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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

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By W. W. Staubitz

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CONVERSION OF MEASUREMENT UNITS

The following factors may be used to convert the inch-pound units published in this report to International System (SI) metric units.

To convert from	Multiply by	To obtain
mile (mi)	1.609	kilometer (km)
square mile (mi^2)	2.590	square kilometer (km^2)
cubic foot (ft^3)	0.02932	cubic meter (m^3)
cubic foot per second (ft^3/s)	0.2832	cubic meter per second (m^3/s)
tons per day (ton/d)	0.9072	megagrams per day (Mg/d)
degree Fahrenheit (^oF)	-32 x 0.555	degree Celsius (^oC)

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ABSTRACT

The U.S. Geological Survey is studying the water quality of streams within the Eastern Coal Province. This report contains streamflow, water-quality, and biologic data collected in the North Branch Potomac River basin and in the Maryland portion of the Youghiogheny and Casselman River basins. Data collected from 64 streams from April 1979 to June 1980 are presented in tables. Other sources of hydrologic information within the study area are also described in the report.

INTRODUCTION

The Surface Mining Control and Reclamation Act of 1977, Public Law 95-87, requires that "an appropriate Federal or State agency" provide to each mining-permit applicant "hydrologic information on the general area prior to mining." In response to this requirement, the U.S. Geological Survey (USGS) instituted a program to collect hydrologic data within the Nation's coal provinces. The Eastern Coal Province, which extends from Alabama to Pennsylvania, was divided into 24 study areas based on hydrologic factors, location, size, and mining activity. Hydrologic data-collection networks were then established in each study area. Streamflow and water-quality-data collection began in the spring of 1979.

This report presents data collected in Area 6 (the North Branch Potomac River basin) and in the parts of Area 5 in Maryland (the upper Youghiogheny and Casselman River basins). The purpose of this report is to present the data collected by the USGS and make it available to mine operators, regulatory authorities, and other interested parties.

DATA COLLECTION AND PRESENTATION

Network Design

The sampling network is composed of three types of stations: trend, regular, and synoptic. The major differences among these stations are in the sampling frequency and the water-quality parameters chosen for sampling.

There is one trend station in this network. It is located at the USGS gaging station at the North Branch Potomac River near Cumberland, Md. (fig. 1). The purpose of this station is to delineate long-term changes in the streamflow and water quality of Area 6. Streamflow, specific conductance, and water temperature are recorded continuously; suspended-sediment data are collected daily; and water-quality samples are collected monthly.

The nine regular stations in the network are located at USGS gages along the North Branch Potomac River, at downstream locations on its major tributaries, and on the Youghiogheny and Casselman Rivers where they leave Maryland. Streamflow is recorded continuously at these sites, and water-quality samples are collected monthly.

There are 54 synoptic stations in the network. The purpose of these stations is to obtain water-quality data from relatively small streams over a large area during different hydrologic conditions. Water-quality samples are collected and concurrent discharge measurements are made three times per year. Samples are taken during one period each of high, medium, and low base flow each year. Daily sediment data and continuous records of streamflow are also obtained at three synoptic sites.

From April to November 1979, data were collected at 39 stations in the synoptic network. In April 1980, the synoptic network was redesigned. At that time, 11 stations were discontinued and 15 new sites were added to increase the areal coverage of the study and to allow for more intensified study of active and projected surface mining areas.

Methods of Sample Collection and Analysis

All water-quality and suspended-sediment samples were collected by depth-integrating methods, as described by Guy and Norman (1970). Discharge measurements were made concurrently with water-quality-sample collection using methods described by Buchanan and Sommers (1969). When water-quality samples were collected at USGS stream-gaging stations, the gage height was recorded and the corresponding streamflow was computed through established stage-discharge relationships, as described by Buchanan and Sommers (1968). All water-quality samples were preserved in the field according to methods described in the National Handbook of Recommended Methods for Water Data Acquisition (U.S. Geological Survey, 1977) and analyzed in the USGS Central Laboratory in Atlanta, Ga.,

according to procedures cited by Skougstad and others (1979). The presence of benthic invertebrates was investigated during low base flow periods by taking 10 rock samples at each site. Each rock was examined at the site and the presence or absence of individual classes and orders of benthic invertebrates was noted. Sediment samples were analyzed in the USGS laboratory in Harrisburg, Pa., by methods described by Guy (1969). Water temperature and specific conductance were continuously measured at the North Branch Potomac River near Cumberland, Md., by an automatic monitoring device.

Data Presentation

The locations of streamflow and water-quality stations are shown in figure 1. Each station is listed by site number, USGS identification number, name, type and drainage area in table 1.

The mean-daily discharges and the percentage departures from the long-term means from January 1979 through June 1980 of the three major streams are listed in table 2. The discharge data were obtained from USGS gaging stations at North Branch Potomac River near Cumberland, Md.; Youghiogheny River at Friendsville, Md.; and Casselman River at Grantsville, Md. Also included in table 2 are the mean-daily discharges and their respective departures from the long-term means for the calendar year 1979, and from January through June 1980.

Instantaneous discharges at the times of sample collection at stations equipped with USGS stream gages are listed in table 3. Also listed in table 3 is the percentage of time that the particular discharge has been exceeded during the period of record at that station. These percentages were obtained from established flow-duration curves based on daily mean discharge values. The number of days in the record upon which the flow-duration curve was based is also included in table 3.

Benthic invertebrate data are presented in table 4. The benthic invertebrates are identified to their class or order level, but only presence or absence is noted. If 10 or more specimens of an individual class or order were identified at a particular site, they are noted in table 4 as being common.

Discharge and water-quality data collected from April 1979 through June 1980 from all synoptic, regular, and trend stations are presented in table 5. Each station is identified by its USGS identification number, name, latitude, and longitude.

Daily suspended-sediment concentration and discharge from the trend station and three synoptic stations where daily sediment data are collected are presented in table 6. These stations are North Branch Potomac River near Cumberland, Md.; Crabtree Creek near Swanton, Md.; South Branch Casselman River near Bittinger, Md.; and North Branch Potomac River at Kitzmiller, Md.

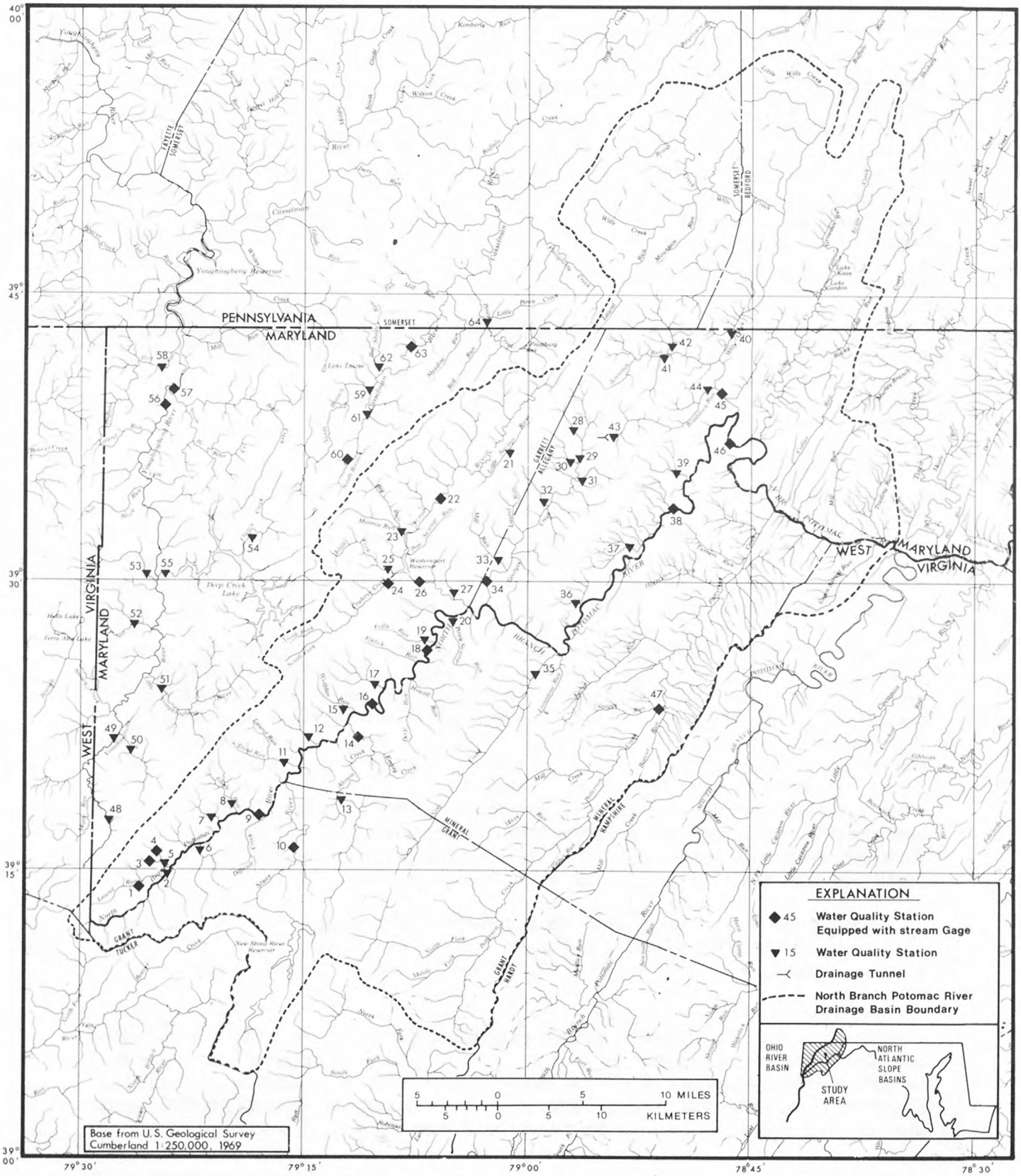

Figure 1.-- Location of surface-water and water-quality stations.

Table 1.--Hydrologic network

Site number	Station identification number	Station name	Station[2] type	Drainage area (square miles)
1	01594930	Laurel Run at Dobbin Rd. nr. Wilson, Md.	S	8.3
2	01594931	North Branch Potomac River at Wilson, Md.	S	25.9
3	01594934	South Fork Sand Run nr. Wilson, Md.	S	1.6
4	01594936	North Fork Sand Run nr. Wilson, Md.	S	1.9
5	01594942	Sand Run at Wilson, Md.	S	3.9
6	01594960	Buffalo Creek at Bayard, W. Va.	S	9.9
7	01594965	Nydegger Run at Gorman, Md.	S	5.2
8	01594975	Glade Run at Steyer, Md.	S	8.8
9	01595000	North Branch Potomac River at Steyer, Md.	R	72.7
10	01595200	Stony River nr. Mt. Storm, W. Va.	R	48.4
11	01595225	Laurel Run at Riley Rd. nr. Steyer, Md.	S	9.2
12	01595250	Lostland Run at Lostland Run Rd. nr. Tasker Corners, Md.	S	9.6
13	01595275	Abram Cr. at Rt. 50 Bridge nr. Mt. Storm, W. Va.	S	21.5
14	01595300	Abram Cr. at Oakmont, W. Va.	R	47.3
15	01595495	Wolfden Run at Kitzmiller, Md.	S	4.5
16	01595500	North Branch Potomac River at Kitzmiller, Md.	S[3]	227.3
17	01595550	Three Forks Run at Vindex, Md.	S	7.3
18	01595800	North Branch Potomac River at Barnum, W. Va.	S	267.9
19	01595810	Folly Run nr. Barnum, W. Va.	S	4.8
20	01595900	Piney Swamp Run at Hampshire, W. Va.	S	6.1
21	01596200	Little Savage River nr. Avilton, Md.	S	2.0
22	01596500	Savage River nr. Barton, Md.	S	48.3
23	01596600	Big Run nr. Swanton, Md.	S	13.0
24	01597000	Crabtree Creek nr. Swanton, Md.	S[3]	17.1
25	01597100	Middle Fork nr. Swanton, Md.	S	10.8
26	01597500	Savage River below Savage River Dam nr. Bloomington, Md.	R	105.9
27	01597900	Aaron Run at Bloomington, Md.	S	3.5
28	01598750	Winebrenner Run at Midlothian, Md.	S	3.0
29	01598770	Georges Creek at Ocean, Md.	S	13.1
30	01598775	Woodland Creek at Ocean, Md.	S	5.5
31	01598820	Neff Run at Midland, Md.	S	5.5
32	01598870	Koontz Run at Lonaconing, Md.	S	3.7
33	01598980	Mill Run at Morrison, Md.	S	7.4
34	01599000	Georges Creek at Franklin, Md.	R	73.3
35	01599600	New Creek at Keyser, W. Va.	S	51.2
36	01599700	Deep Hollow at Dawson Church, Md.	S	1.7

Table 1.--Hydrologic network-- Continued

Site number	Station identification number	Station name	Station type[2]	Drainage area (square miles)
37	01599800	Mill Run at Rawlins, Md.	S	2.8
38	01600000	North Branch Potomac River at Pinto, Md.	R	597.2
39	01600500	Warrior Run at Cresaptown, Md.	S	6.5
40	01601100	Wills Creek at Ellerslie, Md.	S	184.6
41	01601280	Jennings Run at Barrelville, Md.	S	19.9
42	01601300	North Branch Jennings Run at Barrelville, Md.	S	11.7
43	01601420	Hoffman Drainage Tunnel at Clarysville, Md.	S	
44	01601490	Braddock Run at Narrows Park, Md.	S	17.1
45	01601500	Wills Creek nr. Cumberland, Md.	R	246.6
46	01603000	North Branch Potomac River nr. Cumberland, Md.	T[3]	874.8
47	01604500	Patterson Creek nr. Headsville, W. Va.	S	219.0
48	03075250	Youghiogheny River at U.S. 219 nr. Redhouse, Md.	S	8.6
49	03075340	Youghiogheny River at Underwood Rd. nr. Crellin, Md.	S	34.8
50	03075350	Cherry Creek nr. Crellin, Md.	S	16.6
51	03075495	Little Youghiogheny River at 3rd St. at Oakland, Md.	S	36.7
52	03075550	Herrington Creek at Herrington Manor Rd. nr. Oakland, Md.	S	11.1
53	03075700	Muddy Creek at Swallows Falls State Park, Md.	S	17.8
54	03075900	Cherry Creek nr. McHenry, Md.	S	12.3
55	03076010	Deep Creek Lake Outflow	S	63.9
56	03076500	Youghiogheny River at Friendsville, Md.	R	296.6
57	03076600	Bear Creek at Friendsville, Md.	S	48.9
58	03076700	Buffalo Run nr. Friendsville, Md.	S	18.4
59	03077925	North Branch Casselman River nr. Grantsville, Md.	S	26.4
60	03077940	South Branch Casselman River nr. Bittenger, Md.	S[3]	3.2
61	03077945	South Branch Casselman River at Jennings, Md.	S	11.1
62	03077975	Big Shade Run at Grantsville, Md.	S	7.3
63	03078000	Casselman River at Grantsville, Md.	R	64.0
64	03078500	Big Piney Run nr. Salisbury, Pa.	S	24.3

1-Site number is used for location purposes in figure 1.
2-S = Synoptic, R = Regular, T = Trend
3-Stations where daily sediment concentration samples are collected.

Table 2.--Mean-daily discharges and departures from long-term means for months January 1979 through June 1980

Month	01603000 North Branch Potomac River near Cumberland		03076500 Youghiogheny River at Friendsville		03078000 Casselman River at Grantsville	
	Mean-daily discharge (ft^3/s)	Departure from mean (percent)	Mean-daily discharge (ft^3/s)	Departure from mean (percent)	Mean-daily discharge (ft^3/s)	Departure from mean (percent)
1979						
January	2,485	+ 53	1,273	+ 41	204	+ 19
February	2,776	+ 36	1,061	+ 13	229	+ 19
March	5,340	+ 76	1,808	+ 52	425	+ 54
April	2,160	- 3	915	+ 0.1	176	+ 17
May	2,108	+ 28	824	+ 22	143	+ 8
June	776	- 13	269	- 36	46	- 39
July	635	+ 38	240	- 18	49	+ 14
August	481	+ 12	274	- 12	58	+ 55
September	1,336	+253	397	+ 63	69	+128
October	2,375	+308	1,042	+256	211	+393
November	1,358	+101	583	+ 20	118	+ 71
December	1,295	- 6	592	- 28	120	- 18
1979 Calendar Year	1,927	+ 50	773	+ 24	154	+ 29
1980						
January	1,207	- 26	509	- 44	85	- 50
February	1,061	- 48	549	- 41	109	- 43
March	2,897	- 4	1,131	- 5	272	- 1
April	3,754	+ 68	1,274	+ 39	303	+ 42
May	2,549	+ 35	755	+ 12	149	+ 12
June	1,351	+ 51	991	+136	121	+ 62
January-June 1980	2,137	+ 12	868	+ 3	173	+ 2

HYDROLOGIC CONDITIONS

The discharge figures shown in table 2 indicate that streamflow was generally greater than normal during the study period. The first base-flow sampling, in April 1979, was preceded by 3 months of greater than normal streamflow. The average discharges for the three reference stations listed in table 2 for January, February, and March were 40 percent greater than the average of their respective long-term monthly means. The second base-flow sampling, in August 1979, was preceded by a near-normal period. The average discharges for the reference stations from May through August were 5 percent greater than the long-term means. The third base-flow sampling, in November 1979, was preceded by 3 months of greater than normal streamflow. The average discharges for the reference stations during September, October, and November were 177 percent greater than the long-term means. The fourth base-flow sampling, in April 1980, was preceded by 4 months of below-normal streamflow. The average discharges for the reference stations were 26 percent less than the long-term means. On April 8, after the first day of sampling, major thunderstorms occurred over most of the study area. Samples taken April 9, 10, and 11, 1980, should not be considered base-flow samples.

ADDITIONAL SOURCES OF WATER-QUALITY DATA

In addition to the U.S. Geological Survey, three other agencies have collected available water-quality information within the study area: Maryland Department of Health and Mental Hygiene, West Virginia Department of Natural Resources, and the U.S. Army Corps of Engineers. Listed below are the water-quality network stations operated by these agencies. Beneath the listings are descriptions of the water-quality parameters selected for sampling, the frequency and duration of sampling, and the offices from which the data are available.

I. State of Maryland, Department of Health and Mental Hygiene

Stations

NBP 0689 - North Branch Potomac River at Kitzmiller, Md.

NBP 0534 - North Branch Potomac River at Bloomington, Md.

SAV 0000 - Savage River at Md. Rt. 135

GEO 0009 - Georges Creek at Franklin, Md.

NBP 0461 - North Branch Potomac River near McCoole, Md.

NBP 0326 - North Branch Potomac River at Pinto, Md.

BDK 0000 - Braddock Run near Md. Rt. 36

WIL 0013 - Wills Creek at USGS stream gage

NBP 0103 - North Branch Potomac River at Cumberland, Md.

YOU 1139 - Youghiogheny River near Oakland, Md.

LYO 0004 - Little Youghiogheny River near Oakland, Md.

CCR 0001 - Cherry Creek near McHenry, Md.

YOU 0925 - Youghiogheny River at Friendsville, Md.

CAS 0479 - Casselman River at USGS stream gage

Parameters and Sampling

Parameter coverage includes specific conductance, pH, water temperature, turbidity, dissolved oxygen, total coliform, fecal coliform, sulfate, dissolved solids, nitrite, nitrate, phosphorous, orthophosphate, iron, chlorophyll a, phacophytin a, and suspended sediment.

Water-quality samples have been collected monthly at each station since 1976. The data are available from the

State of Maryland
Department of Health and Mental Hygiene
Office of Environmental Programs,
201 West Preston Street
Baltimore, Maryland 21201

II. State of West Virginia, Department of Natural Resources

Stations

Stony River at U.S. Rt. 50 Bridge near Mount Storm, W. Va.
STORET number 550554.

Buffalo Creek at W. Va. Rt. 90 at Bayard, W. Va.
STORET number 50555

Parameters and Sampling

The sampling frequency is monthly at Stony River for specific conductance, pH, water temperature, turbidity, color, dissolved oxygen, total coliform, fecal coliform, hardness, alkalinity, hot acidity, sulfate, chloride, fluoride, dissolved solids, nitrate plus nitrite, ammonia, Kjeldahl nitrogen, phosphorous, cadmium, chromium (hexavalent), lead, phenol, threshold odor number (40°C), and suspended solids. The sampling frequency is quarterly at Buffalo Creek for the same list of parameters. Quarterly samples for cyanide, arsenic, copper, and manganese are also collected at both sites. Additional samples are analyzed annually at both stations for aluminum, antimony, barium, chromium, nickel, mercury, selenium, silver, zinc, potassium, and sodium.

Water-quality samples have been collected at these two stations since 1976. The data are available from the

State of West Virginia
Department of Natural Resources
Water Resources Division
Charleston, West Virginia 25305

III. U.S. Army Corps of Engineers

Stations

BD 100 - North Branch Potomac River at Kitzmiller, Md.

BD 101 - Three Forks Run at mouth

BD 102 - Deep Run at mouth

BD 103 - Howell Run at mouth

BD 104 - Elk Lick Run at mouth

BD 105 - North Branch Potomac River at Barnum, W. Va.

BD 106 - North Branch Potomac River at Bloomington, Md.

BD 107 - Savage River at USGS stream gage

BD 108 - Aaron Run at mouth

BD 109 - Savage River at mouth

BD 110 - North Branch Potomac River upstream of Georges Creek

BD 111 - Georges Creek at USGS stream gage

BD 112 - North Branch Potomac River upstream of New Creek

BD 113 - New Creek at mouth

BD 114 - North Branch Potomac River at Pinto, Md.

BD 115 - North Branch Potomac River upstream of Wills Creek

BD 116 - Wills Creek at USGS stream gage

BD 117 - North Branch Potomac River near Cumberland, Md.

Parameters and Sampling

Parameter coverage includes specific conductance, pH, water temperature, dissolved oxygen, alkalinity, acidity, sulfate, nitrite, nitrate, phosphorous, orthophosphate, aluminum, iron, and manganese

Water-quality samples have been collected monthly since 1977. The data are available from the

Department of the Army
Baltimore District, Corps of Engineers
P.O. Box 1715
Baltimore, Maryland 21203

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Table 3.--Instantaneous discharge and flow-duration values for sampling dates

Station identification number	Sampling date	Discharge (ft^3/s)	Percent of time discharge is exceeded	Number of days in record
1) 01595000	04-18-79	160	33.1	8400
	05-30-79	150	35.1	
	06-20-79	36	75.7	
	07-27-79	24	84.3	
	08-21-79	54	65.6	
	09-24-79	118	43.4	
	10-23-79	91	51.4	
	11-16-79	151	34.9	
	12-14-79	229	21.7	
	01-18-80	162	33.0	
	02-15-80	148	35.6	
	04-09-80	755	3.2	
	05-07-80	171	30.9	
	06-11-80	270	17.7	
2) 01595200	04-18-79	131	22.4	6574
	09-10-79	233	10.0	
	11-16-79	86	33.7	
	02-14-80	21	77.4	
	04-08-80	8.1	35.0	
	05-06-80	122	24.0	
	06-11-80	154	18.2	
3) 01595300	04-18-79	66	31.8	8400
	09-10-79	58	35.4	
	11-16-79	59	35.0	
	02-14-80	20	63.6	
	04-08-80	81	26.0	
	05-06-80	109	18.2	
	06-11-80	112	17.5	
4) 01595500	04-18-79	500	28.2	10957
	08-22-79	34	93.8	
	11-16-79	431	32.5	
	04-09-80	3880	0.5	
5) 01595800	04-18-79	600	28.0	4748
	08-22-79	34	97.6	
	11-16-79	426	39.2	
	04-09-80	3790	0.7	
6) 01596500	04-17-79	93	23.4	11322
	08-21-79	15	66.0	
	11-15-79	34	47.9	
	04-10-80	563	1.3	
7) 01597000	04-17-79	34	25.5	11322
	08-21-79	3.7	77.1	
	11-15-79	14	48.2	
	04-10-80	160	2.6	
8) 01597500	04-17-79	58	64.0	11322
	05-29-79	230	18.2	
	06-19-79	46	71.6	
	07-27-79	21	86.0	
	08-21-79	32	80.0	
	09-24-79	112	27.0	
	10-22-79	108	28.9	
	11-15-79	103	33.0	
	12-14-79	254	17.1	
	01-17-80	240	17.7	
	02-14-80	39	76.3	
	04-10-80	1410	1.1	
	05-09-80	110	27.3	
	06-11-80	443	9.4	
9) 01599000	04-16-79	113	21.0	18262
	05-29-79	89	26.7	
	06-29-79	39	47.4	
	07-26-79	21	62.1	
	08-21-79	21	62.1	
	09-24-79	70	32.6	
	10-22-79	58	37.1	
	11-15-79	131	17.7	
	12-13-79	156	14.2	
	01-17-80	236	7.9	
	02-14-80	120	19.7	
	04-10-80	819	0.5	
	05-09-80	239	7.8	
	06-10-80	516	1.8	
10) 01600000	04-16-79	1050	25.4	14975
	05-29-79	1540	15.9	
	06-19-79	330	59.3	
	07-26-79	295	62.3	
	08-22-79	192	73.9	
	09-24-79	942	28.4	
	10-22-79	1260	20.7	
	11-16-79	1130	23.4	
	12-13-79	632	39.9	
	01-17-80	1417	17.6	
	02-13-80	292	62.5	
	04-10-80	4600	2.2	
	05-09-80	955	28.1	
	06-10-80	2040	10.5	

Table 3.--Instantaneous discharge and flow-duration values for sampling dates--Continued

Station identification number	Sampling date	Discharge (ft^3/s)	Percent of time discharge is exceeded	Number of days in record
11) 01601500	04-17-79	335	27.6	18262
	05-30-79	570	15.7	
	06-19-79	125	53.2	
	07-26-79	210	39.1	
	08-20-79	93	60.8	
	09-25-79	277	32.2	
	10-22-79	242	35.6	
	11-14-79	273	32.6	
	12-13-79	272	32.6	
	01-16-80	684	12.2	
	02-13-80	100	59.0	
	04-08-80	603	14.6	
	05-09-80	304	30.0	
	06-10-80	296	30.6	
12) 01603000	04-17-79	1400	26.7	18262
	05-29-79	2500	13.1	
	06-19-79	495	56.5	
	07-26-79	740	45.0	
	08-22-79	327	67.7	
	09-25-79	1180	31.5	
	10-22-79	1060	34.5	
	11-14-79	1243	30.2	
	12-13-79	769	43.8	
	01-17-80	2130	16.2	
	02-13-80	354	65.8	
	04-08-80	2016	17.6	
	05-12-80	1280	29.3	
	06-10-80	1780	20.6	
13) 01604500	01-29-80	155	26.3	14975
	02-13-80	35	61.3	
	03-18-80	716	4.5	
	04-30-80	1700	1.0	
	06-10-80	110	34.5	
14) 03076500	04-18-79	873	21.6	15705
	05-30-79	680	30.0	
	06-20-79	103	91.1	
	07-27-79	118	87.4	
	08-20-79	221	71.8	
	09-25-79	407	49.5	
	10-23-79	289	62.5	
	11-14-79	387	51.4	
	12-14-79	1353	10.9	
	01-16-80	660	31.0	
	02-15-80	78.7	94.6	
	04-09-80	5050	0.35	
14) 03076500--(Continued)	05-08-80	361	54.2	
	06-12-80	1090	15.6	
15) 0307660	04-18-79	113	23.4	5478
	08-20-79	32	61.9	
	11-14-79	56	45.5	
	04-09-80	887	.30	
16) 03078000	04-17-79	223	14.6	11688
	05-30-79	155	23.4	
	06-20-79	22	74.5	
	07-27-79	31	67.6	
	08-20-79	52	55.0	
	09-25-79	59	53.3	
	10-23-79	71	46.3	
	11-14-79	73	45.6	
	12-14-79	275	10.7	
	01-16-80	111	33.6	
	02-15-80	25	72.5	
	04-09-80	1282	0.32	
	05-08-80	78	43.4	
	06-12-80	162	98.0	

Table 4.--Identification of the presence or absence of benthic invertebrates

Station ID: Date:	01594930 09-10-80	01594931 09-10-80	01594934 09-10-80	01594936 09-10-80	01594960 09-10-80	01594965 09-10-80	01594975 09-09-80
Organism[1]	Count[2]						
.Anthropoda							
..Insecta							
...Ephemeroptera	A	A	A	P	A	P	C
...Odonata	A	A	A	P	A	A	A
...Plecoptera	A	A	A	A	A	C	P
...Megaloptera	A	A	A	A	A	A	A
...Trichoptera							
free-living	A	A	A	A	A	C	P
cases	A	A	A	P	A	C	P
...Coleptera							
adult	A	A	A	A	A	A	P
larvae	A	A	A	A	A	A	A
...Diptera	A	A	A	A	A	A	A
..Crustacea	A	A	A	P	A	P	A
.Mollusca							
..Gastropoda	A	A	A	A	A	A	A
.Annelida							
..Oligochaeta	A	A	A	A	A	A	A
..Hirudinea	A	A	A	A	A	A	A
.Playthelminthes							
..Turbellaria	A	A	A	A	A	A	A

[1] .Phylum
..Class
...Order

[2] A = Absent
P = Present
C = Common

Table 5.--Water-quality data collected from April 1979 through June 1980--Continued

03077975 - BIG SHADE RN. AT GRANTSVILLE, MD (LAT 39 41 12 LONG 079 10 13)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE, WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	ACIDITY TOTAL HEATED (MG/L AS H) (71825)	ACIDITY (MG/L AS CACO3) (00435)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)
APR , 1979											
17...	1300	27	160	6.9	8.0	6.5	11.0	--	--	--	27
AUG											
20...	1630	10	117	7.2	20.0	16.0	7.4	.0	.0	--	25
NOV											
14...	1600	9.6	140	7.6	1.0	6.0	11.2	.0	.0	7	32
APR , 1980											
09...	1445	109	98	6.4	16.5	10.5	10.7	.1	5.0	24	23

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	ARSENIC TOTAL IN BOT-TOM MA-TERIAL (UG/G AS AS) (01003)	CADMIUM RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CD) (01028)	CHRO-MIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01029)	COBALT, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CO) (01038)	COPPER, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CU) (01043)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, SUS-PENDED RECOV-ERABLE (UG/L AS FE) (01044)	IRON, DIS-SOLVED (UG/L AS FE) (01046)
APR , 1979											
17...	--	--	--	--	--	--	--	--	330	320	10
AUG											
20...	66	.09	1.78	1	<10	10	30	10	670	630	40
NOV											
14...	75	.10	1.94	--	--	--	--	--	240	190	50
APR , 1980											
09...	67	.09	19.7	--	--	--	--	--	3700	3600	60

DATE	IRON, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS FE) (01170)	LEAD, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS PB) (01052)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MANGA-NESE, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01053)	MERCURY RECOV. FM BOT-TOM MA-TERIAL (UG/G AS HG) (71921)	SELE-NIUM, TOTAL IN BOT-TOM MA-TERIAL (UG/G) (01148)	ZINC, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS ZN) (01093)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
APR , 1979											
17...	--	--	140	10	130	--	--	--	--	--	--
AUG											
20...	17000	10	100	10	90	1300	.00	0	110	--	--
NOV											
14...	--	--	150	20	130	--	--	--	--	--	--
APR , 1980											
09...	--	--	290	130	160	--	--	--	--	112	33

Table 5.--Water-quality data collected from April 1979 through June 1980--Continued

03078000 - CASSELMAN R. AT GRANTSVILLE, MD (LAT 39 42 08 LONG 079 08 12)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE, WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	ACIDITY TOTAL HEATED (MG/L AS H) (71825)
APR , 1979										
17...	1130	223	120	6.9	5.5	5.0	11.8	--	--	--
MAY										
30...	1045	155	100	7.2	17.0	12.0	--	32	16	.0
JUN										
20...	1345	22	130	8.3	22.5	24.0	--	46	30	.0
JUL										
27...	1400	31	166	8.5	24.0	23.0	10.2	59	28	.0
AUG										
20...	1145	52	136	7.7	25.0	19.0	9.6	45	28	.0
SEP										
25...	1045	59	118	8.4	10.5	13.0	10.2	39	25	.0
OCT										
23...	0830	71	111	7.1	16.0	13.5	9.2	37	20	.0
NOV										
14...	1200	73	112	8.4	.0	6.0	11.3	36	28	--
DEC										
14...	0900	275	98	6.9	-2.0	3.0	12.1	32	25	.0
JAN , 1980										
16...	1230	111	116	6.9	8.5	1.5	13.4	35	29	.0
FEB										
15...	1345	25	140	6.9	2.0	.5	--	47	28	.0
APR										
09...	1345	1280	66	6.0	17.5	9.0	11.1	21	17	.1
JUN										
12...	1045	162	85	6.4	10.5	11.0	10.7	29	21	.1

DATE	ACIDITY (MG/L AS CACO3) (00435)	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)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM+ POTAS-SIUM DIS-SOLVED (MG/L AS NA) (00933)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)
APR , 1979									
17...	--	--	--	--	--	--	--	--	--
MAY									
30...	.0	9.0	2.2	3.2	18	.2	3.9	.7	16
JUN									
20...	.0	13	3.4	4.5	17	.3	--	1.0	16
JUL									
27...	.0	17	4.0	6.2	18	.4	7.6	1.4	31
AUG									
20...	.0	13	3.1	5.7	21	.4	7.0	1.3	17
SEP									
25...	.0	11	2.8	3.7	17	.3	4.7	1.0	14
OCT									
23...	.0	10	2.8	3.1	20	.2	4.1	1.0	17
NOV									
14...	--	10	2.6	3.0	20	.2	4.0	1.0	8
DEC									
14...	.0	9.3	2.2	3.1	22	.2	4.2	1.1	7
JAN , 1980									
16...	.0	9.9	2.6	5.6	25	.4	6.6	1.0	6
FEB									
15...	.0	13	3.5	5.3	19	.3	6.2	.9	19
APR									
09...	5.0	6.0	1.4	1.9	16	.2	--	1.3	4
JUN									
12...	5.0	8.1	2.2	2.9	17	.2	--	.8	8

Table 5.--Water-quality data collected from April 1979 through June 1980--Continued

03078000 - CASSELMAN R. AT GRANTSVILLE, MD (LAT 39 42 08 LONG 079 08 12)

DATE	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	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)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)
APR , 1979									
17...	--	20	--	--	--	--	--	--	--
MAY									
30...	2.0	19	5.9	.1	4.1	--	56	.08	23.4
JUN									
20...	--	26	9.2	.1	3.7	78	72	.11	4.63
JUL									
27...	.2	31	12	.1	3.0	87	95	.12	7.28
AUG									
20...	.7	23	11	.1	3.2	71	71	.10	9.97
SEP									
25...	.1	21	7.3	.1	3.9	68	63	.09	10.9
OCT									
23...	--	25	5.9	.1	4.6	61	64	.08	11.7
NOV									
14...	--	22	6.3	.1	4.5	--	57	.08	11.2
DEC									
14...	--	21	5.8	.1	4.2	60	54	.08	44.5
JAN , 1980									
16...	--	19	10	.1	4.0	65	59	.09	19.5
FEB									
15...	--	28	11	.1	4.4	66	80	.09	4.45
APR									
09...	--	17	3.4	.0	2.9	54	40	.07	187
JUN									
12...	--	22	5.0	.1	4.2	68	53	.09	29.7

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, SUS-PENDED RECOV-ERABLE (UG/L AS FE) (01044)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	IRON, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS FE) (01170)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LEAD, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS PB) (01052)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
APR , 1979									
17...	370	320	50	--	--	--	140	10	130
MAY									
30...	470	440	30	--	--	--	100	10	90
JUN									
20...	390	280	110	--	--	--	40	10	30
JUL									
27...	610	520	90	--	--	--	40	20	20
AUG									
20...	840	700	140	28000	6	20	100	40	60
SEP									
25...	770	700	70	--	--	--	50	0	60
OCT									
23...	520	450	70	--	--	--	100	20	80
NOV									
14...	270	200	70	--	--	--	130	10	120
DEC									
14...	800	740	60	--	--	--	160	40	120
JAN , 1980									
16...	80	10	70	--	--	--	150	30	120
FEB									
15...	140	110	30	--	--	--	130	20	110
APR									
09...	3500	3400	120	--	--	--	390	130	260
JUN									
12...	590	520	70	--	--	--	130	30	100

DATE	MANGA-NESE, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01053)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY RECOV. FM BOT-TOM MA-TERIAL (UG/G AS HG) (71921)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, TOTAL IN BOT-TOM MA-TERIAL (UG/G) (01148)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS ZN) (01093)
AUG , 1979								
20...	1000	<.5	.00	0	0	0	10	30

Table 5.--Water-quality data collected from April 1979 through June 1980--Continued

03078000 - CASSELMAN R. AT GRANTSVILLE, MD (LAT 39 42 08 LONG 079 08 12)

DATE	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT DISCHARGE, SUSPENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
MAY , 1979			
30...	10	4.2	100
JUN			
20...	2	.12	100
AUG			
20...	25	3.5	100
SEP			
25...	27	4.3	--
OCT			
23...	10	1.9	79
NOV			
14...	2	.39	--
DEC			
14...	18	13	--
JAN , 1980			
16...	17	5.1	--
FEB			
15...	1	.07	--
APR			
09...	87	301	--
JUN			
12...	10	4.4	--

Table 5.--Water-quality data collected from April 1979 through June 1980--Continued

03078500 - BIG PINEY RN. NR SALISBURY, PA (LAT 39 43 34 LONG 079 02 55)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE, WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	ACIDITY TOTAL HEATED (MG/L AS H) (71825)	ACIDITY (MG/L AS CACO3) (00435)	ALKA-LINITY (MG/L AS CACO3) (00410)
APR , 1979										
17...	1045	41	135	6.2	7.5	6.0	11.6	--	--	--
AUG										
20...	1900	22	97	7.3	19.5	18.5	8.0	.0	.0	--
NOV										
14...	1930	16	79	7.4	-.5	5.0	11.3	.0	.0	3

DATE	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	CADMIUM RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CD) (01028)	CHRO-MIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01029)	COBALT, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CO) (01038)	COPPER, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CU) (01043)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)
APR , 1979									
17...	10	--	--	--	--	--	--	--	340
AUG									
20...	10	58	.08	3.45	<10	<10	20	<10	820
NOV									
14...	10	52	.07	2.25	--	--	--	--	600

DATE	IRON, SUS-PENDED RECOV-ERABLE (UG/L AS FE) (01044)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	IRON, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS FE) (01170)	LEAD, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS PB) (01052)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MANGA-NESE, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01053)	ZINC, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS ZN) (01093)
APR , 1979									
17...	240	100	--	--	40	10	30	--	--
AUG									
20...	570	250	13000	20	50	20	30	900	60
NOV									
14...	400	200	--	--	70	40	30	--	--

Table 6.--Suspended-sediment data from daily stations

01595500 - North Branch Potomac River at Kitzmiller, Md.

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	316			136	---	---	300	6	4.9
2	248			131	---	---	250	5	3.4
3	217			131	---	---	350	26	24
4	230			137	---	---	270	14	10
5	216			127	---	---	500	22	30
6	210			123	---	---	1210	55	199
7	209			116	---	---	844	22	50
8	203			111	---	---	1150	64	215
9	195			104	---	---	1200	31	104
10	170			103	---	---	965	15	40
11	254			102	---	---	846	14	32
12	558			95	---	---	643	13	23
13	366			88	---	---	586	14	22
14	430			91	14	3.4	560	15	25
15	510			91	21	5.2	527	14	22
16	457			105	25	7.1	886	62	172
17	438			146	12	4.7	1060	120	475
18	438			124	10	3.3	1850	146	762
19	502			112	10	3.0	1270	33	115
20	618			120	15	4.9	1300	22	77
21	295			211	32	20	1330	46	171
22	275			510	238	328	1120	29	88
23	271			1100	76	226	886	20	48
24	210			800	35	76	847	15	34
25	258			620	21	35	850	15	34
26	246			520	16	22	743	12	24
27	514			430	11	13	595	10	16
28	252			400	9	9.7	637	42	82
29	173			390	8	8.4	1460	80	304
30	137			---	---	---	968	35	92
31	152			---	---	---	1810	128	747
TOTAL	9568			7274	---	769.7	27813	---	4045.3

Table 6.--Suspended-sediment data from daily stations

01595500 - North Branch Potomac River at Kitzmiller, Md.--Continued

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	1560	44	195	2100	39	229	456	45	55
2	1110	17	51	1470	20	80	432	29	35
3	986	17	45	1030	15	43	797	76	172
4	1020	23	61	674	12	22	1100	82	282
5	860	16	37	597	15	24	669	22	39
6	716	13	25	557	13	20	703	28	59
7	617	10	17	580	13	20	684	28	52
8	552	28	42	550	10	15	947	50	147
9	3300	284	3010	453	10	12	749	22	45
10	1320	39	142	359	10	9.7	1000	62	215
11	983	18	48	318	9	7.7	889	22	53
12	820	17	38	272	10	7.4	616	22	37
13	766	15	31	422	29	34	503	22	30
14	1350	63	260	324	14	12	356	19	18
15	1360	30	113	259	9	6.3	580	37	65
16	1060	15	43	225	7	4.3	3300	303	2730
17	916	14	34	205	5	2.8	1180	43	138
18	806	13	28	361	16	15	811	29	64
19	685	13	24	286	7	6.0	705	23	44
20	597	12	19	344	36	51	579	16	25
21	520	13	18	2460	179	1460	477	11	14
22	469	12	15	1280	20	68	393	7	7.4
23	423	11	13	1010	16	42	300	5	4.1
24	363	12	12	999	39	139	210	4	2.3
25	368	13	13	1190	46	151	189	6	3.1
26	353	15	14	622	18	30	167	4	1.8
27	1130	79	277	467	14	18	152	5	2.1
28	1140	26	82	392	14	15	149	3	1.2
29	952	17	43	332	14	13	139	9	3.4
30	2960	229	2170	293	14	11	188	14	7.1
31	---	---	---	387	17	18	---	---	---
TOTAL	30062	---	6920	20818	---	2586.2	19420	---	4351.5

Table 6.--Suspended-sediment data from daily stations

01597000 - Crabtree Creek nr. Swanton, Md.

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	22			10	---	---	49	3	.40
2	19			11	---	---	64	3	.52
3	16			12	---	---	90	2	.46
4	15			10	2	.05	73	3	.56
5	15			8.7	2	.05	31	8	.67
6	13			7.2	2	.04	51	13	1.8
7	13			6.8	2	.04	52	14	2.0
8	12			6.6	2	.04	62	21	3.5
9	11			6.4	2	.03	66	14	2.5
10	11			6.3	2	.03	59	9	1.4
11	14			6.2	2	.03	52	9	1.3
12	29			6.2	2	.03	40	8	.86
13	31			7.2	2	.04	35	11	1.0
14	34			7.0	2	.04	32	9	.78
15	35			6.2	2	.03	27	9	.66
16	35			6.4	2	.03	29	8	.63
17	36			6.6	2	.04	83	85	30
18	35			6.8	2	.04	197	112	63
19	32			7.0	2	.04	129	29	10
20	29			7.8	2	.04	88	18	4.1
21	26			18	11	.63	97	52	15
22	25			94	140	39	95	21	6.0
23	23			149	62	25	79	14	3.0
24	20			109	26	8.0	68	15	2.8
25	20			77	16	3.4	61	14	2.3
26	16			57	14	2.2	50	11	1.5
27	16			44	11	1.3	43	11	1.3
28	13			36	10	.97	48	13	1.9
29	12			30	4	.32	145	51	20
30	11			---	---	---	116	14	4.4
31	10			---	---	---	173	71	39
TOTAL	649			766.4	---	81.46	2284	---	223.34

Table 6.--Suspended-sediment data from daily stations

01597000 - Crabtree Creek nr. Swanton, Md.--Continued

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	191	27	15	168	35	16	24	11	.71
2	117	12	3.6	100	22	6.1	25	10	.68
3	79	11	2.3	70	15	2.8	26	11	.77
4	73	14	2.8	53	11	1.6	27	14	1.0
5	62	8	1.3	41	10	1.1	24	12	.78
6	54	5	.73	33	11	.98	25	14	.95
7	47	5	.63	29	9	.70	22	7	.42
8	45	20	5.0	25	9	.61	32	6	.52
9	477	323	521	21	11	.62	31	8	.70
10	173	43	21	19	7	.36	73	45	9.0
11	98	14	3.7	17	8	.37	79	16	3.5
12	70	19	3.4	17	9	.41	57	9	1.4
13	54	17	2.4	18	10	.49	35	6	.57
14	98	55	17	16	8	.35	31	4	.33
15	141	30	11	14	6	.23	27	4	.29
16	105	17	4.9	13	7	.25	66	45	9.0
17	74	13	2.6	13	7	.24	65	10	1.8
18	59	11	1.8	17	21	1.0	55	8	1.2
19	49	13	1.7	20	30	2.0	41	6	.66
20	40	13	1.4	39	36	5.0	31	4	.33
21	33	13	1.2	296	113	97	25	2	.14
22	28	12	.91	143	30	12	21	1	.06
23	24	10	.65	84	17	4.0	18	1	.05
24	20	12	.65	179	206	222	15	1	.04
25	18	10	.49	214	146	99	12	1	.03
26	17	8	.37	110	20	6.3	10	1	.03
27	46	31	4.1	69	17	3.2	9.0	1	.02
28	70	22	4.1	49	16	2.1	8.0	1	.02
29	67	18	3.1	37	12	1.2	7.0	2	.04
30	201	105	59	29	12	.94	7.5	1	.02
31	---	---	---	25	11	.74	---	---	---
TOTAL	2630	---	697.83	1978	---	489.69	928.5	---	35.06

Table 6.--Suspended-sediment data from daily stations

01603000 - North Branch Potomac River nr. Cumberland, Md.

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	10200			7120	---	---	1250	8	27
2	6730			4970	---	---	1220	9	30
3	4440			3740	---	---	1380	17	64
4	4040			2830	---	---	1910	25	130
5	3280			2180	---	---	1720	34	160
6	2690			1860	---	---	1330	14	50
7	2270			1680	---	---	1430	15	58
8	2120			1560	---	---	1480	23	93
9	10400			1430	---	---	1790	35	172
10	8430			1240	16	54	1830	18	90
11	5860			1110	13	39	2660	35	252
12	3850			1080	12	35	1800	29	143
13	3280			1220	14	46	1400	14	53
14	4040			1240	14	46	1160	20	63
15	5380			1040	11	31	941	12	31
16	4360			908	12	30	2100	48	445
17	3850			797	9	20	3780	67	691
18	3210			935	9	23	2000	22	121
19	2360			1090	14	42	1540	23	97
20	2000			1290	25	87	1320	18	65
21	1760			9310	502	11500	1110	13	39
22	1550			8130	175	4160	940	22	56
23	1430			4540	52	640	810	11	24
24	1280			3510	22	210	680	12	22
25	1170			3990	70	758	552	16	24
26	1100			2960	25	201	491	15	20
27	1730			1960	9	48	446	14	17
28	3140			1530	6	25	403	15	16
29	2760			1300	4	14	382	16	16
30	3910			1180	9	29	376	16	16
31	---			1290	27	95	---	---	---
TOTAL	112620			79020	---	18133	40231	---	3085

Table 6.--Suspended-sediment data from daily stations

03077940 - South Branch Casselman River nr. Bittinger, Md.

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	23			11	---	---	4.8	7	.08
2	15			8.3	---	---	7.6	60	1.4
3	12			7.4	---	---	12	68	5.0
4	19			6.6	---	---	9.4	31	1.1
5	13			6.0	---	---	5.5	10	.15
6	10			5.5	---	---	6.0	19	.31
7	8.7			5.3	---	---	5.5	27	.40
8	13			4.8	---	---	5.7	21	.32
9	80			4.5	---	---	5.5	14	.25
10	22			4.2	---	---	30	53	6.1
11	16			3.9	---	---	11	9	.27
12	13			4.5	---	---	8.0	6	.13
13	12			5.2	---	---	6.8	6	.11
14	31			3.8	---	---	5.7	6	.09
15	24			3.5	---	---	5.5	4	.06
16	17			3.0	---	---	14	15	.74
17	14			3.1	---	---	7.6	4	.08
18	12			5.7	---	---	5.9	6	.10
19	10			6.4	---	---	5.0	9	.12
20	9.2			13	---	---	4.4	7	.08
21	8.3			48	---	---	3.8	4	.04
22	7.6			14	---	---	3.5	2	.02
23	7.2			10	---	---	3.2	1	.00
24	6.4			8.9	9	.22	2.8	3	.02
25	5.9			8.0	8	.17	2.7	3	.02
26	5.5			7.0	7	.13	2.4	3	.02
27	13			5.9	6	.10	2.2	1	.00
28	8.7			5.5	6	.09	2.2	1	.00
29	6.8			5.0	7	.09	2.0	1	.00
30	16			4.5	9	.11	2.0	5	.03
31	---			4.7	8	.10	---	---	---
TOTAL	459.3			237.2	---	1.01	192.7	---	17.04

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