	e6.0
31	e4.4	---	e8.6	93	---	48	---	e17	---	52	e7.0	---
TOTAL	235.8	363.4	647.6	455.5	1347	1042	1227	557.4	759.9	1428	438.6	167.9
MEAN	7.61	12.1	20.9	14.7	48.1	33.6	40.9	18.0	25.3	46.1	14.1	5.60
MAX	29	33	99	111	175	110	155	62	141	276	40	9.0
MIN	3.7	4.0	8.6	5.4	17	16	12	6.2	8.9	11	6.2	4.2
CFSM	.92	1.47	2.54	1.79	5.85	4.08	4.97	2.18	3.08	5.60	1.72	.68
IN.	1.07	1.64	2.93	2.06	6.09	4.71	5.55	2.52	3.43	6.45	1.98	.76

e Estimated

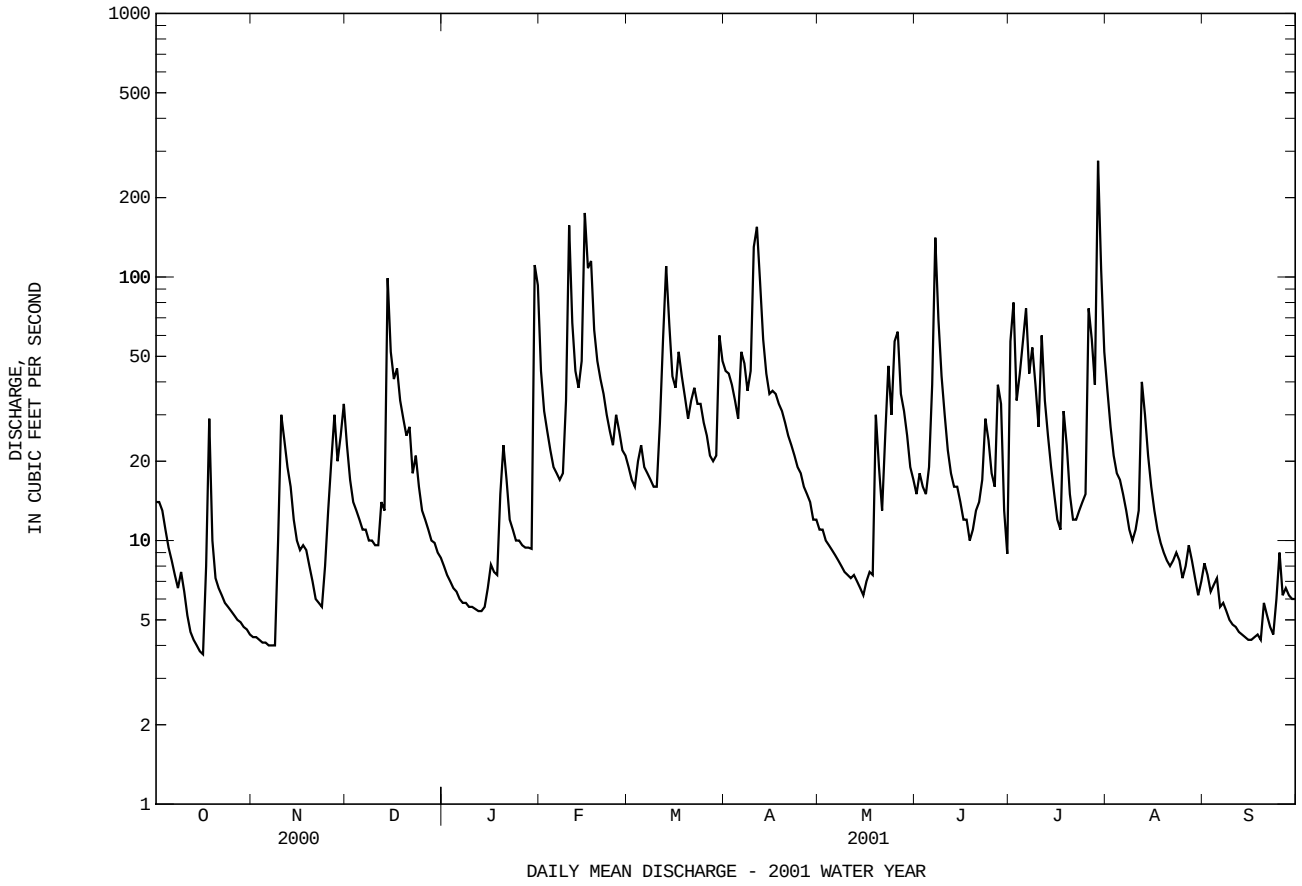
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1980 - 2001, BY WATER YEAR (WY)

MEAN	9.39	19.1	28.8	26.8	37.3	39.9	32.5	28.0	18.3	18.6	11.8	8.27
MAX	26.2	42.8	51.9	51.2	68.5	71.6	61.0	69.8	62.8	46.1	40.2	41.3
(WY)	1997	1987	1985	1996	1994	1994	1984	1996	1981	2001	1980	1996
MIN	3.27	2.20	5.09	8.85	7.24	13.9	9.60	9.35	2.78	2.84	1.71	2.64
(WY)	1992	1999	1999	1981	1993	1990	1995	1991	1999	1999	1999	1999

01594930 LAUREL RUN AT DOBBIN ROAD NEAR WILSON, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1980 - 2001	
ANNUAL TOTAL	7225.4		8670.1			
ANNUAL MEAN	19.7		23.8		22.9	
HIGHEST ANNUAL MEAN					35.6	1996
LOWEST ANNUAL MEAN					14.8	1999
HIGHEST DAILY MEAN	320	Feb 19	276	Jul 29	492	Feb 9 1994
LOWEST DAILY MEAN	(e)2.5	Sep 23	(e)3.7	Oct 16	(e).62	Aug 18 1999
ANNUAL SEVEN-DAY MINIMUM	3.2	Sep 17	4.1	Nov 2	.93	Aug 30 1999
MAXIMUM PEAK FLOW			491	Jul 29	(a)863	Nov 5 1985
MAXIMUM PEAK STAGE			6.27	Jul 29	10.10	Nov 5 1985
INSTANTANEOUS LOW FLOW			UNKNOWN		UNKNOWN	
ANNUAL RUNOFF (CFSM)	2.40		2.89		2.78	
ANNUAL RUNOFF (INCHES)	32.66		39.19		37.82	
10 PERCENT EXCEEDS	37		48		48	
50 PERCENT EXCEEDS	13		14		15	
90 PERCENT EXCEEDS	4.8		5.4		3.7	

e Estimated
a From rating curve extended above 450 ft^3/s on basis of runoff comparisons with nearby stations.



01594936 NORTH FORK SAND RUN NEAR WILSON, MD

LOCATION.--Lat 39°15'37.1", long 79°24'35.2", Garrett County, Hydrologic Unit 02070002, on right bank, 0.1 mi northwest of Wilson-Corona Road, 0.1 mi upstream from mouth and 0.8 mi northwest of Wilson.

DRAINAGE AREA.--1.91 mi^2.

PERIOD OF RECORD.--May 1980 to current year.

GAGE.--Water-stage recorder and steel weir plate. Elevation of gage is 2,515 ft above sea level, from topographic map.

REMARKS.--No estimated daily discharges. Records good above 0.5 ft^3/s and fair below. Several measurements of water temperature were made during the year. Water-quality records for some prior years have been collected at this location.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb 10	0545	43	3.29	Jun 27	1900	*166	*4.71
Feb 15	0830	45	3.31	Jul 1	1945	70	3.65
Apr 11	1015	65	3.59	Jul 29	0630	64	3.57
Jun 7	0515	56	3.47				

Minimum discharge, 0.20 ft^3/s, Oct. 11.

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	1.6	.83	3.5	1.2	8.9	2.8	8.0	1.6	2.7	16	6.3	.99
2	1.4	.78	3.1	1.2	6.5	2.7	7.1	1.5	3.4	16	4.4	.55
3	1.2	.72	2.8	1.2	5.2	2.7	6.3	1.4	3.1	6.7	3.6	.51
4	1.2	.67	2.6	1.4	4.1	4.2	5.3	1.3	2.7	9.7	3.2	.66
5	.98	.64	2.5	1.3	3.7	4.3	4.7	1.1	3.0	15	2.7	.70
6	.94	.59	2.2	1.2	3.4	3.4	12	.88	4.9	14	2.4	.51
7	.85	.59	2.1	1.1	3.3	3.1	9.1	.77	23	7.6	2.1	.48
8	.75	.71	2.0	1.1	4.4	3.0	6.6	.79	8.6	8.9	1.7	.52
9	.73	.77	1.9	.99	8.8	3.1	8.5	.81	5.8	5.5	1.6	.55
10	1.1	4.6	1.4	.90	23	2.9	18	.74	4.5	6.2	1.7	.36
11	.39	3.2	1.7	.92	10	3.7	30	.80	3.5	13	1.3	.43
12	.52	2.6	2.8	1.0	7.2	5.9	14	.92	2.9	5.8	6.1	.52
13	.52	2.0	2.2	1.2	6.4	17	9.1	.89	2.7	4.4	3.1	.44
14	.57	2.0	16	1.2	7.1	12	6.2	.57	2.4	3.6	2.0	.46
15	.35	1.8	8.0	1.4	27	7.9	5.0	.63	2.0	2.9	1.6	.39
16	.38	1.5	7.0	2.0	18	7.6	5.1	.83	2.0	2.4	1.5	.42
17	.44	1.5	7.7	1.6	17	11	4.8	1.0	2.1	2.2	1.6	.43
18	4.8	1.3	5.8	1.5	9.7	7.6	4.5	1.1	1.4	7.9	1.4	.53
19	2.0	1.2	4.7	3.6	7.3	6.4	4.1	5.3	1.2	3.5	1.2	.39
20	1.2	1.2	3.9	4.3	6.3	5.4	3.5	2.3	.97	2.8	1.2	.78
21	.97	1.1	3.8	3.0	5.2	6.9	3.2	1.6	.93	2.4	.83	.56
22	.85	1.0	3.0	2.7	4.2	7.8	2.8	6.8	1.6	2.0	.84	.41
23	.73	1.1	3.1	2.6	3.7	7.1	2.6	7.3	3.7	1.8	1.5	.38
24	.71	.79	2.5	2.5	3.3	7.3	2.6	4.6	2.0	1.6	1.0	.88
25	.69	.99	2.1	2.2	4.8	5.9	2.6	10	1.2	1.4	.72	2.3
26	.66	2.5	1.8	2.0	3.6	5.0	2.4	7.4	.86	9.3	.71	.89
27	.61	4.6	1.8	2.0	3.2	4.1	2.3	4.9	24	4.8	1.5	.52
28	.62	3.3	1.8	1.7	2.9	3.9	2.3	5.1	10	2.9	.89	.47
29	.54	4.0	1.5	1.8	---	4.6	1.8	3.6	4.0	30	.76	.41
30	.50	5.1	1.5	22	---	14	1.5	3.0	2.7	12	.66	.30
31	.71	---	1.4	15	---	9.7	---	2.7	---	8.3	.72	---
TOTAL	29.51	53.68	108.2	87.81	218.2	193.0	196.0	82.23	133.86	230.6	60.83	17.74
MEAN	.95	1.79	3.49	2.83	7.79	6.23	6.53	2.65	4.46	7.44	1.96	.59
MAX	4.8	5.1	16	22	27	17	30	10	24	30	6.3	2.3
MIN	.35	.59	1.4	.90	2.9	2.7	1.5	.57	.86	1.4	.66	.30
CFSM	.50	.94	1.83	1.48	4.08	3.26	3.42	1.39	2.34	3.89	1.03	.31
IN.	.57	1.05	2.11	1.71	4.25	3.76	3.82	1.60	2.61	4.49	1.18	.35

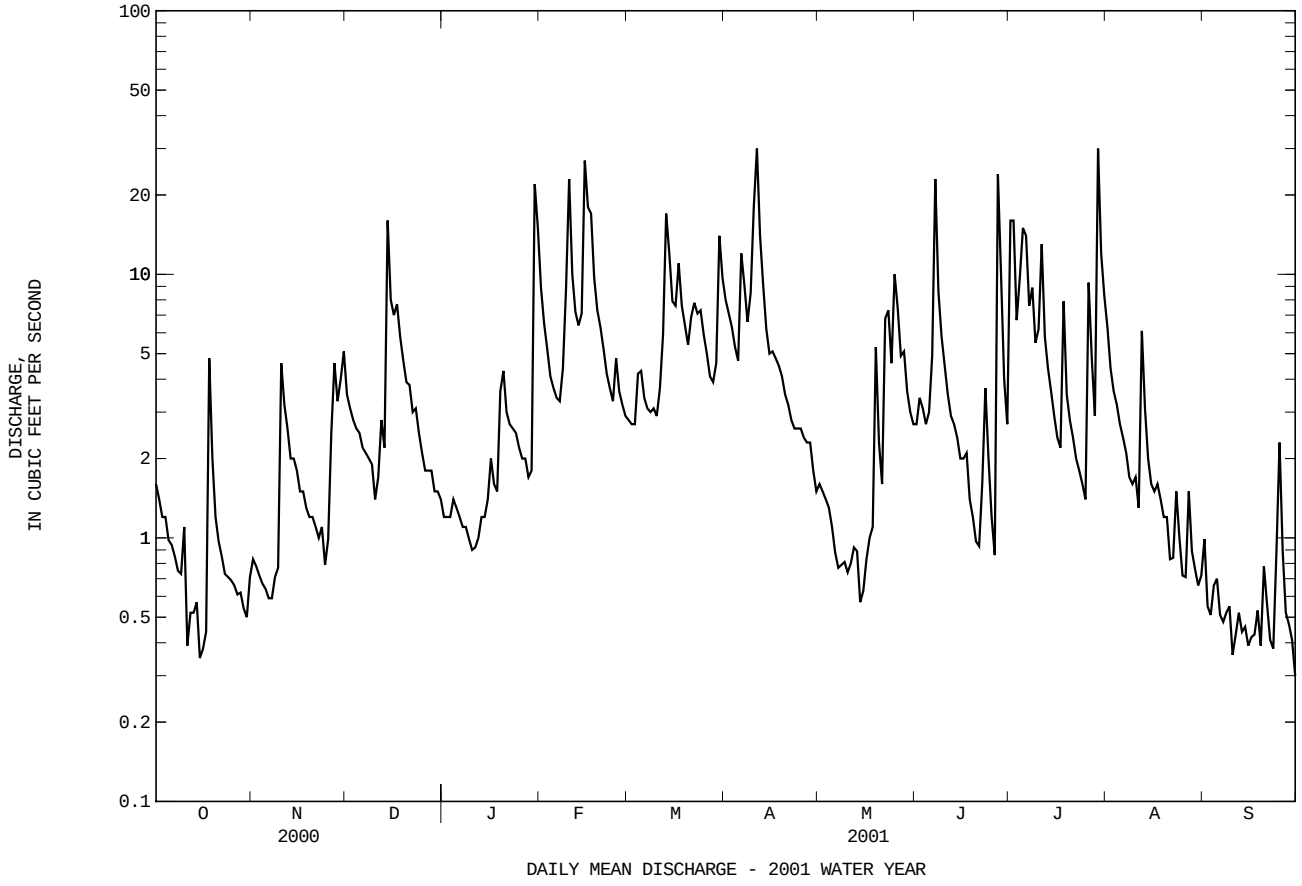
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1980 - 2001, BY WATER YEAR (WY)

MEAN	1.44	4.07	5.36	5.46	7.63	8.40	6.50	5.41	3.30	3.42	2.00	1.50
MAX	4.43	17.5	8.67	12.9	15.9	16.1	13.4	13.5	12.7	8.97	8.09	9.38
(WY)	1997	1986	1991	1996	1986	1994	1984	1996	1981	1996	1996	1996
MIN	.21	.26	.78	1.29	1.37	2.52	2.22	1.32	.43	.28	.30	.19
(WY)	1992	1999	1999	1981	1993	1990	1995	1999	1999	1988	1983	1991

01594936 NORTH FORK SAND RUN NEAR WILSON, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1980 - 2001	
ANNUAL TOTAL	1350.64		1411.66			
ANNUAL MEAN	3.69		3.87		4.48	
HIGHEST ANNUAL MEAN					7.72	1996
LOWEST ANNUAL MEAN					2.74	1999
HIGHEST DAILY MEAN	74	Feb 19	30	(a)	141	Feb 9 1994
LOWEST DAILY MEAN	.35	Oct 15	.30	Sep 30	.09	(b)
ANNUAL SEVEN-DAY MINIMUM	.45	Oct 11	.43	Sep 10	.12	Aug 12 1988
MAXIMUM PEAK FLOW			166	Jun 27	(c)895	May 31 1985
MAXIMUM PEAK STAGE			4.71	Jun 27	10.47	May 31 1985
INSTANTANEOUS LOW FLOW			.20	Oct 11	.01	(d)
ANNUAL RUNOFF (CFSM)	1.93		2.02		2.35	
ANNUAL RUNOFF (INCHES)	26.31		27.49		31.90	
10 PERCENT EXCEEDS	6.3		8.7		10	
50 PERCENT EXCEEDS	2.3		2.4		2.8	
90 PERCENT EXCEEDS	.76		.62		.43	

a April 11, July 29.
b Aug. 22, 1985, Aug. 24, 1993.
c From rating curve extended above 90 ft^3/s on basis of contracted-opening measurement of peak-flow.
d July 18 and Aug. 9, 1988, result of beaver activity upstream.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01594950 MCMILLAN FORK NEAR FORT PENDLETON, MD

LOCATION.--Lat 39°16'36.1", long 79°23'25.1", Garrett County, Hydrologic Unit 02070002, on left bank upstream side of culvert on private driveway off Wilson-Corona Road, 1.7 mi southwest of Fort Pendleton, 1.0 mi south of Bayard, WV, and 200 ft upstream from mouth.

DRAINAGE AREA.--2.30 mi^2.

PERIOD OF RECORD.--October 1986 to current year.

REVISED RECORDS.--WDR MD-DE-95-1: 1988, 1991-93 (M).

GAGE.--Water-stage recorder and sacrete bag control. Datum of gage is 2,441.94 ft above sea level (Garrett County bench mark).

REMARKS.--Water-discharge records good except those for estimated daily discharges (ice effect, backwater), which are poor. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb 10	0430	60	2.71	Jul 1	1930	53	2.55
Feb 15	0715	87	3.23	Jul 26	1445	*UNKNOWN	*7.67(a)
Apr 11	1000	60	2.69	Jul 29	0615	74	2.99
Jun 27	1845	UNKNOWN	7.27(a)				

a Affected by backwater.

Minimum discharge, 0.07 ft^3/s, Sept. 30.

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	1.2	.22	3.4	1.2	10	3.3	11	1.4	2.5	15	8.4	.52
2	.99	.22	2.8	1.1	7.2	3.1	9.9	1.3	3.0	15	6.1	.30
3	.86	.20	e2.4	1.0	e5.8	2.9	8.4	1.2	2.7	7.7	5.2	.26
4	.74	.18	e2.0	.93	e5.0	3.9	6.9	1.0	2.2	9.3	4.3	.25
5	.65	.16	e1.8	.95	4.0	4.2	5.7	1.0	2.4	14	3.6	.25
6	.60	.16	1.5	.94	3.6	4.0	13	.91	3.6	14	2.9	.21
7	.54	.16	1.5	.91	3.3	3.2	11	.81	16	9.0	2.4	.17
8	.47	.16	1.3	.89	4.0	3.0	8.5	.73	7.8	9.5	2.0	.16
9	.43	.23	1.1	.80	8.7	2.9	9.6	.71	5.3	6.3	1.7	.16
10	.42	3.2	1.0	.72	30	2.7	16	.64	4.1	6.1	1.6	.15
11	.34	2.2	1.1	.68	14	3.2	32	.60	3.3	10	1.6	.15
12	.30	1.3	2.1	.67	9.2	5.4	20	.68	2.8	6.0	5.0	.14
13	.28	1.1	1.6	.67	7.8	20	13	.58	2.7	4.8	2.9	.14
14	.26	.98	15	.67	10	15	9.5	.49	2.1	4.0	1.8	.13
15	.26	.88	8.7	.78	45	9.9	7.9	.47	1.7	3.3	1.4	.12
16	.24	.77	7.2	1.2	25	9.1	7.1	.56	1.6	2.7	1.1	.12
17	.24	.71	8.8	1.0	24	12	6.0	.69	1.4	2.4	1.1	.12
18	3.4	.61	6.4	.97	14	9.4	5.5	.90	1.1	12	.94	.12
19	1.2	.52	5.4	2.6	10	7.7	5.1	4.2	.93	5.9	.81	.12
20	.67	e.51	5.5	3.5	8.2	6.5	4.5	1.8	.85	4.3	.73	.25
21	.53	e.51	4.7	e2.7	6.7	8.2	4.1	1.3	.84	3.4	.67	.16
22	.46	e.50	3.6	2.4	5.4	8.5	3.7	6.7	1.8	2.8	.57	.12
23	.39	e.50	3.8	1.9	4.5	7.9	3.3	7.4	3.1	2.4	.90	.12
24	.33	.49	2.7	1.7	3.8	8.3	3.1	5.0	1.4	2.1	.68	.25
25	.32	1.1	2.4	1.6	5.2	6.9	2.7	10	.90	1.9	.47	.57
26	.32	2.5	2.1	1.7	4.7	5.9	2.4	8.4	.72	e40	.40	.25
27	.31	4.2	2.1	1.4	3.8	5.0	2.2	5.8	e30	22	.66	.12
28	.29	3.2	1.7	e1.3	3.7	4.5	1.9	5.4	16	12	.43	.10
29	.28	3.8	1.6	1.3	---	5.0	1.7	4.0	6.5	33	.32	.10
30	.25	4.8	1.5	e20	---	15	1.5	3.3	4.4	16	.29	.09
31	.24	---	1.3	18	---	12	---	2.7	---	11	.43	---
TOTAL	17.81	36.07	108.1	76.18	286.6	218.6	237.2	80.67	133.74	307.9	61.40	5.72
MEAN	.57	1.20	3.49	2.46	10.2	7.05	7.91	2.60	4.46	9.93	1.98	.19
MAX	3.4	4.8	15	20	45	20	32	10	30	40	8.4	.57
MIN	.24	.16	1.0	.67	3.3	2.7	1.5	.47	.72	1.9	.29	.09
CFSM	.25	.52	1.52	1.07	4.45	3.07	3.44	1.13	1.94	4.32	.86	.08
IN.	.29	.58	1.75	1.23	4.64	3.54	3.84	1.30	2.16	4.98	.99	.09

e Estimated

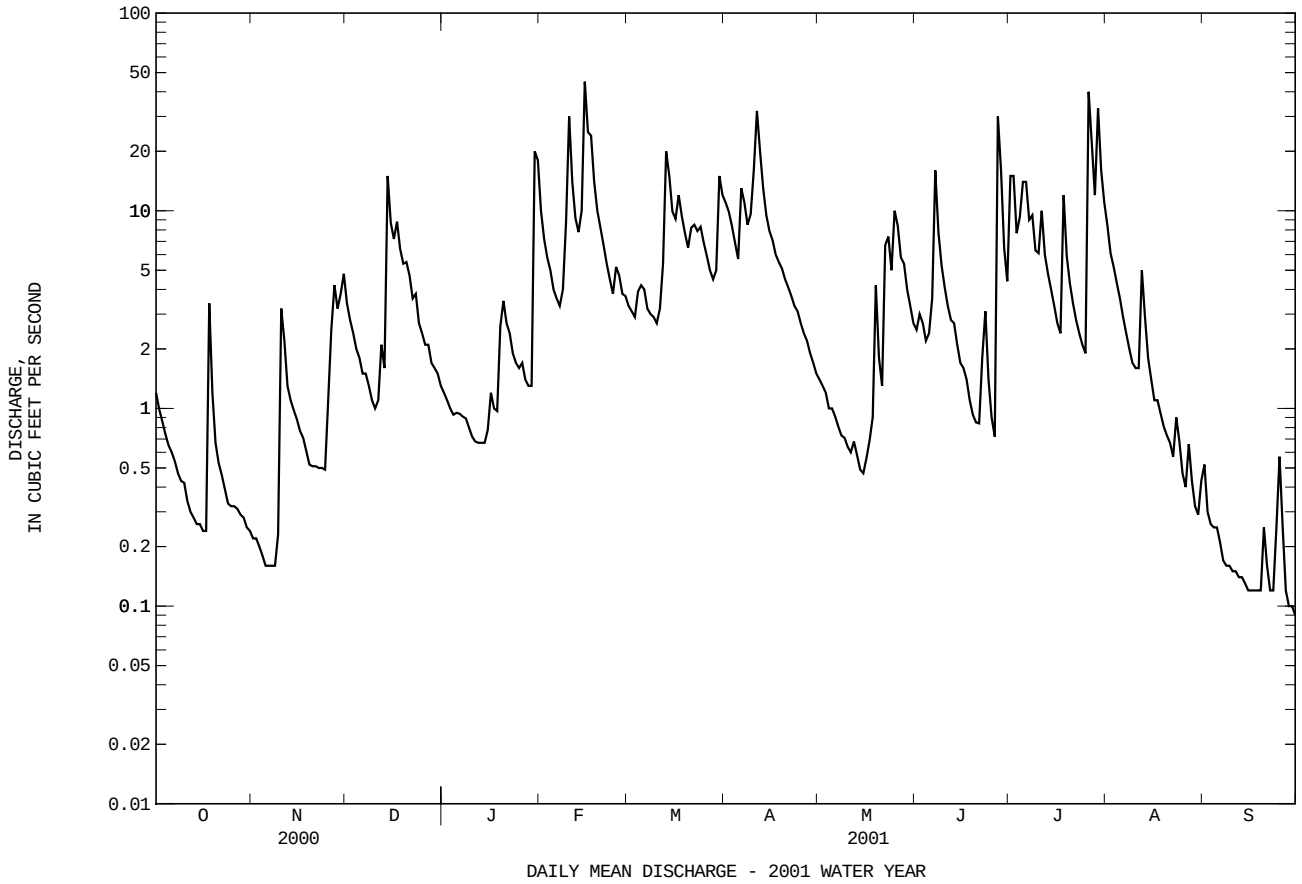
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 2001, BY WATER YEAR (WY)

MEAN	1.19	3.16	5.18	6.61	7.78	9.00	6.44	5.63	2.22	3.10	1.72	1.36
MAX	4.57	10.2	10.0	11.5	14.7	17.6	11.3	13.9	5.29	9.93	9.26	9.25
(WY)	1990	1987	1991	1990	1994	1994	1987	1996	1989	2001	1996	1996
MIN	.060	.035	.20	1.69	1.27	3.34	1.27	1.11	.16	.018	.031	.064
(WY)	1995	1999	1999	2000	1993	1990	1995	1999	1999	1999	1999	1998

01594950 MCMILLAN FORK NEAR FORT PENDLETON, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1987 - 2001	
ANNUAL TOTAL	1141.35		1569.99			
ANNUAL MEAN	3.12		4.30		4.44	
HIGHEST ANNUAL MEAN					7.49	1996
LOWEST ANNUAL MEAN					2.73	1999
HIGHEST DAILY MEAN	80	Feb 19	45	Feb 15	110	May 26 1990
LOWEST DAILY MEAN	.05	Sep 23	.09	Sep 30	.00	(a)
ANNUAL SEVEN-DAY MINIMUM	.08	Sep 18	.12	Sep 13	.00	Aug 10 1999
MAXIMUM PEAK FLOW			UNKNOWN	Jul 26	340	Feb 9 1994
MAXIMUM PEAK STAGE			(b)7.67	Jul 26	(b)7.67	Jul 26 2001
INSTANTANEOUS LOW FLOW			.07	Sep 30	.00	(c)
ANNUAL RUNOFF (CFSM)	1.36		1.87		1.93	
ANNUAL RUNOFF (INCHES)	18.46		25.39		26.22	
10 PERCENT EXCEEDS	5.9		10		10	
50 PERCENT EXCEEDS	1.5		2.1		2.7	
90 PERCENT EXCEEDS	.24		.25		.12	

a Jul 7-9, 12-16, 19-24, 26, 27, 31, Aug. 3-7, 10-23, 30, 31, Sep 1-4, 13-15, 19, 20, 22-28, 1999.
b Affected by backwater.
c Jul 7-10, 12-28, 31, Aug 1-24, 30, 31, Sep 1-4, 13-16, 19-29, 1999.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01595000 NORTH BRANCH POTOMAC RIVER AT STEYER, MD

LOCATION.--Lat 39°18'06.8", long 79°18'24.8", Garrett County, Hydrologic Unit 02070002, on left bank 0.3 mi southeast of Steyer, 0.4 mi downstream from Steyer Run, 2.0 mi northeast of Gorman, and at mile 81.8.

DRAINAGE AREA.--73.1 mi^2.

PERIOD OF RECORD.--July 1956 to current year.

REVISED RECORDS.--WDR WV-97-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,276.01 ft above sea level.

REMARKS.--Records fair except those for estimated daily discharges (ice effect), which are poor. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location. U.S. Geological Survey gage-height telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Oct. 15, 1954, reached a stage of 13.0 ft, from floodmarks; discharge, 11,300 ft^3/s, from rating curve extended above 3,000 ft^3/s on basis of slope-area measurement at gage height of 10.30 ft.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,200 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jul 26	1330	*6,580	*9.91	No other peak greater than base discharge.			

Minimum discharge, 26 ft^3/s, Sept. 20.

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	62	e38	156	e66	400	133	385	86	114	271	270	61
2	66	37	119	e63	282	128	368	84	132	474	198	50
3	65	e37	103	e60	204	121	329	81	127	178	161	47
4	60	e36	146	e57	189	141	298	78	111	238	139	48
5	57	e36	129	e55	160	183	250	75	121	319	130	51
6	54	e35	97	e53	147	148	450	74	151	435	114	41
7	38	e35	91	e51	137	140	449	68	797	229	99	43
8	36	e35	88	e50	151	132	327	66	394	314	90	40
9	47	e39	69	e49	292	132	297	65	244	219	83	39
10	47	209	67	e48	1030	124	701	62	181	163	76	39
11	39	170	82	e47	478	134	1080	58	146	373	81	39
12	37	111	120	e46	324	199	697	60	124	205	270	37
13	35	92	111	45	278	763	452	57	111	161	223	37
14	e34	81	668	45	328	576	332	55	103	137	119	36
15	e33	70	447	58	1200	373	269	50	93	122	95	36
16	e33	72	331	72	740	341	285	56	88	110	85	35
17	e33	69	420	66	737	459	263	65	90	102	73	34
18	175	63	293	64	430	373	230	64	77	385	71	36
19	98	49	251	96	318	307	222	222	67	241	68	34
20	76	e47	201	188	265	260	199	132	63	141	64	40
21	66	e46	191	111	228	318	175	98	63	108	60	47
22	65	e45	141	e94	187	366	158	195	84	97	55	38
23	62	45	136	e86	174	338	144	332	226	90	67	35
24	54	45	e120	e82	148	347	134	218	108	84	67	43
25	51	51	e110	e79	195	292	122	560	83	103	51	74
26	49	109	e105	e77	197	249	111	484	71	1730	48	65
27	46	218	e98	75	156	206	106	283	173	509	67	54
28	46	162	e90	84	149	184	103	253	258	233	58	47
29	44	155	e83	94	---	198	94	178	103	1290	48	45
30	46	245	e76	838	---	556	90	143	86	682	47	42
31	39	---	e72	762	---	444	---	121	---	373	47	---
TOTAL	1693	2482	5211	3661	9524	8665	9120	4423	4589	10116	3124	1313
MEAN	54.6	82.7	168	118	340	280	304	143	153	326	101	43.8
MAX	175	245	668	838	1200	763	1080	560	797	1730	270	74
MIN	33	35	67	45	137	121	90	50	63	84	47	34
CFSM	.75	1.13	2.30	1.62	4.65	3.82	4.16	1.95	2.09	4.46	1.38	.60
IN.	.86	1.26	2.65	1.86	4.85	4.41	4.64	2.25	2.34	5.15	1.59	.67

e Estimated

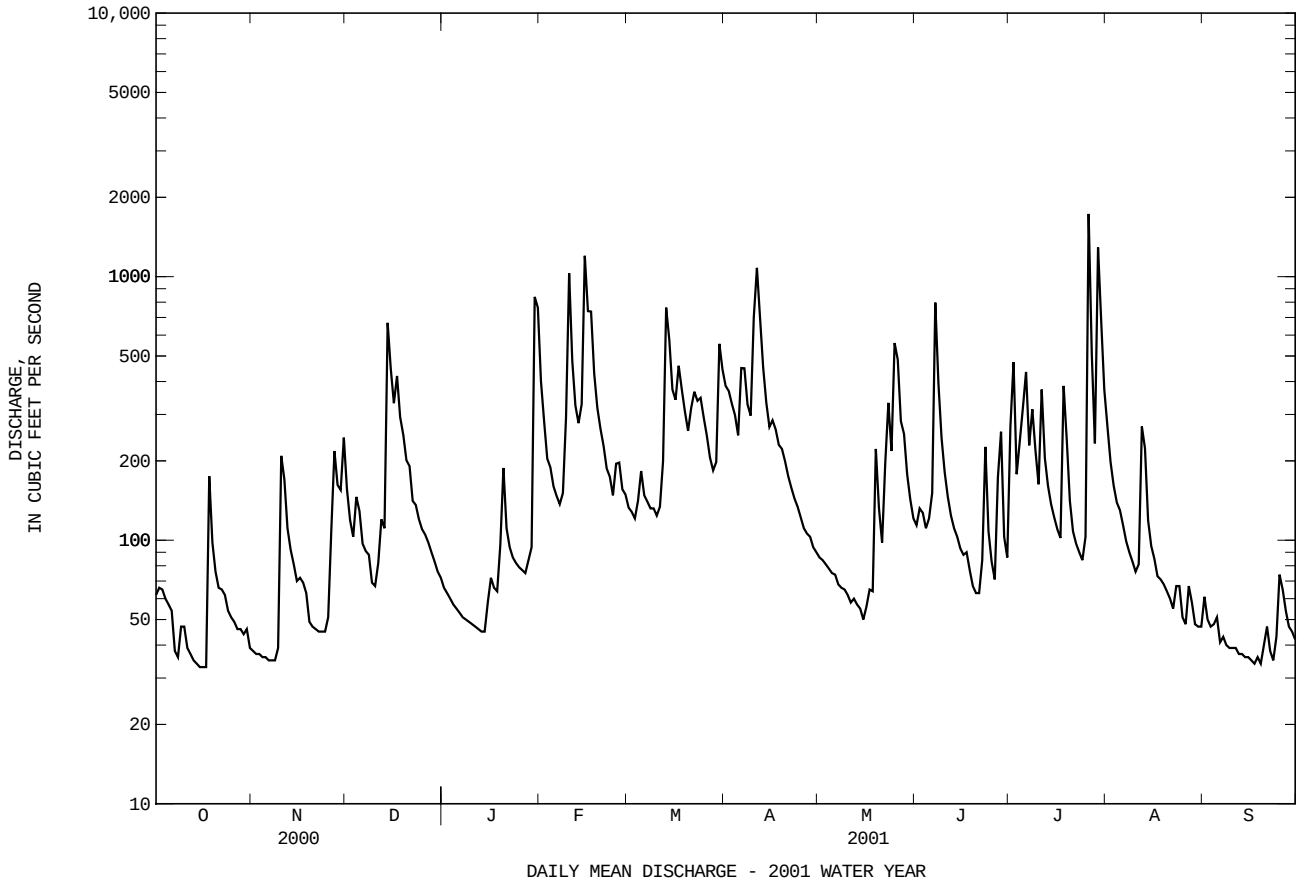
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1956 - 2001, BY WATER YEAR (WY)

MEAN	70.8	136	223	234	267	341	275	197	118	97.7	78.3	55.2
MAX	316	588	527	569	604	885	573	540	442	340	355	340
(WY)	1977	1986	1973	1974	1994	1963	1958	1996	1981	1978	1996	1996
MIN	12.8	26.2	46.1	41.8	65.9	112	78.2	62.5	15.5	14.3	6.72	5.99
(WY)	1964	1966	1999	1977	1993	1990	1995	1965	1965	1965	1965	1959

01595000 NORTH BRANCH POTOMAC RIVER AT STEYER, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1956 - 2001	
ANNUAL TOTAL	52584		63921			
ANNUAL MEAN	144		175		173	
HIGHEST ANNUAL MEAN					297	1996
LOWEST ANNUAL MEAN					115	1959
HIGHEST DAILY MEAN	2570	Feb 19	1730	Jul 26	4530	Feb 9 1994
LOWEST DAILY MEAN	25	(a)	33	(b)	3.1	Sep 9 1965
ANNUAL SEVEN-DAY MINIMUM	35	Oct 11	35	Oct 11	3.6	Sep 23 1959
MAXIMUM PEAK FLOW			6580	Sep 26	(c)11500	Nov 5 1985
MAXIMUM PEAK STAGE			9.91	Jul 26	13.14	Nov 5 1985
INSTANTANEOUS LOW FLOW			26	Sep 20	2.7	Aug 18 1999
ANNUAL RUNOFF (CFSM)	1.97		2.40		2.37	
ANNUAL RUNOFF (INCHES)	26.76		32.53		32.24	
10 PERCENT EXCEEDS	251		373		384	
50 PERCENT EXCEEDS	91		103		104	
90 PERCENT EXCEEDS	45		43		21	

a Sept. 23, 24, 2000.
b Oct. 15-17.
c From rating curve extended above 3,000 ft^3/s on basis of slope-area measurement at gage height of 10.30 ft.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01595200 STONY RIVER NEAR MOUNT STORM, WV

LOCATION.--Lat 39° 16'10", long 79° 15'45", Grant County, Hydrologic Unit 02070002, on left bank 100 ft downstream from highway bridge on U.S. Highway 50, 1.0 mi west of Mount Storm, and at mile 6.4.

DRAINAGE AREA.--48.7 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1961 to current year.

REVISED RECORDS.--WDR WV-97-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,554.54 ft above sea level.

REMARKS.--Water-discharge records good except those for estimated daily discharges (ice effect), which are poor. Flow regulated by Stony River Reservoir, 14.0 mi upstream from station until use of reservoir discontinued June 1987. Regulation since 1963 by Virginia Electric and Power Company dam (Mount Storm Lake), 4.0 mi upstream from station.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,230 ft^3/s, Apr. 11, gage height, 5.94 ft; minimum discharge, 6.8 ft^3/s, Sept. 17, 18, 23, 24.

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	126	13	49	e21	141	68	234	27	64	30	171	12
2	97	13	40	e33	143	70	160	26	67	77	191	11
3	48	8.9	36	43	145	75	144	26	68	37	226	9.1
4	50	8.0	43	42	124	97	93	36	67	45	283	8.9
5	48	7.6	69	30	100	113	164	43	79	59	151	12
6	42	7.5	125	18	89	89	488	64	90	63	279	12
7	31	9.9	28	17	82	88	753	42	213	34	62	11
8	26	11	26	17	85	74	115	22	180	59	40	11
9	24	12	20	20	126	64	247	21	161	50	34	8.7
10	25	50	20	19	262	44	852	20	147	29	28	11
11	22	82	20	21	243	34	949	18	105	57	40	9.8
12	20	165	30	20	260	53	393	17	36	55	114	10
13	19	170	30	16	215	226	337	18	34	44	87	8.3
14	14	33	133	15	187	215	319	20	35	29	58	11
15	13	46	110	17	332	185	111	21	35	23	62	9.5
16	14	54	114	24	354	245	89	24	24	19	38	7.3
17	19	36	259	22	589	397	111	40	24	15	20	6.8
18	63	16	243	21	475	514	114	37	23	67	19	9.9
19	40	14	211	33	288	116	100	130	19	72	17	11
20	32	17	181	63	57	101	104	273	17	58	20	9.5
21	30	20	100	64	48	105	129	216	16	46	15	12
22	29	23	99	69	53	113	142	151	24	49	15	8.5
23	49	17	98	71	67	107	169	225	53	43	18	7.0
24	19	18	92	59	82	108	36	194	30	37	17	7.8
25	18	19	65	54	107	127	35	438	26	39	13	16
26	17	39	23	45	96	164	30	528	20	199	14	13
27	14	55	27	33	41	157	31	330	18	151	16	11
28	19	39	26	39	56	130	44	124	17	33	16	11
29	22	51	e24	36	---	110	47	46	17	501	15	8.8
30	19	79	e22	227	---	168	34	45	15	306	14	7.6
31	14	---	e22	636	---	173	---	55	---	121	13	---
TOTAL	1023	1133.9	2385	1845	4847	4330	6574	3277	1724	2447	2106	302.5
MEAN	33.0	37.8	76.9	59.5	173	140	219	106	57.5	78.9	67.9	10.1
MAX	126	170	259	636	589	514	949	528	213	501	283	16
MIN	13	7.5	20	15	41	34	30	17	15	15	13	6.8

e Estimated

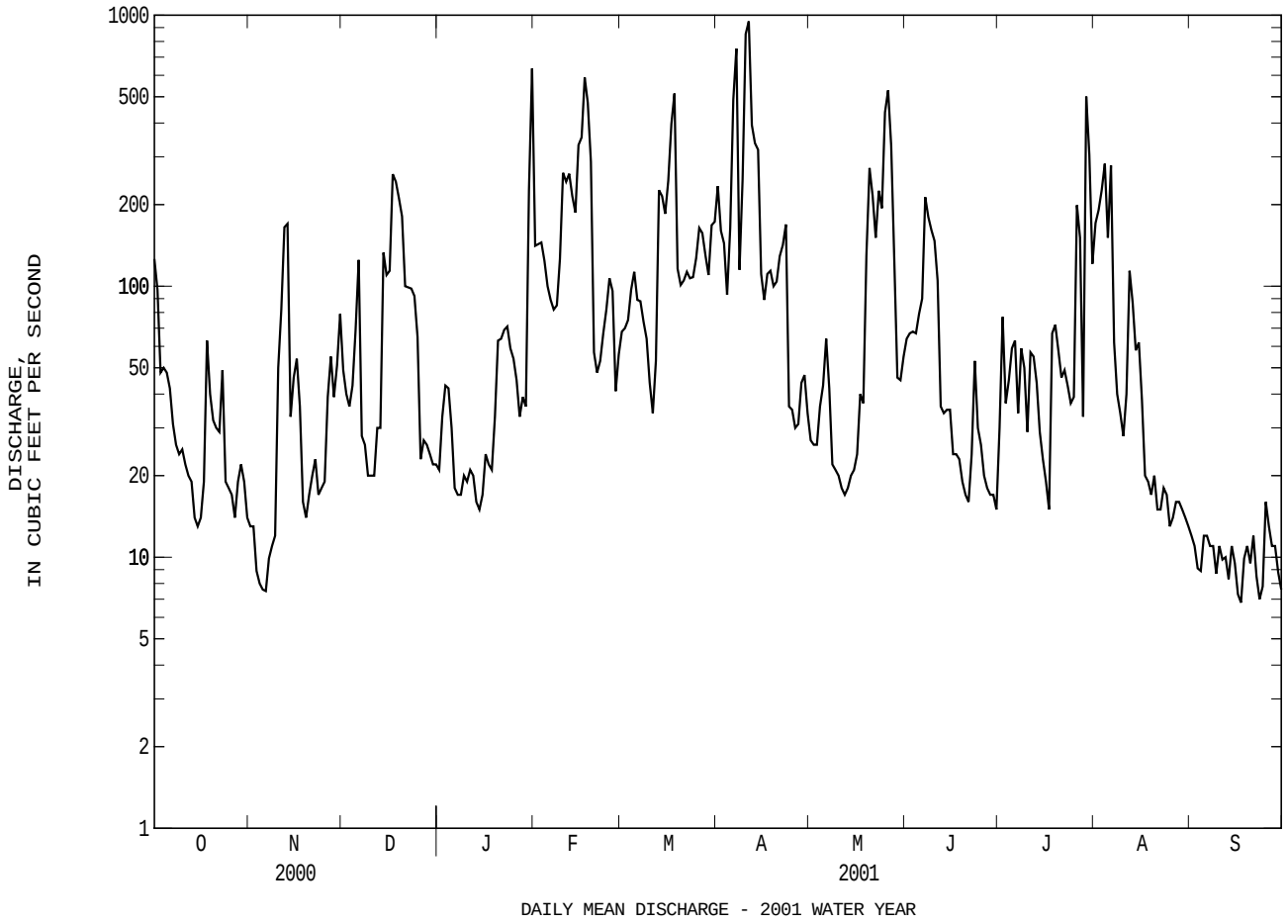
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 2001, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	46.0	84.9	107	115	144	217	156	119	69.1	47.5	35.3	35.5
MAX	234	669	301	267	361	537	371	271	237	205	200	314
(WY)	1977	1986	1973	1996	1994	1963	1987	1988	1981	1978	1996	1996
MIN	3.36	5.53	8.36	20.9	21.3	46.9	51.8	28.3	9.91	4.36	3.28	3.89
(WY)	1992	1999	1999	1981	1978	1990	1995	1964	1964	1968	1999	1985

01595200 STONY RIVER NEAR MOUNT STORM, WV--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1962 - 2001	
ANNUAL TOTAL	27427.9		31994.4			
ANNUAL MEAN	74.9		87.7		97.9	
HIGHEST ANNUAL MEAN					166	1996
LOWEST ANNUAL MEAN					42.0	1964
HIGHEST DAILY MEAN	1850	Feb 19	949	Apr 11	9880	Nov 5 1985
LOWEST DAILY MEAN	7.5	Nov 6	6.8	Sep 17	1.3	Aug 28 1988
ANNUAL SEVEN-DAY MINIMUM	9.3	Nov 3	9.0	Sep 11	1.7	Aug 28 1988
MAXIMUM PEAK FLOW			1230	Apr 11	(a)14000	Nov 5 1985
MAXIMUM PEAK STAGE			5.94	Apr 11	(b)16.41	Nov 5 1985
INSTANTANEOUS LOW FLOW			6.8	(c)	1.3	(d)
10 PERCENT EXCEEDS	167		215		229	
50 PERCENT EXCEEDS	42		42		48	
90 PERCENT EXCEEDS	16		13		8.4	

a From rating curve extended above 7,500 ft 3/s on basis of slope-area measurement of peak flow.
b From floodmarks.
c Sept. 17, 18, 23, 24.
d Aug. 22, 23, 28, 29, 1988.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01595200 STONY RIVER NEAR MOUNT STORM, WV--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1962 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: December 1961 to March 1974, September 1974 to September 1995, October 1996 to current year.

INSTRUMENTATION.--Temperature recorder (continuous ethyl alcohol-actuated thermograph) since December 1961.

REMARKS.--Upstream reservoir regulation defined on the discharge manuscript. No temperature record May 28 to June 7, due to equipment malfunction.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: Maximum, 27.5°C, Aug. 14, 1984, July 19, 1990; minimum, -0.5°C Jan. 16-20, 1999.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURES.--Maximum 24.0°C, Aug. 6-10; minimum, 0°C, Dec. 21 to Jan. 3, Jan. 7-11, Jan. 22-24.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14.5	6.5	2.5	.0	6.0	5.5	6.5	12.0	---	21.0	22.0	23.0
2	14.0	6.0	2.5	.0	4.5	5.0	6.0	12.0	---	20.0	22.0	23.0
3	13.0	6.0	3.0	2.0	4.5	5.5	6.5	12.5	---	20.0	22.0	23.0
4	12.5	6.0	2.5	1.0	5.0	5.5	6.5	12.5	---	19.5	22.5	22.5
5	12.5	6.0	2.0	1.0	5.0	5.0	9.0	12.5	---	19.5	22.5	22.5
6	12.5	6.0	3.0	1.0	5.0	5.0	10.0	12.5	---	19.0	24.0	22.5
7	11.5	8.5	3.0	1.5	5.0	5.0	12.0	12.5	---	19.5	24.0	22.5
8	7.0	9.0	2.0	.0	5.5	5.0	10.5	12.5	20.5	21.0	24.0	22.5
9	6.0	10.0	2.5	.0	6.0	5.0	13.0	12.0	21.5	21.0	24.0	22.5
10	6.0	10.0	1.5	1.0	5.0	4.0	13.5	12.0	22.0	22.0	24.0	22.5
11	6.0	7.0	2.5	1.0	5.5	4.0	13.0	12.5	22.5	21.5	23.0	22.5
12	6.0	12.0	1.5	1.0	6.5	4.5	13.5	12.5	22.0	20.5	23.0	22.5
13	6.0	13.5	1.0	1.0	8.0	4.0	13.5	12.0	22.0	20.0	23.0	22.5
14	6.0	13.5	1.0	1.0	8.5	5.0	13.0	11.5	22.0	20.0	23.0	19.5
15	6.0	7.5	1.0	1.5	8.5	6.0	13.0	11.0	22.0	20.0	23.0	17.5
16	6.0	8.0	3.0	1.0	8.5	7.5	12.0	11.0	21.5	20.0	23.0	18.0
17	6.0	8.0	3.5	1.0	8.5	7.5	11.5	11.0	20.5	20.5	23.0	18.5
18	8.5	5.5	3.5	1.0	9.0	9.0	10.0	11.5	20.5	19.5	23.0	18.0
19	8.0	4.5	3.0	1.0	9.0	7.0	9.5	12.0	21.5	19.5	23.0	18.0
20	7.5	4.5	1.5	1.0	7.0	5.5	9.0	13.0	22.5	21.0	23.0	18.0
21	6.5	4.5	1.0	1.5	5.0	5.0	10.0	13.5	21.5	20.5	23.0	18.0
22	6.5	4.5	1.0	1.5	4.5	5.0	10.5	13.5	20.5	21.5	23.0	18.0
23	9.5	4.0	.5	1.5	4.5	5.0	12.0	13.5	20.0	22.0	23.0	18.5
24	6.0	4.0	1.0	1.5	4.5	5.0	12.0	14.5	19.0	22.5	23.0	17.5
25	6.0	3.5	.0	1.5	6.0	5.0	12.0	14.5	19.5	22.5	23.0	16.0
26	5.5	3.5	.0	2.0	6.0	5.0	11.5	16.0	20.5	22.0	23.0	15.0
27	5.5	3.0	.0	1.0	6.0	5.0	11.0	19.0	22.0	21.5	23.0	14.0
28	5.5	4.0	.0	1.5	6.0	6.0	11.0	---	22.5	20.5	23.0	14.0
29	6.0	3.0	.0	2.0	---	5.5	11.0	---	22.5	19.5	23.0	16.0
30	6.0	3.0	.0	2.0	---	5.5	12.0	---	22.5	21.5	23.0	15.0
31	6.0	---	.0	6.0	---	5.0	---	---	---	20.0	23.0	---

01595200 STONY RIVER NEAR MOUNT STORM, WV--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MINIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14.0	6.0	2.5	.0	4.0	5.0	5.0	11.0	---	20.0	18.5	23.0
2	14.0	6.0	2.5	.0	4.0	5.0	5.0	11.5	---	19.0	21.0	23.0
3	12.5	6.0	2.5	.0	3.5	5.0	6.0	11.5	---	18.0	22.0	22.5
4	12.5	6.0	2.5	1.0	4.0	5.0	6.0	12.5	---	18.5	22.0	22.5
5	12.5	6.0	2.0	1.0	5.0	5.0	6.0	12.5	---	19.0	21.0	22.5
6	11.5	6.0	2.0	1.0	4.5	5.0	9.0	12.5	---	18.0	22.0	22.5
7	7.0	6.0	2.0	.0	4.5	5.0	10.0	12.5	---	18.0	23.0	22.5
8	6.0	7.0	2.0	.0	4.5	5.0	9.0	11.5	20.0	19.0	23.0	22.5
9	6.0	9.0	1.5	.0	5.0	3.5	10.0	11.5	19.5	20.0	23.0	22.5
10	5.5	7.0	1.5	.0	5.0	3.5	13.0	11.5	20.0	20.0	23.0	22.5
11	5.5	6.0	1.5	.0	5.0	4.0	13.0	11.5	21.0	20.0	23.0	22.5
12	6.0	7.0	1.5	1.0	5.0	4.0	13.0	12.0	21.0	20.0	23.0	22.5
13	6.0	12.0	1.0	1.0	6.5	4.0	13.0	11.0	20.5	19.5	23.0	19.5
14	6.0	7.5	1.0	1.0	7.5	4.0	13.0	11.0	19.5	18.5	23.0	14.5
15	6.0	6.0	1.0	1.0	7.5	5.0	12.5	11.0	20.0	18.0	23.0	14.5
16	6.0	6.0	1.0	1.0	7.5	6.0	11.5	11.0	19.0	18.0	23.0	15.0
17	6.0	5.5	1.5	1.0	8.0	7.0	10.0	11.0	18.5	18.0	23.0	15.0
18	6.0	4.5	1.5	1.0	7.5	7.0	9.5	11.0	18.0	19.0	23.0	16.5
19	7.5	4.5	2.0	1.0	7.0	4.0	9.0	11.5	18.0	18.5	23.0	17.5
20	6.5	4.5	.5	1.0	5.0	5.0	9.0	12.0	19.0	19.0	23.0	17.5
21	6.5	4.5	.0	.5	4.5	3.5	9.0	13.0	19.5	19.0	23.0	17.0
22	6.5	4.0	.0	.0	4.5	3.5	10.0	13.0	19.5	19.5	23.0	17.5
23	6.0	3.5	.0	.0	4.0	4.0	10.0	13.0	18.5	20.5	23.0	16.0
24	6.0	3.5	.0	.0	4.0	4.5	12.0	13.5	17.5	21.0	23.0	15.0
25	5.5	3.5	.0	1.0	4.5	3.0	11.5	13.5	17.5	21.5	23.0	14.0
26	5.5	3.5	.0	.5	6.0	4.0	11.0	14.0	17.5	21.0	23.0	14.0
27	5.5	3.0	.0	.5	6.0	4.5	11.0	16.0	18.5	20.5	23.0	14.0
28	5.5	3.0	.0	.5	5.5	4.5	11.0	---	19.5	18.5	23.0	14.0
29	5.5	3.0	.0	1.0	---	5.5	11.0	---	19.5	17.0	23.0	11.5
30	6.0	3.0	.0	1.5	---	4.5	11.0	---	20.0	19.0	23.0	---
31	6.0	---	.0	1.5	---	4.5	---	---	---	18.0	23.0	---

01596500 SAVAGE RIVER NEAR BARTON, MD

LOCATION.--Lat 39°34'12.2", long 79°06'07.0", Garrett County, Hydrologic Unit 02070002, on right bank 0.9 mi upstream from Bear Pen Run, 1.5 mi downstream from Poplar Lick Run, 5.4 mi northwest of Barton, and 10 mi upstream from mouth.

DRAINAGE AREA.--49.1 mi^2.

PERIOD OF RECORD.--September 1948 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,603.88 ft above sea level.

REMARKS.--Records good except those for estimated daily discharges (ice effect), which are poor. U.S. Army Corps of Engineers satellite collection platform at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 800 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan 30	----	Ice Jam	*4.21	Jun 7	0629	*1,440	4.14

Minimum discharge, 3.6 ft^3/s, Sept. 23, 24.

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	36	6.9	55	e21	177	61	150	31	67	23	10	16
2	29	6.5	49	e21	128	58	136	29	110	32	8.5	13
3	25	6.3	e45	e20	93	54	116	28	86	21	27	10
4	21	6.2	e41	e20	79	53	100	26	74	22	89	12
5	18	6.2	e38	e21	69	50	88	25	63	45	176	11
6	16	6.2	e36	e22	61	42	98	23	103	71	79	8.9
7	15	5.8	e33	e22	55	41	119	21	1010	44	53	7.8
8	12	5.8	e30	e21	53	38	122	19	502	56	37	7.3
9	11	6.4	27	e20	82	38	119	19	236	44	28	6.9
10	11	28	e25	e20	358	35	129	19	140	53	24	6.6
11	11	28	23	e19	278	39	170	17	94	110	21	6.3
12	9.5	24	e23	e19	171	57	236	17	70	68	213	5.7
13	8.5	22	e53	e19	127	346	199	17	63	49	194	5.0
14	8.3	20	e25	e20	123	516	150	16	66	36	100	5.2
15	8.0	18	e31	e20	377	324	126	15	47	28	64	5.2
16	7.8	16	40	e21	338	257	170	14	40	24	46	4.5
17	7.5	16	82	e22	269	296	159	14	34	20	40	4.1
18	21	14	121	e22	184	259	153	18	27	19	30	3.8
19	19	13	110	e29	138	189	131	82	24	17	27	3.8
20	13	13	84	e40	110	144	111	49	21	14	28	4.2
21	11	12	e60	e36	93	260	98	48	20	11	22	4.6
22	9.6	e12	e50	e32	70	427	84	107	22	9.6	17	4.2
23	8.7	e11	e40	e29	70	307	73	269	104	8.9	21	3.8
24	8.3	11	e35	e27	56	254	64	166	59	8.1	20	5.8
25	7.9	12	e30	e25	57	194	55	228	40	7.6	15	14
26	7.9	34	e28	e24	73	152	49	343	30	16	13	8.7
27	7.7	77	e26	e23	65	114	44	225	27	16	16	6.2
28	7.6	74	e25	e22	64	92	43	155	37	9.3	14	5.1
29	7.4	67	e24	e22	---	81	36	113	25	15	20	4.5
30	7.2	64	e23	262	---	134	33	88	22	20	15	4.0
31	6.9	---	e22	303	---	148	---	69	---	13	13	---
TOTAL	397.8	642.3	1334	1244	3818	5060	3361	2310	3263	930.5	1480.5	208.2
MEAN	12.8	21.4	43.0	40.1	136	163	112	74.5	109	30.0	47.8	6.94
MAX	36	77	121	303	377	516	236	343	1010	110	213	16
MIN	6.9	5.8	22	19	53	35	33	14	20	7.6	8.5	3.8
CFSM	.26	.44	.88	.82	2.78	3.32	2.28	1.52	2.22	.61	.97	.14
IN.	.30	.49	1.01	.94	2.89	3.83	2.55	1.75	2.47	.70	1.12	.16

e Estimated

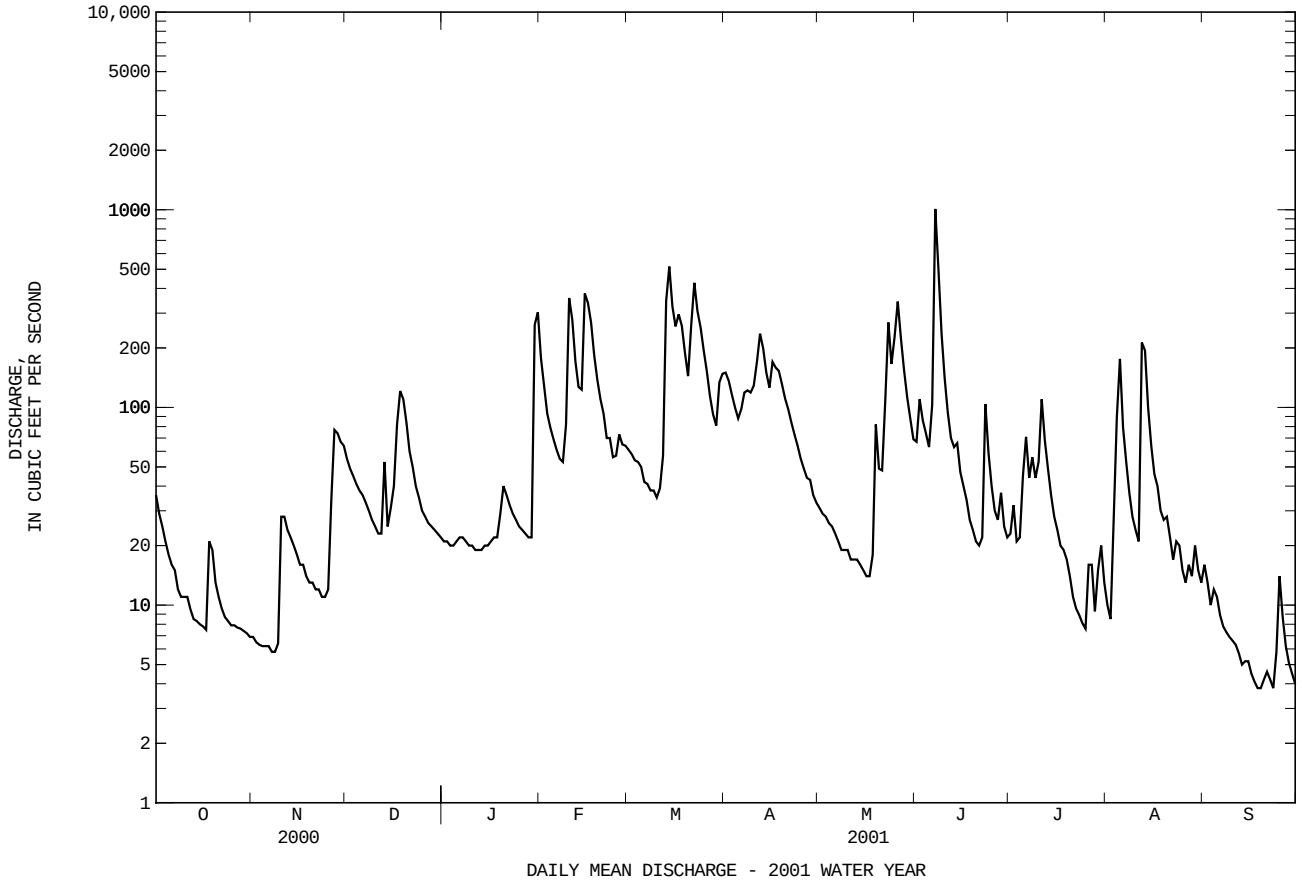
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1948 - 2001, BY WATER YEAR (WY)

MEAN	26.2	51.0	88.3	94.7	129	181	141	93.0	48.0	20.5	18.5	18.6
MAX	157	336	256	251	307	362	343	235	154	111	116	233
(WY)	1955	1986	1973	1952	1956	1994	1993	1996	1981	1989	1956	1996
MIN	1.52	2.29	2.37	13.7	19.4	30.8	33.0	21.8	5.48	2.60	1.57	1.78
(WY)	1964	1999	1999	1977	1954	1990	1968	1991	1965	1999	1999	1991

01596500 SAVAGE RIVER NEAR BARTON, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1948 - 2001	
ANNUAL TOTAL	19569.3		24049.3			
ANNUAL MEAN	53.5		65.9		75.5	
HIGHEST ANNUAL MEAN					138	1996
LOWEST ANNUAL MEAN					34.9	1954
HIGHEST DAILY MEAN	1550	Feb 19	1010	Jun 7	2180	Nov 5 1985
LOWEST DAILY MEAN	3.8	(a)	3.8	(b)	.50	(c)
ANNUAL SEVEN-DAY MINIMUM	5.4	Sep 4	4.1	Sep 17	.63	Aug 29 1966
MAXIMUM PEAK FLOW			1440	Jun 7	(d)7510	Oct 15 1954
MAXIMUM PEAK STAGE			4.21	Jan 30	8.45	Oct 15 1954
INSTANTANEOUS LOW FLOW			3.6	(f)	.40	(g)
ANNUAL RUNOFF (CFSM)	1.09		1.34		1.54	
ANNUAL RUNOFF (INCHES)	14.83		18.22		20.91	
10 PERCENT EXCEEDS	117		168		186	
50 PERCENT EXCEEDS	24		29		33	
90 PERCENT EXCEEDS	7.6		7.7		3.8	

a Sept. 8, 9, 2000.
b Sept. 18, 19, 23.
c Sept. 2, 3, 12, 1966.
d From rating curve extended above 1,600 ft^3/s on basis of slope-area measurement of peak flow.
f Sept. 23, 24.
g Sept. 3, 4, 1966.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01597500 SAVAGE RIVER, BELOW SAVAGE RIVER DAM, NEAR BLOOMINGTON, MD

LOCATION.--Lat 39°30'10", long 79°07'26", Garrett County, Hydrologic Unit 02070002, on left bank 0.7 mi downstream from Savage River Dam, 1.1 mi downstream from Crabtree Creek, 3.2 mi northwest of Bloomington, and 3.7 mi upstream from mouth.

DRAINAGE AREA.--106 mi^2.

PERIOD OF RECORD.--October 1948 to current year.

REVISED RECORDS.--WSP 1432: 1955. WDR MD-DE-96-1: 1996(P).

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,276.40 ft above sea level.

REMARKS.--No estimated daily discharges. Records good. Diversions upstream from station by Baltimore and Ohio Railroad and by cities of Frostburg and Westernport for municipal supply. Flow regulated by Savage River Reservoir beginning December 1950, capacity 20,000 acre-ft. U.S. Army Corps of Engineers satellite collection platform at station. Upper Potomac River Commission gage-height telemeter at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,110 ft^3/s, June 7, gage height, 6.57 ft; minimum discharge, 4.8 ft^3/s, Oct. 11.

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	90	69	67	111	58	151	331	71	133	79	37	94
2	90	69	67	90	58	151	331	60	150	78	37	94
3	90	69	67	79	58	151	228	60	164	77	37	94
4	90	69	67	79	58	151	164	60	165	77	38	94
5	90	69	95	78	78	151	164	60	166	78	123	94
6	90	69	109	79	88	151	165	60	168	77	160	94
7	90	68	109	79	88	151	166	60	2990	77	117	94
8	90	68	109	79	88	151	166	60	1390	78	96	94
9	90	68	109	77	105	127	282	59	607	77	96	94
10	90	69	109	77	120	109	331	58	301	77	96	94
11	77	68	109	77	122	109	401	58	205	106	96	94
12	70	68	109	77	477	109	497	58	164	118	107	62
13	70	68	109	76	671	114	496	58	162	118	162	49
14	70	68	110	76	662	120	479	58	162	119	162	48
15	70	68	109	76	896	120	475	58	109	89	162	48
16	55	68	109	54	1010	344	473	58	118	77	133	48
17	52	68	109	49	776	493	364	58	89	76	120	48
18	72	68	109	53	418	493	322	59	76	78	120	48
19	72	68	111	53	304	388	322	59	76	77	119	48
20	72	68	111	54	302	335	206	59	76	77	60	46
21	72	68	111	54	302	335	160	59	77	77	37	44
22	72	68	111	54	197	440	160	63	79	77	81	44
23	72	68	111	54	150	501	160	68	142	77	118	44
24	71	67	111	54	149	501	160	65	145	77	118	44
25	70	67	111	54	149	422	116	90	93	50	118	44
26	70	67	111	54	150	339	97	439	80	37	118	44
27	70	67	116	54	151	339	97	608	80	36	118	44
28	70	67	111	54	151	336	97	566	80	36	96	44
29	70	67	111	54	---	333	97	332	80	38	94	44
30	70	67	111	55	---	331	97	191	79	37	94	44
31	69	---	111	57	---	331	---	165	---	37	94	---
TOTAL	2356	2040	3229	2071	7836	8277	7604	3837	8406	2289	3164	1919
MEAN	76.0	68.0	104	66.8	280	267	253	124	280	73.8	102	64.0
MAX	90	69	116	111	1010	501	497	608	2990	119	162	94
MIN	52	67	67	49	58	109	97	58	76	36	37	44
(†)	12300	10100	8850	8940	12300	17300	17600	19300	18800	18700	17500	14400

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1951 - 2001, BY WATER YEAR (WY)

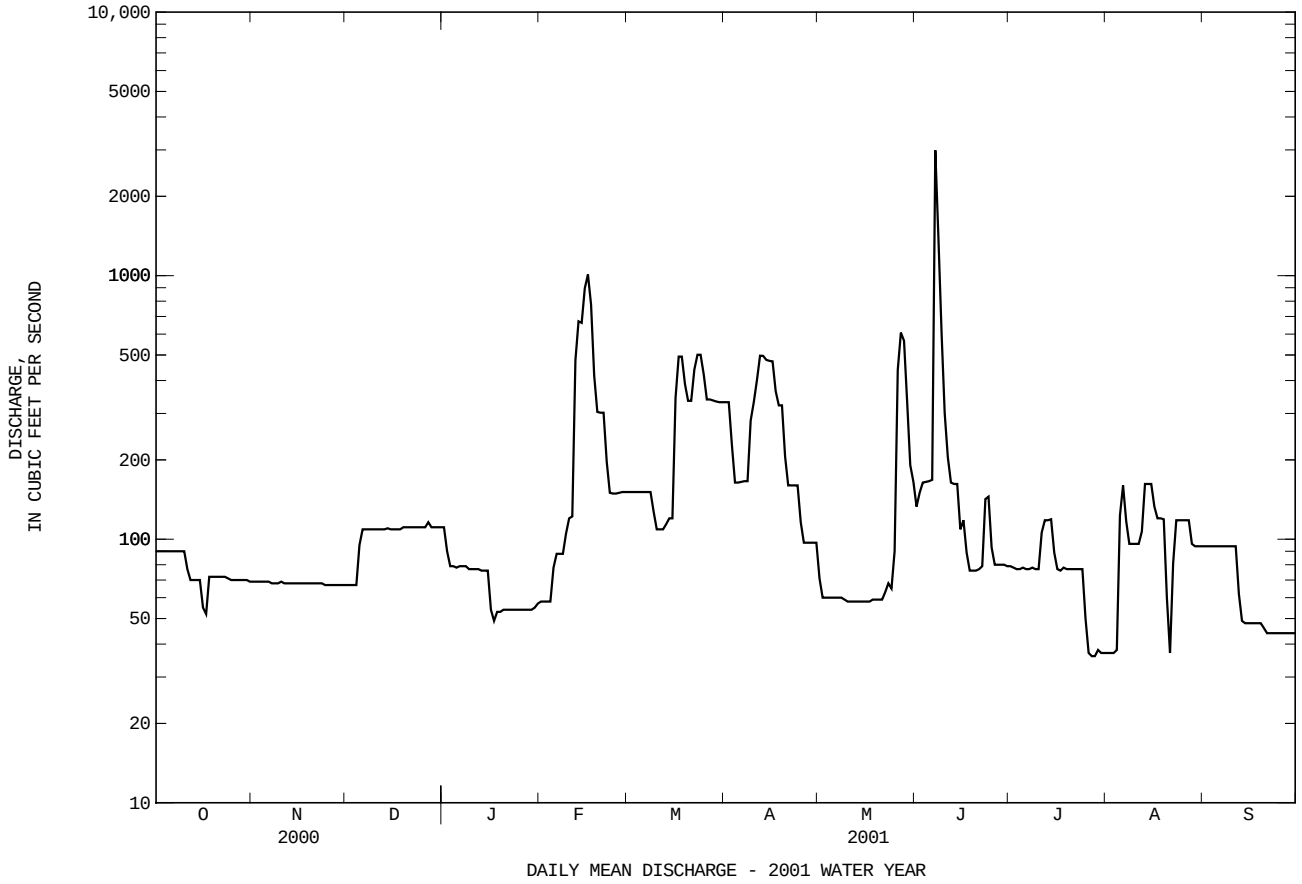
MEAN	105	119	208	213	277	334	223	200	118	69.4	73.0	91.3
MAX	446	641	655	713	633	842	813	563	329	329	262	472
(WY)	1955	1986	1973	1952	1998	1994	1993	1996	1996	1990	1956	1996
MIN	8.14	8.88	12.7	23.7	38.7	105	11.9	18.0	15.8	23.4	6.37	11.7
(WY)	1952	1952	1954	1954	1954	1976	1954	1976	1977	1951	1951	1951

† Monthend contents, in acre-feet, in Savage River Reservoir (contents on Sept. 30, 2000, 15,800 acre-feet).
Records furnished by U.S. Army Corps of Engineers.

01597500 SAVAGE RIVER, BELOW SAVAGE RIVER DAM, NEAR BLOOMINGTON, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1951 - 2001	
ANNUAL TOTAL	41400		53028			
ANNUAL MEAN	113		145		169	
ANNUAL MEAN‡	111		143		169	
HIGHEST ANNUAL MEAN					300	1996
LOWEST ANNUAL MEAN					69.7	1954
HIGHEST DAILY MEAN	1160	Jun 7	2990	Jun 7	4320	Sep 7 1996
LOWEST DAILY MEAN	40	Jan 28	36	(a)	.60	(b)
ANNUAL SEVEN-DAY MINIMUM	40	Jan 28	37	Jul 26	.64	Aug 4 1951
MAXIMUM PEAK FLOW			5110	Jun 7	9190	Sep 7 1996
MAXIMUM PEAK STAGE			6.57	Jun 7	10.09	Sep 7 1996
INSTANTANEOUS LOW FLOW			4.8	Oct 11	.35	Oct 27 1966
ANNUAL RUNOFF (CFSM)	1.07		1.37		1.59	
ANNUAL RUNOFF (CFSM)‡	1.04		1.35		1.59	
ANNUAL RUNOFF (INCHES)	14.53		18.61		21.64	
ANNUAL RUNOFF (INCHES)‡	14.18		18.32		21.65	
10 PERCENT EXCEEDS	218		331		413	
50 PERCENT EXCEEDS	69		90		84	
90 PERCENT EXCEEDS	47		54		24	

‡ Adjusted for change in reservoir contents since December 1950.
a July 27, 28.
b July 27-31, Aug. 5, 6, 9, 10, 1951.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01598500 NORTH BRANCH POTOMAC RIVER AT LUKE, MD

LOCATION.--Lat 39°28'45.1", long 79°03'54.0", Mineral County, W. Va., Hydrologic Unit 02070002, on right bank 0.2 mi downstream from Savage River, 0.5 mi northwest of Luke, and at mile 53.3.

DRAINAGE AREA.--406 mi^2.

PERIOD OF RECORD.--June 1899 to July 1906 (published as "at Piedmont, W. Va."), October 1949 to current year.

REVISED RECORDS.--WSP 192: 1899-1904. WSP 1432: 1905-6, drainage area at former site. WDR WV-97-1: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 944.22 ft above sea level. June 27, 1899, to July 15, 1906, nonrecording gage at bridge 1.1 mi downstream at datum about 35 ft lower.

REMARKS.--No estimated daily discharges. Records good. Flow regulated prior to July 1981 by Stony River Reservoir 45 mi upstream from station, since December 1950 by Savage River Reservoir, 5 mi upstream from station (see station 01597500), and since July 1981 by Jennings Randolph Lake, 9 mi upstream from station. Some regulation at low flow by West Virginia Pulp and Paper Company at site used 1899-1906. U.S. Army Corps of Engineers satellite collection platform at station. Upper Potomac River Commission gage-height telemeter at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,630 ft^3/s, June 7, gage height, 8.00 ft; minimum discharge, 160 ft^3/s, Sept. 27.

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	580	342	359	503	401	649	1680	389	601	345	896	544
2	518	342	356	488	381	649	1430	345	612	398	775	525
3	471	342	353	476	363	644	1130	343	630	446	596	524
4	474	340	350	476	354	654	855	342	623	541	718	353
5	476	338	425	476	399	652	695	341	565	610	796	349
6	476	338	498	476	455	645	939	338	550	612	707	348
7	917	338	494	474	463	641	1710	310	4430	599	589	348
8	940	338	494	445	464	639	1460	281	3000	592	452	348
9	376	340	491	411	544	623	1340	279	1750	589	446	348
10	374	359	489	408	694	596	1920	277	1120	505	446	348
11	360	344	489	407	925	601	3180	275	852	459	443	348
12	349	342	492	407	1680	624	3130	463	612	473	547	292
13	349	342	491	407	2090	757	1940	467	508	471	776	239
14	349	342	503	407	2100	763	1600	268	484	468	628	239
15	349	342	501	407	2830	728	1470	253	389	438	508	239
16	341	342	506	344	3070	1110	1410	256	387	420	472	239
17	327	339	527	283	2700	1630	1260	258	358	416	449	239
18	369	338	525	292	2230	1940	1210	267	336	431	450	239
19	352	338	522	301	1710	1420	1160	279	333	423	451	239
20	349	338	521	314	1220	880	947	269	330	425	396	238
21	349	338	519	306	959	978	874	271	329	422	355	238
22	349	338	519	303	849	1170	822	332	395	419	368	236
23	346	338	513	301	776	1290	651	763	1190	416	388	236
24	345	338	513	304	827	1270	608	1190	615	416	386	233
25	345	340	513	304	927	1320	494	1640	373	375	381	224
26	345	355	509	302	902	1320	460	2450	348	1120	379	220
27	345	360	513	304	711	1230	456	1920	340	2640	379	220
28	345	352	510	301	649	1030	699	1550	336	1860	358	232
29	343	353	508	300	---	1140	695	1070	335	2260	352	232
30	342	363	505	410	---	1780	448	838	337	2490	352	232
31	342	---	503	430	---	1910	---	750	---	1400	364	---
TOTAL	12892	10299	15011	11767	31673	31283	36673	19074	23068	23479	15603	8889
MEAN	416	343	484	380	1131	1009	1222	615	769	757	503	296
MAX	940	363	527	503	3070	1940	3180	2450	4430	2640	896	544
MIN	327	338	350	283	354	596	448	253	329	345	352	220
CFSM	1.02	.85	1.19	.93	2.79	2.49	3.01	1.52	1.89	1.87	1.24	.73
IN.	1.18	.94	1.38	1.08	2.90	2.87	3.36	1.75	2.11	2.15	1.43	.81

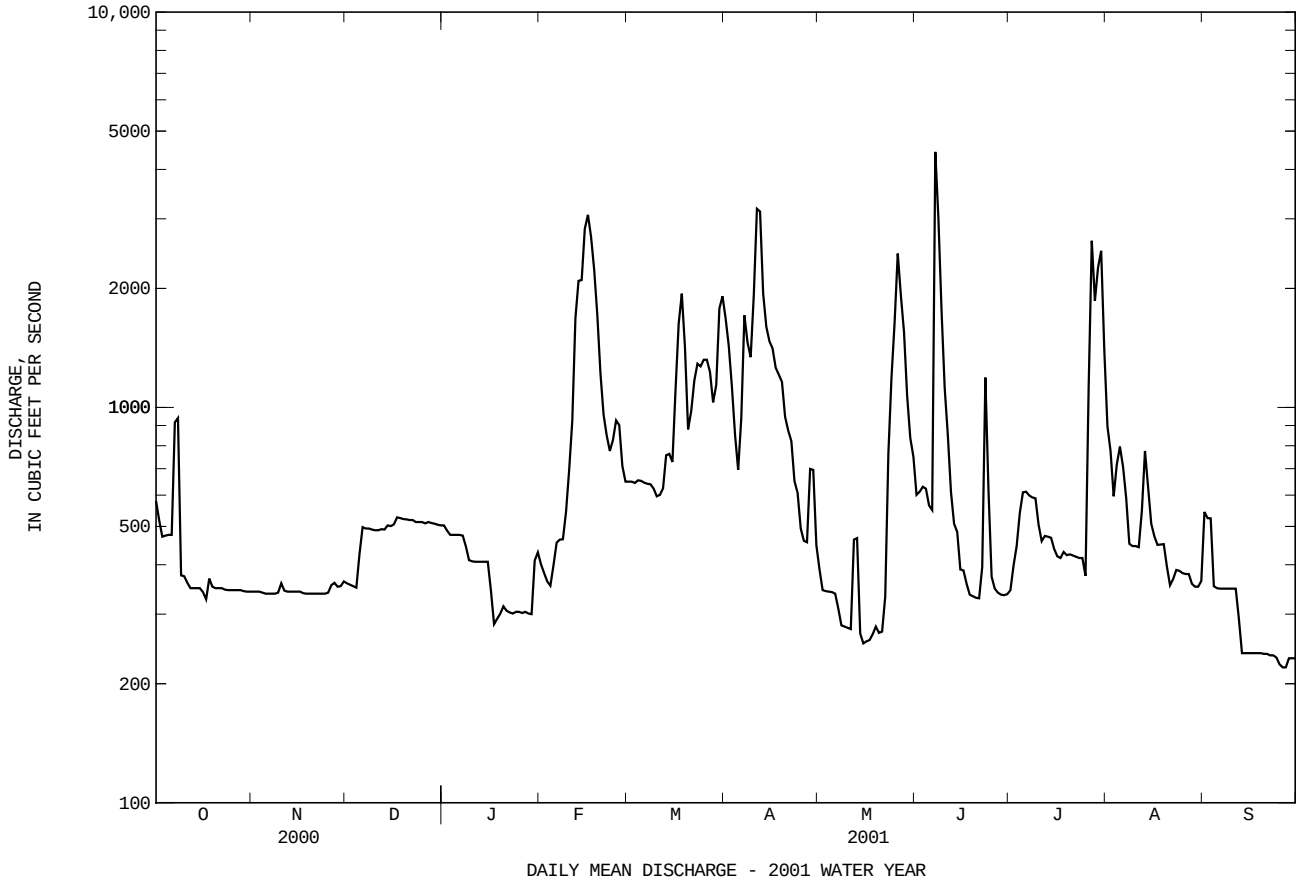
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1899 - 1906, 1950 - 2001, BY WATER YEAR (WY)

MEAN	334	450	806	902	1094	1539	1200	892	535	349	323	286
MAX	1423	2806	2536	2368	2487	3414	3098	2484	1493	1294	1525	1998
(WY)	1955	1986	1973	1996	1994	1963	1993	1996	1981	1990	1996	1996
MIN	27.6	33.5	123	166	99.8	467	278	165	108	91.4	37.0	17.1
(WY)	1905	1905	1999	1977	1905	1988	1995	1982	1969	1953	1904	1904

01598500 NORTH BRANCH POTOMAC RIVER AT LUKE, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1899 - 1906, 1950 - 2001	
ANNUAL TOTAL	196475		239711			
ANNUAL MEAN	537		657		726	
ANNUAL MEAN‡	529		645		728	
HIGHEST ANNUAL MEAN					1342	1996
LOWEST ANNUAL MEAN					412	1969
HIGHEST DAILY MEAN	4300	Feb 21	4430	Jun 7	18400	Aug 18 1955
LOWEST DAILY MEAN	245	Jul 18	220	(a)	6.0	Sep 4 1904
ANNUAL SEVEN-DAY MINIMUM	250	Jul 13	228	Sep 24	11	Aug 29 1904
MAXIMUM PEAK FLOW			6630	Jun 7	(b)39400	Oct 15 1954
MAXIMUM PEAK STAGE			8.00	Jun 7	17.15	Oct 15 1954
INSTANTANEOUS LOW FLOW			160	Sep 27	UNKNOWN	
ANNUAL RUNOFF (CFSM)	1.32		1.62		1.79	
ANNUAL RUNOFF (CFSM)‡	1.30		1.59		1.79	
ANNUAL RUNOFF (INCHES)	18.00		21.96		24.30	
ANNUAL RUNOFF (INCHES)‡	17.70		21.57		24.33	
10 PERCENT EXCEEDS	944		1360		1620	
50 PERCENT EXCEEDS	375		455		409	
90 PERCENT EXCEEDS	278		301		112	

‡ Adjusted for change in reservoir contents since October 1949.
a Sept. 26, 27.
b From rating curve extended above 25,000 ft^3/s on basis of slope-area measurement of peak flow.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01599000 GEORGES CREEK AT FRANKLIN, MD

LOCATION.--Lat 39°29'38.0", long 79°02'40.9", Allegany County, Hydrologic Unit 02070002, on right bank at Franklin, and 1.2 mi upstream from Westernport and mouth.

DRAINAGE AREA.--72.4 mi^2.

PERIOD OF RECORD.--May 1905 to July 1906 (published as "at Westernport"), October 1929 to current year.

REVISED RECORDS.--WSP 726: Drainage area. WSP 1502: 1940. WDR MD-DE-86-1: 1984(M).

GAGE.--Water-stage recorder. Datum of gage is 958.18 ft above sea level. May 4, 1905, to July 15, 1906, nonrecording gage at bridge 0.8 mi downstream at different datum. Oct. 16, 1929, to Oct. 1, 1937, water-stage recorder at site 95 ft downstream at present datum.

REMARKS.--Records good except those for estimated daily discharges (doubtful gage-height record, ice effect), which are poor. Records include about 0.5 ft^3/s of sewage from city of Frostburg, which obtains its water supply from Big Piney Run (Monongahela River basin) and Savage River. A negligible discharge is diverted upstream from station by Frostburg Water Co. for municipal supplies of Eckhart and Welsh Hill. An undetermined amount of water is diverted from the upper third of basin into the Wills Creek basin by the Hoffman drainage tunnel (see station 01601500). National Weather Service gage-height telemeter at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 29, 1924, reached a stage of about 10 ft, from floodmarks, at site 95 ft downstream.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,200 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jun 7	0345	*3,180	*9.23	No other peak greater than base discharge.			

Minimum discharge, 10 ft^3/s, Sept. 20, 23, 24, 30.

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	e45	14	39	20	145	74	164	60	84	53	29	21
2	e32	14	34	18	110	71	150	57	104	57	23	18
3	e28	14	29	18	85	68	135	53	82	43	146	17
4	e25	14	28	17	73	72	122	51	74	49	235	17
5	e23	13	28	18	67	73	110	47	62	67	200	17
6	e22	13	25	18	65	68	131	44	123	75	98	15
7	e21	13	25	18	64	64	137	40	1320	49	70	14
8	e19	13	24	18	63	62	122	37	509	82	54	14
9	e18	15	22	17	88	66	119	38	294	56	44	13
10	e17	52	21	e17	205	62	134	38	203	44	36	13
11	e16	28	21	16	163	66	193	37	154	56	34	13
12	e15	21	22	16	130	90	206	36	122	39	179	12
13	e14	20	21	16	115	354	180	33	117	33	126	11
14	e14	19	25	17	122	359	159	30	154	29	71	12
15	e13	18	28	17	228	265	168	28	95	27	54	12
16	e13	17	27	18	208	246	245	28	90	25	46	11
17	e13	17	53	18	193	239	201	27	84	23	45	11
18	34	16	56	17	149	197	179	27	65	28	36	11
19	23	16	49	26	127	168	159	81	63	26	32	10
20	19	16	39	36	117	147	142	45	56	22	31	11
21	17	15	41	28	104	361	129	57	51	20	27	12
22	17	14	34	e26	86	416	116	136	97	19	23	11
23	16	14	34	e24	85	300	105	205	271	18	27	10
24	16	14	32	23	75	262	96	125	122	18	27	12
25	16	15	29	22	87	218	86	223	85	17	22	21
26	15	38	27	21	110	186	79	244	70	33	21	14
27	15	57	e26	21	84	154	75	199	67	26	22	12
28	15	40	e24	20	78	136	72	202	87	19	20	11
29	14	36	e22	19	---	128	68	145	59	73	21	11
30	14	46	e21	176	---	232	64	116	53	55	19	10
31	14	---	20	207	---	182	---	93	---	35	19	---
TOTAL	593	652	926	963	3226	5386	4046	2582	4817	1216	1837	397
MEAN	19.1	21.7	29.9	31.1	115	174	135	83.3	161	39.2	59.3	13.2
MAX	45	57	56	207	228	416	245	244	1320	82	235	21
MIN	13	13	20	16	63	62	64	27	51	17	19	10
CFSM	.26	.30	.41	.43	1.59	2.40	1.86	1.15	2.22	.54	.82	.18
IN.	.30	.34	.48	.49	1.66	2.77	2.08	1.33	2.48	.62	.94	.20

e Estimated

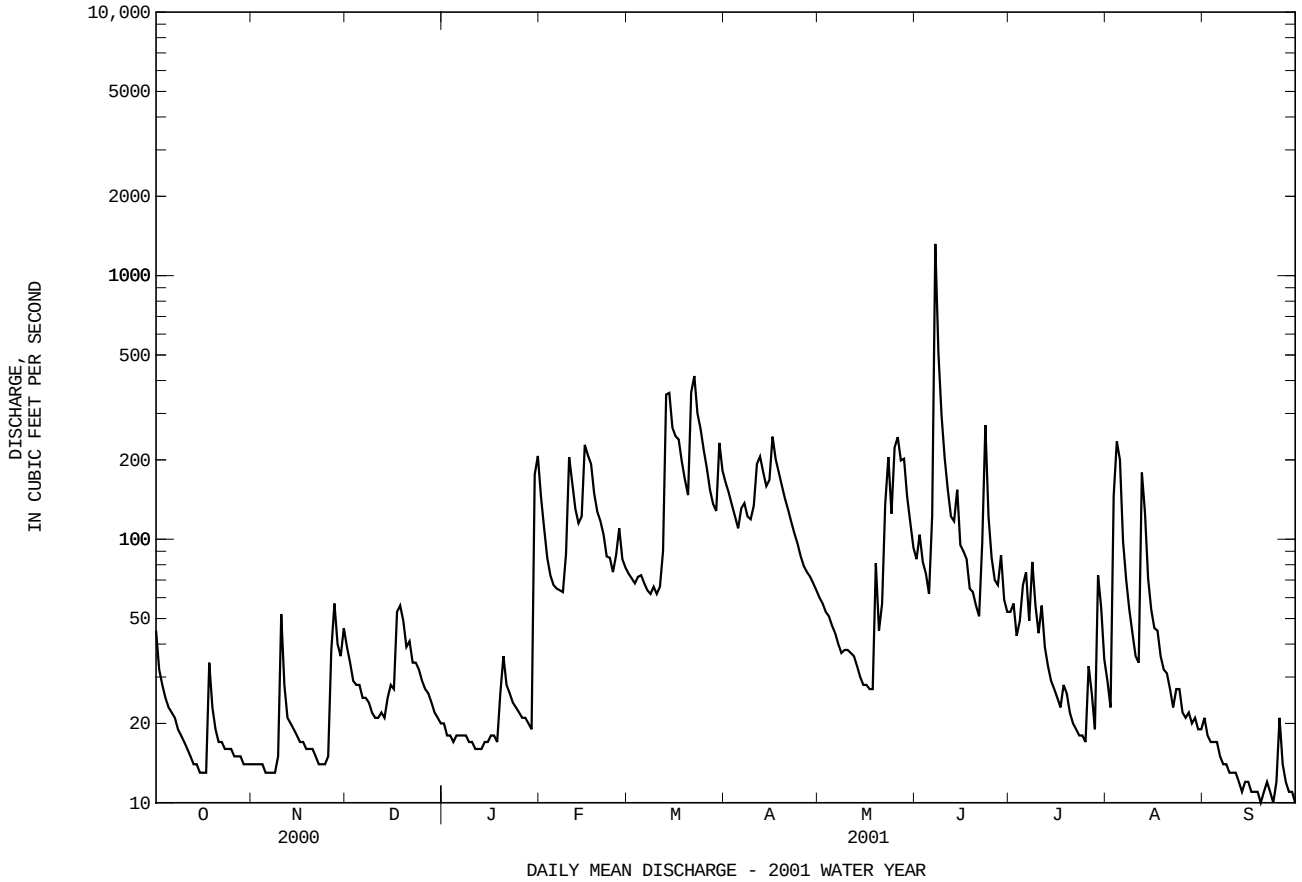
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1905 - 1906, 1930 - 2001, BY WATER YEAR (WY)

MEAN	31.9	42.5	73.4	92.3	127	206	172	120	59.5	30.7	23.9	22.8
MAX	270	355	314	371	355	682	420	294	171	185	120	277
(WY)	1943	1986	1973	1937	1998	1936	1993	1989	1995	1989	1955	1996
MIN	1.78	3.40	3.42	10.9	8.77	43.2	40.0	27.7	12.5	5.19	3.97	2.65
(WY)	1931	1931	1944	1940	1954	1990	1954	1934	1969	1930	1930	1932

01599000 GEORGES CREEK AT FRANKLIN, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1905 - 1906, 1930 - 2001	
ANNUAL TOTAL	21174.0		26641			
ANNUAL MEAN	57.9		73.0		82.5	
HIGHEST ANNUAL MEAN					136	1996
LOWEST ANNUAL MEAN					30.7	1969
HIGHEST DAILY MEAN	1130	Feb 19	1320	Jun 7	4130	Mar 17 1936
LOWEST DAILY MEAN	8.6	Feb 7	10	(a)	1.6	(b)
ANNUAL SEVEN-DAY MINIMUM	9.0	Feb 2	11	Sep 17	1.6	Sep 29 1930
MAXIMUM PEAK FLOW			3180	Jun 7	(c)8500	Mar 17 1936
MAXIMUM PEAK STAGE			9.23	Jun 7	(d)9.60	Mar 17 1936
INSTANTANEOUS LOW FLOW			10	(f)	1.6	(g)
ANNUAL RUNOFF (CFSM)	.80		1.01		1.14	
ANNUAL RUNOFF (INCHES)	10.88		13.69		15.48	
10 PERCENT EXCEEDS	129		179		200	
50 PERCENT EXCEEDS	27		37		38	
90 PERCENT EXCEEDS	13		14		7.2	

a Sept. 19, 23, 30.
b Sept. 29, 30, 1930.
c From rating curve extended above 2,000 ft^3/s on basis of slope-area measurement of peak flow.
d At site then in use.
f Sept. 20, 23, 24, 30.
f Sept. 29 to Oct. 13, 1930.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01601500 WILLS CREEK NEAR CUMBERLAND, MD

LOCATION.--Lat 39°40'10.6", long 78°47'16.9", Allegany County, Hydrologic Unit 02070002, on right bank at downstream side of railway bridge, 0.15 mi downstream from Braddock Run, 2.0 mi upstream from Cumberland, and mouth.

DRAINAGE AREA.--247 mi^2.

PERIOD OF RECORD.--May 1905 to July 1906 (published as "at Cumberland"), October 1929 to current year.

REVISED RECORDS.--WSP 726: Drainage area. WSP 1432: 1906, 1930(M), 1933-34(M), 1936-37, 1945(M).

GAGE.--Water-stage recorder. Datum of gage is 640.89 ft above sea level. May 6, 1905, to July 14, 1906, nonrecording gage at highway bridge 700 ft upstream at different datum. Oct. 18, 1929, to Mar. 17, 1936, water-stage recorder, and Apr. 1, 1936, to Mar. 19, 1937, nonrecording gage at site 200 ft upstream at present datum.

REMARKS.--Records good except those for estimated daily discharges (missing record), which are fair. Records include drainage from numerous active and abandoned coal mines. An undetermined amount of water is diverted into the basin from Georges Creek basin by Hoffman drainage tunnel. Miscellaneous measurements of discharge from the Hoffman drainage tunnel have been made in the water years 1944, 1964-65, 1967-82, and 1984 by the U.S. Geological Survey, and in the water years 1958 and 1959 by the Maryland Geological Survey. Slight diurnal fluctuation at low flow caused by quarry upstream. U.S. Army Corps of Engineers satellite collection platform at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Apr 16	0500	*3,290	*6.40	No peak greater than base discharge.			

Minimum discharge, 23 ft^3/s, Sept. 18-20, 23, 24.

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	68	32	116	61	580	212	503	190	e160	109	47	34
2	60	32	100	58	447	214	492	181	e170	123	43	37
3	53	32	79	59	345	206	439	172	e165	99	72	35
4	49	32	62	54	294	214	397	166	e200	104	247	33
5	46	32	80	52	259	230	358	153	187	114	245	31
6	44	32	68	51	244	198	352	139	276	120	125	29
7	42	31	63	52	237	197	383	129	831	95	82	28
8	38	31	66	53	230	205	369	121	e620	e180	61	28
9	37	35	65	50	264	219	432	126	e500	e125	52	26
10	37	104	51	53	747	208	582	114	e380	97	47	26
11	36	101	58	46	783	214	936	106	e300	99	45	25
12	35	68	58	48	543	267	1200	100	236	79	82	25
13	34	57	44	47	428	700	1020	96	210	68	76	24
14	32	52	58	47	384	1380	766	88	191	61	60	25
15	32	50	72	47	723	1090	739	84	158	57	48	24
16	31	48	75	48	945	926	2620	82	193	54	45	24
17	31	46	e110	51	923	889	1870	82	241	52	47	24
18	64	45	169	52	681	827	1220	99	159	51	46	23
19	87	43	165	73	510	684	889	124	127	51	44	23
20	56	41	151	137	427	555	684	110	109	50	47	23
21	47	39	126	122	365	728	562	140	116	46	54	23
22	43	37	137	95	288	1070	477	249	382	43	44	23
23	40	34	105	92	275	944	414	326	660	41	46	23
24	38	35	101	98	241	833	367	207	391	39	44	32
25	37	38	93	93	230	698	321	279	266	37	42	37
26	37	73	89	78	291	584	286	365	204	46	42	34
27	36	173	74	84	239	486	261	298	169	41	43	31
28	36	146	75	76	224	417	241	282	147	38	38	28
29	35	134	78	71	---	380	218	238	126	e60	36	27
30	35	131	68	260	---	561	202	208	111	52	35	25
31	34	---	70	670	---	505	---	180	---	49	35	---
TOTAL	1330	1784	2726	2878	12147	16841	19600	5234	7985	2280	2020	830
MEAN	42.9	59.5	87.9	92.8	434	543	653	169	266	73.5	65.2	27.7
MAX	87	173	169	670	945	1380	2620	365	831	180	247	37
MIN	31	31	44	46	224	197	202	82	109	37	35	23
CFSM	.17	.24	.36	.38	1.76	2.20	2.65	.68	1.08	.30	.26	.11
IN.	.20	.27	.41	.43	1.83	2.54	2.95	.79	1.20	.34	.30	.13

e Estimated

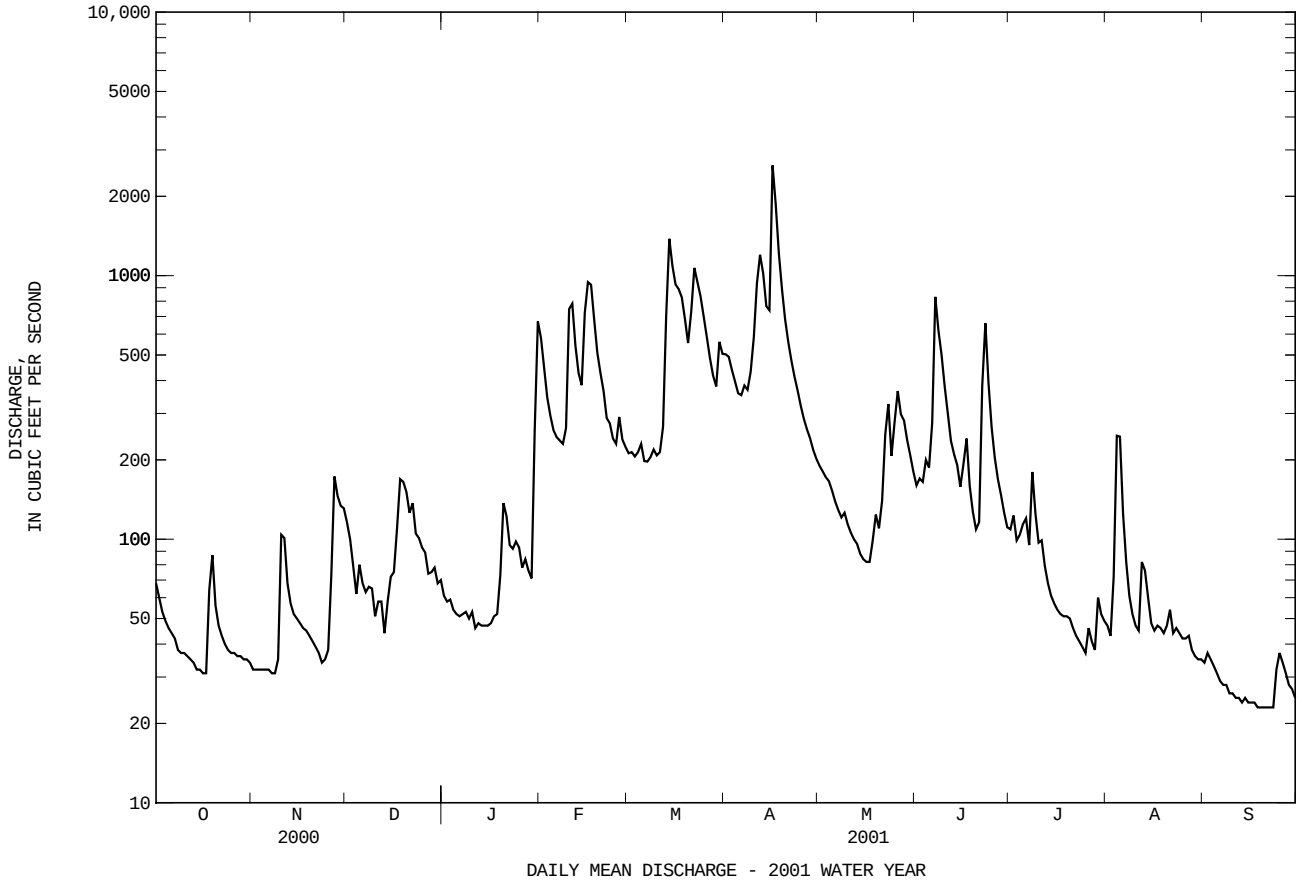
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1905 - 1906, 1930 - 2001, BY WATER YEAR (WY)

MEAN	134	202	324	388	515	807	676	452	231	113	88.9	84.4
MAX	1130	1520	1113	1481	1255	2410	1910	1109	967	641	674	1083
(WY)	1943	1986	1973	1996	1971	1936	1993	1989	1972	1989	1984	1996
MIN	11.9	15.5	18.4	54.2	65.8	182	184	101	51.1	24.3	16.6	12.1
(WY)	1931	1931	1944	1940	1954	1990	1968	1934	1965	1965	1930	1932

01601500 WILLS CREEK NEAR CUMBERLAND, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1905 - 1906, 1930 - 2001	
ANNUAL TOTAL	77057		75655			
ANNUAL MEAN	211		207		334	
HIGHEST ANNUAL MEAN					599	1996
LOWEST ANNUAL MEAN					122	1954
HIGHEST DAILY MEAN	3680	Feb 19	2620	Apr 16	19200	Jan 19 1996
LOWEST DAILY MEAN	27	Sep 9	23	(a)	10	(b)
ANNUAL SEVEN-DAY MINIMUM	32	Nov 2	23	Sep 17	10	Oct 8 1930
MAXIMUM PEAK FLOW			3290	Apr 16	(c)45900	Jan 19 1996
MAXIMUM PEAK STAGE			6.40	Apr 16	(d)23.11	Jan 19 1996
INSTANTANEOUS LOW FLOW			23	(f)	9.0	Oct 14 1930
ANNUAL RUNOFF (CFSM)	.85		.84		1.35	
ANNUAL RUNOFF (INCHES)	11.61		11.39		18.37	
10 PERCENT EXCEEDS	542		561		793	
50 PERCENT EXCEEDS	86		93		147	
90 PERCENT EXCEEDS	35		33		29	

a Sept. 18-23.
b Oct. 8-10, 1930.
c From rating curve extended above 11,000 ft^3/s on basis of slope-area measurement at gage heights of 13.45 and 20.2 ft.
d From floodmarks at present site.
f Sept. 18-20, 23, 24.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01603000 NORTH BRANCH POTOMAC RIVER NEAR CUMBERLAND, MD

LOCATION.--Lat 39°37'18.5", long 78°46'24.3", Allegany County, Hydrologic Unit 02070002, on left bank at downstream side of Wiley Ford Bridge, 2.0 mi south of Cumberland, 2.1 mi downstream from Wills Creek, and at mile 19.6.

DRAINAGE AREA.--877 mi^2.

PERIOD OF RECORD.--May 1929 to current year. Gage-height records collected at various sites about 2.0 mi upstream from September 1901 to December 1932 and thereafter at present site, are contained in reports of the National Weather Service.

REVISED RECORDS.--WSP 726: Drainage area. WSP 781: 1932(M). WDR WV-97-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 585.22 ft above sea level. Prior to June 18, 1929, nonrecording gage at same site and datum.

REMARKS.--Records good. Prior to July 1981 some regulation at low flow by Stony River Reservoir, 79 mi upstream from station. Low-flow regulation since December 1950 by Savage River Reservoir, 39 mi upstream from station (see station 01597500). Flow regulated by Jennings Randolph Lake, 43 mi upstream from station since July 1981. Prior to July 1957, small amount of inflow from industrial wastes and sewage from city of Cumberland from water diverted from Evitts Creek, mouth of which is downstream from station. Diversion to Chesapeake and Ohio Canal prior to 1935. National Weather Service gage height telemeter at station. U.S. Army Corps of Engineers satellite collection platform at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known, 29.2 ft, June 1, 1889, discharge, about 89,000 ft^3/s. Flood of Mar. 29, 1924, reached a stage of 28.4 ft, discharge, about 82,000 ft^3/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 10,900 ft^3/s, June 7, gage height, 10.63 ft; minimum discharge, 284 ft^3/s, Sept. 28.

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	712	420	536	575	1670	1010	2850	716	957	559	1300	508
2	693	416	509	561	1280	989	2560	614	989	614	1170	611
3	582	416	484	525	997	968	2060	591	969	655	833	600
4	556	416	462	520	841	998	1790	576	916	688	1470	579
5	543	416	478	519	758	1120	1360	552	856	847	1690	435
6	540	416	577	525	804	1040	1360	537	922	924	1180	424
7	598	416	592	525	811	986	2320	514	7370	817	1000	422
8	1290	416	597	529	793	999	2440	468	5680	985	695	422
9	815	425	593	493	826	1080	2070	473	3580	926	623	416
10	615	550	564	468	1740	1010	2640	457	2220	808	601	416
11	531	520	564	469	1960	983	4220	443	1810	666	590	416
12	456	464	564	469	2250	1080	6080	439	1400	657	912	415
13	416	449	545	469	3040	1990	4000	600	1030	622	1390	348
14	416	442	609	469	2970	3120	3200	580	1040	607	1100	333
15	416	436	631	469	3770	2600	2830	416	847	594	717	330
16	416	435	636	473	4860	2380	5120	406	765	541	663	330
17	401	429	e700	411	4420	3080	4080	412	850	533	615	330
18	469	429	889	395	3720	3300	3140	433	652	559	589	330
19	489	429	815	429	2780	3150	2670	543	590	574	577	330
20	452	425	759	561	2180	1890	2220	485	554	544	571	330
21	440	419	691	530	1620	2390	1910	511	558	526	492	330
22	435	411	706	458	1430	3560	1780	826	1100	518	461	330
23	431	409	624	456	1200	3210	1480	1520	2570	511	502	324
24	429	409	638	465	1150	2880	1320	1610	1930	506	503	354
25	429	417	626	461	1250	2630	1110	2110	1030	504	487	375
26	429	471	598	438	1510	2430	921	3950	773	515	484	339
27	429	586	625	448	1240	2230	865	3230	682	2800	481	325
28	427	552	603	440	1030	1880	914	2650	661	2560	468	317
29	422	523	581	430	---	1770	1040	1930	611	2250	435	330
30	422	548	584	846	---	2720	923	1380	577	3360	435	330
31	422	---	587	2020	---	3190	---	1150	---	2350	437	---
TOTAL	16121	13510	18967	16846	52900	62663	71273	31122	44489	30120	23471	11679
MEAN	520	450	612	543	1889	2021	2376	1004	1483	972	757	389
MAX	1290	586	889	2020	4860	3560	6080	3950	7370	3360	1690	611
MIN	401	409	462	395	758	968	865	406	554	504	435	317
CFSM	.59	.51	.70	.62	2.15	2.30	2.71	1.14	1.69	1.11	.86	.44
IN.	.68	.57	.80	.71	2.24	2.66	3.02	1.32	1.89	1.28	1.00	.50

e Estimated

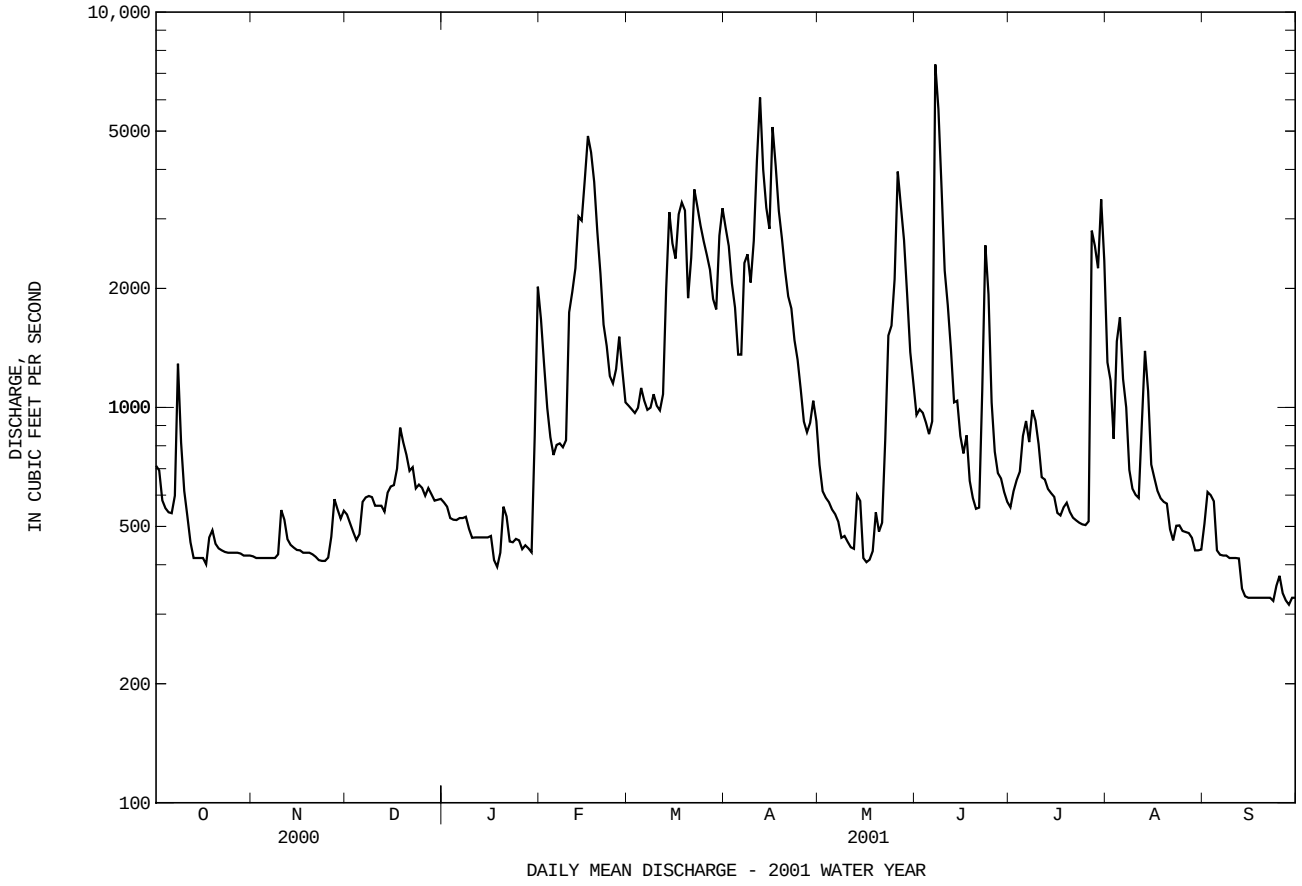
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1929 - 2001, BY WATER YEAR (WY)

MEAN	593	776	1287	1562	2012	2889	2352	1716	911	533	467	442
MAX	3791	5350	4652	5115	4410	8763	5866	4070	2375	2270	2152	4117
(WY)	1943	1986	1973	1937	1998	1936	1993	1996	1981	1989	1996	1996
MIN	28.9	44.8	134	269	393	789	705	374	209	89.7	57.7	40.3
(WY)	1931	1931	1931	1940	1934	1990	1995	1934	1965	1930	1930	1932

01603000 NORTH BRANCH POTOMAC RIVER NEAR CUMBERLAND, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1929 - 2001	
ANNUAL TOTAL	344276		393161			
ANNUAL MEAN	941		1077		1293	
ANNUAL MEAN‡	932		1065		1293	
HIGHEST ANNUAL MEAN					2390	1996
LOWEST ANNUAL MEAN					632	1969
HIGHEST DAILY MEAN	8940	Feb 19	7370	Jun 7	47400	Mar 18 1936
LOWEST DAILY MEAN	320	Sep 9	317	Sep 28	13	(a)
ANNUAL SEVEN-DAY MINIMUM	342	Jul 13	329	Sep 17	16	Sep 20 1932
MAXIMUM PEAK FLOW			10900	Jun 7	(b)88200	Mar 17 1936
MAXIMUM PEAK STAGE			10.63	Jun 7	29.10	Mar 17 1936
INSTANTANEOUS LOW FLOW			284	Sep 28	12	Sep 22 1932
ANNUAL RUNOFF (CFSM)	1.07		1.23		1.47	
ANNUAL RUNOFF (CFSM)‡	1.06		1.21		1.47	
ANNUAL RUNOFF (INCHES)	14.60		16.68		20.03	
ANNUAL RUNOFF (INCHES)‡	14.45		16.50		20.03	
10 PERCENT EXCEEDS	1990		2610		2980	
50 PERCENT EXCEEDS	549		601		678	
90 PERCENT EXCEEDS	383		416		174	

‡ Adjusted for change in reservoir contents since October 1949.
a Sept. 21-24, 1932.
b From rating curve extended above 33,000 ft^3/s on basis of slope-area measurement of peak flow.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01604500 PATTERSON CREEK NEAR HEADSVILLE, WV

LOCATION.--Lat 39°26'35", long 78°49'20", Mineral County, Hydrologic Unit 02070002, on right bank 100 ft downstream from Hazel Run, 1.0 mi downstream from Cabin Run, 4.0 mi northeast of Headsville, 8.0 mi east of Keyser, and at mile 13.0.

DRAINAGE AREA.--211 mi^2.

PERIOD OF RECORD.--August 1938 to current year.

REVISED RECORDS.--WSP 951: 1939-40. WDR WV-97-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 624.90 ft above sea level (levels by U.S. Army Corps of Engineers). Prior to Oct. 11, 1946, nonrecording gage on bridge 1.0 mi upstream at datum 6.14 ft higher. Oct. 11-23, 1946, nonrecording gage at present site and datum.

REMARKS.--Records good except those for estimated daily discharges (doubtful-or-no gage-height record, ice effect), which are poor. The flow from 115 mi^2 upstream from station is partially controlled, but not diverted, by several floodwater detention reservoirs with a total combined detention capacity of 19,887 acre-ft. National Weather Service gage-height telemeter at station.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,250 ft^3/s, Mar. 21, gage height, 6.58 ft; minimum discharge, 6.3 ft^3/s, Sept. 19, 20.

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	56	12	54	e34	483	144	408	62	110	27	205	16
2	46	12	54	e32	427	128	356	57	96	29	154	14
3	39	13	48	31	340	115	298	54	82	27	117	13
4	32	14	39	e29	278	116	252	50	71	29	134	12
5	29	15	41	e28	231	180	221	49	64	31	144	11
6	26	14	34	e28	187	233	212	49	65	30	133	10
7	23	14	34	e27	149	233	228	47	504	26	115	9.4
8	21	15	30	e26	122	249	210	44	350	32	86	8.9
9	19	17	28	e25	104	268	199	43	222	30	67	8.4
10	18	44	26	24	98	254	216	41	157	25	53	8.0
11	16	37	26	e23	95	225	406	38	117	24	43	8.0
12	e14	38	24	e23	90	196	679	36	93	22	117	7.7
13	e13	33	20	e22	86	217	535	34	78	20	138	7.4
14	e12	29	41	e22	82	231	461	32	67	18	84	7.0
15	e11	26	100	e24	84	216	432	31	59	17	57	7.0
16	e10	25	152	e26	92	217	442	30	61	15	43	7.0
17	e13	23	334	e28	122	230	385	32	52	13	35	7.0
18	17	22	363	31	123	225	328	35	41	19	29	7.0
19	19	21	313	44	112	207	273	46	34	28	26	6.6
20	19	20	252	135	105	189	235	92	30	30	23	6.5
21	19	19	224	175	98	576	206	96	28	26	22	9.1
22	19	18	132	150	89	956	179	126	36	21	20	10
23	18	17	101	119	86	642	155	224	102	18	19	10
24	17	17	77	103	85	528	135	189	93	16	19	12
25	16	17	61	100	97	473	117	172	69	14	18	21
26	16	26	57	104	172	427	101	185	52	23	18	20
27	15	31	e49	91	181	358	90	243	44	46	19	18
28	14	34	e45	87	163	299	83	213	37	42	22	15
29	13	38	e42	77	---	257	74	180	32	113	18	14
30	13	50	e38	388	---	438	67	151	29	382	16	12
31	13	---	e36	582	---	456	---	128	---	268	16	---
TOTAL	626	711	2875	2638	4381	9483	7983	2809	2875	1461	2010	323.0
MEAN	20.2	23.7	92.7	85.1	156	306	266	90.6	95.8	47.1	64.8	10.8
MAX	56	50	363	582	483	956	679	243	504	382	205	21
MIN	10	12	20	22	82	115	67	30	28	13	16	6.5
CFSM	.10	.11	.44	.40	.74	1.45	1.26	.43	.45	.22	.31	.05
IN.	.11	.13	.51	.47	.77	1.67	1.41	.50	.51	.26	.35	.06

e Estimated

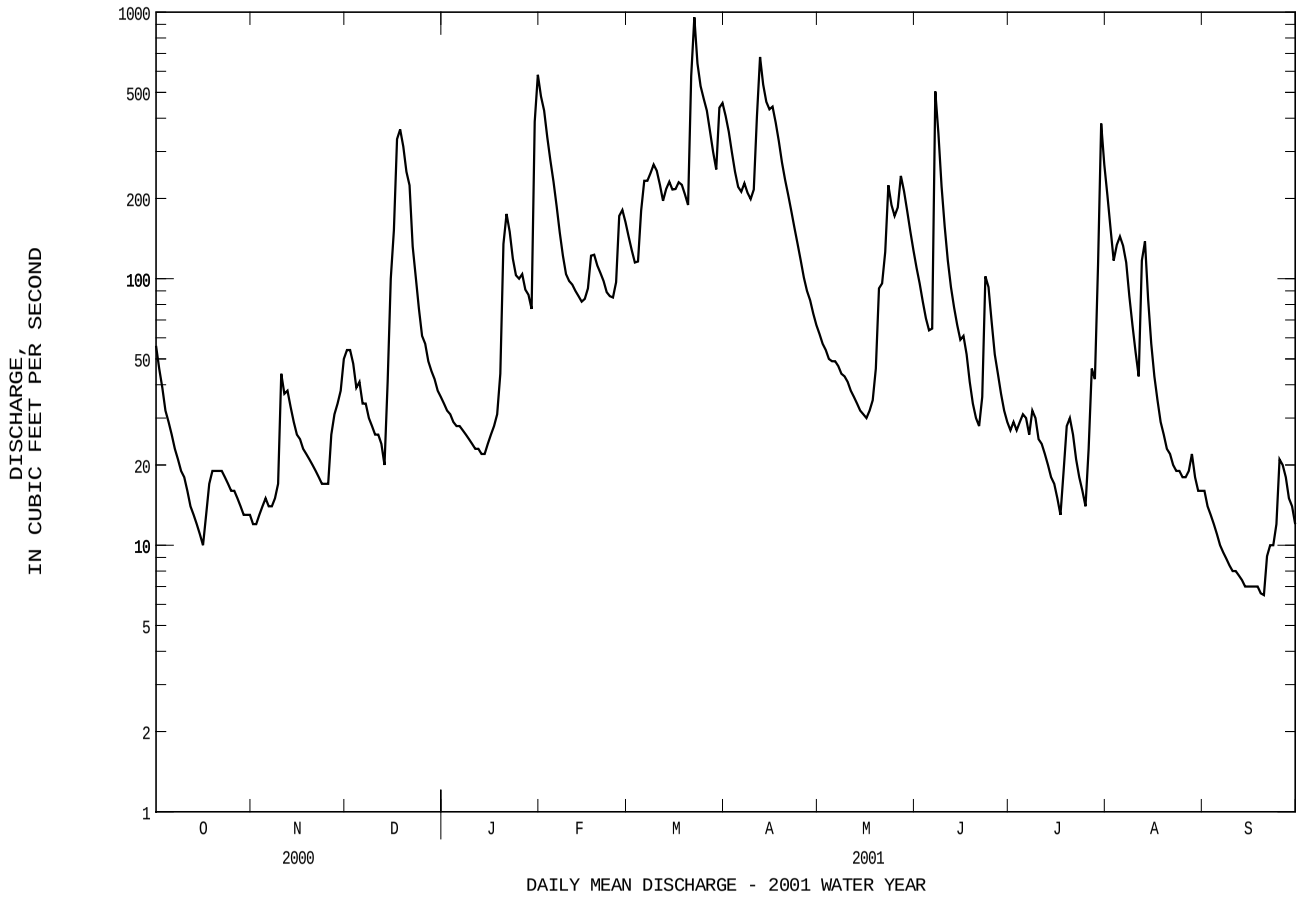
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 2001, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	72.3	82.7	161	208	308	429	313	220	106	58.5	58.2	48.6
MAX	745	901	825	908	893	1346	1085	763	379	415	586	767
(WY)	1943	1986	1973	1996	1994	1963	1993	1988	1940	1989	1996	1996
MIN	2.24	4.39	9.70	22.0	30.8	58.3	54.1	21.2	8.38	3.14	5.20	2.80
(WY)	1992	1992	1944	1981	1954	1990	1969	1969	1999	1999	1966	1991

01604500 PATTERSON CREEK NEAR HEADSVILLE, WV--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1938 - 2001	
ANNUAL TOTAL	32874.2		38175.0			
ANNUAL MEAN	89.8		105		171	
HIGHEST ANNUAL MEAN					387	1996
LOWEST ANNUAL MEAN					35.1	1969
HIGHEST DAILY MEAN	1750	Feb 19	956	Mar 22	11100	Oct 15 1942
LOWEST DAILY MEAN	9.4	Sep 24	6.5	Sep 20	.48	Aug 23 1999
ANNUAL SEVEN-DAY MINIMUM	11	Sep 18	6.9	Sep 14	.87	Aug 17 1999
MAXIMUM PEAK FLOW			1250	Mar 21	(a)16000	Aug 19 1955
MAXIMUM PEAK STAGE			6.58	Mar 21	12.20	Aug 19 1955
INSTANTANEOUS LOW FLOW			6.3	(b)	.45	(c)
ANNUAL RUNOFF (CFSM)	.43		.50		.81	
ANNUAL RUNOFF (INCHES)	5.80		6.73		11.04	
10 PERCENT EXCEEDS	220		261		440	
50 PERCENT EXCEEDS	40		44		59	
90 PERCENT EXCEEDS	15		14		10	

a From rating curve extended above 4,900 ft^3/s on basis of contracted-opening measurement of peak flow.
b Sept. 19, 20.
c Aug. 23, 24, 1999.



01606500 SOUTH BRANCH POTOMAC RIVER NEAR PETERSBURG, WV

LOCATION.--Lat 38°59'28", long 79°10'34", Grant County, Hydrologic Unit 02070001, on right bank 1.1 mi downstream from North Fork South Branch Potomac River, 2.6 mi west of Petersburg, and at mile 74.7.

DRAINAGE AREA.--676 mi^2.

PERIOD OF RECORD.--June 1928 to current year.

REVISED RECORDS.--WSP 951: 1939-41. WSP 1141: 1932, 1933(M), 1936-38. WDR WV-97-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 968.34 ft above sea level. Prior to Dec. 4, 1928, nonrecording gage and June 1928 to Nov. 5, 1985, water-stage recorder at site 1,125 ft downstream at datum 6.34 ft lower. Nov. 5, 1985, to June 22, 1994, and October 23, 1996 to current year, water-stage recorder at present site and datum. June 22, 1994, to October 23, 1996, water-stage recorder at site 325 ft downstream at datum 2.34 ft lower.

REMARKS.--Records good except those for estimated daily discharges (ice effect), which are poor. West Virginia Office of Emergency Services gage-height telemeter at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1877 reached a stage of 21.2 ft, from floodmarks at previous site and datum, about 59,000 ft^3/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 6,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
May 23	0800	*6,140	*6.90	No other peak greater than base discharge.			

MInimum discharge, 88 ft^3/s, Nov. 7, 8, 23, 24.

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	478	95	263	e190	1730	650	2820	353	617	242	980	282
2	399	94	237	e180	1210	606	2580	342	571	247	754	232
3	339	94	219	e175	938	562	2120	335	521	246	578	199
4	292	93	181	e165	791	530	1830	320	470	209	528	179
5	255	92	179	e160	694	537	1640	309	809	191	586	162
6	228	90	186	e155	609	503	1870	301	1010	179	532	149
7	208	91	171	e150	539	465	2760	282	1080	160	417	139
8	191	92	175	e140	479	441	2100	265	1170	178	347	132
9	177	96	169	e135	468	449	1660	264	963	278	302	124
10	167	128	157	e135	651	448	1590	253	786	240	270	120
11	159	269	147	e130	663	438	3050	241	646	257	258	124
12	152	197	145	e125	561	493	3080	231	538	317	610	140
13	144	164	149	e125	503	743	2280	222	480	235	723	119
14	138	152	233	e125	474	1080	1710	214	491	198	526	112
15	133	142	677	e135	998	1030	1360	206	431	177	385	111
16	130	134	634	e150	1510	1080	1180	214	391	161	316	107
17	127	130	1930	e165	2070	1640	1030	246	357	150	274	103
18	128	125	2230	183	1720	1840	906	289	318	230	241	99
19	124	121	1380	217	1230	1480	813	1090	278	293	239	97
20	122	117	957	1220	993	1220	753	2150	252	243	249	98
21	118	114	698	1110	832	1490	710	1690	233	202	222	101
22	114	110	603	739	729	1620	668	1880	324	174	198	98
23	111	102	454	622	647	1820	617	5050	569	156	194	97
24	109	100	e360	552	580	2220	567	2840	404	142	217	104
25	109	109	e310	486	577	2140	528	1860	304	139	223	128
26	108	138	270	390	783	1730	486	1840	256	285	190	139
27	107	310	e245	402	739	1340	451	1480	229	488	176	129
28	105	304	e230	336	696	1100	424	1250	227	346	167	110
29	101	267	e220	320	---	1020	394	1010	220	1380	161	102
30	99	285	e205	1860	---	2030	368	842	231	3360	206	97
31	96	---	e195	2820	---	3010	---	712	---	1480	320	---
TOTAL	5268	4355	14209	13797	24414	35755	42345	28581	15176	12583	11389	3933
MEAN	170	145	458	445	872	1153	1412	922	506	406	367	131
MAX	478	310	2230	2820	2070	3010	3080	5050	1170	3360	980	282
MIN	96	90	145	125	468	438	368	206	220	139	161	97
CFSM	.25	.21	.68	.66	1.29	1.71	2.09	1.36	.75	.60	.54	.19
IN.	.29	.24	.78	.76	1.34	1.97	2.33	1.57	.84	.69	.63	.22

e EStimated

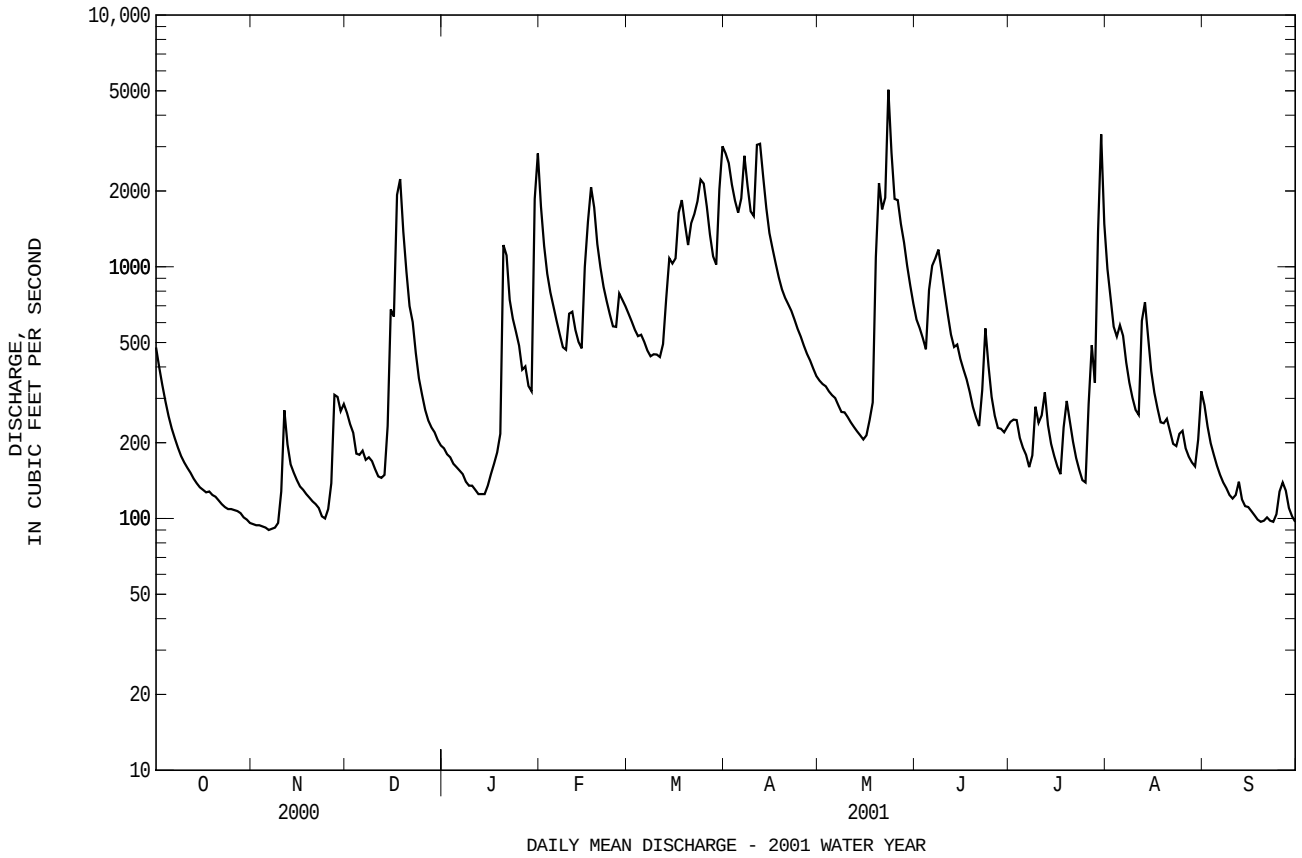
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1928 - 2001, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	321	483	703	934	1167	1642	1259	999	530	292	288	257
MAX	1863	5569	2511	3386	3519	4090	2888	3546	2175	1479	1601	2968
(WY)	1977	1986	1973	1996	1994	1936	1993	1996	1949	1949	1996	1996
MIN	49.3	62.7	95.1	143	212	543	398	233	125	63.9	54.1	52.3
(WY)	1931	1931	1966	1981	1934	1990	1986	1930	1999	1999	1930	1930

01606500 SOUTH BRANCH POTOMAC RIVER NEAR PETERSBURG, WV--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1928 - 2001	
ANNUAL TOTAL	187860		211805			
ANNUAL MEAN	513		580		737	
HIGHEST ANNUAL MEAN					1619	1996
LOWEST ANNUAL MEAN					365	1969
HIGHEST DAILY MEAN	10500	Feb 19	5050	May 23	77000	Nov 5 1985
LOWEST DAILY MEAN	90	Nov 6	90	Nov 6	43	(a)
ANNUAL SEVEN-DAY MINIMUM	92	Nov 2	92	Nov 2	44	Sep 6 1966
MAXIMUM PEAK FLOW			6140	May 23	(b)130000	Nov 5 1985
MAXIMUM PEAK STAGE			6.90	May 23	(c)25.40	Nov 5 1985
INSTANTANEOUS LOW FLOW			88	(d)	42	(f)
ANNUAL RUNOFF (CFSM)	.76		.86		1.09	
ANNUAL RUNOFF (INCHES)	10.34		11.66		14.82	
10 PERCENT EXCEEDS	1140		1630		1660	
50 PERCENT EXCEEDS	269		285		376	
90 PERCENT EXCEEDS	117		113		96	

a Sept. 27-29, 1959, Sept. 11, 12, 1966.
b From rating curve extended above 16,700 ft^3/s on basis of slope-area measurement of peak flow.
c From floodmarks at former site at gage datum 962.00 ft.
d Nov. 7, 8, 23, 24.
f Sept. 28, 29, 1959, Sept. 11, 12, 1966.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01608000 SOUTH FORK SOUTH BRANCH POTOMAC RIVER NEAR MOOREFIELD, WV

LOCATION.--Lat 39°00'44", long 78°57'23", Hardy County, Hydrologic Unit 02070001, on right bank 0.2 mi downstream from Stony Creek, 3.5 mi south of Moorefield, and at mile 5.3.

DRAINAGE AREA.--277 mi^2.

PERIOD OF RECORD.--June 1928 to September 1935, August 1938 to current year.

REVISED RECORDS.--WSP 1141: 1933(M), 1940, 1942-43, 1945, 1948(M). WSP 1302:l93l(M), l935(M). WDR WV-97-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 861.51 ft above sea level (U.S. Army Corps of Engineers datum). Prior to Mar. 11, 1940, nonrecording gage at Harness Ford Bridge 2.0 mi upstream at datum about 31 ft higher.

REMARKS.--Records good except those for estimated discharges (ice effect), which are poor. The flow from 92.7 mi^2 upstream from station is partially controlled, but not diverted, by several floodwater detention reservoirs with a total combined detention capacity of 19,870 acre-ft. National Weather Service gage-height telemeter at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,730 ft^3/s, Apr. 11, gage height, 4.98 ft; minimum discharge, 24 ft^3/s Sept. 22-24.

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	172	34	51	e53	662	162	1150	90	188	114	372	136
2	142	33	58	e50	455	157	947	85	166	119	250	109
3	121	32	53	e47	345	152	781	83	149	105	188	89
4	104	32	51	e44	275	146	607	79	132	96	156	76
5	92	31	46	e42	235	148	489	77	154	91	136	67
6	82	30	44	e40	207	142	430	74	289	82	122	58
7	74	30	43	e38	180	133	431	71	296	72	108	52
8	67	30	41	e36	158	125	404	67	312	84	90	46
9	60	32	41	e34	141	120	367	64	269	107	79	41
10	55	57	39	e33	131	116	458	62	225	94	70	37
11	50	52	37	e32	124	111	1840	59	187	88	68	37
12	47	55	36	e31	116	106	1550	55	156	75	449	37
13	44	48	35	e30	108	105	922	51	136	65	1100	39
14	43	46	53	e30	103	107	628	47	165	56	466	35
15	40	42	65	e31	102	110	474	45	153	49	265	31
16	38	39	90	e32	104	136	391	46	126	42	190	29
17	37	37	134	e34	136	209	326	49	111	39	149	29
18	39	35	443	37	202	262	275	53	96	50	120	28
19	38	35	357	49	213	269	238	173	83	54	107	27
20	37	34	271	217	203	253	209	231	75	47	114	26
21	37	32	209	427	189	690	188	235	73	46	93	26
22	37	31	173	323	174	1400	173	286	206	38	81	25
23	38	29	144	251	161	1460	159	1250	1040	32	74	24
24	36	27	e125	220	149	1300	146	929	701	29	77	26
25	37	28	e109	197	146	1130	135	533	377	51	70	32
26	37	39	e96	169	155	859	126	641	257	122	64	29
27	36	46	e85	150	163	623	117	790	195	185	61	29
28	37	52	e76	141	164	461	110	543	161	145	63	30
29	37	50	e69	122	---	379	103	382	137	582	57	29
30	35	52	e63	362	---	1180	95	287	126	1730	62	27
31	36	---	e58	982	---	1610	---	226	---	698	159	---
TOTAL	1785	1150	3195	4284	5501	14161	14269	7663	6741	5187	5460	1306
MEAN	57.6	38.3	103	138	196	457	476	247	225	167	176	43.5
MAX	172	57	443	982	662	1610	1840	1250	1040	1730	1100	136
MIN	35	27	35	30	102	105	95	45	73	29	57	24
CFSM	.21	.14	.37	.50	.71	1.65	1.72	.89	.81	.60	.64	.16
IN.	.24	.15	.43	.58	.74	1.90	1.92	1.03	.91	.70	.73	.18

e Estimated

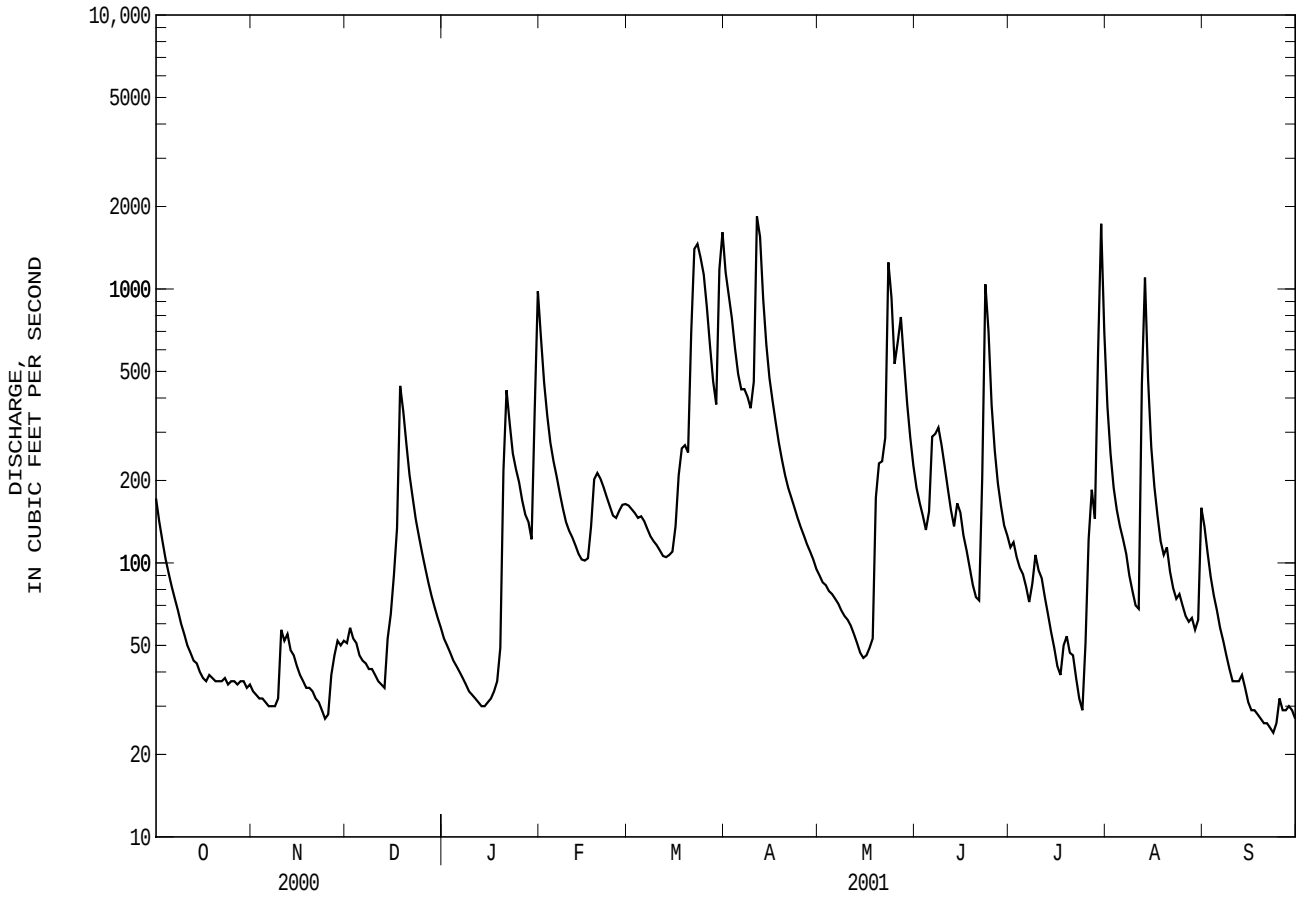
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1928 - 1935, 1938 - 2001, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	126	175	205	268	336	495	402	323	168	84.9	108	94.4
MAX	776	2951	879	1267	1591	1327	1787	946	1071	510	801	1340
(WY)	1977	1986	1974	1996	1998	1993	1987	1988	1949	1949	1955	1996
MIN	12.8	14.0	17.4	21.3	25.2	72.2	91.7	51.2	28.1	9.48	10.4	10.2
(WY)	1992	1999	1966	1981	1934	1981	1981	1930	1977	1999	1965	1968

01608000 SOUTH FORK SOUTH BRANCH POTOMAC RIVER NEAR MOOREFIELD, WV--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1928 - 1935, 1938 - 2001	
ANNUAL TOTAL	56758		70702			
ANNUAL MEAN	155		194		231	
HIGHEST ANNUAL MEAN					480	1996
LOWEST ANNUAL MEAN					85.9	1934
HIGHEST DAILY MEAN	1410	Feb 20	1840	Apr 11	28000	Nov 5 1985
LOWEST DAILY MEAN	27	Nov 24	24	Sep 23	4.4	Sep 10 1966
ANNUAL SEVEN-DAY MINIMUM	31	Nov 19	26	Sep 18	5.3	Sep 5 1966
MAXIMUM PEAK FLOW			2730	Apr 11	(a)110000	Nov 5 1985
MAXIMUM PEAK STAGE			4.98	Apr 11	(b)19.99	Nov 5 1985
INSTANTANEOUS LOW FLOW			24	(c)	3.1	Aug 13 1999
ANNUAL RUNOFF (CFSM)	.56		.70		.84	
ANNUAL RUNOFF (INCHES)	7.62		9.49		11.35	
10 PERCENT EXCEEDS	314		456		510	
50 PERCENT EXCEEDS	90		96		96	
90 PERCENT EXCEEDS	37		33		21	

a From rating curve extended above 39,000 ft^3/s on basis of slope-area measurement of peak flow.
b From floodmarks.
c Sept. 22-24.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01608500 SOUTH BRANCH POTOMAC RIVER NEAR SPRINGFIELD, WV

LOCATION.--Lat 39°26'49", long 78°39'16", Hampshire County, Hydrologic Unit 02070001, on left bank at highway bridge, 2.0 mi east of Springfield, and at mile 13.5.

DRAINAGE AREA.--1,486 mi^2.

PERIOD OF RECORD.--June 1894 to February 1896 (fragmentary), June 1899 to February 1902, August 1903 to July 1906, August 1928 to current year.

REVISED RECORDS.--WSP 1552: 1903-06, 1929-30(M), 1932-33(M), 1935(M), 1937-40(M), 1942-43(M), 1945(M). WDR WV-97-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 562.02 ft above sea level. June 1894 to February 1896, nonrecording gage at Baltimore & Ohio Railroad bridge 11.2 mi upstream at different datum. June 26, 1899, to Feb. 2, 1902, nonrecording gage at bridge 10.0 mi upstream at different datum. Aug. 28, 1903, to July 14, 1906, nonrecording gage at present site at different datum. Aug. 8, to Sept. 24, 1928, nonrecording gage at present site and datum.

REMARKS.--Records good except those for estimated daily discharges (ice effect), which are poor. National Weather Service gage-height telemeter and U.S. Army Corps of Engineers satellite telemeter at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in November 1877 reached a stage of about 34 ft, from floodmarks, discharge, 140,000 ft^3/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 10,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 22	0330	10,800	9.70	Apr 12	0100	*12,000	*10.34

Minimum discharge, 146 ft^3/s, Sept. 22-24.

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	955	174	488	e390	4400	1200	5430	666	1160	525	2380	511
2	791	173	479	e370	2950	1130	4560	638	1030	562	1710	543
3	675	173	442	e350	2190	1060	3870	613	959	535	1310	445
4	588	172	404	e330	1720	1020	3230	593	883	544	1080	385
5	517	170	356	e310	1470	1120	2770	572	832	495	1080	329
6	460	170	318	e290	1290	1220	2550	553	1310	451	1100	301
7	412	169	320	e270	1140	1140	3300	533	2020	429	1000	274
8	371	168	309	e260	1020	1060	3370	506	1940	414	778	250
9	335	172	300	e250	925	1010	2750	485	1740	436	652	227
10	305	230	296	e240	890	976	2600	474	1440	509	568	212
11	284	266	281	e230	1040	938	4870	457	1190	504	508	198
12	266	338	260	e220	1040	892	9060	433	1010	470	585	192
13	250	385	247	e210	929	935	5460	415	882	543	2520	192
14	239	310	291	e200	868	1230	3790	395	809	448	2040	206
15	229	274	502	e220	841	1520	2940	380	831	381	1240	189
16	220	256	1090	e250	1460	1560	2650	368	776	335	900	178
17	215	237	1600	e290	2020	1870	2220	376	771	296	728	171
18	230	227	3370	e350	2520	2590	1890	414	666	301	612	165
19	220	217	2890	447	2100	2470	1640	551	593	516	533	157
20	210	211	2020	1050	1730	2090	1460	2420	527	608	726	165
21	200	202	1490	e2600	1480	3420	1340	2560	522	481	712	175
22	197	197	1150	e1800	1300	8540	1240	2270	495	399	535	149
23	194	192	937	e1400	1170	5780	1150	5310	1740	338	460	149
24	191	189	754	e1150	1090	4930	1060	5990	2280	289	429	161
25	188	184	693	e1000	1040	4590	982	3510	1330	261	439	195
26	188	209	e620	e900	1190	3810	918	2760	921	253	425	229
27	189	260	e570	816	1370	3000	853	3180	732	430	429	214
28	188	360	e520	769	1280	2370	788	2570	618	827	368	206
29	186	498	e470	699	---	1990	741	2040	579	989	327	197
30	182	478	e440	1480	---	3060	702	1660	550	6760	298	176
31	179	---	e410	6290	---	5980	---	1380	---	4280	312	---
TOTAL	9854	7261	24317	25431	42463	74501	80184	45072	31136	24609	26784	7141
MEAN	318	242	784	820	1517	2403	2673	1454	1038	794	864	238
MAX	955	498	3370	6290	4400	8540	9060	5990	2280	6760	2520	543
MIN	179	168	247	200	841	892	702	368	495	253	298	149
CFSM	.21	.16	.53	.55	1.02	1.62	1.80	.98	.70	.53	.58	.16
IN.	.25	.18	.61	.64	1.06	1.87	2.01	1.13	.78	.62	.67	.18

e Estimated

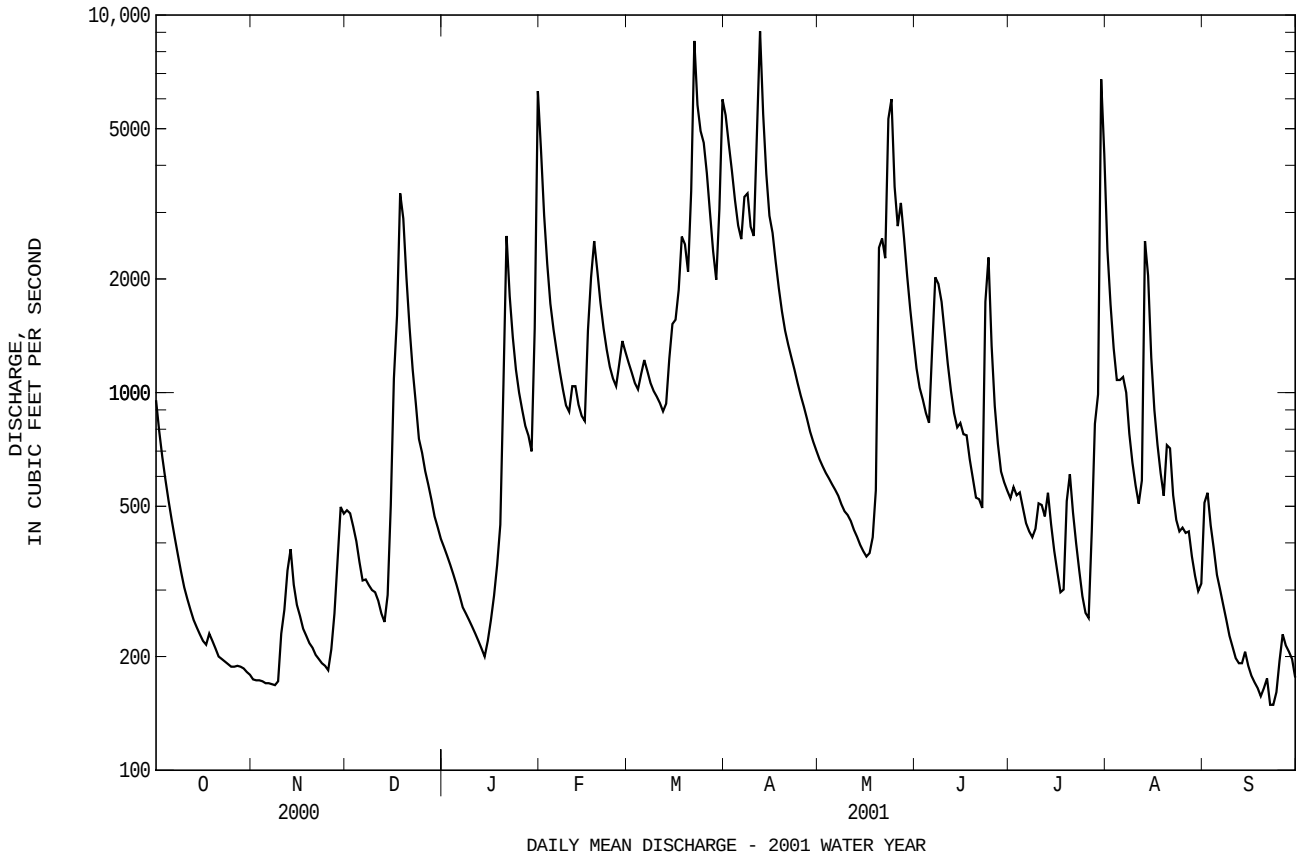
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1899 - 1906, 1928 - 2001, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	614	849	1227	1640	2057	3016	2351	1804	1016	526	545	467
MAX	4629	12850	5000	6928	6474	10490	6421	5785	5231	2638	3923	6538
(WY)	1977	1986	1973	1996	1998	1936	1987	1996	1949	1949	1955	1996
MIN	79.4	82.2	147	271	362	791	829	366	217	86.7	73.5	76.6
(WY)	1931	1905	1966	1981	1934	1981	1976	1977	1999	1999	1930	1930

01608500 SOUTH BRANCH POTOMAC RIVER NEAR SPRINGFIELD, WV--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1899 - 1906, 1928 - 2001	
ANNUAL TOTAL	323375		398753			
ANNUAL MEAN	884		1092		1339	
HIGHEST ANNUAL MEAN					2975	1996
LOWEST ANNUAL MEAN					566	1969
HIGHEST DAILY MEAN	11700	Feb 20	9060	Apr 12	145000	Nov 5 1985
LOWEST DAILY MEAN	166	Jul 11	149	(a)	52	(b)
ANNUAL SEVEN-DAY MINIMUM	171	Nov 3	160	Sep 18	54	Sep 7 1966
MAXIMUM PEAK FLOW			12000	Apr 12	(c)240000	Nov 5 1985
MAXIMUM PEAK STAGE			10.34	Apr 12	(d)44.22	Nov 5 1985
INSTANTANEOUS LOW FLOW			146	(f)	29	(g)
ANNUAL RUNOFF (CFSM)	.59		.74		.90	
ANNUAL RUNOFF (INCHES)	8.10		9.98		12.24	
10 PERCENT EXCEEDS	1940		2600		3010	
50 PERCENT EXCEEDS	502		570		648	
90 PERCENT EXCEEDS	219		197		154	

a Sept. 22, 23.
b Sept. 11, 12, 1966.
c From rating curve extended above 145,000 ft^3/s on basis of slope-area measurement of peak flow.
d From floodmarks.
f Sept. 22-24.
g Jan. 28, 1956 (result of freeze-up), July 30, 1966 (result of temporary dam).



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01610000 POTOMAC RIVER AT PAW PAW, WV

LOCATION.--Lat 39°32'20.0", long 78°27'23.0", Allegany County, Md., Hydrologic Unit 02070003, on left bank 250 ft upstream from bridge on Maryland State Highway 51 at Paw Paw, 3.3 mi downstream from Little Cacapon River, and at mile 277.

DRAINAGE AREA.--3,129 mi^2.

PERIOD OF RECORD.--October 1938 to current year.

REVISED RECORDS.--WDR WV-97-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 487.88 ft above sea level. Prior to Mar. 25, 1939, nonrecording gage at bridge 250 ft downstream at same datum.

REMARKS.--Records good except those for estimated daily discharges (ice effect), which are poor. Low flow affected by Stony River Reservoir prior to July 1981, since December 1950 by Savage River Reservoir (see station 01597500), and since July 1981 by Jennings Randolph Lake. National Weather Service gage-height telemeter at station. U.S. Army Corps of Engineers satellite collection platform at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known, 54.0 ft on Mar. 18, 1936, discharge, 240,000 ft^3/s, from rating curve extended above 85,000 ft^3/s on basis of slope-area measurement of peak flow at site 5.0 mi upstream at Okonoko, WV.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 20,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 22	0830	*20,000	*15.42	No peak greater than base discharge.			

Minimum discharge, 484 ft^3/s, Sept. 23, 24.

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	2040	680	1320	e1300	8940	2890	10300	1800	2680	1190	4570	934
2	1810	675	1290	e1250	6400	2750	8840	1680	2420	1250	3280	1270
3	1590	689	1210	e1200	4830	2620	7590	1560	2350	1240	2630	1150
4	1390	683	1100	e1170	3840	2550	6390	1490	2180	1290	2390	1080
5	1280	669	1080	e1120	3310	2960	5390	1440	2020	1380	2860	890
6	1200	663	1060	e1090	2960	3190	4830	1390	2160	1500	2640	807
7	1130	659	1130	e1040	2740	3030	5850	1310	11000	1410	2350	767
8	1420	656	1150	e1000	2510	3020	6990	1230	11000	1440	1870	740
9	1550	663	1120	e980	2320	3130	5890	1160	7190	1540	1480	716
10	940	1020	1090	e970	2570	3050	5980	1140	4760	1430	1340	698
11	888	1210	1070	e960	3440	2850	7830	1090	3690	1390	1230	681
12	861	1020	1050	e950	3480	2750	17600	1040	2960	1220	1430	660
13	822	1030	994	e930	4030	3240	12300	1150	2410	1200	3510	639
14	804	970	1100	e920	4100	5020	9180	1140	2100	1170	3860	544
15	785	901	1340	e910	4290	5350	7330	947	2000	1070	2540	540
16	775	862	2060	e900	6180	4810	10200	894	1870	990	1850	517
17	770	837	3370	e890	7160	5620	9480	884	1940	919	1590	505
18	814	812	4940	e880	7150	6560	7340	925	1660	896	1360	499
19	921	794	4820	1000	5920	6800	6080	1190	1410	960	1230	494
20	878	778	3680	1940	4830	5250	5170	2500	1260	1250	1190	492
21	815	765	2990	3430	3880	6000	4400	3640	1210	1130	1470	511
22	786	734	2600	3420	3330	17400	3970	3440	1400	1010	1150	508
23	768	729	2180	2750	2920	12200	3580	6570	3190	937	1060	487
24	749	717	1850	2450	2790	10100	3170	9060	5410	880	1040	507
25	731	725	1820	2260	2690	9120	2860	6450	3190	838	993	689
26	724	832	e2000	2040	3140	8000	2520	7080	2180	832	974	669
27	721	1020	e2100	1910	3400	6700	2300	7230	1740	1930	1000	607
28	718	1150	e1800	1740	3100	5560	2160	6270	1490	3470	984	555
29	701	1230	e1600	1660	---	4770	2240	5030	1390	2710	896	532
30	688	1310	e1500	2620	---	6620	2110	3820	1280	8500	846	532
31	683	---	e1400	10200	---	10800	---	3130	---	8320	826	---
TOTAL	30752	25483	57814	55880	116250	174710	189870	87680	91540	55292	56439	20220
MEAN	992	849	1865	1803	4152	5636	6329	2828	3051	1784	1821	674
MAX	2040	1310	4940	10200	8940	17400	17600	9060	11000	8500	4570	1270
MIN	683	656	994	880	2320	2550	2110	884	1210	832	826	487
CFSM	.32	.27	.60	.58	1.33	1.80	2.02	.90	.98	.57	.58	.22
IN.	.37	.30	.69	.66	1.38	2.08	2.26	1.04	1.09	.66	.67	.24

e Estimated

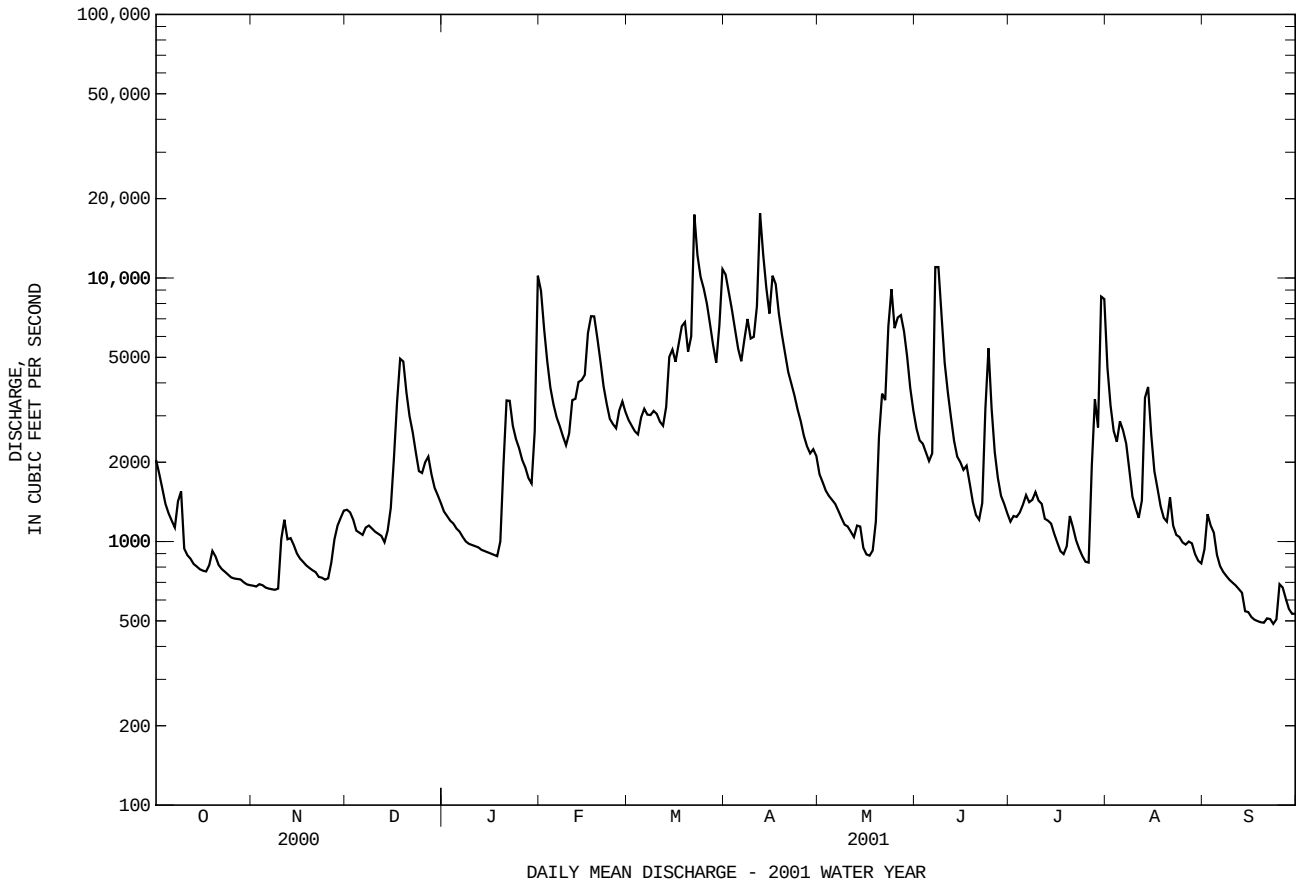
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 2001, BY WATER YEAR (WY)

MEAN	1502	2015	3278	3982	5356	7485	5977	4442	2548	1352	1273	1147
MAX	9709	17180	12300	13040	14040	17440	15620	11210	7612	5071	6775	12080
(WY)	1977	1986	1973	1996	1998	1994	1993	1996	1972	1949	1996	1996
MIN	261	327	388	679	1116	2043	1882	1074	544	303	278	252
(WY)	1952	1966	1966	1981	1954	1990	1995	1941	1965	1966	1944	1959

01610000 POTOMAC RIVER AT PAW PAW, WV--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1939 - 2001	
ANNUAL TOTAL	834480		961930			
ANNUAL MEAN	2280		2635		3353	
HIGHEST ANNUAL MEAN					6433	1996
LOWEST ANNUAL MEAN					1499	1969
HIGHEST DAILY MEAN	23900	Feb 20	17600	Apr 12	125000	Nov 6 1985
LOWEST DAILY MEAN	633	Jul 10	487	Sep 23	172	(a)
ANNUAL SEVEN-DAY MINIMUM	669	Nov 3	499	Sep 17	179	Sep 7 1966
MAXIMUM PEAK FLOW			20000	Mar 22	(b)235000	Nov 5 1985
MAXIMUM PEAK STAGE			15.42	Mar 22	53.58	Nov 5 1985
INSTANTANEOUS LOW FLOW			484	(c)	164	(d)
ANNUAL RUNOFF (CFSM)	.73		.84		1.07	
ANNUAL RUNOFF (INCHES)	9.92		11.44		14.56	
10 PERCENT EXCEEDS	4760		6420		7630	
50 PERCENT EXCEEDS	1280		1440		1790	
90 PERCENT EXCEEDS	765		720		447	

a Sept. 10, 12, 13, 1966.
b From rating curve extended above 85,000 ft^3/s on basis of slope-area measurement of peak flow at site 5.0 mi upstream at Okonoko, WV.
c Sept. 23, 24.
d Sept. 10, 11, 1966.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01610155 SIDELING HILL CREEK NEAR BELLEGROVE, MD

LOCATION.--Lat 39°38'58.3", long 78°20'38.9", Washington County, Hydrologic Unit 02070003, on left bank at downstream side of bridge on Zeigler Road, 1.2 mi upstream from mouth, and 4.0 mi south of Bellegrove.

DRAINAGE AREA.--102 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1967 to September 1977, April 1999 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 440.41 ft above sea level.

REMARKS.--Water-discharge records good above 1.0 ft^3/s and poor below except those for estimated daily discharges (missing record), which are poor.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,100 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 22	0315	*1,460	*4.53	No other peak greater than base discharge.			

Minimum discharge, 0.06 ft^3/s, Sept. 24.

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	7.5	1.7	19	e12	321	59	263	38	15	7.1	2.7	2.2
2	5.9	1.7	17	e11	246	58	202	36	15	6.1	2.2	1.9
3	4.7	1.8	13	e10	247	56	152	33	19	5.4	1.8	1.9
4	3.6	1.8	10	e9.8	167	56	124	30	18	5.0	1.7	1.7
5	2.8	1.8	12	e9.2	107	81	102	29	15	6.1	1.7	2.0
6	2.3	1.8	9.3	e8.8	93	75	95	25	14	12	1.3	1.6
7	1.6	1.7	9.4	e8.6	87	69	97	22	82	16	1.3	1.5
8	1.3	1.8	9.4	e8.2	94	93	102	20	94	14	1.1	1.2
9	1.1	2.0	8.5	e7.6	73	163	257	20	57	27	2.0	.96
10	1.1	23	7.9	e7.2	89	170	578	20	37	18	1.7	.80
11	.91	53	8.3	e6.8	99	151	448	18	27	12	1.3	.67
12	.70	25	7.4	e6.6	76	139	580	16	21	8.0	1.3	.58
13	.74	16	5.6	e6.2	67	253	415	14	19	5.7	1.3	.44
14	.81	12	11	e6.0	59	379	271	13	18	4.5	1.1	.24
15	.74	9.0	12	e5.8	61	287	207	12	12	3.5	2.6	.11
16	.60	8.0	16	e6.2	64	222	827	11	12	3.0	2.2	.09
17	.57	7.2	50	e6.6	81	204	660	10	23	2.5	1.6	.09
18	1.7	6.5	123	e7.0	77	157	399	10	15	2.2	1.2	.09
19	2.8	5.9	91	30	62	129	263	11	10	1.9	1.5	.08
20	4.0	5.5	97	161	74	113	190	12	7.6	1.6	26	.08
21	7.6	5.3	100	216	63	321	150	15	12	1.4	13	.09
22	6.1	4.7	85	150	49	1110	123	38	38	1.1	6.2	.08
23	4.1	4.4	54	127	44	532	103	124	76	.92	4.3	.07
24	3.3	4.0	30	127	50	324	90	71	72	.82	4.3	.16
25	2.8	4.2	23	101	46	217	77	44	42	.57	3.5	.36
26	2.4	8.1	e19	84	63	159	65	39	27	1.0	3.4	.31
27	2.1	23	e17	65	65	123	58	36	19	2.0	4.4	.26
28	2.0	29	e16	55	60	102	53	32	18	2.0	5.9	.37
29	1.7	22	e15	44	---	93	47	29	12	2.7	4.5	.34
30	1.8	19	e14	111	---	261	41	23	8.9	3.0	3.2	.28
31	1.7	---	e13	427	---	327	---	18	---	2.9	2.6	---
TOTAL	81.07	310.9	922.8	1841.6	2684	6483	7039	869	855.5	180.01	112.9	20.55
MEAN	2.62	10.4	29.8	59.4	95.9	209	235	28.0	28.5	5.81	3.64	.69
MAX	7.6	53	123	427	321	1110	827	124	94	27	26	2.2
MIN	.57	1.7	5.6	5.8	44	56	41	10	7.6	.57	1.1	.07
CFSM	.03	.10	.29	.58	.94	2.05	2.30	.27	.28	.06	.04	.01
IN.	.03	.11	.34	.67	.98	2.36	2.57	.32	.31	.07	.04	.01

e Estimated

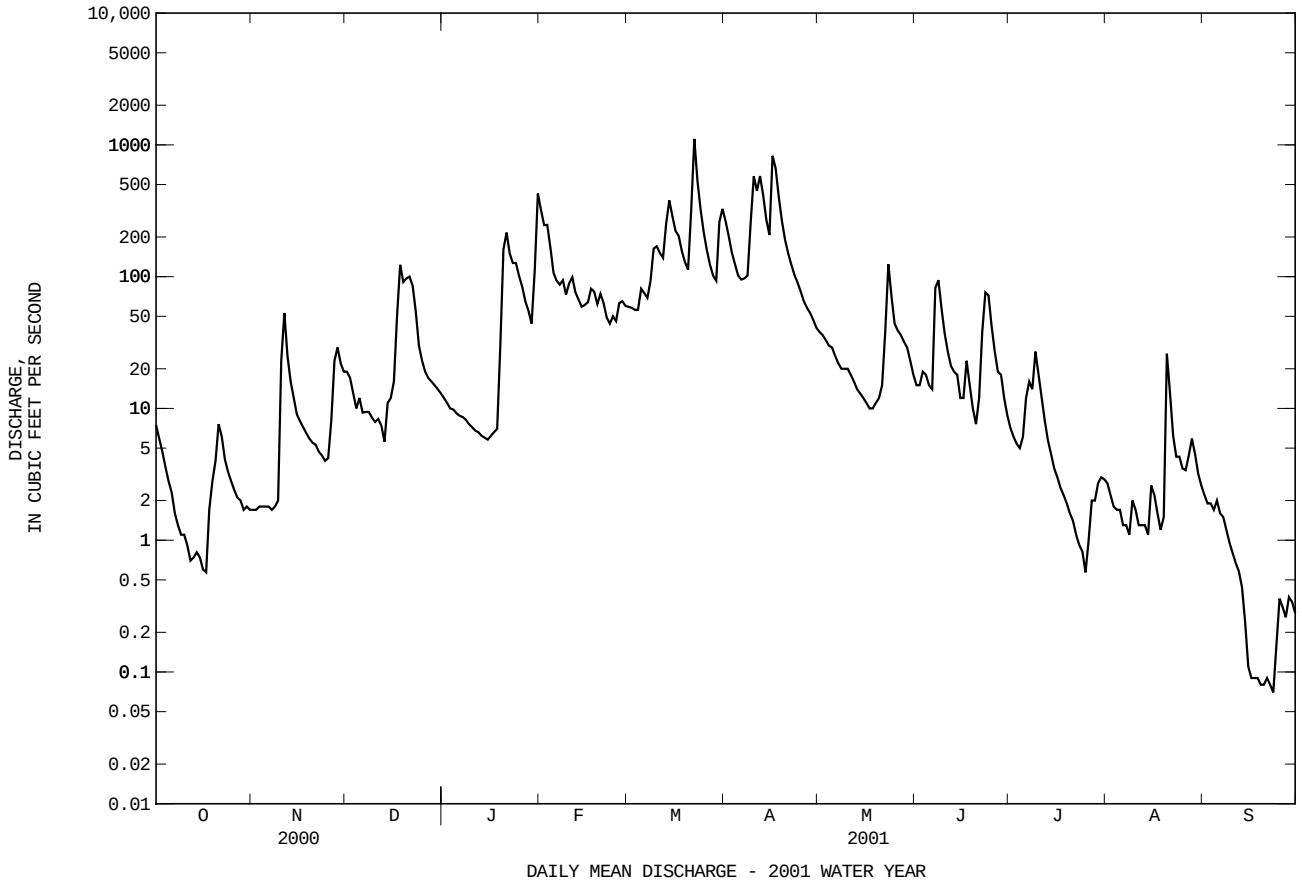
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 1977, 1999 - 2001, BY WATER YEAR (WY)

MEAN	91.9	80.3	161	111	186	206	216	113	113	32.8	22.2	24.9
MAX	569	293	401	230	523	346	518	288	726	87.6	85.1	194
(WY)	1977	1971	1973	1974	1971	1977	1970	1971	1972	1977	1969	1975
MIN	1.17	6.69	29.8	11.3	48.6	107	37.8	22.9	5.10	1.22	.039	.69
(WY)	1975	1975	2001	1977	1969	1969	1971	1969	1999	1999	1968	2001

01610155 SIDELING HILL CREEK NEAR BELLEGROVE, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1967 - 1997, 1999 - 2001	
ANNUAL TOTAL	32709.17		21400.33			
ANNUAL MEAN	89.4		58.6		114	
HIGHEST ANNUAL MEAN					177	1972
LOWEST ANNUAL MEAN					42.0	1969
HIGHEST DAILY MEAN	2550	Apr 22	1110	Mar 22	9200	Jun 22 1972
LOWEST DAILY MEAN	.57	Oct 17	.07	Sep 23	.00	(a)
ANNUAL SEVEN-DAY MINIMUM	.72	Oct 11	.08	Sep 17	.00	Aug 18 1968
MAXIMUM PEAK FLOW			1460	Mar 22	(b)14200	Jun 22 1972
MAXIMUM PEAK STAGE			4.53	Mar 22	12.44	Jun 22 1972
INSTANTANEOUS LOW FLOW			.06	Sep 24	.00	(c)
ANNUAL RUNOFF (CFSM)	.88		.57		1.12	
ANNUAL RUNOFF (INCHES)	11.93		7.80		15.21	
10 PERCENT EXCEEDS	223		158		260	
50 PERCENT EXCEEDS	24		13		36	
90 PERCENT EXCEEDS	2.8		1.1		1.7	

a Aug. 18-31, Sept. 1-9, 1968, Aug. 6-24, 1999.
b From rating curve extended above 10,400 ft^3/s.
c Aug. 17-31, Sept. 1-10, 1968, Aug. 6-25, 1999.



01610155 SIDELING HILL CREEK NEAR BELLEGROVE, MD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1985, 1986, 1997, October 2000 to September 2001.

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

DATE	TIME	SAMPLE TYPE	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)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)
OCT												
24...	*1130*	*BLANK*	--	--	--	--	--	--	--	--	--	--
24...	1200	ENVIRONMENTAL	3.3	186	7.4	18.5	10.7	762	10.1	91	--	--
NOV												
21...	1300	ENVIRONMENTAL	5.4	148	7.7	-2.0	.9	752	12.8	91	--	--
21...	*1301*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
DEC												
19...	1030	ENVIRONMENTAL	97	142	7.0	-3.0	-0.2	747	12.8	89	.77	--
JAN												
23...	1005	ENVIRONMENTAL	90	154	6.6	-4.0	-0.2	760	13.8	94	1.2	.982
23...	*1100*	*BLANK*	--	--	--	--	--	--	--	--	--	--
31...	1300	ENVIRONMENTAL	450	114	6.6	6.0	.00	744	13.5	95	1.6	.953
31...	*1301*	*REPLICATE*	--	--	--	--	--	--	--	--	*1.6*	*.969*
31...	1930	ENVIRONMENTAL	391	102	6.9	4.0	.00	749	13.8	96	1.5	.937
FEB												
06...	*1300*	*BLANK*	--	--	--	--	--	--	--	--	--	--
21...	0920	ENVIRONMENTAL	64	96	6.8	4.0	2.2	756	13.2	97	.63	.502
MAR												
07...	0900	ENVIRONMENTAL	70	147	6.8	3.0	1.2	752	13.9	100	.55	--
12...	1330	ENVIRONMENTAL	139	94	7.2	6.0	4.5	755	13.3	104	.73	.608
21...	0004	ENVIRONMENTAL	107	86	--	--	--	--	--	--	.57	.490
21...	1244	ENVIRONMENTAL	167	83	--	--	--	--	--	--	.55	.453
21...	1544	ENVIRONMENTAL	259	80	--	--	--	--	--	--	.62	.427
21...	1844	ENVIRONMENTAL	491	84	--	--	--	--	--	--	.77	.432
21...	2144	ENVIRONMENTAL	891	103	--	--	--	--	--	--	1.5	.517
22...	0044	ENVIRONMENTAL	1320	--	--	--	--	--	--	--	1.9	.562
22...	0344	ENVIRONMENTAL	1450	80	--	--	--	--	--	--	2.0	.664
22...	0644	ENVIRONMENTAL	1350	--	--	--	--	--	--	--	1.7	.765
22...	0944	ENVIRONMENTAL	1210	73	--	--	--	--	--	--	1.5	.783
22...	1200	ENVIRONMENTAL	1120	80	6.3	9.0	5.5	747	10.5	85	1.4	.808
22...	1505	ENVIRONMENTAL	992	74	--	--	--	--	--	--	1.3	.817
22...	2105	ENVIRONMENTAL	800	73	--	--	--	--	--	--	1.1	.808
23...	0305	ENVIRONMENTAL	655	72	--	--	--	--	--	--	1.1	.793
23...	0905	ENVIRONMENTAL	558	73	--	--	--	--	--	--	1.00	.776
23...	2110	ENVIRONMENTAL	424	74	--	--	--	--	--	--	.93	.739
APR												
04...	0750	ENVIRONMENTAL	130	88	8.3	5.0	7.6	762	12.0	100	.57	.475
19...	1450	ENVIRONMENTAL	248	71	7.0	16.0	8.5	758	11.8	101	.57	.487
MAY												
01...	0730	ENVIRONMENTAL	38	102	6.2	13.0	14.3	758	9.4	92	.37	.171
22...	1305	ENVIRONMENTAL	42	120	7.3	--	--	--	--	--	.42	.204
23...	0405	ENVIRONMENTAL	81	117	7.3	--	--	--	--	--	.44	.243
23...	1010	ENVIRONMENTAL	154	103	7.3	--	--	--	--	--	.50	.246
23...	2210	ENVIRONMENTAL	111	98	7.3	--	--	--	--	--	.91	.355
JUN												
04...	0940	ENVIRONMENTAL	19	117	6.5	19.0	16.2	754	9.3	96	.25	.037
JUL												
10...	0730	ENVIRONMENTAL	20	183	6.3	20.0	23.3	747	7.5	90	.35	.126
AUG												
20...	1405	ENVIRONMENTAL	40	283	7.6	26.0	24.5	753	7.8	95	.44	.076
20...	*1410*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
SEP												
04...	0910	ENVIRONMENTAL	1.7	268	7.4	23.0	22.0	751	8.1	94	--	--

01610155 SIDELING HILL CREEK NEAR BELLEGROVE, MD--Continued

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

DATE	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)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN DIS-SOLVED (MG/L AS N) (00602)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	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)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
OCT													
24...	*<.006*	*<.047*	*E.025*	*E.06*	*<.10*	--	--	--	*<.004*	*<.006*	*E.013*	--	--
24...	<.006	<.047	<.041	.24	.20	--	--	--	.004	<.006	<.018	2	.02
NOV													
21...	<.006	E.025	<.041	.18	.19	--	--	--	.004	<.006	<.018	2	.03
21...	*<.006*	*E.024*	*<.041*	*.25*	*.15*	--	--	--	*.004*	*<.006*	*<.018*	*4*	--
DEC													
19...	<.006	.607	<.041	.16	.19	.79	--	--	.010	.015	<.018	6	1.5
JAN													
23...	.002	.984	.004	.20	.14	1.1	.20	.14	.009	E.004	<.007	3	.73
23...	*<.001*	*<.005*	*<.002*	*E.04*	*<.10*	--	--	--	*<.004*	*<.006*	*<.007*	--	--
31...	.003	.956	.068	.69	.38	1.3	.62	.31	.067	.012	<.007	58	70
31...	*.004*	*.973*	*.071*	*.66*	*.36*	*1.3*	*.59*	*.29*	*.066*	*.013*	*<.007*	*58*	--
31...	.002	.939	.045	.51	.30	1.2	.47	.26	.051	.008	<.007	42	44
FEB													
06...	*<.001*	*<.005*	*.005*	*<.08*	*<.10*	--	--	--	*<.004*	*<.006*	*<.007*	--	--
21...	.002	.504	.004	.13	E.08	--	.12	--	.004	<.006	<.007	3	.59
MAR													
07...	<.001	.446	.004	.10	E.06	--	.10	--	E.003	<.006	<.007	1	.26
12...	.001	.609	.005	.12	E.09	--	.12	--	.005	<.006	<.007	1	.41
21...	.001	.491	<.002	.08	E.05	--	--	--	.004	<.006	<.007	3	.75
21...	.001	.454	<.002	.10	E.07	--	--	--	.005	<.006	<.007	4	1.8
21...	.002	.429	<.002	.19	E.10	--	--	--	.014	<.006	<.007	14	9.8
21...	.002	.434	<.002	.34	.15	.59	--	--	.037	<.006	<.007	41	54
21...	.001	.518	.002	1.0	.15	.67	1.0	.15	.129	E.003	<.007	181	435
22...	.003	.565	<.002	1.3	.18	.74	--	--	.200	E.005	<.007	--	--
22...	.002	.666	.009	1.3	.25	.92	1.3	.24	.216	.006	<.007	283	1110
22...	.003	.768	.005	.96	.27	1.0	.95	.26	.132	.008	<.007	224	816
22...	.002	.785	.003	.72	.22	1.0	.71	.22	.101	E.005	<.007	132	431
22...	.002	.810	<.002	.59	.16	.97	--	--	.072	.006	<.007	103	311
22...	.002	.819	.004	.50	.11	.93	.50	.11	.053	<.006	<.007	66	177
22...	.002	.810	.004	.33	E.09	--	.32	--	.035	<.006	<.007	42	91
23...	.002	.795	.003	.31	E.09	--	.31	--	.024	<.006	<.007	36	64
23...	.002	.778	.003	.22	E.06	--	.22	--	.020	<.006	<.007	19	29
23...	.003	.742	.002	.19	<.10	--	.19	--	.012	<.006	<.007	11	13
APR													
04...	.002	.477	.006	.10	E.08	--	.09	--	.005	E.003	<.007	20	6.9
19...	.003	.490	<.002	.08	E.08	--	--	--	.007	<.006	<.007	4	2.5
MAY													
01...	.002	.173	.012	.20	.12	.29	.18	.10	.008	<.006	<.007	22	2.2
22...	.003	.207	.006	.22	.18	.38	.21	.17	.010	E.004	<.007	3	.34
23...	.003	.246	.005	.20	.13	.38	.19	.13	.014	<.006	<.007	7	1.5
23...	.004	.250	<.002	.25	.18	.43	--	--	.022	.009	<.007	15	6.2
23...	.006	.361	.009	.55	.33	.69	.54	.32	.074	.012	<.007	38	11
JUN													
04...	.001	.038	.004	.21	.14	.18	.21	.14	.010	E.004	<.007	26	1.3
JUL													
10...	.002	.128	.014	.23	.19	.32	.21	.17	.011	E.003	<.007	39	2.1
AUG													
20...	.002	.078	.013	.36	.23	.31	.34	.22	.017	<.006	<.007	70	7.5
20...	--	--	--	--	--	--	--	--	--	--	--	*72*	--
SEP													
04...	<.001	E.033	E.013	.27	.23	--	--	--	.009	<.006	<.007	3	.01

E Estimated value.
< Actual value is known to be less than the value shown.

01610155 SIDELING HILL CREEK NEAR BELLEGROVE, MD--Continued

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

DATE	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT	
24...	--
24...	--
NOV	
21...	--
21...	--
DEC	
19...	--
JAN	
23...	--
23...	--
31...	91
31...	*95*
31...	95
FEB	
06...	--
21...	--
MAR	
07...	--
12...	--
21...	--
21...	100
21...	96
21...	92
21...	92
22...	--
22...	83
22...	97
22...	96
22...	98
22...	96
22...	98
23...	85
23...	98
23...	92
APR	
04...	--
19...	--
MAY	
01...	--
22...	80
23...	91
23...	94
23...	98
JUN	
04...	--
JUL	
10...	--
AUG	
20...	--
20...	--
SEP	
04...	--

THIS IS A BLANK PAGE

01611500 CACAPON RIVER NEAR GREAT CACAPON, WV

LOCATION.--Lat 39°34'56", long 78°18'36", Morgan County, Hydrologic Unit 02070003, on left bank at Rock Ford, 3.0 mi southwest of Great Cacapon, and at mile 6.1.

DRAINAGE AREA.--675 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1922 to September 1995, October 1996 to current year.

REVISED RECORDS.--WSP 800: 1924(M). WSP 921: Drainage area. WSP 951: 1936-37. WSP 1552: 1925-26(M), 1928-1929(M), 1932. WDR WV-97-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 456.78 ft above sea level (U.S. Army Corps of Engineers bench mark). Prior to Nov. 10, 1933, nonrecording gage at same site and datum.

REMARKS.--Water-discharge records fair except those for estimated daily discharges (ice effect, doubtful or no gage-height record), which are poor. High end of rating not confirmed above 3,000 ft^3/s since cableway removed in July 1992.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May 1889 reached a stage of about 24.7 ft, from floodmarks, discharge, 57,500 ft^3/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,900 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan 31	0930	Unknown	(a)9.81	Apr 12	1100	4,170	7.03
Mar 22	0800	*Unknown	(b)*12.93	Jun 23	1930	3,950	6.85

a Ice Jam.
b Backwater from trash.

Minimum discharge, 74 ft^3/s, Nov. 2-9.

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	346	76	155	e195	e1600	432	2060	296	333	219	604	178
2	287	74	150	e185	e1300	418	1720	279	286	285	562	181
3	240	74	156	e175	1180	404	1480	264	256	229	390	239
4	207	74	145	e170	886	396	1210	251	240	213	277	211
5	184	75	133	e160	718	447	1020	237	e224	211	302	183
6	166	74	112	e150	632	562	885	227	e210	187	506	157
7	150	74	116	e145	561	561	891	219	e600	168	335	140
8	135	74	126	e140	491	523	969	204	823	165	240	130
9	126	75	117	e135	431	511	836	196	598	192	193	119
10	118	106	110	e130	395	497	810	187	446	213	156	112
11	110	159	115	e125	379	473	963	179	348	206	138	106
12	104	316	108	e120	349	444	3230	173	281	170	165	100
13	100	254	101	e115	316	437	2500	164	238	143	1820	93
14	96	188	116	e115	292	444	1780	155	208	129	1530	89
15	92	149	152	e110	287	438	1410	149	186	123	782	87
16	89	130	267	e105	293	414	1370	145	179	115	505	84
17	89	119	501	e100	333	478	1390	142	179	107	370	79
18	95	110	1070	e100	440	603	1170	142	166	104	275	78
19	95	102	1010	180	507	629	962	151	173	109	224	78
20	88	99	723	402	454	584	825	338	170	150	193	79
21	86	94	e440	e840	433	1050	728	808	157	171	493	86
22	85	91	e400	e600	413	e2400	657	579	164	139	441	85
23	83	86	e370	e520	381	e4000	594	630	1080	121	303	78
24	81	84	e340	e450	353	2970	540	1410	2010	108	239	80
25	80	85	e320	e400	358	2090	488	919	1060	101	201	91
26	80	99	e290	e350	379	1630	446	625	657	95	191	96
27	80	113	e270	e320	435	1250	407	516	464	95	185	97
28	80	125	e250	e300	448	983	376	521	351	93	194	109
29	79	159	e230	e290	---	842	347	594	274	104	289	120
30	76	167	e220	e900	---	1710	319	498	235	137	221	104
31	76	---	e210	e2000	---	2750	---	402	---	951	186	---
TOTAL	3803	3505	8823	10027	15044	31370	32383	11600	12596	5553	12510	3469
MEAN	123	117	285	323	537	1012	1079	374	420	179	404	116
MAX	346	316	1070	2000	1600	4000	3230	1410	2010	951	1820	239
MIN	76	74	101	100	287	396	319	142	157	93	138	78
CFSM	.18	.17	.42	.48	.80	1.50	1.60	.55	.62	.27	.60	.17
IN.	.21	.19	.49	.55	.83	1.73	1.78	.64	.69	.31	.69	.19

e Estimated

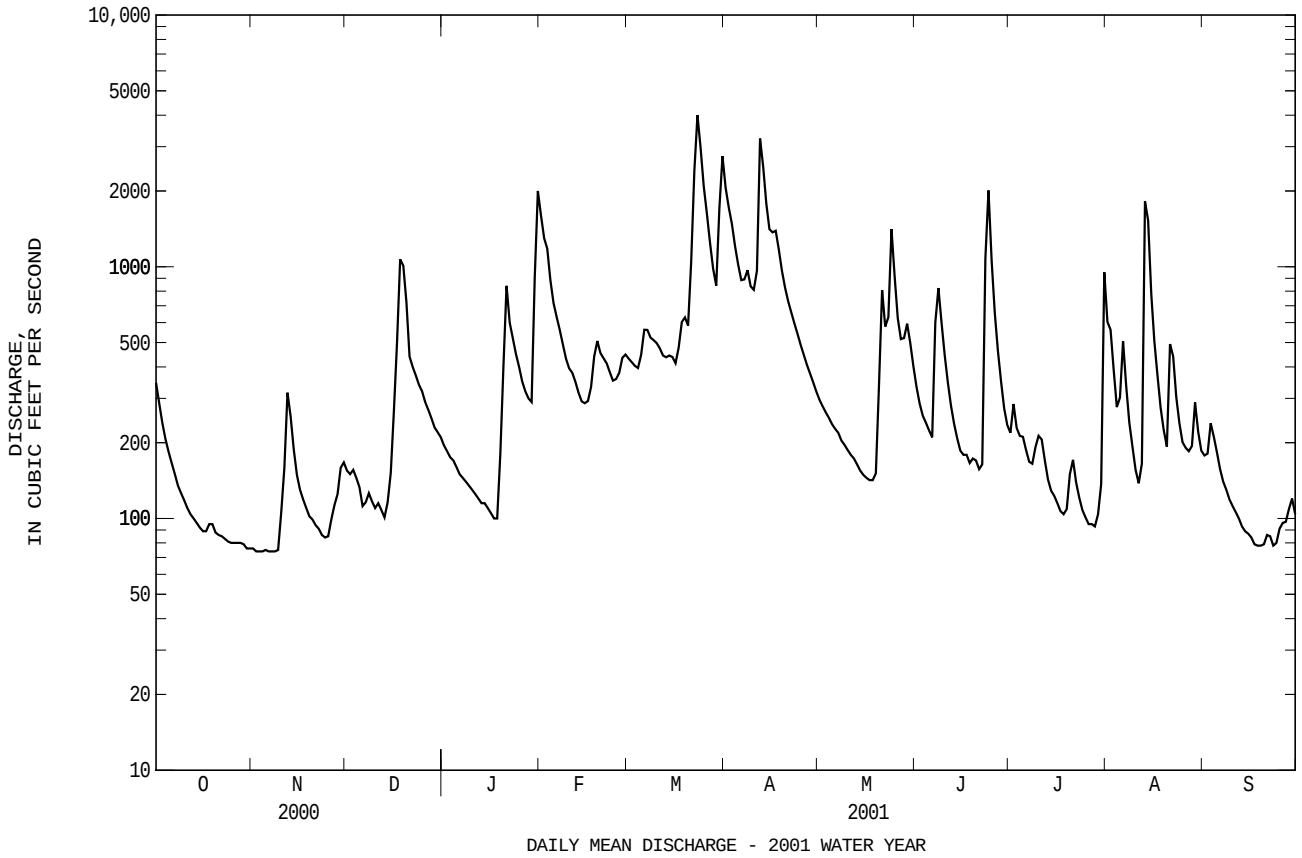
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1923 - 1995, 1997 - 2001, BY WATER YEAR (WY)

MEAN	327	365	513	639	889	1282	1110	849	427	192	235	175
MAX	2976	2577	2121	1751	3234	5708	2976	3565	3525	936	2791	1636
(WY)	1943	1986	1973	1998	1998	1936	1987	1924	1972	1972	1955	1975
MIN	44.8	51.1	56.5	69.6	89.1	247	242	157	72.5	53.8	39.8	39.4
(WY)	1931	1966	1966	1956	1934	1990	1947	1969	1999	1999	1966	1932

01611500 CACAPON RIVER NEAR GREAT CACAPON, WV--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1923 - 1995, 1997 - 2001	
ANNUAL TOTAL	127690		150683			
ANNUAL MEAN	349		413		585	
HIGHEST ANNUAL MEAN					1135	1972
LOWEST ANNUAL MEAN					180	1969
HIGHEST DAILY MEAN	5120	Feb 20	(e)4000	Mar 23	67900	Mar 18 1936
LOWEST DAILY MEAN	(e)54	Jul 18	74	(a)	26	Sep 12 1966
ANNUAL SEVEN-DAY MINIMUM	69	Jul 13	74	Nov 2	28	Sep 7 1966
MAXIMUM PEAK FLOW			UNKNOWN	Mar 22	(b)87600	Mar 18 1936
MAXIMUM PEAK STAGE			(c)12.93	Mar 22	30.10	Mar 18 1936
INSTANTANEOUS LOW FLOW			74	(d)	26	(f)
ANNUAL RUNOFF (CFSM)	.52		.61		.87	
ANNUAL RUNOFF (INCHES)	7.04		8.30		11.78	
10 PERCENT EXCEEDS	715		962		1330	
50 PERCENT EXCEEDS	176		221		241	
90 PERCENT EXCEEDS	89		89		67	

e Estimated.
a Nov.2-4, 6-8.
b From rating curve extended above 52,000 ft^3/s.
c Backwater from trash.
d Nov. 2-9.
f Sept. 11-13, 1966.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1960-61, 1968-80, 1982, 1992, 1994, October 2000 to September 2001.

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

DATE	TIME	SAMPLE TYPE	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)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)
OCT												
24...	0935	ENVIRONMENTAL	82	173	7.8	13.0	13.5	762	9.1	87	--	--
NOV												
21...	1005	ENVIRONMENTAL	95	181	7.9	-4.0	2.1	751	12.5	92	--	--
21...	*1006*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
DEC												
19...	1330	ENVIRONMENTAL	978	133	7.7	-2.0	.00	746	13.5	94	.68	--
JAN												
23...	1245	ENVIRONMENTAL	E520	120	7.6	5.0	-0.2	755	13.6	93	1.5	1.01
31...	1530	ENVIRONMENTAL	E2000	97	7.0	7.0	.5	746	12.6	89	2.1	.665
31...	*1531*	*REPLICATE*	--	--	--	--	--	--	--	--	*2.7*	*.685*
FEB												
06...	*1500*	*BLANK*	--	--	--	--	--	--	--	--	--	--
21...	1145	ENVIRONMENTAL	437	128	8.0	6.0	4.6	761	13.1	102	.56	.380
MAR												
07...	1115	ENVIRONMENTAL	520	120	7.8	7.0	3.3	752	12.7	96	.48	.302
12...	1630	ENVIRONMENTAL	437	119	7.6	7.0	6.5	755	12.6	103	.43	.277
21...	1344	ENVIRONMENTAL	719	114	--	--	--	--	--	--	.55	.358
21...	1644	ENVIRONMENTAL	933	112	--	--	--	--	--	--	.69	.376
21...	1944	ENVIRONMENTAL	E1380	107	--	--	--	--	--	--	.80	.405
21...	2244	ENVIRONMENTAL	E1460	104	--	--	--	--	--	--	1.0	.423
22...	0144	ENVIRONMENTAL	E1620	99	--	--	--	--	--	--	3.0	.450
22...	0444	ENVIRONMENTAL	E1780	92	--	--	--	--	--	--	2.5	.482
22...	0744	ENVIRONMENTAL	E1930	80	--	--	--	--	--	--	2.7	.539
22...	1044	ENVIRONMENTAL	E2090	76	--	--	--	--	--	--	3.0	.617
22...	1500	ENVIRONMENTAL	E2380	84	6.6	8.0	5.5	746	9.0	73	2.7	.722
22...	1810	ENVIRONMENTAL	E2640	83	--	--	--	--	--	--	2.7	.834
23...	0010	ENVIRONMENTAL	E3270	82	--	--	--	--	--	--	2.3	1.00
23...	0610	ENVIRONMENTAL	E3740	81	--	--	--	--	--	--	2.2	1.07
23...	1210	ENVIRONMENTAL	E4240	81	--	--	--	--	--	--	2.0	1.11
24...	0210	ENVIRONMENTAL	4580	85	--	--	--	--	--	--	1.6	1.07
24...	1810	ENVIRONMENTAL	2610	87	--	--	--	--	--	--	1.6	1.14
APR												
04...	0950	ENVIRONMENTAL	1210	104	7.8	11.0	8.8	762	11.8	102	.95	.774
19...	1135	ENVIRONMENTAL	958	102	7.0	13.0	9.6	758	11.2	99	.67	.473
MAY												
01...	0920	ENVIRONMENTAL	298	143	7.5	23.0	17.0	758	9.5	99	.30	.089
23...	1743	ENVIRONMENTAL	644	125	7.2	--	--	--	--	--	1.0	.579
24...	0043	ENVIRONMENTAL	1130	121	7.1	--	--	--	--	--	1.0	.552
24...	0413	ENVIRONMENTAL	1580	119	7.0	--	--	--	--	--	1.1	.529
25...	1130	ENVIRONMENTAL	907	112	7.0	--	--	--	--	--	.94	.520
JUN												
04...	1200	ENVIRONMENTAL	238	119	8.1	20.0	18.6	754	9.6	104	.40	.164
JUL												
10...	0935	ENVIRONMENTAL	219	146	7.9	29.0	26.2	748	7.6	96	.37	.053
AUG												
20...	1220	ENVIRONMENTAL	189	136	8.1	26.0	25.8	751	8.1	101	.80	.485
20...	*1225*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
SEP												
04...	1200	ENVIRONMENTAL	213	158	8.8	28.0	25.1	752	9.3	114	--	--

E Estimated value.

01611500 CACAPON RIVER NEAR GREAT CACAPON, WV--Continued

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

DATE	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)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN DIS-SOLVED (MG/L AS N) (00602)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	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)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
OCT													
24...	<.006	<.047	<.041	.19	.15	--	--	--	.009	E.003	<.018	2	.55
NOV													
21...	<.006	<.047	<.041	.20	.12	--	--	--	.005	E.003	<.018	1	.28
21...	*<.006*	*<.047*	*<.041*	*.21*	*.11*	--	--	--	*.004*	*<.006*	*<.018*	*<1*	--
DEC													
19...	<.006	.457	<.041	.22	.17	.63	--	--	.029	E.005	<.018	13	33
JAN													
23...	.006	1.01	.050	.51	.39	1.4	.46	.34	.043	.013	<.007	12	--
31...	.003	.668	.055	1.4	.41	1.1	1.4	.36	.244	.015	E.004	304	--
31...	*.004*	*.689*	*.054*	*2.0*	*.41*	*1.1*	*2.0*	*.35*	*.269*	*.015*	*<.007*	*310*	--
FEB													
06...	*<.001*	*.005*	*<.002*	*<.08*	*<.10*	--	--	--	*<.004*	*<.006*	*<.007*	--	--
21...	.002	.382	.006	.17	.16	.55	.17	.16	.008	E.004	<.007	2	2.0
MAR													
07...	.002	.304	.004	.18	.11	.41	.18	.10	.007	<.006	<.007	2	3.5
12...	.001	.278	<.002	.15	.11	.39	--	--	.006	<.006	<.007	<1	.71
21...	.003	.361	.004	.19	.14	.50	.19	.13	.012	E.004	<.007	9	17
21...	.002	.378	.005	.31	.17	.55	.31	.16	.017	<.006	<.007	11	28
21...	.002	.407	.006	.39	.18	.58	.39	.17	.024	E.003	<.007	19	--
21...	.002	.425	.002	.60	.18	.61	.60	.18	.080	E.003	<.007	57	--
22...	.002	.452	.012	2.5	.22	.67	2.5	.20	.356	E.005	<.007	473	--
22...	.004	.486	.042	2.0	.37	.86	2.0	.33	.378	.008	<.007	653	--
22...	.004	.543	.049	2.1	.45	.99	2.1	.40	.429	.010	<.007	783	--
22...	.005	.622	.061	2.4	.50	1.1	2.4	.44	.434	.013	<.007	661	--
22...	.005	.727	.050	2.0	.38	1.1	1.9	.33	.368	.011	<.007	509	--
22...	.007	.841	.047	1.8	.36	1.2	1.8	.31	.325	.009	E.005	392	--
23...	.005	1.01	.044	1.3	.30	1.3	1.3	.26	.228	.013	.007	255	--
23...	.006	1.07	.032	1.1	.26	1.3	1.1	.23	.144	.012	.008	169	--
23...	.004	1.12	.022	.88	.25	1.4	.86	.23	.109	.010	E.006	122	--
24...	.004	1.07	.010	.48	.17	1.2	.47	.16	.061	.007	E.004	66	816
24...	.003	1.15	.009	.42	.13	1.3	.41	.12	.040	E.005	<.007	49	345
APR													
04...	.002	.776	.006	.17	.14	.92	.16	.14	.014	E.005	E.005	38	125
19...	.004	.477	.003	.20	.15	.63	.19	.15	.014	E.005	<.007	6	16
MAY													
01...	.002	.091	.005	.21	.15	.24	.20	.15	.010	E.004	<.007	31	25
23...	.011	.590	.029	.45	.30	.89	.42	.27	.028	.008	<.007	11	19
24...	.008	.560	.018	.46	.26	.82	.44	.25	.035	.008	<.007	26	79
24...	.007	.536	.020	.54	.25	.78	.52	.23	.052	.007	<.007	43	183
25...	.006	.526	.019	.41	.27	.79	.39	.25	.037	.010	<.007	25	61
JUN													
04...	.002	.166	.004	.23	.14	.31	.23	.14	.015	.006	<.007	30	19
JUL													
10...	.002	.055	.014	.31	.21	.27	.30	.20	.014	.006	<.007	32	19
AUG													
20...	.004	.489	.013	.31	.22	.71	.30	.21	.023	.013	.008	37	19
20...	--	--	--	--	--	--	--	--	--	--	--	*33*	--
SEP													
04...	<.001	<.005	E.007	.42	.22	--	--	--	.022	E.005	<.007	5	3.0

E Estimated value.
< Actual value is known to be less than the value shown.

01611500 CACAPON RIVER NEAR GREAT CACAPON, WV--Continued

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

DATE	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT	
24...	--
NOV	
21...	--
21...	--
DEC	
19...	--
JAN	
23...	--
31...	94
31...	*93*
FEB	
06...	--
21...	--
MAR	
07...	--
12...	--
21...	84
21...	95
21...	97
21...	74
22...	84
22...	84
22...	84
22...	89
22...	88
22...	92
23...	93
23...	91
23...	90
24...	89
24...	78
APR	
04...	--
19...	--
MAY	
01...	--
23...	92
24...	80
24...	93
25...	93
JUN	
04...	--
JUL	
10...	--
AUG	
20...	--
20...	--
SEP	
04...	--

THIS IS A BLANK PAGE

01613000 POTOMAC RIVER AT HANCOCK, MD

LOCATION.--Lat 39°41'51.2", long 78°10'40.4", Washington County, Hydrologic Unit 02070004, on left bank, 0.2 mi downstream from Little Tonoloway Creek, 0.5 mi downstream from bridge on U.S. Highway 522 at Hancock, 1.1 mi upstream from Tonoloway Creek (formerly called Great or Big Tonoloway Creek), and at mile 239.

DRAINAGE AREA.--4,090 mi^2.

PERIOD OF RECORD.--October 1932 to current year. Gage-height records collected at same site since June 1925 are contained in reports of National Weather Service.

REVISED RECORDS.--WSP 781: 1933(M). WDR WV-97-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 383.68 ft above sea level. Oct. 1, 1932, to Jan. 5, 1935, Mar. 18, 1936, to Jan. 20, 1937, nonrecording gage, on former highway bridge just upstream at same datum.

REMARKS.--Records good except those for estimated daily discharges (ice effect), which are poor. Slight regulation at low flow from power plants upstream. Low flow affected slightly by Stony River Reservoir prior to July 1981, since December 1950 by Savage River Reservoir (see station 01597500), and since July 1981 by Jennings Randolph Lake. National Weather Service gage-height telemeter at station. U.S. Army Corps of Engineers satellite collection platform at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known prior to 1932, about 40 ft in May 1889, discharge, about 220,000 ft^3/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 23,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 22	1400	*29,000	*14.92	No other peak greater than base discharge.			

Minimum discharge, 520 ft^3/s, Sept. 24.

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	2560	753	1580	e1570	12400	3560	12300	2450	3300	1510	6420	990
2	2260	753	1580	e1500	8830	3400	10500	2130	2880	1500	4330	1100
3	2000	753	1550	e1460	6750	3250	9080	1970	2730	1500	3510	1460
4	1740	763	1450	e1400	5380	3130	7670	1840	2570	1470	2780	1350
5	1550	762	1330	e1350	4520	3310	6660	1760	2390	1510	2920	1240
6	1420	753	1290	e1290	3980	3820	5810	1690	2260	1600	3420	1010
7	1320	749	1280	e1220	3670	3860	5740	1620	5770	1660	2870	912
8	1240	743	1330	e1200	3360	3770	7430	1540	13100	1590	2510	857
9	1640	749	1360	e1180	3080	3930	7060	1470	8480	1660	1950	814
10	1520	931	1320	e1170	2920	4030	6950	1400	6120	1740	1600	782
11	1030	1360	1270	e1140	3560	3780	7560	1350	4530	1640	1470	754
12	977	1560	1250	e1130	3940	3580	17200	1290	3730	1520	1360	730
13	945	1420	1230	e1120	4060	3760	16200	1220	3040	1340	3230	705
14	902	1340	1260	e1110	4540	5110	11400	1330	2510	1310	5960	680
15	883	1190	1350	e1090	4450	6220	9010	1290	2300	1250	4110	591
16	866	1090	1750	e1080	5330	5720	10700	1080	2190	1150	2780	577
17	850	1030	3200	e1060	6970	5760	12200	1040	2120	1060	2160	557
18	907	992	5120	e1030	7170	6610	9360	1030	2090	986	1800	542
19	917	961	6300	e1010	6820	7190	7600	1110	1750	963	1560	537
20	1010	932	5080	e1500	5680	6580	6510	1440	1550	1080	1500	540
21	971	905	4000	e2200	4830	5910	5630	4150	1410	1390	1640	546
22	907	886	3440	e3400	4080	22800	5010	4220	1470	1220	1900	546
23	870	852	3060	e3400	3670	17800	4570	4820	2190	1090	1450	541
24	843	830	2550	e3100	3350	13100	4070	9520	6970	1000	1320	541
25	827	832	2190	e2800	3220	10900	3690	7810	5290	932	1210	598
26	809	924	2040	e2550	3340	9460	3310	6580	3470	898	1160	723
27	800	1040	e2500	e2300	3930	8210	2970	7440	2570	908	1150	723
28	791	1290	e2350	e2100	3900	6870	2750	7040	2080	2700	1160	670
29	786	1410	e2000	e2000	---	5880	2590	6040	1790	3440	1210	644
30	768	1550	e1770	e1950	---	6670	2600	4830	1640	4400	1110	610
31	753	---	e1670	10200	---	12300	---	3870	---	10000	1030	---
TOTAL	35662	30103	69450	60610	137730	210270	224130	96370	104290	56017	72580	22870
MEAN	1150	1003	2240	1955	4919	6783	7471	3109	3476	1807	2341	762
MAX	2560	1560	6300	10200	12400	22800	17200	9520	13100	10000	6420	1460
MIN	753	743	1230	1010	2920	3130	2590	1030	1410	898	1030	537
CFSM	.28	.25	.55	.48	1.20	1.66	1.83	.76	.85	.44	.57	.19
IN.	.32	.27	.63	.55	1.25	1.91	2.04	.88	.95	.51	.66	.21

e Estimated

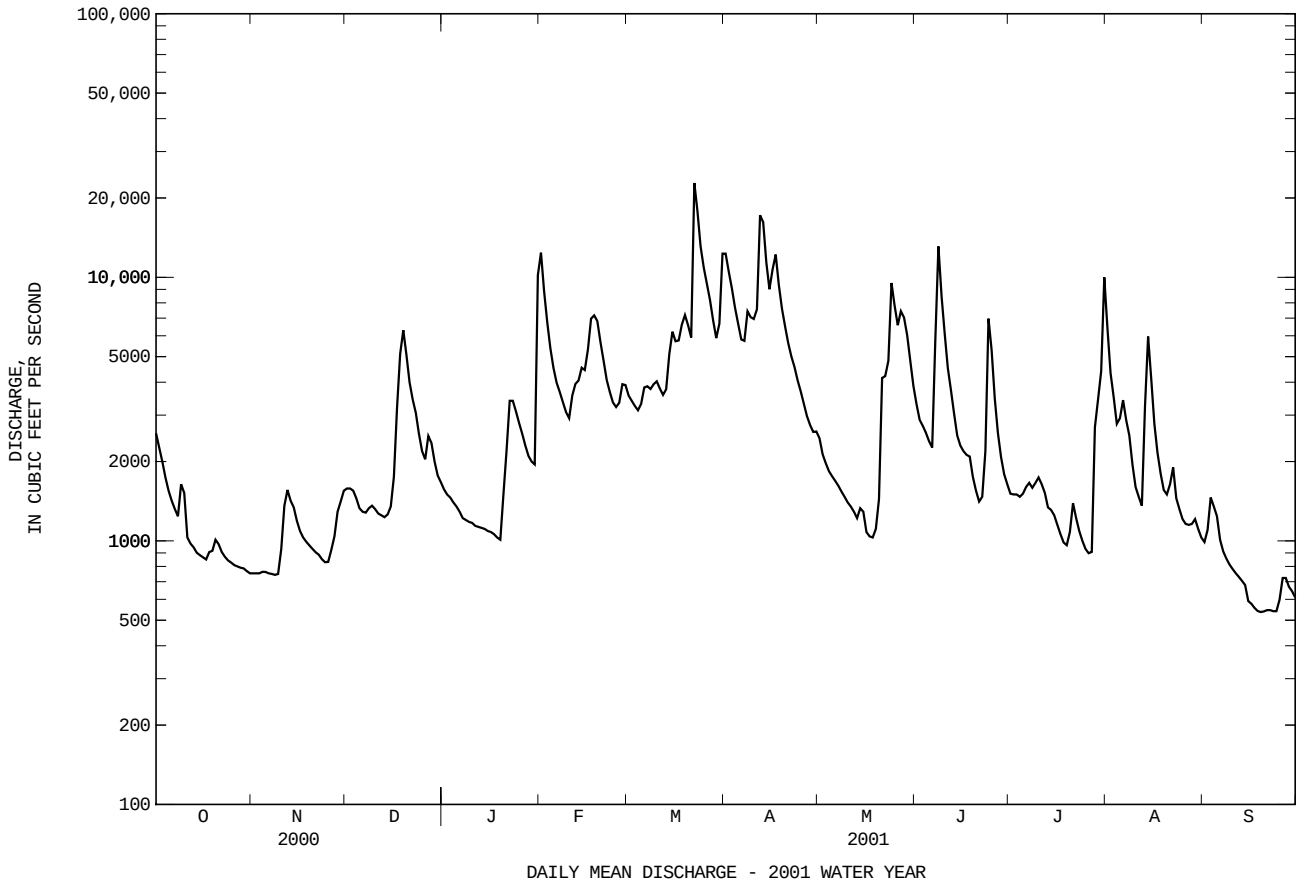
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1933 - 2001, BY WATER YEAR (WY)

MEAN	1993	2484	3968	5111	6590	9370	7606	5473	3085	1576	1603	1430
MAX	13270	20090	15160	17180	17560	32280	19170	13260	13390	6677	9479	15100
(WY)	1977	1986	1973	1996	1998	1936	1993	1988	1972	1949	1955	1996
MIN	309	399	463	751	1041	2311	2286	1344	622	357	342	329
(WY)	1942	1966	1966	1956	1934	1990	1995	1941	1969	1966	1944	1946

01613000 POTOMAC RIVER AT HANCOCK, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1933 - 2001	
ANNUAL TOTAL	1002442		1120082			
ANNUAL MEAN	2739		3069		4178	
HIGHEST ANNUAL MEAN					7932	1996
LOWEST ANNUAL MEAN					1770	1969
HIGHEST DAILY MEAN	31500	Feb 20	22800	Mar 22	261000	Mar 18 1936
LOWEST DAILY MEAN	690	Jul 11	537	Sep 19	184	Oct 3 1932
ANNUAL SEVEN-DAY MINIMUM	753	Nov 3	542	Sep 18	215	Sep 7 1966
MAXIMUM PEAK FLOW			29000	Mar 22	(a)340000	Mar 18 1936
MAXIMUM PEAK STAGE			14.92	Mar 22	47.60	Mar 18 1936
INSTANTANEOUS LOW FLOW			520	Sep 24	180	Oct 4 1932
ANNUAL RUNOFF (CFSM)	.67		.75		1.02	
ANNUAL RUNOFF (INCHES)	9.12		10.19		13.88	
10 PERCENT EXCEEDS	5570		6960		9540	
50 PERCENT EXCEEDS	1510		1690		2170	
90 PERCENT EXCEEDS	878		812		542	

a From rating curve extended above 120,000 ft^3/s on basis of slope-area measurement of peak flow.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01614500 CONOCOCHEAGUE CREEK AT FAIRVIEW, MD

LOCATION.--Lat 39°42'59.0", long 77°49'29.2", Washington County, Hydrologic Unit 02070004, on right bank 0.7 mi upstream from highway bridge in Fairview, 2.0 mi upstream from Rockdale Run, 6.5 mi northwest of Hagerstown, and 19.1 mi upstream from mouth.

DRAINAGE AREA.--494 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1928 to current year.

REVISED RECORDS.--WSP 756: Drainage area. WSP 1432: 1929(M), 1930, 1931-32(M), 1935(M).

GAGE.--Water-stage recorder. Datum of gage is 391.85 ft above sea level. Prior to Dec. 6, 1932, nonrecording gage at highway bridge 0.7 mi downstream at datum 2.93 ft lower. Dec. 6, 1932, to Oct. 7, 1933, nonrecording gage 150 ft downstream from former site at datum 4.92 ft lower than present datum.

REMARKS.--Water-discharge records good except those for estimated daily discharges (ice effect), which are fair. Diversions for irrigation upstream from station. National Weather Service gage-height telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known prior to 1928, about 16.5 ft, present datum, sometime in 1889, from information by local residents, discharge, about 22,000 ft^3/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,300 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jun 23	0730	*4,020	*7.24	No peak greater than base discharge.			

Minimum discharge, 67 ft^3/s, Sept. 17.

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	201	125	210	e275	1080	343	1470	438	294	359	127	113
2	189	124	195	e270	983	333	1220	415	336	359	119	101
3	182	124	181	e265	828	325	1030	393	344	316	115	96
4	173	124	169	e255	680	331	912	371	328	297	115	93
5	162	122	182	e250	614	431	811	354	278	351	140	92
6	158	121	168	e240	582	443	751	338	257	310	135	88
7	153	121	170	e235	536	403	755	322	262	267	129	86
8	147	124	167	e225	507	509	708	307	245	248	111	84
9	141	125	152	e220	488	585	960	319	224	246	102	80
10	144	272	145	e215	492	579	1350	307	209	228	97	80
11	147	372	145	e210	530	525	1310	287	197	240	97	83
12	142	251	144	e205	484	488	1480	273	193	213	112	79
13	136	197	141	e200	442	868	1250	257	189	193	133	75
14	134	181	173	e195	434	1080	1060	248	184	184	153	75
15	132	172	257	e190	438	917	952	241	200	177	125	74
16	128	159	296	e185	456	833	1510	236	322	173	116	72
17	130	153	1120	180	536	875	1620	229	319	171	109	71
18	167	147	1620	175	525	812	1350	224	250	169	113	73
19	246	144	951	239	457	719	1150	228	207	169	91	72
20	205	140	701	760	437	658	1020	225	191	162	586	74
21	171	138	578	646	434	778	921	275	297	151	237	84
22	156	136	499	457	395	1370	842	359	912	142	170	84
23	143	144	405	411	371	1250	771	694	3270	137	145	78
24	141	138	e380	406	374	1050	711	519	1580	133	158	76
25	139	141	e350	352	367	912	648	366	951	127	140	136
26	139	177	326	295	396	799	599	588	719	134	122	132
27	137	285	e320	292	393	712	562	709	582	148	119	107
28	134	264	e310	267	364	650	526	514	495	130	115	95
29	129	210	e300	250	---	618	485	423	470	125	109	87
30	131	213	e295	544	---	2360	458	365	396	129	104	82
31	127	---	e285	1270	---	2120	---	321	---	133	101	---
TOTAL	4764	5144	11335	10179	14623	24676	29192	11145	14701	6321	4345	2622
MEAN	154	171	366	328	522	796	973	360	490	204	140	87.4
MAX	246	372	1620	1270	1080	2360	1620	709	3270	359	586	136
MIN	127	121	141	175	364	325	458	224	184	125	91	71
CFSM	.31	.35	.74	.66	1.06	1.61	1.97	.73	.99	.41	.28	.18
IN.	.36	.39	.85	.77	1.10	1.86	2.20	.84	1.11	.48	.33	.20

e Estimated

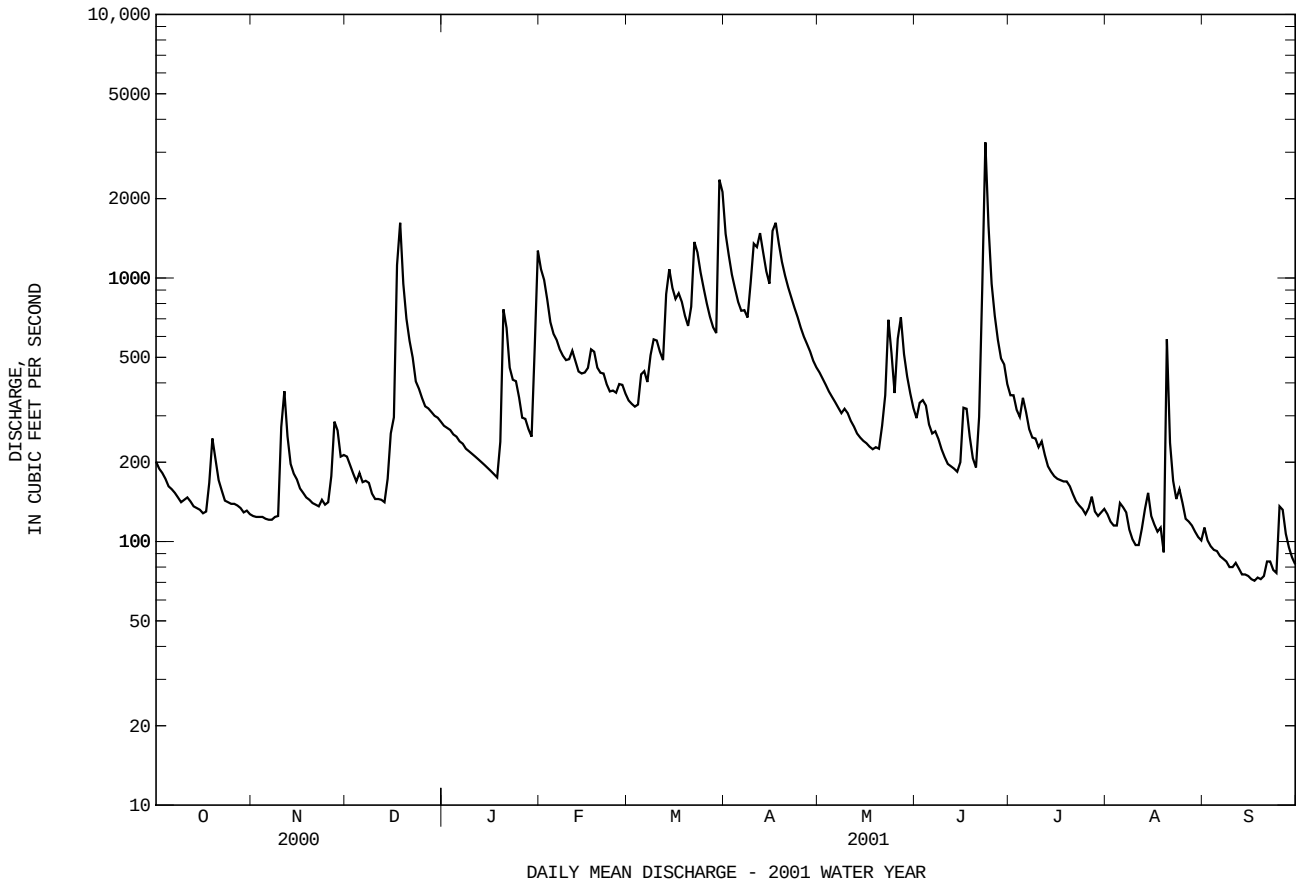
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1928 - 2001, BY WATER YEAR (WY)

MEAN	331	451	621	683	848	1197	1062	737	508	324	230	259
MAX	2177	1571	1926	2404	2473	3725	2991	1736	3278	1358	921	1886
(WY)	1977	1998	1997	1996	1998	1994	1993	1989	1972	1928	1942	1996
MIN	42.3	45.4	61.2	88.8	151	274	304	218	120	62.2	48.0	54.6
(WY)	1931	1931	1931	1931	1931	1990	1995	1941	1965	1966	1966	1930

01614500 CONOCOCHEAGUE CREEK AT FAIRVIEW, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1928 - 2001	
ANNUAL TOTAL	169671		139047			
ANNUAL MEAN	464		381		603	
HIGHEST ANNUAL MEAN					1183	1996
LOWEST ANNUAL MEAN					301	1954
HIGHEST DAILY MEAN	4960	Mar 22	3270	Jun 23	26700	Jun 23 1972
LOWEST DAILY MEAN	121	(a)	71	Sep 17	25	Nov 28 1930
ANNUAL SEVEN-DAY MINIMUM	123	Nov 2	73	Sep 14	28	Sep 7 1966
MAXIMUM PEAK FLOW			4020	Jun 23	(b)32400	Jun 23 1972
MAXIMUM PEAK STAGE			7.24	Jun 23	(c)24.50	Jun 23 1972
INSTANTANEOUS LOW FLOW			67	Sep 17	21	(d)
ANNUAL RUNOFF (CFSM)	.94		.77		1.22	
ANNUAL RUNOFF (INCHES)	12.78		10.47		16.57	
10 PERCENT EXCEEDS	1040		871		1320	
50 PERCENT EXCEEDS	279		246		334	
90 PERCENT EXCEEDS	142		112		104	

a Nov. 6, 7.
b From rating curve extended above 15,000 ft^3/s on basis of contracted-opening and flow-over-road measurement of peak flow.
c From floodmarks.
d Aug. 8, Sept. 12, 1966.



01614500 CONOCOCHEAGUE CREEK AT FAIRVIEW, MD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1967-83, 1992 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: November 1966 to September 1980.
SUSPENDED SEDIMENT DISCHARGE: October 1966 to September 1980.

REMARKS.--Water temperatures were measured in field at time of sampling.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum daily, 30.0°C, July 17, 1969; minimum daily, 0.0°C on many days during winter periods.
SEDIMENT CONCENTRATION: Maximum daily mean, 1,050 mg/L, Oct. 25, 1971; minimum daily mean, 1 mg/L, on many days.
SEDIMENT LOAD: Maximum daily, 73,000 tons, June 23, 1972; minimum daily, 0.17 ton, Nov. 24, 26, 27, 1966.

01614500 CONOCOCHEAGUE CREEK AT FAIRVIEW, MD--Continued

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

DATE	TIME	SAMPLE TYPE	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)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)
OCT												
05...	1330	ENVIRONMENTAL	159	466	8.2	18.0	17.2	754	10.1	106	4.1	--
NOV												
14...	1600	ENVIRONMENTAL	180	407	8.4	9.5	9.5	750	11.8	105	3.1	2.80
DEC												
12...	1500	ENVIRONMENTAL	146	408	8.7	1.5	2.5	757	17.7	131	3.7	--
17...	1006	ENVIRONMENTAL	990	366	7.2	--	--	--	--	--	5.4	3.65
17...	1411	ENVIRONMENTAL	1410	343	7.3	--	--	--	--	--	5.7	3.72
17...	1725	ENVIRONMENTAL	1600	322	7.2	--	--	--	--	--	5.9	4.00
17...	2022	ENVIRONMENTAL	1700	309	7.3	--	--	--	--	--	6.1	4.32
17...	2309	ENVIRONMENTAL	1810	302	7.3	--	--	--	--	--	6.6	4.50
18...	0147	ENVIRONMENTAL	1890	293	7.3	--	--	--	--	--	6.1	4.53
18...	0419	ENVIRONMENTAL	1960	292	7.3	--	--	--	--	--	6.3	4.67
18...	0651	ENVIRONMENTAL	1900	288	7.4	--	--	--	--	--	5.9	4.56
18...	0930	ENVIRONMENTAL	1780	281	7.4	--	--	--	--	--	6.1	4.57
18...	1223	ENVIRONMENTAL	1620	276	7.4	--	--	--	--	--	5.5	4.38
18...	1533	ENVIRONMENTAL	1470	281	7.4	--	--	--	--	--	5.5	4.41
18...	1906	ENVIRONMENTAL	1310	285	7.5	--	--	--	--	--	5.3	4.39
JAN												
24...	1600	ENVIRONMENTAL	423	384	8.0	6.5	.7	751	14.9	106	4.6	4.18
30...	2201	ENVIRONMENTAL	1310	350	7.3	--	--	--	--	--	4.7	3.40
31...	0822	ENVIRONMENTAL	1300	302	7.2	--	--	--	--	--	10	3.25
FEB												
27...	1500	ENVIRONMENTAL	388	337	8.8	13.5	7.5	758	16.7	140	3.5	3.13
MAR												
19...	1330	ENVIRONMENTAL	711	306	8.0	9.0	7.5	767	13.5	112	3.5	3.21
22...	0801	ENVIRONMENTAL	1300	280	--	--	--	--	--	--	4.1	2.85
22...	1826	ENVIRONMENTAL	1480	266	--	--	--	--	--	--	3.9	2.82
23...	0444	ENVIRONMENTAL	1340	267	--	--	--	--	--	--	3.8	2.78
23...	1624	ENVIRONMENTAL	1200	264	--	--	--	--	--	--	3.7	2.94
28...	*1600*	*BLANK*	--	--	--	--	--	--	--	--	--	--
30...	0458	ENVIRONMENTAL	1290	286	--	--	--	--	--	--	4.4	3.08
30...	1136	ENVIRONMENTAL	3070	251	--	--	--	--	--	--	5.8	2.80
30...	1612	ENVIRONMENTAL	3130	241	--	--	--	--	--	--	5.4	3.10
30...	2110	ENVIRONMENTAL	2850	241	--	--	--	--	--	--	5.2	3.44
31...	0222	ENVIRONMENTAL	2740	246	--	--	--	--	--	--	4.6	3.46
31...	0817	ENVIRONMENTAL	2240	251	--	--	--	--	--	--	4.6	3.58
31...	1530	ENVIRONMENTAL	1880	261	--	--	--	--	--	--	4.6	3.66
31...	2353	ENVIRONMENTAL	1650	269	--	--	--	--	--	--	4.6	3.81
APR												
01...	0917	ENVIRONMENTAL	1490	277	--	--	--	--	--	--	4.5	3.85
01...	1937	ENVIRONMENTAL	1370	288	--	--	--	--	--	--	4.5	3.89
02...	0648	ENVIRONMENTAL	1260	290	--	--	--	--	--	--	4.3	3.86
03...	*1530*	*BLANK*	--	--	--	--	--	--	--	--	--	--
MAY												
16...	1330	ENVIRONMENTAL	245	394	7.9	23.0	18.2	752	17.1	184	4.2	3.79
21...	1144	ENVIRONMENTAL	257	425	7.2	--	--	--	--	--	4.6	3.72
22...	0359	ENVIRONMENTAL	316	412	7.2	--	--	--	--	--	4.4	3.60
22...	1120	ENVIRONMENTAL	381	403	7.3	--	--	--	--	--	4.2	3.50
23...	0043	ENVIRONMENTAL	402	371	7.2	--	--	--	--	--	3.9	3.05
23...	0946	ENVIRONMENTAL	874	354	7.3	--	--	--	--	--	5.1	3.04
23...	1456	ENVIRONMENTAL	898	338	7.4	--	--	--	--	--	5.2	3.11
23...	2128	ENVIRONMENTAL	656	306	7.5	--	--	--	--	--	4.4	2.93
24...	0534	ENVIRONMENTAL	613	310	7.5	--	--	--	--	--	4.2	3.05
24...	1442	ENVIRONMENTAL	481	323	7.6	--	--	--	--	--	3.9	3.14
JUN												
14...	1200	ENVIRONMENTAL	182	438	8.1	29.0	24.5	756	9.7	117	3.6	3.20
22...	1028	ENVIRONMENTAL	694	390	5.8	--	--	--	--	--	5.4	3.50
22...	1544	ENVIRONMENTAL	1220	329	6.6	--	--	--	--	--	6.0	3.71
22...	1943	ENVIRONMENTAL	1330	316	6.8	--	--	--	--	--	5.9	3.52
22...	2227	ENVIRONMENTAL	2210	266	7.0	--	--	--	--	--	6.6	3.44
23...	0029	ENVIRONMENTAL	2570	246	7.0	--	--	--	--	--	5.9	2.69
23...	0218	ENVIRONMENTAL	2870	257	7.1	--	--	--	--	--	6.9	2.79
23...	0353	ENVIRONMENTAL	3340	249	7.1	--	--	--	--	--	5.9	3.17
23...	0516	ENVIRONMENTAL	3670	232	7.2	--	--	--	--	--	7.0	3.19
23...	0633	ENVIRONMENTAL	3940	224	7.2	--	--	--	--	--	7.1	2.99
23...	0747	ENVIRONMENTAL	4020	228	7.2	--	--	--	--	--	6.0	3.47
23...	0901	ENVIRONMENTAL	3970	230	7.2	--	--	--	--	--	6.2	3.67
23...	1017	ENVIRONMENTAL	3770	231	7.3	--	--	--	--	--	5.8	3.70
JUL												
12...	1315	ENVIRONMENTAL	210	430	8.2	25.5	23.5	753	11.2	134	4.4	3.83
AUG												
23...	1200	ENVIRONMENTAL	145	468	7.8	22.5	22.0	754	7.6	88	4.8	4.31
SEP												
10...	1300	ENVIRONMENTAL	78	506	8.0	22.5	24.0	757	9.9	119	4.0	3.64

01614500 CONOCOCHEAGUE CREEK AT FAIRVIEW, MD--Continued

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

DATE	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)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN DIS-SOLVED (MG/L AS N) (00602)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	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)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	SEDI-MENT, SUS-PENDED (MG/L) (80154)
OCT													
05...	<.010	3.70	<.020	.38	.21	3.9	--	--	.134	.113	.099	2.3	2
NOV													
14...	.006	2.81	<.041	.24	.23	3.0	--	--	.089	.073	.063	--	M
DEC													
12...	E.005	3.48	<.041	.23	.15	3.6	--	--	.066	.059	.046	--	2
17...	.017	3.67	.094	1.7	.50	4.2	1.6	.41	.423	.091	.069	--	149
17...	.018	3.74	.115	2.0	.60	4.3	1.9	.48	.467	.099	.073	--	223
17...	.020	4.02	.149	1.8	.74	4.8	1.7	.60	.457	.111	.081	--	210
17...	.022	4.34	.162	1.8	.80	5.1	1.6	.64	.458	.122	.089	--	213
17...	.025	4.52	.159	2.1	.77	5.3	1.9	.61	.445	.126	.095	--	203
18...	.022	4.55	.123	1.6	.68	5.2	1.4	.56	.407	.120	.086	--	194
18...	.022	4.70	.117	1.6	.64	5.3	1.5	.52	.377	.111	.083	--	183
18...	.020	4.58	.104	1.3	.59	5.2	1.2	.48	.315	.105	.081	--	152
18...	.020	4.59	.107	1.5	.56	5.1	1.4	.45	.271	.092	.071	--	123
18...	.021	4.41	.079	1.1	.48	4.9	.98	.40	.232	.077	.059	--	101
18...	.020	4.43	.063	1.0	.44	4.9	.96	.38	.198	.068	.050	--	72
18...	.016	4.41	.048	.87	.39	4.8	.82	.34	.173	.058	.044	--	54
JAN													
24...	.033	4.22	<.041	.42	.28	4.5	--	--	.073	.047	.030	--	10
30...	.028	3.43	.102	1.3	.46	3.9	1.2	.36	.274	.062	.036	--	124
31...	.097	3.34	.739	7.0	3.7	7.0	6.2	2.9	1.08	.560	.462	--	105
FEB													
27...	.044	3.17	<.041	.29	.25	3.4	--	--	.041	.021	E.014	2.3	3
MAR													
19...	.013	3.22	<.041	.30	.22	3.4	--	--	.074	.027	.022	--	8
22...	.022	2.88	.077	1.2	.37	3.2	1.1	.29	.208	.037	.025	--	110
22...	.028	2.85	.058	1.0	.29	3.1	.97	.24	.196	.030	.023	--	96
23...	.020	2.80	.056	.99	.24	3.0	.93	.19	.153	.026	.019	--	79
23...	.017	2.96	E.028	.73	.21	3.2	--	--	.099	.021	E.014	--	44
28...	*<.006*	*E.039*	*<.041*	*<.08*	*<.10*	--	--	--	*<.004*	*<.006*	*<.018*	--	--
30...	.020	3.10	.064	1.3	.45	3.5	1.2	.38	.288	.053	.041	--	185
30...	.031	2.84	.174	2.9	.73	3.6	2.8	.56	.831	.063	.047	--	566
30...	.029	3.12	.189	2.3	.78	3.9	2.1	.59	.631	.074	.057	--	457
30...	.026	3.47	.135	1.7	.60	4.1	1.6	.46	.401	.056	.042	--	275
31...	.023	3.48	.088	1.1	.45	3.9	1.0	.36	.293	.040	.032	--	183
31...	.021	3.60	.069	.97	.38	4.0	.90	.31	.209	.031	.023	--	97
31...	.019	3.68	.059	.93	.39	4.1	.87	.33	.157	.028	E.018	--	110
31...	.017	3.82	.052	.74	.39	4.2	.69	.34	.120	.027	.020	--	64
APR													
01...	.014	3.86	E.035	.60	.29	4.1	--	--	.101	.025	E.013	--	46
01...	.020	3.91	.047	.58	.29	4.2	.53	.24	.087	.024	E.017	--	41
02...	.014	3.88	E.030	.44	.21	4.1	--	--	.077	.023	E.015	--	34
03...	*<.006*	*<.047*	*<.041*	*<.08*	*<.10*	--	--	--	*<.004*	*E.003*	*<.018*	--	--
MAY													
16...	.019	3.81	<.041	.35	.23	4.0	--	--	.042	.018	<.018	2.9	8
21...	.036	3.75	.089	.89	.28	4.0	.80	.19	.171	.063	.048	--	38
22...	.044	3.65	.162	.80	.39	4.0	.64	.22	.142	.079	.062	--	29
22...	.039	3.54	.114	.71	.34	3.9	.59	.23	.147	.076	.053	--	30
23...	.044	3.10	.097	.76	.40	3.5	.66	.30	.176	.089	.064	--	42
23...	.046	3.08	.181	2.0	.54	3.6	1.9	.36	.394	.108	.101	--	166
23...	.047	3.16	.176	2.0	.65	3.8	1.8	.47	.425	.135	.102	--	173
23...	.052	2.98	.155	1.4	.66	3.6	1.2	.50	.281	.115	.086	--	105
24...	.054	3.10	.124	1.1	.61	3.7	.96	.49	.224	.092	.061	--	70
24...	.045	3.18	.067	.77	.44	3.6	.70	.38	.170	.083	.056	--	42
JUN													
14...	.018	3.21	<.040	.41	.27	3.5	--	--	.113	.082	.053	--	13
22...	.042	3.54	.050	1.9	.50	4.0	1.8	.45	.499	.110	.086	--	243
22...	.051	3.76	.096	2.3	.63	4.4	2.2	.53	.709	.134	.113	--	460
22...	.063	3.58	.137	2.4	.83	4.4	2.2	.70	.728	.185	.153	--	419
22...	.045	3.49	.073	3.1	.74	4.2	3.0	.67	.853	.121	.094	--	612
23...	.037	2.73	.082	3.2	.64	3.4	3.1	.56	1.12	.067	.046	--	835
23...	.040	2.83	.097	4.0	.71	3.5	3.9	.61	.996	.079	.052	--	762
23...	.040	3.21	.123	2.7	.77	4.0	2.6	.65	.832	.101	.079	--	670
23...	.039	3.23	.126	3.7	.80	4.0	3.6	.67	.915	.096	.075	--	732
23...	.043	3.04	.109	4.1	.82	3.9	4.0	.71	.973	.097	.069	--	701
23...	.038	3.51	.111	2.4	.77	4.3	2.3	.66	.819	.112	.089	--	592
23...	.040	3.71	.107	2.5	.82	4.5	2.4	.71	.784	.129	.104	--	552
23...	.041	3.74	.105	2.0	.79	4.5	1.9	.68	.802	.131	.106	--	547
JUL													
12...	.012	3.84	<.040	.57	.17	4.0	--	--	.089	.014	<.020	--	105
AUG													
23...	.014	4.33	E.027	.45	.39	4.7	--	--	.155	.125	.103	4.1	122
SEP													
10...	.017	3.66	<.040	.34	.29	4.0	--	--	.120	.108	.090	--	4

E Estimated value.
< Actual value is known to be less than the value shown.

01614500 CONOCOCHEAGUE CREEK AT FAIRVIEW, MD--Continued

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

DATE	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY) (80155)
OCT	
05...	1.1
NOV	
14...	.39
DEC	
12...	.71
17...	398
17...	850
17...	906
17...	982
17...	991
18...	988
18...	964
18...	780
18...	591
18...	441
18...	284
18...	190
JAN	
24...	11
30...	437
31...	369
FEB	
27...	3.1
MAR	
19...	15
22...	385
22...	383
23...	286
23...	143
28...	--
30...	644
30...	4700
30...	3860
30...	2110
31...	1350
31...	587
31...	560
31...	287
APR	
01...	187
...	151
02...	115
03...	--
MAY	
16...	5.6
21...	27
22...	25
22...	31
23...	46
23...	391
23...	420
23...	186
24...	116
24...	54
JUN	
14...	6.2
22...	455
22...	1520
22...	1500
22...	3650
23...	5800
23...	5900
23...	6040
23...	7260
23...	7460
23...	6430
23...	5920
23...	5570
JUL	
12...	60
AUG	
23...	48
SEP	
10...	.84

01617800 MARSH RUN AT GRIMES, MD

LOCATION.--Lat 39°30'52.4", long 77°46'38.0", Washington County, Hydrologic Unit 02070004, on right bank 220 ft up- stream from bridge on Sprecher Road, 0.1 mi downstream from unnamed tributary, 0.5 mi southwest of Grimes, 1.5 mi upstream from mouth, and 2.2 mi southwest of Fairplay.

DRAINAGE AREA.--18.9 mi^2.

PERIOD OF RECORD.--October 1963 to current year.

GAGE.--Water-stage recorder. Datum of gage is 354.72 ft above sea level.

REMARKS.--Records good except those for estimated daily discharges (ice effect, missing record), which are poor. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 60 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 30	0615	*29	*1.57	No peak greater than base discharge.			

Minimum discharge, 0.65 ft^3/s, Sept. 20, 22-24, 28-30.

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	9.4	5.2	4.5	e5.8	11	6.7	14	8.8	6.2	5.2	2.4	2.0
2	9.3	5.1	4.3	e6.5	10	6.6	13	8.6	6.7	4.7	2.3	1.5
3	8.7	5.2	4.1	e5.6	9.5	6.5	12	9.1	6.3	4.6	2.1	1.4
4	8.2	5.0	3.9	e5.5	8.6	7.2	12	9.5	5.9	4.8	3.3	1.4
5	8.1	5.0	4.1	e5.5	9.1	9.0	12	9.4	6.0	4.6	3.5	1.3
6	8.1	4.8	4.0	e5.4	9.1	8.4	12	9.3	6.4	4.3	2.6	1.3
7	7.8	4.5	3.9	e5.4	9.2	7.8	14	9.0	10	4.2	2.3	1.2
8	8.0	4.5	3.8	e5.3	8.8	7.4	12	9.0	7.6	5.0	2.2	1.2
9	7.8	4.6	3.8	e5.3	8.8	7.2	12	9.1	5.8	4.4	2.7	1.1
10	7.9	9.8	3.8	e5.2	9.0	6.9	12	7.7	5.9	4.1	2.3	1.1
11	7.3	6.0	3.9	e5.2	8.2	6.9	13	6.2	6.0	4.1	2.3	1.2
12	7.0	5.4	3.6	e5.1	7.5	6.7	14	6.1	6.2	4.0	3.2	1.2
13	6.9	5.0	3.9	e5.1	7.0	9.9	12	6.5	6.0	3.6	4.4	1.1
14	6.8	4.7	8.1	e5.1	7.9	8.5	11	6.8	5.4	3.3	3.4	1.1
15	6.3	4.6	7.8	e5.0	8.1	8.0	11	7.2	5.3	3.2	2.7	1.2
16	6.2	4.5	7.2	e5.0	8.2	8.4	15	7.4	5.9	3.1	2.4	1.3
17	6.5	4.4	14	e5.0	9.3	8.7	14	7.3	9.6	3.1	2.3	1.0
18	7.5	4.4	9.7	e5.0	7.9	7.9	13	7.5	6.1	3.2	2.1	.88
19	6.9	4.4	8.5	7.9	7.7	7.9	12	7.1	5.7	3.2	2.1	.85
20	6.4	4.4	7.5	11	7.7	8.1	12	6.6	5.5	2.9	2.2	1.6
21	6.3	4.3	e7.3	8.2	7.4	9.7	12	8.3	6.0	2.8	2.1	1.6
22	6.0	4.1	e7.0	e7.2	7.1	9.6	12	9.7	5.9	2.7	1.9	.88
23	5.9	4.0	e6.8	e6.7	7.3	9.0	12	11	8.5	2.7	1.9	.65
24	5.9	3.8	e6.7	e6.7	7.3	8.7	12	8.2	6.4	2.6	2.2	.82
25	5.9	4.0	e6.5	e6.4	7.6	8.5	11	7.6	5.7	2.5	1.9	1.4
26	5.8	7.6	e6.4	e6.3	7.4	8.2	10	7.5	5.4	2.6	1.8	.98
27	5.7	5.8	e6.3	e6.2	6.9	8.1	9.9	7.3	5.1	2.5	1.7	.83
28	5.4	4.9	e6.2	e6.1	6.8	7.6	9.4	6.9	4.9	2.4	1.6	.74
29	5.4	4.7	e6.1	e6.1	---	7.2	9.1	6.4	4.8	2.6	1.6	.66
30	5.4	4.8	e6.1	14	---	23	9.0	6.0	4.7	2.8	1.5	.65
31	5.3	---	e5.9	13	---	16	---	5.9	---	2.7	1.5	---
TOTAL	214.1	149.5	185.7	201.8	230.4	270.3	358.4	243.0	185.9	108.5	72.5	34.14
MEAN	6.91	4.98	5.99	6.51	8.23	8.72	11.9	7.84	6.20	3.50	2.34	1.14
MAX	9.4	9.8	14	14	11	23	15	11	10	5.2	4.4	2.0
MIN	5.3	3.8	3.6	5.0	6.8	6.5	9.0	5.9	4.7	2.4	1.5	.65
CFSM	.37	.26	.32	.34	.44	.46	.63	.41	.33	.19	.12	.06
IN.	.42	.29	.37	.40	.45	.53	.71	.48	.37	.21	.14	.07

e Estimated

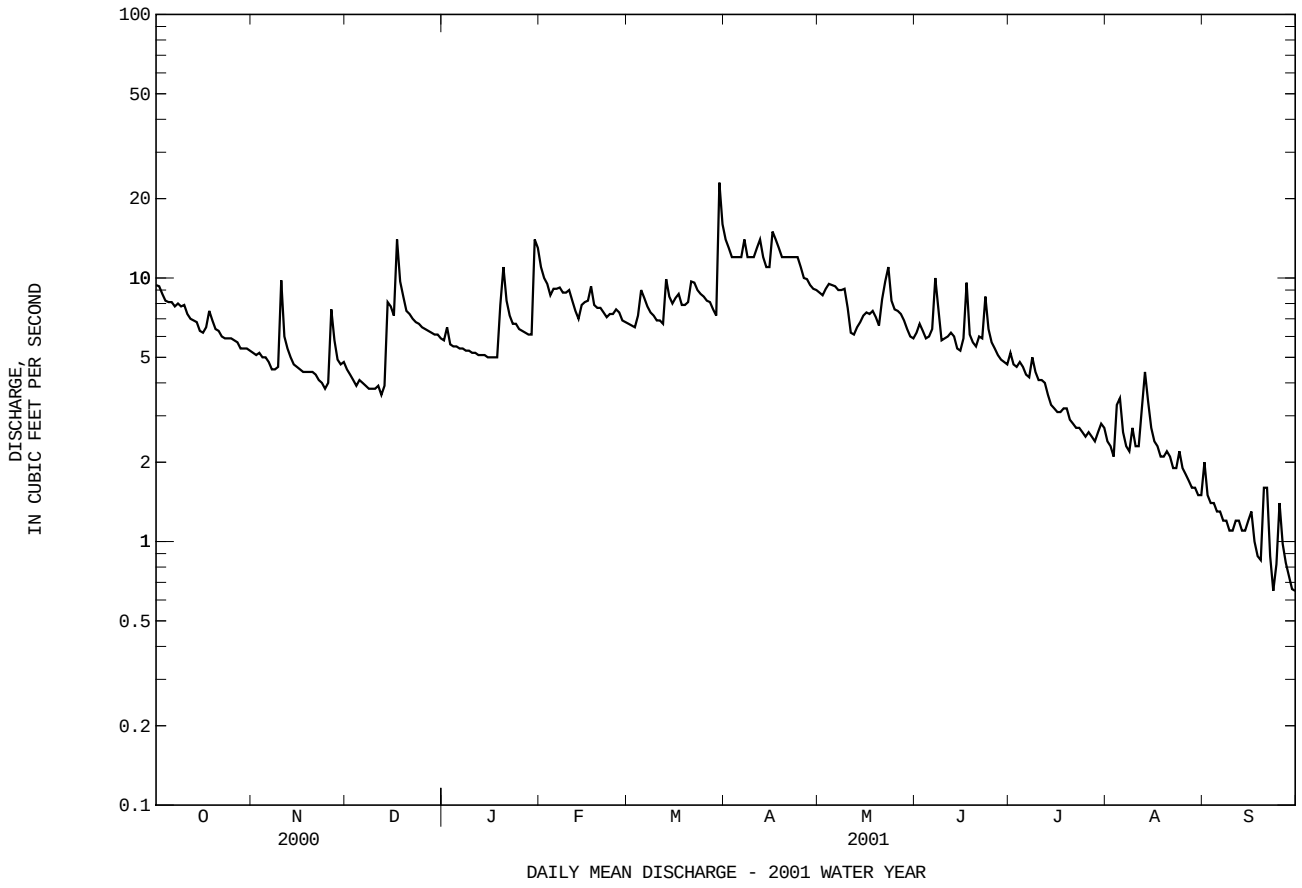
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 2001, BY WATER YEAR (WY)

MEAN	7.83	7.82	10.7	12.5	14.9	19.1	19.1	15.7	13.0	9.59	7.46	6.44
MAX	39.5	29.3	39.9	30.1	33.3	48.6	49.8	36.2	48.2	32.4	24.2	31.8
(WY)	1977	1997	1997	1979	1998	1994	1984	1972	1972	1972	1996	1975
MIN	.83	1.71	1.56	2.24	4.14	5.08	4.45	3.65	2.44	1.08	.43	1.05
(WY)	1987	1992	1999	1981	1989	1990	1969	1969	1999	1999	1999	1995

01617800 MARSH RUN AT GRIMES, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1964 - 2001	
ANNUAL TOTAL	3245.0		2254.24			
ANNUAL MEAN	8.87		6.18		12.1	
HIGHEST ANNUAL MEAN					23.9	1972
LOWEST ANNUAL MEAN					4.04	1999
HIGHEST DAILY MEAN	41	Mar 22	23	Mar 30	223	Jun 23 1972
LOWEST DAILY MEAN	1.8	(a)	.65	(b)	(c).00	Oct 1 1977
ANNUAL SEVEN-DAY MINIMUM	1.9	Feb 3	.87	Sep 23	.28	Aug 15 1999
MAXIMUM PEAK FLOW			29	Mar 30	(d)459	Feb 12 1985
MAXIMUM PEAK STAGE			1.57	Mar 30	4.45	Feb 12 1985
INSTANTANEOUS LOW FLOW			.65	(f)	(c).00	Oct 1 1977
ANNUAL RUNOFF (CFSM)	.47		.33		.64	
ANNUAL RUNOFF (INCHES)	6.39		4.44		8.72	
10 PERCENT EXCEEDS	15		9.9		24	
50 PERCENT EXCEEDS	8.1		6.1		8.8	
90 PERCENT EXCEEDS	3.4		1.9		2.8	

a Feb. 7, 8, 2000.
b Sept. 23, 30.
c Result of regulation caused by construction work upstream from station.
d From rating curve extended above 220 ft^3/s.
f Sept. 20, 22-24, 28-30.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01618000 POTOMAC RIVER AT SHEPHERDSTOWN, WV

LOCATION.--Lat 39°26'05.0", long 77°48'05.0", Jefferson County, Hydrologic Unit 02070004, on right bank, 0.1 mi downstream from Rumsey Bridge at Shepherdstown, 3.3 mi upstream from Antietam Creek, and at mile 184.

DRAINAGE AREA.--5,929 mi^2.

PERIOD OF RECORD.--August 1928 to September 1953. Annual maximums, water years 1954-64. July 1964 to September 1993. October 2000 to September 2001. Gage-height record and estimated discharges October 1953 to June 1964 available in files of the Maryland/Delaware/DC district office.

REVISED RECORDS.--WSP 756: Drainage area. WSP 781: 1929(M). OFR 95-0292: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 281.00 ft above sea level

REMARKS.--Records good except those for estimated daily discharges (missing record, ice effect), which are fair. Some regulation at low flow by power plants upstream from station, prior to July 1981 by Stony River Reservoir, since December 1950 by Savage River Reservoir (see station 01597500), and since July 1981 by Jennings Randolph Lake. National Weather Service gage-height telemeter at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods of June 1889 and May 1924 reached stages of 39.2 ft and 29.8 ft respectively, from floodmarks, discharges, about 290,000 ft^3/s and 168,000 ft^3/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 23,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb 1	0945	24,400	9.17	Apr 13	0415	28,500	10.09
Mar 22	2300	*41,900	*12.86				

Minimum discharge, 744 ft^3/s, Sept. 15, 16.

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	e3400	e930	2130	e2150	19800	4830	19900	3970	4780	2690	9570	1630
2	e3000	e930	2080	e2050	14700	4530	17000	3740	4240	2560	6030	1440
3	e2700	e930	2040	e2000	11100	4360	14300	3410	3820	2430	4550	1330
4	e2300	e930	1940	e1950	8640	4250	12200	3260	3750	2390	3770	1900
5	e2000	e920	1760	1910	7010	4380	10500	3080	3520	2220	3180	1720
6	e1850	e920	1660	1880	6140	5140	9090	2930	3280	2520	3290	1510
7	e1700	e920	1620	1810	5520	5580	8310	2810	3810	2540	3740	1200
8	e1600	e960	1610	e1790	5060	5390	9020	2650	15600	2480	3220	e1250
9	e2100	e1300	1730	e1780	4670	5530	10200	2610	13500	2390	2830	e1300
10	e2300	e1800	1710	e1750	4400	5800	11300	2510	9230	2430	2320	e1300
11	e1800	e2000	1660	e1740	4350	5680	11600	2410	6770	2480	2000	1070
12	e1250	e2200	1670	e1730	5130	5280	16600	2310	5260	2210	2170	1030
13	e1200	e1900	1540	1720	5130	5270	26100	2000	4520	2120	3130	1010
14	e1150	e1700	1710	e1710	5400	6880	18400	2090	3820	1720	5500	999
15	e1120	e1550	1830	e1700	5650	8720	14200	2150	3300	1820	6340	928
16	e1080	e1450	2220	e1690	5730	8800	13900	2120	3230	1830	4320	810
17	e1050	e1380	3230	e1680	7390	8190	20300	1910	4170	1700	3150	900
18	e1150	e1310	7390	e1680	8880	8670	17100	1850	4310	1500	2560	868
19	e1230	e1250	8750	2120	8830	9440	13400	1880	3400	1490	2240	837
20	e1300	e1200	7790	2550	7770	9500	11100	1980	2830	1480	2000	868
21	e1230	e1150	5860	4900	6710	8380	9520	2660	2660	1550	2460	991
22	e1150	e1120	4870	6510	5780	24200	8240	5390	2660	1790	2210	922
23	e1100	e1080	4220	6750	5010	33300	7540	5790	5950	1700	2410	910
24	e1070	e1040	3420	5580	4600	21300	6780	8970	9770	1580	1900	908
25	e1040	e1200	2940	5030	4450	e16000	6040	11600	10100	1450	1800	1010
26	e1010	e1400	e2700	4520	4310	e14000	5500	8640	6730	1380	1600	1070
27	e1000	e1600	e2600	4070	4660	12200	4980	9800	4870	1290	1590	1130
28	e980	e1800	2440	3810	5100	10300	4580	11100	3870	1330	1580	1110
29	e960	e1900	e2400	3490	---	8930	4280	8840	3280	3030	1550	1040
30	e940	1980	e2300	3540	---	11100	4090	7180	2940	3820	1610	994
31	e930	---	e2200	7700	---	19900	---	5770	---	7370	1560	---
TOTAL	46690	40750	92020	93290	191920	305830	346070	137410	159970	69290	96180	33985
MEAN	1506	1358	2968	3009	6854	9865	11540	4433	5332	2235	3103	1133
MAX	3400	2200	8750	7700	19800	33300	26100	11600	15600	7370	9570	1900
MIN	930	920	1540	1680	4310	4250	4090	1850	2660	1290	1550	810
CFSM	.25	.23	.50	.51	1.15	1.66	1.94	.75	.90	.38	.52	.19
IN.	.29	.26	.58	.58	1.20	1.92	2.17	.86	1.00	.43	.60	.21

e Estimated

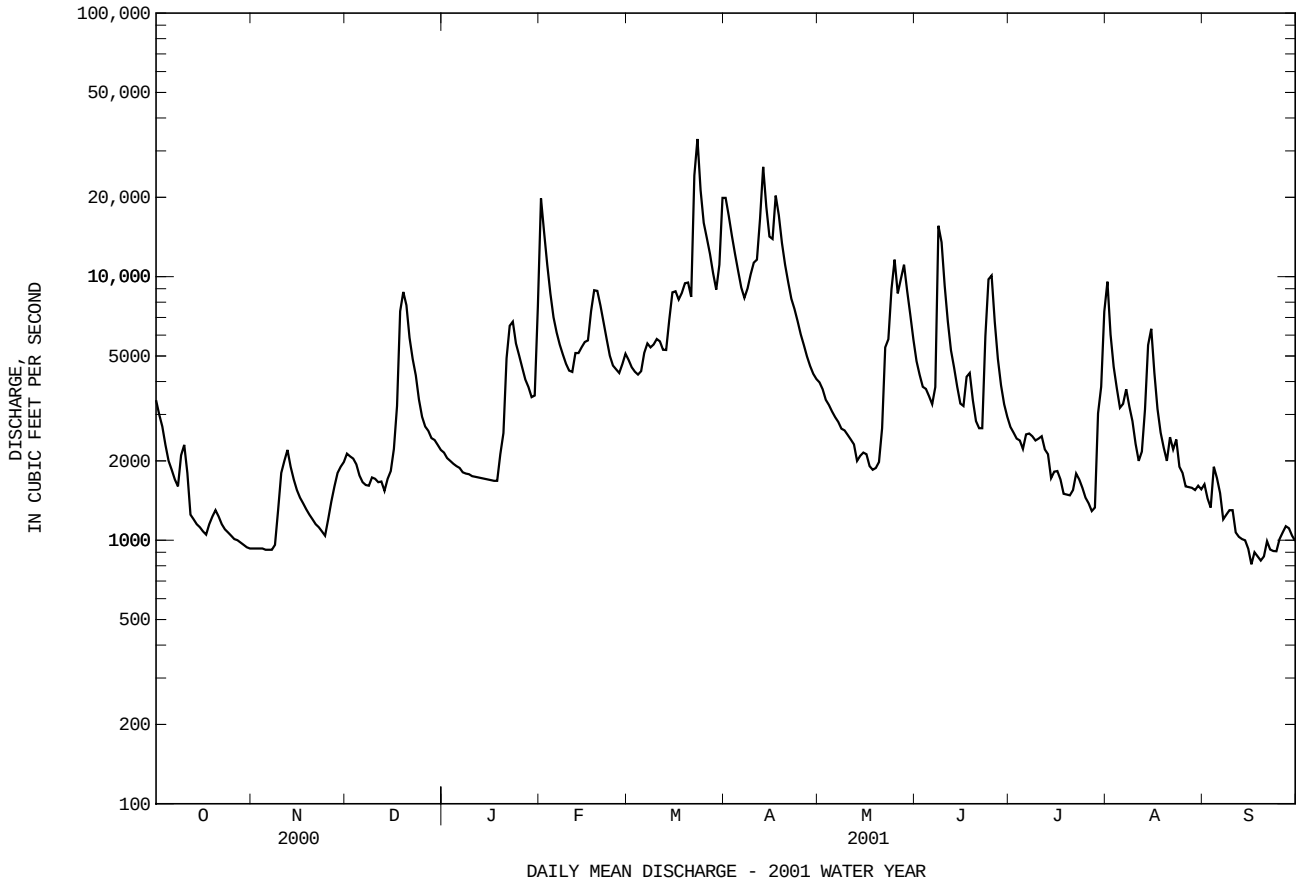
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1928 - 1953, 1964 - 1993, 2001, BY WATER YEAR (WY)

MEAN	3131	3669	5707	6889	9145	13240	11450	8044	4535	2475	2296	1977
MAX	20080	24780	22070	20480	23770	45990	30490	20450	22600	9529	12140	11750
(WY)	1977	1986	1973	1937	1971	1936	1993	1988	1972	1949	1955	1975
MIN	351	395	621	1009	1580	3081	4010	2049	970	556	429	378
(WY)	1931	1931	1931	1981	1934	1990	1969	1930	1969	1966	1930	1930

01618000 POTOMAC RIVER AT SHEPHERDSTOWN, WV--Continued

SUMMARY STATISTICS	FOR 2001 WATER YEAR		WATER YEARS 1928 - 1953, 1964 - 1993, 2001	
ANNUAL TOTAL	1613405			
ANNUAL MEAN	4420		6028	
HIGHEST ANNUAL MEAN			10390	1994
LOWEST ANNUAL MEAN			2607	1969
HIGHEST DAILY MEAN	33300	Mar 23	287000	Mar 19 1936
LOWEST DAILY MEAN	810	Sep 16	185	Jul 31 1966
ANNUAL SEVEN-DAY MINIMUM	885	Sep 16	294	Sep 4 1966
MAXIMUM PEAK FLOW	41900	Mar 22	(a)335000	Mar 19 1936
MAXIMUM PEAK STAGE	12.86	Mar 22	(b)42.10	Mar 19 1936
INSTANTANEOUS LOW FLOW	744	(c)	170	Aug 1 1966
ANNUAL RUNOFF (CFSM)	.74		1.02	
ANNUAL RUNOFF (INCHES)	10.11		13.80	
10 PERCENT EXCEEDS	9650		13500	
50 PERCENT EXCEEDS	2560		3200	
90 PERCENT EXCEEDS	1080		881	

a From rating curve extended above 200,000 ft^3/s, on the basis of slope-area measurement of peak flow.
b From floodmarks.
c Sept. 15, 16.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01618000 POTOMAC RIVER AT SHEPHERDSTOWN, WV--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1960-61, 1965, 1979-93, October 2000 to September 2001.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1980 to September 1981.
WATER TEMPERATURE: October 1980 to September 1981.

EXTREMES FOR PERIOD OF DAILY RECORD--
SPECIFIC CONDUCTANCE: Maximum, 670 microsiemens, Aug. 6, 10, 15, 30, Sept. 3, 1981; minimum,160 microsiemens, April 14-15, 1981.
WATER TEMPERATURE: Maximum, 30.0°C, July 17, 21, 25, 1981; minimum, 1.0°C, Feb. 13, 1981.

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

DATE	TIME	SAMPLE TYPE	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)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)
OCT												
23...	*0900*	*BLANK*	--	--	--	--	--	--	--	--	--	--
23...	*0905*	*BLANK*	--	--	--	--	--	--	--	--	--	--
23...	1030	ENVIRONMENTAL	1370	420	7.9	18.0	15.2	773	10.1	99	1.2	--
NOV												
20...	1225	ENVIRONMENTAL	1320	497	8.2	6.0	6.0	755	11.4	93	1.2	.833
20...	*1226*	*REPLICATE*	--	--	--	--	--	--	--	--	*1.2*	*.838*
DEC												
18...	1110	ENVIRONMENTAL	7450	384	7.9	-3.0	1.1	740	12.6	92	1.4	1.02
JAN												
22...	1050	ENVIRONMENTAL	6270	368	8.0	-2.0	.00	771	13.2	89	1.8	1.33
22...	*1150*	*BLANK*	--	--	--	--	--	--	--	--	--	--
31...	1730	ENVIRONMENTAL	9100	295	7.6	5.0	2.5	744	11.7	88	1.7	1.18
31...	*1731*	*REPLICATE*	--	--	--	--	--	--	--	--	*1.8*	*1.14*
FEB												
01...	1600	ENVIRONMENTAL	20600	207	6.8	7.0	.5	760	13.5	94	2.0	.840
20...	1100	ENVIRONMENTAL	7740	270	7.6	7.0	4.3	763	12.6	97	1.3	.999
MAR												
06...	1210	ENVIRONMENTAL	5070	274	7.9	1.0	5.0	747	12.2	98	1.0	.791
12...	1830	ENVIRONMENTAL	5180	266	8.5	11.0	6.5	756	12.7	104	1.1	.783
21...	1530	ENVIRONMENTAL	7960	246	7.7	6.0	7.9	751	7.1	61	1.2	.924
22...	1845	ENVIRONMENTAL	37400	186	7.3	9.0	6.5	752	10.2	84	1.9	.769
23...	1445	ENVIRONMENTAL	30700	147	7.5	13.5	6.5	751	12.2	101	2.1	.854
26...	1730	ENVIRONMENTAL	13500	196	7.4	-1.0	6.5	760	13.0	106	--	--
APR												
02...	1015	ENVIRONMENTAL	17100	215	6.6	6.0	7.3	759	11.9	99	1.5	1.14
18...	1500	ENVIRONMENTAL	16600	180	6.8	10.0	11.0	752	11.9	109	1.6	1.04
30...	1000	ENVIRONMENTAL	3950	297	7.5	19.5	15.8	767	9.5	95	1.5	1.16
MAY												
21...	1400	ENVIRONMENTAL	2440	399	7.1	--	17.5	753	7.3	77	1.6	1.07
22...	0930	ENVIRONMENTAL	5370	425	7.0	18.5	18.3	750	7.3	80	1.6	1.05
22...	*0931*	*REPLICATE*	--	--	--	--	--	--	--	--	*1.6*	*1.08*
23...	1100	ENVIRONMENTAL	5660	351	6.6	21.0	18.6	755	8.4	91	1.3	.819
24...	1215	ENVIRONMENTAL	8650	316	6.8	23.0	19.2	756	9.1	99	1.5	1.01
25...	1000	ENVIRONMENTAL	12000	240	7.4	19.0	19.0	758	8.7	94	1.5	.917
JUN												
05...	0945	ENVIRONMENTAL	3530	298	7.6	20.5	19.2	751	8.6	95	1.4	.961
JUL												
09...	0915	ENVIRONMENTAL	2390	378	8.0	25.0	25.3	758	8.8	108	1.3	.882
09...	*1200*	*BLANK*	--	--	--	--	--	--	--	--	--	--
AUG												
20...	0945	ENVIRONMENTAL	2010	284	7.4	20.0	25.4	748	6.0	75	1.4	.930
20...	*0950*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
SEP												
05...	0945	ENVIRONMENTAL	1720	400	6.7	21.0	25.1	760	6.7	82	--	--

01618000 POTOMAC RIVER AT SHEPHERDSTOWN, WV--Continued

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

DATE	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)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN DIS-SOLVED (MG/L AS N) (00602)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	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)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
OCT													
23...	*<.006*	*<.047*	*<.041*	*<.08*	*<.10*	--	--	--	*<.004*	*<.006*	*<.018*	--	--
23...	*<.006*	*<.047*	*<.041*	*<.08*	*<.10*	--	--	--	*<.004*	*<.006*	*<.018*	--	--
23...	E.005	1.04	<.041	.20	.30	1.3	--	--	.034	.022	E.014	1	4.1
NOV													
20...	.003	.836	<.041	.36	.34	1.2	--	--	.025	.021	E.013	3	10
20...	*.002*	*.840*	*<.041*	*.37*	*.30*	*1.1*	--	--	*.025*	*.022*	*E.013*	*1*	--
DEC													
18...	.006	1.02	<.041	.36	.19	1.2	--	--	.067	.021	E.013	17	340
JAN													
22...	.012	1.34	.055	.41	.32	1.7	.35	.26	.064	.041	.030	5	86
22...	*<.001*	*<.005*	*<.002*	*<.08*	*<.10*	--	--	--	*<.004*	*<.006*	*<.007*	--	--
31...	.014	1.20	.004	.46	.20	1.4	.45	.20	.070	.026	.015	14	344
31...	*.013*	*1.15*	*.009*	*.61*	*.21*	*1.4*	*.60*	*.20*	*.084*	*.027*	*.018*	*15*	--
FEB													
01...	.007	.847	.088	1.1	.34	1.2	1.0	.25	.251	.017	E.006	182	10100
20...	.011	1.01	.046	.25	.20	1.2	.21	.15	.032	.012	.007	4	94
MAR													
06...	.012	.803	.003	.24	.17	.97	.23	.17	.028	.009	E.004	1	19
12...	.008	.791	.005	.33	.26	1.0	.33	.25	.024	.009	<.007	7	99
21...	.005	.929	.008	.27	.18	1.1	.26	.17	.025	.008	<.007	5	107
22...	.006	.775	.031	1.2	.26	1.0	1.1	.23	.279	.012	.007	269	27200
23...	.006	.860	.047	1.2	.40	1.3	1.2	.35	.237	.011	E.004	219	18200
26...	.005	--	.023	.33	.15	--	.30	.13	.040	.012	.012	19	694
APR													
02...	.006	1.14	.032	.39	.21	1.3	.36	.17	.064	.017	.013	90	4180
18...	.008	1.05	.027	.52	.23	1.3	.49	.21	.070	.015	.008	58	2610
30...	.013	1.17	.003	.32	.11	1.3	.31	.11	.035	E.005	<.007	78	828
MAY													
21...	.014	1.08	.074	.47	.24	1.3	.40	.17	.042	E.005	<.007	8	53
22...	.019	1.07	.127	.55	.30	1.4	.42	.17	.069	.014	E.005	25	362
22...	*.018*	*1.10*	*.132*	*.53*	*.28*	*1.4*	*.40*	*.15*	*.069*	*.012*	*E.006*	*25*	--
23...	.002	.821	.122	.48	.27	1.1	.35	.15	.063	.012	.011	20	306
24...	.016	1.02	.044	.45	.25	1.3	.41	.21	.071	.024	.016	28	654
25...	.016	.933	.050	.52	.24	1.2	.47	.19	.076	.027	.017	32	1040
JUN													
05...	.008	.969	.004	.41	.13	1.1	.40	.13	.052	.013	E.006	83	788
JUL													
09...	.008	.890	.009	.44	.21	1.1	.43	.20	.039	E.005	<.007	116	752
09...	--	--	--	--	--	--	--	--	--	--	--	*<1*	--
AUG													
20...	.011	.941	.055	.50	.34	1.3	.45	.28	.066	.042	.032	82	442
20...	--	--	--	--	--	--	--	--	--	--	--	*88*	--
SEP													
05...	E.008	E.736	E.037	.32	.24	--	--	--	.046	E.028	E.018	6	26

E Estimated value.
< Actual value is known to be less than the value shown.

01618000 POTOMAC RIVER AT SHEPHERDSTOWN, WV--Continued

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

DATE	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT	
23...	--
23...	--
23...	--
NOV	
20...	--
20...	--
DEC	
18...	--
JAN	
22...	--
22...	--
31...	96
31...	*94*
FEB	
01...	96
20...	--
MAR	
06...	--
12...	--
21...	--
22...	92
23...	96
26...	97
APR	
02...	--
18...	--
30...	--
MAY	
21...	92
22...	95
22...	*92*
23...	97
24...	88
25...	97
JUN	
05...	--
JUL	
09...	--
09...	--
AUG	
20...	--
20...	--
SEP	
05...	--

THIS IS A BLANK PAGE

01619500 ANTIETAM CREEK NEAR SHARPSBURG, MD

LOCATION.--Lat 39°26'59.2", long 77°43'48.7", Washington County, Hydrologic Unit 02070004, on left bank 400 ft downstream from Burnside Bridge, 1.0 mi southeast of Sharpsburg, and 4.0 mi upstream from mouth.

DRAINAGE AREA.--281 mi^2.

PERIOD OF RECORD.--June 1897 to September 1905, August 1928 to current year. Monthly discharge only for some periods, published in WSP 1302.

REVISED RECORDS.--WSP 192: 1897-1905. WSP 726: Drainage area. WSP 1432: 1929-31(M), 1933, 1935(M), 1937(M), 1949(M), 1952(M).

GAGE.--Water-stage recorder. Concrete control since Mar. 29, 1934. Datum of gage is 311.05 ft above sea level. June 24, 1897, to Aug. 25, 1905, nonrecording gage a few hundred feet downstream from Middle Bridge, 1.2 mi upstream at datum 12 ft higher. Aug. 21, 1928, to July 13, 1933, nonrecording gage at Burnside Bridge, 0.1 mi upstream at present datum.

REMARKS.--No estimated daily discharges. Records good. Some diurnal fluctuation caused by powerplant upstream from station. Since 1928 records include pumpage from the Potomac River for municipal supply of Hagerstown. This water later enters Antietam Creek upstream from station as sewage. National Weather Service gage-height telemeter at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 30	1800	*1,130	*4.48	No peak greater than base discharge.			

Minimum discharge, 72 ft^3/s, Sept. 19.

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	194	130	138	172	371	222	582	303	191	148	106	115
2	189	129	132	169	345	219	529	295	206	145	101	98
3	184	131	128	179	328	218	478	286	204	145	97	88
4	176	128	124	162	309	222	443	278	192	146	105	87
5	171	128	123	162	301	261	415	272	185	147	142	86
6	168	125	126	159	296	252	404	265	186	150	105	84
7	164	127	124	159	285	236	405	257	259	140	103	83
8	160	126	121	159	273	232	390	252	205	142	98	82
9	159	127	120	159	266	231	397	254	189	139	102	81
10	159	201	118	151	268	229	495	249	179	136	94	80
11	159	194	118	148	279	226	459	243	174	132	93	87
12	156	151	116	149	261	224	500	237	172	134	112	81
13	153	138	113	146	256	273	460	235	171	125	157	79
14	149	135	161	143	258	306	438	230	165	121	131	80
15	148	131	185	143	260	282	418	227	162	118	114	78
16	147	128	185	143	260	280	482	224	177	117	105	78
17	147	128	438	142	287	296	510	219	221	117	102	77
18	155	125	554	141	279	285	457	218	173	119	99	79
19	158	122	347	173	255	268	431	218	164	133	97	77
20	153	122	302	278	251	258	417	218	159	120	101	83
21	146	122	263	271	247	300	406	241	165	114	105	121
22	142	118	249	218	242	560	396	283	171	109	98	98
23	138	118	226	201	239	473	385	316	257	108	94	86
24	137	117	225	200	240	419	373	254	208	107	103	85
25	139	119	216	194	236	390	357	227	176	104	100	130
26	138	160	208	186	243	364	348	219	168	104	91	127
27	137	188	199	180	239	343	338	216	161	112	89	101
28	134	165	195	180	227	325	327	212	155	109	93	91
29	130	143	196	177	---	321	316	206	151	106	90	87
30	129	143	183	288	---	902	309	199	146	110	87	85
31	129	---	180	451	---	746	---	190	---	110	87	---
TOTAL	4748	4119	6113	5783	7601	10163	12665	7543	5492	3867	3201	2694
MEAN	153	137	197	187	271	328	422	243	183	125	103	89.8
MAX	194	201	554	451	371	902	582	316	259	150	157	130
MIN	129	117	113	141	227	218	309	190	146	104	87	77
(†)	-15.9	-16.1	-16.1	-15.4	-16.1	-16.4	-14.4	-15.2	-16.6	-17.4	-17.9	-16.8
MEAN ‡	137	121	181	172	355	886	568	301	242	133	139	73.0
CFSM ‡	0.49	0.43	0.64	0.61	1.26	3.15	2.02	1.07	0.86	0.47	0.49	0.26
IN ‡	0.56	0.48	0.74	0.70	1.31	3.63	2.25	1.23	0.96	0.54	0.56	0.29

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1931 - 2001, BY WATER YEAR (WY)

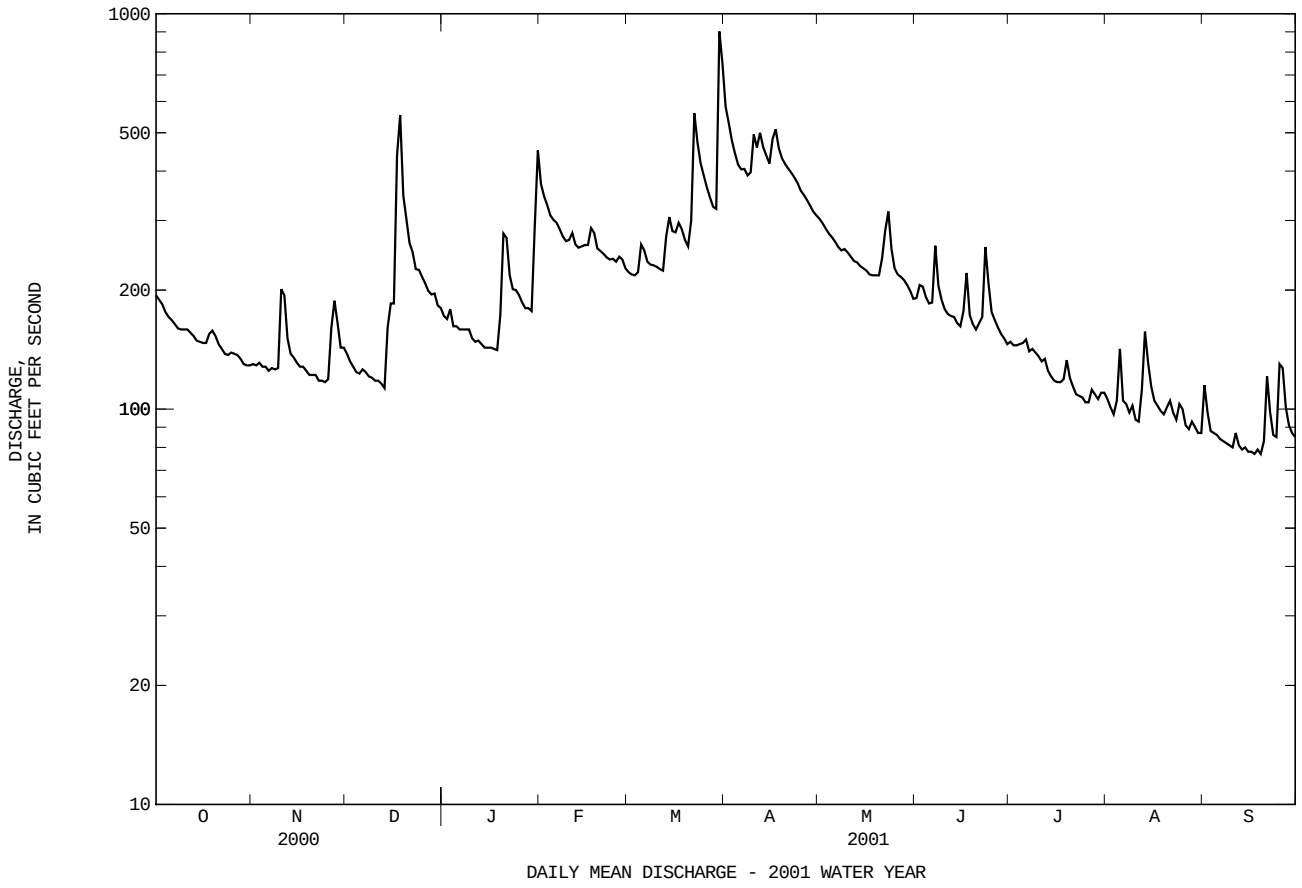
MEAN	177	194	257	302	361	470	467	375	289	214	174	172
MAX	916	628	964	943	1206	1299	1201	859	1278	604	531	1090
(WY)	1977	1997	1997	1996	1998	1994	1993	1998	1972	1996	1996	1975
MIN	65.5	65.6	61.5	57.3	72.5	101	163	139	109	86.7	65.0	69.4
(WY)	1964	1966	1966	1966	1931	1931	1969	1931	1966	1954	1966	1963

† Pumpage in cubic feet per second, from Potomac River for municipal supply of Hagerstown.
‡ Adjusted for pumpage.

01619500 ANTIETAM CREEK NEAR SHARPSBURG, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1931 - 2001	
ANNUAL TOTAL	94600		73989			
ANNUAL MEAN	258		203		287	
ANNUAL MEAN‡	242		187		278	
HIGHEST ANNUAL MEAN					554	1996
LOWEST ANNUAL MEAN					124	1966
HIGHEST DAILY MEAN	1660	Mar 22	902	Mar 30	8970	Sep 26 1975
LOWEST DAILY MEAN	113	Dec 13	77	(a)	37	Jan 30 1966
ANNUAL SEVEN-DAY MINIMUM	119	Dec 7	78	Sep 13	49	Jan 26 1966
MAXIMUM PEAK FLOW			1130	Mar 30	(b)12600	Jul 20 1956
MAXIMUM PEAK STAGE			4.48	Mar 30	16.73	Jul 20 1956
INSTANTANEOUS LOW FLOW			72	Sep 19	(c)9.4	Nov 22 1957
ANNUAL RUNOFF (CFSM)	.92		.72		1.02	
ANNUAL RUNOFF (CFSM)‡	.86		.66		0.99	
ANNUAL RUNOFF (INCHES)	12.52		9.79		13.88	
ANNUAL RUNOFF (INCHES)‡	11.70		9.01		13.42	
10 PERCENT EXCEEDS	431		352		551	
50 PERCENT EXCEEDS	222		168		207	
90 PERCENT EXCEEDS	128		98		99	

‡ Adjusted for inflow since January 1930.
a Sept. 17, 19.
b From rating curve extended above 7,300 ft^3/s on basis of contracted-opening measurement of peak flow.
c Result of regulation caused by construction work upstream from station.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01636500 SHENANDOAH RIVER AT MILLVILLE, WV

LOCATION.--Lat 39°16'55", long 77°47'22", Jefferson County, Hydrologic Unit 02070007, on left bank 0.4 mi downstream from Cattail Run, 1.0 mi upstream from Millville, 5.0 mi upstream from Harpers Ferry, and at mile 4.7.

DRAINAGE AREA.--3,022 mi^2.

PERIOD OF RECORD.--April 1895 to March 1909, August 1928 to current year.

REVISED RECORDS.--WSP 951: 1936(M). WSP 1432: Drainage area at former site, 1895-99, 1901-02, 1905, 1907-08, 1932(M), 1935(M). WDR WV-97-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 293.00 ft above sea level. Apr. 15, 1895, to Mar. 31, 1909, nonrecording gage at site 0.8 mi downstream at datum 0.32 ft higher.

REMARKS.--Records good except those for estimated daily discharges (ice effect), which are poor. Some regulation by upstream hydroelectric plants, including that of Potomac Light and Power Company, 0.5 mi upstream from station. National Weather Service gage-height telemeter and U.S. Army Corps of Engineers satellite telemeter at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of 1870 reached practically same stage as flood of Mar. 18, 1936, 26.36 ft, discharge, 151,000 ft^3/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 15,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 23	0300	*23,700	*10.33	Jun 24	0430	15,600	8.38

Minimum discharge, 479 ft^3/s, Sept. 18, 19.

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	2900	677	838	e980	2740	1410	10500	1530	2360	1690	3610	827
2	2420	678	793	e960	3100	1370	8600	1520	2130	1600	2610	754
3	2080	662	709	e945	2760	1330	7720	1450	1950	1420	1950	768
4	1830	662	714	e930	2420	1270	6920	1390	1820	1420	1660	835
5	1670	663	686	e915	2210	1430	5950	1300	1770	1620	2170	759
6	1530	658	690	e900	2030	1520	5220	1260	1800	1480	1820	658
7	1410	643	678	e890	1890	1510	4800	1240	2180	1280	1420	621
8	1290	652	684	e875	1730	1490	4430	1190	2610	1200	1440	621
9	1210	675	689	e860	1610	1450	4040	1180	2610	1420	1210	607
10	1170	688	678	e850	1510	1400	3820	1140	2150	1290	1050	585
11	1100	733	671	e840	1370	1280	4030	1080	2030	1200	1030	564
12	1040	753	692	e825	1340	1270	7880	1060	1890	1190	1650	538
13	1010	736	657	e810	1310	1290	8670	1020	1740	1100	1810	549
14	975	781	729	795	1240	1260	6830	953	1560	1010	5100	540
15	905	805	762	e790	1220	1240	5620	931	1510	971	3580	556
16	873	759	901	e790	1210	1230	4930	934	1690	928	2300	542
17	877	712	1040	e785	1280	1290	4440	923	2160	908	1700	529
18	889	707	1520	782	1530	1320	3890	924	1970	906	1330	516
19	840	694	1820	821	1560	1410	3430	1020	1820	981	1150	502
20	808	685	3340	1050	1540	1480	3120	1330	1610	940	1030	519
21	769	679	2890	1690	1520	2160	2770	1640	1480	873	1110	517
22	755	683	2330	2090	1470	16500	2550	1950	1780	827	1100	538
23	733	670	1930	2670	1420	19400	2460	3550	7990	886	944	523
24	724	660	1500	2400	1400	11400	2350	5420	11100	886	956	530
25	730	652	e1250	2000	1370	8230	2180	5880	5240	839	1040	595
26	741	759	1160	1880	1390	6400	2000	4620	3900	810	928	615
27	730	880	e1130	1590	1420	5240	1880	4380	2830	960	873	597
28	722	841	e1100	1580	1430	4480	1800	4770	2310	1020	870	587
29	712	888	e1070	1460	---	3940	1650	4220	1990	923	831	609
30	697	879	1040	1580	---	6520	1620	3450	1810	1770	797	631
31	671	---	e1010	2490	---	10100	---	2820	---	3290	802	---
TOTAL	34811	21614	35701	38823	47020	121620	136100	66075	79790	37638	49871	18132
MEAN	1123	720	1152	1252	1679	3923	4537	2131	2660	1214	1609	604
MAX	2900	888	3340	2670	3100	19400	10500	5880	11100	3290	5100	835
MIN	671	643	657	782	1210	1230	1620	923	1480	810	797	502
CFSM	.37	.24	.38	.41	.56	1.30	1.50	.71	.88	.40	.53	.20
IN.	.43	.27	.44	.48	.58	1.50	1.68	.81	.98	.46	.61	.22

e Estimated

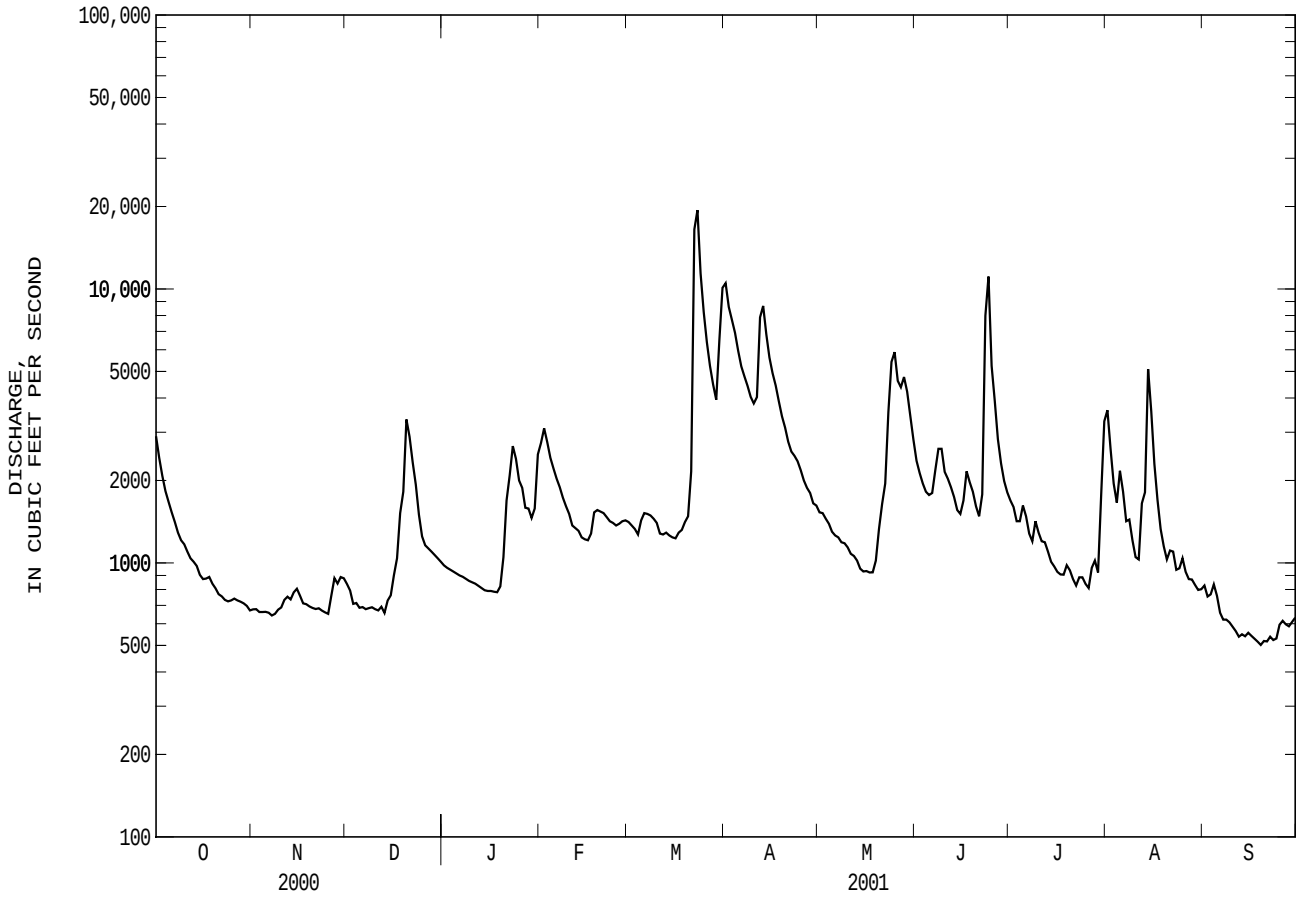
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1895 - 1909, 1928 - 2001, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1948	1853	2476	3234	3917	5047	4364	3330	2395	1440	1628	1470
MAX	16250	13350	8164	13470	18100	17540	12840	8701	10380	4809	10390	14780
(WY)	1943	1986	1973	1996	1998	1936	1901	1901	1972	1972	1955	1996
MIN	343	388	410	503	542	929	992	1001	643	402	388	411
(WY)	1931	1932	1966	1966	1931	1931	1981	1969	1999	1966	1930	1963

01636500 SHENANDOAH RIVER AT MILLVILLE, WV--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1895 - 1909, 1928 - 2001	
ANNUAL TOTAL	660143		687195			
ANNUAL MEAN	1804		1883		2752	
HIGHEST ANNUAL MEAN					5618	1996
LOWEST ANNUAL MEAN					1111	1981
HIGHEST DAILY MEAN	8860	Mar 23	19400	Mar 23	192000	Oct 16 1942
LOWEST DAILY MEAN	643	Nov 7	502	Sep 19	194	Jul 24 1930
ANNUAL SEVEN-DAY MINIMUM	659	Nov 3	521	Sep 17	240	Sep 7 1966
MAXIMUM PEAK FLOW			23700	Mar 23	230000	Oct 16 1942
MAXIMUM PEAK STAGE			10.33	Mar 23	(a)32.40	Oct 16 1942
INSTANTANEOUS LOW FLOW			479	(b)	59	Oct 4 1930
ANNUAL RUNOFF (CFSM)	.60		.62		.91	
ANNUAL RUNOFF (INCHES)	8.13		8.46		12.37	
10 PERCENT EXCEEDS	3210		3920		5570	
50 PERCENT EXCEEDS	1470		1260		1610	
90 PERCENT EXCEEDS	730		671		614	

a From floodmarks.
b Sept. 18, 19.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01637500 CATOCTIN CREEK NEAR MIDDLETOWN, MD

LOCATION.--Lat 39°25'38.1", long 77°33'22.2", Frederick County, Hydrologic Unit 02070008, on right bank 300 ft downstream from bridge on State Highway 17, 1.3 mi south of Middletown, 2.2 mi downstream from Little Catoctin Creek, and 14.8 mi upstream from mouth.

DRAINAGE AREA.--66.9 mi^2.

PERIOD OF RECORD.--August 1947 to current year.

REVISED RECORDS.--WSP 1432: 1947-48. WDR MD-DE-77-1: 1960(M), 1965(M), 1970(M), 1972(P), 1975(P).

GAGE.--Water-stage recorder and concrete control . Elevation of gage is 385 ft above sea level, from topographic map.

REMARKS.--Records good except those for estimated daily discharges (ice effect, missing record), which are poor. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,200 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 17	0745	*1,270	*4.42	No other peak greater than base discharge.			

Minimum discharge, 0.43 ft^3/s, Sept. 18.

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	51	15	25	e27	177	62	236	56	17	10	3.5	1.7
2	46	15	22	e25	158	61	203	53	21	10	e3.1	1.5
3	42	15	19	e22	131	60	171	49	18	9.1	e2.7	1.3
4	37	15	16	e21	111	65	146	47	15	23	e7.0	1.3
5	34	15	19	e21	109	93	129	45	13	24	e4.5	1.2
6	33	15	16	e20	103	77	125	41	13	13	e3.7	1.2
7	31	14	17	e20	99	75	129	37	86	10	e3.2	1.2
8	28	14	18	e20	89	79	114	36	44	12	e2.7	1.3
9	26	15	17	e20	86	83	112	37	32	11	e2.3	1.3
10	27	84	15	e20	97	76	140	35	26	9.7	e1.9	1.5
11	26	43	16	e19	83	73	146	32	23	8.2	e2.7	2.2
12	24	27	16	e19	73	71	159	31	19	7.4	26	1.7
13	22	22	14	e19	73	117	139	29	18	6.0	37	1.8
14	20	21	70	e19	83	101	126	27	15	5.1	19	1.9
15	20	20	100	e18	89	92	121	26	14	4.7	9.7	1.6
16	19	17	64	e18	86	94	161	26	14	3.6	5.3	.69
17	19	17	675	e18	120	99	160	25	17	4.3	4.0	.57
18	29	17	219	e18	95	87	135	27	16	7.0	3.5	.54
19	32	16	156	81	90	78	123	29	12	6.5	3.2	.84
20	24	16	129	166	90	75	115	28	11	5.7	3.0	1.2
21	21	16	114	106	86	357	109	45	11	4.4	2.6	1.9
22	20	14	93	96	76	330	102	73	11	3.6	2.5	3.5
23	19	14	76	95	75	242	96	110	50	e3.2	2.7	2.5
24	18	14	e60	88	73	201	89	44	34	e2.8	3.1	17
25	17	15	e50	65	74	169	82	34	20	e2.5	2.7	43
26	17	45	e38	66	83	146	75	36	15	e2.3	2.4	17
27	17	53	e43	55	70	127	71	34	14	e2.1	2.1	6.9
28	17	32	e38	52	65	113	66	31	12	e2.0	1.8	4.5
29	16	26	e32	49	---	129	60	26	11	e5.0	1.8	3.6
30	16	28	e35	284	---	534	57	23	11	e5.6	1.6	3.0
31	15	---	e31	232	---	285	---	20	---	e4.5	1.7	---
TOTAL	783	690	2253	1799	2644	4251	3697	1192	633	228.3	173.0	129.44
MEAN	25.3	23.0	72.7	58.0	94.4	137	123	38.5	21.1	7.36	5.58	4.31
MAX	51	84	675	284	177	534	236	110	86	24	37	43
MIN	15	14	14	18	65	60	57	20	11	2.0	1.6	.54
CFSM	.38	.34	1.09	.87	1.41	2.05	1.84	.57	.32	.11	.08	.06
IN.	.44	.38	1.25	1.00	1.47	2.36	2.06	.66	.35	.13	.10	.07

e Estimated

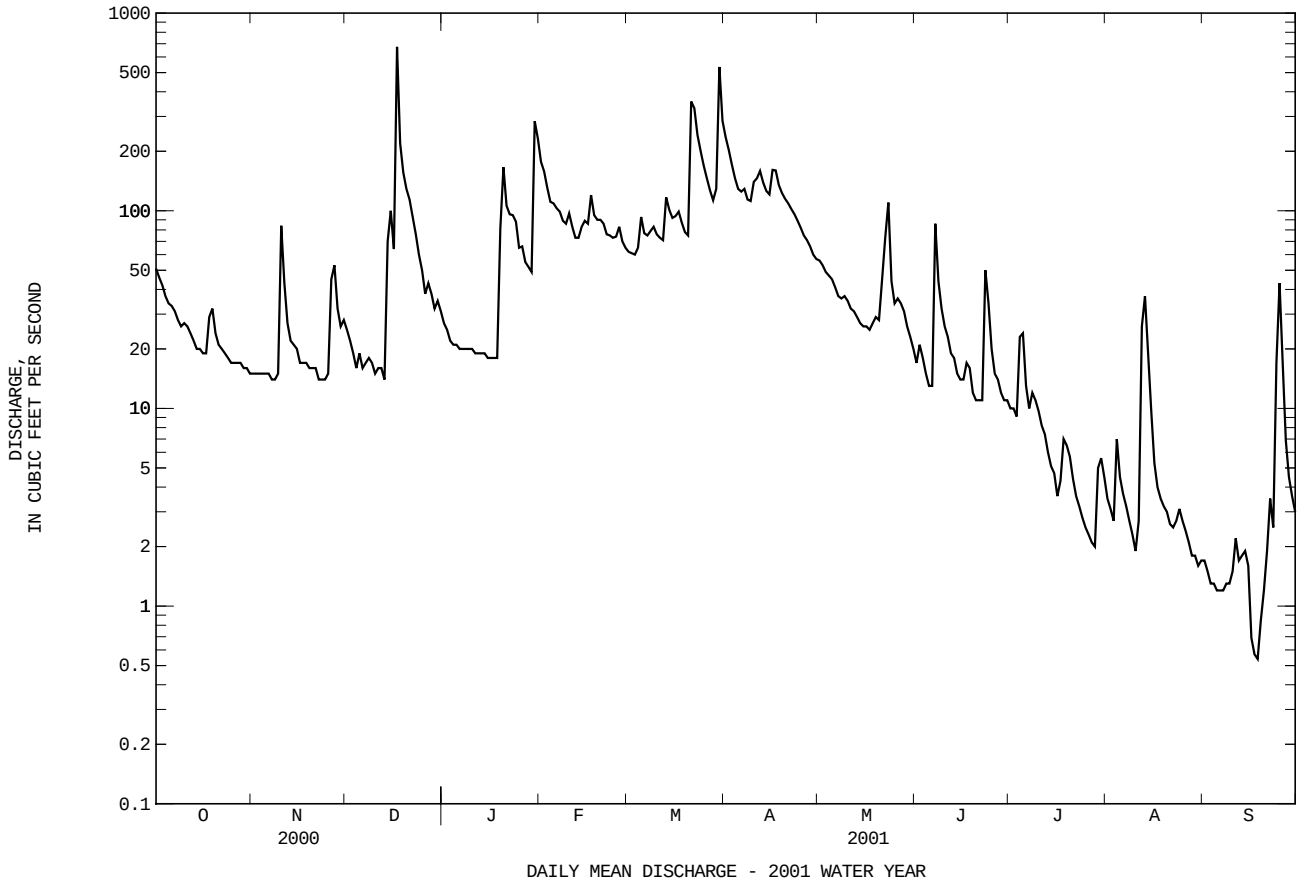
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1947 - 2001, BY WATER YEAR (WY)

MEAN	36.2	48.6	85.0	103	123	156	139	98.8	58.8	33.5	22.2	27.3
MAX	399	162	318	333	373	407	360	391	439	214	208	284
(WY)	1977	1986	1993	1998	1998	1994	1993	1988	1972	1949	1955	1975
MIN	2.62	3.61	3.80	4.25	27.4	46.3	40.1	29.2	11.5	4.86	2.04	1.68
(WY)	1964	1966	1966	1966	1999	1969	1995	1963	1999	1966	1966	1965

01637500 CATOCTIN CREEK NEAR MIDDLETOWN, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1947 - 2001	
ANNUAL TOTAL	26245		18472.74			
ANNUAL MEAN	71.7		50.6		77.4	
HIGHEST ANNUAL MEAN					164	1996
LOWEST ANNUAL MEAN					29.7	1954
HIGHEST DAILY MEAN	760	Mar 22	675	Dec 17	4880	Oct 9 1976
LOWEST DAILY MEAN	12	(a)	.54	Sep 18	.00	(b)
ANNUAL SEVEN-DAY MINIMUM	13	Aug 21	1.0	Sep 14	.00	Aug 27 1966
MAXIMUM PEAK FLOW			1270	Dec 17	(c)12000	Oct 9 1976
MAXIMUM PEAK STAGE			4.42	Dec 17	14.13	Oct 9 1976
INSTANTANEOUS LOW FLOW			.43	Sep 18	.00	(b)
ANNUAL RUNOFF (CFSM)	1.07		.76		1.16	
ANNUAL RUNOFF (INCHES)	14.59		10.27		15.72	
10 PERCENT EXCEEDS	160		122		175	
50 PERCENT EXCEEDS	39		24		38	
90 PERCENT EXCEEDS	16		2.7		5.5	

a Aug. 26, 27, 2000.
b Aug. 27 to Sept. 12, 1966.
c From rating curve extended above 2,600 ft^3/s on basis of slope-area measurement of peak flow.



01638500 POTOMAC RIVER AT POINT OF ROCKS, MD

LOCATION.--Lat 39°16'24.9", long 77°32'35.2", Frederick County, Hydrologic Unit 02070008, on left bank at downstream side of bridge on U.S. Highway 15 at Point of Rocks, 0.3 mi downstream from Catoctin Creek (Virginia), 6 mi upstream from Monocacy River, and at mile 159.5.

DRAINAGE AREA.--9,651 mi^2.

PERIOD OF RECORD.--February 1895 to current year.

REVISED RECORDS.--WSP 192: 1895-1905. WSP 1432: 1899, 1901-2, 1904-5, 1912, 1914(M), 1915, 1917(M), 1918, 1919(M), 1920, 1921-23(M), 1924, 1925-28(M), 1930(M).

GAGE.--Water-stage recorder. Datum of gage is 200.63 ft above sea level. Prior to Oct. 28, 1929, nonrecording gage at same site. Prior to Sept. 2, 1902, at datum about 0.45 ft higher.

REMARKS.--No estimated daily discharges. Records good. Low flow affected slightly from 1913 to July 1981 by Stony River Reservoir; since December 1950 by Savage River Reservoir (see station 01597500); and since July 1981 by Jennings Randolph Lake. Low flow affected extensively at times by run-of-the-river hydroelectric plants. National Weather Service gage-height telemeter at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 2, 1889, reached a stage of 40.2 ft, from floodmarks, discharge, about 460,000 ft^3/s from rating curve extended as explained in footnotes.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 35,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 23	0600	*66,600	*13.23	Apr 13	1030	37,500	8.92

Minimum discharge, 1,350 ft^3/s, Sept. 16, 17, 19.

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	10100	1940	3090	4710	21700	6680	32900	6120	7610	4340	13800	2510
2	8520	1970	3100	4280	20900	6330	28300	5840	6650	4000	9580	2400
3	7470	1960	2960	4450	15900	6060	24100	5420	6030	3820	6650	2200
4	6550	1960	2870	4240	12700	5920	21200	5070	5460	3790	5500	2330
5	5770	1940	2740	3570	10400	6180	18100	4880	5430	4150	5230	2780
6	5070	1860	2510	3240	9040	6730	15900	4620	5070	3860	4790	2390
7	4610	1950	2530	3170	8170	7460	14300	4420	7080	3800	4970	2220
8	4150	1900	2370	3050	7360	7380	13800	4250	13600	3690	4670	1790
9	3920	1940	2510	3390	6840	7370	15100	4150	18300	3720	4080	1980
10	4000	2130	2530	3590	6360	7500	15600	3940	12600	3610	3530	1730
11	4150	2510	2480	3120	6050	7510	16600	3960	9670	3650	3180	1810
12	3410	2780	2540	2750	6340	7150	21400	3750	7620	3390	3630	1670
13	3100	3230	2370	2860	6770	7070	35200	3450	6670	3160	5220	1620
14	2850	3330	2640	2680	6720	7860	28100	3280	5670	2870	10000	1620
15	2710	2890	2940	2570	7190	9900	22000	3280	5010	2590	11100	1560
16	2550	2560	3070	2730	7220	10800	19300	3320	4760	2650	7810	1470
17	2710	2500	6610	2520	8260	10300	24600	3230	5410	2620	5690	1380
18	2560	2270	8790	2560	10600	10300	23400	3040	6700	2550	4460	1450
19	2630	2250	12100	2760	11000	11000	18900	3170	5440	2400	3830	1400
20	2660	2210	13000	3660	10400	11600	15800	3410	4610	2390	3470	1450
21	2810	2160	11400	5650	9070	12300	13700	4100	4050	2250	3490	1560
22	2520	2090	8540	8530	8020	30900	12100	6780	4410	2360	3540	1580
23	2480	2030	8500	10100	7080	59000	11000	9370	10200	2500	3520	1510
24	2450	1970	6310	9400	6460	37400	10200	12400	20200	2430	3240	1870
25	2290	1970	5840	7590	6150	27900	9220	18100	16100	2250	3020	2330
26	2280	2250	4920	7150	6120	22900	8370	14400	11400	2030	2790	1850
27	2230	2580	4320	6100	6160	19500	7700	12600	8100	2040	2550	1830
28	2100	2740	4170	5790	6700	16600	7110	16800	6430	2150	2510	1830
29	2040	3080	4730	5300	---	14500	6610	13900	5220	2540	2470	1760
30	2160	3000	4810	6150	---	18900	6240	11300	4680	5040	2380	1730
31	1970	---	4540	8380	---	30300	---	9130	---	6950	2430	---
TOTAL	114820	69950	151830	146040	255680	451300	516850	211480	240180	99590	153130	55610
MEAN	3704	2332	4898	4711	9131	14560	17230	6822	8006	3213	4940	1854
MAX	10100	3330	13000	10100	21700	59000	35200	18100	20200	6950	13800	2780
MIN	1970	1860	2370	2520	6050	5920	6240	3040	4050	2030	2380	1380
CFSM	.38	.24	.51	.49	.95	1.51	1.79	.71	.83	.33	.51	.19
IN.	.44	.27	.59	.56	.99	1.74	1.99	.82	.93	.38	.59	.21

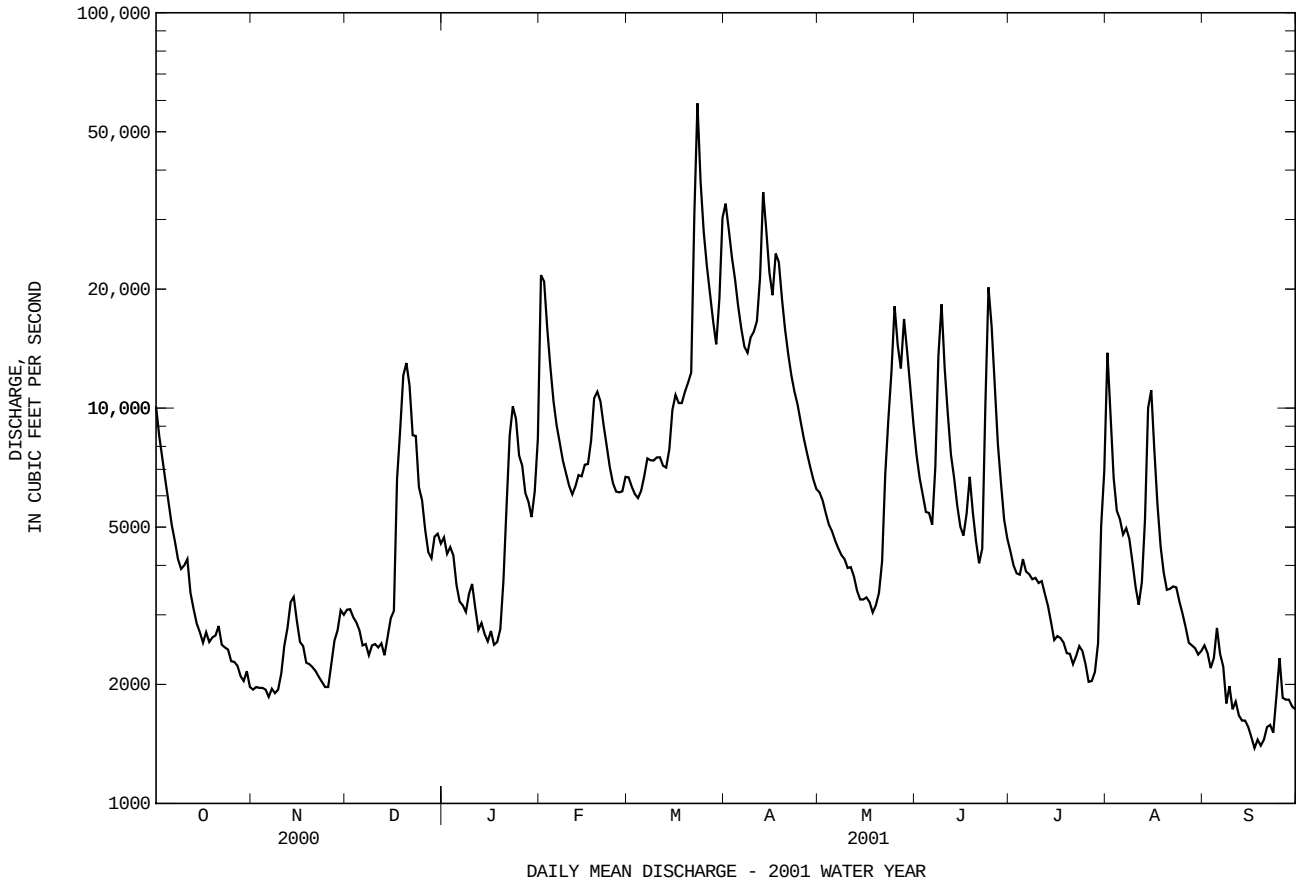
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1895 - 2001, BY WATER YEAR (WY)

MEAN	5026	5632	8540	11450	14430	19750	16460	12230	7964	4493	4286	3786
MAX	37030	39000	32610	42160	47870	68360	43840	41970	40400	16000	23580	38300
(WY)	1943	1986	1973	1996	1998	1936	1993	1924	1972	1949	1955	1996
MIN	706	840	1253	1703	2661	5400	4368	3276	1932	1056	771	834
(WY)	1931	1931	1966	1981	1934	1931	1915	1930	1969	1966	1930	1930

01638500 POTOMAC RIVER AT POINT OF ROCKS, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1895 - 2001	
ANNUAL TOTAL	2513530		2466460			
ANNUAL MEAN	6868		6757		9488	
HIGHEST ANNUAL MEAN					18750	1996
LOWEST ANNUAL MEAN					4366	1969
HIGHEST DAILY MEAN	49200	Feb 21	59000	Mar 23	434000	Mar 19 1936
LOWEST DAILY MEAN	1860	Nov 6	1380	Sep 17	540	Sep 10 1914
ANNUAL SEVEN-DAY MINIMUM	1930	Nov 3	1470	Sep 15	593	Sep 6 1966
MAXIMUM PEAK FLOW			66600	Mar 23	(a)480000	Mar 19 1936
MAXIMUM PEAK STAGE			13.23	Mar 23	41.03	Mar 19 1936
INSTANTANEOUS LOW FLOW			1350	(b)	530	(c)
ANNUAL RUNOFF (CFSM)	.71		.70		.98	
ANNUAL RUNOFF (INCHES)	9.69		9.51		13.36	
10 PERCENT EXCEEDS	13400		14400		20700	
50 PERCENT EXCEEDS	4390		4420		5380	
90 PERCENT EXCEEDS	2470		2040		1690	

a From rating curve extended above 300,000 ft^3/s, on the basis of adjustment of figure of peak flow at station near Washington for inflow and storage, and slope-area measurement of peak flow.
b Sept. 16, 17, 19.
c Sept. 11, 12, 1966.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01639000 MONOCACY RIVER AT BRIDGEPORT, MD

LOCATION.--Lat 39°40'43.8", long 77°14'04.2", Frederick County, Hydrologic Unit 02070009, on right bank 60 ft downstream from bridge on State Highway 140 at Bridgeport, 0.9 mi upstream from Cattail Branch, 3.4 mi northwest of Taneytown, 4.8 mi downstream from confluence of Rock and Marsh Creeks at Pennsylvania-Maryland State line, and 52 mi upstream from mouth.

DRAINAGE AREA.--173 mi^2.

PERIOD OF RECORD.--May 1942 to current year.

REVISED RECORDS.--WSP 1382: 1944(M).

GAGE.--Water-stage recorder. Concrete control since Sept. 15, 1947. Datum of gage is 340.83 ft above sea level (levels by U.S. Army Corps of Engineers). Prior to May 3, 1946, nonrecording gage and crest-stage gages at site 0.3 mi downstream at datum 0.98 ft lower.

REMARKS.--Records good except those for estimated daily discharges (ice effect), which are poor. Occasional regulation at low flow from Lake Herrtage and other unknown sources upstream from station. U.S. Geological Survey gage-height telemeter and satellite collection platform at station. Several measurements of water temperature were made during the year. Water-quality records for some periods have been collected at this location.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Aug. 24, 1933, reached a stage of about 25 ft, present site and datum, from floodmarks, discharge, 23,000 ft^3/s. Stage exceeded that of June 1889, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,800 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 17	1100	*8,760	*14.41	Mar 30	0900	6,270	12.05

Minimum discharge, 0.63 ft^3/s, Sept. 11, 12, 15.

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	66	15	79	48	714	104	457	55	22	9.2	2.4	2.2
2	57	13	61	46	495	95	340	52	34	9.2	2.2	2.0
3	47	13	48	37	319	92	264	48	45	9.5	2.0	2.1
4	38	15	34	37	203	99	217	45	32	11	2.1	2.5
5	32	14	41	36	187	410	177	43	25	37	2.1	2.2
6	29	13	34	38	189	338	160	41	20	21	1.8	1.9
7	27	14	35	40	301	276	165	37	20	13	1.7	1.6
8	24	13	34	40	246	463	150	34	20	11	1.6	1.4
9	22	14	29	41	203	360	167	34	19	17	1.7	1.2
10	22	40	26	36	281	232	321	36	18	14	1.6	1.3
11	21	90	28	35	200	172	314	31	14	12	1.6	.80
12	21	41	29	40	130	147	525	28	13	8.8	2.1	.72
13	19	26	23	41	121	763	315	26	50	6.9	7.5	.92
14	18	22	306	39	129	423	212	24	46	6.1	16	.86
15	17	22	584	39	175	259	168	22	25	4.1	13	.74
16	16	59	293	44	172	242	738	21	27	3.2	9.6	1.7
17	17	64	5660	52	443	517	474	21	36	2.8	6.3	2.7
18	22	56	807	52	213	392	301	21	30	2.4	4.2	2.6
19	40	53	381	233	141	234	217	23	19	2.2	2.8	2.4
20	31	53	279	1210	135	183	178	25	14	2.4	60	5.8
21	22	53	e196	417	131	519	161	34	20	2.5	25	28
22	19	50	e160	e280	108	1090	147	124	48	2.4	11	13
23	18	38	138	e190	93	392	129	207	95	2.4	8.1	5.7
24	18	27	e118	e160	112	271	111	87	67	2.2	5.8	6.0
25	18	27	99	147	115	218	99	49	39	1.9	4.1	178
26	19	275	79	115	234	178	86	46	23	1.7	3.7	72
27	18	280	e74	107	155	146	77	54	17	1.5	3.2	29
28	17	119	e67	101	122	130	73	45	14	2.2	2.5	14
29	18	77	e60	91	---	135	64	37	11	2.7	2.0	9.5
30	18	76	e56	927	---	3460	58	30	8.9	2.8	2.2	7.4
31	13	---	e52	1270	---	757	---	25	---	2.7	2.3	---
TOTAL	784	1672	9910	5989	6067	13097	6865	1405	871.9	227.8	212.2	400.24
MEAN	25.3	55.7	320	193	217	422	229	45.3	29.1	7.35	6.85	13.3
MAX	66	280	5660	1270	714	3460	738	207	95	37	60	178
MIN	13	13	23	35	93	92	58	21	8.9	1.5	1.6	.72
CFSM	.15	.32	1.85	1.12	1.25	2.44	1.32	.26	.17	.04	.04	.08
IN.	.17	.36	2.13	1.29	1.30	2.82	1.48	.30	.19	.05	.05	.09

e Estimated

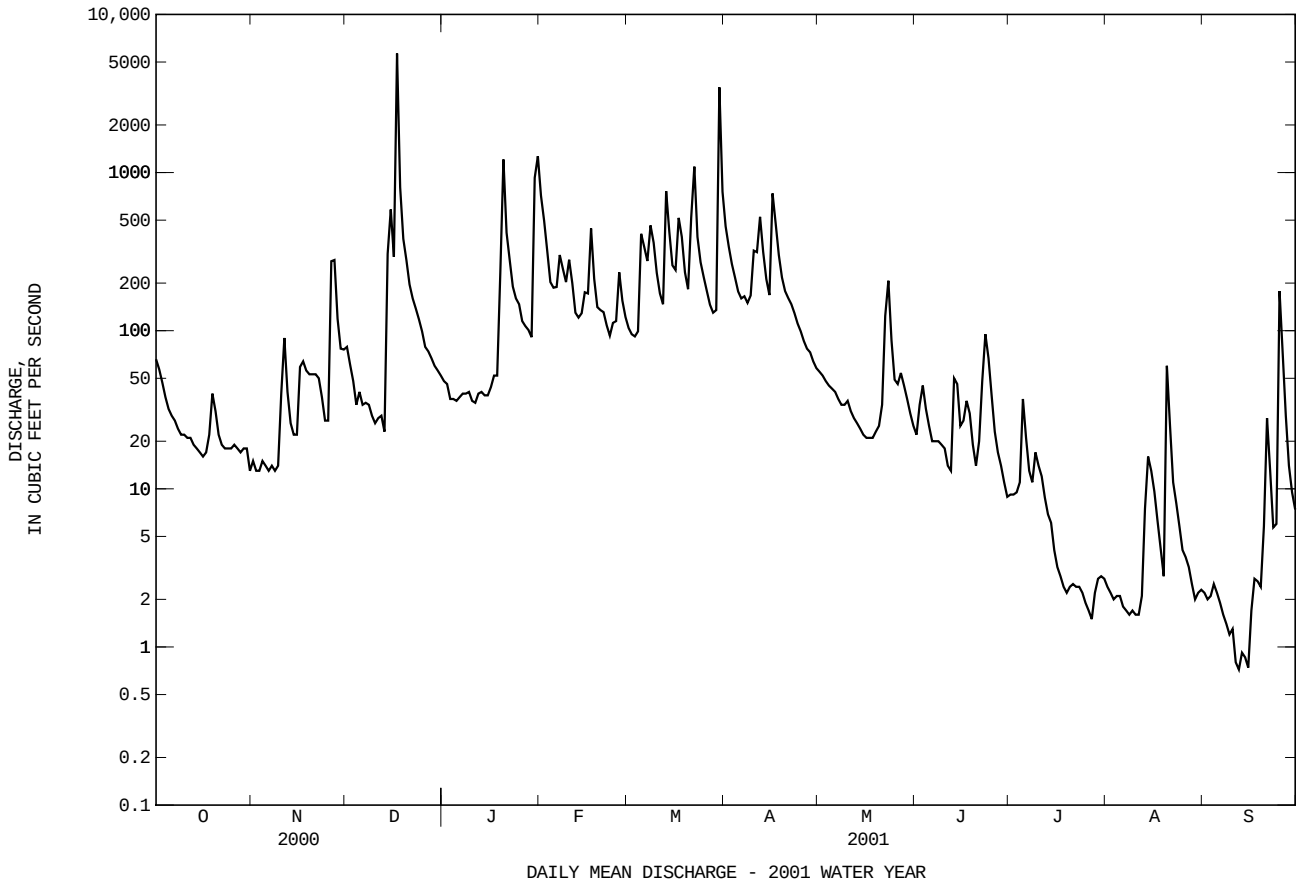
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1942 - 2001, BY WATER YEAR (WY)

MEAN	94.3	177	268	303	379	457	298	208	130	80.0	57.9	85.4
MAX	906	513	780	1214	1029	1606	1029	964	1065	598	613	1027
(WY)	1977	1986	1997	1996	1961	1994	1983	1989	1972	1949	1942	1975
MIN	3.24	10.4	12.3	13.8	51.0	94.7	58.1	41.2	10.5	2.68	2.40	2.34
(WY)	1964	1954	1999	1981	1980	1949	1995	1969	1966	1966	1944	1943

01639000 MONOCACY RIVER AT BRIDGEPORT, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1942 - 2001	
ANNUAL TOTAL	69423		47501.14			
ANNUAL MEAN	190		130		210	
HIGHEST ANNUAL MEAN					447	1996
LOWEST ANNUAL MEAN					76.8	1954
HIGHEST DAILY MEAN	5660	Dec 17	5660	Dec 17	16700	Jun 22 1972
LOWEST DAILY MEAN	11	(a)	.72	Sep 12	.00	(b)
ANNUAL SEVEN-DAY MINIMUM	12	Aug 21	.93	Sep 9	.04	Jul 22 1966
MAXIMUM PEAK FLOW			8760	Dec 17	(c)24400	Jun 19 1996
MAXIMUM PEAK STAGE			14.41	Dec 17	25.42	Jun 19 1996
INSTANTANEOUS LOW FLOW			.63	(d)	.00	(f)
ANNUAL RUNOFF (CFSM)	1.10		.75		1.21	
ANNUAL RUNOFF (INCHES)	14.93		10.21		16.49	
10 PERCENT EXCEEDS	418		296		446	
50 PERCENT EXCEEDS	60		37		64	
90 PERCENT EXCEEDS	17		2.4		8.0	

a Aug. 23-25, 2000.
b July 25-28, 1966.
c From rating curve extended above 14,000 ft^3/s on basis of slope-conveyance study.
d Sept. 11, 12, 15.
f July 24-29, 1966.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01639140 PINEY CREEK NEAR TANEYTOWN, MD

LOCATION.--Lat 39°39'38.7", long 77°13'15.5", Carroll County, Hydrologic Unit 02070009, on left bank at downstream side of bridge on Roop Road, 2.4 mi west of Taneytown, and 4.2 mi upstream from mouth.

DRAINAGE AREA.--31.3 mi^2.

PERIOD OF RECORD.--May 1990 to current year.

GAGE.--Water-stage recorder. Datum of gage is 383.22 ft above sea level.

REMARKS.--Records good except those for estimated daily discharges (backwater, ice effect), which are poor. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 17	0945	*1,720	*6.56	Mar 30	0415	1,210	5.51

Minimum discharge, 0.17 ft^3/s, July 21-27, Aug. 2, 22, 23, 26, 27, 29, 30, Sept. 1, 7-9.

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	12	e2.8	6.3	e13	90	19	65	11	5.0	.92	.40	.34
2	10	e2.6	4.8	e12	70	18	51	11	12	.95	.30	.34
3	9.2	e2.8	4.2	e11	47	17	38	10	8.8	.93	.35	.34
4	8.2	e3.0	3.8	e11	36	22	31	9.6	6.6	.88	.48	.58
5	7.4	e2.9	3.7	e10	36	78	25	9.0	5.8	10	.50	.44
6	7.4	2.8	3.5	e10	39	49	24	8.2	5.1	3.9	.56	.31
7	6.8	2.3	3.8	e10	50	39	23	7.2	7.1	1.7	.58	.27
8	5.7	2.5	3.5	e10	41	33	20	7.3	6.2	1.2	.61	.26
9	5.2	2.5	3.5	11	37	31	27	7.5	4.8	3.7	.63	.31
10	5.4	6.7	3.7	11	42	26	39	7.0	3.8	2.5	.69	.39
11	5.2	6.0	3.7	9.1	30	23	57	6.5	3.3	2.0	.90	.43
12	5.0	2.6	3.7	9.0	26	20	55	6.1	3.1	1.0	2.5	.38
13	4.3	1.9	3.5	9.3	26	97	36	6.1	3.7	.95	11	.39
14	3.9	2.0	74	8.4	29	49	25	5.2	4.4	.76	5.7	.61
15	3.6	2.1	45	7.4	32	36	22	5.3	4.1	.64	4.5	.45
16	3.4	2.1	29	8.3	31	40	102	5.0	7.2	.64	1.8	.52
17	3.8	2.0	904	8.4	69	65	54	5.0	10	.53	.95	.54
18	5.7	2.1	83	8.0	32	40	38	4.9	5.7	.53	.61	.59
19	7.0	1.9	48	70	27	31	28	5.5	3.7	.50	.46	.56
20	5.6	1.9	39	130	28	28	23	5.6	2.6	.45	.42	.73
21	4.3	2.1	e32	53	27	92	21	11	2.5	.37	.41	.91
22	4.0	2.1	e26	e42	20	118	19	17	2.4	.32	.35	2.2
23	4.0	2.0	e24	e34	21	54	17	18	5.8	.32	.26	1.7
24	3.6	1.8	e22	e27	23	42	16	9.9	5.8	.35	.41	4.0
25	3.5	1.8	e21	e24	29	35	14	7.6	3.3	.31	.38	41
26	3.3	8.6	e19	e20	38	31	13	8.8	2.4	.24	.29	8.6
27	e3.4	9.3	e18	e18	26	26	12	10	1.8	.27	.35	3.2
28	e3.4	5.7	e17	20	22	24	12	9.4	1.7	.34	.36	1.8
29	e3.2	4.3	e16	26	---	40	11	7.1	1.2	.38	.35	1.2
30	e2.8	6.8	e15	188	---	489	11	5.8	1.0	.42	.28	.95
31	e2.6	---	e14	129	---	96	---	5.1	---	.51	.38	---
TOTAL	162.9	100.0	1497.7	957.9	1024	1808	929	252.7	140.9	38.51	37.76	74.34
MEAN	5.25	3.33	48.3	30.9	36.6	58.3	31.0	8.15	4.70	1.24	1.22	2.48
MAX	12	9.3	904	188	90	489	102	18	12	10	11	41
MIN	2.6	1.8	3.5	7.4	20	17	11	4.9	1.0	.24	.26	.26
CFSM	.17	.11	1.54	.99	1.17	1.86	.99	.26	.15	.04	.04	.08
IN.	.19	.12	1.78	1.14	1.22	2.15	1.10	.30	.17	.05	.04	.09

e Estimated

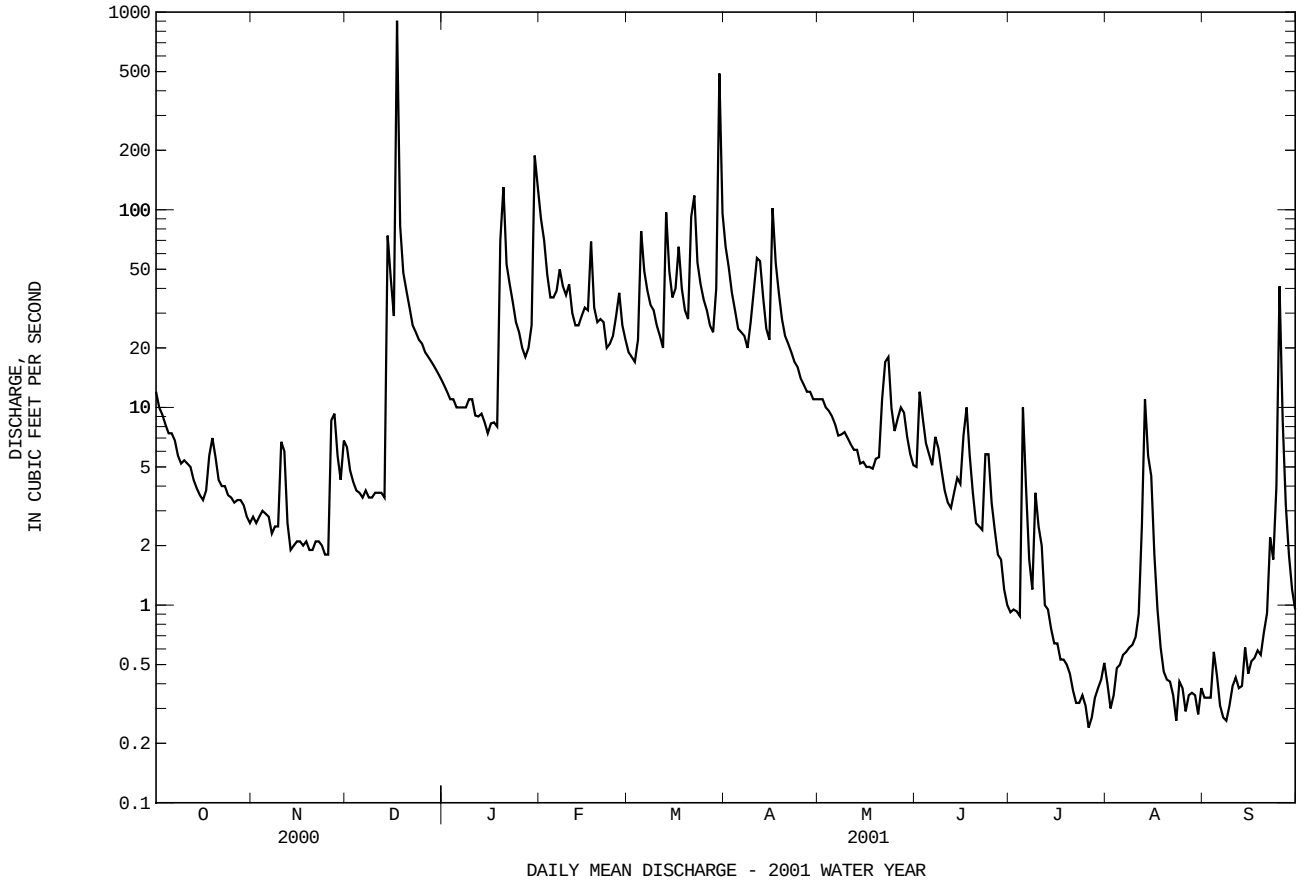
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 2001, BY WATER YEAR (WY)

MEAN	19.1	32.8	57.7	72.1	51.7	97.2	53.5	23.9	14.5	18.1	9.16	14.9
MAX	73.2	73.3	134	200	123	237	183	63.8	62.0	101	43.5	77.3
(WY)	1997	1997	1997	1996	1998	1993	1993	1998	1996	1996	1996	1996
MIN	.94	1.49	1.39	12.0	24.5	31.1	10.7	6.49	1.99	.57	.74	.67
(WY)	1998	1999	1999	2000	1999	1995	1995	1999	1991	1991	1997	1997

01639140 PINEY CREEK NEAR TANEYTOWN, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1990 - 2001	
ANNUAL TOTAL	11237.5		7023.71			
ANNUAL MEAN	30.7		19.2		38.5	
HIGHEST ANNUAL MEAN					68.5	1996
LOWEST ANNUAL MEAN					19.2	2001
HIGHEST DAILY MEAN	904	Dec 17	904	Dec 17	2770	Jan 19 1996
LOWEST DAILY MEAN	1.8	(a)	.24	Jul 26	.00	(b)
ANNUAL SEVEN-DAY MINIMUM	1.9	Nov 19	.31	Jul 22	.03	Aug 2 1991
MAXIMUM PEAK FLOW			1720	Dec 17	(c)7520	Jan 19 1996
MAXIMUM PEAK STAGE			6.56	Dec 17	(d)11.41	Jan 19 1996
INSTANTANEOUS LOW FLOW			.17	(f)	.00	(g)
ANNUAL RUNOFF (CFSM)	.98		.61		1.23	
ANNUAL RUNOFF (INCHES)	13.36		8.35		16.70	
10 PERCENT EXCEEDS	68		40		80	
50 PERCENT EXCEEDS	11		6.1		13	
90 PERCENT EXCEEDS	2.9		.44		1.3	

a Nov. 24, 25.
b Aug. 4, 5, Sept. 2, 3, 1991.
c From rating curve extended above 2,430 ft^3/s on basis of runoff comparisons with nearby stations.
d From floodmarks.
f July 21-27, Aug. 2, 22, 23, 26, 27, 29, 30, Sept. 1, 7-9.
g Aug. 3-9, 17, Sept. 1-4, 1991.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01639500 BIG PIPE CREEK AT BRUCEVILLE, MD

LOCATION.--Lat 39°36'44.5", long 77°14'14.8", Carroll County, Hydrologic Unit 02070009, on left bank 300 ft downstream from bridge on State Highway 194, 800 ft downstream from Bruceville, 3.5 mi upstream from Detour and confluence with Little Pipe Creek.

DRAINAGE AREA.--102 mi^2.

PERIOD OF RECORD.--October 1947 to current year. Prior to December 1947, monthly discharge only, published in WSP 1302.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 336.88 ft above sea level.

REMARKS.--Records good except those for estimated daily discharges (ice effect), which are fair. Occasional diversion for irrigation upstream from station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,600 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 17	0900	*2,530	*6.96	Jun 23	0930	2,210	6.32
Mar 30	0400	2,090	6.08				

Minimum discharge, 11 ft^3/s, Sept. 14, 15.

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	81	41	50	e58	244	80	233	78	49	43	23	19
2	77	40	45	e60	203	79	195	74	66	43	20	18
3	71	41	43	e60	151	77	166	72	57	40	19	16
4	66	40	45	e62	121	86	148	68	50	40	26	16
5	62	41	55	e60	123	199	134	66	47	46	28	16
6	62	40	53	e59	127	140	130	63	45	41	24	15
7	59	40	57	e56	149	114	129	59	56	37	22	14
8	53	40	40	e56	140	102	120	58	52	39	19	14
9	53	42	42	e56	135	96	136	60	47	47	18	13
10	53	68	46	62	164	87	150	59	55	39	17	14
11	54	61	38	55	120	83	178	56	54	46	17	14
12	51	46	38	51	103	80	189	55	53	35	28	13
13	49	44	47	55	103	193	146	54	106	31	69	12
14	48	44	194	53	108	134	124	50	64	29	47	11
15	47	46	159	50	114	110	117	50	57	29	30	11
16	48	43	105	58	112	123	218	49	88	27	26	13
17	48	42	1720	56	195	163	178	49	129	26	24	12
18	55	41	283	54	116	127	158	52	69	25	23	12
19	58	40	162	247	100	107	136	55	58	29	23	12
20	49	40	136	418	100	101	124	54	53	27	23	12
21	48	41	115	176	96	231	120	77	50	25	23	14
22	47	40	e100	121	85	416	116	107	53	23	20	17
23	45	43	e90	e110	87	200	109	125	959	22	20	15
24	44	43	e82	e100	87	164	103	70	129	22	21	22
25	44	47	e76	e95	98	144	97	59	82	21	21	155
26	45	79	e71	e88	122	129	91	78	66	20	19	46
27	45	83	e67	82	94	116	88	85	58	22	19	26
28	44	55	e64	e80	87	109	86	71	53	21	18	23
29	42	48	e62	96	---	136	79	60	49	21	17	21
30	41	54	e60	438	---	1100	78	55	46	24	16	20
31	41	---	e60	371	---	310	---	49	---	25	17	---
TOTAL	1630	1413	4205	3443	3484	5336	4076	2017	2800	965	737	636
MEAN	52.6	47.1	136	111	124	172	136	65.1	93.3	31.1	23.8	21.2
MAX	81	83	1720	438	244	1100	233	125	959	47	69	155
MIN	41	40	38	50	85	77	78	49	45	20	16	11
CFSM	.52	.46	1.33	1.09	1.22	1.69	1.33	.64	.92	.31	.23	.21
IN.	.59	.52	1.53	1.26	1.27	1.95	1.49	.74	1.02	.35	.27	.23

e Estimated

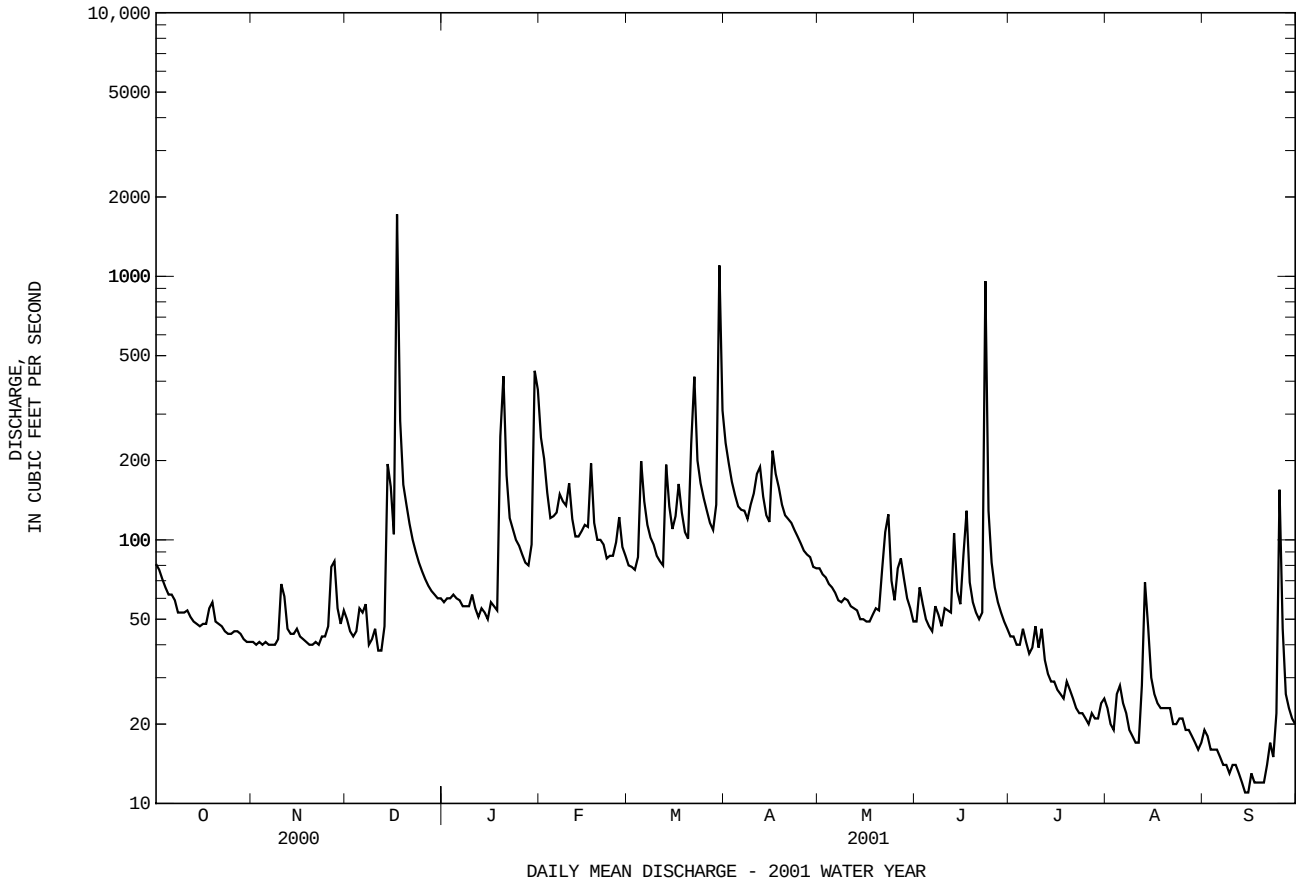
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1948 - 2001, BY WATER YEAR (WY)

MEAN	61.7	85.9	125	152	176	199	166	121	98.5	71.3	53.9	65.6
MAX	390	289	453	492	387	613	514	383	891	295	212	730
(WY)	1980	1948	1997	1996	1979	1994	1993	1989	1972	1949	1955	1975
MIN	14.9	16.7	18.9	22.5	58.1	71.4	61.3	38.6	19.8	10.4	4.39	13.0
(WY)	1964	1966	1966	1966	1954	1981	1965	1965	1966	1966	1966	1963

01639500 BIG PIPE CREEK AT BRUCEVILLE, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1948 - 2001	
ANNUAL TOTAL	41797		30742			
ANNUAL MEAN	114		84.2		114	
HIGHEST ANNUAL MEAN					227	1972
LOWEST ANNUAL MEAN					50.8	1966
HIGHEST DAILY MEAN	1720	Dec 17	1720	Dec 17	14400	Jun 22 1972
LOWEST DAILY MEAN	33	Aug 27	11	(a)	1.0	Sep 12 1966
ANNUAL SEVEN-DAY MINIMUM	35	Aug 21	12	Sep 13	1.4	Sep 7 1966
MAXIMUM PEAK FLOW			2530	Dec 17	(b)28000	Sep 26 1975
MAXIMUM PEAK STAGE			6.96	Dec 17	18.98	Sep 26 1975
INSTANTANEOUS LOW FLOW			11	(a)	1.0	Sep 12 1966
ANNUAL RUNOFF (CFSM)	1.12		.83		1.12	
ANNUAL RUNOFF (INCHES)	15.24		11.21		15.22	
10 PERCENT EXCEEDS	203		148		215	
50 PERCENT EXCEEDS	68		55		66	
90 PERCENT EXCEEDS	41		20		24	

a Sept. 14, 15.
b From rating curve extended above 3,900 ft^3/s on the basis of contracted-opening measurement at gage height of 17.86 ft.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01643000 MONOCACY RIVER AT JUG BRIDGE NEAR FREDERICK, MD

LOCATION.--Lat 39°24'10.2", long 77°21'57.9", Frederick County, Hydrologic Unit 02070009, on right bank 500 ft downstream from Interstate 70 highway bridge, 0.4 mi downstream from Linganore Creek, 2.0 mi east of Frederick, and 16.9 mi upstream from mouth.

DRAINAGE AREA.--817 mi^2.

PERIOD OF RECORD.--October 1929 to current year. Monthly discharge only for October, November 1929, published in WSP 1302.

REVISED RECORDS.--WSP 711: 1930.

GAGE.--Water-stage recorder. Nonrecording gage at site 0.2 mile downstream. Datum of gage is 231.92 ft above sea level.

REMARKS.--No estimated daily discharges. Records good. Occasional regulation at low and medium flows since September 1972 by Linganore Reservoir, total capacity, 883,200,000 gal, 2.8 mi upstream from station. National Weather Service gage-height telemeter at station. U.S. Geological Survey satellite collection platform at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1889 reached a stage of 30 ft, from floodmarks, discharge, 56,000 ft^3/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 8,800 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 18	0130	*17,500	*15.89	Mar 30	2030	13,100	13.55

Minimum discharge, 42 ft^3/s, Sept. 16.

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	515	191	350	411	2600	651	2460	535	289	215	106	79
2	467	185	323	387	1940	609	1930	516	377	204	96	76
3	430	186	282	353	1510	589	1600	488	382	174	90	75
4	382	188	235	343	1150	594	1370	463	345	216	105	69
5	349	186	232	330	1050	1280	1210	441	304	233	104	65
6	333	183	230	319	1060	1500	1120	418	293	226	113	62
7	316	180	213	342	1190	1100	1120	392	574	209	99	62
8	291	176	236	347	1170	1160	1050	377	415	209	86	57
9	275	185	216	335	1020	1110	1150	376	318	267	79	56
10	274	246	206	335	1050	975	1540	377	271	201	75	62
11	272	373	202	318	1070	799	1510	362	247	194	79	59
12	264	346	201	322	818	730	2200	350	233	188	136	55
13	249	250	196	303	748	1290	1680	336	221	161	281	55
14	238	220	568	309	765	1840	1340	319	268	141	222	51
15	229	212	2070	319	837	1170	1160	301	262	133	179	50
16	226	204	1170	328	863	1040	1820	299	306	126	142	46
17	231	212	10700	341	1290	1360	2360	289	528	121	115	48
18	260	226	8800	339	1240	1360	1590	295	361	138	108	49
19	289	212	1860	603	850	1070	1330	312	268	136	101	50
20	283	204	1380	3290	774	883	1160	330	230	129	103	58
21	266	206	1060	2070	760	1350	1080	418	209	124	104	69
22	240	204	1030	1160	705	3630	1010	712	214	111	147	105
23	223	192	747	919	649	2060	935	1070	910	105	109	107
24	212	182	607	837	661	1480	856	787	829	100	99	248
25	212	184	652	780	697	1260	783	477	397	96	93	474
26	213	426	572	649	933	1100	722	437	298	95	88	620
27	209	1120	525	651	883	972	679	525	251	94	81	262
28	208	615	545	591	718	877	644	475	219	90	81	163
29	197	413	464	539	---	900	594	397	201	95	87	124
30	188	361	453	1690	---	9050	554	345	186	97	78	107
31	190	---	443	4930	---	5110	---	304	---	103	75	---
TOTAL	8531	8268	36768	24790	29001	48899	38557	13523	10206	4731	3461	3463
MEAN	275	276	1186	800	1036	1577	1285	436	340	153	112	115
MAX	515	1120	10700	4930	2600	9050	2460	1070	910	267	281	620
MIN	188	176	196	303	649	589	554	289	186	90	75	46
CFSM	.34	.34	1.45	.98	1.27	1.93	1.57	.53	.42	.19	.14	.14
IN.	.39	.38	1.67	1.13	1.32	2.23	1.76	.62	.46	.22	.16	.16

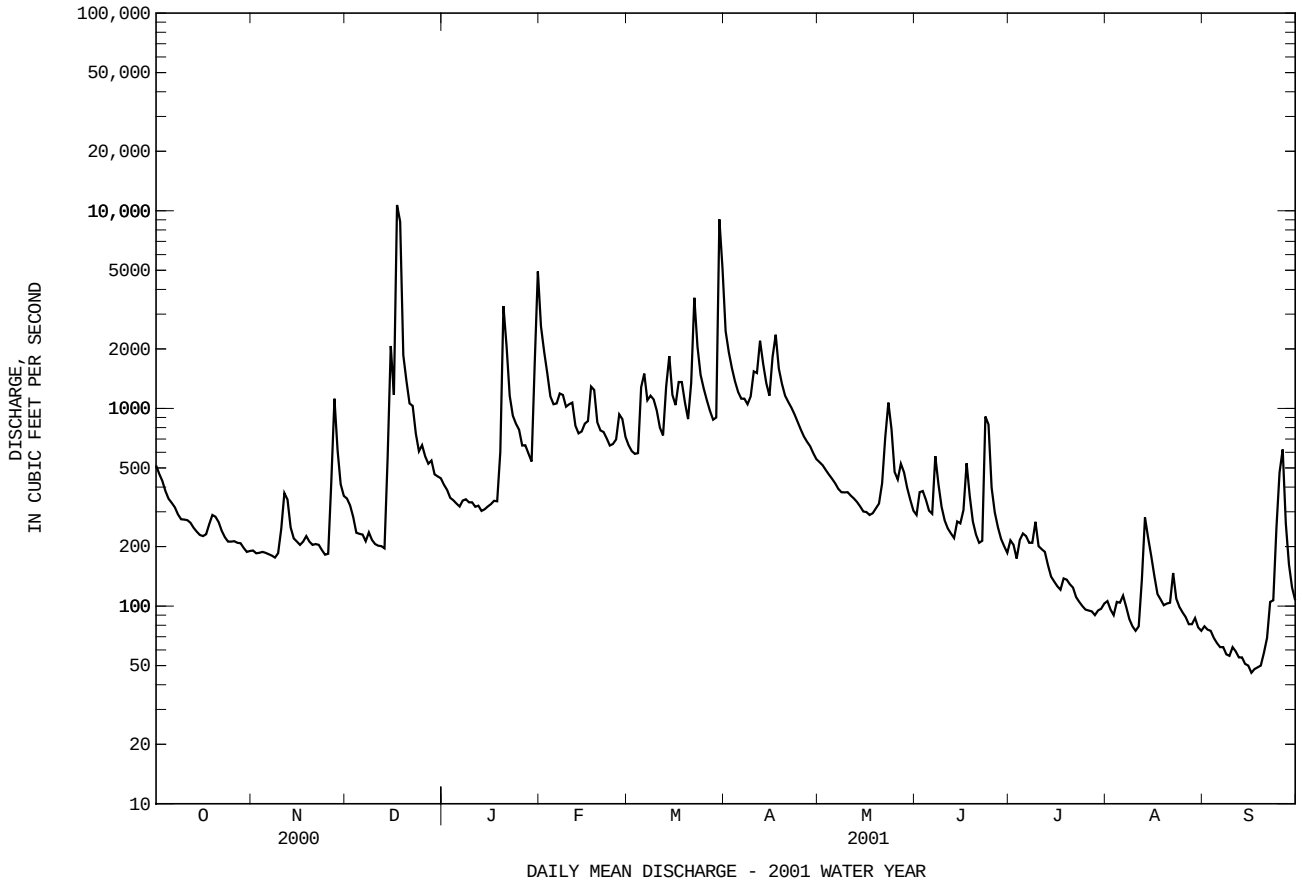
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1930 - 2001, BY WATER YEAR (WY)

MEAN	513	715	1040	1224	1470	1832	1528	1010	708	455	404	486
MAX	3943	2504	3606	4159	4062	5851	4533	3773	6826	2571	3233	5165
(WY)	1977	1933	1997	1996	1984	1993	1983	1989	1972	1949	1933	1975
MIN	46.8	65.1	108	123	175	589	432	296	152	64.5	36.4	59.9
(WY)	1931	1931	1966	1981	1931	1981	1995	1963	1999	1966	1966	1963

01643000 MONOCACY RIVER AT JUG BRIDGE NEAR FREDERICK, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1930 - 2001	
ANNUAL TOTAL	317899		230198			
ANNUAL MEAN	869		631		946	
HIGHEST ANNUAL MEAN					1834	1972
LOWEST ANNUAL MEAN					345	1931
HIGHEST DAILY MEAN	15700	Mar 22	10700	Dec 17	74000	Jun 23 1972
LOWEST DAILY MEAN	154	Aug 24	46	Sep 16	19	(a)
ANNUAL SEVEN-DAY MINIMUM	163	Aug 21	50	Sep 13	19	Sep 7 1966
MAXIMUM PEAK FLOW			17500	Dec 18	81600	Jun 23 1972
MAXIMUM PEAK STAGE			15.89	Dec 18	(b)35.90	Jun 23 1972
INSTANTANEOUS LOW FLOW			42	Sep 16	17	(c)
ANNUAL RUNOFF (CFSM)	1.06		.77		1.16	
ANNUAL RUNOFF (INCHES)	14.47		10.48		15.73	
10 PERCENT EXCEEDS	1810		1290		1990	
50 PERCENT EXCEEDS	452		323		475	
90 PERCENT EXCEEDS	206		95		122	

a Sept. 7-13, 1966.
b From floodmarks.
c Sept. 11, 13, 1966.



01643500 BENNETT CREEK AT PARK MILLS, MD

LOCATION.--Lat 39°17'38.9", long 77°24'25.5", Frederick County, Hydrologic Unit 02070009, on left bank 75 ft downstream from highway bridge, 0.2 mi south of Park Mills, 1.8 mi upstream from mouth, and 3.7 mi southwest of Urbana.

DRAINAGE AREA.--62.8 mi^2.

PERIOD OF RECORD.--July 1948 to September 1958. Annual maximum, water years 1960-66. August 1966 to current year.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 240 ft above sea level, from topographic maps.

REMARKS.--Records good except those for estimated daily discharges (ice effect, missing record), which are poor. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,200 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 17	0945	1,440	4.77	Jun 7	0830	*1,510	*4.86

Minimum discharge, 4.4 ft^3/s, Sept. 19, 20.

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	27	18	21	23	94	47	e140	42	32	35	17	16
2	26	19	20	23	76	46	e110	40	42	36	15	11
3	24	19	19	21	65	44	e94	39	36	31	14	9.3
4	22	19	20	21	58	47	e102	37	31	35	27	9.6
5	22	18	20	21	63	76	e94	36	30	39	18	9.5
6	22	18	24	21	66	61	e80	34	29	31	16	8.3
7	21	18	23	22	66	53	e70	33	492	26	14	7.8
8	20	19	19	22	58	49	e60	33	105	31	13	7.4
9	20	19	18	22	56	49	e68	33	70	52	12	7.3
10	20	42	19	22	55	45	e72	32	56	30	11	6.8
11	20	25	19	22	49	44	e160	30	48	27	14	6.8
12	19	20	18	e21	45	42	e140	e29	43	24	34	6.2
13	19	20	17	e21	49	67	e120	e27	40	22	30	5.8
14	19	21	58	e20	51	62	e94	e26	36	21	22	5.5
15	18	21	54	e20	53	52	e72	e25	34	21	17	5.4
16	18	20	38	e21	55	55	e110	e24	83	20	15	5.3
17	19	20	563	e20	81	60	e105	e23	63	19	14	5.3
18	23	19	98	e20	59	53	e107	e24	41	27	14	5.3
19	22	19	64	219	53	e47	68	e26	35	25	13	5.0
20	19	19	e56	233	53	e44	64	e27	32	21	26	7.6
21	19	19	e48	88	50	e200	63	e52	30	19	16	25
22	18	18	43	86	46	e150	60	e96	182	18	13	10
23	18	19	39	89	51	e110	57	e175	249	17	13	8.3
24	18	21	31	54	48	e90	54	e78	82	16	14	192
25	18	22	28	46	56	e80	51	38	61	16	12	215
26	19	46	25	43	66	e88	49	64	50	15	12	32
27	19	32	27	41	52	e94	47	64	44	16	11	22
28	19	25	27	44	50	e90	46	53	40	14	11	18
29	18	22	24	47	---	e230	43	42	37	23	10	17
30	18	23	25	225	---	e590	42	36	34	24	10	16
31	18	---	24	142	---	e200	---	33	---	19	10	---
TOTAL	622	660	1529	1740	1624	2965	2442	1351	2187	770	488	706.5
MEAN	20.1	22.0	49.3	56.1	58.0	95.6	81.4	43.6	72.9	24.8	15.7	23.5
MAX	27	46	563	233	94	590	160	175	492	52	34	215
MIN	18	18	17	20	45	42	42	23	29	14	10	5.0
CFSM	.32	.35	.79	.89	.92	1.52	1.30	.69	1.16	.40	.25	.38
IN.	.37	.39	.91	1.03	.96	1.76	1.45	.80	1.30	.46	.29	.42

e Estimated

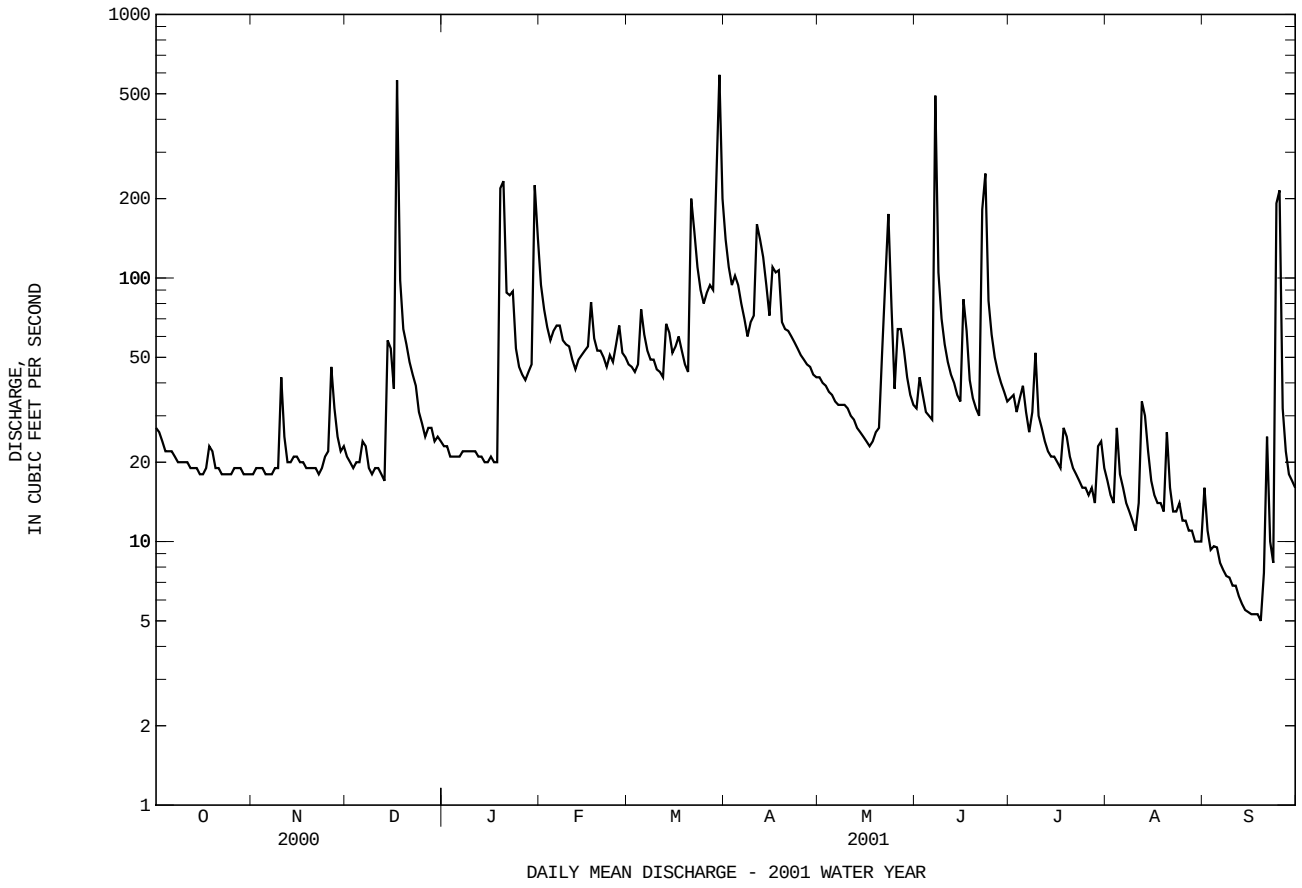
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1948 - 1958, 1966 - 2001, BY WATER YEAR (WY)

MEAN	39.0	48.8	78.0	88.8	99.5	118	105	84.3	66.6	41.6	34.5	39.4
MAX	245	160	295	289	229	369	286	302	498	178	148	211
(WY)	1980	1997	1997	1996	1979	1993	1993	1988	1972	1987	1955	1971
MIN	8.21	12.5	14.6	15.5	37.7	37.6	44.6	25.8	13.9	4.65	4.80	7.38
(WY)	1987	1982	1999	1981	1999	1981	1985	1969	1999	1999	1999	1986

01643500 BENNETT CREEK AT PARK MILLS, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1948 - 1958, 1966 - 2001	
ANNUAL TOTAL	19027		17084.5			
ANNUAL MEAN	52.0		46.8		70.1	
HIGHEST ANNUAL MEAN					141	1972
LOWEST ANNUAL MEAN					32.0	1981
HIGHEST DAILY MEAN	563	Dec 17	590	Mar 30	5500	Jun 22 1972
LOWEST DAILY MEAN	14	(a)	5.0	Sep 19	.40	Sep 8 1966
ANNUAL SEVEN-DAY MINIMUM	15	Sep 12	5.4	Sep 13	.91	Sep 3 1966
MAXIMUM PEAK FLOW			1510	Jun 7	(b)32200	Jun 21 1972
MAXIMUM PEAK STAGE			4.86	Jun 7	(c)22.10	Jun 21 1972
INSTANTANEOUS LOW FLOW			4.4	(d)	.30	Sep 8 1966
ANNUAL RUNOFF (CFSM)	.83		.75		1.12	
ANNUAL RUNOFF (INCHES)	11.27		10.12		15.17	
10 PERCENT EXCEEDS	103		89		132	
50 PERCENT EXCEEDS	33		29		42	
90 PERCENT EXCEEDS	18		14		14	

a Sept. 16-18, 2000.
b From rating curve extended above 2,700 ft^3/s on basis of contracted-opening measurement at gage heights of 11.15, 14.33, and 22.1 ft.
c From floodmarks.
d Sept. 19, 20.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01644600 GREAT SENECA CREEK NEAR QUINCE ORCHARD, MD

LOCATION.--Lat 39°07'58.3", long 77°16'05.2", Montgomery County, Hydrologic Unit 02060008, on left bank 10 ft downstream from bridge on Riffle Ford Road, 1.35 mi northwest of Quince Orchard, 1.75 mi southeast of the intersection of Maryland Route 118 and Riffle Ford Road, and 4.5 mi upstream from the confluence with Little Seneca Creek.

DRAINAGE AREA.--50.7 mi^2.

PERIOD OF RECORD.--July 1997 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 265 ft above sea level, from topographic maps.

REMARKS.--No estimated daily discharges. Records good. Several measurements of water temperature were made during the year. Records include pumpage from a Washington Suburban Sanitary Commission wastewater facility located immediately upstream from station.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,100 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 30	0615	1,510	8.64	Aug 20	0245	1,130	7.84
Jun 7	1230	2,280	10.00	Sep 25	0145	1,120	7.82
Aug 11	2030	*2,630	*10.54				

Minimum discharge, 17 ft^3/s, Sept. 10.

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	50	39	44	41	78	51	107	52	59	46	34	61
2	49	38	41	42	65	51	90	50	92	40	30	34
3	47	38	40	33	60	49	80	47	89	36	28	30
4	44	39	41	37	56	57	73	45	60	46	29	29
5	43	40	42	40	87	104	68	44	59	105	29	28
6	44	39	39	41	83	67	73	42	53	65	28	26
7	42	37	39	40	65	57	74	42	1190	44	26	25
8	41	39	39	45	58	53	66	41	165	75	25	25
9	41	40	37	46	56	52	64	42	98	97	24	25
10	43	115	37	41	56	51	72	41	77	52	24	25
11	42	53	37	41	52	50	178	40	65	44	735	26
12	41	43	37	42	51	51	113	39	56	39	414	24
13	40	41	35	40	55	87	88	38	52	36	106	24
14	39	51	162	41	55	62	76	38	50	35	73	23
15	39	47	83	42	61	59	73	37	49	33	47	22
16	39	42	60	43	84	70	105	36	115	33	40	22
17	39	41	392	42	125	63	89	35	78	32	36	22
18	45	39	113	43	68	56	106	37	51	60	34	22
19	44	39	72	245	59	52	77	51	46	56	35	22
20	41	38	64	187	56	51	71	46	43	39	424	36
21	40	37	56	104	53	266	68	123	41	35	61	94
22	40	39	52	73	52	153	66	194	96	33	43	36
23	39	38	48	62	57	89	63	253	284	31	39	29
24	39	38	48	58	57	73	61	69	75	27	38	127
25	39	39	46	55	64	67	58	55	57	29	34	404
26	39	111	44	51	69	63	57	141	50	28	32	63
27	39	62	45	51	56	59	55	209	47	30	53	42
28	39	47	44	49	53	57	55	136	45	28	70	37
29	39	45	42	49	---	95	53	70	42	58	34	33
30	39	52	43	233	---	691	53	56	43	53	46	31
31	38	---	42	121	---	147	---	49	---	38	37	---
TOTAL	1283	1406	1964	2078	1791	2953	2332	2198	3327	1403	2708	1447
MEAN	41.4	46.9	63.4	67.0	64.0	95.3	77.7	70.9	111	45.3	87.4	48.2
MAX	50	115	392	245	125	691	178	253	1190	105	735	404
MIN	38	37	35	33	51	49	53	35	41	27	24	22
(†)	-10.1	-9.9	-10.3	-9.8	-9.9	-10.1	-10.1	-10.0	-10.2	-9.7	-10.5	-9.7
MEAN‡	31.3	36.9	53.1	57.2	54.0	85.2	67.6	60.9	101	35.5	76.9	38.4
CFSM‡	.62	.73	1.05	1.13	1.07	1.68	1.33	1.20	1.99	.70	1.52	.76
IN‡	.71	.81	1.21	1.30	1.11	1.94	1.49	1.39	2.22	.80	1.75	.85

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1997 - 2001, BY WATER YEAR (WY)

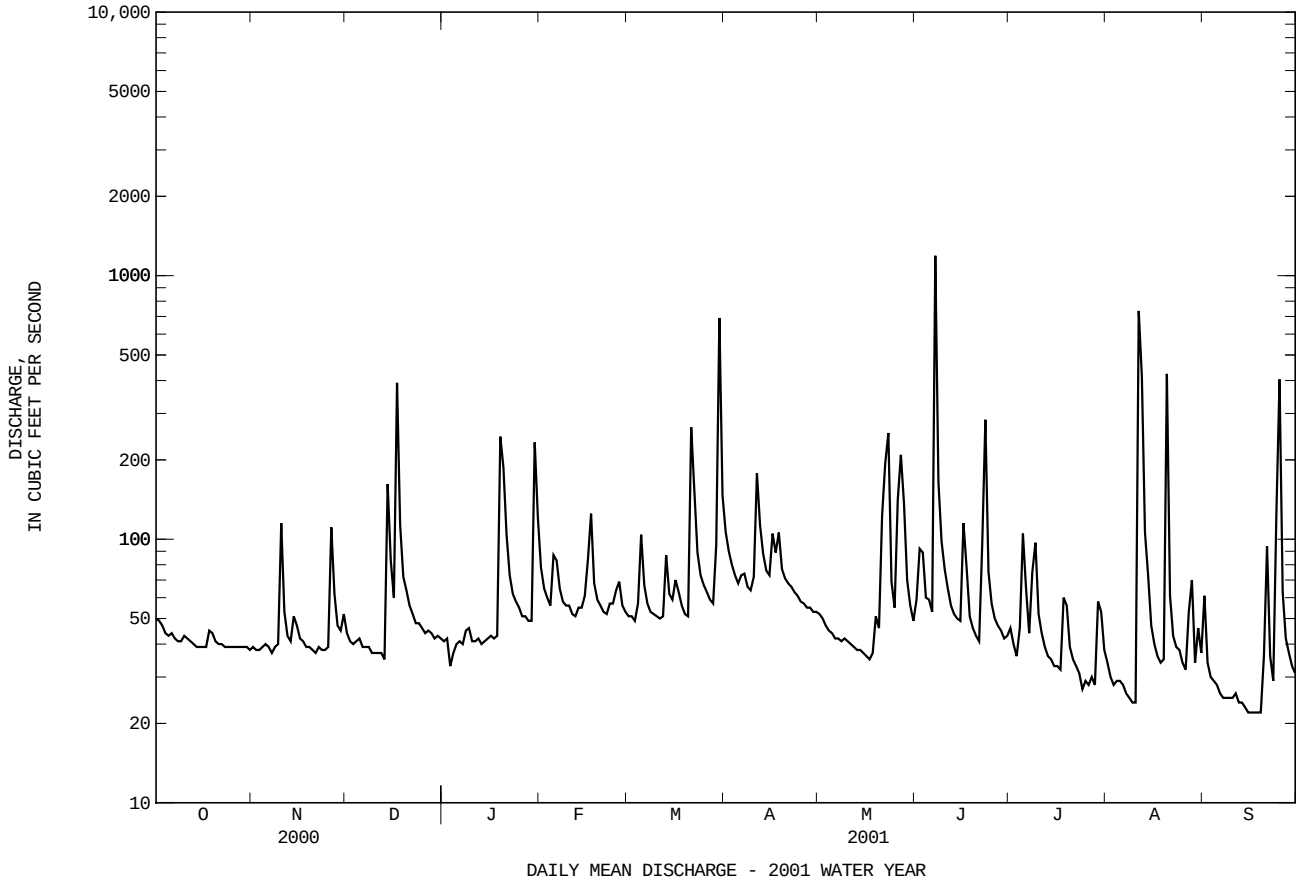
MEAN	40.7	54.0	52.3	81.4	89.5	116	89.4	74.6	72.3	38.5	54.3	68.4
MAX	60.5	91.2	75.5	116	155	175	123	121	111	56.6	88.5	137
(WY)	2000	1998	2000	1998	1998	1998	2000	1998	2001	2000	2000	1999
MIN	30.4	28.8	28.2	51.7	54.5	76.2	56.1	39.2	31.6	21.1	29.9	20.6
(WY)	1998	1999	1999	2000	1999	1999	1999	1999	1999	1999	1997	1998

† Pumpage in cubic feet per second, from Washington Suburban Sanitary Commission.
‡ Adjusted for pumpage.

01644600 GREAT SENECA CREEK NEAR QUINCE ORCHARD, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1997 - 2001	
ANNUAL TOTAL	27885		24890			
ANNUAL MEAN	76.2		68.2		70.6	
ANNUAL MEAN‡	66.3		58.1		61.8	
HIGHEST ANNUAL MEAN					83.0	1998
LOWEST ANNUAL MEAN					52.1	1999
HIGHEST DAILY MEAN	901	Mar 22	1190	Jun 7	1480	Mar 21 1998
LOWEST DAILY MEAN	32	Aug 23	22	(a)	12	Aug 19 1999
ANNUAL SEVEN-DAY MINIMUM	33	Aug 20	22	Sep 13	14	Aug 2 1999
MAXIMUM PEAK FLOW			2630	Aug 11	(b)2630	Aug 11 2001
MAXIMUM PEAK STAGE			10.54	Aug 11	10.54	Aug 11 2001
INSTANTANEOUS LOW FLOW			17	Sep 10	9.3	Aug 13 1999
ANNUAL RUNOFF (CFSM)	1.50		1.35		1.39	
ANNUAL RUNOFF (CFSM)‡	1.31		1.15		1.22	
ANNUAL RUNOFF (INCHES)	20.46		18.26		18.92	
ANNUAL RUNOFF (INCHES)‡	17.81		15.57		16.55	
10 PERCENT EXCEEDS	123		104		112	
50 PERCENT EXCEEDS	51		47		46	
90 PERCENT EXCEEDS	39		33		23	

‡ Adjusted for inflow.
a Sept. 15-19.
b From rating curve extended above 530 ft^3/s.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01645000 SENECA CREEK AT DAWSONVILLE, MD

LOCATION.--Lat 39°07'41.1", long 77°20'08.8", Montgomery County, Hydrologic Unit 02070008, on right bank 60 ft downstream from bridge on State Highway 28, 150 ft downstream from mouth of Great Seneca Creek, 0.5 mi east of Dawsonville, and 5.8 mi upstream from mouth.

DRAINAGE AREA.--101 mi^2.

PERIOD OF RECORD.--September 1930 to current year.

REVISED RECORDS.--WSP 726: Drainage area. WSP 1232: 1930. WSP 1272: 1933. WSP 1432: 1934-35(M), 1941(M). WDR MD-DE-74-1: 1970(M).

GAGE.--Water-stage recorder. Concrete control since Mar. 3, 1934. Datum of gage is 214.02 ft above sea level. Sept. 26 to Nov. 9, 1930, chain gage, and Nov. 10, 1930 to Apr. 6, 1934, water-stage recorder, at highway bridge 60 ft upstream at same datum.

REMARKS.--Records good except those for estimated daily discharges (ice effect), which are fair. Small diversion at times for irrigation upstream from station. National Weather Service gage-height telemeter at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,300 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 30	0445	1,550	6.19	Aug 12	0215	*3,140	*8.01
Jun 7	0800	3,070	7.96	Sep 24	2215	1,410	5.83

Minimum discharge, 28 ft^3/s, Sept. 10, 18.

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	67	48	58	e60	152	91	243	76	75	68	45	77
2	65	48	55	e58	125	87	197	69	120	59	40	50
3	62	48	54	57	108	84	176	66	136	53	41	43
4	60	49	54	e57	98	87	168	64	96	58	42	42
5	58	49	56	58	127	163	162	63	103	134	43	39
6	64	48	53	61	138	123	157	61	94	100	40	37
7	64	46	52	60	112	104	147	61	1870	66	34	35
8	55	47	52	62	100	94	94	59	417	110	32	35
9	54	49	51	69	96	91	90	60	263	212	31	35
10	56	124	50	62	97	88	97	59	203	146	31	34
11	55	70	51	62	86	84	249	57	99	63	390	36
12	54	58	51	63	82	84	215	56	85	55	887	34
13	53	55	47	60	89	128	189	55	79	52	193	32
14	53	63	175	59	90	109	154	54	73	49	144	33
15	52	63	110	61	98	99	121	53	71	48	98	32
16	52	56	77	63	122	116	173	52	146	47	76	31
17	52	54	567	62	212	108	172	51	177	46	54	31
18	56	53	214	62	128	101	183	54	122	73	49	30
19	58	52	136	316	108	90	129	69	78	77	49	31
20	53	51	114	333	101	86	106	64	65	53	473	39
21	52	50	93	197	98	433	102	173	63	48	138	139
22	52	51	e76	e120	91	351	99	224	132	45	107	59
23	51	50	e64	e83	97	201	96	421	437	43	86	39
24	51	50	e62	e82	99	160	93	135	186	37	69	186
25	52	51	e61	e82	106	138	88	88	148	38	50	689
26	52	122	e60	e83	121	144	87	200	87	36	48	190
27	51	82	e60	84	102	151	86	277	71	38	49	119
28	50	89	e60	81	96	144	84	262	67	36	112	82
29	50	70	62	78	---	192	82	132	65	66	51	69
30	48	65	64	318	---	1020	81	105	62	74	60	56
31	47	---	62	234	---	340	---	78	---	52	52	---
TOTAL	1699	1811	2801	3187	3079	5291	4120	3298	5690	2082	3614	2384
MEAN	54.8	60.4	90.4	103	110	171	137	106	190	67.2	117	79.5
MAX	67	124	567	333	212	1020	249	421	1870	212	887	689
MIN	47	46	47	57	82	84	81	51	62	36	31	30
CFSM	.54	.60	.89	1.02	1.09	1.69	1.36	1.05	1.88	.66	1.15	.79
IN.	.63	.67	1.03	1.17	1.13	1.95	1.52	1.21	2.10	.77	1.33	.88

e Estimated

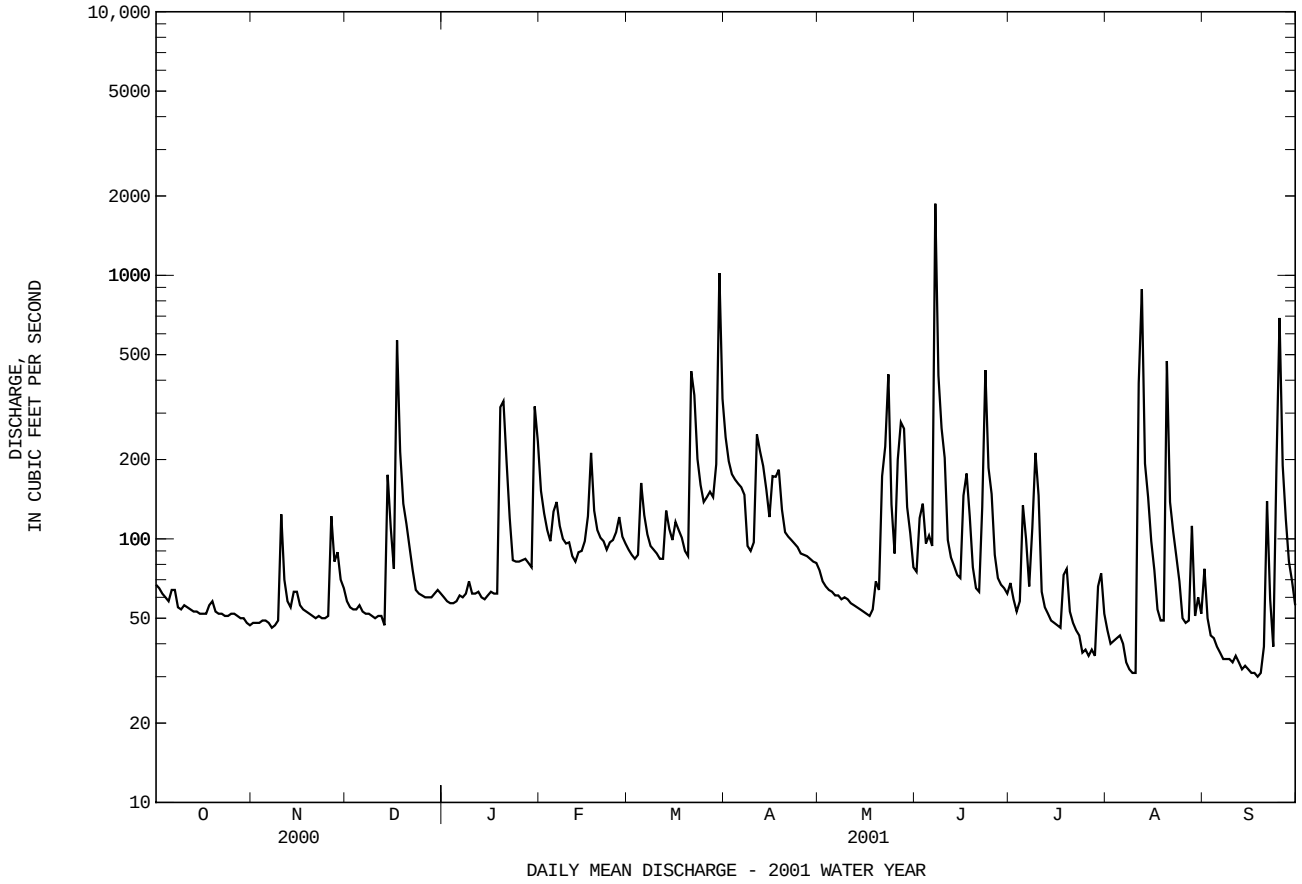
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1930 - 2001, BY WATER YEAR (WY)

MEAN	68.4	84.4	110	130	148	163	149	126	106	75.8	68.7	79.0
MAX	479	290	452	440	484	511	457	510	747	273	248	566
(WY)	1980	1994	1997	1996	1979	1993	1993	1989	1972	1956	1971	1971
MIN	7.10	12.6	20.6	30.2	26.7	44.3	55.9	30.3	35.3	13.4	8.35	10.1
(WY)	1931	1932	1932	1966	1931	1931	1969	1931	1986	1955	1932	1931

01645000 SENECA CREEK AT DAWSONVILLE, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1930 - 2001	
ANNUAL TOTAL	43030		39056			
ANNUAL MEAN	118		107		109	
HIGHEST ANNUAL MEAN					251	1972
LOWEST ANNUAL MEAN					32.8	1931
HIGHEST DAILY MEAN	1330	Mar 22	1870	Jun 7	9900	Jun 22 1972
LOWEST DAILY MEAN	44	Aug 26	30	Sep 18	1.8	(a)
ANNUAL SEVEN-DAY MINIMUM	47	Aug 20	31	Sep 13	2.2	Sep 27 1930
MAXIMUM PEAK FLOW			3140	Aug 12	(b)26100	Jun 22 1972
MAXIMUM PEAK STAGE			8.01	Aug 12	(c)16.40	Jun 22 1972
INSTANTANEOUS LOW FLOW			28	(d)	1.7	(f)
ANNUAL RUNOFF (CFSM)	1.16		1.06		1.08	
ANNUAL RUNOFF (INCHES)	15.85		14.38		14.63	
10 PERCENT EXCEEDS	206		187		190	
50 PERCENT EXCEEDS	78		69		69	
90 PERCENT EXCEEDS	51		46		27	

a Sept. 29, 1930, Sept. 12, 1966.
b From rating curve extended above 3,000 ft^3/s on basis of contracted-opening and flow over-road measurement at gage height 12.17 ft at gage; and contracted-opening and flow-over-road measurement at gage height 16.32 ft at site 5.0 mi downstream, adjusted for flow from intervening area.
c From high-water mark in gage house.
d Sept. 10, 18.
f Sept. 28, 29, 1930.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01646500 POTOMAC RIVER NEAR WASHINGTON, DC

LOCATION.--Lat 38°56'59.2", long 77°07'39.5", Montgomery County, Hydrologic Unit 02070008, on left bank just upstream from Little Falls Dam, 1 mi upstream from District of Columbia boundary line, 1.2 mi upstream from Chain Bridge, 1.8 mi east of Langley, Fairfax County, and at mile 117.4.

DRAINAGE AREA.--11,560 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1930 to current year.

REVISED RECORDS.--WSP 726: Drainage area. WDR MD-DE-75-1: 1973-74(M).

GAGE.--Water-stage recorder and concrete control. Datum of gage is 37.95 ft above sea level. Prior to June 7, 1930, nonrecording gage, and June 7, 1930, to Jan. 22, 1965, water-stage recorder at site 1 mi upstream on right bank at same datum.

REMARKS.--Water-discharge records good. Diversions at Great Falls through aqueducts, and since June 1959, from gage pool at Little Falls Dam, for municipal supply of Washington, D.C.; since October 1958, at Rockville Filtration Plant, for municipal supply of city of Rockville; since April 1961, at Potomac Filtration Plant for water supply of Washington Suburban Sanitary District; since October 1961, at Fairfax Water Treatment Plant for water supply of city of Fairfax (from Goose Creek); since April 1964, at Violets Lock to Chesapeake and Ohio Canal; and since October 1985, at Fairfax County Water Authority Treatment Plant for water supply of the county. Low flow affected slightly prior to July 1981 by Stony River Reservoir, since December 1950, by Savage River Reservoir (see station 01597500), and since July 1981, by Jennings Randolph Lake. National Weather Service gage-height telemeter at station. U.S. Geological Survey satellite collection platform at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 2, 1889, was of approximately the same magnitude as that of March 19, 1936.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 45,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 23	1630	*75,200	*7.88	No other peak greater than base discharge.			

Minimum discharge, 773 ft^3/s, Sept. 19.

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	9360	1920	3170	3630	18300	7750	40800	6700	8910	4930	9580	2250
2	7550	1750	3280	3900	27000	7460	35800	6450	7760	4870	12100	2210
3	6380	1810	3190	3650	20600	7000	29900	6090	6960	4170	8350	2150
4	5720	1770	2990	3580	16200	6820	26000	5610	6160	4480	6140	1860
5	5130	1730	2930	3450	13400	7320	22100	5300	5640	7350	5180	1880
6	4610	1750	2750	3270	11700	8320	19300	4980	5370	5390	4800	2330
7	4080	1720	2590	3230	10400	8960	17300	4710	9770	4180	4360	2100
8	3720	1780	2540	3090	9590	8940	16000	4580	10400	5050	4480	1850
9	3430	1810	2450	3160	8770	8810	16300	4370	20200	4730	4090	1550
10	3290	2220	2490	3430	8040	8760	17500	4220	16100	4380	3570	1410
11	3400	2120	2500	3070	7520	8720	20600	4020	11700	3870	5300	1370
12	3520	2450	2520	3290	7140	8380	23300	3970	9050	3690	8660	1330
13	3060	2790	2370	3070	7580	8290	36700	3690	7350	3440	4680	1290
14	2770	3190	3010	2970	7730	9060	37300	3490	6450	3070	5140	1330
15	2590	3220	3430	2930	7950	10600	27600	3300	5570	2730	10100	1350
16	2420	2820	4840	2920	8660	12000	23500	3240	5650	2370	9970	1140
17	2300	2500	9450	3100	10300	12000	25800	3280	5540	2420	7070	1250
18	2480	2370	23100	2890	11600	11800	29300	3330	6220	2410	5300	980
19	2400	2270	15900	3790	12600	12000	23400	3560	6520	2480	4130	948
20	2430	2170	13800	6120	12100	12500	19300	3620	5210	2240	4550	1100
21	2450	2150	12800	9230	11100	15500	16500	4230	4380	2140	3600	1770
22	2560	2110	10600	8890	9850	27100	14600	6700	4490	1950	3280	1580
23	2310	2010	7200	10100	8800	64600	13000	13000	17200	2010	3810	1340
24	2260	2020	6770	10600	7920	50200	11900	12200	20000	2040	4800	1280
25	2240	2010	e5150	9670	7430	34400	10800	16500	20100	1980	3450	10300
26	2120	2460	4960	8130	7460	26900	9890	18600	15100	1910	2860	4600
27	2110	2680	4350	7780	7410	22600	8990	e14600	10600	1730	2520	2780
28	2050	3390	4880	6810	7470	19300	8190	e16900	7710	1740	2350	2240
29	1970	3350	4500	6390	---	17000	7550	15900	6180	2000	2220	1860
30	1900	3380	4150	6990	---	29900	7110	13200	5140	2720	2180	1720
31	1900	---	4190	12000	---	40300	---	10800	---	4980	2240	---
TOTAL	104510	69720	178850	165130	304620	533290	616330	231140	277430	103450	160860	61148
MEAN	3371	2324	5769	5327	10880	17200	20540	7456	9248	3337	5189	2038
MAX	9360	3390	23100	12000	27000	64600	40800	18600	20200	7350	12100	10300
MIN	1900	1720	2370	2890	7140	6820	7110	3240	4380	1730	2180	948
(†)	606	576	565	583	571	572	606	670	666	694	673	658
MEAN‡	3978	2900	6340	5910	11450	17780	21150	8126	9908	4012	5861	2696
CFSM‡	0.34	0.25	0.55	0.51	0.99	1.54	1.83	0.70	0.86	0.35	0.51	0.23
IN‡	0.40	0.28	0.63	0.59	1.03	1.77	2.04	0.81	0.96	0.40	0.58	0.26

e Estimated

† Diversions, in cubic feet per second, for municipal supply of Washington, D.C., Washington Suburban Sanitary District, city of Rockville, city of Fairfax (from Goose Creek), Fairfax County, and the Chesapeake and Ohio Canal (insignificant diversion to canal during current water year). Records provided by U.S. Army Corps of Engineers, Washington Suburban Sanitary Commission, city of Rockville, city of Fairfax, and Fairfax County Water Authority.

‡ Adjusted for diversion.

01646500 POTOMAC RIVER NEAR WASHINGTON, DC--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1930 - 1958, BY WATER YEAR (WY) (UNREGULATED)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	6120	6496	9843	13570	16660	21060	19120	13610	7960	5135	5804	4419
MAX	44100	21040	30900	37190	36790	76510	36430	27780	19090	21040	28210	19940
(WY)	1943	1933	1951	1937	1939	1936	1933	1932	1951	1949	1955	1945
MIN	583	700	1536	2527	2982	6505	7202	3953	2867	1284	569	679
(WY)	1931	1931	1944	1956	1934	1931	1947	1930	1930	1930	1930	1930

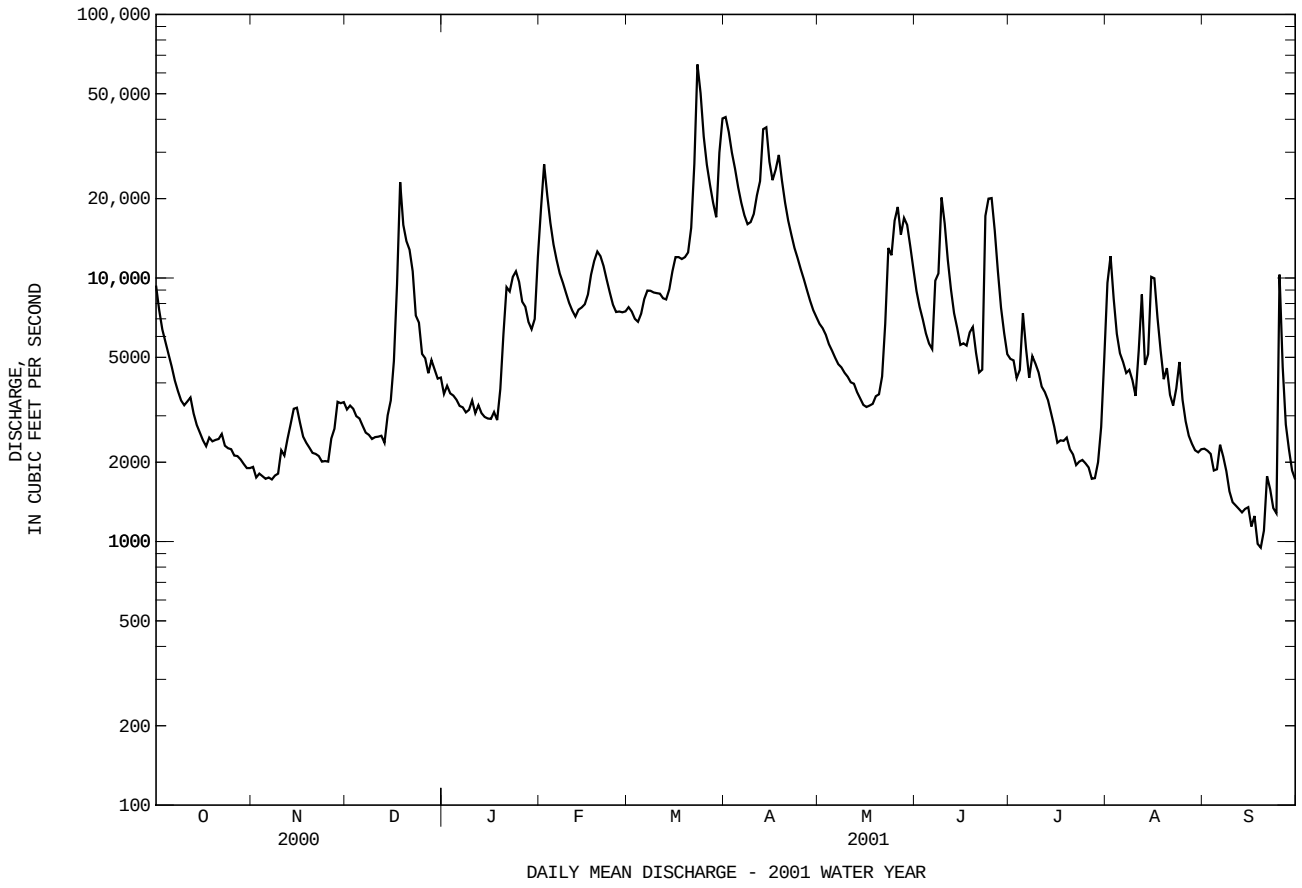
SUMMARY STATISTICS	WATER YEARS 1930 - 1958	
ANNUAL MEAN	10790	
HIGHEST ANNUAL MEAN	16100	1949
LOWEST ANNUAL MEAN	4525	1930
HIGHEST DAILY MEAN	426000	Mar 19 1936
LOWEST DAILY MEAN	448	Aug 25 1930
ANNUAL SEVEN-DAY MINIMUM	499	Aug 21 1930
INSTANTANEOUS PEAK FLOW	484000	Mar 19 1936
INSTANTANEOUS PEAK STAGE	(a)28.10	Mar 19 1936
INSTANTANEOUS LOW FLOW	430	Aug 24 1930
ANNUAL RUNOFF (CFSM)	.93	
ANNUAL RUNOFF (INCHES)	12.68	
10 PERCENT EXCEEDS	23600	
50 PERCENT EXCEEDS	6440	
90 PERCENT EXCEEDS	1810	

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1959 - 2001, BY WATER YEAR (WY) (REGULATED, UNADJUSTED)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	5988	7618	11290	13980	17610	25150	20680	14990	9267	4677	4120	4725
MAX	36790	42030	37630	52890	61040	67370	57850	40410	46630	17160	21720	44620
(WY)	1977	1986	1997	1996	1998	1994	1993	1989	1972	1972	1996	1996
MIN	908	1097	1038	1682	5605	7403	5810	3921	1536	599	538	791
(WY)	1964	1966	1966	1981	1999	1990	1995	1969	1999	1999	1966	1964

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1959 - 2001	
ANNUAL TOTAL	2793130		2806478			
ANNUAL MEAN	7632		7689		11640	
ANNUAL MEAN‡	8219		8309		12151	
HIGHEST ANNUAL MEAN					23760	1996
HIGHEST ANNUAL MEAN‡					24370	1996
LOWEST ANNUAL MEAN					4900	1969
LOWEST ANNUAL MEAN‡					5306	1969
HIGHEST DAILY MEAN	58400	Feb 21	64600	Mar 23	334000	Jun 24 1972
LOWEST DAILY MEAN	1720	Nov 7	948	Sep 19	(b)121	Sep 9 1966
LOWEST DAILY MEAN‡	1480	Nov 7	1000	Sep 19	(c)601	Sep 9 1966
ANNUAL SEVEN-DAY MINIMUM	1760	Nov 2	1160	Sep 14	181	Sep 7 1966
MAXIMUM PEAK FLOW			75200	Mar 23	359000	Jun 24 1972
MAXIMUM PEAK STAGE			7.88	Mar 23	22.03	Jun 24 1972
INSTANTANEOUS LOW FLOW			773	Sep 19	66	Sep 9 1966
ANNUAL RUNOFF (CFSM)	.66		.67		1.01	
ANNUAL RUNOFF (CFSM)‡	.71		.72		1.05	
ANNUAL RUNOFF (INCHES)	8.99		9.03		13.68	
ANNUAL RUNOFF (INCHES)‡	9.68		9.76		14.28	
10 PERCENT EXCEEDS	16100		17100		26500	
50 PERCENT EXCEEDS	4730		4800		6430	
90 PERCENT EXCEEDS	2360		1960		1580	

a At previous site, 1 mi upstream at same datum.
‡ Adjusted for diversion.
b Minimum daily discharge observed at gaging station, does not include diversion of 489 ft^3/s.
c Includes diversion of 449 ft^3/s for municipal use.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01646500 POTOMAC RIVER NEAR WASHINGTON, DC--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1989 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1988 to current year.
WATER TEMPERATURE: October 1988 to current year.

INSTRUMENTATION.--Water-quality monitor October 1988 to current year.

REMARKS.--Missing record June 1-6 due to instrument malfunction..

EXTREMES FOR PERIOD OF DAILY RECORD--
SPECIFIC CONDUCTANCE: Maximum, 747 microsiemens, Jan. 11, 1991; minimum, 68 microsiemens, Oct. 23, 1990.
WATER TEMPERATURE (water years 1989-93, 1995-97): Maximum, 33.5°C, July 11, 1993; minimum, 0.0°C, on many day during winter periods.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 617 microsiemens/cm, Jan. 30; minimum, 130 microsiemens/cm, May 22.
WATER TEMPERATURE: Maximum, 32.3°C, Aug. 11; minimum, -0.1°C, Dec. 22-25, 31, Jan. 2, 3, 10.

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	324	286	297	403	399	401	375	365	372	346	331	338
2	329	305	319	402	397	400	393	374	384	347	334	339
3	329	311	320	402	397	400	405	392	401	352	334	344
4	311	309	310	402	397	400	412	400	407	364	346	355
5	315	309	312	405	400	402	415	404	411	368	353	360
6	315	309	312	408	391	405	416	407	412	378	355	368
7	312	305	309	415	407	412	416	407	412	394	365	379
8	309	306	307	421	414	419	414	407	411	411	381	392
9	314	308	311	427	407	423	408	399	403	489	411	444
10	321	313	318	427	412	421	403	394	398	447	381	413
11	329	320	325	417	405	410	404	397	400	437	409	419
12	333	328	331	408	404	405	404	399	402	426	404	418
13	343	333	339	414	406	410	403	397	401	425	401	413
14	354	343	349	416	411	415	533	390	420	428	406	417
15	362	352	358	424	405	419	512	418	445	422	407	414
16	363	359	361	432	423	429	418	408	414	414	407	410
17	365	360	362	438	429	434	408	176	e290	411	400	407
18	368	364	366	444	435	440	335	216	267	412	402	408
19	370	366	368	449	441	446	305	212	234	592	406	451
20	370	364	367	447	434	439	373	305	358	486	429	459
21	372	364	368	435	428	432	365	349	361	580	442	536
22	377	361	374	430	426	428	349	337	342	582	486	516
23	384	374	379	426	417	421	367	322	340	535	494	511
24	391	382	387	419	412	415	375	344	356	522	466	490
25	399	390	395	416	409	413	359	322	344	466	399	435
26	402	397	400	415	372	399	357	345	350	399	370	382
27	401	396	399	389	379	385	354	338	348	379	369	373
28	403	397	399	400	388	396	353	337	343	384	371	377
29	401	394	397	396	385	392	350	340	346	377	368	372
30	405	399	400	387	364	380	348	328	340	617	367	462
31	403	388	400	---	---	---	343	324	334	449	354	390
MONTH	405	286	353	449	364	413	533	176	369	617	331	413

e Estimated

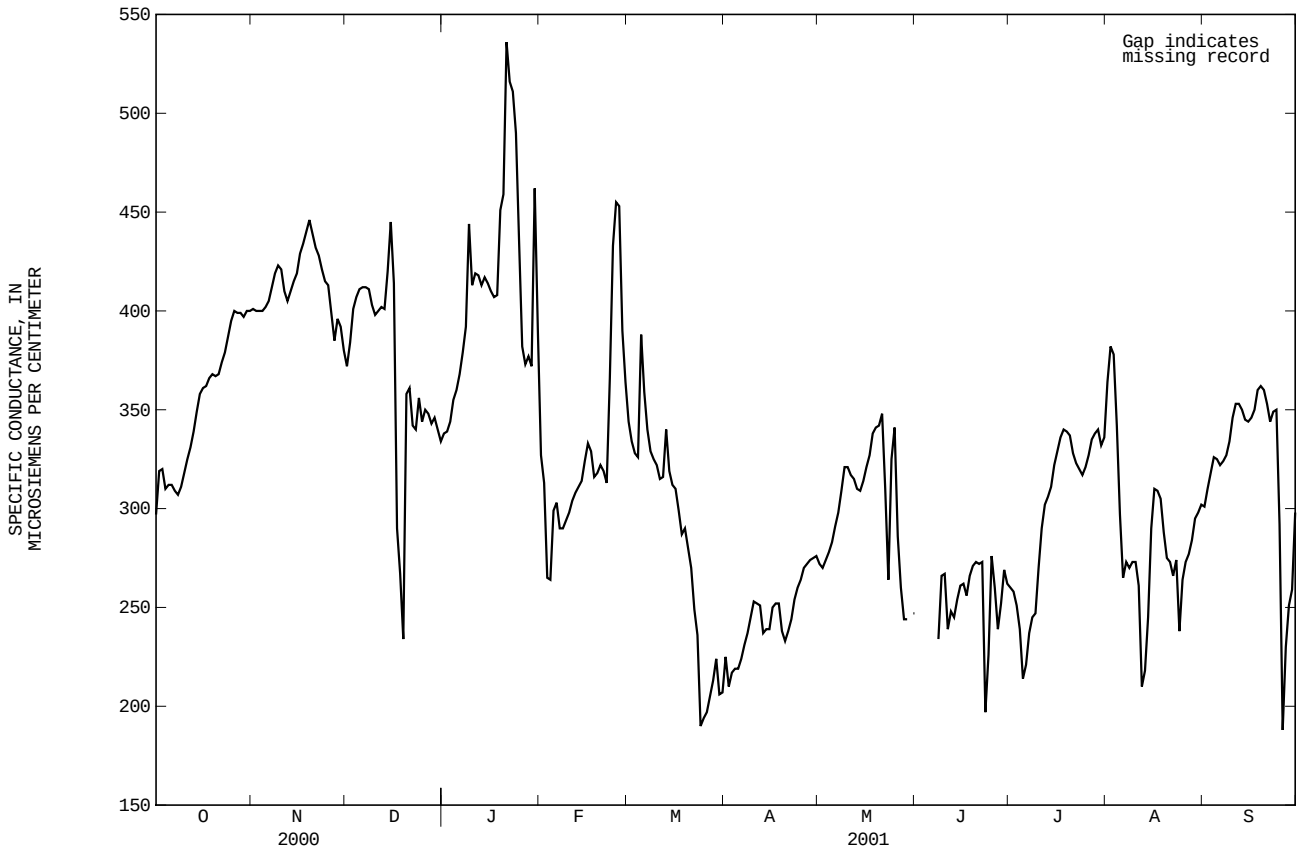
01646500 POTOMAC RIVER NEAR WASHINGTON, DC--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	354	309	327	358	336	344	236	207	225	280	267	272
2	331	270	313	340	329	334	214	206	210	276	267	270
3	272	260	265	334	322	328	221	214	217	279	269	274
4	267	260	264	339	323	326	222	216	219	286	273	278
5	353	258	299	427	339	388	220	217	219	298	276	283
6	328	294	303	374	352	359	228	220	224	298	282	291
7	294	287	290	355	329	340	236	228	231	304	293	298
8	292	288	290	335	323	329	241	233	237	315	304	309
9	300	291	294	330	322	325	250	241	245	325	315	321
10	307	294	298	331	315	322	257	248	253	326	313	321
11	307	301	304	321	310	315	259	243	252	324	311	317
12	312	304	308	320	313	316	258	240	251	325	301	315
13	313	307	311	374	320	340	244	232	237	318	298	310
14	321	311	314	326	313	319	244	231	239	317	303	309
15	338	319	324	334	305	312	246	233	239	320	309	314
16	378	316	333	336	301	310	256	232	250	330	316	321
17	364	320	329	302	295	299	255	250	252	333	321	327
18	331	302	316	297	282	287	254	248	252	343	326	338
19	331	302	318	294	277	290	249	230	238	348	334	341
20	325	319	322	289	272	280	237	229	233	348	338	342
21	322	316	319	292	250	270	242	234	238	354	339	348
22	319	309	313	270	230	249	249	228	244	348	130	310
23	546	315	366	258	194	236	257	249	254	309	130	264
24	592	385	433	210	186	190	264	256	260	350	307	325
25	557	406	455	196	191	194	268	256	264	352	333	341
26	557	410	453	202	193	197	275	256	270	343	254	286
27	410	376	390	209	200	205	274	270	272	271	237	260
28	376	356	364	219	208	213	276	271	274	248	229	244
29	---	---	---	244	218	224	279	272	275	247	241	244
30	---	---	---	233	176	206	278	274	276	253	243	---
31	---	---	---	214	202	207	---	---	---	257	240	247
MONTH	592	258	329	427	176	286	279	206	245	354	130	301

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	---	272	254	260	393	340	364	305	297	301
2	---	---	---	267	251	258	408	374	382	315	304	310
3	---	---	---	258	244	251	409	350	378	323	312	318
4	---	---	---	251	206	239	358	315	342	332	322	326
5	---	---	---	229	198	214	321	271	297	342	321	325
6	---	---	---	226	214	221	277	258	265	325	318	322
7	---	---	---	245	226	237	278	261	273	326	321	324
8	246	222	234	249	238	245	278	262	270	330	322	327
9	306	241	266	256	233	247	282	265	273	342	328	334
10	306	243	267	283	253	270	280	267	273	355	338	346
11	246	231	239	298	283	290	280	206	261	364	346	353
12	252	245	248	305	296	302	226	184	210	356	351	353
13	252	240	245	310	304	306	225	207	218	354	338	350
14	259	250	254	317	304	311	264	219	245	348	340	345
15	267	258	261	329	316	322	309	264	290	355	340	344
16	273	249	262	334	325	329	315	304	310	354	342	346
17	266	250	256	340	330	336	312	307	309	361	345	350
18	271	264	266	343	335	340	310	296	305	373	349	360
19	275	269	271	342	336	339	297	281	288	378	355	362
20	278	269	273	341	332	337	284	265	275	362	355	360
21	280	265	272	338	317	328	280	265	273	370	336	353
22	278	256	273	328	320	323	273	262	266	359	334	344
23	256	163	197	330	314	320	282	240	274	359	343	349
24	282	181	226	320	314	317	246	231	238	363	340	350
25	285	267	276	324	318	321	279	245	264	341	178	292
26	268	254	260	334	322	327	283	266	273	224	172	188
27	255	232	239	343	330	335	283	273	277	261	201	230
28	260	243	252	341	335	338	291	277	284	256	247	251
29	271	260	269	349	337	340	301	287	295	276	247	259
30	271	258	262	342	322	332	301	295	298	312	276	298
31	---	---	---	344	325	336	306	298	302	---	---	---
MONTH	306	163	255	349	198	299	409	184	286	378	172	322

01646500 POTOMAC RIVER NEAR WASHINGTON, DC--Continued



MEAN DAILY SPECIFIC CONDUCTANCE - 2001 WATER YEAR

01646500 POTOMAC RIVER NEAR WASHINGTON, DC--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	17.9	17.1	17.5	13.0	12.1	12.5	6.1	5.1	5.4	.2	.0	.1
2	19.4	17.2	18.2	12.6	11.6	12.2	5.8	4.9	5.3	.3	-.1	.1
3	20.0	18.2	18.9	12.6	11.6	12.2	5.2	3.7	4.2	.4	-.1	.1
4	21.4	18.9	20.0	12.9	12.1	12.5	4.3	3.0	3.4	.2	.0	.1
5	20.9	20.1	20.5	13.0	12.4	12.6	3.7	2.6	3.0	.1	.0	.0
6	21.0	20.1	20.5	12.7	11.9	12.3	3.3	2.2	2.6	.1	.0	.0
7	20.3	18.8	19.5	12.2	11.2	11.7	3.0	2.4	2.7	.1	.0	.1
8	18.8	16.8	17.6	11.9	11.1	11.5	2.9	2.6	2.7	.1	.0	.0
9	16.8	14.9	15.6	12.6	11.6	12.1	2.8	2.3	2.6	.3	.0	.1
10	15.3	13.9	14.6	13.1	12.5	12.8	3.1	2.1	2.5	.3	-.1	.1
11	15.0	13.0	14.1	12.8	12.1	12.5	2.6	2.3	2.4	.4	.0	.2
12	15.7	13.0	14.4	12.6	11.9	12.3	3.5	2.6	3.1	.6	.1	.3
13	16.2	13.7	15.1	12.3	11.1	11.4	3.3	2.4	2.8	.8	.1	.4
14	16.7	14.7	15.8	11.5	10.9	11.2	3.1	2.6	2.8	.8	.3	.5
15	17.4	15.8	16.6	10.9	9.4	9.8	3.3	2.4	2.7	1.0	.6	.7
16	17.8	16.8	17.3	9.5	8.0	8.5	3.3	2.6	3.0	1.4	.8	1.0
17	17.8	17.3	17.5	8.6	7.8	8.2	7.0	3.1	e4.5	1.8	1.0	1.3
18	17.8	17.4	17.6	7.8	7.1	7.5	3.6	2.2	2.7	1.8	1.1	1.4
19	17.6	16.5	17.1	7.8	6.5	7.2	2.6	1.7	2.3	2.5	1.7	1.9
20	17.5	16.1	16.9	6.5	5.8	6.1	1.7	.6	1.1	2.7	2.3	2.6
21	17.4	16.2	16.9	6.0	4.3	5.3	.6	.1	.3	2.3	1.0	1.7
22	17.7	16.6	17.2	4.3	3.2	3.6	.8	-.1	.5	1.1	.2	.6
23	17.5	16.2	17.0	3.7	2.9	3.3	.1	-.1	.0	.9	.1	.4
24	16.8	15.9	16.4	3.1	2.3	2.7	.2	-.1	.0	1.3	.4	.8
25	16.8	16.5	16.6	2.8	2.4	2.5	.1	-.1	.0	1.5	.7	1.0
26	16.7	16.3	16.5	5.0	2.6	3.9	.2	.0	.1	1.6	.6	1.0
27	17.1	16.0	16.6	5.9	4.8	5.2	.1	.0	.0	2.3	.8	1.5
28	16.9	16.4	16.6	6.8	5.6	6.1	.3	.0	.1	2.4	1.3	1.7
29	16.4	14.9	15.5	6.7	5.3	5.9	.2	.0	.1	2.8	1.3	2.0
30	14.9	14.0	14.3	6.4	5.4	5.8	.2	.0	.1	3.3	2.2	2.7
31	14.2	12.9	13.2	---	---	---	.2	-.1	.0	4.1	2.8	3.3
MONTH	21.4	12.9	16.8	13.1	2.3	8.7	7.0	-.1	2.0	4.1	-.1	.9

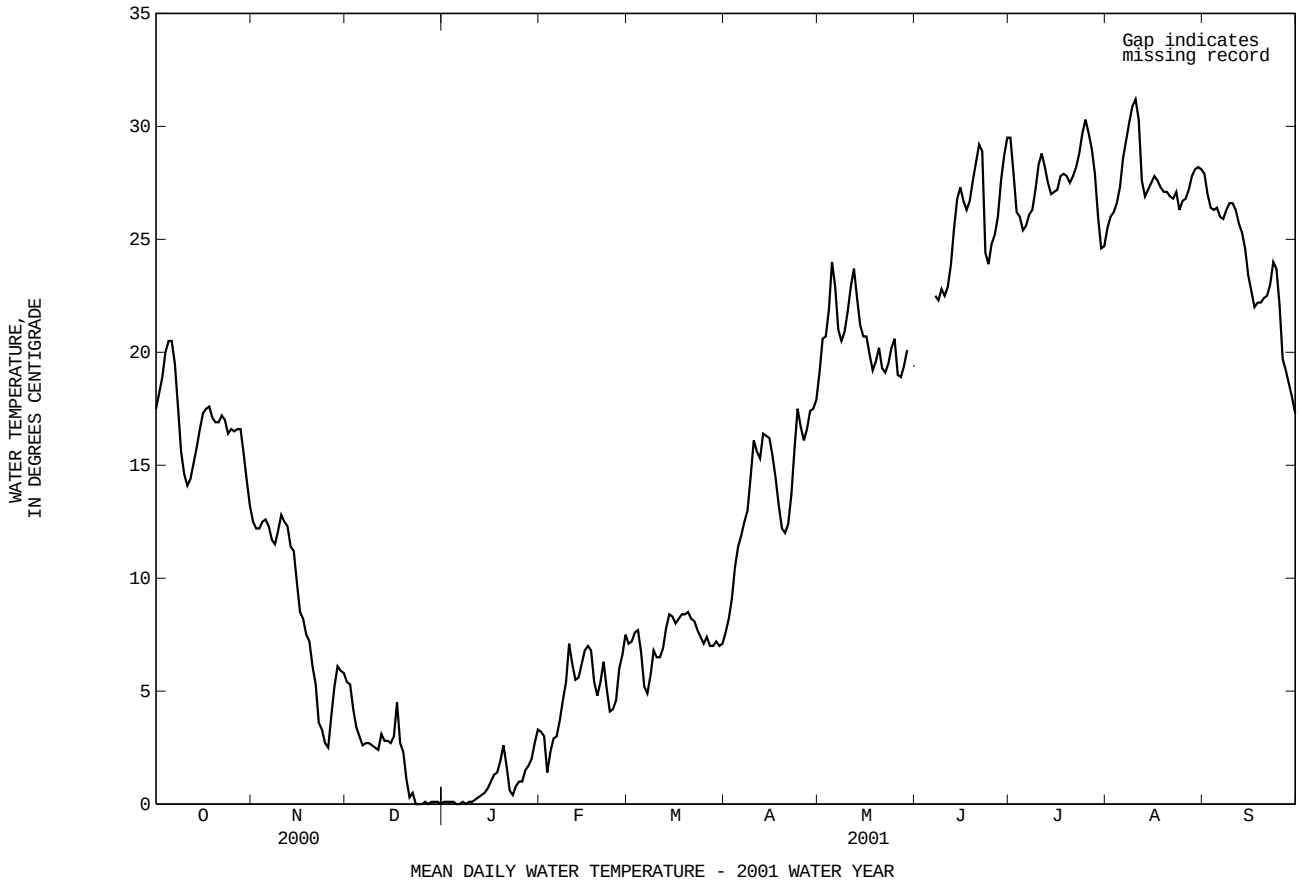
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	3.5	3.0	3.2	8.0	6.5	7.1	7.8	7.4	7.6	20.8	17.5	19.1
2	3.6	2.4	3.0	8.0	6.6	7.2	8.9	7.5	8.2	22.1	19.0	20.6
3	2.4	.5	1.4	8.6	6.8	7.6	10.2	8.1	9.1	23.8	.0	20.7
4	2.8	1.8	2.3	7.9	7.3	7.7	11.5	9.5	10.5	24.7	.0	21.9
5	3.1	2.7	2.9	7.3	5.8	6.7	12.6	10.3	11.4	25.2	22.8	24.0
6	3.3	2.7	3.0	5.8	4.4	5.2	12.6	11.5	11.9	23.8	21.6	22.9
7	4.5	3.2	3.7	6.0	4.3	4.9	12.7	12.3	12.5	22.2	19.9	21.0
8	5.4	3.9	4.6	6.9	4.9	5.7	13.9	12.4	13.0	21.9	18.9	20.5
9	6.4	4.6	5.4	7.7	5.8	6.8	15.9	13.6	14.5	22.2	19.6	20.9
10	8.1	6.0	7.1	7.7	5.9	6.5	16.6	15.5	16.1	23.3	20.2	21.8
11	6.9	5.3	6.2	7.2	6.0	6.5	16.6	14.9	15.6	24.3	21.0	22.9
12	6.1	5.1	5.5	8.1	6.0	6.9	16.0	15.0	15.3	24.6	22.4	23.7
13	6.5	4.9	5.6	8.7	6.9	7.8	17.3	15.8	16.4	23.4	21.3	22.4
14	6.5	5.8	6.2	9.8	7.7	8.4	16.9	15.6	16.3	22.0	19.8	21.2
15	7.2	6.5	6.8	8.5	7.9	8.3	16.6	15.7	16.2	21.7	19.4	20.7
16	7.1	6.8	7.0	8.2	7.9	8.0	16.2	15.0	15.4	21.9	19.1	20.7
17	7.6	6.1	6.8	8.6	7.9	8.2	15.0	13.9	14.4	20.8	19.2	19.9
18	6.1	4.9	5.4	9.1	7.9	8.4	14.0	12.6	13.2	19.8	18.8	19.2
19	5.1	4.5	4.8	9.2	7.8	8.4	12.9	11.3	12.2	20.5	18.7	19.6
20	5.9	4.9	5.4	8.7	8.2	8.5	12.6	11.5	12.0	20.6	19.6	20.2
21	6.9	5.9	6.3	8.6	7.8	8.2	12.7	12.0	12.4	20.3	18.7	19.3
22	6.2	3.8	5.1	8.4	7.7	8.1	14.8	12.7	13.7	20.0	18.3	19.1
23	5.1	3.5	4.1	8.0	7.4	7.7	16.9	14.8	15.7	20.3	18.7	19.5
24	4.8	3.7	4.2	7.8	7.0	7.4	18.2	16.9	17.5	21.0	19.4	20.2
25	5.3	3.9	4.6	7.7	6.4	7.1	17.6	15.8	16.7	21.2	20.2	20.6
26	7.4	5.1	6.0	7.9	6.8	7.4	17.2	15.5	16.1	20.3	18.3	19.0
27	7.9	5.9	6.6	7.4	6.2	7.0	17.6	15.7	16.6	19.5	18.2	18.9
28	8.7	6.6	7.5	7.8	5.9	7.0	18.8	16.4	17.4	20.1	18.9	19.4
29	---	---	---	7.9	6.8	7.2	18.9	16.6	17.5	20.5	19.5	20.1
30	---	---	---	7.5	6.6	7.0	19.5	16.7	17.9	20.7	---	---
31	---	---	---	7.6	6.7	7.1	---	---	---	20.1	18.8	19.4
MONTH	8.7	.5	5.0	9.8	4.3	7.3	19.5	7.4	14.1	25.2	.0	20.6

e Estimated

01646500 POTOMAC RIVER NEAR WASHINGTON, DC--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	---	30.5	28.5	29.5	26.6	24.4	25.5	28.4	27.3	27.9
2	---	---	---	29.1	26.9	27.9	26.5	25.4	26.0	27.6	26.4	27.0
3	---	---	---	27.1	25.2	26.2	26.9	25.6	26.2	26.8	26.0	26.4
4	---	---	---	27.0	24.8	26.0	27.6	25.6	26.6	26.9	25.7	26.3
5	---	---	---	26.5	24.4	25.4	28.5	26.1	27.3	27.3	25.9	26.4
6	---	---	---	26.8	24.9	25.6	29.9	27.3	28.6	26.6	25.1	26.0
7	23.8	21.2	22.5	27.4	24.3	26.1	30.6	28.0	29.4	26.8	25.1	25.9
8	23.2	21.6	22.3	27.0	25.3	26.3	31.5	28.9	30.2	27.0	25.7	26.3
9	23.5	22.1	22.8	28.8	25.4	27.2	32.1	29.7	30.9	27.0	26.0	26.6
10	23.1	21.7	22.5	29.8	26.7	28.3	32.0	30.2	31.2	27.4	26.0	26.6
11	23.3	22.4	22.9	29.9	27.6	28.8	32.3	27.3	30.3	27.0	25.5	26.3
12	24.7	23.1	23.9	29.2	27.0	28.2	28.1	27.1	27.6	26.4	25.0	25.7
13	26.6	24.1	25.5	28.5	26.1	27.5	27.6	26.6	26.9	26.0	24.6	25.3
14	28.2	25.4	26.8	28.2	25.7	27.0	28.3	26.1	27.2	25.8	23.8	24.6
15	28.0	26.6	27.3	28.4	25.7	27.1	28.5	26.8	27.5	24.2	22.5	23.4
16	27.0	26.0	26.7	28.2	26.3	27.2	28.3	27.3	27.8	23.4	21.7	22.7
17	27.6	25.1	26.3	29.5	26.8	27.8	28.2	27.1	27.6	23.1	21.2	22.0
18	28.0	25.3	26.7	28.4	27.6	27.9	28.1	26.4	27.3	23.8	21.3	22.2
19	28.9	26.3	27.6	28.6	27.2	27.8	27.6	26.5	27.1	22.7	21.6	22.2
20	29.7	27.0	28.4	28.8	26.4	27.5	28.1	26.1	27.1	22.8	22.0	22.4
21	30.4	27.8	29.2	29.6	26.2	27.8	27.9	26.0	26.9	23.2	21.9	22.5
22	29.9	27.3	28.9	30.3	26.6	28.2	27.8	25.6	26.8	23.8	22.3	23.0
23	27.3	23.1	24.4	30.7	27.5	28.8	27.8	25.9	27.1	25.7	23.0	24.0
24	25.5	22.9	23.9	31.6	28.5	29.7	27.3	25.3	26.3	24.4	23.5	23.7
25	25.5	23.9	24.8	31.7	29.3	30.3	27.7	25.8	26.7	23.5	20.0	22.1
26	25.8	24.4	25.2	30.3	28.9	29.7	27.9	25.5	26.8	20.2	18.9	19.7
27	26.8	25.2	26.0	29.8	28.3	29.0	28.6	26.2	27.2	19.8	18.4	19.2
28	28.9	26.4	27.6	28.5	27.3	27.9	28.5	27.1	27.8	19.4	18.2	18.6
29	29.9	27.4	28.7	27.4	24.8	26.0	29.1	27.5	28.1	18.3	17.6	18.0
30	30.5	28.5	29.5	24.8	24.3	24.6	29.1	27.8	28.2	17.9	17.0	17.3
31	---	---	---	26.0	23.4	24.7	29.2	27.5	28.1	---	---	---
MONTH	30.5	21.2	25.9	31.7	23.4	27.5	32.3	24.4	27.7	28.4	17.0	23.7



MEAN DAILY WATER TEMPERATURE - 2001 WATER YEAR

01646580 POTOMAC RIVER AT CHAIN BRIDGE AT WASHINGTON, DC

LOCATION.--Lat 38°55'46", long 77°07'02", Arlington County, Va., Hydrologic Unit 02070010, under right downstream side of bridge on Virginia State Highway 123, and at river mile 115.9.

DRAINAGE AREA.--11,570 mi^2.

PERIOD OF RECORD.--Water years 1973 to current year. Prior to October 1977, published as "at Great Falls."

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: June 1978 to September 1981.
pH: June 1978 to September 1981.
WATER TEMPERATURE: June 1978 to September 1981.
DISSOLVED OXYGEN: June 1978 to September 1981.
SUSPENDED SEDIMENT DISCHARGE: October 1978 to September 1981.

INSTRUMENTATION.--Water-quality monitor June 1978 to September 1981.

REMARKS--Extreme high flows were sampled from the George Mason Memorial Bridge (14th Street) located 6 mi downstream from Chain Bridge.

EXTREMES FOR PERIOD OF DAILY RECORD--
SPECIFIC CONDUCTANCE (water years 1979, 1981): Maximum, 598 microsiemens, Sept. 12, 1981; minimum, 116 microsiemens, Jan. 25, 1979.
pH (water years 1979, 1981): Maximum, 9.3 units, Mar. 29, 1981; minimum, 6.7 units, June 2, 1981.
WATER TEMPERATURE (water years 1979, 1981): Maximum, 31.0°C, July 23, 24, 1978; minimum, 0.0°C on many days during winter periods.
DISSOLVED OXYGEN (water years 1979, 1981): Maximum, 16.4 mg/L, on many days in 1979; minimum, 5.6 mg/L, June 2, 1981.
SEDIMENT CONCENTRATION: Maximum daily mean, 812 mg/L, Sept. 6, 1979; minimum daily mean, 1 mg/L on many days during winter periods.
SEDIMENT LOAD: Maximum daily, 281,000 tons, Feb. 27, 1979; minimum daily, 3.2 tons, Jan. 5, 1981.

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

DATE	TIME	SAMPLE TYPE	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)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)
OCT												
13...	1000	ENVIRONMENTAL	3060	317	8.4	20.5	14.5	764	10.3	101	--	--
NOV												
13...	1230	ENVIRONMENTAL	2750	405	8.3	17.0	11.0	760	11.5	105	--	--
DEC												
13...	1200	ENVIRONMENTAL	2350	--	8.6	2.0	4.0	774	--	--	160	46.3
JAN												
25...	1130	ENVIRONMENTAL	9330	351	8.1	4.0	1.0	765	14.3	100	130	38.0
FEB												
14...	1215	ENVIRONMENTAL	7710	288	8.1	8.5	6.0	764	12.7	102	110	33.7
MAR												
13...	1045	ENVIRONMENTAL	8230	306	8.6	9.0	7.0	750	12.7	106	110	32.3
APR												
12...	1215	ENVIRONMENTAL	22700	239	8.0	21.0	16.0	760	--	--	98	28.9
12...	*1216*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
MAY												
09...	*1044*	*BLANK*	--	--	--	--	--	--	--	--	--	*.06*
09...	1045	ENVIRONMENTAL	4420	308	8.5	23.0	22.0	767	--	--	120	34.5
JUN												
14...	*0959*	*BLANK*	--	--	--	--	--	--	--	--	--	--
14...	1000	ENVIRONMENTAL	6470	245	8.8	28.0	26.5	760	8.7	109	100	30.1
JUL												
24...	0945	ENVIRONMENTAL	2070	310	8.3	32.0	29.0	762	7.5	98	120	30.1
24...	*0946*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
AUG												
15...	0945	ENVIRONMENTAL	10600	283	8.1	27.5	28.0	760	8.1	104	110	30.1
SEP												
20...	0945	ENVIRONMENTAL	1050	358	8.2	20.0	22.5	763	8.5	98	140	35.7

01646580 POTOMAC RIVER AT CHAIN BRIDGE AT WASHINGTON, DC--Continued

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

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	BICAR-BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	CAR-BONATE WATER DIS IT FIELD MG/L AS CO3 (00452)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	NITRO-GEN, TOTAL (MG/L AS N) (00600)
OCT													
13...	--	--	--	--	--	--	--	--	--	--	<10	--	1.5
NOV													
13...	--	--	--	115	140	--	--	--	--	--	<10	--	1.0
DEC													
13...	10.8	15.5	2.79	--	--	--	46.5	22.8	E.1	.1	<10	230	1.3
JAN													
25...	8.67	16.4	2.68	82	100	--	40.0	26.2	<.2	3.1	11	203	1.8
FEB													
14...	7.38	10.4	2.08	76	93	--	27.3	16.6	E.1	1.9	68	165	2.2
MAR													
13...	7.24	15.8	2.05	70	85	--	29.8	25.5	<.2	.2	<10	177	1.2
APR													
12...	6.15	7.6	1.99	--	--	--	25.6	12.5	E.1	5.1	74	147	2.0
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAY													
09...	*<.008*	*<.1*	*<.09*	--	--	--	*<.1*	*<.1*	*<.2*	*<.1*	*<10*	*10*	--
09...	9.02	10.4	2.24	89	109	2	30.2	16.5	E.1	.6	<10	187	1.2
JUN													
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
14...	7.01	7.8	2.55	69	84	2	28.8	11.7	E.1	4.4	<10	148	1.3
JUL													
24...	10.8	13.2	2.75	78	95	--	39.0	20.1	E.1	4.5	19	186	.76
24...	--	--	--	--	--	--	--	--	--	--	*24*	--	--
AUG													
15...	8.33	11.1	2.90	70	85	--	33.8	15.6	E.1	4.8	--	163	1.1
SEP													
20...	11.7	16.9	3.23	88	108	--	45.3	24.4	.2	3.3	<10	212	.68

E Estimated value.
< Actual value is known to be less than the value shown.

01646580 POTOMAC RIVER AT CHAIN BRIDGE AT WASHINGTON, DC--Continued

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

DATE	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)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN DIS-SOLVED (MG/L AS N) (00602)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	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)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)
OCT													
13...	--	E.003	1.22	<.041	.29	.16	1.4	--	--	.068	.044	.038	--
NOV													
13...	--	E.004	.764	<.041	.28	.20	.96	--	--	.025	.019	E.014	--
DEC													
13...	--	E.003	1.05	<.041	.21	.15	1.2	--	--	.021	.015	E.009	--
JAN													
25...	1.37	.012	1.39	<.041	.37	.27	1.7	--	--	.058	.031	.020	--
FEB													
14...	1.46	.012	1.48	<.041	.77	.25	1.7	--	--	.214	E.005	<.018	--
MAR													
13...	.834	.009	.843	<.041	.35	.25	1.1	--	--	.029	.008	<.018	--
APR													
12...	1.14	.014	1.15	.050	.86	.34	1.5	.81	.29	.185	.015	<.018	--
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAY													
09...	--	*<.006*	*<.047*	*<.041*	*<.08*	*<.10*	--	--	--	*<.004*	*<.006*	*<.018*	--
09...	.593	.012	.605	<.041	.57	.18	.79	--	--	.047	.018	<.018	--
JUN													
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
14...	.680	.012	.692	<.040	.62	.34	1.0	--	--	.067	.011	<.020	--
JUL													
24...	--	E.005	.198	<.040	.56	.30	.50	--	--	.058	.013	<.020	--
24...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
15...	.512	.010	.522	<.040	.61	.29	.81	--	--	.114	.023	E.009	6.3
SEP													
20...	.313	.009	.322	.064	.36	.29	.62	.29	.23	.047	.031	E.015	--

E Estimated value.
< Actual value is known to be less than the value shown.

01646580 POTOMAC RIVER AT CHAIN BRIDGE AT WASHINGTON, DC--Continued

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

DATE	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	2,6-DI-ETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)	ACETO-CHLOR ESA FLTRD 0.7 UM GF REC (UG/L) (61029)	ACETO-CHLOR OA FLTRD 0.7 UM GF REC (UG/L) (61030)	ACETO-CHLOR, WATER FLTRD REC (UG/L) (49260)	ALA-CHLOR OA FLTRD 0.7 UM GF REC (UG/L) (61031)	ALA-CHLOR, (ESA) WAT FLT GF 0.7U REC (UG/L) (50009)	ALA-CHLOR, WATER, DISS, REC, (UG/L) (46342)	ALPHA BHC DIS-SOLVED (UG/L) (34253)	ATRA-ZINE, WATER, DISS, REC (UG/L) (39632)	BEN-FLUR-ALIN WAT FLD 0.7 U GF, REC (UG/L) (82673)	BUTYL-ATE, WATER, DISS, REC (UG/L) (04028)
OCT													
13...	--	--	<.002	--	--	<.004	--	--	<.002	<.005	.025	<.010	<.002
NOV													
13...	--	--	<.002	--	--	<.004	--	--	<.002	<.005	.036	<.010	<.002
DEC													
13...	20	4.4	<.002	--	--	<.004	--	--	<.002	<.005	.030	<.010	<.002
JAN													
25...	40	16.8	<.002	<.05	<.05	<.004	<.05	<.050	<.002	<.005	.021	<.010	<.002
FEB													
14...	M	49.6	<.002	<.05	<.05	<.004	<.05	<.050	<.002	<.005	.025	<.010	<.002
MAR													
13...	50	15.1	<.002	<.05	<.05	<.004	<.05	<.050	<.002	<.005	.016	<.010	<.002
APR													
12...	20	18.3	<.002	<.05	<.05	<.004	<.05	<.050	<.002	<.005	.024	<.010	<.002
12...	--	--	*<.002*	--	--	*<.004*	--	--	*<.002*	*<.005*	*.027*	*<.010*	*<.002*
MAY													
09...	*<10*	*<3.2*	--	--	--	--	--	--	--	--	--	--	--
09...	20	7.0	<.002	<.05	<.05	<.004	<.05	<.050	<.002	<.005	.032	<.010	<.002
JUN													
14...	--	--	*<.002*	--	--	*<.004*	--	--	*<.002*	*<.005*	*<.007*	*<.010*	*<.002*
14...	10	<3.0	<.002	<.05	<.05	<.004	<.05	<.050	<.002	<.005	.093	<.010	<.002
JUL													
24...	M	E2.0	<.002	<.05	<.05	<.004	<.05	<.050	<.002	<.005	.069	<.010	<.002
24...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
15...	10	<3.0	<.002	<.05	<.05	<.004	<.05	<.050	<.002	<.005	.036	<.010	<.002
SEP													
20...	20	17.2	<.002	<.05	<.05	<.004	<.05	.050	<.002	<.005	.033	<.010	<.002

E Estimated value.
< Actual value is known to be less than the value shown.
M Presence of material verified but not quantified.

01646580 POTOMAC RIVER AT CHAIN BRIDGE AT WASHINGTON, DC--Continued

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

DATE	CARBARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBOFURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)	CHLORPYRIFOS DISSOLVED (UG/L) (38933)	CYANAZINE, WATER, DISS, REC (UG/L) (04041)	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)	DEETHYLATRAZINE, WATER, DISS, REC (UG/L) (04040)	DIAZINON D10 SRG WAT FLT 0.7 U GF, REC PERCENT (91063)	DIAZINON, DISSOLVED (UG/L) (39572)	DIELDRIN DISSOLVED (UG/L) (39381)	DIMETHENAMID OXA, WATER FLT, REC (UG/L) (62482)	DIMETHENAMID, ESA, WAT FLT (UG/L) (61951)	DISULFOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)
OCT													
13...	<.041	<.020	<.005	<.018	<.003	E.046	89	<.005	<.005	--	--	<.021	<.002
NOV													
13...	<.041	<.020	<.005	<.018	<.003	E.059	95	<.005	<.005	--	--	<.021	<.002
DEC													
13...	<.041	<.020	<.005	<.018	<.003	E.054	108	<.005	<.005	--	--	<.021	<.002
JAN													
25...	<.041	<.020	<.005	<.018	<.003	E.037	123	<.005	<.005	--	--	<.021	<.002
FEB													
14...	<.041	<.020	<.005	<.018	<.003	E.048	106	<.005	<.005	--	--	<.021	<.002
MAR													
13...	<.041	<.020	<.005	<.018	<.003	E.031	90	<.005	<.005	<.0500	<.05	<.021	<.002
APR													
12...	<.041	<.020	<.005	<.018	<.003	E.025	94	E.004	<.005	<.0500	<.05	<.021	<.002
12...	*<.041*	*<.020*	*<.005*	*<.018*	*<.003*	*E.032*	*98*	*<.005*	*<.005*	--	--	*<.021*	*<.002*
MAY													
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
09...	<.041	<.020	<.005	<.018	<.003	E.039	111	<.005	<.005	<.0500	<.05	<.021	<.002
JUN													
14...	*<.041*	*<.020*	*<.005*	*<.018*	*<.003*	*<.006*	*107*	*<.005*	*<.005*	*<.021*	--	--	*<.002*
14...	<.041	<.020	<.005	<.018	<.003	E.035	114	E.002	<.005	<.0500	<.05	<.021	<.002
JUL													
24...	<.041	<.020	<.005	<.018	<.003	<.006	95	<.005	<.005	<.0500	<.05	<.021	<.002
24...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
15...	<.041	<.020	<.005	<.018	<.003	E.022	108	.014	<.005	<.0500	<.05	<.021	<.002
SEP													
20...	E.009	<.020	<.005	<.018	<.003	E.032	113	<.005	<.005	<.0500	<.05	<.021	<.002

E Estimated value.
< Actual value is known to be less than the value shown.

01646580 POTOMAC RIVER AT CHAIN BRIDGE AT WASHINGTON, DC--Continued

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

DATE	ETHAL-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)	ETHO-PROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FLUFEN-ACET, ESA, WAT FLT (UG/L) (61952)	FLUFE-NACET OXA WATER FLT, REC (UG/L) (62483)	FONOFOS WATER DISS REC (UG/L) (04095)	HCH ALPHA D6 SRG WAT FLT 0.7 U GF, REC PERCENT (91065)	LINDANE DIS-SOLVED (UG/L) (39341)	LIN-URON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)	MALA-THION, DIS-SOLVED (UG/L) (39532)	METHYL AZIN-PHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)	METHYL PARA-THION WAT FLT 0.7 U GF, REC (UG/L) (82667)	METOLA-CHLOR ESA FLTRD 0.7 UM GF REC (UG/L) (61043)	METOLA-CHLOR OA FLTRD 0.7 UM GF REC (UG/L) (61044)
OCT													
13...	<.009	<.005	--	--	<.003	85	<.004	<.035	<.027	<.050	<.006	--	--
NOV													
13...	<.009	<.005	--	--	<.003	93	<.004	<.035	<.027	<.050	<.006	--	--
DEC													
13...	<.009	<.005	--	--	<.003	103	<.004	<.035	<.027	<.050	<.006	--	--
JAN													
25...	<.009	<.005	--	--	<.003	93	<.004	<.035	<.027	<.050	<.006	.20	<.05
FEB													
14...	<.009	<.005	--	--	<.003	94	<.004	<.035	<.027	<.050	<.006	.32	.05
MAR													
13...	<.009	<.005	<.05	<.0500	<.003	85	<.004	<.035	<.027	<.050	<.006	.22	.05
APR													
12...	<.009	<.005	<.05	<.0500	<.003	90	<.004	<.035	<.027	<.050	<.006	.20	<.05
12...	*<.009*	*<.005*	--	--	*<.003*	*92*	*<.004*	*<.035*	*<.027*	*<.050*	*<.006*	--	--
MAY													
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
09...	<.009	<.005	<.05	<.0500	<.003	89	<.004	<.035	<.027	<.050	<.006	.23	<.05
JUN													
14...	*<.009*	*<.005*	--	--	*<.003*	*99*	*<.004*	*<.035*	*<.027*	*<.050*	*<.006*	--	--
14...	<.009	<.005	<.05	<.0500	<.003	91	<.004	<.035	<.027	<.050	<.006	.15	<.05
JUL													
24...	<.009	<.005	<.05	<.0500	<.003	88	<.004	<.035	<.027	<.050	<.006	.23	<.05
24...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
15...	<.009	<.005	<.05	<.0500	<.003	83	<.004	<.035	<.027	<.050	<.006	.17	<.05
SEP													
20...	<.009	<.005	<.05	<.0500	<.003	105	<.004	<.035	<.027	<.050	<.006	.12	<.05

< Actual value is known to be less than the value shown.

01646580 POTOMAC RIVER AT CHAIN BRIDGE AT WASHINGTON, DC--Continued

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

DATE	METO-LACHLOR WATER DISSOLV (UG/L) (39415)	METRI-BUZIN SENCOR WATER DISSOLV (UG/L) (82630)	MOL-INATE WATER FLTRD 0.7 U GF, REC (UG/L) (82671)	NAPROP-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82684)	P,P' DDE DISSOLV (UG/L) (34653)	PARA-THION, DIS-SOLVED (UG/L) (39542)	PEB-ULATE WATER FILTRD 0.7 U GF, REC (82669)	PENDI-METH-ALIN WAT FLT 0.7 U GF, REC (82683)	PER-METHRIN CIS WAT FLT 0.7 U GF, REC (82687)	PHORATE WATER FLTRD 0.7 U GF, REC (82664)	PRO-METON, WATER, DISS, REC (UG/L) (04037)	PRON-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)	PROPA-CHLOR, WATER, DISS, REC (UG/L) (04024)
OCT													
13...	E.012	<.006	<.002	<.007	<.003	<.007	<.002	<.010	<.006	<.011	E.008	<.004	<.010
NOV													
13...	E.008	<.006	<.002	<.007	<.003	<.007	<.002	<.010	<.006	<.011	E.008	<.004	<.010
DEC													
13...	E.011	<.006	<.002	<.007	<.003	<.007	<.002	<.010	<.006	<.011	E.009	<.004	<.010
JAN													
25...	.014	.010	<.002	<.007	<.003	<.007	<.002	<.010	<.006	<.011	E.006	<.004	<.010
FEB													
14...	E.013	<.006	<.002	<.007	<.003	<.007	<.002	<.010	<.006	<.011	E.002	<.004	<.010
MAR													
13...	E.006	<.006	<.002	<.007	<.003	<.007	<.002	<.010	<.006	<.011	E.003	<.004	<.010
APR													
12...	E.012	<.006	<.002	<.007	E.002	<.007	<.002	<.010	<.006	<.011	E.005	<.004	<.010
12...	*.014*	*<.006*	*<.002*	*<.007*	*<.003*	*<.007*	*<.002*	*<.010*	*<.006*	*<.011*	*<.015*	*<.004*	*<.010*
MAY													
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
09...	E.011	<.006	<.002	<.007	<.003	<.007	<.002	<.010	<.006	<.011	E.007	<.004	<.010
JUN													
14...	*<.013*	*<.006*	*<.002*	*<.007*	*<.003*	*<.007*	*<.002*	*<.010*	*<.006*	*<.011*	*<.015*	*<.004*	*<.010*
14...	.021	<.006	<.002	<.007	<.003	<.007	<.002	<.010	<.006	<.011	E.008	<.004	<.010
JUL													
24...	E.012	<.006	<.002	<.007	<.003	<.007	<.002	<.010	<.006	<.011	.017	<.004	<.010
24...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
15...	E.012	<.006	<.002	<.007	<.003	<.007	<.002	<.010	<.006	<.011	E.015	<.004	<.010
SEP													
20...	E.007	<.006	<.002	<.007	<.003	<.007	<.002	<.010	<.006	<.011	E.012	<.004	<.010

E Estimated value.
< Actual value is known to be less than the value shown.

01646580 POTOMAC RIVER AT CHAIN BRIDGE AT WASHINGTON, DC--Continued

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

DATE	PRO-PANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)	PRO-PARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	SI-MAZINE, WATER, DISS, REC (UG/L) (04035)	TEBU-THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TER-BACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TER-BUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)	TER-BUTHYL-AZINE, WATER, DISS, REC (UG/L) (04022)	THIO-BENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)	TRIAL-LATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)	TRI-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT													
13...	<.011	<.023	E.009	E.006	<.034	<.017	--	<.005	<.002	<.009	6	51	--
NOV													
13...	<.011	<.023	E.011	<.016	<.034	<.017	--	<.005	<.002	<.009	40	294	--
DEC													
13...	<.011	<.023	E.010	<.016	<.034	<.017	--	<.005	<.002	<.009	3	22	--
JAN													
25...	<.011	<.023	.043	<.016	<.034	<.017	--	<.005	<.002	<.009	9	227	86
FEB													
14...	<.011	<.023	.012	E.005	<.034	<.017	--	<.005	<.002	<.009	64	1330	--
MAR													
13...	<.011	<.023	E.008	<.016	<.034	<.017	E.007	<.005	<.002	<.009	7	153	--
APR													
12...	<.011	<.023	.017	E.004	<.034	<.017	--	<.005	<.002	<.009	81	4950	--
12...	*<.011*	*<.023*	*.018*	*<.016*	*<.034*	*<.017*	--	*<.005*	*<.002*	*<.009*	--	--	--
MAY													
09...	--	--	--	--	--	--	--	--	--	--	*<1*	--	--
09...	<.011	<.023	.015	<.016	<.034	<.017	--	<.005	<.002	<.009	4	54	--
JUN													
14...	*<.011*	*<.023*	*<.011*	*<.016*	*<.034*	*<.017*	--	*<.005*	*<.002*	*<.009*	--	--	--
14...	<.011	<.023	.043	<.016	<.034	<.017	--	<.005	<.002	<.009	12	210	--
JUL													
24...	<.011	<.023	.024	E.009	<.034	<.017	--	<.005	<.002	<.009	67	372	--
24...	--	--	--	--	--	--	--	--	--	--	*59*	--	--
AUG													
15...	<.011	<.023	.012	<.016	<.034	<.017	--	<.005	<.002	<.009	49	1400	--
SEP													
20...	<.011	<.023	.013	<.016	<.034	<.017	--	<.005	<.002	<.009	8	24	--

E Estimated value.
< Actual value is known to be less than the value shown.

01648000 ROCK CREEK AT SHERRILL DRIVE, WASHINGTON, DC

LOCATION.--Lat 38°58'21", long 77°02'24", District of Columbia, Hydrologic Unit 02070010, on left bank 125 ft downstream from Sherrill Drive Bridge in Rock Creek Park in Washington, and 7.5 mi upstream from mouth.

DRAINAGE AREA.--62.2 mi^2.

PERIOD OF RECORD.--October 1929 to current year.

REVISED RECORDS.--WSP 1432: 1933(M).

GAGE.--Water-stage recorder, crest-stage gage, and concrete control. Datum of gage is 148.87 ft above sea level.

REMARKS.--Records good except those for estimated daily discharges (ice effect), which are fair. Flow affected by two upstream reservoirs which control flow from about 25 mi^2, Needwood Lake on Rock Creek since Sept. 1966 and Bernard Frank Lake on North Branch Rock Creek since February 1968. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,200 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 17	1200	1,360	6.21	Jun 23	0615	*1,910	*7.64
Mar 30	0400	1,270	5.92	Aug 11	2215	1,650	7.04
Jun 7	0845	1,520	6.71	Aug 23	2200	1,490	6.61

Minimum discharge, 7.2 ft^3/s, Sept. 18-20.

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	26	15	19	e17	62	32	130	27	49	78	18	55
2	23	14	16	17	47	30	103	27	97	76	15	30
3	21	14	15	16	37	28	78	26	62	30	14	21
4	19	13	14	e17	32	39	60	26	33	434	13	17
5	17	13	14	17	135	108	50	24	36	353	12	16
6	17	14	14	20	69	53	48	23	29	103	11	13
7	15	14	14	20	47	41	50	22	704	44	10	12
8	15	14	14	34	39	36	42	22	225	133	9.7	11
9	14	16	13	36	34	38	39	22	159	110	9.7	11
10	14	72	13	19	32	33	56	21	126	39	23	40
11	15	29	13	18	29	31	229	21	101	31	475	20
12	15	20	13	18	27	30	95	23	77	27	257	10
13	14	17	13	17	34	93	80	21	54	23	137	9.4
14	14	31	178	17	32	43	58	18	40	21	103	14
15	14	22	51	17	45	54	53	18	32	20	60	10
16	13	16	51	17	131	77	85	17	103	18	43	8.1
17	13	15	501	17	183	51	68	16	55	16	40	8.1
18	13	14	111	17	71	46	92	19	35	22	24	8.0
19	15	13	73	264	52	35	54	50	28	22	22	7.2
20	14	13	57	198	42	33	47	26	25	18	107	54
21	14	13	39	131	37	292	42	139	31	16	33	187
22	13	13	30	74	34	136	40	315	136	15	24	20
23	13	13	e24	51	48	88	38	296	783	15	263	12
24	14	14	e23	40	44	66	37	104	240	14	141	105
25	14	17	25	34	56	52	34	77	188	13	27	217
26	13	141	e23	29	47	43	33	269	150	14	19	46
27	13	35	e22	26	37	38	32	263	114	17	16	27
28	13	24	21	25	34	36	31	196	87	11	15	21
29	14	21	e18	24	---	111	29	78	69	112	14	14
30	15	38	18	151	---	604	27	55	85	72	16	12
31	14	---	17	86	---	169	---	41	---	21	29	---
TOTAL	471	718	1467	1484	1517	2566	1860	2302	3953	1938	2000.4	1035.8
MEAN	15.2	23.9	47.3	47.9	54.2	82.8	62.0	74.3	132	62.5	64.5	34.5
MAX	26	141	501	264	183	604	229	315	783	434	475	217
MIN	13	13	13	16	27	28	27	16	25	11	9.7	7.2
CFSM	.24	.38	.76	.77	.87	1.33	1.00	1.19	2.12	1.01	1.04	.56
IN.	.28	.43	.88	.89	.91	1.53	1.11	1.38	2.36	1.16	1.20	.62

e Estimated

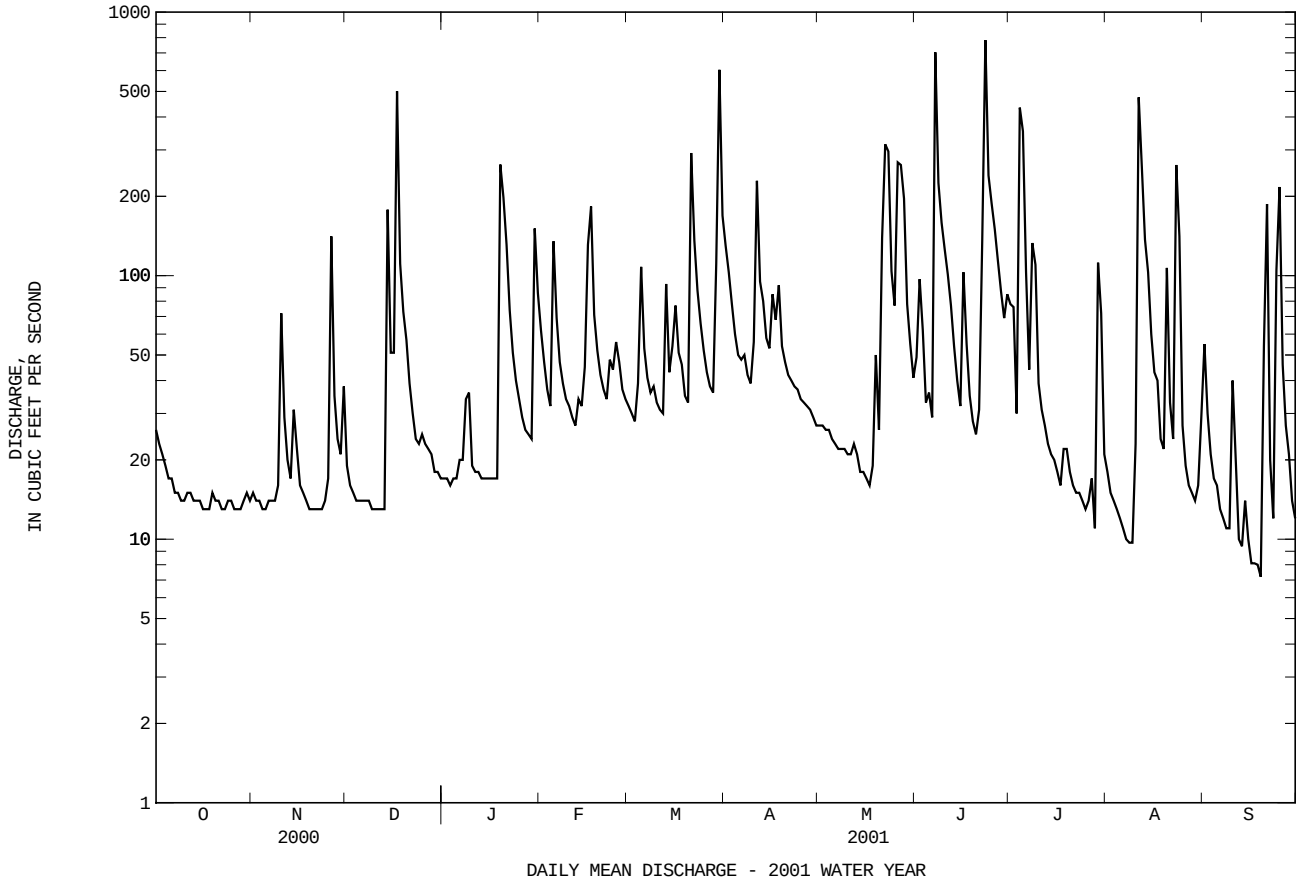
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1930 - 2001, BY WATER YEAR (WY)

MEAN	40.5	52.2	61.4	72.9	82.9	91.9	84.4	73.9	60.7	48.7	47.4	46.9
MAX	196	165	184	201	210	221	215	232	456	192	174	348
(WY)	1980	1953	1973	1978	1979	1993	1973	1989	1972	1945	1955	1979
MIN	2.63	4.57	8.75	11.8	11.9	23.4	29.2	24.3	18.3	7.09	1.72	2.04
(WY)	1931	1932	1931	1931	1931	1931	1969	1955	1986	1930	1930	1930

01648000 ROCK CREEK AT SHERRILL DRIVE, WASHINGTON, DC--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1930 - 2001	
ANNUAL TOTAL	20376.4		21312.2			
ANNUAL MEAN	55.7		58.4		63.5	
HIGHEST ANNUAL MEAN					142	1972
LOWEST ANNUAL MEAN					16.1	1931
HIGHEST DAILY MEAN	561	Mar 21	783	Jun 23	5000	Jun 22 1972
LOWEST DAILY MEAN	8.5	Sep 18	7.2	Sep 19	(a)	
ANNUAL SEVEN-DAY MINIMUM	9.9	Sep 12	9.3	Sep 13	.50	Oct 1 1930
MAXIMUM PEAK FLOW			1910	Jun 23	(b)12500	Jun 22 1972
MAXIMUM PEAK STAGE			7.64	Jun 23	(c)16.20	Jun 22 1972
INSTANTANEOUS LOW FLOW			7.2	(d)	.50	(a)
ANNUAL RUNOFF (CFSM)	.90		.94		1.02	
ANNUAL RUNOFF (INCHES)	12.19		12.75		13.88	
10 PERCENT EXCEEDS	131		134		123	
50 PERCENT EXCEEDS	31		29		37	
90 PERCENT EXCEEDS	13		13		12	

a Oct. 1-7, 1930.
b From rating curve extended above 5,640 ft^3/s on basis of contracted-opening measurement at gage heights of 13.19 and 16.2 ft.
c From floodmarks.
d Sept. 18-20.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01649500 NORTHEAST BRANCH ANACOSTIA RIVER AT RIVERDALE, MD

LOCATION.--Lat 38°57'36.9", long 76°55'33.5", Prince Georges County, Hydrologic Unit 02070010, on right bank at downstream side of bridge on Riverdale Road, 1.8 mi downstream from Indian Creek, and 1.8 mi upstream from confluence with Northwest Branch.

DRAINAGE AREA.--72.8 mi^2.

PERIOD OF RECORD.--August 1938 to current year.

REVISED RECORDS.--WDR MD-DE-75-1: 1972(M).

GAGE.--Water-stage recorders, crest-stage gage, and concrete control. Datum of gage is 12.68 ft above sea level (Washington Suburban Sanitary Commission bench mark). Prior to June 12, 1942, nonrecording gage; June 12, 1942 to Mar. 22, 1966, and Apr. 12, 1967 to Sept. 3, 1969, water-stage recorder, all at bridge at datum 14.00 ft above mean sea level. Mar. 23, 1966 to Apr. 11, 1967, nonrecording gage 600 ft downstream from bridge at datum 9.25 ft above mean sea level.

REMARKS.--Records good except those for estimated daily discharge (ice effect), which are fair. Some regulation at low flow by sand and gravel plants upstream from station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Aug. 23 or 24, 1933, reached a stage of about 15.5 ft at datum 14.00 ft above sea level, from floodmarks, discharge, 10,500 ft^3/s, from rating curve extended above 3,000 ft^3/s on basis of velocity-area study.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 17	1030	3,130	6.17	Jun 7	0730	*4,260	*7.17
Mar 30	0245	2,380	5.44	Jul 4	2230	2,500	5.57
May 22	2000	2,020	5.06	Aug 23	2130	2,360	5.42

Minimum discharge, 9.0 ft^3/s, Aug. 9, 10.

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	24	21	25	e28	59	38	92	26	99	85	23	124
2	22	21	23	e27	47	37	68	26	146	39	19	29
3	21	21	23	e27	41	35	54	25	140	21	14	22
4	20	21	22	e26	38	58	47	23	42	668	17	19
5	19	23	22	e26	247	128	42	23	45	869	22	18
6	19	23	22	e25	129	69	43	21	32	321	14	16
7	19	23	22	e26	65	49	45	21	1560	65	12	15
8	18	25	22	43	48	41	39	21	196	83	10	14
9	18	25	22	42	44	40	41	20	67	144	9.3	13
10	21	69	22	e29	41	38	50	20	43	49	128	18
11	20	25	22	28	36	35	361	20	39	34	325	17
12	19	21	21	25	34	36	151	25	35	27	146	13
13	19	21	21	25	47	101	87	19	29	23	87	12
14	18	42	211	25	47	50	58	19	24	21	61	26
15	18	27	56	25	61	68	56	18	24	19	29	17
16	18	24	58	25	211	84	99	17	286	19	23	12
17	18	23	953	25	375	61	84	17	95	19	23	14
18	18	22	151	25	94	54	59	21	37	29	22	14
19	20	22	63	e160	62	41	45	42	28	27	45	12
20	19	22	50	348	52	39	41	25	27	20	112	94
21	19	22	41	198	46	595	39	101	105	18	30	270
22	19	22	36	85	40	263	37	341	186	16	22	34
23	19	22	e35	60	63	87	35	182	429	15	276	21
24	19	21	e33	51	60	59	34	41	64	15	174	145
25	19	29	e29	48	83	48	32	82	35	15	40	303
26	20	146	e29	40	75	44	31	548	27	29	27	48
27	20	44	e28	39	49	40	30	553	24	22	23	29
28	21	28	e26	38	42	37	29	273	22	14	21	25
29	25	28	e26	36	---	210	27	70	24	93	19	21
30	22	37	27	225	---	1140	26	41	50	62	42	19
31	21	---	e30	103	---	176	---	32	---	26	34	---
TOTAL	612	920	2171	1933	2236	3801	1882	2713	3960	2907	1849.3	1434
MEAN	19.7	30.7	70.0	62.4	79.9	123	62.7	87.5	132	93.8	59.7	47.8
MAX	25	146	953	348	375	1140	361	553	1560	869	325	303
MIN	18	21	21	25	34	35	26	17	22	14	9.3	12
CFSM	.27	.42	.96	.86	1.10	1.68	.86	1.20	1.81	1.29	.82	.66
IN.	.31	.47	1.11	.99	1.14	1.94	.96	1.39	2.02	1.49	.94	.73

e Estimated

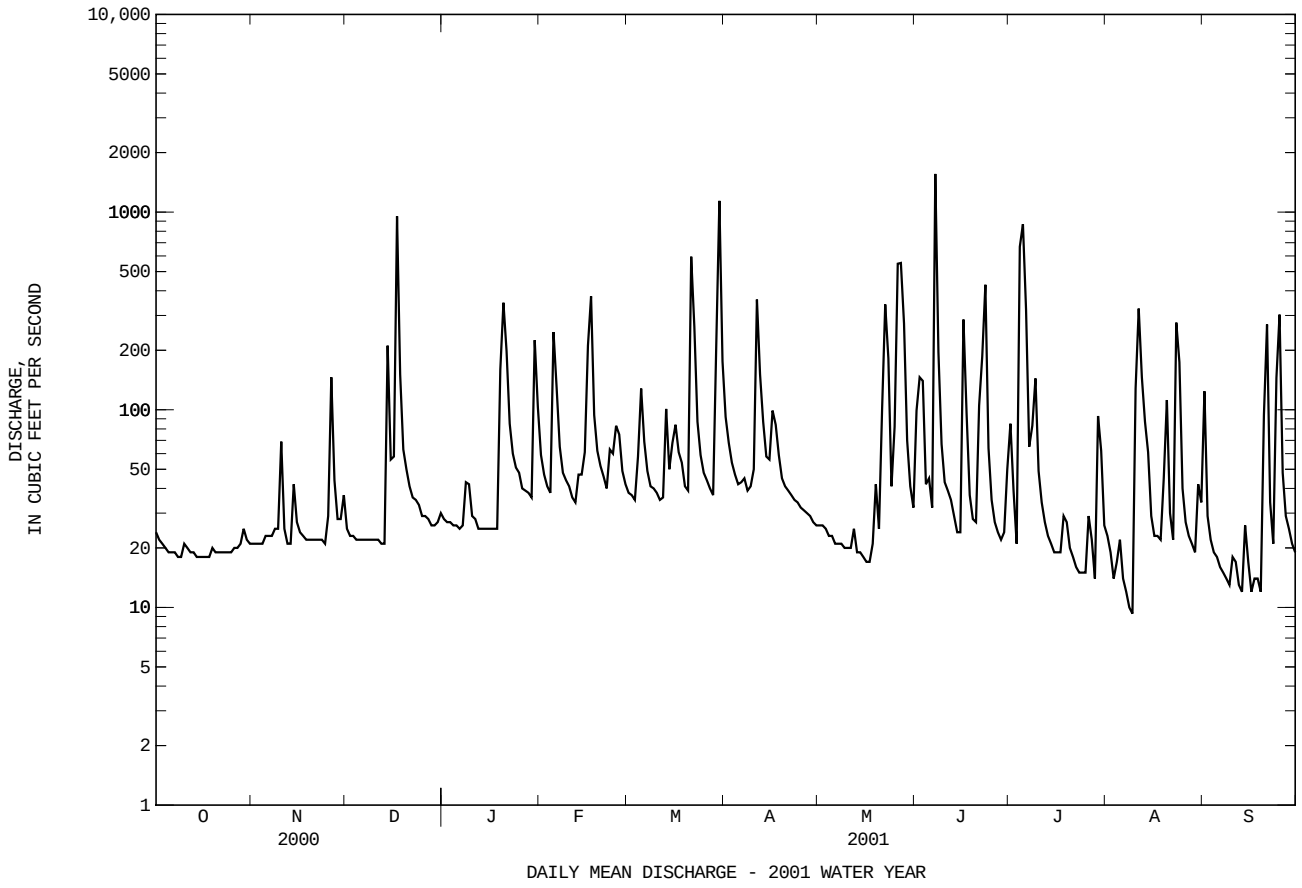
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 2001, BY WATER YEAR (WY)

MEAN	54.1	74.5	93.3	105	114	134	109	94.3	69.6	60.7	63.5	62.6
MAX	234	205	275	325	265	339	322	329	353	335	243	449
(WY)	1943	1973	1997	1979	1972	1994	1983	1989	1972	1945	1955	1975
MIN	9.37	15.9	19.8	25.6	39.3	37.0	32.4	23.9	20.3	8.72	7.94	8.32
(WY)	1942	1942	1966	1955	1947	1981	1985	1941	1965	1999	1962	1941

01649500 NORTHEAST BRANCH ANACOSTIA RIVER AT RIVERDALE, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1938 - 2001	
ANNUAL TOTAL	29335		26418.3			
ANNUAL MEAN	80.2		72.4		86.2	
HIGHEST ANNUAL MEAN					150	1972
LOWEST ANNUAL MEAN					49.3	1981
HIGHEST DAILY MEAN	986	Mar 21	1560	Jun 7	6830	Sep 26 1975
LOWEST DAILY MEAN	12	(a)	9.3	Aug 9	1.4	Sep 12 1966
ANNUAL SEVEN-DAY MINIMUM	14	Aug 20	14	Aug 3	1.7	Sep 7 1966
MAXIMUM PEAK FLOW			4260	Jun 7	(b)12000	Jun 22 1972
MAXIMUM PEAK STAGE			7.17	Jun 7	12.93	Oct 16 1942
INSTANTANEOUS LOW FLOW			9.0	(c)	UNKNOWN	
ANNUAL RUNOFF (CFSM)	1.10		.99		1.18	
ANNUAL RUNOFF (INCHES)	14.99		13.50		16.09	
10 PERCENT EXCEEDS	169		146		166	
50 PERCENT EXCEEDS	45		30		44	
90 PERCENT EXCEEDS	19		19		16	

a Aug. 23, 26
b From rating curve extended above 3,800 ft^3/s on basis of average of contracted-opening and slope-area measurements at gage height 9.52 ft.
c Aug. 9, 10.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01650500 NORTHWEST BRANCH ANACOSTIA RIVER NEAR COLESVILLE, MD

LOCATION.--Lat 39°03'56.4", long 77°01'45.6", Montgomery County, Hydrologic Unit 02070010, on right bank 400 ft upstream from bridge on State Highway 183, 1.5 mi southwest of Colesville, 3 mi upstream from Burnt Mills, 10 mi upstream from Sligo Creek, and 12.5 mi upstream from confluence with Northeast Branch.

DRAINAGE AREA.--21.1 mi^2.

PERIOD OF RECORD.--October 1923 to September 1983, November 1997 to current year. Monthly discharge only for some periods, published in WSP 1302.

REVISED RECORDS.--WSP 1432: 1942(M), 1925-26, 1929-30(M), 1933(M), 1939(P), 1940(M), 1943-46, 1948-49(P).

GAGE.--Water-stage recorder and concrete control. Datum of gage is 264.75 ft above sea level. Prior to Apr. 22, 1932, nonrecording gages in same general vicinity at different datums. Apr. 22, 1932 to Apr. 11, 1934, nonrecording gages at present site and datum.

REMARKS.--Records good except those for estimated daily discharges (ice effect, missing record), which are fair and poor, respectively. Diversions at low flow since 1962 for irrigation of golf courses upstream from station. Records include pumpage from the Patuxent River to augment water supply for Washington Suburban Sanitary District, Aug. 12, 1939 to Aug. 1960. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 600 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 17	0900	835	6.19	Jun 21	0830	815	6.10
Mar 30	0230	750	5.81	Jun 23	0130	*2,410	*9.65
Jun 7	0915	1,530	8.35	Aug 11	1700	674	5.46

Minimum discharge, 1.9 ft^3/s, Aug. 8, 9.

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	7.5	4.3	7.3	7.0	17	13	26	10	21	12	4.1	e23
2	7.7	4.9	6.6	6.7	14	13	20	10	23	8.4	3.5	e5.8
3	6.9	6.4	6.3	6.9	12	12	18	9.5	13	5.8	3.2	e4.0
4	6.3	4.8	6.3	6.7	11	18	16	8.8	10	24	3.0	e4.1
5	6.1	5.4	6.9	6.7	59	37	15	8.9	11	41	3.0	e3.9
6	6.3	5.2	6.4	6.7	30	19	17	8.4	9.5	16	2.9	e3.5
7	5.4	4.4	6.6	6.7	19	15	16	7.3	535	9.4	2.5	e3.2
8	5.1	4.2	6.0	11	15	14	15	7.2	38	17	2.1	e3.1
9	5.1	5.2	5.6	9.9	14	15	15	7.9	20	19	1.9	e3.0
10	5.6	22	5.5	6.7	13	13	19	6.9	14	8.8	2.7	e7.3
11	5.1	6.7	5.8	7.0	11	13	81	5.8	12	6.6	98	e6.6
12	4.6	5.8	5.8	6.9	11	13	32	5.4	10	5.1	29	e4.0
13	4.7	5.7	5.6	7.0	13	31	24	5.4	9.4	4.9	40	e2.7
14	4.9	9.7	64	6.6	13	16	19	5.4	8.5	4.7	20	e4.4
15	5.1	7.7	15	7.2	15	21	19	5.4	8.6	4.6	7.2	e3.5
16	6.0	6.3	12	7.5	59	26	28	5.4	25	4.4	5.3	e2.4
17	5.3	6.0	289	7.1	86	19	22	5.4	14	4.3	4.4	e2.3
18	5.9	5.8	29	7.0	23	16	21	6.3	8.6	7.3	4.3	e2.3
19	5.7	4.9	17	145	17	14	16	11	6.7	6.1	7.9	e2.4
20	5.4	5.2	14	85	16	13	15	8.6	6.3	4.7	35	e28
21	5.7	6.0	e13	39	15	124	15	37	14	4.4	6.3	e42
22	5.2	5.2	12	23	13	47	15	109	152	4.0	4.7	e6.6
23	5.1	5.2	e11	e20	19	23	14	67	426	3.8	e66	e3.5
24	5.2	5.2	9.6	e17	17	19	13	15	25	3.7	e26	e45
25	5.7	7.0	9.3	14	22	16	12	12	15	3.4	e8.8	e43
26	5.4	40	9.3	e13	20	15	12	80	12	3.4	e4.8	e9.9
27	5.9	11	9.1	12	15	14	12	117	9.8	4.2	e4.4	e4.8
28	5.9	7.5	9.3	11	14	14	11	50	8.1	3.3	e4.4	e4.4
29	5.2	7.9	9.2	11	---	53	11	19	6.9	16	e4.0	e3.9
30	4.2	12	8.7	83	---	276	10	14	9.9	11	e5.1	e3.7
31	4.8	---	8.5	27	---	39	---	11	---	4.8	e4.7	---
TOTAL	173.0	237.6	629.7	631.3	603	991	579	680.0	1482.3	276.1	419.2	286.3
MEAN	5.58	7.92	20.3	20.4	21.5	32.0	19.3	21.9	49.4	8.91	13.5	9.54
MAX	7.7	40	289	145	86	276	81	117	535	41	98	45
MIN	4.2	4.2	5.5	6.6	11	12	10	5.4	6.3	3.3	1.9	2.3
CFSM	.26	.38	.96	.97	1.02	1.52	.91	1.04	2.34	.42	.64	.45
IN.	.31	.42	1.11	1.11	1.06	1.75	1.02	1.20	2.61	.49	.74	.50

e Estimated

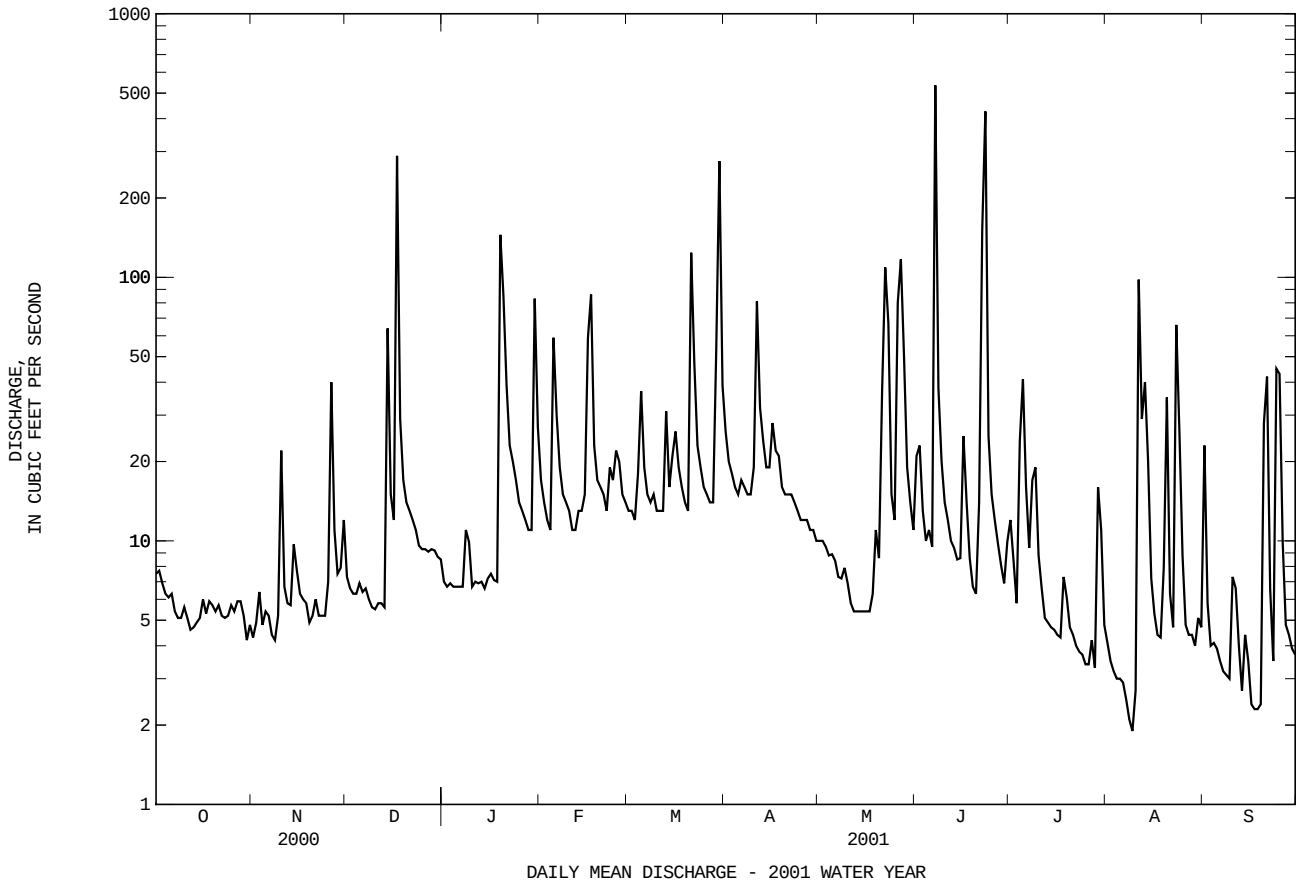
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1924 - 1983, 1998 - 2001, BY WATER YEAR (WY)

MEAN	14.5	18.8	21.8	26.7	33.4	32.6	30.0	24.1	20.4	15.2	16.4	17.3
MAX	56.3	55.6	57.0	81.0	97.0	68.0	78.5	62.5	141	73.7	60.9	118
(WY)	1980	1927	1973	1979	1936	1953	1952	1978	1972	1975	1955	1979
MIN	1.79	2.37	3.50	5.93	4.52	7.46	11.3	7.37	4.03	.92	.72	1.40
(WY)	1932	1932	1932	1931	1931	1931	1969	1999	1999	1999	1930	1930

01650500 NORTHWEST BRANCH ANACOSTIA RIVER NEAR COLESVILLE, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1924 - 1983, 1998 - 2001	
ANNUAL TOTAL	7604.8		6988.5			
ANNUAL MEAN	20.8		19.1		22.4	
HIGHEST ANNUAL MEAN					45.7	1972
LOWEST ANNUAL MEAN					8.45	1931
HIGHEST DAILY MEAN	325	Mar 21	535	Jun 7	2370	Jun 22 1972
LOWEST DAILY MEAN	3.0	Sep 16	1.9	Aug 9	.00	(a)
ANNUAL SEVEN-DAY MINIMUM	3.7	Sep 11	2.6	Aug 4	.00	Sep 5 1966
MAXIMUM PEAK FLOW			2410	Jun 23	(b)11000	Jun 22 1972
MAXIMUM PEAK STAGE			9.65	Jun 23	15.89	Jun 22 1972
INSTANTANEOUS LOW FLOW			1.9	(c)	.00	(d)
ANNUAL RUNOFF (CFSM)	.98		.91		1.06	
ANNUAL RUNOFF (INCHES)	13.41		12.32		14.45	
10 PERCENT EXCEEDS	37		31		36	
50 PERCENT EXCEEDS	12		9.3		14	
90 PERCENT EXCEEDS	5.2		4.2		4.7	

a Aug. 30, 31, Sept. 1, 3, 5-11, 1966, July 27-31, Aug. 1-12, 19, 20, 1999.
b From rating curve extended above 1,200 ft^3/s on basis of contracted-opening and flow-over-road measurement at gage height 10.99 ft and computation of flow over Burnt Mills Dam, 3 mi downstream, adjusted for flow from intervening area, at gage height 15.89 ft.
c Aug. 8, 9.
d Aug. 29-31, Sept. 1-12, 1966, July 18, 19, 24-31, Aug. 1-14, 18-20, 1999.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01651000 NORTHWEST BRANCH ANACOSTIA RIVER NEAR HYATTSVILLE, MD

LOCATION.--Lat 38°57'08.4", long 76°57'57.8", Prince Georges County, Hydrologic Unit 02070010, on right bank at downstream side of bridge on Queens Chapel Road (State Highway 500), 0.8 mi downstream from Sligo Branch, 1.0 mi west of Hyattsville, and 1.6 mi upstream from confluence with Northeast Branch.

DRAINAGE AREA.--49.4 mi^2.

PERIOD OF RECORD.--July 1938 to current year. Monthly discharge only for July 1938 published in WSP 1302.

REVISED RECORDS.--WSP 971: 1942(M).

GAGE.--Water-stage recorder and concrete control. Datum of gage is 17.10 ft above sea level (Washington Suburban Sanitary Commission bench mark). Prior to Oct. 22, 1938, nonrecording gage; Oct. 22, 1938 to Sept. 17, 1951, water-stage recorder; Sept. 17, 1951 to Aug. 29, 1952, nonrecording gage and crest-stage gage.

REMARKS.--Records good except those for estimated daily discharges (ice effect, orifice line leak), which are fair. Prior to June 1961, low flow regulated by storage at Burnt Mills Dam, 7.0 mi upstream from station. Inflow pumped from Patuxent River to augment water supply for Washington Suburban Sanitary District, August 1939 to August 1960. Small diversion since 1962 for irrigation of golf courses upstream from station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,700 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 17	0845	2,980	4.75	Aug 11	1645	2,910	4.70
Jun 7	0745	2,130	4.08	Aug 23	2045	*3,010	*4.77

Minimum discharge, 5.2 ft^3/s, Sept. 17.

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	12	e12	18	18	32	24	58	22	76	42	10	62
2	12	e12	14	18	25	23	44	21	64	25	9.5	16
3	13	e12	12	13	21	22	49	20	43	15	8.5	9.8
4	15	e23	12	19	20	43	42	21	24	403	7.8	11
5	15	e13	15	14	150	83	35	19	32	236	7.6	9.5
6	17	e13	12	16	72	35	39	18	23	62	11	8.5
7	10	e14	14	14	34	25	37	16	853	26	15	7.9
8	10	e15	13	29	26	23	32	16	88	80	8.0	7.7
9	11	36	14	27	25	25	32	17	46	59	7.5	7.4
10	11	64	12	16	24	24	46	17	31	23	119	20
11	e11	18	12	15	20	22	219	17	28	18	404	18
12	e11	9.9	13	17	19	24	72	20	25	16	132	11
13	e13	12	12	15	29	77	53	14	23	14	99	6.6
14	e11	30	173	14	31	31	40	13	22	13	67	12
15	e10	18	44	16	40	52	44	13	20	11	20	8.6
16	e12	12	44	16	139	54	67	13	166	10	15	5.9
17	e16	12	723	14	202	40	55	13	41	11	25	5.6
18	e11	11	85	14	47	33	44	18	22	17	14	5.7
19	e12	11	43	320	30	26	32	42	20	18	30	5.8
20	e11	11	33	208	27	27	30	17	18	13	95	111
21	e11	12	22	101	27	303	31	85	17	11	20	171
22	e14	14	21	e37	25	104	31	241	68	10	10	18
23	e11	11	e17	28	45	45	30	170	606	9.6	274	8.6
24	e11	10	17	27	36	33	29	33	54	8.7	105	183
25	e11	21	21	24	48	28	26	41	32	9.2	24	177
26	e17	117	e18	20	41	25	25	268	24	17	13	27
27	e11	31	15	21	28	22	25	296	21	12	12	13
28	e11	20	16	19	25	23	25	143	19	8.7	12	12
29	e14	19	15	18	---	151	24	41	17	84	9.8	9.5
30	e12	34	16	174	---	569	22	27	22	43	14	8.9
31	e12	---	15	59	---	87	---	21	---	15	13	---
TOTAL	379	647.9	1511	1361	1288	2103	1338	1733	2545	1340.2	1611.7	978.0
MEAN	12.2	21.6	48.7	43.9	46.0	67.8	44.6	55.9	84.8	43.2	52.0	32.6
MAX	17	117	723	320	202	569	219	296	853	403	404	183
MIN	10	9.9	12	13	19	22	22	13	17	8.7	7.5	5.6
CFSM	.25	.44	.99	.89	.93	1.37	.90	1.13	1.72	.88	1.05	.66
IN.	.29	.49	1.14	1.02	.97	1.58	1.01	1.31	1.92	1.01	1.21	.74

e Estimated

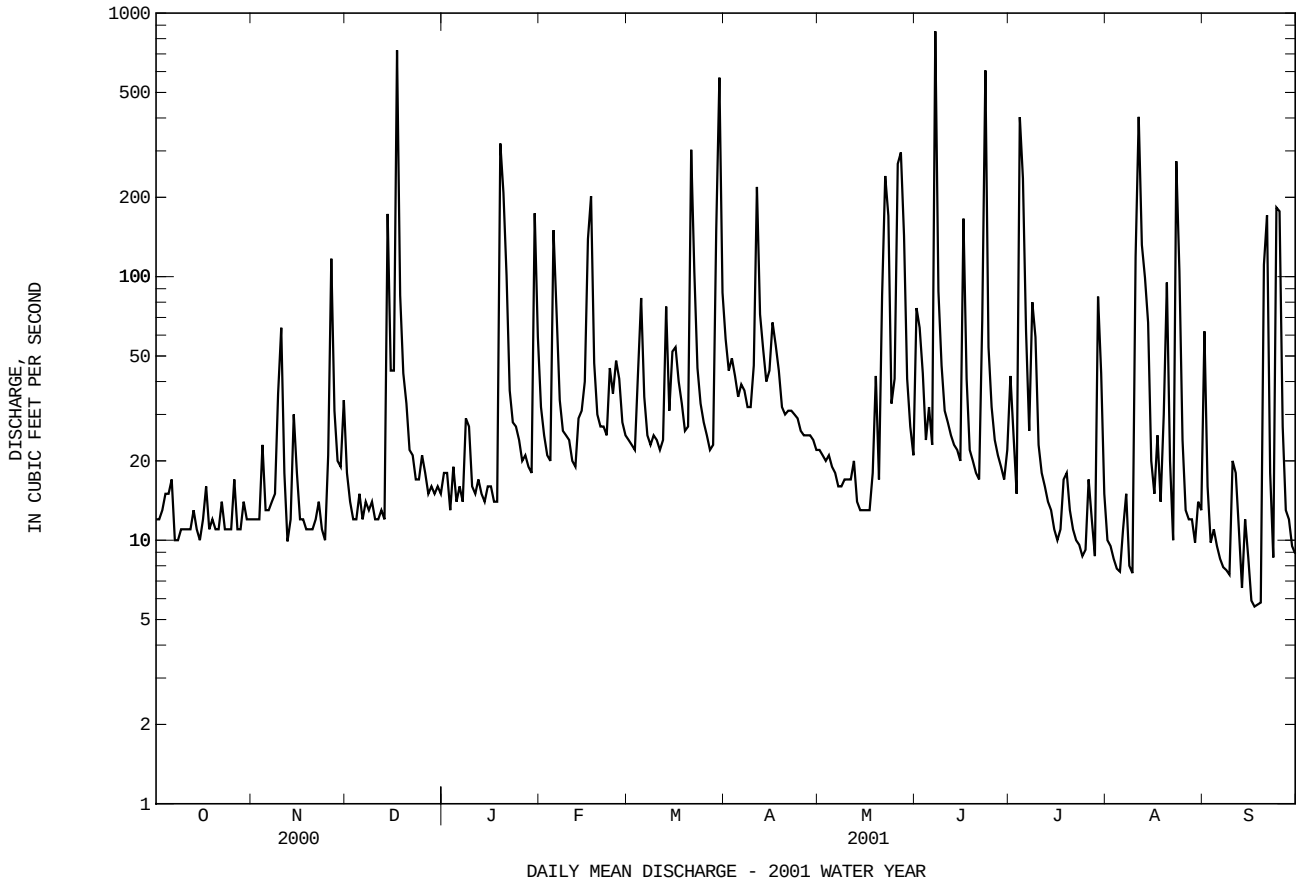
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 2001, BY WATER YEAR (WY)

MEAN	29.0	41.4	49.6	55.6	64.1	72.5	61.7	55.5	43.2	34.4	37.4	39.6
MAX	129	128	144	173	183	176	167	198	237	159	193	327
(WY)	1980	1994	1997	1979	1979	1994	1952	1989	1972	1945	1955	1975
MIN	2.44	4.30	11.4	8.04	13.6	23.5	15.3	9.91	10.1	4.07	3.61	2.58
(WY)	1942	1942	1966	1955	1947	1981	1950	1941	1940	1944	1943	1941

01651000 NORTHWEST BRANCH ANACOSTIA RIVER NEAR HYATTSVILLE, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1938 - 2001	
ANNUAL TOTAL	18214.8		16835.8			
ANNUAL MEAN	49.8		46.1		48.7	
HIGHEST ANNUAL MEAN					96.9	1979
LOWEST ANNUAL MEAN					20.8	1947
HIGHEST DAILY MEAN	723	Dec 17	853	Jun 7	5050	Sep 26 1975
LOWEST DAILY MEAN	6.3	Sep 17	5.6	Sep 17	.40	(a)
ANNUAL SEVEN-DAY MINIMUM	8.4	Sep 12	7.2	Sep 13	.60	Sep 7 1966
MAXIMUM PEAK FLOW			3010	Aug 23	(b)18000	Jun 22 1972
MAXIMUM PEAK STAGE			4.77	Aug 23	14.47	Jun 22 1972
INSTANTANEOUS LOW FLOW			5.2	Sep 17	.20	Sep 11 1966
ANNUAL RUNOFF (CFSM)	1.01		.93		.99	
ANNUAL RUNOFF (INCHES)	13.72		12.68		13.38	
10 PERCENT EXCEEDS	104		91		93	
50 PERCENT EXCEEDS	29		21		24	
90 PERCENT EXCEEDS	11		11		6.6	

a Sept. 8, 11, 1966.
b From rating curve extended above 4,000 ft^3/s on basis of the average of slope-area and step-backwater measurements of peak flow.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01651800 WATTS BRANCH AT WASHINGTON, D.C.

LOCATION.--Lat 38°54'04.0", long 76°56'31.9", District of Columbia, Hydrologic Unit 02070010, on right bank 5 ft downstream from footbridge, 200 ft upstream from Minnesota Ave., and 1.0 mi upstream from mouth.

DRAINAGE AREA.-- 3.28 mi^2.

PERIOD OF RECORD.--June 1992 to current year.

GAGE.--Water-stage recorder, crest-stage gage, and cobblestone control. Datum of gage is 16.52 ft above sea level.

REMARKS.--Records good except those for estimated daily discharges (backwater), which are poor. Several measurements of water temperature were made during the year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 350 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
May 22	1930	*1,470	*7.26	Jun 22	2330	729	5.42
May 25	1600	392	4.18	Jul 4	2000	365	4.06
Jun 7	0430	633	5.10	Jul 9	0030	895	5.93

Minimum discharge, 0.53 ft^3/s, July 26, Aug. 3, 6, 8-10, Sept. 6, 7.

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	.89	e.72	1.1	1.4	2.0	1.6	3.5	1.5	8.0	7.5	.78	.78
2	.89	e.72	1.3	1.4	1.8	1.6	2.8	2.3	2.9	1.4	.66	.73
3	.87	e.72	1.3	1.4	1.7	1.6	2.4	1.8	2.0	.79	.61	.70
4	.87	e.70	1.3	1.4	1.6	5.4	2.2	1.9	1.7	26	1.3	.71
5	.89	e.70	1.1	1.7	2.1	5.0	2.2	1.6	3.4	19	.67	.67
6	.96	e.70	1.0	1.9	2.2	2.1	3.9	1.6	2.9	2.8	.77	.58
7	e.90	e.70	1.1	1.9	2.2	1.8	2.3	1.6	58	1.5	2.1	.60
8	e.84	e.76	1.2	4.7	1.8	1.6	2.2	1.6	4.0	8.8	1.9	.60
9	e.84	2.2	1.1	2.1	1.7	1.6	6.0	1.7	2.6	43	2.8	.60
10	e.82	7.6	1.1	1.8	1.7	3.1	4.1	1.6	2.2	5.5	21	4.4
11	e.82	1.1	1.1	1.7	1.6	1.3	20	1.6	1.9	2.5	13	.99
12	e.80	1.0	1.4	1.4	1.6	3.1	3.9	3.1	2.0	1.6	4.9	.82
13	e.80	1.0	1.3	1.4	2.0	6.4	4.5	1.0	2.9	1.3	13	.78
14	e.78	4.3	14	1.4	2.4	1.9	2.5	.89	2.6	1.3	2.7	3.1
15	e.78	1.2	1.6	1.4	3.1	6.1	3.7	.89	2.2	1.4	1.4	1.4
16	e.82	1.1	4.2	1.4	9.8	2.5	5.4	.88	20	1.0	1.7	.67
17	e.82	1.1	34	1.4	9.8	2.1	4.0	.78	3.4	.89	3.7	.67
18	e.80	.90	2.2	1.4	2.4	2.0	2.5	2.5	1.9	2.4	2.3	.66
19	e.82	.89	1.7	23	1.8	1.8	2.2	10	2.6	1.1	2.5	.67
20	e.80	.90	1.6	16	1.7	2.8	1.9	1.3	7.4	.93	2.3	4.6
21	e.78	.91	1.3	6.4	1.5	43	1.8	4.6	2.8	.89	2.1	4.9
22	e.76	.89	1.3	2.6	1.6	6.0	1.7	63	19	.89	2.2	.68
23	e.74	.89	1.3	2.3	4.6	3.3	2.4	5.1	11	1.0	21	.65
24	e.76	.89	1.3	2.2	1.8	2.6	1.8	1.8	2.2	1.2	2.2	1.8
25	e.78	4.9	1.4	1.9	4.1	2.4	1.7	18	2.0	1.0	2.5	7.1
26	e.80	8.2	1.4	1.7	2.1	2.2	1.7	55	1.4	5.9	.92	.81
27	e.82	1.3	1.3	1.7	1.8	2.2	1.8	9.2	1.8	1.0	.86	.84
28	e.82	1.1	1.4	1.6	1.7	2.0	1.6	4.8	1.1	.67	.83	.89
29	e.78	2.0	1.4	1.6	---	24	1.5	2.8	15	12	.78	.67
30	e.74	1.4	1.4	2.0	---	25	1.4	2.3	5.3	2.0	1.1	.60
31	e.72	---	1.4	2.0	---	4.7	---	1.9	---	.87	.88	---
TOTAL	25.31	51.49	89.6	96.2	74.2	172.8	99.6	208.64	196.2	158.13	115.46	43.67
MEAN	.82	1.72	2.89	3.10	2.65	5.57	3.32	6.73	6.54	5.10	3.72	1.46
MAX	.96	8.2	34	23	9.8	43	20	63	58	43	21	7.1
MIN	.72	.70	1.0	1.4	1.5	1.3	1.4	.78	1.1	.67	.61	.58
CFSM	.25	.52	.88	.95	.81	1.70	1.01	2.05	1.99	1.56	1.14	.44
IN.	.29	.58	1.02	1.09	.84	1.96	1.13	2.37	2.23	1.79	1.31	.50

e Estimated

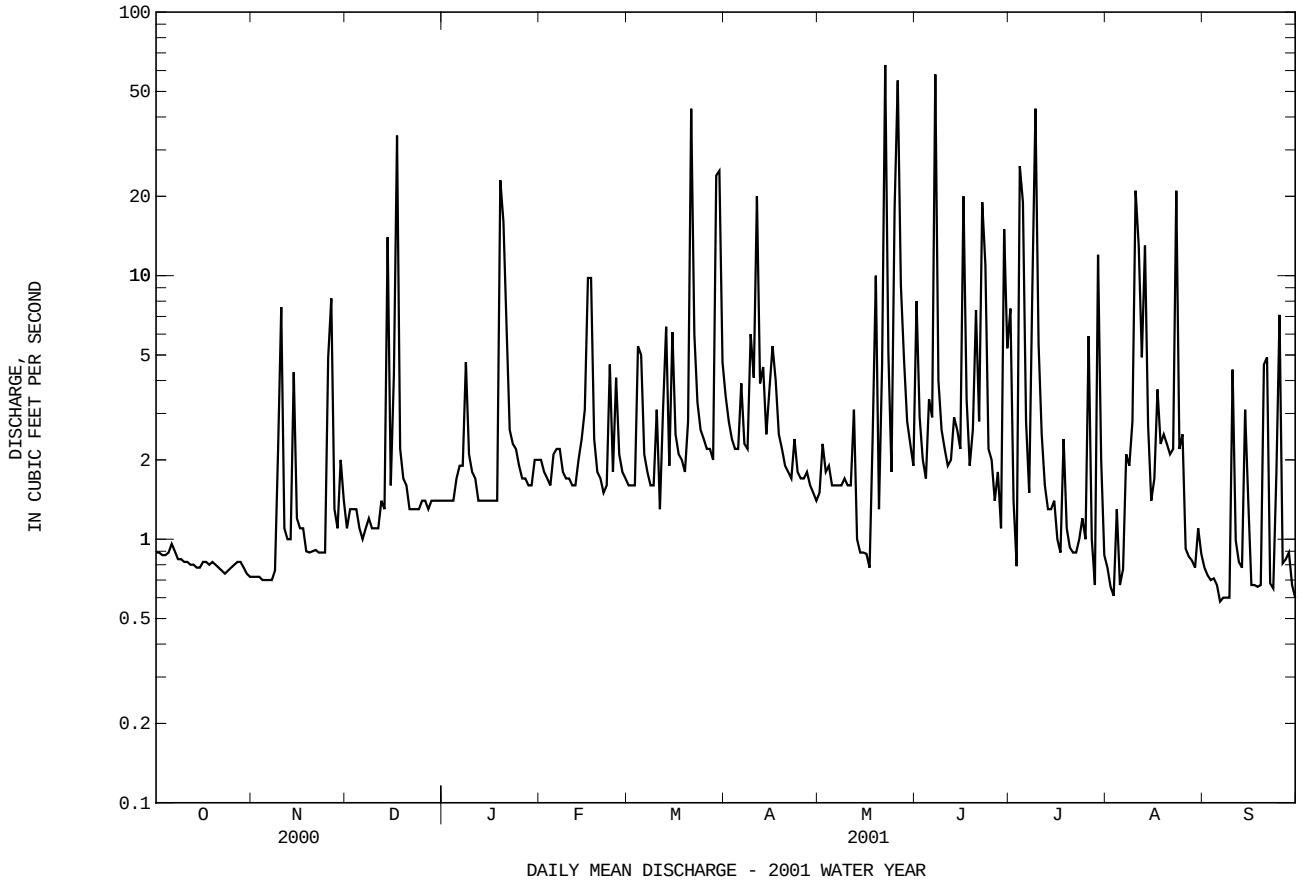
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 2001, BY WATER YEAR (WY)

MEAN	3.02	4.00	4.02	6.11	5.20	8.47	4.68	4.60	3.54	3.32	2.90	3.77
MAX	9.08	6.74	9.57	9.71	11.3	15.7	6.55	6.73	6.54	5.72	4.39	13.0
(WY)	1996	1998	1997	1996	1998	1994	1996	2001	2001	2000	1999	1999
MIN	.73	1.37	2.14	3.10	2.65	5.25	2.36	1.59	1.83	1.63	1.23	1.37
(WY)	1999	1999	1999	2001	2001	1995	1995	1999	1994	1998	1998	1998

01651800 WATTS BRANCH AT WASHINGTON, D.C.--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1992 - 2001	
ANNUAL TOTAL	1391.82		1331.30			
ANNUAL MEAN	3.80		3.65		4.48	
HIGHEST ANNUAL MEAN					5.87	1996
LOWEST ANNUAL MEAN					2.84	1995
HIGHEST DAILY MEAN	52	Mar 21	63	May 22	204	Sep 16 1999
LOWEST DAILY MEAN	(e).70	(a)	.58	Sep 6	.37	Jul 23 1993
ANNUAL SEVEN-DAY MINIMUM	.71	Nov 1	.64	Sep 3	.45	Jul 30 1993
MAXIMUM PEAK FLOW			1470	May 22	(b)1510	Sep 26 1994
MAXIMUM PEAK STAGE			7.26	May 22	7.36	Sep 26 1994
INSTANTANEOUS LOW FLOW			.53	(c)	.28	(d)
ANNUAL RUNOFF (CFSM)	1.16		1.11		1.37	
ANNUAL RUNOFF (INCHES)	15.79		15.10		18.56	
10 PERCENT EXCEEDS	8.9		6.4		9.5	
50 PERCENT EXCEEDS	1.7		1.7		1.9	
90 PERCENT EXCEEDS	.82		.78		.79	

e Estimated
a Nov. 4-7.
b From rating curve extended above 260 ft^3/s.
c July 26, Aug. 3, 6, 8-10, Sept. 6, 7.
d Aug. 11, 12, 1999.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01653600 PISCATAWAY CREEK AT PISCATAWAY, MD

LOCATION.--Lat 38°42'20.8", long 76°57'58.3", Prince Georges County, Hydrologic Unit 02070010, on left bank 75 ft downstream from bridge on State Highway 223, at Piscataway, 0.4 mi upstream from Tinker Creek, and 4.8 mi upstream from mouth.

DRAINAGE AREA.--39.5 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1965 to current year.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 10 ft above sea level, from topographic map.

REMARKS.--No estimated daily discharges. Water-discharge records good. U.S. Geological Survey gage-height telemeter at station.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 450 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 18	0230	906	7.13	Mar 30	1500	575	6.34
Mar 22	0030	850	7.02	Jul 26	2400	*1,360	*7.88

Minimum discharge, 0.18 ft^3/s, July 26.

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	24	8.4	14	17	39	32	78	20	20	6.0	22	9.6
2	22	10	13	18	34	31	65	19	44	5.5	15	8.2
3	20	11	12	17	29	31	56	18	28	3.9	12	6.5
4	18	10	11	16	25	32	51	16	20	3.4	11	5.9
5	17	10	12	17	105	58	47	16	35	32	9.9	5.2
6	18	9.9	12	18	89	45	46	14	22	23	9.4	4.6
7	16	9.0	11	18	55	36	47	13	80	8.0	9.2	3.8
8	13	8.5	11	22	44	32	42	14	41	18	7.4	3.3
9	13	9.8	10	32	39	31	42	13	26	25	6.4	3.2
10	13	29	10	22	37	28	45	13	19	11	8.7	3.4
11	13	19	10	20	32	26	97	12	15	20	54	3.6
12	12	11	10	20	30	25	78	11	13	8.0	94	3.0
13	12	9.8	9.0	18	35	56	54	11	12	5.0	58	2.7
14	12	16	54	17	34	48	45	9.1	11	3.7	35	2.4
15	11	28	43	19	37	38	40	9.7	11	2.8	22	2.6
16	11	15	30	19	40	67	46	8.5	28	2.2	15	2.3
17	11	13	551	16	112	44	53	8.1	53	1.8	12	2.0
18	12	11	332	17	54	37	42	8.9	20	2.6	11	1.9
19	11	10	68	95	42	33	36	39	14	4.6	9.8	3.3
20	10	9.8	57	225	40	31	34	24	12	2.8	9.9	9.4
21	10	9.6	49	128	41	396	33	21	10	1.8	8.2	15
22	9.7	9.1	43	67	38	459	33	29	8.8	1.1	6.7	4.8
23	9.0	8.9	30	53	41	95	31	73	28	.71	22	2.0
24	9.4	8.8	27	46	46	69	30	21	16	.52	97	1.4
25	9.3	9.9	22	41	46	58	27	22	11	.42	21	8.5
26	10	95	21	33	53	53	25	282	8.6	249	13	4.8
27	10	44	21	33	37	49	24	117	7.8	560	10	1.5
28	9.0	22	21	30	34	47	23	46	6.7	36	13	1.2
29	7.6	18	20	28	---	66	21	32	5.8	63	8.7	.98
30	7.8	16	20	61	---	461	21	26	5.3	74	8.8	.87
31	7.8	---	18	59	---	127	---	20	---	34	16	---
TOTAL	388.6	499.5	1572.0	1242	1288	2641	1312	986.3	632.0	1209.85	656.1	127.95
MEAN	12.5	16.6	50.7	40.1	46.0	85.2	43.7	31.8	21.1	39.0	21.2	4.26
MAX	24	95	551	225	112	461	97	282	80	560	97	15
MIN	7.6	8.4	9.0	16	25	25	21	8.1	5.3	.42	6.4	.87
CFSM	.32	.42	1.28	1.01	1.16	2.16	1.11	.81	.53	.99	.54	.11
IN.	.37	.47	1.48	1.17	1.21	2.49	1.24	.93	.60	1.14	.62	.12

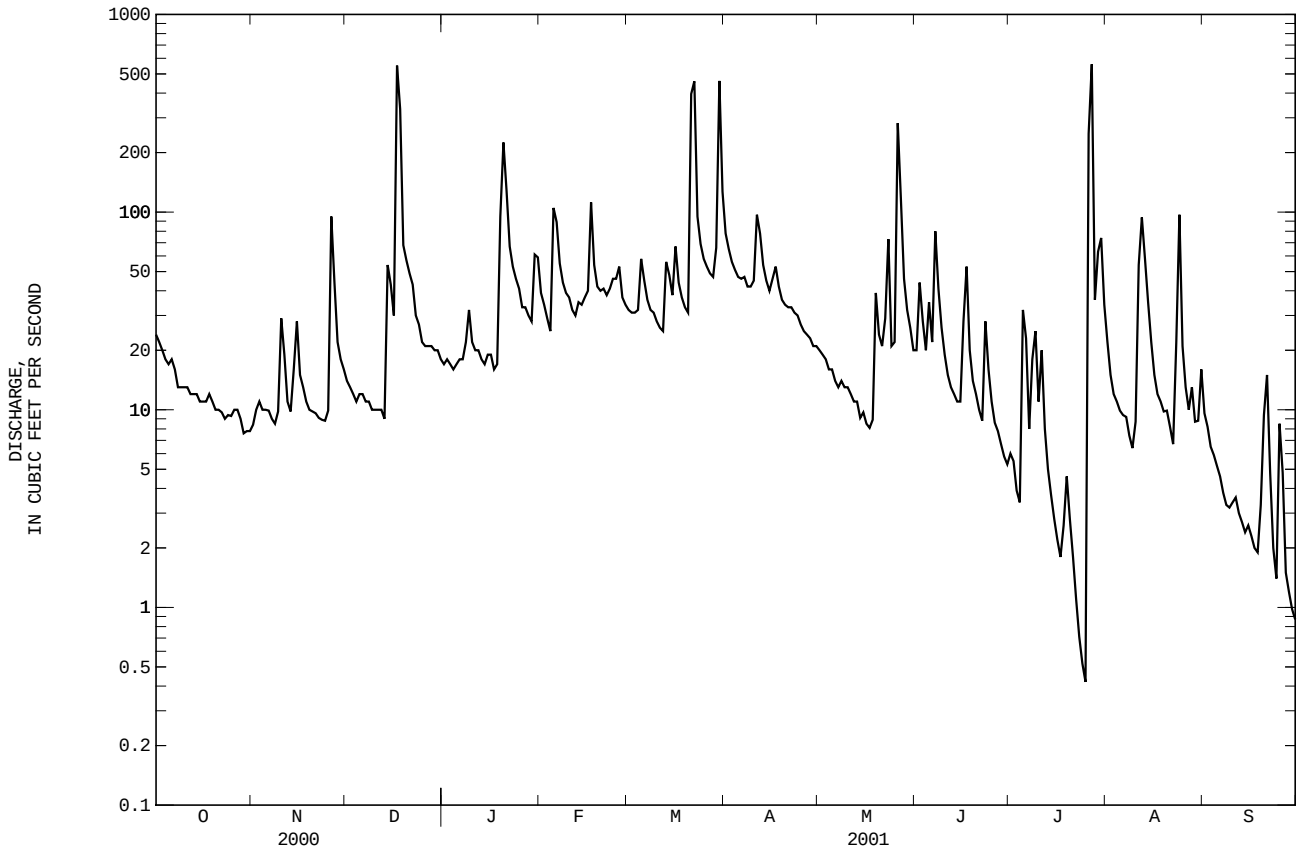
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 2001, BY WATER YEAR (WY)

MEAN	27.7	32.7	50.9	63.4	70.4	85.3	66.4	47.5	30.4	18.8	20.4	30.3
MAX	177	95.8	153	217	188	268	218	189	173	92.7	88.8	256
(WY)	1980	1973	1973	1978	1972	1994	1983	1989	1972	1975	1971	1975
MIN	1.31	1.27	5.26	5.96	23.6	17.5	18.1	9.28	1.42	.14	.006	.000
(WY)	1987	1992	1966	1981	1977	1981	1985	1999	1986	1966	1966	1977

01653600 PISCATAWAY CREEK AT PISCATAWAY, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1966 - 2001	
ANNUAL TOTAL	17062.2		12555.30			
ANNUAL MEAN	46.6		34.4		45.2	
HIGHEST ANNUAL MEAN					85.9	1972
LOWEST ANNUAL MEAN					13.4	1981
HIGHEST DAILY MEAN	551	Dec 17	560	Jul 27	4500	Sep 6 1979
LOWEST DAILY MEAN	5.9	Aug 23	.42	Jul 25	.00	(a)
ANNUAL SEVEN-DAY MINIMUM	7.4	Aug 17	1.7	Jul 19	.00	Jul 9 1966
MAXIMUM PEAK FLOW			1360	Jul 26	(b)8540	Sep 6 1979
MAXIMUM PEAK STAGE			7.88	Jul 26	11.21	Sep 6 1979
INSTANTANEOUS LOW FLOW			.18	Jul 26	.00	(c)
ANNUAL RUNOFF (CFSM)	1.18		.87		1.15	
ANNUAL RUNOFF (INCHES)	16.07		11.82		15.56	
10 PERCENT EXCEEDS	96		58		90	
50 PERCENT EXCEEDS	28		19		23	
90 PERCENT EXCEEDS	9.8		4.9		1.5	

a Many days.
b From rating curve extended above 1,700 ft^3/s on basis of contracted-opening measurement of peak flow at bridge 100 ft upstream.
c No flow at times in 1966, 1970, 1977, 1980-83, 1985-89, 1991-95, 1997-99.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01653600 PISCATAWAY CREEK AT PISCATAWAY, MD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 2000 to September 2001.

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

DATE	TIME	SAMPLE TYPE	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)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)
OCT												
24...	*1259*	*BLANK*	--	--	--	--	--	--	--	--	--	--
24...	1300	ENVIRONMENTAL	8.9	157	7.4	21.0	12.2	769	9.3	86	--	--
NOV												
15...	1430	ENVIRONMENTAL	24	177	6.8	8.5	8.4	--	11.1	--	--	--
DEC												
11...	1315	ENVIRONMENTAL	10	179	6.7	7.0	2.8	765	13.9	103	.53	--
11...	*1316*	*REPLICATE*	--	--	--	--	--	--	--	--	*.50*	--
JAN												
18...	1045	ENVIRONMENTAL	15	211	6.2	6.5	1.9	766	11.2	81	.68	.504
20...	1130	ENVIRONMENTAL	275	223	6.2	2.5	2.8	758	14.3	106	1.5	.505
20...	*1131*	*REPLICATE*	--	--	--	--	--	--	--	--	*1.5*	*.505*
22...	1630	ENVIRONMENTAL	61	--	--	1.5	2.5	--	--	--	1.0	.536
30...	1630	ENVIRONMENTAL	91	355	6.4	14.2	4.2	748	10.6	83	1.0	.590
31...	1330	ENVIRONMENTAL	55	234	6.0	17.0	4.1	752	8.8	68	.98	.599
FEB												
20...	1345	ENVIRONMENTAL	39	187	6.6	--	5.0	763	12.0	94	.71	.468
21...	*1130*	*BLANK*	--	--	--	--	--	--	--	--	--	--
MAR												
12...	2200	ENVIRONMENTAL	25	233	5.7	--	10	--	12.0	--	.61	.358
13...	0600	ENVIRONMENTAL	55	--	--	--	--	--	--	--	.65	.394
13...	1400	ENVIRONMENTAL	67	--	--	--	--	--	--	--	.80	.443
14...	0200	ENVIRONMENTAL	51	--	--	--	--	--	--	--	.69	.458
14...	1400	ENVIRONMENTAL	45	--	--	--	--	--	--	--	.67	.426
15...	1200	ENVIRONMENTAL	34	208	6.8	13.0	7.5	755	12.3	104	.57	.341
15...	1727	ENVIRONMENTAL	36	199	7.2	--	--	--	--	--	.65	--
16...	*0126*	*BLANK*	--	--	--	--	--	--	--	--	--	--
16...	0127	ENVIRONMENTAL	67	--	--	--	--	--	--	--	.68	--
16...	0927	ENVIRONMENTAL	76	222	7.2	--	--	--	--	--	.70	.380
21...	0330	ENVIRONMENTAL	41	--	--	--	--	--	--	--	.62	.327
21...	1130	ENVIRONMENTAL	325	--	--	--	--	--	--	--	2.4	.363
21...	1740	ENVIRONMENTAL	754	--	--	--	--	--	--	--	1.4	.358
21...	*1741*	*REPLICATE*	--	--	--	--	--	--	--	--	*1.5*	*.391*
21...	1936	ENVIRONMENTAL	773	136	6.5	--	--	--	--	--	1.4	.349
22...	0336	ENVIRONMENTAL	834	117	6.6	--	--	--	--	--	1.1	--
22...	1235	ENVIRONMENTAL	279	136	6.6	--	--	--	--	--	.96	.336
22...	2100	ENVIRONMENTAL	150	--	--	--	--	--	--	--	1.0	.365
23...	0500	ENVIRONMENTAL	104	--	--	--	--	--	--	--	.93	.393
23...	1300	ENVIRONMENTAL	88	--	--	--	--	--	--	--	.96	.397
APR												
05...	1315	ENVIRONMENTAL	45	163	6.7	18.0	11.3	774	10.7	96	.76	.459
19...	1400	ENVIRONMENTAL	35	156	7.4	--	11.6	770	10.9	100	.48	.235
MAY												
02...	1445	ENVIRONMENTAL	19	175	7.2	28.0	18.0	767	9.2	96	.71	.238
19...	0030	ENVIRONMENTAL	9.7	--	--	--	--	--	--	--	.77	.298
19...	0630	ENVIRONMENTAL	19	--	--	--	--	--	--	--	.79	.333
19...	1230	ENVIRONMENTAL	63	--	--	--	--	--	--	--	1.4	.382
19...	1830	ENVIRONMENTAL	56	--	--	--	--	--	--	--	1.6	.420
20...	0630	ENVIRONMENTAL	27	--	--	--	--	--	--	--	1.1	.419
JUN												
19...	*1410*	*BLANK*	--	--	--	--	--	--	--	--	--	--
19...	1415	ENVIRONMENTAL	14	146	7.1	29.0	22.7	765	7.5	86	.73	.253
19...	*1416*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
JUL												
26...	1300	ENVIRONMENTAL	.28	180	6.8	29.0	25.8	754	4.1	51	.53	.072
26...	1945	ENVIRONMENTAL	645	83	6.3	--	--	--	--	--	3.0	.440
27...	0145	ENVIRONMENTAL	1330	75	6.3	--	--	--	--	--	1.2	.392
27...	0745	ENVIRONMENTAL	865	86	6.3	--	--	--	--	--	.98	.359
AUG												
14...	1300	ENVIRONMENTAL	36	155	6.9	31.0	23.5	761	7.8	92	.76	.205
SEP												
05...	1300	ENVIRONMENTAL	5.2	160	6.7	27.0	21.5	761	6.5	73	--	--

01653600 PISCATAWAY CREEK AT PISCATAWAY, MD--Continued

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

DATE	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)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN DIS-SOLVED (MG/L AS N) (00602)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	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)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
OCT													
24...	*<.006*	*<.047*	*<.041*	*E.06*	*<.10*	--	--	--	*<.004*	*<.006*	*<.018*	--	--
24...	<.006	<.047	<.041	.29	.22	--	--	--	.098	.036	.031	7	.17
NOV													
15...	E.003	E.041	<.041	.25	.25	--	--	--	.087	.029	.021	13	.84
DEC													
11...	E.004	.347	E.032	.18	.18	.52	--	--	.056	.014	E.017	2	.06
11...	*E.004*	*.359*	*<.041*	*.14*	*.21*	*.56*	--	--	*.057*	*.016*	*E.014*	*6*	--
JAN													
18...	.003	.507	.065	.18	.20	.71	.11	.14	.041	.013	E.006	3	.12
20...	.008	.513	.176	1.0	.49	1.0	.85	.32	.317	.026	.015	240	178
20...	*.008*	*.513*	*.180*	*.99*	*.50*	*1.0*	*.81*	*.32*	*.328*	*.026*	*.015*	*227*	--
22...	.005	.541	.113	.47	.31	.85	.35	.20	.064	.018	.009	15	2.5
30...	.005	.595	.092	.44	.26	.86	.35	.17	.120	.009	E.006	74	18
31...	.008	.607	.093	.37	.36	.97	.28	.27	.051	.012	E.005	10	1.5
FEB													
20...	.004	.472	.038	.24	.19	.66	.20	.15	.043	.014	.010	5	.53
21...	*.001*	*<.005*	*.003*	*<.08*	*<.10*	--	--	--	*<.004*	*<.006*	*<.007*	--	--
MAR													
12...	.003	.361	.018	.25	.14	.50	.23	.12	.050	.012	.008	12	.81
13...	.003	.397	.010	.26	.12	.52	.25	.12	.061	.008	E.005	17	2.5
13...	.005	.448	.023	.35	.18	.62	.33	.15	.074	.009	E.004	22	4.0
14...	.004	.462	<.002	.23	.15	.61	--	--	.056	.009	E.005	11	1.5
14...	.005	.431	<.002	.24	.14	.57	--	--	.054	.010	E.006	12	1.5
15...	.003	.344	.007	.23	.16	.51	.22	.16	.042	.010	.010	5	.46
15...	<.001	.391	.005	.26	.19	.58	.25	.18	.047	.012	.022	5	.49
16...	*<.001*	*.001*	*V.004*	*<.08*	*<.10*	--	--	--	*<.004*	*<.006*	*.002*	*1*	--
16...	<.001	.426	.004	.26	.16	.58	.25	.15	.066	.012	.013	19	3.4
16...	.004	.384	.025	.32	.23	.61	.29	.20	.087	.013	.009	27	5.5
21...	.003	.330	.011	.29	.16	.49	.27	.15	.062	.013	.010	16	1.8
21...	.007	.370	.151	2.1	.51	.88	1.9	.35	1.13	.020	.012	874	767
21...	.006	.364	.086	1.0	.53	.89	.95	.44	.473	.036	.025	308	627
21...	*.006*	*.397*	*.087*	*1.1*	*.51*	*.91*	*.98*	*.42*	*.447*	*.036*	*.025*	*305*	--
21...	.005	.354	.057	1.0	.50	.86	.95	.44	.353	.031	.018	207	432
22...	E.005	.336	E.037	.79	.45	.78	--	--	.218	.031	.018	173	390
22...	.003	.339	.031	.62	.36	.70	.59	.33	.187	.024	.014	115	87
22...	.004	.369	.036	.67	.32	.69	.64	.29	.148	.021	.011	129	52
23...	.004	.397	.039	.53	.36	.75	.49	.32	.140	.019	.012	104	29
23...	.004	.401	.037	.56	.33	.73	.52	.29	.122	.019	.011	73	17
APR													
05...	.002	.461	.021	.30	.19	.65	.28	.17	.050	.019	.014	8	1.0
19...	.003	.238	.007	.24	.21	.45	.24	.20	.056	.023	.018	6	.57
MAY													
02...	.004	.242	.031	.47	.27	.51	.44	.23	.069	.027	.021	6	.30
19...	.009	.307	.059	.47	.31	.62	.41	.25	.135	.043	.035	23	.60
19...	.010	.343	.027	.45	.29	.63	.42	.26	.142	.033	.025	21	1.1
19...	.012	.394	.005	1.0	.28	.68	.99	.28	.429	.013	<.007	204	35
19...	.017	.437	.040	1.2	.37	.81	1.1	.33	.229	.029	.018	84	13
20...	.016	.435	.087	.69	.43	.86	.61	.34	.173	.027	.017	42	3.1
JUN													
19...	--	--	--	--	--	--	--	--	--	--	--	*<1*	--
19...	.007	.260	.037	.47	.40	.66	.43	.36	.139	.066	.055	6	.23
19...	--	--	--	--	--	--	--	--	--	--	--	*6*	--
JUL													
26...	.003	.075	.066	.45	.36	.43	.39	.29	.204	.048	.042	7	.01
26...	.014	.454	.107	2.6	.43	.88	2.5	.32	2.03	.057	.041	1150	2000
27...	.011	.403	.056	.81	.49	.90	.75	.44	.410	.055	.040	187	672
27...	.008	.367	.020	.61	.40	.77	.59	.38	.235	.050	.037	76	177
AUG													
14...	.006	.211	.049	.55	.37	.58	.50	.32	.140	.048	.042	13	1.3
SEP													
05...	E.003	E.098	E.022	.34	E.30	--	--	--	.175	E.071	E.061	3	.05

E Estimated value.
< Actual value is known to be less than the value shown.
V Analyte was detected in both the environmental sample and the associated blanks.

01653600 PISCATAWAY CREEK AT PISCATAWAY, MD--Continued

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

DATE	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT	
24...	--
24...	--
NOV	
15...	--
DEC	
11...	--
11...	--
JAN	
18...	100
20...	61
20...	*68*
22...	85
30...	68
31...	97
FEB	
20...	100
21...	--
MAR	
12...	91
13...	91
13...	83
14...	93
14...	92
15...	95
15...	95
16...	*50*
16...	89
16...	68
21...	86
21...	62
21...	60
21...	*60*
21...	58
22...	42
22...	59
22...	46
23...	53
23...	62
APR	
05...	--
19...	--
MAY	
02...	--
19...	85
19...	89
19...	81
19...	85
20...	87
JUN	
19...	--
19...	--
19...	--
JUL	
26...	--
26...	85
27...	83
27...	71
AUG	
14...	--
SEP	
05...	--

THIS IS A BLANK PAGE

01658000 MATTAWOMAN CREEK NEAR POMONKEY, MD

LOCATION.--Lat 38°35'46.1", long 77°03'21.7", Charles County, Hydrologic Unit 02070010, on bank at left downstream side of bridge on State Highway 227, 30 ft downstream from Old Womans Run, 1.2 mi southeast of Pomonkey, and 12.6 mi upstream from mouth.

DRAINAGE AREA.--57.7 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1949 to September 1972, January 2001 to September 2001.

GAGE.--Water-stage recorder and concrete control. Datum of gage 40 feet above sea level, from topographic map.

REMARKS.--Water-discharge records good except those for estimated daily discharges (missing record), which are fair. Low flow affected by groundwater diversions from municipal well fields Waldorf and St. Charles. U.S. Geological Survey gage-height telemeter at station.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 400 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 22	1445	*3,540	*6.08	May 27	1030	1,740	5.33
Mar 31	0715	2,030	5.48	Jul 28	0900	849	4.81

Minimum discharge, 0.00 ft^3/s, July 17-26, Sept. 10-30.

DISCHARGE, CUBIC FEET PER SECOND, JANUARY TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	60	50	278	18	27	1.1	36	3.5
2	---	---	---	---	51	47	114	16	60	2.3	15	1.5
3	---	---	---	---	42	43	82	14	45	7.4	6.3	.87
4	---	---	---	---	37	42	66	11	27	6.3	4.1	.52
5	---	---	---	---	85	60	56	11	44	4.3	4.5	.42
6	---	---	---	---	178	63	53	10	42	7.2	4.9	.32
7	---	---	---	---	106	52	52	7.7	29	6.2	2.7	.17
8	---	---	---	---	70	46	50	8.3	28	16	1.5	.04
9	---	---	---	---	57	39	48	6.9	22	27	.86	.03
10	---	---	---	---	51	34	60	6.3	15	9.1	3.2	.00
11	---	---	---	---	43	31	83	5.8	11	4.4	55	.00
12	---	---	---	---	37	29	119	6.3	8.4	2.1	131	.00
13	---	---	---	---	43	56	82	6.3	7.0	1.1	78	.00
14	---	---	---	---	46	58	65	6.2	5.8	.87	43	.00
15	---	---	---	---	49	50	54	5.6	6.3	.30	24	.00
16	---	---	---	---	53	81	57	4.4	48	.11	13	.00
17	---	---	---	---	143	68	72	3.8	103	.01	7.7	.00
18	---	---	---	---	130	53	71	3.7	e41	e.00	5.9	.00
19	---	---	---	---	78	43	55	33	e19	e.00	4.7	.00
20	---	---	---	---	61	36	50	46	12	e.00	3.5	.00
21	---	---	---	---	53	897	47	31	7.0	e.00	2.2	.00
22	---	---	---	---	48	2850	41	43	5.7	e.00	1.3	.00
23	---	---	---	---	50	1480	35	51	24	e.00	.81	.00
24	---	---	---	81	59	150	33	30	19	e.00	8.1	.00
25	---	---	---	66	65	98	35	30	11	e.00	13	.00
26	---	---	---	54	77	75	32	875	6.8	e1.9	4.5	.00
27	---	---	---	51	63	59	29	1490	4.5	e167	1.2	.00
28	---	---	---	46	55	51	25	233	3.1	394	.63	.00
29	---	---	---	41	---	61	21	65	3.2	90	.41	.00
30	---	---	---	55	---	1470	19	41	1.5	147	.36	.00
31	---	---	---	78	---	1710	---	28	---	64	2.5	---
TOTAL	---	---	---	472	1890	9882	1884	3147.3	686.3	959.69	479.87	7.37
MEAN	---	---	---	59.0	67.5	319	62.8	102	22.9	31.0	15.5	.25
MAX	---	---	---	81	178	2850	278	1490	103	394	131	3.5
MIN	---	---	---	41	37	29	19	3.7	1.5	.00	.36	.00
CFSM	---	---	---	1.08	1.23	5.82	1.15	1.85	.42	.56	.28	.00
IN.	---	---	---	.32	1.28	6.71	1.28	2.14	.47	.65	.33	.01

e Estimated

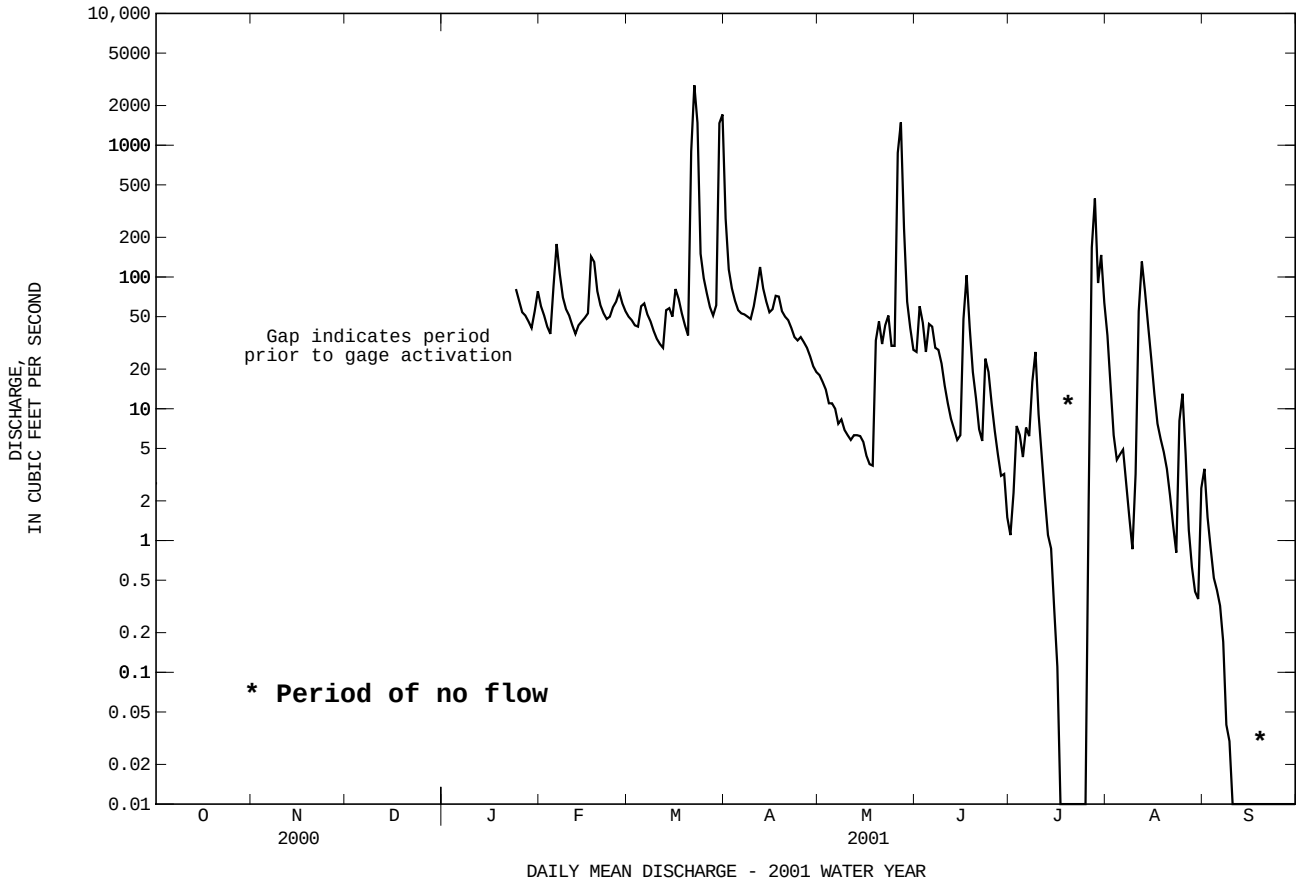
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1950 - 1972, 2001, BY WATER YEAR (WY)

MEAN	20.6	33.9	60.9	74.8	107	132	87.1	44.7	34.3	12.6	29.2	15.8
MAX	142	101	188	151	276	319	203	102	325	59.2	411	127
(WY)	1956	1953	1958	1952	1961	2001	1970	2001	1972	1972	1955	1960
MIN	.000	.023	3.28	11.4	34.4	55.6	29.6	7.16	.53	.000	.000	.000
(WY)	1955	1955	1966	1955	1968	1959	1950	1957	1954	1957	1954	1954

01658000 MATTAWOMAN CREEK NEAR POMONKEY, MD--Continued

SUMMARY STATISTICS	WATER YEARS 1950 - 1972 2001	
ANNUAL MEAN	54.2	
HIGHEST ANNUAL MEAN	113	1972
LOWEST ANNUAL MEAN	22.6	1966
HIGHEST DAILY MEAN	5610	Aug 13 1955
LOWEST DAILY MEAN	.00	(a)
ANNUAL SEVEN-DAY MINIMUM	.00	Jun 29 1950
MAXIMUM PEAK FLOW	(b)9300	Aug 13 1955
MAXIMUM PEAK STAGE	7.52	Aug 13 1955
INSTANTANEOUS LOW FLOW	.00	(c)
ANNUAL RUNOFF (CFSM)	.99	
ANNUAL RUNOFF (INCHES)	13.44	
10 PERCENT EXCEEDS	122	
50 PERCENT EXCEEDS	22	
90 PERCENT EXCEEDS	.00	

a Many days.
b From rating curve extended above 6,000 ft^3/s.
c No flow at times in each year.



01658000 MATTAWOMAN CREEK NEAR POMONKEY, MD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1961, 1964, October 2000 to September 2001.

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

DATE	TIME	SAMPLE TYPE	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)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)
OCT												
24...	1100	ENVIRONMENTAL	4.7	98	6.7	18.5	11.5	768	6.0	55	--	--
NOV												
15...	1215	ENVIRONMENTAL	12	116	6.2	9.5	8.6	760	9.4	81	--	--
DEC												
11...	1115	ENVIRONMENTAL	9.5	121	6.2	5.0	2.5	765	12.4	91	.30	--
11...	*1116*	*REPLICATE*	--	--	--	--	--	--	--	--	*.23*	--
JAN												
18...	*1214*	*BLANK*	--	--	--	--	--	--	--	--	--	--
18...	1215	ENVIRONMENTAL	22	137	6.0	5.5	1.8	765	10.3	74	.35	.190
20...	1715	ENVIRONMENTAL	956	146	6.1	--	2.7	755	10.1	75	.98	.402
20...	*1716*	*REPLICATE*	--	--	--	--	--	--	--	--	*1.0*	*.404*
22...	1330	ENVIRONMENTAL	88	--	--	--	--	--	--	--	.63	.301
30...	1145	ENVIRONMENTAL	53	--	--	--	--	--	--	--	.69	.411
31...	0001	ENVIRONMENTAL	78	--	--	--	--	--	--	--	.62	.355
31...	0600	ENVIRONMENTAL	82	--	--	--	--	--	--	--	.60	.314
31...	1200	ENVIRONMENTAL	80	--	--	--	--	--	--	--	.67	.342
31...	1800	ENVIRONMENTAL	74	--	--	--	--	--	--	--	.58	.312
FEB												
01...	0001	ENVIRONMENTAL	70	--	--	--	--	--	--	--	.58	.314
05...	0515	ENVIRONMENTAL	39	--	--	--	--	--	--	--	.55	.299
05...	1715	ENVIRONMENTAL	125	--	--	--	--	--	--	--	1.3	.342
06...	0515	ENVIRONMENTAL	190	--	--	--	--	--	--	--	.68	.281
06...	2315	ENVIRONMENTAL	144	--	--	--	--	--	--	--	.61	.260
07...	1715	ENVIRONMENTAL	92	--	--	--	--	--	--	--	.48	.252
08...	1115	ENVIRONMENTAL	70	--	--	--	--	--	--	--	.50	.257
MAR												
12...	2215	ENVIRONMENTAL	32	--	--	--	--	--	--	--	.43	.212
13...	1015	ENVIRONMENTAL	55	--	--	--	--	--	--	--	.53	.278
13...	*2159*	*BLANK*	--	--	--	--	--	--	--	--	--	--
13...	2200	ENVIRONMENTAL	69	181	5.5	--	7.8	755	14.0	119	.42	.170
15...	1415	ENVIRONMENTAL	48	194	7.0	7.5	--	754	--	--	.37	.128
21...	0314	ENVIRONMENTAL	46	--	--	--	--	--	--	--	.39	--
21...	1114	ENVIRONMENTAL	314	122	6.2	--	--	--	--	--	2.8	--
21...	*1115*	*REPLICATE*	--	--	--	--	--	--	--	--	*3.0*	--
21...	1914	ENVIRONMENTAL	1850	87	6.2	--	--	--	--	--	1.6	--
22...	0314	ENVIRONMENTAL	2010	--	--	--	--	--	--	--	.92	.231
22...	1517	ENVIRONMENTAL	3420	--	--	--	--	--	--	--	.84	--
23...	0315	ENVIRONMENTAL	2390	--	--	--	--	--	--	--	.68	.140
23...	1230	ENVIRONMENTAL	1510	--	--	--	--	--	--	--	.66	.145
23...	1400	ENVIRONMENTAL	1330	--	--	--	--	--	--	--	.66	.171
24...	0800	ENVIRONMENTAL	155	--	--	--	--	--	--	--	.71	.240
25...	0200	ENVIRONMENTAL	109	--	--	--	--	--	--	--	.64	.282
25...	2000	ENVIRONMENTAL	90	--	--	--	--	--	--	--	.62	.295
APR												
05...	1430	ENVIRONMENTAL	55	109	6.5	18.0	13.2	774	10.3	97	.48	.162
19...	1515	ENVIRONMENTAL	53	116	7.1	18.0	13.1	770	10.4	98	.50	.111
MAY												
02...	1400	ENVIRONMENTAL	15	130	6.9	28.0	19.4	767	8.3	90	.63	.164
19...	0030	ENVIRONMENTAL	5.0	--	--	--	--	--	--	--	.81	.265
19...	0830	ENVIRONMENTAL	28	--	--	--	--	--	--	--	1.1	.400
19...	1630	ENVIRONMENTAL	45	--	--	--	--	--	--	--	1.0	.271
20...	0030	ENVIRONMENTAL	53	--	--	--	--	--	--	--	.79	.168
20...	*0031*	*REPLICATE*	--	--	--	--	--	--	--	--	*.78*	*.177*
21...	0030	ENVIRONMENTAL	34	--	--	--	--	--	--	--	.76	.171
JUN												
19...	1600	ENVIRONMENTAL	18	117	6.8	31.0	23.4	--	6.5	--	.74	.173
19...	*1601*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
AUG												
14...	1530	ENVIRONMENTAL	39	127	6.5	29.0	24.1	755	7.2	87	.60	.101
SEP												
05...	1415	ENVIRONMENTAL	.46	110	6.5	26.0	23.6	761	6.1	72	--	--

01658000 MATTAWOMAN CREEK NEAR POMONKEY, MD--Continued

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

DATE	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)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN DIS-SOLVED (MG/L AS N) (00602)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	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)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
OCT													
24...	<.006	<.047	<.041	.37	.27	--	--	--	.054	.019	E.013	8	.10
NOV													
15...	<.006	<.047	<.041	.36	.28	--	--	--	.047	.013	<.018	10	.32
DEC													
11...	<.006	.053	<.041	.25	.19	.24	--	--	.036	.009	<.018	7	.18
11...	*<.006*	*.056*	*<.041*	*.18*	*.21*	*.27*	--	--	*.043*	*.009*	*<.018*	*9*	--
JAN													
18...	*<.001*	*<.005*	*<.002*	*<.08*	*<.10*	--	--	--	*<.004*	*<.006*	*<.007*	--	--
18...	.001	.191	.020	.16	.20	.39	.14	.18	.024	.008	<.007	5	.30
20...	.003	.405	.052	.57	.37	.78	.52	.32	.095	.023	.011	67	173
20...	*.003*	*.407*	*.053*	*.62*	*.38*	*.79*	*.57*	*.33*	*.095*	*.023*	*.012*	*89*	--
22...	.001	.302	.034	.33	.27	.57	.30	.24	.029	.010	<.007	15	3.6
30...	.002	.413	.022	.28	.17	.58	.26	.15	.025	E.005	<.007	11	1.6
31...	.002	.357	.021	.26	.15	.51	.24	.13	.023	E.005	<.007	7	1.5
31...	.002	.316	.019	.28	.18	.49	.26	.16	.024	E.005	<.007	9	2.0
31...	.001	.343	.010	.33	.18	.52	.32	.17	.025	E.005	<.007	6	1.3
31...	.001	.313	.016	.27	.14	.45	.25	.12	.023	E.005	<.007	5	1.00
FEB													
01...	.001	.315	.013	.26	.17	.48	.25	.15	.020	E.003	<.007	7	1.3
05...	.001	.300	.014	.25	.14	.44	.23	.13	.020	E.004	<.007	10	1.1
05...	.002	.344	.017	.96	.19	.53	.94	.17	.057	.006	E.004	50	17
06...	.001	.282	.013	.40	.21	.49	.38	.19	.055	.009	E.004	37	19
06...	.001	.261	.010	.35	.21	.47	.34	.20	.037	.007	<.007	22	8.6
07...	.003	.255	.010	.23	.17	.43	.22	.16	.027	E.005	<.007	11	2.7
08...	.001	.258	.005	.25	.19	.45	.24	.19	.023	E.004	<.007	11	2.1
MAR													
12...	.002	.214	.009	.21	.13	.34	.20	.12	.021	E.004	<.007	10	.86
13...	.003	.281	.009	.25	.13	.42	.24	.12	.027	.006	<.007	13	1.9
13...	*<.001*	*<.005*	*.005*	*<.08*	*<.10*	--	--	--	*<.004*	*<.006*	*<.007*	*<1*	--
13...	.002	.172	.005	.25	.17	.35	.24	.17	.031	E.005	<.007	16	3.0
15...	.001	.129	.003	.24	.17	.30	.24	.17	.023	E.005	<.007	7	.88
21...	<.001	.151	<.002	.24	.18	.33	--	--	.025	E.005	<.007	13	1.6
21...	<.001	.363	.044	2.4	.38	.74	2.3	.33	.744	.015	E.004	1130	958
21...	*<.001*	*.358*	*.045*	*2.6*	*.37*	*.73*	*2.6*	*.33*	*.768*	*.015*	*E.004*	*1110*	--
21...	<.001	.273	.136	1.4	.57	.84	1.2	.43	.308	.029	.015	565	2820
22...	.001	.232	.039	.69	.44	.67	.65	.40	.137	.021	.010	240	1300
22...	<.001	.167	.016	.67	.39	.56	.65	.38	.106	.021	.009	118	1090
23...	.001	.141	.011	.54	.36	.50	.53	.35	.074	.021	.007	62	400
23...	.002	.147	.010	.52	.32	.46	.51	.31	.077	.014	E.005	124	506
23...	.002	.173	.011	.48	.32	.50	.47	.31	.058	.011	<.007	35	126
24...	.001	.241	.021	.47	.26	.50	.45	.24	.062	.009	E.004	56	23
25...	.002	.284	.016	.36	.21	.49	.34	.19	.051	.009	<.007	37	11
25...	.001	.296	.014	.33	.22	.51	.32	.20	.045	.009	E.005	28	6.8
APR													
05...	.001	.163	.009	.32	.26	.42	.31	.25	.029	.011	E.006	7	1.0
19...	.003	.114	.007	.39	.28	.40	.38	.28	.041	.013	E.006	7	1.0
MAY													
02...	.004	.168	.039	.46	.36	.53	.42	.33	.049	.017	.009	7	.29
19...	.012	.277	.115	.53	.43	.71	.42	.32	.072	.021	.011	19	.26
19...	.011	.411	.032	.71	.36	.77	.68	.33	.121	.018	.007	64	4.8
19...	.008	.279	.062	.73	.41	.69	.67	.34	.106	.025	.012	45	5.5
20...	.007	.175	.055	.61	.36	.54	.56	.31	.107	.023	.010	40	5.7
20...	*.007*	*.184*	*.055*	*.60*	*.40*	*.59*	*.54*	*.35*	*.106*	*.021*	*.010*	*39*	--
21...	.006	.177	.093	.59	.46	.64	.49	.37	.087	.023	.011	26	2.4
JUN													
19...	.004	.177	.041	.56	.46	.64	.52	.42	.082	.031	.020	7	.33
19...	--	--	--	--	--	--	--	--	--	--	--	*8*	--
AUG													
14...	.003	.104	.023	.49	.32	.42	.47	.30	.065	.019	.014	10	1.0
SEP													
05...	E.002	E.060	E.031	.49	E.37	--	--	--	.061	E.020	E.012	5	.01

E Estimated value.
< Actual value is known to be less than the value shown.

01658000 MATTAWOMAN CREEK NEAR POMONKEY, MD--Continued

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

DATE	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT	
24...	--
NOV	
15...	--
DEC	
11...	88
11...	--
JAN	
18...	--
18...	86
20...	77
20...	*72*
22...	--
30...	67
31...	93
31...	85
31...	91
31...	90
FEB	
01...	76
05...	68
05...	80
06...	76
06...	66
07...	71
08...	61
MAR	
12...	74
13...	72
13...	--
13...	81
15...	--
21...	75
21...	70
21...	*72*
21...	51
22...	--
22...	40
23...	38
23...	33
23...	59
24...	66
25...	76
25...	76
APR	
05...	--
19...	--
MAY	
02...	--
19...	54
19...	34
19...	42
20...	81
20...	*52*
21...	58
JUN	
19...	--
19...	--
AUG	
14...	--
SEP	
05...	--

THIS IS A BLANK PAGE

01660920 ZEKIAH SWAMP RUN NEAR NEWTOWN, MD

LOCATION.--Lat 38°29'26.1", long 76°55'37.5", Charles County, Hydrologic Unit 02070011, on left-center downstream side of bridge on State Highway 6, 1.0 mi southeast of Newtown, and 1.7 mi downstream from Kerrick Swamp.

DRAINAGE AREA.--79.9 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1983 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 34.88 ft above sea level.

REMARKS.--Water-discharge records good except those for estimated daily discharges (backwater, missing record), which are poor. Low flow affected by ground-water diversions from municipal well fields at Waldorf and St. Charles, and occasional farm irrigation upstream from station during summer months. U.S. Geological Survey gage-height telemeter at station.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 700 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 18	UNKNOWN	*1,340	*4.30	Mar 30	UNKNOWN	744	3.77
Mar 22	UNKNOWN	1,080	4.10				

Minimum discharge, 0.45 ft^3/s, Sept. 20.

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	62	e30	88	56	e100	81	e189	45	60	6.0	51	162
2	54	e32	78	57	e86	75	e160	47	111	37	30	53
3	49	e32	72	54	e72	73	e139	44	95	25	22	19
4	44	e34	67	52	e66	72	e121	40	61	10	17	9.4
5	40	e34	65	53	e119	95	108	35	88	11	14	5.5
6	41	e31	67	55	e250	106	103	31	92	10	30	4.2
7	40	e30	66	61	200	e85	103	28	66	4.7	24	2.8
8	35	e30	63	73	101	e74	100	30	59	21	13	2.3
9	31	e38	62	93	93	69	98	32	45	42	7.5	2.8
10	31	e70	58	90	90	67	104	33	35	18	7.2	7.0
11	31	e54	57	76	83	63	132	30	29	17	59	10
12	30	e35	62	71	74	60	177	28	24	22	128	7.8
13	29	e32	59	65	78	86	133	30	21	5.8	359	5.3
14	29	e38	111	62	85	100	107	29	18	2.7	154	4.6
15	31	e50	202	75	89	78	90	23	21	2.0	83	4.7
16	28	e45	181	76	93	100	92	21	90	1.8	35	3.0
17	27	e42	e910	73	142	103	104	18	319	2.3	16	2.1
18	e29	e40	e775	64	166	85	113	22	173	5.8	8.6	1.3
19	e31	e39	e375	114	e120	71	93	114	64	9.1	4.4	.63
20	e30	e38	184	439	91	63	81	123	41	7.7	3.3	.93
21	e29	e37	137	541	88	e710	74	82	30	5.4	2.3	7.6
22	e30	e36	113	313	81	e790	72	103	25	4.6	1.2	13
23	e28	e35	94	185	82	e182	67	142	29	3.3	.83	4.0
24	e28	e35	76	159	98	e138	61	87	33	3.5	.71	4.3
25	e30	66	77	124	100	e118	72	55	23	2.6	1.2	21
26	e31	239	68	112	109	e110	64	307	12	57	1.2	20
27	e32	295	57	101	98	e100	54	589	7.8	151	1.3	11
28	e35	189	62	93	85	95	49	323	5.7	125	2.0	4.3
29	e30	122	63	87	---	103	44	118	4.2	118	3.7	2.5
30	e30	100	61	e150	---	e840	42	84	3.4	176	13	2.2
31	e30	---	59	e188	---	e220	---	63	---	99	140	---
TOTAL	1055	1928	4469	3812	2939	5012	2946	2756	1685.1	1006.3	1233.44	398.26
MEAN	34.0	64.3	144	123	105	162	98.2	88.9	56.2	32.5	39.8	13.3
MAX	62	295	910	541	250	840	189	589	319	176	359	162
MIN	27	30	57	52	66	60	42	18	3.4	1.8	.71	.63
CFSM	.43	.80	1.80	1.54	1.31	2.02	1.23	1.11	.70	.41	.50	.17
IN.	.49	.90	2.08	1.77	1.37	2.33	1.37	1.28	.78	.47	.57	.19

e Estimated

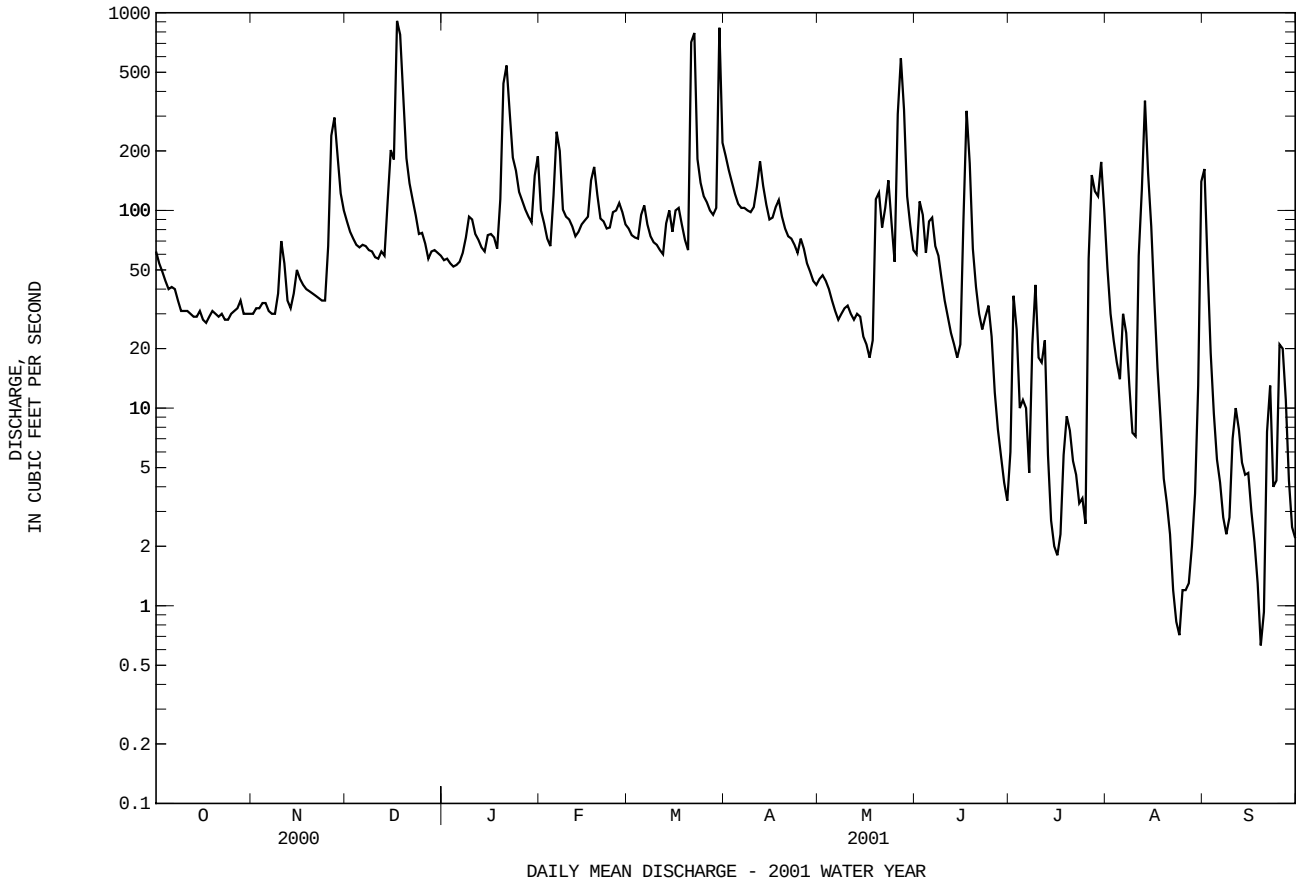
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 2001, BY WATER YEAR (WY)

MEAN	44.6	72.2	103	131	146	191	131	100	59.1	34.4	33.5	41.2
MAX	163	139	236	268	375	491	277	334	311	129	115	175
(WY)	1990	1986	1997	1996	1998	1994	1993	1989	1989	2000	2000	1999
MIN	.000	.000	14.0	49.1	50.2	57.0	30.5	19.7	1.67	1.66	.39	.000
(WY)	1999	1999	1999	1985	1999	1985	1985	1999	1999	1999	1995	1995

01660920 ZEKIAH SWAMP RUN NEAR NEWTOWN, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1983 - 2001	
ANNUAL TOTAL	41702		29240.10			
ANNUAL MEAN	114		80.1		90.8	
HIGHEST ANNUAL MEAN					137	1990
LOWEST ANNUAL MEAN					43.5	1995
HIGHEST DAILY MEAN	910	Dec 17	910	Dec 17	2570	Mar 29 1994
LOWEST DAILY MEAN	15	Jul 8	.63	Sep 19	.00	(a)
ANNUAL SEVEN-DAY MINIMUM	22	Jul 3	1.2	Aug 22	.00	Jul 20 1987
MAXIMUM PEAK FLOW			1340	Dec 18	(b)4080	Sep 17 1999
MAXIMUM PEAK STAGE			4.30	Dec 18	5.51	Sep 17 1999
INSTANTANEOUS LOW FLOW			.45	Sep 20	.00	(c)
ANNUAL RUNOFF (CFSM)	1.43		1.00		1.14	
ANNUAL RUNOFF (INCHES)	19.42		13.61		15.45	
10 PERCENT EXCEEDS	240		150		201	
50 PERCENT EXCEEDS	72		58		52	
90 PERCENT EXCEEDS	31		4.7		1.5	

a Many days.
b From rating curve extended above 1,500 ft^3/s.
c No flow at times in 1983, 1985-89, 1991, 1993, 1995-1999.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01660920 ZEKIAH SWAMP RUN NEAR NEWTOWN, MD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 2000 to current.

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

DATE	TIME	SAMPLE TYPE	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)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)
OCT												
25...	1100	ENVIRONMENTAL	49	90	6.2	22.0	13.1	764	7.3	69	--	--
NOV												
13...	*1459*	*BLANK*	--	--	--	--	--	--	--	--	--	--
13...	1500	ENVIRONMENTAL	100	94	5.8	14.0	9.9	--	9.2	--	--	--
DEC												
07...	1330	ENVIRONMENTAL	65	91	6.1	7.0	1.9	759	12.9	93	.36	--
07...	*1331*	*REPLICATE*	--	--	--	--	--	--	--	--	*.35*	--
JAN												
20...	1530	ENVIRONMENTAL	513	89	6.1	--	2.3	755	8.9	65	.85	.311
20...	*1531*	*REPLICATE*	--	--	--	--	--	--	--	--	*.85*	*.307*
22...	1430	ENVIRONMENTAL	280	--	--	3.5	3.5	--	--	--	.74	.330
FEB												
20...	1130	ENVIRONMENTAL	91	98	6.3	--	4.4	763	11.6	89	.52	.232
MAR												
15...	1430	ENVIRONMENTAL	72	145	6.5	8.0	8.4	758	11.6	99	.38	.083
16...	1545	ENVIRONMENTAL	107	125	6.3	12.0	9.0	758	11.3	98	.42	.117
16...	*1546*	*REPLICATE*	--	--	--	--	--	--	--	--	*.40*	*.116*
21...	1115	ENVIRONMENTAL	204	98	5.9	10.5	7.6	756	14.2	120	.53	.105
22...	1545	ENVIRONMENTAL	954	97	5.6	14.5	9.4	752	6.6	59	.84	.235
22...	*1546*	*REPLICATE*	--	--	--	--	--	--	--	--	*.88*	*.189*
APR												
05...	1130	ENVIRONMENTAL	109	88	7.3	17.0	11.1	774	11.5	103	.49	.129
19...	1230	ENVIRONMENTAL	91	84	7.3	17.5	12.1	770	11.2	103	.50	.068
19...	*1231*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
MAY												
02...	1215	ENVIRONMENTAL	48	97	6.8	28.0	18.8	767	8.0	85	.65	.140
JUN												
19...	1215	ENVIRONMENTAL	62	75	6.5	27.0	21.9	765	6.8	77	.73	.153
JUL												
26...	1100	ENVIRONMENTAL	2.2	124	6.6	31.0	24.0	754	2.9	35	.80	.170
AUG												
15...	1030	ENVIRONMENTAL	93	94	6.2	26.0	21.9	755	6.8	79	.58	.093
SEP												
05...	1115	ENVIRONMENTAL	5.7	89	6.5	27.0	21.0	761	5.8	65	--	--

01660920 ZEKIAH SWAMP RUN NEAR NEWTOWN, MD--Continued

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

DATE	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)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN DIS-SOLVED (MG/L AS N) (00602)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	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)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
OCT													
25...	<.006	<.047	<.041	.34	.31	--	--	--	.067	.021	E.010	2	.26
NOV													
13...	*<.006*	*<.047*	*<.041*	*<.08*	*<.10*	--	--	--	*<.004*	*<.006*	*<.018*	--	--
13...	E.003	<.047	<.041	.39	.36	--	--	--	.087	.018	.019	7	1.8
DEC													
07...	<.006	.110	<.041	.25	.22	.33	--	--	.042	.016	E.011	3	.53
07...	*<.006*	*.111*	*<.041*	*.24*	*.21*	*.33*	--	--	*.043*	*.016*	*E.010*	*6*	--
JAN													
20...	.003	.314	.044	.53	.31	.62	.49	.27	.067	.020	.008	25	35
20...	*.003*	*.310*	*.042*	*.54*	*.30*	*.61*	*.50*	*.26*	*.067*	*.019*	*.009*	*24*	--
22...	.002	.332	.003	.40	.29	.62	.40	.29	.042	.014	<.007	12	9.1
FEB													
20...	.002	.234	.011	.28	.15	.39	.27	.14	.034	.011	E.004	9	2.2
MAR													
15...	.002	.085	.065	.30	.20	.28	.23	.13	.037	.010	<.007	9	1.7
16...	.001	.118	.008	.30	.23	.35	.29	.22	.038	.010	E.006	8	2.3
16...	*.001*	*.117*	*.009*	*.28*	*.23*	*.34*	*.27*	*.22*	*.038*	*.009*	*E.005*	*7*	--
21...	.001	.106	.021	.42	.24	.34	.40	.21	.087	.013	.008	36	20
22...	.008	.243	.016	.59	.33	.57	.58	.31	.095	.016	E.006	37	95
22...	*.008*	*.197*	*.020*	*.68*	*.33*	*.52*	*.66*	*.31*	*.095*	*.017*	*E.004*	*37*	--
APR													
05...	.002	.131	.009	.36	.26	.39	.35	.25	.037	.015	.009	7	2.2
19...	.003	.071	.006	.43	.33	.40	.43	.32	.046	.019	.010	7	1.6
19...	--	--	--	--	--	--	--	--	--	--	--	*8*	--
MAY													
02...	.005	.145	.051	.50	.39	.54	.45	.34	.059	.017	.010	7	.91
JUN													
19...	.003	.156	.044	.57	.47	.63	.53	.43	.114	.038	.026	10	1.7
JUL													
26...	.005	.175	.067	.62	.46	.64	.56	.39	.089	.028	.019	9	.05
AUG													
15...	.002	.095	.019	.48	.44	.53	.46	.42	.070	.022	.016	7	1.8
SEP													
05...	E.002	E.089	E.023	.43	E.36	--	--	--	.068	E.022	E.014	6	.09

DATE	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT	
25...	100
NOV	
13...	--
13...	--
DEC	
07...	100
07...	*96*
JAN	
20...	92
20...	*88*
22...	81
FEB	
20...	94
MAR	
15...	85
16...	90
16...	*89*
21...	93
22...	--
22...	*89*
APR	
05...	--
19...	--
19...	--
MAY	
02...	--
JUN	
19...	--
JUL	
26...	--
AUG	
15...	--
SEP	
05...	--

E Estimated value.
< Actual value is known to be less than the value shown.

01661050 ST. CLEMENT CREEK NEAR CLEMENTS, MD

LOCATION.--Lat 38°19'59.9", long 76°43'30.0", St. Marys County, Hydrologic Unit 02070011, on left bank 60 ft downstream from bridge on State Highway 242, 0.5 mi north of Clements, 2.3 mi upstream from mouth, and 5.7 mi northwest of Leonardtown.

DRAINAGE AREA.--18.5 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1968 to current year.

REVISED RECORDS.--WDR MD-DE-79-1: 1974(P).

GAGE.--Water-stage recorder, crest-stage gage, and concrete control. Elevation of gage is 8 ft above sea level, from topographic map.

REMARKS.--No estimated discharges. Water-discharge records good. Occasional regulation from unknown source upstream from station. U.S. Geological Survey gage-height telemeter at station.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 220 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 17	1630	*627	*5.08	Jun 2	0200	252	3.36
Mar 21	2300	300	3.76	Jul 26	2200	613	5.06
May 26	1430	311	3.85				

Minimum discharge, 1.2 ft^3/s, July 26.

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	12	7.7	10	11	16	17	34	13	51	5.6	11	9.0
2	12	8.1	9.9	12	15	16	31	9.9	149	13	11	7.1
3	11	8.2	9.1	10	14	15	25	9.4	29	7.1	8.7	5.1
4	9.9	8.6	8.5	10	13	17	25	8.7	19	6.5	8.3	5.0
5	10	8.6	8.7	11	41	30	22	12	45	6.8	8.4	4.0
6	11	8.1	9.0	12	35	21	21	8.4	25	4.8	8.0	3.0
7	9.6	8.1	9.0	12	20	17	21	7.7	21	2.9	7.6	2.5
8	8.3	8.3	9.0	15	17	15	21	7.8	20	11	6.8	2.6
9	7.7	9.1	8.4	18	16	15	25	7.9	16	13	5.6	2.2
10	7.9	12	8.1	13	16	14	21	7.7	13	7.6	5.7	12
11	8.0	10	7.9	12	14	14	42	6.6	12	16	8.2	38
12	7.7	8.7	8.8	12	13	14	41	5.9	11	6.7	45	7.3
13	7.7	8.1	7.3	11	19	26	29	6.1	10	3.9	105	6.5
14	8.0	12	20	11	19	19	24	6.0	9.2	2.3	27	5.7
15	7.7	15	19	14	22	18	18	5.4	9.9	2.1	16	5.0
16	7.4	10	31	14	22	25	19	5.3	21	2.3	12	4.0
17	7.1	9.0	327	12	42	19	21	6.9	60	2.3	11	3.3
18	7.4	8.8	124	12	24	17	18	8.3	17	3.9	9.6	2.8
19	7.7	8.3	34	38	18	15	16	22	12	7.6	8.6	2.5
20	7.5	7.9	25	135	18	14	15	18	9.5	5.1	8.9	7.3
21	7.4	7.7	19	69	17	153	15	29	8.1	3.1	7.7	15
22	7.8	7.7	20	31	15	138	15	34	7.5	2.0	5.9	7.3
23	7.4	7.5	15	23	19	42	15	57	74	1.6	5.7	6.1
24	7.3	7.2	15	21	21	33	15	15	19	2.2	28	5.1
25	7.7	8.3	13	19	25	28	14	28	12	1.8	12	12
26	8.1	75	12	16	28	26	13	230	9.6	139	8.2	7.8
27	8.5	33	13	18	20	22	11	107	8.3	198	7.3	5.3
28	8.9	15	14	15	18	19	11	29	6.9	14	6.9	3.9
29	8.2	12	13	15	---	31	10	21	5.5	96	5.4	3.3
30	7.7	11	13	19	---	150	10	17	4.1	74	5.3	3.1
31	7.7	---	12	21	---	47	---	15	---	20	12	---
TOTAL	262.3	369.0	852.7	662	577	1047	618	765.0	714.6	682.2	436.8	203.8
MEAN	8.46	12.3	27.5	21.4	20.6	33.8	20.6	24.7	23.8	22.0	14.1	6.79
MAX	12	75	327	135	42	153	42	230	149	198	105	38
MIN	7.1	7.2	7.3	10	13	14	10	5.3	4.1	1.6	5.3	2.2
CFSM	.46	.66	1.49	1.15	1.11	1.83	1.11	1.33	1.29	1.19	.76	.37
IN.	.53	.74	1.71	1.33	1.16	2.11	1.24	1.54	1.44	1.37	.88	.41

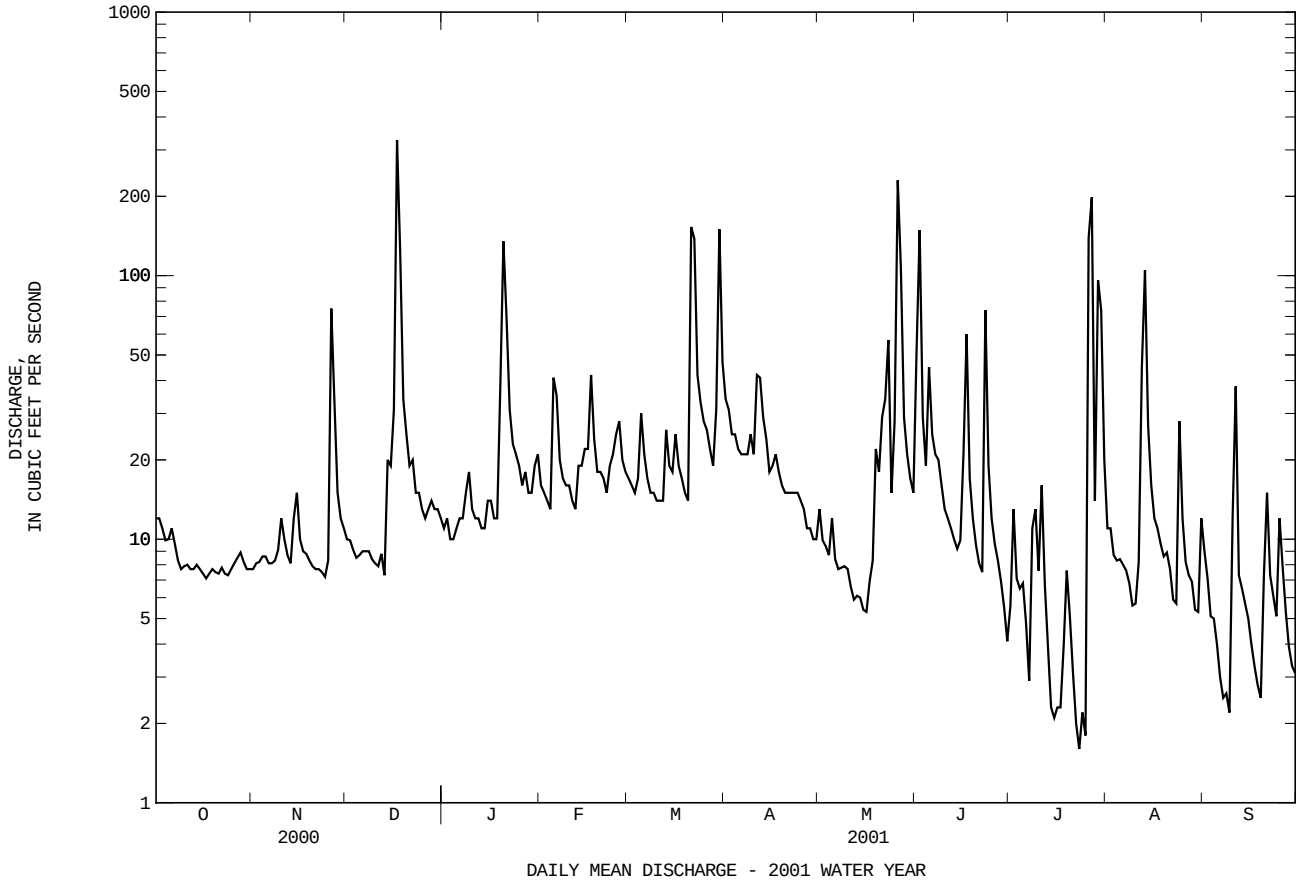
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1969 - 2001, BY WATER YEAR (WY)

MEAN	10.1	14.8	20.7	26.7	29.9	34.6	26.5	21.1	15.8	12.3	10.9	12.7
MAX	46.8	45.3	48.9	77.4	89.7	115	54.7	57.9	116	56.4	45.0	75.2
(WY)	1980	1980	1997	1978	1998	1994	1983	1978	1972	1975	1985	1979
MIN	.73	3.10	5.01	5.30	10.1	10.1	9.05	3.59	1.04	.46	.036	.000
(WY)	1989	1999	1989	1981	1999	1981	1985	1999	1999	1999	1988	1988

01661050 ST. CLEMENT CREEK NEAR CLEMENTS, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1969 - 2001	
ANNUAL TOTAL	6688.5		7190.4			
ANNUAL MEAN	18.3		19.7		19.6	
HIGHEST ANNUAL MEAN					34.5	1972
LOWEST ANNUAL MEAN					9.19	1981
HIGHEST DAILY MEAN	327	Dec 17	327	Dec 17	1580	Jun 22 1972
LOWEST DAILY MEAN	2.2	Jul 3	1.6	Jul 23	.00	(a)
ANNUAL SEVEN-DAY MINIMUM	4.2	May 14	3.3	Jul 19	.00	Aug 31 1980
MAXIMUM PEAK FLOW			627	Dec 17	(b)4500	Sep 6 1979
MAXIMUM PEAK STAGE			5.08	Dec 17	(c)6.96	Sep 6 1979
INSTANTANEOUS LOW FLOW			1.2	Jul 26	.00	(d)
ANNUAL RUNOFF (CFSM)	.99		1.06		1.06	
ANNUAL RUNOFF (INCHES)	13.45		14.46		14.41	
10 PERCENT EXCEEDS	30		32		37	
50 PERCENT EXCEEDS	11		12		11	
90 PERCENT EXCEEDS	5.9		5.5		1.3	

a Many days.
b From rating curve extended above 480 ft^3/s on basis of contracted-opening and flow-over-road measurement of peak flow.
c Backwater from tide; maximum gage height unaffected by backwater, 6.55 ft, June 22, 1972.
d No flow at times in 1977, 1980, 1981, 1983, 1985-89, 1991, 1993, 1995, 1999.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01661050 ST. CLEMENT CREEK NEAR CLEMENTS, MD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 2000 to September 2001.

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

DATE	TIME	SAMPLE TYPE	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)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)
OCT												
23...	*1159*	*BLANK*	--	--	--	--	--	--	--	--	--	--
23...	1200	ENVIRONMENTAL	7.4	127	7.4	17.0	12.4	773	8.8	82	.36	--
NOV												
14...	1500	ENVIRONMENTAL	15	119	6.8	10.3	10.6	--	9.5	--	.38	--
DEC												
13...	1145	ENVIRONMENTAL	7.0	118	6.9	1.5	2.7	778	13.2	95	.57	--
13...	*1146*	*REPLICATE*	--	--	--	--	--	--	--	--	*.56*	--
JAN												
08...	*1530*	*BLANK*	--	--	--	--	--	--	--	--	--	--
16...	*1214*	*BLANK*	--	--	--	--	--	--	--	--	--	--
16...	1215	ENVIRONMENTAL	14	104	6.6	8.5	1.8	763	10.6	76	.74	.495
30...	1345	ENVIRONMENTAL	22	103	6.3	17.0	5.1	749	7.2	57	.87	.549
30...	*1346*	*REPLICATE*	--	--	--	--	--	--	--	--	*.84*	*.543*
FEB												
07...	1445	ENVIRONMENTAL	19	102	7.0	15.0	4.0	766	12.2	92	.78	.445
MAR												
15...	1630	ENVIRONMENTAL	15	107	7.0	--	8.0	758	11.4	97	.60	.309
15...	1805	ENVIRONMENTAL	19	--	--	--	--	--	--	--	.59	.305
16...	0005	ENVIRONMENTAL	27	--	--	--	--	--	--	--	--	--
16...	*0604*	*BLANK*	--	--	--	--	--	--	--	--	--	--
16...	0605	ENVIRONMENTAL	26	--	--	--	--	--	--	--	.91	.372
16...	1205	ENVIRONMENTAL	26	--	--	--	--	--	--	--	.66	.341
21...	0315	ENVIRONMENTAL	17	106	6.2	--	--	--	--	--	.72	.413
21...	0915	ENVIRONMENTAL	75	95	6.4	--	--	--	--	--	1.4	.398
21...	1515	ENVIRONMENTAL	235	76	6.0	--	--	--	--	--	2.6	.751
21...	2115	ENVIRONMENTAL	296	66	6.0	--	--	--	--	--	1.5	.461
22...	0915	ENVIRONMENTAL	119	--	--	--	--	--	--	--	1.2	.383
22...	1315	ENVIRONMENTAL	86	--	--	--	--	--	--	--	1.2	.390
APR												
05...	0915	ENVIRONMENTAL	21	95	6.8	14.0	8.1	774	10.3	85	.74	.384
10...	2215	ENVIRONMENTAL	20	99	7.0	--	--	765	--	--	.59	.206
11...	0415	ENVIRONMENTAL	26	103	7.1	--	--	765	--	--	--	--
11...	1015	ENVIRONMENTAL	40	103	7.2	--	--	765	--	--	.89	.269
11...	1615	ENVIRONMENTAL	58	98	6.1	--	--	765	--	--	1.1	.350
12...	*0414*	*BLANK*	--	--	--	--	--	--	--	--	--	--
12...	0415	ENVIRONMENTAL	50	96	7.1	--	--	765	--	--	.78	.256
19...	1030	ENVIRONMENTAL	16	95	7.3	15.0	9.2	770	10.5	91	.56	.222
MAY												
02...	1030	ENVIRONMENTAL	9.9	115	7.2	26.0	17.0	767	8.1	83	.73	.288
25...	2350	ENVIRONMENTAL	72	50	--	--	--	--	--	--	1.3	.491
26...	0550	ENVIRONMENTAL	179	39	--	--	--	--	--	--	1.9	.343
26...	1150	ENVIRONMENTAL	293	37	--	--	--	--	--	--	1.5	.511
26...	*1151*	*REPLICATE*	--	--	--	--	--	--	--	--	*1.6*	*.526*
26...	2353	ENVIRONMENTAL	264	44	--	--	--	--	--	--	1.3	.518
27...	1153	ENVIRONMENTAL	82	42	--	--	--	--	--	--	1.0	.360
JUN												
19...	1030	ENVIRONMENTAL	12	89	7.0	26.0	20.9	765	7.4	83	.84	.296
19...	*1031*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
JUL												
26...	0930	ENVIRONMENTAL	1.6	128	7.1	31.0	24.4	754	4.8	58	.57	.217
26...	2115	ENVIRONMENTAL	560	56	6.3	--	--	--	--	--	1.8	.541
27...	0315	ENVIRONMENTAL	395	58	6.2	--	--	--	--	--	.99	.333
27...	0915	ENVIRONMENTAL	236	64	6.3	--	--	--	--	--	.80	.172
AUG												
14...	0845	ENVIRONMENTAL	28	90	6.8	26.0	22.5	761	7.3	85	.74	.201
SEP												
05...	0930	ENVIRONMENTAL	4.3	114	7.0	25.0	21.3	761	6.9	78	--	--

01661050 ST. CLEMENT CREEK NEAR CLEMENTS, MD--Continued

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

DATE	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)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN DIS-SOLVED (MG/L AS N) (00602)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	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)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
OCT													
23...	*<.006*	*<.047*	*<.041*	*<.08*	*<.10*	--	--	--	*<.004*	*<.006*	*<.018*	*1*	--
23...	<.006	.062	<.041	.30	.44	.50	--	--	.045	.014	E.011	4	.08
NOV													
14...	<.006	.057	<.041	.33	.31	.36	--	--	.046	.018	E.013	10	.39
DEC													
13...	<.006	.330	E.034	.24	.14	.47	--	--	.035	.011	E.010	7	.13
13...	*E.003*	*.324*	*<.041*	*.23*	*.16*	*.48*	--	--	*.036*	*.012*	*E.012*	*6*	--
JAN													
08...	*.002*	*<.005*	*<.002*	*<.08*	*<.10*	--	--	--	*<.004*	*<.006*	*<.007*	--	--
16...	*<.001*	*<.005*	*<.002*	*<.08*	*<.10*	--	--	--	*<.004*	*E.005*	*<.007*	--	--
16...	.005	.500	.041	.24	.17	.67	.20	.12	.031	.011	.008	9	.34
30...	.005	.554	.038	.32	.17	.72	.28	.13	.042	.010	.007	12	.71
30...	*.005*	*.548*	*.038*	*.30*	*.20*	*.75*	*.26*	*.16*	*.042*	*.010*	*.007*	*12*	--
FEB													
07...	.004	.449	.029	.33	.19	.64	.30	.16	.042	.012	.007	9	.46
MAR													
15...	.005	.314	.048	.29	.22	.53	.24	.17	.034	.010	E.006	6	.24
15...	.005	.310	.036	.28	.22	.53	.25	.18	.037	.009	E.006	5	.26
16...	--	--	--	.34	--	--	--	--	.049	--	--	18	1.3
16...	*<.001*	*<.005*	*<.002*	*.03*	*<.10*	--	--	--	*<.004*	*<.006*	*<.007*	--	--
16...	.006	.378	.012	.53	.23	.61	.52	.22	.047	.011	E.004	15	1.1
16...	.005	.346	.033	.31	.23	.58	.28	.20	.043	.008	E.005	8	.56
21...	.007	.420	.034	.30	.23	.65	.26	.20	.039	.011	.007	9	.41
21...	.006	.404	.070	1.0	.42	.82	.96	.35	.255	.018	.011	239	48
21...	.018	.769	.176	1.8	.61	1.4	1.6	.44	.483	.035	.018	669	424
21...	.010	.471	.071	1.1	.42	.89	.98	.35	.238	.030	.013	290	232
22...	.006	.389	.058	.81	.35	.74	.75	.29	.158	.019	.008	189	61
22...	.007	.397	.068	.78	.36	.76	.71	.30	.127	.018	.007	90	21
APR													
05...	.004	.388	.018	.35	.21	.59	.34	.19	.036	.014	.008	9	.50
10...	.007	.213	.003	.38	.30	.52	.38	.30	.045	.014	E.004	20	1.1
11...	<.001	<.005	<.002	.39	.31	--	--	--	.053	.017	<.007	21	1.5
11...	.008	.277	.011	.62	.39	.66	.60	.38	.085	.018	.007	52	5.6
11...	.007	.357	.032	.71	.40	.75	.68	.36	.110	.021	.008	85	13
12...	*<.001*	*<.005*	*.002*	*<.08*	*<.10*	--	--	--	*<.004*	*<.006*	*<.007*	--	--
12...	.006	.262	.033	.52	.36	.62	.49	.33	.079	.020	.010	45	6.1
19...	.004	.226	.009	.33	.25	.48	.32	.24	.036	.015	.009	6	.28
MAY													
02...	.008	.296	.059	.43	.35	.65	.38	.29	.042	.012	.008	8	.21
25...	.012	.503	.061	.75	.54	1.0	.69	.48	.193	.030	.010	117	23
26...	.007	.350	.060	1.5	.52	.87	1.4	.46	.475	.034	.014	593	287
26...	.009	.520	.039	1.0	.57	1.1	.97	.54	.212	.041	.020	278	220
26...	*.009*	*.535*	*.041*	*1.1*	*.54*	*1.1*	*1.0*	*.50*	*.246*	*.044*	*.021*	*275*	--
26...	.007	.525	.038	.79	.56	1.1	.75	.52	.177	.038	.017	145	103
27...	.008	.368	.052	.68	.49	.86	.62	.44	.128	.029	.012	101	22
JUN													
19...	.007	.303	.042	.53	.51	.81	.49	.47	.089	.037	.024	10	.31
19...	--	--	--	--	--	--	--	--	--	--	--	*9*	--
JUL													
26...	.002	.219	.024	.35	.28	.50	.32	.26	.056	.017	.011	4	.02
26...	.009	.550	.038	1.2	.49	1.0	1.2	.45	.576	.061	.042	444	671
27...	.008	.341	.007	.65	.46	.80	.64	.45	.227	.050	.035	114	122
27...	.003	.175	.009	.62	.41	.58	.61	.40	.150	.034	.019	137	87
AUG													
14...	.004	.205	.037	.53	.39	.59	.49	.35	.094	.026	.017	18	1.4
SEP													
05...	E.002	E.314	E.011	.30	E.26	--	--	--	.050	E.016	E.010	3	.04

E Estimated value.
< Actual value is known to be less than the value shown.

01661050 ST. CLEMENT CREEK NEAR CLEMENTS, MD--Continued

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

DATE	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT	
23...	--
23...	--
NOV	
14...	--
DEC	
13...	100
13...	*92*
JAN	
08...	--
16...	--
16...	84
30...	100
30...	*93*
FEB	
07...	91
MAR	
15...	95
15...	100
16...	99
16...	--
16...	96
16...	100
21...	89
21...	92
21...	65
21...	42
22...	50
22...	74
APR	
05...	--
10...	77
11...	86
11...	92
11...	90
12...	--
12...	92
19...	--
MAY	
02...	--
25...	93
26...	68
26...	50
26...	*51*
26...	58
27...	59
JUN	
19...	--
19...	--
JUL	
26...	--
26...	71
27...	79
27...	30
AUG	
14...	--
SEP	
05...	--

THIS IS A BLANK PAGE

01661500 ST. MARYS RIVER AT GREAT MILLS, MD

LOCATION.--Lat 38°14'30.3", long 76°30'13.2", St. Marys County, Hydrologic Unit 02070011, on left bank at downstream side of bridge on State Highway 471 in Great Mills, 0.3 mi downstream from Western Branch, and 12.0 mi upstream from mouth.

DRAINAGE AREA.--24.0 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1946 to current year.

REVISED RECORDS.--WSP 1702: 1946, 1948-49, 1955, 1957-58. WDR MD-DE-83-1: 1981-82(M).

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 10 ft above sea level, from topographic map.

REMARKS.--No estimated daily discharges. Water-discharge records good. Occasional regulation by reservoir on Western Branch of St. Marys River, 2.0 mi upstream since 1975, total capacity, 3,200 acre feet. U.S. Geological Survey gage-height telemeter at station.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 400 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 21	1330	477	4.78	Aug 13	0830	*607	*5.78
Jun 16	2330	592	5.68				

Minimum discharge, 2.7 ft^3/s, July 26.

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	13	6.4	24	18	19	21	43	12	87	6.9	13	6.8
2	12	6.5	22	18	18	20	34	11	107	29	7.9	6.1
3	11	6.5	21	17	18	19	30	10	56	14	6.4	5.4
4	11	7.1	21	17	17	22	28	9.6	35	10	5.8	5.0
5	10	7.3	21	17	45	45	26	9.1	61	7.5	5.6	4.7
6	10	6.2	21	17	34	29	26	8.3	42	5.8	5.7	4.1
7	9.4	6.7	21	17	26	25	26	7.8	38	4.8	4.6	3.9
8	7.9	6.7	21	19	22	21	26	7.8	30	8.1	4.1	3.8
9	7.3	7.5	20	20	21	20	32	7.9	24	17	3.8	3.7
10	7.2	23	20	18	20	19	28	7.1	18	9.6	3.8	3.6
11	6.9	14	20	17	19	19	77	5.4	15	21	11	3.6
12	6.6	11	20	17	18	18	51	8.0	13	9.9	67	3.3
13	6.5	9.6	19	16	22	30	43	12	12	7.9	430	3.2
14	6.7	17	27	16	22	23	34	6.3	9.9	5.5	131	3.2
15	6.5	17	24	18	25	23	29	5.6	6.4	4.4	46	3.5
16	6.6	12	30	17	25	31	28	5.2	192	3.8	28	3.3
17	6.8	11	47	16	53	25	31	5.1	291	3.5	19	3.1
18	7.2	26	35	16	30	22	28	5.5	47	4.4	15	3.1
19	7.3	54	27	41	26	20	93	31	19	6.0	13	3.0
20	6.6	22	25	152	23	19	139	17	13	5.2	12	4.8
21	6.7	21	22	71	21	251	125	42	11	4.1	9.9	11
22	6.5	21	22	36	21	135	79	33	9.4	3.6	8.4	7.2
23	6.4	21	21	28	23	50	46	44	15	3.4	9.6	5.8
24	7.6	21	20	26	25	33	31	20	11	3.5	36	6.8
25	7.8	21	20	24	28	28	25	12	9.0	3.2	16	15
26	7.4	190	19	21	29	26	20	164	7.6	8.7	12	8.5
27	7.5	48	19	21	25	25	19	94	6.8	26	10	6.6
28	7.2	30	19	19	23	25	16	33	6.3	14	9.6	5.9
29	6.7	26	19	19	---	40	14	20	5.5	86	8.6	5.0
30	6.4	25	19	21	---	244	13	36	4.8	98	7.6	4.4
31	6.3	---	18	21	---	71	---	106	---	28	7.6	---
TOTAL	243.0	701.5	704	811	698	1399	1240	795.7	1202.7	462.8	968.0	157.4
MEAN	7.84	23.4	22.7	26.2	24.9	45.1	41.3	25.7	40.1	14.9	31.2	5.25
MAX	13	190	47	152	53	251	139	164	291	98	430	15
MIN	6.3	6.2	18	16	17	18	13	5.1	4.8	3.2	3.8	3.0
CFSM	.33	.97	.95	1.09	1.04	1.88	1.72	1.07	1.67	.62	1.30	.22
IN.	.38	1.09	1.09	1.26	1.08	2.17	1.92	1.23	1.86	.72	1.50	.24

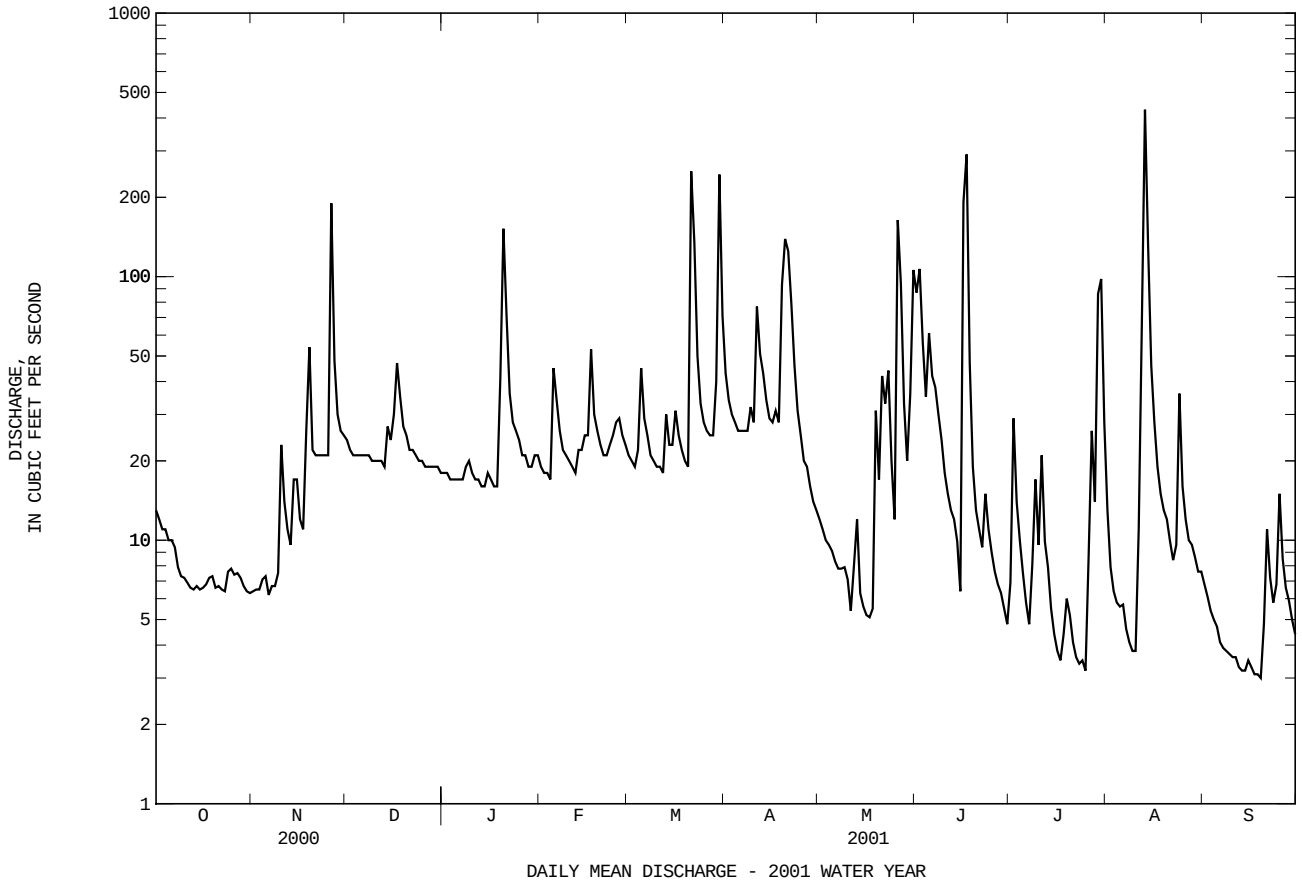
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1946 - 2001, BY WATER YEAR (WY)

MEAN	12.5	18.9	28.3	34.7	37.5	45.6	32.6	24.9	15.7	15.6	17.8	15.5
MAX	70.3	84.4	98.6	125	213	166	95.9	97.4	68.4	82.4	118	150
(WY)	1997	1957	1997	1978	1998	1994	1983	1990	1972	2000	1955	1999
MIN	2.58	4.29	5.27	6.45	9.31	8.52	6.82	3.71	2.01	1.22	1.29	2.02
(WY)	1969	1982	1966	1955	1968	1981	1985	1999	1999	1999	1995	1988

01661500 ST. MARYS RIVER AT GREAT MILLS, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1946 - 2001	
ANNUAL TOTAL	11486.7		9383.1			
ANNUAL MEAN	31.4		25.7		24.9	
HIGHEST ANNUAL MEAN					50.9	1998
LOWEST ANNUAL MEAN					11.1	1966
HIGHEST DAILY MEAN	563	Jul 26	430	Aug 13	2650	Sep 16 1999
LOWEST DAILY MEAN	4.9	May 18	3.0	Sep 19	.17	Aug 11 1999
ANNUAL SEVEN-DAY MINIMUM	6.3	May 14	3.2	Sep 13	.22	Aug 7 1999
MAXIMUM PEAK FLOW			607	Aug 13	(a)7950	Aug 20 1969
MAXIMUM PEAK STAGE			5.78	Aug 13	13.34	Aug 20 1969
INSTANTANEOUS LOW FLOW			2.7	Jul 26	.13	(b)
ANNUAL RUNOFF (CFSM)	1.31		1.07		1.04	
ANNUAL RUNOFF (INCHES)	17.80		14.54		14.08	
10 PERCENT EXCEEDS	51		45		48	
50 PERCENT EXCEEDS	19		18		12	
90 PERCENT EXCEEDS	7.4		5.2		3.2	

a From rating curve extended above 1,500 ft^3/s on basis of contracted-opening measurement at gage height 12.08 ft.
b Aug. 10-14, 1999.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

03075500 YOUGHIOGHENY RIVER NEAR OAKLAND, MD

LOCATION.--Lat 39°25'17.9", long 79°25'29.6", Garrett County, Hydrologic Unit 05020006, on left bank 200 ft downstream from Baltimore and Ohio Railroad bridge, 250 ft downstream from Little Youghiogheny River, 1.2 mi northwest of Oakland, and 1.5 mi upstream from Dunkard Lick Run.

DRAINAGE AREA.--134 mi^2.

PERIOD OF RECORD.--August 1941 to current year.

REVISED RECORDS.--WSP 1113: 1947(M).

GAGE.--Water-stage recorder and concrete control. Datum of gage is 2,353.61 ft above sea level. Prior to Aug. 1, 1946, nonrecording gage at bridge 200 ft upstream at same datum.

REMARKS.--Records good except those for estimated daily discharges (ice effect), which are fair. Town of Oakland diverted an average of 0.4 ft^3/s for water supply. The diversion is returned upstream from station as sewage. U.S. Army Corps of Engineers satellite collection platform at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in March 1936 reached a stage of 15.3 ft, from floodmarks.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan 31	0145	2,710	5.77	Apr 11	1800	2,160	5.23
Feb 10	1145	2,570	5.64	Jun 7	1145	2,670	5.73
Feb 15	1330	2,570	5.64	Jul 26	2015	*5,450	*7.98

Minimum discharge, 13 ft^3/s, Sept. 19, 20.

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	92	29	215	e94	1030	216	458	87	183	67	354	142
2	77	30	188	88	676	198	432	81	246	418	249	70
3	67	29	157	83	456	184	374	76	225	147	194	49
4	59	29	e140	e80	344	216	316	71	193	246	167	46
5	61	28	e125	e78	286	339	272	71	180	494	177	51
6	58	27	e115	e76	249	255	587	63	229	687	125	42
7	46	26	107	e74	227	242	826	56	1890	303	102	35
8	38	27	e98	e72	239	229	560	52	1270	359	87	31
9	36	31	e90	e70	486	213	445	53	686	254	77	25
10	37	128	83	69	2040	191	980	50	402	186	71	23
11	35	190	90	71	1230	186	1530	51	274	574	88	24
12	33	119	e100	72	730	292	1420	45	211	267	307	22
13	30	96	e125	71	549	1610	866	45	227	194	387	20
14	28	91	998	73	591	1510	583	38	419	149	168	19
15	27	87	913	75	2220	926	448	36	201	120	120	17
16	26	74	607	90	1670	774	452	40	154	98	95	16
17	26	69	875	98	1560	1010	400	62	141	82	91	16
18	134	63	744	95	1010	877	344	84	105	450	76	15
19	106	57	528	152	687	681	338	226	85	457	64	14
20	63	53	382	413	495	508	285	149	73	223	57	16
21	50	e51	350	277	415	712	255	105	67	155	51	23
22	43	e50	230	238	305	1020	226	204	63	120	46	22
23	41	e48	181	197	278	765	199	784	190	95	45	18
24	38	47	e160	e170	222	640	181	419	138	79	53	19
25	39	51	e140	e150	303	530	165	605	82	70	44	72
26	38	125	131	142	375	435	144	781	63	1890	38	69
27	36	369	e120	e135	265	338	131	495	55	1870	45	38
28	35	294	e115	132	241	280	122	553	118	506	55	28
29	34	222	e107	131	---	262	106	338	66	1050	49	24
30	31	278	e100	967	---	595	94	263	50	1130	41	23
31	30	---	e96	1980	---	531	---	206	---	593	39	---
TOTAL	1494	2818	8410	6513	19179	16765	13539	6189	8286	13333	3562	1029
MEAN	48.2	93.9	271	210	685	541	451	200	276	430	115	34.3
MAX	134	369	998	1980	2220	1610	1530	784	1890	1890	387	142
MIN	26	26	83	69	222	184	94	36	50	67	38	14
CFSM	.36	.70	2.02	1.57	5.11	4.04	3.37	1.49	2.06	3.21	.86	.26
IN.	.41	.78	2.33	1.81	5.32	4.65	3.76	1.72	2.30	3.70	.99	.29

e Estimated

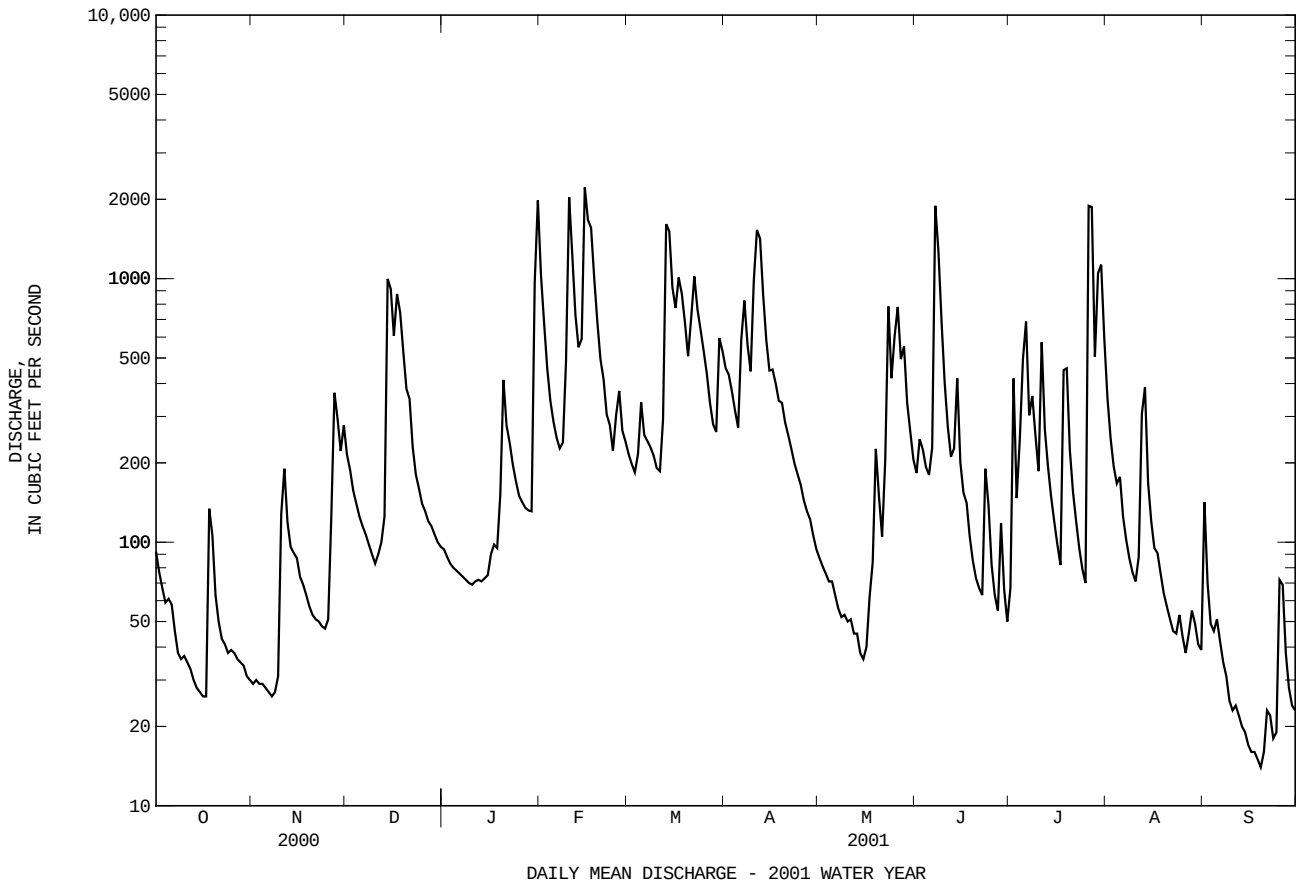
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 2001, BY WATER YEAR (WY)

MEAN	113	239	401	430	507	609	450	328	205	167	130	86.0
MAX	608	1152	1027	973	1100	1477	879	995	730	629	586	600
(WY)	1955	1986	1973	1996	1986	1963	1973	1996	1981	1978	1956	1996
MIN	4.45	7.08	62.2	63.2	127	168	121	76.0	22.9	10.3	10.5	5.99
(WY)	1954	1954	1944	1977	1978	1990	1946	1982	1999	1953	1944	1953

03075500 YOUGHIOGHENY RIVER NEAR OAKLAND, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1941 - 2001	
ANNUAL TOTAL	89180		101117			
ANNUAL MEAN	244		277		304	
HIGHEST ANNUAL MEAN					518	1996
LOWEST ANNUAL MEAN					193	1947
HIGHEST DAILY MEAN	7430	Feb 19	2220	Feb 15	8740	Jan 19 1996
LOWEST DAILY MEAN	20	Sep 23	14	Sep 19	2.5	Oct 4 1953
ANNUAL SEVEN-DAY MINIMUM	23	Sep 18	16	Sep 14	2.7	Oct 2 1953
MAXIMUM PEAK FLOW			5450	Jul 26	(a)14100	Jan 19 1996
MAXIMUM PEAK STAGE			7.98	Jul 26	13.06	Jan 19 1996
INSTANTANEOUS LOW FLOW			13	(b)	2.5	Oct 4 1953
ANNUAL RUNOFF (CFSM)	1.82		2.07		UNKNOWN	
ANNUAL RUNOFF (INCHES)	24.76		28.07		30.87	
10 PERCENT EXCEEDS	520		697		726	
50 PERCENT EXCEEDS	116		131		164	
90 PERCENT EXCEEDS	33		32		24	

a From rating curve extended above 7,000 ft^3/s.
b Sept. 19, 20.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

03076000 DEEP CREEK RESERVOIR NEAR OAKLAND, MD

LOCATION.--Lat 39°30'34", long 79°23'28", Garrett County, Hydrologic Unit 05020006, on Deep Creek at dam, 1.8 mi upstream from mouth and 7.0 mi north of Oakland.

DRAINAGE AREA.--64.7 mi2.

PERIOD OF RECORD.--July 1925 to current year. Prior to October 1950, monthend contents published in WSP 1305, and October 1950 to September 1955, monthend contents published in WSP 1385.

GAGE.--Water-stage recorder at right end of spillway. Datum of gage is at sea level, unadjusted.

REMARKS.--Reservoir is formed by an earthfill dam completed January 1925, with storage beginning at that time. Usable capacity, 92,975 acre-ft between elevations 2,425 ft, top of intake to outlet tunnel, and 2,462 ft, crest of spillway. Dead storage, 13,085 acre-ft. Figures given herein represent usable contents. Reservoir is used for hydroelectric power.

COOPERATION.--Elevations and capacity table furnished by Pennsylvania Electric Co.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 93,800 acre-ft, July 14, 1990, elevation, 2,462.25 ft; minimum observed, 11,763 acre-ft, Sept. 30, 1925, elevation, 2,433.45 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 91,900 acre-ft, June 8, elevation, 2,461.7 ft; minimum, 69,800 acre-ft, Jan. 2, elevation, 2,455.6 ft.

MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTBER 2000 TO SEPTEMBER 2001

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	2458.1	78600	
Oct. 31	2456.7	73600	-5000
Nov. 30	2455.8	70500	-3100
Dec. 31	2455.7	70100	-400
CAL YR 2000			-1000
Jan. 31	2456.1	71500	+1400
Feb. 28	2458.1	78600	+7100
Mar. 31	2459.8	84800	+6200
Apr. 30	2461.1	89600	+4800
May 31	2461.2	90000	+400
June 30	2460.9	88900	-1100
July 31	2460.0	85500	-3400
Aug. 31	2458.8	81100	-4400
Sept. 30	2457.4	76100	-5000
WTR YR 2001			-2500

THIS IS A BLANK PAGE

03076500 YOUGHIOGHENY RIVER AT FRIENDSVILLE, MD

LOCATION.--Lat 39°39'13.0", long 79°24'29.9", Garrett County, Hydrologic Unit 05020006, on left bank 0.7 mi upstream from bridge on State Highway 42 at Friendsville, and 1.5 mi upstream from Bear Creek.

DRAINAGE AREA.--295 mi^2.

PERIOD OF RECORD.--August 1898 to December 1904 and October 1940 to current year. Annual maximum, water years 1905, 1923-3l, 1940, published in WSP 1675. October, November 1940 monthly discharge only, published in WSP 1305. September 1922 to September 1926 (gage heights only) in reports of Pennsylvania Department of Forests and Waters.

REVISED RECORDS.--WSP 1385: Drainage area at former site, 1898-1905, 1941(M), 1942, 1944-45, 1948-49, 1951(M).

GAGE.--Water-stage recorder. Datum of gage is 1,487.33 ft above sea level. Aug. 17, 1898, to Dec. 31, 1904, and Sept. 1, 1922, to Sept. 30, 1926, nonrecording gages at bridge 0.7 mi downstream at datum 16.24 ft and 16.29 ft lower, respectively.

REMARKS.--No estimated daily discharges. Records good. Low and medium flow regulated since July 1925 by Deep Creek Reservoir, 12 mi upstream from station (see station 03076000). U.S. Army Corps of Engineers satellite collection platform at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,690 ft^3/s, July 27, gage height, 5.56 ft; minimum discharge, 51 ft^3/s, Sept. 17-19.

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	161	70	468	137	1680	446	731	211	441	156	666	328
2	296	69	415	139	1080	411	951	206	855	481	508	189
3	124	68	544	240	802	388	668	193	463	292	480	198
4	114	68	362	214	726	398	621	253	537	228	405	240
5	102	67	366	132	589	685	544	269	589	656	435	244
6	266	88	272	119	516	770	687	170	648	989	370	115
7	189	99	401	161	531	532	1320	230	3330	604	316	289
8	144	187	235	225	537	417	949	166	2640	775	332	230
9	208	218	238	243	707	426	1030	141	1750	781	315	218
10	92	156	247	303	2690	653	1330	136	1310	682	299	206
11	124	414	349	251	2170	397	1980	204	1040	959	158	70
12	204	304	477	185	1420	433	2230	139	475	596	357	65
13	181	258	304	322	939	2220	1360	123	390	459	787	173
14	68	300	1120	148	1010	2690	988	189	672	290	355	148
15	65	391	1500	149	3550	1580	798	106	654	242	245	58
16	193	383	960	163	3070	1520	908	184	323	324	340	54
17	105	220	1550	185	2770	1630	802	137	287	218	348	118
18	130	243	1440	237	2050	1440	846	243	315	419	166	54
19	267	132	978	323	1580	1310	818	359	198	774	141	96
20	159	185	802	652	1010	988	818	332	199	585	201	104
21	115	165	587	470	881	923	531	310	258	284	118	228
22	105	243	523	466	1020	1530	490	300	232	364	106	67
23	313	116	384	413	1000	1180	684	942	292	472	106	60
24	276	158	440	341	489	1040	437	681	354	365	220	140
25	326	172	363	316	497	882	370	788	278	188	157	117
26	181	156	357	319	704	962	345	1190	157	667	145	174
27	165	515	321	282	523	812	433	789	186	2790	259	120
28	105	610	337	275	515	650	272	859	153	741	228	156
29	125	511	341	321	---	878	246	868	237	1210	259	74
30	156	558	255	1060	---	815	300	980	160	1550	271	66
31	160	---	277	2820	---	884	---	548	---	890	257	---
TOTAL	5219	7124	17213	11611	35056	29890	24487	12246	19423	20031	9350	4399
MEAN	168	237	555	375	1252	964	816	395	647	646	302	147
MAX	326	610	1550	2820	3550	2690	2230	1190	3330	2790	787	328
MIN	65	67	235	119	489	388	246	106	153	156	106	54
(†)	-82.1	-51.9	-6.50	22.8	128	101	80.7	6.50	-18.5	-55.5	-71.6	-84.2
MEAN‡	86.8	185	548	398	1380	1065	897	402	628	590	230	62.8
CFSM‡	0.29	0.63	1.86	1.35	4.68	3.61	3.04	1.36	2.13	2.00	0.78	0.21
IN‡	0.33	0.70	2.14	1.56	4.87	4.16	3.39	1.57	2.38	2.31	0.90	0.23

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1898 - 1905, 1941 - 2001, BY WATER YEAR (WY)

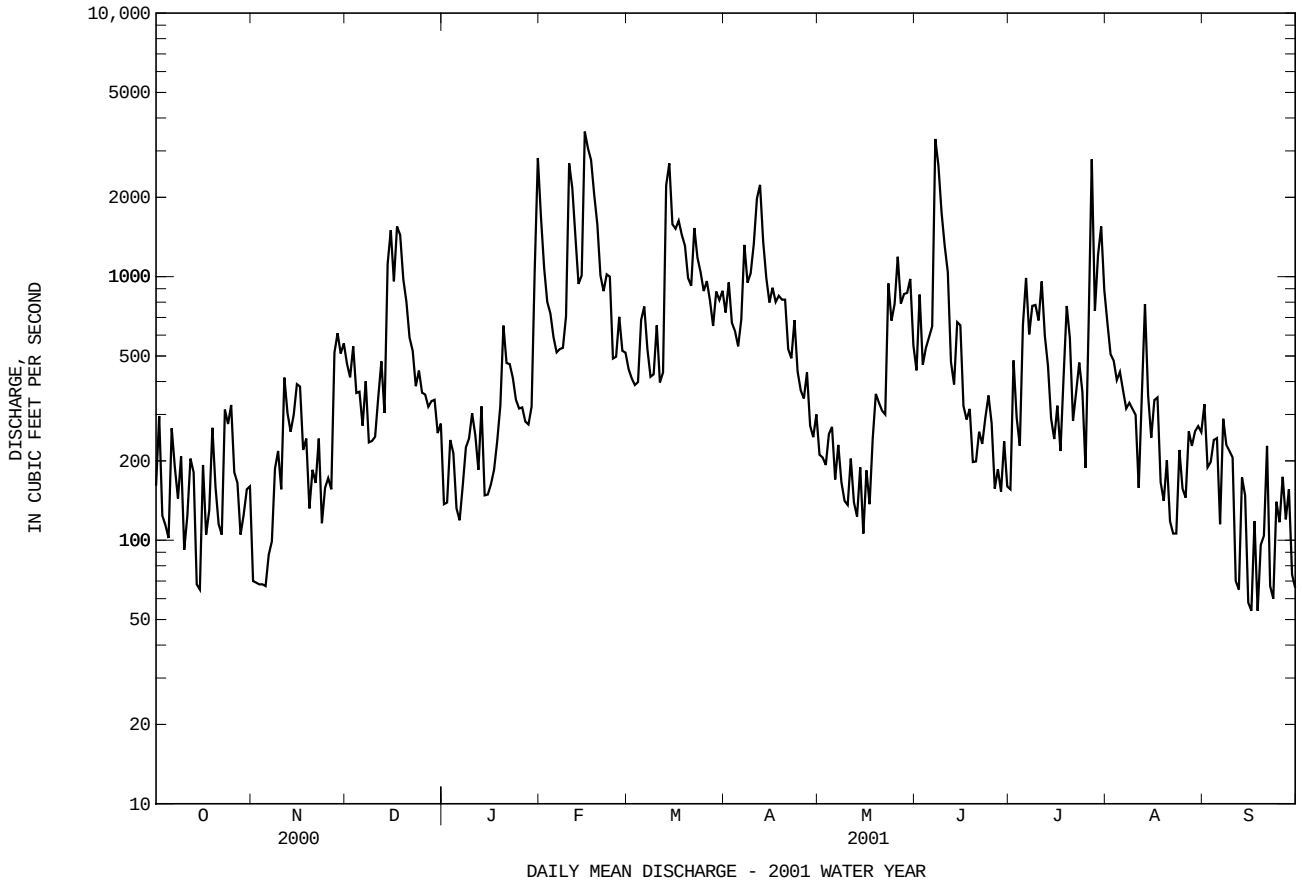
MEAN	277	495	840	872	1000	1216	938	685	482	371	297	237
MAX	1103	2190	2147	1886	2277	2644	2231	1888	1823	1335	1319	1059
(WY)	1955	1986	1903	1996	1903	1963	1901	1996	1903	1990	1956	1996
MIN	50.2	55.7	145	140	337	285	327	176	84.2	64.6	51.0	49.8
(WY)	1992	1905	1944	1981	1954	1990	1995	1982	1969	1991	1991	1991

† Change in contents in Deep Creek Reservoir, equivalent in cubic feet per second, provided by Pennsylvania Electric Company.
‡ Adjusted for change in reservoir contents.

03076500 YOUGHIOGHENY RIVER AT FRIENDSVILLE, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1898 - 1905, 1941 - 2001	
ANNUAL TOTAL	179569		196049			
ANNUAL MEAN	491		537		639	
ANNUAL MEAN‡	489		534		643	
HIGHEST ANNUAL MEAN					1052	1903
LOWEST ANNUAL MEAN					375	1954
HIGHEST DAILY MEAN	11200	Feb 19	3550	Feb 15	11200	Jan 19 1996
LOWEST DAILY MEAN	51	Sep 23	54	(a)	8.2	Sep 11 1966
ANNUAL SEVEN-DAY MINIMUM	76	Nov 1	76	Nov 1	29	Sep 21 1972
MAXIMUM PEAK FLOW			4690	Jul 27	(b)16100	Jan 19 1996
MAXIMUM PEAK STAGE			5.56	Jul 27	(c)14.20	Mar 29 1924
INSTANTANEOUS LOW FLOW			51	(d)	UNKNOWN	
ANNUAL RUNOFF (CFSM)	1.66		1.82		2.17	
ANNUAL RUNOFF (CFSM)‡	1.66		1.81		2.18	
ANNUAL RUNOFF (INCHES)	22.64		24.72		29.43	
ANNUAL RUNOFF (INCHES)‡	22.52		24.57		29.58	
10 PERCENT EXCEEDS	985		1100		1420	
50 PERCENT EXCEEDS	310		332		405	
90 PERCENT EXCEEDS	111		120		103	

‡ Adjusted for change in reservoir contents since October 1940.
a Sept. 16, 18.
b From rating curve extended above 5,800 ft^3/s on basis of slope-area measurement of peak flow.
c From floodmarks.
d Sept. 17-19.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

03076600 BEAR CREEK AT FRIENDSVILLE, MD

LOCATION.--Lat 39°39'22.1", long 79°23'38.8", Garrett County, Hydrologic Unit 05020006, on right bank 0.2 mi downstream from bridge on Accident-Friendsville Road, 0.6 mi downstream from South Branch Bear Creek, 0.8 mi southeast of Friendsville, and 1.2 mi upstream from mouth.

DRAINAGE AREA.--48.9 mi^2.

PERIOD OF RECORD.--October 1964 to current year.

REVISED RECORDS.--WDR MD-DE-94-1: 1993

GAGE.--Water-stage recorder. Datum of gage is 1,551.34 ft above sea level.

REMARKS.--Records good except those for estimated daily discharges (ice effect), which are poor. U.S. Army Corps of Engineers satellite collection platform at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 600 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb 10	0500	639	3.79	Jun 7	0400	*1,990	*5.56

Minimum discharge, 6.0 ft^3/s, Sept. 20.

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	17	7.8	52	e31	215	64	99	42	50	31	16	19
2	15	7.7	48	e30	162	62	98	41	70	39	14	14
3	14	7.6	e45	e29	127	59	91	38	57	23	14	11
4	13	7.6	e42	e29	104	64	84	36	50	27	15	17
5	12	7.5	e39	e28	92	64	79	38	45	86	13	16
6	12	7.4	e37	e28	83	59	109	33	117	88	12	12
7	11	7.3	e36	e27	75	56	132	29	928	55	11	10
8	10	7.4	e34	e27	76	55	130	28	335	112	10	9.7
9	9.8	11	e33	e26	152	56	170	28	197	89	10	8.9
10	10	27	e33	e26	458	52	270	25	140	67	10	8.7
11	9.7	27	33	e25	279	52	262	24	105	59	12	8.8
12	9.0	19	68	e25	204	66	260	25	84	45	72	7.9
13	8.6	17	e70	25	151	359	208	23	86	40	48	7.3
14	8.2	17	108	e25	158	362	153	20	86	36	31	8.2
15	8.1	16	113	e27	302	240	132	20	66	31	22	7.5
16	8.0	15	127	e29	291	203	132	20	59	27	18	6.8
17	8.9	14	330	e32	303	201	123	21	51	24	18	6.6
18	26	14	256	e36	239	179	115	27	44	29	15	6.4
19	16	13	177	63	182	151	106	56	40	26	14	6.3
20	12	13	132	e80	144	133	99	31	37	20	12	12
21	11	13	e105	e55	121	168	94	31	36	17	12	10
22	9.8	13	86	e50	99	202	88	49	34	16	11	7.5
23	9.3	13	e70	e44	88	170	82	76	70	15	15	6.8
24	8.9	13	e60	e40	75	143	77	60	42	14	14	12
25	9.1	14	e50	e37	80	123	68	86	34	16	11	32
26	8.9	32	e45	e35	81	107	60	110	29	33	10	17
27	8.8	58	e42	e34	69	93	55	94	25	23	15	12
28	8.7	59	e38	e32	68	84	51	82	23	16	17	9.9
29	8.3	54	e36	e33	---	79	46	68	21	30	25	9.2
30	8.0	58	e34	265	---	107	44	57	19	32	15	8.4
31	7.9	---	e32	296	---	99	---	49	---	20	12	---
TOTAL	337.0	590.3	2411	1569	4478	3912	3517	1367	2980	1186	544	328.9
MEAN	10.9	19.7	77.8	50.6	160	126	117	44.1	99.3	38.3	17.5	11.0
MAX	26	59	330	296	458	362	270	110	928	112	72	32
MIN	7.9	7.3	32	25	68	52	44	20	19	14	10	6.3
CFSM	.22	.40	1.59	1.04	3.27	2.58	2.40	.90	2.03	.78	.36	.22
IN.	.26	.45	1.83	1.19	3.41	2.98	2.68	1.04	2.27	.90	.41	.25

e Estimated

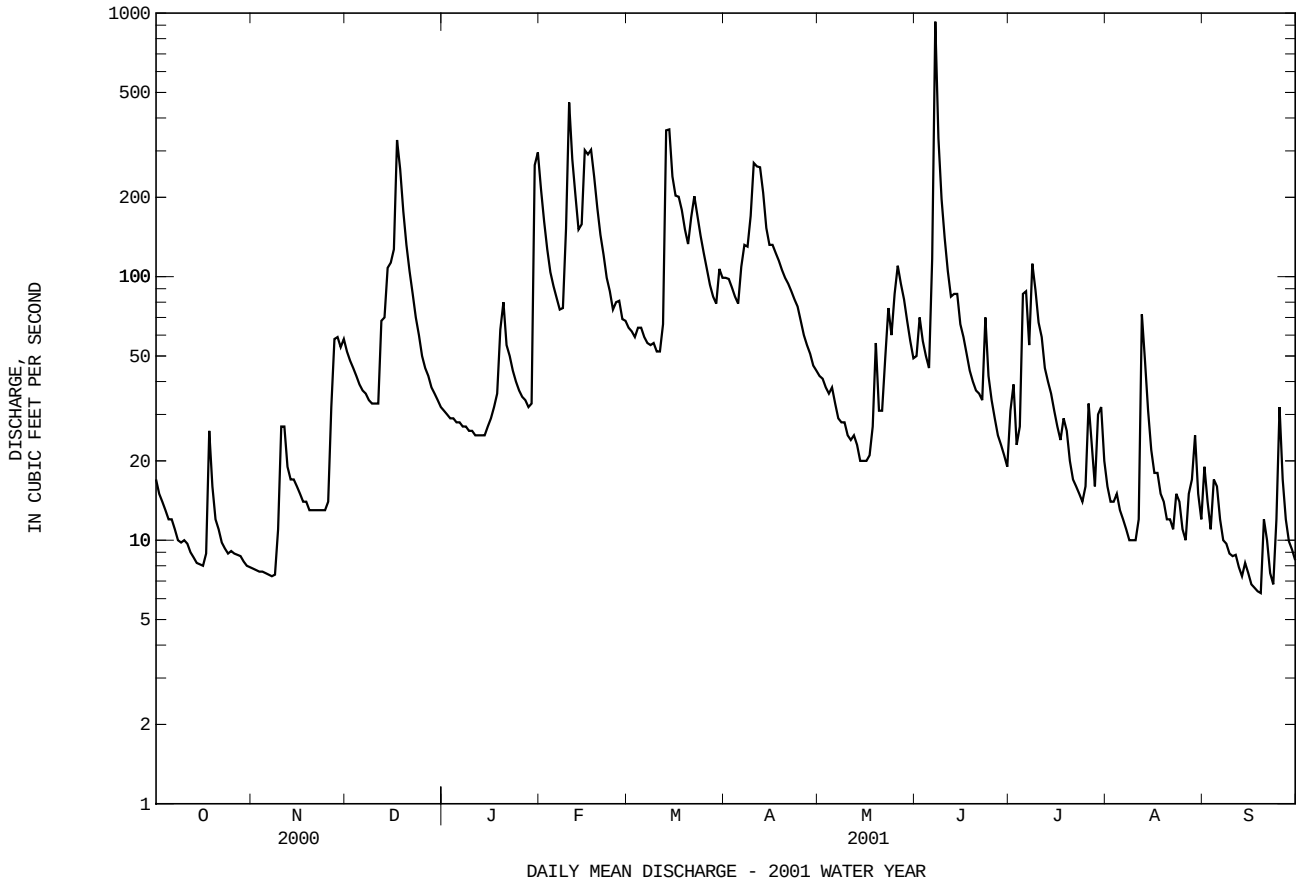
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1965 - 2001, BY WATER YEAR (WY)

MEAN	33.4	67.5	117	114	153	188	153	101	53.8	48.3	31.4	30.8
MAX	187	341	293	296	387	413	293	223	154	274	117	256
(WY)	1980	1986	1991	1996	1986	1994	1984	1996	1981	1990	1980	1971
MIN	4.05	6.71	11.3	19.1	39.8	45.5	59.4	23.5	10.6	6.35	4.32	2.98
(WY)	1992	1999	1999	1977	1993	1990	1995	1982	1991	1965	1966	1991

03076600 BEAR CREEK AT FRIENDSVILLE, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1965 - 2001	
ANNUAL TOTAL	25145.1		23220.2			
ANNUAL MEAN	68.7		63.6		90.6	
HIGHEST ANNUAL MEAN					133	1996
LOWEST ANNUAL MEAN					53.4	1966
HIGHEST DAILY MEAN	700	Feb 19	928	Jun 7	3100	Sep 14 1971
LOWEST DAILY MEAN	6.9	Sep 23	6.3	Sep 19	1.6	(a)
ANNUAL SEVEN-DAY MINIMUM	7.5	Nov 2	7.0	Sep 13	2.0	Sep 7 1966
MAXIMUM PEAK FLOW			1990	Jun 7	(b)4650	Sep 14 1971
MAXIMUM PEAK STAGE			5.56	Jun 7	(c)9.60	Sep 14 1971
INSTANTANEOUS LOW FLOW			6.0	Sep 20	1.5	Sep 12 1966
ANNUAL RUNOFF (CFSM)	1.40		1.30		1.85	
ANNUAL RUNOFF (INCHES)	19.13		17.66		25.18	
10 PERCENT EXCEEDS	182		151		224	
50 PERCENT EXCEEDS	34		34		49	
90 PERCENT EXCEEDS	9.4		9.2		8.3	

a Sept. 12, 13, 1966.
b From rating curve extended above 2,000 ft^3/s on basis of slope-area measurement of peak flow.
c From floodmarks.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

03078000 CASSELMAN RIVER AT GRANTSVILLE, MD

LOCATION.--Lat 39°42'07.9", long 79°08'11.0", Garrett County, Hydrologic Unit 05020006, on left bank at downstream side of highway bridge, 0.3 mi upstream from Slaubaugh Run, 0.7 mi downstream from U.S. Highway 40, and 1.0 mi northeast of Grantsville.

DRAINAGE AREA.--62.5 mi^2.

PERIOD OF RECORD.--July 1947 to current year.

REVISED RECORDS.--WSP 1143: 1948.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 2,088.97 ft above sea level.

REMARKS.--Records good except those for estimated daily discharges (ice effect, missing record), which are poor. U.S. Army Corps of Engineers satellite collection platform at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb 10	0845	1,060	3.35	Mar 13	2030	1,080	3.39
Feb 15	1130	1,010	3.27	Jun 7	0900	*2,030	*4.76

Minimum discharge, 6.0 ft^3/s, Sept. 18-20, 24.

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	30	13	91	e38	282	116	194	59	87	38	24	33
2	25	13	80	e37	196	105	191	57	224	77	18	23
3	21	13	74	e35	166	99	163	53	129	38	16	16
4	19	13	e70	e37	169	100	144	48	100	39	18	16
5	18	12	e64	e38	121	103	128	57	82	171	24	27
6	18	12	e60	e38	112	89	211	48	314	202	16	17
7	16	12	e56	e38	104	88	296	40	1340	75	12	13
8	15	12	e52	e38	116	93	226	37	520	169	10	11
9	15	18	e49	e37	263	87	194	38	287	110	9.8	10
10	18	82	e47	e36	800	80	304	34	197	138	9.1	9.2
11	16	82	e45	e36	385	79	432	31	148	154	10	9.2
12	14	53	e43	e35	250	112	378	30	120	72	316	8.8
13	12	41	e43	e35	216	691	260	31	160	52	190	7.9
14	12	38	e45	e37	302	645	204	26	219	42	69	8.0
15	11	35	e60	e39	902	367	197	23	114	36	41	8.2
16	11	32	e120	e41	613	342	312	23	107	30	30	7.4
17	14	32	439	e42	553	425	283	24	98	25	31	6.7
18	80	28	251	e42	330	327	243	39	71	31	27	6.4
19	49	26	e220	e65	257	259	232	174	57	35	27	6.2
20	31	e25	e180	e90	218	215	200	65	49	25	21	7.8
21	24	e24	e140	e70	207	362	169	56	49	19	18	8.9
22	20	e24	e110	e60	151	422	150	128	47	16	16	7.4
23	18	e23	e85	e55	e148	300	132	213	275	14	28	6.4
24	17	e23	e70	e50	135	266	119	113	126	12	26	8.9
25	17	e23	e60	e48	151	227	105	306	71	19	19	29
26	17	138	e55	e45	205	188	93	359	53	69	15	20
27	16	204	e50	e43	140	156	85	191	73	45	21	11
28	17	138	e47	e41	127	143	78	152	51	22	24	9.4
29	16	100	e45	e39	---	135	69	117	36	46	37	8.0
30	14	110	e42	585	---	306	64	96	31	69	25	7.4
31	14	---	e40	565	---	242	---	80	---	37	18	---
TOTAL	635	1399	2833	2435	7619	7169	5856	2748	5235	1927	1165.9	368.2
MEAN	20.5	46.6	91.4	78.5	272	231	195	88.6	174	62.2	37.6	12.3
MAX	80	204	439	585	902	691	432	359	1340	202	316	33
MIN	11	12	40	35	104	79	64	23	31	12	9.1	6.2
CFSM	.33	.75	1.46	1.26	4.35	3.70	3.12	1.42	2.79	.99	.60	.20
IN.	.38	.83	1.69	1.45	4.53	4.27	3.49	1.64	3.12	1.15	.69	.22

e Estimated

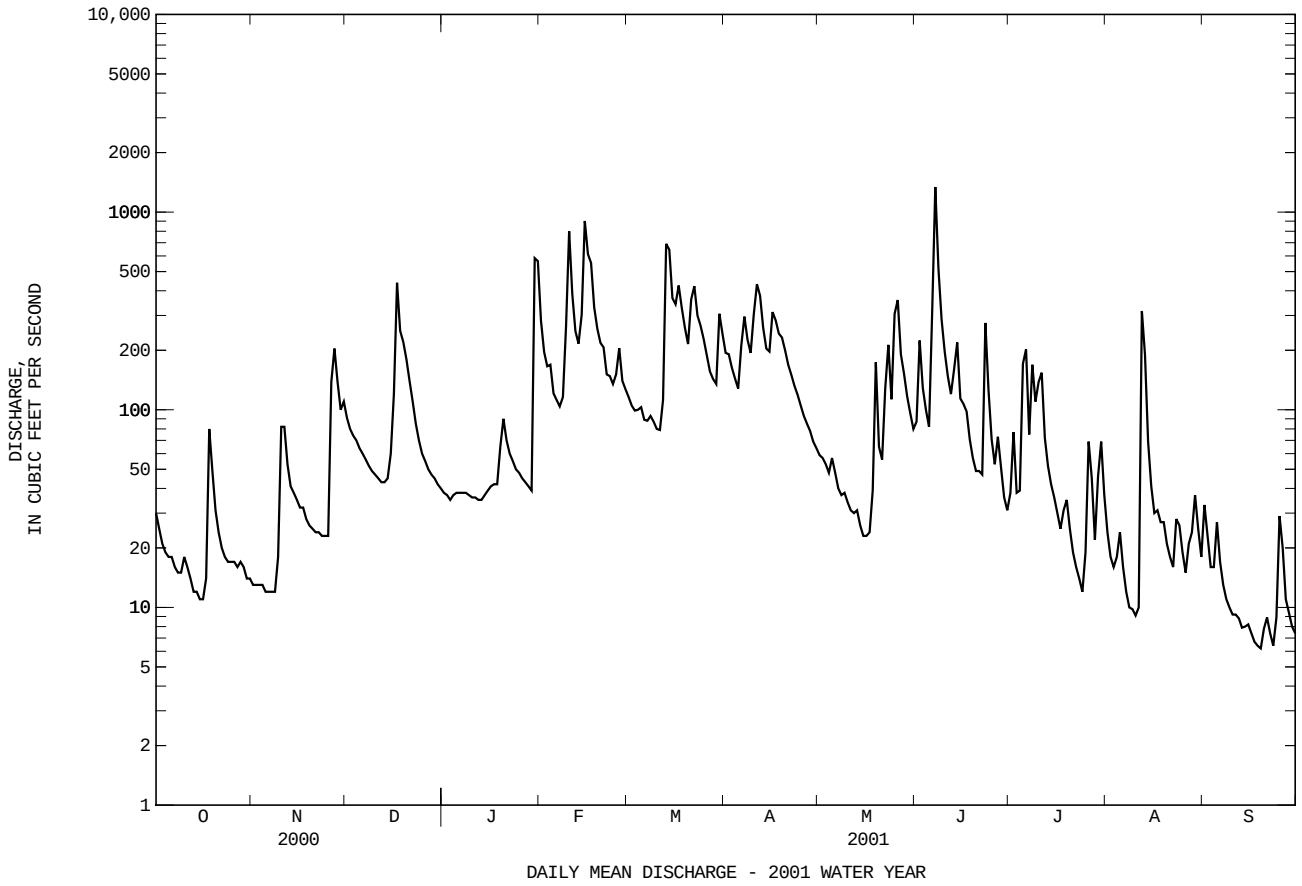
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1947 - 2001, BY WATER YEAR (WY)

MEAN	45.3	87.2	146	161	199	262	211	135	75.1	49.1	38.6	33.8
MAX	288	449	341	376	414	582	468	312	200	175	202	290
(WY)	1955	1986	1973	1996	1956	1963	1970	1996	1951	1996	1956	1996
MIN	1.65	3.38	13.8	26.4	60.3	57.0	77.1	40.1	10.0	4.30	2.87	1.58
(WY)	1954	1954	1999	1977	1964	1990	1968	1976	1965	1965	1991	1991

03078000 CASSELMAN RIVER AT GRANTSVILLE, MD--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1947 - 2001	
ANNUAL TOTAL	34734.1		39390.1			
ANNUAL MEAN	94.9		108		120	
HIGHEST ANNUAL MEAN					203	1996
LOWEST ANNUAL MEAN					64.2	1954
HIGHEST DAILY MEAN	2250	Feb 19	1340	Jun 7	(e)3600	Jan 19 1996
LOWEST DAILY MEAN	8.7	Jul 9	6.2	Sep 19	(a).00	Aug 31 1962
ANNUAL SEVEN-DAY MINIMUM	11	Sep 18	7.1	Sep 17	.89	Aug 27 1962
MAXIMUM PEAK FLOW			2030	Jun 7	(b)8400	Oct 15 1954
MAXIMUM PEAK STAGE			4.76	Jun 7	10.70	Oct 15 1954
INSTANTANEOUS LOW FLOW			6.0	(c)	(b).00	(d)
ANNUAL RUNOFF (CFSM)	1.52		1.73		1.92	
ANNUAL RUNOFF (INCHES)	20.67		23.44		26.05	
10 PERCENT EXCEEDS	205		264		280	
50 PERCENT EXCEEDS	52		50		66	
90 PERCENT EXCEEDS	14		13		8.3	

e Estimated
a Result of regulation from unknown source.
b From rating curve extended above 1,600 ft^3/s on basis of contracted-opening measurement at gage height of 8.13 ft.
c Sept. 18-20, 24.
d Aug. 31, Sept. 1, 1962.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

As the number of streams on which streamflow information is likely to be desired far exceeds the number of stream-gaging stations feasible to operate at one time, the Geological Survey collects limited streamflow data at sites other than stream-gaging stations. When limited streamflow data are collected on a systematic basis over a period of years for use in hydrologic analyses, the site at which the data are collected is called a partial-record station. Data collected at these partial-record stations are usable in low-flow or floodflow analyses, depending on the type of data collected. In addition, discharge measurements are made at other sites not included in the partial-record program. These measurements are generally made in times of drought or flood to give better areal coverage to those events. Those measurements and others collected for some special reason are called measurements at miscellaneous sites.

Records collected at partial-record stations are presented in two tables. The first is a table of annual maximum stage and discharge at crest-stage stations, and the second is a table of annual maximum stage for tidal crest-stage stations.

Crest-stage partial-record stations

The following table contains annual maximum discharges for crest-stage stations. A crest-stage gage is a device which will register the peak stage occurring between inspections of the gage. A stage-discharge relation for each gage is developed from discharge measurements made by indirect measurements of peak flow or by current meter. The date of the maximum discharge is not always certain, but is usually determined by comparison with nearby continuous-record stations, weather records, or local inquiry. Only the maximum discharge for each water year is given. Information on some lower floods may have been obtained, but is not published herein. The years given in the period of record represent water years for which the annual maximum has been determined.

Maximum discharge at crest-stage partial-record stations

Station name and number	Location and drainage area	Period of record	Water year 2001 maximum			Period of record maximum		
			Date	Gage height (ft)	Discharge (ft^3/s)	Date	Gage height (ft)	Discharge (ft^3/s)
POTOMAC RIVER BASIN								
North Branch Potomac River at Kitzmiller, Md. (01595500)	Lat 39°23'38", long 79°10'55", Garrett County, Hydrologic Unit 02070002, on left bank 0.6 mi downstream from bridge on State Highway 38 in Kitzmiller. Drainage area is 225 mi^2.	1950-85≠, 1986-99, 2000-01	07-26-01	9.75	13,500	10-15-54	**a**13.73	33,400
North Branch Potomac River at Barnum, W. Va. (01595800)	Lat 39°26'44", long 79°06'39", Garrett County, Hydrologic Unit 02070002, on right bank at highway bridge at Barnum. Drainage area is 266 mi^2.	1967-85≠, 1986-99, 2000-01	04-12-01	6.78	3,980	7-03-78	13.37	27,100
North Branch Potomac River at Pinto, Md. (01600000)	Lat 39°26'44", long 79°06'39", Mineral County, W. Va., Hydrologic Unit 02070002, on right bank at downstream side of Western Maryland railroad bridge at Pinto, 2.8 mi downstream from Mill Run. Drainage area is 596 mi^2.	1939-85≠, 1986-99, 2000-01	06-02-01	10.54	9,620	10-16-54	23.23	37,000

≠ Operated as a continuous-record station.
a From floodmark

THIS IS A BLANK PAGE

Tidal crest-stage partial-record stations

The following table contains annual maximum stages for tidal crest-stage stations. The information is obtained from a crest-stage gage or a water-stage recorder located at each site. A crest-stage gage is a device which will register the peak stage occurring between inspections of the gage. All stages are elevations above National Geodetic Vertical Datum of l929. Only the maximum stage is given. Information on some other high stages may have been obtained but is not published herein. The years given in the period of record represent water years for which the annual maximum has been determined.

Annual maximum stage at tidal crest-stage partial-record stations during water year 2001

Station No.	Station Name	Location	Period of Record	Annual Maximum Date	Annual Maximum Elevation, in feet NGVD
		DELAWARE RIVER BASIN			
01480065	Christina River at Newport, De.	Lat 39°42'38", long 75°36'33", New Castle County, Hydrologic Unit 02040205, on downstream side of bridge on James Street, at Newport and 7.5 mi upstream from the confluence with Delaware River.	1995-99, 2000-01	3- 8-01	UNKNOWN
01481602	Delaware River below Christina River, at Wilmington, De.	Lat 39°43'00", long 75°31'03", New Castle County, Hydrologic Unit 02040205, on right bank, 1,000 ft from mouth of Christina River at the Wilmington Marine Terminal, 2.0 mi upstream of Delaware Memorial Bridge, and at river mi 69.70.	1983-91, 1995-99, 2000-01	3- 8-01	5.55
01483175	Drawyers Creek at Odessa, De.	Lat 39°28'22", long 75°39'48", New Castle County, Hydrologic Unit 02040205, on downstream side of bridge on U.S. Route 13, 1.3 mi north of Odessa, 1.4 mi downstream from Dove Nest Branch, and 3.0 mi upstream from mouth.	2001 (Discontinued)	3- 5-01	4.16
01483177	Appoquinimink River near Odessa, De.	Lat 39°27'57", long 75°36'48", New Castle County, Hydrologic Unit 02040205, on left bank at downstream side of bridge on State Route 9, 2.6 mi northeast of Odessa, and 4.0 mi upstream from mouth	2001 (Discontinued)	3- 8-01	4.74
		MURDERKILL RIVER BASIN			
01484085	Murderkill River at Bowers, De.	Lat 39°03'30", long 75°23'51", Kent County, Hydrologic Unit 02040207, at Faulkner's Landing in Bowers, on left bank 10 ft southeast of southwest corner of Faulkner's Pier nr near public boat ramp.	1966-86, 1997-99, 2000-01	7-19-01	5.73
		INDIAN RIVER BASIN			
01484540	Indian River at Rosedale Beach, De.	Lat 38°35'29", long 75°12'44", Sussex County, Hydrologic Unit 02060010, on left bank attached to privately owned fishing pier, at Seals Point, 1.9 mi west of Oak Orchard.	1992-99 2000-01	*1-25-00 9-30-01	*4.64 4.37
01484670	Rehoboth Bay at Dewey Beach, De.	Lat 38°41'40", long 75°05'05", Sussex County, Hydrologic Unit 02060010, on north shore of Rehoboth Bay at Head of Bay Cove, at Dewey Beach and at south end of Ventian Drive on bulkhead of a boat slip.	1985-97 2001	9-30-01	3.38
01484683	Indian River Bay at Indian River Inlet near Bethany Beach, De.	Lat 38°36'35", long 75°04'06", Sussex County, Hydrologic Unit 02060010, 0.3 mi northwest of the Indian River Inlet, 0.2 mi west of State Highway 1, 4.9 mi north of Bethany Beach and at the Indian River Coast guard station.	1992-99 2000-01	*1-25-00 9-30-01	*5.66 4.79

*** Data was not published in 2000.**

Tidal crest-stage partial-record stations

Annual maximum stage at tidal crest-stage partial-record stations during water year 2001

ASSAWOMAM BAY BASIN

01484696	Jefferson Creek at South Bethany, De.	Lat 38°31'18", long 75°03'46", Sussex County, Hydrologic Unit 02060010, near mouth of canal off Jefferson Creek, at bulkhead at the end of West 1st Street at South Bethany.	2000-01	9-30-01	2.41
01484701	Little Assawoman Bay at Fenwick Island, De.	Lat 38°27'18", long 75°03'31", Sussex County, Hydrologic Unit 02060010, at bulkhead at end of Madison Ave at Fenwick Island.	2000-01	9-30-01	2.50

Fort Detrick seepage investigations--Unnamed Monocacy River tributary and Carroll Creek, Frederick County, MD

Two series of discharge measurements were made during the 2000 and 2001 water years, September 7-9, 2000 and April 23-24, 2001, on an unnamed tributary to the Monocacy River and on Carroll Creek and its tributaries near Fort Detrick, to identify gaining stream reaches for future water-quality monitoring. The Carroll Creek reach is 5.40 mi in length and extends from its mouth near Frederick, Md., to the Kemp Lane bridge. The unnamed tributary reach is 0.60 mi in length and extends from below the Market Street bridge, 0.30 mi above the mouth, to its headwaters east of U.S. Route 15. The measurements were made during periods of base flow; for 5 days before each investigation no measurable precipitation had fallen. Tributary flow was considered a contribution and not a gain. Gains or losses may be substantially in error as affected by small inaccuracies in open-channel measurements. '--' indicates no data collected.

Unnamed Monocacy River trib. mile	Stream	Location	Meas. discharge (ft^3/s)	Gain or loss	Water temp. (°C)	pH (units)	Conductivity (microsiemens)
				September 7-9, 2000			
0.60	Unnamed spring outflow	Lat 39°26'18", long 77° 24'21", Frederick Co., 0.95 mi south of Harmony Grove.	Dry	-			
0.59	Unnamed tributary	Lat 39°26'18", long 77°24'18", Frederick Co., 0.95 mi south of Harmony Grove.	0.32	-	18.9	7.14	861
0.53	....do....	Lat 39°26'17", long 77°24'14", Frederick Co., 0.95 mi south of Harmony Grove.	0.24	-.08	18.6	7.66	857
0.37	....do....	Lat 39°26'17", long 77°24'02", Frederick Co., 0.95 mi south of Harmony Grove.	0.36	+.12	17.3	7.73	863
0.30	....do....	Lat 39°26'18", long 77°23'57", Frederick Co., 0.95 mi south of Harmony Grove.	0.40	+.04	16.8	7.95	859
Overall net gain or loss, Unnamed Monocacy River tributary				**+.08**			
Carroll Creek mile							
5.40	Carroll Creek	Lat 39°26'52", long 77°27'16", Frederick Co., 0.2 mi south of Rocky Springs.	0.16	-	20.3	7.31	137
5.16	....do....	Lat 39°26'45", long 77°27'01", Frederick Co., 0.4 mi southeast of Rocky Springs.	0.16	+.00	19.4	7.42	144
4.97	....do....	Lat 39°26'37", long 77°26'52", Frederick Co., 0.6 mi northwest of Rocky Springs Station.	0.13	-.03	20.1	7.77	163
Unnamed Carroll Creek trib. no. 1 mile							
0.54	Unnamed tributary	Lat 39°26'41", long 77°27'22", Frederick Co., 0.4 mi south of Rocky Springs.	0.21	-	19.7	7.37	111
0.38	....do....	Lat 39°26'32", long 77°27'16", Frederick Co., 0.5 mi south of Rocky Springs.	0.13	-.08	19.3	7.40	111
0.35	Tributary to unnamed tributary	Lat 39°26'30", long 77°27'16", Frederick Co., at mouth, 0.5 mi south of Rocky Springs.	0.06	-	20.4	7.12	230
0.26	Pond outflow	Lat 39°26'30", long 77°27'09", Frederick Co., at mouth.	0.10	-	23.0	9.11	115
0.24	Unnamed tributary	Lat 39°26'30", long 77° 27'08", Frederick Co., 0.55 mi south of Rocky Springs.	0.25	-.04	20.4	7.75	151
0.18	....do....	Lat 39°26'30", long 77° 27'02", Frederick Co., 0.6 mi southeast of Rocky Springs.	0.25	+.00	20.3	7.45	153
Overall net gain or loss, Unnamed Carroll Creek tributary no. 1				**-.12**			

Fort Detrick seepage investigations--Unnamed Monocacy River tributary and Carroll Creek, Frederick County, MD

September 7-9, 2000--Continued

Carroll Creek mile	Stream	Location	Meas. discharge (ft^3/s)	Gain or loss	Water temp. (°C)	pH (units)	Conduc-tivity (micro-siemens)
4.78	Carroll Creek	Lat 39°26'25", long 77° 26'50", Frederick Co., below confluence, 0.5 mi west of Rocky Springs Station.	0.30	-.08	20.3	7.54	160
4.62	....do....	Lat 39°26'22", long 77° 26'39", Frederick Co., 0.35 mi west of Rocky Springs Station.	0.22	-.08	20.6	8.21	157
4.48	....do....	Lat 39°26'19", long 77° 26'29", Frederick Co., 0.2 mi west of Rocky Springs Station.	0.20	-.02	24.2	9.36	159
Unnamed Carroll Creek trib. no. 2 mile							
0.28	Unnamed tributary	Lat 39°26'29", long 77° 26'20", Frederick Co., 0.15 mi north-west of Rocky Springs Station.	Dry	-			
Carroll Creek mile							
4.29	Carroll Creek	Lat 39°26'12", long 77° 26'25", Frederick Co., below confluence, 0.25 mi southwest of Rocky Springs Station.	1.00	+.80	20.2	7.86	511
4.08	....do....	Lat 39°25'56", long 77° 26'27", Frederick Co., 0.45 mi south-west of Rocky Springs Station.	1.50	+.50	15.3	7.63	508
4.02	Robinson Spring outflow	Lat 39°25'53", long 77° 26'30", Frederick Co., 0.45 mi south-west of Rocky Springs Station.	0.56	-	14.4	7.51	423
3.79	Carroll Creek	Lat 39°25'47", long 77° 26'16", Frederick Co., 0.65 mi south of Rocky Springs Station.	3.42	+1.36	17.0	7.82	514
Unnamed Carroll Creek trib. no. 3 mile							
1.44	Unnamed tributary	Lat 39°25'57", long 77° 27'54", Frederick Co., 0.45 mi south-east of Shookstown.	0.12	-	18.0	7.88	309
1.42	Tributary #1 to unnamed tributary	Lat 39°25'57", long 77° 27'55", Frederick Co., at mouth.	0.13	-	18.0	7.79	267
1.11	Unnamed tributary	Lat 39°25'48", long 77° 27'34", Frederick Co., 0.75 mi south-east of Shookstown.	0.15	-.11	17.3	7.96	294
0.86	....do....	Lat 39°25'49", long 77° 27'18", Frederick Co., 0.9 mi south-east of Shookstown.	0.13	-.02	21.5	8.10	299

Fort Detrick seepage investigations--Unnamed Monocacy River tributary and Carroll Creek, Frederick County, MD

September 7-9, 2000--Continued

Unnamed Carroll Creek trib. no. 3 mile	Stream	Location	Meas. discharge (ft^3/s)	Gain or loss	Water temp. (°C)	pH (units)	Conduc-tivity (micro-siemens)
0.66	Unnamed tributary	Lat 39°25'51", long 77° 27'05", Frederick Co., 0.9 mi south-west of Rocky Springs Station.	0.09	-.04	18.3	7.53	308
0.53	....do....	Lat 39°25'52", long 77° 26'55", Frederick Co., 0.75 mi south-west of Rocky Springs Station.	0.08	-.01	16.0	7.67	306
0.39	Tributary #2 to unnamed tributary	Lat 39°25'53", long 77° 27726'43", Frederick Co., at mouth.	Dry	-			
0.37	Unnamed tributary	Lat 39°25'52", long 77° 26'42", Frederick Co., 0.7 mi south-west of Rocky Springs Station.	0.08	+.00	15.6	7.52	357
0.02	....do....	Lat 39°25'46", long 77° 26'16", Frederick Co., at mouth.	0.24	+.16	19.6	7.74	569
Overall net gain or loss, Unnamed Carroll Creek tributary no. 3				**-.02**			
Carroll Creek mile							
3.65	Carroll Creek	Lat 39°25'45", long 77° 26'07", Frederick Co., below confluence, 0.7 mi southwest of Rocky Springs Station.	3.85	+.19	17.4	7.92	542
3.53	....do....	Lat 39°25'40", long 77° 25'59", Frederick Co., 0.8 mi south of Rocky Springs Station.	3.67	-.18	18.0	7.99	567
3.52	Unnamed spring no. 1 outflow	Lat 39°25'40", long 77° 25'58", Frederick Co., 0.8 mi south of Rocky Springs Station.	0.01	-	--	--	--
3.37	Carroll Creek	Lat 39°25'34", long 77° 25'55", Frederick Co., 0.95 mi south of Rocky Springs Station.	4.17	+.29	18.2	8.09	573
3.19	Unnamed spring no. 2 outflow	Lat 39°25'25", long 77° 25'48", Frederick Co., 1.15 mi south of Rocky Springs Station.	0.01	-	17.5	7.53	1116
3.18	Carroll Creek	Lat 39°25'25", long 77° 25'47", Frederick Co., 1.15 mi south of Rocky Springs Station.	3.92	-.26	16.7	7.91	572
Rock Creek mile							
2.17	Rock Creek	Lat 39°25'30", long 77° 28'16", Frederick Co., 0.3 mi north-east of Braddock.	0.52	-	19.1	8.11	516
2.05	....do....	Lat 39°25'28", long 77° 28'08", Frederick Co., 0.45 mi north-east of Braddock.	0.53	-.01	18.8	8.04	522
1.89	....do....	Lat 39°25'24", long 77° 27'57", Frederick Co., 0.5 mi north-east of Braddock.	0.21	-.32	18.2	8.16	521
1.80	....do....	Lat 39°25'22", long 77° 27'50", Frederick Co., 0.65 mi east of Braddock.	0.25	+.04	18.7	8.10	527
1.58	....do....	Lat 39°25'22", long 77° 27'35", Frederick Co., 0.85 mi east of Braddock.	0.26	+.01	18.8	7.99	529
1.31	....do....	Lat 39°25'17", long 77° 27'14", Frederick Co., 1.15 mi east of Braddock.	0.31	+.05	18.7	7.75	683

Fort Detrick seepage investigations--Unnamed Monocacy River tributary and Carroll Creek, Frederick County, MD

September 7-9, 2000--Continued

Unnamed Rock Creek trib. mile	Stream	Location	Meas. discharge (ft^3/s)	Gain or loss	Water temp. (°C)	pH (units)	Conductivity (microsiemens)
0.67	Unnamed tributary	Lat 39°25'09", long 77° 27'58", Frederick Co., 0.55 mi east of Braddock.	0.12	-	19.1	8.07	600
0.37	....do....	Lat 39°25'09", long 77° 27'36", Frederick Co., 0.85 mi east of Braddock.	0.13	+.01	18.9	7.49	585
0.01	....do....	Lat 39°25'17", long 77° 27'15", Frederick Co., at mouth.	0.05	-.08	17.8	7.71	529
Overall net gain or loss, Unnamed Rock Creek tributary				**-.07**			
Rock Creek mile							
1.23	Rock Creek	Lat 39°25'21", long 77° 27'11", Frederick Co., below confluence, 1.20 mi east of Braddock.	0.50	+.14	19.3	7.91	650
1.14	....do....	Lat 39°25'25", long 77° 27'06", Frederick Co., 1.3 mi east of Braddock.	0.52	+.02	19.7	7.94	653
1.07	Unnamed spring outflow	Lat 39°25'25", long 77° 27'00", Frederick Co., at mouth.	0.61	-	15.1	7.60	604
0.98	Rock Creek	Lat 39°25'24", long 77° 26'53", Frederick Co., 1.25 mi southwest of Rocky Springs Station.	1.21	+.08	17.5	7.90	627
0.80	....do....	Lat 39°25'19", long 77° 26'43", Frederick Co., 1.25 mi southwest of Rocky Springs Station.	1.08	-.13	17.4	8.03	631
0.75	Pond outflow	Lat 39°25'16", long 77° 26'38", Frederick Co., at mouth.	0.02	-	21.4	7.89	1120
0.74	Rock Creek	Lat 39°25'17", long 77° 26'39", Frederick Co., 1.25 mi south of Rocky Springs Station.	1.29	+.19	16.9	8.03	635
0.61	....do....	Lat 39°25'22", long 77° 26'30", Frederick Co., 1.15 mi south of Rocky Springs Station.	1.45	+.16	16.2	7.97	665
0.38	....do....	Lat 39°25'26", long 77° 26'13", Frederick Co., 1.1 mi south of Rocky Springs Station.	1.39	-.06	16.6	8.02	683
0.24	....do....	Lat 39°25'21", long 77° 26'03", Frederick Co., 1.15 mi south of Rocky Springs Station.	1.33	-.06	16.3	8.03	686
0.13	....do....	Lat 39°25'22", long 77° 25'55", Frederick Co., 1.15 mi south of Rocky Springs Station.	1.39	+.06	15.6	7.94	697
0.06	Pond outflow	Lat 39°25'24", long 77° 25'50", Frederick Co., at mouth.	0.03	-	20.8	7.91	941
0.02	Rock Creek	Lat 39°25'25", long 77° 25'48", Frederick Co., 1.15 mi south of Rocky Springs Station.	1.39	-.03	17.0	7.84	700
Overall net gain or loss, Rock Creek				**+.14**			

Fort Detrick seepage investigations--Unnamed Monocacy River tributary and Carroll Creek, Frederick County, MD

September 7-9, 2000--Continued

Carroll Creek mile	Stream	Location	Meas. discharge (ft^3/s)	Gain or loss	Water temp. (°C)	pH (units)	Conduc-tivity (micro-siemens)
3.11	Carroll Creek	Lat 39°25'23", long 77° 25'42", Frederick Co., 1.15 mi south of Rocky Springs Station.	6.61	+1.30	16.2	7.88	633
2.94	....do....	Lat 39°25'14", long 77° 25'36", Frederick Co., 1.15 mi north-west of Frederick.	5.94	-.67	18.7	7.98	629
2.77	....do....	Lat 39°25'06", long 77° 25'33", Frederick Co., 1.0 mi west of Frederick.	5.56	-.38	18.7	7.95	649
2.58	....do....	Lat 39°24'58", long 77° 24'24", Frederick Co., 0.85 mi west of Frederick.	6.05	+.49	18.7	7.75	661
2.32	....do....	Lat 39°24'55", long 77° 24'06", Frederick Co., 0.6 mi west of Frederick.	7.81	+1.76	17.6	7.69	668
1.16	....do....	Lat 39°24'57", long 77° 27723'51", Frederick Co., 0.5 mi east of Frederick.	6.12	-1.69	18.9	8.09	670
0.09	....do....	Lat 39°25'40", long 77° 22'55", Frederick Co., at mouth.	6.62	+.50	22.4	8.58	569
Overall net gain or loss, Carroll Creek				**+3.80**			

Fort Detrick seepage investigations--Unnamed Monocacy River tributary and Carroll Creek, Frederick County, MD

April 23, 24, 2001

Unnamed Monocacy River trib. mile	Stream	Location	Meas. discharge (ft^3/s)	Gain or loss	Water temp. (°C)	pH (units)	Conductivity (microsiemens)
0.60	Unnamed spring outflow	Lat 39°26'18", long 77° 24'21", Frederick Co., 0.95 mi south of Harmony Grove.	0.03	-	15.5	6.92	1021
0.59	Unnamed tributary	Lat 39°26'18", long 77°24'18", Frederick Co., 0.95 mi south of Harmony Grove.	0.53	-	15.0	7.08	940
0.53	....do....	Lat 39°26'17", long 77°24'14", Frederick Co., 0.95 mi south of Harmony Grove.	0.44	-.12	15.4	7.54	935
0.37	....do....	Lat 39°26'17", long 77°24'02", Frederick Co., 0.95 mi south of Harmony Grove.	0.73	+.29	15.8	7.62	817
0.30	....do....	Lat 39°26'18", long 77°23'57", Frederick Co., 0.95 mi south of Harmony Grove.	0.70	-.03	16.5	7.89	917
Overall net gain or loss, Unnamed Monocacy River tributary				**+.14**			
Carroll Creek mile							
5.40	Carroll Creek	Lat 39°26'52", long 77°27'16", Frederick Co., 0.2 mi south of Rocky Springs.	1.08	-	19.7	7.60	99
5.16	....do....	Lat 39°26'45", long 77°27'01", Frederick Co., 0.4 mi southeast of Rocky Springs.	1.03	-.05	20.9	8.01	100
4.97	....do....	Lat 39°26'37", long 77°26'52", Frederick Co., 0.6 mi northwest of Rocky Springs Station.	0.97	-.06	20.7	8.20	102
Unnamed Carroll Creek trib. no. 1 mile							
0.54	Unnamed tributary	Lat 39°26'41", long 77°27'22", Frederick Co., 0.4 mi south of Rocky Springs.	0.78	-	14.1	6.86	85
0.38	....do....	Lat 39°26'32", long 77°27'16", Frederick Co., 0.5 mi south of Rocky Springs.	0.84	+.06	15.1	7.25	83
0.35	Tributary to unnamed tributary	Lat 39°26'30", long 77°27'16", Frederick Co., at mouth, 0.5 mi south of Rocky Springs.	0.28	-	17.5	7.06	222
0.26	Pond outflow	Lat 39°26'30", long 77°27'09", Frederick Co., at mouth.	Dry	-			
0.24	Unnamed tributary	Lat 39°26'30", long 77° 27'08", Frederick Co., 0.55 mi south of Rocky Springs.	1.18	+.06	16.4	7.21	119
0.18	....do....	Lat 39°26'30", long 77° 27'02", Frederick Co., 0.6 mi southeast of Rocky Springs.	1.18	+.00	16.9	7.80	118
Overall net gain or loss, Unnamed Carroll Creek tributary no. 1				**+.12**			

Fort Detrick seepage investigations--Unnamed Monocacy River tributary and Carroll Creek, Frederick County, MD

April 23, 24, 2001--Continued

Carroll Creek mile	Stream	Location	Meas. discharge (ft^3/s)	Gain or loss	Water temp. (°C)	pH (units)	Conductivity (microsiemens)
4.78	Carroll Creek	Lat 39°26'25", long 77° 26'50", Frederick Co., below confluence, 0.5 mi west of Rocky Springs Station.	2.21	+.06	18.8	8.35	109
4.62	....do....	Lat 39°26'22", long 77° 26'39", Frederick Co., 0.35 mi west of Rocky Springs Station.	2.08	-.03	21.0	8.65	110
4.48	....do....	Lat 39°26'19", long 77° 26'29", Frederick Co., 0.2 mi west of Rocky Springs Station.	2.17	+.09	21.1	8.60	113
Unnamed Carroll Creek trib. no. 2 mile							
0.28	Unnamed tributary	Lat 39°26'29", long 77° 26'20", Frederick Co., 0.15 mi northwest of Rocky Springs Station.	0.10	-	17.2	7.65	553
Carroll Creek mile							
4.29	Carroll Creek	Lat 39°26'12", long 77° 26'25", Frederick Co., below confluence, 0.25 mi southwest of Rocky Springs Station.	3.47	+1.20	20.4	8.07	307
4.08	....do....	Lat 39°25'56", long 77° 26'27", Frederick Co., 0.45 mi southwest of Rocky Springs Station.	4.63	+1.16	19.5	7.81	340
4.02	Robinson Spring outflow	Lat 39°25'53", long 77° 26'30", Frederick Co., 0.45 mi southwest of Rocky Springs Station.	0.53	-	20.2	7.52	479
3.94	Hospital Spring outflow	Lat 39°25'50", long 77° 26'23", Frederick Co., 0.6 mi south of Rocky Springs Station.	0.58	-	14.5	7.42	728
3.79	Carroll Creek	Lat 39°25'47", long 77° 26'16", Frederick Co., 0.65 mi south of Rocky Springs Station.	6.02	+.28	16.3	7.45	412
Unnamed Carroll Creek trib. no. 3 mile							
1.44	Unnamed tributary	Lat 39°25'57", long 77° 27'54", Frederick Co., 0.45 mi southeast of Shookstown.	0.68	-	20.2	8.06	227
1.42	Tributary #1 to unnamed tributary	Lat 39°25'57", long 77° 27'55", Frederick Co., at mouth.	0.50	-	18.9	7.65	225
1.11	Unnamed tributary	Lat 39°25'48", long 77° 27'34", Frederick Co., 0.75 mi southeast of Shookstown.	1.04	-.14	20.0	8.18	227
0.86	....do....	Lat 39°25'49", long 77° 27'18", Frederick Co., 0.9 mi southeast of Shookstown.	1.19	+.15	23.7	9.07	226
0.66	....do....	Lat 39°25'51", long 77° 27'05", Frederick Co., 0.9 mi southwest of Rocky Springs Station.	0.84	-.35	20.6	8.68	227

Fort Detrick seepage investigations--Unnamed Monocacy River tributary and Carroll Creek, Frederick County, MD

April 23, 24, 2001--Continued

Unnamed Carroll Creek trib. no. 3 mile	Stream	Location	Meas. discharge (ft^3/s)	Gain or loss	Water temp. (°C)	pH (units)	Conductivity (microsiemens)
0.53	Unnamed tributary	Lat 39°25'52", long 77° 26'55", Frederick Co., 0.75 mi southwest of Rocky Springs Station.	1.02	+.18	19.3	8.73	228
0.39	Tributary #2 to unnamed tributary	Lat 39°25'53", long 77° 27726'43", Frederick Co., at mouth.	0.11	-	26.8	8.41	451
0.37	Unnamed tributary	Lat 39°25'52", long 77° 26'42", Frederick Co., 0.7 mi southwest of Rocky Springs Station.	1.18	+.05	18.8	7.99	283
0.02	....do....	Lat 39°25'46", long 77° 26'16", Frederick Co., at mouth.	1.41	+.23	17.8	7.55	355
Overall net gain or loss, Unnamed Carroll Creek tributary no. 3				**+.12**			
Carroll Creek mile							
3.65	Carroll Creek	Lat 39°25'45", long 77° 26'07", Frederick Co., below confluence, 0.7 mi southwest of Rocky Springs Station.	8.26	+.83	17.0	7.76	424
3.52	Unnamed spring no. 1 outflow	Lat 39°25'40", long 77° 25'58", Frederick Co., 0.8 mi south of Rocky Springs Station.	Dry	-			
3.50	Carroll Creek	Lat 39°25'39", long 77° 25'57", Frederick Co., 0.8 mi south of Rocky Springs Station.	9.12	+.86	16.1	7.75	447
3.37	....do....	Lat 39°25'34", long 77° 25'55", Frederick Co., 0.95 mi south of Rocky Springs Station.	8.61	-.51	15.5	7.74	441
3.19	Unnamed spring no. 2 outflow	Lat 39°25'25", long 77° 25'48", Frederick Co., 1.15 mi south of Rocky Springs Station.	Dry	-			
3.18	Carroll Creek	Lat 39°25'25", long 77° 25'47", Frederick Co., 1.15 mi south of Rocky Springs Station.	8.42	-.19	15.4	5.70	451
Rock Creek mile							
2.17	Rock Creek	Lat 39°25'30", long 77° 28'16", Frederick Co., 0.3 mi northeast of Braddock.	2.79	-	18.6	6.76	450
2.05	....do....	Lat 39°25'28", long 77° 28'08", Frederick Co., 0.45 mi northeast of Braddock.	2.54	-.25	17.4	6.78	451
1.89	....do....	Lat 39°25'24", long 77° 27'57", Frederick Co., 0.5 mi northeast of Braddock.	2.41	-.13	21.2	6.79	452
1.80	....do....	Lat 39°25'22", long 77° 27'50", Frederick Co., 0.65 mi east of Braddock.	1.82	-.59	21.6	7.16	456
1.58	....do....	Lat 39°25'22", long 77° 27'35", Frederick Co., 0.85 mi east of Braddock.	2.10	+.28	21.6	7.58	457
1.31	....do....	Lat 39°25'17", long 77° 27'14", Frederick Co., 1.15 mi east of Braddock.	2.04	-.06	15.9	7.18	465

Fort Detrick seepage investigations--Unnamed Monocacy River tributary and Carroll Creek, Frederick County, MD

April 23, 24, 2001--Continued

Unnamed Rock Creek trib. mile	Stream	Location	Meas. discharge (ft^3/s)	Gain or loss	Water temp. (°C)	pH (units)	Conductivity (microsiemens)
0.67	Unnamed tributary	Lat 39°25'09", long 77° 27'58", Frederick Co., 0.55 mi east of Braddock.	0.63	-	21.3	7.20	556
0.37	....do....	Lat 39°25'09", long 77° 27'36", Frederick Co., 0.85 mi east of Braddock.	0.58	-.05	19.0	7.67	546
0.01	....do....	Lat 39°25'17", long 77° 27'15", Frederick Co., at mouth.	0.69	+.11	15.7	7.06	619
Overall net gain or loss, Unnamed Rock Creek tributary				**+.06**			
Rock Creek mile							
1.23	Rock Creek	Lat 39°25'21", long 77° 27'11", Frederick Co., below confluence, 1.20 mi east of Braddock.	2.71	-.02	15.6	6.82	520
1.14	....do....	Lat 39°25'25", long 77° 27'06", Frederick Co., 1.3 mi east of Braddock.	3.05	+.34	16.7	8.21	520
1.07	Unnamed spring outflow	Lat 39°25'25", long 77° 27'00", Frederick Co., at mouth.	0.70	-	16.4	7.61	612
0.98	Rock Creek	Lat 39°25'24", long 77° 26'53", Frederick Co., 1.25 mi southwest of Rocky Springs Station.	4.09	+.34	17.8	8.40	549
0.80	....do....	Lat 39°25'19", long 77° 26'43", Frederick Co., 1.25 mi southwest of Rocky Springs Station.	4.03	-.06	18.7	8.39	550
0.75	Pond outflow	Lat 39°25'16", long 77° 26'38", Frederick Co., at mouth.	0.16	-	26.3	3.67	1280
0.74	Rock Creek	Lat 39°25'17", long 77° 26'39", Frederick Co., 1.25 mi south of Rocky Springs Station.	4.03	-.16	18.9	8.40	553
0.61	....do....	Lat 39°25'22", long 77° 26'30", Frederick Co., 1.15 mi south of Rocky Springs Station.	3.62	-.41	18.7	8.46	559
0.38	....do....	Lat 39°25'26", long 77° 26'13", Frederick Co., 1.1 mi south of Rocky Springs Station.	3.56	-.06	19.0	8.34	572
0.24	....do....	Lat 39°25'21", long 77° 26'03", Frederick Co., 1.15 mi south of Rocky Springs Station.	3.82	+.26	19.4	8.15	596
0.13	....do....	Lat 39°25'22", long 77° 25'55", Frederick Co., 1.15 mi south of Rocky Springs Station.	3.74	-.08	18.7	8.03	595
0.06	Pond outflow	Lat 39°25'24", long 77° 25'50", Frederick Co., at mouth.	0.03	-	18.4	7.60	1035
0.02	Rock Creek	Lat 39°25'25", long 77° 25'48", Frederick Co., 1.15 mi south of Rocky Springs Station.	4.20	+.43	17.2	7.60	616

Fort Detrick seepage investigations--Unnamed Monocacy River tributary and Carroll Creek, Frederick County, MD

April 23, 24, 2001--Continued

Carroll Creek mile	Stream	Location	Meas. discharge (ft^3/s)	Gain or loss	Water temp. (°C)	pH (units)	Conduc-tivity (micro-siemens)
3.11	Carroll Creek	Lat 39°25'23", long 77° 25'42", Frederick Co., 1.15 mi south of Rocky Springs Station.	12.13	-.49	18.3	7.91	468
2.94	....do....	Lat 39°25'14", long 77° 25'36", Frederick Co., 1.15 mi north-west of Frederick.	10.90	-1.23	18.5	8.12	514
2.77	....do....	Lat 39°25'06", long 77° 25'33", Frederick Co., 1.0 mi west of Frederick.	11.80	+.90	18.3	8.08	528
2.58	....do....	Lat 39°24'58", long 77° 24'24", Frederick Co., 0.85 mi west of Frederick.	13.70	+1.90	18.1	7.96	571
2.32	....do....	Lat 39°24'55", long 77° 24'06", Frederick Co., 0.6 mi west of Frederick.	17.30	+3.60	17.7	7.98	557
1.16	....do....	Lat 39°24'57", long 77° 27723'51", Frederick Co., 0.5 mi east of Frederick.	14.20	-3.10	16.9	7.97	573
0.09	....do....	Lat 39°25'40", long 77° 22'55", Frederick Co., at mouth.	14.80	+.60	17.9	8.11	570
Overall net gain or loss, Carroll Creek				**+6.01**			

Water-quality partial-record stations are particular sites where chemical-quality, biological, and/or sediment data are collected systematically over a period of years for use in hydrologic analyses. The data are collected usually less than quarterly. Samples collected at sites other than gaging stations and partial-record stations to give better areal coverage in a river basin are referred to as miscellaneous sites.

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

ST MARTIN RIVER BASIN

01484310 SEEPS TO PRIME HOOK CREEK NEAR MILTON, DE

DATE	TIME	SAMPLE TYPE	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)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
MAY												
16...	1530	ENVIRONMENTAL	128	6.0	16.3	14.9	--	<1.0	--	35	4.60	5.72
AUG												
23...	1200	ENVIRONMENTAL	68	5.7	30.5	25.5	763	.5	5	--	--	--

DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	BICAR-BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ANTI-MONY, DIS-SOLVED (UG/L AS SB) (01095)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)
MAY													
16...	6.8	3.15	24	30	3.1	15.9	<.2	11.5	4.4	25	10.9	150	.08
AUG													
23...	--	--	14	16	--	--	--	--	--	--	22.8	--	--

DATE	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	URANIUM NATURAL DIS-SOLVED (UG/L AS U) (22703)
MAY													
16...	.12	<.8	3.08	<.2	170	23.7	53.5	<.2	.98	--	<1.0	5	<.02
AUG													
23...	--	--	--	--	--	212	--	--	--	<.3	--	--	--

< Actual value is known to be less than the value shown.

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

POCOMOKE RIVER BASIN

01486983 POCOMOKE RIVER AT SHELLTOWN, MD

DATE	TIME	SAMPLE TYPE	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	BICAR-BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)
APR												
09...	0930	ENVIRONMENTAL	3340	7.8	14.0	8.3	20.2	16	19	2.1	1.15	.007
JUN												
11...	1030	ENVIRONMENTAL	5460	8.0	25.0	5.3	--	32	39	1.2	.372	.008
11...	1600	ENVIRONMENTAL	--	--	--	--	41.4	--	--	--	--	--
AUG												
13...	1000	ENVIRONMENTAL	1570	7.2	28.5	5.9	104	47	57	--	--	<.006

DATE	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN DIS-SOLVED (MG/L AS N) (00602)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	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)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)
APR													
09...	1.16	.066	.93	.71	1.9	.87	.65	.108	.025	.018	72	<2.0	2.4
JUN													
11...	.380	.071	.77	.52	.90	.70	.45	.095	.027	E.012	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	<15	<2.0	4.4
AUG													
13...	E.030	E.032	.58	.53	--	--	--	.087	.027	E.014	<300	E2.4	1.7

DATE	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	2,6-DI-ETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)	ACETO-CHLOR ESA FLTRD 0.7 UM GF REC (UG/L) (61029)	ACETO-CHLOR OA FLTRD 0.7 UM GF REC (UG/L) (61030)	ACETO-CHLOR, WATER FLTRD REC (UG/L) (49260)	ALA-CHLOR OA FLTRD 0.7 UM GF REC (UG/L) (61031)	ALA-CHLOR, (ESA) WAT FLT GF 0.7U REC (UG/L) (50009)	ALA-CHLOR, WATER, DISS, REC, (UG/L) (46342)	ALPHA BHC DIS-SOLVED (UG/L) (34253)	ATRA-ZINE, WATER, DISS, REC (UG/L) (39632)
APR													
09...	190	<.01	<2.4	13	<.002	.11	.07	<.004	.05	.420	<.002	<.005	.010
JUN													
11...	--	--	--	--	<.002	.08	<.05	.005	<.05	.380	<.002	<.005	.162
11...	30	<.01	<2.0	10	--	--	--	--	--	--	--	--	--
AUG													
13...	<200	<.01	<5.0	<6	<.002	<.05	<.05	<.004	<.05	.360	<.002	<.005	.283

DATE	BEN-FLUR-ALIN WAT FLD 0.7 U GF, REC (UG/L) (82673)	BUTYL-ATE, WATER, DISS, REC (UG/L) (04028)	CAR-BARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBO-FURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)	CHLOR-PYRIFOS DIS-SOLVED (UG/L) (38933)	CYANA-ZINE, WATER, DISS, REC (UG/L) (04041)	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)	DEETHYL ATRA-ZINE, WATER, DISS, REC (UG/L) (04040)	DIAZ-INON D10 SRG WAT FLT 0.7 U GF, REC PERCENT (91063)	DI-AZINON, DIS-SOLVED (UG/L) (39572)	DI-ELDRIN DIS-SOLVED (UG/L) (39381)	DIMETH-ENAMID OXA, WATER FLT, REC (UG/L) (62482)	DIMETH-ENAMID, ESA, WAT FLT (UG/L) (61951)
APR													
09...	<.010	<.002	E.006	<.020	<.005	<.018	<.003	E.005	118	<.005	<.005	<.0500	<.05
JUN													
11...	<.010	<.002	<.041	<.020	<.005	<.018	<.003	E.022	104	<.005	<.005	<.0500	<.05
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
13...	<.010	<.002	<.041	<.020	<.005	<.018	<.003	E.034	111	<.005	<.005	<.0500	<.05

DATE	DISUL-FOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ETHAL-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)	ETHO-PROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FLUFEN-ACET, ESA, WAT FLT (UG/L) (61952)	FLUFE-NACET OXA WATER FLT, REC (UG/L) (62483)	FONOFOS WATER DISS REC (UG/L) (04095)	HCH ALPHA D6 SRG WAT FLT 0.7 U GF, REC PERCENT (91065)	LINDANE DIS-SOLVED (UG/L) (39341)	LIN-URON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)	MALA-THION, DIS-SOLVED (UG/L) (39532)	METHYL AZIN-PHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)	METHYL PARA-THION WAT FLT 0.7 U GF, REC (UG/L) (82667)
APR													
09...	<.021	<.002	<.009	<.005	<.05	<.0500	<.003	115	<.004	<.035	<.027	<.050	<.006
JUN													
11...	<.021	<.002	<.009	<.005	<.05	<.0500	<.003	100	<.004	<.035	<.027	<.050	<.006
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
13...	<.021	<.002	<.009	<.005	<.05	<.0500	<.003	99	<.004	<.035	<.027	<.050	<.006

E Estimated value.
< Actual value is known to be less than the value shown.

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

POCOMOKE RIVER BASIN--Continued

01486983 POCOMOKE RIVER AT SHELLTOWN, MD--Continued

DATE	METOLA-CHLOR ESA FLTRD 0.7 UM GF REC (UG/L) (61043)	METOLA-CHLOR OA FLTRD 0.7 UM GF REC (UG/L) (61044)	METO-LACHLOR WATER DISSOLV (UG/L) (39415)	METRI-BUZIN SENCOR WATER DISSOLV (UG/L) (82630)	MOL-INATE WATER FLTRD 0.7 U GF, REC (UG/L) (82671)	NAPROP-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82684)	P,P' DDE DISSOLV (UG/L) (34653)	PARA-THION, DIS-SOLVED (UG/L) (39542)	PEB-ULATE WATER FILTRD 0.7 U GF, REC (UG/L) (82669)	PENDI-METH-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82683)	PER-METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L) (82664)	PRO-METON, WATER, DISS, REC (UG/L) (04037)
APR													
09...	2.39	.55	.032	<.006	<.002	<.007	<.003	<.007	<.002	<.010	<.006	<.011	E.002
JUN													
11...	2.04	.67	.082	<.006	<.002	<.007	<.003	<.007	<.002	<.010	<.006	<.011	E.007
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
13...	1.31	<.05	.028	<.006	<.002	<.007	<.003	<.007	<.002	<.010	<.006	<.011	.031

DATE	PRON-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)	PROPA-CHLOR, WATER, DISS, REC (UG/L) (04024)	PRO-PANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)	PRO-PARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	SI-MAZINE, WATER, DISS, REC (UG/L) (04035)	TEBU-THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TER-BACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TER-BUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)	THIO-BENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)	TRIAL-LATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)	TRI-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)
APR											
09...	<.004	<.010	<.011	<.023	.023	<.016	<.034	<.017	<.005	<.002	<.009
JUN											
11...	<.004	<.010	<.011	<.023	.101	<.016	<.034	<.017	<.005	<.002	<.009
11...	--	--	--	--	--	--	--	--	--	--	--
AUG											
13...	<.004	<.010	<.011	<.023	.165	<.016	<.034	<.017	<.005	<.002	<.009

E Estimated value.
< Actual value is known to be less than the value shown.

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

NANTICOKE RIVER BASIN

01486870 NANTICOKE RIVER AT BRIDGEVILLE, DE

DATE	TIME	SAMPLE TYPE	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 WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (LOW LEVEL) (MG/L) (00335)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)
SEP												
04...	1115	ENVIRONMENTAL	48	136	6.4	20.2	4.3	7.6	85	<10	35	8.20
04...	*1116*	*REPLICATE*	*48*	--	--	--	*4.1*	--	--	*<10*	*35*	*8.18*

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	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)
SEP													
04...	3.49	9.7	2.44	9.2	13.3	<.2	19.9	2	4.5	4.26	.005	4.27	.014
04...	*3.49*	*9.5*	*2.55*	*9.2*	*13.2*	*<.2*	*19.8*	*3*	*4.6*	*4.23*	*.005*	*4.23*	*.011*

DATE	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN DIS-SOLVED (MG/L AS N) (00602)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	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)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	IRON, DIS-SOLVED (UG/L AS FE) (01046)
SEP													
04...	.28	.26	4.5	.27	.25	.021	<.009	.008	10	3.2	3.1	16	90
04...	*.37*	*.28*	*4.5*	*.36*	*.27*	*.022*	*<.007*	*.006*	--	*3.3*	*3.1*	*16*	*110*

DATE	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
SEP			
04...	54.3	2	.25
04...	*55.9*	*2*	*.22*

< Actual value is known to be less than the value shown.

REMARKS.--Nutrient analyses were performed at the Maryland Department of Health and Mental Hygiene laboratory (DHMH), Baltimore, MD.

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

NANTICOKE RIVER BASIN--Continued

01486905 BRIDGEVILLE BRANCH AT BRIDGEVILLE, DE

DATE	TIME	SAMPLE TYPE	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)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (LOW LEVEL) (MG/L) (00335)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)
SEP 04...	0945	ENVIRONMENTAL	9.1	178	6.3	29.0	19.2	2.5	15.3	163	<10	53

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	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)
SEP 04...	14.1	4.34	9.3	3.06	15.1	14.8	<.2	17.1	4	6.9	6.52	.010	6.53

DATE	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN DIS-SOLVED (MG/L AS N) (00602)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	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)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)
SEP 04...	.121	.39	.28	6.8	.27	.16	.050	.035	.019	15	2.9	2.9	E10

DATE	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
SEP 04...	60	22.6	3	.08

E Estimated value.
< Actual value is known to be less than the value shown.

REMARKS.--Nutrient analyses were performed at the Maryland Department of Health and Mental Hygiene laboratory (DHMH), Baltimore, MD.

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

NANTICOKE RIVER BASIN--Continued

01486983 TOMS DAM BRANCH AT BRIDGEVILLE, DE

DATE	TIME	SAMPLE TYPE	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 WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (LOW LEVEL) (MG/L) (00335)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
SEP 04...	1815	ENVIRONMENTAL	13	111	6.2	21.7	3.6	40	<10	28	6.64	2.83

SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	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)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)
8.0	3.32	4.7	9.7	<.2	19.4	2	2.8	2.32	.017	2.34	.086	.47

NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN DIS-SOLVED (MG/L AS N) (00602)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	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)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
.43	2.8	.38	.34	.057	.012	.011	23	4.6	4.1	17	210	15.5

SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
2	.06

< Actual value is known to be less than the value shown.

REMARKS.--Nutrient analyses were performed at the Maryland Department of Health and Mental Hygiene laboratory (DHMH), Baltimore, MD.

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

NANTICOKE RIVER BASIN--Continued

01486985 GUM BRANCH NEAR OAKLEY, DE

DATE	TIME	SAMPLE TYPE	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)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (LOW LEVEL) (MG/L) (00335)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)
SEP												
04...	*1559*	*BLANK*	--	--	--	--	--	*.6*	--	--	*<10*	--
04...	1600	ENVIRONMENTAL	13	81	6.5	27.5	20.6	3.8	5.5	60	<10	17

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	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)
SEP													
04...	*<.01*	*<.008*	*<.1*	*<.09*	*<.1*	*<.1*	*<.2*	*<.5*	*<1*	--	--	*<.001*	*.002*
04...	4.16	1.54	7.0	2.14	3.9	7.8	<.2	17.0	2	2.7	2.41	.004	2.41

DATE	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN DIS-SOLVED (MG/L AS N) (00602)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	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)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)
SEP													
04...	*<.003*	*<.05*	*<.001*	*<.001*	--	--	*<.004*	*<.003*	*<.002*	--	*.09*	*.64*	*<15*
04...	.008	.32	.16	2.6	.31	.15	.010	<.007	.004	7.4	2.5	2.5	<15

DATE	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
SEP				
04...	*<10*	*<3.0*	*<1*	--
04...	90	41.4	3	.10

< Actual value is known to be less than the value shown.

REMARKS.--Nutrient analyses were performed at the Maryland Department of Health and Mental Hygiene laboratory (DHMH), Baltimore, MD.

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

NANTICOKE RIVER BASIN--Continued

01486987 WEST BRANCH NEAR GULLY CAMP, DE

DATE	TIME	SAMPLE TYPE	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 WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (LOW LEVEL) (MG/L) (00335)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)
SEP 04...	1730	ENVIRONMENTAL	3.7	89	6.3	23.1	4.0	6.2	74	<10	20	5.21

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	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)
SEP 04...	1.79	6.9	2.21	4.9	8.6	<.2	11.9	3	2.4	2.10	.005	2.11	.023

DATE	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN DIS-SOLVED (MG/L AS N) (00602)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	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)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	IRON, DIS-SOLVED (UG/L AS FE) (01046)
SEP 04...	.32	.25	2.4	.30	.23	.024	<.007	.006	14	3.4	3.2	E8	190

DATE	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
SEP 04...	19.1	2	.02

E Estimated value.
< Actual value is known to be less than the value shown.

REMARKS.--Nutrient analyses were performed at the Maryland Department of Health and Mental Hygiene laboratory (DHMH), Baltimore, MD.

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

CHESTER RIVER BASIN

01494200 CHESTER RIVER NEAR MCKINLEYVILLE, MD

DATE	TIME	SAMPLE TYPE	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)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	BICAR-BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)
APR												
12...	0900	ENVIRONMENTAL	16600	7.8	--	12.0	766	7.0	69	49.1	63	76
JUN												
12...	1000	ENVIRONMENTAL	8630	7.8	--	25.0	761	7.5	94	98.5	58	71
AUG												
14...	0900	ENVIRONMENTAL	16200	7.2	26.5	28.0	763	6.5	88	97.2	62	75

DATE	NITRO-GEN, TOTAL (MG/L AS N) (00600)	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)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN DIS-SOLVED (MG/L AS N) (00602)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	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)
APR													
12...	1.4	.464	.011	.475	.331	.96	1.0	1.5	.63	.68	.057	.031	E.015
JUN													
12...	.58	--	E.004	.144	<.040	.44	.25	.40	--	--	.027	.007	<.020
AUG													
14...	--	--	E.003	E.024	E.028	.37	.34	--	--	--	.059	.023	<.020

DATE	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	2,6-DI-ETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)	ACETO-CHLOR ESA FLTRD 0.7 UM GF REC (UG/L) (61029)	ACETO-CHLOR OA FLTRD 0.7 UM GF REC (UG/L) (61030)	ACETO-CHLOR, WATER FLTRD REC (UG/L) (49260)	ALA-CHLOR OA FLTRD 0.7 UM GF REC (UG/L) (61031)	ALA-CHLOR, (ESA) WAT FLT GF 0.7U REC (UG/L) (50009)
APR													
12...	<225	<4.0	5.7	<150	<.01	<4.8	4	<.002	<.05	<.05	<.004	<.05	.190
JUN													
12...	<150	<4.0	6.7	<100	<.01	<5.0	<6	<.002	<.05	<.05	<.004	<.05	.170
AUG													
14...	<150	E2.5	9.8	<100	--	<5.0	8	<.002	<.05	<.05	<.004	<.05	.210

DATE	ALA-CHLOR, WATER, DISS, REC, (UG/L) (46342)	ALPHA BHC DIS-SOLVED (UG/L) (34253)	ATRA-ZINE, WATER, DISS, REC (UG/L) (39632)	BEN-FLUR-ALIN WAT FLD 0.7 U GF, REC (UG/L) (82673)	BUTYL-ATE, WATER, DISS, REC (UG/L) (04028)	CAR-BARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBO-FURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)	CHLOR-PYRIFOS DIS-SOLVED (UG/L) (38933)	CYANA-ZINE, WATER, DISS, REC (UG/L) (04041)	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)	DEETHYL ATRA-ZINE, WATER, DISS, REC (UG/L) (04040)	DIAZ-INON D10 SRG WAT FLT 0.7 U GF, REC PERCENT (91063)	DI-AZINON, DIS-SOLVED (UG/L) (39572)
APR													
12...	<.002	<.005	.035	<.010	<.002	<.041	<.020	<.005	<.018	<.003	E.022	100	<.005
JUN													
12...	<.002	<.005	.848	<.010	<.002	<.041	<.020	<.005	<.018	<.003	E.101	104	<.005
AUG													
14...	<.002	<.005	.554	<.010	<.002	<.041	<.020	<.005	<.018	<.003	E.060	111	<.005

DATE	DI-ELDRIN DIS-SOLVED (UG/L) (39381)	DIMETH-ENAMID OXA, WATER FLT, REC (UG/L) (62482)	DIMETH-ENAMID, ESA, WAT FLT (UG/L) (61951)	DISUL-FOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ETHAL-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)	ETHO-PROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FLUFEN-ACET, ESA, WAT FLT (UG/L) (61952)	FLUFE-NACET OXA WATER FLT, REC (UG/L) (62483)	FONOFOS WATER DISS REC (UG/L) (04095)	HCH ALPHA D6 SRG WAT FLT 0.7 U GF, REC PERCENT (91065)	LINDANE DIS-SOLVED (UG/L) (39341)	LIN-URON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)
APR													
12...	<.005	<.0500	<.05	<.021	<.002	<.009	<.005	<.05	<.0500	<.003	94	<.004	<.035
JUN													
12...	<.005	<.0500	<.05	<.021	<.002	<.009	<.005	<.05	<.0500	<.003	97	<.004	<.035
AUG													
14...	<.005	<.0500	<.05	<.021	<.002	<.009	<.005	<.05	<.0500	<.003	91	<.004	<.035

E Estimated value.
< Actual value is known to be less than the value shown.

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

CHESTER RIVER BASIN--Continued

01494200 CHESTER RIVER NEAR MCKINLEYVILLE, MD--Continued

DATE	MALA-THION, DIS-SOLVED (UG/L) (39532)	METHYL AZIN-PHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)	METHYL PARA-THION WAT FLT 0.7 U GF, REC (UG/L) (82667)	METOLA-CHLOR ESA FLTRD 0.7 UM GF REC (UG/L) (61043)	METOLA-CHLOR OA FLTRD 0.7 UM GF REC (UG/L) (61044)	METO-LACHLOR WATER DISSOLV (UG/L) (39415)	METRI-BUZIN SENCOR WATER DISSOLV (UG/L) (82630)	MOL-INATE WATER FLTRD 0.7 U GF, REC (UG/L) (82671)	NAPROP-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82684)	P,P' DDE DISSOLV (UG/L) (34653)	PARA-THION, DIS-SOLVED (UG/L) (39542)	PEB-ULATE WATER FILTRD 0.7 U GF, REC (UG/L) (82669)	PENDI-METH-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82683)
APR													
12...	<.027	<.050	<.006	.97	.20	.026	<.006	<.002	<.007	<.003	<.007	<.002	<.010
JUN													
12...	<.027	<.050	<.006	.86	.26	.048	<.006	<.002	<.007	<.003	<.007	<.002	<.010
AUG													
14...	<.027	<.050	<.006	.83	<.05	E.001	<.006	<.002	<.007	<.003	<.007	<.002	<.010

DATE	PER-METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L) (82664)	PRO-METON, WATER, DISS, REC (UG/L) (04037)	PRON-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)	PROPA-CHLOR, WATER, DISS, REC (UG/L) (04024)	PRO-PANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)	PRO-PARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	SI-MAZINE, WATER, DISS, REC (UG/L) (04035)	TEBU-THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TER-BACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TER-BUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)	THIO-BENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)	TRIAL-LATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)
APR													
12...	<.006	<.011	E.008	<.004	<.010	<.011	<.023	.025	<.016	<.034	<.017	<.005	<.002
JUN													
12...	<.006	<.011	E.006	<.004	<.010	<.011	<.023	.638	E.003	<.034	<.017	<.005	<.002
AUG													
14...	<.006	<.011	E.005	<.004	<.010	<.011	<.023	.329	<.016	<.034	<.017	<.005	<.002

DATE	TRI-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)
APR	
12...	<.009
JUN	
12...	<.009
AUG	
14...	<.009

E Estimated value.
< Actual value is known to be less than the value shown.

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

POTOMAC RIVER BASIN

01621410 BLACKS RUN AT RTE 726 AT HARRISONBURG, VA

DATE	TIME	SAMPLE TYPE	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)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)
OCT												
12...	*1255*	*BLANK*	--	--	--	--	--	--	--	--	--	--
12...	1300	ENVIRONMENTAL	2.5	--	--	--	--	--	--			
NOV												
15...	1230	ENVIRONMENTAL	.79	670	8.2	9.5	7.1	750	14.1	119	1.3	1.16
DEC												
07...	1145	ENVIRONMENTAL	.59	688	7.7	3.5	1.5	750	14.1	102	1.9	1.74
07...	*1146*	*REPLICATE*	--	--	--	--	--	--	--	--	*1.9*	*1.73*
JAN												
04...	*1100*	*BLANK*	--	--	--	--	--	--	--	--	--	--
17...	*1259*	*BLANK*	--	--	--	--	--	--	--	--	--	--
17...	1300	ENVIRONMENTAL	.53	729	8.3	5.0	2.6	750	13.0	98	1.9	1.56
FEB												
26...	1200	ENVIRONMENTAL	.79	952	7.8	11.5	9.4	760	14.7	129	2.6	1.92
MAR												
15...	1600	ENVIRONMENTAL	5.2	777	8.0	5.0	7.9	751	12.9	111	3.3	1.86
20...	1600	ENVIRONMENTAL	1.1	805	8.3	9.5	7.8	750	15.1	129	2.0	1.80
21...	0257	ENVIRONMENTAL	7.4	522	8.0	--	--	--	--	--	3.1	1.35
21...	0457	ENVIRONMENTAL	7.9	302	8.1	--	--	--	--	--	2.8	1.02
21...	0657	ENVIRONMENTAL	163	302	8.2	--	--	--	--	--	3.3	.785
21...	0857	ENVIRONMENTAL	227	329	8.2	--	--	--	--	--	3.1	.519
21...	1057	ENVIRONMENTAL	212	528	8.1	--	--	--	--	--	4.3	1.20
21...	1257	ENVIRONMENTAL	157	352	8.2	--	--	--	--	--	4.1	.573
21...	1657	ENVIRONMENTAL	49	394	8.1	--	--	--	--	--	4.1	2.34
21...	1701	ENVIRONMENTAL	49	397	7.9	--	--	--	--	--	3.9	2.13
21...	*1730*	*BLANK*	--	--	--	--	--	--	--	--	--	--
21...	1857	ENVIRONMENTAL	37	443	8.1	--	--	--	--	--	4.2	2.75
21...	2057	ENVIRONMENTAL	27	473	8.0	--	--	--	--	--	4.2	2.85
21...	2257	ENVIRONMENTAL	20	508	8.0	--	--	--	--	--	4.4	3.19
22...	0057	ENVIRONMENTAL	16	545	8.1	--	--	--	--	--	4.6	3.46
22...	0257	ENVIRONMENTAL	14	572	8.1	--	--	--	--	--	4.8	3.65
22...	1431	ENVIRONMENTAL	14	640	8.0	--	--	--	--	--	5.2	4.16
APR												
13...	1230	ENVIRONMENTAL	7.9	670	8.0	18.5	16.3	725	13.3	143	3.0	2.64
26...	1215	ENVIRONMENTAL	1.9	708	8.2	14.0	13.2	--	14.6	--	2.4	1.97
MAY												
14...	1200	ENVIRONMENTAL	1.4	676	7.9	19.0	14.4	755	9.8	97	1.3	1.06
19...	0045	ENVIRONMENTAL	12	533	7.8	--	--	--	--	--	5.8	1.33
19...	0245	ENVIRONMENTAL	41	295	7.9	--	--	--	--	--	--	.638
19...	*0246*	*REPLICATE*	--	--	--	--	--	--	--	--	--	*.640*
19...	0445	ENVIRONMENTAL	15	319	7.6	--	--	--	--	--	2.8	.789
19...	1300	ENVIRONMENTAL	12	361	7.8	--	--	--	--	--	3.1	1.43
19...	1500	ENVIRONMENTAL	18	314	7.3	--	--	--	--	--	2.9	1.17
19...	1700	ENVIRONMENTAL	12	302	7.8	--	--	--	--	--	--	.950
22...	1515	ENVIRONMENTAL	12	--	8.0	--	--	--	--	--	3.7	2.19
22...	1900	ENVIRONMENTAL	286	236	8.0	--	--	--	--	--	8.2	.760
22...	2130	ENVIRONMENTAL	68	235	7.9	--	--	--	--	--	2.2	.761
JUN												
21...	1145	ENVIRONMENTAL	1.8	701	8.2	29.0	23.3	735	--	--	1.6	1.33
21...	*1146*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
21...	*1150*	*BLANK*	--	--	--	--	--	--	--	--	--	--
JUL												
18...	1500	ENVIRONMENTAL	11	585	7.8	--	--	--	--	--	2.2	1.15
18...	2000	ENVIRONMENTAL	50	302	7.9	--	--	--	--	--	11	1.44
18...	2040	ENVIRONMENTAL	375	242	8.2	--	--	--	--	--	4.4	.633
18...	*2045*	*REPLICATE*	--	--	--	--	--	--	--	--	*4.3*	*.633*
18...	2130	ENVIRONMENTAL	183	246	8.0	--	--	--	--	--	2.3	.573
18...	2215	ENVIRONMENTAL	121	252	8.0	--	--	--	--	--	2.1	.727
25...	1230	ENVIRONMENTAL	1.4	663	8.1	30.0	25.0	735	8.8	110	1.8	1.52
AUG												
20...	1200	ENVIRONMENTAL	2.0	599	8.1	18.0	22.4	726	8.5	103	1.6	1.32
SEP												
06...	1145	ENVIRONMENTAL	5.2	718	8.2	27.5	19.7	732	13.2	151	--	--

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

POTOMAC RIVER BASIN--Continued

01621410 BLACKS RUN AT RTE 726 AT HARRISONBURG, VA--Continued

DATE	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)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN DIS-SOLVED (MG/L AS N) (00602)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	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)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
OCT													
12...	*<.006*	*<.047*	*<.041*	*<.08*	*<.10*	--	--	--	*<.004*	*<.006*	*<.018*	--	--
12...	--	--	--	--	--		--	--	--	--	--	--	
NOV													
15...	.008	1.17	<.041	.17	.17	1.3	--	--	.031	.021	E.016	17	.04
DEC													
07...	.008	1.75	<.041	.19	.15	1.9	--	--	.022	.017	E.015	3	.00
07...	*.007*	*1.74*	*<.041*	*.17*	*.15*	*1.9*	--	--	*.020*	*.017*	*E.014*	*6*	--
JAN													
04...	*.001*	*<.005*	*.005*	*E.04*	*<.10*	--	--	--	*<.004*	*<.006*	*<.007*	--	--
17...	*<.001*	*<.005*	*<.002*	*E.08*	*<.10*	--	--	--	*<.004*	*<.060*	*<.007*	--	--
17...	.017	1.58	.009	.28	.18	1.8	.27	.17	.037	.013	E.004	28	.04
FEB													
26...	.046	1.96	.069	.60	.38	2.3	.53	.31	.075	.010	E.004	34	.07
MAR													
15...	.042	1.91	.297	1.4	.69	2.6	1.1	.40	.256	.048	.033	146	2.1
20...	.015	1.82	.094	.19	.15	2.0	.10	.06	.023	.011	E.006	6	.02
21...	.021	1.37	.163	1.7	.82	2.2	1.6	.66	.301	.051	.006	270	5.4
21...	.017	1.04	.209	1.8	.58	1.6	1.6	.37	.434	.062	.050	318	6.8
21...	.015	.800	.230	2.5	.62	1.4	2.3	.39	.635	.041	.028	518	228
21...	.014	.533	.207	2.6	.52	1.1	2.4	.31	.696	.020	.013	605	371
21...	.024	1.22	.203	3.1	.53	1.8	2.9	.33	.800	.026	.018	586	335
21...	.018	.591	.223	3.5	.58	1.2	3.3	.36	.932	.015	.007	741	314
21...	.035	2.38	.286	1.7	1.00	3.4	1.4	.71	.355	.139	.124	132	17
21...	.034	2.16	.301	1.8	.94	3.1	1.5	.64	.357	.154	.143	147	19
21...	*<.001*	*<.005*	*<.002*	*<.08*	*<.10*	--	--	--	*<.004*	*<.006*	*<.007*	--	--
21...	.036	2.78	.261	1.4	.89	3.7	1.2	.63	.274	.131	.118	103	10
21...	.035	2.88	.267	1.3	.85	3.7	1.0	.58	.254	.113	.101	89	6.5
21...	.038	3.23	.231	1.2	.79	4.0	.93	.56	.213	.102	.090	71	3.8
22...	.035	3.50	.253	1.1	.78	4.3	.88	.53	.218	.106	.093	62	2.7
22...	.037	3.68	.233	1.1	.77	4.5	.86	.54	.201	.103	.091	52	2.0
22...	.031	4.20	.220	1.0	.78	5.0	.81	.56	.174	.102	.087	39	1.5
APR													
13...	.024	2.66	.014	.37	.23	2.9	.35	.22	.042	.020	.012	34	.73
26...	.021	1.99	.048	.39	.26	2.3	.34	.21	.038	.009	<.007	63	.32
MAY													
14...	.020	1.08	.040	.25	.25	1.3	.21	.21	.030	.020	.011	14	.05
19...	.048	1.38	.088	4.4	3.0	4.4	4.4	3.0	.571	.031	.012	472	15
19...	.031	.669	.287	--	.97	1.6	--	.68	--	.038	.018	176	19
19...	*.031*	*.671*	*.287*	--	*.94*	*1.6*	--	*.65*	--	*.038*	*.019*	*179*	--
19...	.037	.826	.414	2.0	1.2	2.0	1.5	.77	.228	.054	.038	75	3.0
19...	.060	1.49	.401	1.6	1.2	2.7	1.2	.76	.157	.054	.040	42	1.4
19...	.050	1.22	.428	1.7	1.2	2.4	1.3	.77	.205	.068	.052	57	2.8
19...	.046	.996	.305	--	1.0	2.0	--	.71	--	.046	.033	34	1.1
22...	.081	2.27	.257	1.4	1.1	3.4	1.2	.83	.149	.055	.042	46	1.5
22...	.038	.798	.565	7.4	1.2	2.0	6.8	.65	2.05	.133	.114	1690	1310
22...	.033	.794	.216	1.4	.55	1.3	1.2	.34	.234	.045	.033	149	27
JUN													
21...	.011	1.34	.038	.26	.22	1.6	.22	.18	.025	.015	.009	3	.01
21...	--	--	--	--	--	--	--	--	--	--	--	*4*	--
21...	--	--	--	--	--	--	--	--	--	--	--	*<1*	--
JUL													
18...	.014	1.16	.182	1.00	.66	1.8	.82	.48	.066	.008	<.007	60	1.8
18...	.050	1.49	1.29	9.6	4.8	6.3	8.3	3.5	1.75	.054	.013	2000	270
18...	.024	.657	.432	3.8	.98	1.6	3.4	.55	1.08	.089	.075	--	--
18...	*.023*	*.656*	*.428*	*3.7*	*.94*	*1.6*	*3.2*	*.51*	*1.00*	*.089*	*.073*	*775*	--
18...	.031	.604	.253	1.7	.72	1.3	1.4	.47	.272	.031	.020	293	145
18...	.033	.760	.265	1.4	.73	1.5	1.1	.46	.253	.031	.021	268	88
25...	.008	1.53	.021	.24	.23	1.8	.22	.20	.014	.008	<.007	6	.02
AUG													
20...	.008	1.33	.024	.31	.23	1.6	.28	.20	.017	E.005	<.007	21	.11
SEP													
06...	E.008	E2.27	E.022	.19	E.15	--	--	--	.021	E.015	E.008	5	.08

E Estimated value.
< Actual value is known to be less than the value shown.

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

POTOMAC RIVER BASIN--Continued

01621410 BLACKS RUN AT RTE 726 AT HARRISONBURG, VA--Continued

DATE	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT	
12...	--
12...	--
NOV	
15...	--
DEC	
07...	--
07...	--
JAN	
04...	--
17...	--
17...	--
FEB	
26...	--
MAR	
15...	--
20...	--
21...	91
21...	95
21...	86
21...	83
21...	92
21...	90
21...	97
21...	97
21...	--
21...	99
21...	100
21...	98
22...	97
22...	100
22...	95
APR	
13...	--
26...	--
MAY	
14...	--
19...	96
19...	95
19...	*96*
19...	95
19...	94
19...	97
19...	98
22...	96
22...	84
22...	92
JUN	
21...	--
21...	--
21...	--
JUL	
18...	76
18...	85
18...	--
18...	*86*
18...	91
18...	97
25...	--
AUG	
20...	--
SEP	
06...	--

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

POTOMAC RIVER BASIN--Continued

01644000 GOOSE CREEK NEAR LEESBURG, VA

DATE	TIME	SAMPLE TYPE	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)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)
OCT												
12...	*0925*	*BLANK*	--	--	--	--	--	--	--	--	--	--
12...	0930	ENVIRONMENTAL	63	--	--	--	--	--	--			--
NOV												
15...	0915	ENVIRONMENTAL	93	188	7.4	7.0	6.9	752	12.0	100	.23	--
DEC												
07...	0900	ENVIRONMENTAL	43	181	7.1	.00	1.0	749	13.8	99	.66	--
07...	*0901*	*REPLICATE*	--	--	--	--	--	--	--	--	*.74*	--
JAN												
04...	*1100*	*BLANK*	--	--	--	--	--	--	--	--	--	--
17...	*0959*	*BLANK*	--	--	--	--	--	--	--	--	--	--
17...	1000	ENVIRONMENTAL	93	153	7.4	4.5	.2	757	13.1	91	1.2	1.02
FEB												
26...	0930	ENVIRONMENTAL	272	157	7.2	8.0	5.6	761	14.0	111	1.3	.835
MAR												
15...	1200	ENVIRONMENTAL	190	158	7.1	6.5	7.4	751	15.0	126	.75	.504
20...	1215	ENVIRONMENTAL	179	159	7.2	15.0	6.4	760	14.5	118	.69	.456
21...	0945	ENVIRONMENTAL	361	151	7.9	9.0	6.4	751	14.1	116	1.3	.452
21...	*1130*	*BLANK*	--	--	--	--	--	--	--	--	--	--
21...	1245	ENVIRONMENTAL	1340	129	7.5	15.5	6.4	750	14.6	121	2.0	.552
22...	1100	ENVIRONMENTAL	2740	124	7.2	11.0	5.5	744	--	--	2.8	1.14
APR												
13...	1000	ENVIRONMENTAL	878	140	7.4	18.0	14.6	749	9.6	96	1.2	.822
26...	0930	ENVIRONMENTAL	310	148	7.0	14.0	12.3	760	11.4	107	.77	.538
MAY												
14...	0900	ENVIRONMENTAL	134	160	7.3	14.5	15.9	755	8.0	82	.92	.559
23...	1015	ENVIRONMENTAL	1670	128	7.0	18.5	17.2	755	8.1	85	2.0	.526
23...	*1016*	*REPLICATE*	--	--	--	--	--	--	--	--	*2.0*	*.525*
JUN												
21...	0900	ENVIRONMENTAL	81	178	7.5	26.0	23.9	755	9.2	111	.97	.530
21...	*0901*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
21...	*0905*	*BLANK*	--	--	--	--	--	--	--	--	--	--
JUL												
25...	0930	ENVIRONMENTAL	39	183	7.5	29.5	26.6	751	5.5	69	.63	.259
AUG												
20...	0930	ENVIRONMENTAL	72	171	7.5	26.5	22.6	750	9.6	113	.92	.438
SEP												
06...	0845	ENVIRONMENTAL	12	198	7.7	17.5	21.4	758	6.0	69	--	--

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

POTOMAC RIVER BASIN--Continued

01644000 GOOSE CREEK NEAR LEESBURG, VA--Continued

DATE	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)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN DIS-SOLVED (MG/L AS N) (00602)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	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)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
OCT													
12...	*<.006*	*<.047*	*<.041*	*<.08*	*<.10*	--	--	--	*<.004*	*<.006*	*<.018*	--	--
12...	--	--	--	--	--		--	--	--	--	--	--	
NOV													
15...	<.006	.036	<.041	.20	.18	.21	--	--	.023	.008	<.018	4	.88
DEC													
07...	<.006	.451	<.041	.21	.14	.59	--	--	.022	.012	E.013	2	.26
07...	*<.006*	*.463*	*<.041*	*.28*	*.13*	*.60*	--	--	*.023*	*.013*	*E.010*	*5*	--
JAN													
04...	*<.001*	*<.005*	*.004*	*<.08*	*<.10*	--	--	--	*<.004*	*<.006*	*<.007*	--	--
17...	*<.001*	*<.005*	*<.002*	*<.08*	*<.10*	--	--	--	*<.004*	*<.006*	*<.007*	--	--
17...	.004	1.02	.028	.17	.15	1.2	.14	.13	.029	.014	E.006	2	.50
FEB													
26...	.004	.839	.006	.42	.14	.98	.42	.13	.028	.008	<.007	13	9.3
MAR													
15...	.005	.509	.008	.24	.17	.67	.23	.16	.026	.008	E.004	7	3.4
20...	.005	.461	<.002	.23	.19	.65	--	--	.024	.007	<.007	5	2.5
21...	.005	.457	.028	.85	.45	.90	.82	.42	.107	.011	<.007	130	127
21...	*<.001*	*<.005*	*.003*	*<.08*	*<.10*	--	--	--	*<.004*	*<.006*	*<.007*	--	--
21...	.006	.558	.078	1.5	.59	1.1	1.4	.51	.460	.026	.012	501	1810
22...	.007	1.15	.097	1.6	.61	1.8	1.5	.51	.547	.028	.014	527	3900
APR													
13...	.004	.826	.008	.42	.21	1.0	.41	.21	.083	.019	.009	40	95
26...	.003	.541	.006	.23	.20	.74	.23	.19	.028	.013	.007	5	3.9
MAY													
14...	.009	.568	.025	.35	.26	.83	.33	.23	.040	.018	.010	6	2.4
23...	.014	.540	.079	1.5	.67	1.2	1.4	.59	.562	.041	.010	441	1990
23...	*.015*	*.540*	*.070*	*1.5*	*.67*	*1.2*	*1.4*	*.60*	*.576*	*.042*	*.010*	*452*	--
JUN													
21...	.009	.539	.040	.43	.29	.83	.39	.25	.058	.026	.020	8	1.7
21...	--	--	--	--	--	--	--	--	--	--	--	*10*	--
21...	--	--	--	--	--	--	--	--	--	--	--	*<.3*	--
JUL													
25...	.005	.264	.040	.37	.29	.56	.33	.25	.050	.025	.015	6	.64
AUG													
20...	.007	.445	.053	.47	.30	.75	.42	.25	.090	.032	.024	24	4.6
SEP													
06...	E.005	E.171	E.047	.35	E.31	--	--	--	.050	E.025	E.014	11	.35

E Estimated value.
< Actual value is known to be less than the value shown.

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

POTOMAC RIVER BASIN--Continued

01644000 GOOSE CREEK NEAR LEESBURG, VA--Continued

DATE	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT	
12...	--
12...	--
NOV	
15...	--
DEC	
07...	--
07...	--
JAN	
04...	--
17...	--
17...	--
FEB	
26...	--
MAR	
15...	--
20...	--
21...	88
21...	--
21...	92
22...	69
APR	
13...	--
26...	--
MAY	
14...	--
23...	83
23...	*87*
JUN	
21...	--
21...	--
21...	--
JUL	
25...	--
AUG	
20...	--
SEP	
06...	--

INDEX

THIS IS A BLANK PAGE

CONVERSION FACTORS AND VERTICAL DATUM

Multiply	By	To obtain
	Length	
inch (in.)	2.54×10^{1}	millimeter
	2.54×10^{-2}	meter
foot (ft)	3.048×10^{-1}	meter
mile (mi)	1.609×10^{0}	kilometer
	Area	
acre	4.047×10^{3}	square meter
	4.047×10^{-1}	square hectometer
	4.047×10^{-3}	square kilometer
square mile (mi^2)	2.590×10^{0}	square kilometer
	Volume	
gallon (gal)	3.785×10^{0}	liter
	3.785×10^{0}	cubic decimeter
	3.785×10^{-3}	cubic meter
million gallons (Mgal)	3.785×10^{3}	cubic meter
	3.785×10^{-3}	cubic hectometer
cubic foot (ft^3)	2.832×10^{1}	cubic decimeter
	2.832×10^{-2}	cubic meter
cubic-foot-per-second day [(ft^3/s) d]	2.447×10^{3}	cubic meter
	2.447×10^{-3}	cubic hectometer
acre-foot (acre-ft)	1.233×10^{3}	cubic meter
	1.233×10^{-3}	cubic hectometer
	1.233×10^{-6}	cubic kilometer
	Flow	
cubic foot per second (ft^3/s)	2.832×10^{1}	liter per second
	2.832×10^{1}	cubic decimeter per second
	2.832×10^{-2}	cubic meter per second
gallon per minute (gal/min)	6.309×10^{-2}	liter per second
	6.309×10^{-2}	cubic decimeter per second
	6.309×10^{-5}	cubic meter per second
million gallons per day (Mgal/d)	4.381×10^{1}	cubic decimeter per second
	4.381×10^{-2}	cubic meter per second
	Mass	
ton (short)	9.072×10^{-1}	megagram or metric ton

Sea level: In this report “sea level” refers to the National Geodetic Vertical Datum of 1929 (NGVD of 1929)—a geodetic datum derived from a general adjustment for the first-order level nets of both the United States and Canada, formerly called Sea Level Datum of 1929.