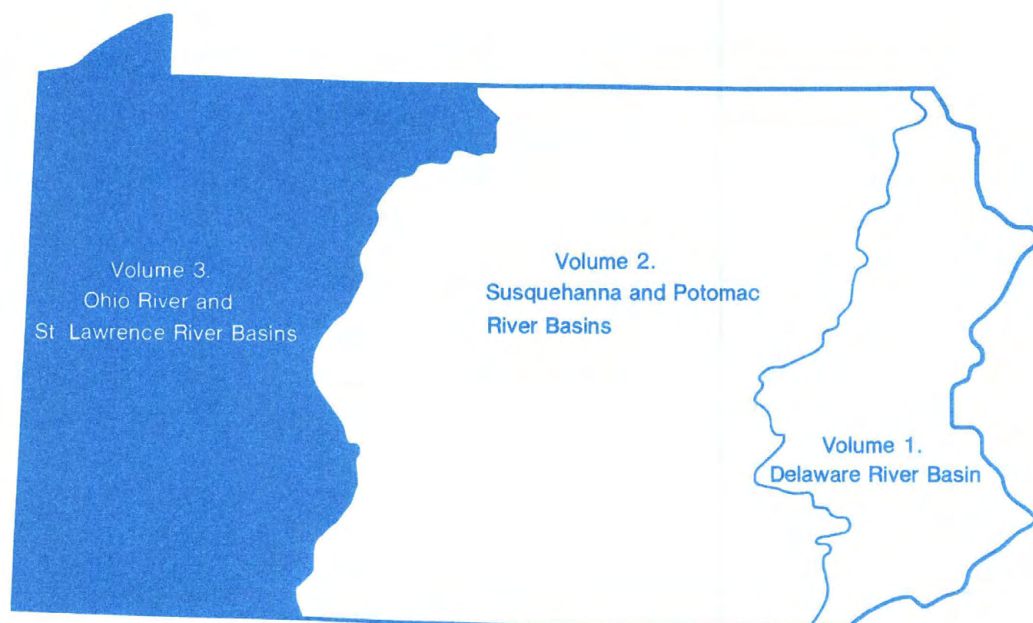
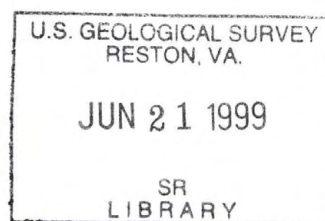


Water Resources Data Pennsylvania Water Year 1998

Volume 3. Ohio River and St. Lawrence River Basins

Water-Data Report PA-98-3



CALENDAR FOR WATER YEAR 1998

1997

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1998

JANUARY							FEBRUARY							MARCH						
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4	5	6	7	8	9	10	8	9	10	11	12	13	14	8	9	10	11	12	13	14
11	12	13	14	15	16	17	15	16	17	18	19	20	21	15	16	17	18	19	20	21
18	19	20	21	22	23	24	22	23	24	25	26	27	28	22	23	24	25	26	27	28
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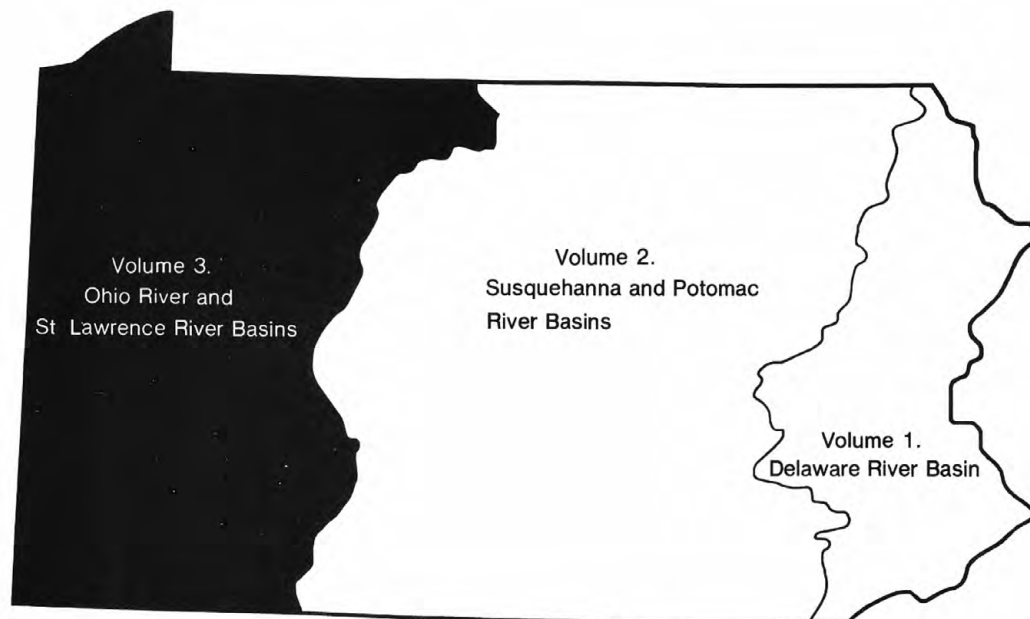
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Water Resources Data Pennsylvania Water Year 1998

Volume 3. Ohio River and St. Lawrence River Basins

By Martin B. Coll, Jr., and Raymond W. Siwicki

Water-Data Report PA-98-3



U.S. DEPARTMENT OF THE INTERIOR

BRUCE BABBITT, Secretary

U.S. GEOLOGICAL SURVEY

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U.S. Geological Survey
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Lemoyne, Pennsylvania 17043-1586

1999

PREFACE

This volume of the annual water resources report of Pennsylvania 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, municipal, and Federal agencies, and the private sector for developing and managing our Nation's land and water resources. Hydrologic data for Pennsylvania are contained in 3 volumes:

- Volume 1. Delaware River Basin
- Volume 2. Susquehanna River and Potomac River Basins
- Volume 3. Ohio River and St. Lawrence River Basins

Volume 3 was prepared in cooperation with the Commonwealth of Pennsylvania and other agencies under the general supervision of Gary N. Paulachok, District Chief, Pennsylvania District; Robert A. Hainly, Assistant District Chief for Hydrologic Surveillance and Data Management; Martin B. Coll Jr., Chief of the Hydrologic Surveillance Program, Pittsburgh, and Steven McAuley, Chief, Pittsburgh Project Office. It is the product of a team effort by dedicated personnel of the U.S. 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:

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13. ABSTRACT (Maximum 200 words) Water resources data for the 1998 water year for Pennsylvania consists of records of discharge and water quality of streams; contents and elevations of lakes and reservoirs; and water levels of ground-water wells. This report, Volume 3, includes records from the Ohio and St. Lawrence River Basins. Specifically, it contains: (1) discharge records for 62 continuous record streamflow-gaging stations and 18 partial-record and miscellaneous streamflow stations; (2) elevation and contents records for 11 lakes and reservoirs; (3) water-quality records for 10 streamflow-gaging stations; and (4) water-level records for 15 network observations wells. Additional water data were collected at various sites not involved in the systematic data-collection program and are published as miscellaneous measurements and analyses. These data, together with the data in Volume 1 and 2, represent that part of the National Water Data System operated by the U.S. Geological Survey and cooperating State, Municipal, Local, and Federal agencies in Pennsylvania.				
14. SUBJECT TERMS *Pennsylvania, *Hydrologic data, *Ground water, *Surface water, *Water quality, Gaging stations, Streamflow, Flow Rates, Lakes, Reservoirs, Chemical analysis, Sediments, Water temperature, Water analysis, Water levels, Water wells, Data-collection sites			15. NUMBER OF PAGES 352	
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SURFACE-WATER STATIONS, IN DOWNSTREAM ORDER, FOR WHICH RECORDS ARE PUBLISHED IN THIS VOLUME

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WATER RESOURCES DATA - PENNSYLVANIA, 1998

DISCONTINUED CONTINUOUS-RECORD SURFACE-WATER DISCHARGE STATIONS

The following continuous-record surface-water discharge stations (listed in downstream order) have been discontinued. Daily streamflow records were collected and published for the period of record shown for each station. Those stations with an asterisk (*) after the station number are currently operated as partial-record stations. Discontinued stations with less than 3 years of record have not been included. Information regarding these stations may be obtained from the District Office at the address given on the back of the title page of this report.

Station name	Station number	Drainage area (mi ²)	Period of record (Water years)
OHIO RIVER AND ST. LAWRENCE RIVER BASINS			
Newell Creek near Port Allegany	03008000	7.79	1965-78
Potato Creek at Smethport	03009680	160	1974-95
Allegheny River at Larabee	03010000	530	1920-21 1925-39
Kinzua Creek at Dewdrop	03012000	171	1909-16
Allegheny River at Kinzua Dam	03012550	2,180	1935-91
Jackson Run near North Warren	03015280	12.8	1962-78
Allegheny River at Warren	03015310*	3,131	1988-94
Tionesta Creek at Sheffield	03016500	128	1941-46
South Branch Tionesta Creek at Barnes	03017000	85.3	1941-46
Tionesta Creek at Lynch	03017500*	233	1939-79
Tionesta Creek at Mayburg	03018000	307	1941-46
Tionesta Creek at Butler Bridge (near Nebraska)	03018500	420	1919-23
Tionesta Creek at Nebraska	03019000	469	1909-11 1923-40
Tionesta Creek at Tionesta Dam	03020000	479	1940-91
Oil Creek near Rouseville	03021000	315	1909-32
West Branch French Creek near Lowville	03021410	52.3	1975-93
French Creek at Carters Corners	03021500	208	1910-71
French Creek near Union City	03021520	221	1972-91
Little Conneauttee Creek near McKean	03021700	3.60	1960-78
French Creek at Venango	03022000*	597	1938-46
French Creek at Saegerstown	03022500	629	1921-39
Woodcock Creek at Blooming Valley	03022540*	31.1	1974-95
Woodcock Creek at Woodcock Creek Dam	03022554	45.6	1974-91
Cussewago Creek near Meadville	03023000	90.2	1910-38
French Creek at Carlton	03023500	998	1908-25
Sugar Creek at Wyattville	03024500	153	1910-16
Sugar Creek at Sugarcreek	03025000*	166	1932-79
Patchel Run near Franklin	03025200	5.69	1967-78
East Branch Clarion River at East Branch Clarion River Dam	03027500	73.2	1948-91
Clarion River at Johnsonburg	03028500*	204	1945-95

WATER RESOURCES DATA - PENNSYLVANIA, 1998

DISCONTINUED CONTINUOUS-RECORD SURFACE-WATER DISCHARGE STATIONS--Continued

Station name	Station number	Drainage area (mi ²)	Period of record (water years)
OHIO RIVER AND ST. LAWRENCE RIVER BASINS			
Clarion River at Ridgway	03029000*	303	1940-53
Toms Run at Cooksburg	03029400	12.6	1959-78
Clarion River near Clarion	03030000	930	1919-23
Clarion River at St. Petersburg	03031000	1,246	1941-53 1973-75
Big Run near Sprankle Mills	03031950	7.38	1963-81
Allegheny River near Rimer	03033000	8,389	1938-45
Stump Creek at Cramer	03033500	22.1	1942-46
Mahoning Creek at Dayton	03035000	321	1920-40
Mahoning Creek at Mahoning Creek Dam	03036000	344	1938-91
Crooked Creek at Creekside	03037000	67.6	1942-46
South Branch Plum Creek at Willet	03037500	30.0	1941-46
Crooked Creek at Crooked Creek Dam	03039000	278	1909-91
Clear Run near Buckstown	03039200	3.68	1964-78
Stony Creek at Hollsopple	03039500	244	1937-40
Little Conemaugh River at East Conemaugh	03041000*	183	1939-95
Little Yellow Creek near Strongstown	03042200	7.36	1960-78 1986-88
Yellow Creek near Penn Run	03042250	50.4	1963-67
Blacklick Creek at Blacklick	03043000	390	1908-51
Conemaugh River at Tunnelton	03044000	1,358	1939-91
Loyalhanna Creek at New Alexandria	03045500	265	1919-23 1925-40
Loyalhanna Creek at Loyalhanna Dam	03047000	292	1939-91
Kiskiminetas River at Avonmore	03047500	1,723	1908-37
Monongahela River at Point Marion	03063000	2,720	1936-55
Stony Fork Tributary near Gibbon Glade	03070420	0.93	1977-94
Stony Fork near Elliottsville	03070455	7.44	1977-85
Monongahela River at Greensboro	03072500	4,367 ^a	1938-95
Georges Creek at Smithfield	03072590	16.3	1963-78
Tenmile Creek near Clarksville	03072840	133	1968-79
South Fork Tenmile Creek at Jefferson	03073000	180	1931-95
Dunlap Creek at Allison	03074000	33.1	1942-51
Lick Run at Hopwood	03074300	3.80	1966-78

^a Formerly published as 4,407.

WATER RESOURCES DATA - PENNSYLVANIA, 1998

DISCONTINUED CONTINUOUS-RECORD SURFACE-WATER DISCHARGE STATIONS--Continued

Station name	Station number	Drainage area (mi ²)	Period of record (Water years)
OHIO RIVER AND ST. LAWRENCE RIVER BASINS			
Youghiogheny River at Youghiogheny River Dam	03077500	436	1939-91
Big Piney Run near Salisbury	03078500	24.5	1932-70
Youghiogheny River at Ohiopyle	03081500	1,062	1927-50
Poplar Run near Normalville	03082200	9.27	1961-78
Green Lick Run at Green Lick Reservoir	03083000	3.07	1941-79
Abers Creek near Murrysville	03084000	4.39	1949-93
Turtle Creek at Trafford	03084500	55.9	1920-52
Chartiers Creek at Crafton	03085500	270	1971-75
Big Sewickley Creek near Ambridge	03086100	15.6	1967-78
Shenango River near Turnersville	03100000	152	1912-22
Sugar Run at Pymatuning Dam	03101000	9.34	1934-55
Shenango River near Jamestown	03102000	181	1919-34
Pymatuning Creek near Orangeville	03103000	169	1914-23 1925-63
Shenango River at Sharpsville	03103500	584	1938-91
Shenango River at Sharon	03104000	608	1910-38
Shenango River at New Castle	03104500*	792	1910-11 1912-34
Cool Spring Creek near Jackson Center	03104580	13.0	1961-68
Harthegig Run near Greenfield	03104760	2.26	1968-81
Neshannock Creek at Eastbrook	03105000	228	1918-23
Wolf Creek near Slippery Rock	03106140	86.6	1976-82
Ohio River at Montgomery Island Dam	03108500	22,960 ^b	1941-51
Brush Run near Buffalo	03111150	10.3	1960-78 1982-85
Enlow Fork near West Finley	03111585	38.1	1979-85
Raccoon Creek near West Springfield	04213040	2.53	1969-95

^b About.

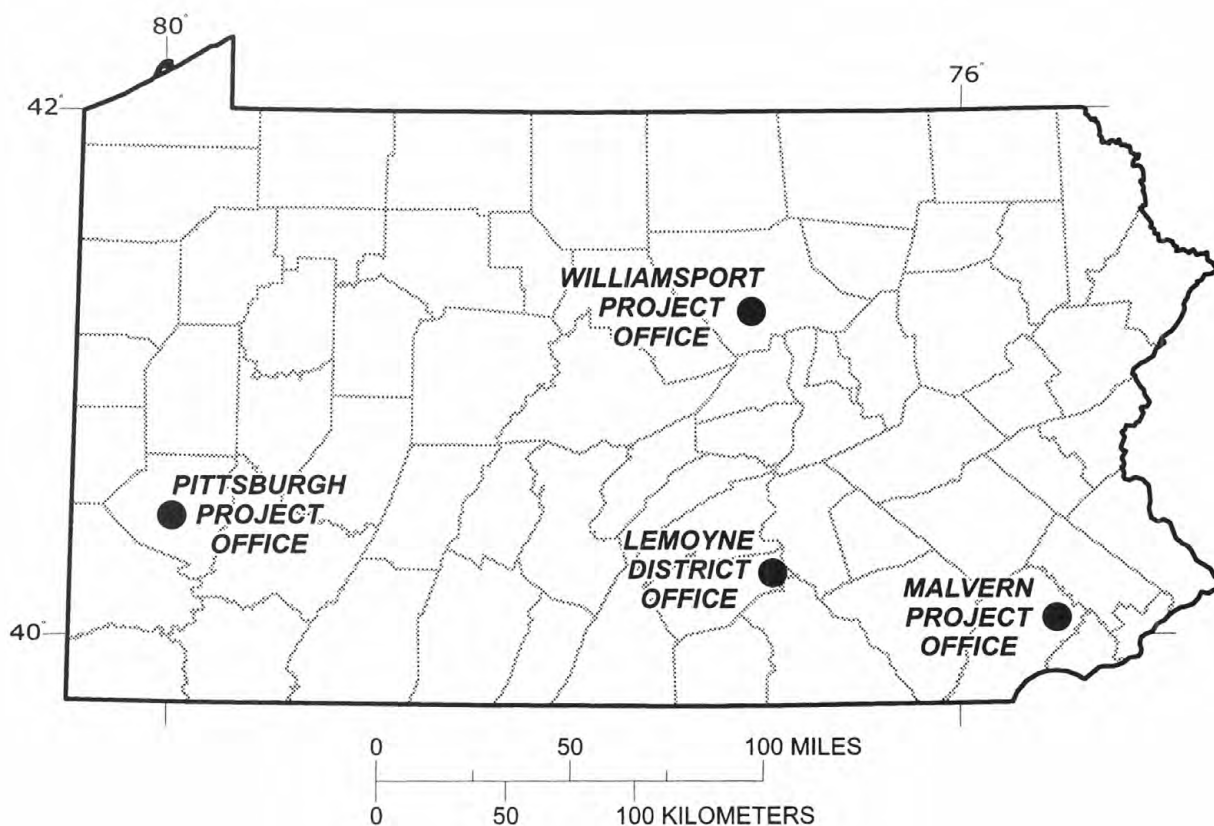
DISCONTINUED CONTINUOUS-RECORD SURFACE-WATER-QUALITY STATIONS

The following stations were discontinued as continuous-record surface-water-quality stations. Daily records of water temperature, specific conductance, pH, or suspended sediment concentration were collected and published for the period shown for each station.

The following abbreviations are used to identify the record type: SC (specific conductance); Temp (water temperature); Sed (sediment concentration and discharge).

Station name	Station number	Drainage area (mi ²)	Type of record	Period of record (Water years)
OHIO RIVER AND ST. LAWRENCE RIVER BASINS				
Brokenstraw Creek at Youngsville	03015500	321	Sed.	1968-70
Oil Creek at Rouseville	03020500	300	Sed.	1970-73
Sugar Creek at Sugarcreek	03025000	166	Sed.	1971-72
Clarion River at Cooksburg	03029500	807	Sed.	1971-73
Redbank Creek at St. Charles	03032500	528	Sed.	1968-70 1976-79
Beaver Run near Troutville	03033222	2.21	Sed.	1979-81
East Branch Mahoning Creek near Big Run	03033225	29.6	Sed.	1979-81
Loyalhanna Creek at Kingston	03045000	172	Sed.	1970-77
Stony Fork near Farmington	03070415	2.50	Sed.	1980-81
Stony Fork Tripartite near Gibbon Glade	03070420	0.93	Sed., Temp., SC., pH	1977-88
Stony Fork near Elliottsville	03070455	7.44	Sed., Temp., SC., pH	1977-85
Whiteley Creek near Kirby	03072670	5.95	Sed.	1979-82
South Fork Tenmile Creek at Jefferson	03073000	180	Sed.	1968-69
Castle Run at Clarksville	03073030	6.21	Sed.	1979-81
Big Meadow Run at Ohiopyle	03081600	35.9	Temp., SC., pH	1988
Indian Creek at Jones Mills	03082020	17.4	Sed., Temp., SC., pH	1986-87
Champion Run at Melcroft	03082120	13.8	Sed.	1985-87
Poplar Run near Normalville	03082190	8.83	Sed., Temp., SC., pH	1986-89
Indian Creek at White Bridge	03082237	91.2	Temp., SC., pH	1985-87
Enlow Fork near West Finley	03111585	38.1	Sed.	1979-85

PENNSYLVANIA DISTRICT OFFICE LOCATIONS AND ADDRESSES



District Office:
U.S. Geological Survey
Water Resources Division
840 Market Street
Lemoyne, PA 17043-1586
(717) 730-6900
FAX (717) 730-6997

Williamsport Project Office:
U.S. Geological Survey
Water Resources Division
439 Hepburn Street
Williamsport, PA 17701
(570) 323-7127
FAX (570) 323-2137

Pittsburgh Project Office:
U.S. Geological Survey
Water Resources Division
1000 Church Hill Road
Pittsburgh, PA 15205
(412) 490-3800
FAX (412) 490-3828

Malvern Project Office:
U.S. Geological Survey
Water Resources Division
Great Valley Corporate Center
111 Great Valley Parkway
Malvern, PA 19355
(610) 647-9008
FAX (610) 647-4594

WATER RESOURCES DATA - PENNSYLVANIA, 1998

INTRODUCTION

The Water Resources Division of the U.S. Geological Survey, in cooperation with State, municipal, and Federal agencies, collects a large amount of data pertaining to the water resources of Pennsylvania 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 - Pennsylvania, Volumes 1, 2, and 3." Volume 1 contains data for the Delaware River Basin; Volume 2, the Susquehanna River and Potomac River Basins; and Volume 3, the Ohio River and St. Lawrence River Basins.

This report, Volume 3, contains: (1) discharge records for 62 continuous-record streamflow-gaging stations, 18 partial-record and miscellaneous streamflow sites; (2) elevation and contents records for 11 lakes and reservoirs; (3) water-quality records for 10 streamflow-gaging stations; and (4) water-level records for 15 ground-water network observation wells.

Publications similar to this report are published annually by the Geological Survey for all States. For the purpose of archiving, these official 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 PA-98-3." These water-data reports, beginning with the 1971 water year, are for sale as paper copy or microfiche by the National Technical Information Service, U.S. Department of Commerce, Springfield, VA 22161.

The annual series of Water Data Reports for Pennsylvania began with the 1961 water-year report and contained only data relating to quantities of surface water. Starting with the 1964 water year, a companion report (part 2) was introduced that contained only data relating to water quality. Beginning with the 1975 water year the report was changed to three volumes (by river basin), with each volume containing data on quantities of surface water, quality of surface and ground water, and ground-water levels.

Prior to the introduction of this series and for several years concurrent with it, water-resources data for Pennsylvania 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," which was released in numbered parts as determined by natural drainage basins. For the 1961-70 water years, the data were published in two 5-year reports. Data prior to 1961 are included in two reports: "Compilation of Records of Surface Waters of the United States through 1950," and "Compilation of Records of Surface Waters of the United States, October 1950 to September 1960." Data for Pennsylvania are published in Parts 1, 3, and 4. Data on chemical quality, temperature, and suspended sediment for the 1941-70 water years were published annually under the title "Quality of Surface Waters of the United States," and ground-water levels for the 1935-74 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 U.S. Geological Survey at USGS Information Services, Box 25286, Denver, CO 80225.

Information for ordering specific reports may be obtained from the Pennsylvania District Office at the address on the back of the title page or by phoning the Scientific and Technical Products Section at (717) 730-6940. Information on the availability of unpublished data or statistical analyses may be obtained from the District Hydrologic Surveillance Program at (717) 730-6900, or FAX (717) 730-6997.

COOPERATION

The U.S. Geological Survey and organizations of the Commonwealth of Pennsylvania have had cooperative agreements for the systematic collection of surface-water records during the periods 1919-21 and 1931 to date, water-quality records from 1944 to date, and ground-water records from 1925 to date. Organizations that supplied data are acknowledged in station manuscripts. Organizations that assisted in collecting data for this report through cooperative agreements with the Survey are listed below.

The Commonwealth of Pennsylvania Department of Environmental Protection, James M. Seif, Secretary through the following:

Office of Water Management, Hugh V. Archer, PhD, Deputy Secretary;
Bureau of Water Supply Management, Glenn E. Maurer, Director;

Harmony Water Authority, Thomas Grech, Chairman.

New York State Department of Environmental Conservation, John P. Cahill, Commissioner.

Federal Energy Regulatory Commission Licensee:
Pennsylvania Electric Company.

The following Federal agency assisted in the data-collection program by providing funds or services:

Corps of Engineers, U.S. Army, in collecting records for 43 gaging stations and 4 partial-record.

National Weather Service, NOAA, U.S. Department of Commerce.

The following organizations aided in collecting records: Allegheny Power Service Corp.; Latrobe Municipal Authority; and Pennsylvania Electric Co.

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SUMMARY OF HYDROLOGIC CONDITIONS

Streamflow

Streamflows in the Upper Ohio and St. Lawrence River Basins during water year 1998 were normal. Normal streamflow is defined as a mean streamflow that is between the long-term 75 percent quartile and 25 percent quartile streamflow. The 1998 annual mean streamflow was 91 percent of the median of the 1961-90 annual mean streamflow at the Ohio River index gaging station-Oil Creek at Rouseville, PA. (station number 03020500). The monthly mean streamflows were above normal for the months of January and April, normal for the months of October, November, December, February, May, and below normal for the months of March, June, July, August, and September. An above normal streamflow is defined as above the long-term 75 percent quartile; a below normal streamflow is below the long-term 25 percent quartile. The below normal streamflows are indicative of a state wide drought condition that affected streams during the summer of 1998.

A comparison of the monthly and yearly mean streamflow during the 1998 water year with that of the 1961-90 reference period for Oil Creek at Rouseville, Pa., is shown in figure 1.

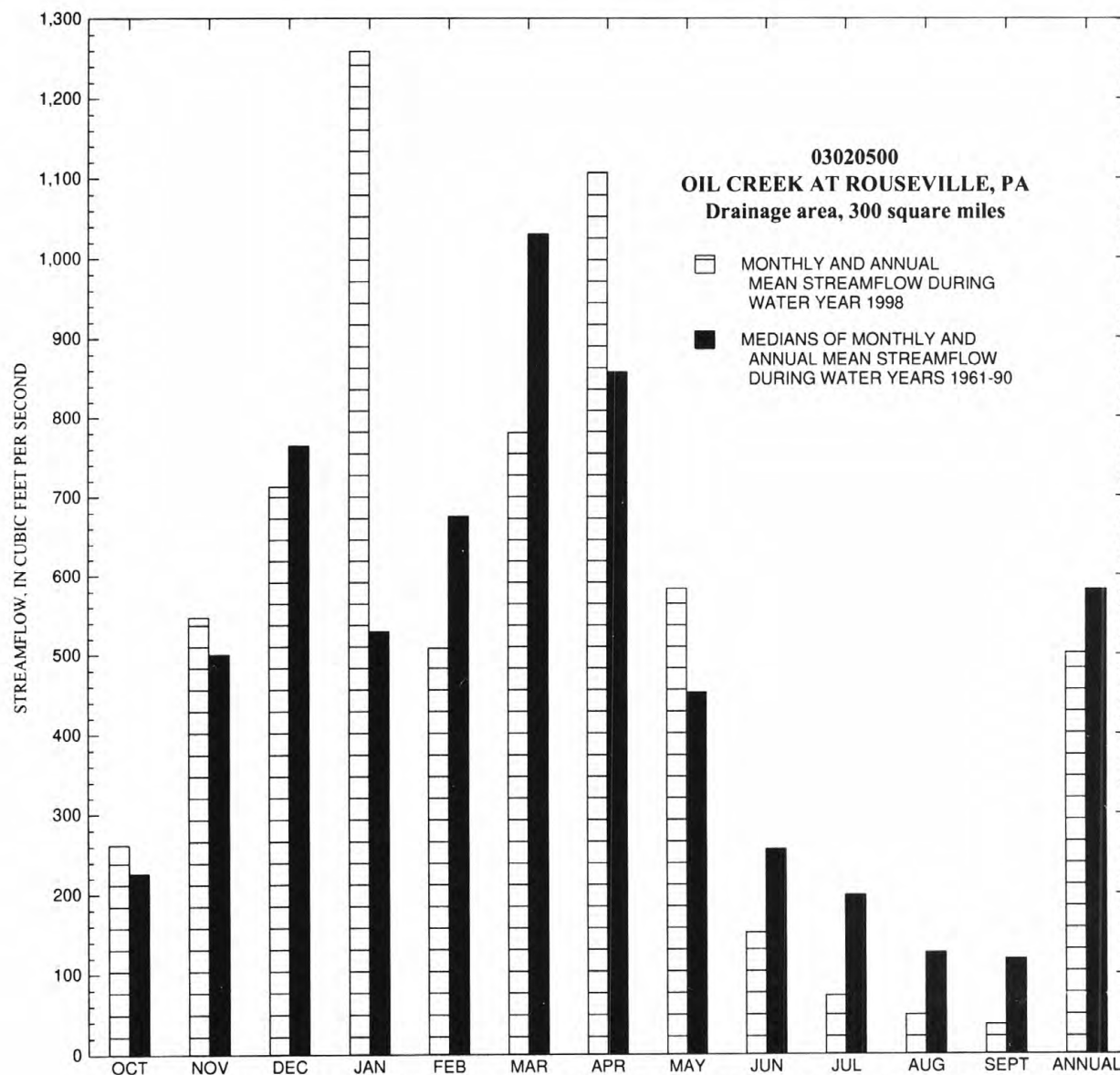


FIGURE 1.--COMPARISON OF MONTHLY AND ANNUAL MEAN STREAMFLOW DURING WATER 1998 WITH THE MEDIANS OF MONTHLY AND ANNUAL MEAN STREAMFLOW DURING WATER YEARS 1961-90.

WATER RESOURCES DATA - PENNSYLVANIA, 1998Ground Water

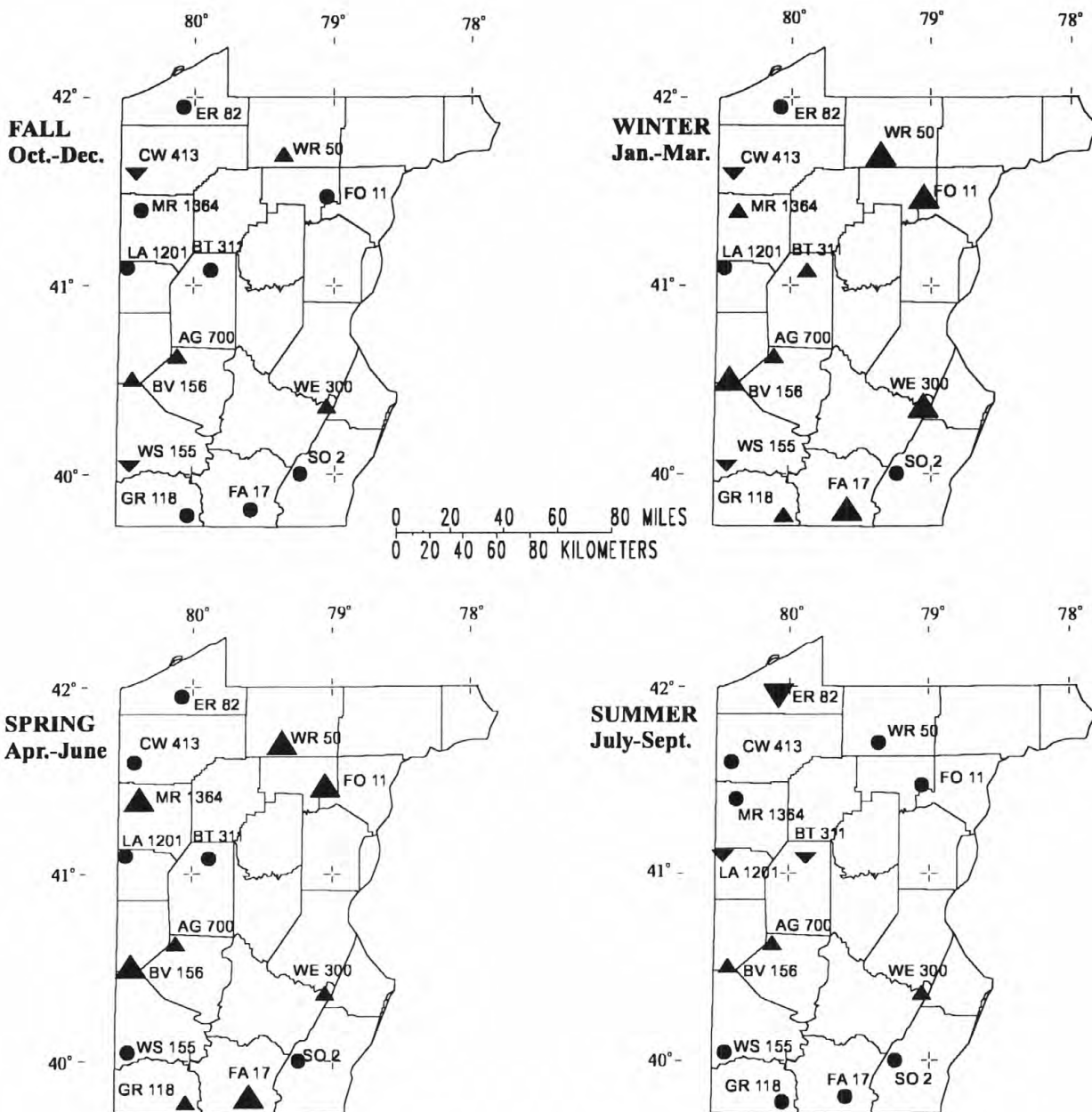
During the 1998 water year, ground-water levels reached annual highs in most observation wells during the late winter or spring. Ground-water levels in many observation wells during the 1998 water year reached annual lows during the late summer of 1998 with a few wells reaching annual lows in the fall of 1997.

The seasonal distribution of water levels for 14 network observation wells during the 1998 water year is shown in figure 2. Water levels during the 1998 water year were averaged by season and compared to the long-term water levels for these seasons. Long-term water levels were calculated from records ranging from 16 to 61 years in length. The water-level records for the Elk County well (EK-108) are published in this report, but are not used in the seasonal distribution evaluation. Water levels at the Elk County well were adversely affected by land use activities and are inappropriate for seasonal evaluation during water year 1998.

In the fall of 1997, seasonal water levels were normal in eight wells, above normal in four wells, and only below normal in two wells. Hydrologic conditions during the winter and spring of 1998 generally resulted in average to above average ground-water recharge. In the transition from fall to winter, five wells changed from normal or above normal water levels to much above normal water levels. In the spring of 1998, ground-water levels were normal in six wells, above normal in three wells, and much above normal in five wells. Period of record high water levels were reached in the spring at wells located in Mercer County, Allegheny County, and Warren County. In the transition from spring to summer, four wells changed from much above normal to normal water levels and a regional pattern developed. Ground-water levels were above normal in three wells, and normal in four wells in the southern part of the basin. In the northern part of the basin, ground-water levels were normal in four wells, below normal in two wells, and much below normal in one well.

On September 25, 1998, the ground-water level, in the Mercer County observation well rose approximately three feet. The probable cause of this abrupt rise in water level is the Pymatuning earthquake (magnitude 5.2) of this day with the epicenter to the northeast on the Mercer and Crawford County boundary. For more information about this water level rise and the hydrologic effects of the Pymatuning earthquake see the following two internet addresses: 1) <http://www.pah2o.er.usgs.gov/quake.html>.
2) <http://www.dcnr.state.pa.us/topogeo/hazards/pymatuning.htm>.

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EXPLANATION



GROUND-WATER LEVELS

- ▲ MUCH ABOVE NORMAL--Water level is higher than the 10th percentile for this season for all years of record.
- ▲ ABOVE NORMAL--Water level is between the 10th and 25th percentile for this season for all years of record.
- NORMAL--Water level is between the 25th and 75th percentile for this season for all years of record.
- ▼ BELOW NORMAL--Water level is between the 75th and 90th percentile for this season for all years of record.
- ▼ MUCH BELOW NORMAL--Water level is lower than the 90th percentile for this season for all years of record.

Figure 2.--Relation between 1998 seasonal water levels and long-term water levels. [Seasonal percentile values were determined by ranking the average monthly water levels for each month in the season from highest to lowest for all years of record and averaging the ranks for the three months. A water level that is higher than the seasonal 10th percentile value would be expected to occur only once in a ten-year period. Conversely, a water level that is lower than the seasonal 90th percentile value also would be expected to occur only once during a ten-year period.]

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SPECIAL NETWORKS AND PROGRAMS

Hydrologic Bench-Mark Network is a network of 50 sites in small drainage basins throughout the country that provides consistent data on hydrology, including water quality, and related factors in representative undeveloped watersheds nationwide. This network also provides analyses on a continuing basis to compare and contrast conditions observed in basins more obviously affected by human activities. There are no stations in the Ohio and St. Lawrence Basins in Pennsylvania participating in this program.

The **National Stream-Quality Accounting Network** (NASQAN) monitors the water quality of large rivers within four of the Nation's largest river basins--the Mississippi, Columbia, Colorado, and Rio Grande. The network consists of 39 stations. 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 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 chemicals for assessing human effects on the world's oceans and for determining global cycles of carbon, nutrients, and other chemicals. There are no stations in the Ohio or St. Lawrence River Basins in Pennsylvania currently participating in this program.

The **National Atmospheric Deposition Program/National Trends Network** (NADP/NTN) provides continuous measurement and assessment of the chemical climate of precipitation throughout the United States. As the lead federal agency, the USGS works together with over 100 organizations to accomplish the following objectives; (1) Provide a long-term, spatial and temporal record of atmospheric deposition generated from a network of 191 precipitation chemistry monitoring sites, (2) Provide the mechanism to evaluate the effectiveness of the significant reduction in SO₂ emissions that began in 1995 as implementation of the Clean Air Act Amendments (CAAA) occurred, and (3) Provide the scientific basis and nationwide evaluation for implementation of the Phase II CAAA emission reductions for SO₂ and NO_x scheduled to begin in year 2000.

Data from the network, as well as information about individual sites, are available through the world wide web at [<http://nadp.nrel.colostate.edu/NADP>].

The **National Water-Quality Assessment Program (NAWQA)** 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 53 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 collaborate efforts among the agencies. Additional information about the NAWQA Program is available through the world wide web at http://wwwrvares.er.usgs.gov/nawqa/nawqa_home.

EXPLANATION OF RECORDS

The surface-water and ground-water records in this report are for the 1998 water year that began October 1, 1997, and ended September 30, 1998. 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, water-quality data for surface and ground water, and ground-water-level data. The location of these stations and wells are shown in figures 4 and 5. The following sections of the 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, whether a stream site or a well, 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 and for ground-water well sites differ, but both are based on geographic location. The "downstream order" system is used for regular surface-water stations and the "latitude-longitude" system is used for wells and, in Pennsylvania, for some miscellaneous surface-water sites where infrequent water-quality samples or discharge measurements are made.

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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 main-stream station are listed before that station. A station on a tributary that enters between two main-stream 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 on which a station is situated with respect to the stream to which it is immediately tributary is indicated by an indentation in a list of stations in the front of the report. Each indentation represents one rank. This downstream-order 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 in downstream order. In assigning station numbers, no distinction is made between partial-record stations and continuous-record 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. A station number can be from 8 to 15 digits in length and normally appears to the left of the station name. For example, an 8-digit number for a station such as 03020500, includes a 2-digit part number "03" plus a 6-digit downstream-order number "020500." The part number designates major river basins; for example, part "03" is the Ohio River and St. Lawrence River Basins.

Latitude-Longitude System

The identification numbers for wells and miscellaneous surface-water sites are assigned based on the grid system of latitude and longitude. The system provides the geographic location of the well or miscellaneous site and a unique number for each site. The number consists of 15 digits. The first six digits denote the degrees, minutes, and seconds of latitude, the next seven digits denote the degrees, minutes, and seconds of longitude, and the last two digits (assigned sequentially) identify the wells or other sites within a 1-second grid. See figure 3 below.

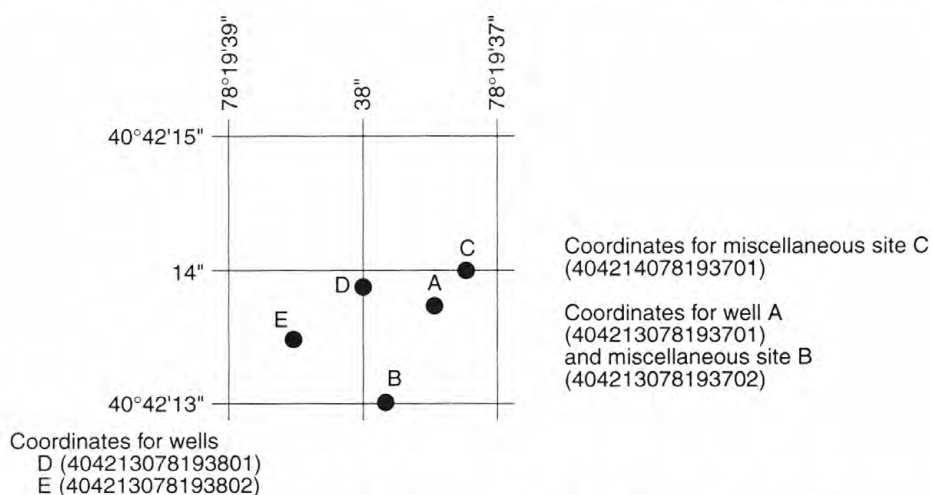


Figure 3.--System for numbering wells and miscellaneous sites (latitude and longitude).

A local well number is also assigned to the wells and consists of a 2-letter abbreviation of the county in which the well is located and a sequential number assigned at the time the well was scheduled.

Records of Stage and Water Discharge

Records of stage and water discharge may be continuous or partial. Continuous records of discharge are those obtained using a continuous stage-recording device through which either instantaneous water discharges may be computed for any time, or mean discharges may be computed for any period of time, during the period of record. Because daily mean discharges or end-of-day contents for reservoirs commonly are published for such stations, they are referred to as "daily stations" or "continuous-record 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-record stations," or "Low-flow partial-record stations." Records of miscellaneous discharge measurements or of measurements from special studies, such as low-flow seepage studies, may be considered as partial records, but they are presented separately in this report. Location of all continuous-record and partial-record stations for which data are given in this report are shown in figures 4 and 5.

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Data Collection and Computation

The data obtained at a continuous-record gaging station on a stream 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. Continuous records of stage are obtained with analog recorders that trace continuous graphs of stage, with digital recorders that punch stage values on paper tapes at selected time intervals, with solid-state electronic data loggers, or with Data Collection Platforms (DCP's) that electronically record and then transmit the data via satellite to ground receiving stations. Measurements of discharge are made with current meters using methods adopted by the Geological Survey as a result of experience accumulated since 1880. These methods are described in standard textbooks, in Water-Supply Paper 2175, and the U.S. Geological Survey Techniques of Water-Resources Investigations (TWRI's), Book 3, Chapter 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-back-water techniques.

Daily mean discharges are computed by applying each recorded stage value (gage height) 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 to compute discharge.

When computing records of lake or reservoir contents, it is necessary to have available from surveys, curves or tables defining the relation between stage and content. The application of stage to the stage-content curves or tables gives the contents from which daily, monthly, or yearly changes then are determined. If the stage-content relation changes because of deposition of sediment in the lake or reservoir, periodic surveys may be necessary to redefine the relation. Even when this is done, the contents computed may increase in error as the time elapsed since the last survey increases. Discharges over lake or reservoir spillways are computed from stage-discharge relation much as other stream discharges are computed.

For some gaging stations, there are periods when no gage-height data are collected or when the recorded gage height is so imprecise or incorrect that it cannot be used to compute daily mean discharge or end-of-day 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

The records published for each continuous-record surface-water discharge station (gaging station) now consist of four parts; (1) the manuscript or station description; (2) the data table of daily mean discharge values for the current water year with summary data; (3) a tabular statistical summary of monthly mean flow data for a designated period; and (4) a summary statistics table for a designated period 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.

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Station manuscript

For each continuous-record station, the manuscript provides, under various headings, descriptive information 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 comments, as appropriate, 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 with respect to the cultural and physical features in the vicinity and with respect to the reference place mentioned in the station name is given. River mileages, listed 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 type of maps available varies from one drainage basin to another, the accuracy of drainage areas likewise 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 its streamflow can reasonably be considered equivalent to the streamflow 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 Sea Level (see definition of terms), and a condensed history of the types, locations, and datums of previous gages are given under this heading.

REMARKS.--This paragraph is 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. 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 here 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 DISCHARGES FOR CURRENT YEAR.--Peaks given here are similar to those found in the summary statistics table, except the peak discharge listing may include secondary peaks. For stations meeting certain criteria, all peak discharges and stages occurring during the water year are greater than a selected base discharge (see Definition of terms) 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 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, occasionally the records of a discontinued gaging station may need revision. Because, for these stations, there would be no current or, possibly, future station manuscript published 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. Of course, if the data for a discontinued station were obtained by computer retrieval, the data would be current and accurate because published revisions of data are always accompanied by revisions of the data in computer storage.

Headings for AVERAGE DISCHARGE, EXTREMES FOR PERIOD OF RECORD, and EXTREMES FOR CURRENT YEAR have been deleted and the information contained in these paragraphs, except for the listing of secondary instantaneous peak discharges in the EXTREMES FOR CURRENT YEAR paragraph, 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 presentations of lake contents.

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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 mean 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."). Figures for cubic feet per second per square mile and runoff in inches may be omitted if there is extensive regulation or diversion or if the drainage area includes large noncontributing areas. At some stations both monthly and 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 daily 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 will be expressed as "FOR WATER YEARS _____, BY WATER YEAR (WY)," and will list the first and last water years of the range of years selected from the PERIOD OF RECORD paragraph in the station manuscript. It 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 will be 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 will be 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 for the statistics may not be the same as the period of record published in the manuscript, occasionally the dates of occurrence listed for the daily and instantaneous extremes may not be within the designated period. Selected streamflow duration statistics and runoff data are also given. Runoff data may be omitted if there is extensive regulation or diversion of flow in the drainage basin.

The summary statistics data, as appropriate, are provided with each continuous record of discharge. The following comments 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 discharge 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-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. Note that secondary instantaneous peak discharges above a selected base discharge are stored in computer files for stations meeting certain criteria. Those discharge values may be obtained by writing to the District Office. (See address on back of title page of this report.)

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.

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ANNUAL RUNOFF.--Indicates the total quantity of water in runoff for a drainage area for the year. Runoff figures may be omitted if there is extensive regulation or diversion. Data reports may use any of the following units of measurements in presenting annual runoff data:

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

Cubic feet per second per square mile (CFSM) 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.

Inches (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 discharge measurements at low-flow partial-record stations, and the second is a table of annual maximum stage and discharge at crest-stage 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 in times of flood or drought to give better areal coverage to those events. Those measurements and others collected for some special reason are called measurements at miscellaneous sites.

Identifying Estimated Daily Discharge

Beginning with the 1987 annual State data report, estimated daily discharge values published in the water-discharge tables are identified by flagging individual daily values with the letter symbol "e" and printing a table footnote, "e Estimate".

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 for values less than 1 cubic foot per second; to the nearest tenth from 1.0 to 10 cubic feet per second; to whole numbers from 10 to 1,000 cubic feet per second; and to 3 significant figures when greater than 1,000 cubic feet per second. 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 incident to 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 in comparison with the observed discharge.

Other Records Available

Information of a more detailed nature than that published for most of the gaging stations such as measurements of water temperature, discharge measurements, gage-height records, and rating tables is on file in the District's offices. Also, most gaging-station records are available in computer-usable form and many statistical analyses have been made.

Information on the availability of unpublished data or statistical analyses may be obtained from the District Information Specialist (717) 730-6916).

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 figures 4 and 5.

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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 at 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

During the collection of water-quality data, assurance that the data obtained represent the in-situ quality of the water is a major concern. Certain measurements, such as water temperature, pH, and dissolved oxygen, need to be made onsite when the samples are collected. To assure that measurements made in the laboratory also represent the in-situ water quality, carefully prescribed procedures need to be followed when collecting the samples, when treating the samples to prevent changes in quality pending analysis, and when shipping the samples to the laboratory. Procedures for onsite measurements and for collecting, treating, and shipping samples are detailed in the TWRI Book 1, Chapter D2; Book 3, Chapter C2; and Book 5, Chapters A1, A3, and A4. These references are listed in the PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS 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 District Office.

One sample can define adequately 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 collected for the National Water-Quality Assessment Program (see Definition of Terms) are obtained from several verticals. Whether samples are obtained from the centroid of flow or from several verticals, depends on flow conditions and other factors that 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 determined from data that are recorded at 15-, 30-, or 60-minute intervals by digital recorders that punch each value on a paper tape, with solid-state electronic data loggers, or with Data Collection Platforms (DCP's). More detailed records (hourly values) may be obtained from the U.S. Geological Survey District Office at the address given on the back of the title page of this report.

Water Temperature

Water temperatures are measured at most of the water-quality stations. At stations where recording instruments are used, maximum, minimum, and mean temperatures for each day are published. In addition, water temperatures are measured at the time of discharge measurements for water-discharge stations and are on file in the District's offices. For stations where water temperature is measured manually once or twice daily, it is usually measured at about the same time each day. Large streams have a small diurnal temperature change; temperatures in shallow streams may have a daily range of several degrees and may follow closely the changes in air temperature. Some streams may be affected by heated waste-water discharges.

Sediment

Suspended-sediment concentrations are determined from samples collected by hand or by pump samplers. Hand samples utilize the appropriate sampler (dependent on stream depth and velocity) and are collected using the depth-integrating method at single or multiple verticals in the cross section. Samples collected by pump samplers use an intake set to a fixed location in the cross section. The intake is located at a site that best represents the entire cross section on the basis of simultaneous samples collected at various stages by the pumping sampler and by hand. During periods of rapidly changing flow or rapidly changing concentration, samples may have been collected more frequently (twice daily or, in some instances, every 15 minutes). 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, mean concentration, and the constant 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 the periods, and suspended-sediment loads for other periods of similar discharge. Methods used in the computation of sediment records are described in the 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 represent conditions only at the time of observations, 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.

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Laboratory Measurements

Sediment samples, samples for biochemical-oxygen demand (BOD), samples for indicator bacteria, and daily samples for specific conductance are analyzed locally. The remaining samples are analyzed in the U.S. Geological Survey National Water-Quality Laboratory in Arvada, Colorado. If other laboratories are used, they are identified in the "Remarks" or "Cooperation" paragraph of each water-quality station manuscript. Methods used to analyze sediment samples and to compute sediment records are described in TWRI Book 5, Chapter C1. Methods used by the Geological Survey laboratory are given in the 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. Methods used by other laboratories are approved by the U.S. Geological Survey, Water Resources Division.

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 constituents currently measured daily. Tables of chemical, physical, biological, radiochemical, and other data, 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 streamflow-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 that follow clarify 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 constituents measured daily or continuously and those measured less often than daily. For those measured daily or continuously, periods of record are given for the constituents individually.

INSTRUMENTATION.--Information on instrumentation is given only if a water-quality monitor, temperature recorder, 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 Geological Survey by a cooperating organization are identified here.

EXTREMES.--Maximums and minimums are given only for constituents measured daily or more frequently. None are given for constituents measured 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 to the Water-Quality File in the U.S. Geological Survey's computerized data system, NWIS, and subsequently by transfer of update transactions to the U.S. Environmental Protection Agency's STORET system. 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 the appropriate computer file to insure the most recent updates.

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. Descriptive statements are generally not 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:

<u>PRINTED OUTPUT</u>	<u>REMARK</u>
E,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 blanks.
ND	Material specifically analysed for but not detected.

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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 USGS. 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:

Ambient blank.--a blank solution that is put in the same type of sample container 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 put in 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.

Canister blank.--a blank solution that is taken directly from a stainless steel canister just before the VOC sample is submerged to obtain a field sample.

REFERENCE SAMPLES.--Reference material 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 ensure 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 such that the samples are thought 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 the district are:

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

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

SPIKE SAMPLES.--Spike samples are samples to which known quantities 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.

Records of Ground-Water Levels

Ground-water level data from an observation well network and from ground-water projects are published herein. Locations of observation wells in the basic network are shown in figure 4. Ground-water data are grouped by counties, arranged in alphabetical order, and are listed on page viii.

Data Collection and Computation

Water levels are measured in many types of wells under varying conditions, but the methods of measurement are standardized to the extent possible. The equipment and measuring techniques used at each observation well ensure that measurements at each well are of consistent accuracy and reliability.

The prime identification number for a given well is the 15-digit number that appears above the station description. The secondary identification number is the local well number, an alphanumeric number, derived from the county location of the well.

Water-level records are obtained from direct measurements with a steel tape, from the graph or punched tape of a water-stage recorder, with solid-state electronic data loggers, or with Data Collection Platforms (DCP's). The water-level measurements in this report are given in feet with reference to land-surface datum (lsd). Land-surface datum is a datum plane that is approximately at land surface at each well. If known, the elevation of the land-surface datum is given in the well description. The height of the measuring point (MP) above or below land-surface datum is given in each well description. Water levels in wells equipped with recording gages are reported for each day.

Water levels are reported to as many significant figures as can be justified by the local conditions. Accordingly, most measurements are reported to a hundredth of a foot, but some may be given to a tenth of a foot.

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Data Presentation

Each well record consists of three parts; (1) the station description, (2) the data table of water levels observed during the current water year, and (3) a graph of the water levels for the last 3 years. The description of the well is presented first through use of descriptive headings preceding the tabular data. The comments that follow clarify information presented under the various headings of the station description.

LOCATION.--This paragraph follows the well-identification number and reports the latitude and longitude (given in degrees, minutes, and seconds), the hydrologic-unit number, the distance and direction from a geographic point of reference, and the owner's name.

AQUIFER.--This entry designates by name (if a name exists) and geologic age the aquifer(s) open to the well.

WELL CHARACTERISTICS.--This entry describes the well in terms of depth, diameter, casing depth or screened interval, method of construction, use, and additional information such as casing breaks, collapsed screen, and other changes since construction.

INSTRUMENTATION.--This paragraph provides information on both the frequency of measurement and the collection method, allowing the user to better evaluate the reported water-levels by knowing whether they are based on hourly, daily, or some other frequency of measurement.

DATUM.--This entry describes both the measuring point and the land-surface elevation at the well. The measuring point is described physically (such as top of collar, notch in top of casing, plug in pump base and so on), and in relation to land surface (such as 1.3 ft above land-surface datum). The elevation of the land-surface datum is described in feet above (or below) sea level; it is reported with a precision relative to the method of determination.

REMARKS.--This entry describes factors that may influence the water level in a well or the measurement of the water level. It should identify wells that also are water-quality observation wells, and may be used to acknowledge the assistance of local (non-Survey) observers.

PERIOD OF RECORD.--This entry indicates the period for which there are published records for the well. It reports the month and year of the start of publication of water-level records by the U.S. Geological Survey and the words "to current year" if the records are to be continued into the following year. Periods for which water-level records are available, but are not published by the Geological Survey, may be noted.

EXTREMES FOR PERIOD OF RECORD.--This entry contains the highest and lowest values of one daily water-level statistic (maximum, mean, or instantaneous) reported in the data tables for the period of published record with respect to land-surface datum, (or occasionally sea level), and the dates of their occurrence. For example, if the highest and lowest of these daily maximum values for the period of record. Depending on the statistic reported in the table of water levels, extremes would be determined from daily maximum, mean, or instantaneous values.

Data table of water-levels

A table of water levels follows the station description for each well. These tables usually report water-level data as maximum depth (in feet) above or below land-surface datum, but may report daily mean or instantaneous values depending upon the method used to obtain the record and how the record was published in the past. If water-level record is obtained from punched-tape recorders, electronic data loggers, or DCP's, in addition to data published in the table of water levels, the daily maximum, minimum, and mean water-levels are stored in computer files and available from the District Office as noted in the REMARKS paragraph for that well. The extremes of the water-levels reported in the table for the water year and their dates of occurrence are shown on a line below the table. Missing records are indicated by dashes in place of the water level. A hydrograph showing the last three years of water levels follows each water-level table.

Records of Ground-Water Quality

Records of ground-water quality are obtained at wells and springs included in ground-water projects. Records of ground-water quality in this report may involve a variety of types of data and measurement frequencies. Those wells with a (c) following the well number in the list of ground-water wells on page ix, have water-quality data published in the report.

Data Collection and Computation

The records of ground-water quality in this report were obtained mostly as a part of special studies in specific areas. Consequently, a number of chemical analyses are presented for some counties but none are presented for others. As a result, the records for this year, by themselves, do not provide a balanced view of ground-water quality Statewide. Such a view can be attained only by considering records for this year in context with similar records obtained for these and other counties in previous years.

Most methods for collecting and analyzing water samples are described in the U.S. Geological Survey TWRI publications referred to in the "On-site Measurements and Sample Collection" and the "Laboratory Measurements" sections in this data report. In addition, the TWRI Book 1, Chapter D2, describes guidelines for the collection and field analysis of ground-water samples for selected unstable constituents. The values reported in this report represent water-quality conditions at the time of sampling as much as possible, consistent with available sampling techniques and methods of analysis. These methods are consistent with ASTM standards and generally follow ISO standards. All samples were obtained by trained personnel. The wells sampled were pumped long enough to assure that the water collected came directly from the aquifer and had not stood for a long time in the well casing where it would have been exposed to the atmosphere and to the material, possibly metal, comprising the casings.

Data Presentation

Ground-water-quality data are published with ground-water-level data at stations where level data are collected. Data collected at partial-record stations and miscellaneous sites follow the information for continuous ground-water record stations. Data for each section are listed alphabetically by county, and are identified by well number. The prime identification number for wells sampled is the 15-digit number derived from the latitude-longitude locations. No descriptive statements are given for ground-water-quality records; however, the well number, depth of well, date of sampling, and other pertinent data are given in the table containing the chemical analyses of the ground water. The REMARK codes listed for surface-water-quality records are also applicable to ground-water-quality records.

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ACCESS TO USGS WATER DATA

The U.S. Geological Survey is the principal Federal water-data agency and, as such, collects and disseminates about 70 percent of the water data currently being used by numerous State, local, private, and other Federal agencies to develop and manage our water resources. 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 most current or discontinued gaging stations through the World Wide Web (WWW). This data may be accessed at [<http://water.usgs.gov>].

Some water-quality and ground-water data also are available through 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 on the back of the title page.)

For most streamgages, "real-time" streamflow conditions are available on the World Wide Web (WWW) Pennsylvania District Home Page at [<http://www.pah2o.er.usgs.gov/>]. Daily streamflow values for the period of record, annual peak stream discharges, and streamflow conditions for surrounding states may also be obtained at this WWW address.

A wide variety of additional information, such as ordering U.S. Geological Survey maps and publications is available at the U.S. Geological Survey Home Page at [<http://www.usgs.gov/>].

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DEFINITION OF TERMS

Terms related to streamflow, water-quality, and other hydrologic data, as used in this report, are defined below. See also the table for converting Inch-pound units to International System (SI) Units on the inside of the back cover.

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

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

Algae are mostly aquatic single-celled, colonial, or multi-celled plants, containing chlorophyll and lacking roots, stems, and leaves.

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.

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 measurements in presenting annual runoff data:

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

Cubic feet per second per square mile (CFSM) 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.

Inches (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.

Aquifer is a geologic formation, group of formations, or part of a formation that contains sufficient saturated permeable material to yield significant quantities of water to wells and springs.

Artesian means confined and is used to describe a well in which the water level stands above the top of the aquifer tapped by the well. A flowing artesian well is one in which the water level is above the land surface.

Bacteria are microscopic unicellular organisms, typically spherical, rodlike, or spiral and threadlike in shape, often clumped into colonies. Some bacteria cause disease, 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.

Fecal coliform bacteria are bacteria that are present in the intestines 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 $44.5^{\circ}\text{C} \pm 0.2^{\circ}\text{C}$ on M-FC medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Fecal streptococcal bacteria are bacteria found also in intestines of warm-blooded animals. Their presence in water is considered to verify fecal pollution. They are characterized as gram-positive, cocci bacteria which are capable of growth in brain-heart infusion broth. In the laboratory they are defined as all the organisms which produce red or pink colonies within 48 hours at $35^{\circ}\text{C} \pm 1.0^{\circ}\text{C}$ on KF-streptococcus medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Total coliform bacteria are a particular group of bacteria that are used as indicators of possible sewage pollution. They are characterized as aerobic or facultative anaerobic, gram-negative, nonspore-forming, rod-shaped bacteria which ferment lactose with gas formation within 48 hours at 35°C . In the laboratory these bacteria are defined as the organisms that produce colonies with a golden-green metallic sheen within 24 hours when incubated at $35^{\circ}\text{C} \pm 1.0^{\circ}\text{C}$ on M-Endo medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Bed material is the unconsolidated material of which a streambed, lake, pond, reservoir, or estuary bottom is composed.

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 the mass per unit area or volume of habitat.

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. The ash mass values of zooplankton and phytoplankton are expressed in grams per cubic meter (g/m^3), and periphyton and benthic organisms in grams per square meter (g/m^2).

Dry mass refers to the mass of residue present after drying in an oven at 105°C for zooplankton and periphyton, 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.

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. The organic mass is expressed in the same units as for ash mass and dry mass.

Wet mass is the mass of living matter plus contained water.

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Bottom material: See Bed material.

Cells/volume refers to the number of cells of any organism which 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, usually milliliters (mL) or liters (L).

Cfs-day is the volume of water represented by flow of 1 cubic foot per second for 24 hours. It is equivalent to 86,400 cubic feet, 1.9835 acre-feet, or about 646,000 gallons.

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 natural water color or with carbonaceous organic pollution from sewage or industrial wastes.

Chlorophyll refers to the green pigments of plants. Chlorophyll a and b are the two most common green pigments in plants.

Color unit is produced by one 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 station where streamflow and/or water-quality data are collected systematically over a period of years for use in hydrologic analyses. Data may be collected continuously or periodically.

Control designates a feature downstream from the gage that determines the stage-discharge relation at the gage. This feature may be a natural constriction of the channel, 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 salt water.

Cubic feet per second per square mile [(ft³/s)/mi²]¹ is the average number of cubic feet of water flowing per second from each square mile of area drained, assuming that the runoff is distributed uniformly in time and area.

Cubic foot per second (ft³/s)¹ is the rate of discharge representing a volume of 1 cubic foot passing a given point during 1 second and is equivalent to approximately 7.48 gallons per second or 448.8 gallons per minute.

Data Collection Platform (DCP) is an electronic instrument which collects, processes, stores, and transmits data from various sensors to an earth-orbiting Geostationary Operational Environmental Satellite (GOES) and/or through landline telemetry.

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

Discharge is the volume of water (or more broadly, volume of fluid plus suspended sediment) that passes a given point within a given period of time.

Annual 7-day minimum is 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-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.)

Base discharge is an arbitrary instantaneous discharge value, determined for stations meeting certain criteria, that will be exceeded about three times per year.

Instantaneous discharge is the discharge at a particular instant of time.

Mean discharge (MEAN) is the arithmetic mean of individual discharges during a specific period.

Dissolved refers to that material in a representative water sample which passes through a 0.45 μ m membrane filter. This is a convenient operational definition used by Federal agencies that collect water data. Determinations of "dissolved" constituents are made on subsamples of the filtrate.

Dissolved-solids concentration of water 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 of dissolved solids, the bicarbonate (generally a major dissolved component of water) is converted to carbonate. Therefore, in the mathematical calculation of dissolved-solids concentration, the bicarbonate value, in milligrams per liter, is multiplied by 0.492 to reflect the change.

Drainage area of a stream at a specific location is that area, measured in a horizontal plane, enclosed by a topographic divide from which direct surface runoff from precipitation normally drains by gravity into the stream above the specified point. Figures of drainage area given herein include all closed basins, or noncontributing areas, within the area unless otherwise noted.

Drainage basin is a part of the surface of the earth that is occupied by a drainage system, which consists of a surface stream or a body of impounded surface water together with all tributary surface streams and bodies of impounded surface water.

¹ Until appropriate changes can be made to the NWIS database retrieval system, the unit abbreviations "CFS" and "CFSM" will appear on some computer-generated table headings and summaries.

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Estimated (E) values is when an analyte is detected and all criteria for a positive result are met, the concentration is reported. 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 (<).

Gage height (G.H.) is the water-surface elevation referred to some arbitrary gage datum. Gage height is often used interchangeably with the more general term "stage," although gage height is more appropriate when used with a reading on a gage.

Gaging station is a particular site on a stream, canal, lake, or reservoir where systematic observations of hydrologic data are obtained.

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 and is expressed as the equivalent concentration of calcium carbonate (CaCO_3).

The Hydrologic Bench-Mark Network is a network of 50 sites in small drainage basins around the country whose purpose is to provide consistent data on the hydrology, including water quality, and related factors in representative undeveloped watersheds nationwide, and to provide analyses on a continuing basis to compare and contrast conditions observed in basins more obviously affected by the activities of man.

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

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

Measuring point (MP) is an arbitrary permanent reference point from which the distance to the water surface in a well is measured to obtain the water level.

Metamorphic stage refers to the stage of development that an organism exhibits during its transformation from an immature form to an adult form. This development 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.

Methylene blue active substance (MBAS) is a measure of apparent detergents. This determination depends on the formation of a blue color when methylene blue dye reacts with synthetic anionic detergent compounds.

Micrograms per gram ($\mu\text{g/g}$) 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 liter ($\mu\text{g/L}$, $\mu\text{g/L}$) is a unit expressing the concentration of chemical constituents in solution as mass (micrograms) of solute per unit volume (liter) of water. One thousand micrograms per liter is equivalent to one milligram per liter.

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

Miscellaneous-record site is a site where limited streamflow and/or water-quality data are collected on a random basis for use in hydrologic analyses.

The National Geodetic Vertical Datum of 1929 (NGVD of 1929) is a geodetic datum derived from a general adjustment of the first order level nets of both the United States and Canada. It was formerly called "Sea Level Datum of 1929" or "mean sea level" in this series of reports. Although the datum was derived from the average sea level over a period of many years at 26 tide stations along the Atlantic, Gulf of Mexico, and Pacific Coasts, it does not necessarily represent local mean sea level at any particular place.

The National Trends Network (NTN) is a 150-station network for sampling atmospheric deposition in the United States. The purpose of the network is to determine the variability, both in location and in time, of the composition of atmospheric deposition, which includes snow, rain, dust particles, aerosols, and gases. The core from which the NTN was built was the already-existing deposition-monitoring network of the National Atmospheric Deposition Program (NADP).

The National Water-Quality Assessment Program (NAWQA) 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, diverse, and geographically distributed part of the Nation's ground- and surface-water resources, and to identify, describe, and explain the major natural and human factors that affect these observed conditions and trends.

Organism is any living entity.

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

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

Total organism count is the total number of organisms collected and enumerated in any particular sample.

Parameter Code is a 5-digit number used in the U.S. Geological Survey computerized data system, WATSTORE, to uniquely identify a specific constituent. The codes used in WATSTORE are the same as those used in the U.S. Environmental Protection Agency data system, STORET. The Environmental Protection Agency assigns and approves all requests for new codes.

Partial-record station is a particular site where limited streamflow and/or water-quality data are collected systematically over a period of years for use in hydrologic analyses.

Particle size is the diameter, in millimeters (mm), of a particle determined by either sieve or sedimentation methods. Sedimentation methods (pipet, bottom-withdrawal tube, visual-accumulation tube) 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 used in this report agrees with recommendations made by the American Geophysical Union Subcommittee on Sediment Terminology. The classification is as follows:

<u>Classification</u>	<u>Size (mm)</u>	<u>Method of analysis</u>
Clay	0.00024 - 0.004	Sedimentation
Silt	.004 - .062	Sedimentation
Sand	.062 - 2.0	Sedimentation or 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 material 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.

Percent composition 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, mass, or volume.

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.

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

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

Plankton is the community of suspended, floating, or weakly swimming organisms that live in the open water of lakes and rivers.

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.

Blue-green algae 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.

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.

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

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.

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 by the plants (carbon method).

Milligrams of carbon per area or volume per unit time [$\text{mg C}/(\text{m}^2 \cdot \text{time})$] for periphyton and macrophytes and [$\text{mg C}/(\text{m}^3 \cdot \text{time})$] for phytoplankton are units for expressing primary productivity. They define 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.

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Milligrams of oxygen per area or volume per unit time [$\text{mg O}/(\text{m}^2 \cdot \text{time})$] for periphyton and macrophytes and [$\text{mg O}/(\text{m}^3 \cdot \text{time})$] for phytoplankton are the units for expressing primary productivity. They define 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.

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.

Radiochemical program is a network of regularly sampled water-quality stations where samples are collected to be analyzed for radioisotopes. The streams that are sampled represent major drainage basins in the conterminous United States.

Recoverable from 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 only 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.

Recurrence interval is the average time interval between occurrences of a hydrological event of a given or greater magnitude, usually expressed in years. May also be called return period.

Runoff (see Annual Runoff)

Sea level in this report refers to the National Geodetic Vertical Datum of 1929 (NGVD of 1929)--a geodetic datum derived from a general adjustment of the first-order level nets of both the United States and Canada, formerly called Seal Level Datum of 1929.

Sediment is solid material that originates mostly from disintegrated rocks and is transported by, suspended in, or deposited from water; it 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 factors. Some major factors are degree of slope, length of slope, soil characteristics, land usage, and quantity and intensity of precipitation.

Bed load is the sediment that is transported in a stream by rolling, sliding, or skipping along the bed and very close to it. In this report, bed load is considered to consist of particles in transit within 0.25 ft of the streambed.

Bed load discharge (tons per day) is the quantity of bed load measured by dry weight that moves past a section as bed load in a given time.

Suspended sediment is the sediment that at any given time is maintained in suspension by the upward components of turbulent currents or that exists in suspension as a colloid.

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).

Mean concentration is the time-weighted concentration of suspended sediment passing a stream section during a 24-hour day.

Suspended-sediment discharge (tons/day) is the rate at which dry mass of sediment passes a section of a stream or is the quantity of sediment, as measured by dry mass or volume, that passes a section in a given time. It is calculated in units of tons per day as follows: concentration (mg/L) $\times$ discharge (ft^3/s) $\times$ 0.0027.

Suspended-sediment load is a general term that refers to material in suspension. It is not synonymous with either discharge or concentration.

Total-sediment discharge (tons/day) is the sum of the suspended-sediment discharge and the bed-load discharge. It is the total quantity of sediment, as measured by dry mass or volume, that passes a section during a given time.

Total-sediment load or total load is a term which refers to the total sediment (bed load plus suspended-sediment load) that is in transport. It is not synonymous with total-sediment discharge.

7-day 10-year low flow (Q7,10) is the discharge at the 10-year recurrence interval taken from a frequency curve of annual values of the lowest mean discharge for 7 consecutive days (the 7-day low flow).

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. Waters range in respect to sodium hazard from those which can be used for irrigation on almost all soils to those which are generally unsatisfactory for irrigation.

Solute is any substance that is dissolved in water.

Specific conductance is a measure of the ability of a water to conduct an electrical current. It is expressed in microsiemens per centimeter at 25°C. Specific conductance is related to the type and concentration of ions in the solution and can be used for approximating the dissolved-solids content of the water. Commonly, the concentration of dissolved solids (in milligrams per liter) is about 65 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.

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

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.

Artificial substrate is a device which 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 multi-plate samplers (made of hardboard) for benthic organism collection, and plexiglas strips for periphyton collection.

Natural substrate refers to any naturally occurring emerged or submersed solid surface, such as a rock or tree, upon which an organism lives.

Surface area of a lake is that area outlined on the latest USGS topographic map as the boundary of the lake and measured by a planimeter in acres. In localities not covered by topographic maps, the areas are computed from the best maps available at the time planimetered. All areas shown are those for the stage when the planimetered map was made.

Surficial bed material is that part (0.1 to 0.2 ft) of the bed material that is sampled using U.S. Series Bed-Material Samplers.

Surrogate refers to a chemical compound added to a sample as one quality assurance method to monitor the performance of laboratory analytical techniques. USGS gas chromatography methods use surrogates for most any analysis of organic compounds. Percent recoveries of surrogates are published with analysis of organic compounds in fish tissue, bed sediment, and water samples in this report. Gas chromatograms are reviewed thoroughly at the laboratory when surrogate recoveries are low. USGS methods for fish tissue analysis require a sample to be reanalyzed when a surrogate recovery is less than 30 percent.

Suspended (as used in tables of chemical analyses) refers to the amount (concentration) of undissolved material in a water-sediment mixture. It is associated with the material retained on a 0.45 μ m filter.

Suspended, recoverable is the amount of a given constituent that is in solution after the part of a representative water-suspended sediment sample that is retained on a 0.45 μ m 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 would be 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 analyzing portions of the material collected on the filter or, more commonly, by difference, based on determinations of (1) dissolved and (2) total recoverable concentrations of the constituent.

Suspended, total is the total amount of a given constituent in the part of a representative water-suspended sediment sample that is retained on a 0.45 μ m membrane filter. 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 determine when the results should be reported as "suspended, total."

Determinations of "suspended, total" constituents are made either by analyzing portions of the material collected on the filter or, more commonly, by difference, based on determinations of (1) dissolved and (2) total concentrations of the constituent.

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:

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

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Thermograph is an instrument that continuously records variations of temperature on a chart. The more general term "temperature recorder" is used in the table headings and refers to an 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 that would be contained in a vessel or reservoir that had received equal quantities of water from the stream each day for the year.

Tons per acre-foot indicates the dry mass of dissolved solids in 1 acre-foot of water. It is computed by multiplying the concentration in milligrams per liter by 0.00136.

Tons per day (T/day) is the quantity of substance in solution or suspension that passes a stream section during a 24-hour period.

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Total is the total amount of a given constituent in a representative water-suspended sediment 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 determines all of the constituent in the sample).

Total discharge is the total quantity of any individual constituent, as measured by dry mass or volume, that passes through a stream cross-section per unit of time. This term needs to be qualified, such as "total sediment discharge," "total chloride discharge," and so on.

Total recoverable is the amount of a given constituent that is in solution after a representative water-suspended sediment 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, equivalent digestion procedures would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

Water year as used in Geological Survey reports, 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, 1980, is called the "1980 water year."

WDR is used as an abbreviation for "Water-Data Report" in the REVISED RECORDS paragraph to refer to a State's annual hydrologic-data reports.

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.

WSP is used as an abbreviation for "Water-Supply Paper" in references to previously published reports.

PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS

The U.S. Geological Survey 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. Geological Survey, Branch of 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 sent by 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 "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 measurement, and data presentation*, by H.H. Stevens, Jr., J.F. Ficke, and G.F. Smoot: USGS-TWRI Book 1, Chapter D1. 1975. 65 p.
- 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 p.

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

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

Section F. Drilling and Sampling 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 p.

Book 3. Applications 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 p.
- 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 p.
- 3-A3. *Measurement of peak discharge at culverts by indirect methods*, by G.L. Bodhaine: USGS-TWRI Book 3, Chapter A3. 1968. 60 p.
- 3-A4. *Measurement of peak discharge at width contractions by indirect methods*, by H.F. Matthai: USGS-TWRI Book 3, Chapter A4. 1967. 44 p.
- 3-A5. *Measurement of peak discharge at dams by indirect methods*, by Harry Hulsing: USGS-TWRI Book 3, Chapter A5. 1967. 29 p.
- 3-A6. *General procedure for gaging streams*, by R.W. Carter and Jacob Davidian: USGS-TWRI Book 3, Chapter A6. 1968. 13 p.
- 3-A7. *Stage measurement at gaging stations*, by T.J. Buchanan and W.P. Somers: USGS-TWRI Book 3, Chapter A7. 1968. 28 p.
- 3-A8. *Discharge measurements at gaging stations*, by T.J. Buchanan and W.P. Somers: USGS-TWRI Book 3, Chapter A8. 1969. 65 p.
- 3-A9. *Measurement of time of travel in streams by dye tracing*, by F.A. Kilpatrick and J.F. Wilson, Jr.: USGS-TWRI Book 3, Chapter A9. 1989. 27 p.
- 3-A10. *Discharge ratings at gaging stations*, by E.J. Kennedy: USGS-TWRI Book 3, Chapter A10. 1984. 59 p.
- 3-A11. *Measurement of discharge by the moving-boat method*, by G.F. Smoot and C.E. Novak: USGS-TWRI Book 3, Chapter A11. 1969. 22 p.
- 3-A12. *Fluorometric procedures for dye tracing*, Revised, by J.F. Wilson, Jr., E.D. Cobb, and F.A. Kilpatrick: USGS-TWRI Book 3, Chapter A12. 1986. 34 p.
- 3-A13. *Computation of continuous records of streamflow*, by E.J. Kennedy: USGS-TWRI Book 3, Chapter A13. 1983. 53 p.
- 3-A14. *Use of flumes in measuring discharge*, by F.A. Kilpatrick and V.R. Schneider: USGS-TWRI Book 3, Chapter A14. 1983. 46 p.

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- 3-A16. *Measurement of discharge using tracers*, by F.A. Kilpatrick and E.D. Cobb: USGS-TWRI Book 3, Chapter A16. 1985. 52 p.
- 3-A17. *Acoustic velocity meter systems*, by Antonius Laenen: USGS-TWRI Book 3, Chapter A17. 1985. 38 p.
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- 3-A21. *Stream-gaging cableways*, by C. Russell Wagner: USGS-TWRI Book 3, Chapter A21. 1995. 56 p.

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

Section C. Sedimentation and Erosion Techniques

- 3-C1. *Fluvial sediment concepts*, by H.P. Guy: USGS-TWRI Book 3, Chapter C1. 1970. 55 p.
- 3-C2. *Field methods for measurement of fluvial sediment*, by H.P. Guy and V.W. Norman: USGS-TWRI Book 3, Chapter C2. 1970. 59 p.
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Book 4. Hydrologic 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 p.
- 4-A2. *Frequency curves*, by H.C. Riggs: USGS-TWRI Book 4, Chapter A2. 1968. 15 p.

Section B. Surface Water

- 4-B1. *Low-flow investigations*, by H.C. Riggs: USGS-TWRI Book 4, Chapter B1. 1972. 18 p.
- 4-B2. *Storage analyses for water supply*, by H.C. Riggs and C.H. Hardison: USGS-TWRI Book 4, Chapter B2. 1973. 20 p.
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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 p.

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, editors: USGS-TWRI Book 5, Chapter A1. 1989. 545 p.
- 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 p.
- 5-A3. *Methods for the determination of organic substances in water and fluvial sediments*, edited by R.L. Wershaw, M.J. Fishman, R.R. Grabbe, and L.E. Lowe: USGS-TWRI Book 5, Chapter A3. 1987. 80 p.

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- 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 p.
- 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 p.

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 p.

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 p.
- 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 p.
- 6-A3. *A modular finite-element model (MODFE) for areal and axisymmetric ground-water-flow problems, Part 1: Model Description and User's Manual*, by L.J. Torak: USGS-TWRI Book 6, Chapter A3. 1993. 136 p.
- 6-A4. *A modular finite-element model (MODFE) for areal and axisymmetric 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 p.
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- 6-A6. *A coupled surface-water and ground-water flow model (MODBRANCH) for simulation of stream-aquifer interaction*, by Eric D. Swain and Eliezer J. Wexler. 1996. 125 p.

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

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 p.

Book 9. Handbooks for Water-Resources Investigations**Section A. National Field Manual for the Collection of Water-Quality Data**

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- 9-A8. *National Field Manual for the Collection of Water-Quality Data: Bottom-material samples*, by D.B. Radtke: USGS-TWRI Book 9, Chapter A8. 1998. 48 p.
- 9-A9. *National Field Manual for the Collection of Water-Quality Data: Safety in Field Activities*, by S.L. Lane and R.G. Fay: USGS-TWRI Book 9, Chapter A9. 1998. 60 p.

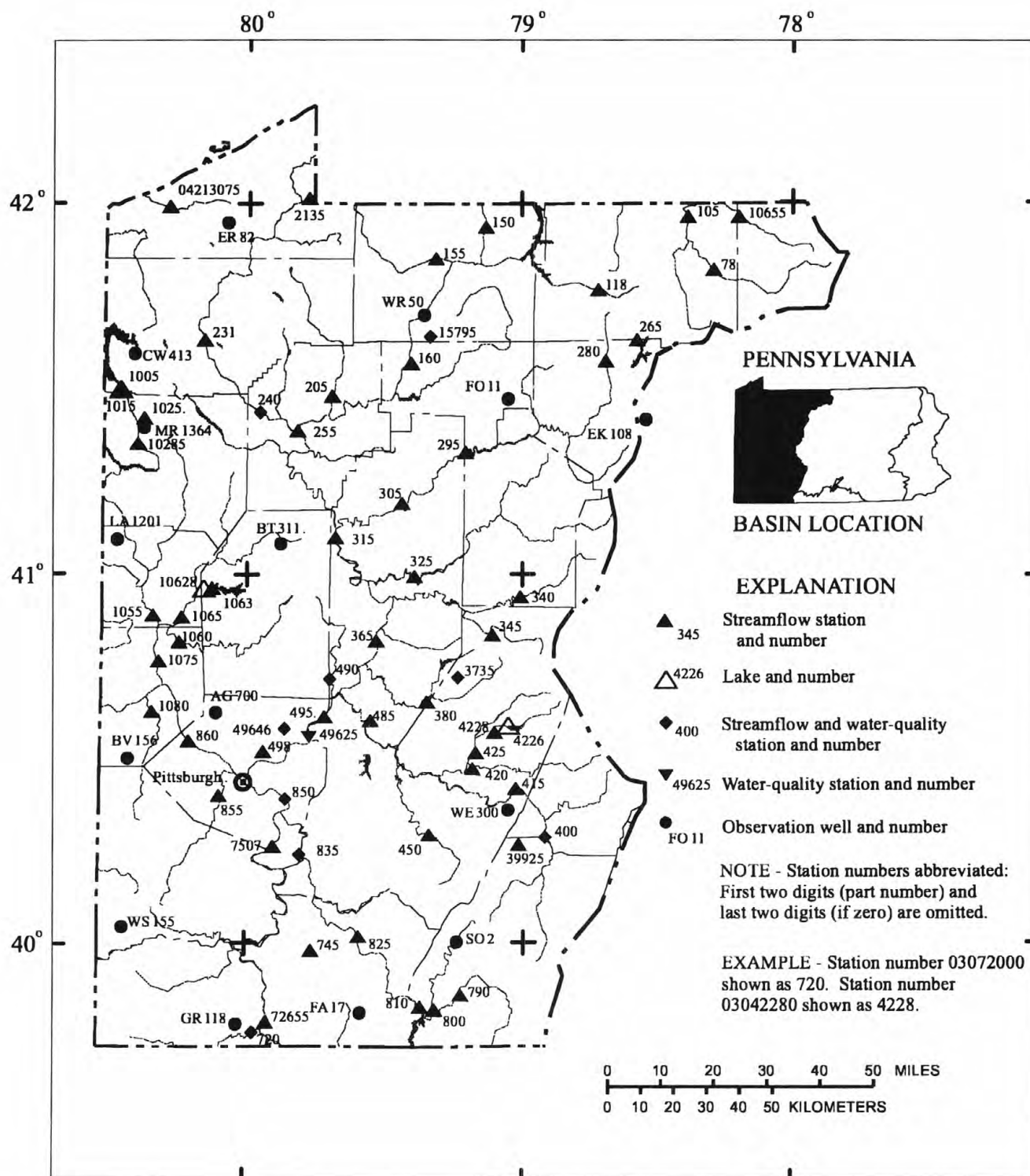


Figure 4. Location of continuous-record data-collection stations and network observation wells.

WATER RESOURCES DATA - PENNSYLVANIA, 1998

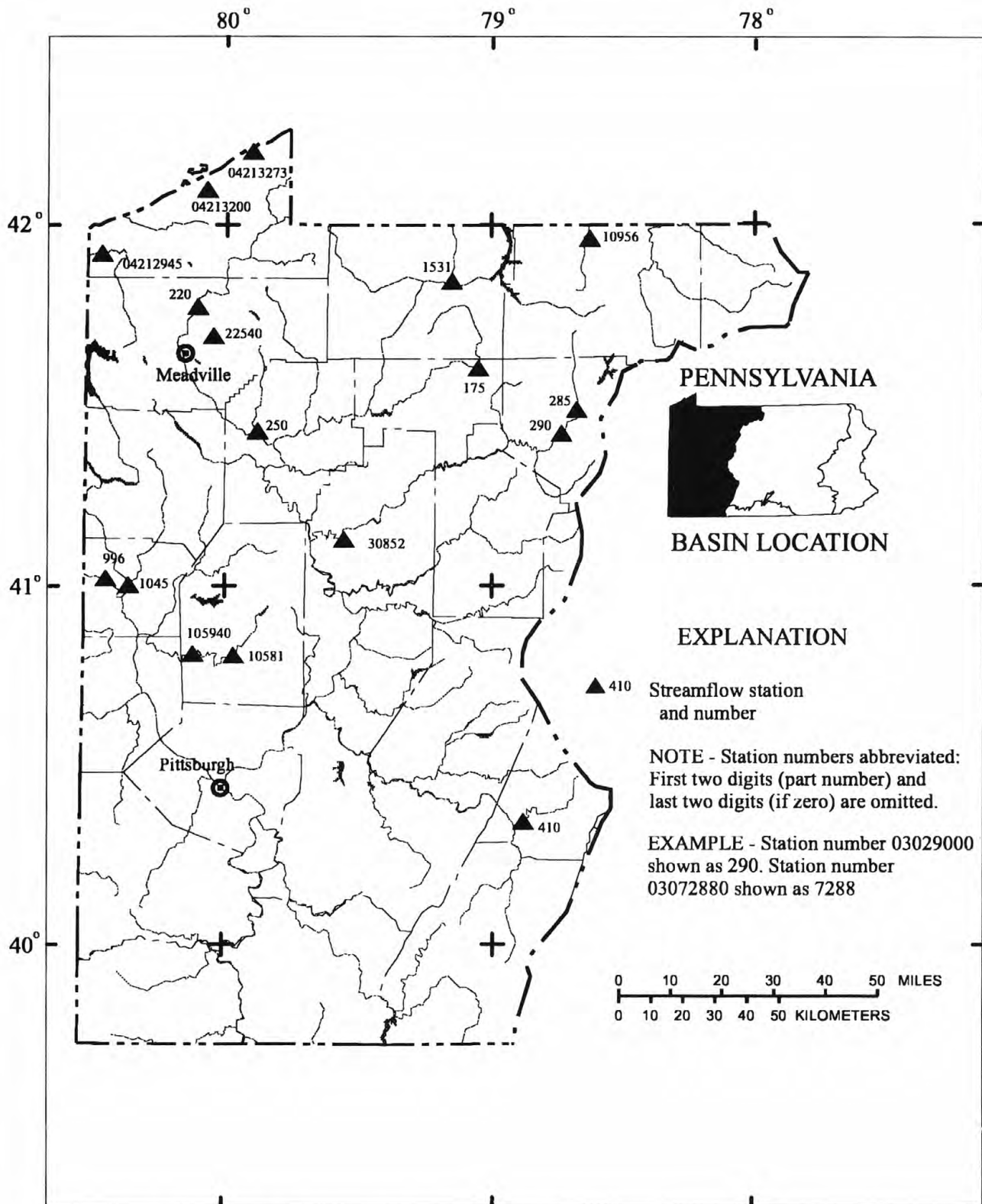


Figure 5. Location of partial-record data-collection stations.

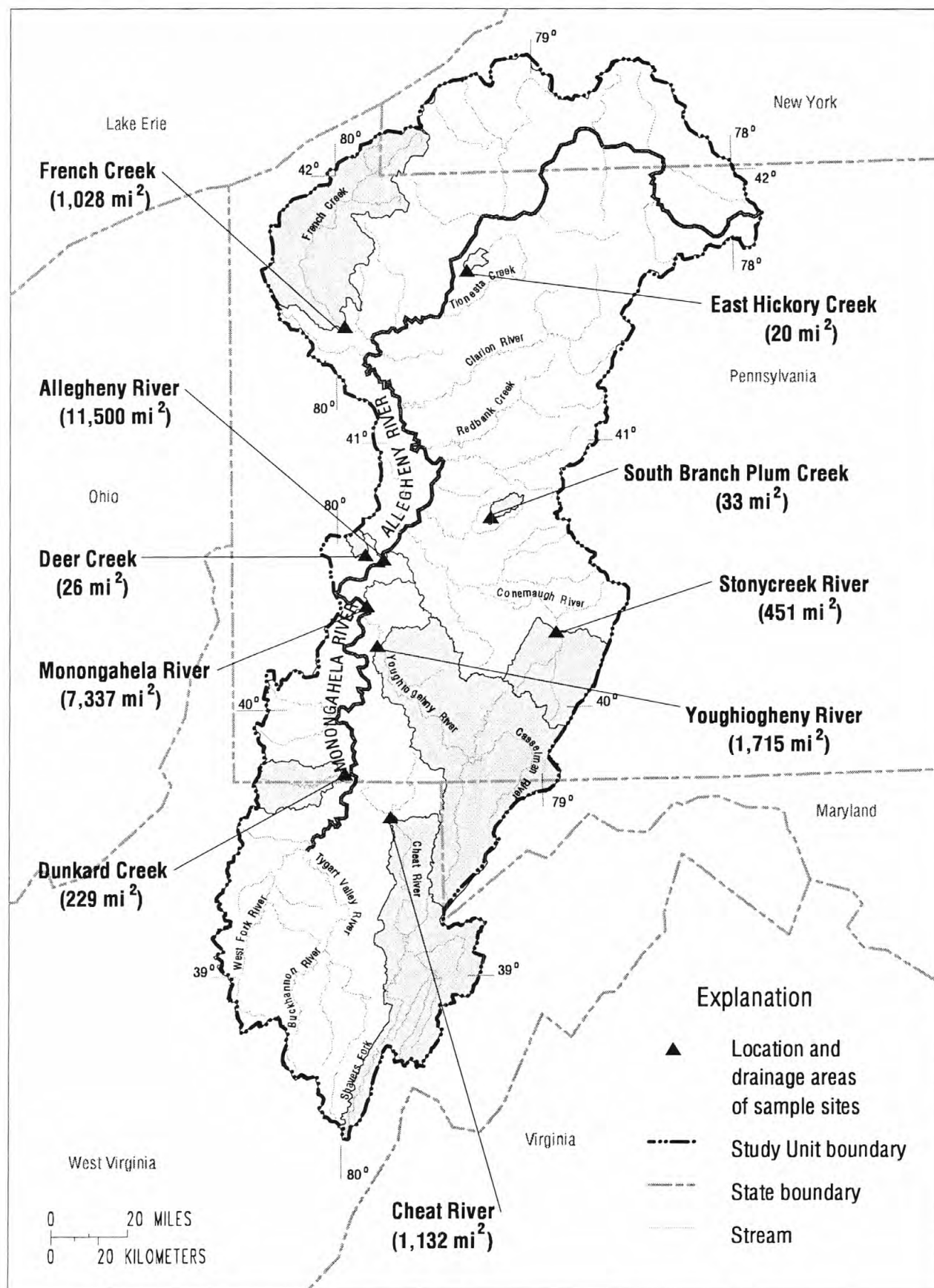


Figure 6. Location of surface water quality fixed site network in the Allegheny – Monongahela River Basin NAWQA Study Unit

WATER RESOURCES DATA - PENNSYLVANIA, 1998

SPECIAL NOTES, REMARK CODES, AND SELECTED CONSTITUENT DEFINITIONS

NOTES--Traditionally, dissolved trace-element concentrations have been reported at the microgram per liter ($\mu\text{G/L}$) 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 $\mu\text{G/L}$ 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 at some stations in water year 1994. Full implementation of the protocols took place during the 1995 water year.

--In March 1989 a bias was discovered in the turbidimetric method for **sulfate analysis** for those samples analyzed by the U.S. Geological Survey National Water-Quality Laboratory indicating that values below 75 mg/L have a median positive bias of 2 mg/L above the true value for the period between 1982 and 1989.

--**Methylene blue active substance (MBAS)** determinations made from January 1, 1970, through August 29, 1993, at the National Water Quality Laboratory in Denver (Analyzing Agency Code 80020) are positively biased. These data can be corrected on the basis of the following equation, if concentrations of dissolved nitrate plus nitrite, as nitrogen, and dissolved chloride, determined concurrently with the MBAS data are applied:

$$\text{MBASCOR} = \text{M} - 0.0088\text{N} - 0.00019\text{C}$$

where:

MBASCOR = corrected MBAS concentration, in mg/L ;

M = reported MBAS concentration, in mg/L ;

N = dissolved nitrate plus nitrite, as nitrogen, in mg/L ; and

C = dissolved chloride concentration, in mg/L .

The detection limit of the new method is 0.02 mg/L , whereas the detection limit for the old method was 0.01 mg/L . A detection limit of 0.02 mg/L should be used with corrected MBAS data from January 1, 1970, through August 29, 1993.

Remark Codes--The following remark codes may appear with the data tables in this report:

<u>PRINTED OUTPUT</u>	<u>REMARK</u>
E,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
ND	Material specifically analyzed for but not detected
--	Data not available
%	Percent

EXPLANATION OF CODES USED TO DEFINE SAMPLE COLLECTION PROCEDURES (partial listing)(71999) SAMPLE PURPOSE CODES:

10--Routine
15--NAWQA
20--NASQAN
30--Benchmark

(82398) SAMPLE METHOD CODES:

10--Equal width increment
20--Equal discharge increment
30--Single vertical
40--Multiple verticals
50--Point sample
70--Grab sample
120--Velocity integrated
8010--Other

(84164) SAMPLER TYPE: (partial list)

110--Sewage sampler
3011--US D-77
3035--DH-76 Trace metal sampler with
teflon gasket and nozzle
3039--D-77 Trace metal
3040--D-77 Trace metal modified teflon
bag sampler
3045--DH-81 with Teflon cap and
nozzle
8010--Other (other than a defined
sampler type)

WATER RESOURCES DATA - PENNSYLVANIA, 1998

SPECIAL NOTES, REMARK CODES AND SELECTED CONSTITUENT DEFINITIONS--Continued

(00027) AGENCY COLLECTING SAMPLE CODES:

1028--U.S. Geological Survey

(00028) AGENCY ANALYZING SAMPLE CODES:

1028--U.S. Geological Survey

80020--U.S. Geological Survey, National Water-
Quality Laboratory, Denver, Colorado

9813--Pennsylvania Department of Environmental Protection

WATER RESOURCES DATA - PENNSYLVANIA, 1998

SPECIAL NOTES, REMARK CODES AND SELECTED CONSTITUENT DEFINITIONS--Continued

Explanation of selected abbreviations used in constituent definitions in water-quality tables:

AC-FT	acre-feet
BOT MAT	bottom material (Unconsolidated material of which a streambed, lake, pond, reservoir, or estuary bottom is composed.)
CENTRIF	centrifuge
COLS/100 ML	colonies per 100 milliliters
DEG C or °C	degrees centigrade
DIS	dissolved
FET	fixed end-point titration
FLD	field (Measurement determined at field site.)
FLTRD	filtered
F/S	feet per second
G/M	gallons per minute
G/SQM; MG/M2	grams or milligrams per square meter
INST	instantaneous
IT	incremental titration
KF AGAR	nutrient medium for growth of fecal streptococcal bacteria
μG/G	micrograms per gram
μG/L	micrograms per liter
μS/CM	microsiemens per centimeter
MG/L	milligrams per liter
MG/M2	milligrams per square meter
ML	milliliters
MM	millimeters
MM OF HG	millimeters of mercury
NONCARB	noncarbonate
NTU	nephelometric turbidity unit
PCI/L	picocuries per liter
REC	recoverable
SED	sediment
SUS or SUSP	suspended
TOT	total
T/DAY	tons per day
UNF or UNFLTRD	unfiltered
WAT	water
WH	whole
WH IT	whole water, incremental titration (Alkalinity, bicarbonate, and carbonate as determined by incremental titration of unfiltered water at the field site.)
2 SIGMA	Counting statistic that represents error in the reported radon, uranium, or tritium value caused by variations in sample counting, background radiation, volume of sample, and decay since sample was collected.
0.7μ GF	0.7 micron glass-fiber filter (Water filtered through a glass-fiber membrane filter with openings that are 0.7 microns in size.)

SURFACE-WATER AND WATER-QUALITY STATION RECORDS

OHIO RIVER MAIN STEM

03007800 ALLEGHENY RIVER AT PORT ALLEGANY, PA

LOCATION.--Lat 41°49'07", long 78°17'35", McKean County, Hydrologic Unit 05010001, on right bank 40 ft upstream from bridge on U.S. Highway 6 at Port Allegany, 1.1 mi upstream from Twomile Creek, 1.4 mi downstream from Allegheny Portage Creek, at mile 285.5.

DRAINAGE AREA.--248 mi².

PERIOD OF RECORD.--October 1974 to current year. Discharge measurements obtained by U.S. Army Corps of Engineers March 1971 to October 1974.

GAGE.--Water-stage recorder. Datum of gage is 1,454.88 ft above sea level.

REMARKS.--Records good except for estimated daily discharges, which are fair. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 23, 1972 reached a stage of at least 17.5 ft, discharge, 21,700 ft³/s, from U.S. Army Corps of Engineers discharge measurement.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a base discharge of 2,500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 9	0800	*6,480	*11.98	June 30	2000	2,720	7.93

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	195	109	1150	e270	249	1430	632	637	197	1510	96	49
2	162	663	1040	e290	249	1490	600	636	145	972	87	41
3	159	710	915	e330	244	1340	528	679	143	692	80	41
4	145	655	909	e600	231	1110	490	643	115	514	76	39
5	174	568	788	1180	228	922	456	933	101	411	71	35
6	153	467	673	1720	213	767	412	969	99	305	66	33
7	133	459	599	1880	203	648	372	945	92	250	60	38
8	124	869	518	4820	196	643	343	941	92	459	55	45
9	114	1070	461	6180	189	824	732	938	86	647	53	41
10	106	982	437	4190	187	959	1800	868	79	413	152	35
11	98	854	413	2440	190	925	1560	1240	80	304	165	31
12	93	717	370	1650	261	878	1280	1740	242	241	91	29
13	90	595	337	1310	285	800	1020	1670	215	201	75	28
14	87	573	315	983	272	737	878	1360	176	170	65	27
15	84	477	285	804	251	630	955	1050	143	150	163	26
16	80	422	270	741	267	525	782	860	152	136	90	25
17	75	367	258	625	369	463	723	744	139	139	77	26
18	72	323	241	537	766	475	635	547	122	151	75	26
19	70	296	237	462	893	531	847	438	110	116	76	23
20	68	310	245	409	993	587	1760	363	117	481	61	23
21	66	312	237	357	1030	797	1780	305	98	371	54	22
22	66	456	211	321	935	835	1540	266	90	463	64	25
23	65	520	237	329	855	803	1240	234	272	386	76	23
24	63	520	234	349	808	750	988	207	287	303	56	21
25	77	458	376	302	722	674	805	187	162	238	52	21
26	87	485	501	271	667	679	903	172	136	202	49	21
27	84	868	471	250	613	699	940	154	120	169	45	22
28	88	846	445	245	763	716	799	140	105	149	40	27
29	76	934	404	252	---	760	754	131	95	134	40	27
30	71	1030	e360	322	---	692	704	130	1360	121	44	22
31	68	---	e320	283	---	630	---	121	---	108	58	---
TOTAL	3093	17915	14257	34702	13129	24719	27258	20248	5370	10906	2312	892
MEAN	99.8	597	460	1119	469	797	909	653	179	352	74.6	29.7
MAX	195	1070	1150	6180	1030	1490	1800	1740	1360	1510	165	49
MIN	63	109	211	245	187	463	343	121	79	108	40	21
CFSM	.40	2.41	1.85	4.51	1.89	3.22	3.66	2.63	.72	1.42	.30	.12
IN.	.46	2.69	2.14	5.21	1.97	3.71	4.09	3.04	.81	1.64	.35	.13

e Estimated.

OHIO RIVER MAIN STEM

03007800 ALLEGHENY RIVER AT PORT ALLEGANY, PA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1975 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	305	502	538	458	570	863	896	509	376	202	168	231
MAX	964	1018	1082	1119	1572	1730	2006	1127	1484	598	1175	1226
(WY)	1991	1997	1978	1998	1976	1979	1993	1996	1989	1977	1994	1977
MIN	31.2	61.7	171	78.2	98.0	326	359	142	48.5	28.5	27.0	20.7
(WY)	1983	1992	1990	1981	1980	1993	1976	1985	1991	1991	1991	1991

SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

FOR 1998 WATER YEAR

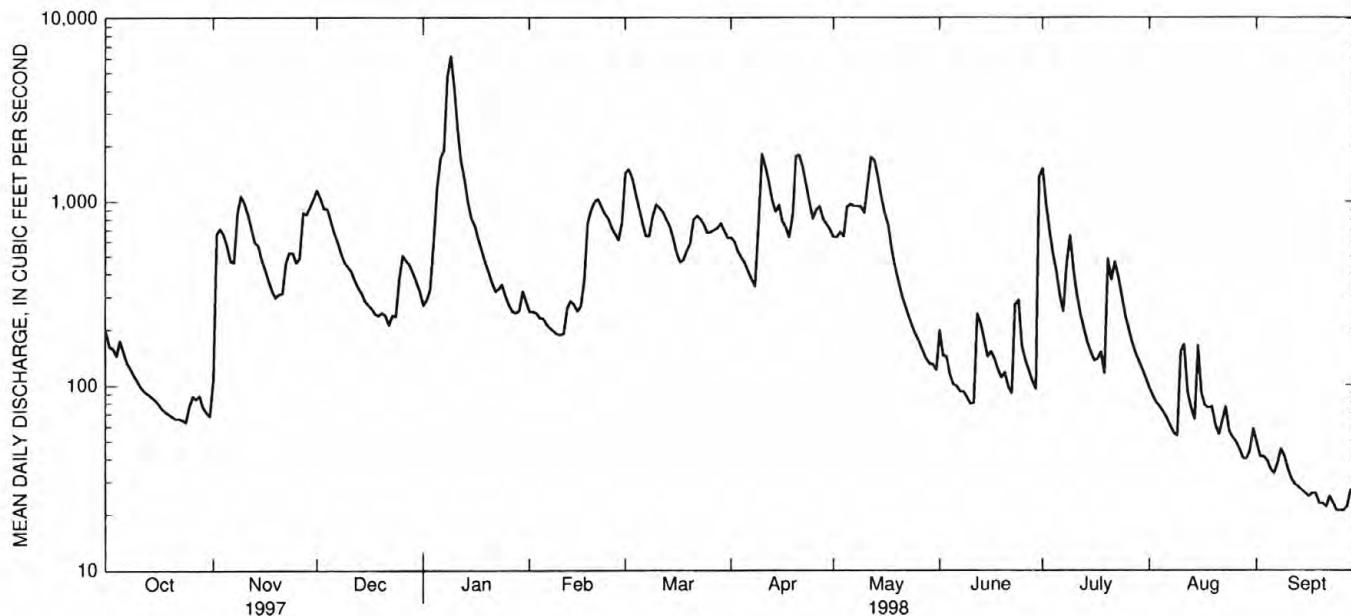
WATER YEARS 1975 - 1998

ANNUAL TOTAL	156137	174801	
ANNUAL MEAN	428	479	467
HIGHEST ANNUAL MEAN			670
LOWEST ANNUAL MEAN			326
HIGHEST DAILY MEAN	e3800	Feb 22	6180
LOWEST DAILY MEAN	44	Aug 11	21
ANNUAL SEVEN-DAY MINIMUM	48	Aug 7	22
INSTANTANEOUS PEAK FLOW			6480
INSTANTANEOUS PEAK STAGE			11.98
INSTANTANEOUS LOW FLOW			20
ANNUAL RUNOFF (CFSM)	1.72	1.93	1.88
ANNUAL RUNOFF (INCHES)	23.42	26.22	25.59
10 PERCENT EXCEEDS	969	982	1050
50 PERCENT EXCEEDS	273	302	260
90 PERCENT EXCEEDS	68	53	55

a From rating curve extended above 6,700 ft³/s.

b From peak-stage indicator.

c Estimated.



October 1, 1997 to September 30, 1998

OHIO RIVER MAIN STEM

03010500 ALLEGHENY RIVER AT ELDRED, PA

LOCATION.--Lat 41°57'48", long 78°23'11", McKean County, Hydrologic Unit 05010001, on right bank at site of former highway bridge, 600 ft upstream from bridge on State Highway 346, 1,000 ft upstream from Knapp Creek, 0.5 mi north of Eldred, at mile 267.8.

DRAINAGE AREA.--550 mi².

PERIOD OF RECORD.--July 1939 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,416.53 ft above sea level.

REMARKS.--Records good except for estimated daily discharges, which are fair. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a base discharge of 5,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 10	0300	*10,700	*a17.81	No other peak greater than base discharge.			

a From peak-stage indicator.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	698	166	2240	e600	616	2350	1260	1310	341	2480	156	131
2	471	1180	2010	e640	596	2420	1370	1260	335	1550	143	114
3	393	1830	1750	e700	579	2220	1220	1500	346	1050	134	104
4	354	1330	1740	e800	556	1930	1110	1380	278	771	128	103
5	470	1180	1690	e1200	536	1650	1020	1550	234	653	120	96
6	486	970	1440	e1800	504	1410	915	1920	221	527	114	90
7	359	865	1300	e2700	473	1240	824	1730	210	431	108	87
8	312	1170	1180	4720	455	1130	748	1650	200	458	101	97
9	282	1900	1050	8550	436	1440	995	1830	193	755	96	120
10	258	1630	966	10100	426	1760	3100	1590	180	599	174	108
11	220	1440	956	7820	423	1580	3320	1940	177	462	444	95
12	204	1270	867	5390	492	1460	2660	3050	282	374	244	85
13	192	1100	790	3490	662	1400	2030	3070	708	318	160	80
14	184	1040	733	2220	581	1320	1690	2600	391	275	134	76
15	178	986	676	1640	501	1230	1870	2040	319	244	586	74
16	171	857	643	1440	505	1050	1690	1620	295	224	1030	74
17	162	765	623	1310	660	960	1480	1580	433	210	386	78
18	153	681	572	1150	1430	1010	1330	1270	339	229	292	83
19	148	634	581	1010	1700	1180	1470	1000	265	210	264	80
20	144	646	584	889	1760	1360	3210	828	285	335	219	78
21	140	699	596	785	1810	1630	3530	701	246	547	181	75
22	136	890	535	700	1670	1820	3170	609	212	548	168	73
23	134	1200	562	671	1510	1620	2510	540	209	536	180	74
24	132	1200	598	804	1430	1520	1980	479	558	456	166	70
25	137	1030	783	723	1350	1390	1600	428	360	353	149	67
26	183	962	1350	633	1310	1470	1530	393	272	291	143	67
27	190	1840	1260	580	1220	1570	2220	354	236	252	129	68
28	208	1880	1120	554	1240	1480	1700	317	209	223	116	76
29	195	1910	964	576	---	1540	1500	291	188	203	109	108
30	171	1970	e880	729	---	1420	1400	282	709	187	112	88
31	160	---	e720	732	---	1300	---	263	---	170	118	---
TOTAL	7625	35221	31759	65656	25431	46860	54452	39375	9231	15921	6604	2619
MEAN	246	1174	1024	2118	908	1512	1815	1270	308	514	213	87.3
MAX	698	1970	2240	10100	1810	2420	3530	3070	709	2480	1030	131
MIN	132	166	535	554	423	960	748	263	177	170	96	67
CFSM	.45	2.13	1.86	3.85	1.65	2.75	3.30	2.31	.56	.93	.39	.16
IN.	.52	2.38	2.15	4.44	1.72	3.17	3.68	2.66	.62	1.08	.45	.18

e Estimated.

OHIO RIVER MAIN STEM

03010500 ALLEGHENY RIVER AT ELDRED, PA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	462	848	1079	1046	1105	1899	2052	1193	791	427	255	324
MAX	1894	3175	2390	3359	3250	4697	5314	3273	6490	3893	1699	2340
(WY)	1991	1951	1973	1952	1976	1945	1940	1943	1972	1942	1994	1977
MIN	41.6	62.0	55.1	87.3	213	728	385	292	109	57.8	43.4	34.6
(WY)	1965	1965	1961	1961	1980	1993	1946	1985	1991	1966	1957	1959

SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

FOR 1998 WATER YEAR

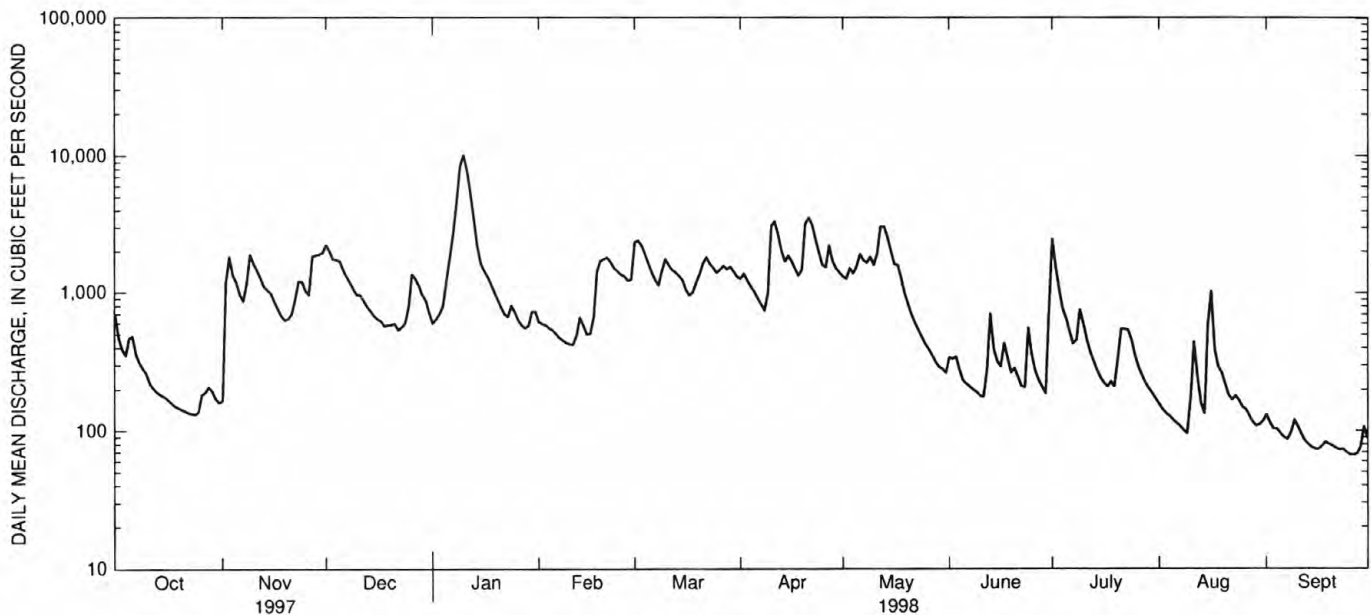
WATER YEARS 1940 - 1998

ANNUAL TOTAL	335118	340754	
ANNUAL MEAN	918	934	955
HIGHEST ANNUAL MEAN			1475
LOWEST ANNUAL MEAN			631
HIGHEST DAILY MEAN	5560	Mar 1	10100
LOWEST DAILY MEAN	86	Aug 12	67
ANNUAL SEVEN-DAY MINIMUM	99	Aug 8	71
INSTANTANEOUS PEAK FLOW			10700
INSTANTANEOUS PEAK STAGE			17.81
INSTANTANEOUS LOW FLOW			66
ANNUAL RUNOFF (CFSM)	1.67	1.70	1.74
ANNUAL RUNOFF (INCHES)	22.67	23.05	23.60
10 PERCENT EXCEEDS	1900	1850	2290
50 PERCENT EXCEEDS	695	634	525
90 PERCENT EXCEEDS	142	119	85

a From rating curve extended above 21,000 ft³/s on basis of slope-area measurement at gage height 27.6 ft.

b From peak-stage-indicator.

c From floodmark.



October 1, 1997 to September 30, 1998

OSWAYO CREEK BASIN

03010655 OSWAYO CREEK AT SHINGLEHOUSE, PA

LOCATION.--Lat 41°57'42", long 78°11'54", Potter County, Hydrologic Unit 05010001, on right bank 200 ft upstream from bridge on State Highway 44 at Shinglehouse and 0.7 mi upstream from Honeoye Creek.

DRAINAGE AREA.--98.7 mi².

PERIOD OF RECORD.--October 1974 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,460.34 ft above sea level (U.S. Army Corps of Engineers bench mark).

REMARKS.--Records good except for estimated daily discharges, which are fair. Several measurements of water temperature were made during the year. Landline and U.S. Army Corps of Engineers satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a base discharge of 1,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 9	0300	*2,470	*a9.97	No other peak greater than base discharge.			

a From peak-stage indicator.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	93	29	368	e84	e94	462	222	177	41	169	21	9.5
2	83	170	336	e95	e90	502	202	174	37	149	19	9.3
3	78	210	291	e110	e84	426	183	174	44	126	18	9.9
4	68	209	283	e150	81	342	169	160	33	105	17	9.1
5	101	192	237	e210	80	279	155	190	29	92	16	8.7
6	84	166	206	e300	75	227	140	198	29	75	15	8.0
7	77	159	186	e450	71	193	127	209	26	68	14	8.3
8	71	191	164	e1470	68	186	118	212	27	86	14	10
9	64	230	149	e2040	65	206	196	203	24	116	13	9.5
10	58	232	141	e1500	63	238	385	192	22	81	23	8.7
11	52	214	131	e1000	63	235	391	310	23	73	26	7.9
12	47	189	120	e700	77	232	343	474	44	65	17	7.7
13	44	164	110	e450	78	215	282	477	43	56	15	8.5
14	41	163	104	e300	77	204	240	385	59	49	15	7.6
15	38	140	97	e220	75	177	235	299	40	44	32	7.5
16	35	126	92	e190	81	154	194	233	38	39	17	8.4
17	32	113	90	e170	99	139	177	191	60	36	15	9.2
18	31	103	85	e150	161	143	156	150	45	34	15	8.3
19	29	98	83	e140	190	150	221	124	37	29	16	7.7
20	28	101	85	e130	226	158	516	105	37	42	13	8.0
21	27	105	82	e120	251	212	567	91	33	52	12	9.5
22	26	134	75	e110	238	216	477	81	29	56	12	9.3
23	25	150	81	e100	220	217	373	71	85	59	12	8.4
24	24	154	79	e120	213	210	296	62	181	48	13	7.7
25	26	140	111	e115	198	196	235	58	122	42	13	7.7
26	27	153	133	e100	186	207	251	54	104	37	11	8.6
27	26	277	e120	e94	173	232	232	47	86	32	10	8.7
28	26	283	e115	e85	233	256	206	42	71	29	9.8	13
29	24	300	e105	e100	---	280	200	40	59	27	10	8.4
30	23	329	e95	e110	---	246	191	40	160	25	10	7.3
31	22	---	e90	e105	---	224	---	35	---	23	10	---
TOTAL	1430	5224	4444	11018	3610	7364	7680	5258	1668	1964	473.8	260.4
MEAN	46.1	174	143	355	129	238	256	170	55.6	63.4	15.3	8.68
MAX	101	329	368	2040	251	502	567	477	181	169	32	13
MIN	22	29	75	84	63	139	118	35	22	23	9.8	7.3
CFSM	.47	1.76	1.45	3.60	1.31	2.41	2.59	1.72	.56	.64	.15	.09
IN.	.54	1.97	1.67	4.15	1.36	2.78	2.89	1.98	.63	.74	.18	.10

e Estimated.

OSWAYO CREEK BASIN

03010655 OSWAYO CREEK AT SHINGLEHOUSE, PA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1975 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	103	170	192	168	202	291	311	179	126	71.9	57.2	68.3
MAX	331	371	318	388	561	517	755	489	612	238	396	452
(WY)	1991	1997	1978	1979	1976	1979	1993	1996	1989	1977	1994	1977
MIN	8.35	23.1	52.6	28.5	41.2	120	131	50.8	6.28	7.69	7.12	6.08
(WY)	1992	1992	1989	1981	1987	1981	1976	1993	1993	1993	1991	1991

SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

FOR 1998 WATER YEAR

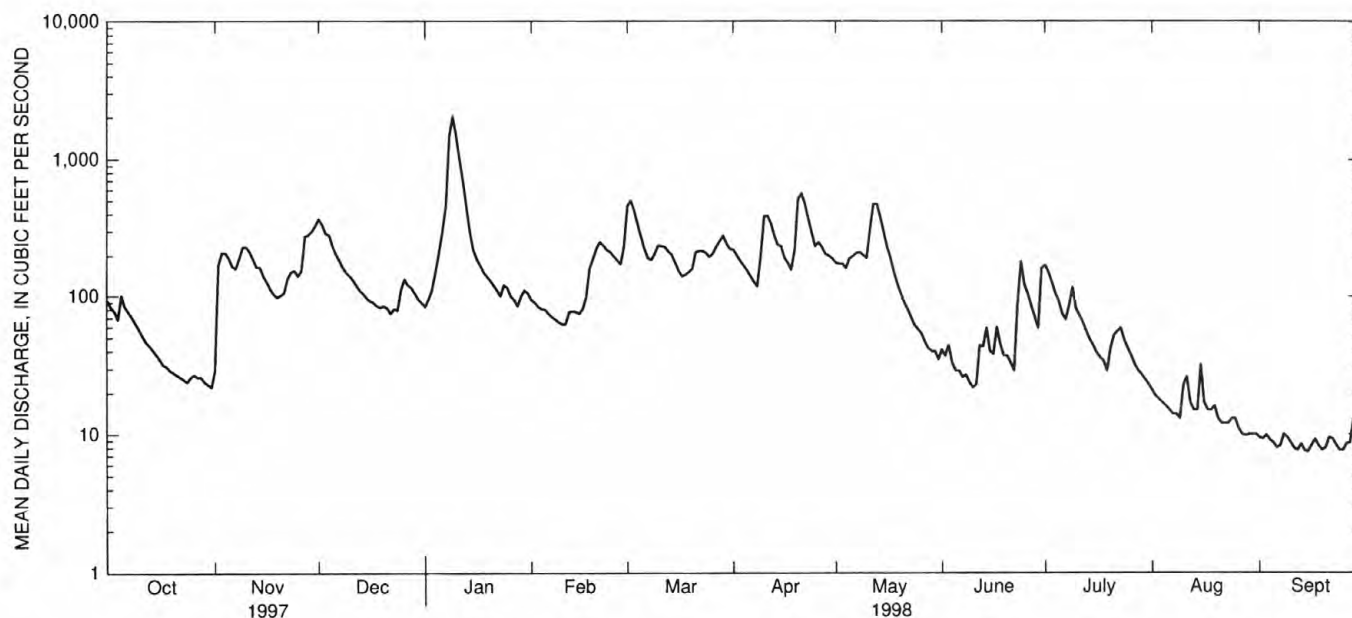
WATER YEARS 1975 - 1998

ANNUAL TOTAL	50947	50394.2	
ANNUAL MEAN	140	138	161
HIGHEST ANNUAL MEAN			222
LOWEST ANNUAL MEAN			118
HIGHEST DAILY MEAN	1170	Feb 28	e2040
LOWEST DAILY MEAN	15	Sep 6,9,10	7.3
ANNUAL SEVEN-DAY MINIMUM	16	Sep 4	8.0
INSTANTANEOUS PEAK FLOW			2470
INSTANTANEOUS PEAK STAGE			b9.97
INSTANTANEOUS LOW FLOW			7.0
ANNUAL RUNOFF (CFSM)	1.41		1.40
ANNUAL RUNOFF (INCHES)	19.20		18.99
10 PERCENT EXCEEDS	286		278
50 PERCENT EXCEEDS	96		94
90 PERCENT EXCEEDS	23		12

a From rating curve extended above 2,600 ft³/s.

b From peak-stage indicator.

e Estimated.



October 1, 1997 to September 30, 1998

OHIO RIVER MAIN STEM
03011020 ALLEGHENY RIVER AT SALAMANCA, NY

LOCATION.--Lat 42°09'23", long 78°42'56", Cattaraugus County, Hydrologic Unit 05010001, on left bank 230 ft upstream from Main Street bridge in Salamanca, 1.3 mi downstream from Great Valley Creek, and 1.6 mi upstream from Little Valley Creek.

DRAINAGE AREA.--1,608 mi².

PERIOD OF RECORD.--September 1903 to current year. Monthly discharge only for some periods, published in WSP 1305. Prior to October 1964, published as "at Red House."

REVISED RECORDS.--WSP 1385: 1907, 1909-12, 1913(M), 1914-15, 1916-17(M), 1925, 1927. WSP 1907: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,358.00 ft above sea level (Corps of Engineers bench mark). Prior to Sept. 3, 1917, nonrecording gage and Sept. 4, 1917 to Sept. 30, 1964, water-stage recorder at site 7.5 mi downstream at different datum. Oct. 1, 1964 to Sept. 30, 1967, at present site at datum 0.04 ft lower.

REMARKS.--Records good except those for estimated daily discharges, which are fair. U.S. Army Corps of Engineers telephone gage-height telemeter and satellite gage-height and precipitation telemeter at station. Several measurements of water temperature were made during the year. Pesticide sample collected as part of state-wide sampling network in cooperation with the New York State Department of Environmental Conservation. Analyses published on page 277.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 73,000 ft³/s, June 23, 1972, gage height, 24.01 ft, from floodmarks; minimum instantaneous discharge not determined.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 17,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage Height (ft)	Date	Time	Discharge (ft ³ /s)	Gage Height (ft)
Jan. 9	1200	31,500	14.28	No other peak greater than base discharge.			

Minimum instantaneous discharge not determined.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4150	784	6970	1980	1990	7740	3770	3200	938	4870	448	279
2	2720	3750	5930	1920	1900	7810	4020	3060	982	3530	409	286
3	1970	6180	4850	2650	1860	6450	3730	4200	1150	2250	374	293
4	1530	4190	4830	7840	1740	5340	3320	4140	1060	1720	350	264
5	2000	3290	4740	11000	1630	4480	3020	4020	833	1570	341	258
6	2080	2720	4120	11000	e1450	3810	2700	4450	733	1300	319	248
7	1540	2360	3660	10100	e1400	3280	2430	4180	683	1060	307	235
8	1250	2650	3310	20900	e1300	3000	2210	3840	656	1730	287	229
9	1080	3180	3000	30500	e1250	3720	2580	4040	632	3880	278	238
10	967	3290	2810	26500	1270	4760	8350	3700	596	2510	582	265
11	875	2930	2770	21200	1290	4300	7860	4650	588	1660	778	253
12	789	2630	2610	14600	1620	3750	6500	8980	693	1270	819	233
13	734	2350	2440	9550	2130	3530	5060	8220	1120	1040	539	222
14	684	2270	2320	6510	1880	3370	4170	6680	1220	888	410	208
15	647	2300	2130	4680	e1500	3120	4630	5180	919	782	394	197
16	613	2140	2080	4030	e1400	2740	4430	4100	842	712	1170	195
17	577	2030	2040	3560	2110	2510	3870	3700	1140	651	982	208
18	553	1900	1950	3130	4990	2770	3410	3200	1140	603	633	196
19	536	1810	1880	2770	5840	4030	3440	2520	901	589	571	206
20	518	1860	1980	2510	5430	5530	10500	2110	1210	582	521	466
21	505	2080	2040	2240	5030	5980	12000	1820	841	902	435	286
22	586	2670	1830	2040	4470	5780	9200	1590	695	1180	441	228
23	591	3250	1930	1960	3960	4910	7110	1420	650	1750	431	208
24	571	3320	2090	2260	3680	4270	5460	1280	770	1720	395	196
25	602	2920	2910	2180	3470	3930	4350	1190	1100	1090	472	191
26	636	2920	4720	1910	3410	5000	3980	1190	908	840	387	191
27	892	6740	4240	1720	3230	7220	5410	1040	1250	710	344	191
28	1080	6590	3530	1650	3310	5890	4450	935	1000	617	315	219
29	993	6240	2970	1670	---	5740	3830	859	738	569	298	220
30	846	6380	2800	2360	---	4960	3530	827	2040	540	293	237
31	785	---	2470	2410	---	4170	---	798	---	489	285	---
TOTAL	33900	97724	97950	219330	74540	143890	149320	101119	28028	43604	14608	7146
MEAN	1094	3257	3160	7075	2662	4642	4977	3262	934	1407	471	238
MAX	4150	6740	6970	30500	5840	7810	12000	8980	2040	4870	1170	466
MIN	505	784	1830	1650	1250	2510	2210	798	588	489	278	191
CFSM	.68	2.03	1.96	4.40	1.66	2.89	3.10	2.03	.58	.87	.29	.15
IN.	.78	2.26	2.27	5.07	1.72	3.33	3.45	2.34	.65	1.01	.34	.17

e Estimated.

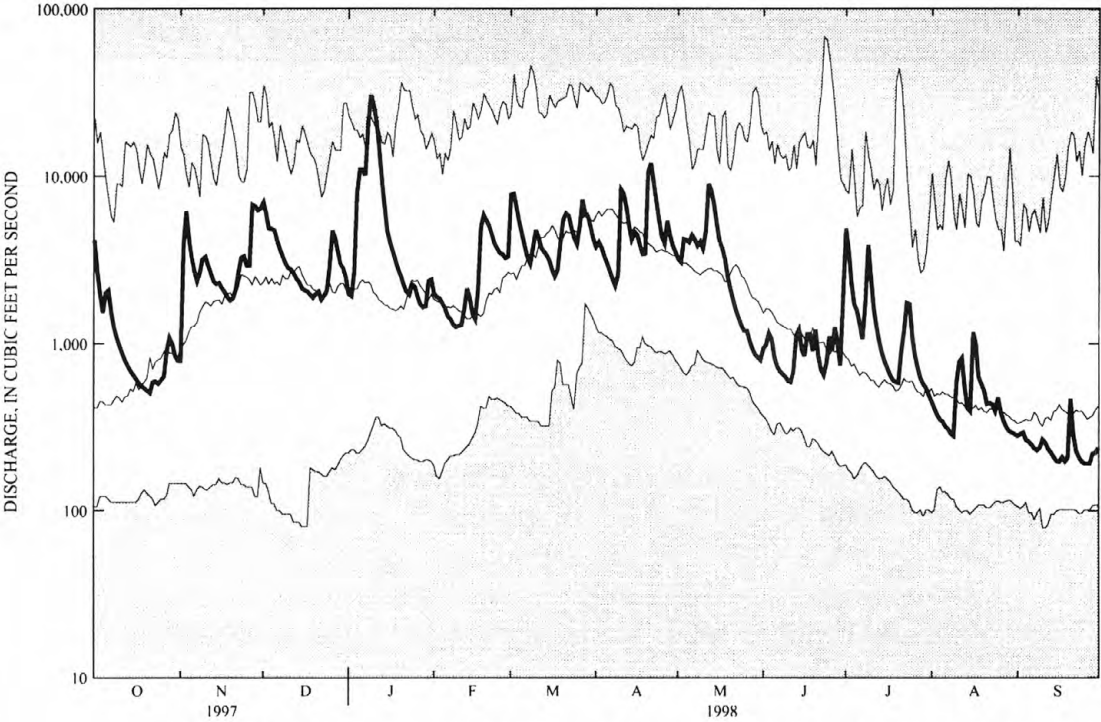
OHIO RIVER MAIN STEM

03011020 ALLEGHENY RIVER AT SALAMANCA, NY--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1904 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1358	2574	3106	3360	3170	6002	5832	3478	2019	1103	721	840
MAX	5801	8605	9147	10200	9683	14850	15540	9574	11520	6074	3882	7477
(WY)	1991	1928	1928	1913	1976	1936	1940	1943	1972	1942	1977	1977
MIN	124	146	189	255	550	1983	970	796	299	150	119	118
(WY)	1931	1931	1961	1961	1905	1937	1946	1985	1934	1934	1930	1932

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1904 - 1998	
ANNUAL TOTAL	1021506		1011159			
ANNUAL MEAN	2799		2770		2794	
HIGHEST ANNUAL MEAN					4174	
LOWEST ANNUAL MEAN					1784	
HIGHEST DAILY MEAN	18400		Feb 28		30500	
LOWEST DAILY MEAN	346		Sep 10		191	
ANNUAL SEVEN-DAY MINIMUM	374		Sep 22		202	
ANNUAL RUNOFF (CFSM)	1.74				1.72	
ANNUAL RUNOFF (INCHES)	23.63				23.39	
10 PERCENT EXCEEDS	6460				5760	
50 PERCENT EXCEEDS	2120				1980	
90 PERCENT EXCEEDS	513				317	



CURRENT WATER YEAR DAILY MEAN DISCHARGE (BOLD) WITH DAILY MEDIAN FOR PERIOD OF RECORD.
SHADED AREAS SHOW DAILY MAXIMUM AND MINIMUM FOR PERIOD OF RECORD THROUGH PREVIOUS WATER YEAR.

KINZUA CREEK BASIN

03011800 KINZUA CREEK NEAR GUFFEY, PA

LOCATION.--Lat 41°45'59", long 78°43'08", McKean County, Hydrologic Unit 05010001, in Allegheny National Forest, on right bank 130 ft upstream from bridge on U.S. Highway 219, 0.2 mi upstream from Wintergreen Run, 1.0 mi downstream from Pine Run, and 1.5 mi west of Guffey.

DRAINAGE AREA.--46.4 mi².

PERIOD OF RECORD.--Occasional low-flow measurements, published as "at Tallyho," water years 1959-65. October 1965 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 1,540 ft above sea level, from topographic map.

REMARKS.--Records good except for estimated daily discharges, which are fair. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a base discharge of 500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 8	0900	*1,410	*a6.43	Apr. 9	2400	541	4.72

a From peak-stage indicator.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	97	43	205	e62	44	171	99	88	32	163	4.8	10
2	55	218	156	e66	43	124	107	100	23	62	4.6	9.0
3	46	153	133	e64	40	109	92	154	18	42	4.6	9.8
4	40	110	168	e90	38	103	83	116	15	35	4.6	8.1
5	57	95	142	e130	36	94	76	144	13	33	4.5	7.6
6	44	81	120	e200	35	87	69	125	12	25	4.2	7.2
7	32	100	111	308	37	79	63	108	12	22	3.8	9.0
8	28	147	98	1160	37	84	61	110	11	24	3.5	9.3
9	25	125	89	755	34	124	173	116	9.7	25	6.0	9.4
10	24	103	87	417	32	127	337	97	9.6	19	46	7.9
11	22	93	84	273	34	96	185	134	10	15	23	6.9
12	20	83	77	198	59	e86	155	195	55	13	10	6.4
13	19	75	72	169	60	e80	130	133	30	12	7.2	6.3
14	19	81	67	134	46	e74	120	115	19	9.9	52	6.3
15	17	72	64	114	46	e68	164	100	15	9.6	102	6.3
16	16	66	67	105	49	e64	127	87	16	9.1	24	8.1
17	15	60	61	91	68	e60	111	82	40	8.5	16	9.9
18	14	59	59	82	139	e66	94	66	19	7.8	16	8.2
19	14	53	53	73	138	e90	144	56	13	7.3	14	7.4
20	14	55	55	66	125	122	277	48	17	27	11	9.1
21	14	56	53	59	121	125	184	40	12	17	10	9.7
22	13	74	53	53	108	112	160	35	11	15	10	9.7
23	13	76	56	62	99	100	139	31	15	19	9.5	8.6
24	13	72	55	71	96	94	119	28	15	16	9.5	8.1
25	21	62	95	57	88	87	101	25	10	10	10	8.1
26	21	73	116	49	89	106	145	23	9.6	8.5	9.7	8.3
27	31	154	91	45	84	108	160	20	8.7	7.4	8.3	13
28	32	130	e80	44	94	93	110	18	8.1	6.8	8.1	23
29	26	164	e70	46	---	114	98	16	7.8	6.3	9.9	12
30	26	189	e62	59	---	97	94	16	144	6.2	10	10
31	21	---	e58	50	---	87	---	15	---	5.5	16	---
TOTAL	849	2922	2757	5152	1919	3031	3977	2441	630.5	686.9	472.8	272.7
MEAN	27.4	97.4	88.9	166	68.5	97.8	133	78.7	21.0	22.2	15.3	9.09
MAX	97	218	205	1160	139	171	337	195	144	163	102	23
MIN	13	43	53	44	32	60	61	15	7.8	5.5	3.5	6.3
CFSM	.59	2.10	1.92	3.58	1.48	2.11	2.86	1.70	.45	.48	.33	.20
IN.	.68	2.34	2.21	4.13	1.54	2.43	3.19	1.96	.51	.55	.38	.22

e Estimated.

KINZUA CREEK BASIN

03011800 KINZUA CREEK NEAR GUFFEY, PA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	50.2	88.4	107	79.6	89.4	139	137	85.6	73.0	34.8	30.5	39.4
MAX	137	166	281	166	251	269	289	182	272	99.0	126	155
(WY)	1991	1971	1984	1998	1976	1979	1994	1989	1989	1992	1980	1977
MIN	6.69	15.3	32.6	19.8	18.4	61.6	67.9	23.8	9.49	6.29	4.96	5.16
(WY)	1992	1992	1990	1981	1987	1970	1976	1985	1991	1991	1991	1991

SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

FOR 1998 WATER YEAR

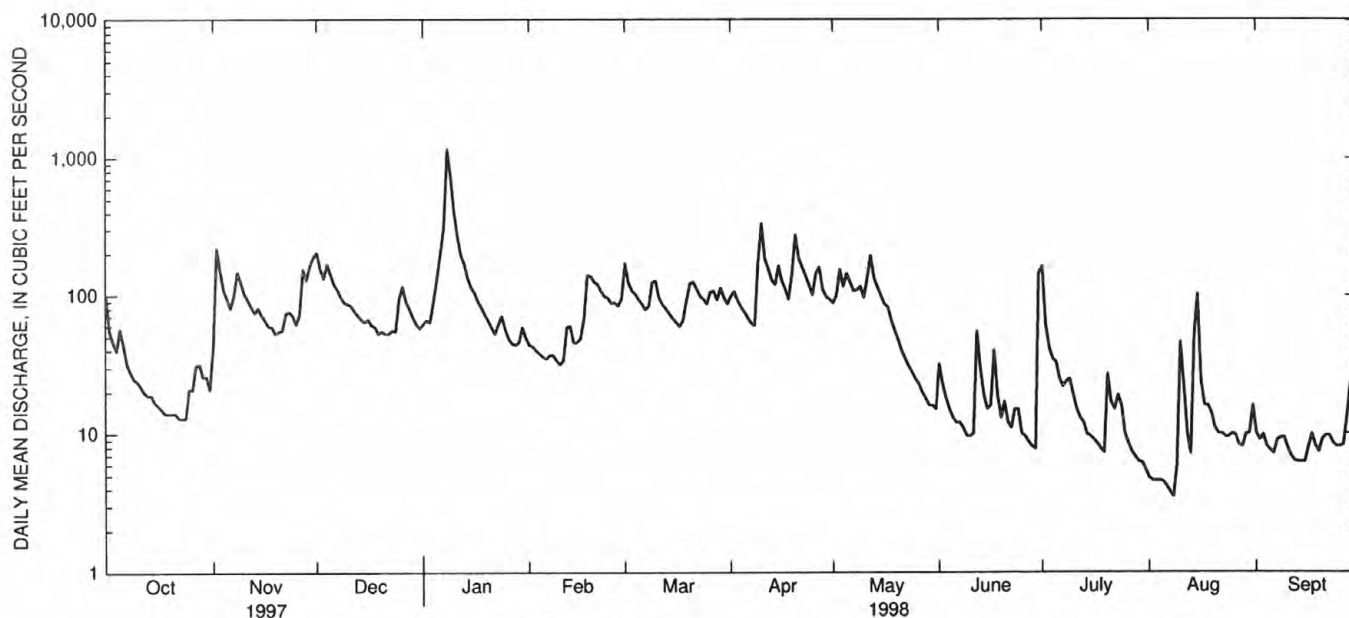
WATER YEARS 1966 - 1998

ANNUAL TOTAL	25871	25110.9	
ANNUAL MEAN	70.9	68.8	79.3
HIGHEST ANNUAL MEAN			113
LOWEST ANNUAL MEAN			58.9
HIGHEST DAILY MEAN	e450	Feb 27	1160 Jan 8
LOWEST DAILY MEAN	11	Sep 7, 9, 27	3.5 Aug 8
ANNUAL SEVEN-DAY MINIMUM	12	Sep 4	4.3 Aug 2
INSTANTANEOUS PEAK FLOW			1410 Jan 8
INSTANTANEOUS PEAK STAGE			b6.43 Jan 8
INSTANTANEOUS LOW FLOW			3.3 Aug 8, 9
ANNUAL RUNOFF (CFSM)	1.53	1.48	1.71
ANNUAL RUNOFF (INCHES)	20.74	20.13	23.22
10 PERCENT EXCEEDS	142	139	172
50 PERCENT EXCEEDS	59	55	51
90 PERCENT EXCEEDS	15	8.4	12

a From rating curve extended above 1,300 ft³/s on basis of slope-area measurement at gage height 8.33 ft.

b From peak-stage indicator.

e Estimated.



October 1, 1997 to September 30, 1998

CONEWANGO CREEK BASIN

03015000 CONEWANGO CREEK AT RUSSELL, PA

LOCATION.--Lat 41°56'17", long 79°08'00", Warren County, Hydrologic Unit 05010002, on left bank of highway bridge on SR 957 at Russell, 0.5 mi upstream from Akeley Run, and 8.0 mi upstream from mouth.

DRAINAGE AREA.--816 mi².

PERIOD OF RECORD.--October 1939 to current year. Monthly discharge only for October, November 1939, published in WSP 1305.

REVISED RECORD.--WSP 1083: 1936 (M).

GAGE.--Water-stage recorder. Datum of gage is 1,221.77 ft above sea level. Prior to Apr. 10, 1941, nonrecording gage at same site and datum.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by Chautauqua Lake. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of March 1936 reached a stage of 10.9 ft from floodmark, discharge, 14,600 ft³/s.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3570	1550	3500	1900	1880	2230	3270	1830	335	955	196	179
2	3620	2190	3170	1810	1690	2430	3040	1980	341	743	188	179
3	3500	2600	2710	2200	1660	2200	2800	3210	335	513	180	177
4	2970	2500	2620	4090	1570	1840	2510	2960	301	365	173	173
5	2600	2160	2670	4690	1450	1660	2160	3130	278	316	166	163
6	2570	1760	2590	5130	1310	1570	1840	2560	258	294	160	156
7	2340	1580	2390	5940	1210	1480	1550	2030	242	269	158	155
8	1880	1850	2170	9720	1150	1430	1380	1740	230	280	155	157
9	1520	1830	1970	13600	1100	1860	1750	1550	215	1120	151	175
10	951	1660	2090	14700	1060	2420	4140	1400	210	1040	185	172
11	645	1510	2210	13500	1090	2350	3740	1260	210	533	342	161
12	575	1430	2210	11700	1290	1980	3320	2730	234	347	529	154
13	520	1360	2150	9860	1850	1710	2400	2760	301	273	444	147
14	474	1340	2050	8210	1820	1590	1700	2410	719	240	330	141
15	435	1430	1910	6730	1460	1530	1910	1620	471	220	257	139
16	408	1500	1800	5590	1190	1460	2190	1110	349	209	225	137
17	382	1540	1760	4790	1360	1440	2630	865	294	241	205	136
18	356	1540	1720	4090	2770	1790	2800	717	293	248	203	130
19	340	1520	1680	3350	3140	3070	2810	599	286	216	277	125
20	328	1540	1720	2680	3250	3630	4190	525	268	226	387	128
21	297	1640	1820	2220	3090	3920	4440	473	264	226	309	130
22	272	2230	1760	1920	2640	4060	4510	435	248	244	242	128
23	268	2620	1780	1800	2180	3990	4510	404	226	545	214	126
24	288	2600	2110	1890	1860	3790	4290	380	212	1090	259	120
25	348	2280	3050	1910	1730	3410	3810	362	204	647	260	120
26	440	2120	3810	1770	1630	3280	3350	357	200	378	222	118
27	814	3320	3770	1610	1500	3390	3380	347	244	273	204	116
28	1940	3440	3650	1560	1460	3510	2870	324	528	217	202	117
29	2090	3490	3340	1540	---	3730	2380	307	484	205	196	118
30	1850	3500	2860	1980	---	3720	2010	293	529	206	192	121
31	1690	---	2350	2090	---	3560	---	281	---	204	185	---
TOTAL	40281	61630	75390	154570	49390	80030	87680	40949	9309	12883	7396	4298
MEAN	1299	2054	2432	4986	1764	2582	2923	1321	310	416	239	143
MAX	3620	3500	3810	14700	3250	4060	4510	3210	719	1120	529	179
MIN	268	1340	1680	1540	1060	1430	1380	281	200	204	151	116
CFSM	1.59	2.52	2.98	6.11	2.16	3.16	3.58	1.62	.38	.51	.29	.18
IN.	1.84	2.81	3.44	7.05	2.25	3.65	4.00	1.87	.42	.59	.34	.20

CONEWANGO CREEK BASIN

03015000 CONEWANGO CREEK AT RUSSELL, PA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	880	1630	2143	2049	2091	3194	2827	1383	896	483	419	609
MAX	3276	4070	4261	4986	5320	6715	6503	4016	2927	2142	2391	3891
(WY)	1991	1986	1978	1998	1976	1945	1947	1943	1986	1986	1977	1977
MIN	66.1	119	111	215	533	1344	353	296	177	108	82.4	79.9
(WY)	1964	1961	1961	1961	1963	1960	1946	1985	1949	1963	1954	1941

SUMMARY STATISTICS

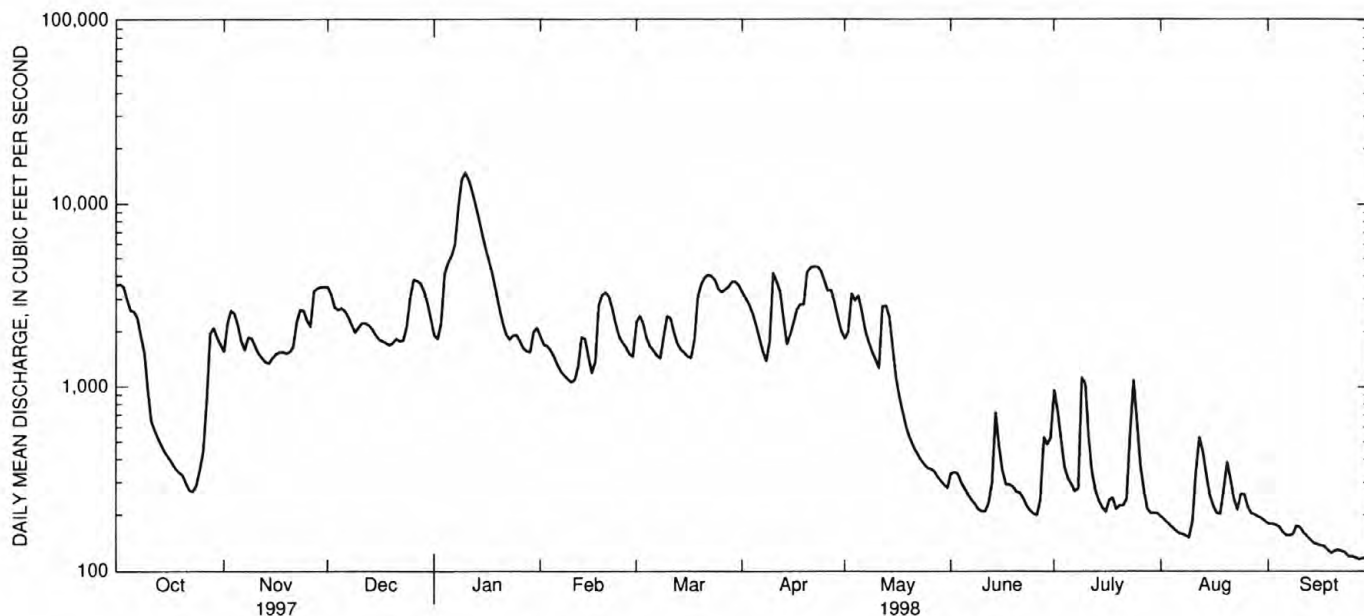
FOR 1997 CALENDAR YEAR

FOR 1998 WATER YEAR

WATER YEARS 1940 - 1998

ANNUAL TOTAL	641730	623806	
ANNUAL MEAN	1758	1709	1547
HIGHEST ANNUAL MEAN			2057
LOWEST ANNUAL MEAN			974
HIGHEST DAILY MEAN	5890	Mar 3	14700
LOWEST DAILY MEAN	199	Aug 10	116
ANNUAL SEVEN-DAY MINIMUM	213	Aug 9	119
INSTANTANEOUS PEAK FLOW			14900
INSTANTANEOUS PEAK STAGE			Jan 10
ANNUAL RUNOFF (CFSM)	2.15		2.09
ANNUAL RUNOFF (INCHES)	29.26		28.44
10 PERCENT EXCEEDS	3790		3530
50 PERCENT EXCEEDS	1520		1520
90 PERCENT EXCEEDS	286		180

a From peak-stage indicator.



October 1, 1997 to September 30, 1998

BROKENSTRAW CREEK BASIN

03015500 BROKENSTRAW CREEK AT YOUNGSVILLE, PA

LOCATION.--Lat 41°51'09", long 79°19'03", Warren County, Hydrologic Unit 05010001, on right bank 150 ft downstream from bridge on Main Street at Youngsville, 500 ft upstream from Matthews Run, and 3.7 mi upstream from mouth. Records include flow of Matthews Run.

DRAINAGE AREA.--321 mi², including that of Matthews Run.

PERIOD OF RECORD.--October 1909 to current year. Monthly discharge only for some periods, published in WSP 1305. Flow of Matthews Run included in records since October 1938.

REVISED RECORDS.--WSP 743: Drainage area. WSP 1083: 1913 (M). WSP 1275: 1920, 1932, 1936. WSP 1305: 1910-15, 1928-29.

GAGE.--Water-stage recorder. Datum of gage is 1,186.92 ft above sea level. Prior to Sept. 30, 1933, nonrecording gage at site 150 ft upstream at datum 2.00 ft higher. Oct. 1, 1933 to June 15, 1939, nonrecording gage at site 150 ft upstream, and June 16, 1939 to Sept. 30, 1961, water-stage recorder at present site, both at datum 1.00 ft higher.

REMARKS.--Records good except for estimated daily discharges, which are fair. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a base discharge of 4,500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 9	1100	*9,780	*10.66	No other peak greater than base discharge.			

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	865	343	1100	e370	492	846	741	557	145	157	56	49
2	528	904	822	e380	451	860	840	772	148	120	53	47
3	306	843	621	e500	459	656	746	2180	133	96	52	46
4	213	562	1010	3480	447	553	641	1580	124	86	52	46
5	252	412	1090	4380	402	508	540	1320	116	83	51	45
6	333	323	840	3610	354	472	460	1200	110	77	50	44
7	225	386	671	2850	329	432	408	893	106	74	49	46
8	174	642	e600	8000	313	448	384	769	104	80	49	46
9	147	588	e540	9380	303	768	1520	718	101	95	49	47
10	129	461	e620	5720	301	1010	3560	600	100	94	55	48
11	118	388	e820	2920	314	778	2760	588	99	80	62	48
12	112	342	786	1440	494	618	1340	941	132	71	64	47
13	104	303	703	1010	767	565	764	778	190	67	60	45
14	99	332	638	824	556	543	647	575	203	64	54	43
15	94	360	560	709	400	487	983	457	151	68	52	42
16	90	379	522	682	365	463	1220	388	136	82	50	42
17	87	380	493	609	605	468	1730	338	130	71	49	42
18	84	363	465	550	1580	667	1420	295	126	66	49	42
19	82	382	443	500	1560	1670	1200	260	112	62	51	43
20	80	415	496	456	1120	2350	3160	232	104	60	50	42
21	79	488	533	411	832	2510	3060	208	96	61	49	41
22	85	860	478	399	687	1850	1860	193	91	69	48	42
23	97	1100	625	410	589	1170	971	181	90	158	47	42
24	112	964	830	476	549	890	746	170	88	174	50	42
25	128	719	1600	461	497	781	614	164	85	122	56	42
26	126	720	2190	408	440	956	842	157	81	90	58	42
27	329	1690	1780	380	408	1050	1430	146	78	75	53	42
28	768	1650	1140	376	426	818	1030	138	75	68	50	44
29	634	1290	762	388	---	1000	722	131	72	64	50	44
30	478	1180	e600	648	---	949	611	128	213	61	51	42
31	352	---	e420	654	---	709	---	128	---	59	51	---
TOTAL	7310	19769	24798	53381	16040	27845	36950	17185	3539	2654	1620	1323
MEAN	236	659	800	1722	573	898	1232	554	118	85.6	52.3	44.1
MAX	865	1690	2190	9380	1580	2510	3560	2180	213	174	64	49
MIN	79	303	420	370	301	432	384	128	72	59	47	41
CFSM	.73	2.05	2.49	5.36	1.78	2.80	3.84	1.73	.37	.27	.16	.14
IN.	.85	2.29	2.87	6.19	1.86	3.23	4.28	1.99	.41	.31	.19	.15

e Estimated.

BROKENSTRAW CREEK BASIN

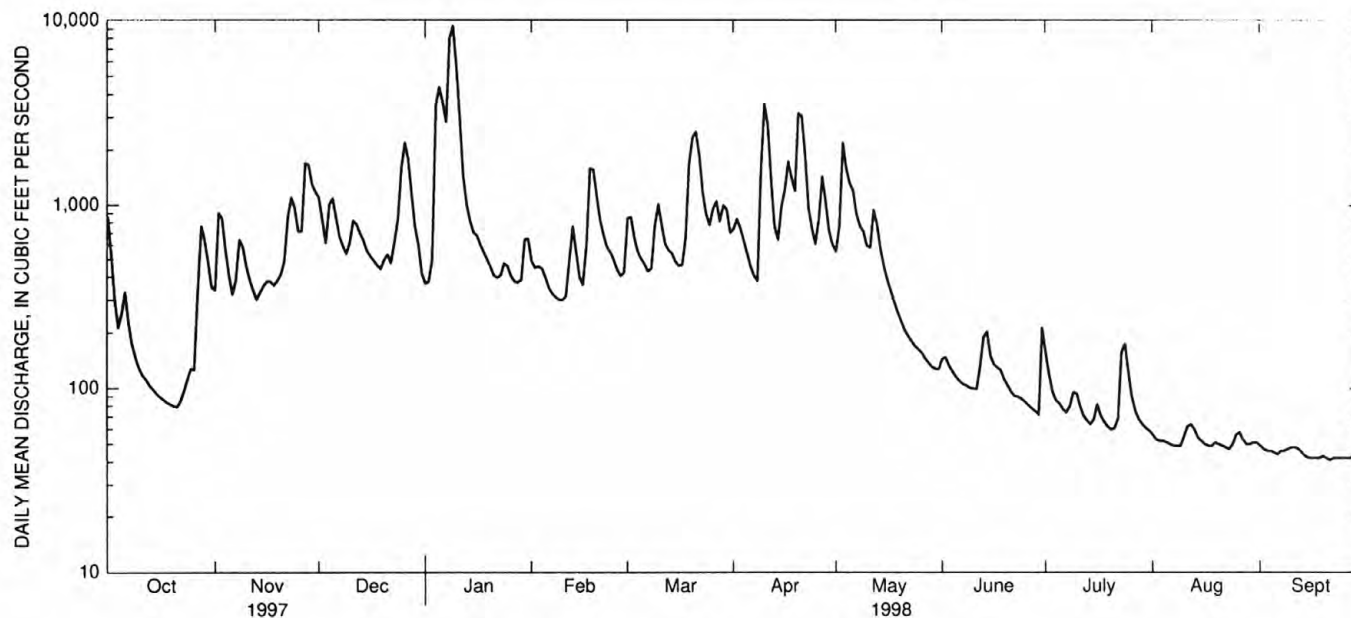
03015500 BROKENSTRAW CREEK AT YOUNGSVILLE, PA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1910 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	320	631	758	798	769	1258	1025	602	380	229	180	229
MAX	1413	1817	1724	2459	2248	2851	2715	1528	1535	1039	994	1428
(WY)	1991	1986	1978	1913	1976	1936	1947	1943	1928	1986	1956	1977
MIN	31.7	57.3	85.9	124	161	297	251	135	62.0	37.8	32.3	31.6
(WY)	1932	1931	1961	1918	1987	1915	1946	1934	1934	1934	1934	1936

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1910 - 1998	
ANNUAL TOTAL	230020		212414			
ANNUAL MEAN	630		582		597	
HIGHEST ANNUAL MEAN					864	
LOWEST ANNUAL MEAN					307	
HIGHEST DAILY MEAN	5130	Feb 27	9380	Jan 9	14000	Mar 25 1913
LOWEST DAILY MEAN	60	Aug 10 ^a	41	Sep 21	19	Oct 14 1934
ANNUAL SEVEN-DAY MINIMUM	68	Aug 5	42	Sep 20	24	Oct 11 1934
INSTANTANEOUS PEAK FLOW			9780	Jan 9	^b 18000	Mar 25 1913
INSTANTANEOUS PEAK STAGE			10.66	Jan 9	14.20	Mar 25 1913
INSTANTANEOUS LOW FLOW			41	Sep 19	^c 19	Oct 14 1934
ANNUAL RUNOFF (CFSM)	1.96		1.81		1.86	
ANNUAL RUNOFF (INCHES)	26.66		24.62		25.28	
10 PERCENT EXCEEDS	1420		1200		1440	
50 PERCENT EXCEEDS	447		380		306	
90 PERCENT EXCEEDS	81		49		68	

^a Also Sept. 10.
^b About.
^c Minimum observed.



October 1, 1997 to September 30, 1998

EAST HICKORY CREEK BASIN

03015795 EAST HICKORY CREEK NEAR QUEEN, PA

LOCATION.--Lat 41°38'31", long 79°20'18", Warren County, Hydrologic Unit 05010003, in the Allegheny National Forest, on right bank 20 ft downstream of Forest Service Road 119 bridge, 0.2 mi downstream of Camp Run, 0.5 mi upstream of Jaybuck Run, and 1.7 mi northeast of Queen, Pa.

DRAINAGE AREA.--20.3 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1996 to September 1998 (discontinued).

GAGE.--Water-stage recorder. Elevation of gage is 1,270 ft above sea level, from topographic map.

REMARKS.--Records fair. Several measurements of water temperature were made during the year.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a base discharge of 280 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 8	0615	*918	*6.32	Apr. 9	1815	380	4.70
Jan. 9	0945	641	5.57				

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	13	60	e27	24	87	44	42	14	5.6	.88	1.7
2	10	58	46	e26	21	66	44	51	13	3.5	.69	1.5
3	8.1	31	38	e25	21	57	39	61	8.3	2.8	.65	1.5
4	6.4	22	69	e40	20	49	37	72	6.1	2.5	.61	1.3
5	13	17	52	e44	20	42	33	93	5.5	2.7	.61	1.0
6	9.3	14	44	e36	19	37	29	72	5.4	2.2	.59	.95
7	7.4	37	38	e54	19	33	26	57	4.9	2.0	.56	1.0
8	6.1	78	32	584	17	37	27	55	4.5	2.4	.51	1.2
9	5.5	43	28	468	15	57	154	47	3.9	2.5	1.3	1.8
10	5.6	32	40	227	14	58	209	39	3.9	2.0	27	1.7
11	5.1	26	61	122	15	49	115	42	4.3	1.7	9.6	1.4
12	4.9	21	46	79	21	51	79	61	26	1.6	2.9	1.1
13	4.8	18	39	62	21	43	60	48	15	1.5	1.9	.91
14	4.9	20	33	45	19	37	55	42	9.4	1.4	1.6	.90
15	4.8	18	28	38	e18	32	75	36	9.5	1.4	1.6	.82
16	4.6	17	25	36	e17	e29	64	29	22	1.4	1.5	1.0
17	4.6	15	23	31	e25	e25	61	25	17	1.6	1.4	1.3
18	4.6	27	21	28	48	e30	50	23	9.9	1.7	3.2	1.3
19	4.5	21	19	24	45	71	75	19	7.4	1.4	2.4	1.2
20	4.5	18	19	22	43	77	163	16	6.6	1.3	1.6	1.5
21	4.4	20	18	32	40	88	114	14	5.3	9.8	e1.4	1.9
22	4.8	39	17	31	34	80	84	12	4.9	6.3	e1.3	1.8
23	5.4	46	27	26	31	65	67	11	7.3	5.8	e1.2	1.7
24	5.3	41	29	27	31	54	53	9.6	16	3.9	e1.9	1.5
25	6.8	33	75	23	28	45	43	8.9	7.2	2.1	e2.7	1.5
26	6.8	38	88	21	25	41	70	8.2	5.8	1.7	e4.0	1.6
27	14	77	67	20	24	37	79	7.2	5.0	1.5	1.4	1.7
28	11	64	50	20	31	34	62	6.6	4.4	1.4	1.1	1.6
29	9.6	60	39	21	---	43	53	6.8	3.7	1.3	2.1	1.5
30	8.4	71	35	28	---	36	46	7.1	7.0	1.1	3.7	1.4
31	7.4	---	e30	24	---	33	---	8.1	---	1.0	2.8	---
TOTAL	220.6	1035	1236	2291	706	1523	2110	1029.5	263.2	79.1	84.70	41.28
MEAN	7.12	34.5	39.9	73.9	25.2	49.1	70.3	33.2	8.77	2.55	2.73	1.38
MAX	18	78	88	584	48	88	209	93	26	9.8	27	1.9
MIN	4.4	13	17	20	14	25	26	6.6	3.7	1.0	.51	.82
CFSM	.35	1.70	1.96	3.64	1.24	2.42	3.46	1.64	.43	.13	.13	.07
IN.	.40	1.90	2.26	4.20	1.29	2.79	3.87	1.89	.48	.14	.16	.08

e Estimated.

EAST HICKORY CREEK BASIN

03015795 EAST HICKORY CREEK NEAR QUEEN, PA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	23.3	53.8	45.9	55.6	50.2	63.3	57.3	36.5	18.6	7.50	3.58	3.19
MAX	39.4	73.0	51.9	73.9	75.1	77.5	70.3	39.9	28.4	12.5	4.42	5.61
(WY)	1997	1997	1997	1998	1997	1997	1998	1997	1997	1997	1997	1997
MIN	7.12	34.5	39.9	37.3	25.2	49.1	44.3	33.2	8.77	2.55	2.73	1.38
(WY)	1998	1998	1998	1997	1998	1998	1997	1998	1998	1998	1998	1998

SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

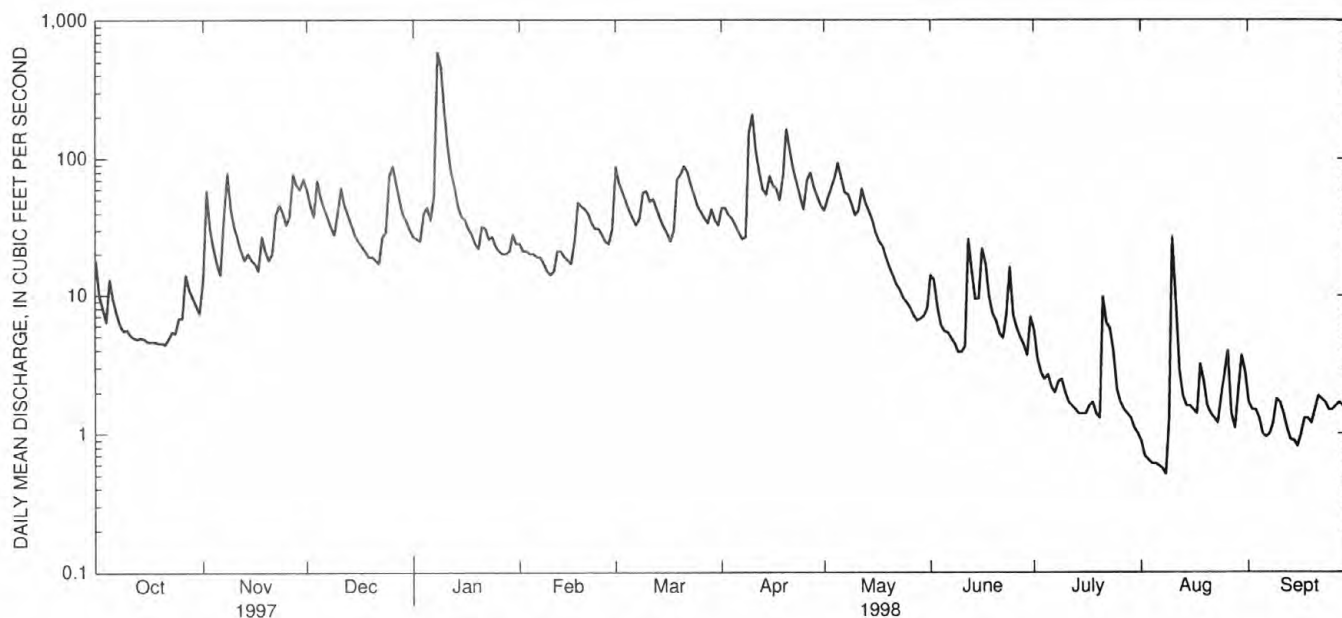
FOR 1998 WATER YEAR

WATER YEARS 1996 - 1998

ANNUAL TOTAL	12261.1	10619.38	
ANNUAL MEAN	33.6	29.1	
HIGHEST ANNUAL MEAN			34.8
LOWEST ANNUAL MEAN			40.5
HIGHEST DAILY MEAN	266	Feb 27	584
LOWEST DAILY MEAN	2.3	Sep 7	.51
ANNUAL SEVEN-DAY MINIMUM	2.5	Sep 4	.60
INSTANTANEOUS PEAK FLOW			a918
INSTANTANEOUS PEAK STAGE			b6.32
INSTANTANEOUS LOW FLOW			.47
ANNUAL RUNOFF (CFSM)	1.65		1.43
ANNUAL RUNOFF (INCHES)	22.47		19.46
10 PERCENT EXCEEDS	71		63
50 PERCENT EXCEEDS	27		19
90 PERCENT EXCEEDS	3.4		1.4

a From rating curve extended above 600 ft³/s.

b From recorded gage height.



October 1, 1997 to September 30, 1998

EAST HICKORY CREEK BASIN

03015795 EAST HICKORY CREEK NEAR QUEEN, PA--Continued
(National Water-Quality Assessment station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1996 to September 1998 (discontinued).

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: October 1996 to September 1998.

INSTRUMENTATION.--Daily record measured and collected at hourly intervals with in-situ probes and electronic data loggers. Water temperature was measured and collected at hourly intervals using an in-situ probe with an electronic data logger.

REMARKS.--All water-quality samples were collected and analyzed by the U.S. Geological Survey. Interruptions in the daily record were due to malfunctions of the equipment. Water temperature data from the in-situ probes oftentimes did not exactly agree with the water temperature of the monthly and storm samples because of the fixed location of the in-situ temperature probes. Additional sites in the (NAWQA) fixed-station network are shown in figure 6 on page 28. An explanation of selected abbreviations used in the water-quality tables are given on pages 29-31.

EXTREMES FOR PERIOD OF DAILY RECORD.--Maximum, 23.5°C, July 29, 1997; minimum, 0.0°C, many days during winter periods.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 22.5°C, June 26, 29, August 5, 15; minimum, 0.0°C, many days during winter periods.

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

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (μS/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	OXYGEN, DIS- SOLVED (MG/L) (00300)	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)
OCT											
28...	1255	11	50	6.8	5.0	724	12.3	14	3.2	1.5	2.0
NOV											
21...	1040	18	45	6.9	1.5	715	10.3	13	2.9	1.4	1.7
DEC											
16...	1105	25	42	6.5	.0	724	9.6	13	3.0	1.4	1.5
JAN											
08...	1525	569	38	5.6	7.5	712	10.6	10	2.3	1.0	.76
09...	0905	635	36	5.6	7.0	713	11.2	10	2.3	1.0	.79
27...	1035	20	42	6.6	.5	729	14.3	12	2.6	1.2	1.5
FEB											
24...	1135	31	44	6.6	3.0	719	12.6	12	2.7	1.3	1.4
MAR											
19...	1020	69	44	6.5	3.0	719	13.0	12	2.6	1.3	1.6
APR											
10...	1325	182	38	6.1	7.0	720	11.7	11	2.6	1.2	1.1
29...	1115	53	40	6.9	7.0	743	12.9	12	2.7	1.3	1.2
MAY											
14...	1110	42	40	6.9	12.0	743	10.1	13	2.8	1.3	1.4
JUN											
23...	1135	5.0	46	6.8	18.5	739	8.6	14	3.2	1.5	2.0
JUL											
27...	1200	1.5	42	7.2	16.0	738	9.1	16	3.7	1.6	2.6
AUG											
27...	1530	1.4	55	7.2	19.5	741	8.2	18	4.1	1.8	3.1
SEP											
09...	1400	1.8	56	7.3	13.0	736	10.1	17	3.9	1.8	3.4

EAST HICKORY CREEK BASIN

03015795 EAST HICKORY CREEK NEAR QUEEN, PA--Continued

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

DATE	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	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, 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)
OCT 28...	1.0	9	7.8	1.7	<.10	5.8	34	<.010	.087	<.015	<.20
NOV 21...	.87	7	8.9	1.5	<.10	6.1	31	<.010	.185	<.020	<.10
DEC 16...	.69	2	9.5	1.4	<.10	6.7	30	<.010	.257	<.020	<.10
JAN 08...	1.0	1	8.9	.88	<.10	4.9	38	<.010	.337	<.020	.28
09...	.87	1	8.5	.85	<.10	5.0	39	<.010	.291	<.020	.24
27...	.74	4	9.5	1.8	<.10	5.8	35	<.010	.248	<.020	<.10
FEB 24...	.73	4	9.4	1.5	<.10	5.8	23	<.010	.258	<.020	<.10
MAR 19...	.69	2	8.5	1.8	<.10	5.3	30	<.010	.295	.028	<.10
APR 10...	.75	2	8.8	1.1	<.10	5.5	31	.060	.421	.059	.13
29...	.74	2	9.4	1.2	<.10	5.7	29	<.010	.196	.043	<.10
MAY 14...	.74	2	10	1.2	<.10	5.8	34	.010	.136	.045	<.10
JUN 23...	.85	7	6.5	1.6	<.10	5.5	36	<.010	.179	<.020	.16
JUL 27...	.90	25	5.5	1.7	<.10	5.1	38	<.010	.179	.032	.16
AUG 27...	.97	16	5.1	2.0	<.10	5.1	33	<.010	.144	.026	.16
SEP 09...	.97	17	4.8	2.2	<.10	4.8	32	<.010	.125	.026	.11

DATE	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N) (00623)	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)	IRON, DIS- SOLVED (MG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (MG/L AS MN) (01056)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS- PENDE TOTAL (MG/L AS C) (00689)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 28...	<.20	<.010	<.010	<.010	250	19	3.0	.30	1	80
NOV 21...	<.10	<.010	<.010	.014	68	21	1.4	<.20	2	60
DEC 16...	<.10	<.010	<.010	<.010	48	18	1.1	<.20	2	67
JAN 08...	.15	.028	<.010	<.010	91	171	3.9	1.2	48	30
09...	.12	.022	<.010	<.010	80	124	3.4	.60	63	42
27...	<.10	<.010	<.010	<.010	43	17	1.0	<.20	1	50
FEB 24...	<.10	<.010	<.010	.015	43	17	1.0	<.20	1	50
MAR 19...	<.10	<.010	<.010	<.010	59	25	1.3	.20	4	60
APR 10...	<.10	.015	<.010	.020	38	53	2.5	.50	14	55
29...	<.10	<.010	<.010	<.010	51	16	1.1	<.20	5	35
MAY 14...	<.10	.024	<.010	<.010	90	17	1.3	.20	3	50
JUN 23...	<.10	<.010	<.010	.010	340	21	2.3	.30	6	76
JUL 27...	.14	.020	<.010	.011	250	22	2.4	.40	3	71
AUG 27...	.11	<.010	<.010	<.010	150	27	3.0	.30	3	69
SEP 09...	<.10	<.010	<.010	<.010	78	16	2.3	<.20	4	60

EAST HICKORY CREEK BASIN

03015795 EAST HICKORY CREEK NEAR QUEEN, PA--Continued

REMARKS.--The following data are for dissolved trace elements in surface water filtered through a 0.45µm filter.

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

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	ALUM- INUM, DIS- SOLVED (µG/L AS AL) (01106)	ANTI- MONY, DIS- SOLVED (µG/L AS SB) (01095)	ARSENIC DIS- SOLVED (µG/L AS AS) (01000)	BARIUM, DIS- SOLVED (µG/L AS BA) (01005)	BERYL- LIUM, DIS- SOLVED (µG/L AS BE) (01010)	CADMIUM DIS- SOLVED (µG/L AS CD) (01025)	CHRO- MIUM, DIS- SOLVED (µG/L AS CR) (01030)	COBALT, DIS- SOLVED (µG/L AS CO) (01035)
SEP 09...	1400	1.8	8.5	<1.0	<1	20	<1.0	<1.0	<1.0	<1.0

DATE	COPPER, DIS- SOLVED (µG/L AS CU) (01040)	LEAD, DIS- SOLVED (µG/L AS PB) (01049)	MANGA- NESE, DIS- SOLVED (µG/L AS MN) (01056)	MOLYB- DENUM, DIS- SOLVED (µG/L AS MO) (01060)	NICKEL, DIS- SOLVED (µG/L AS NI) (01065)	SELE- NIUM, DIS- SOLVED (µG/L AS SE) (01145)	SILVER, DIS- SOLVED (µG/L AS AG) (01075)	URANIUM NATURAL DIS- SOLVED (µG/L AS U) (22703)	ZINC, DIS- SOLVED (µG/L AS ZN) (01090)
SEP 09...	<1.0	<1.0	16	<1.0	<1.0	<1	<1.0	<1.0	1.9

EAST HICKORY CREEK BASIN

03015795 EAST HICKORY CREEK NEAR QUEEN, PA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	12.5	9.5	11.0	7.5	5.5	6.5	5.5	3.5	4.0	.0	.0	.0
2	9.5	7.5	8.5	8.5	7.0	8.0	3.5	2.5	3.0	.0	.0	.0
3	10.5	9.0	9.5	7.0	6.0	6.5	3.5	2.0	2.5	.5	.0	.0
4	12.5	10.5	11.5	6.0	5.0	5.5	4.5	3.5	4.0	3.5	.5	2.5
5	14.0	12.5	13.5	5.5	4.5	5.0	4.0	2.5	3.5	5.0	3.0	4.0
6	14.5	13.0	14.0	5.0	3.5	4.5	2.5	1.0	1.5	6.5	5.0	6.0
7	15.5	14.0	14.5	6.0	4.5	5.0	2.0	.5	1.5	7.5	6.5	7.0
8	15.0	13.5	14.5	6.5	6.0	6.0	2.5	2.0	2.5	8.0	7.5	7.5
9	15.5	13.5	14.5	7.0	6.5	6.5	2.5	1.0	2.0	7.5	5.5	7.0
10	15.0	12.5	14.5	6.5	6.0	6.0	2.5	1.5	2.0	5.5	4.5	5.0
11	12.5	10.5	11.5	6.0	4.5	5.0	3.0	2.5	2.5	4.5	3.0	3.5
12	11.0	8.5	10.0	4.5	3.0	3.5	3.0	2.0	2.5	3.0	2.0	2.5
13	12.5	9.5	11.0	3.0	1.5	2.0	2.0	1.5	1.5	3.5	1.5	3.0
14	12.5	10.5	12.0	1.5	.0	.5	2.0	1.5	1.5	1.5	.0	.5
15	10.5	8.0	9.0	1.5	1.0	1.5	1.5	.5	1.0	2.0	.0	1.0
16	8.5	7.0	8.0	1.5	1.0	1.0	1.0	.0	.5	2.0	2.0	2.0
17	7.5	5.5	6.5	1.0	.0	.5	1.0	.0	.5	2.5	2.0	2.0
18	7.0	5.0	6.0	.0	.0	.0	1.0	.5	.5	2.0	1.5	1.5
19	7.0	5.0	6.0	.0	.0	.0	2.0	.5	1.0	1.5	1.0	1.0
20	6.5	5.0	6.0	1.0	.0	.5	2.0	1.5	2.0	1.0	.0	.5
21	7.0	6.0	6.5	2.5	1.0	2.0	2.0	.5	1.5	.0	.0	.0
22	6.0	4.5	5.0	3.5	2.5	3.0	1.0	.0	.5	.0	.0	.0
23	4.5	4.0	4.0	3.5	3.0	3.5	2.0	1.0	1.5	.5	.0	.0
24	5.5	3.5	4.5	3.0	1.5	2.0	2.5	2.0	2.0	1.0	.5	1.0
25	6.5	5.5	6.0	2.0	.5	1.5	3.5	2.5	3.0	1.0	.5	.5
26	5.5	4.5	5.0	3.5	1.5	2.5	3.5	3.0	3.0	1.0	.0	.5
27	6.0	5.5	6.0	4.0	3.5	3.5	3.0	2.5	3.0	---	---	---
28	5.5	3.5	4.5	5.0	3.5	4.0	2.5	1.0	2.0	2.0	1.0	1.5
29	4.5	3.0	4.0	5.5	4.5	5.0	1.5	.5	1.0	2.0	.5	1.5
30	5.5	3.5	4.5	6.5	5.5	6.0	1.5	.0	1.0	2.0	1.5	2.0
31	5.5	3.5	4.5	---	---	---	.0	.0	.0	1.5	.5	1.0
MONTH	15.5	3.0	8.6	8.5	.0	3.6	5.5	.0	1.9	8.0	.0	2.2

EAST HICKORY CREEK BASIN
03015795 EAST HICKORY CREEK NEAR QUEEN, PA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	.5	.0	.0	5.5	4.5	5.0	12.5	10.5	11.5	11.5	10.0	11.0
2	1.5	.0	.5	5.0	4.0	4.5	10.5	7.5	9.0	11.5	10.5	11.0
3	2.0	1.5	1.5	4.0	3.0	3.5	7.5	7.0	7.0	11.0	10.0	10.5
4	1.5	1.0	1.0	3.5	3.0	3.0	7.0	5.5	6.0	11.5	9.5	10.5
5	1.5	1.0	1.0	3.0	2.5	2.5	7.0	4.5	5.5	11.5	9.5	10.5
6	1.0	.0	.5	3.5	2.5	3.0	7.0	3.5	5.5	12.5	10.0	11.0
7	.5	.0	.0	3.5	1.5	2.5	8.0	3.5	6.0	13.5	9.5	12.0
8	.5	.0	.0	4.0	2.5	3.0	9.0	7.0	8.0	13.0	12.0	12.5
9	.5	.0	.5	6.5	4.0	5.0	8.5	6.5	7.5	13.5	11.0	12.0
10	1.0	.0	.5	6.0	.5	3.0	8.5	5.5	6.5	13.0	12.0	12.5
11	2.5	1.0	1.5	.5	.0	.0	8.0	4.5	6.0	12.0	11.5	12.0
12	2.5	2.0	2.5	.0	.0	.0	8.5	4.5	6.5	12.5	11.0	11.5
13	2.0	1.0	1.5	.0	.0	.0	10.0	5.5	8.0	15.0	11.0	13.0
14	1.0	.0	.5	.0	.0	.0	9.5	8.0	8.5	16.0	12.0	14.0
15	.0	.0	.0	1.0	.0	.5	11.5	8.5	9.5	17.0	12.5	15.0
16	.0	.0	.0	1.0	.0	.0	10.0	9.0	9.5	16.5	13.5	15.5
17	2.0	.0	1.5	2.5	.0	1.0	10.0	7.5	9.0	17.0	14.5	16.0
18	3.5	2.0	3.0	2.5	2.0	2.5	9.5	5.5	7.5	16.5	13.0	15.0
19	3.5	3.0	3.5	3.5	2.5	3.0	8.5	6.5	7.5	17.5	13.5	15.5
20	4.0	3.0	3.5	4.5	3.5	4.0	9.5	6.0	7.5	18.0	15.5	17.0
21	3.5	3.0	3.5	4.5	3.0	3.5	10.0	6.0	8.0	17.5	14.0	15.0
22	3.5	3.0	3.5	3.0	2.0	2.5	9.5	7.0	8.5	14.0	11.5	12.5
23	3.5	2.5	3.0	3.0	.5	2.0	9.5	7.5	8.5	13.0	10.0	11.5
24	3.5	3.0	3.0	3.0	1.5	2.0	10.5	6.5	8.5	13.5	10.5	12.0
25	3.5	2.0	3.0	4.5	.5	2.5	10.5	7.0	9.0	14.0	12.5	13.5
26	5.0	3.0	4.0	8.0	4.0	6.0	10.0	6.5	8.0	15.5	13.5	14.5
27	5.0	3.5	4.0	9.5	6.0	8.0	9.0	5.5	7.0	15.0	13.0	14.0
28	5.0	4.0	4.5	12.0	8.0	10.0	9.5	5.5	7.5	16.5	13.5	15.0
29	---	---	---	12.5	10.0	11.0	10.0	6.0	8.0	17.0	15.0	16.0
30	---	---	---	13.0	9.5	11.0	11.0	9.0	10.0	18.5	16.5	17.5
31	---	---	---	13.5	10.5	12.0	---	---	---	19.0	17.0	18.0
MONTH	5.0	.0	1.8	13.5	.0	3.8	12.5	3.5	7.8	19.0	9.5	13.5

EAST HICKORY CREEK BASIN

03015795 EAST HICKORY CREEK NEAR QUEEN, PA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	17.5	14.0	15.5	20.0	18.0	19.0	20.0	11.0	15.5	18.0	13.5	15.5
2	15.5	12.5	14.0	19.0	16.0	17.5	21.0	11.5	16.0	17.0	13.0	15.5
3	15.0	12.0	13.0	18.5	15.0	17.0	20.0	13.0	17.0	16.0	10.0	13.5
4	12.5	10.5	11.5	17.5	16.5	17.0	22.0	16.0	18.5	18.0	10.0	13.5
5	11.5	10.0	11.0	19.0	16.5	18.0	22.5	17.5	19.5	18.5	9.5	14.0
6	11.0	9.5	10.5	18.5	15.5	17.0	---	---	---	20.0	11.5	16.0
7	11.0	10.0	10.5	18.0	16.5	17.5	---	---	---	17.0	12.5	15.5
8	12.0	10.0	11.0	19.0	17.5	18.0	---	---	---	13.0	9.5	11.5
9	11.5	9.0	10.5	19.5	17.5	18.5	---	---	---	13.0	10.5	12.0
10	12.0	11.0	11.5	19.0	15.0	17.5	20.5	19.5	20.0	14.0	8.5	11.5
11	14.0	12.0	13.0	18.0	12.5	15.5	20.5	19.0	19.5	16.0	8.5	12.5
12	17.0	14.0	15.5	19.5	12.0	15.5	19.5	17.5	19.0	16.5	11.0	14.0
13	17.0	15.5	16.0	21.0	13.0	16.5	19.5	15.0	17.5	18.0	13.0	15.5
14	15.5	14.5	15.0	20.0	14.5	17.5	20.0	15.5	18.0	19.5	13.5	16.5
15	15.0	14.0	14.5	20.5	15.5	18.0	22.5	18.0	19.5	19.5	16.5	18.0
16	16.5	14.5	15.5	22.0	17.5	19.5	22.0	17.5	20.0	19.0	17.5	18.0
17	17.0	15.5	16.5	21.0	17.5	19.5	22.0	19.0	20.0	18.5	14.0	17.0
18	18.0	16.0	17.0	19.5	15.5	17.5	19.0	17.0	18.5	19.0	11.0	15.0
19	17.5	16.5	17.0	20.5	14.0	17.5	17.5	13.5	16.0	20.5	13.5	16.5
20	19.5	17.0	18.0	22.0	17.5	20.0	19.0	10.0	14.0	19.5	16.5	18.0
21	19.0	17.0	18.0	20.0	16.5	18.5	18.5	13.5	16.5	18.5	17.0	18.0
22	19.0	18.0	18.5	20.5	19.0	20.0	---	---	---	18.0	13.5	16.0
23	19.5	18.0	18.5	21.0	19.0	20.0	22.0	18.0	19.5	15.5	8.5	11.5
24	20.5	18.5	19.5	19.0	16.5	18.0	20.5	17.5	19.0	12.5	6.0	10.0
25	21.5	19.0	20.5	17.5	15.0	16.5	19.5	18.5	19.0	14.0	11.5	12.5
26	22.5	20.5	21.5	19.0	14.5	16.5	21.5	17.0	19.0	17.5	12.5	15.0
27	21.0	20.0	20.5	18.5	12.5	16.0	---	---	---	18.0	14.5	16.5
28	21.5	19.5	20.5	21.0	15.0	18.0	---	---	---	16.5	11.0	14.5
29	22.5	20.0	21.0	22.0	16.0	19.0	19.0	17.5	18.5	14.5	8.0	11.5
30	21.0	19.0	20.5	19.5	14.0	17.0	19.0	18.0	18.5	16.0	11.5	13.5
31	---	---	---	20.5	14.0	17.5	18.5	15.5	18.0	---	---	---
MONTH	22.5	9.0	15.9	22.0	12.0	17.8	22.5	10.0	18.2	20.5	6.0	14.6

OHIO RIVER MAIN STEM

03016000 ALLEGHENY RIVER AT WEST HICKORY, PA

LOCATION.--Lat 41°34'15", long 79°24'29", Forest County, Hydrologic Unit 05010003, on right bank at downstream side of bridge on State Highway 127 at West Hickory, 0.6 mi upstream from Siggins Run, 0.8 mi downstream from East Hickory Creek, at mile 158.9.

DRAINAGE AREA.--3,660 mi².

PERIOD OF RECORD.--October 1941 to current year.

REVISED RECORDS.--WRD PA-96-3: 1995(M).

GAGE.--Water-stage recorder. Datum of gage is 1,059.90 ft above sea level. Prior to Dec. 12, 1941, nonrecording gage at same site and datum.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by Allegheny Reservoir 39 mi upstream since October 1965 and since 1941 by Chautauqua Lake. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6480	2920	13300	7420	6700	8280	6630	9610	1800	3980	2630	2460
2	6980	4140	12500	7080	6450	8990	6640	6360	1800	4940	2870	2400
3	6670	4830	11800	6090	6210	9890	6230	10100	1780	4800	2900	2570
4	6170	5550	12200	9100	5120	9390	5860	9100	1690	4600	2860	2570
5	5290	5360	13100	15600	4920	8960	5440	7040	1640	4260	2850	2530
6	5170	4270	15500	18900	4690	8710	5020	6300	1630	2400	2840	2480
7	4950	3230	14900	21200	4530	8530	4660	7880	1590	2290	2830	2470
8	4570	5520	14400	36700	4390	8420	4380	10200	1560	2280	2790	2370
9	4070	5360	14000	34700	4310	8750	5620	11000	2080	2720	2770	2380
10	3630	6200	13900	29300	4250	8280	14000	9960	2150	4210	3130	2340
11	3160	6570	13200	26200	4220	7050	15700	6850	2440	4620	3040	2270
12	3010	6560	10600	26800	4530	6530	14300	12200	2810	3350	2780	2270
13	2960	6230	8580	24400	5230	6190	12400	8810	2790	2360	2590	2220
14	2920	6240	7220	25300	4870	5800	11200	5360	2200	1950	2450	2170
15	2870	6240	6940	26100	4300	4580	11200	7050	2160	1870	2440	2190
16	2820	6330	6710	24800	3960	4270	9840	14000	2030	2450	2550	2190
17	2780	6340	6650	23500	4100	3110	10900	13900	2040	2510	2520	2440
18	2750	6290	6280	22400	6420	3860	9230	12900	1840	2780	2560	2620
19	2720	6260	5160	21300	7290	6340	8890	10400	1730	2770	2710	2750
20	2700	6420	5170	19500	7120	8450	14200	6650	1660	2790	2760	2910
21	2670	6490	5340	16500	7260	9480	17000	4610	1620	2850	2790	2760
22	2670	7800	5300	15900	7380	9140	19300	3640	1600	2810	2760	2590
23	2690	9880	5440	15700	7850	8320	21400	3550	1560	3090	2690	2510
24	3240	10200	5940	15800	7540	8660	20100	3480	2120	3530	2690	2460
25	3340	11300	7480	15700	7290	8050	16600	3420	2190	3520	2760	2450
26	3420	11000	10100	14700	7090	7680	11700	3340	2430	3080	2660	2450
27	3240	13700	10700	12400	6900	6900	10200	2060	2430	2890	2620	2460
28	4270	13900	10200	10600	6870	6770	10600	1520	2560	2780	2570	2500
29	4850	13400	9340	7280	---	7100	12500	1420	2770	2720	2590	2450
30	4350	13400	8730	6820	---	7180	11900	1640	3580	2680	2590	2430
31	3170	---	7990	7080	---	6840	---	1700	---	2420	2520	---
TOTAL	120580	221930	298670	564870	161790	230500	333640	216050	62280	96300	84110	73660
MEAN	3890	7398	9635	18220	5778	7435	11120	6969	2076	3106	2713	2455
MAX	6980	13900	15500	36700	7850	9890	21400	14000	3580	4940	3130	2910
MIN	2670	2920	5160	6090	3960	3110	4380	1420	1560	1870	2440	2170
CFSM	1.06	2.02	2.63	4.98	1.58	2.03	3.04	1.90	.57	.85	.74	.67
IN.	1.23	2.26	3.04	5.74	1.64	2.34	3.39	2.20	.63	.98	.85	.75

OHIO RIVER MAIN STEM

03016000 ALLEGHENY RIVER AT WEST HICKORY, PA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1942 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	4168	6690	8704	8724	8121	12300	11820	7595	4813	3080	2278	2722
MAX	15890	17070	17950	21260	18970	29740	25970	20020	14730	15430	10160	12160
(WY)	1991	1993	1978	1952	1990	1945	1947	1943	1989	1972	1977	1977
MIN	324	659	581	844	1725	3378	2255	1333	1430	597	490	449
(WY)	1964	1961	1961	1961	1963	1969	1946	1985	1949	1955	1954	1955

SUMMARY STATISTICS

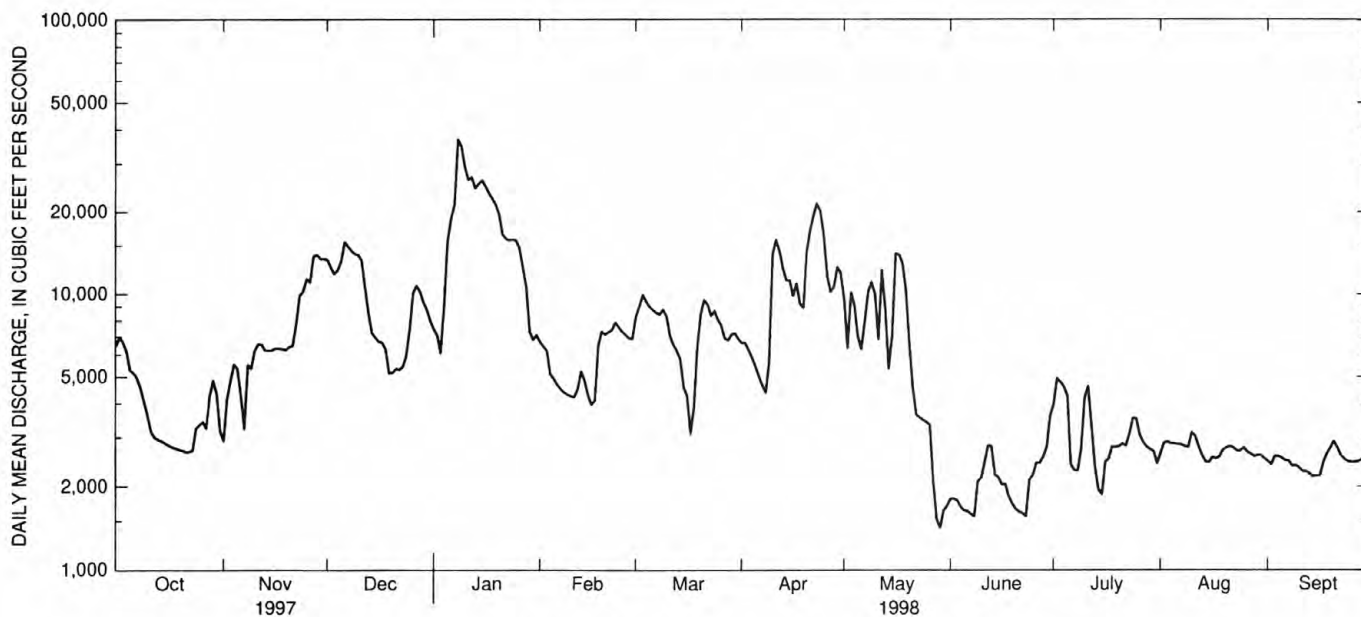
FOR 1997 CALENDAR YEAR

FOR 1998 WATER YEAR

WATER YEARS 1942 - 1998

ANNUAL TOTAL	2487000	2464380	
ANNUAL MEAN	6814	6752	6744
HIGHEST ANNUAL MEAN			9547
LOWEST ANNUAL MEAN			4455
HIGHEST DAILY MEAN	28400	Feb 27	36700
LOWEST DAILY MEAN	2010	Aug 22	1420
ANNUAL SEVEN-DAY MINIMUM	2270	Jul 19	1670
INSTANTANEOUS PEAK FLOW			43100
INSTANTANEOUS PEAK STAGE			11.19
ANNUAL RUNOFF (CFSM)	1.86		1.84
ANNUAL RUNOFF (INCHES)	25.28		25.05
10 PERCENT EXCEEDS	14000	13900	15500
50 PERCENT EXCEEDS	5550	5120	4400
90 PERCENT EXCEEDS	2470	2290	1050

a Maximum gage height, 17.83 ft., Jan. 25, 1964 (backwater from ice).



October 1, 1997 to September 30, 1998

ALLEGHENY RIVER BASIN

LAKES AND RESERVOIRS IN ALLEGHENY RIVER BASIN

03013946 CHAUTAUQUA LAKE.--Lat 42°09'23", long 79°23'39", Chautauqua County, N.Y., Hydrologic Unit 05010002, 6 ft east of lake shore, 30 ft south of the intersection of Pauline Ave. and Lakeside Ave., 950 ft southeast of the ferry landing, at Bemus Point, N.Y. DRAINAGE AREA, 189 mi². PERIOD OF RECORD, November 1949 to current year. GAGE, water-stage recorder. Datum of gage is sea level. Prior to Dec. 21, 1956, non-recording gage at site near mouth of Big Inlet at datum 1,300.00 ft above sea level. Dec. 21, 1956 to Sept. 30, 1975, water-stage recorder at site at outlet of Muddy Creek at datum 1,300.00 ft above sea level.

Lake is regulated at outlet by Warner Dam. Capacity of lake not determined; area of water surface, 20.98 mi². Figures of change in contents computed from surface area multiplied by change in stage.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 1,311.23 ft, Mar. 5, 1976; minimum, 1,306.29 ft, Nov. 17, 1953.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 1,310.40 ft, Jan. 10; minimum, 1,307.20 ft, Mar. 17.

03012520 ALLEGHENY RESERVOIR.--Lat 41°50'17", long 79°00'15", Warren County, Hydrologic Unit 05010001, in Allegheny National Forest, at control house at Kinzua Dam on Allegheny River, 3 mi upstream from Hemlock Run, and 7 mi east of Warren. DRAINAGE AREA, 2,180 mi². PERIOD OF RECORD, October 1965 to current year. Prior to October 1966 published as Allegheny River Reservoir. GAGE, water-stage recorder. Datum of gage is sea level. Reservoir is formed by a concrete gravity dam with a gated spillway and with an earthfill section, rockfaced, at right side. Storage began during construction and reservoir acted as retention basin from October 1965 to December 1966. Dam became operational in January 1967. Reservoir first reached minimum pool elevation during period of construction. Capacity, 1,180,000 acre-ft between elevations 1,205.0 ft (invert of low level sluices) and 1,365.0 ft (full pool). Dead storage is 128 acre-ft. Minimum pool elevation, 1,240 ft (capacity, 24,240 acre-ft). Winter low-water pool elevation, 1,292 ft (capacity, 239,780 acre-ft). Summer low-water pool elevation, 1,328 ft (capacity, 572,610 acre-ft). Storage to summer pool normally occurs during period April to May. Depletion of low-water storage for augmenting flow in Allegheny River normally occurs during period July to December. Figures given herein represent total contents. Reservoir is used for flood control, low-flow augmentation and water-quality control of Allegheny River and downstream rivers, power generation, and recreation. Records furnished by U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,121,120 acre-ft June 27, 1972 (elevation, 1,362.20 ft); minimum (after first filling), 113,310 acre-ft Jan. 26, 1968 (elevation 1,268.68 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 647,890 acre-ft May 15 (elevation, 1,333.95 ft); minimum, 307,860 acre-ft Feb. 12 (elevation, 1,301.37 ft).

MONTHEND ELEVATION IN FEET ABOVE SEA LEVEL, AND CONTENTS AT 2400 HRS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

Date	Elevation (feet)	Contents (acre- feet)	Change in contents (equivalent in ft ³ /s)	Elevation (feet)	Contents (acre- feet)	Change in contents (equivalent in ft ³ /s)
<u>03013946 Chautauqua Lake</u>				<u>03012520 Allegheny Reservoir</u>		
Sept. 30	1,308.64	-	-	1,316.58	446,170	-
Oct. 31	1,307.99	-	-141	1,313.42	414,700	-512
Nov. 30	1,307.80	-	-43	1,313.76	418,010	+56
Dec. 31	1,307.76	-	-8.7	1,305.00	337,890	-1,300
CAL YR 1997	-	-	-2.8	-	-	+60
Jan. 31	1,308.09	-	+72	1,305.15	332,340	-253
Feb. 28	1,307.43	-	-159	1,307.86	362,890	+730
Mar. 31	1,307.89	-	+100	1,325.03	537,580	+2,840
Apr. 30	1,308.36	-	+106	1,328.71	581,250	+734
May 31	1,308.12	-	-52	1,328.86	583,080	+30
June 30	1,308.12	-	0	1,327.99	572,490	-178
July 31	1,308.09	-	-6.5	1,325.42	542,100	-494
Aug. 31	1,307.83	-	-57	1,318.17	462,540	-1,290
Sept. 30	1,307.53	-	-67	1,308.57	369,270	-1,570
WTR YR 1998	-	-	-21	-	-	-106

OIL CREEK BASIN

03020500 OIL CREEK AT ROUSEVILLE, PA

LOCATION.--Lat 41°28'54", long 79°41'44", Venango County, Hydrologic Unit 05010003, on right bank 100 ft downstream from bridge on State Highway 8, about 300 ft upstream from Cherrytree Run, and 1 mi north of Rouseville. Records include flow of Cherrytree Run.

DRAINAGE AREA.--300 mi², including that of Cherrytree Run.

PERIOD OF RECORD.--June 1932 to current year.

REVISED RECORDS.--WSP 743: Drainage area. WSP 1053: 1936-37(M), 1943(M).

GAGE.--Water-stage recorder. Datum of gage is 1,028.32 ft above sea level. Prior to June 9, 1941, nonrecording gage at same site and datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a base discharge of 5,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 9	1200	*8,370	*8.89	No other peak greater than base discharge.			

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	942	256	776	e220	489	906	579	597	214	213	41	54
2	485	1160	581	e290	465	743	764	1050	192	124	40	46
3	271	653	474	e420	457	576	595	2390	188	92	37	41
4	202	478	988	e2200	429	526	521	1260	144	83	37	39
5	203	357	904	2270	393	510	469	1060	130	78	36	37
6	224	311	665	1290	346	481	408	1190	128	73	35	35
7	168	286	571	1160	320	444	367	864	122	69	34	40
8	140	714	521	6110	306	450	349	801	117	69	32	37
9	121	534	488	7550	292	845	1170	802	111	73	30	47
10	109	396	675	3920	284	987	3420	643	111	70	88	47
11	100	327	1380	1750	287	716	1420	618	117	62	134	41
12	94	282	971	1170	396	605	915	1120	331	57	72	37
13	92	247	737	982	561	568	713	817	368	55	54	34
14	91	283	605	806	408	550	638	591	298	53	46	32
15	86	321	513	691	308	502	1350	493	210	52	43	33
16	83	320	450	704	303	446	1550	428	187	52	40	35
17	80	305	416	617	518	467	2270	379	169	74	38	38
18	79	274	377	555	1580	745	1230	331	146	59	47	35
19	76	353	347	501	1110	1890	1190	297	129	48	49	32
20	75	319	393	457	861	1930	3120	270	121	51	41	32
21	76	437	412	400	771	1600	1860	247	109	69	38	32
22	77	818	363	394	634	1440	1150	230	102	82	37	30
23	119	986	662	422	551	966	910	215	102	103	35	29
24	130	792	860	579	526	830	750	203	144	106	41	29
25	123	572	1630	498	474	709	628	195	100	73	49	30
26	178	514	2010	420	410	659	962	186	91	60	54	30
27	536	1270	1200	391	374	595	1640	173	84	54	46	33
28	740	1030	828	386	369	523	908	161	80	52	39	39
29	460	972	e560	423	---	759	721	154	78	48	40	32
30	303	849	e420	792	---	669	639	154	96	45	73	30
31	228	---	e310	653	---	542	---	160	---	43	77	---
TOTAL	6691	16416	22087	39021	14222	24179	33206	18079	4519	2242	1503	1086
MEAN	216	547	712	1259	508	780	1107	583	151	72.3	48.5	36.2
MAX	942	1270	2010	7550	1580	1930	3420	2390	368	213	134	54
MIN	75	247	310	220	284	444	349	154	78	43	30	29
CFSM	.72	1.82	2.37	4.20	1.69	2.60	3.69	1.94	.50	.24	.16	.12
IN.	.83	2.04	2.74	4.84	1.76	3.00	4.12	2.24	.56	.28	.19	.13

e Estimated.

OIL CREEK BASIN

03020500 OIL CREEK AT ROUSEVILLE, PA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1933 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	262	521	691	691	737	1113	937	592	389	228	174	204
MAX	1260	1560	1784	2385	2124	2574	1958	1706	1491	896	786	1304
(WY)	1991	1986	1978	1937	1976	1936	1940	1953	1989	1987	1980	1990
MIN	34.5	65.0	80.9	108	158	407	266	129	75.2	38.3	38.8	34.5
(WY)	1964	1992	1961	1984	1987	1969	1935	1934	1934	1934	1934	1934

SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

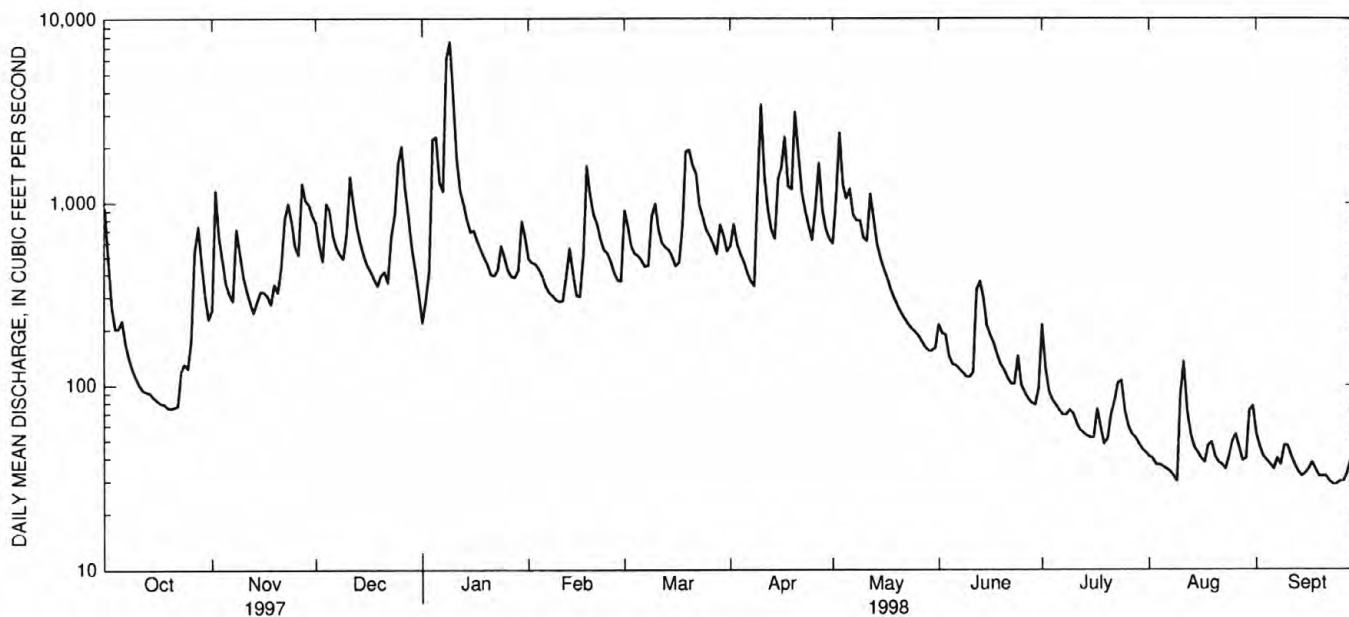
FOR 1998 WATER YEAR

WATER YEARS 1933 - 1998

ANNUAL TOTAL	201218	183251	
ANNUAL MEAN	551	502	544
HIGHEST ANNUAL MEAN			746
LOWEST ANNUAL MEAN			303
HIGHEST DAILY MEAN	4550	Feb 27	7550
LOWEST DAILY MEAN	51	Sep 8,9	29
ANNUAL SEVEN-DAY MINIMUM	56	Sep 4	30
INSTANTANEOUS PEAK FLOW			8370
INSTANTANEOUS PEAK STAGE			8.89
INSTANTANEOUS LOW FLOW			27
ANNUAL RUNOFF (CFSM)	1.84	1.67	1.81
ANNUAL RUNOFF (INCHES)	24.95	22.72	24.63
10 PERCENT EXCEEDS	1140	1110	1240
50 PERCENT EXCEEDS	398	331	297
90 PERCENT EXCEEDS	76	40	63

a From rating curve extended above 15,000 ft³/s.

b Result of upstream pumping.



October 1, 1997 to September 30, 1998

FRENCH CREEK BASIN

03021350 FRENCH CREEK NEAR WATTSBURG, PA

LOCATION.--Lat 42°00'55", long 79°46'58", Erie County, Hydrologic Unit 05010004, on right bank at downstream side of bridge on Tanner Road, 1,200 ft east of State Highway 74, 1.1 mi west of Pennsylvania-New York border, 1.5 mi northeast of Wattsburg, and 2.4 mi above confluence with West Branch French Creek.

DRAINAGE AREA.--92.0 mi².

PERIOD OF RECORD.--October 1974 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,304.84 ft above sea level (U.S. Army Corps of Engineers bench mark).

REMARKS.--Records good except for estimated daily discharges, which are fair. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a base discharge of 2,500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 4	2000	3,500	8.99	Apr. 10	1000	2,640	8.04
Jan. 8	1300	*4,210	*a9.70	Apr. 20	1500	2,530	7.92

a From peak-stage indicator.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	668	123	398	e115	144	333	216	128	40	40	10	6.1
2	225	414	252	e140	133	280	267	184	28	27	9.8	6.3
3	121	278	190	e270	137	181	269	301	27	20	8.8	6.2
4	80	182	500	e2700	119	158	204	205	24	16	8.3	5.8
5	265	130	376	2290	99	152	160	182	21	14	7.9	5.5
6	179	101	265	1760	84	149	141	159	20	17	8.0	5.3
7	99	93	218	1530	78	136	122	155	19	14	7.7	5.5
8	70	156	e210	3630	75	199	104	123	19	141	7.1	6.8
9	52	142	e200	2230	76	407	370	116	18	239	6.9	7.5
10	45	119	e240	1070	91	367	1880	93	17	58	7.9	7.6
11	41	131	e280	470	129	219	441	105	18	34	11	7.0
12	35	119	276	288	515	173	224	186	22	25	13	6.3
13	31	118	256	262	398	160	166	127	42	20	11	6.0
14	31	143	239	204	191	140	158	87	33	16	9.3	5.7
15	30	158	214	189	125	142	448	69	28	14	8.4	5.3
16	28	165	208	177	111	140	631	60	25	13	7.5	6.2
17	27	160	199	152	449	138	981	52	23	17	7.3	6.6
18	25	153	190	141	1390	306	458	44	22	13	8.4	5.7
19	24	151	189	124	631	1110	465	40	19	11	10	5.9
20	24	164	216	119	356	1020	2180	36	17	16	12	8.2
21	25	215	209	105	284	817	778	33	15	31	9.5	7.8
22	34	469	183	102	234	511	329	31	13	24	8.5	6.9
23	45	409	361	112	190	322	228	28	13	39	7.6	6.6
24	65	313	389	155	165	253	180	27	13	56	9.4	6.0
25	74	222	773	134	141	254	143	26	12	32	9.9	6.5
26	62	418	905	114	126	584	285	27	11	24	8.1	7.2
27	453	1050	496	100	116	531	439	24	11	19	7.0	8.0
28	427	506	345	97	118	278	211	22	11	16	6.6	7.1
29	294	432	e230	105	---	607	157	21	12	13	7.2	6.5
30	197	430	e170	263	---	319	138	19	38	12	7.3	6.0
31	135	---	e130	198	---	206	---	25	---	11	6.7	---
TOTAL	3911	7664	9307	19346	6705	10592	12773	2735	631	1042	268.1	194.1
MEAN	126	255	300	624	239	342	426	88.2	21.0	33.6	8.65	6.47
MAX	668	1050	905	3630	1390	1110	2180	301	42	239	13	8.2
MIN	24	93	130	97	75	136	104	19	11	11	6.6	5.3
CFSM	1.37	2.78	3.26	6.78	2.60	3.71	4.63	.96	.23	.37	.09	.07
IN.	1.58	3.10	3.76	7.82	2.71	4.28	5.16	1.11	.26	.42	.11	.08

e Estimated.

FRENCH CREEK BASIN

03021350 FRENCH CREEK NEAR WATTSBURG, PA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1975 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	168	321	314	258	314	444	326	148	127	70.2	80.9	125
MAX	375	669	547	624	792	779	627	409	477	334	272	563
(WY)	1982	1986	1978	1998	1976	1979	1994	1984	1986	1986	1977	1977
MIN	13.3	31.0	81.2	79.3	75.9	191	157	38.2	14.6	13.1	5.93	4.84
(WY)	1992	1992	1990	1977	1987	1981	1976	1985	1991	1995	1991	1995

SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

FOR 1998 WATER YEAR

WATER YEARS 1975 - 1998

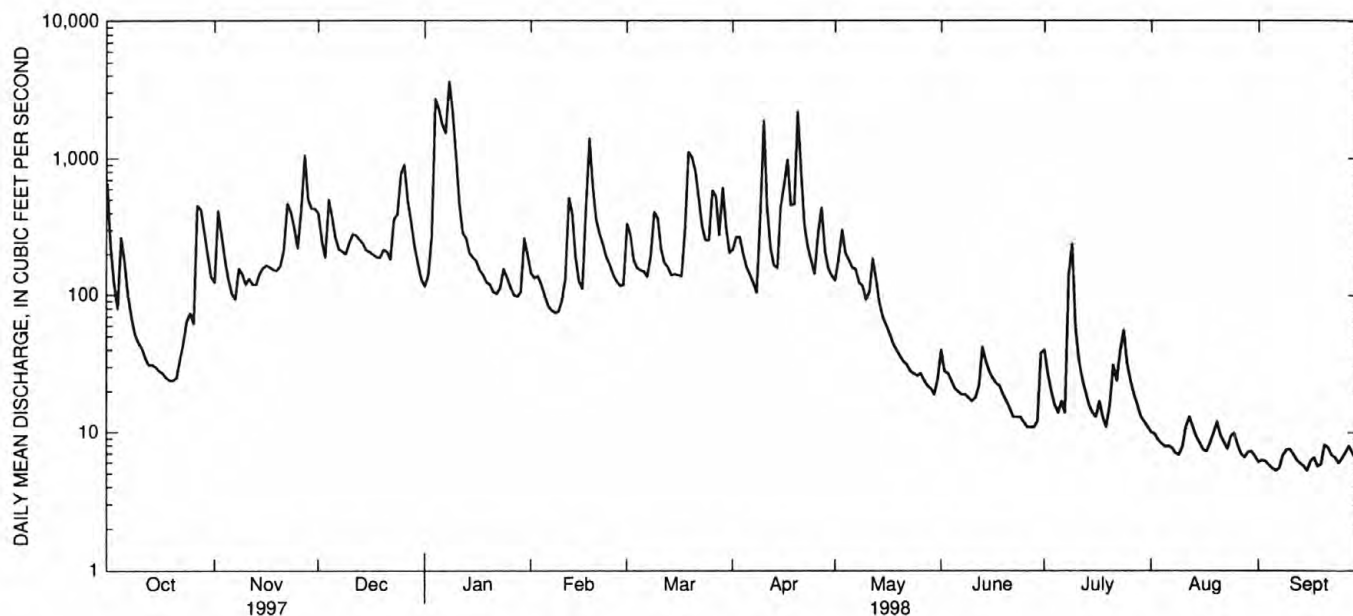
ANNUAL TOTAL	89638	75168.2	
ANNUAL MEAN	246	206	224
HIGHEST ANNUAL MEAN			289
LOWEST ANNUAL MEAN			143
HIGHEST DAILY MEAN	2630	Feb 27	3630
LOWEST DAILY MEAN	13	Aug 2	5.3
ANNUAL SEVEN-DAY MINIMUM	a14	Jul 30	5.8
INSTANTANEOUS PEAK FLOW			4210
INSTANTANEOUS PEAK STAGE			c9.70
INSTANTANEOUS LOW FLOW			5.0
ANNUAL RUNOFF (CFSM)	2.67		2.24
ANNUAL RUNOFF (INCHES)	36.24		30.39
10 PERCENT EXCEEDS	533		444
50 PERCENT EXCEEDS	151		118
90 PERCENT EXCEEDS	23		7.6

a Computed using estimated discharges.

b From rating curve extended above 4,400 ft³/s.

c From peak-stage indicator.

e Estimated



October 1, 1997 to September 30, 1998

FRENCH CREEK BASIN

03023100 FRENCH CREEK AT MEADVILLE, PA

LOCATION.--Lat 41°37'57", long 80°09'35", Crawford County, Hydrologic Unit 05010004, on left bank 30 ft upstream from bridge on Mercer Street at Meadville, 300 ft downstream from Mill Run, 2,600 ft downstream from Cussewago Creek, at mile 30.5.

DRAINAGE AREA.--788 mi².

PERIOD OF RECORD.--October 1988 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,058.83 ft above sea level (U.S. Army Corps of Engineers bench mark). Prior to October 27, 1989, water-stage recorder at site 2,300 ft upstream at different datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. Flow regulated beginning October 1971 by Union City Reservoir 43 mi upstream, serving as a retarding basin, and Woodcock Creek Lake 9.0 mi upstream. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge 25,800 ft³/s April 1947, gage height, 17.05 ft; maximum gage height 17.60 ft, January 1959 (backwater from ice), site and datum then in use.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2230	1190	2500	e1700	1710	1180	1910	1890	249	135	77	77
2	1900	1480	2220	e1650	1460	1490	2150	2810	287	177	75	74
3	1450	1610	1950	e1950	1380	1380	2000	4510	280	155	81	69
4	1190	1460	2340	5440	1280	1280	1740	3640	247	132	79	67
5	1000	1260	2710	7230	1130	1250	1530	3080	230	116	77	63
6	983	1040	2400	6850	975	1230	1330	2980	212	109	76	63
7	954	813	2160	6200	839	1180	1110	2390	201	106	74	69
8	741	766	2020	10400	787	1170	924	1750	191	101	81	85
9	532	897	1950	13100	755	1600	1500	1480	184	99	80	80
10	423	896	2280	12800	740	2090	4130	1310	178	326	107	61
11	373	803	3430	10200	775	1980	3840	1130	176	271	96	62
12	347	795	3270	7620	1040	1680	2900	1370	243	168	93	70
13	328	779	2930	5580	1720	1460	2150	1590	310	132	95	66
14	308	800	2530	4300	1750	1390	1850	1260	407	112	90	62
15	291	936	2110	3580	1470	1280	2630	956	472	101	76	60
16	275	1080	1850	3180	1210	1190	4190	782	393	92	70	60
17	261	1140	1690	2840	1220	1190	5860	664	388	88	74	58
18	258	1090	1560	2520	2440	1750	4870	578	307	83	78	56
19	253	1070	1460	2310	2770	3790	3810	516	252	88	75	61
20	243	1130	1560	2180	2540	4820	5900	454	219	86	73	60
21	226	1300	1660	2000	2240	4470	5810	406	186	87	71	58
22	210	1810	1560	1840	1990	4050	4250	369	171	96	71	55
23	254	2410	2040	1850	1800	3210	3350	341	158	135	70	59
24	329	2310	2800	2100	1630	2700	2630	320	149	220	78	59
25	409	2030	3750	2040	1470	2420	2210	302	142	222	81	56
26	549	1880	5070	1760	1310	2310	2390	294	136	181	82	55
27	1040	2680	4360	1540	1130	2220	3420	281	127	139	88	57
28	2170	2870	3470	1380	992	2060	2880	265	120	117	83	59
29	2040	2740	2730	1300	---	2430	2380	251	113	100	84	60
30	1720	2620	2270	1780	---	2450	2070	233	121	89	98	59
31	1430	---	e1900	2000	---	2080	---	239	---	81	86	---
TOTAL	24717	43685	76530	131220	40553	64780	87714	38441	6849	4144	2519	1900
MEAN	797	1456	2469	4233	1448	2090	2924	1240	228	134	81.3	63.3
MAX	2230	2870	5070	13100	2770	4820	5900	4510	472	326	107	85
MIN	210	766	1460	1300	740	1170	924	233	113	81	70	55
CFSM	1.01	1.85	3.13	5.37	1.84	2.65	3.71	1.57	.29	.17	.10	.08
IN.	1.17	2.06	3.61	6.19	1.91	3.06	4.14	1.81	.32	.20	.12	.09

e Estimated.

03023100 FRENCH CREEK AT MEADVILLE, PA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1185	2070	2065	2642	2125	2609	2454	1451	888	489	403	841
MAX	3181	3205	3039	4233	4190	4059	4023	2998	2659	1337	1291	2786
(WY)	1991	1997	1991	1998	1990	1997	1994	1996	1989	1992	1994	1990
MIN	104	154	786	834	757	1700	1556	451	155	134	81.3	52.6
(WY)	1992	1992	1990	1994	1993	1990	1995	1993	1991	1998	1998	1991

SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

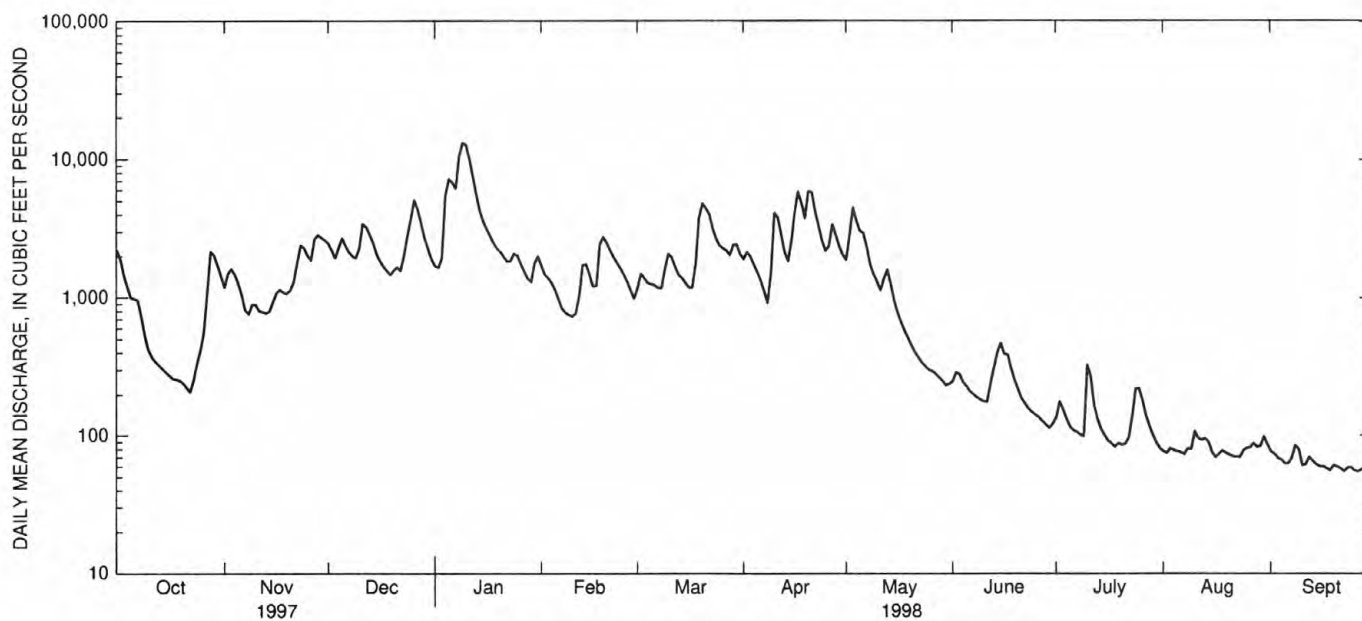
FOR 1998 WATER YEAR

WATER YEARS 1989 - 1998

ANNUAL TOTAL	598626	523052	
ANNUAL MEAN	1640	1433	1598
HIGHEST ANNUAL MEAN			1982
LOWEST ANNUAL MEAN			1040
HIGHEST DAILY MEAN	8960	Feb 28	13100
LOWEST DAILY MEAN	89	Aug 10, 11	55
ANNUAL SEVEN-DAY MINIMUM	103	Aug 6	57
INSTANTANEOUS PEAK FLOW			14000
INSTANTANEOUS PEAK STAGE			b15.04
INSTANTANEOUS LOW FLOW			53
ANNUAL RUNOFF (CFSM)	2.08	1.82	2.03
ANNUAL RUNOFF (INCHES)	28.26	24.69	27.56
10 PERCENT EXCEEDS	3800	3190	3720
50 PERCENT EXCEEDS	1190	1080	1130
90 PERCENT EXCEEDS	172	76	135

a From rating curve extended above 10,300 ft³/s.

b From peak-stage indicator.



October 1, 1997 to September 30, 1998

FRENCH CREEK BASIN

03024000 FRENCH CREEK AT UTICA, PA
(National water-quality assessment station)

LOCATION.--Lat 41°26'15", long 79°57'22", Venango County, Hydrologic Unit 05010004, on right bank at upstream side of bridge on SR 3017 at Utica and 2,000 ft upstream from Mill Creek.

DRAINAGE AREA.--1,028 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1932 to current year.

REVISED RECORDS.--WSP 743: Drainage area. WSP 823: 1936 (M). WSP 1275: 1933, 1936.

GAGE.--Water-stage recorder. Datum of gage is 1,019.44 ft above sea level. Prior to Nov. 27, 1933, nonrecording gage at same site and datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. Flow regulated since 1971 by Union City Reservoir 50 mi upstream, serving as a retarding basin, and since January 1974 by Woodcock Creek Lake, 25 mi upstream. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1912, 15.7 ft in March 1913, discharge 35,600 ft³/s.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2170	1320	2890	e2110	2330	1680	2390	2640	427	221	119	122
2	2200	1390	2620	e1960	2020	2060	2570	3080	389	233	114	113
3	1650	1690	2250	e2100	1870	1950	2540	5920	411	256	109	110
4	1340	1600	2490	4590	1750	1810	2250	4920	383	235	114	102
5	1140	1410	3100	7210	1560	1730	2010	4460	351	213	114	95
6	1020	1200	2850	7610	1370	1700	1780	3950	337	194	112	93
7	1030	989	2530	7070	1200	1640	1490	3400	322	185	110	106
8	916	945	2310	11500	1120	1580	1290	2840	312	182	106	108
9	693	961	2220	15200	1060	1960	1690	2400	296	174	110	127
10	550	1010	2610	16100	1020	2590	4500	2070	288	195	142	127
11	472	961	3980	14500	1010	2630	4750	1780	286	385	171	98
12	431	897	3970	11300	1170	2310	3800	1810	525	293	138	92
13	404	885	3570	8230	1810	2020	2940	2190	582	225	127	96
14	390	902	3190	6070	2130	1900	2440	1850	635	191	128	95
15	371	1010	2690	4920	1890	1780	2890	1460	635	171	124	90
16	354	1140	2310	4310	1560	1640	5180	1220	632	156	113	88
17	341	1210	2070	3830	1540	1600	7120	1040	741	147	106	87
18	331	1200	1910	3390	2720	2150	6480	913	544	139	111	84
19	328	1150	1770	3060	3450	4040	5200	818	445	133	112	84
20	319	1210	1760	2840	3230	5330	6960	733	392	134	108	95
21	309	1350	1870	2620	2960	5520	7400	652	343	134	104	93
22	290	1760	1820	2370	2640	5280	5810	595	312	148	102	87
23	279	2480	2150	2370	2380	4370	4650	549	293	174	100	82
24	326	2570	3070	2680	2180	3700	3700	517	277	207	105	81
25	410	2280	3970	2670	1980	3230	3060	490	263	275	119	82
26	504	2010	5200	2380	1770	2970	3350	465	252	265	119	82
27	755	2520	5160	2100	1540	2850	4520	446	241	224	111	81
28	1900	3240	4220	1950	1370	2630	3990	421	233	186	117	89
29	2160	3170	3450	1810	---	2860	3360	405	221	162	120	86
30	1870	3050	2850	2180	---	3090	2900	385	225	141	125	84
31	1590	---	e2410	2600	---	2690	---	375	---	129	127	---
TOTAL	26843	47510	89260	163630	52630	83290	113010	54794	11593	6107	3637	2859
MEAN	866	1584	2879	5278	1880	2687	3767	1768	386	197	117	95.3
MAX	2200	3240	5200	16100	3450	5520	7400	5920	741	385	171	127
MIN	279	885	1760	1810	1010	1580	1290	375	221	129	100	81
CFSM	.84	1.54	2.80	5.13	1.83	2.61	3.66	1.72	.38	.19	.11	.09
IN.	.97	1.72	3.23	5.92	1.90	3.01	4.09	1.98	.42	.22	.13	.10

e Estimated.

FRENCH CREEK BASIN

03024000 FRENCH CREEK AT UTICA, PA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1974 - 1998, BY WATER YEAR (WY) (SINCE REGULATION)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1351	2438	2856	2637	2946	3745	3076	1732	1283	844	704	982
MAX	3954	6309	6029	5426	6394	5778	5101	4081	4659	2629	3297	3409
(WY)	1991	1986	1978	1993	1976	1977	1994	1996	1986	1987	1980	1990
MIN	121	176	1049	869	629	2085	1655	452	209	192	112	71.7
(WY)	1992	1992	1990	1977	1987	1990	1976	1985	1991	1995	1991	1995

SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

FOR 1998 WATER YEAR

WATER YEARS 1974 - 1998

ANNUAL TOTAL	738376	655163	
ANNUAL MEAN	2023	1795	2044
HIGHEST ANNUAL MEAN			2459
LOWEST ANNUAL MEAN			1349
HIGHEST DAILY MEAN	10100	Mar 1	16100
LOWEST DAILY MEAN	108	Aug 12	81
ANNUAL SEVEN-DAY MINIMUM	130	Aug 8	83
INSTANTANEOUS PEAK FLOW			16200
INSTANTANEOUS PEAK STAGE			10.98
ANNUAL RUNOFF (CFSM)	1.97		1.75
ANNUAL RUNOFF (INCHES)	26.72		23.71
10 PERCENT EXCEEDS	4850		3980
50 PERCENT EXCEEDS	1530		1290
90 PERCENT EXCEEDS	227		111

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1933 - 1973, BY WATER YEAR (WY) (PRIOR TO REGULATION)

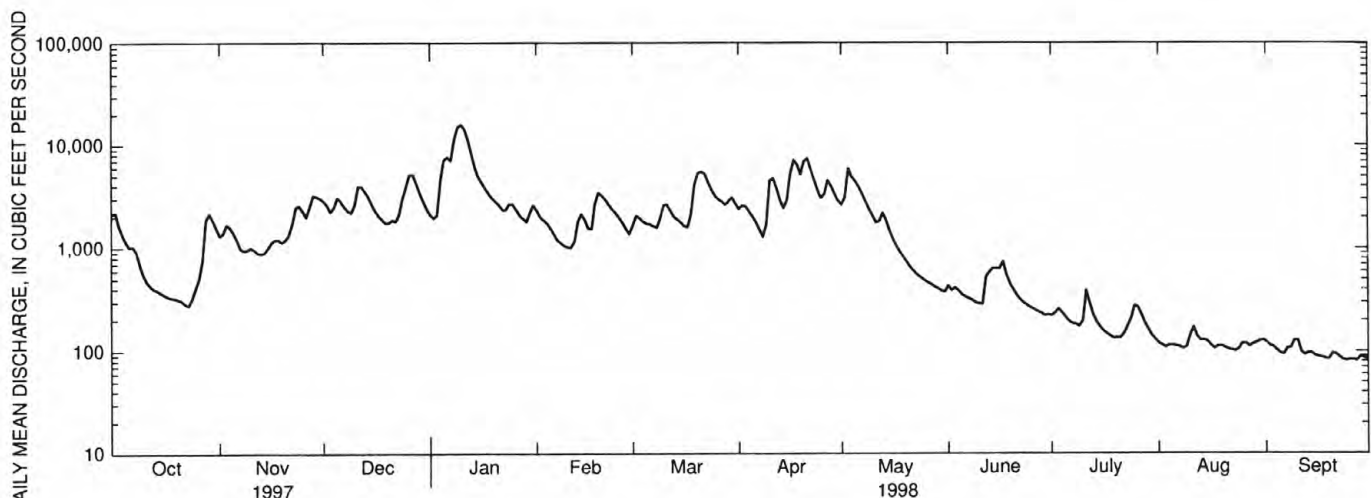
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	695	1506	2238	2590	2713	3915	3147	1684	953	555	408	440
MAX	3744	3983	4471	7284	5894	7359	6688	4160	3717	2015	1907	2148
(WY)	1946	1971	1951	1937	1938	1964	1947	1956	1947	1967	1956	1958
MIN	69.5	183	227	403	523	1768	575	349	124	77.1	77.8	80.4
(WY)	1964	1954	1961	1961	1934	1937	1946	1934	1934	1934	1954	1954

SUMMARY STATISTICS

WATER YEARS 1933 - 1973

ANNUAL MEAN	1751	
HIGHEST ANNUAL MEAN	2539	1956
LOWEST ANNUAL MEAN	1146	1934
HIGHEST DAILY MEAN	23000	Mar 6 1964
LOWEST DAILY MEAN	45	Sep 1 1933
ANNUAL SEVEN-DAY MINIMUM	48	Aug 27 1933
INSTANTANEOUS PEAK FLOW	23800	Mar 7 1964
INSTANTANEOUS PEAK STAGE	a13.2	Mar 7 1964
INSTANTANEOUS LOW FLOW	43	Jul 30 1934
ANNUAL RUNOFF (CFSM)	1.70	
ANNUAL RUNOFF (INCHES)	23.15	
10 PERCENT EXCEEDS	4370	
50 PERCENT EXCEEDS	940	
90 PERCENT EXCEEDS	147	

a From floodmark in gage well.



October 1, 1997 to September 30, 1998

FRENCH CREEK BASIN

03024000 FRENCH CREEK AT UTICA, PA--Continued
(National Water-Quality Assessment station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--February to October 1956, October 1959 to May 1973, December 1975 to August 1978, April 1996 to September 1998 (discontinued).

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: October 1996 to September 1998.

SUSPENDED SEDIMENT DISCHARGE: October 1971 to September 1972.

INSTRUMENTATION.--Suspended-sediment samples were collected daily and more often during storm events by an observer from October 1971 to September 1972. Water temperature was measured and collected at hourly intervals using an in-situ probe with an electronic data logger from October 1996 to September 1998.

REMARKS.--All water-quality samples were collected and analyzed by the U.S. Geological Survey. Interruptions in the daily records were due to malfunctions of the equipment. Water temperature data from the in-situ probes oftentimes did not exactly agree with the water temperature of the monthly and storm samples because of the fixed location of the in-situ temperature probes. Additional sites in the (NAWQA) fixed-station network are shown in figure 6 on page 28. An explanation of selected abbreviations used in the water-quality tables are given on pages 29-31.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum, 28.0°C, June 25, 26 1998; minimum, 0.0°C, November 19, December 31, 1997, January 1, 2, 1998.

SEDIMENT CONCENTRATIONS: Maximum daily, 404 mg/L, June 24, 1972; minimum daily, 3 mg/L on several days during February 1972.

SEDIMENT DISCHARGES: Maximum daily, 10400 tons, June 24, 1972; minimum daily, 3.5 tons, September 11, 1972.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 28.0°C, June 25, 26 ; minimum, 0.0°C, November 19, December 31, January 1, 2.

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

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (μS/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	OXYGEN, DIS- SOLVED (MG/L) (00300)	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)
OCT											
29...	1100	2130	225	7.6	6.0	732	11.5	87	26	5.3	7.2
NOV											
18...	1255	1180	268	7.6	1.0	736	14.5	92	28	5.4	10
DEC											
15...	1250	2640	216	7.3	1.0	732	13.7	75	23	4.5	7.8
JAN											
09...	1450	15400	112	7.3	6.5	723	10.9	36	11	2.3	4.4
26...	1055	2390	233	7.7	1.5	738	13.7	80	25	4.6	8.5
FEB											
25...	0840	2000	194	7.6	4.0	730	11.5	73	22	4.0	6.8
MAR											
18...	1020	2000	242	7.6	4.0	733	13.2	83	25	4.8	12
APR											
17...	0945	7070	147	7.3	12.0	725	9.1	56	17	3.2	5.9
30...	0930	2930	176	7.5	13.0	745	8.3	74	23	4.2	5.7
MAY											
15...	1030	1470	200	8.1	19.0	749	9.4	86	26	4.9	7.0
JUN											
24...	1015	281	286	7.8	24.0	747	9.0	120	36	6.8	11
JUL											
28...	1015	188	325	8.0	23.0	743	7.4	130	40	7.9	12
AUG											
28...	1045	113	338	8.0	23.0	746	7.5	140	40	8.3	16
SEP											
10...	0945	122	341	8.0	16.5	747	7.9	130	38	8.1	16

FRENCH CREEK BASIN

03024000 FRENCH CREEK AT UTICA--Continued

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

DATE	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	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, 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)
OCT 29...	2.3	48	15	15	<.10	4.2	129	.011	.726	.020	.59
NOV 18...	1.6	68	16	20	<.10	3.7	147	<.010	.491	.287	.27
DEC 15...	1.5	48	15	16	<.10	4.5	113	<.010	.770	<.020	.28
JAN 09...	1.9	22	9.5	8.1	<.10	3.9	86	<.010	.558	<.020	.58
26...	1.4	60	14	16	<.10	4.6	130	<.010	.968	.045	.24
FEB 25...	1.3	53	14	13	<.10	3.6	113	<.010	.666	.025	.28
MAR 18...	1.3	56	14	21	<.10	2.9	130	.017	.849	.052	.24
APR 17...	1.3	38	10	9.4	<.10	3.4	91	<.010	.476	.052	.74
30...	1.1	54	11	10	<.10	3.1	104	<.010	.426	.080	.29
MAY 15...	1.2	70	12	11	.10	3.0	121	.017	.660	.042	.33
JUN 24...	1.7	106	14	18	<.10	1.4	171	.011	.390	<.020	.37
JUL 28...	1.9	112	16	20	<.10	1.9	186	.012	.325	.045	.36
AUG 28...	2.5	111	17	25	<.10	2.0	185	.012	.473	.038	.35
SEP 10...	2.6	110	18	26	<.10	1.8	193	.011	.378	.044	.34

DATE	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N) (00623)	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)	IRON, DIS- SOLVED (MG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (MG/L AS MN) (01056)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS- PENDE TOTAL (MG/L AS C) (00689)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 29...	.33	.064	<.010	.010	55	10	4.8	1.1	39	89
NOV 18...	.21	.022	.014	<.010	88	22	3.5	.20	5	80
DEC 15...	.22	.021	.027	.015	68	24	3.0	.30	9	91
JAN 09...	.26	.121	<.010	.014	96	38	4.1	1.3	113	88
26...	.21	<.010	<.010	.011	65	31	2.6	.40	8	85
FEB 25...	.20	.027	.012	.021	79	19	2.3	.30	11	87
MAR 18...	.28	.014	<.010	<.010	97	30	2.3	.40	8	65
APR 17...	.29	.138	.016	.012	81	14	4.2	2.4	99	80
30...	.20	.016	<.010	<.010	96	16	3.4	.50	17	78
MAY 15...	.23	.017	.060	<.010	160	18	3.8	.40	9	81
JUN 24...	.16	<.010	<.010	<.010	40	22	3.1	.30	8	87
JUL 28...	.26	.054	.031	.024	28	28	2.8	.40	5	59
AUG 28...	.29	.027	.025	.028	21	23	3.3	.30	3	67
SEP 10...	.29	.034	.022	.023	18	14	2.7	.20	4	53

FRENCH CREEK BASIN

03024000 FRENCH CREEK AT UTICA, PA--Continued

REMARKS.--The following data are for dissolved trace elements in surface water filtered through a 0.45µm filter.

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

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	ALUM- INUM, DIS- SOLVED (µG/L AS AL) (01106)	ANTI- MONY, DIS- SOLVED (µG/L AS SB) (01095)	ARSENIC DIS- SOLVED (µG/L AS AS) (01000)	BARIUM, DIS- SOLVED (µG/L AS BA) (01005)	BERYL- LIUM, DIS- SOLVED (µG/L AS BE) (01010)	CADMIUM DIS- SOLVED (µG/L AS CD) (01025)	CHRO- MIUM, DIS- SOLVED (µG/L AS CR) (01030)	COBALT, DIS- SOLVED (µG/L AS CO) (01035)
SEP 10...	0945	122	5.9	<1.0	2	39	<1.0	<1.0	1.3	<1.0

DATE	COPPER, DIS- SOLVED (µG/L AS CU) (01040)	LEAD, DIS- SOLVED (µG/L AS PB) (01049)	MANGA- NESE, DIS- SOLVED (µG/L AS MN) (01056)	MOLYB- DENUM, DIS- SOLVED (µG/L AS MO) (01060)	NICKEL, DIS- SOLVED (µG/L AS NI) (01065)	SELE- NIUM, DIS- SOLVED (µG/L AS SE) (01145)	SILVER, DIS- SOLVED (µG/L AS AG) (01075)	URANIUM NATURAL DIS- SOLVED (µG/L AS U) (22703)	ZINC, DIS- SOLVED (µG/L AS ZN) (01090)
SEP 10...	1.1	<1.0	14	2.3	<1.0	<1	<1.0	<1.0	4.1

FRENCH CREEK BASIN

03024000 FRENCH CREEK AT UTICA, PA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	15.5	14.0	14.5	7.5	6.0	7.0	4.5	4.0	4.5	.0	.0	.0
2	14.0	13.0	13.5	8.0	7.5	7.5	4.0	3.5	4.0	.5	.0	.0
3	14.5	13.0	13.5	8.0	7.5	7.5	3.5	3.0	3.0	2.0	.5	1.0
4	15.5	13.0	14.5	7.5	7.0	7.5	4.0	3.0	4.0	3.5	2.0	3.0
5	17.0	15.0	16.0	7.5	6.5	7.0	4.0	3.0	3.5	4.0	3.5	3.5
6	18.0	16.0	17.0	7.0	6.0	6.5	3.0	1.5	2.5	5.0	4.0	4.5
7	18.5	16.5	17.5	6.5	6.0	6.5	1.5	.5	1.0	6.0	5.0	5.0
8	19.0	17.0	18.0	6.5	6.5	6.5	1.0	.5	1.0	6.5	6.0	6.5
9	19.0	17.5	18.5	7.0	6.5	7.0	1.5	.5	1.0	6.0	5.5	6.0
10	19.0	17.0	18.0	7.0	6.5	7.0	1.5	1.0	1.5	5.5	4.5	5.0
11	17.5	16.0	16.5	6.5	6.0	6.0	1.5	1.5	1.5	4.5	3.0	3.5
12	16.5	14.5	15.5	6.0	5.0	5.5	1.5	1.0	1.0	3.0	2.5	2.5
13	17.0	14.5	16.0	5.0	3.5	4.0	1.0	.5	1.0	3.0	2.5	2.5
14	16.5	14.5	16.0	3.5	2.5	3.0	.5	.5	.5	2.5	1.5	2.0
15	15.0	13.5	14.0	3.0	2.5	3.0	.5	.5	.5	1.5	1.5	1.5
16	13.5	12.0	13.0	3.0	2.0	2.5	1.0	.5	.5	2.0	1.5	1.5
17	12.5	11.0	11.5	2.0	1.0	1.5	1.0	.5	1.0	2.0	1.5	1.5
18	12.0	10.0	11.0	1.0	.5	.5	1.5	.5	1.0	1.5	1.5	1.5
19	12.0	10.0	11.0	1.5	.0	1.0	2.0	1.0	1.5	1.5	1.0	1.5
20	11.0	10.0	10.5	2.5	1.5	2.0	2.5	1.5	2.0	1.5	.5	1.0
21	11.0	10.0	10.5	3.5	2.0	3.0	2.5	1.5	2.0	.5	.5	.5
22	10.0	8.0	9.0	4.0	3.5	3.5	1.5	1.5	1.5	1.0	.5	1.0
23	8.5	7.5	8.0	4.0	3.5	4.0	2.0	1.5	1.5	1.0	.5	1.0
24	8.5	7.5	8.0	3.5	2.5	3.0	2.0	1.5	1.5	1.5	1.0	1.5
25	8.5	8.0	8.0	2.5	1.5	2.0	2.5	2.0	2.5	1.0	1.0	1.0
26	8.0	7.5	7.5	2.5	1.5	2.0	2.5	2.0	2.5	1.5	1.0	1.0
27	8.0	6.5	7.5	3.0	2.5	3.0	2.0	1.5	2.0	1.5	1.0	1.5
28	6.5	6.0	6.5	4.0	3.0	3.5	1.5	1.0	1.5	2.5	1.5	2.0
29	6.5	5.5	6.0	4.0	4.0	4.0	1.0	.5	.5	2.5	1.5	2.0
30	6.5	5.5	6.0	5.0	4.0	4.5	.5	.5	.5	2.5	2.0	2.0
31	7.5	5.5	6.5	---	---	---	.5	.0	.0	2.0	1.5	1.5
MONTH	19.0	5.5	12.2	8.0	.0	4.4	4.5	.0	1.7	6.5	.0	2.2

FRENCH CREEK BASIN

03024000 FRENCH CREEK AT UTICA, PA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	1.5	1.0	1.5	6.0	5.0	5.5	15.0	14.0	14.5	13.5	12.5	13.0
2	2.0	1.0	1.5	5.5	5.0	5.5	14.0	12.0	13.5	13.5	13.0	13.0
3	2.5	1.5	2.0	5.0	4.0	4.5	12.0	10.5	11.5	14.0	13.0	13.5
4	2.0	1.5	2.0	4.5	3.5	4.0	10.5	9.0	10.0	14.5	13.5	14.0
5	2.5	1.5	2.0	4.0	3.5	3.5	10.5	8.5	9.5	14.5	14.0	14.0
6	2.0	.5	1.5	5.0	3.5	4.0	10.5	8.5	9.0	15.0	14.5	14.5
7	2.5	.5	1.5	5.0	3.5	4.0	11.0	8.0	9.5	16.5	15.0	16.0
8	2.5	.5	1.5	5.0	3.5	4.5	12.5	9.0	10.5	16.5	15.5	16.0
9	3.0	1.0	2.0	6.0	4.5	5.5	11.5	10.0	10.5	17.0	15.5	16.5
10	3.5	1.5	2.5	5.5	3.0	4.5	10.0	9.0	9.5	17.5	16.0	17.0
11	3.5	2.5	3.0	3.0	1.5	3.0	9.5	8.0	9.0	16.5	15.5	16.0
12	3.5	3.0	3.5	2.0	1.0	1.5	10.0	8.5	9.5	17.0	15.5	16.0
13	3.0	2.5	3.0	2.0	.5	1.0	11.0	10.0	10.5	18.0	16.0	16.5
14	3.0	2.0	2.5	1.5	.5	1.0	12.0	10.5	11.5	19.5	16.5	18.0
15	2.0	1.0	1.5	2.0	.5	1.0	12.5	11.0	11.5	21.5	17.5	19.5
16	2.0	.5	1.5	3.0	1.0	2.0	12.0	11.5	12.0	22.0	18.5	20.5
17	3.0	1.5	2.0	4.0	1.0	2.5	12.0	11.5	12.0	22.0	19.0	20.5
18	3.5	3.0	3.0	4.0	3.0	3.5	11.5	10.5	11.0	22.5	19.0	20.5
19	3.5	3.5	3.5	4.0	3.5	4.0	11.5	10.0	11.0	23.0	19.5	21.5
20	3.5	3.5	3.5	4.0	3.5	4.0	10.0	9.0	10.0	24.0	20.5	22.0
21	3.5	3.0	3.5	4.0	3.5	4.0	11.5	9.5	10.5	22.0	20.0	21.0
22	3.5	3.0	3.0	3.5	2.5	3.0	12.0	11.0	11.5	20.5	18.0	19.5
23	4.0	3.0	3.5	3.0	2.0	2.5	12.5	11.5	12.0	20.5	16.5	18.5
24	4.5	3.5	4.0	3.5	3.0	3.0	12.5	12.0	12.5	19.0	16.5	18.0
25	4.0	3.5	4.0	4.0	3.0	3.5	13.0	12.5	12.5	18.5	17.5	18.0
26	5.0	3.5	4.0	6.5	4.0	6.0	13.0	10.5	12.0	20.5	17.0	18.5
27	5.0	4.0	4.5	9.0	6.5	8.0	11.0	10.0	10.5	21.5	17.0	19.5
28	5.0	4.0	4.5	11.0	9.0	10.0	11.5	10.5	11.0	22.0	18.0	20.5
29	---	---	---	12.5	10.5	11.5	12.0	11.5	12.0	23.0	20.0	22.0
30	---	---	---	13.5	12.0	13.0	12.5	12.0	12.5	24.5	21.0	23.0
31	---	---	---	15.0	13.5	14.0	---	---	---	23.5	21.5	22.5
MONTH	5.0	.5	2.7	15.0	.5	4.8	15.0	8.0	11.1	24.5	12.5	18.0

FRENCH CREEK BASIN

FRENCH CREEK AT UTICA, PA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	22.0	19.5	21.0	25.5	22.0	24.0	24.5	20.5	23.0	24.0	21.0	22.5
2	22.0	19.0	20.5	25.0	21.5	23.5	24.5	21.0	23.0	23.5	21.0	22.0
3	20.0	17.5	19.0	25.5	21.5	23.5	25.5	21.5	23.5	21.5	18.5	20.0
4	20.0	16.5	18.5	25.5	22.5	23.5	25.0	22.0	23.5	22.0	18.5	20.5
5	18.0	16.5	17.5	25.0	21.0	22.5	25.0	23.0	24.0	22.5	18.5	20.5
6	17.0	15.0	16.0	25.5	21.5	23.5	25.5	22.5	24.0	23.5	19.5	21.5
7	16.5	15.0	15.5	25.0	22.5	23.5	26.5	23.0	25.0	23.5	21.0	22.0
8	17.5	14.5	16.0	25.0	22.5	23.5	27.0	23.5	25.5	21.0	17.5	19.0
9	16.5	15.0	16.0	25.5	22.5	24.0	27.0	24.5	26.0	17.5	16.0	17.0
10	16.0	15.0	15.5	25.5	22.5	24.0	27.0	24.0	25.0	18.5	15.5	17.0
11	17.5	15.0	16.5	25.0	21.0	23.0	25.5	23.0	24.0	20.0	16.0	18.0
12	20.0	17.0	18.5	25.0	21.0	23.0	25.0	23.0	24.5	21.5	17.5	19.5
13	19.5	18.0	19.0	26.0	21.5	24.0	25.5	22.0	24.0	22.5	19.0	20.5
14	19.0	18.0	18.5	26.0	22.5	24.5	25.0	22.5	24.0	23.0	20.0	21.5
15	19.0	17.5	18.0	26.0	23.0	24.5	26.0	23.0	24.5	23.0	21.0	22.0
16	20.5	17.5	19.0	27.0	23.5	25.0	27.0	23.5	25.0	23.0	21.5	22.5
17	21.0	18.5	19.5	27.0	24.5	25.5	26.5	24.5	25.5	23.0	21.0	22.0
18	23.0	19.0	21.0	26.0	22.0	24.0	26.0	23.5	24.0	22.5	19.0	21.0
19	22.0	20.5	21.5	25.5	22.0	24.0	23.5	20.5	22.5	23.0	20.0	21.5
20	24.0	20.5	22.5	26.0	24.0	25.0	23.5	20.0	22.0	23.5	21.0	22.5
21	25.5	21.0	23.5	26.0	23.5	24.5	24.0	21.0	22.5	23.5	21.5	22.5
22	25.5	22.5	24.0	26.0	23.5	25.0	25.0	22.5	23.5	23.0	20.5	22.0
23	25.0	23.0	24.0	26.0	24.0	25.0	26.0	22.5	24.5	20.5	17.5	18.5
24	---	---	---	25.5	22.5	24.0	25.5	23.0	24.5	18.0	15.0	16.5
25	28.0	24.5	26.5	24.5	21.5	23.5	24.5	22.5	23.0	18.5	16.5	17.5
26	28.0	25.5	26.5	25.0	21.5	23.5	25.0	22.0	23.5	21.0	17.5	19.0
27	27.5	25.0	26.0	25.0	21.5	23.0	25.0	22.0	23.5	22.0	19.5	20.5
28	27.0	24.5	25.5	25.5	22.0	24.0	25.5	22.0	24.0	21.5	19.5	20.5
29	27.0	24.5	26.0	26.0	23.5	24.5	25.5	23.0	24.0	19.5	16.5	18.0
30	27.0	24.5	25.5	25.5	22.0	24.0	25.0	22.0	23.5	19.5	17.0	18.0
31	---	---	---	24.5	21.5	23.5	24.5	22.5	24.0	---	---	---
MONTH	28.0	14.5	20.6	27.0	21.0	24.0	27.0	20.0	24.0	24.0	15.0	20.2

LAKES AND RESERVOIRS IN FRENCH CREEK BASIN

03021518 UNION CITY RESERVOIR.--Lat 41°55'13", long 79°53'59", Erie County, Hydrologic Unit 05010004, in tower at left center of Union City Dam on French Creek, 1.4 mi upstream from South Branch French Creek, and 3.2 mi northwest of Union City. DRAINAGE AREA, 220 mi². PERIOD OF RECORD, July 1970 to current year. GAGE, water-stage recorder. Datum of gage is sea level (U.S. Army Corps of Engineers bench mark).

Reservoir is formed by earthfill dam with sidehill, concrete-lined spillway completed September 1971. Dam became operational in July 1970. Usable capacity 47,650 acre-ft between elevation 1,210.00 ft (invert of inlet of conduit) and 1,278.00 ft (crest of spillway). No dead storage. Figures given herein represent usable contents. Reservoir is used for flood control only. Records furnished by U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 34,840 acre-ft, Feb. 21, 1981 (elevation, 1,271.80 ft); minimum, 0.0 acre-ft, Aug. 31, 1995 (elevation, 1,211.08 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 35,910 acre-ft, Jan. 9 (elevation, 1,272.37 ft); minimum, 1.0 acre-ft, Sept. 19 (elevation, 1,211.41 ft).

03022550 WOODCOCK CREEK LAKE.--Lat 41°41'50", long 80°06'06", Crawford County, Hydrologic Unit 05010004 in tower on right center and 200 ft upstream from center line of Woodcock Creek Dam on Woodcock Creek, 2.8 mi southeast of Saegerstown and 3.5 mi upstream from mouth. DRAINAGE AREA, 45.6 mi². PERIOD OF RECORD, January 1974 to current year. GAGE, water-stage recorder. Datum of gage is sea level (U.S. Army Corps of Engineers bench mark).

Lake is formed by a rolled earth embankment with an impervious core. Storage began in January 1974. Total storage 20,000 acre-ft between elevation 1,138 ft inlet invert and 1,209 ft crest of spillway. Figures given herein represent usable contents. Lake is used for flood control and recreation. Records furnished by U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 12,690 acre-ft, June 13, 1986 (elevation, 1,198.18 ft); minimum (after first filling) 676 acre-ft, Nov. 1, 1984 (elevation, 1,159.82 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 7,270 acre-ft, Apr. 20 (elevation, 1,187.24); minimum, 1,090 acre-ft, Jan. 1 (elevation, 1,163.54 ft)

MONTHEND ELEVATION IN FEET ABOVE SEA LEVEL, AND CONTENTS AT 2400 HRS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

Date	Elevation (feet)	Contents (acre- feet)	Change in contents (equivalent in ft ³ /s)	Elevation (feet)	Contents (acre- feet)	Change in contents (equivalent in ft ³ /s)
<u>03021518 Union City Reservoir</u>				<u>03022550 Woodcock Creek Lake</u>		
Sept. 30	1,231.33	1,580	-	1,180.16	4,660	-
Oct. 31	1,223.50	477	-18	1,172.36	2,580	-34
Nov. 30	1,241.86	4,590	+69	1,170.20	2,140	-7.4
Dec. 31	1,238.35	3,400	-19	1,163.74	1,110	-17
CAL YR 1997	-	-	- .44	-	-	- .81
Jan. 31	1,225.51	694	-44	1,165.68	1,380	+4.4
Feb. 28	1,218.76	134	-10	1,167.50	1,660	+5.0
Mar. 31	1,239.07	3,640	+57	1,176.50	3,580	+31
Apr. 30	1,238.02	3,290	-5.9	1,181.97	5,260	+28
May 31	1,213.18	8	-53	1,181.55	5,120	-2.3
June 30	1,213.81	13	+ .08	1,181.31	5,040	-1.3
July 31	1,212.29	1	- .2	1,180.32	4,710	-5.4
Aug. 31	1,211.68	0	- .02	1,175.19	3,230	-24
Sept. 30	1,211.47	0	0	1,170.45	2,190	-17
WTR YR 1998	-	-	-2.2	-	-	-3.4

OHIO RIVER MAIN STEM

03025500 ALLEGHENY RIVER AT FRANKLIN, PA

LOCATION.--Lat 41°23'22", long 79°49'14", Venango County, Hydrologic Unit 05010003, on right bank at upstream side of Eighth Street bridge on U.S. Highway 322 at Franklin, 1,000 ft downstream from French Creek, at mile 124.4.

DRAINAGE AREA.--5,982 mi².

PERIOD OF RECORD.--October 1914 to current year. Monthly discharge only for some periods, published in WSP 1305. Gage-height records collected at same site since April 1905 are contained in reports of U.S. Weather Bureau.

REVISED RECORDS.--WSP 743: Drainage area. WSP 783: 1913 (M). WSP 1003: 1920 (M). WSP 1305: 1926 (M), 1928-29 (M). WSP 1385: 1920, 1932.

GAGE.--Water-stage recorder. Datum of gage is 955.84 ft above sea level. Prior to Sept. 16, 1932, nonrecording gage, and Sept. 16-30, 1932, water-stage recorder, at present site at datum 2.00 ft higher.

REMARKS.--Records good except for estimated daily discharges, which are fair. Flow regulated by Allegheny Reservoir 74 mi upstream, since 1965, by Chautauqua Lake since 1941, by Tionesta Lake since 1940, by Union City Reservoir since 1971, and by Woodcock Creek Lake since January 1974. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 17, 1865 reached a stage of 25.0 ft, and that of Mar. 26, 1913 a stage of 24.6 ft, from graph based on gage readings, discharge, 196,000 ft³/s and 191,000 ft³/s, respectively, from rating curve extended above 120,000 ft³/s. Maximum discharge since at least 1864 is that of Mar. 17, 1865.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10700	5360	20900	13000	12100	13700	12300	17600	3470	5070	2470	2400
2	11100	7080	20100	12200	11300	14900	12400	14800	3200	5670	2640	2500
3	10000	8180	18500	11100	10900	15900	11800	22000	3340	5920	2840	2490
4	9150	9020	18700	15400	9530	15500	11100	20300	3040	5710	2810	2660
5	7810	8670	19700	26300	8700	14800	10300	17300	2720	5380	2780	2590
6	7230	7890	21700	30200	8160	14300	9400	15700	2490	3960	2740	2500
7	7010	5990	21300	32700	7690	13900	8400	15000	2380	2720	2690	2730
8	6520	8230	20200	59100	7390	13400	7840	17300	2320	2680	2640	2630
9	5820	8910	19400	69700	7180	14500	9760	18400	2370	2750	2630	2570
10	5150	9860	19700	59000	7040	15400	25600	17100	2870	3920	3270	2600
11	4370	10300	22700	49800	6980	14000	27100	12600	3010	5480	3760	2470
12	3940	10100	19900	46600	7390	12700	25600	17100	5200	4650	3510	e2500
13	3810	9270	16600	40800	8860	11700	21900	17200	5560	3380	3320	e2400
14	3700	9230	14100	38300	9260	11200	19200	12600	5850	2480	2990	e2300
15	3600	9340	12700	38200	8260	9460	19900	10900	4930	2100	2650	e2350
16	3490	9310	11900	36500	7450	8520	21300	16900	4710	2190	2690	e2500
17	3410	9330	11200	34400	7570	7400	25400	18600	4560	2720	2690	e2650
18	3360	9180	10700	32300	12000	7810	22700	17400	3950	2870	2710	e2750
19	3320	9060	9330	30000	14400	13100	20100	14900	3260	3030	2790	e2900
20	3280	9130	8830	28000	14000	17700	28800	11200	3040	3010	2690	e3000
21	3250	9760	9130	24100	14000	19200	32400	7760	2680	3090	2800	e3100
22	3210	11500	9130	22500	13800	19900	31800	6210	2490	3210	2790	e2910
23	3200	15100	9960	21900	13900	17400	32200	5590	2280	3270	2790	e2800
24	3570	15800	11600	22300	13600	17400	30200	5420	e3000	3940	2700	e2650
25	4160	16400	14500	22000	12900	16400	25700	5270	e3400	4260	2930	2540
26	4430	15900	19600	21200	12300	15400	21700	5140	e3300	3830	2890	2580
27	5120	18700	20600	18500	11700	14200	22900	4290	3270	3380	2720	2610
28	6830	20900	19200	16100	11300	13500	20600	2860	3060	3090	2590	2690
29	8210	21100	17100	13000	---	13800	20900	2480	3290	2870	2560	2620
30	7810	20600	15600	12000	---	14000	19800	2480	3600	2780	2600	2550
31	6280	---	14200	12800	---	13100	---	2660	---	2450	2600	---
TOTAL	172840	339200	498780	910000	289660	434190	609100	375060	102640	111860	87280	78540
MEAN	5575	11310	16090	29350	10350	14010	20300	12100	3421	3608	2815	2618
MAX	11100	21100	22700	69700	14400	19900	32400	22000	5850	5920	3760	3100
MIN	3200	5360	8830	11100	6980	7400	7840	2480	2280	2100	2470	2300
CFSM	.93	1.89	2.69	4.91	1.73	2.34	3.39	2.02	.57	.60	.47	.44
IN.	1.07	2.11	3.10	5.66	1.80	2.70	3.79	2.33	.64	.70	.54	.49

e Estimated.

OHIO RIVER MAIN STEM

03025500 ALLEGHENY RIVER AT FRANKLIN, PA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1915 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	5624	10160	13420	14030	13610	21230	19350	12150	7424	4474	3196	3563
MAX	22900	26030	33270	41420	32340	49850	49920	30070	24820	21440	13830	17730
(WY)	1991	1986	1928	1937	1976	1936	1940	1943	1989	1972	1977	1977
MIN	515	771	1125	1732	2929	6383	4203	2554	1106	555	414	435
(WY)	1931	1931	1961	1961	1963	1969	1946	1985	1934	1934	1930	1930

SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

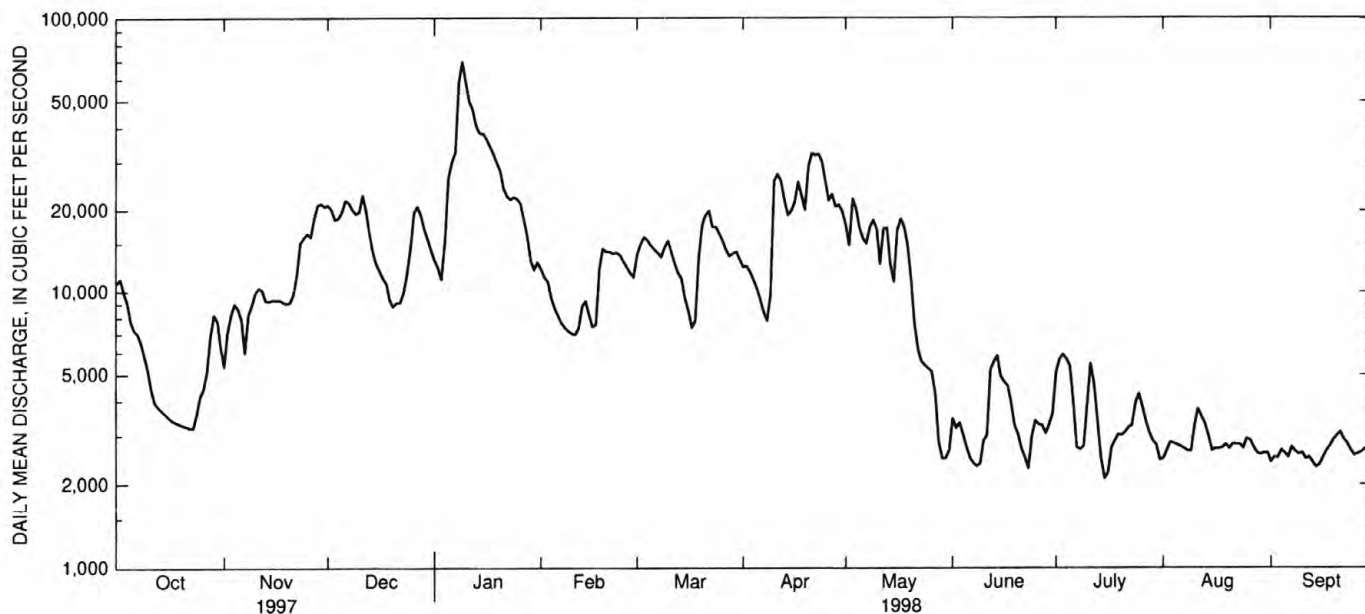
FOR 1998 WATER YEAR

WATER YEARS 1915 - 1998

ANNUAL TOTAL	4245000	4009150	10670	1956
ANNUAL MEAN	11630	10980	15560	1931
HIGHEST ANNUAL MEAN			6482	1931
LOWEST ANNUAL MEAN			130000	Mar 13 1920
HIGHEST DAILY MEAN	46100	Feb 28	69700	Jan 9
LOWEST DAILY MEAN	2670	Aug 22	2100	Jul 15
ANNUAL SEVEN-DAY MINIMUM	2890	Aug 29	a2450	Sep 10
INSTANTANEOUS PEAK FLOW			73000	Jan 8
INSTANTANEOUS PEAK STAGE			14.89	Jan 8
ANNUAL RUNOFF (CFSM)	1.94	1.84	b20.65	Mar 13 1920
ANNUAL RUNOFF (INCHES)	26.40	24.93	24.24	1.78
10 PERCENT EXCEEDS	21700	21800	25400	
50 PERCENT EXCEEDS	9700	8700	6700	
90 PERCENT EXCEEDS	3090	2630	1370	

a Computed using estimated discharges.

b Maximum gage height observed, 26.0 ft., Feb. 27, 1917 (backwater from ice), also Feb. 26, 1926 (backwater from ice).



October 1, 1997 to September 30, 1998

CLARION RIVER BASIN

03026500 SEVENMILE RUN NEAR RASSELAS, PA

LOCATION.--Lat 41°37'52", long 78°34'37", McKean County, Hydrologic Unit 05010005, on right bank 300 ft upstream from highway bridge, 600 ft upstream from Fivemile Run, and 3.2 mi northeast of Rasselas.

DRAINAGE AREA.--7.84 mi².

PERIOD OF RECORD.--October 1951 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,690.73 ft above sea level.

REMARKS.--Records good except for estimated daily discharges, which are fair. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a base discharge of 200 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 8	0500	384	4.36	Aug. 14	2115	583	4.68
Jan. 8	1800	472	4.52	Aug. 15	0100	*592	*4.69

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.8	8.8	38	e10	7.5	31	15	17	4.5	13	.62	2.0
2	3.8	44	29	e10	6.6	25	15	18	5.4	5.9	.45	1.9
3	3.2	29	25	e9.0	6.5	22	14	20	4.3	4.3	.45	1.8
4	2.8	20	31	e24	6.1	20	13	19	3.5	3.7	.45	1.6
5	3.4	17	26	45	5.8	18	12	24	3.3	3.6	.45	1.4
6	2.8	14	22	72	5.7	16	11	21	3.2	3.0	.45	1.3
7	2.2	19	20	65	5.6	15	9.7	19	2.9	2.7	.37	1.7
8	2.0	35	17	282	5.2	16	8.8	19	2.8	2.8	.37	1.8
9	1.9	31	16	148	5.1	21	26	20	2.6	3.2	.44	1.7
10	1.8	25	15	75	5.2	22	52	18	2.4	2.5	13	1.4
11	1.7	20	14	50	5.5	18	33	28	2.5	2.2	5.7	1.2
12	1.6	18	13	37	11	e16	27	41	20	1.9	1.9	1.1
13	1.5	15	12	31	10	e14	23	31	8.2	1.9	1.2	1.1
14	1.3	15	11	25	8.6	e13	21	26	5.2	1.6	63	1.0
15	1.4	13	10	22	e7.6	e13	32	21	4.9	1.6	157	.96
16	1.3	12	9.4	19	e8.0	e12	25	19	12	1.6	30	1.0
17	1.2	10	9.0	17	13	e11	22	30	6.3	1.8	18	1.1
18	1.2	9.5	9.0	15	27	e12	19	19	5.3	1.7	14	1.1
19	1.1	8.6	7.8	13	30	e16	30	16	4.2	1.5	11	.89
20	1.1	8.4	7.6	11	28	24	54	14	3.9	1.5	7.8	.84
21	1.1	8.4	7.5	9.8	26	25	38	12	3.4	1.5	6.1	1.1
22	1.2	12	7.5	8.9	23	24	31	9.5	3.0	1.4	5.7	1.2
23	1.3	14	7.2	9.9	20	21	27	8.7	3.7	1.4	4.6	1.1
24	1.4	14	7.6	11	19	19	23	7.6	5.1	1.4	4.3	.96
25	2.4	13	15	8.8	17	18	19	6.7	3.3	1.1	4.0	.73
26	2.3	14	19	7.8	18	18	28	6.1	2.9	.95	3.4	.73
27	3.9	27	16	7.2	17	17	30	5.4	2.6	.84	2.9	.73
28	3.8	26	e13	6.9	20	16	23	4.8	2.4	.81	2.5	1.1
29	3.3	33	e11	7.2	---	16	21	4.4	2.4	.63	2.7	1.1
30	3.1	39	e10	9.7	---	14	19	4.3	8.5	.63	2.7	.83
31	2.8	---	e9.8	7.9	---	13	---	3.9	---	.63	2.4	---
TOTAL	69.7	572.7	465.4	1075.1	368.0	556	721.5	513.4	144.7	73.29	367.95	36.47
MEAN	2.25	19.1	15.0	34.7	13.1	17.9	24.0	16.6	4.82	2.36	11.9	1.22
MAX	5.8	44	38	282	30	31	54	41	20	13	157	2.0
MIN	1.1	8.4	7.2	6.9	5.1	11	8.8	3.9	2.4	.63	.37	.73
CFSM	.29	2.43	1.91	4.42	1.68	2.29	3.07	2.11	.62	.30	1.51	.16
IN.	.33	2.72	2.21	5.10	1.75	2.64	3.42	2.44	.69	.35	1.75	.17

e Estimated.

CLARION RIVER BASIN

03026500 SEVENMILE RUN NEAR RASSELAS, PA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1952 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	8.27	14.9	17.5	14.8	16.8	28.9	29.0	17.3	12.0	5.56	5.30	6.32
MAX	29.7	49.5	35.9	56.4	49.9	70.8	70.6	47.8	74.0	26.0	32.8	39.7
(WY)	1971	1986	1978	1952	1976	1964	1970	1953	1989	1992	1956	1987
MIN	.32	.66	.94	1.55	2.22	9.85	11.2	4.05	1.14	.50	.52	.28
(WY)	1965	1965	1961	1961	1987	1993	1976	1985	1991	1991	1966	1964

SUMMARY STATISTICS

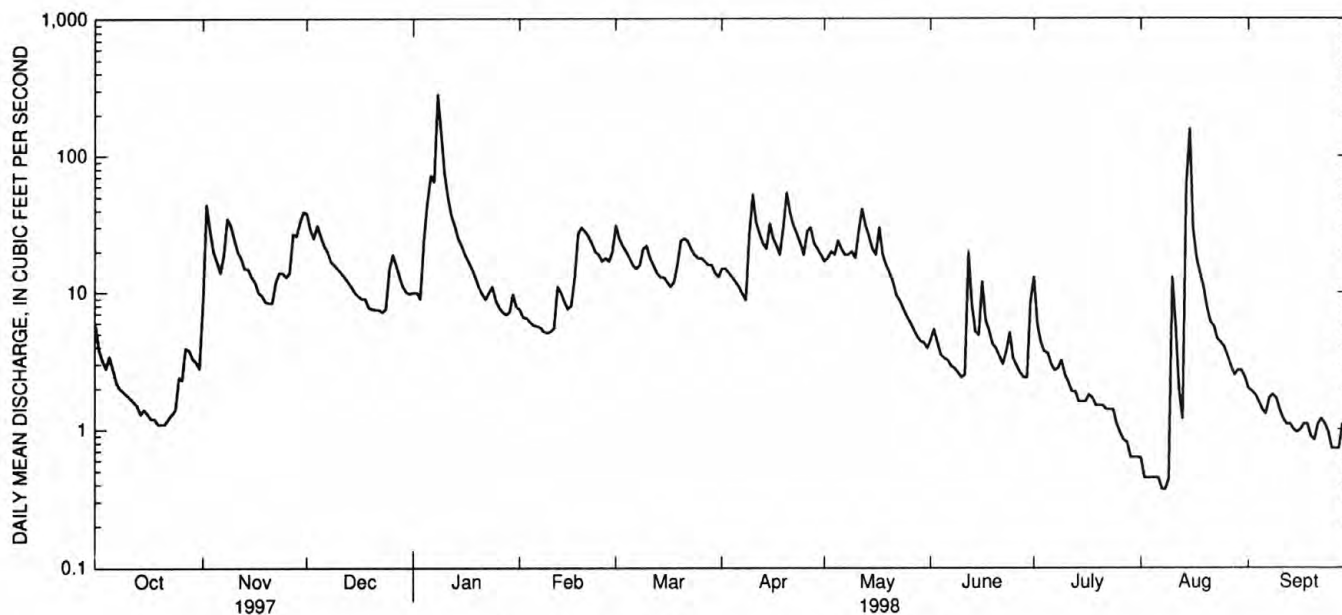
FOR 1997 CALENDAR YEAR

FOR 1998 WATER YEAR

WATER YEARS 1952 - 1998

ANNUAL TOTAL	5342.2	4964.21	
ANNUAL MEAN	14.6	13.6	14.7
HIGHEST ANNUAL MEAN			21.1
LOWEST ANNUAL MEAN			10.4
HIGHEST DAILY MEAN	125	Feb 27	282
LOWEST DAILY MEAN	1.1	Aug 11	.37
ANNUAL SEVEN-DAY MINIMUM	1.2	Oct 16	.43
INSTANTANEOUS PEAK FLOW			592
INSTANTANEOUS PEAK STAGE			4.69
INSTANTANEOUS LOW FLOW			.37
ANNUAL RUNOFF (CFSM)	1.87		1.73
ANNUAL RUNOFF (INCHES)	25.35		23.55
10 PERCENT EXCEEDS	32		28
50 PERCENT EXCEEDS	11		8.8
90 PERCENT EXCEEDS	1.6		1.1

a From rating curve extended above 600 ft³/s on basis of slope-area measurement at gage height 4.60 ft and contracted-opening measurement at gage height 5.02 ft.



October 1, 1997 to September 30, 1998

CLARION RIVER BASIN

LAKE IN CLARION RIVER BASIN

03027000 EAST BRANCH CLARION RIVER LAKE.--Lat 41°33'35", long 78°35'40", Elk County, Hydrologic Unit 05010005, at control tower at East Branch Clarion River Dam on East Branch Clarion River, 1.7 mi northeast of Glen Hazel, and 7.5 mi upstream from confluence with West Branch Clarion River. DRAINAGE AREA, 72.4 mi² (figure from U.S. Army Corps of Engineers). PERIOD OF RECORD, June 1952 to current year. Prior to October 1970 published as "East Branch Clarion River Reservoir", GAGE, water-stage recorder. Datum of gage is sea level (U.S. Army Corps of Engineers bench mark).

Lake is formed by an earthfill dam rock-faced. Dam completed in 1952. Controlled storage began in June 1952. Capacity, 83,300 acre-ft between elevations 1,555 ft (sill of outlet gates) and 1,685 ft (full pool). Minimum pool elevation, 1,555 ft (capacity, 1,000 acre-ft). Winter low-water pool elevation, 1,651 ft (capacity, 45,600 acre-ft). Summer low-water pool elevation, 1,670 ft (capacity, 65,300 acre-ft). Storage to summer pool normally occurs during period Mar. 1 to Apr. 30. Depletion of low-water storage for augmenting flow in Clarion River occurs normally during period June to October. Figures given herein represent total contents. Lake is used for flood control, for low-flow augmentation of Clarion River and downstream rivers, and for recreation. Records furnished by U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 85,010 acre-ft, June 24, 1972 (elevation, 1,685.55 ft; minimum, 160 acre-ft, Nov. 9, 1952 (elevation, 1,541.07 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 66,560 acre-ft, Apr.27 (elevation, 1,671.07 ft); minimum 38,940 acre-ft, Nov. 1 (elevation, 1,643.45 ft).

MONTHEND ELEVATION IN FEET ABOVE SEA LEVEL, AND CONTENTS AT 2400 HRS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

Date	Elevation (feet)	Contents (acre- feet)	Change in contents (equivalent in ft ³ /s)
Sept. 30	1,649.18	43,900	-
Oct. 31	1,643.64	39,090	-78
Nov. 30	1,652.21	46,680	+128
Dec. 31	1,651.06	45,610	-17
CAL YR 1997	-	-	-15
Jan. 31	1,651.52	46,040	+7.0
Feb. 28	1,655.94	50,260	+76
Mar. 31	1,663.04	57,550	+119
Apr. 30	1,670.74	66,170	+145
May 31	1,670.37	65,740	-7.0
June 30	1,667.31	62,240	-59
July 31	1,661.16	55,560	-109
Aug. 31	1,657.00	51,310	-69
Sept. 30	1,647.44	42,350	-151
WTR YR 1998	-	-	-2.1

CLARION RIVER BASIN

03028000 WEST BRANCH CLARION RIVER AT WILCOX, PA

LOCATION.--Lat 41°34'31", long 78°41'33", Elk County, Hydrologic Unit 05010005, on right bank 20 ft downstream from bridge on Township Route 359 at Wilcox, 100 ft downstream from Wilson Run, and 0.1 mi upstream from Penn Central Railroad bridge.

DRAINAGE AREA.--63.0 mi².

PERIOD OF RECORD.--October 1953 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,502.02 ft above sea level. Prior to Nov. 18, 1953, nonrecording gage at site 20 ft upstream at same datum. Nov. 18 to Dec. 8, 1953, nonrecording gage at same site and datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a base discharge of 1,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 8	2030	*3,510	*7.65	Aug. 15	0300	1,660	5.10

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	37	56	286	e70	68	261	113	142	42	97	11	21
2	24	236	228	e74	69	212	106	162	42	35	11	19
3	21	142	194	e80	68	200	95	157	34	29	10	19
4	19	106	237	e120	65	183	90	140	29	27	10	18
5	23	90	189	e240	66	158	86	186	28	26	9.9	17
6	20	77	163	514	61	140	81	159	27	24	9.9	16
7	17	147	151	525	58	126	76	154	26	23	9.4	27
8	15	258	133	2460	57	135	77	164	25	23	9.3	23
9	14	214	119	1800	55	194	277	153	24	24	13	23
10	14	174	116	886	54	199	472	134	23	21	183	19
11	14	147	108	542	56	173	330	215	24	19	61	17
12	13	124	98	371	93	e150	263	326	169	17	27	16
13	12	105	90	297	86	e135	209	261	55	17	21	15
14	13	110	86	217	79	e125	196	224	39	16	71	15
15	13	93	78	179	71	e115	266	186	43	16	552	14
16	12	85	73	159	76	e100	196	157	66	16	108	15
17	12	75	70	137	125	e94	182	182	42	23	75	21
18	12	67	67	121	211	e110	158	125	36	18	68	16
19	12	67	66	106	236	e130	253	103	32	15	54	14
20	12	67	66	93	239	161	434	91	30	16	42	15
21	12	68	63	85	233	206	341	79	27	17	36	19
22	12	113	57	78	203	205	294	70	27	17	33	17
23	12	121	72	94	183	187	239	61	31	19	30	16
24	12	118	71	98	171	168	196	55	31	17	32	14
25	19	102	132	84	152	151	161	52	25	14	31	14
26	18	116	154	75	145	147	238	48	24	14	27	14
27	28	226	137	70	135	135	219	43	22	13	24	14
28	27	205	128	71	164	123	174	39	21	12	22	14
29	23	241	e105	75	---	123	163	38	20	12	24	13
30	22	304	e94	90	---	107	153	36	43	12	25	13
31	19	---	e84	77	---	97	---	35	---	12	24	---
TOTAL	533	4054	3715	9888	3279	4750	6138	3977	1107	661	1663.5	508
MEAN	17.2	135	120	319	117	153	205	128	36.9	21.3	53.7	16.9
MAX	37	304	286	2460	239	261	472	326	169	97	552	27
MIN	12	56	57	70	54	94	76	35	20	12	9.3	13
CFSM	.27	2.14	1.90	5.06	1.86	2.43	3.25	2.04	.59	.34	.85	.27
IN.	.31	2.39	2.19	5.84	1.94	2.80	3.62	2.35	.65	.39	.98	.30

e Estimated.

CLARION RIVER BASIN

03028000 WEST BRANCH CLARION RIVER AT WILCOX, PA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1954 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	73.2	130	155	127	144	246	248	143	96.7	58.8	50.3	57.0
MAX	236	390	311	319	448	494	483	363	417	252	249	231
(WY)	1982	1986	1978	1998	1976	1964	1970	1984	1972	1992	1956	1987
MIN	7.60	12.9	12.4	18.5	27.6	96.4	109	40.9	20.4	12.3	8.30	7.68
(WY)	1964	1965	1961	1961	1987	1969	1976	1985	1991	1955	1991	1955

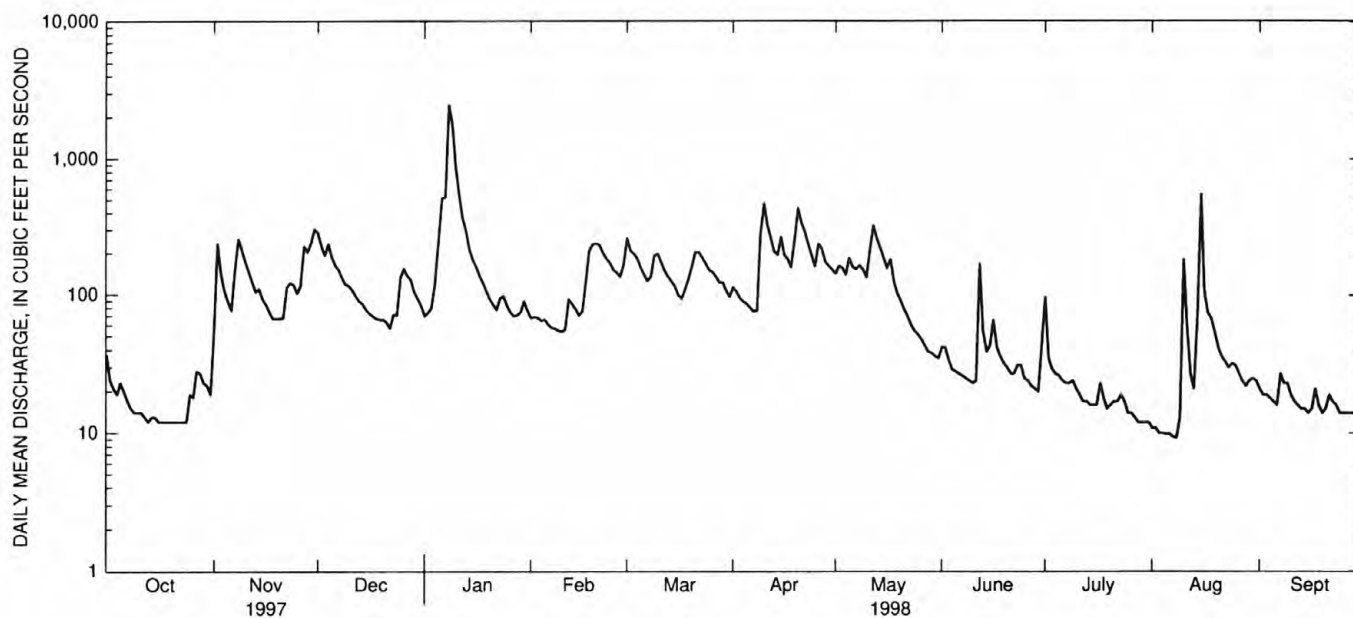
SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

FOR 1998 WATER YEAR

WATER YEARS 1954 - 1998

ANNUAL TOTAL	44030	40273.5	
ANNUAL MEAN	121	110	127
HIGHEST ANNUAL MEAN			184
LOWEST ANNUAL MEAN			91.6
HIGHEST DAILY MEAN	943	Feb 22	2460
LOWEST DAILY MEAN	12	Oct 13, 16-24	9.3
ANNUAL SEVEN-DAY MINIMUM	12	Oct 16	9.9
INSTANTANEOUS PEAK FLOW			3510
INSTANTANEOUS PEAK STAGE			7.65
INSTANTANEOUS LOW FLOW			9.3
ANNUAL RUNOFF (CFSM)	1.91	1.75	4.2
ANNUAL RUNOFF (INCHES)	26.00	23.78	27.46
10 PERCENT EXCEEDS	239	221	290
50 PERCENT EXCEEDS	90	71	76
90 PERCENT EXCEEDS	17	14	16

a From rating curve extended above 3,000 ft³/s.**b** From peak-stage indicator.

October 1, 1997 to September 30, 1998

CLARION RIVER BASIN

03029500 CLARION RIVER AT COOKSBURG, PA

LOCATION.--Lat 41°19'50", long 79°12'33", Jefferson County, Hydrologic Unit 05010005, on left bank at downstream side of bridge on State Highway 36 at Cooksburg, 300 ft downstream from Toms Run, and 2.7 mi upstream from Cathers Run.

DRAINAGE AREA.--807 mi².

PERIOD OF RECORD.--October 1938 to current year. Monthly discharge only for October, November 1938, published in WSP 1305.

REVISED RECORDS.--WSP 1305: 1939 (M). WDR PA-85-3: 1979 (M).

GAGE.--Water-stage recorder. Datum of gage is 1,147.00 ft above sea level. Prior to May 17, 1939, nonrecording gage at same site and datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. Flow regulated by East Branch Clarion River Lake since June 1952 and at low flow by industrial plants above station. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1935, 19 ft, Mar. 17, 1936, from floodmarks, discharge, about 56,000 ft³/s.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a base discharge of 10,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 8	1800	*23,300	*12.76	No other peak greater than base discharge.			

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	871	286	3830	e1200	1260	3000	1150	2480	839	1160	260	299
2	702	1210	3090	e1100	1170	3020	1450	2670	807	1140	256	289
3	511	2370	2710	e1050	1150	2660	1250	3300	658	699	249	282
4	440	1360	2780	e1100	1110	2410	1120	2750	591	537	246	287
5	381	1020	2830	e1400	1080	2220	1060	3450	491	506	245	272
6	350	857	2420	e1850	1060	1960	996	4400	447	475	243	260
7	334	901	2080	e2700	991	1760	936	3840	429	425	246	267
8	308	7040	1830	e13000	930	1630	892	3520	413	432	245	362
9	291	6780	1610	17500	890	2310	1170	3710	394	460	241	452
10	301	3890	1570	9180	854	3080	4960	3090	364	479	299	410
11	293	2820	1910	6010	841	2570	3720	2830	361	400	715	354
12	302	2210	1740	4550	924	2210	2920	5200	1020	355	561	314
13	298	1800	1510	3800	1290	e1900	2440	4590	2080	342	331	298
14	299	1700	1340	3310	1150	e1600	2140	3820	1050	326	297	288
15	293	1610	1220	2820	1020	e1450	3650	3190	797	315	282	282
16	287	1410	1130	2640	952	e1300	3370	2590	1100	308	770	280
17	280	1250	1060	2460	1080	e1250	2960	2300	1350	303	504	299
18	265	1100	983	2260	2120	e1350	2500	2020	919	345	548	364
19	259	1010	889	2080	2910	e1450	2410	1560	728	335	487	318
20	257	989	881	1910	2910	e1700	6510	1290	642	323	379	355
21	256	1020	873	1740	2790	e2000	5540	1130	592	332	304	390
22	252	1450	829	1650	2490	2930	4230	1000	517	348	290	376
23	253	2520	899	1530	2190	2530	3470	888	599	396	276	361
24	253	2460	1190	1990	2140	2280	2900	778	2810	343	271	320
25	266	2090	1420	1690	2040	2010	2430	715	1430	334	331	301
26	290	1850	2290	1390	1910	1800	2470	680	912	306	365	296
27	351	2870	2240	1230	1800	1680	5090	629	765	288	330	299
28	420	3210	2000	1140	1720	1520	3570	562	655	276	291	305
29	391	3640	e1700	1170	---	1420	3020	500	577	270	280	335
30	312	3760	e1550	1380	---	1330	2700	528	582	266	286	278
31	278	---	e1350	1480	---	1200	---	526	---	260	297	---
TOTAL	10644	66483	53754	98310	42772	61530	83024	70536	24919	13084	10725	9593
MEAN	343	2216	1734	3171	1528	1985	2767	2275	831	422	346	320
MAX	871	7040	3830	17500	2910	3080	6510	5200	2810	1160	770	452
MIN	252	286	829	1050	841	1200	892	500	361	260	241	260
CFSM	.43	2.75	2.15	3.93	1.89	2.46	3.43	2.82	1.03	.52	.43	.40
IN.	.49	3.06	2.48	4.53	1.97	2.84	3.83	3.25	1.15	.60	.49	.44

e Estimated.

CLARION RIVER BASIN

03029500 CLARION RIVER AT COOKSBURG, PA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1952 - 1998, BY WATER YEAR (WY) (SINCE REGULATION)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	802	1366	1816	1616	1748	2788	2566	1872	1216	795	637	644
MAX	2357	3906	3821	5654	4138	6185	4721	4086	5307	2565	2732	1995
(WY)	1991	1986	1978	1952	1976	1979	1994	1984	1972	1992	1994	1992
MIN	86.6	204	150	211	369	764	1217	566	365	139	117	109
(WY)	1952	1961	1961	1961	1987	1969	1976	1985	1991	1952	1952	1952

SUMMARY STATISTICS**FOR 1997 CALENDAR YEAR****FOR 1998 WATER YEAR****WATER YEARS 1952 - 1998**

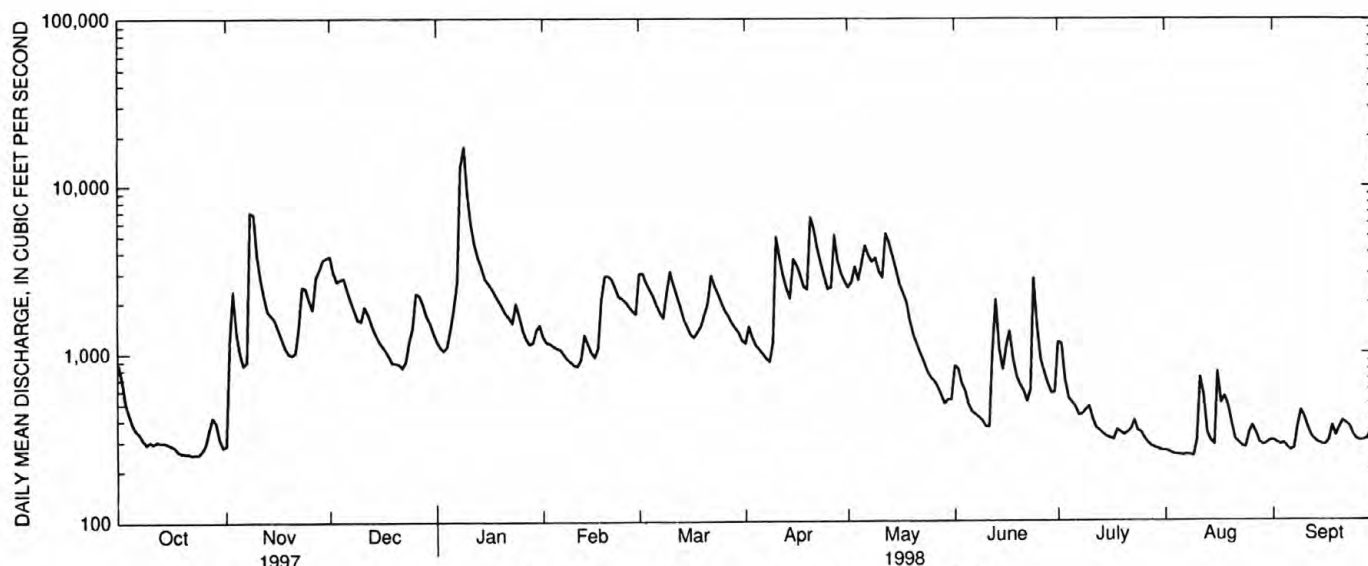
ANNUAL TOTAL	570754	545374	
ANNUAL MEAN	1564	1494	1487
HIGHEST ANNUAL MEAN			2066
LOWEST ANNUAL MEAN			1077
HIGHEST DAILY MEAN	11100	Mar 6	43200
LOWEST DAILY MEAN	245	Aug 11	59
ANNUAL SEVEN-DAY MINIMUM	256	Oct 18	67
INSTANTANEOUS PEAK FLOW			23300
INSTANTANEOUS PEAK STAGE			12.76
INSTANTANEOUS LOW FLOW			239
ANNUAL RUNOFF (CFSM)	1.94		1.85
ANNUAL RUNOFF (INCHES)	26.31		25.14
10 PERCENT EXCEEDS	3190		3230
50 PERCENT EXCEEDS	1190		915
90 PERCENT EXCEEDS	293		300

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 1951, BY WATER YEAR (WY) (PRIOR TO REGULATION)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	590	1085	1475	1891	1961	3055	2969	1971	1154	579	288	348
MAX	2134	4241	3050	3962	3881	6815	6288	3965	2789	1765	580	1078
(WY)	1946	1951	1941	1950	1951	1945	1940	1943	1946	1942	1950	1945
MIN	113	170	337	417	764	1610	725	606	261	158	94.2	82.8
(WY)	1950	1950	1944	1944	1941	1949	1946	1941	1939	1949	1944	1943

SUMMARY STATISTICS**WATER YEARS 1939 - 1951**

ANNUAL MEAN	1444
HIGHEST ANNUAL MEAN	2023
LOWEST ANNUAL MEAN	953
HIGHEST DAILY MEAN	24600
LOWEST DAILY MEAN	43
ANNUAL SEVEN-DAY MINIMUM	50
INSTANTANEOUS PEAK FLOW	32700
INSTANTANEOUS PEAK STAGE	14.96
INSTANTANEOUS LOW FLOW	41
ANNUAL RUNOFF (CFSM)	1.79
ANNUAL RUNOFF (INCHES)	24.31
10 PERCENT EXCEEDS	3350
50 PERCENT EXCEEDS	793
90 PERCENT EXCEEDS	140

a From rating curve extended above 40,000 ft³/s.**b** From peak-stage indicator.

October 1, 1997 to September 30, 1998

CLARION RIVER BASIN

03030500 CLARION RIVER NEAR PINEY, PA

LOCATION.--Lat 41°11'33", long 79°26'25", Clarion County, Hydrologic Unit 05010005, on left bank 0.2 mi downstream from hydroelectric plant of Pennsylvania Electric Co., 2.3 mi northeast of Piney, 2.4 mi upstream from Piney Creek, and 3 mi southwest of Clarion.

DRAINAGE AREA.--951 mi².

PERIOD OF RECORD.--October 1944 to current year (monthly discharge only October 1944 to September 1947).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,002.06 ft above sea level (Pennsylvania Electric Co. bench mark). Prior to Dec. 23, 1947, records from hydroelectric plant 0.2 mi upstream.

REMARKS.--Records good except for estimated daily discharges, which are fair. Flow regulated by East Branch Clarion River Lake since June 1952 and by hydroelectric plant at Piney Dam 0.2 mi upstream since 1924, combined capacity of reservoirs, 113,200 acre-ft. Several measurements of water temperature were made during the year. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--The flood of Mar. 18, 1936 reached a discharge of 50,000 ft³/s, as determined by Pennsylvania Electric Co., elevation, 1,028.5 ft, at lower pool of dam.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1060	637	4120	1310	1270	3610	2280	3230	e652	e1150	124	384
2	521	1830	3630	1310	2530	2920	1700	3150	e1020	e1160	113	312
3	777	1860	2460	1210	1250	3570	1750	4020	e325	e1140	477	106
4	396	1310	3720	1540	1440	3050	1440	4040	e597	e1050	307	472
5	730	1120	2880	3250	1230	2350	806	4830	e874	e580	322	121
6	440	1700	2220	4740	1610	2650	1370	4840	e107	e1240	280	113
7	312	2510	2240	4230	816	2730	1400	4710	e107	e374	102	200
8	525	5130	2620	13100	1030	1640	1560	4900	e972	677	100	688
9	103	7180	2030	17700	1440	2320	2300	4250	e394	481	101	471
10	624	4960	2120	9620	969	3600	4340	4150	e662	489	511	110
11	308	3430	1820	6610	1160	3660	4350	3810	e225	92	619	960
12	103	2820	1930	5500	1070	3480	3610	5760	e946	88	674	120
13	471	1980	2520	4130	1230	2530	4360	5420	e2120	722	355	279
14	374	2290	1330	4190	1910	2010	3030	4270	e601	290	716	667
15	431	1570	1440	3600	1190	2380	4460	4440	e1390	285	393	124
16	523	1630	1570	2630	1460	2180	4250	3170	e1080	628	104	440
17	146	1650	1670	2730	1320	1420	4530	3210	e1660	571	832	105
18	109	1790	1580	2910	2740	2770	3950	2950	e859	77	465	106
19	110	1350	1310	3030	2910	1460	3190	2270	e795	72	784	123
20	942	1180	745	2490	3520	2430	6270	e1300	e665	835	748	779
21	114	982	1020	1900	3290	2700	7030	e964	e1070	447	396	678
22	490	1640	1170	2170	3070	2780	5750	e842	e546	443	154	110
23	217	1820	1200	1280	3610	3920	4800	e891	e567	424	118	406
24	519	2500	1590	2760	2530	2870	3750	e731	e2380	435	742	108
25	98	2850	1440	2270	2590	3120	4150	e1300	e1370	209	358	662
26	104	2170	2850	1400	2430	2570	3340	e686	e1010	76	439	496
27	1010	3150	2480	1310	2450	2160	6450	e616	e619	521	322	108
28	112	2550	2280	1340	1550	2500	4720	e564	e288	412	307	109
29	850	5280	2100	1230	---	979	3710	e949	e1080	294	140	391
30	101	3290	2560	2070	---	2470	4190	e4180	e990	308	146	413
31	301	---	2130	2450	---	2100	---	e675	---	291	625	---
TOTAL	12921	74159	64775	116010	53615	80929	108836	91118	25971	15861	11874	10161
MEAN	417	2472	2090	3742	1915	2611	3628	2939	866	512	383	339
MAX	1060	7180	4120	17700	3610	3920	7030	5760	2380	1240	832	960
MIN	98	637	745	1210	816	979	806	564	107	72	100	105
†	-77	127	-24	12	76	119	146	-6.9	-59	-109	-69	-151

† Change in contents, equivalent in cubic feet per second, in East Branch Clarion River Lake and Piney Reservoir. Records of contents in Piney Reservoir furnished by Pennsylvania Electric Co. Records of contents in East Branch Clarion River Lake furnished by U.S. Army Corps of Engineers.

e Estimated.

CLARION RIVER BASIN

03030500 CLARION RIVER NEAR PINEY, PA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1948 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	911	1632	2197	2094	2322	3343	3116	2231	1466	944	724	731
MAX	2743	5013	4611	6884	5775	6703	5186	4644	6354	3220	3096	2469
(WY)	1991	1986	1978	1952	1976	1964	1970	1984	1972	1992	1994	1992
MIN	40.2	82.5	184	244	527	881	1517	700	345	167	135	120
(WY)	1950	1950	1961	1961	1987	1969	1968	1985	1991	1952	1952	1951

SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

FOR 1998 WATER YEAR

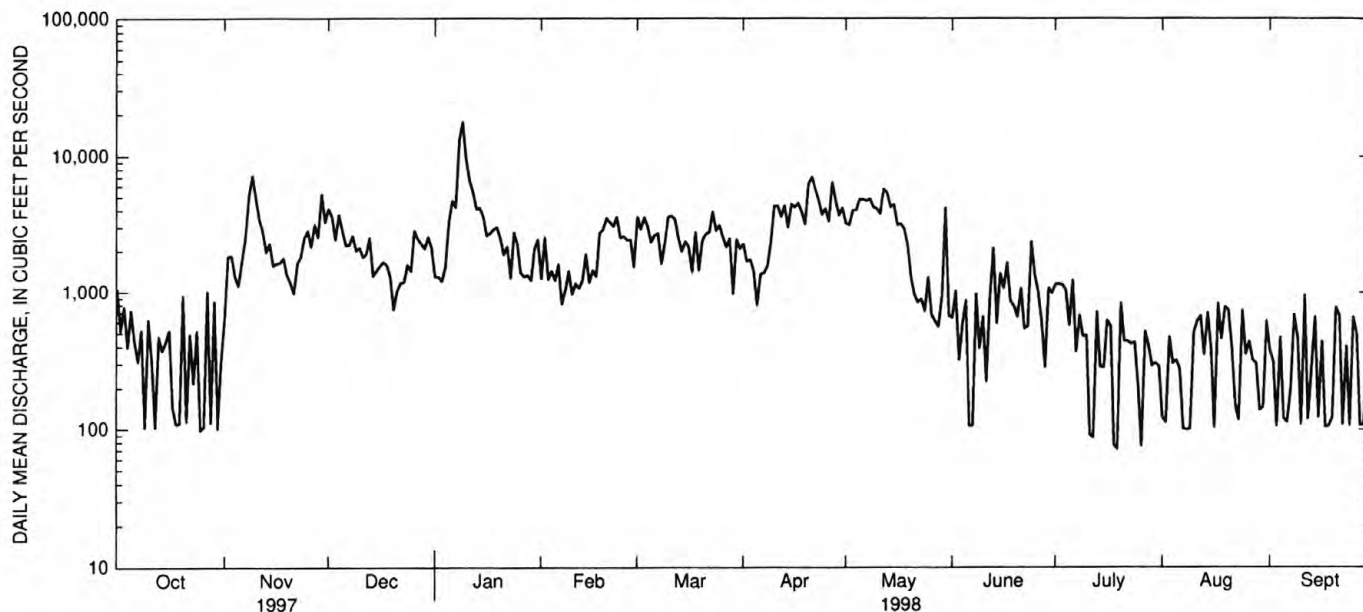
WATER YEARS 1948 - 1998

ANNUAL TOTAL	660423		666230									
ANNUAL MEAN	1809	†-.64	1825	†-2.1					1806			
HIGHEST ANNUAL MEAN									2443			1994
LOWEST ANNUAL MEAN									1223			1963
HIGHEST DAILY MEAN	10500	Mar 6	17700	Jan 9					51600		Jun 23	1972
LOWEST DAILY MEAN	68	Jul 26, 27	72	Jul 19					11		Oct 1	1966
ANNUAL SEVEN-DAY MINIMUM	304	Oct 17	241	Aug 3					26		Oct 16	1949
INSTANTANEOUS PEAK FLOW			22500	Jan 8					^a 74500		Jun 23	1972
INSTANTANEOUS PEAK STAGE			14.55	Jan 8					^b 28.24		Jun 23	1972
10 PERCENT EXCEEDS	3650		4150						4110			
50 PERCENT EXCEEDS	1500		1310						1150			
90 PERCENT EXCEEDS	248		134						125			

† Change in contents, equivalent in cubic feet per second, in East Branch Clarion River Lake and Piney Reservoir. Records of contents in Piney Reservoir furnished by Pennsylvania Electric Co. Records of contents in East Branch Clarion River Lake furnished by U.S. Army Corps of Engineers.

^a From rating curve extended above 44,000 ft³/s.

^b From floodmark.



October 1, 1997 to September 30, 1998

OHIO RIVER MAIN STEM

03031500 ALLEGHENY RIVER AT PARKER, PA

LOCATION.--Lat 41°06'02", long 79°40'53", Armstrong County, Hydrologic Unit 05010006, on right bank 500 ft downstream from bridge on State Highway 368 at Parker, 1.1 mi downstream from Clarion River, at mile 83.4.

DRAINAGE AREA.--7,671 mi².

PERIOD OF RECORD.--October 1932 to current year. Prior to October 1963, published as "at Parkers Landing." Gage-height records collected at same site since 1885 are contained in reports of U.S. Weather Bureau.

GAGE.--Water-stage recorder. Datum of gage is 845.14 ft above sea level. Prior to Oct. 1, 1932, U.S. Weather Bureau gages at different datums. Oct. 1-28, 1932, nonrecording gage at datum 27.00 ft lower.

REMARKS.--No estimated daily discharges. Records good. Flow regulated since 1965 by Allegheny Reservoir, since 1949 by Chautauqua Lake, since 1941 by Tionesta Lake, since 1971 by Union City Reservoir, since 1974 by Woodcock Creek Lake, since 1952 by East Branch Clarion River Lake, and since 1924 by Piney Reservoir. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 17, 1865 reached a stage of 29.4 ft, present datum, discharge, 250,000 ft³/s, from rating curve extended above 137,000 ft³/s.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10900	6240	26500	14900	15000	17100	15100	22900	4260	5290	3010	3170
2	12200	7930	26000	14300	14400	19300	14700	20300	4520	6340	3040	3190
3	11200	9710	23100	13400	12900	19600	14000	25100	4590	6430	3220	3070
4	10400	10700	22900	14600	12100	20500	13000	27000	3950	6180	3570	2950
5	8970	10500	25200	28300	10500	18500	11600	23900	4090	6090	3430	3290
6	8270	9510	24700	35800	10100	17600	10900	21700	3600	5060	3310	2940
7	7730	9170	25200	38500	9440	17500	10100	20700	2970	4130	3350	2910
8	7270	15200	24600	71500	8360	16500	9410	22300	3510	3350	3150	3240
9	6860	18700	22800	98900	8490	17300	11500	23900	3190	3560	3110	3520
10	5760	15500	23700	79400	8610	20500	29100	22600	3620	3540	3400	3280
11	5570	14900	27900	63000	7860	19500	33400	18600	3570	5130	4370	3000
12	4690	13700	25500	56100	8260	17200	31100	21100	5070	5380	4320	3450
13	4280	12100	21700	49300	9740	15300	28300	25800	7780	4110	4160	2800
14	4520	12100	18500	45000	11000	14300	23900	19400	8050	3760	3690	2890
15	4340	11900	15300	42900	10300	13000	28400	15300	6030	2930	3970	3180
16	4310	11800	14500	41800	9090	11300	27700	17900	6850	2700	3300	2710
17	4320	11500	13800	39000	9100	10200	33200	22700	6490	3280	3360	3100
18	3910	11400	13400	37400	13400	9610	30700	21000	6480	3500	3660	2860
19	3840	11200	12100	34500	19100	14300	26400	18300	4600	3260	3650	2960
20	3780	10500	10300	31900	19400	19700	38400	15000	4590	3290	3790	3140
21	4530	11200	10300	28200	18800	23700	43400	10600	3740	3970	3790	3880
22	3730	13300	10500	25500	18100	26900	40800	7830	3700	3820	3550	3730
23	4120	17300	11600	24700	18100	24000	38400	6460	3420	3820	3300	3000
24	3790	20000	13500	25700	17500	21700	36400	6470	4000	4030	3260	3130
25	4740	20500	16200	26000	16300	21100	31800	6900	5230	4500	3950	2850
26	4650	19000	22300	24000	16100	19500	28200	5800	4130	4310	3720	3390
27	5270	21400	25500	21500	14900	17900	35300	5680	4370	3750	3550	3300
28	7000	25700	23400	18900	13800	16900	28900	4370	4150	3850	3330	3040
29	8140	28700	20900	16200	---	15500	25900	3840	3850	3600	3280	3300
30	9010	26400	19400	14500	---	16700	25400	3680	4270	3400	3170	3170
31	7280	---	18100	15100	---	16100	---	3430	---	3340	3490	---
TOTAL	195380	437760	609400	1090800	360750	548810	775410	490560	138670	129700	109250	94440
MEAN	6303	14590	19660	35190	12880	17700	25850	15820	4622	4184	3524	3148
MAX	12200	28700	27900	98900	19400	26900	43400	27000	8050	6430	4370	3880
MIN	3730	6240	10300	13400	7860	9610	9410	3430	2970	2700	3010	2710
CFSM	.82	1.90	2.56	4.59	1.68	2.31	3.37	2.06	.60	.55	.46	.41
IN.	.95	2.12	2.96	5.29	1.75	2.66	3.76	2.38	.67	.63	.53	.46

OHIO RIVER MAIN STEM

03031500 ALLEGHENY RIVER AT PARKER, PA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1933 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	7101	12650	17250	17890	17820	26980	24890	15590	9955	6153	4500	5011
MAX	28650	33760	38040	53560	40460	63020	58110	36220	35340	26090	16890	21370
(WY)	1991	1986	1978	1937	1976	1936	1940	1943	1989	1972	1994	1977
MIN	802	1655	1332	2111	3788	7746	5651	3610	1508	1069	1034	951
(WY)	1964	1961	1961	1961	1934	1969	1946	1934	1934	1934	1934	1936

SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

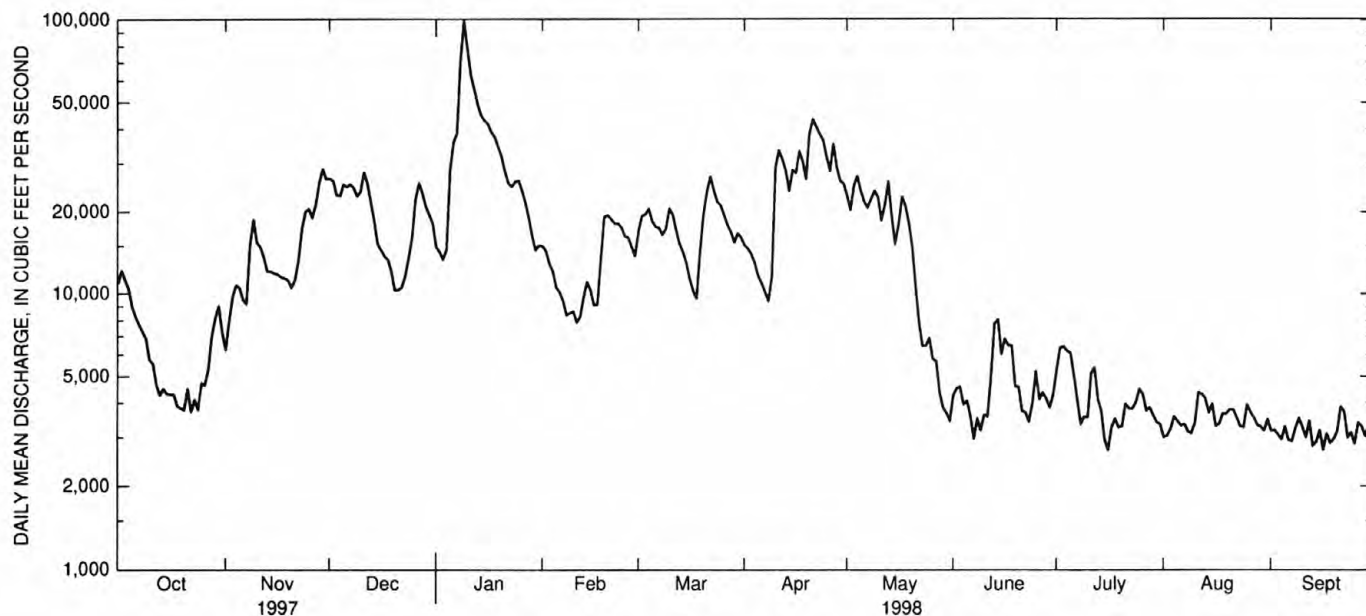
FOR 1998 WATER YEAR

WATER YEARS 1933 - 1998

ANNUAL TOTAL	5316500	4980930	13790	1956
ANNUAL MEAN	14570	13650	19640	1934
HIGHEST ANNUAL MEAN			8175	1934
LOWEST ANNUAL MEAN			160000	Jan 22 1959
HIGHEST DAILY MEAN	61000	Feb 28	98900	Jan 9
LOWEST DAILY MEAN	3350	Aug 12	2700	Jul 16
ANNUAL SEVEN-DAY MINIMUM	3620	Aug 6	2930	Sep 13
INSTANTANEOUS PEAK FLOW			102000	Jan 9
INSTANTANEOUS PEAK STAGE			17.10	Jan 9
INSTANTANEOUS LOW FLOW			2540	Jul 17
ANNUAL RUNOFF (CFSM)	1.90		1.78	1.80
ANNUAL RUNOFF (INCHES)	25.78		24.15	24.43
10 PERCENT EXCEEDS	27000		27300	32000
50 PERCENT EXCEEDS	11900		10500	8960
90 PERCENT EXCEEDS	3870		3290	2080

a About.

b Backwater from ice.



October 1, 1997 to September 30, 1998

REDBANK CREEK BASIN

03032500 REDBANK CREEK AT ST. CHARLES, PA

LOCATION.--Lat 40°59'40", long 79°23'40", Armstrong County, Hydrologic Unit 05010006, on left bank 400 ft downstream from highway bridge on SR 1005 at St. Charles, 0.3 mi downstream from Leatherwood Creek, and 3 mi west of New Bethlehem.

DRAINAGE AREA.--528 mi².

PERIOD OF RECORD.--Annual maximums, water years 1910-18. October 1918 to current year. Monthly discharge only for some periods, published in WSP 1305. Figures of daily discharge for November 1920 to June 1921, published in WSP 523, are unreliable and should not be used.

REVISED RECORDS.--WSP 743: Drainage area. WSP 1385: 1919, 1936-39. WDR PA-72-1: 1923 (M), 1926 (M), 1928 (M), 1936, 1937 (M), 1938 (M), 1943, 1945 (P), 1952 (M), 1953 (M), 1955 (M), 1956 (P), 1958 (M), 1959 (M), 1964, 1966 (M). See also PERIOD OF RECORD.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 973.14 ft above sea level. Prior to July 10, 1940, nonrecording gage at site 500 ft upstream at datum 3.10 ft higher.

REMARKS.--Records good except for estimated daily discharges, which are fair. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a base discharge of 7,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 8	1300	*12,600	*11.69	Jan. 8	1100	9,710	10.63

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	535	147	1620	e500	e1020	2650	784	1420	298	231	61	51
2	413	634	1320	e520	948	2280	809	1740	289	310	55	48
3	298	1170	1090	e540	888	1900	766	2170	380	267	53	52
4	235	741	1100	e740	862	1590	750	1620	330	199	50	50
5	197	494	1120	1220	872	1390	689	2490	281	185	49	49
6	168	380	1000	1150	918	1210	628	2920	255	183	48	47
7	146	801	909	1340	834	1070	592	2310	241	161	46	47
8	128	11100	835	7520	764	1010	599	1930	236	236	45	62
9	115	6530	780	6850	722	1350	910	1920	226	239	44	119
10	106	3480	1010	4330	687	1970	2320	1520	223	202	55	168
11	99	1970	1500	2770	668	1490	1740	1360	225	165	115	102
12	91	1380	1280	1940	723	1220	1290	2390	433	135	160	70
13	89	1070	1070	1620	859	1100	1100	2320	655	119	157	56
14	92	1050	951	1420	800	1080	1330	1710	582	107	101	50
15	88	1130	849	1170	707	995	5210	1360	465	97	78	48
16	81	1050	772	1110	657	906	3660	1130	607	98	71	45
17	78	960	726	1060	786	866	2720	986	1120	101	65	45
18	77	853	680	1000	1350	920	1900	849	807	95	76	44
19	77	785	634	926	2130	1070	2260	741	553	84	124	44
20	76	812	609	855	2130	1110	5670	662	488	80	106	73
21	75	859	591	754	1900	1620	3950	608	428	84	90	57
22	75	1380	565	735	1590	2300	2720	551	345	96	55	82
23	73	2080	668	861	1380	1740	2020	502	315	97	47	e70
24	74	1810	889	1520	1500	1480	1590	464	338	84	54	e58
25	82	1420	979	1300	1510	1290	1320	449	290	93	122	e52
26	91	1200	1110	1070	1370	1220	2090	432	252	93	149	e56
27	114	1330	1040	979	1280	1120	4740	398	221	72	113	e60
28	138	1730	940	e960	1310	1020	2980	361	202	65	97	72
29	153	2300	849	e998	---	941	2050	346	194	66	79	56
30	129	1830	e700	e1120	---	871	1620	340	190	64	60	60
31	110	---	e600	e1230	---	802	---	315	---	65	58	---
TOTAL	4303	52476	28786	50108	31165	41581	60807	38314	11469	4173	2483	1893
MEAN	139	1749	929	1616	1113	1341	2027	1236	382	135	80.1	63.1
MAX	535	11100	1620	7520	2130	2650	5670	2920	1120	310	160	168
MIN	73	147	565	500	657	802	592	315	190	64	44	44
CFSM	.26	3.31	1.76	3.06	2.11	2.54	3.84	2.34	.72	.25	.15	.12
IN.	.30	3.70	2.03	3.53	2.20	2.93	4.28	2.70	.81	.29	.17	.13

e Estimated.

REDBANK CREEK BASIN

03032500 REDBANK CREEK AT ST. CHARLES, PA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1919 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	384	760	1087	1138	1212	1820	1487	1076	686	423	282	287
MAX	1385	2806	3151	4616	2707	5016	3337	2603	3887	2238	1498	2091
(WY)	1927	1922	1928	1937	1990	1936	1940	1919	1972	1996	1956	1996
MIN	40.3	50.9	75.9	96.8	179	358	367	180	123	61.1	33.5	29.2
(WY)	1931	1931	1961	1931	1934	1969	1925	1926	1936	1966	1930	1939

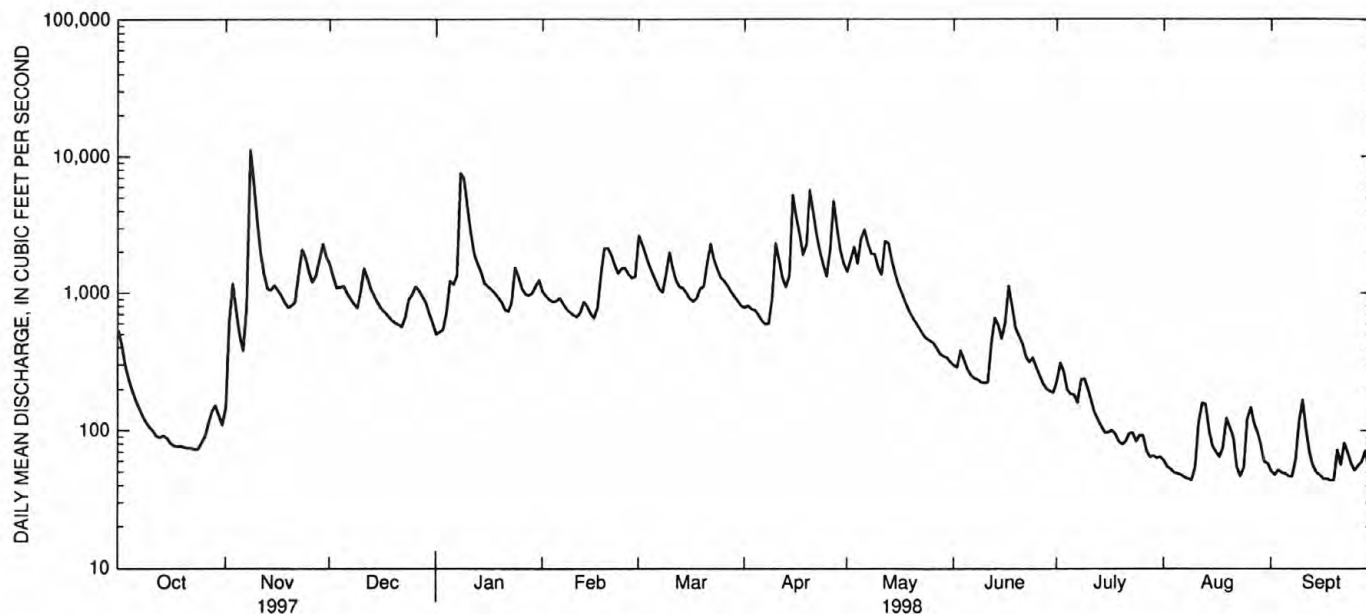
SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

FOR 1998 WATER YEAR

WATER YEARS 1919 - 1998

ANNUAL TOTAL	325369		327558									
ANNUAL MEAN	891		897									
HIGHEST ANNUAL MEAN									884			
LOWEST ANNUAL MEAN									1333			1996
HIGHEST DAILY MEAN									430			1934
LOWEST DAILY MEAN									28100			Jul 19 1996
ANNUAL SEVEN-DAY MINIMUM									20			Sep 28 1922
INSTANTANEOUS PEAK FLOW									24			Aug 30 1939
INSTANTANEOUS PEAK STAGE									12600			Nov 8 1996
INSTANTANEOUS LOW FLOW									11.69			Nov 8 1996
ANNUAL RUNOFF (CFSM)									41			Sep 19 1996
ANNUAL RUNOFF (INCHES)									1.69			Oct 1 1918
10 PERCENT EXCEEDS									1.70			1.68
50 PERCENT EXCEEDS									22.92			22.76
90 PERCENT EXCEEDS									1920			2130
									634			466
									89			85

a Also Sept. 18, 19.**b** From rating curve extended above 35,000 ft³/s on basis of slope-area measurement at gage height 23.90 ft.**c** From floodmarks.**d** Minimum observed.

October 1, 1997 to September 30, 1998

MAHONING CREEK BASIN

03034000 MAHONING CREEK AT PUNXSUTAWNEY, PA

LOCATION.--Lat 40°56'21", long 79°00'31", Jefferson County, Hydrologic Unit 05010006, on right bank 75 ft downstream from Williams Run, 1.8 mi upstream from bridge on Diamond Road at Sportsburg, 1.9 mi downstream from Sawmill Run, and 2 mi west of Punxsutawney.

DRAINAGE AREA.--158 mi².

PERIOD OF RECORD.--October 1938 to current year.

REVISED RECORDS.--WDR PA-87-3: 1977-86 (P).

GAGE.--Water-stage recorder. Datum of gage is 1,206.14 ft above sea level (U.S. Army Corps of Engineers bench mark). Prior to Oct. 1, 1946, at site 2.9 mi upstream at datum 13.30 ft higher.

REMARKS.--Records good except for estimated daily discharges, which are fair. Diurnal fluctuations at low flow by mine pumpage into stream above station. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 18, 1936 reached a stage of 15.6 ft, from floodmark at former site and datum, discharge, 12,500 ft³/s, from rating curve extended above 4,300 ft³/s.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a base discharge of 2,500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 8	1230	*7,460	*10.47	Apr. 15	0400	3,100	6.56
Jan. 8	0900	2,580	5.98				

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	158	83	493	e160	305	888	256	461	115	85	29	17
2	122	430	388	e165	295	721	271	739	105	66	26	18
3	102	318	326	e170	286	652	231	665	139	57	25	21
4	91	198	333	e200	272	542	218	620	109	55	23	20
5	82	156	310	e230	283	464	205	1050	94	60	23	17
6	72	131	278	e270	283	395	193	982	89	55	23	16
7	65	1060	256	e320	254	352	183	752	86	50	22	18
8	62	6190	237	2100	240	396	180	720	85	89	21	25
9	58	2560	224	1750	230	701	310	618	79	88	21	28
10	55	1200	288	1080	224	704	579	494	79	60	31	25
11	53	725	450	744	225	555	397	457	119	51	44	22
12	52	510	383	555	313	464	334	796	285	46	34	19
13	51	383	333	489	322	404	302	634	197	45	26	17
14	51	368	298	400	275	379	451	521	193	44	23	16
15	50	351	263	340	244	328	2140	433	154	45	28	16
16	49	314	239	341	233	294	1180	364	271	45	28	15
17	47	277	224	321	290	276	817	320	337	45	25	16
18	47	247	205	302	451	280	588	273	220	45	32	16
19	47	237	192	278	735	290	792	244	171	42	42	16
20	47	241	186	258	718	279	1620	221	159	36	29	20
21	46	247	173	229	660	380	1090	201	127	38	24	27
22	45	453	164	229	545	477	787	184	111	38	22	22
23	43	563	222	313	481	399	608	174	106	42	21	20
24	43	493	244	493	534	367	481	163	96	45	23	18
25	48	397	288	391	504	329	392	157	87	40	46	17
26	56	352	313	339	499	336	897	156	79	36	46	18
27	73	372	e270	313	477	308	1580	140	73	34	32	18
28	66	528	e240	299	612	283	929	130	71	32	24	18
29	53	661	e220	302	---	262	680	135	68	30	20	18
30	48	553	e190	375	---	246	544	165	71	30	19	17
31	48	---	e170	339	---	233	---	126	---	30	18	---
TOTAL	1930	20598	8400	14095	10790	12984	19235	13095	3975	1504	850	571
MEAN	62.3	687	271	455	385	419	641	422	133	48.5	27.4	19.0
MAX	158	6190	493	2100	735	888	2140	1050	337	89	46	28
MIN	43	83	164	160	224	233	180	126	68	30	18	15
CFSM	.39	4.35	1.71	2.88	2.44	2.65	4.06	2.67	.84	.31	.17	.12
IN.	.45	4.85	1.98	3.32	2.54	3.06	4.53	3.08	.94	.35	.20	.13

e Estimated.

MAHONING CREEK BASIN

03034000 MAHONING CREEK AT PUNXSUTAWNEY, PA--Continued

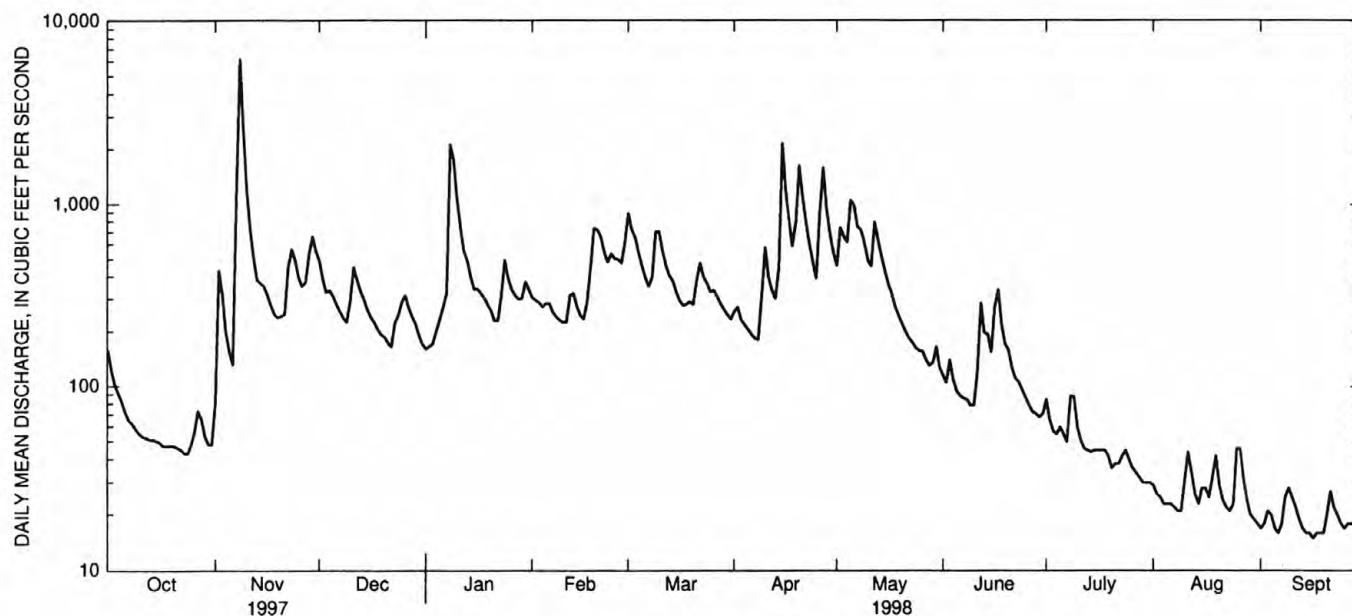
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	120	226	331	339	412	569	467	338	211	157	107	95.2
MAX	394	715	769	1025	1013	1249	909	722	1210	855	670	572
(WY)	1987	1986	1973	1952	1975	1964	1994	1953	1972	1977	1956	1996
MIN	18.1	27.9	27.2	61.0	96.6	132	112	79.9	48.9	26.4	23.0	16.9
(WY)	1965	1954	1961	1961	1993	1969	1946	1941	1991	1988	1949	1964

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1939 - 1998	
ANNUAL TOTAL	102314		108027			
ANNUAL MEAN	280		296		280	
HIGHEST ANNUAL MEAN					433	
LOWEST ANNUAL MEAN					177	
HIGHEST DAILY MEAN	6190	Nov 8	6190	Nov 8	13200	Jun 23 1972
LOWEST DAILY MEAN	35	Aug 11,12	15	Sep 16	12	Oct 19 1939
ANNUAL SEVEN-DAY MINIMUM	38	Aug 6	16	Sep 13	13	Oct 14 1939
INSTANTANEOUS PEAK FLOW			7460	Nov 8	a20400	Jul 19 1996
INSTANTANEOUS PEAK STAGE			10.47	Nov 8	b18.38	Jul 19 1996
INSTANTANEOUS LOW FLOW			14	Sep 16	2.6	Sep 26 1939
ANNUAL RUNOFF (CFSM)	1.77		1.87		1.77	
ANNUAL RUNOFF (INCHES)	24.09		25.43		24.11	
10 PERCENT EXCEEDS	566		641		630	
50 PERCENT EXCEEDS	186		221		156	
90 PERCENT EXCEEDS	48		23		34	

a From rating curve extended above 4,300 ft³/s on basis of slope-area measurement at gage height 13.01 ft.

b From floodmark in gage well.



October 1, 1997 to September 30, 1998

MAHONING CREEK BASIN

03034500 LITTLE MAHONING CREEK AT McCORMICK, PA

LOCATION.--Lat 40°50'10", long 79°06'37", Indiana County, Hydrologic Unit 05010006, on left bank 200 ft upstream from bridge on SR 4018 at McCormick, 1 mi west of Georgeville, 1.7 mi upstream from Ross Run, and 4 mi southeast of Smicksburg.

DRAINAGE AREA.--87.4 mi².

PERIOD OF RECORD.--October 1939 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,164.88 ft above sea level (U.S. Army Corps of Engineers bench mark). Prior to May 10, 1940, nonrecording gage at site 200 ft upstream at same datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a base discharge of 2,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 8	1330	*4,220	*11.06	No other peak greater than base discharge.			

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	67	25	267	e88	141	519	105	199	31	18	4.4	6.0
2	45	245	195	e94	132	369	124	401	25	16	3.5	4.6
3	34	179	159	e105	125	299	98	324	23	13	3.1	4.2
4	28	96	174	e120	118	235	91	333	21	12	3.2	4.3
5	22	72	161	e110	126	193	84	793	20	12	3.0	4.9
6	20	56	141	e140	129	161	77	539	20	11	2.3	3.9
7	18	459	131	e195	114	143	71	362	19	9.9	2.1	2.7
8	16	3480	120	1450	110	171	70	316	20	112	1.9	4.4
9	14	1210	114	940	107	355	192	253	18	92	1.8	20
10	14	578	192	538	106	374	330	191	18	37	4.7	22
11	13	349	351	356	109	258	182	172	21	29	30	17
12	13	240	250	256	144	201	144	309	59	26	26	12
13	13	176	201	221	152	170	124	212	88	21	11	7.2
14	13	189	167	183	129	156	172	170	78	17	5.8	5.1
15	13	216	141	155	114	135	1060	142	47	15	4.1	3.7
16	13	181	125	164	106	119	530	123	119	17	3.6	2.8
17	12	153	115	158	134	109	387	108	202	20	3.8	2.5
18	12	134	103	141	217	115	261	89	107	24	4.7	2.4
19	12	126	e96	129	468	126	487	77	70	29	6.1	2.5
20	12	132	e88	119	398	125	959	67	59	18	4.9	3.0
21	11	142	e84	103	326	205	521	59	45	17	3.3	7.8
22	11	295	e80	103	248	234	349	53	37	22	2.6	30
23	10	327	e130	240	210	181	253	49	33	21	2.3	30
24	11	249	e150	432	252	163	192	44	30	19	2.3	23
25	14	186	e170	275	237	142	153	42	26	19	8.6	18
26	19	163	201	206	262	141	533	41	23	15	33	15
27	41	167	e140	174	253	128	1120	37	21	19	28	19
28	32	308	e125	159	370	118	473	32	19	9.3	16	71
29	19	426	e110	151	---	108	315	33	18	6.0	10	46
30	15	308	e100	194	---	99	240	47	18	5.6	8.1	29
31	13	---	e93	163	---	92	---	34	---	5.5	7.0	---
TOTAL	600	10867	4674	7862	5337	5944	9697	5651	1335	707.3	251.2	424.0
MEAN	19.4	362	151	254	191	192	323	182	44.5	22.8	8.10	14.1
MAX	67	3480	351	1450	468	519	1120	793	202	112	33	71
MIN	10	25	80	88	106	92	70	32	18	5.5	1.8	2.4
CFSM	.22	4.14	1.73	2.90	2.18	2.19	3.70	2.09	.51	.26	.09	.16
IN.	.22	4.63	1.99	3.35	2.27	2.53	4.13	2.41	.57	.30	.11	.18

e Estimated.

MAHONING CREEK BASIN

03034500 LITTLE MAHONING CREEK AT McCORMICK, PA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	66.6	136	198	206	240	309	238	170	96.8	75.1	55.6	48.8
MAX	251	378	436	569	715	756	525	358	458	445	294	296
(WY)	1955	1986	1991	1952	1975	1963	1948	1956	1972	1977	1958	1996
MIN	3.39	10.7	21.8	26.2	42.7	59.0	48.7	20.5	9.10	4.71	3.85	2.33
(WY)	1964	1940	1961	1940	1993	1969	1946	1941	1949	1966	1957	1952

SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

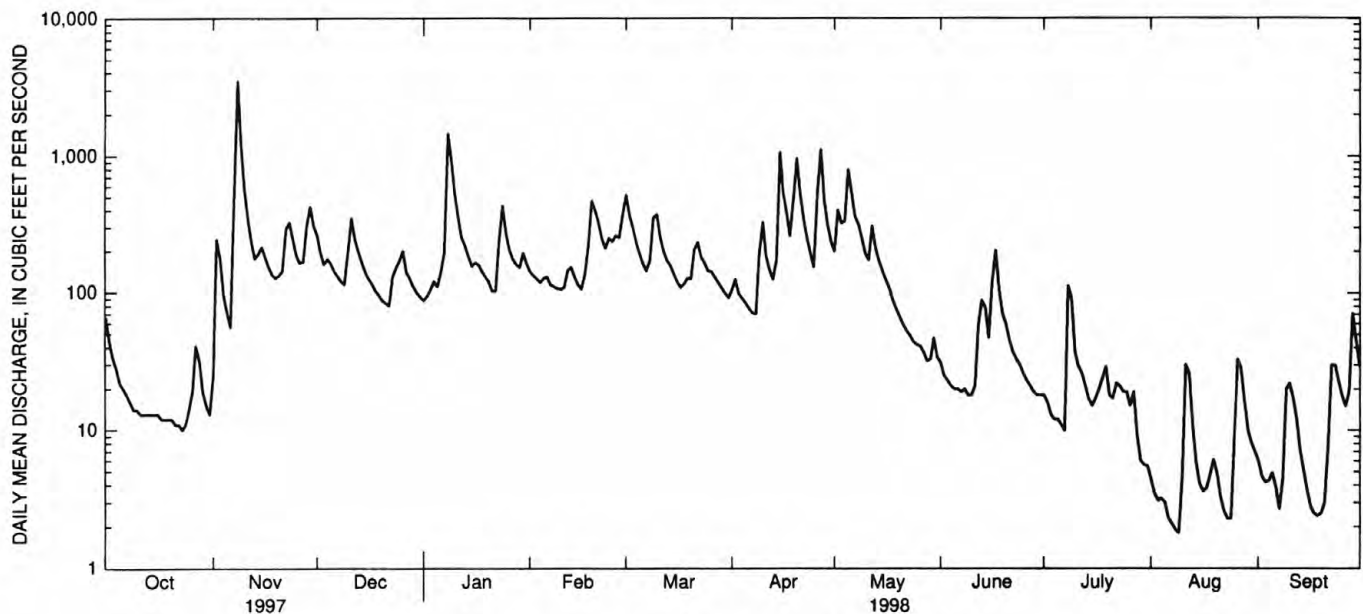
FOR 1998 WATER YEAR

WATER YEARS 1940 - 1998

ANNUAL TOTAL	54430.7	53349.5	
ANNUAL MEAN	149	146	
HIGHEST ANNUAL MEAN			153
LOWEST ANNUAL MEAN			240
HIGHEST DAILY MEAN	3480	Nov 8	3480
LOWEST DAILY MEAN	2.9	Aug 12	1.8
ANNUAL SEVEN-DAY MINIMUM	6.5	Aug 6	2.5
INSTANTANEOUS PEAK FLOW			4220
INSTANTANEOUS PEAK STAGE			11.06
INSTANTANEOUS LOW FLOW			1.7
ANNUAL RUNOFF (CFSM)	1.71		1.67
ANNUAL RUNOFF (INCHES)	23.17		22.71
10 PERCENT EXCEEDS	329		326
50 PERCENT EXCEEDS	93		100
90 PERCENT EXCEEDS	13		5.9

a From rating curve extended above 8,500 ft³/s.

b From peak-stage indicator.



October 1, 1997 to September 30, 1998

OHIO RIVER MAIN STEM

03036500 ALLEGHENY RIVER AT KITTANNING, PA

LOCATION.--Lat 40°49'13", long 79°31'54", Armstrong County, Hydrologic Unit 05010006, on right bank 600 ft upstream from dam at lock 7, 3,000 ft upstream from bridge on SR 1038 at Kittanning, 5.7 mi upstream from Crooked Creek, and 9.7 mi downstream from Mahoning Creek, at mile 45.8.

DRAINAGE AREA.--8,973 mi².

PERIOD OF RECORD.--August 1904 to September 1928, October 1934 to current year. Monthly discharge only for some periods, published in WSP 1305.

REVISED RECORDS.--WSP 873: Drainage area. WSP 1305: 1906 (M), 1914, 1925. WSP 1435: 1936-37, 1939.

GAGE.--Water-stage recorder and concrete dam control. Datum of gage is 773.40 ft above sea level (U.S. Army Corps of Engineers bench mark). Prior to Sept. 30, 1928, nonrecording gage at site 4,000 ft downstream at different datum. Oct. 1, 1934 to Apr. 19, 1939, nonrecording gage, Apr. 20, 1939 to Sept. 27, 1990, water-stage recorder at present site at different datum.

REMARKS.--No estimated daily discharges. Records good. Flow regulated since 1924 by Piney Resvoir, since 1941 by Mahoning Creek Lake, and Tionesta Lake, since 1949 by Chautauqua Lake, since 1965 by Allegheny Reservoir, since 1971 by Union City Reservoir, and since 1974 by Woodcock Creek Lake. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11100	7000	29400	16400	17700	20000	16700	27800	4520	5270	2790	3340
2	14200	8420	29600	15000	15900	24300	17000	24700	5070	6460	2780	3060
3	12300	11500	26000	15500	15500	23600	16300	26100	5310	7120	2180	2860
4	11500	12400	24000	15100	14200	24500	15200	31700	4280	6990	3390	2580
5	10100	12100	27200	25600	12700	22400	13900	28200	4380	6610	3320	3120
6	9080	10800	25300	36500	12400	20700	12700	28000	4320	5670	3150	2690
7	8250	10900	26800	40500	11800	20100	11800	26200	3210	4810	3290	2790
8	7710	26400	25800	70000	10500	19500	11100	24700	3070	4190	3210	3090
9	7220	28600	24800	110000	10200	19100	12200	28400	3850	4000	2940	3440
10	6010	23900	24300	89600	10300	23900	25900	26400	3230	3990	3160	3190
11	5690	22900	30600	70400	9560	23800	37000	23800	3600	5030	4520	2830
12	4740	19600	29100	61600	10100	21100	34300	22800	4970	5830	4350	3430
13	4230	18700	25200	55500	11300	18400	31300	31000	8460	4550	4430	2560
14	4430	16700	22300	49300	12800	17400	26900	25000	9490	4060	3710	2710
15	4310	16700	18000	46900	12500	15700	37100	19700	7580	2940	3840	3080
16	4240	15400	16200	46200	10900	13800	36000	18600	8500	2540	3340	2460
17	4190	14600	15500	43100	11100	12800	39500	24500	8790	3020	3080	2910
18	3800	14000	14900	40800	15000	11300	37300	23400	8630	3420	3790	2650
19	3700	13400	13900	37900	22100	15600	31900	21300	6500	3070	3400	2730
20	4290	12700	11800	35100	24200	19700	46100	17400	6030	3240	3840	3000
21	4460	13000	11500	31200	23700	25300	51100	12700	4650	4070	3730	3930
22	3710	15600	11900	26900	22500	31100	47700	9350	4650	3840	3440	3870
23	4010	19800	12800	26700	21800	28700	44300	7740	3870	3970	3140	2940
24	3870	22900	14900	27700	21700	25000	41600	7540	3760	3920	3100	3010
25	4460	23800	17200	29100	20600	24400	36500	7670	6150	4590	4210	2740
26	4650	21800	21700	27500	19700	23000	33100	7270	4580	4510	3870	3340
27	5510	22300	26700	24900	18300	21300	43800	6810	4690	3880	3570	3300
28	7040	27800	25600	21900	17700	19500	36300	5560	4650	3910	3250	3050
29	8340	32400	23400	19800	---	18700	32200	4630	3680	3640	3120	3210
30	9680	31600	21400	16600	---	17900	30600	4450	4800	3300	2970	3120
31	8020	---	20000	17400	---	18500	---	3920	---	3180	3030	---
TOTAL	204840	547720	667800	1190700	436760	641100	907400	577340	159270	135620	105940	91030
MEAN	6608	18260	21540	38410	15600	20680	30250	18620	5309	4375	3417	3034
MAX	14200	32400	30600	110000	24200	31100	51100	31700	9490	7120	4520	3930
MIN	3700	7000	11500	15000	9560	11300	11100	3920	3070	2540	2180	2460
CFSM	.74	2.03	2.40	4.28	1.74	2.30	3.37	2.08	.59	.49	.38	.34
IN.	.85	2.27	2.77	4.94	1.81	2.66	3.76	2.39	.66	.56	.44	.38

OHIO RIVER MAIN STEM

03036500 ALLEGHENY RIVER AT KITTANNING, PA--Continued

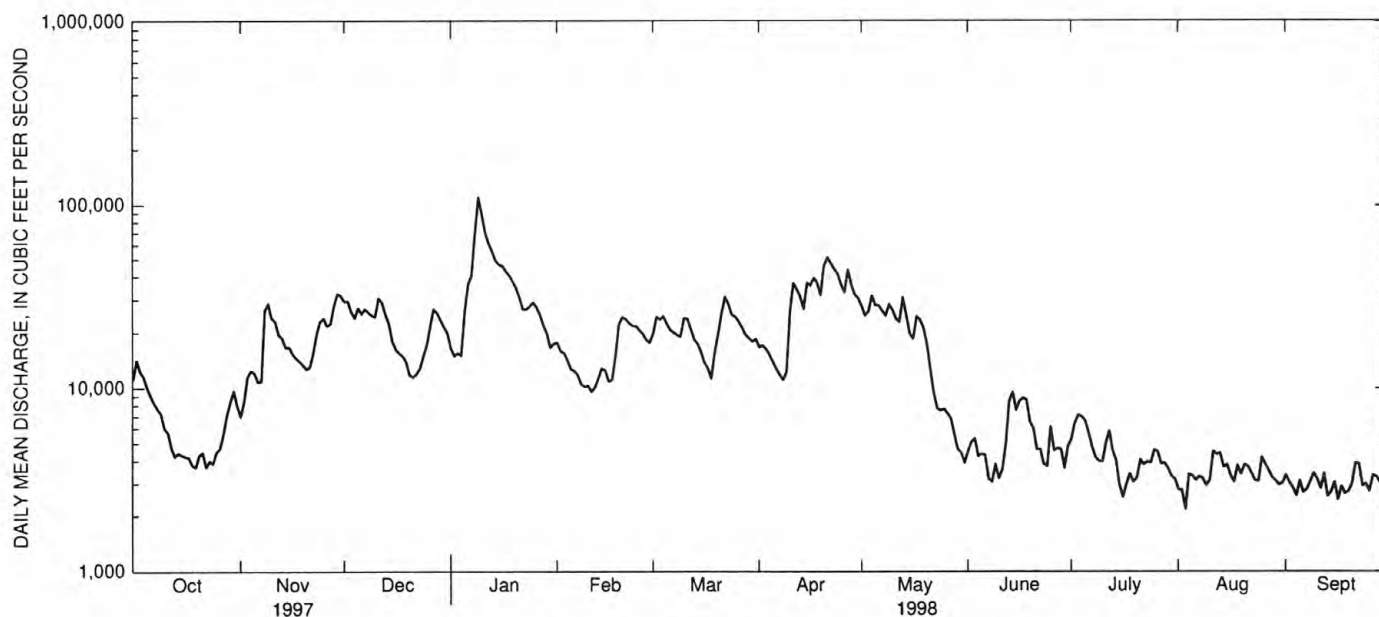
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1904 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	8513	14340	19030	21170	20940	32770	27670	18480	11430	7037	5099	5613
MAX	31750	37830	55850	62840	45020	74110	66140	43650	40230	28200	19250	23500
(WY)	1991	1986	1928	1937	1990	1936	1940	1919	1989	1972	1977	1926
MIN	848	1155	1636	2752	4688	10550	6585	4860	2893	1511	1274	930
(WY)	1924	1909	1961	1961	1963	1915	1946	1941	1936	1966	1910	1909

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1904 - 1998	
ANNUAL TOTAL	5994220		5665520			
ANNUAL MEAN	16420		15520		15990	
HIGHEST ANNUAL MEAN					22400	
LOWEST ANNUAL MEAN					10450	
HIGHEST DAILY MEAN	66000		Feb 28		110000	
LOWEST DAILY MEAN	2870		Aug 12		2180	
ANNUAL SEVEN-DAY MINIMUM	3130		Aug 6		2730	
INSTANTANEOUS PEAK FLOW			115000		Jan 9	
INSTANTANEOUS PEAK STAGE			18.94		Jan 9	
ANNUAL RUNOFF (CFSM)	1.83		1.73		b30.70	
ANNUAL RUNOFF (INCHES)	24.85		23.49		1.78	
10 PERCENT EXCEEDS	30800		31200		37400	
50 PERCENT EXCEEDS	13700		12200		10100	
90 PERCENT EXCEEDS	3670		3150		2180	

a Also Sept. 16, 17, 1913.

b From Floodmark, site and datum then in use.



CROOKED CREEK BASIN

03037350 SOUTH BRANCH PLUM CREEK AT FIVE POINTS, PA
(National water-quality assessment station)

LOCATION.--Lat 40°43'08", long 79°14'12", Indiana County, Hydrologic Unit 05010006, on left bank, 800 ft upstream of bridge on Creek Road, about 0.6 mi downstream of Mudlick Run, and about 2 mi upstream of the Indiana-Armstrong County boundary.

DRAINAGE AREA.--33.3 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1996 to September 1998 (discontinued).

GAGE.--Water-stage recorder. Elevation of gage is 1,060 ft above sea level.

REMARKS.--Records good, except for estimated daily discharges, which are fair. Several measurements of water temperature were made during the year. Satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a base discharge of 700 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 8	1000	*1,620	*6.58	May 6	0730	718	4.51
Apr. 27	0100	964	5.12				

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	23	97	e25	32	176	29	74	5.1	8.0	.48	.17
2	8.5	63	67	e23	30	132	26	95	3.8	4.1	.45	.13
3	6.5	38	53	e30	27	105	22	80	3.1	2.9	.35	.13
4	5.2	23	65	e41	26	81	20	71	2.7	2.4	.28	.12
5	4.0	17	54	e39	33	63	18	120	2.5	2.6	.26	.09
6	3.4	14	46	e60	37	50	16	487	2.3	2.1	.19	.04
7	3.0	199	41	109	32	43	15	203	2.2	1.7	.16	1.0
8	2.7	1180	38	627	30	67	16	147	2.2	129	.16	1.9
9	2.5	374	36	386	28	117	73	103	2.0	45	.12	1.4
10	2.5	155	106	187	26	129	104	74	1.9	22	1.6	.66
11	2.3	96	150	121	26	98	69	70	2.9	14	9.2	.43
12	2.3	65	112	86	30	73	51	94	11	9.4	1.7	.35
13	2.3	47	84	77	27	58	41	71	18	7.2	.78	.36
14	2.2	97	63	57	24	e45	81	55	13	5.4	.48	.27
15	2.2	139	49	49	21	e36	449	42	7.5	4.7	.37	.18
16	2.5	108	40	50	20	e30	199	33	32	5.3	.31	.11
17	2.1	80	34	45	32	e25	129	31	50	4.6	.30	.07
18	1.8	62	29	43	76	e32	87	22	25	3.5	.39	.05
19	1.9	53	26	39	182	34	214	18	34	2.5	.46	.03
20	1.9	49	23	36	159	32	457	15	186	2.1	.40	.02
21	1.8	44	21	31	126	78	204	12	45	3.1	.31	13
22	1.7	76	21	29	96	88	125	10	25	7.1	.22	14
23	1.7	79	43	114	83	74	87	8.8	18	6.1	.16	3.8
24	1.8	64	39	181	125	62	62	7.9	14	3.4	.10	1.5
25	3.1	50	62	125	121	51	45	8.4	9.8	2.1	.25	1.2
26	5.2	45	62	90	99	46	301	7.5	7.9	1.5	.72	1.5
27	11	44	56	69	82	40	563	6.2	6.5	1.2	1.2	1.4
28	4.0	111	48	60	135	36	187	5.1	6.4	.99	.52	5.8
29	2.4	155	42	51	---	31	114	5.9	5.2	.79	.33	2.3
30	2.0	122	e35	46	---	27	90	7.9	6.7	.75	.29	1.2
31	1.7	---	e30	38	---	24	---	5.2	---	.75	.20	---
TOTAL	110.2	3672	1672	2964	1765	1983	3894	1989.9	551.7	306.28	22.74	53.21
MEAN	3.55	122	53.9	95.6	63.0	64.0	130	64.2	18.4	9.88	.73	1.77
MAX	14	1180	150	627	182	176	563	487	186	129	9.2	14
MIN	1.7	14	21	23	20	24	15	5.1	1.9	.75	.10	.02
CFSM	.11	3.68	1.62	2.87	1.89	1.92	3.90	1.93	.55	.30	.02	.05
IN.	.12	4.10	1.87	3.31	1.97	2.22	4.35	2.22	.62	.34	.03	.06

e Estimated.

CROOKED CREEK BASIN

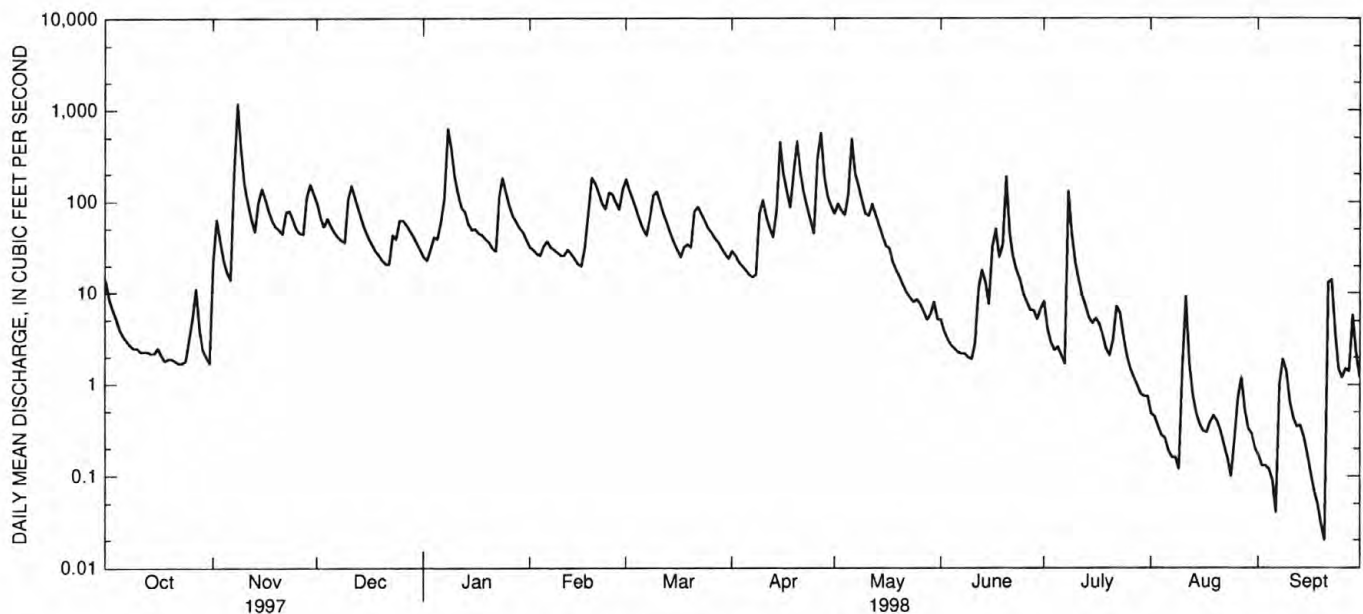
03037350 SOUTH BRANCH PLUM CREEK AT FIVE POINTS, PA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 1998 BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	27.8	101	87.0	69.6	69.7	78.4	75.4	67.0	34.7	17.1	6.47	21.0
MAX	52.0	122	120	95.6	76.3	92.9	130	69.8	46.2	38.3	13.7	55.9
(WY)	1997	1998	1997	1998	1997	1997	1998	1997	1996	1996	1997	1996
MIN	3.55	79.1	53.9	43.6	63.0	64.0	21.1	64.2	18.4	2.98	.73	1.77
(WY)	1998	1997	1998	1997	1998	1998	1997	1998	1998	1997	1998	1998

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR				FOR 1998 WATER YEAR				WATER YEARS 1996 - 1998			
ANNUAL TOTAL	16481.85				18984.03							
ANNUAL MEAN	45.2				52.0				51.7			
HIGHEST ANNUAL MEAN									52.0			
LOWEST ANNUAL MEAN									51.3			
HIGHEST DAILY MEAN	1180				1180				1180			
LOWEST DAILY MEAN	.54				.02				.02			
ANNUAL SEVEN-DAY MINIMUM	1.0				.10				.10			
INSTANTANEOUS PEAK FLOW					1620				1620			
INSTANTANEOUS PEAK STAGE					a6.58				a6.58			
INSTANTANEOUS LOW FLOW					.01				.01			
ANNUAL RUNOFF (CFSM)	1.36				1.56				1.55			
ANNUAL RUNOFF (INCHES)	18.41				21.21				21.08			
10 PERCENT EXCEEDS	97				121				114			
50 PERCENT EXCEEDS	24				26				24			
90 PERCENT EXCEEDS	1.7				.44				1.5			

a From gage height record.



October 1, 1997 to September 30, 1998

CROOKED CREEK BASIN

03037350 SOUTH BRANCH PLUM CREEK AT FIVE POINTS, PA--Continued
(National Water-Quality Assessment station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 1996 to September 1998 (discontinued).

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: March 1997 to September 1997, March 1998 to July 1998.

WATER TEMPERATURE: October 1996 to September 1998.

INSTRUMENTATION.--Daily record measured and collected at hourly intervals with in-situ probes and electronic data loggers. Water temperature was measured and collected at hourly intervals using an in-situ probe with an electronic data logger from October 1996 to September 1998.

REMARKS.--All water-quality samples were collected and analyzed by the U.S. Geological Survey. Interruptions in the daily record were due to malfunctions of the equipment. Water temperature and specific conductance data from the in-situ probes oftentimes did not exactly agree with the water temperature and specific conductance of the monthly and storm samples because of the fixed location of the in-situ probes. Additional sites in the (NAWQA) fixed-station network are shown in figure 6 on page 28. An explanation of selected abbreviations used in the water-quality tables are given on pages 29-31.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum, 29.5°C, July 18, 1997; minimum 0.0°C, many days during winter periods.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 28.0°C, June 25, 26; minimum 0.0°C, November 19, December 31, January 1, 2.

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

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (μ S/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	OXYGEN, DIS- SOLVED (MG/L) (00300)	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)
OCT											
09...	1015	4.2	228	7.3	17.0	736	7.1	76	19	6.7	10
NOV											
04...	0930	24	161	7.4	7.0	730	10.9	--	13	4.3	5.6
08...	1330	1440	90	6.6	8.5	725	10.3	27	7.2	2.3	1.7
DEC											
09...	1045	36	153	7.1	2.5	729	13.0	50	13	4.4	5.8
JAN											
08...	0905	682	101	6.9	9.5	736	6.4	34	8.6	2.9	2.6
22...	0950	29	148	7.1	1.0	735	14.0	51	13	4.6	5.0
FEB											
27...	1010	82	121	7.2	6.0	725	12.0	42	10	3.9	3.6
MAR											
11...	0950	98	124	7.1	1.5	737	15.0	41	10	3.8	3.4
APR											
15...	0915	540	97	6.9	10.0	728	9.6	32	8.4	2.7	2.2
24...	0945	64	114	7.3	9.0	742	11.6	42	11	3.7	3.5
27...	1440	415	95	7.0	10.5	739	10.9	34	8.8	2.9	2.2
MAY											
06...	1030	592	93	6.8	8.5	743	8.4	34	9.1	2.9	2.0
21...	0950	12	150	7.2	19.0	740	8.3	54	14	4.7	5.4
JUN											
10...	1000	1.8	222	7.3	14.5	743	8.8	75	19	6.6	11
JUL											
08...	1220	289	116	7.2	20.0	730	6.5	38	10	3.0	3.9
15...	0940	4.5	186	6.9	22.0	746	7.5	65	17	5.6	8.4
AUG											
12...	0900	1.8	198	7.4	21.0	745	6.5	63	16	5.3	11
SEP											
15...	0915	.20	260	7.5	19.5	745	8.1	79	20	6.8	16

CROOKED CREEK BASIN

03037350 SOUTH BRANCH PLUM CREEK AT FIVE POINTS, PA--Continued

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

DATE	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	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, 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)
OCT 09...	3.1	54	29	15	.11	4.2	127	<.010	.357	.036	.28
NOV 04...	--	31	--	--	--	--	--	.031	1.21	<.020	.13
08...	3.2	10	14	3.8	<.10	4.7	65	<.010	1.47	<.020	.49
DEC 09...	1.3	20	23	11	<.10	6.2	93	<.010	1.18	<.020	<.10
JAN 08...	2.3	12	16	5.0	<.10	5.7	73	<.010	1.11	<.020	.58
22...	1.1	20	23	8.1	<.10	6.2	90	.012	1.27	<.020	<.10
FEB 27...	1.1	14	22	5.9	<.10	5.6	72	<.010	1.12	.036	.11
MAR 11...	.97	14	21	5.6	<.10	6.0	70	<.010	1.25	.031	<.10
APR 15...	1.6	14	16	3.3	<.10	5.4	65	<.010	.937	.052	.76
24...	1.0	18	21	5.0	<.10	5.6	70	<.010	2.58	.054	<.10
27...	1.1	11	18	3.2	<.10	6.0	62	<.010	.991	.046	.33
MAY 06...	1.5	14	16	--	<.10	5.6	67	<.010	.873	.044	.53
21...	1.6	28	24	6.7	<.10	5.3	89	.015	.702	.047	.21
JUN 10...	1.9	42	39	14	.10	2.7	126	<.010	.258	.028	.26
JUL 08...	3.0	20	13	5.9	<.10	4.3	77	.015	.986	<.020	1.5
15...	2.2	36	26	11	<.10	4.1	119	.016	.901	.079	.18
AUG 12...	4.1	44	21	14	.10	3.5	109	.012	.436	.073	.49
SEP 15...	3.7	45	34	23	.13	1.6	148	<.010	.123	.034	.42

CROOKED CREEK BASIN

SOUTH BRANCH PLUM CREEK AT FIVE POINTS, PA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	NITRO- GEN, AM- MONIA + ORGANIC DIS. (MG/L AS N) (00623)	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)	IRON, DIS- SOLVED (µG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (µG/L AS MN) (01056)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS- PENDEDED TOTAL (MG/L AS C) (00689)	SEDI- MENT, SUS- PENDEDED (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT										
09...	<.20	<.010	<.010	<.010	12	149	2.3	.30	11	79
NOV										
04...	.22	<.010	<.010	.031	56	92	2.2	.40	8	96
08...	.33	.092	.011	<.010	89	261	4.4	1.6	78	93
DEC										
09...	<.10	<.010	<.010	<.010	110	168	1.0	<.20	4	92
JAN										
08...	.29	.083	<.010	<.010	85	115	3.3	4.5	293	91
22...	<.10	<.010	<.010	.011	170	169	.80	<.20	4	88
FEB										
27...	<.10	<.010	<.010	.010	43	85	.80	.30	10	95
MAR										
11...	<.10	<.010	<.010	<.010	81	95	1.0	.20	7	93
APR										
15...	.27	.175	.015	.011	67	180	3.0	1.4	198	80
24...	.26	<.010	.016	<.010	52	87	1.1	.20	6	75
27...	.14	.072	<.010	<.010	32	67	1.9	.20	71	84
MAY										
06...	.25	.112	<.010	<.010	68	91	2.6	1.8	123	87
21...	.15	.021	<.010	<.010	75	70	1.4	.30	7	79
JUN										
10...	.15	<.010	<.010	<.010	38	55	1.7	.20	4	92
JUL										
08...	.53	.405	.052	.023	80	47	5.4	>5.0	359	86
15...	.17	<.010	<.010	.020	29	64	1.7	.40	4	77
AUG										
12...	.38	.049	.011	<.010	<10	31	4.0	.60	17	91
SEP										
15...	.22	.023	<.010	<.010	32	71	2.7	.80	9	77

CROOKED CREEK BASIN

03037350 SOUTH BRANCH PLUM CREEK AT FIVE POINTS, PA--Continued

REMARKS.--The following data are for dissolved trace elements in surface water filtered through a 0.45µm filter.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1997 TO 1998

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	ALUM- INUM, DIS- SOLVED (µG/L AS AL) (01106)	ANTI- MONY, DIS- SOLVED (µG/L AS SB) (01095)	ARSENIC DIS- SOLVED (µG/L AS AS) (01000)	BARIUM, DIS- SOLVED (µG/L AS BA) (01005)	BERYL- LIUM, DIS- SOLVED (µG/L AS BE) (01010)	CADMIUM DIS- SOLVED (µG/L AS CD) (01025)	CHRO- MIUM, DIS- SOLVED (µG/L AS CR) (01030)	COBALT, DIS- SOLVED (µG/L AS CO) (01035)
SEP 15...	0915	.20	8.1	<1.0	<1	51	<1.0	<1.0	<1.0	<1.0

DATE	COPPER, DIS- SOLVED (µG/L AS CU) (01040)	LEAD, DIS- SOLVED (µG/L AS PB) (01049)	MANGA- NESE, DIS- SOLVED (µG/L AS MN) (01056)	MOLYB- DENUM, DIS- SOLVED (µG/L AS MO) (01060)	NICKEL, DIS- SOLVED (µG/L AS NI) (01065)	SELE- NIUM, DIS- SOLVED (µG/L AS SE) (01145)	SILVER, DIS- SOLVED (µG/L AS AG) (01075)	URANIUM NATURAL DIS- SOLVED (µG/L AS U) (22703)	ZINC, DIS- SOLVED (µG/L AS ZN) (01090)
SEP 15...	<1.0	<1.0	71	<1.0	<1.0	<1	<1.0	<1.0	14

CROOKED CREEK BASIN

03037350 SOUTH BRANCH PLUM CREEK AT FIVE POINTS, PA--Continued

REMARKS.--The following data are for analytes from the National Water Quality laboratory (NWQL) schedule 2010--pesticides in filtered water. Samples are filtered through a glass-fiber membrane filter with openings that are 0.7 microns in size to remove sediment and microorganisms. A surrogate is then added to the sample. The filtered water is field extracted on C-18 Solid Phase Extraction Cartridges and analyzed by a gas chromatography/mass spectrometric detector.

The method detection limit (MDL) provides an index to indicate where measurement uncertainty is increased. When an analyte is detected and all criteria for a positive result are met, the concentration is reported. If the concentration is less than the 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 NWQL 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 (<).

The abbreviations SRG, SURROGT, or SURROG indicate surrogate recovery in percent.

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

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (µS/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	BARO-METRIC PRES-SURE (MM HG) (00025)	OXYGEN, DIS-SOLVED (MG/L) (00300)	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	2,6-DI-ETHYL ANILINE WAT FLT 0.7 µ GF, REC (µG/L) (82660)	ACETO-CHLOR, WATER FLTRD REC (µG/L) (49260)	ALA-CHLOR, WATER, DISS, REC (µG/L) (46342)	ATRA-ZINE, WATER, DISS, REC (µG/L) (39632)
OCT 09...	1015	4.2	228	7.3	17.0	736	7.1	54	<.0030	<.0020	<.002	.033
NOV 04	0930	24	161	7.4	7.0	730	10.9	31	<.003	<.0020	<.002	.025
08...	1330	1440	90	6.6	8.5	725	10.3	10	<.0030	<.0020	<.002	.041
DEC 09...	1045	36	153	7.1	2.5	729	13.0	20	<.0030	<.0020	<.002	.014
DATE	METHYL AZIN-PHOS WAT FLT 0.7 µ GF, REC (µG/L) (82686)	BEN-FLUR-ALIN WAT FLD 0.7 µ GF, REC (µG/L) (82673)	BUTYL-ATE, WATER, DISS, REC (µG/L) (04028)	CAR-BARYL WATER FLTRD 0.7 µ GF, REC (µG/L) (82680)	CARBO-FURAN WATER FLTRD 0.7 µ GF, REC (µG/L) (82674)	CHLOR-PYRIFOS DIS-SOLVED (µG/L) (38933)	CYANA-ZINE, WATER, DISS, REC (µG/L) (04041)	DCPA WATER FLTRD 0.7 µ GF, REC (µG/L) (82682)	DEETHYL ATRA-ZINE, WATER, DISS, REC (µG/L) (04040)	DI-AZINON, DIS-SOLVED (µG/L) (39572)	DI-ELDRIN DIS-SOLVED (µG/L) (39381)	DISUL-FOTON WATER FLTRD 0.7 µ GF, REC (µG/L) (82677)
OCT 09...	<.0010	<.0020	<.0020	<.0060	<.0030	<.0040	.0088	<.0020	E.0075	<.002	<.001	<.0170
NOV 04	<.001	<.0020	<.0020	<.0030	<.0030	<.0040	.0148	<.0020	E.0158	<.002	<.001	<.0170
08...	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0040	<.0020	E.0151	<.002	<.001	<.0170
DEC 09...	<.400	<.0020	<.0020	<.0030	<.0030	<.0040	.0150	<.0020	E.0134	<.002	<.001	<.0170
DATE	EPTC WATER FLTRD 0.7 µ GF, REC (µG/L) (82668)	ETHAL-FLUR-ALIN WAT FLT 0.7 µ GF, REC (µG/L) (82663)	ETHO-PROP WATER FLTRD 0.7 µ GF, REC (µG/L) (82672)	FONOFOS WATER DISS REC (µG/L) (04095)	LINDANE DIS-SOLVED (µG/L) (39341)	LIN-URON WATER FLTRD 0.7 µ GF, REC (µG/L) (82666)	MALA-THION, DIS-SOLVED (µG/L) (39532)	METO-LACHLOR WATER DISSOLV (µG/L) (39415)	METRI-BUZIN SENCOR WATER DISSOLV (µG/L) (82630)	MOL-INATE WATER FLTRD 0.7 µ GF, REC (µG/L) (82671)	NAPROP-AMIDE WATER FLTRD 0.7 µ GF, REC (µG/L) (82684)	PARA-THION, DIS-SOLVED (µG/L) (39542)
OCT 09...	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	.007	<.008	<.0040	<.0030	<.004
NOV 04	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	.008	.019	<.0040	<.0030	<.004
08...	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	.025	<.010	<.0040	<.0030	<.004
DEC 09...	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	.008	<.013	<.0040	<.0030	<.004

CROOKED CREEK BASIN

03037350 SOUTH BRANCH PLUM CREEK AT FIVE POINTS, PA--Continued

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

DATE	METHYL- PARA- THION WAT FLT 0.7 µ GF, REC (µG/L) (82667)	PEB- ULATE WATER FILTRD 0.7 µ GF, REC (µG/L) (82669)	PENDI- METH- ALIN WAT FLT 0.7 µ GF, REC (µG/L) (82683)	PHORATE WATER FLTRD 0.7 µ GF, REC (µG/L) (82664)	PRO- METON, WATER, DISS, REC (µG/L) (04037)	PROP- CHLOR, WATER, DISS, REC (µG/L) (04024)	PRO- PANIL WATER FLTRD 0.7 µ GF, REC (µG/L) (82679)	PRO- PARGITE WATER FLTRD 0.7 µ GF, REC (µG/L) (82685)	PRON- AMIDE WATER FLTRD 0.7 µ GF, REC (µG/L) (82676)	SI- MAZINE, WATER, DISS, REC (µG/L) (04035)	TEBU- THIURON WATER FLTRD 0.7 µ GF, REC (µG/L) (82670)	TER- BACIL WATER FLTRD 0.7 µ GF, REC (µG/L) (82665)
OCT 09...	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030	E.0047	<.0100	<.0070
NOV 04	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030	E.0029	<.0100	<.0070
08...	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030	E.0034	E.0093	<.0070
DEC 09...	<.0060	<.0040	<.0040	<.0020	<.0180	<.0070	<.0040	<.0130	<.0030	<.0050	<.0100	<.0070

DATE	TER- BUFOS WATER FLTRD 0.7 µ GF, REC (µG/L) (82675)	THIO- BENCARB WATER FLTRD 0.7 µ GF, REC (µG/L) (82681)	TRIAL- LATE WATER FLTRD 0.7 µ GF, REC (µG/L) (82678)	TRI- FLUR- ALIN WAT FLT 0.7 µ GF, REC (µG/L) (82661)	ALPHA BHC DIS- SOLVED (µG/L) (34253)	PER- METHRIN CIS WAT FLT 0.7 µ GF, REC (µG/L) (82687)	P, P' DDE DISSOLV (µG/L) (34653)	DIAZ- INON D10 SRG WAT FLT 0.7 µ GF, REC (91063)	TERBUTH YLAZINE SURROGT WAT FLT 0.7 µ GF, REC (91064)	HCH ALPHA D6 SRG WAT FLT 0.7 µ GF, REC (91065)	SAMPLE VOLUME SCHED- ULE 2010 (ML) (99857)
OCT 09...	<.0130	<.0020	<.0010	<.0020	<.0020	<.0050	<.0060	99.0	106	113	961
NOV 04	<.0130	<.0020	<.0010	<.0020	<.0020	<.0050	<.0060	94.6	110	93.2	952
08...	<.0130	<.0020	<.0010	<.0020	<.0020	<.0050	<.0060	102	106	92.2	952
DEC 09...	<.0130	<.0020	<.0010	<.0020	<.0020	<.0050	<.0060	100	122	109	970

CROOKED CREEK BASIN

03037350 SOUTH BRANCH PLUM CREEK AT FIVE POINTS, PA--Continued

REMARKS.--The following data are for analytes from the National Water Quality laboratory (NWQL) schedule 2051--pesticides in filtered water. Samples are filtered through a glass-fiber membrane filter with openings that are 0.7 microns in size to remove sediment and microorganisms. A surrogate is then added to the sample. The filtered water is field extracted on Carbopak B solid phase extraction cartridge and analyzed by high performance liquid chromatography.

The method detection limit (MDL) provides an index to indicate where measurement uncertainty is increased. When an analyte is detected and all criteria for a positive result are met, the concentration is reported. If the concentration is less than the 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 NWQL 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 (<).

The abbreviations SRG, SURROGT, or SURROG indicate surrogate recovery in percent.

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

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON- DUCT- ANCE (μS/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	OXYGEN, DIS- SOLVED (MG/L) (00300)	ALKA- LILITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	2,4,5-T DIS- SOLVED (μG/L) (39742)	2,4-D, DIS- SOLVED (μG/L) (39732)
OCT 09...	1015	4.2	228	7.3	17.0	736	7.1	54	<.0350	<.035
NOV 04	0930	24	161	7.4	7.0	730	10.9	31	<.0350	<.035
08...	1330	1440	90	6.6	8.5	725	10.3	10	<.0350	<.150
DEC 09...	1045	36	153	7.1	2.5	729	13.0	20	<.0350	<.150
DATE	2,4-DB WATER, FLTRD, GF 0.7μ REC (μG/L) (38746)	SILVEX, DIS- SOLVED (μG/L) (39762)	3HYDRXY CARBO- FURAN WAT,FLT GF 0.7μ REC (μG/L) (49308)	DNOC WAT,FLT GF 0.7μ REC (μG/L) (49299)	ACIFL- UORFEN WATER, FLTRD, GF 0.7μ REC (μG/L) (49315)	ALDI- CARB, WATER, FLTRD, GF 0.7μ REC (μG/L) (49312)	ALDI- CARB SULFONE WAT,FLT GF 0.7μ REC (μG/L) (49313)	ALDICA- RB SUL- FOXIDE, WAT,FLT GF 0.7μ REC (μG/L) (49314)	BENTA- ZON, WATER, FLTRD, GF 0.7μ REC (μG/L) (38711)	BRO- MACIL, WATER, DISS, REC (μG/L) (04029)
OCT 09...	<.0350	<.0210	<.0140	<.0350	<.0350	<.0160	<.0160	<.0210	<.0140	<.0350
NOV 04	<.0350	<.0210	<.0140	<.0350	<.0350	<.0160	<.0160	<.0210	<.0140	<.0350
08...	<.240	<.0210	<.0140	<.420	<.0350	<.550	<.100	<.0210	<.0140	<.0350
DEC 09...	<.240	<.0210	<.0140	<.420	<.0350	<.550	<.100	<.0210	<.0140	<.0350

CROOKED CREEK BASIN

03037350 SOUTH BRANCH PLUM CREEK AT FIVE POINTS, PA--Continued

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

DATE	BRO-MOXYNIL WATER, FLTRD, GF 0.7µ REC (µG/L) (49311)	CAR-BARYL, WATER, FLTRD, GF 0.7µ REC (µG/L) (49310)	CARBO-FURAN, WATER, FLTRD, GF 0.7µ REC (µG/L) (49309)	CHLOR-AMBEN, WATER, FLTRD, GF 0.7µ REC (µG/L) (49307)	CHLORO-THALO-NIL, WAT,FLT FLTRD, GF 0.7µ REC (µG/L) (49306)	CLOPYR-ALID, WATER, FLTRD, GF 0.7µ REC (µG/L) (49305)	DACTHAL-MONO-ACID, WAT,FLT FLTRD, GF 0.7µ REC (µG/L) (49304)	DICAMBA-WATER, FLTRD, GF 0.7µ REC (µG/L) (38442)	DICHLO-BENIL, WATER, FLTRD, GF 0.7µ REC (µG/L) (49303)	DICHLOR-PROP, WATER, FLTRD, GF 0.7µ REC (µG/L) (49302)
OCT 09...	<.0350	<.0080	<.0280	<.0110	<.0350	<.0500	<.0170	<.0350	<.0200	<.0320
NOV 04...	<.0350	<.0080	<.0280	<.0110	<.0350	<.0500	<.0170	<.0350	<.0200	<.0320
NOV 08...	<.0350	<.0080	<.120	<.420	<.480	<.230	<.0170	<.0350	<1.20	<.0320
DEC 09...	<.0350	<.0080	<.120	<.420	<.480	<.230	<.0170	<.0350	<1.20	<.0320

DATE	DINOSEB WATER, FLTRD, GF 0.7µ REC (µG/L) (49301)	DIURON, WATER, FLTRD, GF 0.7µ REC (µG/L) (49300)	FEN-URON, WATER, FLTRD, GF 0.7µ REC (µG/L) (49297)	FLUO-METURON WATER, FLTRD, GF 0.7µ REC (µG/L) (38811)	LINURON WATER, FLTRD, GF 0.7µ REC (µG/L) (38478)	MCPA, WATER, FLTRD, GF 0.7µ REC (µG/L) (38482)	MCPB, WATER, FLTRD, GF 0.7µ REC (µG/L) (38487)	METHIO-CARB, WATER, FLTRD, GF 0.7µ REC (µG/L) (38501)	METH-OMYL, WATER, FLTRD, GF 0.7µ REC (µG/L) (49296)	NEB-URON, WATER, FLTRD, GF 0.7µ REC (µG/L) (49294)
OCT 09...	<.0350	<.0200	<.0130	<.0350	<.0180	<.0500	<.0350	<.0260	<.0170	<.0150
NOV 04...	<.0350	<.0200	<.0130	<.0350	<.0180	<.0500	<.0350	<.0260	<.0170	<.0150
NOV 08...	<.0350	<.0200	<.0130	<.0350	<.0180	<.170	<.140	<.0260	<.0170	<.0150
DEC 09...	<.0350	<.0200	<.0130	<.0350	<.0180	<.170	<.140	<.0260	<.0170	<.0150

DATE	NORFLUR AZON, WATER, FLTRD, GF 0.7µ REC (µG/L) (49293)	ORY-ZALIN, WATER, FLTRD, GF 0.7µ REC (µG/L) (49292)	OXAMYL, WATER, FLTRD, GF 0.7µ REC (µG/L) (38866)	PIC-LORAM, WATER, FLTRD, GF 0.7µ REC (µG/L) (49291)	PRO-PHAM, WATER, FLTRD, GF 0.7µ REC (µG/L) (49236)	PRO-POXUR, WATER, FLTRD, GF 0.7µ REC (µG/L) (38538)	TRI-CLOPYR, WATER, FLTRD, GF 0.7µ REC (µG/L) (49235)	BDMC, SURROG, WATER, UNFLTRD REC PERCENT (99835)	SAMPLE VOLUME, SCHED- ULE 2051 (ML) (99847)
OCT 09...	<.0240	<.0190	<.0180	<.0500	<.0350	<.0350	<.0500	95.0	973
NOV 04...	<.0240	<.0190	<.0180	<.0500	<.0350	<.0350	<.0500	76.0	963
NOV 08...	<.0240	<.310	<.0180	<.0500	<.0350	<.0350	<.250	64.0	959
DEC 09...	<.0240	<.310	<.0180	<.0500	<.0350	<.0350	<.250	115	973

DAY	MAX	MIN	MEAN		MAX	MIN	MEAN		MAX	MIN	MEAN		MAX	MIN	MEAN
	OCTOBER				NOVEMBER				DECEMBER				JANUARY		
1	---	---	---		---	---	---		---	---	---		---	---	---
2	---	---	---		---	---	---		---	---	---		---	---	---
3	---	---	---		---	---	---		---	---	---		---	---	---
4	---	---	---		---	---	---		---	---	---		---	---	---
5	---	---	---		---	---	---		---	---	---		---	---	---
6	---	---	---		---	---	---		---	---	---		---	---	---
7	---	---	---		---	---	---		---	---	---		---	---	---
8	---	---	---		---	---	---		---	---	---		---	---	---
9	---	---	---		---	---	---		---	---	---		---	---	---
10	237	230	234		---	---	---		---	---	---		---	---	---
11	241	237	238		---	---	---		---	---	---		---	---	---
12	243	237	239		---	---	---		---	---	---		---	---	---
13	---	---	---		---	---	---		---	---	---		---	---	---
14	---	---	---		---	---	---		---	---	---		---	---	---
15	---	---	---		---	---	---		---	---	---		---	---	---
16	254	252	253		---	---	---		---	---	---		---	---	---
17	253	246	249		---	---	---		---	---	---		---	---	---
18	---	---	---		---	---	---		---	---	---		---	---	---
19	---	---	---		---	---	---		---	---	---		---	---	---
20	---	---	---		---	---	---		---	---	---		---	---	---
21	260	258	259		---	---	---		---	---	---		---	---	---
22	---	---	---		---	---	---		---	---	---		---	---	---
23	---	---	---		---	---	---		---	---	---		---	---	---
24	---	---	---		---	---	---		---	---	---		---	---	---
25	---	---	---		---	---	---		---	---	---		---	---	---
26	---	---	---		---	---	---		---	---	---		---	---	---
27	---	---	---		---	---	---		---	---	---		---	---	---
28	---	---	---		---	---	---		---	---	---		---	---	---
29	---	---	---		---	---	---		---	---	---		---	---	---
30	---	---	---		---	---	---		---	---	---		---	---	---
31	---	---	---		---	---	---		---	---	---		---	---	---
MONTH	260	230	245		---	---	---		---	---	---		---	---	---

CROOKED CREEK BASIN

SOUTH BRANCH PLUM CREEK AT FIVE POINTS, PA--Continued

SPECIFIC CONDUCTANCE, $\mu\text{S}/\text{CM}$ @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	---	---	---	133	125	130	114	109	111
2	---	---	---	---	---	---	132	127	130	114	112	113
3	---	---	---	---	---	---	130	126	128	113	110	111
4	---	---	---	---	---	---	130	126	129	112	111	111
5	---	---	---	---	---	---	---	---	---	118	93	113
6	---	---	---	---	---	---	134	130	131	97	81	91
7	---	---	---	---	---	---	137	131	133	103	97	100
8	---	---	---	---	---	---	138	134	136	109	102	105
9	---	---	---	---	---	---	137	101	127	111	108	109
10	---	---	---	---	---	---	103	99	101	114	111	112
11	---	---	---	---	---	---	104	101	102	117	114	115
12	---	---	---	---	---	---	107	103	105	120	116	118
13	---	---	---	104	100	102	112	107	109	117	115	116
14	---	---	---	114	103	106	115	83	111	120	116	117
15	---	---	---	111	106	109	102	82	95	125	120	121
16	---	---	---	112	108	110	107	102	105	130	125	127
17	---	---	---	115	111	113	110	107	108	136	129	132
18	---	---	---	116	113	115	112	109	110	140	136	138
19	---	---	---	117	114	116	114	98	108	146	140	143
20	---	---	---	117	114	115	102	96	98	156	145	150
21	---	---	---	118	105	112	107	102	104	---	---	---
22	---	---	---	108	101	103	111	107	109	---	---	---
23	---	---	---	102	100	101	115	111	113	---	---	---
24	---	---	---	101	100	101	116	110	114	---	---	---
25	---	---	---	103	101	102	117	113	115	---	---	---
26	---	---	---	117	102	112	119	76	103	---	---	---
27	---	---	---	118	114	115	93	76	86	---	---	---
28	---	---	---	121	117	118	101	93	96	---	---	---
29	---	---	---	125	119	121	105	100	102	---	---	---
30	---	---	---	126	123	124	109	105	107	---	---	---
31	---	---	---	129	126	127	---	---	---	---	---	---
MONTH	---	---	---	129	100	112	138	76	112	156	81	118

CROOKED CREEK BASIN

SOUTH BRANCH PLUM CREEK AT FIVE POINTS, PA--Continued

SPECIFIC CONDUCTANCE, $\mu\text{S}/\text{CM}$ @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	---	---	---	203	193	196	---	---	---	---	---	---
2	---	---	---	204	192	196	---	---	---	---	---	---
3	---	---	---	211	204	207	---	---	---	---	---	---
4	---	---	---	225	211	220	---	---	---	---	---	---
5	---	---	---	230	224	227	---	---	---	---	---	---
6	---	---	---	234	230	232	---	---	---	---	---	---
7	---	---	---	245	233	236	---	---	---	---	---	---
8	---	---	---	245	118	167	---	---	---	---	---	---
9	---	---	---	170	145	160	---	---	---	---	---	---
10	---	---	---	183	170	175	---	---	---	---	---	---
11	235	228	233	194	180	186	---	---	---	---	---	---
12	235	180	207	201	190	194	---	---	---	---	---	---
13	202	180	189	212	199	204	---	---	---	---	---	---
14	181	174	178	217	205	211	---	---	---	---	---	---
15	190	179	183	---	---	---	---	---	---	---	---	---
16	196	142	171	---	---	---	---	---	---	---	---	---
17	168	142	160	---	---	---	---	---	---	---	---	---
18	168	161	165	---	---	---	---	---	---	---	---	---
19	173	88	165	---	---	---	---	---	---	---	---	---
20	124	88	114	---	---	---	---	---	---	---	---	---
21	137	124	130	---	---	---	---	---	---	---	---	---
22	146	137	142	---	---	---	---	---	---	---	---	---
23	155	146	152	---	---	---	---	---	---	---	---	---
24	168	155	161	---	---	---	---	---	---	---	---	---
25	180	167	172	---	---	---	---	---	---	---	---	---
26	185	176	180	---	---	---	---	---	---	---	---	---
27	192	184	187	---	---	---	---	---	---	---	---	---
28	201	188	192	---	---	---	---	---	---	---	---	---
29	205	193	199	---	---	---	---	---	---	---	---	---
30	208	191	201	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	235	88	174	245	118	201	---	---	---	---	---	---

CROOKED CREEK BASIN
SOUTH BRANCH PLUM CREEK AT FIVE POINTS, PA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	15.5	14.0	14.5	7.5	6.0	7.0	4.5	4.0	4.5	.0	.0	.0
2	14.0	13.0	13.5	8.0	7.5	7.5	4.0	3.5	4.0	.5	.0	.0
3	14.5	13.0	13.5	8.0	7.5	7.5	3.5	3.0	3.0	2.0	.5	1.0
4	15.5	13.0	14.5	7.5	7.0	7.5	4.0	3.0	4.0	3.5	2.0	3.0
5	17.0	15.0	16.0	7.5	6.5	7.0	4.0	3.0	3.5	4.0	3.5	3.5
6	18.0	16.0	17.0	7.0	6.0	6.5	3.0	1.5	2.5	5.0	4.0	4.5
7	18.5	16.5	17.5	6.5	6.0	6.5	1.5	.5	1.0	6.0	5.0	5.0
8	19.0	17.0	18.0	6.5	6.5	6.5	1.0	.5	1.0	6.5	6.0	6.5
9	19.0	17.5	18.5	7.0	6.5	7.0	1.5	.5	1.0	6.0	5.5	6.0
10	19.0	17.0	18.0	7.0	6.5	7.0	1.5	1.0	1.5	5.5	4.5	5.0
11	17.5	16.0	16.5	6.5	6.0	6.0	1.5	1.5	1.5	4.5	3.0	3.5
12	16.5	14.5	15.5	6.0	5.0	5.5	1.5	1.0	1.0	3.0	2.5	2.5
13	17.0	14.5	16.0	5.0	3.5	4.0	1.0	.5	1.0	3.0	2.5	2.5
14	16.5	14.5	16.0	3.5	2.5	3.0	.5	.5	.5	2.5	1.5	2.0
15	15.0	13.5	14.0	3.0	2.5	3.0	.5	.5	.5	1.5	1.5	1.5
16	13.5	12.0	13.0	3.0	2.0	2.5	1.0	.5	.5	2.0	1.5	1.5
17	12.5	11.0	11.5	2.0	1.0	1.5	1.0	.5	1.0	2.0	1.5	1.5
18	12.0	10.0	11.0	1.0	.5	.5	1.5	.5	1.0	1.5	1.5	1.5
19	12.0	10.0	11.0	1.5	.0	1.0	2.0	1.0	1.5	1.5	1.0	1.5
20	11.0	10.0	10.5	2.5	1.5	2.0	2.5	1.5	2.0	1.5	.5	1.0
21	11.0	10.0	10.5	3.5	2.0	3.0	2.5	1.5	2.0	.5	.5	.5
22	10.0	8.0	9.0	4.0	3.5	3.5	1.5	1.5	1.5	1.0	.5	1.0
23	8.5	7.5	8.0	4.0	3.5	4.0	2.0	1.5	1.5	1.0	.5	1.0
24	8.5	7.5	8.0	3.5	2.5	3.0	2.0	1.5	1.5	1.5	1.0	1.5
25	8.5	8.0	8.0	2.5	1.5	2.0	2.5	2.0	2.5	1.0	1.0	1.0
26	8.0	7.5	7.5	2.5	1.5	2.0	2.5	2.0	2.5	1.5	1.0	1.0
27	8.0	6.5	7.5	3.0	2.5	3.0	2.0	1.5	2.0	1.5	1.0	1.5
28	6.5	6.0	6.5	4.0	3.0	3.5	1.5	1.0	1.5	2.5	1.5	2.0
29	6.5	5.5	6.0	4.0	4.0	4.0	1.0	.5	.5	2.5	1.5	2.0
30	6.5	5.5	6.0	5.0	4.0	4.5	.5	.5	.5	2.5	2.0	2.0
31	7.5	5.5	6.5	---	---	---	.5	.0	.0	2.0	1.5	1.5
MONTH	19.0	5.5	12.2	8.0	.0	4.4	4.5	.0	1.7	6.5	.0	2.2

CROOKED CREEK BASIN

03037350 SOUTH BRANCH PLUM CREEK AT FIVE POINTS, PA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	1.5	1.0	1.5	6.0	5.0	5.5	15.0	14.0	14.5	13.5	12.5	13.0
2	2.0	1.0	1.5	5.5	5.0	5.5	14.0	12.0	13.5	13.5	13.0	13.0
3	2.5	1.5	2.0	5.0	4.0	4.5	12.0	10.5	11.5	14.0	13.0	13.5
4	2.0	1.5	2.0	4.5	3.5	4.0	10.5	9.0	10.0	14.5	13.5	14.0
5	2.5	1.5	2.0	4.0	3.5	3.5	10.5	8.5	9.5	14.5	14.0	14.0
6	2.0	.5	1.5	5.0	3.5	4.0	10.5	8.5	9.0	15.0	14.5	14.5
7	2.5	.5	1.5	5.0	3.5	4.0	11.0	8.0	9.5	16.5	15.0	16.0
8	2.5	.5	1.5	5.0	3.5	4.5	12.5	9.0	10.5	16.5	15.5	16.0
9	3.0	1.0	2.0	6.0	4.5	5.5	11.5	10.0	10.5	17.0	15.5	16.5
10	3.5	1.5	2.5	5.5	3.0	4.5	10.0	9.0	9.5	17.5	16.0	17.0
11	3.5	2.5	3.0	3.0	1.5	3.0	9.5	8.0	9.0	16.5	15.5	16.0
12	3.5	3.0	3.5	2.0	1.0	1.5	10.0	8.5	9.5	17.0	15.5	16.0
13	3.0	2.5	3.0	2.0	.5	1.0	11.0	10.0	10.5	18.0	16.0	16.5
14	3.0	2.0	2.5	1.5	.5	1.0	12.0	10.5	11.5	19.5	16.5	18.0
15	2.0	1.0	1.5	2.0	.5	1.0	12.5	11.0	11.5	21.5	17.5	19.5
16	2.0	.5	1.5	3.0	1.0	2.0	12.0	11.5	12.0	22.0	18.5	20.5
17	3.0	1.5	2.0	4.0	1.0	2.5	12.0	11.5	12.0	22.0	19.0	20.5
18	3.5	3.0	3.0	4.0	3.0	3.5	11.5	10.5	11.0	22.5	19.0	20.5
19	3.5	3.5	3.5	4.0	3.5	4.0	11.5	10.0	11.0	23.0	19.5	21.5
20	3.5	3.5	3.5	4.0	3.5	4.0	10.0	9.0	10.0	24.0	20.5	22.0
21	3.5	3.0	3.5	4.0	3.5	4.0	11.5	9.5	10.5	22.0	20.0	21.0
22	3.5	3.0	3.0	3.5	2.5	3.0	12.0	11.0	11.5	20.5	18.0	19.5
23	4.0	3.0	3.5	3.0	2.0	2.5	12.5	11.5	12.0	20.5	16.5	18.5
24	4.5	3.5	4.0	3.5	3.0	3.0	12.5	12.0	12.5	19.0	16.5	18.0
25	4.0	3.5	4.0	4.0	3.0	3.5	13.0	12.5	12.5	18.5	17.5	18.0
26	5.0	3.5	4.0	6.5	4.0	6.0	13.0	10.5	12.0	20.5	17.0	18.5
27	5.0	4.0	4.5	9.0	6.5	8.0	11.0	10.0	10.5	21.5	17.0	19.5
28	5.0	4.0	4.5	11.0	9.0	10.0	11.5	10.5	11.0	22.0	18.0	20.5
29	---	---	---	12.5	10.5	11.5	12.0	11.5	12.0	23.0	20.0	22.0
30	---	---	---	13.5	12.0	13.0	12.5	12.0	12.5	24.5	21.0	23.0
31	---	---	---	15.0	13.5	14.0	---	---	---	23.5	21.5	22.5
MONTH	5.0	.5	2.7	15.0	.5	4.8	15.0	8.0	11.1	24.5	12.5	18.0

CROOKED CREEK BASIN

03037350 SOUTH BRANCH PLUM CREEK AT FIVE POINTS, PA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	22.0	19.5	21.0	25.5	22.0	24.0	24.5	20.5	23.0	24.0	21.0	22.5
2	22.0	19.0	20.5	25.0	21.5	23.5	24.5	21.0	23.0	23.5	21.0	22.0
3	20.0	17.5	19.0	25.5	21.5	23.5	25.5	21.5	23.5	21.5	18.5	20.0
4	20.0	16.5	18.5	25.5	22.5	23.5	25.0	22.0	23.5	22.0	18.5	20.5
5	18.0	16.5	17.5	25.0	21.0	22.5	25.0	23.0	24.0	22.5	18.5	20.5
6	17.0	15.0	16.0	25.5	21.5	23.5	25.5	22.5	24.0	23.5	19.5	21.5
7	16.5	15.0	15.5	25.0	22.5	23.5	26.5	23.0	25.0	23.5	21.0	22.0
8	17.5	14.5	16.0	25.0	22.5	23.5	27.0	23.5	25.5	21.0	17.5	19.0
9	16.5	15.0	16.0	25.5	22.5	24.0	27.0	24.5	26.0	17.5	16.0	17.0
10	16.0	15.0	15.5	25.5	22.5	24.0	27.0	24.0	25.0	18.5	15.5	17.0
11	17.5	15.0	16.5	25.0	21.0	23.0	25.5	23.0	24.0	20.0	16.0	18.0
12	20.0	17.0	18.5	25.0	21.0	23.0	25.0	23.0	24.5	21.5	17.5	19.5
13	19.5	18.0	19.0	26.0	21.5	24.0	25.5	22.0	24.0	22.5	19.0	20.5
14	19.0	18.0	18.5	26.0	22.5	24.5	25.0	22.5	24.0	23.0	20.0	21.5
15	19.0	17.5	18.0	26.0	23.0	24.5	26.0	23.0	24.5	23.0	21.0	22.0
16	20.5	17.5	19.0	27.0	23.5	25.0	27.0	23.5	25.0	23.0	21.5	22.5
17	21.0	18.5	19.5	27.0	24.5	25.5	26.5	24.5	25.5	23.0	21.0	22.0
18	23.0	19.0	21.0	26.0	22.0	24.0	26.0	23.5	24.0	22.5	19.0	21.0
19	22.0	20.5	21.5	25.5	22.0	24.0	23.5	20.5	22.5	23.0	20.0	21.5
20	24.0	20.5	22.5	26.0	24.0	25.0	23.5	20.0	22.0	23.5	21.0	22.5
21	25.5	21.0	23.5	26.0	23.5	24.5	24.0	21.0	22.5	23.5	21.5	22.5
22	25.5	22.5	24.0	26.0	23.5	25.0	25.0	22.5	23.5	23.0	20.5	22.0
23	25.0	23.0	24.0	26.0	24.0	25.0	26.0	22.5	24.5	20.5	17.5	18.5
24	---	---	---	25.5	22.5	24.0	25.5	23.0	24.5	18.0	15.0	16.5
25	28.0	24.5	26.5	24.5	21.5	23.5	24.5	22.5	23.0	18.5	16.5	17.5
26	28.0	25.5	26.5	25.0	21.5	23.5	25.0	22.0	23.5	21.0	17.5	19.0
27	27.5	25.0	26.0	25.0	21.5	23.0	25.0	22.0	23.5	22.0	19.5	20.5
28	27.0	24.5	25.5	25.5	22.0	24.0	25.5	22.0	24.0	21.5	19.5	20.5
29	27.0	24.5	26.0	26.0	23.5	24.5	25.5	23.0	24.0	19.5	16.5	18.0
30	27.0	24.5	25.5	25.5	22.0	24.0	25.0	22.0	23.5	19.5	17.0	18.0
31	---	---	---	24.5	21.5	23.5	24.5	22.5	24.0	---	---	---
MONTH	28.0	14.5	20.6	27.0	21.0	24.0	27.0	20.0	24.0	24.0	15.0	20.2

CROOKED CREEK BASIN

03038000 CROOKED CREEK AT IDAHO, PA

LOCATION.--Lat 40°39'17", long 79°20'56", Armstrong County, Hydrologic Unit 05010006, on right bank at downstream end of old bridge abutment at Idaho, 0.4 mi downstream from Keystone Generation Station, 1.5 mi downstream from Plum Creek, 1.8 mi upstream of bridge on SR 210, and 2.4 mi west of Shelocta.

DRAINAGE AREA.--191 mi².

PERIOD OF RECORD.--October 1937 to current year. Monthly discharge only for some periods published in WSP 1305.

REVISED RECORDS.--WSP 1385: 1938, 1945.

GAGE.--Water-stage recorder and concrete weir control. Datum of gage is 961.04 ft above sea level (Baltimore and Ohio Railroad bench mark).

REMARKS.--Records good except for estimated daily discharges, which are fair. Flow regulated to some extent since March 1968 by Keystone Lake 7 mi upstream, usable capacity, 22,010 acre-ft. Evaporation from operation of steam-electric plant 0.4 mi upstream, which began during July 1967, can amount to as much as 30 ft³/s. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of March 1936 reached a stage of 18.6 ft, from floodmark, discharge, 19,400 ft³/s.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a base discharge of 2,500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 8	1700	*4,810	*9.49	Apr. 27	0300	4,130	8.60
Jan. 8	1700	3,390	7.58	May 6	1200	2,770	6.76
Apr. 20	0500	2,860	6.88	June 20	0500	3,430	7.64

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	40	52	435	e100	204	929	177	474	50	89	32	30
2	35	215	310	e130	189	662	198	494	34	44	32	31
3	33	160	245	e160	172	548	157	438	32	30	28	33
4	29	78	276	e205	167	448	146	377	26	35	28	31
5	27	56	251	e210	198	364	132	568	29	31	28	33
6	24	39	221	e260	231	296	112	2060	28	29	30	34
7	27	533	197	e450	203	259	101	1020	28	24	31	47
8	31	4140	180	3060	203	323	104	804	25	634	32	86
9	26	2130	173	2280	202	581	339	619	30	317	32	39
10	25	709	412	1140	189	653	662	475	29	148	35	36
11	30	413	682	692	191	488	421	437	32	89	65	29
12	36	288	484	494	221	390	327	592	56	65	42	33
13	33	213	382	439	215	319	265	458	87	46	32	32
14	34	402	301	351	187	310	274	369	87	33	30	28
15	28	655	237	291	163	259	1660	290	46	32	32	26
16	26	471	200	300	146	215	990	236	84	36	29	27
17	30	341	178	272	202	192	727	306	226	34	30	27
18	24	265	149	262	383	205	510	201	127	30	31	27
19	26	229	130	237	901	221	1020	159	138	27	31	29
20	28	213	117	220	781	209	2440	125	1990	30	33	30
21	25	195	102	192	646	383	1220	102	428	30	29	153
22	29	277	96	181	502	467	726	85	225	41	28	79
23	32	303	177	533	440	404	521	74	156	44	28	56
24	29	248	179	986	605	350	402	67	113	43	34	33
25	29	201	242	661	624	297	310	61	76	34	45	36
26	28	185	249	487	542	269	1300	58	59	34	49	38
27	46	193	e220	393	472	241	3210	49	49	31	42	37
28	31	371	e185	347	645	223	1220	40	67	30	31	35
29	25	674	e160	305	---	204	692	35	45	30	33	43
30	26	503	e135	274	---	180	556	64	56	30	35	33
31	27	---	e120	237	---	159	---	46	---	32	30	---
TOTAL	919	14752	7425	16149	9824	11048	20919	11183	4458	2182	1047	1231
MEAN	29.6	492	240	521	351	356	697	361	149	70.4	33.8	41.0
MAX	46	4140	682	3060	901	929	3210	2060	1990	634	65	153
MIN	24	39	96	100	146	159	101	35	25	24	28	26
CFSM	.16	2.57	1.25	2.73	1.84	1.87	3.65	1.89	.78	.37	.18	.21
IN.	.18	2.87	1.45	3.15	1.91	2.15	4.07	2.18	.87	.42	.20	.24

e Estimated.

CROOKED CREEK BASIN

03038000 CROOKED CREEK AT IDAHO, PA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	126	227	365	382	499	599	469	310	201	136	97.9	91.1
MAX	839	820	827	1000	1260	1340	1052	746	1072	987	549	497
(WY)	1955	1986	1991	1952	1956	1994	1940	1989	1972	1956	1984	1945
MIN	7.15	23.8	33.5	59.7	120	83.9	85.1	38.0	25.3	13.9	11.3	6.07
(WY)	1953	1954	1961	1977	1980	1969	1946	1941	1949	1962	1942	1952

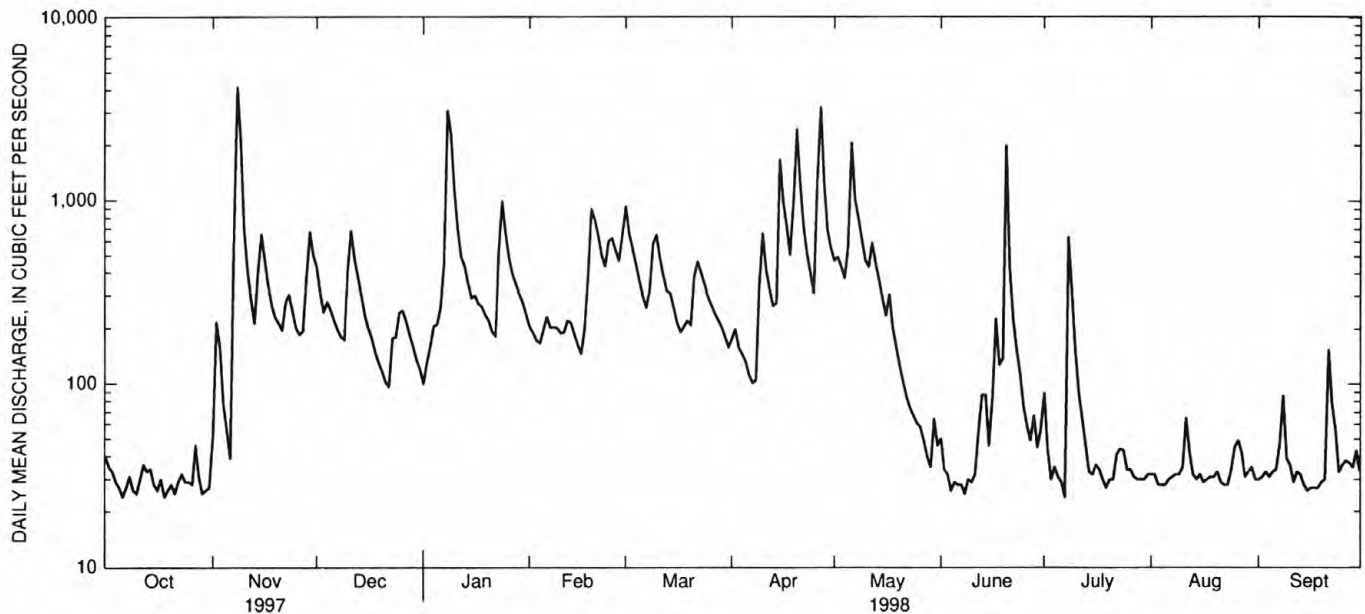
SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

FOR 1998 WATER YEAR

WATER YEARS 1938 - 1998

ANNUAL TOTAL	93782	101137	
ANNUAL MEAN	257	277	291
HIGHEST ANNUAL MEAN			511
LOWEST ANNUAL MEAN			148
HIGHEST DAILY MEAN	4540	May 26	4140
LOWEST DAILY MEAN	24	Oct 6, 18	24
ANNUAL SEVEN-DAY MINIMUM	27	Oct 15	27
INSTANTANEOUS PEAK FLOW			4810
INSTANTANEOUS PEAK STAGE			9.49
INSTANTANEOUS LOW FLOW			20
ANNUAL RUNOFF (CFSM)	1.35		1.45
ANNUAL RUNOFF (INCHES)	18.27		19.70
10 PERCENT EXCEEDS	586		628
50 PERCENT EXCEEDS	140		160
90 PERCENT EXCEEDS	32		29

a Also July 7.**b** Result of upstream pumping.**c** Also July 8, and Aug. 14.

October 1, 1997 to September 30, 1998

KISKIMINETAS RIVER BASIN

03039925 NORTH FORK BENS CREEK AT NORTH FORK RESERVOIR, PA

LOCATION.--Lat 40°15'58", long 79°01'01", Somerset County, Hydrologic Unit 05010007, just off of T534 on left bank at upstream side of concrete bridge, 1,800 ft upstream from North Fork Reservoir, and 3.2 mi north of Forwardstown.

DRAINAGE AREA.--3.45 mi².

PERIOD OF RECORD.--October 1984 to September 1985, October 1987 to September 1998 (discontinued).

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 1,600 ft above sea level, from topographic map.

REMARKS.--Records fair.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a base discharge of 80 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 8	Unknown	Unknown	Unknown	No other peak greater than base discharge.			

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e5.4	e1.9	21	8.0	4.8	33	7.3	8.4	5.1	1.6	.85	1.7
2	e4.4	e30	18	7.5	4.7	28	6.7	8.1	2.6	e1.4	.64	e1.4
3	e4.2	e12	15	8.1	4.6	26	6.3	7.3	2.7	e1.2	.64	e1.1
4	e4.0	e9.3	14	11	4.4	20	6.3	7.0	2.3	e1.1	.59	e.96
5	e3.8	e8.1	12	12	5.0	16	6.0	7.7	2.2	e1.2	.57	e.86
6	e3.3	e7.0	10	14	5.0	13	5.7	11	2.0	e1.1	e.52	e1.0
7	e3.1	e47	9.4	18	4.6	11	6.2	11	1.9	e1.0	e.47	e1.5
8	e2.9	e129	8.5	44	4.3	20	8.6	12	1.8	e2.0	e.45	2.0
9	e2.6	e75	7.7	38	4.2	41	22	11	1.6	e3.8	e.58	1.2
10	e2.5	e38	8.8	26	4.0	39	43	11	1.6	e3.3	e2.3	1.0
11	e2.3	e24	13	19	4.5	26	26	10	1.6	e2.7	4.6	.81
12	e2.2	e18	12	14	10	19	19	11	2.5	e2.4	2.2	e.70
13	e2.0	e13	11	12	12	15	16	10	2.0	e2.2	1.7	e.60
14	e1.9	e12	9.8	9.9	10	13	13	10	2.2	e1.9	1.6	e.56
15	e1.9	e12	8.7	8.8	8.5	10	11	9.2	8.2	e1.8	1.6	e.74
16	e1.6	e10	8.1	8.6	7.4	8.4	9.0	7.9	11	2.7	1.4	.99
17	e1.6	e8.8	7.7	7.9	8.0	7.4	7.9	7.1	11	1.9	4.3	2.0
18	e1.5	e7.5	7.2	7.1	14	7.5	6.9	6.1	10	1.1	2.3	1.7
19	e1.5	e6.7	6.7	6.7	30	8.1	13	5.4	25	.70	1.8	1.2
20	e1.5	6.8	6.6	6.3	28	8.0	23	4.9	49	.74	1.5	1.1
21	e1.4	6.9	6.3	e5.8	25	11	19	4.4	31	.81	e1.3	1.6
22	e1.4	11	6.1	e5.4	20	12	16	3.9	23	2.5	e1.1	2.4
23	e1.2	13	8.5	7.1	16	12	13	3.5	18	3.0	e.90	1.2
24	e1.2	12	9.4	8.5	14	11	11	3.0	6.3	3.4	e1.2	.95
25	e2.5	11	12	7.9	12	9.9	9.0	3.1	8.3	1.7	2.0	1.1
26	e1.6	10	13	7.2	11	9.3	10	2.6	5.2	1.5	1.7	1.2
27	e2.8	9.4	13	6.6	10	8.7	11	2.6	3.5	1.3	1.3	e1.0
28	e2.0	15	12	6.4	25	8.2	10	2.6	2.5	1.2	e1.1	e.64
29	e1.9	22	11	5.9	---	7.7	10	2.9	1.8	.95	e.95	e.58
30	e1.9	22	10	5.8	---	7.0	9.3	2.7	2.5	1.1	1.2	e.55
31	e1.9	---	8.8	5.5	---	6.6	---	2.7	---	1.3	4.1	---
TOTAL	74.0	608.4	325.3	359.0	311.0	472.8	381.2	210.1	248.4	54.60	47.46	34.34
MEAN	2.39	20.3	10.5	11.6	11.1	15.3	12.7	6.78	8.28	1.76	1.53	1.14
MAX	5.4	129	21	44	30	41	43	12	49	3.8	4.6	2.4
MIN	1.2	1.9	6.1	5.4	4.0	6.6	5.7	2.6	1.6	.70	.45	.55
CFSM	.69	5.88	3.04	3.36	3.22	4.42	3.68	1.96	2.40	.51	.44	.33

e Estimated.

KISKIMINETAS RIVER BASIN

03039925 NORTH FORK BENS CREEK AT NORTH FORK RESERVOIR, PA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	3.60	7.67	9.31	8.82	11.2	14.9	12.0	9.79	5.08	3.56	2.41	3.75
MAX	11.8	20.3	14.4	17.8	18.0	23.0	23.7	17.7	10.0	10.5	5.86	16.0
(WY)	1997	1998	1997	1996	1991	1994	1993	1997	1989	1990	1994	1996
MIN	.42	1.26	2.96	4.75	2.20	5.01	5.47	3.45	1.02	.67	.33	.35
(WY)	1992	1992	1990	1997	1993	1990	1995	1991	1991	1991	1991	1991

SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

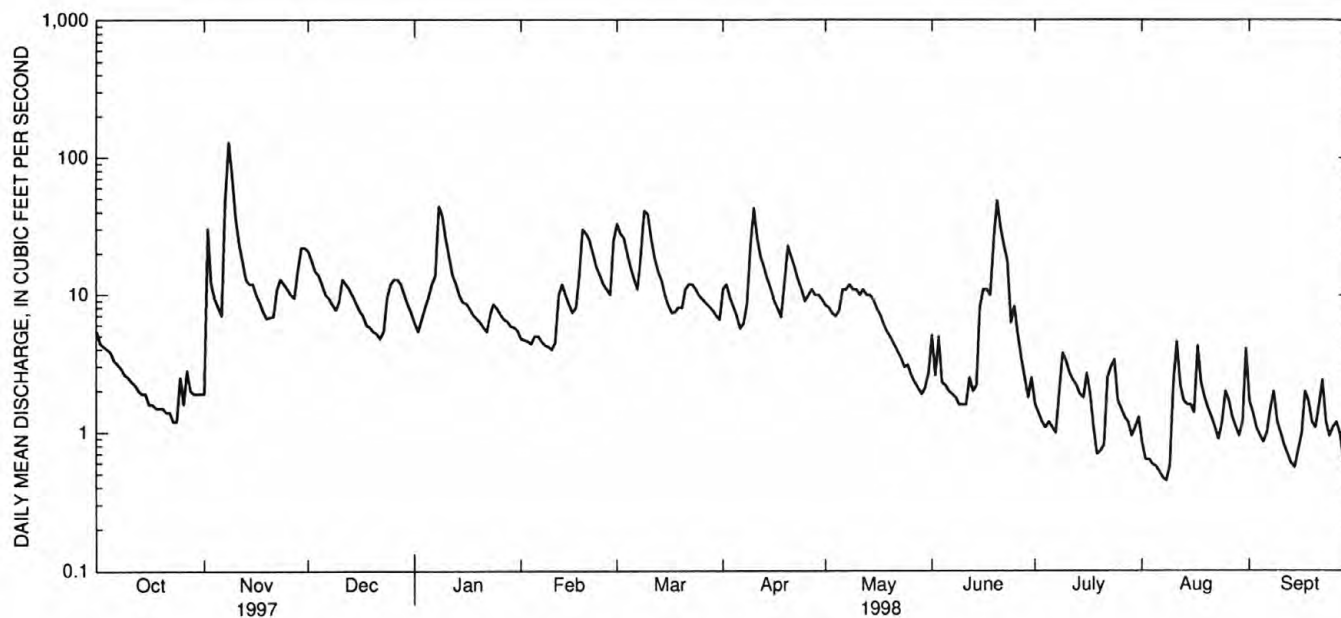
FOR 1998 WATER YEAR

WATER YEARS 1984 - 1998

ANNUAL TOTAL	3113.69	3126.60	7.66	
ANNUAL MEAN	8.53	8.57	11.1	1996
HIGHEST ANNUAL MEAN			5.22	1992
LOWEST ANNUAL MEAN				
HIGHEST DAILY MEAN	e129	Nov 8	e129	Nov 8 1997
LOWEST DAILY MEAN	e.35	Aug 12	e.45	Aug 8 1991
ANNUAL SEVEN-DAY MINIMUM	a.42	Aug 6	a.55	Aug 3 1991
INSTANTANEOUS PEAK FLOW			204	Jan 19 1996
INSTANTANEOUS PEAK STAGE			5.36	Jan 19 1996
INSTANTANEOUS LOW FLOW			.06	Sep 18 1985
ANNUAL RUNOFF (CFSM)	2.47	2.48	2.22	
ANNUAL RUNOFF (INCHES)	33.57	33.71	30.15	
10 PERCENT EXCEEDS	19	19	17	
50 PERCENT EXCEEDS	5.1	6.4	4.9	
90 PERCENT EXCEEDS	1.0	1.1	1.0	

a Computed using estimated discharges.

e Estimated.



October 1, 1997 to September 30, 1998

KISKIMINETAS RIVER BASIN

03040000 STONYCREEK RIVER AT FERNDAL, PA
(National water-quality assessment station)

LOCATION.--Lat 40°17'08", long 78°55'15", Cambria County, Hydrologic unit 05010007, on right bank 50 ft upstream from highway bridge at Ferndale, 0.4 mi downstream from Bens Creek, 1.2 mi upstream from Johnstown city limits, and 5.2 mi upstream from confluence with Little Conemaugh River.

DRAINAGE AREA.--451 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1913 to March 1936, October 1938 to current year. Monthly discharge only for some periods, published in WSP 1305. Monthly figures adjusted for storage and diversion for October 1918 to September 1921, published in WSP 503, 523, have been found in error and should not be used. Published as "at Johnstown" 1914-36, and as "Stony Creek at Ferndale" 1938-79. Gage-height records collected in this vicinity since 1885 are contained in reports of U.S. Weather Bureau.

REVISED RECORDS.--WSP 743: Drainage area. WSP 1305: 1915, 1918, 1923-26. WSP 1435: 1920-21, 1932, 1941 (M), 1943 (M), 1945-46 (M). WDR PA-78-3: 1977 (M). See also PERIOD OF RECORD.

GAGE.--Water-stage recorder. Datum of gage is 1,184.06 ft above sea level. Prior to Mar. 19, 1936, nonrecording gage at site 3.5 mi downstream at different datum. Dec. 8, 1938 to Jan. 30, 1940, nonrecording gage at site 50 ft downstream at present datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. Regulation by mine pumpage and reservoirs and diversion above station; the four largest reservoirs have a combined capacity of 42,360 acre-ft. Figures of daily discharge do not include diversion from Stonycreek River and Quemahoning Creek Reservoir to plants of Bethlehem Steel Co., and from Mill Creek, Dalton Run, and North Fork Bens Creek Reservoirs for water supply of city of Johnstown. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	461	299	2310	e520	741	4180	1230	871	1460	571	194	155
2	446	1130	1740	e470	692	2970	1230	946	815	425	155	116
3	387	797	1410	e490	650	2590	915	913	670	340	143	104
4	374	521	1290	e540	658	2040	826	881	551	292	132	94
5	355	434	1180	e610	832	1690	768	1530	410	289	123	87
6	338	398	1050	e740	1010	1440	681	4120	358	265	114	82
7	309	2440	949	e1000	927	1320	613	2270	316	241	109	101
8	140	9990	880	3890	806	1840	612	2600	298	471	103	137
9	107	4790	797	4210	736	3630	1150	2450	270	611	114	117
10	106	2680	836	2690	706	3510	4750	1890	282	423	193	113
11	104	1880	1280	1920	807	2350	3010	1600	283	299	217	101
12	101	1450	1320	1510	1750	1760	1850	2100	480	249	149	85
13	98	1210	1070	1320	1940	1450	1400	1920	656	227	125	81
14	98	1280	899	1160	1430	1290	1200	1570	1020	206	114	78
15	96	1470	770	1030	1110	1110	1210	1310	689	204	133	74
16	100	1330	692	1000	983	961	1020	1120	661	241	270	75
17	100	1170	648	965	1200	857	903	1020	819	246	201	80
18	112	1100	594	892	3450	932	792	853	1030	204	206	79
19	104	995	553	776	4320	1360	1630	747	2280	180	174	79
20	86	950	537	683	3310	1230	3270	629	3460	176	137	80
21	76	966	519	598	2890	2140	2100	537	1700	175	120	91
22	75	1560	501	574	2280	2120	1560	476	1190	240	111	110
23	74	1600	567	753	1940	1620	1290	437	960	237	107	97
24	78	1310	684	1190	1790	1420	1100	399	800	276	108	85
25	161	1160	1060	1020	1510	1270	948	438	644	207	131	82
26	171	995	1120	842	1430	1160	1050	386	547	180	139	101
27	185	997	975	753	1540	1070	1710	345	499	170	121	134
28	164	1420	865	754	2860	1010	1220	312	458	157	108	138
29	128	2000	767	743	---	931	1000	296	450	143	99	132
30	114	1780	e680	930	---	847	911	311	435	143	98	128
31	104	---	e580	891	---	760	---	329	---	238	253	---
TOTAL	5352	50102	29123	35464	44298	52858	41949	35606	24491	8326	4501	3016
MEAN	173	1670	939	1144	1582	1705	1398	1149	816	269	145	101
MAX	461	9990	2310	4210	4320	4180	4750	4120	3460	611	270	155
MIN	74	299	501	470	650	760	612	296	270	143	98	74
CFSM	.38	3.70	2.08	2.54	3.51	3.78	3.10	2.55	1.81	.60	.32	.22
IN.	.44	4.13	2.40	2.93	3.65	4.36	3.46	2.94	2.02	.69	.37	.25

e Estimated.

KISKIMINETAS RIVER BASIN

03040000 STONYCREEK RIVER AT FERNDAL, PA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	245	427	691	775	1043	1622	1346	837	505	265	179	189
MAX	1514	2099	2162	1929	2575	3581	3426	1792	1773	874	1098	1449
(WY)	1977	1986	1973	1952	1986	1994	1993	1978	1972	1977	1979	1996
MIN	13.6	20.4	48.4	137	262	367	336	186	77.4	28.4	26.3	18.9
(WY)	1964	1954	1954	1977	1963	1990	1946	1941	1965	1965	1957	1943

SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

FOR 1998 WATER YEAR

WATER YEARS 1939 - 1998

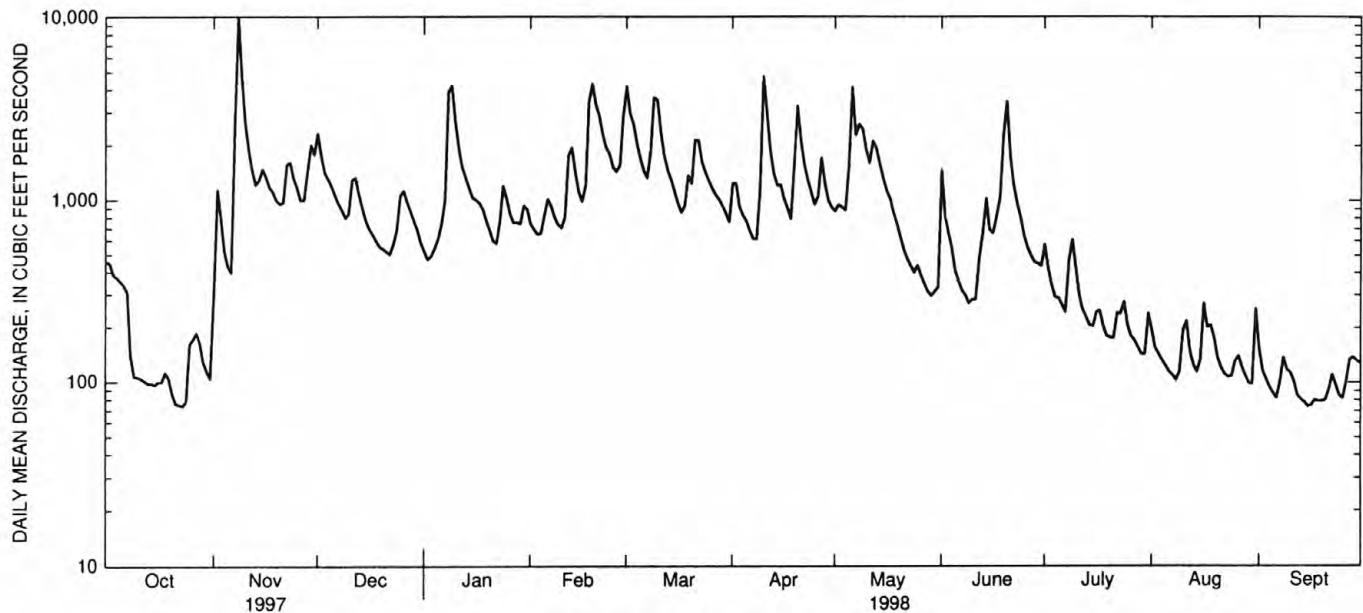
ANNUAL TOTAL	289743	335086	
ANNUAL MEAN	794	918	677
HIGHEST ANNUAL MEAN			1044
LOWEST ANNUAL MEAN			280
HIGHEST DAILY MEAN	9990	Nov 8	9990
LOWEST DAILY MEAN	74	Oct 23	74
ANNUAL SEVEN-DAY MINIMUM	86	Oct 18	78
INSTANTANEOUS PEAK FLOW			13300
INSTANTANEOUS PEAK STAGE			10.86
INSTANTANEOUS LOW FLOW			70
ANNUAL RUNOFF (CFSM)	1.76	2.04	1.50
ANNUAL RUNOFF (INCHES)	23.90	27.64	20.41
10 PERCENT EXCEEDS	1750	1940	1610
50 PERCENT EXCEEDS	459	692	333
90 PERCENT EXCEEDS	121	104	58

a Also Sept. 15.

b From rating curve extended above 13,000 ft³/s on the basis of slope-area and contracted-opening measurement of peak flow.

c From highwater mark, site and datum then in use.

d Minimum observed.



October 1, 1997 to September 30, 1998

KISKIMINETAS RIVER BASIN

03040000 STONYCREEK RIVER AT FERNDAL, PA--Continued
(National Water-Quality Assessment station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1975 to September 1981, September 1992 to May 1994, April 1996 to September 1998 (discontinued).

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: July 1997 to September 1997, March 1998 to September 1998.

pH: July 1997 to September 1997, March 1998 to September 1998.

WATER TEMPERATURE: January 1978 to September 1979, November 1996 to September 1998.

SUSPENDED SEDIMENT DISCHARGE: February 1977 to September 1979.

INSTRUMENTATION.--From January 1978 to September 1979, water temperatures were once daily readings by an observer and suspended sediment samples were collected daily and more often during storm events by an observer. From November 1996 to current year, daily records of water temperature, specific conductance and pH were measured and collected at hourly intervals with in-situ probes and electronic data loggers.

REMARKS.--All water-quality samples were collected and analyzed by the U.S. Geological Survey. Interruptions in the daily record were due to frozen river conditions or malfunctions of the equipment. Water temperature, specific conductance, and pH data from the in-situ probes often times did not exactly agree with the water temperature, specific conductance, and pH of the monthly and storm samples because of the fixed location of the in-situ probes. Additional sites in the (NAWQA) fixed-station network are shown in figure 6 on page 28. An explanation of selected abbreviations used in the water-quality tables are given on pages 29-31.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: Maximum, 27.5°C, July 3, 1997; minimum, 0.0°C, many days during winter period.

SEDIMENT CONCENTRATIONS: Maximum daily, 2,800 mg/L, June 17, 1978; minimum daily, 2 mg/L, September 9, 10, 11, 1978.

SEDIMENT DISCHARGES: Maximum daily, 20,900 tons, March 5, 1979; minimum daily, 0.44 ton, September 10, 11, 1978

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

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (µS/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	OXYGEN, DIS- SOLVED (MG/L) (00300)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	ACIDITY HEATED (MG/L AS CACO3) (70508)	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)												
OCT												
08...	1000	125	645	6.5	19.0	733	9.4	260	7.6	70	22	22
NOV												
08...	1640	10100	139	6.5	7.0	720	11.7	43	7.6	11	3.6	3.7
DEC												
12...	0905	1380	330	7.0	3.5	450	11.4	110	4.6	28	9.8	11
JAN												
09...	1600	4010	229	7.2	7.0	722	12.4	74	2.6	19	6.6	7.4
21...	1150	602	417	7.1	1.0	733	14.3	170	7.2	42	15	11
FEB												
26...	1100	1420	350	6.8	4.0	729	13.2	130	8.0	31	12	12
MAR												
17...	0940	868	370	6.0	3.0	735	13.8	140	14	35	14	8.6
APR												
14...	1035	1210	301	6.6	11.0	722	8.9	120	8.0	30	11	8.3
20...	1550	3080	228	6.9	9.5	730	11.0	82	3.2	20	7.4	7.0
27...	1615	1590	256	7.0	12.5	745	10.8	98	5.0	24	8.9	7.3
MAY												
06...	1430	3550	188	7.0	14.0	739	10.2	68	3.8	18	5.9	5.3
29...	1015	510	620	6.2	19.5	740	6.4	280	10	68	27	13
JUN												
25...	1040	667	347	6.7	21.0	743	9.4	140	3.8	35	13	8.7
JUL												
14...	1050	203	595	6.7	23.0	742	8.5	260	17.0	64	24	16
AUG												
11...	1000	230	542	7.1	22.0	737	8.4	220	4.0	58	19	16
SEP												
28...	1015	137	762	6.9	20.0	739	9.0	360	4.2	87	35	15

KISKIMINETAS RIVER BASIN

03040000 STONYCREEK RIVER AT FERNDAL, PA--Continued

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

DATE	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	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, 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)
OCT 08...	2.3	27	270	13	.17	5.3	404	.013	.793	.253	.38
NOV 08...	2.0	6	37	5.5	<.10	4.0	92	.013	.899	.030	.57
DEC 12...	1.7	9	97	17	<.10	5.6	189	.021	1.06	.068	.27
JAN 09...	1.7	10	61	12	.11	5.2	142	.010	1.07	.028	.30
21...	1.6	5	160	13	<.10	6.4	269	.019	.863	.086	.16
FEB 26...	1.5	7	120	16	<.10	5.8	214	<.010	.890	.097	.22
MAR 17...	1.3	3	140	10	<.10	6.2	237	<.010	.777	.129	.19
APR 14...	1.4	6	110	9.6	<.10	5.7	191	<.010	.749	.121	.22
20...	1.5	8	67	9.9	<.10	4.8	134	.013	.751	.088	.36
27...	1.3	6	91	8.7	<.10	5.0	164	<.010	.611	.105	.26
MAY 06...	1.3	8	59	6.7	.10	4.8	134	<.010	.653	.054	.54
29...	2.1	3	290	9.8	<.10	6.8	451	.019	.524	.198	.20
JUN 25...	1.5	9	130	8.4	.12	5.6	244	.010	.571	.196	.35
JUL 14...	2.0	3	260	11	.14	6.6	429	.016	.432	.336	.36
AUG 11...	2.8	17	220	12	<.10	6.9	362	.012	.719	.329	.57
SEP 28...	2.9	9	350	15	.11	5.8	483	.018	.598	1.12	1.2

DATE	NITRO- GEN, AM- MONIA + ORGANIC DIS. (MG/L AS N) (00623)	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 (MG/L AS AL) (01106)	IRON, DIS- SOLVED (MG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (MG/L AS MN) (01056)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS- PENDEDED TOTAL (MG/L AS C) (00689)	SEDI- MENT, SUS- PENDEDED (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 08...	.37	<.010	.017	<.010	28	240	1200	1.1	.20	4	86
NOV 08...	.28	.074	<.010	.012	118	100	377	4.3	.70	97	74
DEC 12...	.19	.012	<.010	.013	--	400	775	1.4	.70	14	96
JAN 09...	.18	.026	<.010	<.010	33	130	381	2.1	.70	23	82
21...	.13	<.010	<.010	<.010	24	830	1070	.80	.20	12	98
FEB 26...	<.10	<.010	<.010	<.010	13	560	888	.90	.50	13	93
MAR 17...	.14	<.010	<.010	<.010	130	860	1060	.80	.40	12	98
APR 14...	.12	.026	<.010	<.010	16	340	739	1.2	.60	14	56
20...	.16	.055	<.010	<.010	32	87	435	2.0	.50	21	66
27...	.13	<.010	<.010	<.010	25	240	611	1.4	.90	19	80
MAY 06...	.20	.068	<.010	<.010	57	69	388	2.5	1.7	115	46
29...	.17	<.010	<.010	<.010	112	320	1750	.80	.20	9	73
JUN 25...	.15	<.010	<.010	.011	38	120	804	1.1	.40	8	89
JUL 14...	.32	<.010	<.010	.017	98	340	1780	.90	.40	7	48
AUG 11...	.42	.043	<.010	<.010	43	46	1110	1.4	1.1	31	83
SEP 28...	1.3	.050	<.050	<.010	32	180	1860	1.3	1.3	16	63

KISKIMINETAS RIVER BASIN

03040000 STONYCREEK RIVER AT FERNDAL, PA.

REMARKS.--The following data are for dissolved trace elements in surface water filtered through a .45µm filter.

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

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	ALUM-INUM, DIS-SOLVED (µG/L AS AL) (01106)	ANTI-MONY, DIS-SOLVED (µG/L AS SB) (01095)	ARSENIC, DIS-SOLVED (µG/L AS AS) (01000)	BARIUM, DIS-SOLVED (µG/L AS BA) (01005)	BERYL-LIUM, DIS-SOLVED (µG/L AS BE) (01010)	CADMIUM, DIS-SOLVED (µG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (µG/L AS CR) (01030)	COBALT, DIS-SOLVED (µG/L AS CO) (01035)
SEP 28...	1015	137	32	<1.0	<1	35	<1.0	<1.0	<1.0	49

DATE	COPPER, DIS-SOLVED (µG/L AS CU) (01040)	LEAD, DIS-SOLVED (µG/L AS PB) (01049)	MANGA-NESE, DIS-SOLVED (µG/L AS MN) (01056)	MOLYB-DENUM, DIS-SOLVED (µG/L AS MO) (01060)	NICKEL, DIS-SOLVED (µG/L AS NI) (01065)	SELE-NIUM, DIS-SOLVED (µG/L AS SE) (01145)	SILVER, DIS-SOLVED (µG/L AS AG) (01075)	URANIUM, DIS-SOLVED (µG/L AS U) (22703)	ZINC, DIS-SOLVED (µG/L AS ZN) (01090)
SEP 28...	2.9	<1.0	1860	<1.0	79	<1	<1.0	<1.0	128

KISKIMINETAS RIVER BASIN

03040000 STONYCREEK RIVER AT FERNDAL, PA.

REMARKS.--The following data are for trace elements and other constituents that were part of the suspended-sediment fraction of the water sample. Suspended sediments were dewatered using a continuous flow centrifuge, dried, and analyzed directly for total metals using a nitric, hydrofluoric, perchloric acid digestion. Whole water contributions by the suspended sediment were then calculated using the suspended-sediment concentration in kilograms per liter (kg/L) and the analyte concentration in milligrams per kilogram (mg/kg) from the direct analysis of the suspended sediments, resulting in micrograms per gram ($\mu\text{G/G}$) concentrations. Values reported in percent are the percent of that constituent in the suspended sediment. When no trace element was detected in the sample, the default reporting value is the method detection limit preceded by a less-than sign (<).

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

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	ALUM- INUM SED, SUS PERCENT (30221)	AN- TIMONY SED. SUSP. (μG/G) (29816)	ARSENIC SED. SUSP. (μG/G) (29818)	BARIUM SED. SUSP. (μG/G) (29820)	BERYL- LIUM SED. SUSP. (μG/G) (29822)	CADMIUM SED. SUSP. (μG/G) (29826)	CHRO- MIUM SED. SUSP. (μG/G) (29829)	
APR 20...	1550	3080	4.0	1	17	200	4	2	38	
DATE		COBALT SEDI- MENT SUSP. (μG/G) (35031)	COPPER SED. SUSP. (μG/G) (29832)	IRON SEDI- MENT SUSP. PERCENT (30269)	LEAD SED. SUSP. (μG/G) (29836)	LITHIUM SEDI- MENT SUSP. (μG/G) (35050)	MAN- GANESE SED. SUSP. (μG/G) (29839)	MERCURY SED. SUSP. (μG/G) (29841)	MOLYB- DENUM SED. SUSP. (μG/G) (29843)	NICKEL SED. SUSP. (μG/G) (29845)
APR 20...	100	38	3.1	44	31	2800	0	<10	120	
DATE		PHOS- PHORUS SEDI- MENT SUSP. PERCENT (30292)	SELE- NIUM SED. SUSP. (μG/G) (29847)	SILVER SED. SUSP. (μG/G) (29850)	STRON- TIUM SEDI- MENT SUSP. (μG/G) (35040)	THAL- LIUM SUS SED (μG/G) (49955)	TITA- NIUM SEDI- MENT SUSP. PERCENT (30317)	URANIUM SEDI- MENT SUSP. (μG/G) (35046)	VANA- DIUM SED. SUSP. (μG/G) (29853)	ZINC SED. SUSP. (μG/G) (29855)
APR 20...	800	2	<1	63	<100	.16	<100	47	510	

03040000 STONYCREEK RIVER AT FERNDALE, PA--Continued

SPECIFIC CONDUCTANCE, $\mu\text{S}/\text{CM}$ @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN		MAX	MIN	MEAN		MAX	MIN	MEAN		MAX	MIN	MEAN
	OCTOBER				NOVEMBER				DECEMBER				JANUARY		
1	512	462	488		---	---	---		---	---	---		---	---	---
2	538	512	525		---	---	---		---	---	---		---	---	---
3	560	538	547		---	---	---		---	---	---		---	---	---
4	566	541	557		---	---	---		---	---	---		---	---	---
5	602	566	586		---	---	---		---	---	---		---	---	---
6	609	578	600		---	---	---		---	---	---		---	---	---
7	578	558	563		---	---	---		---	---	---		---	---	---
8	---	---	---		---	---	---		---	---	---		---	---	---
9	---	---	---		---	---	---		---	---	---		---	---	---
10	---	---	---		---	---	---		---	---	---		---	---	---
11	---	---	---		---	---	---		---	---	---		---	---	---
12	---	---	---		---	---	---		---	---	---		---	---	---
13	---	---	---		---	---	---		---	---	---		---	---	---
14	---	---	---		---	---	---		---	---	---		---	---	---
15	---	---	---		---	---	---		---	---	---		---	---	---
16	---	---	---		---	---	---		---	---	---		---	---	---
17	---	---	---		---	---	---		---	---	---		---	---	---
18	---	---	---		---	---	---		---	---	---		---	---	---
19	---	---	---		---	---	---		---	---	---		---	---	---
20	---	---	---		---	---	---		---	---	---		---	---	---
21	---	---	---		---	---	---		---	---	---		---	---	---
22	---	---	---		---	---	---		---	---	---		---	---	---
23	---	---	---		---	---	---		---	---	---		---	---	---
24	---	---	---		---	---	---		---	---	---		---	---	---
25	---	---	---		---	---	---		---	---	---		---	---	---
26	---	---	---		---	---	---		---	---	---		---	---	---
27	---	---	---		---	---	---		---	---	---		---	---	---
28	---	---	---		---	---	---		---	---	---		---	---	---
29	---	---	---		---	---	---		---	---	---		---	---	---
30	---	---	---		---	---	---		---	---	---		---	---	---
31	---	---	---		---	---	---		---	---	---		---	---	---
MONTH	609	462	552		---	---	---		---	---	---		---	---	---

KISKIMINETAS RIVER BASIN

03040000 STONYCREEK RIVER AT FERNDAL, PA--Continued

SPECIFIC CONDUCTANCE, $\mu\text{S}/\text{CM}$ @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	---	---	---	299	204	263	318	311	314
2	---	---	---	---	---	---	227	192	208	316	305	310
3	---	---	---	---	---	---	253	227	243	327	307	315
4	---	---	---	---	---	---	270	248	260	330	316	325
5	---	---	---	---	---	---	283	266	272	320	226	290
6	---	---	---	---	---	---	290	279	286	---	---	---
7	---	---	---	---	---	---	295	275	284	214	190	203
8	---	---	---	---	---	---	318	290	299	216	164	189
9	---	---	---	---	---	---	293	189	271	201	168	182
10	---	---	---	---	---	---	193	94	126	217	187	204
11	---	---	---	---	---	---	114	99	106	226	208	218
12	---	---	---	---	---	---	121	114	118	224	199	209
13	---	---	---	---	---	---	127	121	124	224	199	211
14	---	---	---	---	---	---	---	---	---	242	207	222
15	---	---	---	---	---	---	300	293	296	246	227	237
16	---	---	---	---	---	---	321	299	309	273	239	251
17	---	---	---	---	---	---	336	321	328	278	258	267
18	---	---	---	393	370	383	370	336	348	291	268	282
19	---	---	---	370	313	334	377	222	336	311	286	296
20	---	---	---	329	303	318	222	195	207	334	311	323
21	---	---	---	323	185	254	250	222	237	358	334	351
22	---	---	---	217	183	202	266	250	260	400	358	384
23	---	---	---	232	215	221	280	266	273	419	395	410
24	---	---	---	240	230	235	302	280	291	437	415	427
25	---	---	---	249	235	240	315	301	305	452	428	439
26	---	---	---	249	229	237	336	315	322	456	442	450
27	---	---	---	241	229	234	322	244	258	480	456	466
28	---	---	---	257	236	246	287	261	272	533	480	490
29	---	---	---	274	256	265	306	287	297	---	---	---
30	---	---	---	282	266	274	313	306	309	632	588	608
31	---	---	---	280	271	275	---	---	---	635	599	615
MONTH	---	---	---	393	183	266	377	94	259	635	164	322

KISKIMINETAS RIVER BASIN

03040000 STONYCREEK RIVER AT FERNDAL, PA--Continued

SPECIFIC CONDUCTANCE, $\mu\text{S}/\text{CM}$ @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	676	273	393	393	351	364	624	587	604	583	564	573
2	343	288	315	398	354	375	626	582	606	678	565	637
3	414	315	353	425	398	417	674	619	651	727	570	685
4	384	325	358	446	425	437	693	674	681	784	684	747
5	404	374	382	460	444	453	719	681	705	790	701	745
6	447	400	413	473	456	464	742	696	721	837	735	785
7	448	425	436	496	460	483	757	730	742	829	689	774
8	481	440	465	517	402	452	786	722	748	775	707	740
9	484	455	461	419	313	364	769	686	735	772	650	733
10	492	454	472	379	317	357	725	589	678	732	650	703
11	467	444	452	424	378	409	675	541	614	734	670	706
12	472	346	425	471	424	449	672	639	653	719	691	706
13	350	277	323	513	471	496	726	668	700	738	684	712
14	300	256	276	---	---	---	765	700	729	771	717	742
15	311	235	283	562	533	547	767	693	739	793	750	762
16	338	282	304	550	526	538	718	506	584	854	781	799
17	342	291	313	550	516	537	635	524	575	909	854	880
18	339	257	288	550	516	535	623	581	606	956	906	933
19	293	154	228	595	546	577	691	591	655	1000	927	956
20	---	---	---	609	568	588	717	659	690	1000	894	969
21	---	---	---	627	587	616	710	660	688	1010	982	1000
22	---	---	---	636	575	594	735	655	686	1020	964	1000
23	---	---	---	637	545	600	760	681	716	1000	934	967
24	---	---	---	569	532	552	768	713	751	961	903	936
25	---	---	---	564	533	548	754	711	739	952	886	928
26	421	306	362	649	564	614	775	688	732	986	946	959
27	408	373	389	645	627	636	759	721	740	973	885	922
28	458	391	418	672	639	652	769	719	748	902	772	827
29	420	394	408	736	672	704	779	703	736	---	---	---
30	408	311	379	721	704	715	795	659	739	---	---	---
31	---	---	---	710	587	647	724	578	640	---	---	---
MONTH	676	154	371	736	313	524	795	506	688	1020	564	815

KISKIMINETAS RIVER BASIN

03040000 STONYCREEK RIVER AT FERNDAL, PA--Continued

pH VALUES, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	---	---	---	5.4	4.9	5.0	5.4	5.3	5.4
2	---	---	---	---	---	---	5.6	5.4	5.5	5.4	5.2	5.4
3	---	---	---	---	---	---	5.5	5.2	5.4	5.3	5.2	5.3
4	---	---	---	---	---	---	5.2	5.0	5.2	5.2	5.1	5.1
5	---	---	---	---	---	---	5.0	4.8	4.9	5.7	5.1	5.3
6	---	---	---	---	---	---	4.9	4.8	4.8	5.9	5.6	5.7
7	---	---	---	---	---	---	4.9	4.9	4.9	5.9	5.8	5.9
8	---	---	---	---	---	---	5.0	4.9	4.9	5.9	5.7	5.8
9	---	---	---	---	---	---	5.1	4.9	5.0	5.9	5.7	5.8
10	---	---	---	---	---	---	5.2	5.1	5.1	5.8	5.6	5.7
11	---	---	---	---	---	---	5.4	5.2	5.3	5.6	5.5	5.5
12	---	---	---	---	---	---	5.5	5.3	5.4	5.9	5.6	5.8
13	---	---	---	---	---	---	5.7	5.5	5.6	5.9	5.8	5.9
14	---	---	---	---	---	---	---	---	---	5.9	5.9	5.9
15	---	---	---	---	---	---	6.1	5.8	5.8	5.9	5.8	5.9
16	---	---	---	---	---	---	5.8	5.7	5.8	5.8	5.7	5.8
17	---	---	---	---	---	---	5.7	5.4	5.6	5.7	5.4	5.6
18	---	---	---	5.2	4.9	5.0	5.4	5.1	5.3	5.4	5.1	5.3
19	---	---	---	5.8	5.2	5.8	5.6	4.9	5.0	5.4	5.1	5.3
20	---	---	---	5.8	5.3	5.6	6.0	5.6	5.9	5.4	5.2	5.3
21	---	---	---	5.7	5.1	5.5	6.0	5.9	5.9	5.2	5.1	5.2
22	---	---	---	5.8	5.7	5.7	5.9	5.7	5.8	5.1	5.0	5.1
23	---	---	---	5.8	5.7	5.8	5.7	5.6	5.7	5.0	4.8	4.9
24	---	---	---	5.8	5.7	5.8	5.6	5.5	5.6	4.8	4.6	4.6
25	---	---	---	5.7	5.7	5.7	5.5	5.3	5.4	4.6	4.4	4.5
26	---	---	---	5.7	5.5	5.6	5.3	4.7	5.1	4.6	4.4	4.5
27	---	---	---	5.5	5.2	5.4	5.4	4.6	5.1	4.6	4.5	4.6
28	---	---	---	5.3	5.0	5.2	5.5	5.4	5.5	4.7	4.6	4.6
29	---	---	---	5.0	4.8	4.8	5.5	5.4	5.5	---	---	---
30	---	---	---	4.8	4.7	4.7	5.4	5.4	5.4	4.6	4.5	4.6
31	---	---	---	4.9	4.8	4.8	---	---	---	4.6	4.4	4.5
MAX	---	---	---	5.8	5.7	5.8	6.1	5.9	5.9	5.9	5.9	5.9
MIN	---	---	---	4.8	4.7	4.7	4.9	4.6	4.8	4.6	4.4	4.5

KISKIMINETAS RIVER BASIN

03040000 STONYCREEK RIVER AT FERNDAL, PA--Continued

pH VALUES, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	6.4	4.4	5.8	6.2	5.5	6.0	4.8	4.6	4.7	4.7	4.6	4.7
2	6.6	6.4	6.5	6.2	6.2	6.2	4.8	4.8	4.8	4.7	4.6	4.7
3	6.7	6.4	6.5	6.2	5.9	6.2	4.9	4.8	4.8	4.8	4.7	4.7
4	6.8	6.7	6.8	5.9	5.3	5.6	4.8	4.7	4.8	4.7	4.6	4.7
5	6.8	6.5	6.7	5.3	5.2	5.3	4.7	4.7	4.7	4.8	4.6	4.7
6	6.5	6.3	6.4	5.2	5.0	5.2	4.7	4.6	4.7	4.8	4.7	4.7
7	6.3	6.1	6.2	5.0	4.8	4.9	4.7	4.6	4.6	4.8	4.6	4.7
8	6.1	5.6	5.9	5.5	4.8	5.1	4.7	4.6	4.7	4.9	4.7	4.8
9	5.6	5.6	5.6	6.6	5.5	6.2	4.6	4.6	4.6	4.9	4.8	4.9
10	5.6	5.4	5.4	6.7	6.6	6.7	5.0	4.5	4.6	4.9	4.8	4.9
11	5.5	5.3	5.4	6.7	6.5	6.6	5.3	4.4	4.8	4.9	4.8	4.9
12	5.5	5.3	5.4	6.5	5.4	6.2	4.9	4.6	4.7	4.9	4.9	4.9
13	6.4	5.5	6.1	5.4	4.9	5.0	4.6	4.5	4.5	5.0	4.8	4.9
14	6.5	6.2	6.4	---	---	---	4.6	4.5	4.6	5.0	4.8	4.9
15	6.2	6.1	6.2	4.7	4.5	4.6	4.6	4.4	4.5	5.2	5.0	5.1
16	6.1	6.0	6.1	4.7	4.6	4.6	4.5	4.3	4.5	5.4	5.2	5.3
17	6.3	6.0	6.1	4.7	4.6	4.7	4.5	4.3	4.3	5.7	5.4	5.5
18	6.8	6.3	6.7	4.8	4.6	4.8	4.4	4.3	4.4	5.8	5.7	5.7
19	7.3	6.8	6.9	4.6	4.5	4.6	4.6	4.4	4.5	5.9	5.8	5.9
20	7.4	6.5	7.2	4.6	4.6	4.6	4.7	4.6	4.7	6.1	5.9	6.0
21	7.1	6.8	7.0	4.7	4.6	4.6	4.7	4.6	4.7	6.2	6.1	6.1
22	6.8	6.6	6.8	4.7	4.5	4.6	4.7	4.6	4.6	6.3	6.2	6.2
23	6.7	6.6	6.7	4.8	4.6	4.6	4.6	4.5	4.6	6.4	6.3	6.3
24	6.6	6.3	6.4	5.2	4.8	5.1	4.6	4.5	4.6	6.5	6.4	6.4
25	---	---	---	5.2	5.0	5.1	4.6	4.5	4.6	6.5	6.4	6.5
26	6.6	6.1	6.3	5.1	4.9	5.0	4.6	4.5	4.5	6.6	6.5	6.5
27	6.4	5.5	6.2	5.1	4.9	5.1	4.6	4.5	4.6	6.6	6.5	6.6
28	5.5	4.6	4.7	4.9	4.7	4.9	4.6	4.5	4.6	6.6	6.1	6.6
29	5.4	4.7	5.0	4.7	4.5	4.6	4.6	4.6	4.6	---	---	---
30	5.7	5.4	5.4	4.6	4.5	4.5	4.6	4.5	4.6	---	---	---
31	---	---	---	4.6	4.5	4.5	4.7	4.5	4.6	---	---	---
MAX	7.4	6.8	7.2	6.7	6.6	6.7	5.3	4.8	4.8	6.6	6.5	6.6
MIN	5.4	4.4	4.7	4.6	4.5	4.5	4.4	4.3	4.3	4.7	4.6	4.7

[illegible]

KISKIMINETAS RIVER BASIN

03040000 STONYCREEK RIVER AT FERNDAL, PA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	---	---	---	14.5	12.5	13.5	14.0	12.5	13.5
2	---	---	---	---	---	---	12.5	10.5	11.5	13.5	13.0	13.0
3	---	---	---	---	---	---	11.0	9.0	10.0	14.5	12.0	13.0
4	---	---	---	---	---	---	10.5	7.5	8.5	15.0	13.0	14.5
5	---	---	---	---	---	---	10.0	6.0	8.0	15.0	13.5	14.0
6	---	---	---	---	---	---	10.5	6.5	8.5	14.5	12.0	13.0
7	---	---	---	---	---	---	10.5	6.5	9.0	15.0	12.5	13.5
8	---	---	---	---	---	---	12.0	9.0	10.5	14.5	13.0	13.5
9	---	---	---	---	---	---	11.0	8.5	10.0	14.0	12.5	13.0
10	---	---	---	---	---	---	9.0	7.5	8.5	14.0	12.5	13.0
11	---	---	---	---	---	---	10.5	7.5	9.0	13.5	12.5	13.0
12	---	---	---	---	---	---	11.0	7.0	9.0	13.0	12.0	12.5
13	---	---	---	---	---	---	12.0	8.0	10.0	16.5	12.0	14.0
14	---	---	---	---	---	---	---	---	---	18.0	13.0	15.5
15	---	---	---	---	---	---	13.5	11.0	12.0	19.0	14.0	16.5
16	---	---	---	---	---	---	13.5	11.5	12.5	19.5	15.5	17.5
17	---	---	---	---	---	---	13.5	11.0	12.0	21.0	17.0	19.0
18	---	---	---	5.0	4.0	4.5	12.5	9.0	11.0	20.0	16.0	18.0
19	---	---	---	6.5	4.5	5.5	12.0	9.0	10.5	21.0	16.5	19.0
20	---	---	---	6.5	5.0	5.5	10.5	8.5	9.5	22.0	18.0	20.0
21	---	---	---	6.0	4.5	5.0	12.0	8.5	10.0	21.5	18.0	20.0
22	---	---	---	4.5	3.0	3.5	11.5	9.5	10.5	19.5	15.5	17.5
23	---	---	---	5.0	2.5	3.5	11.0	9.0	10.0	20.0	15.5	17.5
24	---	---	---	5.0	3.0	4.0	13.0	8.5	11.0	17.5	15.0	16.0
25	---	---	---	6.5	2.5	4.5	14.5	10.5	12.5	18.0	15.0	16.5
26	---	---	---	9.5	5.0	7.5	13.5	10.5	12.0	19.5	16.5	17.5
27	---	---	---	12.0	7.5	10.0	12.5	9.0	10.5	21.0	16.0	18.0
28	---	---	---	13.0	9.5	11.5	13.0	8.5	11.0	21.5	17.0	19.0
29	---	---	---	14.5	11.0	13.0	13.5	9.5	11.5	---	---	---
30	---	---	---	15.0	11.0	13.0	13.5	12.5	13.0	25.0	19.5	22.0
31	---	---	---	15.5	12.0	14.0	---	---	---	25.0	20.5	22.0
MONTH	---	---	---	15.5	2.5	7.5	14.5	6.0	10.5	25.0	12.0	16.2

KISKIMINETAS RIVER BASIN

03040000 STONYCREEK RIVER AT FERNDAL, PA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	21.0	18.0	19.5	22.0	18.0	20.0	26.5	19.0	22.0	25.0	18.5	21.5
2	21.5	17.5	19.5	23.0	18.0	20.5	27.0	18.0	22.0	24.0	19.0	21.0
3	20.0	17.5	18.5	23.0	19.0	20.5	27.0	18.5	22.5	24.5	16.5	20.5
4	19.5	16.0	17.5	20.5	18.5	19.5	27.5	18.5	23.0	24.5	17.0	20.5
5	18.0	15.0	16.5	23.5	18.0	20.0	27.5	19.5	23.5	24.5	17.0	20.5
6	16.5	14.0	15.0	24.0	18.5	21.0	28.0	19.5	23.5	25.5	17.5	21.0
7	15.5	14.0	14.5	24.5	19.0	21.5	28.5	19.5	23.5	22.5	19.5	21.0
8	16.5	13.0	14.5	22.0	20.5	21.0	26.5	20.5	23.5	20.0	16.5	18.0
9	14.5	13.0	14.0	23.0	20.0	21.5	27.5	21.0	24.0	18.0	14.5	16.0
10	14.5	13.5	14.0	24.5	20.5	22.0	26.0	22.5	24.0	20.0	13.5	16.5
11	17.0	14.0	15.5	24.0	18.5	21.0	25.0	21.0	22.5	21.5	14.0	17.5
12	20.0	16.0	18.0	24.5	18.0	21.0	27.0	20.0	23.0	23.5	16.0	19.5
13	20.0	17.5	18.5	26.5	18.5	22.0	27.0	20.0	23.0	25.5	17.5	21.0
14	18.0	16.0	17.0	---	---	---	25.0	21.0	22.5	26.0	18.0	21.5
15	19.0	16.5	18.0	23.5	21.0	22.0	26.0	20.0	22.5	26.0	19.5	22.5
16	21.5	18.0	19.0	24.5	20.5	22.0	24.0	21.0	22.5	25.0	20.5	23.0
17	19.5	17.5	18.5	26.5	21.0	23.0	24.0	21.5	22.5	24.5	21.0	22.5
18	21.0	17.0	19.0	27.5	20.5	23.5	25.5	20.5	22.5	25.5	20.0	22.0
19	20.5	17.5	18.5	28.0	20.0	23.5	25.0	18.0	21.0	24.5	19.5	21.5
20	20.0	17.0	18.5	26.0	22.0	23.5	25.5	17.0	21.0	25.5	20.0	22.5
21	21.5	17.5	19.5	26.5	21.0	23.5	25.5	17.5	21.0	24.5	20.5	22.0
22	20.5	18.5	19.5	27.5	22.0	24.0	28.0	19.5	23.0	23.0	19.0	21.5
23	22.0	19.0	20.5	26.0	22.0	23.5	28.0	21.0	24.0	20.5	15.5	17.5
24	23.5	19.5	21.5	23.5	20.5	22.0	24.0	21.0	22.5	20.0	13.5	16.5
25	---	---	---	26.0	19.0	22.0	22.5	20.0	21.0	20.0	16.5	18.0
26	23.5	21.0	22.5	27.0	20.0	23.0	26.5	20.0	22.5	23.0	17.0	19.5
27	23.0	21.0	21.5	26.5	19.5	23.0	27.5	20.0	23.5	24.0	18.5	21.0
28	22.0	20.5	21.0	27.0	19.5	23.0	27.5	19.5	23.0	23.0	16.5	20.5
29	21.5	19.5	20.5	26.0	20.0	23.0	24.0	20.5	22.0	---	---	---
30	22.0	18.5	20.0	24.5	19.5	22.0	27.0	19.5	22.5	---	---	---
31	---	---	---	24.5	20.0	22.0	25.0	20.0	22.0	---	---	---
MONTH	23.5	13.0	18.3	28.0	18.0	22.0	28.5	17.0	22.6	26.0	13.5	20.2

KISKIMINETAS RIVER BASIN

03041500 CONEMAUGH RIVER AT SEWARD, PA

LOCATION.--Lat 40°25'09", long 79°01'35", Westmoreland County, Hydrologic Unit 05010007, on left bank at upstream side of bridge on State Highway 56 at Seward, 2.0 mi downstream from Findley Run, and 9 mi northwest of Johnstown.

DRAINAGE AREA.--715 mi².

PERIOD OF RECORD.--May 1938 to current year.

REVISED RECORDS.--WDR PA-78-3: 1936 (M), 1977 (M).

GAGE.--Water-stage recorder. Datum of gage is 1,076.01 ft above sea level.

REMARKS.--Records good except for estimated daily discharges, which are fair. Flow regulated by steel mills and reservoirs above station; the eight most effective reservoirs have a combined capacity of 51,850 acre-ft. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 18, 1936 reached a stage of 26.4 ft, from floodmarks, discharge, 75,000 ft³/s, by contracted-opening measurement at site 6.7 mi downstream, adjusted for inflow.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	798	466	3810	e820	1250	6840	2010	1770	1730	1100	388	337
2	713	2480	2800	e820	1180	5120	2390	2010	1170	822	327	274
3	591	1810	2210	e900	1110	4460	1720	1900	953	662	306	260
4	544	1090	2010	e980	1110	3540	1500	1770	864	585	297	248
5	502	860	1780	e1200	1310	2980	1380	2920	696	562	287	236
6	478	745	1500	e1500	1550	2550	1250	7040	614	523	278	229
7	457	4790	1330	e2350	1390	2290	1140	4100	571	485	275	286
8	362	23300	1210	7230	1240	2820	1140	4450	535	932	265	375
9	293	9630	1120	7190	1170	5470	2010	4300	497	1100	262	310
10	286	5190	1290	4670	1150	5620	6760	3310	511	792	392	288
11	275	3380	2390	3360	1220	3920	4570	2860	526	592	467	270
12	272	2520	2340	2660	2650	3010	3030	3780	814	504	346	251
13	272	1960	1920	2320	3180	2490	2400	3300	933	460	298	240
14	266	2040	1580	1990	2460	2270	2090	2670	1400	434	289	233
15	262	2340	1330	1660	1910	1960	2540	2210	1200	411	321	228
16	260	1960	1200	1650	1650	1660	2050	1890	1430	487	425	228
17	259	1610	1130	1620	1780	1480	1790	1880	1410	479	458	233
18	250	1380	1040	1520	5200	1580	1530	1460	1810	421	475	234
19	247	1280	954	1340	6680	2140	2600	1250	2950	380	380	230
20	245	1230	920	1250	5290	2050	5620	1120	6260	371	321	227
21	244	1230	884	1130	4690	3300	3760	989	2930	373	292	247
22	241	2240	845	1070	3740	3530	2870	875	2030	570	276	287
23	239	2510	979	1320	3210	2800	2370	803	1620	447	268	267
24	242	2000	1160	2060	3090	2460	2020	733	1330	550	273	238
25	377	1640	1740	1770	2690	2180	1690	790	1120	429	324	235
26	374	1410	1990	1420	2560	1990	2220	730	987	376	347	239
27	403	1580	1700	1270	2720	1850	4410	648	899	353	304	264
28	371	2330	1470	1270	4410	1730	2820	598	942	343	275	294
29	323	3670	e1220	1240	---	1580	2210	562	879	325	255	277
30	296	3030	e1100	1540	---	1420	1940	582	855	343	251	266
31	287	---	e940	1490	---	1280	---	558	---	430	369	---
TOTAL	11029	91701	47892	62610	71590	88370	75830	63858	40466	16641	10091	7831
MEAN	356	3057	1545	2020	2557	2851	2528	2060	1349	537	326	261
MAX	798	23300	3810	7230	6680	6840	6760	7040	6260	1100	475	375
MIN	239	466	845	820	1110	1280	1140	558	497	325	251	227
CFSM	.50	4.28	2.16	2.82	3.58	3.99	3.54	2.88	1.89	.75	.46	.37
IN.	.57	4.77	2.49	3.26	3.72	4.60	3.95	3.32	2.11	.87	.53	.41

e Estimated.

KISKIMINETAS RIVER BASIN

03041500 CONEMAUGH RIVER AT SEWARD, PA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	574	889	1337	1465	1879	2821	2376	1567	1042	679	489	495
MAX	2746	3076	3620	3625	3816	5524	5288	2871	3594	2527	1690	2475
(WY)	1977	1986	1973	1952	1971	1994	1993	1960	1972	1977	1979	1996
MIN	169	189	245	391	493	779	739	512	338	242	217	169
(WY)	1964	1939	1954	1977	1993	1990	1946	1941	1965	1965	1939	1959

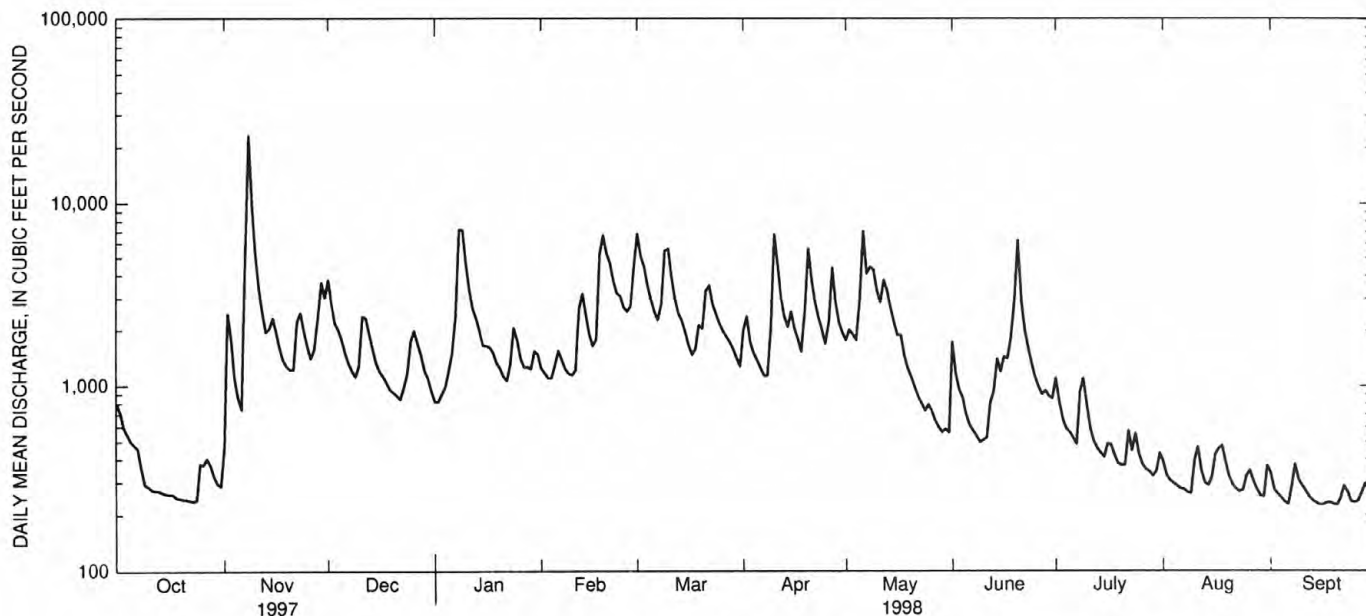
SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

FOR 1998 WATER YEAR

WATER YEARS 1939 - 1998

ANNUAL TOTAL	507233		587909									
ANNUAL MEAN	1390		1611							1298		
HIGHEST ANNUAL MEAN										1814		1996
LOWEST ANNUAL MEAN										687		1954
HIGHEST DAILY MEAN	23300	Nov 8		23300	Nov 8					40900	Jul 20 1977	
LOWEST DAILY MEAN	210	Sep 19		227	Sep 20					105	Dec 28 1938 ^a	
ANNUAL SEVEN-DAY MINIMUM	227	Aug 6		230	Sep 14					111	Dec 26 1938	
INSTANTANEOUS PEAK FLOW				31000	Nov 8					^b 115000	Jul 20 1977	
INSTANTANEOUS PEAK STAGE				15.07	Nov 8					^c 27.06	Jul 20 1977	
INSTANTANEOUS LOW FLOW				217	Sep 20					105	Dec 28 1938	
ANNUAL RUNOFF (CFSM)	1.94			2.25						1.82		
ANNUAL RUNOFF (INCHES)	26.39			30.59						24.67		
10 PERCENT EXCEEDS	2960			3330						2870		
50 PERCENT EXCEEDS	837			1200						743		
90 PERCENT EXCEEDS	297			269						262		

^a Also Dec. 29, 31, 1938.^b From slope-area measurement of peak flow.^c From highwater mark.

October 1, 1997 to September 30, 1998

KISKIMINETAS RIVER BASIN

03042000 BLACKLICK CREEK AT JOSEPHINE, PA

LOCATION.--Lat 40°28'24", long 79°11'01", Indiana County, Hydrologic Unit 05010007, on right bank on upstream side of old concrete dam at Josephine, 0.9 mi upstream from Two Lick Creek, and 5 mi northeast of Blairsville.

DRAINAGE AREA.--192 mi².

PERIOD OF RECORD.--January 1952 to current year.

REVISED RECORDS.--WSP 1385: 1952-54 (M). WDR PA-78-3: 1977 (M).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 975.82 ft above sea level. Prior to Aug. 25, 1953, nonrecording gage at same site and datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. Some regulation at low flow by mine pumpage above station. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a base discharge of 2,700 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 8	1100	*13,600	*10.37	Apr. 27	0200	4,640	6.97
Jan. 8	0700	4,100	6.71	May 6	0100	5,020	7.15

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	290	119	849	e300	427	1800	370	609	e92	360	e100	e35
2	263	861	662	e300	409	1140	494	679	e88	333	e90	e33
3	220	725	560	e350	394	1080	369	685	e85	292	e80	e32
4	179	447	e520	e430	386	845	344	588	e82	251	e72	e31
5	153	353	e480	519	435	700	320	1040	e80	212	e66	e30
6	137	302	e450	630	450	594	e300	2070	e84	183	e60	e30
7	e120	2130	e400	862	396	537	e270	969	e93	166	e55	e29
8	e110	10900	e390	3440	380	575	304	921	e100	215	e50	e28
9	e100	3600	e370	2230	378	992	480	843	e110	384	e49	e27
10	e90	1740	511	1300	375	961	1040	654	e115	330	e48	e27
11	e80	1050	994	911	375	705	631	606	123	288	e53	e28
12	e70	781	756	704	532	581	510	864	130	253	e55	e29
13	e66	619	619	626	670	513	446	673	163	223	e53	e29
14	e65	676	532	562	531	494	434	557	171	195	e50	e29
15	e58	776	461	486	457	441	940	477	166	175	e48	e28
16	e52	620	412	511	415	393	760	413	175	e150	e46	e27
17	e48	e500	387	498	434	e330	e600	e290	227	e130	e45	e26
18	e45	e400	356	474	722	391	e480	e300	333	e115	e46	e26
19	e43	e350	328	435	1230	429	1030	e250	385	e105	e49	e26
20	e42	e320	e290	403	1040	406	1910	e230	1390	e94	e48	e26
21	e45	e400	e250	374	912	468	1070	e210	653	e87	e47	e28
22	e50	552	305	372	730	573	799	e180	395	e90	e45	e30
23	e59	640	397	561	641	483	653	e170	374	120	e43	e31
24	e66	548	486	838	664	464	547	e150	400	145	e41	e29
25	e70	472	614	625	606	425	471	e140	e300	170	e40	e29
26	e76	442	678	516	644	394	1140	e125	e250	157	e40	e28
27	e80	482	589	465	715	e370	2810	e115	e210	e140	e42	e28
28	e70	677	516	443	1080	e345	1150	e110	e260	e120	e44	e27
29	e60	1070	e450	435	---	e325	813	e104	e210	e110	e42	e27
30	e50	849	e400	531	---	339	672	e100	305	e100	e39	e26
31	e80	---	e330	496	---	304	---	e98	---	e90	e37	---
TOTAL	2937	33401	15342	21627	16428	18397	22157	15220	7549	5783	1623	860
MEAN	94.7	1113	495	698	587	593	739	491	252	187	52.4	28.7
MAX	290	10900	994	3440	1230	1800	2810	2070	1390	384	100	35
MIN	42	119	250	300	375	304	270	98	80	87	37	26
CFSM	.49	5.80	2.58	3.63	3.06	3.09	3.85	2.56	1.31	.97	.27	.15
IN.	.57	6.47	2.97	4.19	3.18	3.56	4.29	2.95	1.46	1.12	.31	.17

e Estimated.

03042000 BLACKLICK CREEK AT JOSEPHINE, PA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1953 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	176	311	437	427	538	771	600	426	257	208	152	145
MAX	812	1113	1025	905	1202	1615	1086	1009	1376	1114	581	595
(WY)	1977	1998	1973	1975	1956	1967	1993	1978	1972	1977	1958	1996
MIN	30.8	33.5	68.4	135	124	219	236	84.8	65.6	43.5	37.1	28.7
(WY)	1953	1954	1961	1956	1987	1969	1997	1986	1965	1965	1962	1998

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR			FOR 1998 WATER YEAR			WATER YEARS 1953 - 1998		
ANNUAL TOTAL	154704			161324					
ANNUAL MEAN	424			442					
HIGHEST ANNUAL MEAN							372		
LOWEST ANNUAL MEAN							523		1972
HIGHEST DAILY MEAN	10900			10900			22800		Jul 20 1977
LOWEST DAILY MEAN	e42			e26			15		Oct 13 1995
ANNUAL SEVEN-DAY MINIMUM	a46			a27			24		Jul 21 1982
INSTANTANEOUS PEAK FLOW				13600			b45700		Jul 20 1977
INSTANTANEOUS PEAK STAGE				10.37			c19.89		Jul 20 1977
INSTANTANEOUS LOW FLOW							19		Sep 14 1952d
ANNUAL RUNOFF (CFSM)	2.21			2.30			1.93		
ANNUAL RUNOFF (INCHES)	29.97			31.26			26.29		
10 PERCENT EXCEEDS	812			854			800		
50 PERCENT EXCEEDS	247			353			215		
90 PERCENT EXCEEDS	77			42			53		

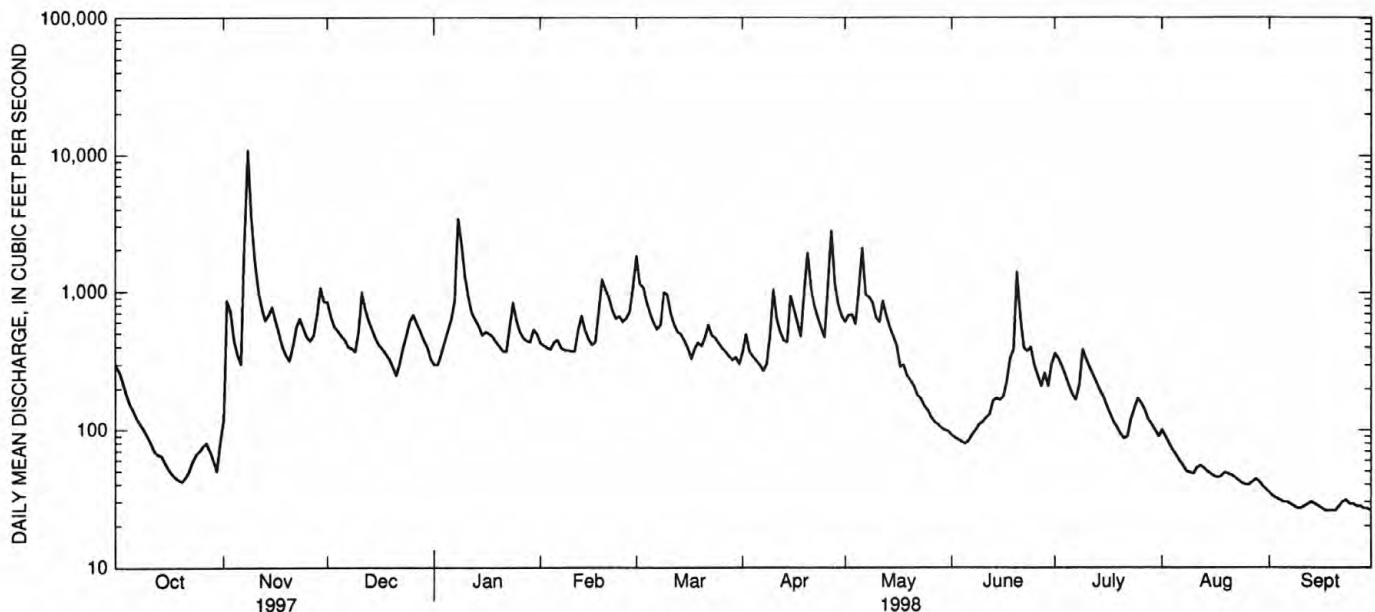
a Computed using estimated discharges.

b From rating curve extended above 16,000 ft³/s on basis of contracted-opening measurement at gage height 11.35 ft in gage well, 12.67 ft from outside floodmark and slope-area measurement at gage height 10.93 ft.

c From floodmark in gage well.

d Also Nov. 4, 1953.

e Estimated.



October 1, 1997 to September 30, 1998

KISKIMINETAS RIVER BASIN

LAKE IN KISKIMINETAS RIVER BASIN

03042260 YELLOW CREEK LAKE.--Lat 40°35'27", long 79°03'11", Indiana County, Hydrologic Unit 05010007, in gate-house at right end of dam on Yellow Creek, at Yellow Creek State Park, and 3 mi southwest of Penn Run. DRAINAGE AREA, 52.5 mi². PERIOD OF RECORD, July 1971 to current year. GAGE, Water-stage recorder. Datum of gage is sea level (Pennsylvania Department of Environmental Protection bench mark).

Lake is formed by an earthfill dam with concrete spillway. Storage began July 11, 1971. Usable capacity, 13,800 acre-ft between elevation 1,245.5 ft, sill of 4-foot and 1.5 foot outlet gates, and 1,280.00 ft (spillway crest). No dead storage. Figures given herein represent usable contents. Lake is used for recreation. Dam built by Pennsylvania Department of Forests and Waters and now maintained by Pennsylvania Department of Environmental Protection.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 24,100 acre-ft, July 20, 1977, elevation, 1,290.29 ft; minimum (after first filling), 2,810 acre-ft, Apr. 14, 1975, elevation, 1,261.47 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 17,060 acre-ft, Nov. 8 elevation, 1,283.62 ft; minimum, 12,680 acre-ft, Sept. 7 elevation, 1,278.73 ft.

MONTHEND ELEVATION IN FEET ABOVE SEA LEVEL, AND CONTENTS AT 2400 HRS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

Date	Elevation (feet)	Contents (acre- feet)	Change in contents (equivalent in ft ³ /s)
Sept. 30	1,279.70	13,530	-
Oct. 31	1,279.20	13,080	-7.3
Nov. 30	1,280.51	14,260	+20
Dec. 31	1,279.99	13,790	-7.6
CAL YR 1997	-	-	- .01
Jan. 31	1,280.11	13,900	+1.8
Feb. 28	1,280.79	14,510	+11
Mar. 31	1,279.76	13,580	-15
Apr. 30	1,280.53	14,280	+11
May 31	1,279.33	13,190	-18
June 30	1,279.39	13,250	+1.0
July 31	1,279.19	13,070	-2.9
Aug. 31	1,278.93	12,840	-3.7
Sept. 30	1,278.89	12,810	-.5
WTR YR 1998	-	-	-1.0

KISKIMINETAS RIVER BASIN

03042280 YELLOW CREEK NEAR HOMER CITY, PA

LOCATION.--Lat 40°34'18", long 79°06'13", Indiana County, Hydrologic Unit 05010007, on left bank 0.3 mi upstream from Central Indiana County Water Authority dam, 0.4 mi upstream from Ferrier Run, which has been diverted, and 3.5 mi northeast of Homer City.

DRAINAGE AREA.--57.4 mi², excludes that of Ferrier Run.

PERIOD OF RECORD.--October 1967 to current year.

REVISED RECORDS.--WDR PA-76-3: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 1,140 ft above sea level, from topographic map.

REMARKS.--Records good except for estimated daily discharges, which are fair. Flow regulated since 1971 by Yellow Creek Lake (station 03042260) 4.2 mi upstream. Several measurements of water temperature were made during the year. Satellite telemeter at station.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	55	15	212	e94	131	324	75	223	19	30	16	8.5
2	53	44	197	e90	116	311	87	201	18	26	14	8.5
3	48	82	174	e84	107	280	89	191	17	23	13	8.5
4	42	85	163	e90	101	240	86	178	16	20	12	8.5
5	38	79	156	e100	100	203	80	249	15	19	12	8.5
6	33	69	144	e110	100	177	73	573	14	17	11	8.5
7	30	199	133	e130	100	156	66	407	14	16	10	11
8	26	2440	123	e350	97	147	63	334	13	52	10	12
9	23	1710	116	901	94	175	94	287	13	65	10	9.7
10	21	746	126	542	92	208	153	232	12	55	12	9.4
11	18	407	208	368	92	197	159	205	13	46	12	9.4
12	16	290	239	278	95	174	151	222	20	37	11	9.4
13	15	223	226	228	111	153	136	204	26	32	10	9.4
14	14	201	198	199	113	139	125	187	26	28	10	8.8
15	13	218	173	174	113	124	183	164	27	25	10	8.2
16	14	209	151	161	108	108	213	139	37	24	10	8.5
17	13	184	132	151	107	99	219	115	50	23	10	8.5
18	12	161	115	145	123	92	199	98	64	20	9.4	8.5
19	12	143	102	134	184	92	245	85	67	18	9.4	8.5
20	12	128	95	123	217	92	457	77	132	17	9.4	9.4
21	11	120	89	109	224	95	395	52	117	16	9.4	10
22	11	124	85	103	206	108	308	35	97	17	9.4	9.4
23	10	142	88	129	187	113	242	33	86	22	9.4	9.4
24	9.7	144	99	197	185	113	198	31	81	30	11	9.4
25	9.4	141	122	209	183	109	169	28	67	32	15	9.4
26	9.9	130	141	195	181	102	246	26	55	31	14	9.4
27	12	123	148	176	197	96	846	25	47	27	11	9.4
28	12	132	e145	159	228	91	522	23	42	24	9.9	9.4
29	12	187	e130	147	---	87	351	21	35	22	8.5	9.4
30	12	204	e115	145	---	83	270	20	32	19	8.5	9.4
31	12	---	e100	142	---	76	---	19	---	18	8.5	---
TOTAL	629.0	9080	4445	6163	3892	4564	6500	4684	1272	851	335.8	276.3
MEAN	20.3	303	143	199	139	147	217	151	42.4	27.5	10.8	9.21
MAX	55	2440	239	901	228	324	846	573	132	65	16	12
MIN	9.4	15	85	84	92	76	63	19	12	16	8.5	8.2
CFSM	.35	5.27	2.50	3.46	2.42	2.56	3.77	2.63	.74	.48	.19	.16
IN.	.41	5.88	2.88	3.99	2.52	2.96	4.21	3.04	.82	.55	.22	.18

e Estimated.

KISKIMINETAS RIVER BASIN

03042280 YELLOW CREEK NEAR HOMER CITY, PA.--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1971 - 1998, BY WATER YEAR (WY) (SINCE REGULATIONS)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	54.9	104	142	128	167	207	155	122	76.9	65.4	30.6	39.6
MAX	186	303	254	314	374	447	246	358	324	443	90.3	163
(WY)	1978	1998	1973	1996	1981	1994	1987	1978	1972	1977	1980	1996
MIN	6.10	8.57	32.3	33.9	44.4	70.8	68.8	32.1	12.4	5.95	5.46	8.16
(WY)	1992	1992	1990	1981	1993	1990	1997	1975	1991	1971	1971	1991

SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

FOR 1998 WATER YEAR

WATER YEARS 1971 - 1998

ANNUAL TOTAL	43186.0	42692.1	
ANNUAL MEAN	118	117	107
HIGHEST ANNUAL MEAN			145
LOWEST ANNUAL MEAN			70.1
HIGHEST DAILY MEAN	2440	Nov 8	2440
LOWEST DAILY MEAN	9.4	Sep 27	8.2
ANNUAL SEVEN-DAY MINIMUM	10	Oct 20	8.5
INSTANTANEOUS PEAK FLOW			3190
INSTANTANEOUS PEAK STAGE			6.91
ANNUAL RUNOFF (CFSM)	2.06		2.04
ANNUAL RUNOFF (INCHES)	27.99		27.67
10 PERCENT EXCEEDS	224		223
50 PERCENT EXCEEDS	72		89
90 PERCENT EXCEEDS	12		9.6

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 1970, BY WATER YEAR (WY) (PRIOR TO REGULATION)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	24.6	72.0	119	113	146	136	160	148	51.0	39.6	39.9	26.9
MAX	51.8	105	142	148	210	199	243	212	74.7	75.4	63.0	66.6
(WY)	1968	1968	1969	1969	1970	1970	1970	1968	1970	1969	1969	1970
MIN	7.87	43.9	102	90.8	112	46.4	62.7	103	25.5	7.11	13.0	5.34
(WY)	1969	1970	1968	1970	1969	1969	1968	1969	1969	1968	1968	1969

SUMMARY STATISTICS

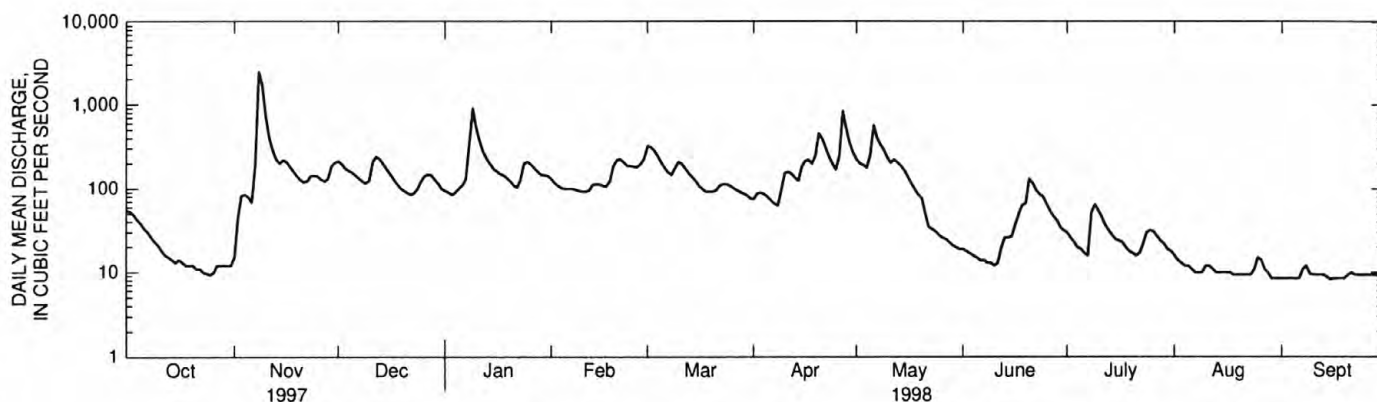
WATER YEARS 1968 - 1970

ANNUAL MEAN	89.4
HIGHEST ANNUAL MEAN	104
LOWEST ANNUAL MEAN	80.7
HIGHEST DAILY MEAN	1100
LOWEST DAILY MEAN	3.0
ANNUAL SEVEN-DAY MINIMUM	3.3
INSTANTANEOUS PEAK FLOW	b1300
INSTANTANEOUS PEAK STAGE	c7.83
INSTANTANEOUS LOW FLOW	1.4
ANNUAL RUNOFF (CFSM)	1.56
ANNUAL RUNOFF (INCHES)	21.16
10 PERCENT EXCEEDS	213
50 PERCENT EXCEEDS	50
90 PERCENT EXCEEDS	8.0

a From rating curve extended above 810 ft³/s on basis of computation of peak flow over dam; gage height 7.46 ft.

b About.

c Backwater from ice.



October 1, 1997 to September 30, 1998

KISKIMINETAS RIVER BASIN

03042500 TWO LICK CREEK AT GRACETON, PA

LOCATION.--Lat 40°31'02", long 79°10'19", Indiana County, Hydrologic Unit 05010007, on right bank 0.8 mi upstream from highway bridge on road leading west from Graceton, 1.1 mi downstream from Tearing Run, 1.5 mi upstream from Cherry Run, and 8 mi northeast of Blairsville.

DRAINAGE AREA.--171 mi².

PERIOD OF RECORD.--September 1951 to current year.

GAGE.--Water-stage recorder. Datum of gage is 981.63 ft above sea level.

REVISED RECORDS.--WDR PA-78-3: 1977 (M).

REMARKS.--Records good except for estimated daily discharges, which are fair. Diurnal fluctuation caused by mine pumpage and by sewage-disposal plant above station. Flow regulated since December 1968 by Two Lick Creek Reservoir 10 mi upstream, capacity, 16,240 acre-ft and since July 1971 by Yellow Creek Lake 11 mi upstream. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	135	127	560	e205	331	822	232	569	151	89	62	56
2	120	214	512	e195	281	786	261	570	85	70	67	57
3	111	192	416	e200	254	729	185	536	76	63	66	57
4	103	178	422	e220	259	559	163	515	66	60	63	56
5	86	161	387	e245	293	453	139	781	58	59	63	55
6	72	147	333	e280	286	415	128	1830	56	54	63	62
7	64	702	318	e500	305	366	119	1090	54	54	61	117
8	59	5630	303	2930	307	363	135	750	55	551	61	102
9	56	2930	279	2290	255	458	349	730	52	338	62	66
10	55	1380	376	1220	249	545	674	561	62	138	150	60
11	51	764	580	730	249	509	456	477	68	105	82	58
12	50	609	581	608	271	442	383	562	163	91	64	57
13	50	528	546	568	276	385	356	533	124	83	59	56
14	49	582	504	512	270	364	331	424	83	76	59	55
15	50	612	419	486	260	326	765	385	78	74	59	53
16	58	561	352	450	257	256	683	321	121	79	62	54
17	59	508	e275	380	330	245	574	245	214	72	66	59
18	58	434	e230	375	437	249	519	287	158	66	65	54
19	57	357	e190	306	548	250	938	190	226	62	58	54
20	56	289	e160	290	603	244	1830	174	823	60	53	57
21	55	220	e150	258	670	371	1040	146	239	59	54	115
22	55	329	e150	232	529	367	768	108	172	88	54	62
23	57	358	e165	491	512	317	584	98	151	116	54	58
24	68	349	e200	780	574	273	472	108	142	193	67	56
25	74	335	e250	636	561	261	394	113	124	93	159	62
26	71	256	e300	515	551	252	1300	100	111	77	117	61
27	79	289	e370	479	551	243	2620	83	99	72	69	60
28	66	483	323	418	625	218	1160	80	181	66	63	61
29	65	576	e270	363	---	187	718	80	93	64	61	59
30	64	564	e240	358	---	171	624	83	119	61	59	60
31	63	---	e225	407	---	152	---	80	---	58	58	---
TOTAL	2116	20664	10386	17927	10894	11578	18900	12609	4204	3191	2160	1899
MEAN	68.3	689	335	578	389	373	630	407	140	103	69.7	63.3
MAX	135	5630	581	2930	670	822	2620	1830	823	551	159	117
MIN	49	127	150	195	249	152	119	80	52	54	53	53
†	+12	+23	-22	+9.9	+18	-13	+9.3	-19	+3.5	-5.3	-28	-22

† Change in contents, equivalent in cubic feet per second, in Yellow Creek Lake and Two Lick Creek Reservoir.
Records of contents in Two Lick Creek Reservoir furnished by Pennsylvania Electric Co.
e Estimated.

KISKIMINETAS RIVER BASIN

03042500 TWO LICK CREEK AT GRACETON, PA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 1998, BY WATER YEAR (WY) (SINCE REGULATION)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	153	277	379	357	442	535	418	325	226	188	112	137
MAX	466	689	722	745	925	1230	832	658	1091	1161	310	475
(WY)	1977	1998	1973	1996	1986	1994	1984	1978	1972	1977	1977	1996
MIN	21.0	53.2	99.7	106	116	93.9	167	86.2	53.6	30.2	40.0	29.8
(WY)	1969	1992	1990	1983	1993	1969	1968	1986	1992	1968	1968	1968

SUMMARY STATISTICS**FOR 1997 CALENDAR YEAR****FOR 1998 WATER YEAR****WATER YEARS 1968 - 1998**

ANNUAL TOTAL	108514		116528									
ANNUAL MEAN	297	f-.08	319	f-2.9						295		
HIGHEST ANNUAL MEAN										375		1994
LOWEST ANNUAL MEAN										178		1969
HIGHEST DAILY MEAN			5630	Nov 8		5630	Nov 8		21900		Jul 20	1977
LOWEST DAILY MEAN			47	Sep 16		49	Oct 14		11		Sep 30	1968
ANNUAL SEVEN-DAY MINIMUM			51	Jul 5		52	Oct 9		14		Sep 26	1968
INSTANTANEOUS PEAK FLOW						9180	Nov 8		a32000		Jul 20	1977
INSTANTANEOUS PEAK STAGE						11.35	Nov 8		b18.65		Jul 20	1977
10 PERCENT EXCEEDS			578			608				613		
50 PERCENT EXCEEDS			183			205				181		
90 PERCENT EXCEEDS			56			58				58		

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1952 - 1967, BY WATER YEAR (WY) (PRIOR TO REGULATION)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	94.7	129	252	373	452	615	491	333	130	105	93.8	63.1
MAX	628	305	635	811	1093	1097	786	634	271	644	377	199
(WY)	1955	1960	1955	1952	1956	1963	1957	1966	1960	1956	1956	1962
MIN	14.2	23.6	50.1	118	176	234	236	99.7	42.3	25.2	16.9	15.9
(WY)	1964	1954	1961	1956	1963	1957	1963	1955	1965	1962	1957	1952

SUMMARY STATISTICS**WATER YEARS 1952 - 1967**

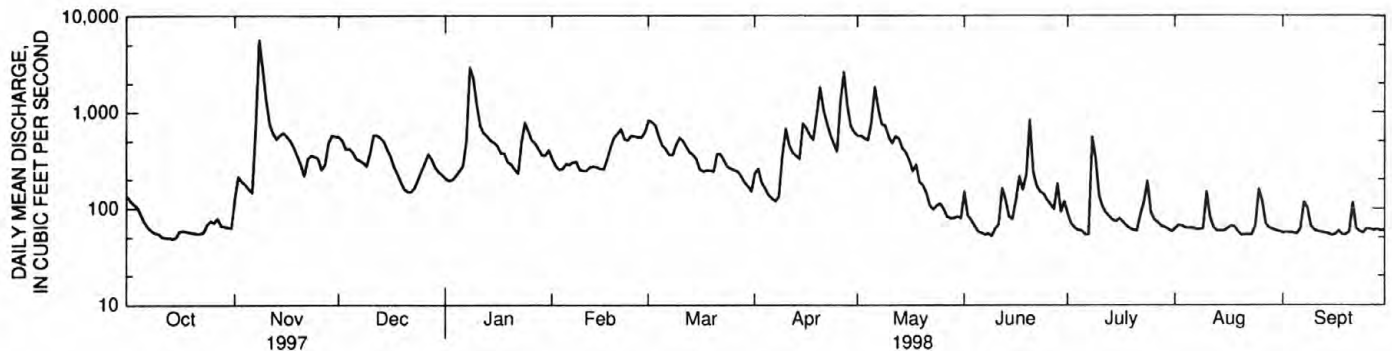
ANNUAL MEAN	260											
HIGHEST ANNUAL MEAN	415					1956						
LOWEST ANNUAL MEAN	185					1954						
HIGHEST DAILY MEAN	6800				Oct 16	1954						
LOWEST DAILY MEAN	8.7				Sep 14	1952						
ANNUAL SEVEN-DAY MINIMUM	12				Sep 6	1957						
INSTANTANEOUS PEAK FLOW	c12900				Oct 16	1954						
INSTANTANEOUS PEAK STAGE	12.71				Oct 16	1954						
INSTANTANEOUS LOW FLOW	2.0				Sep 14,15	1952						
ANNUAL RUNOFF (CFSM)	1.52											
ANNUAL RUNOFF (INCHES)	20.67											
10 PERCENT EXCEEDS	644											
50 PERCENT EXCEEDS	120											
90 PERCENT EXCEEDS	21											

f Change in contents, equivalent in cubic feet per second, in Yellow Creek Lake and Two Lick Creek Reservoir. Records of contents in Two Lick Creek Reservoir furnished by Pennsylvania Electric Co.

a From rating curve extended above 4,500 ft³/s on basis of slope-area measurement of peak flow and contracted-opening measurement at gage height 12.71 ft at site 1.6 mi upstream from gage, adjusted to gage site.

b Backwater, from highwater mark.

c From rating curve extended above 4,500 ft³/s on basis of contracted-opening measurement of peak flow at site 1.6 mi upstream from gage, adjusted to gage site.



October 1, 1997 to September 30, 1998

KISKIMINETAS RIVER BASIN

03045000 LOYALHANNA CREEK AT KINGSTON, PA

LOCATION.--Lat 40°17'33", long 79°20'27", Westmoreland County, Hydrologic Unit 05010008, on right bank 60 ft downstream from bridge on State Highway 217 at Kingston, 100 ft downstream from Miller Run, 1.9 mi upstream from Ninemile Run, and 3 mi southeast of Latrobe.

DRAINAGE AREA.--172 mi².

PERIOD OF RECORD.--October 1939 to current year. Monthly discharge only October to December 1939, published in WSP 1305.

REVISED RECORDS.--WSP 1335: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,013.16 ft above sea level (U.S. Army Corps of Engineers bench mark). Prior to Oct. 1, 1969, at datum 1.00 ft higher.

REMARKS.--Records good except for estimated daily discharges, which are fair. Flow regulated by Latrobe Reservoir, capacity, 3,670 acre-ft, and diversion works at Kingston. Figures of daily discharge do not include diversion from reservoir and at Kingston intake to borough of Latrobe. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1918, 15.8 ft, present datum, Oct. 15, 1954. Flood of Mar. 17 or 18, 1936 reached a stage of about 15.5 ft, present datum, from information by local residents, discharge, 21,000 ft³/s, from rating curve extended above 8,700 ft³/s.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a base discharge of 3,500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 7	1100	5,450	8.50	Apr. 10	0400	6,020	8.81
Nov. 8	0900	*6,900	*9.27	June 19	1300	4,920	8.19

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	173	60	1030	e180	270	1090	563	301	685	219	65	76
2	149	382	683	e200	256	881	485	372	218	119	46	49
3	97	269	526	e220	241	784	364	322	677	93	38	38
4	78	185	481	e420	245	606	322	312	298	83	33	31
5	64	146	412	377	480	509	284	442	213	87	30	29
6	55	122	332	398	559	424	255	410	183	74	e28	29
7	47	3110	292	775	487	368	230	353	141	66	e27	34
8	42	5640	262	2440	413	522	241	369	129	217	e24	108
9	38	2350	247	1530	373	877	687	322	107	299	30	63
10	31	1210	435	998	343	805	3890	282	102	141	90	49
11	34	740	889	703	368	594	1360	266	99	99	82	35
12	27	518	624	537	566	505	822	412	133	82	58	30
13	25	385	485	485	523	479	583	295	131	71	37	e27
14	24	592	385	390	425	356	483	257	206	63	30	e25
15	24	789	310	334	347	299	448	230	246	59	31	e23
16	25	534	271	419	303	260	375	207	417	97	30	e21
17	24	393	248	377	312	236	352	228	912	76	61	e20
18	23	313	220	363	491	259	291	173	919	58	74	e19
19	23	276	201	316	1000	316	602	144	1930	47	41	e18
20	22	257	186	293	858	285	1210	127	973	45	30	e50
21	22	236	168	262	771	443	732	115	570	77	e23	e45
22	21	355	162	244	614	549	556	101	394	224	e21	e31
23	20	355	217	594	573	479	453	94	315	256	e18	e40
24	20	310	223	791	682	443	367	85	245	228	28	e50
25	51	274	340	566	667	384	303	99	195	112	64	e37
26	58	264	340	444	670	353	382	84	163	81	66	e34
27	65	249	e290	368	689	323	626	76	146	65	41	e27
28	56	759	e250	377	920	299	402	69	153	54	30	e23
29	39	1100	e230	346	---	279	342	65	120	48	29	e22
30	33	918	e210	342	---	256	312	89	135	50	29	e20
31	30	---	e190	304	---	238	---	78	---	115	240	---
TOTAL	1440	23091	11139	16393	14446	14501	18322	6779	11155	3405	1474	1103
MEAN	46.5	770	359	529	516	468	611	219	372	110	47.5	36.8
MAX	173	5640	1030	2440	1000	1090	3890	442	1930	299	240	108
MIN	20	60	162	180	241	236	230	65	99	45	18	18
†	+2.2	+24	+13	+8.2	+17	+3.1	+7.3	+5.7	+5.4	+3.0	+2.4	+1.5

† Diversion from and change in contents in Latrobe Reservoir and diversion from Kingston intake, equivalent in cubic feet per second, furnished by Latrobe Municipal Authority.

e Estimated.

KISKIMINETAS RIVER BASIN

03045000 LOYALHANNA CREEK AT KINGSTON, PA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	109	217	359	384	474	616	524	378	232	120	99.4	89.9
MAX	689	785	834	850	1210	1305	1007	779	997	344	667	635
(WY)	1955	1986	1973	1952	1986	1963	1940	1952	1972	1990	1979	1971
MIN	2.76	5.09	48.1	79.0	137	175	178	115	40.5	7.76	7.04	4.20
(WY)	1954	1954	1961	1940	1978	1969	1997	1963	1991	1966	1957	1957

SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

FOR 1998 WATER YEAR

WATER YEARS 1940 - 1998

ANNUAL TOTAL	109161		123248									
ANNUAL MEAN	299	†+6.3	338	†+7.6						299		
HIGHEST ANNUAL MEAN										447		1971
LOWEST ANNUAL MEAN										160		1954
HIGHEST DAILY MEAN			5640	Nov 8		5640	Nov 8			14200	Jun 23	1972
LOWEST DAILY MEAN			12	Aug 2,3,11,12		e18	Aug 23a			.20	Oct 23,24	1953b
ANNUAL SEVEN-DAY MINIMUM			14	Jul 29		22	Oct 18			.63	Oct 19	1953
INSTANTANEOUS PEAK FLOW						6900	Nov 8			c29700	Oct 15	1954
INSTANTANEOUS PEAK STAGE						9.27	Nov 8			d15.80	Oct 15	1954
INSTANTANEOUS LOW FLOW										.10	Sep 4	1953
10 PERCENT EXCEEDS			624			688				702		
50 PERCENT EXCEEDS			170			247				160		
90 PERCENT EXCEEDS			21			30				21		

† Diversion from and change in contents in Latrobe Reservoir and diversion from Kingston intake, equivalent in cubic feet per second, furnished by Latrobe Municipal Authority.

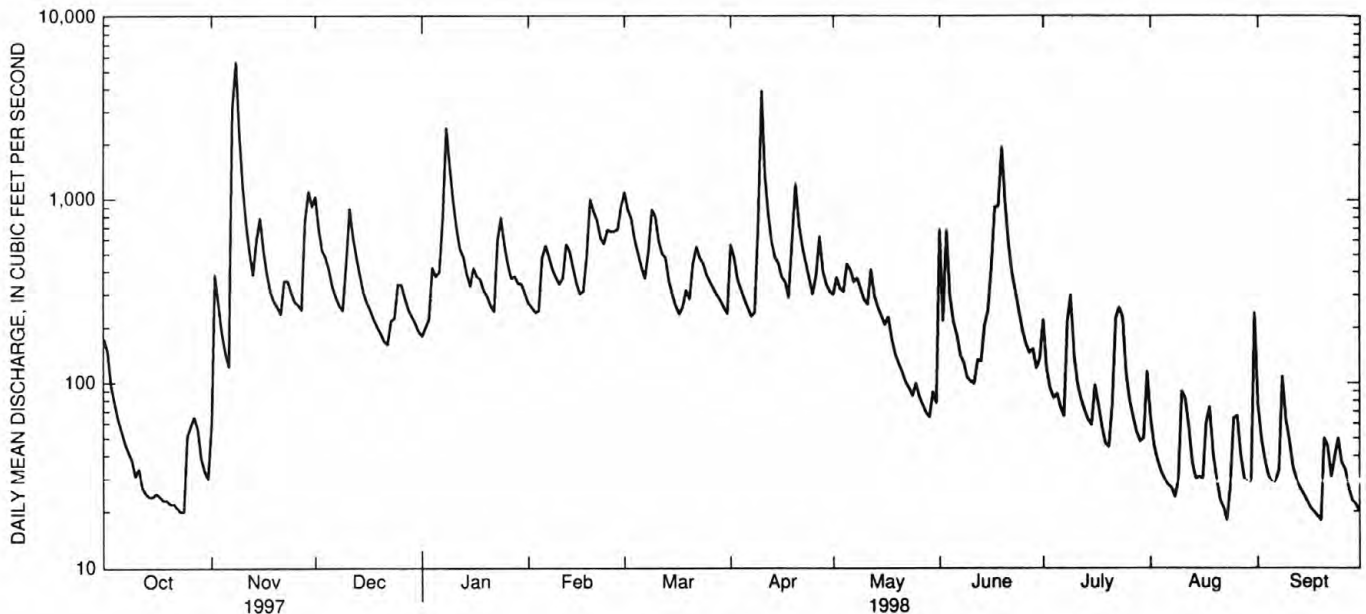
a Also Sept. 19.

b Computed using estimated discharges.

c From rating curve extended above 8,700 ft³/s on basis of slope-area measurement at gage height 13.37 ft.

d Present datum, from floodmarks.

e Estimated.



October 1, 1997 to September 30, 1998

KISKIMINETAS RIVER BASIN

03048500 KISKIMINETAS RIVER AT VANDERGRIFT, PA

LOCATION.--Lat 40°36'16", long 79°33'08", Westmoreland County, Hydrologic Unit 05010008, on left bank 0.5 mi upstream from bridge on State Highway Alternate 66 at Vandergrift, and 2.2 mi upstream from Pine Run.

DRAINAGE AREA.--1,825 mi².

PERIOD OF RECORD.--August 1937 to current year. Monthly discharge only for some periods, published in WSP 1305. October 1920 to September 1932 (gage heights and discharge measurements only) in reports of Pennsylvania Department of Forests and Waters.

GAGE.--Water-stage recorder. Datum of gage is 769.40 ft above sea level (U.S. Army Corps of Engineers bench mark). Oct. 1, 1920 to Sept. 30, 1930, nonrecording gage, Oct. 1, 1930 to Sept. 30, 1932, water-stage recorder, at site 0.6 mi downstream at different datum.

REMARKS.--No estimated daily discharges. Records good. Flow regulated since 1971 by Yellow Creek Lake (station 03042260), since 1952 by Conemaugh River Lake, 23 mi upstream, since 1942 by Loyalhanna Lake, 20 mi upstream, and by other reservoirs above station; the 11 most effective of which have a combined capacity of 105,700 acre-ft. Figures of daily discharge do not include diversion from Beaver Run Reservoir to plants and communities downstream, nor into the Monongahela River Basin. Evaporation from operation of Homer City and Conemaugh generating stations, which began during 1969 and 1970, respectively, can amount to as much as 45 ft³/s. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of March 18, 1936 reached a stage of 41.64 ft, from floodmark at present site, discharge, 185,000 ft³/s, by slope-area measurement.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3020	634	8240	3290	4060	8850	2880	6270	1340	1860	557	503
2	2200	966	9770	2180	3640	11600	3290	6180	2280	1750	562	647
3	1750	2680	8680	1750	2890	11800	4160	5140	2660	1640	572	632
4	1610	3420	6710	2120	2920	10500	4120	4700	2190	1290	581	515
5	1410	2840	5470	3760	3040	8730	3630	4360	1880	840	575	491
6	1150	2900	4780	4230	3520	7320	2740	5950	1550	776	511	475
7	570	2870	3930	4450	4390	5250	1820	10500	1220	944	506	474
8	573	8000	3240	6190	4380	5170	2000	9850	1090	1460	495	348
9	716	9730	2620	5440	3970	5300	2580	7590	1030	1430	502	344
10	526	15500	2880	4800	3590	6780	4530	7510	1030	3230	570	528
11	494	18600	3780	5160	3300	9020	5560	6970	935	2300	560	572
12	500	19900	5590	7640	3400	9030	7660	6530	1020	1330	571	577
13	495	20500	5570	7750	3840	7820	9830	6840	1410	1030	572	567
14	495	19800	5580	8510	4900	5120	9970	6980	1470	878	573	527
15	525	17800	5030	10600	5310	4310	9620	5000	1600	660	561	478
16	524	13400	3760	12300	5060	4110	7890	3940	3020	725	574	255
17	525	10900	2800	11900	4600	3900	7020	3900	3230	733	546	247
18	531	7980	2710	10700	4260	3850	6230	3530	3950	856	506	211
19	531	4500	2690	7880	5180	2700	5200	2710	4650	891	390	211
20	499	4420	2490	4600	6660	3130	5540	2370	5010	852	308	223
21	494	5410	2050	4170	8280	4150	6060	1830	7740	555	571	266
22	285	3460	1990	3980	9150	4970	8710	1710	7770	601	528	559
23	252	3710	2000	4310	9050	6270	11600	1630	5980	794	527	543
24	256	4850	2050	4870	8900	5740	8700	1350	4180	1160	532	545
25	455	4110	1920	5350	8710	4610	7030	1360	3020	1520	618	552
26	539	2310	2570	4860	8740	4550	6700	1540	2060	1500	748	547
27	698	2620	3820	4770	8060	4320	6940	1660	1960	1390	1250	536
28	872	3050	3780	4710	6980	4170	7260	1170	1760	848	819	528
29	856	4150	4020	4400	---	3890	10100	768	1420	575	752	529
30	585	6090	4010	4310	---	3560	9030	872	1890	496	681	535
31	578	---	3880	4130	---	2840	---	1240	---	507	495	---
TOTAL	24514	227100	128410	175110	150780	183360	188400	131950	80345	35421	18113	13965
MEAN	791	7570	4142	5649	5385	5915	6280	4256	2678	1143	584	466
MAX	3020	20500	9770	12300	9150	11800	11600	10500	7770	3230	1250	647
MIN	252	634	1920	1750	2890	2700	1820	768	935	496	308	211
CFSM	.43	4.15	2.27	3.10	2.95	3.24	3.44	2.33	1.47	.63	.32	.26
IN.	.50	4.63	2.62	3.57	3.07	3.74	3.84	2.69	1.64	.72	.37	.28

KISKIMINETAS RIVER BASIN

03048500 KISKIMINETAS RIVER AT VANDERGRIFF, PA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1323	2028	3445	3783	4721	6530	5640	3765	2487	1547	1153	1039
MAX	6429	7570	9057	8454	10140	12400	12550	7245	8262	5469	4138	4629
(WY)	1955	1998	1973	1991	1956	1945	1993	1978	1972	1977	1958	1996
MIN	255	307	587	847	1724	1802	1727	1127	666	378	363	297
(WY)	1964	1954	1961	1956	1958	1969	1946	1941	1965	1965	1939	1939

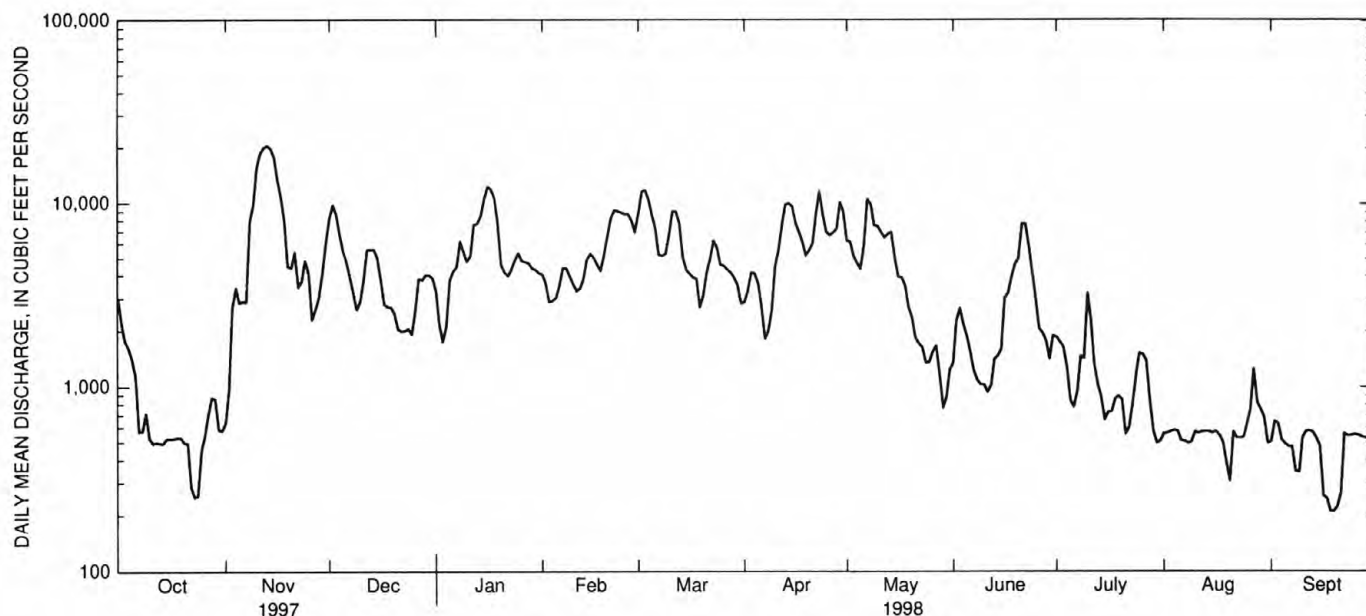
SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

FOR 1998 WATER YEAR

WATER YEARS 1938 - 1998

ANNUAL TOTAL	1239742		1357468									
ANNUAL MEAN	3397		3719									
HIGHEST ANNUAL MEAN									3113			
LOWEST ANNUAL MEAN									4518			1951
HIGHEST DAILY MEAN									1777			1954
LOWEST DAILY MEAN				24800	May 29		20500	Nov 13	60400		Mar 31	1940
ANNUAL SEVEN-DAY MINIMUM				252	Oct 23		211	Sep 18,19	60		Oct 15	1952
INSTANTANEOUS PEAK FLOW				396	Oct 19		270	Sep 15	145		Nov 1	1952
INSTANTANEOUS PEAK STAGE							21500	Nov 12	71900		Mar 31	1940
INSTANTANEOUS LOW FLOW							14.11	Nov 12	25.70		Mar 31	1940
ANNUAL RUNOFF (CFSM)				1.86			197	Sep 18,19	60		Oct 15	1952
ANNUAL RUNOFF (INCHES)				25.27			2.04		1.71			
10 PERCENT EXCEEDS				8420			27.67		23.18			
50 PERCENT EXCEEDS				2060			8690		7160			
90 PERCENT EXCEEDS				525			2880		1850			
							525		495			



October 1, 1997 to September 30, 1998

BUFFALO CREEK BASIN

03049000 BUFFALO CREEK NEAR FREEPORT, PA

LOCATION.--Lat 40°42'57", long 79°41'59", Butler County, Hydrologic Unit 05010009, on right bank 0.6 mi upstream from Little Buffalo Creek, 1.6 mi downstream of bridge on SR 3023, and 3 mi north of Freeport.

DRAINAGE AREA.--137 mi².

PERIOD OF RECORD.--October 1940 to current year. Monthly discharge only for October 1940, published in WSP 1305.

GAGE.--Water-stage recorder. Elevation of gage is 792 ft above sea level, by barometer. Prior to July 19, 1962, nonrecording gage at same site and datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. Several measurements of water temperature were made during the year.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a base discharge of 2,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 8	0845	*2,970	*5.87	Apr. 26	2115	2,350	5.16

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	82	21	368	e72	148	288	161	314	47	45	12	11
2	55	81	275	e120	139	274	165	317	41	34	11	9.6
3	41	64	222	e110	130	260	137	279	40	27	10	10
4	35	45	240	e220	123	250	125	243	36	25	10	11
5	31	38	217	273	154	230	113	271	33	26	9.6	11
6	27	32	186	278	197	203	103	245	32	23	8.8	9.1
7	22	57	169	316	160	187	95	210	30	20	8.6	9.1
8	22	882	152	2190	147	202	95	340	30	250	8.0	17
9	20	481	145	1770	138	307	169	335	28	127	8.2	24
10	18	281	337	1080	130	322	293	274	27	58	9.5	18
11	17	196	546	649	128	263	212	249	29	38	14	13
12	16	148	393	448	162	241	176	347	74	33	15	11
13	16	117	316	388	171	227	158	270	81	29	11	9.3
14	16	293	261	311	146	216	199	230	99	25	9.1	8.4
15	16	457	215	262	132	194	e430	197	84	24	8.4	8.1
16	17	356	183	258	127	171	e300	167	125	24	7.1	7.7
17	16	285	162	226	195	158	e250	198	209	23	7.1	7.1
18	14	234	142	209	453	175	e190	145	112	21	8.7	6.9
19	14	212	127	190	729	185	e400	120	120	21	9.5	8.5
20	14	218	116	175	614	172	e580	105	315	18	8.7	18
21	13	221	104	153	517	338	e300	91	161	17	7.7	19
22	13	375	95	145	398	589	e190	80	101	29	6.2	16
23	13	408	150	222	341	464	e160	71	77	36	6.1	15
24	14	327	143	368	347	370	e140	63	63	27	7.8	12
25	22	251	217	303	292	300	257	62	52	19	24	9.7
26	21	217	e190	263	249	275	921	61	44	15	102	9.8
27	28	235	e160	237	228	244	1240	52	38	14	29	11
28	20	462	e140	220	225	216	673	46	51	13	18	10
29	19	642	e120	204	---	194	469	45	45	13	14	7.9
30	18	474	e100	195	---	175	371	86	41	13	12	7.6
31	15	---	e86	170	---	159	---	50	---	13	12	---
TOTAL	705	8110	6277	12025	6920	7849	9072	5563	2265	1100	433.1	345.8
MEAN	22.7	270	202	388	247	253	302	179	75.5	35.5	14.0	11.5
MAX	82	882	546	2190	729	589	1240	347	315	250	102	24
MIN	13	21	86	72	123	158	95	45	27	13	6.1	6.9
CFSM	.17	1.97	1.48	2.83	1.80	1.85	2.21	1.31	.55	.26	.10	.08
IN.	.19	2.20	1.70	3.27	1.88	2.13	2.46	1.51	.62	.30	.12	.09

e Estimated.

BUFFALO CREEK BASIN

03049000 BUFFALO CREEK NEAR FREEPORT, PA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	97.7	276	290	275	274	350	224	223	121	31.2	40.7	22.8
MAX	173	282	377	388	300	447	302	267	166	35.5	67.4	34.0
(WY)	1997	1997	1997	1998	1997	1997	1998	1997	1997	1998	1997	1997
MIN	22.7	270	202	163	247	253	145	179	75.5	27.0	14.0	11.5
(WY)	1998	1998	1998	1997	1998	1998	1997	1998	1998	1997	1998	1998

SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

FOR 1998 WATER YEAR

WATER YEARS 1997 - 1998

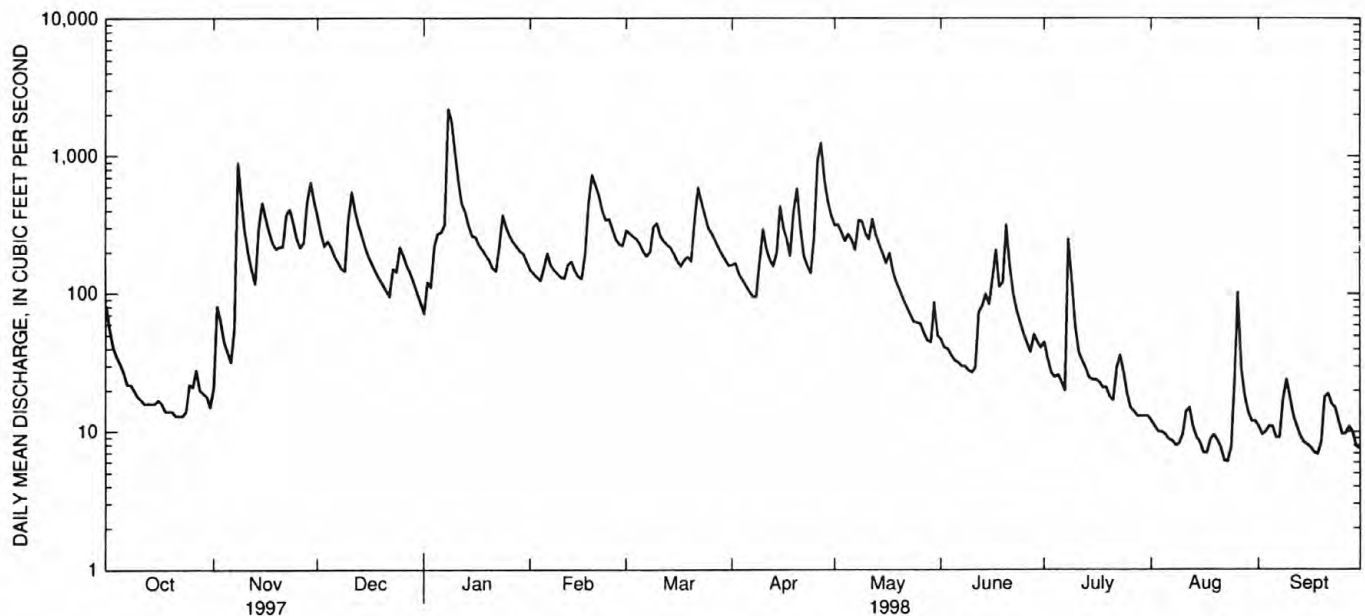
ANNUAL TOTAL	63937.8	60664.9	
ANNUAL MEAN	175	166	185
HIGHEST ANNUAL MEAN			204
LOWEST ANNUAL MEAN			166
HIGHEST DAILY MEAN	1740	May 25	2190
LOWEST DAILY MEAN	4.3	Aug 10	6.1
ANNUAL SEVEN-DAY MINIMUM	a6.3	Aug 6	7.7
INSTANTANEOUS PEAK FLOW			2970
INSTANTANEOUS PEAK STAGE			5.87
INSTANTANEOUS LOW FLOW			5.9
ANNUAL RUNOFF (CFSM)	1.28	1.21	1.35
ANNUAL RUNOFF (INCHES)	17.36	16.47	18.34
10 PERCENT EXCEEDS	388	347	383
50 PERCENT EXCEEDS	127	125	136
90 PERCENT EXCEEDS	15	11	13

a Computed using estimated discharges

b From rating curve extended above 4,300 ft³/s on basis of slope-area measurement of peak flow.

c From floodmarks.

d Minimum observed.



October 1, 1997 to September 30, 1998

OHIO RIVER MAIN STEM

03049500 ALLEGHENY RIVER AT NATRONA, PA
(National water-quality assessment station)

LOCATION.--Lat 40°36'55", long 79°43'07", Allegheny County, Hydrologic Unit 05010009, on right bank 520 ft upstream from dam at lock 4 at Natrona, 5.8 mi downstream from Kiskiminetas River, at mile 24.3.

DRAINAGE AREA.--11,410 mi², approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1938 to current year.

REVISED RECORDS.--WSP 1435: 1939.

GAGE.--Water-stage recorder and concrete dam control. Datum of gage is 736.36 ft above sea level (U.S. Army Corps of Engineers bench mark). Prior to Apr. 14, 1940, nonrecording gage and Apr. 15, 1940 to Oct. 22, 1990, water-stage recorder at same site at datum 0.75 ft higher.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by Allegheny Reservoir, Chautauqua and Tionesta Lakes, Union City Reservoir, Woodcock Creek, East Branch Clarion River, Mahoning Creek, Crooked Creek, Yellow Creek, Conemaugh River, Loyalhanna Lake, and by 15 smaller reservoirs, combined capacity, excluding that of Chautauqua Lake, 2,069,000 acre-ft. Slight diversion since 1952 from Beaver Run Reservoir into the Monongahela River Basin. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 18, 1936 reached a stage of 32.06 ft, discharge, 365,000 ft³/s, determined by U.S. Army Corps of Engineers.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13400	7570	38100	20600	22800	28000	20600	36800	5890	7100	3460	4090
2	17200	8710	39700	17600	20600	36400	20700	33400	7230	8190	3360	3720
3	15200	14200	35600	17600	19700	35800	21200	32000	8150	8790	2550	3570
4	13600	16400	31300	18000	18100	36000	20200	37700	6690	8350	3730	3120
5	11800	15300	32400	26400	17100	32100	18900	33600	6510	7450	4080	3340
6	10400	14300	30600	39000	16800	29300	16200	34600	6120	6440	3670	3320
7	8920	13800	31200	43700	17300	26100	14600	37700	4520	5910	4060	3340
8	8260	32000	29600	70500	16000	25600	13400	35900	4430	6530	4120	3550
9	7830	39000	28000	119000	15300	25200	15000	37100	5070	5870	3520	3860
10	6620	39300	27500	101000	14900	30100	27200	35700	4510	7850	4060	3740
11	6190	41000	33700	75500	13700	33700	42400	32800	4400	7970	5050	3490
12	5360	39100	36400	68600	14500	31300	41900	29700	5850	7560	5050	4140
13	4810	38800	32600	63300	15600	28200	41400	37400	9440	6090	5230	3000
14	4950	36600	29300	57600	18400	23800	37600	34100	11300	5260	4430	3430
15	4870	35600	24700	56600	19100	21400	46300	26900	9960	3850	4530	3640
16	4780	29800	21100	57600	17000	19300	45100	23200	11400	3630	4040	2830
17	4810	26500	19100	54400	17000	18000	46800	27900	12700	3920	3670	3090
18	4400	23800	18400	51200	19600	16300	45400	27800	13100	4380	4460	2860
19	4260	19800	17600	46500	27800	18200	39600	25000	12500	4150	3280	2900
20	4870	18000	15200	40100	32200	22400	51200	21400	11500	4270	4600	3180
21	4580	19800	14000	36100	33500	29300	57400	16200	13400	4770	3900	4570
22	4240	19300	14300	31800	33200	36100	56300	11700	14000	4730	4530	4510
23	4110	23400	15100	31600	32000	36600	56300	9960	11100	4900	3710	3780
24	3630	28100	16900	33200	31800	32600	51500	9110	8820	5260	3670	3700
25	4820	28400	19000	35800	30600	30300	44800	8880	9410	6170	5120	3450
26	5300	25100	23500	34200	29400	28700	42400	9200	7070	6250	4910	3910
27	5910	24800	30300	31700	27900	26800	52200	8150	6730	5570	5070	3800
28	7550	30300	30000	27900	25900	24700	45500	7040	6910	4980	4270	3680
29	8510	36200	28200	25700	---	23700	44200	5520	5290	4380	4120	3730
30	10800	38800	25900	22300	---	22200	41900	6010	6830	3910	4100	3680
31	8600	---	23600	22400	---	22200	---	5270	---	3800	3610	---
TOTAL	230580	783780	812900	1377500	617800	850400	1118200	737740	250830	178280	127960	107020
MEAN	7438	26130	26220	44440	22060	27430	37270	23800	8361	5751	4128	3567
MAX	17200	41000	39700	119000	33500	36600	57400	37700	14000	8790	5230	4570
MIN	3630	7570	14000	17600	13700	16300	13400	5270	4400	3630	2550	2830
CFSM	.65	2.29	2.30	3.89	1.93	2.40	3.27	2.09	.73	.50	.36	.31
IN.	.75	2.56	2.65	4.49	2.01	2.77	3.65	2.41	.82	.58	.42	.35

OHIO RIVER MAIN STEM

03049500 ALLEGHENY RIVER AT NATRONA, PA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 1987, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	9871	16860	24240	24930	27360	38980	35590	23030	14780	9172	6659	6948
MAX	34470	45230	48690	68600	53390	87030	83780	48400	45820	34630	23020	22690
(WY)	1991	1986	1978	1952	1976	1945	1940	1943	1989	1972	1956	1990
MIN	1227	2686	2316	4520	7167	10410	9000	6129	3759	1944	1786	1444
(WY)	1964	1954	1961	1961	1963	1969	1946	1941	1991	1966	1962	1939

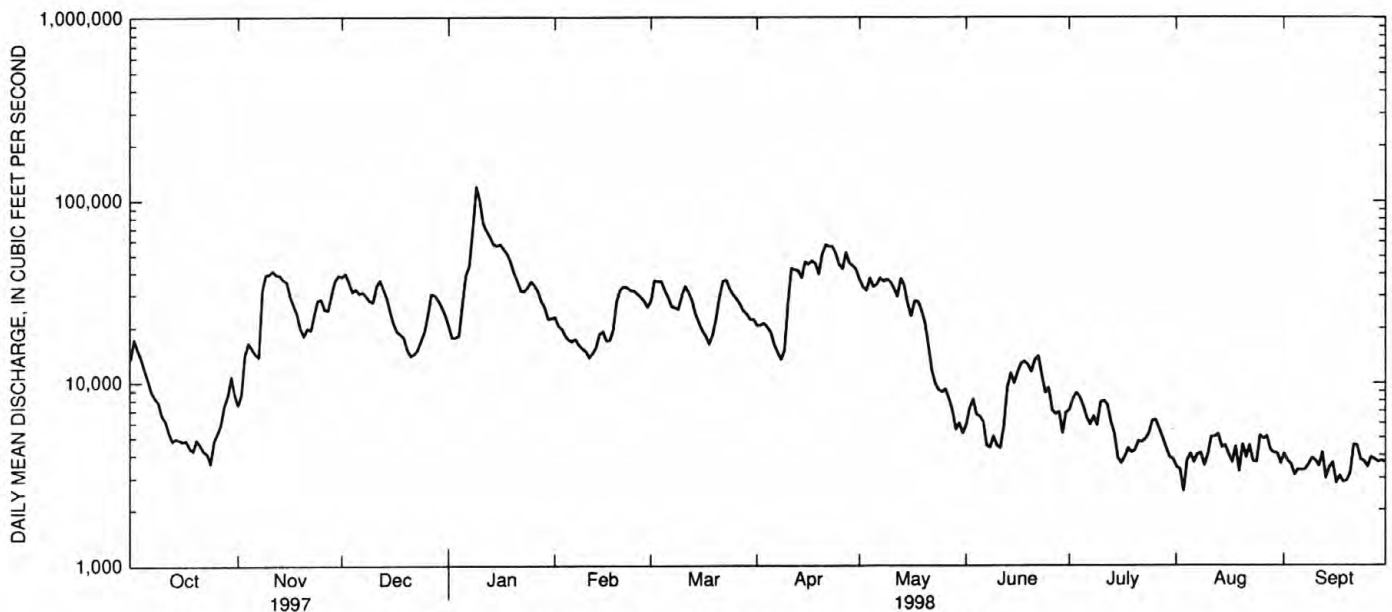
SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

FOR 1998 WATER YEAR

WATER YEARS 1939 - 1998

ANNUAL TOTAL	7388630	7192990	19830	
ANNUAL MEAN	20240	19710	27810	1956
HIGHEST ANNUAL MEAN			13540	1963
LOWEST ANNUAL MEAN				
HIGHEST DAILY MEAN	66800	Feb 28	119000	Jan 9
LOWEST DAILY MEAN	3240	Aug 9, 12 ^a	2550	Aug 3
ANNUAL SEVEN-DAY MINIMUM	3710	Aug 6	3110	Sep 13
INSTANTANEOUS PEAK FLOW			124000	Jan 9
INSTANTANEOUS PEAK STAGE			19.94	Jan 9
INSTANTANEOUS LOW FLOW				
ANNUAL RUNOFF (CFSM)	1.77		1.73	
ANNUAL RUNOFF (INCHES)	24.09		23.45	
10 PERCENT EXCEEDS	39500		39200	45200
50 PERCENT EXCEEDS	17100		16200	13200
90 PERCENT EXCEEDS	4490		3790	3160

^a Also Sept. 3.^b Datum then in use.

OHIO RIVER MAIN STEM

03049625 ALLEGHENY RIVER AT NEW KENSINGTON, PA
(National Water-Quality Assessment station)

WATER-QUALITY RECORDS

LOCATION.--Lat 40°33'52", long 79°46'22", Allegheny County, Hydrologic Unit 05010009, at New Kensington highway bridge, 5.1 mi downstream from dam at Lock 4 at Natrona, 5.3 mi downstream from gaging station at Natrona, and at mile 19.0 upstream from mouth.

DRAINAGE AREA.--11,500 mi².

PERIOD OF RECORD.--July 1972 to December 1973, October 1974 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1974 to September 1981.

WATER TEMPERATURE: October 1974 to September 1981 and October 1996 to September 1998.

SUSPENDED SEDIMENT DISCHARGES: October 1976 to September 1979.

INSTRUMENTATION.--From October 1974 to September 1981, specific conductance and water temperature were once daily readings by an observer. From October 1976 to September 1979, suspended-sediment samples were collected daily and more often during storm events by an observer. From October 1996 to current year, daily records of water temperature were measured and collected at hourly intervals with an in-situ probe and electronic data logger.

REMARKS.--Records of discharge are given for 03049500 Allegheny River at Natrona, Pa. All water-quality samples were collected and analyzed by the U.S. Geological Survey. Interruptions in the daily record were due to malfunctions of the equipment. Water temperature data from the in-situ probes often times did not exactly agree with the water temperature of the monthly and storm samples because of the fixed location of the in-situ temperature probes. Additional sites in the (NAWQA) fixed-station network are shown in figure 6 on page 28. An explanation of selected abbreviations used in the water-quality tables are given on pages 29-31. Throughout the period of record, samples for this site have been collected at both the New Kensington highway bridge and the Hulton bridge in Oakmont (6.0 mi. downstream of the New Kensington highway bridge) due to factors such as bridge construction, highway detours, ice cover, etc. From April 1996 to the current year, all samples have been collected at the Hulton bridge in Oakmont because this location is downstream of Deer Creek. Deer Creek near Dorseyville, Pa., is an intensive fixed site for the NAWQA study unit.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 440 micromhos, February 20, 1980; minimum 120 micromhos, March 11, 1979.

WATER TEMPERATURE: Maximum, 30.0°C, August 1, 2, 1975; minimum, 0.0°C, on many days during winter period.

SEDIMENT CONCENTRATIONS: Maximum daily, 805 mg/L, January 2, 1979; minimum daily, 1 mg/L, August 4, 5, 1979.

SEDIMENT DISCHARGES: Maximum daily, 192,000 tons, January 2, 1979; minimum daily, 22 tons, August 5, 1979.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 28.0°C, August 4, 8-10, 17; minimum, 0.5°C, January 2.

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

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (000061)	SPE- CIFIC CON- DUCT- ANCE (μS/CM) (000095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	OXYGEN, DIS- SOLVED (MG/L) (00300)	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)
OCT											
21...	0830	5600	323	7.6	17.0	739	8.8	100	30	7.2	19
NOV											
25...	0920	29000	256	7.3	5.0	745	12.5	83	23	6.4	12
DEC											
10...	1000	27600	200	7.3	4.5	727	13.1	65	18	4.8	9.9
JAN											
10...	1430	97300	125	7.3	7.5	740	12.4	39	11	3.0	5.0
28...	1015	28100	208	7.2	3.5	736	13.1	63	17	4.8	9.6
FEB											
20...	0935	32100	256	7.5	5.0	731	11.9	83	23	6.5	11
MAR											
10...	0845	29100	225	7.3	6.0	737	12.5	76	21	6.0	9.7
APR											
08...	0915	13800	243	7.5	12.0	731	10.3	81	22	6.2	11
MAY											
20...	0900	21800	180	7.6	20.0	749	9.0	63	17	4.6	7.4
JUN											
09...	0905	4690	315	7.6	21.0	754	8.4	110	30	8.7	15
JUL											
30...	1010	4460	379	7.2	26.0	750	7.4	130	36	10	23
AUG											
31...	1010	3980	362	7.6	26.0	750	7.3	120	33	9.4	22
SEP											
17...	0915	3140	374	7.8	26.0	753	7.4	120	32	9.1	23

ALLEGHENY RIVER BASIN

03049625 ALLEGHENY R AT NEW KENSINGTON, PA--Continued

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

DATE	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	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, 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)
OCT 21...	2.2	50	67	20	.15	1.4	189	.015	.538	.068	.42
NOV 25...	1.8	33	54	17	<.10	4.4	149	<.010	.641	<.020	.14
DEC 10...	1.4	30	37	14	<.10	4.3	112	<.010	.539	<.020	.27
JAN 10...	1.5	14	23	8.1	<.10	4.8	84	<.010	.539	<.020	.64
JAN 28...	1.3	23	41	14	<.10	4.9	123	<.010	.733	.029	.17
FEB 20...	1.4	31	54	16	<.10	4.9	148	<.010	.674	.048	.18
MAR 10...	1.3	24	50	14	<.10	4.9	124	<.010	.509	.034	.12
APR 08...	1.4	27	55	14	<.10	3.4	145	<.010	.488	.041	.24
MAY 20...	1.2	31	35	10	<.10	3.9	91	.014	.422	.046	.23
JUN 09...	1.8	31	85	15	.12	2.9	194	.022	.570	.058	.21
JUL 30...	2.3	38	100	21	.12	3.0	236	.013	.501	.032	.23
AUG 31...	2.0	33	91	22	.14	3.0	215	.018	.631	.046	.22
SEP 17...	2.2	41	90	24	.15	2.6	225	.023	.556	.079	.23

DATE	NITRO- GEN, AM- MONIA + ORGANIC DIS. (MG/L AS N) (00623)	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)	IRON, DIS- SOLVED (MG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (MG/L AS MN) (01056)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS- PENDEDED TOTAL (MG/L AS C) (00689)	SEDI- MENT, SUS- PENDEDED (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 21...	<.20	<.010	<.010	.011	4.1	4.3	3.0	.50	7	96
NOV 25...	.13	<.010	<.010	.014	40	241	2.0	<.20	14	84
DEC 10...	<.10	.033	<.010	.023	45	121	1.9	.40	94	58
JAN 10...	.18	.151	<.010	<.010	84	220	2.9	2.6	169	88
JAN 28...	.11	<.010	<.010	<.010	31	197	1.7	.40	9	94
FEB 20...	<.10	.021	<.010	.017	35	253	1.9	.40	18	74
MAR 10...	.11	<.010	<.010	.012	40	258	1.5	.30	10	86
APR 08...	.10	.020	.014	<.010	44	234	--	.40	6	76
MAY 20...	.12	.042	<.010	<.010	33	90	1.9	.40	12	82
JUN 09...	.18	<.010	<.010	<.010	<10	59	1.6	.30	7	79
JUL 30...	.17	.012	<.010	<.010	<10	<4.0	1.7	.30	4	60
AUG 31...	<.10	<.010	<.010	<.010	<10	<4.0	1.9	.20	3	63
SEP 17...	.22	.017	.016	.015	<10	1.5	1.8	.30	5	75

ALLEGHENY RIVER BASIN

03049625 ALLEGHENY R AT NEW KENSINGTON, PA--Continued

REMARKS.--The following data are for dissolved trace elements in surface water filtered through a 0.45µm filter.

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

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	ALUM- INUM, DIS- SOLVED (µG/L AS AL) (01106)	ANTI- MONY, DIS- SOLVED (µG/L AS SB) (01095)	ARSENIC DIS- SOLVED (µG/L AS AS) (01000)	BARIUM, DIS- SOLVED (µG/L AS BA) (01005)	BERYL- LIUM, DIS- SOLVED (µG/L AS BE) (01010)	CADMIUM DIS- SOLVED (µG/L AS CD) (01025)	CHRO- MIUM, DIS- SOLVED (µG/L AS CR) (01030)	COBALT, DIS- SOLVED (µG/L AS CO) (01035)
SEP 17...	0915	3140	15	<1.0	<1	54	<1.0	<1.0	<1.0	<1.0

DATE	COPPER, DIS- SOLVED (µG/L AS CU) (01040)	LEAD, DIS- SOLVED (µG/L AS PB) (01049)	MANGA- NESE, DIS- SOLVED (µG/L AS MN) (01056)	MOLYB- DENUM, DIS- SOLVED (µG/L AS MO) (01060)	NICKEL, DIS- SOLVED (µG/L AS NI) (01065)	SELE- NIUM, DIS- SOLVED (µG/L AS SE) (01145)	SILVER, DIS- SOLVED (µG/L AS AG) (01075)	URANIUM NATURAL DIS- SOLVED (µG/L AS U) (22703)	ZINC, DIS- SOLVED (µG/L AS ZN) (01090)
SEP 17...	1.3	<1.0	1.5	2.2	2.2	<1	<1.0	<1.0	3.3

ALLEGHENY RIVER BASIN

03049625 ALLEGHENY RIVER AT NEW KENSINGTON, PA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	19.5	18.0	19.0	11.0	10.5	10.5	5.5	5.0	5.5	1.5	1.0	1.0
2	18.0	17.5	18.0	10.5	10.0	10.5	5.5	5.5	5.5	1.0	.5	.5
3	17.5	17.0	17.5	10.5	9.0	9.5	5.5	5.5	5.5	1.0	1.0	1.0
4	17.5	17.0	17.0	9.5	8.5	9.0	5.5	5.5	5.5	1.0	1.0	1.0
5	18.0	17.5	17.5	9.0	8.5	9.0	5.5	4.5	5.0	1.5	1.0	1.0
6	18.5	17.5	18.0	8.5	8.5	8.5	4.5	4.0	4.5	2.0	1.5	1.5
7	18.5	17.5	18.0	8.5	8.5	8.5	4.0	4.0	4.0	4.5	2.0	3.5
8	18.5	18.0	18.0	8.5	8.0	8.0	4.0	3.5	3.5	5.5	4.5	5.0
9	19.0	18.0	18.5	8.0	8.0	8.0	3.5	2.5	3.0	7.0	5.5	6.0
10	19.5	18.5	19.0	8.0	7.5	8.0	3.0	2.5	3.0	7.5	7.0	7.0
11	19.5	18.5	19.0	8.0	7.5	7.5	3.5	3.0	3.0	7.0	6.0	6.5
12	20.0	19.0	19.0	7.5	7.0	7.5	3.5	3.5	3.5	7.0	5.0	5.5
13	20.0	19.0	19.5	7.0	7.0	7.0	3.5	3.0	3.5	5.0	4.5	4.5
14	20.0	19.0	19.5	7.0	7.0	7.0	3.5	3.0	3.0	4.5	3.5	4.0
15	20.0	19.0	19.5	7.0	6.5	6.5	3.0	2.5	3.0	4.5	3.5	3.5
16	19.0	19.0	19.0	6.5	5.5	6.0	3.0	2.5	2.5	3.5	3.5	3.5
17	19.0	18.0	18.5	5.5	4.5	5.0	2.5	2.5	2.5	3.5	3.0	3.0
18	18.5	18.0	18.0	---	---	---	2.5	2.0	2.0	3.5	3.0	3.0
19	18.0	17.5	17.5	---	---	---	2.0	1.5	2.0	3.5	3.0	3.0
20	17.5	16.5	17.5	4.0	4.0	4.0	2.0	1.5	2.0	4.0	2.5	3.0
21	17.0	16.5	17.0	4.0	4.0	4.0	2.0	2.0	2.0	3.0	2.0	2.5
22	16.5	15.5	16.0	4.0	4.0	4.0	2.0	2.0	2.0	2.5	2.0	2.0
23	16.0	15.0	15.5	4.0	4.0	4.0	2.5	2.0	2.0	2.0	2.0	2.0
24	15.5	15.0	15.5	4.0	4.0	4.0	2.5	2.5	2.5	2.0	2.0	2.0
25	15.5	14.5	15.0	4.0	4.0	4.0	3.0	2.5	3.0	2.5	2.0	2.0
26	15.0	13.5	14.0	4.0	4.0	4.0	3.0	3.0	3.0	2.5	2.5	2.5
27	14.0	13.0	13.5	4.0	4.0	4.0	3.0	3.0	3.0	3.0	2.5	2.5
28	13.5	12.0	12.5	4.0	3.5	3.5	3.5	3.0	3.0	2.5	2.5	2.5
29	12.0	11.5	11.5	4.0	3.5	4.0	3.0	2.5	3.0	3.5	2.5	2.5
30	11.5	11.0	11.5	5.0	4.0	4.5	2.5	2.0	2.5	3.0	3.0	3.0
31	11.5	11.0	11.0	---	---	---	2.0	1.5	2.0	3.5	3.0	3.0
MONTH	20.0	11.0	16.8	11.0	3.5	6.4	5.5	1.5	3.2	7.5	.5	3.0

ALLEGHENY RIVER BASIN

03049625 ALLEGHENY RIVER AT NEW KENSINGTON, PA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	3.5	3.0	3.0	5.0	4.5	5.0	13.5	12.5	13.0	12.0	12.0	12.0
2	3.5	3.0	3.0	5.5	5.0	5.5	14.0	13.5	13.5	12.5	12.0	12.5
3	3.5	3.0	3.0	6.0	5.5	5.5	14.0	13.5	13.5	13.0	12.5	12.5
4	3.0	2.5	3.0	5.5	5.5	5.5	14.0	13.5	13.5	13.5	13.0	13.0
5	2.5	2.0	2.5	5.5	5.0	5.5	13.5	13.0	13.0	14.0	13.5	13.5
6	2.5	2.0	2.5	5.5	4.5	5.0	13.0	12.0	12.5	15.0	14.0	14.0
7	3.0	2.0	2.5	5.0	4.5	5.0	12.5	11.5	12.0	15.5	15.0	15.0
8	3.5	2.5	2.5	5.0	5.0	5.0	12.0	11.5	12.0	15.5	15.0	15.5
9	3.5	2.5	3.0	5.5	5.0	5.5	11.5	11.5	11.5	16.0	15.0	15.5
10	3.5	3.0	3.0	6.0	5.5	5.5	11.5	11.0	11.5	16.5	16.0	16.0
11	3.5	3.0	3.5	5.5	4.5	5.5	11.5	10.5	11.0	16.5	15.5	16.0
12	3.5	3.5	3.5	5.0	4.0	4.5	11.5	10.5	11.0	16.0	15.5	15.5
13	3.5	3.5	3.5	4.5	3.5	4.0	11.0	10.0	10.5	16.0	15.0	15.5
14	3.5	3.5	3.5	3.5	2.5	3.0	11.0	10.0	10.5	16.5	15.5	15.5
15	4.0	3.5	3.5	3.0	2.5	2.5	11.0	10.5	11.0	17.5	16.0	16.0
16	4.0	3.5	3.5	3.0	2.5	2.5	11.5	11.0	11.5	18.0	17.0	17.5
17	4.0	4.0	4.0	3.0	2.5	2.5	12.0	11.5	11.5	19.0	17.5	18.0
18	4.0	4.0	4.0	3.5	3.0	3.0	12.0	11.5	11.5	20.0	19.0	19.0
19	4.0	4.0	4.0	4.0	3.5	3.5	12.0	11.5	11.5	21.5	20.0	20.5
20	4.0	4.0	4.0	4.5	4.0	4.5	11.5	11.0	11.0	21.5	20.5	21.0
21	4.5	4.0	4.0	5.0	4.5	5.0	11.0	10.5	11.0	21.0	20.0	20.5
22	5.0	4.5	4.5	5.5	5.0	5.5	11.0	10.5	10.5	20.5	19.5	20.0
23	5.0	4.5	4.5	5.5	5.0	5.5	11.0	11.0	11.0	20.5	19.5	20.0
24	4.5	4.5	4.5	5.5	4.5	5.0	12.0	11.0	11.5	20.5	19.5	20.0
25	4.5	4.5	4.5	5.0	4.0	4.5	12.5	11.5	11.5	20.5	20.0	20.0
26	4.5	4.0	4.5	5.0	4.5	4.5	12.5	12.0	12.0	20.5	20.0	20.0
27	4.5	4.5	4.5	6.5	5.0	5.5	12.5	11.5	12.0	21.0	20.0	20.5
28	5.0	4.5	5.0	7.5	6.5	7.0	12.0	11.0	11.5	21.5	20.5	21.0
29	---	---	---	9.0	7.5	8.5	12.0	11.0	11.0	22.5	21.0	21.5
30	---	---	---	11.0	9.0	10.0	12.0	11.0	11.5	22.5	21.0	21.5
31	---	---	---	12.5	11.0	12.0	---	---	---	22.5	21.5	22.0
MONTH	5.0	2.0	3.6	12.5	2.5	5.2	14.0	10.0	11.7	22.5	12.0	17.5

ALLEGHENY RIVER BASIN

03049625 ALLEGHENY RIVER AT NEW KENSINGTON, PA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	22.5	21.5	22.0	25.5	24.5	25.0	26.5	25.0	25.5	26.5	25.5	26.0
2	23.0	22.0	22.5	26.0	25.0	25.5	26.5	25.5	26.0	26.5	26.0	26.0
3	22.5	22.0	22.5	26.0	25.0	25.5	27.0	26.0	26.5	26.0	25.0	25.5
4	22.5	22.0	22.0	26.0	25.5	25.5	28.0	25.5	26.5	26.0	25.5	25.5
5	22.0	21.5	22.0	26.0	25.0	25.5	26.5	25.0	26.0	26.0	25.0	25.5
6	22.0	21.5	22.0	26.0	25.0	25.5	27.0	26.0	26.5	26.0	25.0	25.5
7	22.0	21.0	21.0	26.5	25.5	26.0	27.5	26.5	27.0	25.5	24.5	25.0
8	21.5	20.5	21.0	27.0	25.5	26.5	28.0	27.0	27.5	25.0	24.0	24.5
9	21.5	21.0	21.0	26.5	25.5	26.0	28.0	27.5	27.5	24.0	23.0	23.5
10	21.0	20.5	21.0	27.0	25.5	26.0	28.0	26.5	28.0	24.0	23.0	23.5
11	21.5	20.5	21.0	26.0	25.0	25.0	26.5	26.0	26.0	23.5	22.5	23.0
12	21.5	20.5	21.0	25.5	24.5	25.0	26.5	25.5	26.0	23.5	22.5	23.0
13	21.5	20.0	21.0	25.5	25.0	25.0	27.5	26.5	27.0	24.0	22.5	23.0
14	21.0	20.5	20.5	26.5	25.5	26.0	27.5	26.5	27.0	25.0	24.0	24.0
15	21.0	20.5	20.5	26.5	26.0	26.0	27.0	26.5	26.5	25.0	24.0	24.5
16	21.5	20.5	21.0	27.0	26.0	26.5	27.5	27.0	27.0	25.0	23.5	24.5
17	21.0	20.0	20.5	27.5	26.5	27.0	28.0	26.5	27.0	25.0	24.0	24.5
18	21.5	20.5	20.5	27.5	26.5	26.5	27.5	26.5	27.5	25.0	24.0	24.5
19	22.0	21.5	21.5	27.5	25.5	26.5	27.0	26.5	26.5	25.5	24.5	25.0
20	22.5	21.5	22.0	26.5	25.5	26.0	27.0	25.5	26.0	25.0	24.0	24.5
21	22.5	21.5	22.0	27.0	26.0	27.0	27.0	25.5	26.5	24.5	24.0	24.0
22	23.0	22.0	22.5	27.5	26.0	27.0	26.5	26.0	26.5	24.5	24.0	24.5
23	22.5	22.0	22.0	27.5	26.0	26.5	27.0	26.0	26.5	24.0	23.0	23.5
24	23.0	22.0	22.5	26.5	25.5	26.0	27.0	26.0	26.5	24.0	22.5	23.5
25	24.0	23.0	23.5	27.0	26.0	26.5	26.5	25.5	26.0	23.5	23.0	23.0
26	24.5	24.0	24.0	27.0	26.5	26.5	26.0	25.0	25.5	23.5	22.5	23.0
27	25.0	24.5	25.0	27.0	26.0	26.5	26.5	25.5	26.0	23.5	23.0	23.5
28	25.5	25.0	25.0	27.0	26.5	26.5	26.5	25.5	26.0	24.0	22.5	23.0
29	25.5	25.0	25.5	27.0	26.0	26.5	26.5	26.0	26.0	24.0	23.0	23.5
30	26.0	25.5	25.5	27.0	25.5	26.0	26.0	25.5	26.0	23.5	23.0	23.0
31	---	---	---	26.0	25.5	25.5	26.0	25.5	26.0	---	---	---
MONTH	26.0	20.0	22.1	27.5	24.5	26.0	28.0	25.0	26.5	26.5	22.5	24.2

DEER CREEK BASIN

03049646 DEER CREEK NEAR DORSEYVILLE, PA
(National water-quality assessment station)

LOCATION.--Lat 40°34'57", long 79°51'41", Allegheny County, Hydrologic Unit 050100009, on left bank, 10 ft upstream from foot bridge accessing Emmerling Community Park, 0.5 m upstream from Blue Run, 0.6 mi downstream from Cunningham Run, and about 1.0 mi north of Indianola, Pa.

DRAINAGE AREA.--27.0 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1996 to September 1998 (discontinued).

GAGE.--Water-stage recorder. Elevation of gage is 840 ft above sea level, from topographic map.

REMARKS.--Records good except for estimated daily discharges, which are fair. Several measurements of water temperature were made during the year. Satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a base discharge of 250 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 8	0500	256	2.62	Apr. 19	2215	369	2.71
Jan. 8	0215	997	3.76	Apr. 26	2030	*1,260	*4.08
Jan. 9	0615	378	2.73				

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	18	32	e12	15	39	26	50	11	14	.66	.25
2	8.8	13	28	e13	17	35	22	64	8.0	5.1	.13	.89
3	4.5	7.1	27	e18	20	38	20	51	8.9	3.2	.06	.91
4	2.5	8.4	30	e15	21	36	17	44	7.3	2.6	.04	.54
5	2.3	7.1	25	e18	41	32	16	38	4.5	2.7	.46	.56
6	2.2	6.1	17	e25	35	26	15	34	1.2	1.8	.60	.23
7	2.2	43	16	99	25	20	16	30	.92	2.5	.63	.39
8	2.2	158	18	459	22	41	21	39	.83	53	.27	1.3
9	1.9	43	22	248	23	66	52	29	.70	13	.05	1.1
10	1.9	24	67	110	25	58	91	24	4.1	7.6	.06	1.6
11	3.1	17	59	68	25	46	50	22	10	4.0	.11	1.4
12	2.7	14	40	52	31	38	40	22	13	3.1	.44	.96
13	2.6	14	30	55	24	29	34	19	24	2.4	.52	.27
14	2.5	161	24	42	17	e23	37	17	18	3.2	.50	.19
15	3.1	85	21	38	15	e20	61	13	34	3.2	.34	.08
16	6.3	49	22	34	18	e18	83	7.6	33	3.4	.06	.98
17	6.8	34	23	26	50	e17	60	9.1	32	2.9	.09	2.3
18	4.6	28	21	25	97	e20	42	8.1	21	1.3	1.1	2.6
19	2.9	23	17	25	105	e24	155	10	36	.56	.78	2.5
20	6.1	21	11	26	77	22	160	12	19	1.6	.66	4.1
21	11	17	9.4	24	59	53	83	11	11	1.9	.36	37
22	12	26	13	23	46	81	58	8.1	10	8.2	.07	3.5
23	12	20	23	57	44	55	45	3.2	13	4.3	.03	1.4
24	8.3	17	17	48	48	48	36	2.8	11	9.0	.05	.60
25	4.3	19	28	38	40	41	29	5.2	9.4	2.3	27	.50
26	3.5	21	21	34	35	36	384	5.7	6.3	1.1	8.9	.75
27	15	17	18	35	31	32	241	8.9	2.6	.62	2.8	.46
28	14	32	e14	33	32	27	99	8.6	2.6	1.1	1.7	.31
29	13	47	e14	30	---	25	68	5.9	5.2	1.5	.69	.46
30	12	35	e13	29	---	23	59	1.7	28	1.4	.30	.32
31	6.6	---	e12	21	---	23	---	2.3	---	1.3	.18	---
TOTAL	190.9	1024.7	732.4	1780	1038	1092	2120	606.2	386.55	163.88	49.64	68.45
MEAN	6.16	34.2	23.6	57.4	37.1	35.2	70.7	19.6	12.9	5.29	1.60	2.28
MAX	15	161	67	459	105	81	384	64	36	53	27	37
MIN	1.9	6.1	9.4	12	15	17	15	1.7	.70	.56	.03	.08
CFSM	.23	1.27	.88	2.13	1.37	1.30	2.62	.72	.48	.20	.06	.08
IN.	.26	1.41	1.01	2.45	1.43	1.50	2.92	.84	.53	.23	.07	.09

e Estimated.

DEER CREEK BASIN

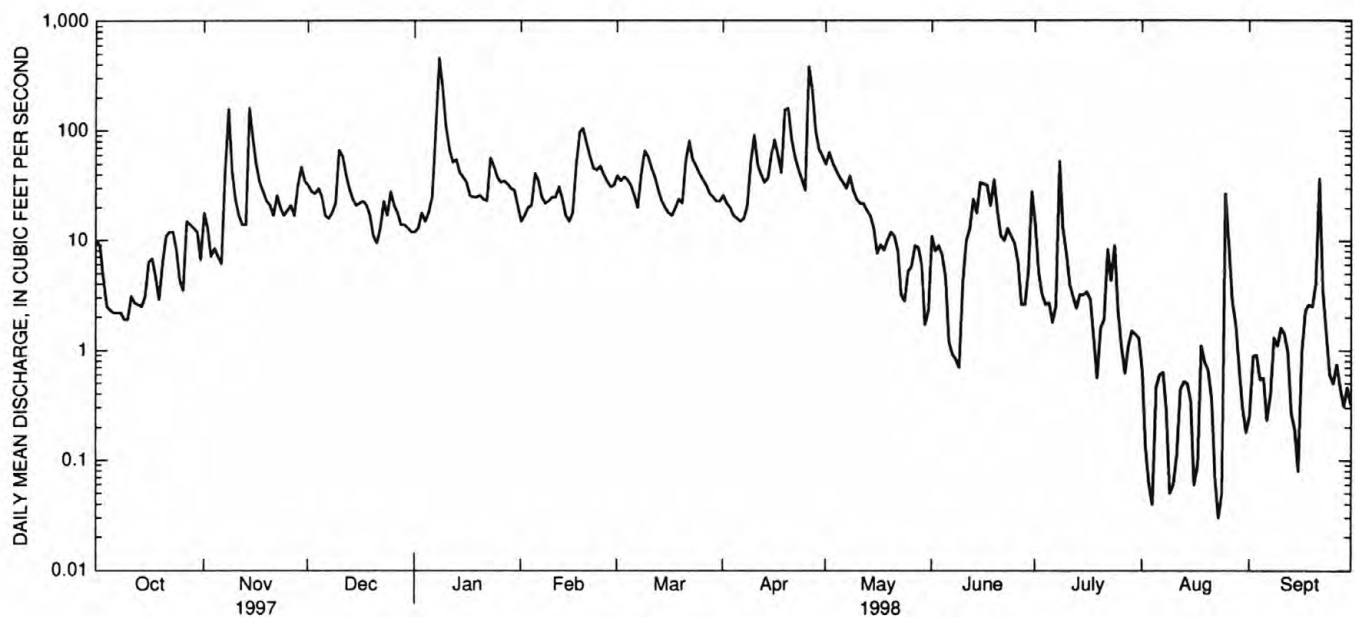
03049646 DEER CREEK NEAR DORSEYVILLE, PA.--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	16.4	46.7	39.6	42.2	38.3	45.7	44.4	39.5	23.1	9.52	4.75	8.80
MAX	26.6	59.2	55.6	57.4	39.4	56.3	70.7	59.4	34.7	18.2	7.23	17.8
(WY)	1997	1997	1997	1998	1997	1997	1998	1997	1996	1996	1997	1996
MIN	6.16	34.2	23.6	26.9	37.1	35.2	18.2	19.6	12.9	5.10	1.60	2.28
(WY)	1998	1998	1998	1997	1998	1998	1997	1998	1998	1997	1998	1998

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR	FOR 1998 WATER YEAR	WATER YEARS 1996 - 1998
ANNUAL TOTAL	9237.6	9252.72	
ANNUAL MEAN	25.3	25.3	28.6
HIGHEST ANNUAL MEAN			31.8
LOWEST ANNUAL MEAN			25.3
HIGHEST DAILY MEAN	736 May 25	459 Jan 8	736 May 25 1997
LOWEST DAILY MEAN	1.1 Aug 11	.03 Aug 23	.03 Aug 23 1998
ANNUAL SEVEN-DAY MINIMUM	1.9 Aug 5	.28 Aug 8	.28 Aug 8 1998
INSTANTANEOUS PEAK FLOW		1260 Apr 26	a2370 May 25 1997
INSTANTANEOUS PEAK STAGE		4.08 Apr 26	b5.08 May 25 1997
INSTANTANEOUS LOW FLOW		.00 Aug 24	.00 Aug 24 1998
ANNUAL RUNOFF (CFSM)	.94	.94	1.06
ANNUAL RUNOFF (INCHES)	12.73	12.75	14.38
10 PERCENT EXCEEDS	49	52	56
50 PERCENT EXCEEDS	18	17	17
90 PERCENT EXCEEDS	2.5	.61	1.9

- a From rating curve extended above 450 ft³/s.
b From gage height record.



October 1, 1997 to September 30, 1998

DEER CREEK BASIN

03049646 DEER CREEK NEAR DORSEYVILLE, PA--Continued
(National Water-Quality Assessment station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 1996 to September 1998 (discontinued).

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: April 1997 to September 1997, April 1998 to September 1998.
WATER TEMPERATURE: November 1996 to September 1998.

INSTRUMENTATION.--Daily record measured and collected at hourly intervals with in-situ probes and electronic data loggers. Water temperature was measured and collected at hourly intervals using an in-situ probe with an electronic data logger from October 1996 to September 1998.

REMARKS.--All water-quality samples were collected and analyzed by the U.S. Geological Survey. Interruptions in the daily record were due to malfunctions of the equipment. Water temperature and specific conductance data from the in-situ probes often times did not exactly agree with the water temperature and specific conductance of the monthly and storm samples because of the fixed location of the in-situ probes. Additional sites in the (NAWQA) fixed-station network are shown in figure 6 on page 28. An explanation of selected abbreviations used in the water-quality tables are given on pages 29-31.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum, 29.5°C, August 9, 1998; minimum, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 29.5°C, August 9; minimum 0.0°C, on many days during winter period.

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

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (μS/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	OXYGEN, DIS- SOLVED (MG/L) (00300)	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)
OCT											
27...	0910	14	770	8.1	9.0	728	10.2	170	47	13	88
NOV											
08...	0815	200	312	7.6	7.5	731	10.4	82	24	5.4	22
DEC											
10...	1440	127	750	7.7	5.0	723	11.0	150	44	10	88
17...	1400	25	783	7.8	4.0	735	14.2	83	23	5.9	13
JAN											
08...	0910	425	339	7.6	9.0	726	11.2	82	23	5.7	28
20...	0920	27	730	7.6	3.0	740	13.2	110	30	8.1	55
FEB											
12...	1205	34	746	7.8	6.0	729	12.8	160	43	12	86
MAR											
10...	0915	58	504	7.7	4.5	739	13.2	130	35	9.5	50
APR											
08...	1310	20	757	7.7	11.5	730	10.6	170	45	13	94
16...	1145	96	380	7.6	11.5	728	9.6	100	29	6.8	37
27...	0910	225	281	7.7	8.5	744	10.9	80	22	5.9	19
MAY											
20...	1250	12	780	7.6	19.0	747	10.5	190	52	15	95
JUN											
02...	1600	7.4	939	7.8	17.5	749	10.3	190	51	16	123
19...	1155	86	525	8.0	19.0	746	5.2	140	41	9.6	57
JUL											
08...	0850	123	304	7.5	21.0	745	7.8	81	24	5.2	28
22...	1240	6.0	534	8.4	24.5	751	9.4	140	40	9.7	59
AUG											
25...	1330	10	790	8.3	20.5	747	8.1	160	42	12	112
25...	1715	43	580	8.2	20.5	746	8.1	140	39	10	64
25...	1850	121	317	8.0	19.5	745	8.0	85	25	5.3	28
25...	2100	67	337	7.9	19.5	745	7.8	84	25	5.1	34
26...	0710	10	420	8.0	19.5	739	8.0	110	32	7.1	47
SEP											
29...	0850	.44	742	8.0	12.5	749	8.6	190	51	14	87

DEER CREEK BASIN

03049646 DEER CREEK NEAR DORSEYVILLE, PA--Continued

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

DATE	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	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, 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)
OCT											
27...	4.0	150	110	71	.27	5.4	454	<.010	<.050	<.015	<.20
NOV											
08...	3.4	54	33	34	.18	6.6	191	.011	1.21	<.020	.55
DEC											
10...	2.6	95	67	140	.16	6.5	421	<.010	.789	<.020	.88
17...	1.3	170	60	13	<.10	5.0	147	.016	.769	.081	.22
JAN											
08...	2.5	44	36	46	.16	8.4	187	<.010	1.23	<.020	.74
20...	1.5	148	89	79	.18	4.6	423	<.010	.733	<.020	<.10
FEB											
12...	2.3	139	84	85	.25	4.5	410	<.010	.467	<.020	.16
MAR											
10...	1.8	99	60	51	.15	7.3	281	<.010	.710	<.020	.10
APR											
08...	2.5	192	100	55	.23	4.0	460	<.010	.258	<.020	.15
16...	1.9	80	42	40	.15	5.6	221	.010	.605	.081	.91
27...	1.7	46	35	23	.13	8.3	162	<.010	.880	.051	.44
MAY											
20...	2.8	210	100	52	.24	5.8	478	.011	.351	.051	.15
JUN											
02...	3.1	290	130	55	.26	5.5	586	<.010	.276	<.020	<.10
19...	2.7	125	76	41	.24	7.6	322	<.010	.691	.056	.65
JUL											
08...	2.7	64	35	24	.20	5.6	185	.013	.853	.023	1.8
22...	3.6	115	73	46	.26	5.4	325	.017	.475	.022	.37
AUG											
25...	3.4	204	150	33	.35	5.7	508	.014	.312	.097	.34
25...	3.2	146	80	42	.28	6.1	351	.017	.639	.115	.92
25...	3.6	72	35	27	.27	5.6	193	.022	1.20	.138	5.1
25...	3.0	80	41	31	.26	5.6	207	.025	1.18	.122	.70
26...	3.5	92	58	40	.28	7.2	282	.029	1.44	.101	.75
SEP											
29...	3.4	184	95	72	.29	3.9	448	<.010	<.050	<.020	.18

DEER CREEK BASIN

03049646 DEER CREEK NEAR DORSEYVILLE, PA--Continued

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

DATE	NITRO- GEN, AM- MONIA + ORGANIC DIS. (MG/L AS N) (00623)	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)	IRON, DIS- SOLVED (µG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (µG/L AS MN) (01056)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS- PENDED TOTAL (MG/L AS C) (00689)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT										
27...	<.20	.017	.021	.019	9.5	14	3.5	<.20	4	90
NOV										
08...	.39	.091	.022	.023	53	46	5.4	>5.0	252	93
DEC										
10...	.10	.183	<.010	<.010	12	29	2.9	1.1	160	93
17...	.21	.036	.018	.036	23	123	1.2	.30	1	75
JAN										
08...	.26	.239	<.010	.020	45	61	4.0	.90	395	90
20...	<.10	<.010	<.010	.014	<10	21	3.9	<.20	1	83
FEB										
12...	.12	<.010	<.010	.012	18	53	2.9	.20	2	67
MAR										
10...	<.10	<.010	<.010	.013	<10	36	1.7	.20	4	81
APR										
08...	<.10	.010	<.010	<.010	33	26	1.5	.20	4	62
16...	.28	.179	.011	.011	22	76	2.9	4.5	222	94
27...	.19	.072	<.010	.012	17	48	3.1	.20	65	91
MAY										
20...	.16	.024	<.010	.010	15	17	1.5	--	3	55
JUN										
02...	<.10	<.010	<.010	<.010	<10	23	1.3	<.20	10	82
19...	.15	.132	<.010	.018	<10	5.1	2.3	2.5	269	96
JUL										
08...	.34	.541	.059	.037	15	<4.0	4.4	>4.0	481	93
22...	.25	.046	<.010	<.010	<10	9.7	3.7	1.3	34	90
AUG										
25...	.19	.062	.026	.028	<10	22	3.7	1.0	35	84
25...	.23	.255	.030	.030	<10	20	4.5	>5.0	1110	95
25...	.35	1.68	.086	.062	20	<4.0	4.9	>5.0	1890	90
25...	.30	.232	.044	.042	11	<4.0	5.1	>5.0	1140	93
26...	.38	.142	.035	.044	20	4.5	5.9	1.2	421	40
SEP										
29...	.14	.016	<.050	.013	<10	16	2.5	.20	6	59

DEER CREEK BASIN

03049646 DEER CREEK NEAR DORSEYVILLE, PA.

REMARKS.-- The following data are for dissolved trace elements in surface water filtered through a 0.45µm filter.

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

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	ALUM- INUM, DIS- SOLVED (µG/L AS AL) (01106)	ANTI- MONY, DIS- SOLVED (µG/L AS SB) (01095)	ARSENIC DIS- SOLVED (µG/L AS AS) (01000)	BARIUM, DIS- SOLVED (µG/L AS BA) (01005)	BERYL- LIUM, DIS- SOLVED (µG/L AS BE) (01010)	CADMIUM DIS- SOLVED (µG/L AS CD) (01025)	CHRO- MIUM, DIS- SOLVED (µG/L AS CR) (01030)	COBALT, DIS- SOLVED (µG/L AS CO) (01035)
SEP 29...	0850	.44	12	<1.0	<1	52	<1.0	<1.0	<1.0	<1.0

DATE	COPPER, DIS- SOLVED (µG/L AS CU) (01040)	LEAD, DIS- SOLVED (µG/L AS PB) (01049)	MANGA- NESE, DIS- SOLVED (µG/L AS MN) (01056)	MOLYB- DENUM, DIS- SOLVED (µG/L AS MO) (01060)	NICKEL, DIS- SOLVED (µG/L AS NI) (01065)	SELE- NIUM, DIS- SOLVED (µG/L AS SE) (01145)	SILVER, DIS- SOLVED (µG/L AS AG) (01075)	URANIUM NATURAL DIS- SOLVED (µG/L AS U) (22703)	ZINC, DIS- SOLVED (µG/L AS ZN) (01090)
SEP 29...	1.1	<1.0	16	<1.0	1.2	<1	<1.0	<1.0	8.5

DEER CREEK BASIN

03049646 DEER CREEK NEAR DORSEYVILLE, PA--Continued

REMARKS.--The following data are for analytes from the National Water Quality laboratory (NWQL) schedule 2010--pesticides in filtered water. Samples are filtered through a glass-fiber membrane filter with openings that are 0.7 microns in size to remove sediment and microorganisms. A surrogate is then added to the sample. The filtered water is field extracted on C-18 Solid Phase Extraction Cartridges and analyzed by a gas chromatography/mass spectrometric detector.

The method detection limit (MDL) provides an index to indicate where measurement uncertainty is increased. When an analyte is detected and all criteria for a positive result are met, the concentration is reported. If the concentration is less than the 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 NWQL 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 (<).

The abbreviations SRG, SURROGT, or SURROG indicate surrogate recovery in percent.

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

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (µS/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (MG/L) (00300)	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	2,6-DI-ETHYL ANILINE WAT FLT 0.7 µ GF, REC (µG/L) (82660)	ACETO-CHLOR, WATER FLTRD REC (µG/L) (49260)	ALA-CHLOR, WATER, DISS, REC (µG/L) (46342)	ATRA-ZINE, WATER, DISS, REC (µG/L) (39632)
OCT 27...	0910	14	770	8.1	9.0	728	10.2	150	<.0030	<.0020	<.002	E.003
NOV 25...	1400	17	608	8.3	1.5	738	15.0	110	<.0030	<.0020	<.002	.006
DEC 17...	1400	25	783	7.8	4.0	735	14.2	170	<.0030	<.0020	<.002	E.004
AUG 25...	1330	10	790	8.3	20.5	747	8.1	204	<.0030	<.0020	<.002	.011
25...	1715	43	580	8.2	20.5	746	8.1	146	<.0030	<.0020	<.002	.010
25...	1850	121	317	8.0	19.5	745	8.0	72	<.0030	<.0020	<.002	.009
25...	2100	67	337	7.9	19.5	745	7.8	80	<.0030	<.0020	<.002	.009
26...	0710	10	420	8.0	19.5	739	8.0	92	<.0030	<.0020	<.002	.011

DATE	METHYL AZIN-PHOS WAT FLT 0.7 µ GF, REC (µG/L) (82686)	BEN-FLUR-ALIN WAT FLD 0.7 µ GF, REC (µG/L) (82673)	BUTYL-ATE, WATER, DISS, REC (µG/L) (04028)	CAR-BARYL WATER FLTRD 0.7 µ GF, REC (µG/L) (82680)	CARBO-FURAN WATER FLTRD 0.7 µ GF, REC (µG/L) (82674)	CHLOR-PYRIFOS DIS-SOLVED (µG/L) (38933)	CYANA-ZINE, WATER, DISS, REC (µG/L) (04041)	DCPA WATER FLTRD 0.7 µ GF, REC (µG/L) (82682)	DEETHYL ATRA-ZINE, WATER, DISS, REC (µG/L) (04040)	DI-AZINON, DIS-SOLVED (µG/L) (39572)	DI-ELDRIN DIS-SOLVED (µG/L) (39381)	DISUL-FOTON WATER FLTRD 0.7 µ GF, REC (µG/L) (82677)
OCT 27...	<.0010	<.0020	<.0020	<.0030	<.0030	<.0040	<.0040	<.0020	<.0020	<.002	<.001	<.0170
NOV 25...	<.0010	<.0020	<.0020	E.0092	<.0030	<.0040	<.0040	<.0020	E.0032	<.002	<.001	<.0170
DEC 17...	<.800	<.0020	<.0020	<.0030	<.0030	<.0040	<.0040	<.0020	E.0029	<.002	<.001	<.0170
AUG 25...	<.0010	<.0020	<.0020	E.0669	<.0030	<.0040	<.0040	<.0020	E.0020	.007	<.001	<.0170
25...	<.0010	<.0020	<.0020	E.581	<.0030	<.0040	<.0040	<.0020	<.0020	.026	<.001	<.0170
25...	<.0010	<.0020	<.0020	E.610	<.0030	<.0040	<.0040	<.0020	E.0026	.027	<.001	<.0170
25...	<.0010	<.0020	<.0020	E.418	<.0030	<.0040	<.0040	<.0020	E.0024	.051	<.001	<.0170
26...	<.0010	<.0020	<.0020	E.613	<.0030	<.0040	<.0040	<.0020	E.0032	.051	<.001	<.0170

DEER CREEK BASIN

03049646 DEER CREEK NEAR DORSEYVILLE, PA--Continued

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

DATE	EPTC WATER FLTRD 0.7 μ	ETHAL- FLUR- ALIN WAT FLT 0.7 μ	ETHO- PROP WATER FLTRD 0.7 μ	FONOFOS WATER FLTRD DISS REC	LINDANE DIS- SOLVED	LIN- URON WATER FLTRD 0.7 μ	MALA- THION, DIS- SOLVED	METO- LACHLOR WATER DISSOLV	METRI- BUZIN WATER DISSOLV	MOL- INATE WATER FLTRD 0.7 μ	NAPROP- AMIDE WATER FLTRD 0.7 μ	PARA- THION, DIS- SOLVED
	GF, REC	GF, REC	GF, REC	(μG/L)	(μG/L)	GF, REC	(μG/L)	(μG/L)	(μG/L)	GF, REC	GF, REC	(μG/L)
	(82668)	(82663)	(82672)	(04095)	(39341)	(82666)	(39532)	(39415)	(82630)	(82671)	(82684)	(39542)
OCT 27...	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	<.002	<.004	<.0040	<.0030	<.004
NOV 25...	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	.005	<.004	<.0040	<.0030	<.004
DEC 17...	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	E.004	<.010	<.0040	<.0030	<.004
AUG 25...	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	.005	<.004	<.0040	<.0030	<.004
25...	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	.005	<.004	<.0040	.0054	<.004
25...	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	.005	<.004	<.0040	<.0030	<.004
25...	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	.005	<.004	<.0040	<.0030	<.004
26...	<.0020	<.0040	<.0030	<.0030	<.004	<.0020	<.005	.005	<.004	<.0040	<.0030	<.004
DATE	METHYL PARA- THION WAT FLT 0.7 μ	PEB- ULATE WATER FILTRD 0.7 μ	PENDI- METH- ALIN WAT FLT 0.7 μ	PHORATE WATER FLTRD 0.7 μ	PRO- METON, WATER, DISS, REC	PROP- CHLOR, WATER, DISS, REC	PRO- PANIL WATER FLTRD 0.7 μ	PRO- PARGITE WATER FLTRD 0.7 μ	PRON- AMIDE WATER FLTRD 0.7 μ	SI- MAZINE, WATER, DISS, REC	TEBU- THIURON WATER FLTRD 0.7 μ	TER- BACIL WATER FLTRD 0.7 μ
	GF, REC	GF, REC	GF, REC	GF, REC	REC	REC	GF, REC	GF, REC	GF, REC	REC	GF, REC	GF, REC
	(82667)	(82669)	(82683)	(82664)	(μG/L)	(04037)	(μG/L)	(μG/L)	(82685)	(82676)	(04035)	(82670)
OCT 27...	<.0060	<.0040	<.0040	<.0020	E.0134	<.0070	<.0040	<.0130	<.0030	<.0050	<.0100	<.0070
NOV 25...	<.0060	<.0040	<.0040	<.0020	E.0057	<.0070	<.0040	<.0130	<.0030	E.0029	<.0100	<.0070
DEC 17...	<.0060	<.0040	<.0040	<.0020	E.0037	<.0070	<.0040	<.0130	<.0030	<.0050	<.0100	<.0070
AUG 25...	<.0060	<.0040	<.0040	<.0020	.355	<.0070	<.0040	<.0130	<.0030	E.0035	<.0100	<.0070
25...	<.0060	<.0040	<.0040	<.0020	.182	<.0070	<.0040	<.0130	<.0030	<.0050	<.0100	<.0070
25...	<.0060	<.0040	<.0040	<.0020	.0512	<.0070	<.0040	<.0130	<.0030	E.0032	<.0100	<.0070
25...	<.0060	<.0040	<.0040	<.0020	.0275	<.0070	<.0040	<.0130	<.0030	E.0041	<.0100	<.0070
26...	<.0060	<.0040	<.0040	<.0020	.0293	<.0070	<.0040	<.0130	<.0030	E.0036	<.0100	<.0070
DATE	TER- BUFOS WATER FLTRD 0.7 μ	THIO- BENCARB WATER FLTRD 0.7 μ	TRIAL- LATE WATER FLTRD 0.7 μ	TRI- FLUR- ALIN WAT FLT 0.7 μ	ALPHA BHC DIS- SOLVED	PER- METHRIN CIS WAT FLT 0.7 μ	P, P' DDE DISSOLV	DIAZ- INON D10 SRG WAT FLT 0.7 μ	TERBUTH YLAZINE SURROGT WAT FLT 0.7 μ	HCH ALPHA D6 SRG WAT FLT 0.7 μ	SAMPLE VOLUME SCHED- ULE	
	GF, REC	GF, REC	GF, REC	GF, REC	(μG/L)	GF, REC	(μG/L)	GF, REC	GF, REC	GF, REC	2010	
	(82675)	(82681)	(82678)	(82661)	(34253)	(82687)	(34653)	(91063)	(91064)	(91065)	(99857)	
OCT 27...	<.0130	<.0020	<.0010	<.0020	<.0020	<.0050	<.0060	93.5	129	94.4	925	
NOV 25...	<.0130	<.0020	<.0010	<.0020	<.0020	<.0050	<.0060	97.7	120	101	980	
DEC 17...	<.0130	<.0020	<.0010	<.0020	<.0020	<.0050	<.0060	86.8	105	92.1	970	
AUG 25...	<.0130	<.0020	<.0010	E.0019	<.0020	<.0050	<.0060	98.3	109	108	990	
25...	<.0130	<.0020	<.0010	E.0027	<.0020	<.0050	<.0060	94.5	106	106	980	
25...	<.0130	<.0020	<.0010	E.0020	<.0020	<.0050	<.0060	103	112	108	970	
25...	<.0130	<.0020	<.0010	E.0017	<.0020	<.0050	<.0060	99.1	107	103	980	
26...	<.0130	<.0020	<.0010	<.0020	<.0020	<.0050	<.0060	101	108	109	970	

DEER CREEK BASIN

03049646 DEER CREEK NEAR DORSEYVILLE, PA--Continued

REMARKS.--The following data are for analytes from the National Water Quality laboratory (NWQL) schedule 2051--pesticides in filtered water. Samples are filtered through a glass-fiber membrane filter with openings that are 0.7 microns in size to remove sediment and microorganisms. A surrogate is then added to the sample. The filtered water is field extracted on a Carboxpak B solid phase extraction cartridge and analyzed by high performance liquid chromatography.

The method detection limit (MDL) provides an index to indicate where measurement uncertainty is increased. When an analyte is detected and all criteria for a positive result are met, the concentration is reported. If the concentration is less than the 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 NWQL 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 (<).

The abbreviations SRG, SURROGT, or SURROG indicate surrogate recovery in percent.

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

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (µS/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	OXYGEN, DIS- SOLVED (MG/L) (00300)	ALKA- LITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	2,4,5-T DIS- SOLVED (µG/L) (39742)	2,4-D, DIS- SOLVED (µG/L) (39732)
OCT 27...	0910	14	770	8.1	9.0	728	10.2	110	<.0350	<.035
NOV 25...	1400	17	608	8.3	1.5	738	15.0	110	<.0350	<.150
DEC 17...	1400	25	783	7.8	4.0	735	14.2	170	<.0350	<.150
DATE	2,4-DB WATER, FLTRD, GF 0.7µ REC (µG/L) (38746)	SILVEX, DIS- SOLVED (µG/L) (39762)	3HYDRXY CARBO- FURAN WAT,FLT GF 0.7µ REC (µG/L) (49308)	DNOC WAT,FLT GF 0.7µ REC (µG/L) (49299)	ACIFL- UORFEN WATER, FLTRD, GF 0.7µ REC (µG/L) (49315)	ALDI- CARB, WATER, FLTRD, GF 0.7µ REC (µG/L) (49312)	ALDI- CARB SULFONE WAT,FLT GF 0.7µ REC (µG/L) (49313)	ALDICA- RB SUL- FOXIDE, WAT,FLT GF 0.7µ REC (µG/L) (49314)	BENTA- ZON, WATER, FLTRD, GF 0.7µ REC (µG/L) (38711)	BRO- MACIL, WATER, DISS, REC (µG/L) (04029)
OCT 27...	<.0350	<.0210	<.0140	<.0350	<.0350	<.0160	<.0160	<.0210	<.0140	<.0350
NOV 25...	<.240	<.0210	<.0140	<.420	<.0350	<.550	<.100	<.0210	<.0140	<.0350
DEC 17...	<.240	<.0210	<.0140	<.420	<.0350	<.550	<.100	<.0210	<.0140	<.0350

DEER CREEK BASIN

03049646 DEER CREEK NEAR DORSEYVILLE, PA--Continued

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

DATE	BRO-MOXYNIL WATER, FLTRD, GF 0.7µ REC (µG/L) (49311)	CAR-BARYL, WATER, FLTRD, GF 0.7µ REC (µG/L) (49310)	CARBO-FURAN, WATER, FLTRD, GF 0.7µ REC (µG/L) (49309)	CHLOR-AMBN, WATER, FLTRD, GF 0.7µ REC (µG/L) (49307)	CHLORO-THALO-NIL, WAT,FLT GF 0.7µ REC (µG/L) (49306)	CLOPYR-ALID, WATER, FLTRD, GF 0.7µ REC (µG/L) (49305)	DACTHAL MONO-ACID, WAT,FLT GF 0.7µ REC (µG/L) (49304)	DICAMBA WATER, FLTRD, GF 0.7µ REC (µG/L) (38442)	DICHLOR-BENIL, WATER, FLTRD, GF 0.7µ REC (µG/L) (49303)	DICHLOR PROP, WATER, FLTRD, GF 0.7µ REC (µG/L) (49302)
OCT 27...	<.0350	<.0080	<.0280	<.0110	<.0350	<.0500	<.0170	<.0350	<.0200	<.0320
NOV 25...	<.0350	<.0080	<.120	<.420	<.480	<.230	<.0170	<.0350	<1.20	<.0320
DEC 17...	<.0350	<.0080	<.120	<.420	<.480	<.230	<.0170	<.0350	<1.20	<.0320
DATE	DINOSEB WATER, FLTRD, GF 0.7µ REC (µG/L) (49301)	DIURON, WATER, FLTRD, GF 0.7µ REC (µG/L) (49300)	FEN-URON, WATER, FLTRD, GF 0.7µ REC (µG/L) (49297)	FLUO-METURON WATER, FLTRD, GF 0.7µ REC (µG/L) (38811)	LINURON WATER, FLTRD, GF 0.7µ REC (µG/L) (38478)	MCPA, WATER, FLTRD, GF 0.7µ REC (µG/L) (38482)	MCPB, WATER, FLTRD, GF 0.7µ REC (µG/L) (38487)	METHIO-CARB, WATER, FLTRD, GF 0.7µ REC (µG/L) (38501)	METH-OMYL, WATER, FLTRD, GF 0.7µ REC (µG/L) (49296)	NEB-URON, WATER, FLTRD, GF 0.7µ REC (µG/L) (49294)
OCT 27...	<.0350	<.0200	<.0130	<.0350	<.0180	<.0500	<.0350	<.0260	<.0170	<.0150
NOV 25...	<.0350	<.0200	<.0130	<.0350	<.0180	<.170	<.140	<.0260	<.0170	<.0150
DEC 17...	<.0350	<.0200	<.0130	<.0350	<.0180	<.170	<.140	<.0260	<.0170	<.0150
DATE	NORFLURAZON, WATER, FLTRD, GF 0.7µ REC (µG/L) (49293)	ORY-ZALIN, WATER, FLTRD, GF 0.7µ REC (µG/L) (49292)	OXAMYL, WATER, FLTRD, GF 0.7µ REC (µG/L) (38866)	PIC-LORAM, WATER, FLTRD, GF 0.7µ REC (µG/L) (49291)	PRO-PHAM, WATER, FLTRD, GF 0.7µ REC (µG/L) (49236)	PRO-POXUR, WATER, FLTRD, GF 0.7µ REC (µG/L) (38538)	TRI-CLOPYR, WATER, FLTRD, GF 0.7µ REC (µG/L) (49235)	BDMC, SURROG, WATER, UNFLTRD REC (99835)	SAMPLE VOLUME, SCHED-ULE 2051 (ML) (99847)	
OCT 27...	<.0240	<.0190	<.0180	<.0500	<.0350	<.0350	<.0500	101	940	
NOV 25...	<.0240	<.310	<.0180	<.0500	<.0350	<.0350	<.250	94.0	981	
DEC 17...	<.0240	<.310	<.0180	<.0500	<.0350	<.0350	<.250	E.000	947	

DEER CREEK BASIN

03049646 DEER CREEK NEAR DORSEYVILLE, PA--Continued

REMARKS.--The following data are volatile organic compounds (VOC) detected at .2µG/L by purge and trap gas chromatography/mass spectrometric method.

The method detection limit (MDL) provides an index to indicate where measurement uncertainty is increased. When an analyte is detected and all criteria for a positive result are met, the concentration is reported. If the concentration is less than the 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 NWQL 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 (<).

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

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (µS/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	OXYGEN, DIS- SOLVED (MG/L) (00300)	ALKA- LITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	ACETONE WATER WHOLE TOTAL (µG/L) (81552)	ACRO- LEIN TOTAL (µG/L) (34210)	ACRYLO- NITRILE TOTAL (µG/L) (34215)	BENZENE TOTAL (µG/L) (34030)
OCT												
21...	1300	9.8	1260	7.8	11.0	736	9.7	364	<4.90	--	<1.23	E.010
27...	0909	14	770	8.1	9.0	728	10.2	150	<9.81	--	<2.45	<.064
NOV												
19...	0730	24	590	8.1	1.5	742	13.1	110	<4.90	--	<1.23	E.049
25...	1401	17	608	8.3	1.5	738	15.0	110	<4.90	--	<1.23	E.021
DEC												
10...	1440	127	750	7.7	5.0	723	11.0	95	<4.90	<50.0	<1.23	E.028
17...	1400	25	783	7.8	4.0	735	14.2	170	<4.90	<50.0	<1.23	E.033
MAR												
10...	0915	58	504	7.7	4.5	739	13.2	99	<4.90	<250	<1.23	E.009
APR												
16...	1145	96	380	7.6	11.5	728	9.6	80	<9.81	--	<2.45	<.064
AUG												
25...	1330	10	790	8.3	20.5	747	8.1	204	E2.80	--	<1.23	E.010
25...	1715	43	580	8.2	20.5	746	8.1	146	E7.00	--	<1.23	E.014
25...	1850	121	317	8.0	19.5	745	8.0	72	E6.60	--	<1.23	E.012
25...	2100	67	337	7.9	19.5	745	7.8	80	E6.20	--	<1.23	E.012
26...	0710	10	420	8.0	19.5	739	8.0	92	E2.00	--	<1.23	E.010

DEER CREEK BASIN

03049646 DEER CREEK NEAR DORSEYVILLE, PA--Continued

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

DATE	BROMO- BENZENE WATER, WHOLE, TOTAL ($\mu\text{G/L}$) (81555)	CHLORO- BENZENE TOTAL ($\mu\text{G/L}$) (34301)	BENZENE O-DI- CHLORO- WATER UNFLTRD REC ($\mu\text{G/L}$) (34536)	BENZENE 1,3-DI- CHLORO- WATER UNFLTRD REC ($\mu\text{G/L}$) (34566)	BENZENE 1,4-DI- CHLORO- WATER UNFLTRD REC ($\mu\text{G/L}$) (34571)	1,2,3- TRI- CHLORO- BENZENE WAT, WH REC ($\mu\text{G/L}$) (77613)	BENZENE 1,2,4- TRI- CHLORO- WAT UNF REC ($\mu\text{G/L}$) (34551)	BENZENE 123-TRI METHYL- WATER UNFLTRD RECOVER ($\mu\text{G/L}$) (77221)	BENZENE 124-TRI METHYL UNFILT RECOVER ($\mu\text{G/L}$) (77222)	BENZENE 135-TRI METHYL WATER UNFLTRD REC ($\mu\text{G/L}$) (77226)	ETHYL- BENZENE TOTAL ($\mu\text{G/L}$) (34371)	BENZENE N-PROPY WATER UNFLTRD REC ($\mu\text{G/L}$) (77224)
OCT												
21...	<.036	<.028	<.048	<.054	<.050	<.266	<.188	<.124	<.056	<.044	<.030	<.042
27...	<.072	<.056	<.096	<.108	<.100	<.532	<.376	<.248	<.112	<.088	<.060	<.084
NOV												
19...	<.036	<.028	<.048	<.054	<.050	<.266	<.188	<.124	E.034	<.044	<.030	<.042
25...	<.036	<.028	<.048	<.054	<.050	<.266	<.188	<.124	<.056	<.044	<.030	<.042
DEC												
10...	<.036	<.028	<.048	<.054	E.029	<.266	<.188	<.124	E.070	E.020	E.020	E.010
17...	<.036	<.028	<.048	<.054	<.050	<.266	<.188	<.124	<.056	<.044	<.030	<.042
MAR												
10...	<.036	<.028	<.048	<.054	<.050	<.266	<.188	<.124	<.056	<.044	<.030	<.042
APR												
16...	<.072	<.056	<.096	<.108	<.100	<.532	<.376	<.248	<.112	<.088	<.060	<.084
AUG												
25...	<.036	<.028	<.048	<.054	<.050	<.266	<.188	<.124	<.056	<.044	<.030	<.042
25...	<.036	<.028	E.010	<.054	E.006	<.266	<.188	<.124	E.014	<.044	<.030	<.042
25...	<.036	<.028	<.048	<.054	<.050	<.266	<.188	<.124	E.010	<.044	<.030	<.042
25...	<.036	<.028	<.048	<.054	<.050	<.266	<.188	<.124	E.013	<.044	<.030	<.042
26...	<.036	<.028	<.048	<.054	<.050	<.266	<.188	<.124	<.056	<.044	<.030	<.042

DEER CREEK BASIN

03049646 DEER CREEK NEAR DORSEYVILLE, PA--Continued

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

DATE	ISO- PROPYL- BENZENE WATER WHOLE REC ($\mu\text{G/L}$) (77223)	BENZENE N-BUTYL WATER UNFLTRD REC ($\mu\text{G/L}$) (77342)	BENZENE SEC BUTYL- WATER UNFLTRD REC ($\mu\text{G/L}$) (77350)	BENZENE TERT- BUTYL- WATER UNFLTRD REC ($\mu\text{G/L}$) (77353)	2BUTENE TRANS-1 4-DI- CHLORO WATER UNFLTRD RECOVER ($\mu\text{G/L}$) (73547)	CARBON DI- SULFIDE WATER WHOLE TOTAL ($\mu\text{G/L}$) (77041)	1,2- DIBROMO ETHANE WATER WHOLE TOTAL ($\mu\text{G/L}$) (77651)	CHLORO- ETHANE WATER TOTAL ($\mu\text{G/L}$) (34311)	1,1-DI- CHLORO- ETHANE TOTAL ($\mu\text{G/L}$) (34496)	1,1,1- TRI- CHLORO- ETHANE TOTAL ($\mu\text{G/L}$) (34506)	1,1,2- TRI- CHLORO- ETHANE TOTAL ($\mu\text{G/L}$) (34511)	ETHANE, 1112- TETRA- CHLORO- WAT UNF REC ($\mu\text{G/L}$) (77562)
OCT												
21...	<.032	<.186	<.048	<.096	<.692	<.080	<.036	<.120	<.066	<.032	<.064	<.044
27...	<.064	<.372	<.096	<.192	<1.38	<.160	<.072	<.240	<.132	<.064	<.128	<.088
NOV												
19...	<.032	<.186	<.048	<.096	<.692	<.080	<.036	<.120	<.066	<.032	<.064	<.044
25...	<.032	<.186	<.048	<.096	<.692	<.080	<.036	<.120	<.066	<.032	<.064	<.044
DEC												
10...	<.032	<.186	<.048	<.096	<.692	E.032	<.036	<.120	<.066	<.032	<.064	<.044
17...	<.032	<.186	<.048	<.096	<.692	<.080	<.036	<.120	<.066	<.032	<.064	<.044
MAR												
10...	<.032	<.186	<.048	<.096	<.692	<.080	<.036	<.120	<.066	<.032	<.064	<.044
APR												
16...	<.064	<.372	<.096	<.192	<1.38	<.160	<.072	<.240	<.132	<.064	<.128	<.088
AUG												
25...	<.032	<.186	<.048	<.096	<.692	<.370	<.036	<.120	<.066	<.032	<.064	<.044
25...	<.032	<.186	<.048	<.096	<.692	.108	<.036	<.120	<.066	<.032	<.064	<.044
25...	<.032	<.186	<.048	<.096	<.692	E.067	<.036	<.120	<.066	<.032	<.064	<.044
25...	<.032	<.186	<.048	<.096	<.692	E.043	<.036	<.120	<.066	<.032	<.064	<.044
26...	<.032	<.186	<.048	<.096	<.692	<.370	<.036	<.120	<.066	<.032	<.064	<.044

DEER CREEK BASIN

03049646 DEER CREEK NEAR DORSEYVILLE, PA--Continued

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

DATE	ETHANE, 1,1,2,2- TETRA- CHLORO- WAT UNF REC (µG/L) (34516)	ETHANE HEXA- CHLORO- WATER UNFLTRD RECOVER (µG/L) (34396)	BROMO- ETHENE WATER UNFLTRD RECOVER (µG/L) (50002)	METHYL ENE CHLO- RIDE TOTAL (µG/L) (34423)	1,1-DI- CHLORO- ETHYL- ENE TOTAL (µG/L) (34501)	CIS-1,2 -DI- CHLORO- ETHENE WATER TOTAL (µG/L) (77093)	TRANS- 1,2-DI- CHLORO- ETHENE TOTAL (µG/L) (34546)	TRI- CHLORO- ETHYL- ENE TOTAL (µG/L) (39180)	TETRA- CHLORO- ETHYL- ENE TOTAL (µG/L) (34475)	DI-ISO- PROPYL- ETHER, WATER, UNFLTRD RECOVER (µG/L) (81577)	ETHER ETHYL WATER UNFLTRD RECOVER (µG/L) (81576)
OCT											
21...	<.132	<.362	<.100	<.382	<.044	<.038	<.032	<.038	<.038	<.098	<.170
27...	<.264	<.724	<.200	<.764	<.088	<.076	<.064	<.076	<.076	<.196	<.340
NOV											
19...	<.132	<.362	<.100	<.382	<.044	<.038	<.032	<.038	<.038	<.098	<.170
25...	<.132	<.362	<.100	<.382	<.044	<.038	<.032	<.038	<.038	<.098	<.170
DEC											
10...	<.132	<.362	<.100	<.382	<.044	<.038	<.032	<.038	<.038	<.098	<.170
17...	<.132	<.362	<.100	<.382	<.044	<.038	<.032	<.038	<.038	<.098	<.170
MAR											
10...	<.132	<.362	<.100	<.382	<.044	<.038	<.032	<.038	<.038	<.098	<.170
APR											
16...	<.264	<.724	<.200	<.764	<.088	<.076	<.064	<.076	<.076	<.196	<.340
AUG											
25...	<.132	<.362	<.100	<.382	<.044	<.038	<.032	<.038	<.102	<.098	<.170
25...	<.132	<.362	<.100	<.382	<.044	<.038	<.032	<.038	<.102	<.098	<.170
25...	<.132	<.362	<.100	<.382	<.044	<.038	<.032	<.038	<.102	<.098	<.170
25...	<.132	<.362	<.100	<.382	<.044	<.038	<.032	<.038	<.102	<.098	<.170
26...	<.132	<.362	<.100	<.382	<.044	<.038	<.032	<.038	<.102	<.098	<.170

DEER CREEK BASIN

03049646 DEER CREEK NEAR DORSEYVILLE, PA--Continued

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

DATE	METHYL- TERT- BUTYL ETHER WAT UNF REC (μ G/L) (78032)	ETHER TERT- BUTYL ETHYL UNFLTRD RECOVER (μ G/L) (50004)	ETHER TERT- PENTYL METHYL UNFLTRD RECOVER (μ G/L) (50005)	FREON- 113 WATER UNFLTRD REC (μ G/L) (77652)	FURAN, TETRA- HYDRO- WATER UNFLTRD RECOVER (μ G/L) (81607)	HEXA- CHLORO- BUT- ADIENE TOTAL (μ G/L) (39702)	2-HEXA- NONE WATER WHOLE TOTAL (μ G/L) (77103)	ISO- DURENE WATER UNFLTRD RECOVER (μ G/L) (50000)	METHAC- RYLATE METHYL WATER UNFLTRD RECOVER (μ G/L) (81597)	METHAC- RYLATE ETHYL- WATER UNFLTRD RECOVER (μ G/L) (73570)	METHYL- BROMIDE TOTAL (μ G/L) (34413)
OCT											
21...	<.112	<.054	<.112	<.032	<1.48	<.142	<.746	<.240	<.350	<.278	<.148
27...	<.224	<.108	<.224	E.004	<2.30	<.284	<1.49	<.480	<.700	<.556	<.296
NOV											
19...	.370	<.054	<.112	<.032	<1.15	<.142	<.746	<.240	<.350	<.278	<.148
25...	<.112	<.054	<.112	<.032	<1.15	<.142	<.746	<.240	<.350	<.278	<.148
DEC											
10...	E.089	<.054	<.112	<.032	<1.15	<.142	<.746	<.240	<.350	<.278	<.148
17...	<.112	<.054	<.112	<.032	<1.15	<.142	<.746	<.240	<.350	<.278	<.148
MAR											
10...	<.112	<.054	<.112	<.032	<1.15	<.142	<.746	<.240	<.350	<.278	<.148
APR											
16...	<.224	<.108	<.224	<.064	<2.30	<.284	<1.49	<.480	<.700	<.556	<.296
AUG											
25...	<.112	<.054	<.112	<.032	<8.79	<.142	<.746	<.240	<.350	<.278	<.148
25...	<.166	<.054	<.112	<.032	<8.79	<.142	<.746	<.240	<.350	<.278	<.148
25...	<.166	<.054	<.112	<.032	<8.79	<.142	<.746	<.240	<.350	<.278	<.148
25...	<.166	<.054	<.112	<.032	<8.79	<.142	<.746	<.240	<.350	<.278	<.148
26...	E.086	<.054	<.112	<.032	<8.79	<.142	<.746	<.240	<.350	<.278	<.148

DEER CREEK BASIN

03049646 DEER CREEK NEAR DORSEYVILLE, PA--Continued

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

DATE	METHYL- CHLO- RIDE TOTAL ($\mu\text{G/L}$) (34418)	METHANE BROMO- CHLORO- WAT UNFLTRD REC ($\mu\text{G/L}$) (77297)	CHLORO- DI- BROMO- METHANE TOTAL ($\mu\text{G/L}$) (32105)	DI- BROMO- WATER WHOLE RECOVER ($\mu\text{G/L}$) (30217)	BROMO- DI- CHLORO- METHANE TOTAL ($\mu\text{G/L}$) (32101)	DI- CHLORO- DI- FLUORO- METHANE TOTAL ($\mu\text{G/L}$) (34668)	METHYL IODIDE WATER UNFLTRD RECOVER ($\mu\text{G/L}$) (77424)	CARBON TETRA- CHLO- RIDE TOTAL ($\mu\text{G/L}$) (32102)	BROMO- FORM TOTAL ($\mu\text{G/L}$) (32104)	CHLORO- FORM TOTAL ($\mu\text{G/L}$) (32106)	TRI- CHLORO- FLUORO- METHANE TOTAL ($\mu\text{G/L}$) (34488)
OCT											
21...	<.254	<.044	<.182	<.050	<.048	<.096	<.076	<.088	<.104	<.052	<.092
27...	<.508	<.088	<.364	<.100	<.096	<.192	<.152	<.176	<.208	<.104	<.184
NOV											
19...	E.010	<.044	<.182	<.050	<.048	<.096	<.076	<.088	<.104	<.052	<.092
25...	<.254	<.044	<.182	<.050	<.048	<.096	<.076	<.088	<.104	<.052	<.092
DEC											
10...	<.254	<.044	<.182	<.050	<.048	<.096	<.076	<.088	<.104	<.052	<.092
17...	<.254	<.044	<.182	<.050	<.048	<.096	<.076	<.088	<.104	<.052	<.092
MAR											
10...	<.254	<.044	<.182	<.050	<.048	<.096	<.076	<.088	<.104	<.052	<.092
APR											
16...	<.508	<.088	<.364	<.100	<.096	<.192	<.152	<.176	<.208	<.104	<.184
AUG											
25...	<.254	<.044	<.182	<.050	<.048	<.138	<.208	<.088	<.104	<.052	<.092
25...	E.018	<.044	<.182	<.050	<.048	<.138	<.208	<.088	<.104	E.003	<.092
25...	E.021	<.044	<.182	<.050	<.048	<.138	<.208	<.088	<.104	E.005	<.092
25...	E.018	<.044	<.182	<.050	<.048	<.138	<.208	<.088	<.104	<.052	<.092
26...	E.013	<.044	<.182	<.050	<.048	<.138	<.208	<.088	<.104	<.052	<.092

DEER CREEK BASIN

03049646 DEER CREEK NEAR DORSEYVILLE, PA--Continued

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

DATE	METHYL- ACRY- LATE WATER UNFLTRD RECOVER (μ G/L) (49991)	METH- ACRYLO- NITRITE WATER UNFLTRD RECOVER (μ G/L) (81593)	METHYL- ETHYL- KETONE WATER WHOLE TOTAL (μ G/L) (81595)	METHYL- ISO- BUTYL KETONE WAT.WH. TOTAL (μ G/L) (78133)	PREH- NITENE WATER UNFLTRD RECOVER (μ G/L) (49999)	1,2-DI- CHLORO- PROPANE TOTAL (μ G/L) (34541)	2,2-DI- CHLORO- PRO- PANE WAT, WH TOTAL (μ G/L) (77170)	1,3-DI- CHLORO- PROPANE WAT. WH TOTAL (μ G/L) (77173)	123-TRI- CHLORO- PROPANE WATER WHOLE TOTAL (μ G/L) (77443)	DIBROMO CHLORO- PROPANE WATER WHOLE TOT. REC (μ G/L) (82625)	PROPENE 3- CHLORO- WATER UNFLTRD RECOVER (μ G/L) (78109)
OCT											
21...	<.612	<.570	<1.65	<.374	<.230	<.068	<.078	<.116	<.070	<.214	<.196
27...	<1.22	<1.14	<3.30	<.748	<.460	<.136	<.156	<.232	<.140	<.428	<.392
NOV											
19...	<.612	<.570	<1.65	<.374	<.230	<.068	<.078	<.116	<.070	<.214	<.196
25...	<.612	<.570	<1.65	<.374	<.230	<.068	<.078	<.116	<.070	<.214	<.196
DEC											
10...	<.612	<.570	<1.65	E.260	<.230	<.068	<.078	<.116	<.070	<.214	<.196
17...	<.612	<.570	<1.65	<.374	<.230	<.068	<.078	<.116	<.070	<.214	<.196
MAR											
10...	<.612	<.570	<1.65	<.374	<.230	<.068	<.078	<.116	<.070	<.214	<.196
APR											
16...	<1.22	<1.14	<3.30	<.748	<.460	<.136	<.156	<.232	<.140	<.428	<.392
AUG											
25...	<1.36	<.570	<1.65	<.374	<.230	<.068	<.078	<.116	<.162	<.214	<.196
25...	<1.36	<.570	<1.65	<.374	<.230	<.068	<.078	<.116	<.162	<.214	<.196
25...	<1.36	<.570	<1.65	<.374	<.230	<.068	<.078	<.116	<.162	<.214	<.196
25...	<1.36	<.570	E.670	<.374	<.230	<.068	<.078	<.116	<.162	<.214	<.196
26...	<1.36	<.570	<1.65	<.374	<.230	<.068	<.078	<.116	<.162	<.214	<.196

DEER CREEK BASIN

03049646 DEER CREEK NEAR DORSEYVILLE, PA--Continued

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

DATE	1,1-DI CHLORO- PRO- PENE, WAT, WH TOTAL (µG/L) (77168)	CIS 1,3-DI- CHLORO- PROPENE TOTAL (µG/L) (34704)	TRANS- 1,3-DI- CHLORO- PROPENE TOTAL (µG/L) (34699)	STYRENE TOTAL (µG/L) (77128)	TOLUENE TOTAL (µG/L) (34010)	O- CHLORO- TOLUENE WATER TOTAL (µG/L) (77275)	TOLUENE P-CHLOR WATER UNFLTRD REC (µG/L) (77277)	TOLUENE O-ETHYL WATER UNFLTRD RECOVER (µG/L) (77220)	P-ISO- PROPYL- TOLUENE WATER WHOLE REC (µG/L) (77356)	O- XYLENE WATER WHOLE TOTAL (µG/L) (77135)	META/ PARA- XYLENE WATER UNFLTRD REC (µG/L) (85795)
OCT											
21...	<.026	<.092	<.134	<.042	E.030	<.042	<.056	<.100	<.110	<.064	<.064
27...	<.052	<.184	<.268	<.084	<.076	<.084	<.112	<.200	<.220	<.128	<.128
NOV											
19...	<.026	<.092	<.134	<.042	.098	<.042	<.056	E.007	<.110	<.064	E.061
25...	<.026	<.092	<.134	<.042	E.026	<.042	<.056	<.100	<.110	<.064	<.064
DEC											
10...	<.026	<.092	<.134	E.009	.115	<.042	<.056	E.016	<.110	E.046	E.084
17...	<.026	<.092	<.134	<.042	E.042	<.042	<.056	<.100	<.110	<.064	E.032
MAR											
10...	<.026	<.092	<.134	<.042	<.038	<.042	<.056	<.100	<.110	<.064	<.064
APR											
16...	<.052	<.184	<.268	<.084	E.180	<.084	<.112	<.200	<.220	<.128	<.128
AUG											
25...	<.026	<.092	<.134	E.006	<.054	<.042	<.056	<.100	E.008	<.064	<.064
25...	<.026	<.092	<.134	<.042	<.054	<.042	<.056	<.100	E.020	E.006	E.013
25...	<.026	<.092	<.134	<.042	<.054	<.042	<.056	<.100	E.014	<.064	<.064
25...	<.026	<.092	<.134	<.042	<.054	<.042	<.056	<.100	E.013	<.064	E.019
26...	<.026	<.092	<.134	<.042	<.054	<.042	<.056	<.100	E.007	<.064	<.064

DEER CREEK BASIN

03049646 DEER CREEK NEAR DORSEYVILLE, PA--Continued

SPECIFIC CONDUCTANCE, $\mu\text{S}/\text{CM}$ @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	426	408	414	714	652	690	459	441	453
2	---	---	---	531	425	471	722	696	709	455	384	428
3	---	---	---	565	529	559	752	721	731	460	426	444
4	---	---	---	605	565	588	762	735	747	482	458	467
5	---	---	---	600	590	596	749	736	742	506	482	490
6	---	---	---	607	474	552	761	749	756	578	505	531
7	---	---	---	485	426	449	803	734	758	606	576	587
8	---	---	---	442	393	427	---	---	---	603	505	541
9	---	---	---	452	394	413	756	483	646	592	543	563
10	---	---	---	517	452	484	483	406	438	642	590	607
11	---	---	---	542	517	530	524	474	500	700	642	668
12	---	---	---	581	457	543	557	524	541	753	697	717
13	705	570	639	481	459	467	580	557	570	801	733	764
14	577	498	532	1040	440	545	631	574	612	855	774	812
15	506	488	497	919	487	615	576	373	443	874	805	840
16	681	485	554	487	463	473	527	369	441	861	768	828
17	660	479	606	527	463	503	461	380	418	848	753	812
18	524	426	492	688	527	575	384	369	375	830	705	783
19	459	422	440	686	676	679	395	261	343	864	824	841
20	467	399	437	686	535	632	348	261	309	873	818	847
21	408	399	403	545	411	487	363	348	356	919	864	895
22	412	404	408	484	383	414	372	357	361	933	912	920
23	507	410	454	507	405	445	381	369	373	925	802	873
24	543	507	527	546	507	523	406	381	392	853	774	816
25	568	543	557	566	543	552	423	400	409	840	759	817
26	585	568	578	586	566	576	428	181	322	955	773	866
27	592	470	533	613	586	600	348	206	293	968	939	953
28	474	416	442	613	595	602	400	348	374	988	932	960
29	---	---	---	628	603	616	433	400	417	1030	988	1000
30	---	---	---	637	627	632	445	428	435	1030	938	996
31	---	---	---	697	627	665	---	---	---	983	898	936
MONTH	705	399	506	1040	383	536	803	181	500	1030	384	744

DEER CREEK BASIN

03049646 DEER CREEK NEAR DORSEYVILLE, PA--Continued

SPECIFIC CONDUCTANCE, $\mu\text{S}/\text{CM}$ @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	931	607	742	517	318	418	830	814	822	865	852	856
2	973	878	933	584	476	521	833	814	826	882	854	871
3	965	906	938	675	555	603	828	811	817	859	808	831
4	1010	925	958	743	623	675	814	803	810	890	815	838
5	1030	978	997	753	661	718	906	803	883	943	890	924
6	1020	999	1010	729	651	676	880	862	871	960	943	951
7	999	934	965	724	642	672	868	858	865	963	916	941
8	939	700	886	743	293	466	925	868	897	963	928	938
9	869	638	781	620	456	534	899	871	886	939	922	931
10	980	737	830	674	613	637	951	875	910	925	792	869
11	984	910	966	693	645	660	1020	920	957	792	756	770
12	981	945	974	655	613	637	1020	973	998	847	774	817
13	982	499	839	629	590	604	1010	969	986	887	846	873
14	753	527	641	638	595	609	974	959	968	906	887	898
15	834	300	668	764	615	662	---	---	---	904	894	898
16	631	394	532	820	764	795	---	---	---	925	888	897
17	643	434	542	834	818	827	---	---	---	957	925	948
18	759	627	684	830	804	819	---	---	---	990	950	960
19	786	313	555	846	813	827	---	---	---	1020	933	1000
20	488	351	417	867	845	860	---	---	---	997	835	905
21	572	448	481	895	867	881	---	---	---	835	247	408
22	786	561	663	899	864	888	---	---	---	572	466	533
23	862	763	801	901	846	882	---	---	---	608	570	586
24	923	862	886	891	876	883	---	---	---	636	608	623
25	964	923	950	877	830	856	---	---	---	658	636	647
26	983	946	965	856	819	842	571	348	491	678	657	670
27	976	921	960	836	780	806	716	571	643	686	667	678
28	977	923	955	835	804	820	816	716	760	698	678	691
29	1030	902	973	827	807	818	846	816	834	726	687	712
30	1040	289	844	817	801	808	859	844	850	---	---	---
31	---	---	---	814	803	810	862	847	855	---	---	---
MONTH	1040	289	811	901	293	726	1020	348	846	1020	247	809

DEER CREEK BASIN

03049646 DEER CREEK NEAR DORSEYVILLE, PA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	13.5	11.5	13.0	9.0	6.0	7.5	8.0	5.5	6.5	.0	.0	.0
2	13.0	10.0	11.0	9.5	7.5	9.0	6.0	4.5	5.5	.0	.0	.0
3	14.5	10.5	12.5	8.5	7.0	7.5	6.0	3.5	5.0	3.5	.0	1.0
4	16.5	12.0	14.0	7.5	5.5	6.5	7.5	6.0	7.0	6.0	3.5	5.0
5	18.0	14.5	16.0	6.5	4.5	5.5	6.5	3.0	5.0	7.5	3.5	6.0
6	18.5	14.5	16.5	6.5	3.5	5.0	3.0	.5	1.5	8.5	7.5	8.0
7	18.0	14.5	16.5	7.0	6.0	6.5	2.0	.0	1.0	9.5	8.5	9.0
8	18.0	14.5	16.5	8.0	7.0	7.5	5.0	2.0	3.0	9.5	9.0	9.5
9	18.0	14.5	16.5	9.5	8.0	8.5	5.5	4.0	4.5	9.0	6.5	8.0
10	19.0	15.0	17.0	8.0	7.0	7.5	5.5	4.5	5.0	6.5	5.0	6.0
11	15.0	11.5	13.0	7.5	6.0	7.0	5.5	5.0	5.0	5.0	3.0	4.0
12	14.0	10.0	12.0	6.0	3.5	5.0	5.0	3.0	4.0	5.0	2.5	3.5
13	15.5	11.5	13.5	4.5	2.0	3.5	3.5	2.5	3.0	6.0	3.0	5.0
14	15.0	12.0	14.0	5.5	2.0	4.0	3.0	2.0	2.5	3.0	1.5	2.5
15	12.0	8.5	10.0	5.5	4.5	5.5	2.5	.5	1.5	5.0	2.5	4.0
16	11.0	8.5	9.5	4.5	3.5	4.0	4.0	.0	1.5	5.0	3.5	4.5
17	10.0	7.0	8.5	4.0	2.0	3.0	4.5	2.5	3.5	3.5	3.0	3.5
18	9.5	7.0	8.5	3.0	.0	1.5	4.0	2.5	3.5	3.0	2.5	2.5
19	10.0	6.5	8.0	4.5	1.5	3.0	4.5	2.0	3.0	4.5	1.5	3.0
20	11.0	6.5	8.5	5.0	2.5	3.5	2.5	.5	1.5	8.0	3.0	3.5
21	12.0	8.5	10.0	5.5	3.0	4.5	3.0	1.5	2.5	3.5	2.0	2.5
22	10.5	8.0	9.0	6.5	5.5	6.0	5.5	1.0	3.0	4.5	3.0	3.5
23	9.5	7.0	8.5	6.0	4.5	5.5	6.0	5.0	5.5	4.5	3.5	4.0
24	10.5	8.0	9.0	4.5	1.5	3.0	6.0	4.5	5.5	3.5	2.5	3.0
25	10.0	8.0	9.0	4.5	.0	2.0	5.5	4.5	5.0	3.0	2.0	2.5
26	9.0	8.5	8.5	7.0	4.5	6.0	5.0	3.5	4.0	5.5	2.0	3.5
27	9.5	8.5	9.0	7.5	6.0	6.5	3.5	2.5	3.0	5.0	3.5	4.5
28	9.0	7.5	8.5	6.5	5.0	6.0	2.5	1.0	1.5	6.5	4.5	5.0
29	9.5	7.0	8.5	8.0	6.5	7.5	1.0	.0	.5	6.5	4.5	5.5
30	10.5	7.5	9.0	9.0	7.5	8.0	1.5	.0	.5	6.0	3.0	4.5
31	9.5	7.0	8.0	---	---	---	.0	.0	.0	3.0	1.5	2.5
MONTH	19.0	6.5	11.4	9.5	.0	5.5	8.0	.0	3.4	9.5	.0	4.2

DEER CREEK BASIN

03049646 DEER CREEK NEAR DORSEYVILLE, PA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	3.0	.0	1.5	7.5	5.5	6.5	16.0	13.5	14.5	13.0	11.5	12.5
2	5.5	.5	2.5	7.0	5.5	6.0	13.5	10.5	12.0	13.0	11.5	12.5
3	5.5	4.5	5.0	6.0	4.5	5.0	13.0	8.5	10.5	15.0	11.5	13.0
4	5.0	3.0	4.0	6.0	4.5	5.5	10.5	9.0	9.5	16.0	12.5	14.0
5	4.5	3.0	4.0	6.5	4.5	5.5	12.5	8.0	10.0	15.0	13.0	14.0
6	4.0	2.0	3.0	6.5	4.0	5.5	12.5	7.0	9.5	16.5	12.5	14.5
7	3.5	.0	1.5	8.0	3.5	5.5	12.5	7.0	10.0	16.0	13.0	14.5
8	4.0	.0	1.5	7.0	5.5	6.5	13.5	10.0	11.5	15.5	14.0	14.5
9	5.5	.0	2.5	9.5	6.5	7.5	12.0	10.0	11.0	17.0	13.5	15.0
10	6.5	3.0	4.5	7.5	2.5	4.5	12.5	8.5	10.0	16.5	14.0	15.0
11	7.0	5.0	6.0	3.5	1.0	2.0	12.5	6.5	9.5	15.0	14.0	14.5
12	6.5	5.0	6.0	3.0	.0	1.5	14.0	7.0	10.0	15.0	13.5	14.0
13	5.0	3.5	4.0	3.0	.0	1.0	14.5	8.0	11.0	18.0	12.5	15.0
14	4.5	2.5	3.5	5.0	1.5	3.0	13.5	11.5	12.5	19.0	14.0	16.5
15	4.0	.5	2.5	4.5	1.0	2.5	14.5	11.0	12.5	22.5	14.5	18.5
16	6.0	.5	3.0	6.0	.5	3.0	14.0	11.5	12.5	21.5	17.0	20.0
17	5.5	5.0	5.5	6.0	1.5	4.0	13.0	9.5	11.5	22.5	17.5	20.0
18	6.5	5.0	6.0	7.5	4.5	6.0	12.0	7.0	10.0	20.5	15.5	17.5
19	6.0	5.5	5.5	10.5	7.5	8.5	11.0	9.5	10.0	19.0	14.0	16.5
20	6.0	5.5	5.5	9.5	7.5	8.5	13.5	8.5	10.5	19.5	15.5	17.5
21	5.5	5.0	5.0	8.5	5.5	7.0	13.5	7.5	10.5	18.5	14.0	16.5
22	6.0	4.0	5.0	5.5	3.5	4.5	13.5	9.0	11.5	18.5	12.5	15.5
23	6.0	4.0	5.0	8.0	3.0	5.0	14.0	9.5	11.5	20.5	14.5	17.0
24	7.0	5.0	6.0	7.0	3.5	5.0	15.5	8.0	12.0	18.0	14.0	16.0
25	6.5	5.0	5.5	9.0	3.0	6.0	16.5	9.5	13.0	19.0	15.5	17.5
26	7.5	4.0	5.5	13.0	7.0	10.0	13.5	9.5	11.5	17.0	14.0	16.0
27	7.0	5.5	6.0	15.5	10.0	12.5	13.5	8.0	10.5	18.0	13.0	15.5
28	6.5	5.5	6.0	16.0	11.0	13.5	14.0	7.5	10.5	17.5	13.0	15.5
29	---	---	---	17.0	12.5	14.5	13.5	8.5	11.0	21.0	14.0	17.5
30	---	---	---	17.0	12.0	14.5	13.0	11.5	12.0	24.5	18.0	21.0
31	---	---	---	17.5	12.5	15.0	---	---	---	24.5	19.0	21.5
MONTH	7.5	.0	4.3	17.5	.0	6.6	16.5	6.5	11.1	24.5	11.5	16.1

DEER CREEK BASIN

03049646 DEER CREEK NEAR DORSEYVILLE, PA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	20.0	14.5	17.5	22.5	17.5	19.5	24.5	16.5	20.5	24.0	15.5	19.0
2	18.0	13.5	15.5	23.0	17.0	20.5	26.0	15.5	20.0	22.0	18.5	20.0
3	16.0	13.0	14.5	24.0	18.0	21.0	26.5	16.0	20.5	21.0	15.0	18.0
4	16.0	12.0	13.5	23.0	19.5	20.5	28.0	17.0	22.0	21.0	14.5	17.5
5	15.5	12.0	14.0	24.5	18.5	20.5	26.0	19.0	22.5	21.5	15.0	18.5
6	16.5	12.5	14.5	24.5	17.5	21.0	26.5	19.0	22.5	24.0	15.5	19.0
7	15.0	12.0	13.5	23.5	19.0	21.0	26.0	19.5	22.5	22.5	19.0	20.0
8	18.0	11.5	15.0	23.0	20.5	21.5	27.5	20.0	23.5	20.0	15.0	17.0
9	20.0	11.5	13.5	24.5	20.0	22.0	29.5	21.5	25.0	17.0	12.5	15.0
10	16.0	14.0	14.5	24.0	19.5	22.0	28.0	23.0	24.5	17.5	12.0	14.5
11	15.5	13.0	14.0	23.0	17.0	20.5	26.5	21.0	23.5	18.5	13.0	15.5
12	19.5	15.0	16.5	23.0	16.5	20.0	25.0	19.5	22.0	21.0	15.0	17.5
13	18.5	16.0	17.0	25.0	17.0	21.0	25.0	18.0	21.5	23.5	16.5	19.0
14	18.0	15.5	16.5	24.0	19.0	21.5	24.5	19.5	22.0	23.5	16.0	19.5
15	18.5	14.0	16.0	23.5	21.0	22.0	26.0	20.5	22.5	24.0	18.5	21.0
16	19.0	16.5	17.5	24.0	21.0	22.0	27.5	20.5	23.5	23.5	19.5	21.5
17	19.5	16.5	17.5	25.0	21.0	23.0	25.5	22.0	23.5	22.5	20.5	21.0
18	20.5	16.5	18.5	25.5	18.5	22.0	25.0	21.0	22.5	21.5	16.5	19.5
19	20.5	17.0	18.5	27.0	18.5	22.0	22.5	16.5	20.0	23.0	18.0	20.0
20	23.5	18.5	20.5	25.0	21.5	23.0	22.5	14.5	18.5	23.0	19.5	21.0
21	24.5	18.5	21.0	25.5	21.5	23.5	23.0	16.0	19.5	22.5	20.5	21.0
22	24.0	20.5	21.5	25.5	21.5	24.0	27.0	19.5	22.5	22.0	19.5	21.0
23	20.5	17.5	18.5	25.5	22.0	24.0	28.0	19.5	23.0	19.5	14.5	17.0
24	20.5	16.5	18.5	24.0	20.0	22.0	26.5	21.5	23.0	16.0	11.0	13.5
25	20.5	16.5	18.5	24.5	19.5	21.5	21.5	19.5	20.0	19.0	15.0	16.0
26	26.0	17.5	20.5	25.5	18.5	21.5	23.0	19.0	20.5	21.0	16.0	18.0
27	25.0	22.0	23.0	24.5	17.5	21.0	23.0	18.5	21.0	22.0	18.0	20.0
28	24.0	21.0	22.5	25.0	18.5	21.5	23.0	18.0	21.0	21.0	18.0	19.5
29	23.5	17.0	20.5	25.0	20.5	22.5	24.5	20.5	22.0	18.5	12.5	15.0
30	21.0	16.0	17.5	24.0	19.0	21.5	25.0	18.5	21.0	19.5	15.0	16.5
31	---	---	---	24.0	18.5	21.0	24.5	19.5	21.5	---	---	---
MONTH	26.0	11.5	17.4	27.0	16.5	21.6	29.5	14.5	21.9	24.0	11.0	18.4

PINE CREEK BASIN

03049800 LITTLE PINE CREEK NEAR ETNA, PA

LOCATION.--Lat 40°31'13", long 79°56'18", Allegheny County, Hydrologic Unit 05010009, on right bank at downstream side of highway bridge on Saxonburg Boulevard, 0.7 mi upstream from mouth, and 1.5 mi northeast of Etna.

DRAINAGE AREA.--5.78 mi².

PERIOD OF RECORD.--October 1962 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 775.26 ft above sea level.

REMARKS.--Records fair. Several measurements of water temperature were made during the year.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a base discharge of 150 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 8	0015	388	a4.17	Apr. 26	1830	*408	*a4.22

a From peak-stage indicator.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.64	4.4	18	e6.0	1.0	12	4.6	18	3.9	1.4	.25	.19
2	.40	1.7	14	e6.8	1.0	9.9	3.4	55	6.7	.70	.19	.20
3	.35	1.1	12	e8.4	.90	8.8	2.8	37	3.3	.62	e.17	.21
4	.35	1.1	13	e8.8	.93	8.0	2.5	27	1.2	.63	e.17	.18
5	.37	.73	12	e8.0	6.1	7.2	2.2	19	.96	.64	e.16	e.18
6	.37	.60	11	e13	2.9	6.3	2.0	14	.85	.48	e.15	e.15
7	.36	20	10	47	2.6	5.5	1.8	11	.76	.44	e.14	e.15
8	.36	61	9.6	116	3.0	14	3.3	19	.71	19	e.13	.29
9	.38	13	9.7	66	2.4	23	17	14	.69	1.5	e.14	.26
10	.35	7.1	26	28	2.2	17	28	9.5	.76	.81	e.20	.23
11	.32	4.6	22	12	2.3	12	13	7.9	.85	.61	.30	.18
12	.33	3.9	17	6.4	2.6	13	8.6	6.9	1.2	.53	.20	e.16
13	.34	3.5	14	6.3	1.6	8.5	6.9	4.8	8.0	.47	.16	e.14
14	.33	46	13	3.2	1.7	7.9	7.3	3.6	2.5	.41	e.14	e.13
15	.33	18	12	3.6	1.9	6.8	6.7	2.9	2.5	.42	e.13	e.13
16	.33	6.7	11	3.2	4.9	5.6	12	2.6	1.6	.46	e.12	e.12
17	.32	4.3	10	2.4	16	4.7	8.5	2.2	2.4	.45	e.12	e.12
18	.32	3.0	9.7	2.2	38	6.3	6.7	1.8	1.4	.41	e.14	e.12
19	.32	3.1	9.3	2.1	36	6.1	37	1.9	3.6	.34	e.18	e.16
20	.32	2.7	9.2	1.8	24	5.8	38	1.9	1.8	.36	e.15	.21
21	.32	2.8	9.0	1.5	15	27	22	1.4	1.0	.38	e.12	2.3
22	.33	11	9.8	1.4	10	34	14	1.3	.87	.80	e.11	e.30
23	.33	7.6	12	13	9.3	21	10	1.1	.78	1.7	e.10	e.24
24	.38	6.4	13	7.4	11	15	8.1	1.2	.70	.78	e1.3	e.19
25	1.2	6.8	16	3.3	8.6	11	6.8	1.3	.63	.41	6.5	e.17
26	.92	8.0	13	2.6	7.5	9.0	85	1.1	.63	.35	.65	e.17
27	2.9	6.7	e12	2.1	7.3	7.9	52	.89	.80	.32	.31	e.25
28	.52	26	e10	2.2	11	6.9	e32	.80	1.0	.31	.25	e.20
29	.42	29	e8.8	1.8	---	6.0	e21	.88	.66	.29	.25	e.15
30	.37	22	e7.8	1.5	---	4.7	21	.92	4.6	.28	.24	e.13
31	.37	---	e6.8	1.2	---	3.8	---	3.9	---	.28	.21	---
TOTAL	15.25	332.83	380.7	389.2	231.73	334.7	484.2	274.79	57.35	36.58	13.38	7.61
MEAN	.49	11.1	12.3	12.6	8.28	10.8	16.1	8.86	1.91	1.18	.43	.25
MAX	2.9	61	26	116	38	34	85	55	8.0	19	6.5	2.3
MIN	.32	.60	6.8	1.2	.90	3.8	1.8	.80	.63	.28	.10	.12
CFSM	.09	1.92	2.12	2.17	1.43	1.87	2.79	1.53	.33	.20	.07	.04
IN.	.10	2.14	2.45	2.50	1.49	2.15	3.12	1.77	.37	.24	.09	.05

e Estimated.

PINE CREEK BASIN

03049800 LITTLE PINE CREEK NEAR ETNA, PA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1.99	5.11	8.05	7.66	9.68	13.4	10.5	8.47	4.27	3.33	1.63	1.57
MAX	8.55	25.4	26.4	22.4	21.0	32.4	23.8	26.1	17.8	26.4	6.92	10.4
(WY)	1980	1986	1987	1965	1966	1994	1987	1968	1972	1990	1980	1990
MIN	.010	.51	.69	.82	2.17	1.30	2.33	1.74	.42	.016	.10	.040
(WY)	1964	1964	1964	1977	1980	1969	1971	1965	1965	1965	1965	1963

SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

FOR 1998 WATER YEAR

WATER YEARS 1963 - 1998

ANNUAL TOTAL	2558.92	2558.32	
ANNUAL MEAN	7.01	7.01	
HIGHEST ANNUAL MEAN			6.29
LOWEST ANNUAL MEAN			10.8
HIGHEST DAILY MEAN	70	May 25	116
LOWEST DAILY MEAN	e.02	Aug 9-11	e.10
ANNUAL SEVEN-DAY MINIMUM	a.04	Aug 5	a.13
INSTANTANEOUS PEAK FLOW			408
INSTANTANEOUS PEAK STAGE			c4.22
INSTANTANEOUS LOW FLOW			b7190
ANNUAL RUNOFF (CFSM)	1.21	1.21	1.09
ANNUAL RUNOFF (INCHES)	16.47	16.47	14.78
10 PERCENT EXCEEDS	16	18	15
50 PERCENT EXCEEDS	4.7	2.4	2.8
90 PERCENT EXCEEDS	.35	.19	.30

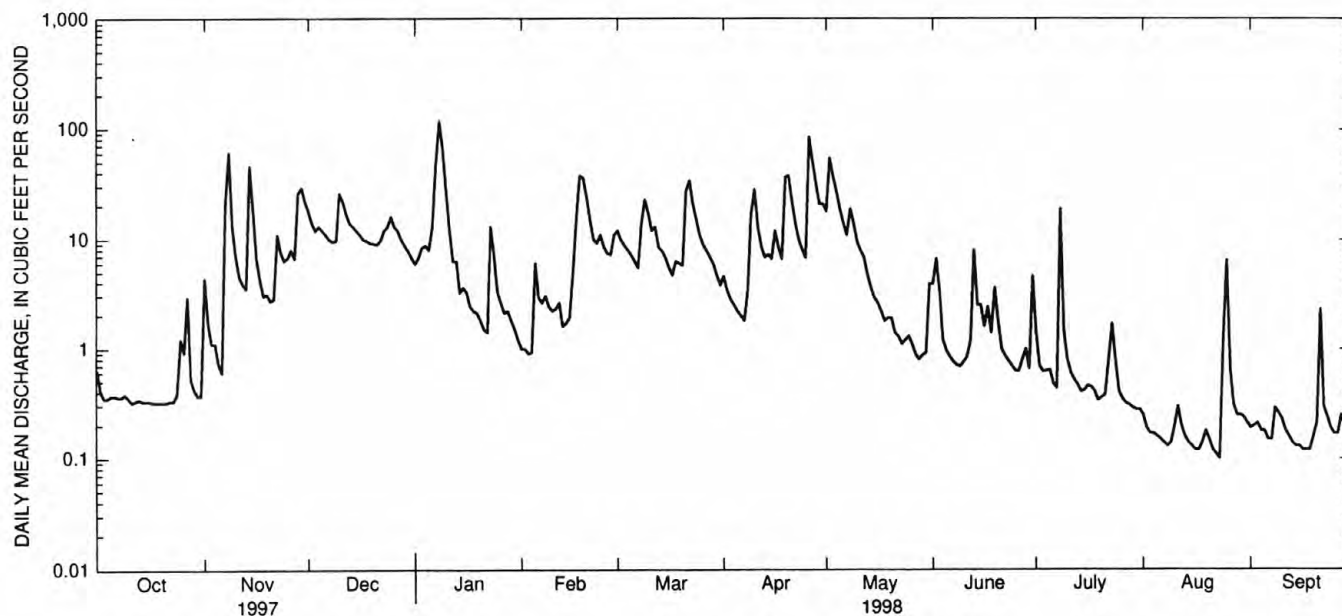
a Computed using estimated discharges.

b From rating curve extended above 150 ft³/s on basis of slope-area measurement of peak flow at site 0.6 mi downstream at datum then in use.

c From peak-stage indicator.

d 10.41 ft, from outside floodmark.

e Estimated.



October 1, 1997 to September 30, 1998

MONONGAHELA RIVER BASIN

LAKES AND RESERVOIRS IN MONONGAHELA RIVER BASIN

03055500 TYGART LAKE.--Lat 39°18'50", long 80°02'00", Taylor County, W. Va., Hydrologic Unit 05020001, at dam on Tygart Valley River, 2.2 mi upstream from Threefork Creek, and 2.4 mi upstream from Grafton, W. Va. DRAINAGE AREA, 1,184 mi². PERIOD OF RECORD, April 1938 to current year. Prior to October 1960 published as "Tygart Reservoir". GAGE, water-stage recorder. Datum of gage is at sea level.

Lake is formed by concrete gravity dam completed and accepted February 1938, storage began May 15, 1938. Capacity, 285,000 acre-ft (from sedimentation resurvey made in 1959) between elevations 991.5 ft (sill of valves) and 1,167.0 ft (crest of spillway) above sea level. Dead storage, 2,700 acre-ft. Figures given herein represent total contents. Conservation pool elevation is 1,010.0 ft and water below elevation 991.5 ft cannot be withdrawn. Lake is used for flood control, for supplementary supply for navigation on Monongahela River during periods of low flow, and for recreation. Records furnished by U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 255,680 acre-ft, Nov. 7, 1985 (elevation, 1,156.69 ft); minimum since October 1939, 8,330 acre-ft, Jan. 25, 1940 (elevation, 1,005.15 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 162,660 acre-ft, June 30 (elevation, 1,120.47 ft); minimum, 25,740 acre-ft, Jan. 2 (elevation, 1,028.59 ft).

MONTHEND ELEVATION IN FEET ABOVE SEA LEVEL, AND CONTENTS AT 2400 HRS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

Date	Elevation (feet)	Contents (acre- feet)	Change in contents (equivalent in ft ³ /s)
Sept. 30	1,081.92	91,320	-
Oct. 31	1,052.98	51,200	-652
Nov. 30	1,041.27	38,040	-221
Dec. 31	1,033.04	29,810	-134
CAL YR 1997	-	-	-8.8
Jan. 31	1,042.68	39,540	+158
Feb. 28	1,049.73	47,390	+141
Mar. 31	1,063.46	64,580	+280
Apr. 30	1,096.99	116,540	+873
May 31	1,094.68	112,440	-67
June 30	1,119.69	169,980	+967
July 31	1,093.91	111,090	-958
Aug. 31	1,092.15	108,070	-49
Sept. 30	1,070.29	73,910	-574
WTR YR 1998	-	-	-24

MONONGAHELA RIVER BASIN

03070350 CHEAT RIVER NEAR MT. NEBO, WV
(National Water-Quality Assessment station)

LOCATION.--Lat 39°35'40", long 79°44'56", Preston County, Hydrologic Unit 05020004, on left bank 150 ft upstream of Jenkintown Bridge, 800 ft upstream of Big Sandy Creek, 1.3 mi northeast of the town of Bull Run, and 2.3 mi west southwest of Mt. Nebo, WV.

DRAINAGE AREA.--1,132 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1996 to September 1998 (discontinued).

GAGE.--Water-stage recorder. Elevation of gage is 960 ft above sea level, from topographic map.

REMARKS.--Records good except for estimated daily discharges, which are fair. Several measurements of water temperature were made during the year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Discharge measurement taken July 31, 1996 at a stage of 15.75 ft, from outside gage reading, discharge of 39,500 ft³/s.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a base discharge of 22,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 8	2115	*32,800	*14.16	June 20	0345	30,800	13.74
Mar. 21	1530	23,700	12.14	June 29	1330	28,300	13.19
Apr. 20	0645	25,500	12.56				

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2310	640	5600	1230	3330	9170	2740	2490	691	10800	566	197
2	1560	3230	5250	1470	2660	8410	2850	2950	758	6270	611	186
3	1240	5690	3820	1780	2330	6290	2630	4780	706	3850	421	174
4	985	3460	3210	3570	2240	4750	2400	5860	597	2690	323	163
5	799	2360	3080	5250	2330	3800	4050	7270	503	2220	267	153
6	661	1730	3020	6000	2660	3150	3370	6820	477	1920	233	146
7	555	10200	2580	10400	2960	2860	2660	4840	475	1500	204	144
8	492	11700	2150	22100	2750	3310	2220	4590	e430	1480	183	176
9	441	8940	1950	24500	2430	9810	2740	5320	e500	2250	169	877
10	406	7190	2210	14500	2230	15700	6650	4490	e900	2310	e2200	969
11	371	5220	8310	7560	2230	8360	6500	3640	e1330	1680	e3400	569
12	337	3850	7430	5120	3280	5470	4560	4760	1640	1230	e2400	402
13	318	2970	4800	4160	6180	4070	3360	5730	4280	958	e1500	310
14	303	3390	3550	3790	4870	3430	2710	4200	5650	786	e880	248
15	295	e6390	2740	3380	3560	2910	2280	3140	4380	700	e1100	203
16	269	e5000	2150	3460	2790	2390	1980	2490	13700	699	e1000	182
17	247	e3730	1800	3860	2490	2040	2120	2400	11600	674	e2100	164
18	244	e3000	1570	3600	7320	2250	1840	2040	7870	661	e2400	155
19	242	e2500	1350	3110	13100	11100	4870	1610	10400	672	e2800	144
20	250	e1970	1230	2730	10000	9580	21600	1350	19500	561	e2300	244
21	255	1880	1150	2300	9150	17800	10500	1400	7120	482	e1450	249
22	243	3640	1130	1940	7310	16800	6150	1220	4320	425	e1000	468
23	229	7540	1260	3710	5600	8920	4330	1040	3170	446	e800	478
24	231	5440	2030	9120	5140	6050	3350	958	2490	763	e690	351
25	256	3850	3370	6790	4340	4650	2730	1930	e1910	1450	e450	341
26	297	3030	4340	4620	4160	4100	2320	1940	e1570	854	e390	313
27	534	2650	3900	3570	4280	4610	4230	1270	e2500	609	351	262
28	817	2590	3210	3670	6520	5260	4480	939	e9200	473	303	257
29	748	2770	2580	3790	---	4620	3420	792	18800	398	268	220
30	602	3130	2250	4330	---	3830	2780	727	12500	352	239	244
31	496	---	1870	4290	---	3070	---	637	---	430	215	---
TOTAL	17033	129680	94890	179700	128240	198560	128420	93623	149967	50593	31213	8989
MEAN	549	4323	3061	5797	4580	6405	4281	3020	4999	1632	1007	300
MAX	2310	11700	8310	24500	13100	17800	21600	7270	19500	10800	3400	969
MIN	229	640	1130	1230	2230	2040	1840	637	430	352	169	144
CFSM	.49	3.82	2.70	5.12	4.05	5.66	3.78	2.67	4.42	1.44	.89	.26
IN.	.56	4.26	3.12	5.91	4.21	6.53	4.22	3.08	4.93	1.66	1.03	.30

e Estimated.

MONONGAHELA RIVER BASIN

03070350 CHEAT RIVER NEAR MT. NEBO, WV--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1997 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1633	4346	4080	3985	3886	6573	3272	3363	3208	1097	1099	514
MAX	2716	4369	5099	5797	4580	6741	4281	3706	4999	1632	1192	728
(WY)	1997	1997	1997	1998	1998	1997	1998	1997	1998	1998	1997	1997
MIN	549	4323	3061	2174	3192	6405	2264	3020	1417	561	1007	300
(WY)	1998	1998	1998	1997	1997	1998	1997	1998	1997	1997	1998	1998

SUMMARY STATISTICS

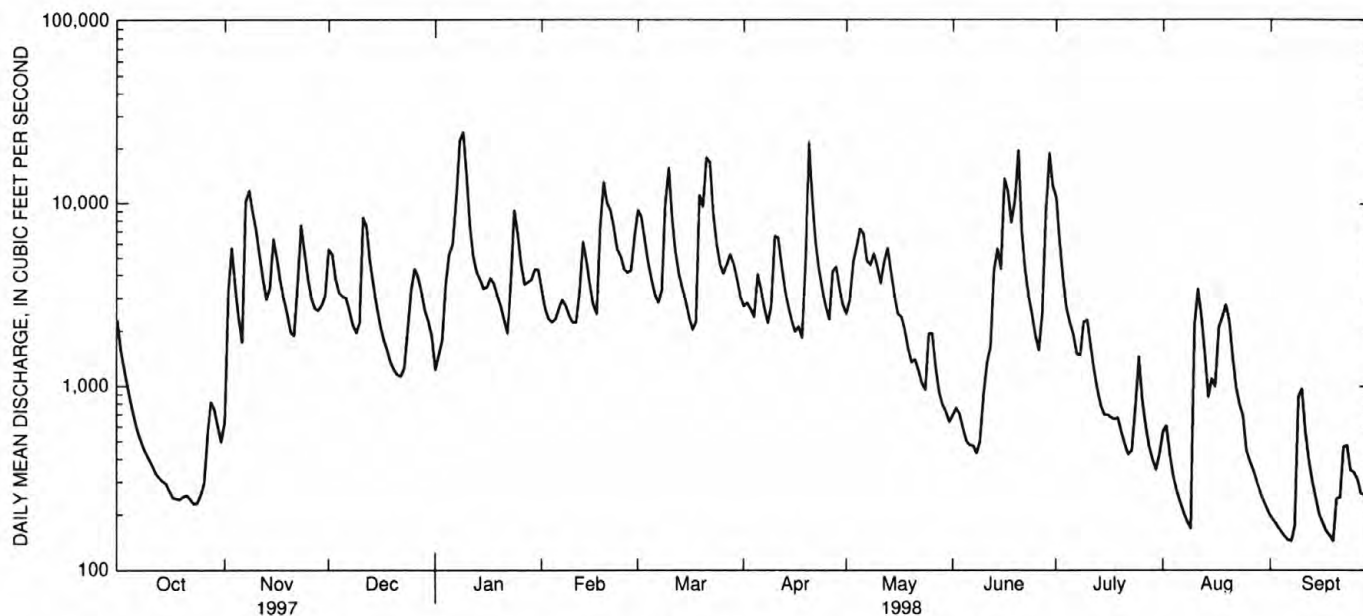
FOR 1997 CALENDAR YEAR

FOR 1998 WATER YEAR

WATER YEARS 1996 - 1998

ANNUAL TOTAL	908845	1210908	
ANNUAL MEAN	2490	3318	3084
HIGHEST ANNUAL MEAN			3318
LOWEST ANNUAL MEAN			2851
HIGHEST DAILY MEAN	e25000	Mar 2	24500 Jan 9
LOWEST DAILY MEAN	151	Jul 22	144 Sep 7, 19
ANNUAL SEVEN-DAY MINIMUM	187	Jul 17	163 Sep 2
INSTANTANEOUS PEAK FLOW			32800 Jan 8
INSTANTANEOUS PEAK STAGE			14.16 Jan 8
INSTANTANEOUS LOW FLOW			132 Sep 7
ANNUAL RUNOFF (CFSM)	2.20	2.93	2.72
ANNUAL RUNOFF (INCHES)	29.87	39.79	37.02
10 PERCENT EXCEEDS	5500	7360	6510
50 PERCENT EXCEEDS	1770	2400	2220
90 PERCENT EXCEEDS	297	268	317

e Estimated.



October 1, 1997 to September 30, 1998

MONONGAHELA RIVER BASIN

03070350 CHEAT RIVER NEAR MT. NEBO, WV--Continued
(National Water-Quality Assessment station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1996 to September 1998 (discontinued).

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: June 1997 to September 1998.

pH: June 1997 to August 1998.

WATER TEMPERATURE: October 1996 to September 1998.

INSTRUMENTATION.--Daily record measured and collected at hourly intervals with in-situ probes and electronic data loggers. Water temperature was measured and collected at hourly intervals using an in-situ probe with an electronic data logger from October 1996 to September 1998.

REMARKS.--All water-quality samples were collected and analyzed by the U.S. Geological Survey. Interruptions in the daily record were due to malfunctions of the equipment. Water temperature, specific conductance, and pH data from the in-situ probes often times did not exactly agree with the water temperature, specific conductance, and pH of the monthly and storm samples because of the fixed location of the in-situ probes. Additional sites in the (NAWQA) fixed-station network are shown in figure 6 on page 28. An explanation of selected abbreviations used in the water-quality tables are given on pages 29-31.

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

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (μ S/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	OXYGEN, DIS- SOLVED (MG/L) (00300)	HARD- NESS TOTAL (MG/L AS CAC03) (00900)	ACIDITY TOTAL HEATED (MG/L AS CAC03) (70508)	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)
OCT												
16...	1345	289	197	7.1	18.0	739	9.1	73	2.4	20	5.3	2.2
NOV												
05...	1130	2360	83	6.9	8.0	740	11.3	30	4.4	9.0	1.8	1.2
07...	1615	13000	94	7.2	8.5	730	11.4	32	3.0	9.4	2.1	1.1
DEC												
03...	0945	3910	88	7.0	5.0	734	12.0	30	4.6	8.7	2.0	1.3
JAN												
06...	1145	5230	87	6.9	5.0	736	12.7	29	6.4	8.4	1.9	1.6
09...	1000	23700	67	7.1	8.5	727	12.2	23	2.2	6.7	1.4	.96
FEB												
03...	1200	2260	128	6.3	3.5	736	11.9	42	7.5	12	3.1	1.9
MAR												
25...	1020	4670	88	6.8	4.0	743	13.2	30	3.6	8.6	2.1	1.4
APR												
16...	1835	1980	109	7.3	16.5	725	9.5	39	3.0	11	2.6	1.5
20...	1645	19800	61	7.1	10.1	748	11.2	21	2.0	6.4	1.3	1.0
MAY												
27...	1120	1280	134	7.4	21.5	748	6.7	51	2.0	15	3.4	1.6
JUN												
11...	1150	1210	186	6.9	20.5	747	7.7	70	3.0	20	5.0	2.3
16...	1345	15400	76	7.3	19.0	740	7.4	29	3.4	8.9	1.7	1.2
29...	1530	26800	63	7.0	18.5	744	10.1	23	3.2	7.0	1.3	.89
JUL												
23...	1110	414	182	6.7	30.0	744	7.4	73	3.0	21	5.1	2.2
AUG												
21...	1600	774	98	7.5	24.0	752	8.2	36	2.2	11	2.1	1.5
SEP												
22...	1410	511	254	6.7	26.0	732	7.7	96	2.6	28	6.5	2.7

MONONGAHELA RIVER BASIN

03070350 CHEAT RIVER NEAR MT. NEBO, WV--Continued

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

DATE	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	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, 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)
OCT											
16...	1.1	4	73	2.3	<.10	3.5	116	<.010	.141	.413	.44
NOV											
05...	.81	10	20	1.6	<.10	4.2	56	.038	.390	<.020	.22
07...	1.2	8	23	1.7	<.10	4.1	64	<.010	.628	<.020	.22
DEC											
03...	.68	7	23	1.6	<.10	4.2	53	<.010	.455	.091	.14
JAN											
06...	.65	8	18	2.3	<.10	4.0	48	<.010	.576	.051	.15
09...	.71	6	14	1.4	<.10	3.5	50	<.010	.567	<.020	.22
FEB											
03...	.64	4	38	2.9	<.10	4.5	77	<.010	.587	.401	.43
MAR											
25...	.61	8	23	1.9	<.10	3.9	52	<.010	.511	.101	.14
APR											
16...	.74	5	32	1.7	<.10	3.7	64	<.010	.348	.293	.33
20...	.64	7	10	1.3	<.10	3.5	40	<.010	.416	.080	.36
MAY											
27...	.92	10	40	1.8	<.10	3.8	79	.017	.319	.296	.23
JUN											
11...	.99	4	66	2.3	<.10	3.9	115	.011	.324	.445	.50
16...	.80	10	15	1.2	<.10	3.9	53	<.010	.348	.077	.85
29...	.85	10	11	.86	<.10	3.7	43	<.010	.315	<.020	.74
JUL											
23...	1.1	8	63	1.9	<.10	3.9	121	<.010	.192	.488	.53
AUG											
21...	.80	13	22	1.5	<.10	3.6	61	.045	.936	.096	.38
SEP											
22...	1.7	3	100	2.9	<.10	4.4	161	<.010	.443	.712	--

MONONGAHELA RIVER BASIN

03070350 CHEAT RIVER NEAR MT. NEBO, WV--Continued

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

DATE	NITRO- GEN, AM- MONIA + ORGANIC DIS. (MG/L AS N) (00623)	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 (µG/L AS AL) (01106)	IRON, DIS- SOLVED (µG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (µG/L AS MN) (01056)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS- PENDE TOTAL (MG/L AS C) (00689)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT											
16...	.48	<.010	<.010	<.010	24	4.7	286	5.9	.20	6	52
NOV											
05...	.21	<.010	<.010	.012	103	70	75	8.7	.40	6	58
07...	<.10	.016	<.010	<.010	40	23	126	2.4	4.0	128	79
DEC											
03...	.12	<.010	<.010	<.010	38	89	88	1.1	.80	6	71
JAN											
06...	.10	<.010	<.010	.012	32	36	69	.80	.40	7	67
09...	.14	.015	<.010	<.010	59	43	68	2.7	2.5	79	90
FEB											
03...	.38	<.010	<.010	.010	<10	410	166	.70	.30	10	88
MAR											
25...	.11	<.010	<.010	.010	12	240	99	.70	.90	8	78
APR											
16...	.26	.017	<.010	<.010	23	200	127	.70	.60	6	69
20...	.12	.039	<.010	.010	70	62	41	2.5	2.8	73	69
MAY											
27...	.30	.024	<.010	<.010	101	28	145	1.1	.20	6	81
JUN											
11...	.48	<.010	.030	.018	17	34	258	.90	.30	10	81
16...	.16	.136	<.010	<.010	63	55	58	2.6	2.1	119	77
29...	.21	.238	<.010	<.010	67	97	18	3.6	>5.0	196	79
JUL											
23...	.52	<.010	<.010	<.010	101	<10	240	1.1	.20	3	82
AUG											
21...	.36	<.010	<.010	<.010	155	63	52	2.2	.20	3	71
SEP											
22...	--	<.050	<.010	.010	25	<10	375	1.1	<.20	2	57

MONONGAHELA RIVER BASIN

03070350 CHEAT RIVER NEAR MT. NEBO, WV--Continued

REMARKS.--The following data are for dissolved trace elements in surface water filtered through a 0.45µm filter.

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

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	ALUM- INUM, DIS- SOLVED (µG/L AS AL) (01106)	ANTI- MONY, DIS- SOLVED (µG/L AS SB) (01095)	ARSENIC DIS- SOLVED (µG/L AS AS) (01000)	BARIUM, DIS- SOLVED (µG/L AS BA) (01005)	BERYL- LIUM, DIS- SOLVED (µG/L AS BE) (01010)	CADMIUM DIS- SOLVED (µG/L AS CD) (01025)	CHRO- MIUM, DIS- SOLVED (µG/L AS CR) (01030)	COBALT, DIS- SOLVED (µG/L AS CO) (01035)
SEP 22...	1410	511	25	<1.0	<1	53	<1.0	<1.0	<1.0	10

DATE	COPPER, DIS- SOLVED (µG/L AS CU) (01040)	LEAD, DIS- SOLVED (µG/L AS PB) (01049)	MANGA- NESE, DIS- SOLVED (µG/L AS MN) (01056)	MOLYB- DENUM, DIS- SOLVED (µG/L AS MO) (01060)	NICKEL, DIS- SOLVED (µG/L AS NI) (01065)	SELE- NIUM, DIS- SOLVED (µG/L AS SE) (01145)	SILVER, DIS- SOLVED (µG/L AS AG) (01075)	URANIUM NATURAL DIS- SOLVED (µG/L AS U) (22703)	ZINC, DIS- SOLVED (µG/L AS ZN) (01090)
SEP 22...	1.2	<1.0	375	<1.0	21	<1	<1.0	<1.0	45

MONONGAHELA RIVER BASIN

03070350 CHEAT RIVER NEAR MT. NEBO, WV--Continued

REMARKS.--The following data are for trace elements and other constituents that were part of the suspended-sediment fraction of the water sample. Suspended sediments were dewatered using a continuous flow centrifuge, dried, and analyzed directly for total metals using a nitric, hydrofluoric, perchloric acid digestion. Whole water contributions by the suspended sediment were then calculated using the suspended-sediment concentration in kilograms per liter (kg/L) and the analyte concentration in milligrams per kilogram (mg/kg) from the direct analysis of the suspended sediments, resulting in micrograms per gram ($\mu\text{G/G}$) concentrations. Values reported in percent are the percent of that constituent in the suspended sediment. When no trace element was detected in the sample, the default reporting value is the method detection limit preceded by a less-than sign (<).

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

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	ALUM- INUM SED, SUS PERCENT (30221)	AN- TIMONY SED. SUSP. ($\mu\text{G/G}$) (29816)	ARSENIC SED. SUSP. ($\mu\text{G/G}$) (29818)	BARIUM SED. SUSP. ($\mu\text{G/G}$) (29820)	BERYL- LIUM SED. SUSP. ($\mu\text{G/G}$) (29822)	CADMIUM SED. SUSP. ($\mu\text{G/G}$) (29826)	CHRO- MIUM SED. SUSP. ($\mu\text{G/G}$) (29829)
APR 20...	1645	19800	5.7	1	13	400	2	1	62

DATE	COBALT SEDI- MENT SUSP. ($\mu\text{G/G}$) (35031)	COPPER SED. SUSP. ($\mu\text{G/G}$) (29832)	IRON SEDI- MENT SUSP. PERCENT (30269)	LEAD SED. SUSP. ($\mu\text{G/G}$) (29836)	LITHIUM SEDI- MENT SUSP. ($\mu\text{G/G}$) (35050)	MAN- GANESE SED. SUSP. ($\mu\text{G/G}$) (29839)	MERCURY SED. SUSP. ($\mu\text{G/G}$) (29841)	MOLYB- DENUM SED. SUSP. ($\mu\text{G/G}$) (29843)	NICKEL SED. SUSP. ($\mu\text{G/G}$) (29845)
APR 20...	44	24	3.5	31	41	1600	0	<5	57

DATE	PHOS- PHORUS SEDI- MENT SUSP. PERCENT (30292)	SELE- NIUM SED. SUSP. ($\mu\text{G/G}$) (29847)	SILVER SED. SUSP. ($\mu\text{G/G}$) (29850)	STRON- TIUM SEDI- MENT SUSP. ($\mu\text{G/G}$) (35040)	THAL- LIUM SUS SED ($\mu\text{G/G}$) (49955)	TITA- NIUM SEDI- MENT SUSP. PERCENT (30317)	URANIUM SEDI- MENT SUSP. ($\mu\text{G/G}$) (35046)	VANA- DIUM SED. SUSP. ($\mu\text{G/G}$) (29853)	ZINC SED. SUSP. ($\mu\text{G/G}$) (29855)
APR 20...	670	1	<1	83	<50	.38	<50	81	210

MONONGAHELA RIVER BASIN

03070350 CHEAT RIVER NEAR MT. NEBO, WV--Continued

SPECIFIC CONDUCTANCE, $\mu\text{S}/\text{CM}$ @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	147	114	133	---	---	---	---	---	---	---	---	---
2	159	147	153	---	---	---	---	---	---	---	---	---
3	172	159	166	---	---	---	---	---	---	---	---	---
4	185	172	180	---	---	---	---	---	---	---	---	---
5	194	185	188	---	---	---	---	---	---	---	---	---
6	213	194	202	---	---	---	376	341	362	---	---	---
7	231	213	220	---	---	---	401	375	386	---	---	---
8	242	231	238	---	---	---	537	400	467	---	---	---
9	258	242	252	---	---	---	572	537	552	---	---	---
10	266	257	263	---	---	---	612	572	591	---	---	---
11	280	262	269	---	---	---	659	612	632	---	---	---
12	280	272	275	---	---	---	---	---	---	---	---	---
13	280	272	276	---	---	---	---	---	---	---	---	---
14	282	274	280	---	---	---	---	---	---	---	---	---
15	292	281	286	---	---	---	---	---	---	---	---	---
16	292	189	255	---	---	---	---	---	---	---	---	---
17	192	189	191	---	---	---	---	---	---	---	---	---
18	194	185	192	---	---	---	---	---	---	---	---	---
19	193	185	187	---	---	---	---	---	---	---	---	---
20	195	193	194	---	---	---	---	---	---	---	---	---
21	194	189	191	---	---	---	---	---	---	---	---	---
22	190	188	189	---	---	---	---	---	---	---	---	---
23	196	184	187	---	---	---	---	---	---	---	---	---
24	202	196	200	---	---	---	---	---	---	---	---	---
25	205	199	201	---	---	---	---	---	---	---	---	---
26	241	205	228	---	---	---	---	---	---	---	---	---
27	229	173	205	---	---	---	---	---	---	---	---	---
28	---	---	---	---	---	---	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	---	---	---	---
30	---	---	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	292	114	215	---	---	---	659	341	498	---	---	---

DAY	MAX	MIN	MEAN		MAX	MIN	MEAN		MAX	MIN	MEAN		MAX	MIN	MEAN
	FEBRUARY				MARCH				APRIL				MAY		
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	---	---	---		---	---	---		---	---	---		---	---	---
MONTH	---	---	---		---	---	---		---	---	---		---	---	---

MONONGAHELA RIVER BASIN

03070350 CHEAT RIVER NEAR MT. NEBO, WV--Continued

SPECIFIC CONDUCTANCE, $\mu\text{S}/\text{CM}$ @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	---	---	---	---	---	---	197	152	178	---	---	---
2	---	---	---	---	---	---	152	130	135	---	---	---
3	---	---	---	---	---	---	155	135	146	---	---	---
4	---	---	---	---	---	---	188	155	167	---	---	---
5	---	---	---	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	---	---	---	---	---	---	---	---	---	---	---	---
8	---	---	---	---	---	---	---	---	---	---	---	---
9	---	---	---	---	---	---	---	---	---	---	---	---
10	---	---	---	---	---	---	---	---	---	145	129	138
11	---	---	---	---	---	---	271	111	179	129	111	117
12	---	---	---	---	---	---	117	94	103	111	110	110
13	---	---	---	---	---	---	127	97	109	---	---	---
14	---	---	---	---	---	---	136	100	115	---	---	---
15	---	---	---	---	---	---	203	125	166	---	---	---
16	---	---	---	---	---	---	190	141	167	---	---	---
17	---	---	---	---	---	---	192	139	169	---	---	---
18	---	---	---	---	---	---	187	122	153	---	---	---
19	---	---	---	---	---	---	166	100	131	---	---	---
20	---	---	---	---	---	---	155	101	127	---	---	---
21	---	---	---	---	---	---	---	---	---	---	---	---
22	---	---	---	---	---	---	106	97	103	---	---	---
23	---	---	---	---	---	---	115	106	111	---	---	---
24	---	---	---	247	173	197	122	115	120	---	---	---
25	---	---	---	176	109	123	162	122	136	---	---	---
26	---	---	---	129	114	121	162	146	152	---	---	---
27	---	---	---	125	115	120	156	147	152	---	---	---
28	---	---	---	137	125	132	---	---	---	---	---	---
29	---	---	---	157	137	146	---	---	---	---	---	---
30	---	---	---	163	151	156	---	---	---	---	---	---
31	---	---	---	194	162	169	---	---	---	---	---	---
MONTH	---	---	---	247	109	146	271	94	141	145	110	122

MONONGAHELA RIVER BASIN

03070350 CHEAT RIVER NEAR MT. NEBO, WV--Continued

pH Values, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	7.7	7.5	7.6	8.0	7.5	7.8	7.5	6.7	7.0	---	---	---
2	7.8	7.7	7.7	7.8	7.1	7.4	7.2	7.0	7.1	---	---	---
3	7.8	7.7	7.7	7.8	7.6	7.7	7.7	6.6	6.8	---	---	---
4	7.7	7.3	7.6	7.8	7.6	7.8	6.7	6.6	6.6	---	---	---
5	7.4	7.1	7.2	7.9	6.6	7.8	7.5	6.7	7.3	---	---	---
6	7.2	7.1	7.1	7.2	6.6	7.1	7.3	7.2	7.3	---	---	---
7	7.3	7.2	7.2	7.1	6.4	6.6	7.2	7.2	7.2	---	---	---
8	7.3	7.2	7.3	6.9	6.8	6.8	7.3	7.2	7.2	---	---	---
9	7.4	7.2	7.3	6.8	6.7	6.8	7.2	7.2	7.2	---	---	---
10	7.3	7.2	7.2	6.9	6.7	6.8	7.2	7.1	7.1	---	---	---
11	7.2	7.1	7.2	6.8	6.7	6.8	7.2	7.1	7.1	---	---	---
12	7.2	7.1	7.2	6.8	6.7	6.8	---	---	---	---	---	---
13	7.2	7.2	7.2	6.7	6.5	6.5	---	---	---	---	---	---
14	7.2	7.2	7.2	6.5	6.4	6.5	---	---	---	---	---	---
15	7.2	7.0	7.1	7.2	6.4	6.8	---	---	---	---	---	---
16	7.2	5.3	7.1	6.9	6.7	6.7	---	---	---	---	---	---
17	7.1	6.8	7.0	7.4	6.8	6.9	---	---	---	---	---	---
18	7.2	7.0	7.1	6.8	6.4	6.6	---	---	---	---	---	---
19	7.3	7.0	7.2	6.9	6.4	6.8	---	---	---	---	---	---
20	7.3	7.1	7.2	6.8	6.6	6.6	---	---	---	---	---	---
21	7.3	7.1	7.2	6.8	6.6	6.7	---	---	---	---	---	---
22	7.4	7.3	7.3	6.7	6.4	6.7	---	---	---	---	---	---
23	7.4	7.3	7.4	7.1	6.6	6.8	---	---	---	---	---	---
24	7.4	7.3	7.4	7.1	6.9	7.0	---	---	---	---	---	---
25	7.3	7.1	7.1	6.9	6.9	6.9	---	---	---	---	---	---
26	7.1	6.5	6.6	6.9	6.6	6.9	---	---	---	---	---	---
27	7.5	6.6	7.1	6.7	6.5	6.6	---	---	---	---	---	---
28	7.9	7.5	7.7	6.8	6.7	6.7	---	---	---	---	---	---
29	8.0	7.9	8.0	6.7	6.6	6.7	---	---	---	---	---	---
30	8.0	7.9	8.0	6.7	6.5	6.6	---	---	---	---	---	---
31	8.0	7.9	7.9	---	---	---	---	---	---	---	---	---
MAX	8.0	7.9	8.0	8.0	7.6	7.8	7.7	7.2	7.3	---	---	---
MIN	7.1	5.3	6.6	6.5	6.4	6.5	6.7	6.6	6.6	---	---	---

[illegible]

MONONGAHELA RIVER BASIN

03070350 CHEAT RIVER NEAR MT. NEBO, WV--Continued

pH VALUES, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	---	---	---	---	---	---	8.0	7.3	7.7	---	---	---
2	---	---	---	---	---	---	8.4	8.0	8.3	---	---	---
3	---	---	---	---	---	---	8.4	8.1	8.2	---	---	---
4	---	---	---	---	---	---	8.2	7.4	8.1	---	---	---
5	---	---	---	---	---	---	7.9	7.0	7.4	---	---	---
6	---	---	---	---	---	---	7.9	7.7	7.8	---	---	---
7	---	---	---	---	---	---	7.8	7.6	7.7	---	---	---
8	---	---	---	---	---	---	7.6	7.5	7.6	---	---	---
9	---	---	---	---	---	---	7.6	7.4	7.5	---	---	---
10	---	---	---	---	---	---	7.6	6.6	7.5	---	---	---
11	---	---	---	---	---	---	8.2	5.7	7.9	---	---	---
12	---	---	---	---	---	---	8.2	7.9	8.0	---	---	---
13	---	---	---	---	---	---	8.1	7.5	7.9	---	---	---
14	---	---	---	---	---	---	7.9	7.6	7.8	---	---	---
15	---	---	---	---	---	---	7.8	7.3	7.6	---	---	---
16	---	---	---	---	---	---	7.5	7.1	7.3	---	---	---
17	---	---	---	---	---	---	7.6	7.2	7.4	---	---	---
18	---	---	---	---	---	---	7.9	7.6	7.7	---	---	---
19	---	---	---	---	---	---	7.9	7.6	7.8	---	---	---
20	---	---	---	---	---	---	7.9	7.6	7.8	---	---	---
21	---	---	---	---	---	---	---	---	---	---	---	---
22	---	---	---	---	---	---	---	---	---	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
24	---	---	---	7.8	6.0	7.1	---	---	---	---	---	---
25	---	---	---	8.7	7.8	8.5	---	---	---	---	---	---
26	---	---	---	8.6	8.4	8.5	---	---	---	---	---	---
27	---	---	---	8.6	8.4	8.5	---	---	---	---	---	---
28	---	---	---	8.4	8.2	8.4	---	---	---	---	---	---
29	---	---	---	8.3	7.7	8.2	---	---	---	---	---	---
30	---	---	---	8.1	7.6	7.8	---	---	---	---	---	---
31	---	---	---	8.0	7.4	7.8	---	---	---	---	---	---
MAX	---	---	---	8.7	8.4	8.5	8.4	8.1	8.3	---	---	---
MIN	---	---	---	7.8	6.0	7.1	7.5	5.7	7.3	---	---	---

MONONGAHELA RIVER BASIN

03070350 CHEAT RIVER NEAR MT. NEBO, WV--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	15.5	15.0	15.5	12.5	11.0	11.5	8.5	7.0	7.5	---	---	---
2	15.5	14.5	15.0	11.5	10.0	10.5	7.0	5.5	6.0	---	---	---
3	16.5	15.0	15.5	10.0	9.0	9.5	13.0	4.5	8.5	---	---	---
4	17.5	16.5	17.0	9.5	8.5	9.0	11.5	2.5	9.0	---	---	---
5	19.5	17.5	18.5	8.5	8.0	8.0	---	---	---	---	---	---
6	21.0	18.5	20.0	8.5	8.0	8.0	---	---	---	---	---	---
7	22.5	20.0	21.5	8.5	8.0	8.0	---	---	---	---	---	---
8	23.5	21.5	22.5	8.0	8.0	8.0	---	---	---	---	---	---
9	24.0	22.0	23.0	8.0	7.5	7.5	---	---	---	---	---	---
10	24.5	23.0	24.0	8.0	7.5	8.0	---	---	---	---	---	---
11	24.0	22.0	23.0	7.5	7.5	7.5	---	---	---	---	---	---
12	22.5	21.0	22.0	7.5	6.5	7.0	---	---	---	---	---	---
13	23.0	21.0	22.0	6.5	6.0	6.0	---	---	---	---	---	---
14	22.5	21.5	21.5	6.5	6.0	6.0	---	---	---	---	---	---
15	21.5	18.5	20.0	6.0	6.0	6.0	---	---	---	---	---	---
16	18.5	16.5	17.5	6.0	5.0	5.0	---	---	---	---	---	---
17	17.0	15.5	16.5	5.0	4.0	4.0	---	---	---	---	---	---
18	17.0	15.5	16.0	4.0	3.0	3.5	---	---	---	---	---	---
19	17.0	15.5	16.5	4.0	3.5	3.5	---	---	---	---	---	---
20	16.0	14.5	15.5	5.0	3.5	4.5	---	---	---	---	---	---
21	14.5	13.0	14.0	6.0	5.0	5.5	---	---	---	---	---	---
22	14.0	12.5	13.0	6.5	6.0	6.0	---	---	---	---	---	---
23	12.5	11.5	12.0	6.5	6.5	6.5	---	---	---	---	---	---
24	13.5	12.0	13.0	6.5	5.0	5.5	---	---	---	---	---	---
25	15.0	13.5	14.5	5.0	4.0	4.0	---	---	---	---	---	---
26	15.0	15.0	15.0	5.0	4.0	4.5	---	---	---	---	---	---
27	15.0	11.5	14.0	5.5	5.0	5.0	---	---	---	---	---	---
28	11.5	9.5	10.5	6.0	5.0	5.5	---	---	---	---	---	---
29	10.0	9.0	9.5	7.0	6.0	6.5	---	---	---	---	---	---
30	11.0	9.5	10.0	8.5	7.0	7.5	---	---	---	---	---	---
31	12.0	10.0	11.0	---	---	---	---	---	---	---	---	---
MONTH	24.5	9.0	16.8	12.5	3.0	6.6	13.0	2.5	7.8	---	---	---

03070350 CHEAT RIVER NEAR MT. NEBO, WV--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

[illegible]

MONONGAHELA RIVER BASIN

03070350 CHEAT RIVER NEAR MT. NEBO, WV--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	---	---	---	---	---	---	29.5	26.5	28.0	29.5	21.5	24.5
2	---	---	---	---	---	---	28.0	25.5	27.0	28.0	22.5	25.0
3	---	---	---	---	---	---	29.0	25.5	27.0	30.0	20.0	23.5
4	---	---	---	---	---	---	29.5	26.0	28.0	30.5	20.0	23.5
5	---	---	---	---	---	---	29.5	26.0	28.0	30.5	19.5	23.0
6	---	---	---	---	---	---	30.0	24.5	27.5	28.5	18.5	23.0
7	---	---	---	---	---	---	31.0	23.5	27.0	24.5	20.5	22.5
8	---	---	---	---	---	---	31.5	23.5	27.5	22.0	18.5	20.0
9	---	---	---	---	---	---	32.0	25.0	28.0	22.0	17.5	19.5
10	---	---	---	---	---	---	29.0	25.5	27.0	19.5	18.5	19.0
11	---	---	---	---	---	---	30.0	24.0	27.5	20.0	18.5	19.0
12	---	---	---	---	---	---	24.5	22.5	23.5	21.0	19.0	20.0
13	---	---	---	---	---	---	25.5	24.5	25.0	22.5	20.0	21.0
14	---	---	---	---	---	---	26.5	25.5	26.0	26.0	19.5	22.5
15	---	---	---	---	---	---	26.5	25.0	25.5	27.0	21.0	24.0
16	---	---	---	---	---	---	27.0	25.5	26.5	27.5	23.0	25.0
17	---	---	---	---	---	---	27.0	26.0	26.5	26.5	23.5	24.5
18	---	---	---	---	---	---	26.0	23.5	24.5	31.5	22.5	25.5
19	---	---	---	---	---	---	24.5	23.0	23.5	28.0	22.5	24.5
20	---	---	---	---	---	---	23.5	22.0	23.0	27.5	23.0	25.5
21	---	---	---	---	---	---	---	---	---	26.0	23.0	25.0
22	---	---	---	---	---	---	26.0	24.5	25.5	---	---	---
23	---	---	---	---	---	---	28.5	26.0	27.5	---	---	---
24	---	---	---	31.5	29.0	30.0	28.5	27.0	28.0	---	---	---
25	---	---	---	29.5	25.5	27.0	29.5	27.0	28.0	---	---	---
26	---	---	---	27.5	26.5	27.0	30.5	27.0	29.0	---	---	---
27	---	---	---	28.5	26.0	27.0	30.0	27.5	29.0	---	---	---
28	---	---	---	29.5	26.5	28.0	29.5	27.0	28.5	---	---	---
29	---	---	---	29.5	27.0	28.5	29.0	26.0	26.5	---	---	---
30	---	---	---	30.0	28.0	29.0	29.5	25.5	27.0	---	---	---
31	---	---	---	30.0	28.0	29.0	29.5	24.0	26.0	---	---	---
MONTH	---	---	---	31.5	25.5	28.2	32.0	22.0	26.7	31.5	17.5	22.9

MONONGAHELA RIVER BASIN

03072000 DUNKARD CREEK AT SHANNOPIN, PA
(National water-quality assessment station)

LOCATION.--Lat 39°45'33", long 79°58'15", Greene County, Hydrologic Unit 05020005, on left bank 1,300 ft upstream from highway bridge at mine buildings at Shannopin, 1.2 mi north of Dunkard, 3.5 mi upstream from mouth, and 4 mi southwest of Greensboro.

DRAINAGE AREA.--229 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1940 to current year. Prior to December 1940 monthly discharge only, published in WSP 1305.

REVISED RECORDS.--WSP 1505: 1955.

GAGE.--Water-stage recorder. Datum of gage is 806.25 ft above sea level (levels by U.S. Army Corps of Engineers).

REMARKS.--Records good except for estimated daily discharges, which are fair. Some regulation at low flow by mine pumpage above station. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a base discharge of 4,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 8	1500	*3,130	*7.75				

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29	19	158	e52	269	457	195	342	62	1340	12	8.0
2	25	24	180	e58	227	410	207	1430	56	628	11	6.8
3	20	51	112	e64	193	381	164	1990	48	342	11	5.6
4	16	44	89	e74	184	333	167	996	41	215	11	7.0
5	14	34	83	e90	305	326	186	1020	38	165	9.4	6.4
6	12	28	73	109	e1400	309	160	810	36	129	8.3	7.3
7	10	54	63	280	e1150	286	146	541	34	97	7.5	6.4
8	8.3	179	57	e2700	e900	381	145	547	32	104	6.0	4.8
9	7.4	217	53	e1800	758	1380	221	1190	30	141	5.3	4.8
10	7.1	106	54	e800	731	1440	408	811	34	99	5.8	11
11	6.2	67	152	e540	767	820	418	559	59	71	16	12
12	6.9	51	263	e350	1110	578	334	457	127	57	21	9.5
13	7.1	42	191	e270	1020	438	273	381	267	48	17	8.3
14	5.4	52	135	e240	649	366	238	289	521	43	15	5.9
15	3.8	212	101	e220	465	300	215	218	310	39	13	4.4
16	4.2	183	79	e210	363	241	186	168	609	37	11	3.4
17	5.1	113	66	e190	330	205	188	137	758	37	11	2.2
18	6.3	82	57	e180	521	254	158	113	605	36	18	1.9
19	6.7	65	53	e170	1760	1140	272	90	560	31	47	1.9
20	6.7	55	49	e160	1150	869	1430	80	947	29	27	2.1
21	6.2	49	44	e140	870	1240	863	74	407	27	18	4.9
22	5.3	62	42	131	659	1540	573	63	220	26	13	13
23	5.2	115	47	380	556	1090	423	54	140	23	9.7	20
24	4.9	99	66	1070	1080	763	327	54	101	21	8.0	17
25	7.0	73	125	653	988	576	254	663	80	21	16	13
26	8.9	58	207	442	695	453	217	400	68	18	17	9.7
27	11	52	155	335	541	369	624	180	239	16	26	7.4
28	14	50	125	397	459	314	592	113	1250	15	21	7.6
29	20	54	e100	504	---	265	406	85	2140	14	15	6.0
30	19	67	e76	422	---	228	332	74	1350	13	12	5.4
31	16	---	e62	339	---	199	---	71	---	13	9.6	---
TOTAL	324.7	2357	3117	13370	20100	17951	10322	14000	11169	3895	448.6	223.7
MEAN	10.5	78.6	101	431	718	579	344	452	372	126	14.5	7.46
MAX	29	217	263	2700	1760	1540	1430	1990	2140	1340	47	20
MIN	3.8	19	42	52	184	199	145	54	30	13	5.3	1.9
CFSM	.05	.34	.44	1.88	3.13	2.53	1.50	1.97	1.63	.55	.06	.03
IN.	.05	.38	.51	2.17	3.27	2.92	1.68	2.27	1.81	.63	.07	.04

e Estimated.

MONONGAHELA RIVER BASIN

03072000 DUNKARD CREEK AT SHANNOPIN, PA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	71.8	165	339	432	509	628	462	328	181	89.4	78.6	74.3
MAX	381	1149	1071	1050	1100	1475	1033	903	877	461	890	573
(WY)	1955	1986	1991	1994	1956	1994	1948	1968	1981	1996	1980	1975
MIN	1.73	2.44	7.46	26.5	63.5	112	80.9	57.4	10.2	4.62	2.45	2.39
(WY)	1952	1954	1954	1967	1954	1987	1971	1986	1966	1962	1962	1953

SUMMARY STATISTICS

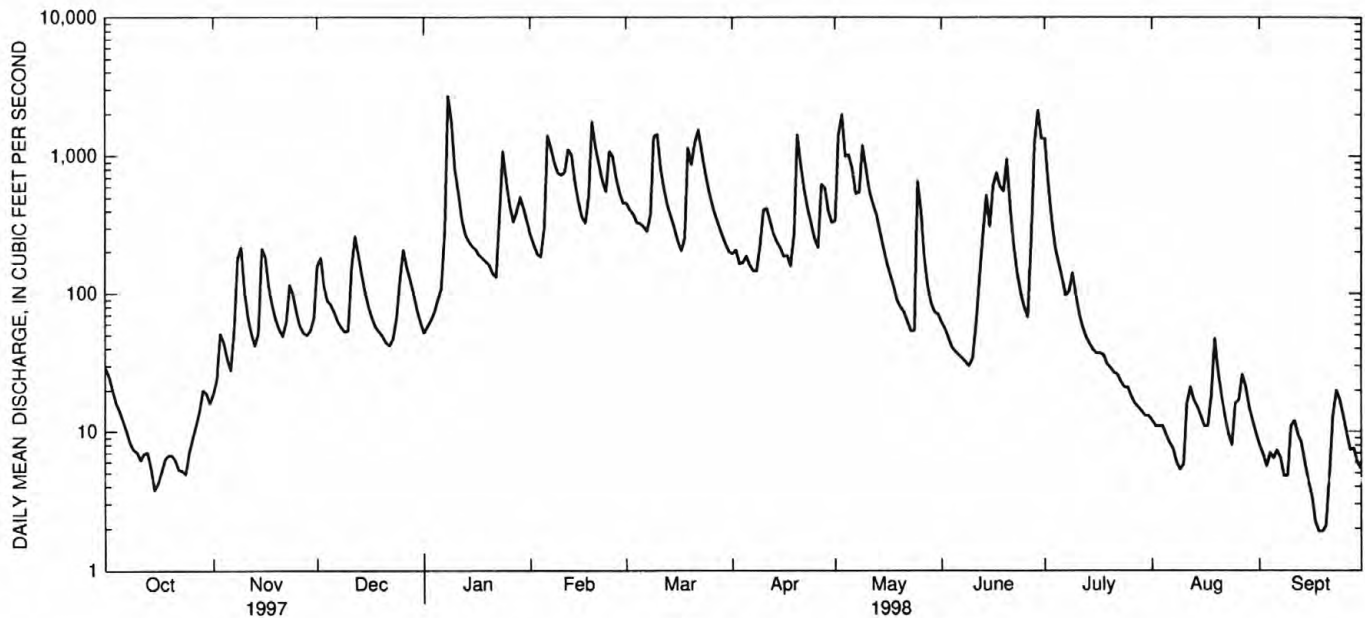
FOR 1997 CALENDAR YEAR

FOR 1998 WATER YEAR

WATER YEARS 1941 - 1998

ANNUAL TOTAL	75825.8	97278.0	
ANNUAL MEAN	208	267	279
HIGHEST ANNUAL MEAN			462
LOWEST ANNUAL MEAN			104
HIGHEST DAILY MEAN	7670	Mar 2	11200
LOWEST DAILY MEAN	3.8	Oct 15	.50
ANNUAL SEVEN-DAY MINIMUM	5.5	Oct 14	.73
INSTANTANEOUS PEAK FLOW			3130
INSTANTANEOUS PEAK STAGE			7.75
INSTANTANEOUS LOW FLOW			1.6
ANNUAL RUNOFF (CFSM)	.91		1.16
ANNUAL RUNOFF (INCHES)	12.32		15.80
10 PERCENT EXCEEDS	437		780
50 PERCENT EXCEEDS	84		99
90 PERCENT EXCEEDS	8.6		7.2

e Estimated.



MONONGAHELA RIVER BASIN

03072000 DUNKARD CREEK AT SHANNOPIN, PA--Continued
(National Water-Quality Assessment station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--November 1975 to August 1981, April 1996 to September 1998 (discontinued).

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: July 1997 to September 1998.

pH: July 1997 to September 1998.

WATER TEMPERATURE: October 1996 to September 1998.

INSTRUMENTATION.--Daily record measured and collected at hourly intervals with in-situ probes and electronic data loggers. Water temperature was measured and collected at hourly intervals using an in-situ probe with an electronic data logger from October 1996 to September 1998.

REMARKS.--All water-quality samples were collected and analyzed by the U.S. Geological Survey. Interruptions in the daily record were due to malfunctions of the equipment. Water temperature, specific conductance, and pH data from the in-situ probes often times did not exactly agree with the water temperature, specific conductance, and pH of the monthly and storm samples because of the fixed location of the in-situ probes. Additional sites in the (NAWQA) fixed-station network are shown in figure 6 on page 28. An explanation of selected abbreviations used in the water-quality tables are given on pages 29-31.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 28.0°C, July 22; minimum 0.0°C, on may days during winter period.

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

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (µS/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	OXYGEN, DIS- SOLVED (MG/L) (00300)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	ACIDITY TOTAL HEATED (MG/L AS CACO3) (70508)	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)
OCT												
17...	0905	4.9	1350	7.1	10.0	740	9.6	430	14	110	37	113
NOV												
06...	0915	29	1050	7.7	5.0	742	11.6	220	6.0	62	16	123
DEC												
04...	0900	91	502	7.8	6.0	729	11.5	130	3.4	39	8.8	41
JAN												
07...	0945	146	477	7.9	6.5	734	11.9	130	2.2	39	8.9	43
08...	1530	3890	173	7.5	9.0	726	10.4	56	3.0	17	3.5	7.9
FEB												
04...	1030	173	379	7.9	2.5	730	12.2	120	2.6	34	8.4	25
MAR												
26...	0930	462	311	7.9	7.0	742	11.6	100	2.0	29	7.6	18
APR												
20...	1045	1640	244	7.7	11.0	739	10.4	85	18	25	5.5	13
27...	1010	565	329	8.0	13.0	755	10.6	120	1.0	33	8.0	22
MAY												
28...	0940	114	365	7.7	19.0	753	8.8	120	4.0	36	8.4	24
JUN												
12...	1000	130	506	7.9	19.0	745	6.5	150	3.5	45	10	46
29...	1015	3080	180	7.1	19.5	749	8.3	61	3.6	18	3.7	9.0
JUL												
29...	0940	15	780	7.5	23.0	747	7.6	260	8.4	69	22	64
AUG												
19...	1345	45	711	7.9	24.0	756	8.7	180	--	50	14	75
SEP												
23...	0845	19	1450	7.5	18.5	754	7.3	430	7.0	120	29	149

MONONGAHELA RIVER BASIN
03072000 DUNKARD CREEK AT SHANNOPIN, PA.

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

DATE	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	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, 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)
OCT											
17...	3.7	66	530	67	.40	8.6	982	<.010	.234	.067	<.20
NOV											
06...	3.8	120	250	86	.26	2.7	652	.032	.086	<.020	.17
DEC											
04...	2.1	74	110	27	.13	3.9	291	<.010	.364	<.020	<.10
JAN											
07...	1.6	86	95	30	.14	2.1	274	<.010	.349	<.020	.14
08...	2.2	28	33	6.3	<.10	6.2	103	<.010	.800	.026	1.4
FEB											
04...	1.2	72	86	12	.18	5.5	236	<.010	.354	.052	.12
MAR											
26...	1.2	74	70	7.4	<.10	5.4	187	.010	.281	<.020	.11
APR											
20...	1.5	51	49	7.5	<.10	5.9	149	.010	.381	.065	.32
27...	1.5	70	67	8.0	.11	3.5	203	<.010	.127	.038	.38
MAY											
28...	1.7	72	86	8.6	<.10	5.5	227	.032	.377	.053	.22
JUN											
12...	2.3	110	110	18	.17	2.7	313	.012	.238	.028	.25
29...	2.1	40	31	4.3	<.10	6.6	118	.014	.397	.020	.49
JUL											
29...	2.6	98	260	22	.27	4.9	552	<.010	.138	.051	.23
AUG											
19...	3.0	114	170	34	.25	3.9	445	.012	.072	.050	.29
SEP											
23...	4.1	90	620	32	.33	3.8	844	<.010	.132	.080	.30

DATE	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N) (00623)	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 (μG/L AS AL) (01106)	IRON, DIS- SOLVED (μG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (μG/L AS MN) (01056)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS- PENDED TOTAL (MG/L AS C) (00689)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT											
17...	<.20	<.010	<.010	<.010	32	24	854	5.8	<.20	2	86
NOV											
06...	.16	.012	<.010	.014	56	9.9	108	E3.3	.30	6	91
DEC											
04...	<.10	<.010	<.010	<.010	53	24	42	1.8	.30	5	100
JAN											
07...	<.10	<.010	<.010	.013	56	50	35	1.5	.30	7	82
08...	.28	.425	<.010	.015	19	50	48	4.1	1.9	484	97
FEB											
04...	<.10	<.010	<.010	.011	53	34	63	1.2	<.20	3	77
MAR											
26...	.13	.014	<.010	.010	61	17	62	1.2	.40	11	86
APR											
20...	.19	.035	<.010	.011	29	29	16	2.6	3.4	132	93
27...	.10	.029	<.010	<.010	59	36	31	2.0	1.1	41	76
MAY											
28...	.17	<.010	<.010	<.010	106	13	70	2.3	.30	13	89
JUN											
12...	.17	.037	.053	.016	127	17	46	2.1	.40	22	93
29...	.36	.171	<.010	<.010	14	44	--	4.1	3.9	563	96
JUL											
29...	.19	<.010	<.010	<.010	67	<10	326	1.8	.20	3	56
AUG											
19...	.21	.042	<.010	.013	159	18	123	2.6	.30	10	76
SEP											
23...	.24	.021	<.010	<.010	44	<10	273	2.4	.20	6	73

MONONGAHELA RIVER BASIN

03072000 DUNKARD CREEK AT SHANNOPIN, PA.

REMARKS.--The following data are for dissolved trace elements in surface water filtered through a 0.45µm filter.

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

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	ALUM- INUM, DIS- SOLVED (µG/L) AS AL) (01106)	ANTI- MONY, DIS- SOLVED (µG/L) AS SB) (01095)	ARSENIC DIS- SOLVED (µG/L) AS AS) (01000)	BARIUM, DIS- SOLVED (µG/L) AS BA) (01005)	BERYL- LIUM, DIS- SOLVED (µG/L) AS BE) (01010)	CADMIUM DIS- SOLVED (µG/L) AS CD) (01025)	CHRO- MIUM, DIS- SOLVED (µG/L) AS CR) (01030)	COBALT, DIS- SOLVED (µG/L) AS CO) (01035)
SEP 23...	0845	19	44	<1.0	<1	145	<1.0	<1.0	1.5	5.1

DATE	COPPER, DIS- SOLVED (µG/L) AS CU) (01040)	LEAD, DIS- SOLVED (µG/L) AS PB) (01049)	MANGA- NESE, DIS- SOLVED (µG/L) AS MN) (01056)	MOLYB- DENUM, DIS- SOLVED (µG/L) AS MO) (01060)	NICKEL, DIS- SOLVED (µG/L) AS NI) (01065)	SELE- NIUM, DIS- SOLVED (µG/L) AS SE) (01145)	SILVER, DIS- SOLVED (µG/L) AS AG) (01075)	URANIUM NATURAL DIS- SOLVED (µG/L) AS U) (22703)	ZINC, DIS- SOLVED (µG/L) AS ZN) (01090)
SEP 23...	2.7	<1.0	273	<1.0	15	<1	<1.0	<1.0	13

MONONGAHELA RIVER BASIN

03072000 DUNKARD CREEK AT SHANNOPIN, PA.

REMARKS.--The following data are for trace elements and other constituents that were part of the suspended-sediment fraction of the water sample. Suspended sediments were dewatered using a continuous flow centrifuge, dried, and analyzed directly for total metals using a nitric, hydrofluoric, perchloric acid digestion. Whole water contributions by the suspended sediment were then calculated using the suspended-sediment concentration in kilograms per liter (kg/L) and the analyte concentration in milligrams per kilogram (mg/kg) from the direct analysis of the suspended sediments, resulting in micrograms per gram ($\mu\text{g/g}$) concentrations. Values reported in percent are the percent of that constituent in the suspended sediment. When no trace element was detected in the sample, the default reporting value is the method detection limit preceded by a less-than sign (<).

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

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	ALUM- INUM SED,SUS PERCENT (30221)	AN- TIMONY SED. SUSP. (μG/G) (29816)	ARSENIC SED. SUSP. (μG/G) (29818)	BARIUM SED. SUSP. (μG/G) (29820)	BERYL- LIUM SED. SUSP. (μG/G) (29822)	CADMIUM SED. SUSP. (μG/G) (29826)	CHRO- MIUM SED. SUSP. (μG/G) (29829)	
APR 20...	1045	1640	8.8	1	15	650	3	1	62	
DATE		COBALT SEDI- MENT SUSP. (μG/G) (35031)	COPPER SED. SUSP. (μG/G) (29832)	IRON SEDI- MENT SUSP. PERCENT (30269)	LEAD SED. SUSP. (μG/G) (29836)	LITHIUM SEDI- MENT SUSP. (μG/G) (35050)	MAN- GANESE SED. SUSP. (μG/G) (29839)	MERCURY SED. SUSP. (μG/G) (29841)	MOLYB- DENUM SED. SUSP. (μG/G) (29843)	NICKEL SED. SUSP. (μG/G) (29845)
APR 20...	44	24	4.6	31	60	2000	0	<5	57	
DATE		PHOS- PHORUS SEDI- MENT SUSP. PERCENT (30292)	SELE- NIUM SED. SUSP. (μG/G) (29847)	SILVER SED. SUSP. (μG/G) (29850)	STRON- TIUM SEDI- MENT SUSP. (μG/G) (35040)	THAL- LIUM SUS SED (μG/G) (49955)	TITA- NIUM SEDI- MENT SUSP. PERCENT (30317)	URANIUM SEDI- MENT SUSP. (μG/G) (35046)	VANA- DIUM SED. SUSP. (μG/G) (29853)	ZINC SED. SUSP. (μG/G) (29855)
APR 20...	1100	1	<1	160	<50	.54	<50	100	210	

MONONGAHELA RIVER BASIN

03072000 DUNKARD CREEK AT SHANNOPIN, PA--Continued

SPECIFIC CONDUCTANCE, $\mu\text{S}/\text{CM}$ @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	1030	1000	1010	1260	1260	1260	---	---	---	---	---	---
2	1010	990	1000	1260	1260	1260	---	---	---	---	---	---
3	1000	986	993	1260	1260	1260	---	---	---	---	---	---
4	1030	997	1010	1260	1260	1260	---	---	---	---	---	---
5	1060	1020	1040	1270	1250	1260	---	---	---	---	---	---
6	1060	1050	1060	1270	1030	1140	---	---	---	---	---	---
7	1080	1060	1070	1030	912	947	---	---	---	---	---	---
8	1090	1080	1090	912	724	817	---	---	---	---	---	---
9	1090	1080	1090	898	525	652	---	---	---	---	---	---
10	1090	1090	1090	581	528	556	---	---	---	---	---	---
11	1110	1090	1100	583	568	579	---	---	---	---	---	---
12	1140	1100	1120	568	546	553	---	---	---	---	---	---
13	1160	1140	1140	548	527	537	---	---	---	---	---	---
14	1150	1130	1140	529	509	521	---	---	---	---	---	---
15	1160	1120	1140	509	393	451	---	---	---	---	---	---
16	1280	1160	1210	---	---	---	---	---	---	---	---	---
17	1270	1110	1210	---	---	---	---	---	---	---	---	---
18	1280	1190	1200	---	---	---	---	---	---	---	---	---
19	1290	1270	1280	---	---	---	---	---	---	---	---	---
20	1290	1280	1280	---	---	---	---	---	---	---	---	---
21	1300	1290	1290	---	---	---	---	---	---	---	---	---
22	1300	1220	1240	---	---	---	---	---	---	---	---	---
23	1240	1240	1240	---	---	---	---	---	---	---	---	---
24	1250	1240	1240	---	---	---	---	---	---	---	---	---
25	1250	1240	1240	---	---	---	---	---	---	---	---	---
26	1250	1240	1240	---	---	---	---	---	---	---	---	---
27	1250	1240	1250	---	---	---	---	---	---	---	---	---
28	1250	1240	1250	---	---	---	---	---	---	---	---	---
29	1260	1240	1250	---	---	---	---	---	---	---	---	---
30	1260	1250	1260	---	---	---	---	---	---	---	---	---
31	1270	1250	1260	---	---	---	---	---	---	---	---	---
MONTH	1300	986	1160	1270	393	870	---	---	---	---	---	---

MONONGAHELA RIVER BASIN

03072000 DUNKARD CREEK AT SHANNOPIN, PA--Continued

SPECIFIC CONDUCTANCE, $\mu\text{S}/\text{CM}$ @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	---	---	---	411	398	403	---	---	---
2	---	---	---	---	---	---	419	397	405	---	---	---
3	---	---	---	---	---	---	440	419	423	---	---	---
4	---	---	---	---	---	---	442	425	433	---	---	---
5	---	---	---	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	430	417	426	---	---	---
7	---	---	---	---	---	---	438	430	434	---	---	---
8	---	---	---	---	---	---	439	431	434	---	---	---
9	---	---	---	---	---	---	448	426	435	---	---	---
10	---	---	---	---	---	---	427	377	394	---	---	---
11	---	---	---	---	---	---	380	373	376	---	---	---
12	---	---	---	---	---	---	373	368	371	---	---	---
13	---	---	---	---	---	---	384	371	374	---	---	---
14	---	---	---	---	---	---	394	383	385	---	---	---
15	---	---	---	---	---	---	398	390	393	---	---	---
16	---	---	---	---	---	---	400	394	398	---	---	---
17	---	---	---	---	---	---	397	389	393	---	---	---
18	---	---	---	---	---	---	414	395	403	---	---	---
19	---	---	---	---	---	---	414	327	402	---	---	---
20	---	---	---	---	---	---	327	243	264	---	---	---
21	---	---	---	---	---	---	279	255	265	---	---	---
22	---	---	---	---	---	---	298	279	287	---	---	---
23	---	---	---	---	---	---	325	298	314	---	---	---
24	---	---	---	---	---	---	342	325	332	---	---	---
25	---	---	---	---	---	---	360	341	349	---	---	---
26	---	---	---	---	---	---	380	360	369	---	---	---
27	---	---	---	334	314	325	---	---	---	---	---	---
28	---	---	---	347	334	340	---	---	---	---	---	---
29	---	---	---	360	346	354	---	---	---	427	402	417
30	---	---	---	373	360	365	---	---	---	450	427	443
31	---	---	---	398	373	387	---	---	---	481	444	459
MONTH	---	---	---	398	314	354	448	243	378	481	402	440

MONONGAHELA RIVER BASIN

03072000 DUNKARD CREEK AT SHANNOPIN, PA--Continued

SPECIFIC CONDUCTANCE, $\mu\text{S}/\text{CM}$ @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	509	481	499	235	210	217	890	849	875	948	917	933
2	582	509	557	257	216	239	898	868	888	978	947	963
3	562	551	556	296	257	277	879	863	868	1010	975	992
4	587	562	575	329	296	313	875	857	865	1010	949	966
5	656	587	631	357	329	342	956	867	923	976	940	955
6	661	633	645	420	357	387	950	936	942	973	935	951
7	656	641	651	430	414	422	965	929	943	1010	955	972
8	655	645	649	429	420	426	1020	961	986	1060	1010	1030
9	705	645	670	449	423	428	1090	1010	1040	1090	1040	1080
10	702	618	669	493	449	475	1090	1070	1080	1040	907	930
11	620	521	576	497	476	485	1070	822	933	1020	961	1000
12	---	---	---	498	491	493	918	818	863	996	937	950
13	612	410	537	532	498	507	897	867	888	943	930	935
14	421	302	368	549	532	541	867	834	846	991	941	962
15	312	305	310	569	541	553	881	837	863	1060	991	1030
16	307	271	289	617	563	590	939	881	917	1070	829	1030
17	294	240	262	583	561	572	940	894	926	1070	728	899
18	284	261	270	624	583	607	900	851	864	1010	829	902
19	308	242	290	656	606	638	872	718	761	1040	593	854
20	256	202	226	643	628	633	816	751	785	1420	630	1230
21	291	246	271	690	637	667	961	816	884	1530	1410	1490
22	328	291	308	722	665	697	1020	961	998	1410	1320	1350
23	370	328	346	703	689	695	1090	1020	1070	---	---	---
24	406	367	378	750	699	723	1140	1080	1120	---	---	---
25	439	394	403	761	722	741	1090	992	1030	---	---	---
26	442	421	430	771	743	752	1110	1020	1080	---	---	---
27	426	370	405	777	771	774	1030	937	987	---	---	---
28	370	242	305	780	769	773	937	903	916	---	---	---
29	242	177	207	801	776	787	903	880	889	---	---	---
30	227	191	209	816	797	808	900	873	884	---	---	---
31	---	---	---	851	812	842	919	900	910	---	---	---
MONTH	705	177	431	851	210	561	1140	718	930	1530	593	1020

MONONGAHELA RIVER BASIN

03072000 DUNKARD CREEK AT SHANNOPIN, PA--Continued

pH VALUES, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	7.8	7.6	7.7	6.8	6.8	6.8	---	---	---	---	---	---
2	7.8	7.7	7.7	6.8	6.8	6.8	---	---	---	---	---	---
3	7.7	7.6	7.7	6.9	6.8	6.8	---	---	---	---	---	---
4	7.7	7.5	7.6	6.9	6.8	6.9	---	---	---	---	---	---
5	7.7	7.5	7.6	7.0	6.8	6.9	---	---	---	---	---	---
6	7.6	7.4	7.5	7.8	6.8	6.9	---	---	---	---	---	---
7	7.5	7.4	7.5	7.7	7.6	7.7	---	---	---	---	---	---
8	7.5	7.4	7.4	7.8	7.7	7.7	---	---	---	---	---	---
9	7.5	7.3	7.4	7.8	7.7	7.8	---	---	---	---	---	---
10	7.4	7.3	7.4	7.7	7.7	7.7	---	---	---	---	---	---
11	7.5	7.4	7.4	7.7	7.6	7.6	---	---	---	---	---	---
12	7.5	7.4	7.5	7.7	7.6	7.6	---	---	---	---	---	---
13	7.5	7.4	7.5	7.6	7.6	7.6	---	---	---	---	---	---
14	7.6	7.5	7.5	7.7	7.5	7.6	---	---	---	---	---	---
15	7.7	7.6	7.6	7.8	7.7	7.8	---	---	---	---	---	---
16	7.7	7.3	7.6	---	---	---	---	---	---	---	---	---
17	7.5	6.8	7.1	---	---	---	---	---	---	---	---	---
18	7.4	6.7	6.9	---	---	---	---	---	---	---	---	---
19	7.5	7.4	7.4	---	---	---	---	---	---	---	---	---
20	7.5	7.4	7.5	---	---	---	---	---	---	---	---	---
21	7.5	7.4	7.5	---	---	---	---	---	---	---	---	---
22	7.5	6.8	6.9	---	---	---	---	---	---	---	---	---
23	6.9	6.8	6.9	---	---	---	---	---	---	---	---	---
24	7.0	6.8	6.9	---	---	---	---	---	---	---	---	---
25	6.9	6.9	6.9	---	---	---	---	---	---	---	---	---
26	6.9	6.9	6.9	---	---	---	---	---	---	---	---	---
27	7.0	6.9	6.9	---	---	---	---	---	---	---	---	---
28	7.1	6.9	7.0	---	---	---	---	---	---	---	---	---
29	7.1	6.8	7.0	---	---	---	---	---	---	---	---	---
30	6.9	6.7	6.9	---	---	---	---	---	---	---	---	---
31	6.9	6.7	6.9	---	---	---	---	---	---	---	---	---
MAX	7.8	7.7	7.7	7.8	7.7	7.8	---	---	---	---	---	---
MIN	6.9	6.7	6.9	6.8	6.8	6.8	---	---	---	---	---	---

MONONGAHELA RIVER BASIN

03072000 DUNKARD CREEK AT SHANNOPIN, PA--Continued

pH VALUES, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	---	---	---	8.2	7.6	7.8	---	---	---
2	---	---	---	---	---	---	8.3	7.7	7.8	---	---	---
3	---	---	---	---	---	---	8.3	7.7	7.9	---	---	---
4	---	---	---	---	---	---	8.0	7.8	7.9	---	---	---
5	---	---	---	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	8.3	7.8	8.0	---	---	---
7	---	---	---	---	---	---	8.3	7.8	8.1	---	---	---
8	---	---	---	---	---	---	8.2	7.7	8.0	---	---	---
9	---	---	---	---	---	---	8.0	7.7	7.7	---	---	---
10	---	---	---	---	---	---	8.1	7.6	7.7	---	---	---
11	---	---	---	---	---	---	8.2	7.6	7.8	---	---	---
12	---	---	---	---	---	---	8.3	7.6	7.9	---	---	---
13	---	---	---	---	---	---	8.3	7.6	7.9	---	---	---
14	---	---	---	---	---	---	8.0	7.6	7.8	---	---	---
15	---	---	---	---	---	---	8.2	7.5	7.8	---	---	---
16	---	---	---	---	---	---	8.0	7.6	7.7	---	---	---
17	---	---	---	---	---	---	7.9	7.6	7.7	---	---	---
18	---	---	---	---	---	---	8.2	7.6	7.8	---	---	---
19	---	---	---	---	---	---	7.9	7.7	7.8	---	---	---
20	---	---	---	---	---	---	7.9	7.8	7.8	---	---	---
21	---	---	---	---	---	---	8.1	7.8	7.9	---	---	---
22	---	---	---	---	---	---	8.2	7.8	7.9	---	---	---
23	---	---	---	---	---	---	8.2	7.8	7.9	---	---	---
24	---	---	---	---	---	---	8.4	7.6	8.0	---	---	---
25	---	---	---	---	---	---	8.3	7.6	7.9	---	---	---
26	---	---	---	---	---	---	8.0	7.7	7.8	---	---	---
27	---	---	---	8.1	7.7	7.8	---	---	---	---	---	---
28	---	---	---	8.2	7.7	7.8	---	---	---	---	---	---
29	---	---	---	8.3	7.7	7.8	---	---	---	7.9	7.3	7.5
30	---	---	---	8.4	7.7	7.9	---	---	---	8.0	7.4	7.5
31	---	---	---	8.4	7.7	7.9	---	---	---	7.8	7.4	7.5
MAX	---	---	---	8.4	7.7	7.9	8.4	7.8	8.1	8.0	7.4	7.5
MIN	---	---	---	8.1	7.7	7.8	7.9	7.5	7.7	7.8	7.3	7.5

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03072000 DUNKARD CREEK AT SHANNOPIN, PA--Continued

pH VALUES, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	7.8	7.3	7.5	7.7	7.6	7.6	7.1	7.0	7.0	7.1	6.9	7.0
2	7.6	7.3	7.4	7.6	7.5	7.6	7.1	7.0	7.1	7.0	6.9	7.0
3	7.5	7.3	7.3	7.7	7.5	7.6	7.1	7.0	7.0	7.0	6.8	6.9
4	7.4	7.2	7.3	7.7	7.5	7.6	7.1	7.0	7.0	6.9	6.8	6.9
5	7.3	7.2	7.2	8.1	7.6	7.7	7.0	6.9	7.0	7.0	6.9	6.9
6	7.3	7.2	7.2	8.3	7.6	7.8	7.0	6.9	6.9	7.0	6.9	6.9
7	7.3	7.2	7.2	8.6	7.6	7.8	6.9	6.9	6.9	7.1	7.0	7.0
8	7.3	7.2	7.2	8.3	7.6	7.8	6.9	6.8	6.9	7.0	6.8	7.0
9	7.3	7.2	7.2	8.6	7.7	7.9	6.8	6.7	6.8	7.0	6.8	6.9
10	7.3	7.2	7.2	8.6	7.7	8.0	6.8	6.7	6.8	7.2	6.8	7.0
11	7.5	7.2	7.3	8.4	7.7	7.9	7.3	6.7	7.0	7.2	7.1	7.2
12	---	---	---	8.3	7.7	7.8	7.4	7.2	7.3	7.2	7.1	7.2
13	7.7	7.6	7.7	8.1	7.5	7.7	7.3	7.2	7.2	7.2	7.0	7.1
14	7.7	7.6	7.6	7.9	7.5	7.6	7.2	7.1	7.2	7.2	7.1	7.1
15	7.6	7.5	7.5	7.7	7.4	7.5	7.2	7.0	7.1	7.2	7.0	7.1
16	7.6	7.5	7.6	7.7	7.4	7.5	7.1	7.0	7.0	7.2	6.9	7.1
17	7.5	7.5	7.5	7.8	7.4	7.6	7.1	6.9	7.0	7.7	7.0	7.4
18	7.5	7.5	7.5	7.8	7.5	7.6	7.4	7.0	7.1	7.4	7.0	7.4
19	7.6	7.4	7.5	7.7	7.5	7.5	7.6	7.1	7.6	7.1	6.5	6.9
20	7.5	7.4	7.5	7.6	7.4	7.5	7.5	7.4	7.4	7.0	5.3	6.0
21	7.7	7.5	7.6	7.6	7.4	7.5	7.4	7.2	7.3	5.3	4.9	5.1
22	7.7	7.5	7.6	7.5	7.3	7.4	7.2	7.1	7.1	7.3	5.0	6.4
23	7.7	7.4	7.5	7.4	7.2	7.3	7.1	6.9	7.0	---	---	---
24	8.0	7.5	7.6	7.4	7.3	7.3	7.0	6.9	6.9	---	---	---
25	8.3	7.5	7.7	7.5	7.3	7.3	7.2	6.9	7.0	---	---	---
26	8.0	7.4	7.7	7.3	7.2	7.3	7.2	7.1	7.2	---	---	---
27	7.8	7.5	7.6	7.3	7.2	7.2	7.3	7.2	7.3	---	---	---
28	7.7	7.5	7.7	7.3	7.2	7.2	7.3	7.1	7.2	---	---	---
29	7.6	7.5	7.5	7.3	6.9	7.1	7.2	7.1	7.2	---	---	---
30	7.7	7.5	7.6	7.0	6.8	6.9	7.2	7.1	7.1	---	---	---
31	---	---	---	7.1	6.9	7.0	7.1	7.0	7.0	---	---	---
MAX	8.3	7.6	7.7	8.6	7.7	8.0	7.6	7.4	7.6	7.7	7.1	7.4
MIN	7.3	7.2	7.2	7.0	6.8	6.9	6.8	6.7	6.8	5.3	4.9	5.1

MONONGAHELA RIVER BASIN

03072000 DUNKARD CREEK AT SHANNOPIN, PA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	16.0	14.0	15.5	14.0	9.0	11.0	7.0	6.0	6.5	.0	.0	.0
2	15.0	12.5	14.0	12.5	7.0	10.0	6.0	5.0	5.5	.5	.0	.0
3	14.5	12.0	13.0	12.0	5.5	8.5	5.5	4.0	4.5	2.0	.5	1.0
4	16.5	13.0	14.5	9.5	4.5	7.0	6.0	5.5	6.0	4.0	2.0	3.0
5	18.0	15.0	16.5	13.5	1.0	7.0	5.5	4.0	5.0	4.5	3.0	4.0
6	19.0	15.5	17.0	9.0	2.5	6.0	4.0	2.0	3.0	6.5	4.5	5.5
7	20.0	16.0	18.0	7.0	6.5	7.0	2.0	1.5	2.0	8.0	6.5	7.0
8	20.0	16.5	18.0	7.5	7.0	7.0	2.5	1.5	2.0	9.0	8.0	9.0
9	20.0	16.5	18.5	8.0	7.0	7.5	2.5	1.5	2.0	9.0	8.0	8.5
10	20.5	18.0	19.0	8.0	7.0	7.5	4.0	2.5	3.0	8.0	6.0	7.0
11	18.0	15.0	16.5	7.0	6.5	7.0	4.0	3.5	3.5	6.0	4.5	5.0
12	17.5	12.5	15.0	6.5	5.0	6.0	4.0	3.5	4.0	4.5	4.0	4.5
13	18.5	14.0	16.0	5.0	4.0	5.0	3.5	3.0	3.5	5.0	4.5	5.0
14	16.5	13.5	15.5	5.5	5.0	5.0	3.5	2.5	3.0	4.5	3.0	3.5
15	15.0	11.5	13.0	5.5	4.5	5.0	2.5	1.5	2.0	3.5	3.0	3.0
16	13.0	10.0	11.5	5.0	4.0	4.5	1.5	.5	1.0	4.0	3.5	3.5
17	19.0	9.0	12.5	4.0	2.5	3.5	1.0	.0	.5	4.0	3.5	4.0
18	21.0	4.0	11.0	2.5	1.5	2.0	1.0	.0	.5	4.0	3.5	3.5
19	13.0	10.0	11.5	3.0	1.0	2.0	1.5	.0	.5	3.5	3.0	3.5
20	11.5	9.0	10.0	3.5	2.0	2.5	1.0	.0	.5	3.0	2.0	2.5
21	10.0	7.5	9.0	4.0	2.5	3.5	2.0	1.0	1.5	2.0	1.0	1.5
22	12.5	2.5	8.5	5.0	4.0	4.5	2.5	1.0	1.5	2.5	1.5	2.0
23	12.5	7.5	11.0	5.5	5.0	5.0	3.5	2.5	3.0	4.0	2.5	3.0
24	14.5	3.5	8.5	5.0	3.0	4.0	4.0	3.5	3.5	5.0	4.0	4.5
25	12.0	8.0	9.5	3.0	2.0	2.5	5.0	4.0	4.5	4.5	3.5	4.0
26	10.0	8.0	8.5	4.5	2.5	3.5	5.0	4.5	4.5	3.5	3.0	3.5
27	11.5	3.5	9.0	4.5	3.5	4.0	4.5	3.5	4.0	---	---	---
28	8.0	1.5	5.0	5.0	3.5	4.0	3.5	2.5	3.0	3.5	3.5	3.5
29	---	---	---	6.5	5.0	6.0	2.5	1.0	1.5	4.5	3.5	4.0
30	17.5	3.5	10.0	7.0	6.5	6.5	1.5	1.0	1.0	5.5	4.5	5.0
31	20.0	4.5	11.5	---	---	---	1.0	.0	.5	5.0	4.0	4.5
MONTH	21.0	1.5	12.7	14.0	1.0	5.5	7.0	.0	2.8	9.0	.0	4.0

MONONGAHELA RIVER BASIN

03072000 DUNKARD CREEK AT SHANNOPIN, PA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	4.5	2.5	3.5	7.5	6.5	7.0	18.5	16.5	17.5	14.5	14.0	14.0
2	3.5	2.5	3.0	8.0	6.5	7.5	18.0	15.0	16.5	14.0	13.0	14.0
3	3.5	3.0	3.0	7.5	6.0	6.5	16.5	13.0	14.5	13.0	12.5	12.5
4	3.5	2.0	3.0	6.0	5.0	5.5	14.0	12.0	13.0	14.5	13.0	13.5
5	2.0	1.0	1.5	5.5	4.5	5.0	12.0	10.0	10.5	15.5	14.5	15.0
6	2.0	1.0	1.5	5.5	4.0	5.0	12.5	9.5	11.0	15.0	13.0	14.0
7	3.0	2.0	2.5	6.5	5.0	6.0	13.0	9.5	11.0	15.5	14.0	14.5
8	3.5	3.0	3.0	7.5	6.5	7.5	12.5	11.0	12.0	15.5	15.0	15.0
9	4.0	2.5	3.0	8.5	7.5	8.0	14.0	12.5	13.5	16.0	14.0	15.0
10	4.0	3.0	3.5	8.5	6.5	8.0	13.5	11.5	12.5	15.0	14.0	14.5
11	5.0	3.5	4.5	6.5	3.5	5.0	13.5	10.5	12.0	15.5	15.0	15.5
12	5.5	5.0	5.0	3.5	1.0	2.5	13.0	10.5	11.5	15.5	14.5	15.0
13	5.5	4.5	5.0	2.5	.5	1.5	13.5	11.0	12.0	15.5	14.0	14.5
14	4.5	4.0	4.5	3.5	1.5	2.5	14.0	12.5	13.5	17.5	15.5	16.5
15	4.5	3.5	4.0	4.5	3.0	4.0	14.5	12.5	13.5	19.5	17.5	18.5
16	4.5	3.5	4.0	4.5	3.0	4.0	15.0	14.0	14.5	21.5	19.5	20.5
17	4.5	3.5	4.0	5.5	4.0	5.0	15.5	14.5	15.0	22.0	20.0	21.0
18	6.0	4.5	5.5	6.0	5.0	5.5	15.0	12.0	13.5	23.5	20.0	22.0
19	6.5	6.0	6.0	8.0	6.0	7.0	14.5	13.0	13.5	23.5	20.0	22.0
20	6.0	6.0	6.0	8.5	8.0	8.0	13.0	10.5	11.5	24.0	21.0	22.5
21	6.0	6.0	6.0	8.5	8.0	8.5	12.0	10.5	11.5	25.0	22.0	23.5
22	6.0	5.5	5.5	8.0	5.5	7.0	13.0	11.5	12.0	24.5	19.5	22.0
23	6.5	6.0	6.0	5.5	4.5	5.0	14.0	11.5	13.0	22.5	19.5	21.0
24	6.0	5.0	5.5	6.0	5.5	5.5	13.5	11.5	12.5	22.5	19.0	20.5
25	6.0	5.0	5.5	6.5	5.0	6.0	15.0	13.0	14.0	21.0	18.5	20.0
26	6.5	5.5	6.0	8.5	6.0	7.5	16.0	14.5	15.5	20.0	17.5	18.5
27	6.5	5.5	6.0	11.5	8.5	10.5	15.5	12.5	14.0	19.5	18.0	18.5
28	7.0	6.0	7.0	14.0	11.5	13.0	14.5	11.5	13.0	22.0	19.5	21.0
29	---	---	---	15.5	14.0	15.0	14.5	11.5	13.0	24.0	20.0	22.0
30	---	---	---	16.5	14.5	15.5	14.5	13.0	14.0	25.0	21.5	23.0
31	---	---	---	18.0	15.5	16.5	---	---	---	25.0	22.0	23.5
MONTH	7.0	1.0	4.4	18.0	.5	7.1	18.5	9.5	13.2	25.0	12.5	18.2

MONONGAHELA RIVER BASIN

03072000 DUNKARD CREEK AT SHANNOPIN, PA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	24.5	22.0	23.0	19.5	18.5	19.0	24.5	21.5	23.0	23.5	20.0	22.0
2	24.0	21.0	22.5	21.0	18.5	19.5	24.5	20.5	23.0	23.5	20.5	22.0
3	23.0	21.0	22.0	22.5	19.5	21.0	24.5	21.0	23.0	23.0	19.5	21.5
4	21.5	19.0	20.5	22.0	20.5	21.0	25.0	21.0	23.5	22.5	19.5	21.0
5	20.5	17.5	18.5	22.5	20.5	21.5	26.0	22.0	24.0	23.0	19.0	21.0
6	18.0	16.0	17.0	23.5	20.5	22.0	26.0	22.0	24.5	23.5	18.5	21.5
7	17.5	16.0	17.0	24.5	21.5	23.0	26.5	22.5	24.5	22.0	21.0	21.5
8	18.5	15.0	17.0	25.0	23.0	24.0	26.5	23.0	25.0	21.0	18.0	19.5
9	17.5	16.5	16.5	25.5	23.5	24.5	27.0	23.5	25.5	18.0	16.0	17.5
10	19.5	16.5	17.5	26.0	23.5	24.5	26.0	24.0	24.5	19.0	15.5	17.0
11	19.5	18.5	19.0	25.0	22.0	23.5	26.0	23.0	24.5	20.0	16.5	18.0
12	---	---	---	25.0	21.5	23.0	25.5	23.0	24.5	21.5	17.0	19.5
13	21.0	19.5	20.0	25.5	21.5	23.5	25.5	23.0	24.5	22.5	18.5	20.5
14	19.5	18.5	19.0	25.5	23.0	24.0	24.5	23.0	23.5	23.0	18.5	21.0
15	19.5	18.0	19.0	24.5	23.5	24.0	25.0	22.0	23.5	24.0	20.0	22.0
16	20.0	18.5	19.0	25.0	23.0	24.0	25.5	23.0	24.0	24.0	21.0	22.5
17	19.5	18.5	19.0	26.0	23.5	24.5	25.5	23.5	24.5	22.5	21.0	22.0
18	21.0	18.0	19.5	26.5	23.0	24.5	26.0	23.0	24.5	24.0	19.5	22.0
19	21.0	19.5	20.0	26.5	23.0	25.0	25.0	22.5	23.5	24.0	20.5	22.0
20	21.0	19.0	20.0	25.5	24.0	24.5	23.5	20.0	22.0	24.0	20.5	22.0
21	23.0	19.5	21.0	27.0	23.5	25.0	24.0	20.5	22.5	22.5	21.0	21.5
22	24.0	21.5	22.5	28.0	25.0	26.5	25.0	22.0	23.5	22.0	21.0	21.5
23	24.5	22.5	23.5	27.5	25.5	26.0	26.5	23.0	25.0	---	---	---
24	26.5	22.5	24.5	26.0	24.0	25.0	25.0	22.5	24.0	---	---	---
25	27.0	23.5	25.5	25.5	21.5	24.0	24.5	21.5	23.0	---	---	---
26	26.5	25.0	25.5	25.5	22.0	24.0	26.0	23.0	24.5	---	---	---
27	25.0	23.0	24.0	25.5	21.5	23.5	25.5	22.5	24.0	---	---	---
28	23.0	20.0	21.0	25.0	22.0	24.0	25.5	22.5	24.0	---	---	---
29	20.0	19.0	19.5	25.0	22.5	24.0	24.0	23.0	23.5	---	---	---
30	20.0	19.0	19.5	26.0	23.5	24.5	24.5	21.5	23.0	---	---	---
31	---	---	---	25.5	22.5	24.0	24.5	22.0	23.5	---	---	---
MONTH	27.0	15.0	20.4	28.0	18.5	23.6	27.0	20.0	23.9	24.0	15.5	20.9

MONONGAHELA RIVER BASIN

03072655 MONONGAHELA RIVER NEAR MASONTOWN, PA

LOCATION.--Lat 39°49'30", long 79°55'23", Greene County, Hydrologic Unit 05020005, on left bank, 84 ft upstream from Lock and Dam at Grays Landing, 0.9 mi upstream from Masontown, 1.2 mi upstream from Whitley Creek, 5.3 mi downstream from Dunkard Creek, 7.6 mi downstream from Cheat River, at mile 81.9.

DRAINAGE AREA.--4,440 mi².

PERIOD OF RECORD.--October 1995 to current year. Published as "at Greensboro" (Station 03072500) October 1938 to September 1995. Prior to January 1939 monthly discharge only, published in WSP 1305.

REVISED RECORDS.--WSP 1113: 1939 (M), 1941 (M). WSP 1435: 1939. WSP 1907: 1936 (M), 1955 (M).

GAGE.--Water-stage recorder and concrete dam control. Datum of gage is 769.00 ft above sea level (U.S. Army Corps of Engineers bench mark). Prior to Nov. 9, 1990, at datum 1.45 ft lower.

REMARKS.--Records good above 5,000 ft³/s, fair below, except those below 1,000 ft³/s, which are poor. Flow regulated since 1938 by Tygart Lake 69 mi upstream, since 1926 by Lake Lynn 11 mi upstream, and since 1990 by Stonewall Jackson Lake 120.6 mi upstream, combined capacity, 432,000 acre-ft. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 1888 reached a stage of about 36 ft, from high-water profile by U.S. Army Corps of Engineers. Flood of Mar. 18, 1936, reached a stage of 28.4 ft, discharge, 130,000 ft³/s.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6830	2630	12500	6820	16300	22900	10300	7270	3210	37800	1510	929
2	5550	5850	12000	6360	12800	21100	9680	23800	3090	31000	1120	1620
3	4380	9610	12500	4220	10200	20000	7050	21300	1690	20900	2260	1320
4	3550	10900	8400	6490	10600	18500	5680	17000	2010	12300	1390	1340
5	1630	5330	8540	12300	13400	14500	6940	25500	1670	8040	993	1530
6	3420	5630	8200	15400	15200	10600	8460	23500	2150	6410	1400	1380
7	1840	12900	6180	19200	15000	11100	8070	20100	1170	4990	1120	1610
8	1420	20000	8540	41500	11500	9690	6800	18100	2200	5220	1270	1780
9	2670	18900	6580	47000	13500	19600	8280	23200	970	6710	677	3240
10	1830	17300	6820	34900	13900	26300	12900	20500	2390	6710	2270	2250
11	1610	15800	13000	26100	12300	21600	14800	16300	3570	4750	4450	3140
12	1650	10100	17400	26600	12500	18800	11100	15200	4060	3220	4280	1980
13	1740	8760	16700	23400	14100	16600	9310	14100	10500	4330	3150	1550
14	1560	11200	10700	21300	14600	12200	8490	11900	12400	2970	1640	2120
15	1790	15400	9610	17100	12500	11100	6990	9460	10900	2560	2490	1840
16	1590	15400	8370	13900	12200	9050	6230	9120	29800	3120	4280	1500
17	1600	10600	7500	12600	11800	7470	6210	6380	28800	2490	4280	1270
18	1290	9710	6090	8790	15700	7570	5480	5780	26600	1560	7830	1860
19	1710	7630	5680	10800	26800	25000	10400	3850	29300	1900	6150	1490
20	1710	4760	3580	9940	24900	22300	31900	4400	49400	1950	7390	2140
21	2000	7520	3320	9190	24500	32300	28800	3950	31400	3180	5340	1850
22	1460	8610	3500	10300	22700	39200	28700	3890	22400	2330	2260	1850
23	2420	13600	4780	12800	22300	30000	23800	2650	14300	2010	3330	1990
24	1680	13800	3130	20600	30000	26200	17300	3180	11600	2040	2500	1850
25	1840	12100	6040	17500	23700	21700	9250	6930	7300	3490	2040	2240
26	1810	9520	7490	12500	18500	16900	9020	3880	4690	1930	1570	1310
27	1730	5080	10800	13400	17500	14100	15600	2970	7650	2750	989	2890
28	1480	9010	7380	20600	20800	11300	12500	3730	22400	2190	1500	1920
29	3410	6230	9440	24600	---	14000	10300	3080	45800	2980	1530	1690
30	1450	5770	9930	18400	---	10200	10500	2580	41900	1390	918	1830
31	1480	---	5450	16200	---	8730	---	1840	---	1880	1550	---
TOTAL	70130	309650	260150	540810	469800	550610	360840	335440	435320	195100	83477	55309
MEAN	2262	10320	8392	17450	16780	17760	12030	10820	14510	6294	2693	1844
MAX	6830	20000	17400	47000	30000	39200	31900	25500	49400	37800	7830	3240
MIN	1290	2630	3130	4220	10200	7470	5480	1840	970	1390	677	929
†	+22	-74	-83	+13	-59	+77	+22	+91	+29	-28	+17	-40

† Change in contents, equivalent in cubic feet per second, in Tygart Lake, Stonewall Jackson Lake and Lake Lynn. Records of contents in Lake Lynn furnished by Allegheny Power Service Corp. Records of contents in Tygart Lake and Stonewall Jackson Lake furnished by U.S. Army Corps of Engineers.

MONONGAHELA RIVER BASIN

03072655 MONONGAHELA RIVER NEAR MASONTOWN, PA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	3442	6751	11220	11960	14290	16190	11820	9144	5860	4054	3886	2748
MAX	15260	29580	26520	24690	30880	37830	23180	29230	22100	13240	15120	12470
(WY)	1980	1986	1973	1952	1994	1963	1940	1996	1981	1958	1956	1971
MIN	439	369	1648	1840	3781	6192	3781	1836	926	676	592	482
(WY)	1954	1954	1966	1977	1941	1987	1946	1982	1965	1966	1965	1946

SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

FOR 1998 WATER YEAR

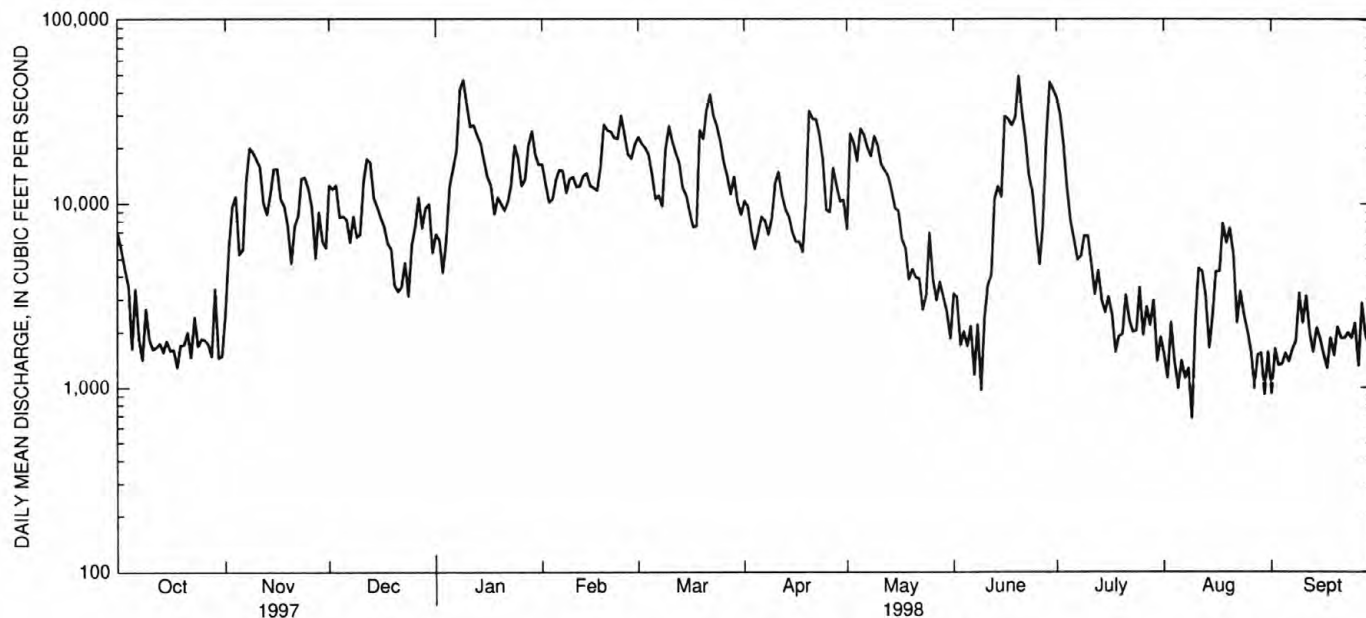
WATER YEARS 1939 - 1998

ANNUAL TOTAL	2767882		3666636									
ANNUAL MEAN	7583	†-80	10050	†-.47								
HIGHEST ANNUAL MEAN										8411		
LOWEST ANNUAL MEAN										13010		1994
HIGHEST DAILY MEAN										4995		1966
LOWEST DAILY MEAN										154000		Nov 5 1985
ANNUAL SEVEN-DAY MINIMUM										177		Sep 11 1988
INSTANTANEOUS PEAK FLOW										267		Nov 4 1953
INSTANTANEOUS PEAK STAGE										a220000		Nov 5 1985
10 PERCENT EXCEEDS										b39.39		Nov 5 1985
50 PERCENT EXCEEDS										21000		
90 PERCENT EXCEEDS										4800		
										1030		

† Change in contents, equivalent in cubic feet per second, in Tygart Lake, Stonewall Jackson Lake and Lake Lynn. Records of contents in Lake Lynn furnished by Allegheny Power Service Corp. Records of contents in Tygart Lake and Stonewall Jackson Lake furnished by U.S. Army Corps of Engineers.

a From rating curve extended above 131,000 ft³/s.

b From outside floodmarks, datum then in use.



October 1, 1997 to September 30, 1998

MONONGAHELA RIVER BASIN

03074500 REDSTONE CREEK AT WALTERSBURG, PA

LOCATION.--Lat 39°58'48", long 79°45'52", Fayette County, Hydrologic Unit 05020005, on right bank, 15 ft upstream from highway bridge at Waltersburg, 400 ft upstream from Bolden Run, and 0.9 mi upstream from Allen Run.

DRAINAGE AREA.--73.7 mi².

PERIOD OF RECORD.--October 1942 to current year. Monthly discharge only for October 1942, published in WSP 1305.

REVISED RECORDS.--WSP 1435: 1943-45 (M), 1946, 1947 (M), 1948 (P), 1949-50 (M), 1951 (P), 1952 (M).

GAGE.--Water-stage recorder. Datum of gage is 882.28 ft above sea level. Prior to Nov. 15, 1973, nonrecording gage 15 ft downstream and Nov. 15, 1973 to Sept. 30, 1997, at present site at datum 1.00 ft. higher.

REMARKS.--Records good except for estimated daily discharges, which are fair. Some regulation at low flow by mine pumpage into stream above station. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a base discharge of 1,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 7	0845	*2,260	*7.62	Jan. 8	1630	1,020	5.00
Jan. 7	2230	1,250	5.57				

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	50	50	272	e45	109	272	176	106	76	60	e33	20
2	39	75	176	e50	100	267	133	109	37	34	e25	20
3	33	51	138	e80	92	254	115	103	53	e34	e20	20
4	30	42	131	99	111	214	123	114	37	e28	e17	20
5	28	37	114	95	275	190	105	153	35	e27	e16	19
6	26	34	99	110	265	164	95	115	35	e26	e16	58
7	25	822	89	329	213	150	88	105	31	e25	e15	68
8	25	539	80	831	178	190	110	146	31	e50	e14	35
9	24	317	77	547	152	293	250	119	32	e100	e13	30
10	24	210	120	333	135	261	675	104	37	e60	e13	25
11	24	154	172	227	128	203	324	106	38	e43	e13	23
12	23	125	146	178	132	173	217	101	48	e33	e16	22
13	22	100	130	170	125	153	171	85	151	e28	e25	21
14	22	187	113	135	114	141	145	75	96	e25	e48	21
15	23	232	98	125	103	121	124	66	66	e23	e25	20
16	21	168	87	125	98	107	118	63	90	e22	e16	21
17	e19	121	79	119	104	98	107	57	79	e30	e16	21
18	e18	101	71	126	226	152	91	51	55	e22	e20	81
19	e18	93	67	114	334	170	310	47	50	e18	e27	58
20	e17	83	63	107	280	148	350	51	47	e17	e37	49
21	e17	77	59	98	246	219	214	43	41	e16	e45	48
22	e17	107	63	92	204	262	173	40	60	e27	e28	35
23	e16	86	67	137	247	210	144	38	43	e45	e20	28
24	22	77	67	159	391	197	124	37	38	e74	59	37
25	47	71	83	142	285	171	110	49	34	e50	40	31
26	29	70	77	125	230	155	164	37	33	e35	26	27
27	32	65	e70	113	205	144	211	35	33	e27	24	25
28	27	127	e64	172	274	134	138	33	34	e23	23	24
29	25	133	e58	144	---	122	123	32	48	e20	23	23
30	25	199	e52	135	---	109	112	36	104	e17	22	23
31	24	---	e47	122	---	99	---	36	---	e34	21	---
TOTAL	792	4553	3029	5384	5356	5543	5340	2292	1592	1073	756	953
MEAN	25.5	152	97.7	174	191	179	178	73.9	53.1	34.6	24.4	31.8
MAX	50	822	272	831	391	293	675	153	151	100	59	81
MIN	16	34	47	45	92	98	88	32	31	16	13	19
CFSM	.35	2.06	1.33	2.36	2.60	2.43	2.42	1.00	.72	.47	.33	.43
IN.	.40	2.30	1.53	2.72	2.70	2.80	2.70	1.16	.80	.54	.38	.48

e Estimated.

MONONGAHELA RIVER BASIN

03074500 REDSTONE CREEK AT WALTERSBURG, PA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1943 - 1998 BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	50.1	70.6	116	134	159	193	161	127	80.8	56.2	50.0	48.7
MAX	225	459	308	284	376	470	310	274	413	187	172	161
(WY)	1980	1986	1973	1994	1986	1994	1948	1996	1972	1990	1980	1987
MIN	11.2	19.0	14.2	23.1	33.0	45.5	49.2	27.3	15.4	9.59	12.4	8.92
(WY)	1964	1967	1961	1967	1954	1969	1971	1963	1962	1962	1962	1991

SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

FOR 1998 WATER YEAR

WATER YEARS 1943 - 1998

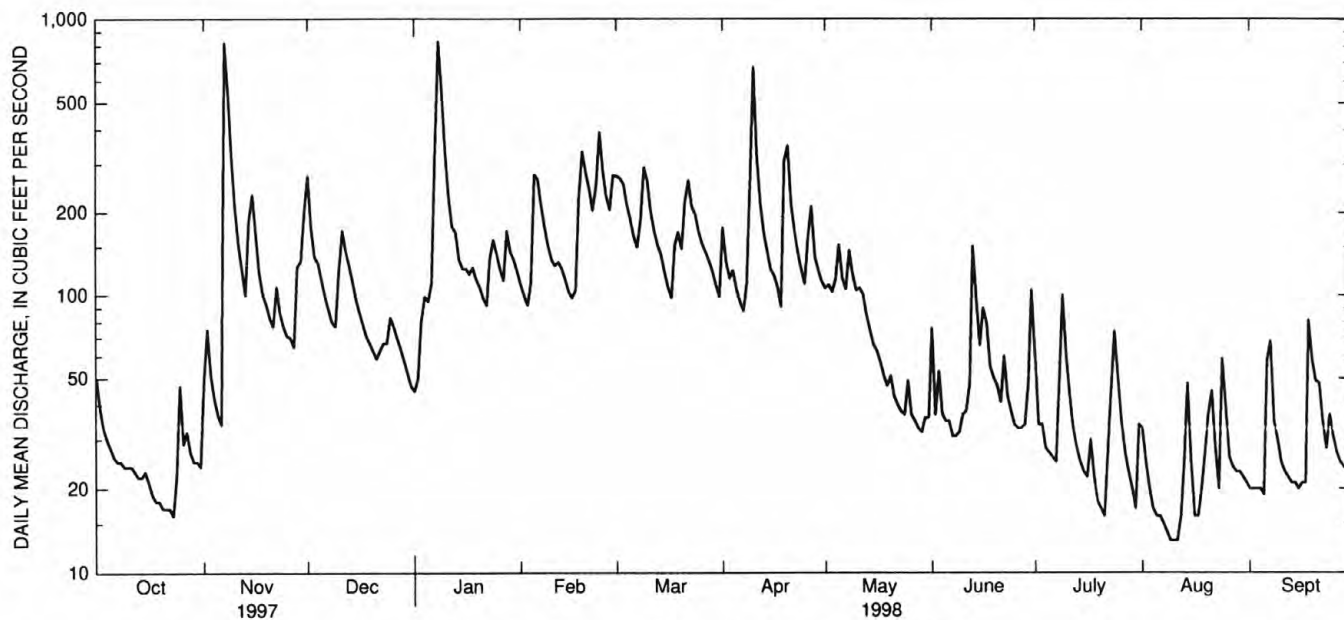
ANNUAL TOTAL	35151	36663	104	
ANNUAL MEAN	96.3	100	166	1994
HIGHEST ANNUAL MEAN			44.2	1954
LOWEST ANNUAL MEAN			6620	Jun 23 1972
HIGHEST DAILY MEAN	1120	Mar 2	831	Jan 8
LOWEST DAILY MEAN	e16	Jul 23	e13	Aug 9-11
ANNUAL SEVEN-DAY MINIMUM	a17	Oct 17	a14	Aug 5
INSTANTANEOUS PEAK FLOW			2260	Nov 7
INSTANTANEOUS PEAK STAGE			7.62	Nov 7
INSTANTANEOUS LOW FLOW				b14.83
ANNUAL RUNOFF (CFSM)	1.31	1.36		1.41
ANNUAL RUNOFF (INCHES)	17.74	18.51		19.09
10 PERCENT EXCEEDS	182	213	212	
50 PERCENT EXCEEDS	62	71	62	
90 PERCENT EXCEEDS	24	21	21	

a Computed using estimated discharges.

b From peak-stage indicator.

c Minimum observed.

e Estimated.



October 1, 1997 to September 30, 1998

MONONGAHELA RIVER BASIN

03075070 MONONGAHELA RIVER AT ELIZABETH, PA

LOCATION.--Lat 40°15'44", long 79°54'05", Allegheny County, Hydrologic Unit 05020005, on right bank 30 ft landward from upstream end of guide wall, 1,050 ft upstream from dam at lock 3 at Elizabeth, 0.4 mi downstream from Lobbs Creek, at mile 24.0.

DRAINAGE AREA.--5,340 mi².

PERIOD OF RECORD.--October 1933 to current year. Published as "at Charleroi" (station 03075000) October 1933 to September 1976. Monthly discharge prior to 1940, adjusted for reservoir contents, published in WSP 1305. Records for March 1886 to March 1905 (high-water periods, only), published in WSP 169, are unreliable and should not be used (peak discharge of July 11, 1888, as published in WSP 183, is still considered reliable).

REVISED RECORDS.--WSP 758: Drainage area. WSP 783: 1888 (M). WSP 1435: 1934, 1936. See also "PERIOD OF RECORD."

GAGE.--Water-stage recorder and concrete dam control. Datum of gage is 717.90 ft above sea level (U.S. Army Corps of Engineers bench mark). From Oct. 1, 1967 to Sept. 30, 1976, at site 17.5 mi upstream at datum 15.70 ft higher. Prior to Oct. 1, 1967, water-stage recorder at site 17.9 mi upstream at datum 17.43 ft higher. Oct. 1, 1965 to Sept. 30, 1967, auxiliary staff gage, Apr. 14, 1966 to Sept. 30, 1967, auxiliary water-stage recorder and Oct. 1, 1967 to Nov. 4, 1990, water-stage recorder at present site at datum 7.60 ft higher.

REMARKS.--Records good, except for estimated daily discharges, and those below 2,500 ft³/s, which are fair. Flow regulated by locks above station, since 1938 by Tygart Lake, since 1926 by Lake Lynn, and since 1990 by Stonewall Jackson Lake, combined capacity, 432,000 acre-ft. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6800	1970	12100	6010	16200	23400	10600	8960	3250	45100	1620	827
2	5080	4920	12400	6980	14000	23100	10500	19500	3290	36200	1630	1480
3	4170	8180	13100	4890	11200	20500	8150	28000	2430	24100	1810	1240
4	3360	11100	8390	5000	9880	19500	6230	17700	1790	13800	1850	1350
5	2780	5490	8560	11800	14400	15600	6390	25700	2290	8600	916	1500
6	2320	4690	8680	13800	16300	11800	7910	25400	1910	6450	1340	1250
7	2240	13400	6130	18300	17200	11200	9040	21000	1580	6010	1350	1600
8	1790	21400	8600	43900	14000	9940	6280	18200	2010	5290	1270	1850
9	1670	20500	6070	58700	13900	19600	7930	23600	1730	6140	1010	2570
10	2220	17400	6910	45400	14900	28300	14000	21700	1680	7320	1260	2890
11	1530	16000	12200	29100	13700	24700	15900	16600	3810	5180	3710	2320
12	1560	10800	17000	27700	12800	20300	13000	15800	2820	3750	4150	2660
13	1510	8670	17200	24500	15100	16900	10300	14900	9030	3250	3070	1800
14	1780	10700	11300	22700	14900	14100	7480	11800	14600	3530	2270	1600
15	1410	14900	9760	18000	13400	11700	8110	10300	9920	2450	1850	2260
16	1530	16500	8270	14500	12400	10500	7010	9610	26100	3140	3970	1900
17	1420	11200	7550	13600	13600	7870	6610	6490	31700	2610	3570	1160
18	1470	9590	6450	9360	14400	6640	5660	6470	26800	2000	6850	2230
19	1230	8000	6160	10700	29800	23000	8370	3450	26500	1880	5920	1170
20	1570	4900	4250	10500	27300	24300	29500	4370	52100	1810	6990	2220
21	1960	6720	3000	9090	26900	29700	34100	4140	38100	2140	4900	1820
22	1410	7770	3150	10500	24300	47000	29600	3890	24500	3350	3370	2250
23	1690	12800	4810	11300	22600	36200	26900	3080	15400	1790	2530	2280
24	1940	13700	3610	21400	32200	29300	18000	3250	11500	2180	3340	1670
25	1840	12000	5080	18300	28200	23600	11200	6940	8170	2810	2170	2530
26	1800	9530	7530	13300	19900	18200	8960	4380	4960	2450	2290	1380
27	1900	5850	11000	13800	18100	15700	15000	2710	7430	2060	1300	1490
28	1440	7590	7850	17600	21000	11500	13900	3250	19500	2240	1340	3100
29	2460	7680	8180	27200	---	14700	12600	3740	46800	2470	1390	1540
30	1970	6540	10300	18900	---	11100	9380	2720	53700	2300	1440	1560
31	1470	---	6440	16600	---	9300	---	2260	---	2040	1400	---
TOTAL	67320	310490	262030	573430	502580	589250	378610	349910	455400	214440	81876	55497
MEAN	2172	10350	8453	18500	17950	19010	12620	11290	15180	6917	2641	1850
MAX	6800	21400	17200	58700	32200	47000	34100	28000	53700	45100	6990	3100
MIN	1230	1970	3000	4890	9880	6640	5660	2260	1580	1790	916	827
†	+22	-74	-83	+13	-59	+77	+22	+91	+29	-28	+17	-40

† Change in contents, equivalent in cubic feet per second, in Tygart Lake, Stonewall Jackson Lake and Lake Lynn. Records of contents in Lake Lynn furnished by Allegheny Power Service Corp. Records of contents in Tygart Lake and Stonewall Jackson Lake furnished by U.S. Army Corps of Engineers.

e Estimated.

MONONGAHELA RIVER BASIN

03075070 MONONGAHELA RIVER AT ELIZABETH, PA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1934 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	3648	6862	11850	13700	15560	18270	13420	10310	6396	4376	4200	2967
MAX	16770	33750	29760	37480	33170	41930	26500	33610	24840	13570	17890	13300
(WY)	1980	1986	1973	1937	1994	1963	1940	1996	1981	1958	1956	1945
MIN	475	401	1991	2249	3210	6636	4478	2128	1009	915	812	581
(WY)	1954	1954	1966	1977	1934	1987	1971	1982	1936	1966	1957	1936

SUMMARY STATISTICS FOR 1997 CALENDAR YEAR FOR 1998 WATER YEAR WATER YEARS 1934 - 1998

ANNUAL TOTAL	2886072		3840833									
ANNUAL MEAN	7907	f-8.0	10520	f-.47								
HIGHEST ANNUAL MEAN									9270			
LOWEST ANNUAL MEAN									14400			1996
HIGHEST DAILY MEAN									5282			1954
LOWEST DAILY MEAN									158000			Jan 20 1996
ANNUAL SEVEN-DAY MINIMUM									206			Jun 29 1936
INSTANTANEOUS PEAK FLOW									301			Oct 1 1936
INSTANTANEOUS PEAK STAGE									bcl78000			Nov 6 1985
10 PERCENT EXCEEDS									30.39			Jan 20 1996
50 PERCENT EXCEEDS									22500			
90 PERCENT EXCEEDS									5240			
									1150			

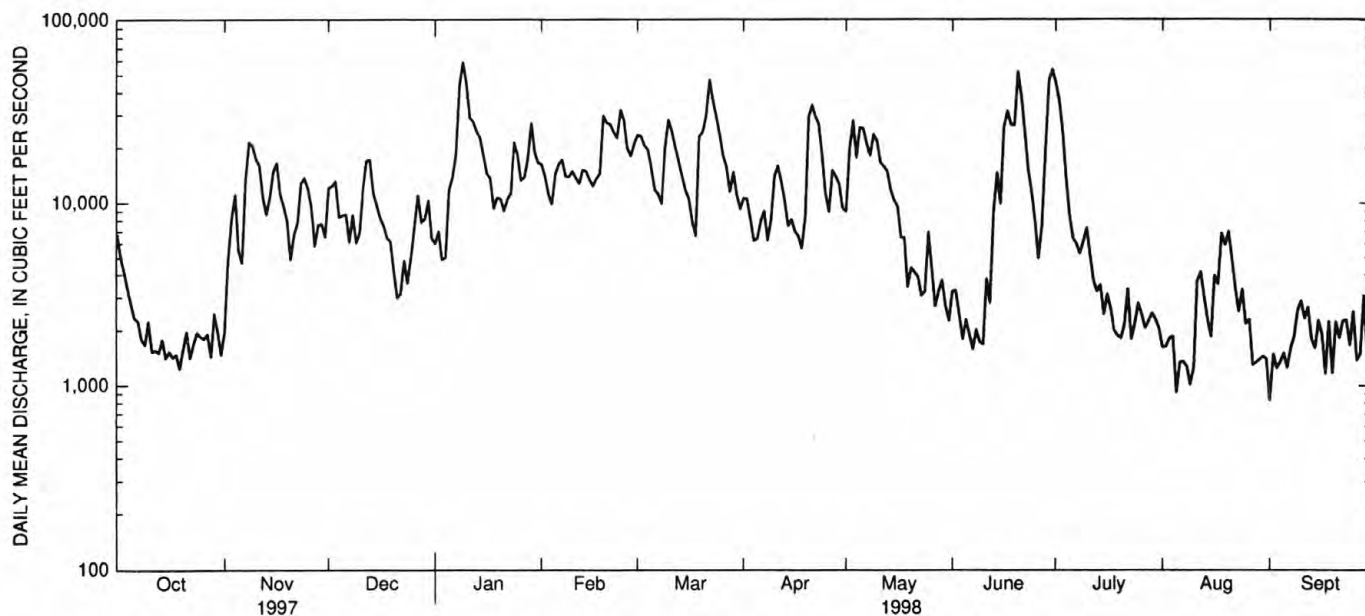
f Change in contents, equivalent in cubic feet per second, in Tygart Lake, Stonewall Jackson Lake and Lake Lynn. Records of contents in Lake Lynn furnished by Allegheny Power Service Corp. Records of contents in Tygart Lake and Stonewall Jackson Lake furnished by U.S. Army Corps of Engineers.

a Computed using estimated discharges.

b From rating curve extended above 110,000 ft³/s.

c Gage height 23.60 ft, datum then in use.

e Estimated.



October 1, 1997 to September 30, 1998

MONONGAHELA RIVER BASIN

03076500 YOUGHIOGHENY RIVER AT FRIENDSVILLE, MD

LOCATION.--Lat 39°39'13", long 79°24'31", 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 mi².

PERIOD OF RECORD.--August 1898 to December 1904 and October 1940 to current year. Annual maximum, water years 1905, 1923-31, 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 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, 4,470 ft³/s, Apr. 20, gage height, 5.46 ft; minimum discharge, 44 ft³/s, Sep 6, 15.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	245	147	1700	685	603	2160	628	608	302	2730	233	55
2	246	528	1260	716	572	2010	643	917	243	1250	116	50
3	255	671	1010	416	545	1650	545	845	185	813	146	48
4	232	413	918	579	576	1320	422	832	158	606	87	123
5	133	353	1020	1100	620	1080	460	2420	213	442	80	115
6	269	354	793	1190	907	943	396	2020	212	435	104	47
7	236	2500	628	1490	887	711	335	1410	138	322	132	130
8	131	2580	676	3270	811	1030	347	1240	194	388	97	75
9	251	1860	728	3720	662	1960	658	1590	123	605	133	69
10	177	1600	801	2900	496	2330	1310	1240	233	504	190	66
11	95	1040	1890	1960	512	2070	985	875	234	537	308	152
12	88	812	1440	1490	969	1730	743	949	576	231	177	101
13	150	889	896	1300	1400	1330	606	677	1050	253	128	53
14	135	695	666	1180	1000	741	520	686	1010	307	175	191
15	157	1300	876	999	759	622	464	551	859	159	103	65
16	95	983	844	977	652	657	417	503	2440	283	192	54
17	230	706	753	721	691	682	472	758	2440	318	302	50
18	79	644	768	681	2680	753	352	590	1900	209	562	117
19	70	579	664	621	3330	1960	1540	363	1770	167	332	54
20	98	520	366	602	2780	1400	3910	389	1610	270	280	58
21	130	513	327	589	2760	2110	2000	328	848	257	281	171
22	71	1260	678	494	2070	2040	1220	436	795	241	174	207
23	48	1270	754	760	1770	1630	890	325	622	156	143	135
24	95	965	851	1410	1540	1330	771	234	519	274	242	98
25	87	767	1160	1060	1630	1160	636	621	498	170	205	144
26	121	599	1140	842	1320	1120	599	381	450	128	213	76
27	206	576	710	729	1050	1010	1440	293	317	247	230	61
28	215	529	601	721	1350	735	946	256	568	169	247	169
29	160	561	819	677	---	615	720	370	1150	149	75	75
30	109	721	824	820	---	674	641	203	1030	95	106	94
31	121	---	740	704	---	626	---	224	---	191	132	---
TOTAL	4735	26935	27301	35403	34942	40189	25616	23134	22687	12906	5925	2903
MEAN	153	898	881	1142	1248	1296	854	746	756	416	191	96.8
MAX	269	2580	1890	3720	3330	2330	3910	2420	2440	2730	562	207
MIN	48	147	327	416	496	615	335	203	123	95	75	47
†	-68.1	82.2	-91.3	-16.3	126	76.6	112	-13.0	20.2	-91.3	-83.2	-42.0
MEAN±	85	980	790	1126	1374	1373	966	733	776	325	108	54.8
CFSM±	0.29	3.32	2.68	3.82	4.66	4.65	3.27	2.48	2.63	1.10	0.36	0.19
IN±	0.33	3.70	3.09	4.40	4.85	5.36	3.65	2.86	2.93	1.27	0.42	0.21

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1898 - 1905, 1941 - 1998, BY WATER YEAR (WY)

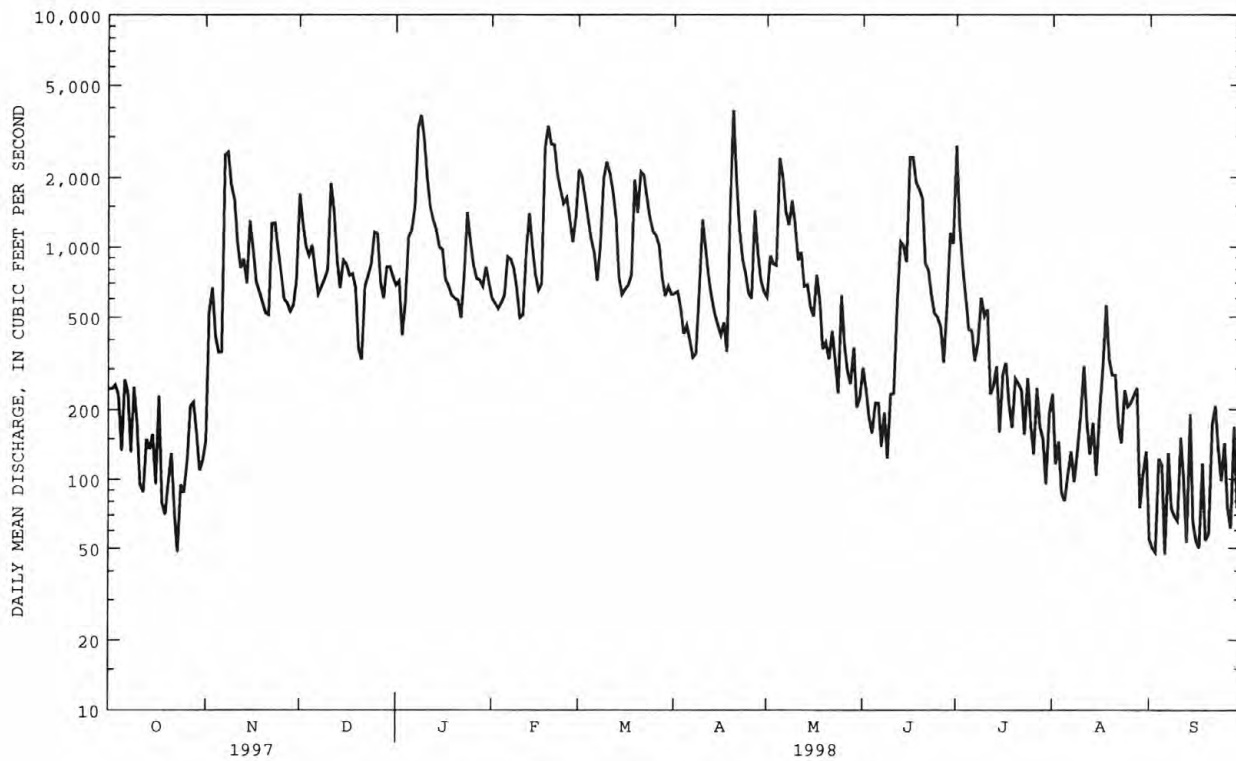
	MEAN	284	508	860	887	995	1229	937	700	483	371	241
MAX	1103	2190	2147	1886	2277	2644	2231	1888	1823	1335	1319	1059
(WY)	1955	1986	1903	1996	1903	1963	1901	1996	1903	1990	1956	1996
MIN	50.2	55.7	145	140	337	285	327	176	84.2	64.6	51.0	49.8
(WY)	1992	1905	1944	1981	1954	1990	1995	1982	1969	1991	1991	1991

† 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 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1898 - 1905 1941 - 1998	
ANNUAL TOTAL	216291		262676			
ANNUAL MEAN	593		720		647	
ANNUAL MEAN ^a	592		714		650	
HIGHEST ANNUAL MEAN					1052	1903
LOWEST ANNUAL MEAN					375	1954
HIGHEST DAILY MEAN	3780	Mar 6	3910	Apr 20	11200	Jan 19 1996
LOWEST DAILY MEAN	48	Oct 23	47	Sep 6	8.2	Sep 11 1966
ANNUAL SEVEN-DAY MINIMUM	84	Oct 18	81	Sep 1	29	Sep 21 1972
INSTANTANEOUS PEAK FLOW			4470	Apr 20	a16100	Jan 19 1996
INSTANTANEOUS PEAK STAGE			5.46	Apr 20	b14.20	Mar 29 1924
INSTANTANEOUS LOW FLOW			44	Sept 6, 15	UNKNOWN	
ANNUAL RUNOFF (CFSM)	2.01		2.44		2.19	
ANNUAL RUNOFF (CFSM) ^a	2.01		2.42		2.20	
ANNUAL RUNOFF (INCHES)	27.27		33.12		29.78	
ANNUAL RUNOFF (INCHES) ^a	27.23		32.83		29.92	
10 PERCENT EXCEEDS	1170		1620		1440	
50 PERCENT EXCEEDS	441		590		412	
90 PERCENT EXCEEDS	123		105		107	

^a Adjusted for change in reservoir contents since October 1940.^a From rating curve extended above 5,800 ft³/s on basis of slope-area measurement of peak flow.^b From floodmarks.

DAILY MEAN DISCHARGE - 1998 WATER YEAR

MONONGAHELA RIVER BASIN

03078000 CASSELMAN RIVER AT GRANTSVILLE, MD

LOCATION.--Lat 39°42'08", long 79°08'12", 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 north-east of Grantsville.

DRAINAGE AREA.--62.5 mi².

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 (backwater), which are poor. 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 FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 8	1900	1,230	3.76	Mar. 8	1945	1,030	3.45
Feb. 18	0500	*1,270	*3.82	Apr. 19	2145	1,210	3.72

Minimum discharge, 2.0 ft³/s, Oct 23, 24.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	40	147	486	83	104	690	101	133	81	282	30	10
2	36	290	241	99	98	490	98	183	39	120	22	10
3	27	143	185	110	89	371	80	218	61	84	18	9.8
4	22	81	171	242	81	243	97	257	44	69	14	8.7
5	18	60	171	238	152	206	91	612	33	66	11	7.8
6	13	51	145	226	213	188	75	467	31	58	8.1	7.1
7	9.3	679	127	242	159	192	67	276	28	50	5.7	10
8	7.6	688	115	1020	137	566	75	429	27	100	5.0	38
9	5.6	358	105	768	129	889	334	412	25	96	5.2	26
10	8.8	217	123	433	126	618	678	259	73	58	31	20
11	11	158	294	286	153	366	283	214	66	46	135	17
12	8.4	131	185	225	394	262	189	196	106	40	34	13
13	5.5	109	147	201	315	212	159	171	140	35	e15	10
14	4.9	132	124	168	213	187	136	135	119	33	e21	7.3
15	4.7	192	107	146	172	157	121	109	101	31	e25	6.1
16	4.7	141	99	148	154	133	105	103	232	32	31	5.7
17	3.9	112	92	148	393	122	100	133	273	32	118	8.6
18	3.6	101	87	136	1120	197	88	88	164	30	77	7.3
19	3.6	104	78	118	971	352	636	72	390	26	50	6.5
20	6.6	91	78	107	743	252	693	65	203	23	32	6.5
21	3.2	118	77	96	702	472	298	58	120	22	e22	11
22	2.5	443	73	90	433	337	206	53	93	21	e20	35
23	2.2	316	113	122	354	228	169	46	83	67	44	28
24	3.7	197	130	163	280	203	141	44	71	54	25	18
25	23	153	220	125	220	179	123	95	63	34	e22	14
26	25	141	167	103	205	165	142	60	52	27	20	13
27	40	139	137	95	237	144	402	50	76	24	e16	12
28	29	181	119	100	491	126	184	42	177	21	e14	9.9
29	20	213	111	102	---	111	142	36	125	19	e12	8.3
30	15	384	104	138	---	99	130	36	162	17	e11	8.7
31	13	---	97	116	---	89	---	33	---	32	e10	---
TOTAL	420.8	6270	4508	6394	8838	8846	6143	5085	3258	1649	904.0	393.3
MEAN	13.6	209	145	206	316	285	205	164	109	53.2	29.2	13.1
MAX	40	688	486	1020	1120	889	693	612	390	282	135	38
MIN	2.2	51	73	83	81	89	67	33	25	17	5.0	5.7
CFSM	.22	3.34	2.33	3.30	5.05	4.57	3.28	2.62	1.74	.85	.47	.21
IN.	.25	3.73	2.68	3.81	5.26	5.27	3.66	3.03	1.94	.98	.54	.23

e Estimated.

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1947 - 1998, BY WATER YEAR (WY)

	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958
MEAN	47.1	90.5	151	164	198	265	209	138	73.7	49.9	37.9	34.8
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	14.5	26.4	60.3	57.0	77.1	40.1	10.0	4.30	2.87	1.58
(WY)	1954	1954	1954	1977	1964	1990	1968	1976	1965	1965	1991	1991

03078000 CASSELMAN RIVER AT GRANTSVILLE, MD--Continued

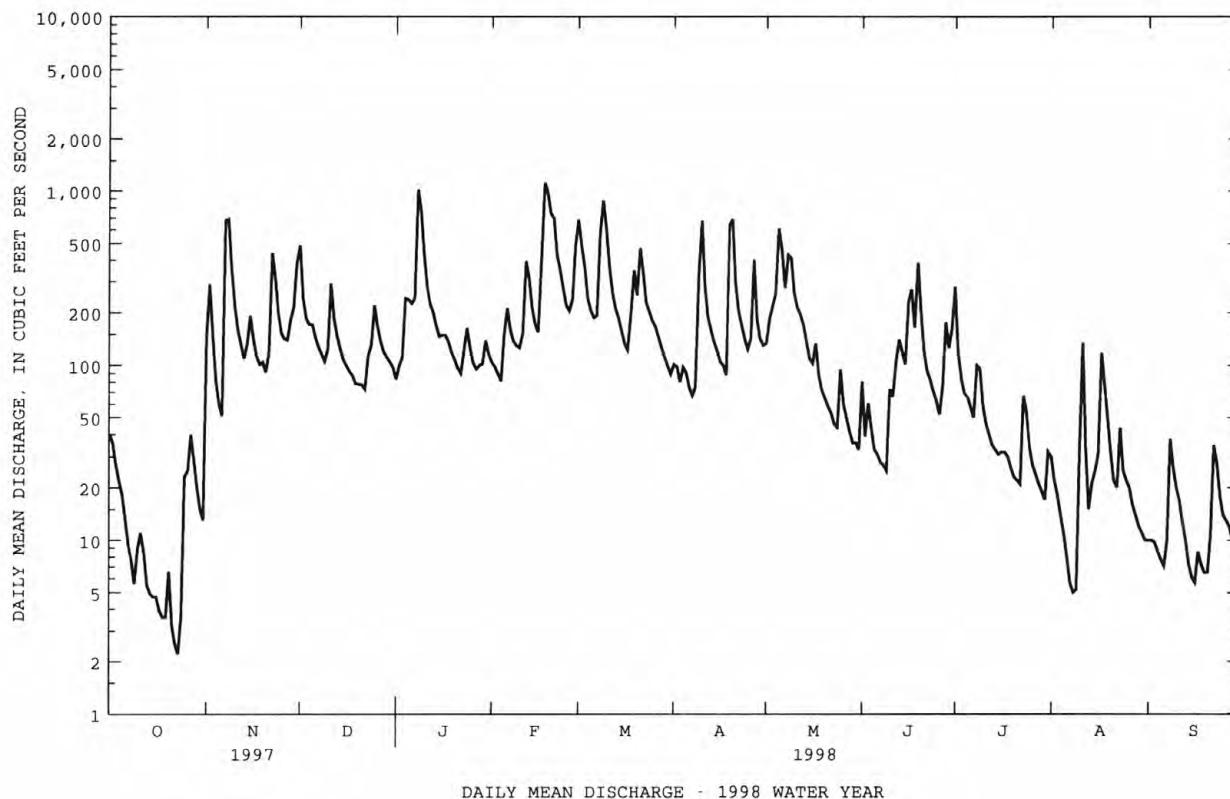
SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1947 - 1998	
ANNUAL TOTAL	42839.3		52709.1		121	
ANNUAL MEAN	117		144		203	
HIGHEST ANNUAL MEAN					64.2	
LOWEST ANNUAL MEAN					1996	
HIGHEST DAILY MEAN	724	Mar 6	1120	Feb 18	e3600	Jan 19 1996
LOWEST DAILY MEAN	2.2	Oct 23	2.2	Oct 23	a.00	Aug 31 1962
ANNUAL SEVEN-DAY MINIMUM	3.6	Oct 18	3.6	Oct 18	.89	Aug 27 1962
INSTANTANEOUS PEAK FLOW			1270	Feb 18	b8400	Oct 15 1954
INSTANTANEOUS PEAK STAGE			3.82	Feb 18	10.70	Oct 15 1954
INSTANTANEOUS LOW FLOW			2.0	Oct 23,24	a.00	Aug 31 1962c
ANNUAL RUNOFF (CFSM)	1.88		2.31		1.94	
ANNUAL RUNOFF (INCHES)	25.50		31.37		26.34	
10 PERCENT EXCEEDS	275		343		281	
50 PERCENT EXCEEDS	89		101		68	
90 PERCENT EXCEEDS	7.7		10		8.4	

e Estimated.

a Result of regulation from unknown source.

b From rating curve extended above 1,600 ft³/s on basis of contracted-opening measurement at gage height of 8.13 ft.

c Also Sept. 1, 1962.



YOUGHIOGHENYA RIVER BASIN

03079000 CASSELMAN RIVER AT MARKLETON, PA

LOCATION.--Lat 39°51'35", long 79°13'40", Somerset County, Hydrologic Unit 05020006, on right bank at downstream side of highway bridge at Markleton, 2 mi southwest of Casselman, and 7 mi downstream from Coxes Creek.

DRAINAGE AREA.--382 mi².

PERIOD OF RECORD.--August to September 1913 (gage heights and discharge measurements only), October 1920 to current year. Monthly discharge only for some periods, published in WSP 1305. October 1913 to September 1920 (gage heights and discharge measurements only) in reports of Water Supply Commission of Pennsylvania.

REVISED RECORDS.--WSP 743: Drainage area. WSP 1305: 1923-31. WSP 1435: 1932-34, 1935 (M), 1936-38. WSP 1625: 1924 (M).

GAGE.--Water-stage recorder. Datum of gage is 1,655.29 ft above sea level. Prior to Nov. 19, 1940, nonrecording gage at same site and datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. Slight diversion above station to city of Frostburg, MD, in the Potomac River Basin. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a base discharge of 8,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 10	0500	*8,220	*6.74	No other peak greater than base discharge.			

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	250	213	2870	e340	597	3370	806	749	775	664	104	48
2	213	1300	1600	e400	572	2510	780	926	417	443	84	45
3	175	950	1200	e540	537	2060	595	893	1010	309	64	41
4	148	516	1070	e900	515	1570	579	955	524	256	55	38
5	128	380	969	1260	726	1300	590	2620	362	252	53	37
6	113	306	832	1120	1260	1130	496	2430	326	223	50	35
7	121	3090	726	1450	999	1080	445	1580	269	194	46	38
8	123	6860	656	5040	841	1950	455	1910	246	311	44	59
9	116	3420	601	4590	770	4350	1380	1730	220	662	45	88
10	116	1920	773	2570	742	3420	5940	1300	257	329	53	78
11	110	1260	1790	1650	843	2000	2420	1100	328	227	153	57
12	107	989	1240	1260	2100	1450	1460	1350	578	184	205	48
13	104	782	964	1090	2040	1230	1120	1100	e700	159	99	42
14	101	919	820	924	1350	1130	937	881	e1000	143	74	38
15	96	1350	694	775	1070	967	839	742	615	134	75	36
16	90	960	624	779	935	824	712	747	e1200	142	116	35
17	86	755	590	756	1700	747	650	1450	1040	147	149	34
18	85	626	531	712	6640	913	553	788	785	126	320	34
19	84	566	501	611	5650	1660	2130	606	2150	107	178	34
20	82	564	487	551	3770	1290	4320	506	1610	96	119	47
21	81	666	475	490	3450	2400	2000	442	956	93	85	46
22	79	1680	455	457	2310	2110	1360	385	722	88	71	81
23	79	1620	607	632	1890	1500	1100	343	763	99	81	168
24	80	1150	796	1020	1640	1310	919	305	702	169	119	102
25	170	896	1370	782	1350	1150	780	332	467	133	109	72
26	185	801	1180	625	1280	1020	767	333	393	98	95	69
27	239	785	978	569	1340	912	1820	266	374	82	75	58
28	215	1200	e800	591	2260	824	1100	235	373	74	60	55
29	159	1640	e600	636	---	735	869	212	471	69	54	49
30	130	1590	e480	923	---	658	780	220	388	67	51	44
31	115	---	e420	766	---	598	---	199	---	109	51	---
TOTAL	3980	39754	27699	34809	49177	48168	38702	27635	20021	6189	2937	1656
MEAN	128	1325	894	1123	1756	1554	1290	891	667	200	94.7	55.2
MAX	250	6860	2870	5040	6640	4350	5940	2620	2150	664	320	168
MIN	79	213	420	340	515	598	445	199	220	67	44	34
CFSM	.34	3.47	2.34	2.94	4.60	4.07	3.38	2.33	1.75	.52	.25	.14
IN.	.39	3.87	2.70	3.39	4.79	4.69	3.77	2.69	1.95	.60	.29	.16

e Estimated.

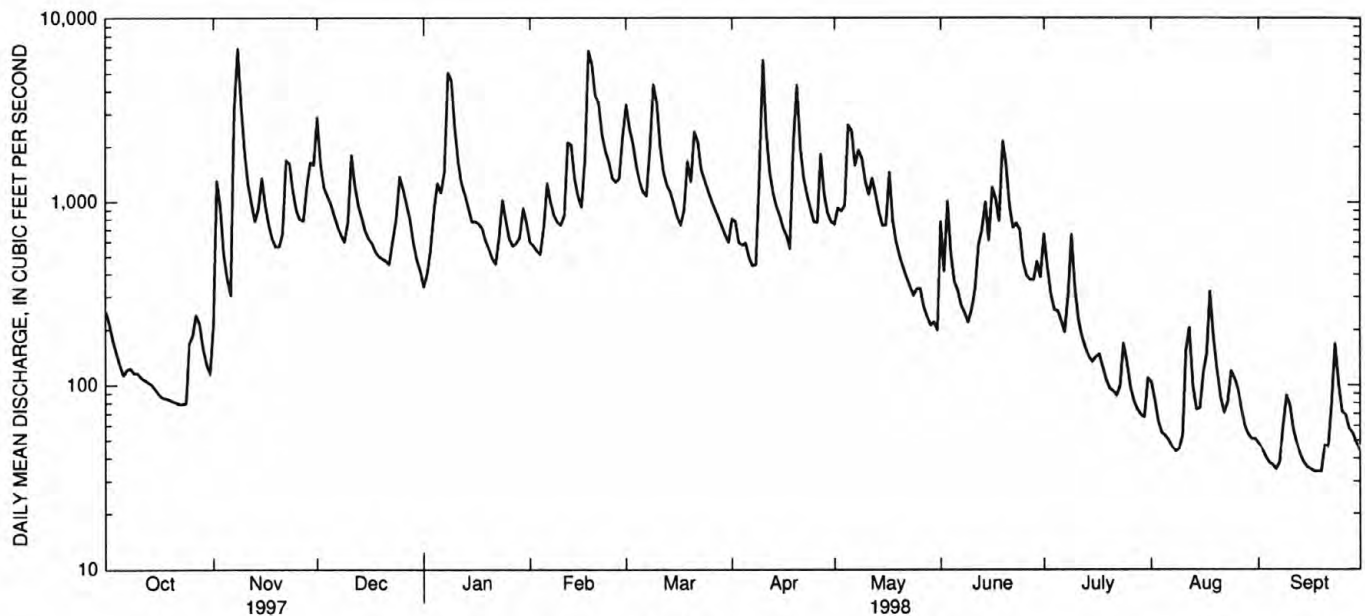
YOUGHIOGHENY RIVER BASIN

03079000 CASSELMAN RIVER AT MARKLETON, PA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1921 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	281	478	778	870	1052	1492	1156	799	442	264	218	198
MAX	1769	2975	2217	2709	2324	3860	2437	2147	1499	920	842	1756
(WY)	1955	1986	1973	1937	1956	1936	1970	1924	1941	1924	1956	1996
MIN	14.9	22.6	69.2	133	153	307	316	126	60.6	35.6	24.5	19.9
(WY)	1954	1954	1954	1925	1934	1990	1921	1926	1965	1965	1957	1943

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR			FOR 1998 WATER YEAR			WATER YEARS 1921 - 1998		
ANNUAL TOTAL	239603			300727					
ANNUAL MEAN	656			824			667		
HIGHEST ANNUAL MEAN							1151		
LOWEST ANNUAL MEAN							336		
HIGHEST DAILY MEAN	6860			Nov 8			e25000		
LOWEST DAILY MEAN	50			Sep 7			11		
ANNUAL SEVEN-DAY MINIMUM	55			Sep 3			12		
INSTANTANEOUS PEAK FLOW				8220			b50000		
INSTANTANEOUS PEAK STAGE				6.74			14.06		
INSTANTANEOUS LOW FLOW				32			10		
ANNUAL RUNOFF (CFSM)	1.72			2.16			1.75		
ANNUAL RUNOFF (INCHES)	23.33			29.29			23.73		
10 PERCENT EXCEEDS	1560			1800			1550		
50 PERCENT EXCEEDS	410			598			346		
90 PERCENT EXCEEDS	81			68			57		

a Also Sept. 7-9, 1957.**b** Estimated on basis of summation of peak flows at nearby stations.**c** Estimated.

October 1, 1997 to September 30, 1998

YOUGHIOGHENY RIVER BASIN

03080000 LAUREL HILL CREEK AT URSINA, PA
(National Water-Quality Assessment station)

LOCATION.--Lat 39°49'13", long 79°19'18", Somerset County, Hydrologic Unit 05020006, on right bank 500 ft downstream from bridge on State Highway 281 at Ursina, and 2.7 mi upstream from mouth.

DRAINAGE AREA.--121 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August to September 1913 (gage heights and discharge measurements only), October 1918 to current year. Monthly discharge only for some periods, published in WSP 1305. October 1913 to September 1918 (gage heights and discharge measurements only) in reports of Water Supply Commission of Pennsylvania.

REVISED RECORDS.--WSP 743: Drainage area. WSP 893: 1919-21, 1932-34. WSP 1305: 1922-31.
WSP 1435: 1919-20. WSP 1625: 1932 (M).

GAGE.--Water-stage recorder and masonry control. Datum of gage is 1,335.26 ft above sea level. Prior to July 18, 1939, nonrecording gage at bridge 0.5 mi downstream at datum 6.20 ft lower.

REMARKS.--Records good except for estimated daily discharges, which are fair. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 10	0600	*3,020	*4.50	No other peak greater than base discharge.			

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	129	79	987	e110	252	1230	303	263	363	289	33	13
2	139	506	655	e115	225	890	334	291	173	174	23	12
3	95	448	465	e120	199	739	251	299	252	133	17	11
4	69	261	404	e340	192	555	242	304	181	112	16	9.8
5	52	196	347	395	242	452	220	857	132	111	15	8.7
6	41	156	280	388	297	367	193	772	116	89	14	8.2
7	35	993	244	617	268	367	172	556	92	74	13	11
8	31	2160	211	1890	235	749	176	544	80	142	11	22
9	30	1580	191	1700	223	1430	751	468	71	376	12	24
10	28	857	293	1120	215	1150	2680	356	83	197	16	18
11	27	522	888	705	238	732	1350	299	75	136	25	e15
12	24	376	618	491	554	516	738	313	128	108	22	e13
13	24	293	433	399	677	401	494	272	197	92	18	e12
14	23	391	336	323	462	337	380	214	440	80	16	e11
15	23	654	266	264	347	276	319	181	286	71	17	e10
16	22	431	225	265	290	230	263	158	298	72	17	e9.0
17	21	313	201	249	329	206	240	199	537	76	19	e8.8
18	20	253	179	233	1110	259	199	144	367	58	30	e8.6
19	20	221	156	203	1670	471	509	117	916	45	23	e9.0
20	20	206	150	188	1260	400	1180	101	704	39	17	13
21	19	221	148	168	1070	542	713	94	408	37	14	15
22	19	597	142	153	778	621	491	79	316	35	13	20
23	18	651	232	375	618	478	384	70	491	51	16	18
24	18	462	327	579	525	431	306	64	445	87	14	15
25	47	344	559	393	418	377	252	66	263	44	27	15
26	68	288	532	295	384	365	268	60	200	33	28	16
27	108	260	429	256	395	342	709	50	186	e29	22	e13
28	102	627	337	263	772	312	422	43	168	e25	18	e12
29	57	1100	e250	269	---	282	329	39	149	e23	15	e11
30	44	868	e200	375	---	248	290	48	153	e21	14	e10
31	37	---	e150	318	---	221	---	45	---	33	13	---
TOTAL	1410	16314	10835	13559	14245	15976	15158	7366	8270	2892	568	392.1
MEAN	45.5	544	350	437	509	515	505	238	276	93.3	18.3	13.1
MAX	139	2160	987	1890	1670	1430	2680	857	916	376	33	24
MIN	18	79	142	110	192	206	172	39	71	21	11	8.2
CFSM	.38	4.49	2.89	3.61	4.20	4.26	4.18	1.96	2.28	.77	.15	.11
IN.	.43	5.02	3.33	4.17	4.38	4.91	4.66	2.26	2.54	.89	.17	.12

e Estimated.

YOUGHIOGHENY RIVER BASIN

03080000 LAUREL HILL CREEK AT URSINA, PA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1919 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	118	224	336	353	402	557	440	318	184	106	98.4	83.0
MAX	564	1011	815	1141	1000	1331	879	689	700	388	416	608
(WY)	1955	1986	1973	1937	1956	1936	1970	1924	1941	1985	1935	1971
MIN	6.15	8.91	42.2	57.0	89.3	155	114	52.0	29.4	9.20	8.90	5.73
(WY)	1931	1931	1931	1925	1934	1990	1921	1926	1965	1966	1983	1959

SUMMARY STATISTICS

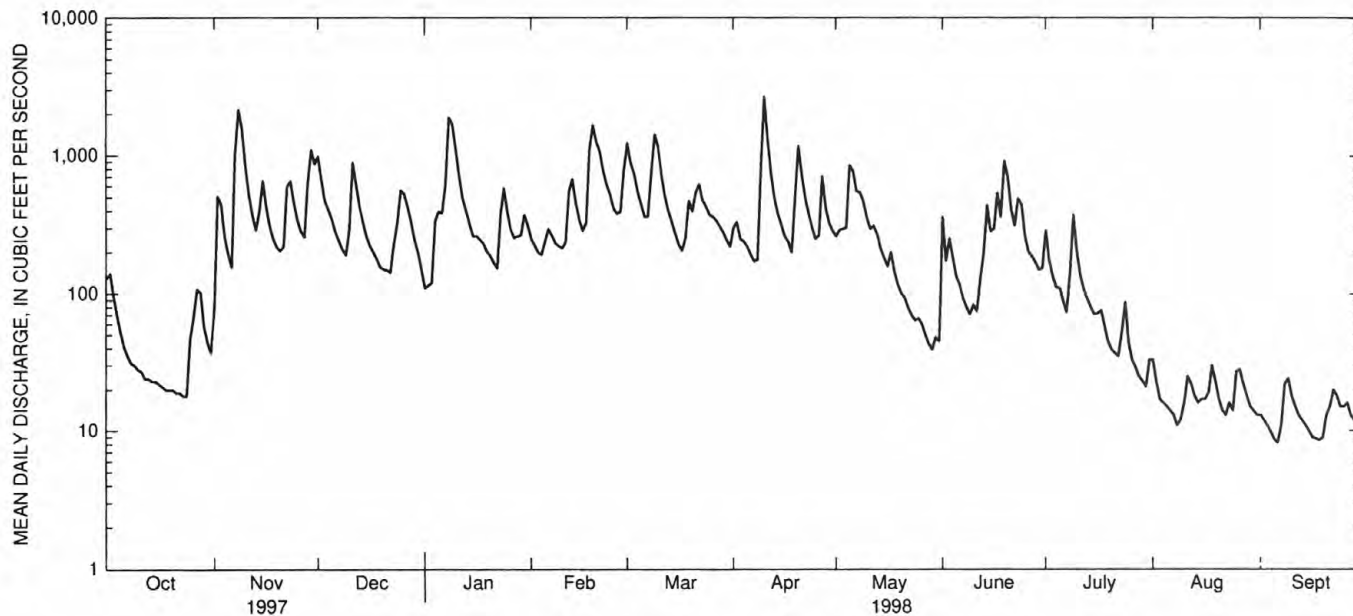
FOR 1997 CALENDAR YEAR

FOR 1998 WATER YEAR

WATER YEARS 1919 - 1998

ANNUAL TOTAL	95041	106985.1	
ANNUAL MEAN	260	293	268
HIGHEST ANNUAL MEAN			395
LOWEST ANNUAL MEAN			164
HIGHEST DAILY MEAN	2780	May 26	2680
LOWEST DAILY MEAN	11	Aug 16	8.2
ANNUAL SEVEN-DAY MINIMUM	15	Sep 14	a9.8
INSTANTANEOUS PEAK FLOW			3020
INSTANTANEOUS PEAK STAGE			4.50
INSTANTANEOUS LOW FLOW			8.2
ANNUAL RUNOFF (CFSM)	2.15		2.42
ANNUAL RUNOFF (INCHES)	29.22		32.89
10 PERCENT EXCEEDS	644		688
50 PERCENT EXCEEDS	179		214
90 PERCENT EXCEEDS	18		16

a Computed using estimated discharges.

b From rating curve extended above 6,100 ft³/s on basis of slope-area measurement of peak flow.

October 1, 1997 to September 30, 1998

MONONGAHELA RIVER BASIN

03080000 LAUREL HILL CREEK AT URSINA, PA--Continued
(National Water-Quality Assessment station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1975 to August 1981, April 1996 to September 1998 (discontinued).

REMARKS.--All water-quality samples were collected and analyzed by the U.S. Geological Survey. This site was used as a comparable reference site for mining. Additional sites in the (NAWQA) fixed-station network are shown in figure 6 on page 28. An explanation of selected abbreviations used in the water-quality tables are given on pages 29-31.

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

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (μ S/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	OXYGEN, DIS- SOLVED (MG/L) (00300)	HARD- NESS TOTAL (MG/L AS CAC03) (00900)	ACIDITY TOTAL HEATED (MG/L AS CAC03) (70508)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L A NA) (00930)
APR 20...	1200	1180	87	7.0	8.5	728	11.0	22	2.8	6.5	1.4	5.6

DATE	POTAS- SIUM, DIS- SOLVED AS K) (00935)	ALKA- LITY WAT DIS TOT IT FIELD MG/L AS CAC03 (39086)	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, 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)
APR 20...	.69	8	8.2	10	<.10	3.6	50	<.010	.543	.033	.17

DATE	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N) (00623)	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 (μ G/L AS AL) (01106)	IRON, DIS- SOLVED (μ G/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (μ G/L AS MN) (01056)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS- PENDEED TOTAL (MG/L AS C) (00689)	SEDI- MENT, SUS- PENDEED (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
APR 20...	.10	.034	.025	<.010	39	56	21	1.6	.30	13	59

MONONGAHELA RIVER BASIN

03080000 LAUREL HILL CREEK AT URSINA, PA.

REMARKS.--The following data are for dissolved trace elements in surface water filtered through a 0.45µm filter.

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

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	ALUM- INUM, DIS- SOLVED (µG/L AS AL) (01106)	ANTI- MONY, DIS- SOLVED (µG/L AS SB) (01095)	ARSENIC DIS- SOLVED (µG/L AS AS) (01000)	BARIUM, DIS- SOLVED (µG/L AS BA) (01005)	BERYL- LIUM, DIS- SOLVED (µG/L AS BE) (01010)	CADMIUM DIS- SOLVED (µG/L AS CD) (01025)	CHRO- MIUM, DIS- SOLVED (µG/L AS CR) (01030)	COBALT, DIS- SOLVED (µG/L AS CO) (01035)
APR 20...	1200	1180	39	<1.0	<1	40	<1.0	<1.0	<1.0	<1.0

DATE	COPPER, DIS- SOLVED (µG/L AS CU) (01040)	LEAD, DIS- SOLVED (µG/L AS PB) (01049)	MANGA- NESE, DIS- SOLVED (µG/L AS MN) (01056)	MOLYB- DENUM, DIS- SOLVED (µG/L AS MO) (01060)	NICKEL, DIS- SOLVED (µG/L AS NI) (01065)	SELE- NIUM, DIS- SOLVED (µG/L AS SE) (01145)	SILVER, DIS- SOLVED (µG/L AS AG) (01075)	URANIUM NATURAL DIS- SOLVED (µG/L AS U) (22703)	ZINC, DIS- SOLVED (µG/L AS ZN) (01090)
APR 20...	<1.0	<1.0	21	<1.0	1.8	<1	<1.0	<1.0	16

MONONGAHELA RIVER BASIN

03080000 LAUREL HILL CREEK AT URSINA, PA.

REMARKS.--The following data are for trace elements and other constituents that were part of the suspended-sediment fraction of the water sample. Suspended sediments were dewatered using a continuous flow centrifuge, dried, and analyzed directly for total metals using a nitric, hydrofluoric, perchloric acid digestion. Whole water contributions by the suspended sediment were then calculated using the suspended-sediment concentration in kilograms per liter (kg/L) and the analyte concentration in milligrams per kilogram (mg/kg) from the direct analysis of the suspended sediments, resulting in micrograms per gram ($\mu\text{G/G}$) concentrations. Values reported in percent are the percent of that constituent in the suspended sediment. When no trace element was detected in the sample, the default reporting value is the method detection limit preceded by a less-than sign (<).

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

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	ALUM- INUM SED,SUS PERCENT (30221)	AN- TIMONY SED. SUSP. ($\mu\text{G/G}$) (29816)	ARSENIC SED. SUSP. ($\mu\text{G/G}$) (29818)	BARIUM SED. SUSP. ($\mu\text{G/G}$) (29820)	BERYL- LIUM SED. SUSP. ($\mu\text{G/G}$) (29822)	CADMIUM SED. SUSP. ($\mu\text{G/G}$) (29826)	CHRO- MIUM SED. SUSP. ($\mu\text{G/G}$) (29829)
APR 20...	1200	1180	3.7	1	11	270	2	5	43
DATE	COBALT SEDI- MENT SUSP. ($\mu\text{G/G}$) (35031)	COPPER SED. SUSP. ($\mu\text{G/G}$) (29832)	IRON SEDI- MENT SUSP. PERCENT (30269)	LEAD SED. SUSP. ($\mu\text{G/G}$) (29836)	LITHIUM SEDI- MENT SUSP. ($\mu\text{G/G}$) (35050)	MAN- GANESE SED. SUSP. ($\mu\text{G/G}$) (29839)	MOLYB- DENUM SED. SUSP. ($\mu\text{G/G}$) (29843)	NICKEL SED. SUSP. ($\mu\text{G/G}$) (29845)	PHOS- PHORUS SEDI- MENT SUSP. PERCENT (30292)
APR 20...	26	16	2.1	48	28	1600	<10	51	590
DATE	SELE- NIUM SED. SUSP. ($\mu\text{G/G}$) (29847)	SILVER SED. SUSP. ($\mu\text{G/G}$) (29850)	STRON- TIUM SEDI- MENT SUSP. ($\mu\text{G/G}$) (35040)	THAL- LIUM SUS SED ($\mu\text{G/G}$) (49955)	TITA- NIUM SEDI- MENT SUSP. PERCENT (30317)	URANIUM SEDI- MENT SUSP. ($\mu\text{G/G}$) (35046)	VANA- DIUM SED. SUSP. ($\mu\text{G/G}$) (29853)	ZINC SED. SUSP. ($\mu\text{G/G}$) (29855)	
APR 20...	1	<1	58	<100	.21	100	50	260	

YOUGHIOGHENY RIVER BASIN

03081000 YOUGHIOGHENY RIVER BELOW CONFLUENCE, PA

LOCATION.--Lat 39°49'39", long 79°22'22", Fayette County, Hydrologic Unit 05020006, on left bank 1.0 mi downstream from Casselman River, 1.5 mi northwest of Confluence, at mile 72.0.

DRAINAGE AREA.--1,029 mi².

PERIOD OF RECORD.--June 1940 to current year. Monthly discharge only for June 1940, published in WSP 1305.

GAGE.--Water-stage recorder. Datum of gage is 1,302.77 ft above sea level.

REMARKS.--No estimated daily discharges. Records good. Flow regulated since 1925 by Deep Creek Reservoir and since 1943 by Youghiogheny River Lake 1.7 mi upstream. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 17, or 18, 1936 reached a stage of 21.6 ft, from floodmarks, discharge, 85,000 ft³/s.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1250	748	5670	1990	2120	7870	1940	3450	1740	3490	1050	885
2	1150	2240	3870	2120	2020	6580	2110	2820	1320	3960	1030	784
3	1010	2190	3080	2300	1930	5830	1720	2840	1810	2490	1020	721
4	949	1300	2810	2980	1910	5440	1660	2870	1370	2130	1010	799
5	906	1030	2610	2800	2160	5750	1650	5810	1110	1850	994	969
6	876	1010	2360	2550	3390	5360	1520	6850	1050	1210	985	965
7	860	4150	2170	3210	3310	5240	1410	5870	1090	1070	977	902
8	863	10200	2040	8410	3020	6150	1410	5220	892	1170	974	781
9	929	6600	1700	8590	2700	9160	2640	5150	856	1860	969	791
10	979	3900	2130	6000	2050	7890	11500	4440	879	1400	1010	774
11	974	2650	4100	5770	2120	5750	7390	3460	948	1170	1080	834
12	961	2070	3330	5850	4010	4730	5310	3330	1210	1070	1240	956
13	960	1690	2730	5300	4950	4160	4460	2890	1540	1020	1110	876
14	997	1840	2420	5030	4000	3760	3600	2400	1920	923	1040	730
15	987	2830	2170	4770	3430	2890	2580	2140	1840	1000	1020	721
16	946	2100	2130	4720	3150	1740	1980	1950	2550	980	1120	718
17	924	1670	2130	3880	3230	1630	1730	2680	3790	1020	1190	717
18	894	1720	2030	3250	9340	1800	1490	1700	5000	990	1230	770
19	894	2060	1950	2510	9730	3140	2960	1440	7010	952	1030	882
20	805	2190	1920	1690	7600	2680	7640	1310	5750	931	1030	826
21	742	2310	1740	1640	7210	4190	6040	1190	3890	873	1060	745
22	739	3680	1300	1600	5630	4600	5970	1150	2660	855	1040	795
23	736	3930	1550	2290	4850	3660	4470	1210	2740	913	1050	873
24	737	2640	2230	3450	4470	3320	4280	1150	2560	1130	1070	849
25	812	2100	3300	3170	3940	3030	2870	1170	1740	1130	1110	844
26	934	2200	3180	2840	3990	2830	2790	1190	1450	1060	1030	951
27	926	2270	2880	2500	4420	2660	4330	986	1400	939	949	883
28	873	2880	2640	1860	5750	2510	3510	848	1350	923	960	752
29	751	4310	2230	2000	---	2370	3310	867	1250	1010	1020	747
30	704	3750	2150	2300	---	1970	3760	1000	1620	1010	977	739
31	685	---	2290	1980	---	1700	---	926	---	1040	889	---
TOTAL	27753	84258	78840	109350	116430	130390	108030	80307	64335	41569	32264	24579
MEAN	895	2809	2543	3527	4158	4206	3601	2591	2145	1341	1041	819
MAX	1250	10200	5670	8590	9730	9160	11500	6850	7010	3960	1240	969
MIN	685	748	1300	1600	1910	1630	1410	848	856	855	889	717
†	-614	+703	+103	+237	+670	+353	+165	-66	+93	-475	-670	-596

† Change in contents, equivalent in cubic feet per second, in Deep Creek Reservoir and Youghiogheny River Lake. Records of contents in Deep Creek Reservoir furnished by Pennsylvania Electric Co. Records of contents in Youghiogheny River Lake furnished by U.S. Army Corps of Engineers.

YOUGHIOGHENY RIVER BASIN

03081000 YOUGHIOGHENY RIVER BELOW CONFLUENCE, PA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1200	1569	2397	2521	2883	3663	3027	2369	1505	1120	1064	1093
MAX	4699	5065	6171	5441	5204	7868	6984	5052	4137	2950	3565	3882
(WY)	1980	1986	1973	1974	1956	1963	1993	1996	1941	1985	1956	1971
MIN	287	433	384	496	903	778	1157	602	491	384	290	214
(WY)	1948	1954	1944	1981	1954	1990	1963	1982	1965	1942	1944	1946

SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

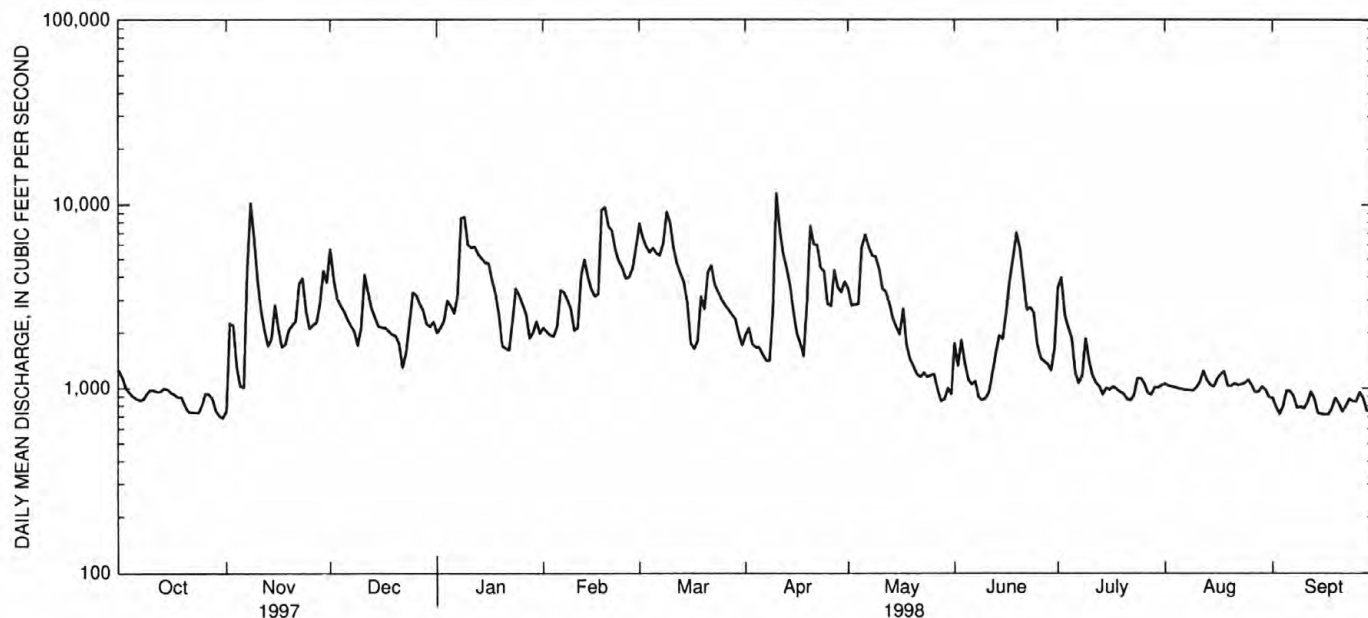
FOR 1998 WATER YEAR

WATER YEARS 1941 - 1998

ANNUAL TOTAL	696318		898105									
ANNUAL MEAN	1908	†+3.5	2461	†-14						2030		
HIGHEST ANNUAL MEAN										2910		1996
LOWEST ANNUAL MEAN										1074		1954
HIGHEST DAILY MEAN			10200	Nov 8		11500	Apr 10		34600		Oct 16	1954
LOWEST DAILY MEAN			581	Jul 8		685	Oct 31		121		Sep 27	1943
ANNUAL SEVEN-DAY MINIMUM			709	Jul 6		766	Sep 14		175		Sep 16	1946
INSTANTANEOUS PEAK FLOW						13200	Apr 10		a69500		Oct 15	1954
INSTANTANEOUS PEAK STAGE						8.78	Apr 10		19.92		Oct 15	1954
ANNUAL RUNOFF (CFSM)		1.85				2.39			1.97			
ANNUAL RUNOFF (INCHES)		25.17				32.47			26.81			
10 PERCENT EXCEEDS		3850				5260			4470			
50 PERCENT EXCEEDS		1310				1920			1290			
90 PERCENT EXCEEDS		750				871			617			

† Change in contents, equivalent in cubic feet per second, in Deep Creek Reservoir and Youghiogheny River Lake. Records of contents in Deep Creek Reservoir furnished by Pennsylvania Electric Co. Records of contents in Youghiogheny River Lake furnished by U.S. Army Corps of Engineers.

a From rating curve extended above 25,000 ft³/s on basis of slope-area measurement of peak flow.



October 1, 1997 to September 30, 1998

YOUGHIOGHENY RIVER BASIN

03082500 YOUGHIOGHENY RIVER AT CONNELLSVILLE, PA

LOCATION.--Lat 40°01'03", long 79°35'38", Fayette County, Hydrologic Unit 05020006, on left bank at downstream side of Crawford Avenue bridge at Conneltsville, 1.2 mi upstream from Mounts Creek, at mile 44.0.

DRAINAGE AREA.--1,326 mi².

PERIOD OF RECORD.--July 1908 to current year. Monthly discharge only for some periods, published in WSP 1305.

REVISED RECORDS.--WSP 743: Drainage area. WSP 1305: 1912 (M), 1914 (M), 1916-17 (M), 1918, 1922-25. WSP 1435: 1919-20. WSP 1725: 1916, 1932 (monthly, yearly summaries).

GAGE.--Water-stage recorder. Datum of gage is 860.13 ft above sea level. Prior to Aug. 15, 1928, nonrecording gage, and Aug. 15, 1928 to July 7, 1958, water-stage recorder at same site and datum. July 8, 1958 to Sept. 8, 1959, nonrecording gage at site 0.4 mi downstream at different datum.

REMARKS.--No estimated daily discharges. Records good. Flow regulated since 1925 by Deep Creek Reservoir, since 1943 by Youghiogheny River Lake 29.4 mi upstream, and by several smaller reservoirs above station. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1630	785	7140	2380	2890	9650	2580	4290	1720	3670	1090	857
2	1470	2100	5290	2410	2720	8070	3160	3270	1710	4710	1040	831
3	1210	3180	4120	2720	2580	7030	2550	3410	1730	2960	1010	693
4	1110	1860	3680	3780	2540	6180	2400	3280	1620	2370	1010	684
5	1050	1380	3370	3630	2820	6530	2330	5720	1270	2300	984	875
6	998	1160	3030	3300	4100	6010	2120	7040	1140	1480	966	914
7	958	6170	2760	4220	4370	5830	1920	6680	1180	1220	952	961
8	945	13900	2560	11100	3930	6320	1900	5490	999	1340	933	906
9	954	9700	2210	12500	3680	10700	2770	5860	932	2210	931	833
10	1050	5780	2670	8340	2830	9910	15300	4970	963	1790	1090	800
11	1050	3900	5580	6770	2780	7140	10200	4150	1020	1380	1160	769
12	1030	2990	4880	6820	4180	5750	6750	3610	1140	1230	1210	912
13	1020	2430	3830	6040	5990	4980	5440	3370	1910	1140	1160	927
14	1020	2680	3260	5610	4970	4610	4550	2700	2490	1090	1070	738
15	1060	4360	2860	5250	4270	3820	3480	2440	2180	1010	1020	697
16	1000	3350	2620	5220	3850	2540	2600	2180	2890	1090	1060	692
17	990	2560	2600	4740	3690	2160	2350	2820	3850	1090	1290	680
18	945	2250	2470	3890	8990	2270	1960	2050	5160	1070	1310	677
19	939	2450	2340	3460	12100	3780	2500	1630	6780	1010	1140	839
20	916	2620	2270	2260	9380	3520	9400	1450	6530	977	976	880
21	781	2650	2230	2210	8750	4470	6950	1310	4670	960	1060	754
22	779	3720	1650	2070	7020	5910	6810	1180	3020	903	1020	796
23	773	4790	1840	3060	5960	4760	5140	1260	3030	990	1040	867
24	775	3570	2450	4850	5670	4330	5280	1200	3380	1040	1040	874
25	891	2630	3680	4450	5050	3970	3350	1220	2260	1170	1170	811
26	1040	2620	3930	3780	4900	3680	3240	1230	1730	1090	1150	928
27	1040	2700	3570	3420	5430	3440	5380	1140	1720	1040	984	930
28	1030	3280	3250	2820	6520	3210	4500	923	1890	927	921	774
29	885	5800	2930	2910	---	3010	4010	867	1590	935	980	728
30	796	4870	2500	3340	---	2700	4080	1000	1810	1070	985	714
31	755	---	2750	2890	---	2280	---	1050	---	1100	882	---
TOTAL	30890	112235	100320	140240	141960	158560	135000	88790	72314	46362	32634	24341
MEAN	996	3741	3236	4524	5070	5115	4500	2864	2410	1496	1053	811
MAX	1630	13900	7140	12500	12100	10700	15300	7040	6780	4710	1310	961
MIN	755	785	1650	2070	2540	2160	1900	867	932	903	882	677
†	-614	+703	+103	+237	+670	+353	+165	-66	+93	-475	-670	-596

† Change in contents, equivalent in cubic feet per second, in Deep Creek Reservoir and Youghiogheny River Lake. Records of contents in Deep Creek Reservoir furnished by Pennsylvania Electric Co. Records of contents in Youghiogheny River Lake furnished by U.S. Army Corps of Engineers.

YOUGHIOGHENY RIVER BASIN

03082500 YOUGHIOGHENY RIVER AT CONNELLSVILLE, PA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1925 - 1998, BY WATER YEAR (WY) (SINCE REGULATION)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1534	2155	3698	4024	4602	5968	4902	3694	2268	1588	1447	1363
MAX	5938	7518	8050	9737	7916	11370	8463	7142	5805	4143	4772	5400
(WY)	1955	1986	1973	1937	1939	1936	1993	1996	1941	1985	1956	1971
MIN	139	84.5	296	465	630	1189	1321	662	504	279	155	146
(WY)	1931	1931	1931	1925	1934	1990	1925	1926	1925	1930	1930	1925

SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

FOR 1998 WATER YEAR

WATER YEARS 1925 - 1998

ANNUAL TOTAL	913213		1083646									
ANNUAL MEAN	2502	t+3.5	2969	t-14								
HIGHEST ANNUAL MEAN									2620			1996
LOWEST ANNUAL MEAN									3944			1925
HIGHEST DAILY MEAN	16300	May 26		15300	Apr 10				58100	Mar 18		1936
LOWEST DAILY MEAN	633	Jul 8		677	Sep 18				39	Nov 16		1930
ANNUAL SEVEN-DAY MINIMUM	758	Aug 6		743	Sep 14				62	Nov 14		1930
INSTANTANEOUS PEAK FLOW				18800	Apr 10				a103000	Oct 16		1954
INSTANTANEOUS PEAK STAGE					9.85	Apr 10			21.96	Oct 16		1954
ANNUAL RUNOFF (CFSM)	1.89				2.24				1.98			
ANNUAL RUNOFF (INCHES)	25.62				30.40				26.84			
10 PERCENT EXCEEDS	5050			6000					5820			
50 PERCENT EXCEEDS	1860			2430					1640			
90 PERCENT EXCEEDS	827			910					600			

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1909 - 1924, BY WATER YEAR (WY) (PRIOR TO REGULATION)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1126	1653	2574	4697	4098	5490	3830	2696	2379	1110	764	1100
MAX	5117	4937	5795	8679	9354	9777	6572	6675	5224	5102	1904	5158
(WY)	1912	1914	1922	1913	1918	1912	1914	1924	1910	1912	1912	1911
MIN	36.4	68.4	342	503	1589	1913	1335	1125	938	221	99.5	132
(WY)	1909	1909	1909	1918	1924	1915	1921	1911	1922	1918	1910	1922

SUMMARY STATISTICS

WATER YEARS 1909 - 1924

ANNUAL MEAN	2620											
HIGHEST ANNUAL MEAN	3976											1912
LOWEST ANNUAL MEAN	1879											1923
HIGHEST DAILY MEAN	59200				Mar 21							1912
LOWEST DAILY MEAN	11				Oct 18							1910
ANNUAL SEVEN-DAY MINIMUM	14				Oct 15							1910
INSTANTANEOUS PEAK FLOW	b65900				Mar 29							1924
INSTANTANEOUS PEAK STAGE	c20.5				Mar 29							1924
INSTANTANEOUS LOW FLOW	11				Sep 23							1908d
ANNUAL RUNOFF (CFSM)	1.98											
ANNUAL RUNOFF (INCHES)	26.84											
10 PERCENT EXCEEDS	6200											
50 PERCENT EXCEEDS	1370											
90 PERCENT EXCEEDS	195											

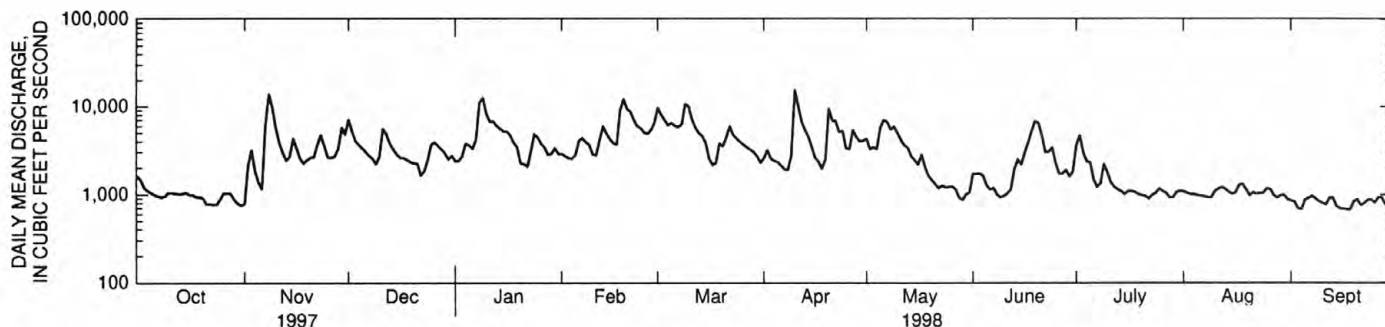
t Change in contents, equivalent in cubic feet per second, in Deep Creek Reservoir and Youghiogheny River Lake. Records of contents in Deep Creek Reservoir furnished by Pennsylvania Electric Co. Records of contents in Youghiogheny River Lake furnished by U.S. Army Corps of Engineers.

a From rating curve extended above 55,000 ft³/s.

b Estimated from hydrograph.

c From graph based on gage readings.

d Also Sept. 26, 27, 1908 and Oct. 18, 1910.



October 1, 1997 to September 30, 1998

YOUGHIOGHENY RIVER BASIN

03083500 YOUGHIOGHENY RIVER AT SUTERSVILLE, PA
(National water-quality assessment station)

LOCATION.--Lat 40°14'24", long 79°48'24", Allegheny County, Hydrologic Unit 05020006, on left bank 500 ft upstream from highway bridge at Sutersville, 2.1 mi downstream from Sewickley Creek, at mile 15.2.

DRAINAGE AREA.--1,715 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1920 to current year. Monthly discharge only for some periods, published in WSP 1305.

REVISED RECORDS.--WSP 743: Drainage area. WSP 1305: 1924, 1926 (M), 1931 (M). WSP 1435: 1935-36.

GAGE.--Water-stage recorder. Datum of gage is 733.36 ft above sea level. Prior to June 1, 1939, nonrecording gage at site 500 ft downstream at same datum.

REMARKS.--No estimated daily discharges. Records good. Flow regulated since 1925 by Deep Creek Reservoir, since 1943 by Youghiogheny River Lake 58 mi upstream, and by several smaller reservoirs above station. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2010	871	8420	2930	3300	10700	2850	5200	2090	3490	1380	1030
2	1680	1350	7150	2690	3200	9760	3870	4210	2470	5150	1230	974
3	1460	3490	5330	3010	3020	8420	3240	4140	2260	3960	1170	888
4	1260	2380	4590	3860	2970	7270	2890	4070	2450	2750	1130	793
5	1150	1660	4210	4280	4300	7330	2810	5250	1750	2600	1110	811
6	1080	1350	3770	3830	5440	6900	2600	7720	1480	2120	1090	995
7	1020	6380	3400	4670	5900	6560	2360	7990	1380	1550	1070	1030
8	984	17800	3130	13500	5120	6800	2270	6350	1380	1670	1040	1320
9	975	15000	2950	16300	4660	11200	2930	6750	1160	2230	1030	1070
10	1030	8870	2930	11500	3910	11900	16700	5900	1150	2560	1210	997
11	1080	5640	6060	8100	3460	8880	14800	5180	1180	1820	1400	897
12	1060	4030	6580	8160	3940	6970	9140	4010	1250	1520	1330	891
13	1050	3230	5010	7180	6480	6000	6930	4090	1790	1380	1370	1020
14	1040	3530	4150	6660	5890	5470	5950	3240	2830	1300	1230	962
15	1070	5660	3590	6150	4990	4730	4710	2880	2810	1180	1250	779
16	1050	4860	3200	6080	4380	3610	3530	2560	3590	1270	1150	767
17	1020	3580	3120	5930	4250	2620	3150	2900	4630	1280	1390	760
18	991	2900	2970	4720	7830	2720	2680	2760	5740	1260	1550	755
19	954	2870	2770	4350	13800	3880	2830	2040	6520	1190	1400	783
20	946	3100	2650	3220	11600	4400	10300	1840	8310	1130	1150	998
21	875	3070	2580	2770	10400	5170	8830	1650	5920	1120	1120	976
22	791	3510	2280	2580	8690	7870	8270	1480	3920	1150	1140	1140
23	787	5560	2060	3010	7150	6440	6910	1430	3310	1150	1110	985
24	795	4490	2520	5680	7540	5530	5920	1460	3810	1260	1160	962
25	942	3190	3710	5710	6750	5020	4480	1420	2910	1330	1430	968
26	1060	2980	4540	4710	6110	4530	3880	1440	2160	1290	1480	947
27	1200	3070	4130	4140	6330	4220	5960	1410	1980	1190	1250	1040
28	1130	3640	3780	3790	6960	3940	5850	1220	2230	1070	1080	981
29	1040	7160	3450	3490	---	3680	4750	1080	2020	1030	1040	818
30	877	6350	3010	3710	---	3420	4460	1110	1940	1240	1120	799
31	811	---	3100	3600	---	2850	---	1240	---	1710	1440	---
TOTAL	33218	141571	121140	170310	168370	188790	165850	104020	86420	54950	38050	28136
MEAN	1072	4719	3908	5494	6013	6090	5528	3355	2881	1773	1227	938
MAX	2010	17800	8420	16300	13800	11900	16700	7990	8310	5150	1550	1320
MIN	787	871	2060	2580	2970	2620	2270	1080	1150	1030	1030	755
†	-614	+703	+103	+237	+670	+353	+165	-66	+93	-475	-670	-596

† Change in contents, equivalent in cubic feet per second, in Deep Creek Reservoir and Youghiogheny River Lake. Records of contents in Deep Creek Reservoir furnished by Pennsylvania Electric Co. Records of contents in Youghiogheny River Lake furnished by U.S. Army Corps of Engineers.

YOUGHIOGHENY RIVER BASIN

03083500 YOUGHIOGHENY RIVER AT SUTERSVILLE, PA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1921 - 1998 BY WATER YEAR (WY) (SINCE REGULATION)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1534	2155	3698	4024	4602	5968	4902	3694	2268	1588	1447	1363
MAX	7006	5818	9373	8488	9630	13720	10230	8012	7318	4853	5707	6382
(WY)	1955	1922	1973	1974	1939	1936	1940	1996	1941	1985	1956	1971
MIN	107	209	596	611	716	1539	1637	1012	585	614	309	185
(WY)	1924	1923	1954	1925	1934	1990	1921	1982	1925	1942	1922	1922

SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

FOR 1998 WATER YEAR

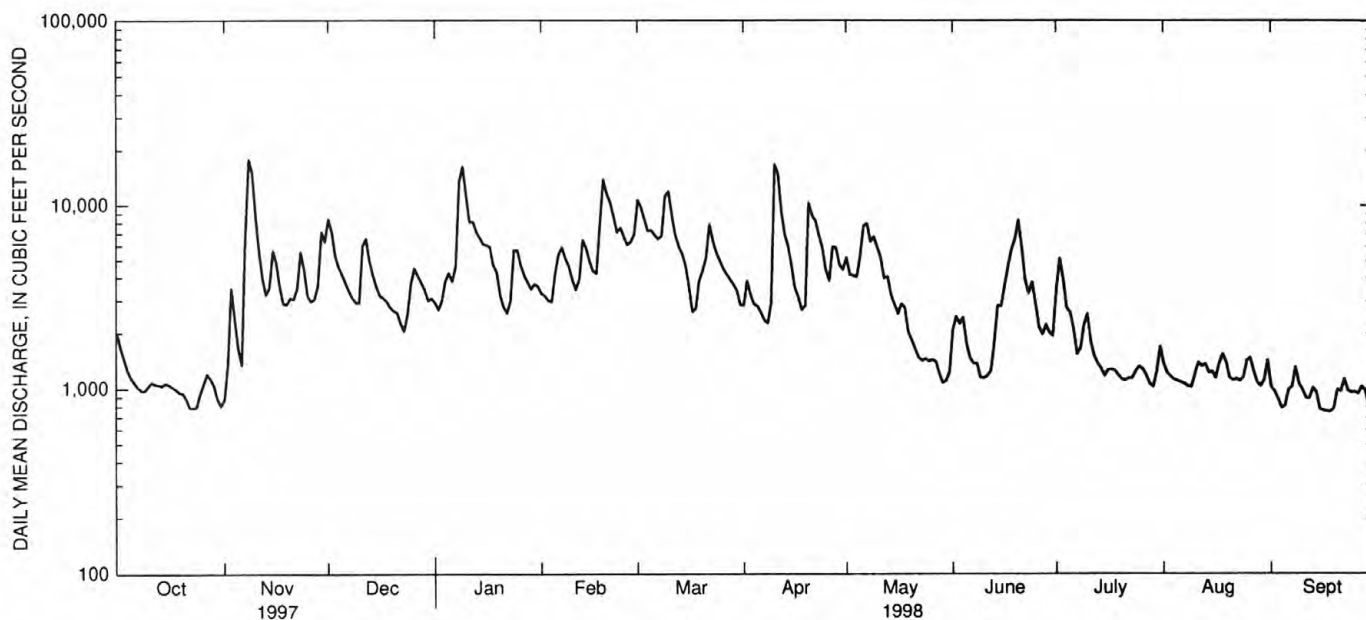
WATER YEARS 1921 - 1998

ANNUAL TOTAL	1063308		1300825									
ANNUAL MEAN	2913	†+3.5	3564	†-14								
HIGHEST ANNUAL MEAN									4537			1996
LOWEST ANNUAL MEAN									1496			1925
HIGHEST DAILY MEAN	25000	May 26	17800	Nov 8					79000		Mar 18	1936
LOWEST DAILY MEAN	691	Jul 9	755	Sep 18					57		Sep 30	1922
ANNUAL SEVEN-DAY MINIMUM	778	Aug 6	829	Sep 14					64		Sep 24	1922
INSTANTANEOUS PEAK FLOW			22400	Apr 10					108000		Oct 16	1954
INSTANTANEOUS PEAK STAGE			13.13	Apr 10					a32.50		Oct 16	1954
INSTANTANEOUS LOW FLOW			749	Sep 18,19					b57		Sep 29	1922
ANNUAL RUNOFF (CFSM)	1.70		2.08						1.81			
ANNUAL RUNOFF (INCHES)	23.06		28.22						24.53			
10 PERCENT EXCEEDS	6040		7150						6860			
50 PERCENT EXCEEDS	2060		2900						1950			
90 PERCENT EXCEEDS	897		1010						697			

† Change in contents, equivalent in cubic feet per second, in Deep Creek Reservoir and Youghiogheny River Lake. Records of contents in Deep Creek Reservoir furnished by Pennsylvania Electric Co. Records of contents in Youghiogheny River Lake furnished by U.S. Army Corps of Engineers.

a From floodmark.

b Minimum observed.



October 1, 1997 to September 30, 1998

MONONGAHELA RIVER BASIN

03083500 YOUGHIOGHENY RIVER AT SUTERSVILLE, PA--Continued
(National Water-Quality Assessment station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1947 to September 1950, October 1958 to September 1959, October 1968 to September 1972, November 1975 to September 1981, April 1996 to September 1998 (discontinued).

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: October 1996 to September 1998.

INSTRUMENTATION.--Daily record measured and collected at hourly intervals with an in-situ probe and electronic data logger. Water temperature was measured and collected at hourly intervals using an in-situ probe with an electronic data logger from October 1996 to September 1998.

REMARKS.--All water-quality samples were collected and analyzed by the U.S. Geological Survey. Interruptions in the daily record were due to malfunctions of the equipment. Water temperature data from the in-situ probes oftentimes did not exactly agree with the water temperature of the monthly and storm samples because of the fixed location of the in-situ temperature probes. Additional sites in the (NAWQA) fixed-station network are shown in figure 6 on page 28. An explanation of selected abbreviations used in the water-quality tables are given on pages 29-31.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 28.5°C, August 9,10; minimum 0.0°C, December 31, January 1,2.

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

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (μS/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	OXYGEN, DIS- SOLVED (MG/L) (00300)	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)
OCT											
07...	1000	1030	274	7.5	19.0	745	8.4	85	23	6.4	22
NOV											
09...	0915	15600	152	7.1	8.0	733	10.0	46	13	3.1	6.0
DEC											
19...	0825	2790	123	7.3	2.0	741	10.1	77	21	6.0	14
JAN											
10...	0850	12300	180	7.4	7.5	722	11.4	52	15	3.8	9.3
23...	0855	2400	291	7.5	3.5	736	13.0	91	25	7.2	18
FEB											
06...	0920	5250	316	7.4	3.0	737	12.2	79	22	5.8	23
MAR											
13...	0915	6080	204	7.1	1.0	749	14.3	61	16	4.8	11
APR											
23...	1010	7240	163	7.0	10.0	747	10.9	51	14	3.9	8.4
MAY											
13...	0930	4180	198	7.4	13.0	753	9.8	64	17	5.0	10
JUN											
18...	1030	6120	188	6.9	19.0	752	8.9	63	18	4.6	8.7
JUL											
16...	0930	1270	368	7.2	21.0	752	7.2	110	31	8.6	25
AUG											
06...	0900	1100	304	7.1	24.5	756	7.1	87	24	6.8	22
SEP											
03...	1000	940	281	7.6	22.0	747	7.8	81	22	6.1	20

MONONGAHELA RIVER BASIN
03083500 YOUGHIOGHENY RIVER AT SUTERSVILLE, PA.

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

DATE	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	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, 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)
OCT 07...	1.9	36	80	15	.13	.82	180	<.010	.482	.023	.23
NOV 09...	2.2	11	26	8.9	<.10	4.4	99	<.010	1.17	<.020	.64
DEC 19...	1.3	24	59	14	<.10	4.6	155	<.010	1.06	<.020	.12
JAN 10...	1.5	19	30	14	<.10	5.1	112	<.010	1.04	<.020	.32
23...	1.4	25	68	21	<.10	5.1	176	.015	1.02	<.020	.10
FEB 06...	1.6	29	50	35	.11	5.1	174	<.010	1.01	.035	.31
MAR 13...	1.1	16	43	14	<.10	4.6	118	<.010	.921	.039	<.10
APR 23...	1.1	17	34	10	<.10	4.2	97	<.010	.787	.040	.18
MAY 13...	1.2	19	49	11	<.10	4.1	117	<.010	.714	.055	.14
JUN 18...	1.5	21	39	11	<.10	4.6	115	<.010	.853	.056	.89
JUL 16...	2.0	34	99	17	.14	2.3	258	.016	.834	.088	.17
AUG 06...	1.7	29	83	13	.14	1.8	186	.011	.718	.037	.22
SEP 03...	1.6	21	73	13	<.10	2.6	172	.016	.867	.064	.14

DATE	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N) (00623)	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)	IRON, DIS- SOLVED (MG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (MG/L AS MN) (01056)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS- PENDE TOTAL (MG/L AS C) (00689)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 07...	<.20	<.010	<.010	<.010	46	28	1.8	.20	7	80
NOV 09...	.25	.102	<.010	.011	53	110	3.8	1.0	81	78
DEC 19...	.13	.012	.017	<.010	81	138	1.4	.20	3	67
JAN 10...	.15	.042	<.010	<.010	27	61	2.3	.50	39	89
23...	<.10	<.010	<.010	.016	45	167	1.1	.20	5	95
FEB 06...	.16	.013	.018	.010	16	105	1.4	.70	389	44
MAR 13...	<.10	<.010	<.010	<.010	41	144	1.2	.40	6	92
APR 23...	<.10	<.010	<.010	<.010	34	67	1.2	.50	10	59
MAY 13...	.11	<.010	<.010	<.010	33	56	1.1	.40	6	50
JUN 18...	.11	.150	<.010	<.010	29	25	1.8	>3.3	95	84
JUL 16...	.14	<.010	<.010	.019	51	38	1.7	.40	5	53
AUG 06...	.15	<.010	<.010	<.010	52	29	1.8	.50	8	56
SEP 03...	.13	<.010	<.010	.012	65	28	1.8	.20	14	52

MONONGAHELA RIVER BASIN

03083500 YOUGHIOGHENY RIVER AT SUTERSVILLE, PA.

REMARKS.--The following data are for dissolved trace elements in surface water filtered through a 0.45µm filter.

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

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	ALUM- INUM, DIS- SOLVED (µG/L AS AL) (01106)	ANTI- MONY, DIS- SOLVED (µG/L AS SB) (01095)	ARSENIC DIS- SOLVED (µG/L AS AS) (01000)	BARIUM, DIS- SOLVED (µG/L AS BA) (01005)	BERYL- LIUM, DIS- SOLVED (µG/L AS BE) (01010)	CADMIUM DIS- SOLVED (µG/L AS CD) (01025)	CHRO- MIUM, DIS- SOLVED (µG/L AS CR) (01030)	COBALT, DIS- SOLVED (µG/L AS CO) (01035)
SEP 03...	1000	940	17	<1.0	1	38	<1.0	<1.0	<1.0	<1.0

DATE	COPPER, DIS- SOLVED (µG/L AS CU) (01040)	LEAD, DIS- SOLVED (µG/L AS PB) (01049)	MANGA- NESE, DIS- SOLVED (µG/L AS MN) (01056)	MOLYB- DENUM, DIS- SOLVED (µG/L AS MO) (01060)	NICKEL, DIS- SOLVED (µG/L AS NI) (01065)	SELE- NIUM, DIS- SOLVED (µG/L AS SE) (01145)	SILVER, DIS- SOLVED (µG/L AS AG) (01075)	URANIUM NATURAL DIS- SOLVED (µG/L AS U) (22703)	ZINC, DIS- SOLVED (µG/L AS ZN) (01090)
SEP 03...	1.1	<1.0	28	<1.0	1.4	<1	<1.0	<1.0	5.2

MONONGAHELA RIVER BASIN

03083500 YOUGHIOGHENY RIVER AT SUTERSVILLE, PA.

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	17.0	15.5	16.5	10.5	9.5	10.0	8.0	7.0	7.5	.0	.0	.0
2	16.5	14.0	15.5	11.5	10.5	10.5	7.0	5.0	6.0	1.5	.0	.5
3	15.5	14.0	15.0	10.5	9.5	10.0	5.0	4.5	4.5	4.0	1.5	2.5
4	17.5	14.5	16.0	9.5	8.0	8.5	5.5	5.0	5.5	5.0	4.0	4.5
5	19.5	17.0	18.0	8.0	7.0	7.5	5.5	5.0	5.5	5.5	4.0	5.0
6	20.5	18.5	19.5	8.0	6.5	7.0	5.0	2.5	3.5	6.5	5.5	6.0
7	21.0	19.0	20.0	8.0	7.5	8.0	2.5	2.0	2.0	8.0	6.5	7.0
8	21.5	19.5	20.5	8.0	7.5	8.0	2.5	2.0	2.0	9.0	8.0	9.0
9	21.5	19.5	20.5	8.5	7.5	8.0	3.0	2.0	2.5	9.5	8.5	9.0
10	21.5	20.0	20.5	8.5	8.0	8.0	4.0	3.0	3.5	8.5	6.0	7.0
11	20.0	18.0	19.0	8.0	7.5	7.5	4.5	4.0	4.5	6.0	4.5	5.5
12	19.0	17.0	18.0	7.5	6.0	6.5	4.5	4.0	4.0	4.5	4.0	4.0
13	19.5	17.0	18.0	6.0	5.0	5.5	4.0	3.5	3.5	4.5	4.0	4.5
14	18.5	16.0	17.5	5.5	5.0	5.0	3.5	3.0	3.5	4.0	2.5	3.0
15	16.5	14.5	15.5	5.0	5.0	5.0	3.0	2.5	2.5	3.5	2.5	3.0
16	15.5	14.0	14.5	5.0	4.0	4.5	2.5	2.0	2.5	4.0	3.5	3.5
17	14.5	12.5	13.5	4.0	3.0	3.5	2.5	2.0	2.0	4.0	4.0	4.0
18	14.5	12.5	13.5	3.0	2.5	2.5	2.5	1.5	2.0	4.0	3.5	4.0
19	15.0	13.0	14.0	3.0	2.5	3.0	3.0	2.0	2.5	3.5	3.0	3.5
20	14.5	12.5	13.5	4.5	3.0	4.0	3.0	2.5	3.0	3.5	3.0	3.0
21	13.0	12.0	12.5	6.0	4.5	5.0	3.5	3.0	3.0	3.0	2.5	2.5
22	12.0	9.5	11.0	6.5	6.0	6.0	3.5	3.0	3.0	3.5	2.5	2.5
23	10.0	8.5	9.5	6.5	6.0	6.5	4.5	3.5	4.0	4.0	3.0	3.5
24	9.5	8.5	9.0	6.0	4.0	5.0	4.5	4.0	4.5	4.0	3.5	3.5
25	10.0	9.5	10.0	4.0	3.0	3.5	5.0	4.5	5.0	3.5	3.0	3.0
26	10.5	10.0	10.0	4.0	3.0	3.5	5.0	4.5	4.5	3.5	2.5	3.0
27	10.5	9.5	10.5	5.0	4.0	4.5	4.5	3.5	4.0	3.5	3.0	3.5
28	9.5	8.0	9.0	6.0	5.0	5.5	3.5	2.5	3.0	4.0	3.5	3.5
29	9.5	7.5	8.5	7.0	6.0	6.5	2.5	2.0	2.0	4.5	3.5	4.0
30	10.0	8.0	9.0	8.0	7.0	7.5	2.0	1.5	1.5	4.5	4.0	4.5
31	10.5	8.5	9.5	---	---	---	1.5	.0	.5	4.0	3.0	3.5
MONTH	21.5	7.5	14.4	11.5	2.5	6.2	8.0	.0	3.5	9.5	.0	4.0

MONONGAHELA RIVER BASIN
03083500 YOUGHIOGHENY RIVER AT SUTERSVILLE, PA.

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	3.0	2.0	3.0	6.0	5.5	6.0	16.5	15.5	15.5	13.0	12.0	12.5
2	3.5	2.5	3.0	6.0	5.5	6.0	15.5	13.5	14.0	12.5	11.5	12.0
3	3.5	3.0	3.5	5.5	5.0	5.5	13.5	12.0	12.5	14.0	12.5	13.0
4	3.0	2.0	2.5	5.0	4.5	4.5	12.0	9.5	10.5	15.5	13.5	14.5
5	3.0	2.0	2.5	4.5	4.0	4.5	10.5	9.0	10.0	15.0	13.5	14.5
6	4.0	3.0	3.5	5.5	3.5	4.5	11.0	8.5	10.0	15.0	13.0	14.0
7	4.0	2.5	3.5	6.5	5.0	6.0	11.5	9.0	10.5	14.5	13.5	14.0
8	4.0	2.5	3.5	7.0	6.0	6.5	12.0	10.5	11.0	14.0	13.5	13.5
9	4.5	3.0	3.5	7.5	6.5	7.0	12.0	11.0	11.5	14.5	13.5	14.0
10	5.0	3.5	4.0	7.0	5.0	6.0	11.5	9.5	10.5	14.5	13.5	14.0
11	5.0	4.0	4.5	5.0	2.5	3.5	9.5	9.0	9.5	14.5	13.5	14.0
12	5.5	5.0	5.0	2.5	1.5	2.0	10.5	8.5	9.5	14.5	13.5	14.0
13	5.0	4.0	4.0	3.0	1.0	2.0	11.0	9.0	10.0	16.5	13.5	15.0
14	4.0	3.5	3.5	4.5	2.5	3.5	12.0	10.5	11.0	18.5	15.5	17.0
15	4.0	3.0	3.5	4.0	3.0	3.5	12.5	11.0	11.5	20.0	17.5	18.5
16	4.0	3.0	3.5	5.0	3.0	4.0	13.5	12.0	12.5	20.5	18.5	19.5
17	5.0	4.0	4.5	5.5	4.5	5.0	13.5	12.5	13.5	21.5	19.0	20.0
18	5.5	4.5	5.0	6.0	5.0	5.5	13.0	11.5	12.0	21.5	18.0	20.0
19	5.0	4.5	4.5	7.5	6.0	6.5	12.5	11.0	12.0	23.0	19.5	21.0
20	5.0	5.0	5.0	8.0	7.0	7.5	11.0	10.5	10.5	24.0	20.5	22.0
21	5.0	5.0	5.0	8.0	7.0	7.5	11.5	9.5	10.5	23.0	21.0	22.0
22	5.5	4.5	5.0	7.0	5.0	6.0	11.0	10.0	10.5	22.0	19.0	20.5
23	5.0	4.5	5.0	5.5	4.5	5.0	11.0	10.0	10.5	22.5	19.5	20.5
24	4.5	4.0	4.5	5.5	4.5	5.0	12.5	10.0	11.0	20.5	18.5	19.5
25	4.5	4.0	4.0	6.5	4.5	5.5	13.5	11.0	12.0	20.5	18.5	19.5
26	5.0	4.0	4.5	9.5	6.5	8.0	13.5	12.0	12.5	20.5	18.5	19.5
27	5.5	4.5	5.0	12.0	9.0	10.5	12.5	11.0	12.0	22.0	18.5	20.0
28	6.0	5.5	5.5	13.5	11.5	12.5	13.0	11.0	12.0	23.0	19.5	21.0
29	---	---	---	14.5	13.0	13.5	13.5	11.0	12.5	25.0	21.0	22.5
30	---	---	---	15.5	13.5	14.5	13.0	12.5	12.5	26.0	22.5	24.0
31	---	---	---	16.5	14.0	15.0	---	---	---	25.5	23.0	24.5
MONTH	6.0	2.0	4.1	16.5	1.0	6.5	16.5	8.5	11.5	26.0	11.5	17.8

MONONGAHELA RIVER BASIN

03083500 YOUGHIOGHENY RIVER AT SUTERSVILLE, PA.

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	23.5	22.0	22.5	---	---	---	25.0	22.0	23.0	25.5	22.5	24.0
2	22.5	20.5	21.5	---	---	---	25.5	22.0	23.5	25.0	23.0	23.5
3	21.0	20.0	20.5	---	---	---	26.0	23.0	24.0	24.5	21.5	22.5
4	20.5	18.5	19.5	---	---	---	26.5	23.0	24.5	24.5	21.5	23.0
5	19.0	17.0	18.0	---	---	---	27.0	24.0	25.0	25.0	21.5	23.0
6	---	---	---	---	---	---	27.5	24.0	25.5	25.0	22.0	23.5
7	---	---	---	---	---	---	27.5	24.5	25.5	25.0	22.5	23.5
8	---	---	---	---	---	---	27.5	24.5	26.0	23.0	20.5	21.5
9	---	---	---	---	---	---	28.5	25.5	26.5	20.5	18.0	19.0
10	---	---	---	---	---	---	28.5	25.5	26.5	20.5	17.0	18.5
11	---	---	---	---	---	---	25.5	23.5	24.5	21.5	18.5	19.5
12	---	---	---	---	---	---	25.5	23.0	24.0	23.0	19.5	21.0
13	---	---	---	---	---	---	26.0	23.0	24.5	24.0	21.0	22.0
14	---	---	---	---	---	---	26.0	23.5	24.5	24.5	22.0	23.0
15	---	---	---	---	---	---	25.0	22.5	23.5	25.5	23.0	24.0
16	---	---	---	---	---	---	26.5	24.0	25.0	25.5	23.5	24.0
17	---	---	---	25.0	22.5	23.5	26.0	23.5	24.5	25.0	23.5	24.0
18	---	---	---	26.5	23.0	24.0	25.0	23.0	24.0	25.5	22.5	23.5
19	---	---	---	27.0	23.5	25.0	25.0	22.0	23.5	25.0	23.0	24.0
20	---	---	---	26.5	24.5	25.5	24.5	21.0	22.5	25.0	23.0	24.0
21	---	---	---	27.0	24.0	25.0	24.5	22.0	23.0	25.0	23.5	24.0
22	---	---	---	27.5	25.0	26.0	25.5	23.0	24.0	24.5	22.5	23.0
23	---	---	---	27.0	25.0	25.5	27.0	24.0	25.0	23.5	20.0	21.5
24	---	---	---	26.0	24.0	25.0	26.5	23.5	25.0	21.5	18.5	19.5
25	---	---	---	25.5	23.0	24.0	23.5	22.5	22.5	20.5	19.0	19.5
26	---	---	---	26.0	23.0	24.5	25.0	22.0	23.0	22.5	19.0	20.0
27	---	---	---	26.0	23.0	24.5	26.0	23.0	24.0	23.5	21.0	22.0
28	---	---	---	26.0	23.5	24.5	27.0	23.5	25.0	23.5	22.0	22.5
29	---	---	---	26.0	23.5	24.5	26.5	24.0	25.0	23.0	20.5	21.5
30	---	---	---	26.0	23.5	24.5	25.5	23.0	24.0	23.0	20.5	21.5
31	---	---	---	24.0	21.5	22.5	25.5	23.0	24.0	---	---	---
MONTH	23.5	17.0	20.4	27.5	21.5	24.6	28.5	21.0	24.4	25.5	17.0	22.2

MONONGAHELA RIVER BASIN

03085000 MONONGAHELA RIVER AT BRADDOCK, PA
(National water-quality assessment station)

LOCATION.--Lat 40°23'28", long 79°51'30", Allegheny County, Hydrologic Unit 05020005, near right bank on river guide wall 300 ft upstream from dam at lock 2 at Braddock, 1,700 ft downstream from Turtle Creek, and 11.2 mi upstream of confluence with Allegheny River.

DRAINAGE AREA.--7,337 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1938 to current year. Monthly discharge only for some periods, published in WSP 1305.

GAGE.--Water-stage recorder and fixed-crest concrete dam control with streamward lock chamber usable as floodway during high flow since 1951. Datum of gage is 709.66 ft above sea level (U.S. Army Corps of Engineers bench mark). Prior to Aug. 13, 1951, at site 700 ft upstream, and Aug. 13, 1951 to Nov. 8, 1990 at present site at datum 2.50 ft lower.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by locks and hydroelectric plants, since 1938 by Tygart Lake, since 1926 by Lake Lynn, since 1925 by Deep Creek Reservoir, since 1943 by Youghiogheny River Lake, and since 1990 by Stonewall Jackson Lake, combined capacity, 779,000 acre-ft. Figures of daily discharge include slight diversion from Beaver Run Reservoir in the Kiskiminetas River Basin to the borough of Jeannette in the Monongahela River Basin. U.S. Army Corps of Engineers satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 18, 1936 reached a stage of 38.8 ft from floodmarks, discharge, 210,000 ft³/s.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10300	2820	20100	8680	20300	33500	13600	15100	5850	46800	3080	2100
2	8110	6000	21200	10000	18700	33800	14900	21700	6080	40500	2740	2220
3	6440	11400	19600	8290	15000	30000	12000	33800	5600	29600	2550	2030
4	5380	14300	13800	8340	12900	28100	9490	23200	4220	18300	3010	1990
5	4860	7960	13300	16100	18800	23900	9280	29600	4070	11700	1930	2080
6	3350	6130	13300	18000	23200	20200	10400	33600	3520	9090	2130	2200
7	3930	19000	10300	23800	24000	17800	12000	29700	3070	7890	2200	2770
8	3260	39900	11700	53200	20900	17500	8680	26000	3010	7980	2210	3460
9	2690	38100	9470	73400	19200	29400	11000	30500	2990	8180	1980	3550
10	3670	28200	10400	57100	19800	39500	27700	28700	2540	9960	2890	4180
11	2880	23600	17000	38500	18200	35400	33100	22700	4600	7490	4900	2680
12	2830	16600	24700	35700	17500	28400	24500	21400	4290	5630	5300	3580
13	2760	12500	23900	32600	22000	24500	18500	20100	9380	4460	4650	2440
14	3080	15000	17000	30600	22000	21000	13600	15900	18500	5040	3680	2320
15	2480	21300	14000	25500	19900	17800	13900	14000	13400	3790	2820	2870
16	2950	23300	12300	21800	17500	14800	11400	12600	29700	4140	4980	2430
17	2460	16400	10800	20500	19300	11400	9950	9790	36200	3850	4880	1950
18	2660	13300	10000	15700	21100	9750	8980	9510	32500	3240	7940	2600
19	2230	11400	9100	15100	42400	24500	10700	6180	32400	2770	8170	1900
20	2560	8790	7480	14800	39800	29800	35500	6450	56400	2810	8030	2710
21	2780	9170	5680	12900	37500	33300	43600	5850	44100	3260	6560	2630
22	2490	11300	5550	13000	34100	52200	37300	5620	29900	4700	4910	3220
23	2320	18400	6790	14500	30600	43000	34800	4640	20400	3060	3390	2970
24	3000	19500	6530	27000	38100	35000	25300	4550	16000	3520	4710	2530
25	2840	16400	8070	25700	36300	30100	18000	7630	12000	3840	4070	3220
26	2820	12700	12000	19700	27400	24100	13800	6370	7560	3940	3880	2440
27	3230	10000	15700	18700	25600	21200	21000	4160	9130	3110	2810	2220
28	2620	10600	12300	21200	28100	16600	21600	4440	20000	3450	2230	3950
29	3260	15600	11400	31000	---	19300	18600	4800	44700	3220	2370	2180
30	3230	13900	14000	23700	---	15300	14200	4050	55200	3560	2400	2160
31	2350	---	10700	21800	---	13000	---	3770	---	3470	2590	---
TOTAL	109820	473570	398170	756910	690200	794150	557380	466410	537310	272350	119990	79580
MEAN	3543	15790	12840	24420	24650	25620	18580	15050	17910	8785	3871	2653
MAX	10300	39900	24700	73400	42400	52200	43600	33800	56400	46800	8170	4180
MIN	2230	2820	5550	8290	12900	9750	8680	3770	2540	2770	1930	1900
CFSM	.48	2.15	1.75	3.33	3.36	3.49	2.53	2.05	2.44	1.20	.53	.36
IN.	.56	2.40	2.02	3.84	3.50	4.03	2.83	2.36	2.72	1.38	.61	.40

MONONGAHELA RIVER BASIN

03085000 MONONGAHELA RIVER AT BRADDOCK, PA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	5423	9546	15850	17330	20870	24180	18690	14300	9262	6331	5867	4678
MAX	23130	42130	37600	36150	43120	54500	39180	40310	30240	15620	23720	18290
(WY)	1980	1986	1973	1952	1956	1963	1940	1996	1981	1958	1956	1971
MIN	1200	971	2748	3389	6387	8042	6473	3352	2107	1765	1531	1005
(WY)	1954	1954	1954	1977	1954	1969	1971	1982	1965	1966	1957	1946

SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

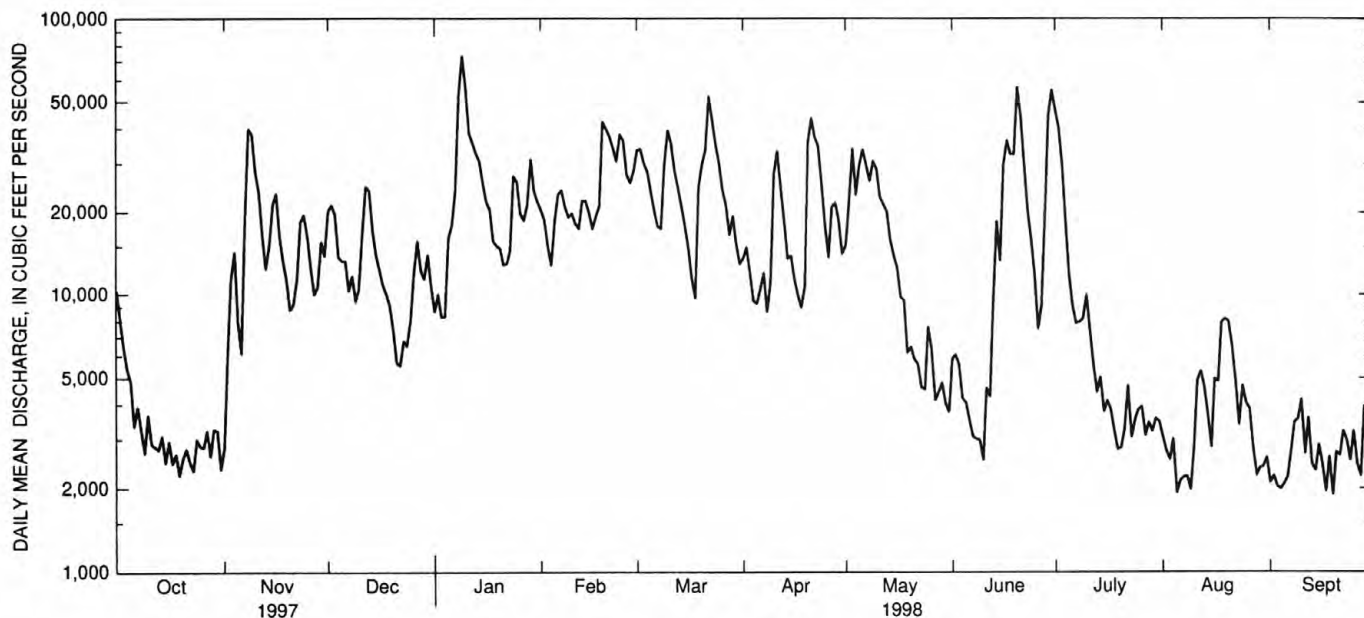
FOR 1998 WATER YEAR

WATER YEARS 1939 - 1998

ANNUAL TOTAL	4137240	5255840	
ANNUAL MEAN	11330	14400	
HIGHEST ANNUAL MEAN			12640
LOWEST ANNUAL MEAN			18440
HIGHEST DAILY MEAN	77600	Mar 3	73400
LOWEST DAILY MEAN	1860	Aug 12	1900
ANNUAL SEVEN-DAY MINIMUM	2160	Jul 16	2170
INSTANTANEOUS PEAK FLOW			79500
ANNUAL RUNOFF (CFSM)	1.54		18.42
ANNUAL RUNOFF (INCHES)	20.98		26.65
10 PERCENT EXCEEDS	23400		32500
50 PERCENT EXCEEDS	8370		11300
90 PERCENT EXCEEDS	2630		2630

a Also Sept. 4, 22, 1946.

b Maximum gage height, 31.39 ft., June 24, 1972 (backwater from Allegheny River). Datum then in use.



October 1, 1997 to September 30, 1998

MONONGAHELA RIVER BASIN

03085000 MONONGAHELA RIVER AT BRADDOCK, PA--Continued
(National Water-Quality Assessment station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1958 to September 1993 (discontinued). September 1994 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: January 1973 to October 1975.

WATER TEMPERATURE: January 1973 to September 1979, November 1996 to September 1998.

SUSPENDED SEDIMENT DISCHARGE: January 1973 to September 1979.

INSTRUMENTATION.--From January 1973 to September 1979, specific conductance and water temperature were once daily readings by an observer. From January 1973 to September 1979, suspended-sediment samples were collected daily and more often during storm events by an observer. From November 1996 to current year, daily records of water temperature were measured and collected at hourly intervals with an in-situ probe and electronic data logger.

REMARKS.--All water-quality samples were collected and analyzed by the U.S. Geological Survey. Interruptions in the daily record were due to malfunctions of the equipment. Water temperature data from the in-situ probes often times did not exactly agree with the water temperature of the monthly and storm samples because of the fixed location of the in-situ temperature probes. Additional sites in the (NAWQA) fixed-station network are shown in figure 6 on page 28. An explanation of selected abbreviations used in the water-quality tables are given on pages 29-31.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum, 30.0°C, on several days during the summer periods; minimum, 0.0°C, on several days each year before 1979 water year.

SEDIMENT CONCENTRATIONS: Maximum daily, 830 mg/L, March 15, 19, 1978; minimum daily, 2 mg/L, November 29, 1976.

SEDIMENT DISCHARGES: Maximum daily, 210,000 tons, January 12, 1974; minimum daily, 14 tons, February 8, 1977.

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

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (μS/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	OXYGEN, DIS- SOLVED (MG/L) (00300)	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)
OCT											
06...	0845	3100	443	7.6	21.5	741	8.4	140	38	10	30
NOV											
24...	1145	20900	267	7.5	7.0	747	12.2	84	24	6.1	14
DEC											
17...	0920	10500	255	7.3	5.0	735	12.3	170	48	13	87
JAN											
10...	0950	56400	200	7.4	8.0	740	11.0	65	19	4.4	9.7
29...	0940	30400	280	7.3	5.0	734	12.3	88	25	6.4	14
FEB											
19...	1045	44600	302	7.4	6.0	735	11.7	91	25	6.8	16
MAR											
09...	0920	29600	271	7.5	8.0	721	11.9	92	25	6.9	14
APR											
07...	0925	13700	301	7.6	13.0	738	9.9	99	27	7.5	16
MAY											
12...	1010	20700	226	7.5	16.0	748	9.5	77	22	5.5	11
JUN											
04...	1030	4350	375	7.4	23.0	748	7.3	120	33	8.7	24
JUL											
09...	0945	8510	259	7.3	25.0	750	7.4	85	25	5.8	13
AUG											
10...	1045	2640	442	7.4	28.0	752	6.5	130	37	9.3	32
SEP											
04...	1000	1690	456	7.9	27.0	746	8.0	140	38	9.8	33

MONONGAHELA RIVER BASIN

03085000 MONONGAHELA RIVER AT BRADDOCK, PA.

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

DATE	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	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, 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)
OCT 06...	2.4	41	140	18	.18	3.3	278	.010	.889	.047	.37
NOV 24...	1.9	30	67	12	<.10	4.9	161	<.010	.725	.061	.22
DEC 17...	2.3	25	110	60	.22	6.3	426	.010	.547	<.020	<.10
JAN 10...	1.4	24	40	12	.11	5.1	129	<.010	.803	.037	.66
JAN 29...	1.3	28	74	11	.11	5.0	172	<.010	.668	.136	.27
FEB 19...	1.4	31	71	15	.10	5.1	177	<.010	.690	.119	.47
MAR 09...	1.2	29	67	12	<.10	5.0	157	<.010	.587	.078	.20
APR 07...	1.3	30	86	10	<.10	4.6	185	.012	.612	.070	.21
MAY 12...	1.2	28	57	8.0	<.10	4.9	135	.012	.522	.084	.24
JUN 04...	2.0	42	100	20	.14	4.6	228	.031	---	.083	.33
JUL 09...	1.8	33	60	12	.10	4.8	158	.012	.695	.053	.28
AUG 10...	3.0	37	120	26	.19	3.5	262	.025	1.20	.076	.53
SEP 04...	2.4	38	130	25	.19	2.9	288	.030	1.27	.086	.37

DATE	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N) (00623)	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)	IRON, DIS- SOLVED (MG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (MG/L AS MN) (01056)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS- PENDE TOTAL (MG/L AS C) (00689)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 06...	<.20	.013	<.010	<.010	17	9.4	1.8	.30	7	97
NOV 24...	.17	.012	<.010	.015	17	95	1.6	.90	16	96
DEC 17...	<.10	.010	.010	.030	15	36	1.4	<.20	7	80
JAN 10...	.18	.136	<.010	<.010	19	152	1.8	1.4	149	92
JAN 29...	.21	.016	<.010	<.010	<10	132	1.2	.90	22	82
FEB 19...	.17	.097	<.010	.020	15	117	1.5	2.3	65	84
MAR 09...	.11	.020	<.010	.010	15	120	1.2	.60	17	86
APR 07...	.10	.016	<.010	<.010	28	127	1.0	.30	8	62
MAY 12...	.16	.033	<.010	.011	17	48	1.2	.60	14	80
JUN 04...	.19	<.010	<.010	.083	20	70	1.6	.20	20	97
JUL 09...	.23	.040	.013	.029	23	49	2.0	.60	34	92
AUG 10...	.28	.083	<.010	<.010	<10	21	2.6	1.0	47	92
SEP 04...	.21	.025	<.010	.013	20	4.3	2.0	.60	15	69

MONONGAHELA RIVER BASIN

03085000 MONONGAHELA RIVER AT BRADDOCK, PA--Continued

REMARKS.--The following data are for dissolved trace elements in surface water filtered through a 0.45µm filter.

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

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	ALUM- INUM, DIS- SOLVED (µG/L AS AL) (01106)	ANTI- MONY, DIS- SOLVED (µG/L AS SB) (01095)	ARSENIC DIS- SOLVED (µG/L AS AS) (01000)	BARIUM, DIS- SOLVED (µG/L AS BA) (01005)	BERYL- LIUM, DIS- SOLVED (µG/L AS BE) (01010)	CADMIUM DIS- SOLVED (µG/L AS CD) (01025)	CHRO- MIUM, DIS- SOLVED (µG/L AS CR) (01030)	COBALT, DIS- SOLVED (µG/L AS CO) (01035)
SEP 04...	1000	1690	25	<1.0	<1	48	<1.0	<1.0	<1.0	<1.0

DATE	COPPER, DIS- SOLVED (µG/L AS CU) (01040)	LEAD, DIS- SOLVED (µG/L AS PB) (01049)	MANGA- NESE, DIS- SOLVED (µG/L AS MN) (01056)	MOLYB- DENUM, DIS- SOLVED (µG/L AS MO) (01060)	NICKEL, DIS- SOLVED (µG/L AS NI) (01065)	SELE- NIUM, DIS- SOLVED (µG/L AS SE) (01145)	SILVER, DIS- SOLVED (µG/L AS AG) (01075)	URANIUM NATURAL DIS- SOLVED (µG/L AS U) (22703)	ZINC, DIS- SOLVED (µG/L AS ZN) (01090)
SEP 04...	1.9	<1.0	4.3	1.6	2.6	<1	<1.0	<1.0	8.7

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN		MAX	MIN	MEAN		MAX	MIN	MEAN		MAX	MIN	MEAN
	OCTOBER				NOVEMBER				DECEMBER				JANUARY		
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	---	---	---		---	---	---		---	---	---		---	---	---
MONTH	---	---	---		---	---	---		---	---	---		---	---	---

MONONGAHELA RIVER BASIN

03085000 MONONGAHELA RIVER AT BRADDOCK, PA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	---	---	---	15.0	14.0	14.5	15.0	14.5	15.0
2	---	---	---	---	---	---	14.5	13.5	14.0	15.0	14.5	14.5
3	---	---	---	---	---	---	14.0	13.5	13.5	15.0	14.0	14.5
4	---	---	---	---	---	---	13.5	12.5	13.0	15.5	14.5	15.0
5	---	---	---	---	---	---	13.0	12.0	12.5	15.5	15.0	15.5
6	---	---	---	---	---	---	13.0	12.5	13.0	15.5	14.5	15.0
7	---	---	---	---	---	---	13.5	13.0	13.0	15.5	15.0	15.5
8	---	---	---	---	---	---	14.0	13.0	13.5	16.0	15.5	15.5
9	---	---	---	---	---	---	14.5	13.0	14.0	15.5	15.5	15.5
10	---	---	---	7.5	6.0	7.0	13.0	11.0	12.0	16.0	15.0	15.5
11	---	---	---	6.0	4.5	5.0	11.5	10.5	11.0	16.0	15.5	16.0
12	---	---	---	4.5	3.5	4.0	12.5	11.0	11.5	16.0	15.5	16.0
13	---	---	---	4.5	3.5	4.0	13.5	11.5	12.5	17.5	15.5	16.5
14	---	---	---	5.5	4.5	4.5	13.5	13.0	13.0	18.5	17.0	17.5
15	---	---	---	5.5	5.0	5.0	14.5	13.5	14.0	19.5	18.5	19.0
16	---	---	---	6.0	4.5	5.5	15.0	14.0	14.5	20.0	19.5	19.5
17	---	---	---	6.0	5.5	6.0	15.0	14.5	14.5	20.5	19.5	20.0
18	---	---	---	7.0	6.0	6.5	14.5	14.5	14.5	21.5	20.5	21.0
19	---	---	---	7.0	6.0	6.5	14.5	13.0	14.0	22.0	21.0	21.5
20	---	---	---	7.0	6.0	6.5	13.0	12.5	12.5	23.0	22.0	22.5
21	---	---	---	7.5	6.5	7.0	13.0	12.0	12.5	23.0	23.0	23.0
22	---	---	---	6.5	6.5	6.5	13.0	12.5	13.0	23.5	22.5	23.0
23	---	---	---	6.5	6.0	6.5	12.5	12.0	12.5	23.0	22.0	22.5
24	---	---	---	6.5	6.0	6.5	13.0	12.0	12.5	22.5	22.0	22.5
25	---	---	---	7.0	6.0	6.5	14.5	12.5	13.5	23.0	21.5	22.5
26	---	---	---	8.5	7.0	7.5	14.5	13.0	14.0	22.5	22.0	22.5
27	---	---	---	10.5	8.5	9.5	13.5	13.0	13.5	22.0	21.5	22.0
28	---	---	---	12.0	10.5	11.0	14.0	13.0	13.5	23.0	21.5	22.5
29	---	---	---	12.5	11.0	11.5	14.5	13.5	14.0	24.5	23.0	23.5
30	---	---	---	13.5	12.0	13.0	15.0	14.5	14.5	25.0	24.0	24.5
31	---	---	---	14.5	13.0	13.5	---	---	---	25.5	24.0	25.0
MONTH	---	---	---	14.5	3.5	7.3	15.0	10.5	13.3	25.5	14.0	19.2

MONONGAHELA RIVER BASIN

03085000 MONONGAHELA RIVER AT BRADDOCK, PA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	25.0	24.0	24.5	21.5	21.0	21.5	27.0	26.0	26.5	27.0	26.5	26.5
2	25.0	22.5	24.0	21.0	20.5	21.0	26.5	26.0	26.5	27.0	26.0	26.5
3	23.5	23.0	23.5	21.5	20.5	20.5	27.5	26.5	27.0	26.5	25.5	26.0
4	---	---	---	21.5	21.0	21.5	27.5	26.5	27.0	26.5	25.5	26.0
5	22.0	21.0	21.5	22.0	21.0	21.5	29.0	27.5	28.0	26.5	26.0	26.0
6	21.5	20.5	21.0	23.0	21.5	22.5	29.0	27.5	28.0	27.0	26.0	26.0
7	21.0	20.0	20.5	24.0	22.5	23.0	29.0	27.5	28.0	27.0	25.0	26.5
8	20.5	20.0	20.5	24.0	23.5	24.0	29.5	28.0	28.5	25.0	24.5	25.0
9	20.5	20.0	20.5	25.0	24.0	24.5	30.0	28.5	29.0	24.5	23.5	24.0
10	20.0	20.0	20.0	25.5	24.5	25.0	29.5	27.0	28.0	24.5	23.0	23.5
11	21.5	19.5	20.0	25.0	24.5	25.0	29.5	28.0	28.5	24.5	23.5	24.5
12	23.0	21.5	22.0	25.5	24.5	25.0	31.0	28.5	29.5	24.0	23.0	23.5
13	24.0	22.5	23.0	26.0	25.0	25.5	31.0	28.5	29.5	26.0	22.0	24.5
14	24.0	22.0	23.0	26.5	25.5	26.0	29.0	27.5	28.5	25.0	24.0	24.5
15	22.5	22.0	22.0	26.5	26.5	26.5	28.5	27.5	28.0	25.5	24.5	25.0
16	22.5	22.0	22.0	26.5	26.0	26.5	28.5	27.0	27.5	26.0	25.0	25.5
17	22.0	21.0	21.5	26.5	26.0	26.5	30.0	28.5	29.0	26.5	26.0	26.0
18	21.0	20.5	20.5	27.0	26.5	26.5	29.5	27.5	28.5	26.5	26.0	26.5
19	21.0	20.0	20.5	27.0	26.5	26.5	28.5	27.5	28.0	27.0	26.5	26.5
20	20.0	19.0	19.5	27.0	26.5	27.0	28.0	26.5	27.5	27.0	26.5	27.0
21	20.5	19.5	19.5	27.5	27.0	27.0	28.0	27.0	27.5	27.0	27.0	27.0
22	21.5	20.5	21.0	28.5	27.0	27.5	27.5	26.5	27.0	27.5	26.5	27.0
23	22.0	21.0	21.5	29.0	28.5	28.5	27.5	27.0	27.5	26.5	25.5	26.0
24	23.0	22.0	22.5	28.5	28.0	28.5	28.0	27.5	28.0	25.5	24.5	25.0
25	24.0	22.5	23.0	28.0	27.5	28.0	27.5	26.5	27.0	25.0	24.0	24.5
26	25.0	23.5	24.0	28.5	27.5	28.0	26.5	26.0	26.0	25.0	23.5	24.0
27	25.0	24.5	24.5	28.5	27.5	28.0	26.0	26.0	26.0	25.5	24.5	25.0
28	25.0	23.5	24.5	27.5	27.0	27.5	26.5	26.0	26.5	25.0	24.0	24.5
29	23.5	22.5	23.0	27.5	27.0	27.5	27.0	26.5	26.5	25.5	24.5	25.0
30	22.5	21.5	22.0	28.0	27.0	27.5	27.5	26.5	27.0	25.5	24.5	25.0
31	---	---	---	28.0	27.0	27.5	27.5	27.0	27.5	---	---	---
MONTH	25.0	19.0	21.9	29.0	20.5	25.5	31.0	26.0	27.7	27.5	22.0	25.4

MONONGAHELA RIVER BASIN

LAKES AND RESERVOIRS IN MONONGAHELA RIVER BASIN

03076000 DEEP CREEK RESERVOIR.--Lat 39°30'34", long 79°23'28", Garrett County, Md., Hydrologic Unit 05020006, on Deep Creek at dam, 1.8 mi upstream from mouth, and 7 mi north of Oakland, Md. 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).

Reservoir is formed by an earthfill dam completed January 1925. 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. Records furnished by Pennsylvania Electric Co.

EXTREMES FOR PERIOD OF RECORD.--July 1925 to Sept. 1995; Maximum contents, 93,260 acre-ft, July 24, 25, 1949 (elevation, 2,462.075 ft); minimum observed, 11,760 acre-ft, Sept. 30, 1925 (elevation, 2,433.45 ft).

EXTREMES FOR CURRENT YEAR.--Records not furnished to determine extremes for current year.

03077000 YOUGHIOGHENY RIVER LAKE.--Lat 39°47'56", long 79°22'06", Somerset County, Hydrologic Unit 05020006, remote control recorder at control house at dam, 1.2 mi upstream from Confluence, Pa., since June 1951. Water-stage recorder and transmitter at lat 39°45'21", long 79°24'00", at bridge on U.S. Highway 40, 500 ft upstream from Stuck Hollow Run, 0.6 mi upstream from Tub Run, on Youghiogheny River, 7.5 mi upstream from Youghiogheny River Dam, Pa. DRAINAGE AREA, 434 mi². PERIOD OF RECORD, October 1943 to current year. Prior to October 1970 published as "Youghiogheny River Reservoir." GAGE, water-stage recorder. Datum of gage is at sea level. Prior to Mar. 9, 1948, non-recording gage at dam at same datum. Mar. 9, 1948 to present, water-stage recorder also at transmitter site at datum.

Lake is formed by a rock-faced earthfill dam with uncontrolled side channel spillway. Storage began during construction and lake acted as a retention basin from December 1942 to December 1947. Dam became fully operational in January 1948. Lake first reached minimum pool elevation, 1,344.0 ft (capacity, 5,230 acre-ft) in December 1942. Capacity 254,000 acre-ft between elevations 1,319.50 ft (invert at intake to outlet tunnel) and 1,470.00 ft (full pool). Winter low-water pool elevation is 1,419.0 ft, capacity, 103,000 acre-ft. Summer pool normally occurs during period Mar. 15 to Apr. 15. Depletion of low-water storage for Youghiogheny River flow augmentation occurs normally during the period July through November. Figures given herein represent total contents. Lake is used for flood control, for low-flow augmentation of Youghiogheny River and downstream rivers, and for recreation. Records furnished by U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 222,610 acre-ft, May 16, 1967 (elevation, 1,460.95); minimum (after dam became fully operational), 3,700 acre-ft, Oct. 31, 1946 (elevation 1,340.30 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 170,750 acre-ft, Apr. 21 (elevation, 1,444.58 ft); minimum 43,820 acre-ft, Nov. 2 elevation, 1,386.90).

MONTHEND ELEVATION IN FEET ABOVE SEA LEVEL, AND CONTENTS AT 2400 HRS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

Date	Elevation (feet)	Contents (acre- feet)	Change in contents (equivalent in ft ³ /s)	Elevation (feet)	Contents (acre- feet)	Change in contents (equivalent in ft ³ /s)
<u>03076000 Deep Creek Reservoir</u>				<u>03077000 Youghiogheny River Lake</u>		
Sept. 30	2,457.50	76,420	-	1,407.16	77,840	-
Oct. 31	2,456.30	72,190	-69	1,387.27	44,340	-545
Nov. 30	2,457.50	76,420	+71	1,409.23	81,970	+632
Dec. 31	2,456.20	71,840	-74	1,414.44	92,870	+177
CAL YR 1997	-	-	- .48	-	-	+4.0
Jan. 31	2,455.90	70,800	-17	1,421.34	108,500	+254
Feb. 28	2,457.50	76,420	+101	1,433.81	140,110	+569
Mar. 31	2,459.10	82,230	+94	1,439.54	156,050	+259
Apr. 30	2,460.90	88,880	+112	1,440.64	159,200	+53
May 31	2,460.70	88,140	-12	1,439.49	155,910	-54
June 30	2,460.90	88,880	+12	1,441.16	160,700	+81
July 31	2,459.50	83,700	-84	1,432.53	136,670	-391
Aug. 31	2,458.10	78,580	-83	1,417.91	100,560	-587
Sept. 30	2,457.40	76,070	-42	1,401.74	67,560	-554
WTR YR 1998	-	-	- .48	-	-	-14

CHARTIERS CREEK BASIN

03085500 CHARTIERS CREEK AT CARNEGIE, PA

LOCATION.--Lat 40°24'02", long 80°05'48", Allegheny County, Hydrologic Unit 05030101, on left bank 100 ft downstream from Hammond Street bridge, 0.3 mi downstream from Robinson Run, 0.8 mi upstream from Campbells Run, and 8.9 mi upstream from mouth.

DRAINAGE AREA.--257 mi².

PERIOD OF RECORD.--October 1919 to September 1933, October 1940 to current year. Published as "at Crafton" October 1971 to September 1975. Monthly discharge only for some periods, published in WSP 1305. June 1915 to September 1919 (gage heights and discharge measurements only) in reports of Water Supply Commission of Pennsylvania.

GAGE.--Water-stage recorder and concrete weir control. Datum of gage is 755.45 ft above sea level. Prior to Dec. 15, 1931, nonrecording gage at site 0.5 mi downstream at different datum. Jan. 8, 1932 to Sept. 30, 1933, nonrecording gage at site 1.0 mi downstream at different datum. Nov. 20, 1940 to Aug. 18, 1967, water-stage recorder at site 400 ft upstream at datum 1.00 ft higher. Oct. 1, 1971 to Sept. 30, 1975, nonrecording gage at site 4.6 mi downstream, at datum 725.99 ft above sea level.

REMARKS.--Records good except for estimated daily discharges, which are fair. Some regulations at low flow by mine drainage, reservoirs, and industrial usage above station. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Sept. 2, 1912 reached a discharge of 20,000 ft³/s, from U.S. Army Corps of Engineers.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a base discharge of 2,500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 8	0500	3,680	6.09	June 28	0100	*5,140	*7.40
Jan. 9	0800	2,610	4.84	June 30	1800	2,790	5.06
June 27	1630	4,540	6.88	July 8	0700	3,050	5.39

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	90	172	374	e135	247	653	304	460	713	1510	111	103
2	75	165	286	e140	239	508	276	1190	217	552	94	82
3	70	102	238	e150	228	464	251	863	213	393	90	81
4	66	85	270	165	240	434	244	735	173	324	86	74
5	63	72	238	152	459	405	230	1070	146	292	90	68
6	62	64	213	188	545	369	218	678	143	250	89	66
7	60	1020	199	533	453	347	210	570	127	230	86	430
8	57	1540	189	2770	457	596	279	678	118	1190	77	333
9	55	565	185	2100	432	891	437	613	116	463	70	213
10	55	297	316	1010	405	687	436	489	133	308	88	191
11	56	211	425	652	420	506	316	448	165	253	107	149
12	55	180	327	515	507	447	266	413	179	221	89	130
13	55	174	269	510	461	409	247	366	368	200	77	118
14	55	1070	235	435	388	403	246	326	319	192	73	111
15	53	687	209	401	343	358	247	294	354	191	73	111
16	55	391	196	384	342	330	289	271	532	192	69	85
17	55	285	186	345	479	311	264	252	527	183	84	62
18	54	222	171	331	953	326	224	228	338	172	84	58
19	59	197	164	309	1580	310	649	245	270	159	69	62
20	57	175	158	286	829	297	925	255	206	170	62	60
21	53	164	142	265	659	587	499	204	171	158	58	53
22	52	271	153	255	540	935	409	187	197	154	65	57
23	51	224	182	522	498	591	364	177	161	195	57	64
24	52	188	184	519	553	492	333	165	175	190	127	56
25	87	165	306	413	473	430	309	186	172	140	761	68
26	88	160	239	355	421	397	561	160	243	123	300	66
27	143	146	206	328	405	367	661	152	2020	113	138	50
28	85	378	190	328	512	347	384	147	1870	111	97	47
29	63	493	176	305	---	324	327	198	900	111	84	48
30	58	364	e160	288	---	306	372	207	1210	108	95	50
31	56	---	e150	266	---	285	---	261	---	129	242	---
TOTAL	1995	10227	6936	15355	14068	14112	10777	12488	12476	8977	3692	3146
MEAN	64.4	341	224	495	502	455	359	403	416	290	119	105
MAX	143	1540	425	2770	1580	935	925	1190	2020	1510	761	430
MIN	51	64	142	135	228	285	210	147	116	108	57	47
CFM	.25	1.33	.87	1.93	1.95	1.77	1.40	1.57	1.62	1.13	.46	.41
IN.	.29	1.48	1.00	2.22	2.04	2.04	1.56	1.81	1.81	1.30	.53	.46

e Estimated.

CHARTIERS CREEK BASIN

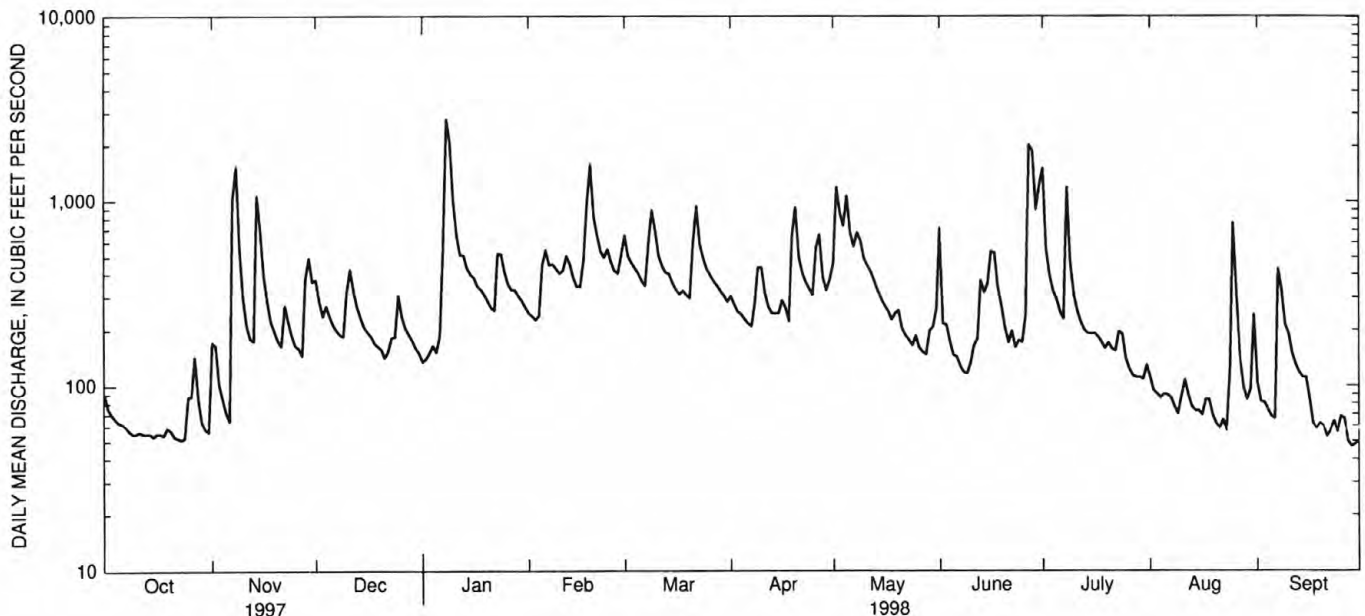
03085500 CHARTIERS CREEK AT CARNEGIE, PA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1920 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	116	200	289	355	462	587	472	351	236	177	142	129
MAX	393	1401	1003	986	1255	1361	999	887	694	951	960	757
(WY)	1980	1986	1951	1924	1926	1945	1961	1924	1980	1928	1980	1926
MIN	31.3	35.5	36.5	37.8	80.9	101	154	92.7	46.5	30.0	28.4	24.1
(WY)	1933	1931	1931	1931	1964	1969	1925	1926	1926	1926	1930	1927

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1920 - 1998	
ANNUAL TOTAL	102023		114249			
ANNUAL MEAN	280		313		292	
HIGHEST ANNUAL MEAN					527	
LOWEST ANNUAL MEAN					132	
HIGHEST DAILY MEAN	4610	May 26	2770	Jan 8	11100	Aug 6 1956
LOWEST DAILY MEAN	51	Oct 23	47	Sep 28	16	Aug 9 1926
ANNUAL SEVEN-DAY MINIMUM	54	Oct 18	54	Oct 18	19	Sep 26 1927
INSTANTANEOUS PEAK FLOW			5140	Jun 28	13500	Aug 6 1956
INSTANTANEOUS PEAK STAGE			7.40	Jun 28	a16.37	Aug 6 1956
INSTANTANEOUS LOW FLOW			46	Sep 28,29	b16	Aug 9 1926c
ANNUAL RUNOFF (CFSM)	1.09		1.22		1.14	
ANNUAL RUNOFF (INCHES)	14.77		16.54		15.44	
10 PERCENT EXCEEDS	509		589		625	
50 PERCENT EXCEEDS	197		230		163	
90 PERCENT EXCEEDS	69		63		55	

- a Site and datum then in use.
b Minimum observed.
c Also at times in September 1932.



October 1, 1997 to September 30, 1998

03086000 OHIO RIVER AT SEWICKLEY, PA

LOCATION.--Lat 40°32'57", long 80°12'21", Allegheny County, Hydrologic Unit 05030101, near left bank 50 ft upstream from Dashields Dam, 1.0 mi downstream from Narrows Run, 1.0 mi northwest of Sewickley, and 13.3 mi downstream from confluence of Allegheny and Monongahela Rivers.

DRAINAGE AREA.--19,500 mi², approximately.

PERIOD OF RECORD.--October 1933 to current year.

REVISED RECORDS.--WSP 1305: 1938-40 (adjusted monthly runoff). WSP 1435: 1934.

GAGE.--Water-stage recorder and fixed-crest concrete dam control. Datum of gage is 680.00 ft above sea level (U.S. Army Corps of Engineers bench mark). Prior to Nov. 22, 1933, nonrecording gage, Nov. 22, 1933 to May 4, 1981, water-stage recorder at site 1.5 mi upstream, Nov. 14, 1988 to July 12, 1990, nonrecording gage, and July 13, 1990 to June 13, 1991, water-stage recorder at present site at datum 10.41 ft higher.

REMARKS.--Records good except for estimated daily discharges, which are fair. Some regulation by locks, and by many reservoirs above station. Combined capacity of reservoirs and lakes, excluding that of Chautauqua Lake, but including Lake Lynn, Deep Creek Reservoir, and 15 smaller reservoirs, 2,773,000 acre-ft. Several measurements of water temperature were made during the year. Satellite telemeter at station.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24300	12900	60200	e29400	45100	63500	37200	56600	15400	58800	8260	7180
2	26200	15400	63900	e27800	42300	74200	e39000	59100	16100	52900	6430	6060
3	22600	26400	58600	e26100	37500	68700	e32900	70700	16300	42500	5340	5490
4	20900	32300	48400	e26500	33100	68500	32300	64900	12600	29700	5250	5640
5	17800	24600	48000	42100	38700	58800	30500	66600	11700	21900	6070	5090
6	13600	22200	47400	58200	42800	53700	28600	71700	11500	17700	5140	6560
7	13900	36400	44900	e70300	43800	46000	29600	70300	8790	16600	e6350	6580
8	12100	76100	44300	e124000	40000	47200	24200	66100	7710	19800	e7210	8630
9	11600	81800	40500	e193000	36600	57700	29100	70600	9160	16600	e5570	7990
10	11100	70800	41100	e157000	36800	72500	54300	68100	8050	18900	e7040	9370
11	9580	66900	51900	e113000	34700	74100	79000	58700	10000	17700	e10100	6890
12	8640	58800	64500	e104000	34400	62900	69500	53700	12000	15400	12200	8710
13	8300	54900	59800	104000	39400	56700	63100	59100	20300	12400	11600	5940
14	8110	57800	49600	94500	42400	48100	54600	53800	33300	12000	9030	6490
15	7490	61800	41800	86900	41700	42400	62200	45700	26500	8890	7580	6980
16	8220	56800	36500	84500	37100	37100	62000	38200	40600	9130	10300	6210
17	7430	45600	32200	78900	39200	31600	59400	40400	52600	8420	9580	5780
18	7890	40700	30800	71800	43500	28900	59300	40600	48700	8800	12300	5670
19	6630	33900	28800	65500	74500	43100	55700	34600	48800	7780	13600	6460
20	7530	28700	25700	59100	77200	54800	87700	31100	70100	8100	13000	6550
21	7310	30600	20700	52900	75700	65300	108000	24800	61900	8720	11700	8770
22	7900	32600	22100	47800	72000	93400	98600	20100	47800	11400	10600	8620
23	6320	42800	23500	49600	66000	86000	97000	16300	34900	8660	7580	6800
24	8130	49500	24900	62900	73400	72400	81700	15300	28200	10400	9070	7230
25	7540	47200	29400	65200	71800	64500	67100	18100	24000	10700	12100	7590
26	9110	40000	35800	57400	59800	56000	62500	17900	17300	11600	10100	7130
27	9060	37900	47900	53200	57100	51200	79800	14000	20300	9760	8630	6490
28	10300	43000	45400	51600	57100	45000	72400	12400	30600	9390	6780	8910
29	12200	54700	42200	59600	---	46100	67100	11900	53100	8640	7330	6030
30	15000	56900	e40100	48900	---	40700	60000	12000	67900	8750	6860	6750
31	11900	---	e34500	47000	---	38300	---	9760	---	7830	6690	---
TOTAL	358690	1340000	1285400	2212700	1393700	1749400	1784400	1293160	866210	509870	269390	208590
MEAN	11570	44670	41460	71380	49780	56430	59480	41710	28870	16450	8690	6953
MAX	26200	81800	64500	193000	77200	93400	108000	71700	70100	58800	13600	9370
MIN	6320	12900	20700	26100	33100	28900	24200	9760	7710	7780	5140	5090
CFSM	.59	2.29	2.13	3.66	2.55	2.89	3.05	2.14	1.48	.84	.45	.36
IN.	.68	2.56	2.45	4.22	2.66	3.34	3.40	2.47	1.65	.97	.51	.40

e Estimated.

OHIO RIVER MAIN STEM

03086000 OHIO RIVER AT SEWICKLEY, PA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1934 - 1998, BY WATER YEAR (WY)

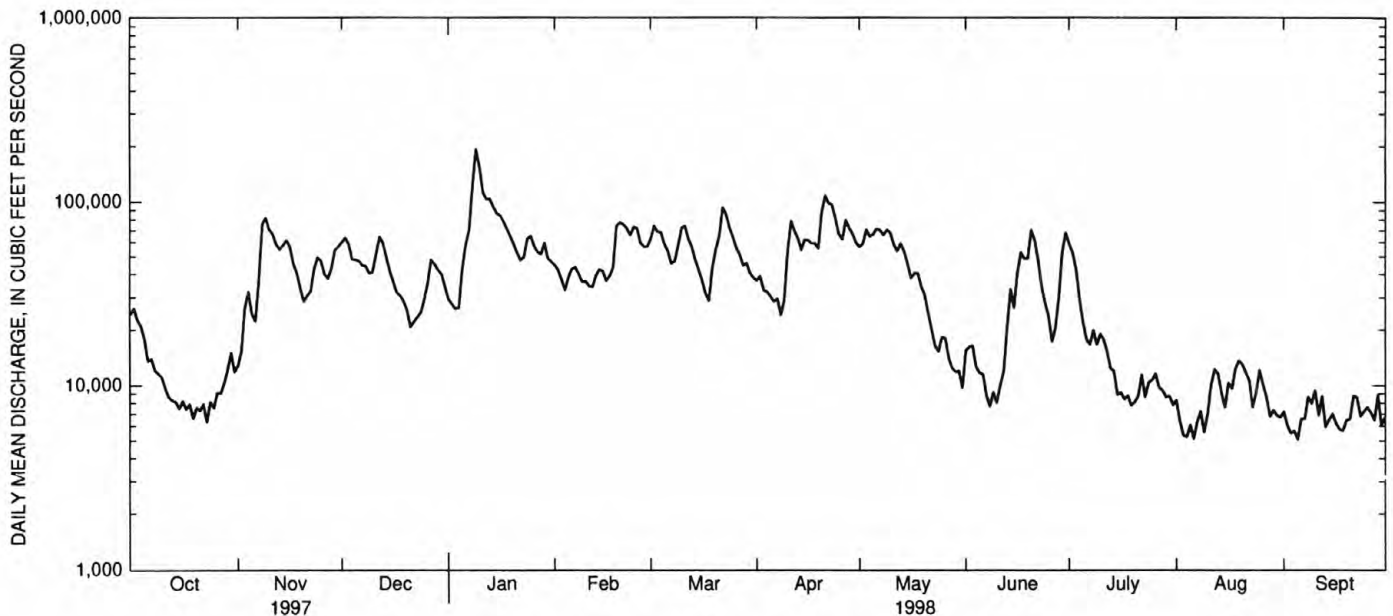
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	15380	26430	40710	45380	49770	66220	56330	38410	24500	16010	13170	11830
MAX	51010	83490	88890	132000	91830	147900	124500	90380	70490	50770	48180	39450
(WY)	1955	1986	1973	1937	1939	1936	1940	1996	1989	1972	1956	1996
MIN	3073	3991	6705	10470	11610	18670	16790	9593	5001	3892	3565	3081
(WY)	1964	1954	1961	1977	1934	1969	1946	1934	1934	1966	1957	1946

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR	FOR 1998 WATER YEAR	WATER YEARS 1934 - 1998
ANNUAL TOTAL	12349200	13271510	
ANNUAL MEAN	33830	36360	33600
HIGHEST ANNUAL MEAN			46520
LOWEST ANNUAL MEAN			21110
HIGHEST DAILY MEAN	130000	Mar 4	465000
LOWEST DAILY MEAN	4820	Aug 12	2100
ANNUAL SEVEN-DAY MINIMUM	6560	Aug 6	2330
INSTANTANEOUS PEAK FLOW			574000
INSTANTANEOUS PEAK STAGE			b34.75
INSTANTANEOUS LOW FLOW			1800
ANNUAL RUNOFF (CFPM)	1.74	1.86	1.72
ANNUAL RUNOFF (INCHES)	23.56	25.32	23.41
10 PERCENT EXCEEDS	67500	70600	74600
50 PERCENT EXCEEDS	28000	33100	23000
90 PERCENT EXCEEDS	7880	7280	5990

a Computed using estimated discharges.

b From floodmarks in gage house, site and datum then in use.

c Estimated.



October 1, 1997 to September 30, 1998

BEAVER RIVER BASIN

03101500 SHENANGO RIVER AT PYMATUNING DAM, PA

LOCATION.--Lat 41°29'53", long 80°27'37", Crawford County, Hydrologic Unit 05030102, on left bank 500 ft downstream from Sugar Run, 900 ft downstream from Pymatuning Dam, 1.5 mi northwest of Jamestown, at mile 84.9.

DRAINAGE AREA.--167 mi².

PERIOD OF RECORD.--June 1934 to current year.

REVISED RECORDS.--WSP 823: 1934-36. WSP 1083: 1936 (M), 1937, 1940 (M), 1941-45. WSP 1335: 1940.

GAGE.--Water-stage recorder and concrete dam control. Datum of gage is 970.00 ft above sea level.

REMARKS.--Records good except for estimated daily discharges, which are fair. Flow regulated since 1933 by Pymatuning Reservoir (station 03100500). Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	63	61	215	484	581	70	57	336	44	68	e101	78
2	61	62	210	484	577	74	58	431	43	68	e101	82
3	61	62	210	489	576	63	58	425	43	68	e101	80
4	61	62	223	520	576	63	56	391	43	68	e101	91
5	61	61	217	500	576	64	55	388	43	68	e101	89
6	61	61	212	494	417	61	54	434	42	68	e85	91
7	61	61	210	473	228	58	53	456	42	79	e76	92
8	61	61	210	286	182	63	53	465	42	102	e76	96
9	60	62	210	204	182	81	87	467	41	101	e76	97
10	59	62	291	386	183	75	87	459	41	101	e76	94
11	59	62	357	561	157	64	62	456	60	101	e76	93
12	59	62	353	552	149	60	57	503	83	103	e76	93
13	59	62	343	585	149	58	56	524	89	103	70	93
14	59	62	338	599	123	58	57	520	85	104	63	93
15	59	64	335	527	111	58	64	516	78	104	63	94
16	59	65	333	569	111	59	223	513	78	104	62	95
17	59	64	416	594	120	64	125	472	75	103	62	94
18	59	63	494	592	177	77	71	290	73	101	62	94
19	59	63	494	590	187	71	78	150	75	101	62	95
20	59	65	494	590	184	65	120	108	72	101	e46	95
21	59	65	494	589	182	87	69	107	69	102	73	95
22	59	66	494	587	179	76	61	106	68	104	73	96
23	59	66	489	549	176	66	59	106	69	104	73	97
24	59	64	447	567	175	62	57	106	69	e104	73	97
25	59	62	422	591	119	59	55	106	69	e104	73	96
26	59	62	466	587	87	58	134	67	69	e104	73	95
27	62	62	487	586	65	56	240	43	68	e103	70	95
28	62	67	487	586	56	56	283	45	70	e103	71	95
29	62	175	487	586	---	62	275	46	69	e103	75	96
30	61	210	487	592	---	58	275	46	68	e102	75	e93
31	61	---	485	586	---	56	---	45	---	e103	75	---
TOTAL	1861	2146	11410	16485	6585	2002	3039	9127	1880	2952	2340	2784
MEAN	60.0	71.5	368	532	235	64.6	101	294	62.7	95.2	75.5	92.8
MAX	63	210	494	599	581	87	283	524	89	104	101	97
MIN	59	61	210	204	56	56	53	43	41	68	46	78
CFSM	.36	.43	2.20	3.18	1.41	.39	.61	1.76	.38	.57	.45	.56
IN.	.41	.48	2.54	3.67	1.47	.45	.68	2.03	.42	.66	.52	.62

e Estimated.

BEAVER RIVER BASIN

03101500 SHENANGO RIVER AT PYMATUNING DAM, PA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1935 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	172	182	301	281	282	262	198	162	161	152	163	186
MAX	601	588	753	728	783	682	608	548	773	408	587	558
(WY)	1982	1997	1987	1943	1952	1956	1950	1956	1947	1987	1956	1956
MIN	17.3	6.27	3.79	10.4	13.2	17.0	2.78	5.78	5.37	20.0	31.6	40.2
(WY)	1935	1935	1945	1936	1935	1992	1935	1935	1935	1968	1935	1935

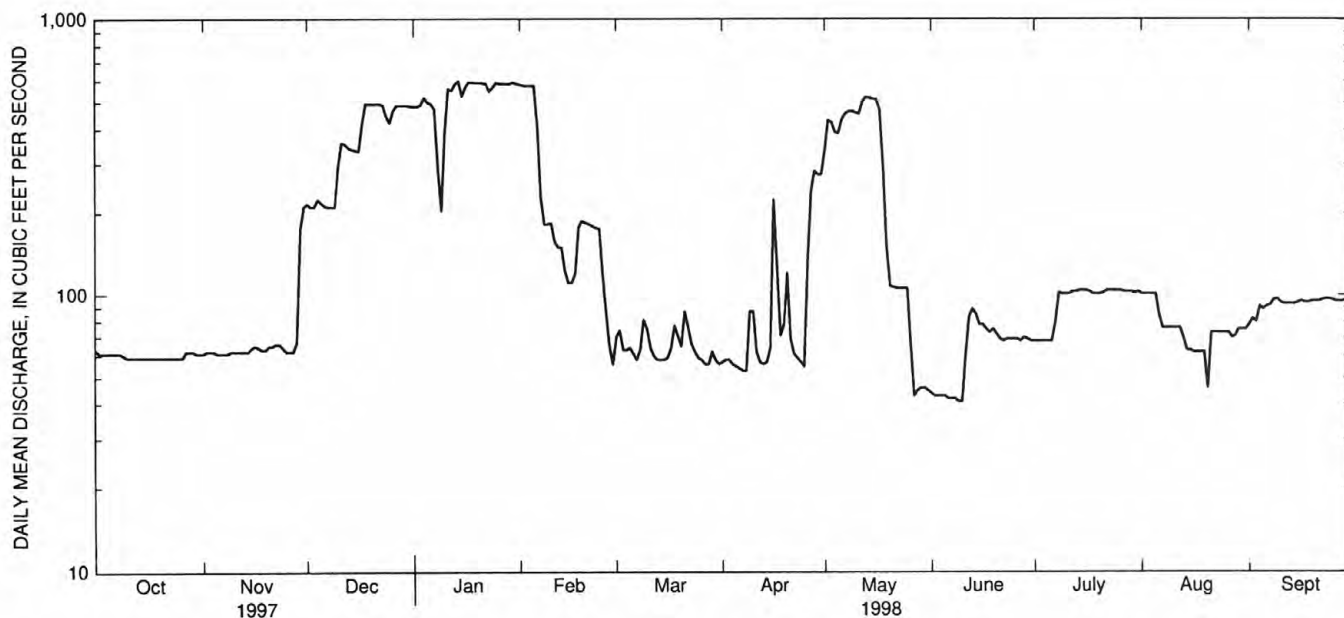
SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

FOR 1998 WATER YEAR

WATER YEARS 1935 - 1998

ANNUAL TOTAL	77582	62611	208	
ANNUAL MEAN	213	172	330	1956
HIGHEST ANNUAL MEAN			16.6	1935
LOWEST ANNUAL MEAN			1240	Jan 28 1937
HIGHEST DAILY MEAN	677	Mar 13	41	Jun 9,10
LOWEST DAILY MEAN	58	Aug 6-15	42	Jun 4
ANNUAL SEVEN-DAY MINIMUM	58	Aug 6	602	Jan 13,14,16,24
INSTANTANEOUS PEAK FLOW			6.04	Jan 13,14,16,24
INSTANTANEOUS PEAK STAGE			1.03	1.25
ANNUAL RUNOFF (CFSM)	1.27		13.95	16.95
ANNUAL RUNOFF (INCHES)	17.28			
10 PERCENT EXCEEDS	593	494	564	
50 PERCENT EXCEEDS	84	87	137	
90 PERCENT EXCEEDS	61	58	25	



October 1, 1997 to September 30, 1998

BEAVER RIVER BASIN

03102500 LITTLE SHENANGO RIVER AT GREENVILLE, PA

LOCATION.--Lat 41°25'19", long 80°22'35", Mercer County, Hydrologic Unit 05030102, on left bank 1,700 ft downstream from Williamson Crossing bridge, 1 mi northeast of Greenville, and 2.0 mi upstream from mouth.

DRAINAGE AREA.--104 mi².

PERIOD OF RECORD.--October 1913 to current year. Monthly discharge only for some periods, published in WSP 1305.

REVISED RECORDS.--WSP 743: Drainage area. WSP 1305: 1914, 1922-23, 1926-29. WSP 1335: 1923 (m).

GAGE.--Water-stage recorder. Datum of gage is 953.46 ft above sea level. Prior to Nov. 4, 1915, nonrecording gage; Nov. 4, 1915, to Sept. 30, 1918, water-stage recorder; Nov. 7, 1919, to Aug. 31, 1923, and Nov. 19, 1925, to June 20, 1934, nonrecording gage at site 1 mi downstream at datum 8.96 ft lower.

REMARKS.--Records good except for estimated daily discharges, which are fair. Several measurements of water temperature were made during the year.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a base discharge of 1,500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 9	0830	*2,690	*8.16	No other peak greater than base discharge.			

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	152	35	138	e66	146	e290	122	215	39	43	11	11
2	100	55	106	e70	126	e361	125	419	44	36	9.8	9.2
3	62	60	86	e80	117	e225	128	570	39	32	9.2	8.5
4	45	60	147	e110	108	e210	127	360	33	29	9.1	8.3
5	45	56	172	e170	101	e210	117	290	30	28	9.1	8.3
6	42	47	130	e170	97	e180	104	252	29	25	15	8.0
7	34	44	110	e140	89	e150	94	186	27	24	10	11
8	30	79	102	e1500	82	e160	87	170	27	23	8.8	17
9	28	112	101	2560	77	e290	89	200	27	22	8.2	35
10	25	83	262	1550	74	e310	97	170	27	21	11	24
11	23	66	733	690	73	e220	152	142	26	19	25	17
12	21	56	374	417	77	e170	208	146	61	18	18	13
13	21	49	217	324	101	e150	149	144	103	17	14	12
14	20	56	157	267	102	e150	130	116	127	16	11	11
15	21	104	125	217	88	142	250	99	114	16	9.9	9.7
16	19	109	110	270	77	138	623	86	103	16	9.5	9.1
17	19	91	102	233	e140	e170	1280	76	113	15	9.4	9.1
18	18	75	94	188	e280	e300	654	66	83	14	8.9	9.0
19	17	68	86	160	e270	e340	433	59	270	14	8.9	18
20	17	82	83	145	e230	e290	861	54	218	14	9.1	32
21	17	99	78	122	e240	e410	626	50	109	15	8.4	19
22	16	115	73	117	e200	e480	357	46	68	20	7.9	14
23	16	122	150	146	e170	e310	277	44	53	27	7.9	12
24	15	94	179	224	e150	e240	221	44	45	24	10	10
25	17	76	269	227	126	e200	166	42	39	20	19	10
26	18	70	275	184	112	204	394	42	34	17	26	10
27	42	99	178	158	102	179	916	40	31	15	20	11
28	67	134	137	154	96	149	435	37	77	14	14	12
29	55	227	e110	154	---	136	268	36	81	13	12	12
30	42	176	e90	170	---	139	217	36	54	12	12	12
31	36	---	e76	180	---	137	---	35	---	11	13	---
TOTAL	1100	2599	5050	11163	3651	7040	9707	4272	2131	630	375.1	402.2
MEAN	35.5	86.6	163	360	130	227	324	138	71.0	20.3	12.1	13.4
MAX	152	227	733	2560	280	480	1280	570	270	43	26	35
MIN	15	35	73	66	73	136	87	35	26	11	7.9	8.0
CFSM	.34	.83	1.57	3.46	1.25	2.18	3.11	1.33	.68	.20	.12	.13
IN.	.39	.93	1.81	3.99	1.31	2.52	3.47	1.53	.76	.23	.13	.14

e Estimated.

BEAVER RIVER BASIN

03102500 LITTLE SHENANGO RIVER AT GREENVILLE, PA

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1914 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	60.6	126	177	209	225	300	231	156	92.8	61.5	42.9	41.8
MAX	343	639	521	773	553	659	506	511	395	457	284	316
(WY)	1927	1986	1928	1937	1976	1963	1957	1929	1989	1958	1980	1926
MIN	5.19	6.31	16.8	21.3	36.0	66.5	16.7	21.8	11.9	5.91	5.33	5.90
(WY)	1964	1931	1961	1977	1963	1915	1915	1934	1934	1934	1930	1930

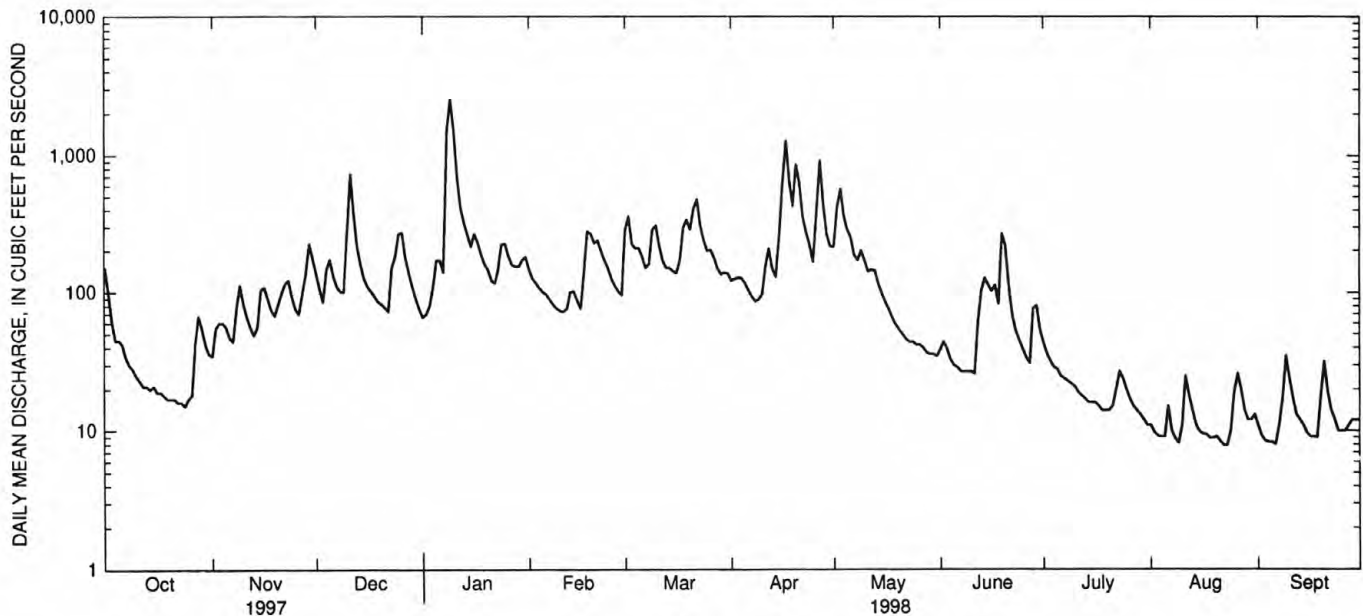
SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1914 - 1998	
ANNUAL TOTAL	55866		48120.3			
ANNUAL MEAN	153		132		143	
HIGHEST ANNUAL MEAN					218	
LOWEST ANNUAL MEAN					65.6	
HIGHEST DAILY MEAN	2110	Jun 3	2560	Jan 9	5980	Jan 22 1959
LOWEST DAILY MEAN	e10	Aug 11,12	7.9	Aug 22,23	3.1	Jul 31 1934
ANNUAL SEVEN-DAY MINIMUM	a11	Aug 6	8.6	Aug 17	3.4	Jul 26 1934
INSTANTANEOUS PEAK FLOW			2690	Jan 9	b8540	Jan 22 1959
INSTANTANEOUS PEAK STAGE			8.16	Jan 9	14.30	Jan 22 1959
INSTANTANEOUS LOW FLOW			7.5	Aug 24c	2.9	Jul 31 1934
ANNUAL RUNOFF (CFSM)	1.47		1.27		1.38	
ANNUAL RUNOFF (INCHES)	19.98		17.21		18.71	
10 PERCENT EXCEEDS	300		270		330	
50 PERCENT EXCEEDS	105		80		66	
90 PERCENT EXCEEDS	18		11		13	

a Computed using estimated discharges.

b From rating curve extended above 3,200 ft³/s on basis of slope-area measurement at gage height 12.26 ft.

c Also Sept. 7.

e Estimated.



October 1, 1997 to September 30, 1998

BEAVER RIVER BASIN

03102850 SHENANGO RIVER NEAR TRANSFER, PA

LOCATION.--Lat 41°21'13", long 80°23'53", Mercer County, Hydrologic Unit 05030102, on left bank at downstream side of covered wooden bridge, 200 ft downstream from highway bridge, 0.6 mi downstream from Big Run, 2.5 mi north-east of Transfer, at mile 71.8.

DRAINAGE AREA.--337 mi².

PERIOD OF RECORD.--October 1965 to current year.

REVISED RECORDS.--WDR PA-71-3: 1966, 1967.

GAGE.--Water-stage recorder. Datum of gage is 913.94 ft above sea level (Pennsylvania Department of Transportation bench mark).

REMARKS.--Records good except for estimated daily discharges, which are fair. Flow regulated since 1933 by Pymatuning Reservoir (station 03100500) 13 mi upstream and by mills above station. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	393	123	519	e620	810	555	277	637	94	137	130	84
2	254	162	456	e600	789	675	306	1150	85	120	129	93
3	184	169	417	e640	775	440	275	1340	78	111	128	87
4	151	166	522	e680	759	411	248	882	70	106	127	102
5	153	152	579	e800	751	413	226	772	65	105	127	102
6	145	136	506	e780	667	361	204	731	63	99	124	100
7	129	137	468	e720	450	317	191	693	63	97	88	115
8	122	224	454	3960	350	328	215	735	60	142	87	141
9	116	282	458	4570	340	537	691	750	58	145	86	194
10	112	224	1050	2400	336	593	1120	664	59	141	117	127
11	108	190	1630	1480	324	432	630	635	64	139	111	110
12	107	171	1010	1110	340	341	379	709	327	136	101	105
13	106	158	749	1010	374	307	303	728	501	136	92	104
14	105	203	641	967	325	311	296	682	480	136	69	101
15	106	304	587	907	270	294	480	651	258	136	68	100
16	104	302	560	961	262	294	2040	630	231	134	66	100
17	103	254	556	949	358	343	2380	613	212	134	65	100
18	102	219	672	896	646	580	978	449	175	132	65	100
19	99	206	679	863	634	642	711	273	355	132	64	176
20	100	253	667	843	573	554	1490	184	354	133	63	194
21	100	269	657	807	583	765	910	173	234	138	65	129
22	98	311	651	800	516	871	544	168	177	157	77	115
23	99	304	745	924	466	584	421	163	154	172	76	108
24	83	243	813	1130	432	460	347	158	141	155	87	105
25	88	209	927	961	373	390	288	158	131	145	119	105
26	92	205	949	873	278	337	995	143	123	140	105	103
27	153	256	843	851	252	301	1550	77	120	136	93	106
28	177	368	768	849	226	277	883	74	181	136	79	106
29	150	585	e700	843	---	323	643	75	188	134	91	106
30	125	579	e680	887	---	304	604	75	151	133	86	106
31	113	---	e640	861	---	269	---	81	---	132	88	---
TOTAL	4077	7364	21553	35542	13259	13609	20625	15253	5252	4129	2873	3424
MEAN	132	245	695	1147	474	439	688	492	175	133	92.7	114
MAX	393	585	1630	4570	810	871	2380	1340	501	172	130	194
MIN	83	123	417	600	226	269	191	74	58	97	63	84
CFSM	.39	.73	2.06	3.40	1.41	1.30	2.04	1.46	.52	.40	.28	.34
IN.	.45	.81	2.38	3.92	1.46	1.50	2.28	1.68	.58	.46	.32	.38

e Estimated.

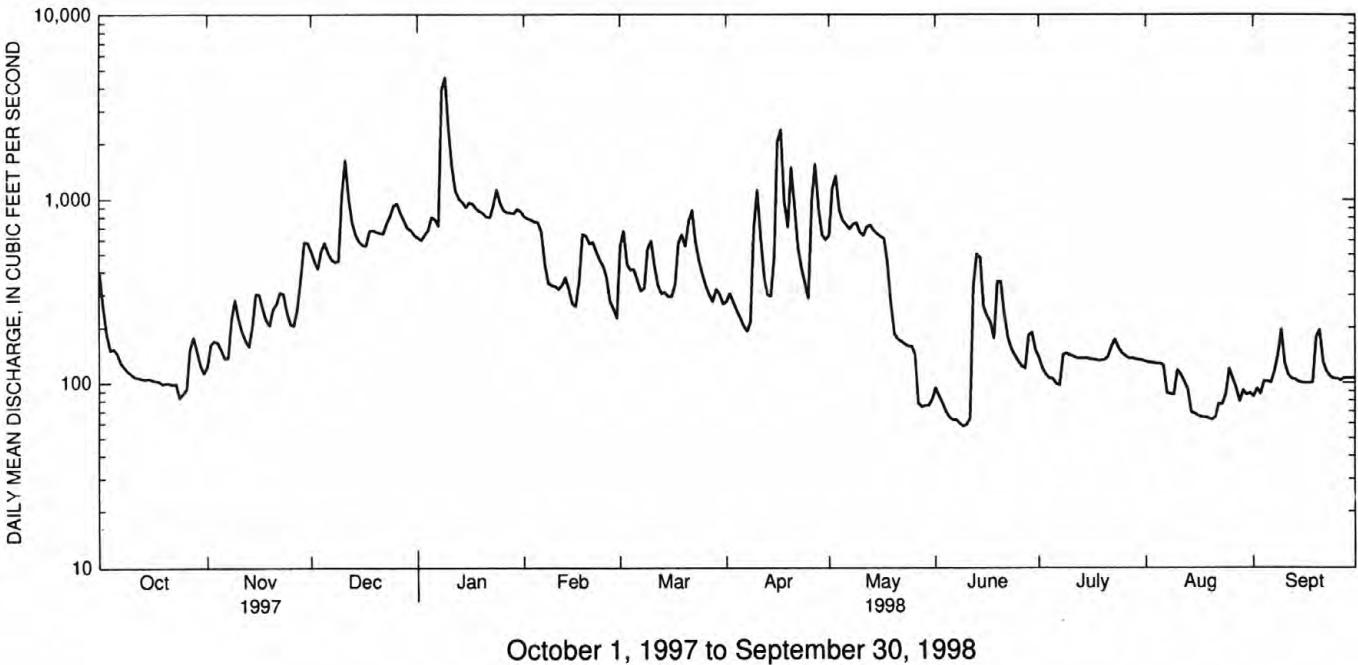
BEAVER RIVER BASIN

03102850 SHENANGO RIVER NEAR TRANSFER, PA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	302	553	845	681	681	685	555	428	333	255	204	260
MAX	1034	1627	1343	1242	1319	1212	1273	1119	1080	873	1005	717
(WY)	1991	1986	1991	1993	1990	1985	1994	1984	1989	1972	1980	1987
MIN	57.9	114	236	151	121	172	207	82.9	86.2	46.5	81.6	107
(WY)	1983	1992	1992	1977	1987	1969	1968	1987	1967	1968	1982	1994

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR			FOR 1998 WATER YEAR			WATER YEARS 1966 - 1998		
ANNUAL TOTAL	182316			146960					
ANNUAL MEAN	499			403			481		
HIGHEST ANNUAL MEAN							663		
LOWEST ANNUAL MEAN							290		
HIGHEST DAILY MEAN	3410			Jun 3			5120		
LOWEST DAILY MEAN	74			Aug 10-12			33		
ANNUAL SEVEN-DAY MINIMUM	75			Aug 6			39		
INSTANTANEOUS PEAK FLOW				4970			5390		
INSTANTANEOUS PEAK STAGE				9.03			10.47		
INSTANTANEOUS LOW FLOW							33		
ANNUAL RUNOFF (CFSM)	1.48			1.19			1.43		
ANNUAL RUNOFF (INCHES)	20.13			16.22			19.39		
10 PERCENT EXCEEDS	1010			855			1010		
50 PERCENT EXCEEDS	334			253			299		
90 PERCENT EXCEEDS	100			90			102		



BEAVER RIVER BASIN

03105500 BEAVER RIVER AT WAMPUM, PA

LOCATION.--Lat 40°53'19", long 80°20'14", Lawrence County, Hydrologic Unit 05030104, on right bank at downstream side of bridge on State Highway 288 at Wampum, 2.9 mi upstream from Connoquenessing Creek, at mile 15.4.

DRAINAGE AREA.--2,235 mi².

PERIOD OF RECORD.--July 1914 to September 1918, August 1932 to current year. Monthly discharge only for some periods, published in WSP 1305. Published as "at Newport" 1914-18.

REVISED RECORDS.--WSP 728: Drainage area. WSP 1385: 1933-40, 1946, 1951-52. WSP 1725: 1960 (adjusted runoff). WDR PA-85-3: 1984 (M).

GAGE.--Water-stage recorder. Datum of gage is 736.24 ft above sea level (Penn Central Railroad bench mark). Prior to Sept. 20, 1914, nonrecording gage at site 500 ft downstream at datum 0.76 ft lower. Oct. 1, 1914 to Sept. 30, 1918, nonrecording gage at site 1 mi upstream at datum 0.84 ft higher. Aug. 26, 1932 to Nov. 16, 1938, nonrecording gage at present site and datum. Since 1932 an auxiliary gage 10 mi downstream at Beaver Falls (station 03107500) is used during periods of backwater from Connoquenessing Creek.

REMARKS.--No estimated daily discharges. Records good. Flow regulated since 1942 by Berlin Lake, since 1916 by Milton Reservoir, since 1966 by Michael J. Kirwan Reservoir, since 1943 by Mosquito Creek Lake, since 1929 by Meander Creek Reservoir, since 1933 by Pymatuning Reservoir, and since 1967 by Shenango River Lake 40 mi upstream. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1912, 29.9 ft, Mar. 26, 1913, from floodmark, discharge, about 87,000 ft³/s.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1490	710	2450	2460	3220	2770	1780	7790	968	1280	769	756
2	1330	1050	2290	2330	3080	2760	1800	7910	957	1620	767	747
3	1120	856	2090	2100	2640	2690	1630	8270	1060	2140	765	732
4	930	807	2510	2520	2510	2510	1430	7970	952	2130	769	730
5	822	882	2580	3000	2110	2850	1300	7990	873	1960	769	725
6	787	938	2330	3240	2100	2740	1210	7100	837	1560	769	700
7	885	1010	2120	3320	1960	2470	1140	6020	828	1390	768	751
8	947	1820	2010	19300	1840	2390	1100	5820	847	1260	779	1150
9	931	1970	1970	26700	1530	3880	4010	5350	817	1030	776	1480
10	912	1450	2940	20600	1350	5330	10200	4480	826	824	917	1030
11	898	1330	5720	8580	1300	4770	6580	3550	852	772	1430	829
12	873	1230	5150	6380	1450	3590	4190	2900	1260	778	1050	765
13	873	1150	4630	7100	1580	2640	3150	2370	2310	806	759	725
14	890	1560	4160	7340	1490	2520	2850	2460	2170	814	644	695
15	892	2260	3470	7420	1370	2420	6760	2190	1530	836	697	676
16	872	1860	2890	7850	1300	2030	10600	2050	1430	849	775	664
17	862	1560	2600	7610	1660	1810	19900	1940	1480	833	784	677
18	858	1510	2480	7260	3240	1950	11200	1480	1170	861	785	735
19	757	1300	2050	6810	4380	2650	8140	1450	1170	827	762	741
20	676	1100	1880	6420	3800	2610	13500	1510	1560	812	749	846
21	668	1260	1810	6060	3670	3680	12000	1410	1250	835	730	825
22	659	1700	1790	5700	3320	5700	9220	1130	1070	1140	719	796
23	623	1760	2420	6190	2860	4360	8140	1030	979	1310	700	776
24	569	1550	2610	7560	2660	3570	7620	1010	954	1250	749	769
25	583	1410	3470	6910	2440	3020	6930	1020	917	906	1240	770
26	604	1430	3450	5940	2270	2910	8620	1020	918	738	1800	770
27	919	1520	3350	5370	2150	2850	15000	979	919	689	1220	767
28	921	2660	3100	4850	1770	3180	8350	935	1050	743	934	815
29	777	3370	2880	4130	---	3110	6810	940	1230	745	778	803
30	695	2780	2780	3510	---	2720	7560	952	1250	730	812	736
31	632	---	2670	3370	---	2080	---	903	---	763	785	---
TOTAL	26255	45793	88650	217930	65050	94560	202720	101929	34434	33231	26750	23981
MEAN	847	1526	2860	7030	2323	3050	6757	3288	1148	1072	863	799
MAX	1490	3370	5720	26700	4380	5700	19900	8270	2310	2140	1800	1480
MIN	569	710	1790	2100	1300	1810	1100	903	817	689	644	664
CFSM	.38	.68	1.28	3.15	1.04	1.36	3.02	1.47	.51	.48	.39	.36
IN.	.44	.76	1.48	3.63	1.08	1.57	3.37	1.70	.57	.55	.45	.40

BEAVER RIVER BASIN

03105500 BEAVER RIVER AT WAMPUM, PA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1915 - 1998, BY WATER YEAR (WY)

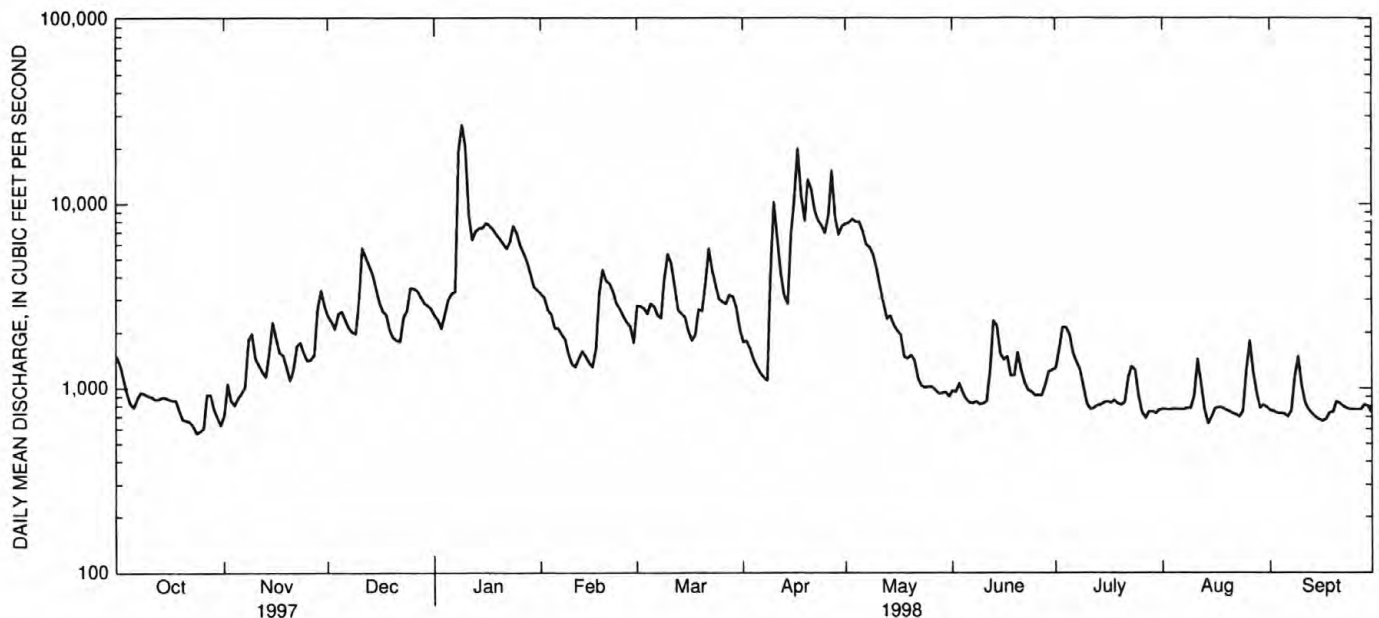
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1275	1834	2861	3452	3903	4958	3888	2666	1970	1488	1261	1199
MAX	5888	7936	7978	13030	8779	9098	9226	8362	8004	5893	4923	4759
(WY)	1991	1986	1991	1937	1915	1916	1994	1996	1989	1958	1956	1990
MIN	168	278	447	534	304	1074	657	288	222	198	156	153
(WY)	1934	1915	1961	1918	1934	1969	1915	1934	1934	1918	1933	1916

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR			FOR 1998 WATER YEAR			WATER YEARS 1915 - 1998		
ANNUAL TOTAL	1040109			961283					
ANNUAL MEAN	2850			2634			2564		
HIGHEST ANNUAL MEAN							3995		
LOWEST ANNUAL MEAN							834		
HIGHEST DAILY MEAN	16900			Jun 3			26700		
LOWEST DAILY MEAN	569			Oct 24			569		
ANNUAL SEVEN-DAY MINIMUM	626			Oct 20			626		
INSTANTANEOUS PEAK FLOW							28800		
INSTANTANEOUS PEAK STAGE							15.55		
INSTANTANEOUS LOW FLOW							569		
ANNUAL RUNOFF (CFSM)	1.27						1.18		
ANNUAL RUNOFF (INCHES)	17.31						16.00		
10 PERCENT EXCEEDS	6100						6650		
50 PERCENT EXCEEDS	2050						1490		
90 PERCENT EXCEEDS	808						754		

a From slope-rating curve extended above 28,000 ft³/s on basis of contracted-opening measurement at gage height 21.44 ft.

b Maximum gage height, 24.86 ft., Jan. 22, 1959 (backwater from Connoquenessing Creek).

c Minimum discharge observed.



October 1, 1997 to September 30, 1998

BEAVER RIVER BASIN

03106000 CONNOQUENESSING CREEK NEAR ZELIENOPLE, PA

LOCATION.--Lat 40°49'01", long 80°14'33", Beaver County, Hydrologic Unit 05030105, on right bank at downstream side of highway bridge at Hazen, 0.3 mi upstream from Brush Creek, 4 mi southeast of Ellwood City, and 6.0 mi west of Zelienople.

DRAINAGE AREA.--356 mi².

PERIOD OF RECORD.--October 1919 to current year. Monthly discharge only for some periods, published in WSP 1305. June 1915 to September 1919 (gage heights and discharge measurements only) in reports of Water Supply Commission of Pennsylvania. Published as "at Hazen" 1915-16, 1929-63, and as "near Hazen" 1917-28.

REVISED RECORDS.--WSP 743: Drainage area. WSP 893: 1937-38, 1939 (M). WSP 1305: 1922-26, 1928. WSP 1335: 1920-21, 1924 (M). WSP 1385: 1952.

GAGE.--Water-stage recorder. Datum of gage is 852.31 ft above sea level. Prior to June 23, 1941, nonrecording gage at same site and datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. Some regulation by mills above station. Several measurements of water temperature were made during the year. Satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a base discharge of 5,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 8	1130	*9,530	*11.66	Apr. 27	0315	6,760	9.35

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	323	93	943	e200	362	850	412	801	147	201	35	40
2	230	308	695	e210	333	755	461	1210	130	120	35	37
3	172	197	560	e220	310	715	370	1200	168	84	33	37
4	146	148	644	e230	288	677	334	939	129	73	32	44
5	129	136	612	e250	350	633	296	868	98	70	30	39
6	110	117	518	e440	504	549	268	712	92	67	29	36
7	96	181	478	916	396	504	253	595	85	60	27	34
8	86	1880	443	7870	350	537	240	608	90	455	27	36
9	81	1280	415	6570	322	859	462	588	83	402	29	72
10	76	719	701	3620	300	879	1350	484	78	155	36	62
11	71	521	1370	1890	286	688	845	436	80	104	55	50
12	68	415	982	1250	388	586	638	420	117	83	58	43
13	67	334	781	1060	466	523	527	376	232	72	41	39
14	65	1370	643	872	380	514	547	312	303	66	34	37
15	62	1970	528	701	336	492	2260	269	176	61	32	37
16	61	1280	453	682	320	435	2010	238	237	57	31	34
17	60	920	399	605	454	398	1930	221	512	56	34	33
18	58	716	351	554	1170	420	1330	200	288	54	68	31
19	57	614	314	501	1740	479	1690	175	459	50	44	32
20	57	600	289	461	1450	455	3690	164	519	48	35	35
21	55	559	264	402	1250	960	2150	155	267	46	33	44
22	55	651	244	377	958	1990	1430	138	187	53	31	76
23	55	734	382	607	811	1420	1050	127	152	102	30	54
24	54	626	394	968	780	1060	814	121	133	82	31	43
25	59	509	569	764	679	827	660	121	117	68	114	39
26	74	457	581	660	567	730	1840	123	101	53	478	39
27	151	456	e480	585	514	641	4760	115	91	47	136	47
28	157	853	e400	534	511	561	1950	105	89	41	71	38
29	92	1620	e330	492	---	501	1240	104	91	38	58	33
30	75	1180	e280	470	---	448	938	217	102	36	50	32
31	66	---	e240	422	---	407	---	143	---	35	46	---
TOTAL	2968	21444	16283	35383	16575	21493	36745	12285	5353	2939	1823	1253
MEAN	95.7	715	525	1141	592	693	1225	396	178	94.8	58.8	41.8
MAX	323	1970	1370	7870	1740	1990	4760	1210	519	455	478	76
MIN	54	93	240	200	286	398	240	104	78	35	27	31
CFSM	.27	2.01	1.48	3.21	1.66	1.95	3.44	1.11	.50	.27	.17	.12
IN.	.31	2.24	1.70	3.70	1.73	2.25	3.84	1.28	.56	.31	.19	.13

e Estimated.

BEAVER RIVER BASIN

03106000 CONNOQUENESSING CREEK NEAR ZELIENOPLE, PA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1920 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	164	343	566	660	757	988	771	521	332	204	151	134
MAX	1290	1648	1778	2607	2048	2324	2054	1283	1518	1373	775	1743
(WY)	1955	1986	1928	1937	1956	1945	1940	1983	1989	1928	1980	1926
MIN	11.3	12.3	22.3	16.4	97.7	154	182	62.3	24.4	20.5	11.2	11.4
(WY)	1931	1931	1961	1931	1934	1969	1946	1934	1934	1936	1930	1930

SUMMARY STATISTICS

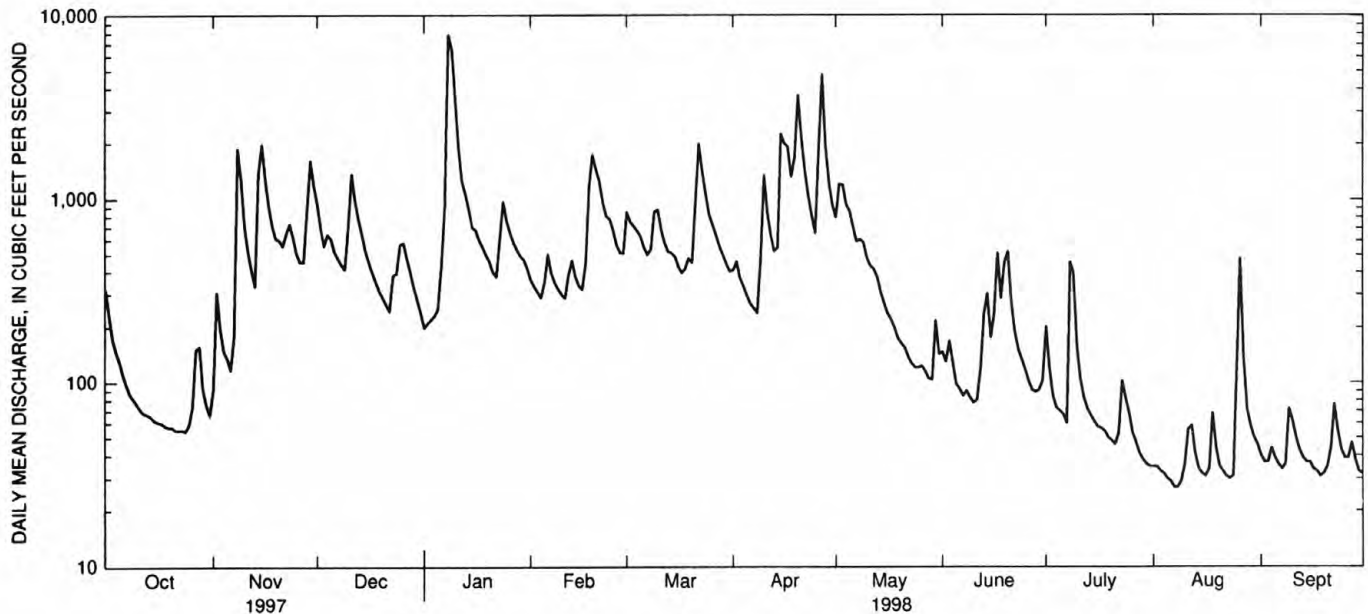
FOR 1997 CALENDAR YEAR

FOR 1998 WATER YEAR

WATER YEARS 1920 - 1998

ANNUAL TOTAL	172828	174544	
ANNUAL MEAN	474	478	464
HIGHEST ANNUAL MEAN			816
LOWEST ANNUAL MEAN			221
HIGHEST DAILY MEAN	7550	May 26	7870
LOWEST DAILY MEAN	26	Aug 10-12	27
ANNUAL SEVEN-DAY MINIMUM	28	Aug 6	30
INSTANTANEOUS PEAK FLOW			9530
INSTANTANEOUS PEAK STAGE			11.66
INSTANTANEOUS LOW FLOW			26
ANNUAL RUNOFF (CFSM)	1.33	1.34	1.30
ANNUAL RUNOFF (INCHES)	18.06	18.24	17.73
10 PERCENT EXCEEDS	1020	1050	1100
50 PERCENT EXCEEDS	324	289	213
90 PERCENT EXCEEDS	56	38	32

a About.



October 1, 1997 to September 30, 1998

BEAVER RIVER BASIN

03106300 MUDDY CREEK NEAR PORTERSVILLE, PA

LOCATION.--Lat 40°57'47", long 80°07'31", Butler County, Hydrologic Unit 05030105, on left bank 1,000 ft downstream of Lake Arthur Dam, 0.2 mi north of U.S. Highway 422, and 3 mi north of Portersville.

DRAINAGE AREA.--51.2 mi².

PERIOD OF RECORD.--March 1963 to September 1993, July 1994 to current year.

REVISED RECORDS.--WDR PA-79-3: 1978.

GAGE.--Water-stage recorder. Datum of gage is 1,160.91 ft above sea level (Pennsylvania Department of Environmental Protection bench mark). Prior to Apr. 8, 1963 nonrecording gage at site 2,000 ft downstream at different datum. Apr. 8 to May 1, 1963, nonrecording gage and May 2, 1963 to Sept. 30, 1980, water-stage recorder at site 1,000 ft downstream at datum 5.71 ft lower.

REMARKS.--Records fair. Some regulation from October 1966 to May 1969 and completely regulated thereafter by Lake Arthur (station 03106280) 1,000 ft upstream. Several measurements of water temperature were made during the year.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.2	4.7	22	6.7	84	4.3	77	164	13	9.5	10	14
2	2.9	5.1	16	5.4	98	4.1	73	161	12	8.8	11	13
3	2.4	6.6	15	4.8	103	3.9	69	156	9.5	8.1	11	13
4	1.8	7.8	14	4.6	97	3.9	64	149	8.2	7.6	11	12
5	2.3	8.1	13	4.4	124	3.9	56	138	7.4	7.0	12	12
6	2.6	7.8	10	7.7	172	3.8	52	126	6.1	6.6	12	13
7	2.5	7.7	9.5	13	170	3.8	49	116	5.3	6.3	10	15
8	2.1	12	8.5	93	169	5.0	47	110	5.2	7.7	7.7	14
9	1.7	12	7.2	231	168	4.8	69	99	5.2	7.7	8.0	13
10	2.7	11	8.9	278	168	4.2	99	91	5.2	6.9	10	12
11	3.7	11	11	263	142	4.5	103	84	5.0	5.9	8.9	12
12	4.1	9.0	9.9	240	101	5.6	101	79	6.6	5.6	8.9	12
13	3.8	8.6	8.6	208	84	8.1	97	71	9.2	5.6	9.2	12
14	3.4	14	7.5	185	71	10	101	64	11	5.6	12	11
15	4.5	15	6.4	163	71	13	142	57	11	5.7	14	11
16	5.4	16	5.9	142	71	16	172	51	12	5.9	13	13
17	4.8	16	6.1	127	72	20	196	44	13	5.9	13	13
18	4.9	15	6.4	113	72	24	197	39	13	6.0	13	13
19	4.6	14	7.9	99	72	28	213	34	23	6.2	13	12
20	3.8	12	7.0	88	72	33	247	32	24	6.3	12	12
21	3.8	11	5.3	80	72	49	253	28	23	6.8	12	12
22	4.6	11	6.9	71	72	70	239	24	21	7.6	12	12
23	4.9	11	7.9	74	72	83	212	21	19	7.8	12	13
24	4.6	9.5	7.4	76	72	88	185	19	18	8.1	13	13
25	4.4	9.6	7.1	74	71	90	164	16	17	8.4	14	12
26	5.0	8.4	6.5	80	71	93	184	15	14	8.7	13	12
27	3.3	8.9	6.6	104	48	91	220	14	13	8.9	12	16
28	3.7	16	6.6	123	3.9	89	212	12	14	8.9	13	12
29	3.9	23	8.7	110	---	86	194	12	11	9.4	14	5.2
30	3.8	25	9.4	98	---	82	177	15	10	9.8	14	6.7
31	3.9	---	7.8	91	---	78	---	14	---	10	14	---
TOTAL	115.1	346.8	281.0	3257.6	2662.9	1102.9	4264	2055	364.9	229.3	362.7	365.9
MEAN	3.71	11.6	9.06	105	95.1	35.6	142	66.3	12.2	7.40	11.7	12.2
MAX	5.4	25	22	278	172	93	253	164	24	10	14	16
MIN	1.7	4.7	5.3	4.4	3.9	3.8	47	12	5.0	5.6	7.7	5.2
CFSM	.07	.23	.18	2.05	1.86	.69	2.78	1.29	.24	.14	.23	.24
IN.	.08	.25	.20	2.37	1.93	.80	3.10	1.49	.27	.17	.26	.27

BEAVER RIVER BASIN

03106300 MUDDY CREEK NEAR PORTERSVILLE, PA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	30.1	63.5	101	96.6	106	118	111	76.6	55.7	33.4	21.9	22.9
MAX	268	248	268	212	220	298	200	187	332	155	127	227
(WY)	1976	1973	1973	1965	1990	1964	1972	1983	1989	1990	1980	1975
MIN	1.11	1.50	2.41	2.40	31.0	10.8	2.78	2.97	1.53	3.01	1.98	.61
(WY)	1964	1970	1970	1970	1980	1973	1986	1986	1969	1965	1966	1969

SUMMARY STATISTICS

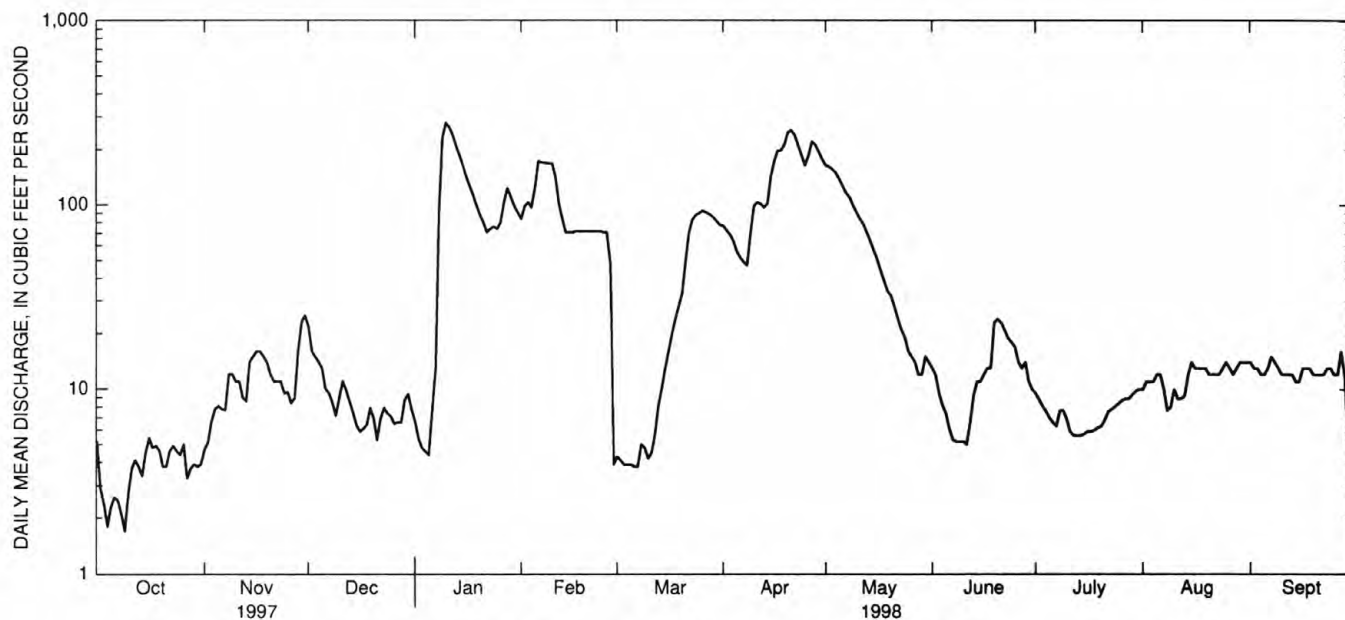
FOR 1997 CALENDAR YEAR

FOR 1998 WATER YEAR

WATER YEARS 1963 - 1998

ANNUAL TOTAL	18860.1	15408.1	70.0	
ANNUAL MEAN	51.7	42.2	98.9	1973
HIGHEST ANNUAL MEAN			24.1	1970
LOWEST ANNUAL MEAN			1450	Mar 10 1964
HIGHEST DAILY MEAN	201	Jun 3	.50	Sep 1 1969
LOWEST DAILY MEAN	1.7	Oct 9	.54	Aug 29 1969
ANNUAL SEVEN-DAY MINIMUM	2.2	Oct 3		
INSTANTANEOUS PEAK FLOW			284	Jan 10
INSTANTANEOUS PEAK STAGE			5.04	Jan 10
INSTANTANEOUS LOW FLOW			8.18	Mar 10 1964
ANNUAL RUNOFF (CFSM)	1.01	.82	1.37	Sep 17 1966
ANNUAL RUNOFF (INCHES)	13.70	11.19	18.57	
10 PERCENT EXCEEDS	148	126	181	
50 PERCENT EXCEEDS	16	12	38	
90 PERCENT EXCEEDS	4.9	4.6	3.9	

a From rating curve extended above 820 ft³/s on basis of slope-area measurement of peak flow.



October 1, 1997 to September 30, 1998

BEAVER RIVER BASIN

03106500 SLIPPERY ROCK CREEK AT WURTEMBERG, PA

LOCATION.--Lat 40°53'02", long 80°14'02", Lawrence County, Hydrologic Unit 05030105, on left bank at downstream side of highway bridge at Camp Allegheny, 2 mi north of Wurtemberg, and 2.8 mi upstream from mouth.

DRAINAGE AREA.--398 mi².

PERIOD OF RECORD.--October 1911 to current year. Monthly discharge only for some periods, published in WSP 1305.

REVISED RECORDS.--WSP 743: Drainage area. WSP 1305: 1914-18, 1920-22, 1923-24 (M), 1925-28, 1930.
WSP 1385: 1932, 1935, 1936 (M), 1937-39. WSP 1625: 1955.

GAGE.--Water-stage recorder. Datum of gage is 832.06 ft above sea level. Jan. 1, 1912 to Sept. 30, 1922, nonrecording gage at site 1.5 mi downstream at datum 13.77 ft lower and Oct. 1, 1922 to Sept. 30, 1940, nonrecording gage at site 2 mi downstream at datum 18.92 ft lower.

REMARKS.--Records good except for estimated daily discharges, which are fair. Some regulation since May 1969 by Lake Arthur (station 03106280) 13 mi upstream. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a base discharge of 3,500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 9	1315	*7,610	*7.36	No other peak greater than base discharge.			

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	369	123	756	e290	571	1010	555	1200	167	138	68	71
2	392	205	603	e300	517	1100	624	1370	179	125	65	69
3	241	237	500	e320	523	807	593	1500	162	106	62	68
4	181	187	651	e340	506	692	517	1270	165	98	61	65
5	147	172	801	e360	505	710	460	1160	141	93	61	64
6	130	158	620	e450	619	662	414	1040	130	91	60	62
7	121	163	525	e560	604	592	387	805	129	88	58	65
8	114	648	488	3980	563	549	371	849	128	93	57	83
9	106	1080	472	6540	538	776	996	1020	126	98	57	88
10	87	687	737	4700	519	936	2780	780	121	93	75	83
11	81	436	1640	2490	509	810	1610	662	123	86	82	78
12	80	334	1190	1700	471	601	970	643	166	83	78	71
13	80	279	821	1370	545	505	742	620	260	81	75	66
14	80	443	644	1130	494	492	851	522	297	77	64	65
15	77	740	545	930	436	502	2890	431	217	75	67	63
16	75	652	478	1020	399	498	2770	384	193	75	67	60
17	75	530	442	980	460	503	2980	349	205	72	68	60
18	70	428	408	833	1240	574	2040	319	185	72	66	60
19	70	374	390	729	1460	801	1840	290	260	70	63	59
20	70	379	380	654	1280	921	3040	274	313	68	63	64
21	70	408	359	571	1240	1080	2470	256	222	68	63	64
22	68	498	353	528	1040	2070	1760	230	149	85	62	69
23	66	597	623	673	879	1610	e1410	220	132	89	60	64
24	66	493	742	1280	830	1250	e1130	207	121	93	62	61
25	70	405	929	1020	777	1060	925	207	114	87	106	61
26	74	357	949	764	690	958	1570	204	106	80	156	60
27	135	397	713	688	633	941	3190	200	100	74	119	60
28	227	882	e540	699	479	845	2010	184	101	71	88	62
29	162	1270	e450	675	---	737	1400	179	141	67	78	86
30	123	935	e370	659	---	655	1240	179	155	66	75	81
31	108	---	e310	643	---	604	---	170	---	66	72	---
TOTAL	3815	14497	19429	37876	19327	25851	44535	17724	5008	2628	2258	2032
MEAN	123	483	627	1222	690	834	1485	572	167	84.8	72.8	67.7
MAX	392	1270	1640	6540	1460	2070	3190	1500	313	138	156	88
MIN	66	123	310	290	399	492	371	170	100	66	57	59
CFSM	.31	1.21	1.57	3.07	1.73	2.10	3.73	1.44	.42	.21	.18	.17
IN.	.36	1.35	1.82	3.54	1.81	2.42	4.16	1.66	.47	.25	.21	.19

e Estimated.

BEAVER RIVER BASIN

03106500 SLIPPERY ROCK CREEK AT WURTEMBURG, PA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1969 - 1998, BY WATER YEAR (WY) (SINCE REGULATION)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	282	581	827	686	891	1086	957	643	539	349	276	255
MAX	741	1822	1576	1264	1949	1972	1608	1400	2075	1109	1323	992
(WY)	1976	1986	1978	1974	1981	1972	1987	1983	1989	1990	1980	1975
MIN	56.5	82.2	178	153	289	243	345	215	112	84.8	64.4	63.7
(WY)	1992	1992	1990	1977	1987	1969	1971	1976	1992	1998	1991	1991

SUMMARY STATISTICS**FOR 1997 CALENDAR YEAR****FOR 1998 WATER YEAR****WATER YEARS 1969 - 1998**

ANNUAL TOTAL	193573	194980	
ANNUAL MEAN	530	534	613
HIGHEST ANNUAL MEAN			813
LOWEST ANNUAL MEAN			406
HIGHEST DAILY MEAN	3530	Mar 6	6540
LOWEST DAILY MEAN	47	Aug 11, 12	57
ANNUAL SEVEN-DAY MINIMUM	53	Aug 6	59
INSTANTANEOUS PEAK FLOW			7610
INSTANTANEOUS PEAK STAGE			7.36
INSTANTANEOUS LOW FLOW			56
ANNUAL RUNOFF (CFSM)	1.33	1.34	1.54
ANNUAL RUNOFF (INCHES)	18.09	18.22	20.91
10 PERCENT EXCEEDS	1090	1190	1380
50 PERCENT EXCEEDS	450	359	379
90 PERCENT EXCEEDS	76	66	98

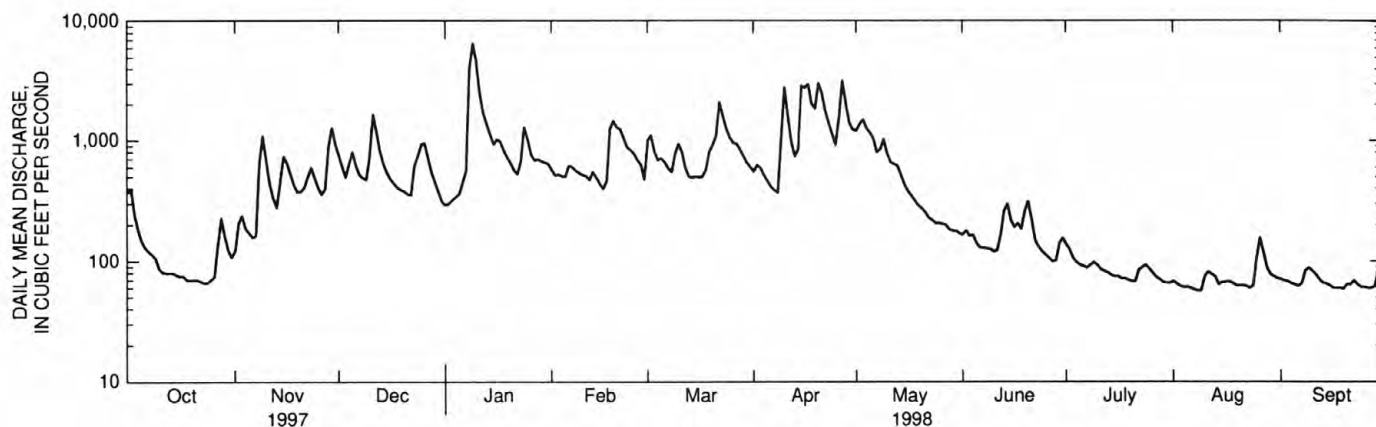
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1912 - 1968, BY WATER YEAR (WY) (PRIOR TO REGULATION)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	237	379	589	839	856	1203	911	653	386	237	191	160
MAX	1391	1329	2088	3161	2089	2728	1974	1472	1559	1307	905	1675
(WY)	1912	1922	1928	1937	1956	1913	1940	1924	1956	1958	1956	1926
MIN	37.7	43.0	58.5	56.3	94.7	291	238	94.3	79.3	54.8	35.3	38.2
(WY)	1964	1931	1931	1931	1934	1931	1925	1934	1936	1944	1930	1944

SUMMARY STATISTICS**WATER YEARS 1912 - 1968**

ANNUAL MEAN	552	
HIGHEST ANNUAL MEAN	917	1956
LOWEST ANNUAL MEAN	216	1931
HIGHEST DAILY MEAN	16700	Mar 26 1913
LOWEST DAILY MEAN	20	Sep 11 1938
ANNUAL SEVEN-DAY MINIMUM	24	Sep 6 1938
INSTANTANEOUS PEAK FLOW	a19000	Jan 25 1937
INSTANTANEOUS PEAK STAGE	b12.05	Jan 25 1937
INSTANTANEOUS LOW FLOW	c16	Sep 13 1932
ANNUAL RUNOFF (CFSM)	1.39	
ANNUAL RUNOFF (INCHES)	18.85	
10 PERCENT EXCEEDS	1390	
50 PERCENT EXCEEDS	248	
90 PERCENT EXCEEDS	58	

- a From rating curve extended above 14,000 ft³/s.
b From floodmark, site and datum then in use.
c Minimum observed.



October 1, 1997 to September 30, 1998

BEAVER RIVER BASIN

03107500 BEAVER RIVER AT BEAVER FALLS, PA

LOCATION.--Lat 40°45'48", long 80°18'55", Beaver County, Hydrologic Unit 05030104, on left bank at Beaver Falls, 200 ft upstream from pumping plant of Beaver Falls Municipal Authority, 7.0 mi downstream from Connoquenessing Creek, at mile 5.5.

DRAINAGE AREA.--3,106 mi².

PERIOD OF RECORD.--October 1935 to current year (fragmentary records only prior to October 1956). Gage-height records collected at same site since 1908 are contained in reports of U.S. Weather Bureau.

REVISED RECORDS.--WSP 1725: 1960 (adjusted runoff).

GAGE.--Water-stage recorder and concrete dam control. Datum of gage is 727.48 ft above sea level (U.S. Army Corps of Engineers bench mark). Prior to Dec. 3, 1941, nonrecording gage at site 200 ft downstream at same datum.

REMARKS.--Estimated daily discharges are fair. Records good above 2,000 ft³/s, and fair below, except those below 1,200 ft³/s, which are poor. Pumpage from gage pool, averaging 3.4 ft³/s in 1935 and 6.0 ft³/s at present, for local water supply, returns to river 2 mi downstream; information furnished by Beaver Falls Municipal Authority. Flow regulated since 1942 by Berlin Lake, since 1916 by Milton Reservoir, since 1966 by Michael J. Kirwan Reservoir, since 1943 by Mosquito Creek Lake, since 1929 by Meander Creek Reservoir, since 1933 by Pymatuning Reservoir, since 1967 by Shenango River Lake, all over 50 mi upstream, and since 1969 by Lake Arthur 29 mi upstream. U.S. Army Corps of Engineers satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 27, 1913 reached a stage of 17.4 ft, discharge, 103,000 ft³/s, from rating curve extended above 60,000 ft³/s.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2190	978	4170	2940	e4150	4850	2800	9940	1370	1750	915	845
2	2060	1560	3570	2970	e3930	4540	2960	10500	1370	1870	922	830
3	1640	1420	3120	2960	e3470	4240	2680	11500	1460	2240	901	826
4	1350	1240	3550	3550	e3300	3870	2380	10500	1360	2230	896	827
5	1190	1220	3930	4340	e2960	4150	2170	10100	1210	2110	884	816
6	1120	1260	3410	4420	e3220	3880	2020	9090	1150	1730	888	789
7	1130	1390	3060	4630	e2960	3520	1900	7500	1130	1580	881	813
8	1190	3780	2870	29800	e2750	3400	1850	7250	1140	1850	880	1220
9	1160	4730	2780	40800	e2390	5320	5390	7010	1120	1890	881	1570
10	1120	3100	3720	30800	2280	7030	14900	5770	1120	1220	1020	1200
11	1100	2410	8700	13800	2220	6170	9340	4710	1150	1070	1530	966
12	1080	2060	7420	9390	2500	4720	5860	3980	1530	1040	1290	892
13	1080	1830	6200	9290	2700	3640	4460	3420	2690	1040	978	835
14	1090	3070	5360	9230	2430	3490	4150	3290	2830	1020	825	815
15	1080	5300	4470	8840	2220	3390	11900	2950	2070	1030	827	781
16	1060	3990	3740	9290	2160	2970	15300	2740	1950	1040	893	776
17	1050	3190	3350	9000	2860	2730	25100	2600	2360	1020	907	784
18	1050	2750	3150	8450	5870	2940	15000	2170	1830	1030	925	831
19	970	2400	2730	7870	7510	3840	11700	2050	1820	982	917	840
20	876	2150	2510	7370	6430	3830	20600	2100	2560	974	880	923
21	863	2220	2390	6940	6010	5280	17200	1950	1900	1000	836	952
22	847	2700	2330	6490	5140	9940	12700	1660	1540	1280	808	962
23	809	3080	3130	7170	4490	7410	10700	1490	1370	1540	793	929
24	756	2700	3640	9730	4220	5770	9650	1440	1300	1570	844	898
25	778	2360	4610	8710	3830	4790	8550	1430	1230	1200	1400	896
26	814	2230	4930	7360	3470	4480	10800	1420	1190	987	2480	897
27	1160	2300	4480	e6640	3240	4270	24100	1360	1190	901	1610	900
28	1370	3760	4080	e6080	2970	4350	13400	1280	1270	912	1140	922
29	1120	6240	3710	e5300	---	4190	9670	1270	1500	923	918	941
30	975	4940	3570	e4640	---	3740	9770	1380	1640	891	914	901
31	878	---	3430	e4440	---	3090	---	1320	---	909	930	---
TOTAL	34956	82358	122110	293240	101680	139830	289000	135170	47350	40829	31713	27377
MEAN	1128	2745	3939	9459	3631	4511	9633	4360	1578	1317	1023	913
MAX	2190	6240	8700	40800	7510	9940	25100	11500	2830	2240	2480	1570
MIN	756	978	2330	2940	2160	2730	1850	1270	1120	891	793	776
CFSM	.36	.88	1.27	3.05	1.17	1.45	3.10	1.40	.51	.42	.33	.29
IN.	.42	.99	1.46	3.51	1.22	1.67	3.46	1.62	.57	.49	.38	.33

e Estimated.

BEAVER RIVER BASIN

03107500 BEAVER RIVER AT BEAVER FALLS, PA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1957 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1882	3185	4901	4904	5577	6972	5827	4055	2960	2338	1735	1817
MAX	6760	11520	11880	11620	12360	13040	13620	10880	11090	7925	6505	5804
(WY)	1991	1986	1991	1993	1990	1993	1957	1996	1989	1958	1980	1975
MIN	531	439	540	714	887	1606	1861	1271	966	916	777	740
(WY)	1992	1992	1961	1961	1963	1969	1971	1962	1992	1965	1991	1962

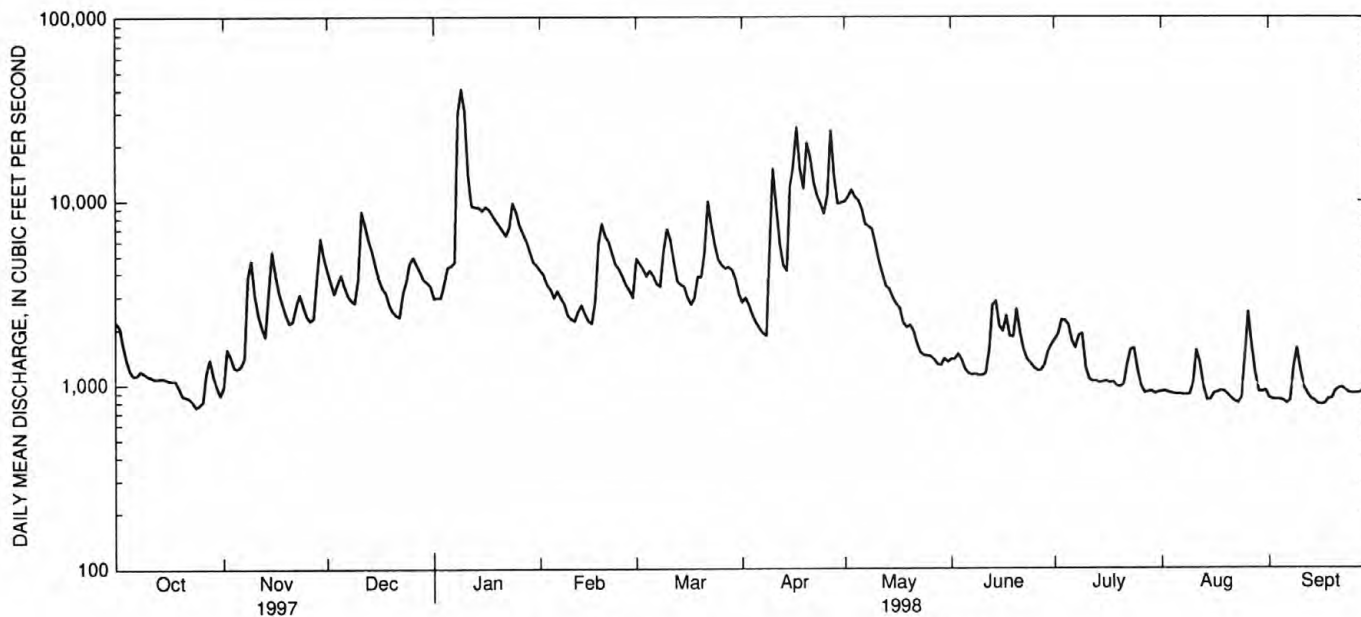
SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

FOR 1998 WATER YEAR

WATER YEARS 1957 - 1998

ANNUAL TOTAL	1465863	1345613	
ANNUAL MEAN	4016	3687	
HIGHEST ANNUAL MEAN			5146
LOWEST ANNUAL MEAN			1938
HIGHEST DAILY MEAN	26500	May 26	40800
LOWEST DAILY MEAN	756	Oct 24	756
ANNUAL SEVEN-DAY MINIMUM	820	Oct 20	809
INSTANTANEOUS PEAK FLOW			44700
INSTANTANEOUS PEAK STAGE			11.05
INSTANTANEOUS LOW FLOW			600
ANNUAL RUNOFF (CFSM)	1.29	1.19	1.24
ANNUAL RUNOFF (INCHES)	17.56	16.12	16.79
10 PERCENT EXCEEDS	8310	8700	8410
50 PERCENT EXCEEDS	2900	2300	2400
90 PERCENT EXCEEDS	1020	893	914



BEAVER RIVER BASIN

LAKES AND RESERVOIRS IN BEAVER RIVER BASIN

03100500 PYMATUNING RESERVOIR.--Lat 41°29'54", long 80°27'47", Crawford County, Hydrologic Unit 05030102, in gatehouse at Pymatuning Dam on Shenango River, 1.8 mi northwest of Jamestown, Pa., and at mile 85.1. DRAINAGE AREA, 158 mi². PERIOD OF RECORD, October 1932 to current year. Contents prior to October 1938 published in WSP 1305. GAGE, water-stage recorder. Datum of gage is sea level. Prior to Nov. 20, 1934, nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed in two parts. The main dam is earthfill with stone facing, provided with regulating gates (outlet gate sill elevation at 975.3 ft), and a spillway with crest elevation at 1,008.0 ft. An auxiliary dam 15 mi upstream from the main dam with spillway elevation at 1,010 ft has a fixed crest weir section in the earthfill causeway. Storage began Jan. 23, 1934, when all regulating gates were closed. Capacity, 188,040 acre-ft between elevations, 975.3 ft and 1,008.0 ft was reached in March 1936. Dead storage 10,150 acre-ft (93 acre-ft behind main dam below elevation 975.3 ft and 10,060 acre-ft behind upstream dam below elevation 1,010 ft). Upstream pool was filled (all dead storage accumulated) on March 5, 1934. Figures given herein represent usable contents. Reservoir is used for flood control, and for recreation. Dam built by Pennsylvania Department of Forests and Waters and now maintained by Pennsylvania Department of Environmental Protection.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 210,680 acre-ft, June 26, 1972 (elevation, 1,009.53 ft); minimum (after first filling), 110,570 acre-ft, Dec. 4, 1953 (elevation, 1,002.17 ft).

EXTREMES FOR CURRENT YEAR. Maximum contents, 199,330 acre-ft, May 9 (elevation, 1,008.77 ft); minimum, 151,080 acre-ft, Feb. 17 (elevation, 1,005.35).

03106280 LAKE ARTHUR.--Lat 40°57'45", long 80°07'17", Butler County, Hydrologic Unit 05030105, in gatehouse at left end of spillway of Lake Arthur Dam on Muddy Creek, at Moraine State Park, 3 mi northeast of Portersville, Pa. DRAINAGE AREA, 50.8 mi². PERIOD OF RECORD, May 1969 to current year. GAGE, water-stage recorder. Datum of gage is sea level (Pennsylvania Department of Environmental Protection bench mark). Prior to Aug. 23, 1969, nonrecording gage at same site and datum.

REMARKS.--Lake is formed by an earthfill dam with concrete spillway. Storage began May 15, 1969. Usable capacity, 37,000 acre-ft between elevations 1,160 ft, sill of 6 ft outlet gate and 1,189.8 ft (spillway crest). No dead storage. Figures given herein represent usable contents. Lake is used for recreation. Dam built by Pennsylvania Department of Forests and Waters and now maintained by Pennsylvania Department of Environmental Protection.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 44,240 acre-ft, June 16, 1989 (elevation, 1,192.01 ft); minimum (after first filling), 21,320 acre-ft, Nov. 30, 1975 (elevation, 1,183.88 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 41,720 acre-ft, Jan. 10 (elevation, 1,191.27 ft); minimum, not determined.

MONTHEND ELEVATION IN FEET ABOVE SEA LEVEL, AND CONTENTS AT 2400 HRS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	Elevation (feet)	Contents (acre- feet)	Change in contents (equivalent in ft ³ /s)	Elevation (feet)	Contents (acre- feet)	Change in contents (equivalent in ft ³ /s)
<u>03100500 Pymatuning Reservoir</u>				<u>03106280 Lake Arthur</u>		
Sept. 30	1,006.94	172,890	-	1,190.05	37,760	-
Oct. 31	1,006.58	167,860	-82	1,189.91	37,330	-7.0
Nov. 30	1,006.69	169,400	+26	1,190.61	39,550	+37
Dec. 31	1,005.93	158,920	-170	1,190.10	37,920	-27
CAL YR 1997	-	-	-20	-	-	+69
Jan. 31	1,005.91	158,650	-4.4	1,190.31	38,590	+11
Feb. 28	1,005.64	154,980	-66	1,189.29	35,470	-56
Mar. 31	1,006.73	169,960	+244	1,190.56	39,390	+64
Apr. 30	1,008.42	194,160	+407	-	-	-
May 31	1,007.92	186,880	-118	-	-	-
June 30	1,007.76	184,570	-39	-	-	-
July 31	1,006.86	171,770	-208	-	-	-
Aug. 31	1,006.34	164,540	-118	1,189.53	36,190	-
Sept. 30	1,005.95	159,190	-90	1,189.28	35,440	-12
WTR YR 1998	-	-	-19	-	-	-3.2

RACCOON CREEK BASIN

03108000 RACCOON CREEK AT MOFFATTS MILL, PA

LOCATION.--Lat 40°37'40", long 80°20'16", Beaver County, Hydrologic Unit 05030101, on left bank at downstream side of highway bridge at Moffatts Mill, 1.4 mi downstream from Gums Run, 4 mi south of Vanport, and 4.2 mi upstream from mouth.

DRAINAGE AREA.--178 mi².

PERIOD OF RECORD.--September 1941 to current year. May 1915 to July 1932 (gage heights and discharge measurements only) in reports of Water Supply Commission of Pennsylvania or Pennsylvania Department of Forests and Waters.

REVISED RECORDS.--WSP 1385: 1941-43.

GAGE.--Water-stage recorder. Datum of gage is 719.16 ft above sea level (U.S. Army Corps of Engineers bench mark). May 27, 1915 to July 31, 1932, and Sept. 2 to Dec. 3, 1941, nonrecording gage at same site and datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. Normally, no regulation from Raccoon Creek Lake. Diversion out of the basin from Cherry Valley and Service Creek Reservoirs upstream increased from an average of 4.0 ft³/s at the close of 1957 to 6.8 ft³/s for the present year; diversion began with 2.0 ft³/s for September 1957. Published records do not include diversion. Records of diversion furnished by Western Pennsylvania Water Company and Ambridge Water Authority. Several measurements of water temperature were made during the year. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Apr. 15, 1922, reached a stage of 9.80 ft, discharge, 10,000 ft³/s. Flood of Mar. 5, 1920, also reached a stage of 9.80 ft, backwater from ice.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a base discharge of 1,800 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 8	1430	*3,540	*5.98	Apr. 27	0330	2,210	4.85
Jan. 9	1430	2,710	5.30	June 28	0630	1,850	4.49

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	48	24	219	e64	152	358	179	397	292	727	29	25
2	38	97	173	e65	145	329	180	799	152	409	24	22
3	33	61	147	e66	139	320	154	1010	133	270	22	19
4	30	46	158	e68	131	295	146	715	97	197	21	18
5	28	41	162	e68	165	264	136	661	81	176	21	16
6	26	35	144	e70	203	240	126	558	75	141	21	15
7	24	196	132	e110	172	232	120	457	71	120	20	15
8	23	628	122	2610	171	275	125	528	65	275	18	66
9	22	356	115	2330	175	439	221	486	59	261	17	65
10	22	157	158	1180	176	389	362	432	58	159	17	54
11	21	113	282	638	181	315	293	376	61	119	39	37
12	20	92	221	449	263	270	238	357	87	98	34	27
13	21	80	184	380	282	242	205	303	143	85	27	23
14	21	668	157	317	242	243	186	259	210	75	23	18
15	20	622	139	272	209	214	188	226	135	69	21	17
16	19	286	124	266	192	187	339	201	146	68	19	16
17	20	181	116	234	247	176	454	183	132	67	30	16
18	19	137	103	217	404	174	329	161	146	62	62	16
19	19	117	102	190	848	174	544	146	568	54	34	16
20	19	107	97	179	595	166	1320	144	437	53	23	16
21	19	97	91	160	466	381	705	130	226	59	20	29
22	21	117	86	153	366	899	498	118	166	55	18	21
23	20	143	99	288	316	601	388	105	134	61	23	21
24	19	117	99	443	314	443	316	97	103	68	21	18
25	22	99	130	349	272	347	263	97	87	56	154	17
26	32	94	137	287	234	301	623	95	73	44	181	17
27	55	91	e120	250	220	267	1560	87	368	39	70	20
28	48	123	e105	230	221	241	727	78	1280	35	44	20
29	29	303	e92	209	---	218	511	72	482	34	33	18
30	23	244	e82	193	---	198	423	72	482	31	29	16
31	21	---	e72	172	---	183	---	74	---	30	25	---
TOTAL	802	5472	4168	12507	7501	9381	11859	9424	6549	3997	1140	714
MEAN	25.9	182	134	403	268	303	395	304	218	129	36.8	23.8
MAX	55	668	282	2610	848	899	1560	1010	1280	727	181	66
MIN	19	24	72	64	131	166	120	72	58	30	17	15
CFM	.15	1.02	.76	2.27	1.51	1.70	2.22	1.71	1.23	.72	.21	.13
IN.	.17	1.14	.87	2.61	1.57	1.96	2.48	1.97	1.37	.84	.24	.15

e Estimated.

RACCOON CREEK BASIN

03108000 RACCOON CREEK AT MOFFATTS MILL, PA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1942 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	63.7	114	196	251	322	411	343	265	144	86.9	69.8	55.6
MAX	359	764	717	737	788	1010	757	618	632	389	651	453
(WY)	1955	1986	1991	1952	1956	1945	1957	1983	1989	1990	1980	1975
MIN	7.98	14.8	15.1	34.5	47.7	56.3	94.7	65.6	26.3	15.6	10.2	9.73
(WY)	1964	1964	1964	1967	1964	1969	1946	1986	1988	1965	1965	1964

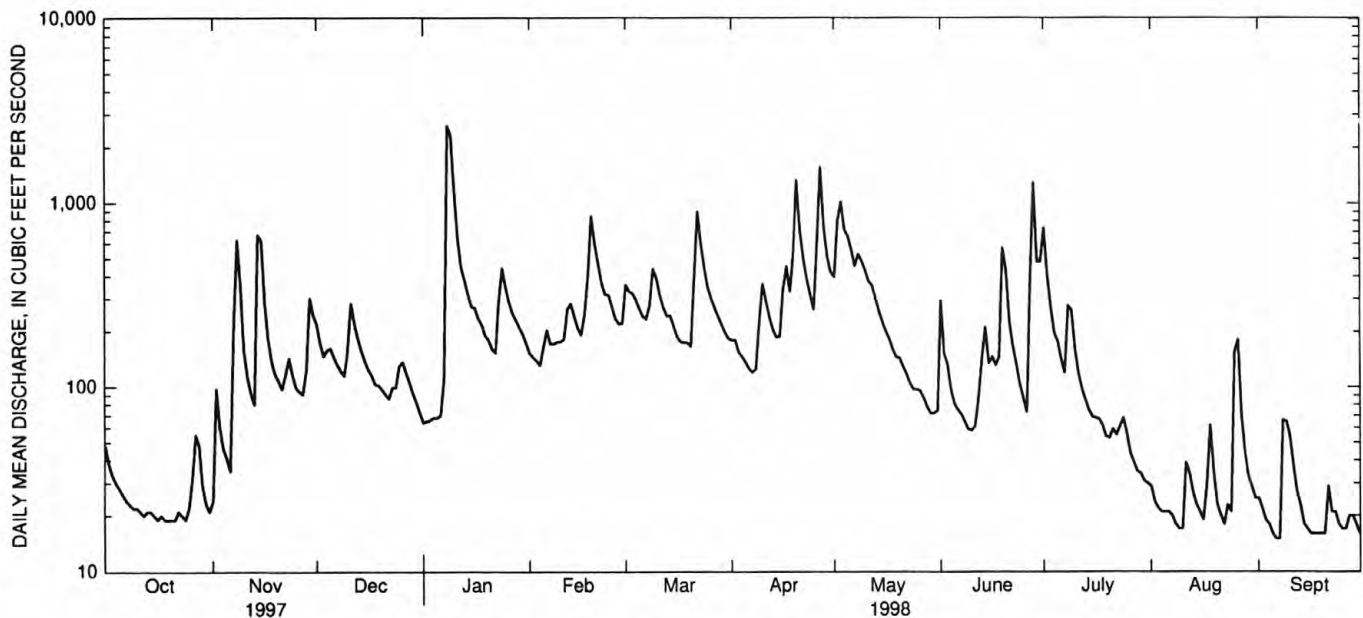
SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

FOR 1998 WATER YEAR

WATER YEARS 1942 - 1998

ANNUAL TOTAL	60604	73514	
ANNUAL MEAN	166	201	
HIGHEST ANNUAL MEAN			193
LOWEST ANNUAL MEAN			314
HIGHEST DAILY MEAN	2060	May 26	2610
LOWEST DAILY MEAN	15	Aug 11,12	15
ANNUAL SEVEN-DAY MINIMUM	17	Aug 6	16
INSTANTANEOUS PEAK FLOW			3540
INSTANTANEOUS PEAK STAGE			5.98
INSTANTANEOUS LOW FLOW			15
ANNUAL RUNOFF (CFSM)	.93		1.13
ANNUAL RUNOFF (INCHES)	12.67		15.36
10 PERCENT EXCEEDS	370		443
50 PERCENT EXCEEDS	115		132
90 PERCENT EXCEEDS	22		21



October 1, 1997 to September 30, 1998

STREAMS TRIBUTARY TO LAKE ERIE
04213000 CONNEAUT CREEK AT CONNEAUT, OH

LOCATION.--Lat 41°55'37", long 80°36'15", Ashtabula County, Hydrologic Unit 04120101, on right bank at downstream side of Keefus Road bridge at Conneaut, and 6.4 mi upstream from mouth.

DRAINAGE AREA.--175 mi².

PERIOD OF RECORD.--July 1922 to December 1935, March 1950 to September 1961 (published as "at Amboy"), October 1961 to current year.

REVISED RECORDS.--WSP 714: 1926. WSP 784: 1933. WSP 1437: 1923-25(M), 1926-30, 1931-32(M), 1933, 1935(M). WSP 1912: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 610.30 ft above sea level. Prior to Aug. 17, 1924, nonrecording gage at same site and datum.

REMARKS.--Records good except for periods of estimated record, which are poor. Water-quality and sediment data collected at this site.

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

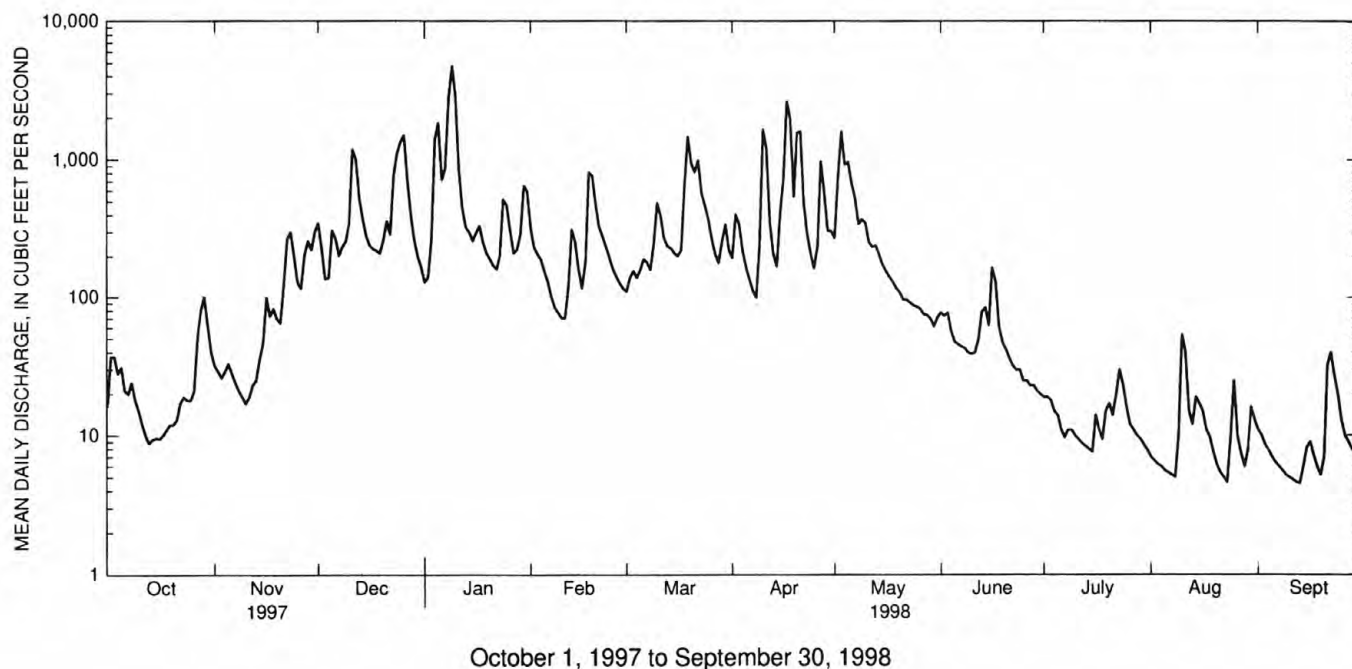
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	32	351	129	320	111	197	274	78	19	7.0	11
2	37	29	227	140	233	139	406	734	74	19	6.6	10
3	37	26	137	269	209	157	346	1610	78	18	6.2	8.6
4	28	29	139	1420	191	139	224	926	58	15	6.0	7.8
5	31	33	311	1850	155	159	168	970	48	14	5.6	7.0
6	21	28	271	720	130	192	136	681	46	11	5.4	6.4
7	20	24	204	873	102	182	112	535	44	9.7	5.2	6.0
8	24	21	236	2820	85	160	100	346	43	11	5.0	5.6
9	18	19	260	4760	78	247	242	377	40	11	10	5.2
10	15	17	350	2900	71	490	1660	352	39	10	54	5.0
11	12	19	1190	831	71	400	1220	258	40	9.4	40	4.8
12	10	23	1010	451	120	275	353	236	50	8.8	15	4.6
13	8.8	25	534	326	314	239	211	242	79	8.4	12	4.5
14	9.4	35	376	303	258	231	170	209	85	8.0	19	6.0
15	9.6	47	285	261	161	213	410	175	63	7.6	17	8.2
16	9.5	100	242	299	117	202	730	156	165	14	15	9.0
17	10	73	228	335	183	222	2650	141	129	11	11	7.2
18	11	83	220	255	811	650	1990	130	61	9.4	9.8	6.0
19	12	70	212	214	772	1480	550	117	47	15	7.6	5.2
20	12	65	265	192	476	942	1580	109	42	17	6.2	7.0
21	13	122	364	173	330	821	1610	97	36	14	5.4	32
22	17	271	291	162	281	987	489	96	32	20	5.0	40
23	19	301	782	206	237	579	297	92	30	30	4.6	27
24	18	203	1120	517	197	469	211	88	30	23	10	20
25	18	128	1350	474	164	375	165	86	25	16	25	13
26	21	116	1510	311	143	271	238	83	25	12	9.8	10
27	51	205	729	212	127	210	977	76	23	11	7.4	9.0
28	81	260	405	223	116	181	578	75	23	10	6.0	8.0
29	101	224	265	294	---	261	311	70	21	9.4	8.0	7.4
30	62	303	201	651	---	343	308	62	20	8.6	16	6.8
31	40	---	168	594	---	224	---	72	---	7.8	13	---
TOTAL	792.3	2931	14233	23165	6452	11551	18639	9475	1574	408.1	373.8	308.3
MEAN	25.6	97.7	459	747	230	373	621	306	52.5	13.2	12.1	10.3
MAX	101	303	1510	4760	811	1480	2650	1610	165	30	54	40
MIN	8.8	17	137	129	71	111	100	62	20	7.6	4.6	4.5
CFSM	.15	.56	2.62	4.27	1.32	2.13	3.55	1.75	.30	.08	.07	.06
IN.	.17	.62	3.03	4.92	1.37	2.46	3.96	2.01	.33	.09	.08	.07

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1922 - 1997, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	138	321	422	423	460	539	392	234	135	76.5	65.8	105
MAX	804	1373	1049	929	1115	987	839	670	1013	415	493	709
(WY)	1927	1986	1928	1990	1981	1972	1957	1953	1986	1969	1980	1990
MIN	4.95	17.1	35.1	81.0	39.6	235	69.9	20.2	5.46	2.79	3.19	3.56
(WY)	1924	1954	1961	1977	1934	1969	1935	1934	1934	1934	1923	1932

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1922 - 1998	
ANNUAL TOTAL	103738.5		89902.5		275	
ANNUAL MEAN	284		246		401	
HIGHEST ANNUAL MEAN					140	
LOWEST ANNUAL MEAN					11000	
HIGHEST DAILY MEAN	4560 Feb 28		4760 Jan 9		17000 Jan 22 1959	
LOWEST DAILY MEAN	8.8 Oct 13		e4.5 Sep 13		12.94 Mar 4 1934	
ANNUAL SEVEN-DAY MINIMUM	9.8 Oct 12		5.1 Sep 7		.64 Aug 27 1933	
INSTANTANEOUS PEAK FLOW			6070 Jan 9a		.20 Jul 31 1933	
INSTANTANEOUS PEAK STAGE			8.15 Jan 9			
INSTANTANEOUS LOW FLOW			e4.5 Sep 13			
ANNUAL RUNOFF (CFSM)	1.62		1.41		1.57	
ANNUAL RUNOFF (INCHES)	22.05		19.11		21.38	
10 PERCENT EXCEEDS	750		616		685	
50 PERCENT EXCEEDS	128		96		97	
90 PERCENT EXCEEDS	15		8.0		10	

a Peaks above base shown in table of peak discharges and stages at continuous-record surface-water-discharge stations.
e Estimated.



STREAMS TRIBUTARY TO LAKE ERIE

04213075 BRANDY RUN NEAR GIRARD, PA

LOCATION.--Lat 41°59'31", long 80°17'29", Erie County, Hydrologic Unit 04120101, on left bank 100 ft upstream from highway bridge on Tannery Road, 0.5 mi upstream from mouth, and 1.8 mi southeast of Girard.

DRAINAGE AREA.--4.45 mi².

PERIOD OF RECORD.--May 1986 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 800 ft above sea level, from topographic map.

REVISED RECORDS.--WRD PA-94-3: 1987-89 (M).

REMARKS.--Records good except for estimated daily discharges, which are fair. Several measurements of water temperature were made during the year.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a base discharge of 200 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 8	0230	*331	*2.26	No other peaks greater than base discharge.			

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.9	3.8	7.8	e6.2	6.8	4.6	13	12	4.5	2.0	.72	.79
2	1.3	6.0	5.0	e5.8	6.6	4.3	11	28	2.6	1.7	.70	1.1
3	1.2	4.6	4.3	e20	6.1	4.2	7.0	12	2.3	1.6	.65	.86
4	1.2	3.5	9.0	64	5.2	5.1	5.7	9.4	2.2	1.6	.65	.82
5	3.9	2.6	7.7	22	4.5	6.7	4.8	8.1	2.2	1.6	.54	.77
6	1.7	2.5	16	18	3.9	6.5	4.0	6.2	2.1	1.5	.53	.73
7	1.4	2.5	25	56	3.7	5.4	3.8	4.9	2.0	1.5	.44	1.1
8	1.4	2.7	16	123	3.6	6.1	3.7	4.9	2.0	1.7	.42	.96
9	1.4	2.6	13	75	3.6	8.1	14	4.4	1.9	1.3	.51	.80
10	1.4	2.7	22	21	3.5	8.4	19	3.6	1.7	1.2	1.5	.72
11	1.3	2.9	40	12	4.0	6.4	7.2	4.3	2.0	1.2	.94	.69
12	1.4	3.4	25	8.5	13	6.3	5.4	5.2	2.4	1.1	.93	.66
13	1.3	4.5	16	9.0	9.1	5.6	4.6	3.6	2.5	1.1	.80	.66
14	1.8	6.5	14	7.1	6.1	5.5	6.0	3.2	1.8	1.1	.79	.62
15	1.5	7.1	13	7.7	6.0	5.4	17	3.2	1.7	1.1	.74	.66
16	1.6	7.7	12	8.8	4.6	5.8	27	3.0	2.2	1.1	.69	.92
17	1.6	7.6	12	6.9	15	8.6	38	2.8	2.2	1.3	.71	.82
18	1.5	7.8	12	6.5	15	15	10	2.9	1.7	1.1	1.2	.71
19	1.5	8.0	11	6.8	9.2	11	16	2.8	1.6	1.0	.81	.87
20	1.6	9.1	13	5.8	7.6	8.3	40	2.8	1.5	1.0	.75	.96
21	1.7	16	11	5.5	6.8	17	11	2.8	1.6	1.7	.75	.94
22	5.3	20	11	5.4	5.8	11	7.8	2.7	1.6	1.2	.72	.88
23	4.3	11	44	13	5.2	9.2	6.3	2.7	1.7	3.1	.72	.77
24	3.6	7.2	18	13	4.9	10	5.6	2.6	1.6	1.2	2.1	.86
25	2.5	5.3	69	8.1	4.4	9.9	5.0	*2.6	1.5	1.1	1.3	1.1
26	2.9	8.6	33	6.5	4.2	8.0	19	2.5	1.5	1.0	.96	1.0
27	18	8.4	14	6.5	4.2	6.3	10	2.3	1.5	.95	.85	1.7
28	6.9	6.5	9.6	7.8	4.1	9.4	6.3	2.2	1.8	.88	.81	1.6
29	4.2	6.1	8.2	14	---	16	5.2	2.1	1.7	.80	1.4	1.1
30	3.5	9.1	e7.4	17	---	7.7	4.9	2.0	2.2	.75	1.0	1.1
31	3.2	---	e6.8	8.8	---	5.9	---	7.1	---	.77	.92	---
TOTAL	88.0	196.3	525.8	595.7	176.7	247.7	338.3	158.9	59.8	40.25	26.55	27.27
MEAN	2.84	6.54	17.0	19.2	6.31	7.99	11.3	5.13	1.99	1.30	.86	.91
MAX	18	20	69	123	15	17	40	28	4.5	3.1	2.1	1.7
MIN	1.2	2.5	4.3	5.4	3.5	4.2	3.7	2.0	1.5	.75	.42	.62
CFSM	.64	1.47	3.81	4.32	1.42	1.80	2.53	1.15	.45	.29	.19	.20
IN.	.74	1.64	4.40	4.98	1.48	2.07	2.83	1.33	.50	.34	.22	.23

e Estimated.

STREAMS TRIBUTARY TO LAKE ERIE

04213075 BRANDY RUN NEAR GIRARD, PA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	5.05	10.2	14.6	14.6	8.39	11.8	8.87	6.43	4.66	1.59	1.29	1.16
MAX	7.25	13.9	17.0	19.2	10.5	15.5	11.3	7.73	7.33	1.88	1.72	1.41
(WY)	1997	1997	1998	1998	1997	1997	1998	1997	1997	1997	1997	1997
MIN	2.84	6.54	12.1	9.92	6.31	7.99	6.46	5.13	1.99	1.30	.86	.91
(WY)	1998	1998	1997	1997	1998	1998	1997	1998	1998	1998	1998	1998

SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

FOR 1998 WATER YEAR

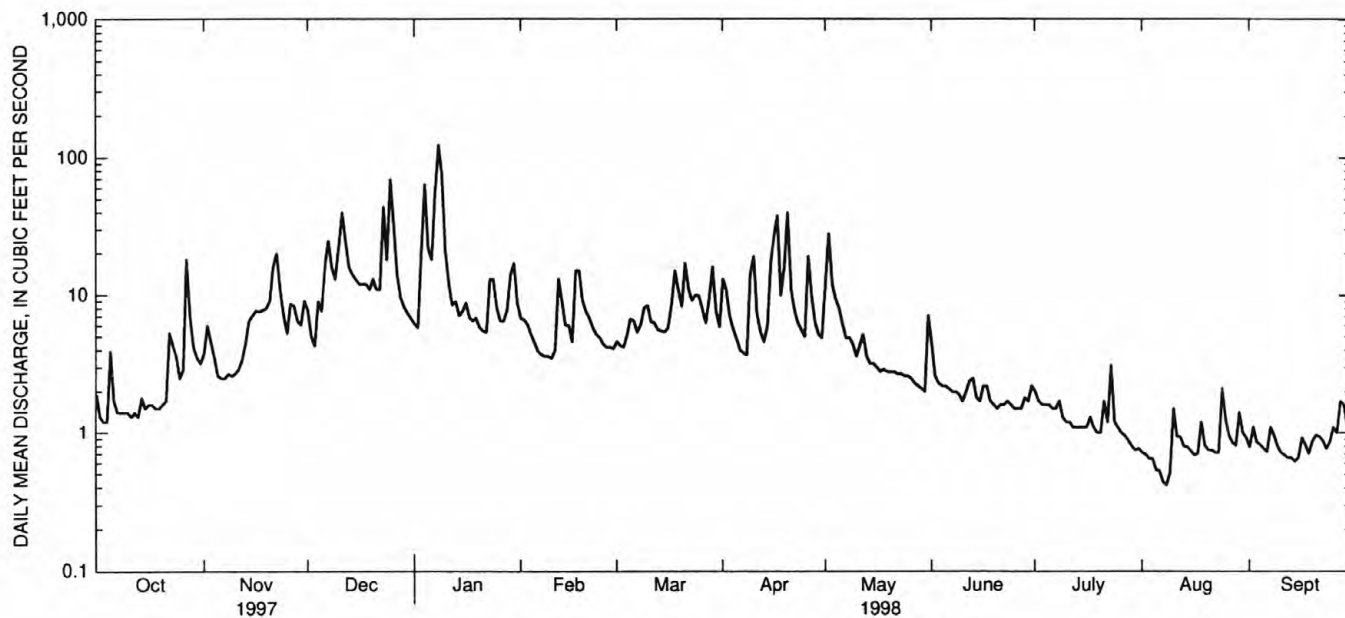
WATER YEARS 1997 - 1998

ANNUAL TOTAL	2698.78	2481.27	
ANNUAL MEAN	7.39	6.80	7.38
HIGHEST ANNUAL MEAN			7.96
LOWEST ANNUAL MEAN			6.80
HIGHEST DAILY MEAN	81 Jan 30	123 Jan 8	123 Jan 8 1998
LOWEST DAILY MEAN	.90 Sep 7	.42 Aug 8	.42 Aug 8 1998
ANNUAL SEVEN-DAY MINIMUM	.98 Sep 3	.53 Aug 3	.53 Aug 3 1998
INSTANTANEOUS PEAK FLOW		331 Jan 8	a708 Jun 13 1994
INSTANTANEOUS PEAK STAGE		2.26 Jan 8	b3.36 Jun 13 1994
INSTANTANEOUS LOW FLOW		.40 Aug 6-9c	.19 Jul 11 1986
ANNUAL RUNOFF (CFSM)	1.66	1.53	1.66
ANNUAL RUNOFF (INCHES)	22.56	20.74	22.54
10 PERCENT EXCEEDS	16	14	16
50 PERCENT EXCEEDS	4.3	3.9	4.3
90 PERCENT EXCEEDS	1.2	.82	1.0

a From rating curve extended above 14,000 ft³/s.

b Maximum gage height, 4.55 ft., Dec. 19, 1989 (backwater from ice).

c Also Sept. 14, 15.



October 1, 1997 to September 30, 1998

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

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 other collected for some special reason are called measurements at miscellaneous sites.

Records collected at crest-stage partial-record stations are presented in the following table. Discharge measurements made at low-flow partial-record sites and at miscellaneous sites and for special studies are given in separate tables.

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.

Annual maximum discharge at crest-stage partial-record stations during water year 1998

Station name and number	Location and drainage area	Period of record	Water year 1998 maximum			Period of record maximum		
			Date	Gage height (ft)	Dis- charge (ft ³ /s)	Date	Gage height (ft)	Dis- charge (ft ³ /s)
<u>OHIO RIVER BASIN</u>								
ALLEGHENY RIVER BASIN								
Allegheny River at Warren, Pa. (03015310)	Lat 41°50'38", long 79°09'00", Warren County, Hydrologic Unit 05010002, on right bank at downstream end of municipale parking lot at Warren, 1,400 ft. downstream from confluence of Conewango Creek, and at mile 188.7. Drainage area is 3,131 mi ² .	1988-98	1-08-98	10.38	27,000	1-03-91	10.19	31,700
FRENCH CREEK BASIN								
Woodcock Creek at Blooming Valley, Pa. (03022540)	Lat 41°41'26", long 80°02'54", Crawford County, Hydrologic Unit 05010004, on left bank at upstream side of bridge, 0.7 mi northeast of Blooming Valley, and 3.4 mi upstream from Woodcock Creek Dam. Drainage area is 31.1 mi ² .	1974-95† 1996-98	1-08-98	8.67	1,080	2-17-76	11.48	2,980
CLARION RIVER BASIN								
Clarion River at Johnsonburg, Pa. (03028500)	Lat 41°29'10", long 78°40'43", Elk County, Hydrologic Unit 05010005, on left bank at upstream side of highway bridge at Johnsonburg, 0.1 mi downstream from confluence of East and West Branches. Drainage area is 204 mi ² .	1945-95† 1996-98	1-08-98	6.94	4,660	1-19-96	10.14	12,800

† Operated as a continuous-record gaging station.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Crest-stage partial-record stations--continued

Annual maximum discharge at crest-stage partial-record stations during water year 1998--Continued

Station name and number	Location and drainage area	Period of record	<u>Water year 1998 maximum</u>			<u>Period of record maximum</u>		
			Date	Gage height (ft)	Dis- charge (ft ³ /s)	Date	Gage height (ft)	Dis- charge (ft ³ /s)
KISKIMINETAS RIVER BASIN								
Little Conemaugh River at East Conemaugh, Pa. (03041000)	Lat 40°20'45", long 78°52'58", Cambria County, Hydrologic Unit 05010007, upstream from bridge on State Highway 271 at East Conemaugh, 300 ft downstream from Clapboard Run, and 2.7 mi upstream from confluence with Stonycreek River. Drainage area is 183 mi 2.	1939-95† 1996-98	11-08-97	17.20	11,200	7-20-77	18.85	40,000
<u>LAKE ERIE BASIN</u>								
Mill Creek at Erie, Pa. (04213200)	Lat 42°05'54", long 80°04'35", Erie County, Hydrologic Unit 04120101, at bridge on West 38th Street, 100 ft west of State Highway 505, at Erie. Drainage area is 9.16 mi2.	1964-98	1-08-98	10.90	620	9-17-96	15.06	3,310

† Operated as a continuous-record gaging station.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Miscellaneous sites

Discharge measurements made at miscellaneous sites during water year 1998

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements	
					Date	Discharge (ft ³ /s)
<u>OHIO RIVER BASIN</u>						
ALLEGHENY RIVER BASIN						
03010956 Tunungwant Creek	Allegheny River	Lat 41°57'44", long 78°37'30", McKean County, Hydrologic Unit 05010001, at bridge on State Highway 346 and 1.5 mi downstream from confluence of East and West branch Tunungwant Creek.	138	1989-98	10-20-97	50.6
					2-02-98	150
					4-06-98	223
					6-01-98	77.7
					7-20-98	66.9
					9-16-98	27.7
03017500 Tionesta Creek	Allegheny River	Lat 41°36'07", long 79°03'01", Forest County, Hydrologic Unit 05010003, in Allegheny National Forest, on left bank at downstream side of highway bridge at Lynch, 500 ft upstream from Bluejay Creek and 7 mi south of Sheffield.	233	1939-79† 1981, 1988-98	11-19-97	187
					1-15-98	607
					3-11-98	523
					5-06-98	682
					7-01-98	224
					8-24-98	56.9
03022000 French Creek	Allegheny River	Lat 41°46'19", long 80°06'29", Crawford County, Hydrologic Unit 05010004, at downstream side of bridge at Venango, 1.2 mi upstream from Gravel Run and 2.2 mi downstream from Boles Run.	597	1938-46† 1994-98	11-04-97	1,170
					1-07-98	4,990
					2-23-98	1,320
					4-21-98	4,100
					6-16-98	226
					8-10-98	71.3
03025000 Sugar Creek	Allegheny River	Lat 41°25'43", long 79°52'48", Venango County, Hydrologic Unit 05010004, at bridge 0.8 mi north of Sugarcreek, 0.9 mi upstream from mouth, and 3 mi northeast of Franklin.	166	1932-79† 1989-98	11-17-97	124
					1-14-98	461
					3-09-98	400
					5-04-98	851
					6-29-98	56.7
					8-20-98	32.9
03029000 Clarion River	Allegheny River	Lat 41°25'15", long 78°44'10", Elk County, Hydrologic Unit 05010005, at bridge on State Highway 948 in Ridgway 50 ft downstream from Elk Creek.	303	1940-53† 1954, 1988-98†	10-22-97	156
					12-18-97	257
					2-04-98	335
					4-08-98	302
					6-03-98	218
					6-03-98	217
					7-22-98	205
					9-14-98	202
03030852 Clarion River	Allegheny River	Lat 41°07'47", long 79°33'18", Clarion County, Hydrologic Unit 05010005, at bridge on State Highway 58 at Callensburg and 0.3 mi upstream from Licking Creek.	1,163	1970-72† 1979-95† 1998	11-20-97	3,880
					1-20-98	2,300
					3-12-98	4,290
					5-11-98	3,580
					7-06-98	148
					8-27-98	199

† Operated as a continuous-record gaging station.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES--Continued
 Discharge measurements made at miscellaneous sites during water year 1998

Stream	Tributary to	Location	Drainage area (mi2)	Measured previously (water years)	Measurements	
					Date	Discharge (ft3/s)
BEAVER RIVER BASIN						
03099600 Mahoning River	Beaver River	Lat 41°01'06", long 80°26'27", Lawrence County, Hydrologic Unit 05030103, at bridge on State Highway 224 and 0.4 mi northwest of Edinburg.	1,099	1989-98	11-06-97	332
					1-08-98	8,020
					2-26-98	592
					4-28-98	4,700
					6-12-98	599
					8-13-98	369
03104500 Shenango River	Beaver River	Lat 41°00'00", long 80°21'21", Lawrence County, Hydrologic Unit 05030102, at bridge on Grant Street in New Castle and 0.6 mi above confluence with Neshannock Creek.	792	1910-11† 1912-34† 1989-98	11-06-97	443
					1-08-98	5,070
					2-26-98	1,110
					4-28-98	1,760
					6-18-98	258
					8-13-98	203
03105810 Connoquenessing Creek	Beaver River	Lat 40°48'21", long 79°57'55", Butler County, Hydrologic Unit 05030105, at bridge on SR 3006 at Renfrew and 0.8 mi upstream from Thorn Creek.	137	1989-98	11-21-97	193
					1-16-98	290
					3-18-98	152
					5-07-98	217
					7-07-98	21.8
					8-24-98	13.3
03105940 Little Connoquenessing Creek	Beaver River	Lat 40°48'36", long 80°06'54", Butler County, Hydrologic Unit 05030105, on right bank at pumping station for Harmony Borough Water Authority, .85 mi northeast of Harmony Borough and 1.3 mi above mouth.	63.8	1996-98	11-05-97	20.1
					1-09-98	1,310
					1-09-98	1,210
					2-27-98	84.0
					4-24-98	130
					6-19-98	207
					8-14-98	2.67
					8-31-98	5.62
					9-18-98	1.76
LAKE ERIE BASIN						
04212945 Conneaut Creek	Lake Erie	Lat 41°55'04", long 80°28'09", Erie County, Hydrologic Unit 04120101, at bridge on Griffey Road and 1.2 mi northwest of Cherry Hill and 1.9 mi south of West Springfield.	149	1989-98	11-05-97	22.7
					1-06-98	603
					2-23-98	191
					4-21-98	1,150
					6-17-98	20.8
					8-11-98	6.36
04213273 Twelvemile Creek	Lake Erie	Lat 42°12'15", long 79°54'16", Erie County, Hydrologic Unit 04120101, at bridge on Malbert Place at Mooreheadville and 0.5 mi upstream from mouth.	12.5	1989-98	11-04-97	9.03
					1-05-98	76.0
					2-24-98	15.1
					4-20-98	85.3
					6-16-98	2.14
					8-11-98	1.11

† Operated as a continuous-record gaging station.

ANALYSIS OF STREAMFLOW SAMPLES COLLECTED AT SPECIAL-STUDY SITES

ALLEGHENY-MONONGAHELA RIVER BASIN NAWQA PROJECT

LOW-FLOW SYNOPTIC SURVEY OF STREAMS THROUGHOUT THE ALLEGHENY AND MONONGAHELA RIVER BASINS

A low flow surface-water synoptic survey was completed throughout the Allegheny and Monongahela River Basins on August 13-21, 1998. Of the 121 sites sampled, 119 of the sites were previously sampled in 1979-81 as part of the Coal Area Hydrology Network established by the USGS in cooperation with the Office of Surface Mining (OSM). This Network was established to acquire and disseminate hydrologic information for the major coal areas of the Nation to aid mining companies and regulatory authorities in preparing and assessing permits. The data collected in 1998 will be compared to data collected in 1979-81 to assess water-quality changes that have occurred. Eighty-nine of the sites sampled were standard sites and 32 sites were intensive sites. Laboratory analyses for the standard sites (schedule 1065) included pH, specific conductance, sulfate, chloride, and total and dissolved iron, manganese, and aluminum. Laboratory analyses for the intensive sites included the standard site analyses plus calcium, magnesium, sodium, potassium, silica, fluoride and dissolved solids. Field determinations for all sites included water discharge, pH, specific conductance, water temperature, and alkalinity. Also, chilled samples were sent to the USGS Ocala Service Unit for heated acidity determinations for all sites. Quality control included 16 replicate samples taken at 16 individual sites.

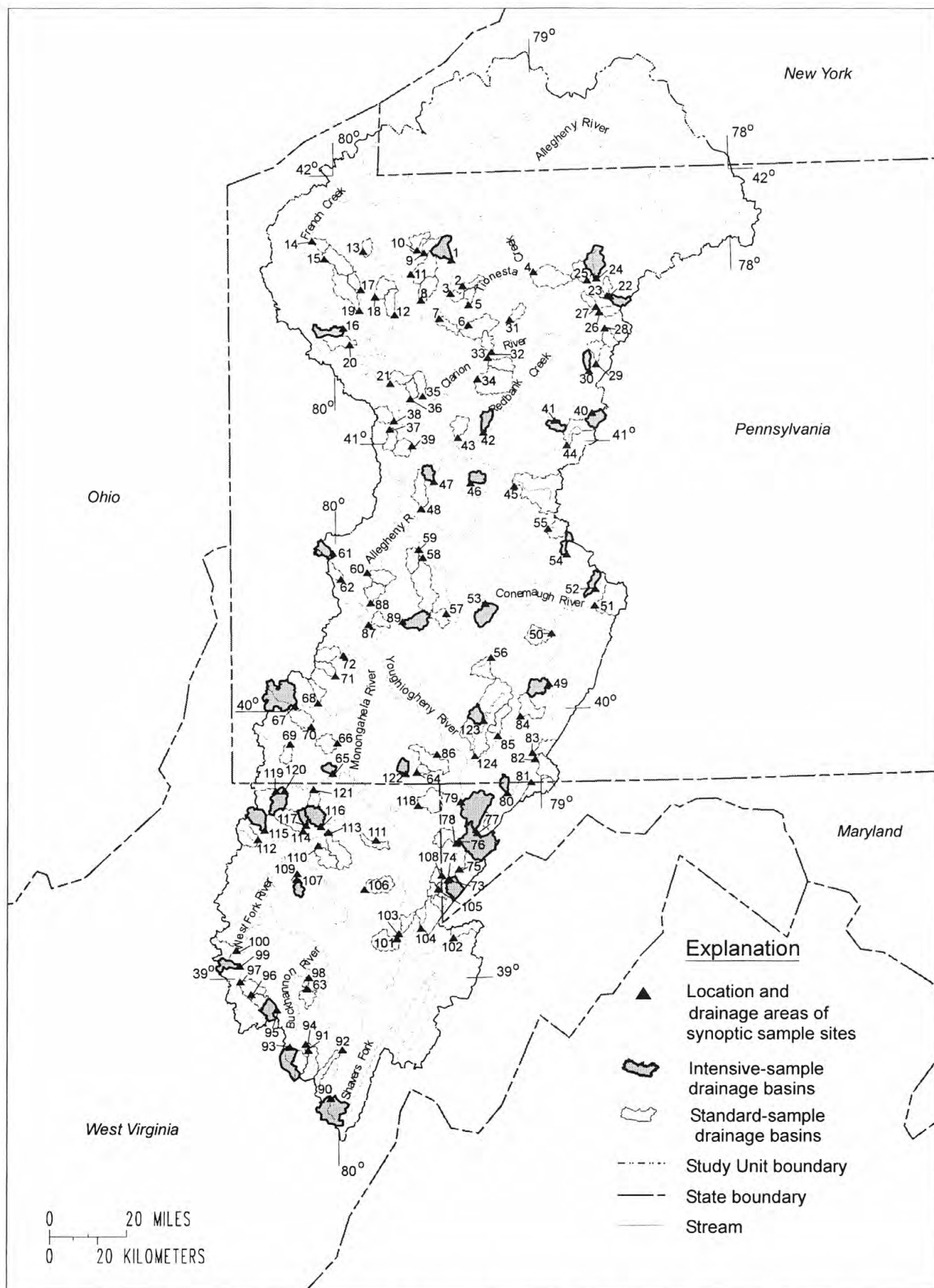


Figure 7. Location of Sites Sampled during the Low-flow Synoptic Survey of Streams in the Coal Fields of the Allegheny and Monongahela River Basins

ANALYSIS OF STREAMFLOW SAMPLES COLLECTED AT SPECIAL-STUDY SITES

ALLEGHENY-MONONGAHELA RIVER BASIN NAWQA PROJECT

LOW-FLOW SYNOPTIC SURVEY OF STREAMS THROUGHOUT THE ALLEGHENY AND MONONGAHELA RIVER BASINS--Continued

REMARKS.--The following water quality samples were collected at intensive sites. ANC is an abbreviation for acid neutralizing capacity.

WATER QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT- ANCE (μ S/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	ANC WATER UNFLTRD FET FIELD MG/L AS CACO3 (00410)	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)	ALKA- LITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)
03015560 TIDIOUTE C AT TIDIOUTE, PA (LAT 41 40 00N LONG 079 24 35W) Site 1												
AUG 1998 19...	0815	1.5	110	7.6	14.5	30	32	8.5	2.7	7.6	1.6	--
03024003 MILL C AT UTICA, PA (LAT 41 25 58N LONG 079 57 19W) Site 16												
AUG 1998 14...	0940	2.9	227	8.1	17.0	84	100	29	6.6	5.8	1.5	76
03027550 CROOKED CR AT GLEN HAZEL, PA. (LAT 41 32 15N LONG 078 36 49W) Site 22												
AUG 1998 17...	1435	.60	95	7.5	20.0	25	33	9.6	2.2	4.2	1.3	--
03027830 W BR CLARION R NR WILCOX, PA (LAT 41 36 20N LONG 078 40 45W) Site 24												
AUG 1998 17...	1145	30	80	7.4	17.5	19	26	7.7	1.5	4.0	1.0	--
03029144 MEAD RUN AT BROCKPORT, PA. (LAT 41 15 38N LONG 078 43 33W) Site 30												
AUG 1998 18...	0815	1.6	503	7.5	19.0	44	240	63	20	5.0	2.4	--
03031620 LABORDE BRANCH NR HOMECAMP, PA. (LAT 41 06 18N LONG 078 42 52W) Site 40												
AUG 1998 14...	1430	1.7	960	7.5	21.0	46	500	120	50	12	3.1	--
03031720 TROUT RUN NR REYNOLDSVILLE, PA. (LAT 41 04 43N LONG 078 54 07W) Site 41												
AUG 1998 14...	1100	.69	528	8.0	18.0	98	240	65	19	12	2.2	100
03032025 PINE C AT MAYPORT, PA (LAT 41 02 20N LONG 079 15 34W) Site 42												
AUG 1998 14...	1630	.70	860	8.3	21.5	98	280	74	23	60	3.7	--
03036220 N BR S FK PINE C AT ECHO, PA (LAT 40 51 01N LONG 079 19 41W) Site 46												
AUG 1998 15...	0930	.33	438	7.7	19.5	70	160	44	12	22	3.3	--
03036320 LIMESTONE RN AT TARRTOWN, PA (LAT 40 51 27N LONG 079 30 32W) Site 47												
AUG 1998 15...	1115	2.2	926	8.2	20.0	85	500	110	53	9.1	3.7	--
03039340 BEAVERDAM C AT STOYSTOWN, PA (LAT 40 05 35N LONG 078 57 16W) Site 49												
AUG 1998 13...	1640	2.4	378	8.4	21.5	86	150	44	10	8.8	2.8	--
03040110 HOWELLS RUN NEAR EBENSBURG, PA (LAT 40 26 46N LONG 078 42 56W) Site 52												
AUG 1998 13...	0845	1.7	715	8.0	16.5	79	130	39	8.8	66	17	--
03041700 MCGEE RN AT BRENIZER, PA (LAT 40 23 53N LONG 079 15 43W) Site 53												
AUG 1998 13...	1640	6.4	250	7.8	23.0	59	86	27	4.2	12	3.2	--

ANALYSIS OF STREAMFLOW SAMPLES COLLECTED AT SPECIAL-STUDY SITES

ALLEGHENY-MONONGAHELA RIVER BASIN NAWQA PROJECT

LOW-FLOW SYNOPTIC SURVEY OF STREAMS THROUGHOUT THE ALLEGHENY AND MONONGAHELA RIVER BASINS--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	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)	ALUM- INUM, TOTAL RECOV- ERABLE (µG/L AS AL) (01105)	ALUM- INUM, DIS- SOLVED (µG/L AS AL) (01106)	IRON, TOTAL RECOV- ERABLE (µG/L AS FE) (01045)	IRON, DIS- SOLVED (µG/L AS FE) (01046)	MANGA- NESE, TOTAL RECOV- ERABLE (µG/L AS MN) (01055)	MANGA- NESE, DIS- SOLVED (µG/L AS MN) (01056)
03015560 TIDIOUTE C AT TIDIOUTE, PA (LAT 41 40 00N LONG 079 24 35W) Site 1											
AUG 1998 19...	6.6	9.5	<.10	4.3	63	110	<10	500	31	22	12
03024003 MILL C AT UTICA, PA (LAT 41 25 58N LONG 079 57 19W) Site 16											
AUG 1998 14...	17	7.6	<.10	6.1	130	40	10	160	<10	<10	<4.0
03027550 CROOKED CR AT GLEN HAZEL, PA. (LAT 41 32 15N LONG 078 36 49W) Site 22											
AUG 1998 17...	10	5.7	<.10	3.8	55	130	12	610	33	43	21
03027830 W BR CLARION R NR WILCOX, PA (LAT 41 36 20N LONG 078 40 45W) Site 24											
AUG 1998 17...	9.6	5.2	<.10	4.4	50	110	14	370	56	37	26
03029144 MEAD RUN AT BROCKPORT, PA. (LAT 41 15 38N LONG 078 43 33W) Site 30											
AUG 1998 18...	190	4.8	.18	5.9	348	60	<10	310	15	210	219
03031620 LABORDE BRANCH NR HOMECAMP, PA. (LAT 41 06 18N LONG 078 42 52W) Site 40											
AUG 1998 14...	440	12	.20	4.1	747	40	<10	300	<10	450	521
03031720 TROUT RUN NR REYNOLDSVILLE, PA. (LAT 41 04 43N LONG 078 54 07W) Site 41											
AUG 1998 14...	140	20	.14	3.3	339	30	<10	330	37	95	85
03032025 PINE C AT MAYPORT, PA (LAT 41 02 20N LONG 079 15 34W) Site 42											
AUG 1998 14...	--	--	--	3.1	--	20	13	90	<10	50	33
03036220 N BR S FK PINE C AT ECHO, PA (LAT 40 51 01N LONG 079 19 41W) Site 46											
AUG 1998 15...	90	30	.11	3.6	264	60	<10	400	12	260	244
03036320 LIMESTONE RN AT TARRTOWN, PA (LAT 40 51 27N LONG 079 30 32W) Site 47											
AUG 1998 15...	390	8.6	.28	5.1	700	90	14	120	<10	41	29
03039340 BEAVERDAM C AT STOYSTOWN, PA (LAT 40 05 35N LONG 078 57 16W) Site 49											
AUG 1998 13...	69	14	.10	3.3	229	120	<10	340	52	64	34
03040110 HOWELLS RUN NEAR EBENSBURG, PA (LAT 40 26 46N LONG 078 42 56W) Site 52											
AUG 1998 13...	31	130	.35	5.5	396	50	13	100	26	23	16
03041700 MCGEE RN AT BRENIZER, PA (LAT 40 23 53N LONG 079 15 43W) Site 53											
AUG 1998 13...	32	15	<.10	4.4	151	1100	245	140	<10	41	35

ANALYSIS OF STREAMFLOW SAMPLES COLLECTED AT SPECIAL-STUDY SITES

ALLEGHENY-MONONGAHELA RIVER BASIN NAWQA PROJECT

LOW-FLOW SYNOPTIC SURVEY OF STREAMS IN THE COAL FIELDS OF THE ALLEGHENY AND MONONGAHELA RIVER BASINS--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (μ S/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	ANC WATER UNFLTRD FET FIELD MG/L AS CACO3 (00410)	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)	ALKA- LITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)
03049740 PINE C NR INGOMAR, PA (LAT 40 35 32N LONG 080 00 53W) Site 61												
AUG 1998 13...	1645	1.0	730	8.1	22.0	90	190	54	13	65	3.7	--
03071920 MEADOW RUN AT DAVISTOWN, PA (LAT 39 45 59N LONG 080 01 15W) Site 65												
AUG 1998 14...	1830	.14	550	8.2	21.5	176	170	47	12	54	2.6	--
03072815 TENMILE CREEK NEAR AMITY, PA (LAT 40 01 11N LONG 080 12 20W) Site 67												
AUG 1998 13...	1150	2.7	382	8.2	22.0	140	160	54	6.7	13	2.9	--
03075350 CHERRY CREEK NEAR CRELLIN, MD (LAT 39 22 06N LONG 079 27 16W) Site 74												
AUG 1998 14...	1550	2.8	145	7.4	20.5	33	47	14	2.9	6.4	3.5	--
03076010 DEEP CREEK LAKE OUTFLOW, MD (LAT 39 30 32N LONG 079 24 20W) Site 78												
AUG 1998 15...	1720	1.4	588	7.9	21.5	143	64	19	3.8	92	9.4	--
03076600 BEAR CREEK AT FRIENDSVILLE, MD (LAT 39 39 22N LONG 079 23 41W) Site 79												
AUG 1998 15...	1930	21	134	7.6	19.0	28	42	12	2.7	7.2	2.0	--
03077975 BIG SHADE RUN AT GRANTSVILLE, MD (LAT 39 41 12N LONG 079 10 03W) Site 80												
AUG 1998 14...	1115	.88	343	8.0	18.0	51	120	35	8.2	15	2.0	--
03084900 BRUSH C AT WESTMORELAND CITY, PA (LAT 40 20 02N LONG 079 40 18W) Site 89												
AUG 1998 13...	1500	8.2	505	8.5	23.0	76	140	40	8.9	41	3.8	--
383309080021539 TYGART VLY R @ HWY 15 BR @ VALLEY HEAD WV (LAT 38 33 09N LONG 080 02 15W) Site 90												
AUG 1998 21...	0820	13	130	8.0	16.0	66	65	22	2.3	3.3	1.0	--
384440080140939 R F BUCKHANNON R @ HWY 48 BR @ NEWLONTON WV (LAT 38 44 40N LONG 080 14 09W) Site 93												
AUG 1998 20...	2025	75	41	7.0	18.0	9	12	3.6	.79	1.9	.41	--
385307080175339 FRENCH CR @ HWY 20 BR @ FRENCH CREEK WV (LAT 38 53 07N LONG 080 17 53W) Site 95												
AUG 1998 14...	1140	3.1	90	7.1	21.0	27	29	8.8	1.8	3.0	1.4	--
390253080283839 POLK CR @ HWY 33 BR @ WESTON WV (LAT 39 02 53N LONG 080 28 38W) Site 99												
AUG 1998 21...	0930	4.2	241	7.6	20.0	75	100	30	6.9	4.3	2.7	--
392212080120339 CORBIN BRANCH @ HWY 1/1 BR @ SANTIAGO WV (LAT 39 22 12N LONG 080 12 03W) Site 107												
AUG 1998 20...	1415	.48	314	8.0	22.0	72	94	29	5.1	3.8	3.1	68

ANALYSIS OF STREAMFLOW SAMPLES COLLECTED AT SPECIAL-STUDY SITES

ALLEGHENY-MONONGAHELA RIVER BASIN NAWQA PROJECT

LOW-FLOW SYNOPTIC SURVEY OF STREAMS IN THE COAL FIELDS OF THE ALLEGHENY AND MONONGAHELA RIVER BASINS--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	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)	ALUM- INUM, TOTAL RECOV- ERABLE (µG/L AS AL) (01105)	ALUM- INUM, DIS- SOLVED (µG/L AS AL) (01106)	IRON, TOTAL RECOV- ERABLE (µG/L AS FE) (01045)	IRON, DIS- SOLVED (µG/L AS FE) (01046)	MANGA- NESE, TOTAL RECOV- ERABLE (µG/L AS MN) (01055)	MANGA- NESE, DIS- SOLVED (µG/L AS MN) (01056)
03049740 PINE C NR INGOMAR, PA (LAT 40 35 32N LONG 080 00 53W) Site 61											
AUG 1998 13...	62	130	.24	6.8	415	110	11	230	10	67	53
03071920 MEADOW RUN AT DAVISTOWN, PA (LAT 39 45 59N LONG 080 01 15W) Site 65											
AUG 1998 14...	87	5.7	.19	6.9	341	590	26	1100	<10	210	26
03072815 TENMILE CREEK NEAR AMITY, PA (LAT 40 01 11N LONG 080 12 20W) Site 67											
AUG 1998 13...	27	15	.15	4.6	225	120	11	230	<10	41	23
03075350 CHERRY CREEK NEAR CRELLIN, MD (LAT 39 22 06N LONG 079 27 16W) Site 74											
AUG 1998 14...	--	11	<.10	4.7	85	--	--	--	90	--	104
03076010 DEEP CREEK LAKE OUTFLOW, MD (LAT 39 30 32N LONG 079 24 20W) Site 78											
AUG 1998 15...	23	71	<.10	8.9	334	190	54	630	120	150	95
03076600 BEAR CREEK AT FRIENDSVILLE, MD (LAT 39 39 22N LONG 079 23 41W) Site 79											
AUG 1998 15...	11	11	<.10	4.7	76	210	20	330	<10	31	<4.0
03077975 BIG SHADE RUN AT GRANTSVILLE, MD (LAT 39 41 12N LONG 079 10 03W) Site 80											
AUG 1998 14...	61	27	<.10	1.8	201	190	19	460	25	110	81
03084900 BRUSH C AT WESTMORELAND CITY, PA (LAT 40 20 02N LONG 079 40 18W) Site 89											
AUG 1998 13...	58	64	.18	4.3	292	120	41	150	<10	37	24
383309080021539 TYGART VLY R @ HWY 15 BR @ VALLEY HEAD WV (LAT 38 33 09N LONG 080 02 15W) Site 90											
AUG 1998 21...	6.4	2.8	<.10	3.5	87	20	<10	20	<10	<10	<4.0
384440080140939 R F BUCKHANNON R @ HWY 48 BR @ NEWLONTON WV (LAT 38 44 40N LONG 080 14 09W) Site 93											
AUG 1998 20...	5.9	.75	<.10	3.2	22	90	17	170	24	18	<4.0
385307080175339 FRENCH CR @ HWY 20 BR @ FRENCH CREEK WV (LAT 38 53 07N LONG 080 17 53W) Site 95											
AUG 1998 14...	7.1	4.2	<.10	4.3	52	80	<10	1100	14	160	140
390253080283839 POLK CR @ HWY 33 BR @ WESTON WV (LAT 39 02 53N LONG 080 28 38W) Site 99											
AUG 1998 21...	41	4.2	.10	4.8	147	180	11	490	11	96	67
392212080120339 CORBIN BRANCH @ HWY 1/1 BR @ SANTIAGO WV (LAT 39 22 12N LONG 080 12 03W) Site 107											
AUG 1998 20...	27	3.6	<.10	3.1	126	90	12	220	17	42	35

ANALYSIS OF STREAMFLOW SAMPLES COLLECTED AT SPECIAL-STUDY SITES

ALLEGHENY-MONONGAHELA RIVER BASIN NAWQA PROJECT

LOW-FLOW SYNOPTIC SURVEY OF STREAMS IN THE COAL FIELDS OF THE ALLEGHENY AND MONONGAHELA RIVER BASINS--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (μ S/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	ANC WATER UNFLTRD FET FIELD MG/L AS CACO3 (00410)	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)	ALKA- LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)
393320080212239 PYLES FK @ HWY 250/5 BR NR METZ WV (LAT 39 33 20N LONG 080 21 22W) Site 115												
AUG 1998 18...	1645	.08	271	7.9	27.0	86	99	30	5.7	15	2.9	82
393408080045039 INDIAN CR @ HWY 45/2 BR @ OSGOOD WV (LAT 39 34 08N LONG 080 04 50W) Site 116												
AUG 1998 18...	0925	17	2660	8.1	21.5	120	610	160	51	405	5.8	106
393423080091339 L PAW PAW CR @ HWY 25 BR @ HOODSVILLE WV (LAT 39 34 23N LONG 080 09 13W) Site 117												
AUG 1998 18...	1200	.94	388	7.9	23.5	138	150	43	9.8	21	2.8	137
394212080152739 MIRACLE RUN @ HWY 7 BR @ BULA WV (LAT 39 42 12N LONG 080 15 27W) Site 120												
AUG 1998 15...	1700	.84	1490	7.7	25.5	138	260	71	20	212	3.2	--
03070470 MILL RUN NEAR ELLIOTTSVILLE, PA (LAT 39 45 49N LONG 079 39 49W) Site 122												
AUG 1998 18...	1345	4.6	64	7.2	20.0	14	20	6.2	1.2	2.5	.91	--
03079710 FALL CREEK AT BARRONVALE, PA (LAT 39 57 28N LONG 079 16 48W) Site 123												
AUG 1998 18...	0840	2.7	47	6.8	17.0	7	15	4.1	1.2	1.4	.77	--

ANALYSIS OF STREAMFLOW SAMPLES COLLECTED AT SPECIAL-STUDY SITES

ALLEGHENY-MONONGAHELA RIVER BASIN NAWQA PROJECT

LOW-FLOW SYNOPTIC SURVEY OF STREAMS IN THE COAL FIELDS OF THE ALLEGHENY AND MONONGAHELA RIVER BASINS--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	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)	ALUM- INUM, TOTAL RECOV- ERABLE (µG/L AS AL) (01105)	ALUM- INUM, DIS- SOLVED (µG/L AS AL) (01106)	IRON, TOTAL RECOV- ERABLE (µG/L AS FE) (01045)	IRON, DIS- SOLVED (µG/L AS FE) (01046)	MANGA- NESE, TOTAL RECOV- ERABLE (µG/L AS MN) (01055)	MANGA- NESE, DIS- SOLVED (µG/L AS MN) (01056)
393320080212239 PYLES FK @ HWY 250/5 BR NR METZ WV (LAT 39 33 20N LONG 080 21 22W) Site 115											
AUG 1998 18...	17	18	<.10	1.4	153	100	11	260	13	95	48
393408080045039 INDIAN CR @ HWY 45/2 BR @ OSGOOD WV (LAT 39 34 08N LONG 080 04 50W) Site 116											
AUG 1998 18...	1300	40	.23	6.6	2100	280	<30	370	<30	94	42
393423080091339 L PAW PAW CR @ HWY 25 BR @ HOODSVILLE WV (LAT 39 34 23N LONG 080 09 13W) Site 117											
AUG 1998 18...	50	5.5	.18	4.5	236	120	13	280	<10	62	49
394212080152739 MIRACLE RUN @ HWY 7 BR @ BULA WV (LAT 39 42 12N LONG 080 15 27W) Site 120											
AUG 1998 15...	430	110	.35	3.0	993	100	<10	240	30	210	204
03070470 MILL RUN NEAR ELLIOTTSVILLE, PA (LAT 39 45 49N LONG 079 39 49W) Site 122											
AUG 1998 18...	8.6	3.4	<.10	4.7	40	110	20	270	77	25	16
03079710 FALL CREEK AT BARRONVALE, PA (LAT 39 57 28N LONG 079 16 48W) Site 123											
AUG 1998 18...	6.8	3.3	<.10	4.0	26	50	19	40	<10	10	5.3

ANALYSIS OF STREAMFLOW SAMPLES COLLECTED AT SPECIAL-STUDY SITES

ALLEGHENY-MONONGAHELA RIVER BASIN NAWQA PROJECT

LOW-FLOW SYNOPTIC SURVEY OF STREAMS THROUGHOUT THE ALLEGHENY AND MONONGAHELA RIVER BASINS

REMARKS.--The following water quality samples were collected at standard sites. ANC is an abbreviation for acid neutralizing capacity.

WATER QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (μ S/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	ANC WATER UNFLTRD FET FIELD MG/L AS CACO3 (00410)	ALKA- LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)
03015700 BEAVER RN AT ENDEVOR, PA (LAT 41 35 12N LONG 079 21 17W) Site 2								
AUG 1998 18...	1515	1.9	72	7.5	18.5	18	--	3.6
03016005 L HICKORY RN AT WEST HICKORY, PA (LAT 41 33 28N LONG 079 24 56W) Site 3								
AUG 1998 18...	1635	1.4	100	7.6	18.5	24	--	5.8
03016805 S BR TIONESTA C AT CHERRY RUN, PA (LAT 41 38 03N LONG 078 59 50W) Site 4								
AUG 1998 17...	1715	16	90	7.7	20.5	21	--	5.7
03017820 ROSS RN NR CRYSTAL SPRINGS, PA (LAT 41 30 53N LONG 079 19 30W) Site 5								
AUG 1998 18...	1130	.84	75	7.4	19.0	21	--	3.2
03018900 COON C NR NEWMANSVILLE, PA (LAT 41 26 24N LONG 079 19 44W) Site 6								
AUG 1998 18...	0905	3.7	240	7.5	19.5	112	--	9.3
03020055 L TIONESTA C AT TIONESTA, PA (LAT 41 27 55N LONG 079 28 25W) Site 7								
AUG 1998 18...	1835	1.6	88	7.5	18.9	20	--	7.5
03020250 PITHOLE C NR LOVELL CORNERS, PA (LAT 41 32 05N LONG 079 33 51W) Site 8								
AUG 1998 14...	1915	4.1	300	7.8	20.0	64	--	54
03020438 CALDWELL C AT GRAND VALLEY, PA (LAT 41 42 36N LONG 079 32 44W) Site 9								
AUG 1998 15...	0945	.04	120	7.0	21.0	40	--	10
03020445 W BR CALDWELL C NR GRAND VALLEY, PA (LAT 41 43 16N LONG 079 34 49W) Site 10								
AUG 1998 15...	1040	1.0	120	7.6	18.5	37	--	6.8
03020455 PINE C NR ENTERPRISE, PA (LAT 41 37 56N LONG 079 36 49W) Site 11								
AUG 1998 15...	0830	4.4	198	7.6	19.0	54	--	24
03020510 CHERRYTREE RUN NR ROUSEVILLE, PA. (LAT 41 28 51N LONG 079 41 47W) Site 12								
AUG 1998 14...	1745	2.0	216	8.3	22.0	58	--	29
03021610 E BR MUDDY C NR KOOCHOGEY CORNERS, PA (LAT 41 43 06N LONG 079 51 07W) Site 13								
AUG 1998 15...	1230	.47	280	8.1	18.5	132	--	4.2
03022100 GRAVEL RN NR WOODCOCK, PA (LAT 41 45 31N LONG 080 06 34W) Site 14								
AUG 1998 15...	1550	.55	345	8.2	24.0	140	--	11

ANALYSIS OF STREAMFLOW SAMPLES COLLECTED AT SPECIAL-STUDY SITES

ALLEGHENY-MONONGAHELA RIVER BASIN NAWQA PROJECT

LOW-FLOW SYNOPTIC SURVEY OF STREAMS THROUGHOUT THE ALLEGHENY AND MONONGAHELA RIVER BASINS--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	ALUM- INUM, TOTAL RECOV- ERABLE (µG/L AS AL) (01105)	ALUM- INUM, DIS- SOLVED (µG/L AS AL) (01106)	IRON, TOTAL RECOV- ERABLE (µG/L AS FE) (01045)	IRON, DIS- SOLVED (µG/L AS FE) (01046)	MANGA- NESE, TOTAL RECOV- ERABLE (µG/L AS MN) (01055)	MANGA- NESE, DIS- SOLVED (µG/L AS MN) (01056)
03015700 BEAVER RN AT ENDEVOR, PA (LAT 41 35 12N LONG 079 21 17W) Site 2							
AUG 1998 18...	7.5	60	25	310	58	14	7.2
03016005 L HICKORY RN AT WEST HICKORY, PA (LAT 41 33 28N LONG 079 24 56W) Site 3							
AUG 1998 18...	10	90	18	200	<10	13	5.6
03016805 S BR TIONESTA C AT CHERRY RUN, PA (LAT 41 38 03N LONG 078 59 50W) Site 4							
AUG 1998 17...	9.1	70	23	600	160	34	28
03017820 ROSS RN NR CRYSTAL SPRINGS, PA (LAT 41 30 53N LONG 079 19 30W) Site 5							
AUG 1998 18...	8.4	120	<10	390	48	21	9.8
03018900 COON C NR NEWMANSVILLE, PA (LAT 41 26 24N LONG 079 19 44W) Site 6							
AUG 1998 18...	61	90	28	390	16	160	143
03020055 L TIONESTA C AT TIONESTA, PA (LAT 41 27 55N LONG 079 28 25W) Site 7							
AUG 1998 18...	11	80	<10	220	25	21	8.2
03020250 PITHOLE C NR LOVELL CORNERS, PA (LAT 41 32 05N LONG 079 33 51W) Site 8							
AUG 1998 14...	6.7	30	18	480	210	60	45
03020438 CALDWELL C AT GRAND VALLEY, PA (LAT 41 42 36N LONG 079 32 44W) Site 9							
AUG 1998 15...	4.0	280	13	2800	920	710	672
03020445 W BR CALDWELL C NR GRAND VALLEY, PA (LAT 41 43 16N LONG 079 34 49W) Site 10							
AUG 1998 15...	7.6	50	27	370	91	20	18
03020455 PINE C NR ENTERPRISE, PA (LAT 41 37 56N LONG 079 36 49W) Site 11							
AUG 1998 15...	9.8	60	13	450	71	51	46
03020510 CHERRYTREE RUN NR ROUSEVILLE, PA. (LAT 41 28 51N LONG 079 41 47W) Site 12							
AUG 1998 14...	14	40	17	110	38	15	13
03021610 E BR MUDDY C NR KOOCHOGEY CORNERS, PA (LAT 41 43 06N LONG 079 51 07W) Site 13							
AUG 1998 15...	18	40	<10	230	14	97	84
03022100 GRAVEL RN NR WOODCOCK, PA (LAT 41 45 31N LONG 080 06 34W) Site 14							
AUG 1998 15...	21	20	<10	170	51	53	50

ANALYSIS OF STREAMFLOW SAMPLES COLLECTED AT SPECIAL-STUDY SITES

ALLEGHENY-MONONGAHELA RIVER BASIN NAWQA PROJECT

LOW-FLOW SYNOPTIC SURVEY OF STREAMS THROUGHOUT THE ALLEGHENY AND MONONGAHELA RIVER BASINS--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (μ S/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	ANC WATER UNFLTRD FET FIELD MG/L AS CACO3 (00410)	ALKA- LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)
03022540 WOODCOCK C AT BLOOMING VALLEY, PA. (LAT 41 41 26N LONG 080 02 54W) Site 15								
AUG 1998 15...	1435	2.0	270	8.5	22.0	108	--	11
03024200 WEST BR SUGAR CR NR BRADLEYTOWN, PA. (LAT 41 34 31N LONG 079 51 54W) Site 17								
AUG 1998 14...	1450	.47	197	9.2	26.0	86	--	8.7
03024210 PRATHER C NR DEMPSEYTOWN, PA (LAT 41 32 54N LONG 079 47 39W) Site 18								
AUG 1998 14...	1615	1.9	188	8.0	20.5	54	--	16
03024300 LAKE C AT COOPERSTOWN, PA (LAT 41 29 52N LONG 079 52 22W) Site 19								
AUG 1998 14...	1315	3.2	218	9.0	21.5	87	--	9.6
03026100 L SANDY C AT POLK, PA (LAT 41 22 14N LONG 079 55 23W) Site 20								
AUG 1998 14...	0805	5.2	177	7.8	17.0	57	--	7.2
03026300 MILL C NR EMLENTON, PA (LAT 41 13 30N LONG 079 43 20W) Site 21								
AUG 1998 13...	1930	1.2	385	7.9	19.0	55	--	11
03027610 JOHNSON RUN AT KETNER, PA. (LAT 41 32 23N LONG 078 37 34W) Site 23								
AUG 1998 17...	1300	2.7	285	5.3	19.5	3	1	6.3
03027990 WILSON RN AT DAHOCA, PA (LAT 41 35 56N LONG 078 43 35W) Site 25								
AUG 1998 17...	1045	12	85	7.5	16.5	19	--	5.9
03028520 POWERS RN AT JOHNSONBURG, PA (LAT 41 28 45N LONG 078 40 12W) Site 26								
AUG 1998 17...	1645	1.4	107	7.6	20.0	21	--	10
03028595 SILVER C AT WILCOX, PA (LAT 41 29 57N LONG 078 41 03W) Site 27								
AUG 1998 17...	1540	.56	140	8.5	21.5	42	--	12
03028800 DAGUSCAHONDA CR AT DAGUSCAHONDA, PA. (LAT 41 25 09N LONG 078 38 32W) Site 28								
AUG 1998 18...	1040	2.3	405	4.4	17.0	0	--	7.4
03029140 BRANDY CAMP CREEK AT ELBON, PA (LAT 41 17 10N LONG 078 41 22W) Site 29								
AUG 1998 18...	0920	5.6	710	4.8	17.0	2	--	6.6
03029193 W BR MILLSTONE C AT MARIENVILLE, PA (LAT 41 27 25N LONG 079 07 13W) Site 31								
AUG 1998 17...	1540	.89	250	7.5	21.0	89	--	20

LOW-FLOW SYNOPTIC SURVEY OF STREAMS THROUGHOUT THE ALLEGHENY AND MONONGAHELA RIVER BASINS--Continued

DATE	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	ALUM- INUM, TOTAL RECOV- ERABLE (µG/L AS AL) (01105)	ALUM- INUM, TOTAL DIS- SOLVED (µG/L AS AL) (01106)	IRON, TOTAL RECOV- ERABLE (µG/L AS FE) (01045)	IRON, TOTAL DIS- SOLVED (µG/L AS FE) (01046)	MANGA- NESE, TOTAL RECOV- ERABLE (µG/L AS MN) (01055)	MANGA- NESE, TOTAL DIS- SOLVED (µG/L AS MN) (01056)
	03022540	WOODCOCK C AT BLOOMING VALLEY, PA. (LAT 41 41 26N LONG 080 02 54W)	Site 15				
AUG 1998 15...	15	50	<10	330	61	29	23
	03024200	WEST BR SUGAR CR NR BRADLEYTOWN, PA. (LAT 41 34 31N LONG 079 51 54W)	Site 17				
AUG 1998 14...	16	50	18	90	20	13	6.1
	03024210	PRATHER C NR DEMPSEYTOWN, PA (LAT 41 32 54N LONG 079 47 39W)	Site 18				
AUG 1998 14...	11	70	17	350	120	38	33
	03024300	LAKE C AT COOPERSTOWN, PA (LAT 41 29 52N LONG 079 52 22W)	Site 19				
AUG 1998 14...	19	50	13	110	51	25	11
	03026100	L SANDY C AT POLK, PA (LAT 41 22 14N LONG 079 55 23W)	Site 20				
AUG 1998 14...	16	40	11	130	15	14	6.1
	03026300	MILL C NR EMLENTON, PA (LAT 41 13 30N LONG 079 43 20W)	Site 21				
AUG 1998 13...	110	30	11	50	<10	16	<4.0
	03027610	JOHNSON RUN AT KETNER, PA. (LAT 41 32 23N LONG 078 37 34W)	Site 23				
AUG 1998 17...	110	280	209	80	25	1500	1570
	03027990	WILSON RN AT DAHOGA, PA (LAT 41 35 56N LONG 078 43 35W)	Site 25				
AUG 1998 17...	8.2	50	<10	310	50	30	28
	03028520	POWERS RN AT JOHNSONBURG, PA (LAT 41 28 45N LONG 078 40 12W)	Site 26				
AUG 1998 17...	11	80	23	180	20	20	7.4
	03028595	SILVER C AT WILCOX, PA (LAT 41 29 57N LONG 078 41 03W)	Site 27				
AUG 1998 17...	8.4	60	34	240	100	48	42
	03028800	DAGUSCAHONDA CR AT DAGUSCAHONDA, PA. (LAT 41 25 09N LONG 078 38 32W)	Site 28				
AUG 1998 18...	190	2400	2500	160	140	5700	5710
	03029140	BRANDY CAMP CREEK AT ELBON, PA (LAT 41 17 10N LONG 078 41 22W)	Site 29				
AUG 1998 18...	340	1000	915	2100	1800	4000	3850
	03029193	W BR MILLSTONE C AT MARIENVILLE, PA (LAT 41 27 25N LONG 079 07 13W)	Site 31				
AUG 1998 17...	7.0	170	43	1800	820	180	165

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ALLEGHENY-MONONGAHELA RIVER BASIN NAWQA PROJECT

LOW-FLOW SYNOPTIC SURVEY OF STREAMS THROUGHOUT THE ALLEGHENY AND MONONGAHELA RIVER BASINS--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (μ S/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	ANC WATER UNFLTRD FET FIELD MG/L AS CACO3 (00410)	ALKA- LITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)
03029400 TOMS RUN AT COOKSBURG, PA. (LAT 41 20 16N LONG 079 12 50W) Site 32								
AUG 1998 17...	1340	1.0	145	7.4	19.0	22	--	10
03029510 CATHERS RUN AT MOUTH, PA. (LAT 41 19 00N LONG 079 13 59W) Site 33								
AUG 1998 17...	1130	2.7	135	8.0	20.5	55	--	10
03029700 MILL CREEK NR STRATTANVILLE, PA. (LAT 41 14 15N LONG 079 17 11W) Site 34								
AUG 1998 17...	0940	8.2	1120	3.3	21.0	0	--	13
03030803 BEAVER C BELOW BLAIRS CORNERS, PA (LAT 41 10 38N LONG 079 33 37W) Site 35								
AUG 1998 13...	1750	1.3	380	8.4	23.0	54	--	29
03030948 TURKEY RN AT ALUM ROCK, PA (LAT 41 10 02N LONG 079 37 18W) Site 36								
AUG 1998 13...	1610	.66	705	8.1	24.0	95	--	35
03031508 S BR BEAR C AT BRUIN, PA (LAT 41 03 17N LONG 079 43 34W) Site 37								
AUG 1998 13...	1040	1.4	1800	7.3	18.0	108	--	430
03031510 N BR BEAR C AT PARKER, PA (LAT 41 05 08N LONG 079 42 17W) Site 38								
AUG 1998 13...	1435	3.7	515	4.3	19.0	0	--	7.3
03031540 SUGAR C AT EAST BRADY, PA (LAT 40 59 30N LONG 079 37 01W) Site 39								
AUG 1998 13...	0810	1.7	865	8.0	17.5	115	--	28
03032400 LEATHERWOOD CREEK NEAR NEW BETHLEHEM, PA. (LAT 41 01 12N LONG 079 23 14W) Site 43								
AUG 1998 14...	1815	2.4	1360	8.7	23.0	67	--	11
03033218 STUMP C NR BIG CREEK, PA (LAT 40 59 07N LONG 078 50 37W) Site 44								
AUG 1998 14...	0910	5.6	652	7.8	18.0	101	--	20
03034500 LITTLE MAHONING CREEK AT MCCORMICK, PA. (LAT 40 50 10N LONG 079 06 37W) Site 45								
AUG 1998 15...	0750	7.1	463	7.8	20.5	53	--	21
03036600 GLADE RN AT CADOGAN, PA (LAT 40 45 24N LONG 079 34 25W) Site 48								
AUG 1998 13...	0835	2.7	910	7.2	17.5	88	--	25
03039957 BENS C AT FERNDAL, PA (LAT 40 16 58N LONG 078 56 10W) Site 50								
AUG 1998 13...	1230	11	468	8.4	19.5	62	--	9.6

ALLEGHENY-MONONGAHELA RIVER BASIN NAWQA PROJECT

LOW-FLOW SYNOPTIC SURVEY OF STREAMS THROUGHOUT THE ALLEGHENY AND MONONGAHELA RIVER BASINS--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	ALUM- INUM, TOTAL RECOV- ERABLE (µG/L AS AL) (01105)	ALUM- INUM, DIS- SOLVED (µG/L AS AL) (01106)	IRON, TOTAL RECOV- ERABLE (µG/L AS FE) (01045)	IRON, DIS- SOLVED (µG/L AS FE) (01046)	MANGA- NESE, TOTAL RECOV- ERABLE (µG/L AS MN) (01055)	MANGA- NESE, DIS- SOLVED (µG/L AS MN) (01056)
	03029400 TOMS RUN AT COOKSBURG, PA. (LAT 41 20 16N LONG 079 12 50W) Site 32						
AUG 1998 17...	23	40	<10	220	15	45	35
	03029510 CATHERS RUN AT MOUTH, PA. (LAT 41 19 00N LONG 079 13 59W) Site 33						
AUG 1998 17...	3.1	20	<10	170	<10	30	13
	03029700 MILL CREEK NR STRATTANVILLE, PA. (LAT 41 14 15N LONG 079 17 11W) Site 34						
AUG 1998 17...	470	2700	2880	3300	3600	12000	12200
	03030803 BEAVER C BELOW BLAIRS CORNERS, PA (LAT 41 10 38N LONG 079 33 37W) Site 35						
AUG 1998 13...	80	30	<10	240	110	330	314
	03030948 TURKEY RN AT ALUM ROCK, PA (LAT 41 10 02N LONG 079 37 18W) Site 36						
AUG 1998 13...	220	<10	13	100	<10	34	24
	03031508 S BR BEAR C AT BRUIN, PA (LAT 41 03 17N LONG 079 43 34W) Site 37						
AUG 1998 13...	210	540	31	7200	1400	620	673
	03031510 N BR BEAR C AT PARKER, PA (LAT 41 05 08N LONG 079 42 17W) Site 38						
AUG 1998 13...	240	2300	2370	150	150	3900	3960
	03031540 SUGAR C AT EAST BRADY, PA (LAT 40 59 30N LONG 079 37 01W) Site 39						
AUG 1998 13...	370	80	43	60	<10	27	24
	03032400 LEATHERWOOD CREEK NEAR NEW BETHLEHEM, PA. (LAT 41 01 12N LONG 079 23 14W) Site 43						
AUG 1998 14...	550	20	<10	30	16	38	33
	03033218 STUMP C NR BIG CREEK, PA (LAT 40 59 07N LONG 078 50 37W) Site 44						
AUG 1998 14...	190	50	<10	580	<10	210	210
	03034500 LITTLE MAHONING CREEK AT MCCORMICK, PA. (LAT 40 50 10N LONG 079 06 37W) Site 45						
AUG 1998 15...	130	130	<10	250	11	99	47
	03036600 GLADE RN AT CADOGAN, PA (LAT 40 45 24N LONG 079 34 25W) Site 48						
AUG 1998 13...	380	1200	32	5400	2900	260	249
	03039957 BENS C AT FERNDAL, PA (LAT 40 16 58N LONG 078 56 10W) Site 50						
AUG 1998 13...	140	100	50	90	<10	16	<4.0

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ALLEGHENY-MONONGAHELA RIVER BASIN NAWQA PROJECT

LOW-FLOW SYNOPTIC SURVEY OF STREAMS THROUGHOUT THE ALLEGHENY AND MONONGAHELA RIVER BASINS--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (μ S/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	ANC WATER UNFLTRD FET FIELD MG/L AS CACO3 (00410)	ALKA- LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)
03040100 L CONEMAUGH RIVER AT WILMORE, PA (LAT 40 23 02N LONG 078 43 11W) Site 51								
AUG 1998 13...	1040	17	913	4.4	15.5	0	--	11
03042040 S BR TWO LICK C NR WANDIN JUNCTION, PA. SITE 14 (LAT 40 40 29N LONG 078 56 41W) Site 55								
AUG 1998 13...	1915	6.5	1000	8.9	20.0	351	--	9.3
03044800 LOYALHANNA C AT RECTOR, PA (LAT 40 11 42N LONG 079 14 15W) Site 56								
AUG 1998 13...	1440	2.3	174	8.0	23.0	35	34	17
03045480 CRABTREE C AT CRABTREE, PA (LAT 40 21 43N LONG 079 27 18W) Site 57								
AUG 1998 13...	1445	7.8	1560	6.6	17.0	134	--	44
03048400 BEAVER RN AT PAULTON, PA (LAT 40 34 26N LONG 079 34 06W) Site 58								
AUG 1998 13...	1300	14	333	8.3	21.0	28	--	30
03048550 PINE RN AT WEST VANDERGRIFT, PA (LAT 40 36 15N LONG 079 35 18W) Site 59								
AUG 1998 13...	1110	2.7	620	7.1	20.0	64	--	38
03049660 PLUM C AT VERONA, PA (LAT 40 31 10N LONG 079 50 37W) Site 60								
AUG 1998 18...	1135	2.5	1130	8.1	23.0	108	107	190
03049818 GIRTYS RUN AT MILLVALE, PA (LAT 40 29 41N LONG 079 58 30W) Site 62								
AUG 1998 18...	0825	.76	1330	8.2	21.5	122	123	120
03052500 SAND RUN NEAR BUCKHANNOON, WV (LAT 38 57 50N LONG 080 09 10W) Site 63								
AUG 1998 21...	1215	10	134	7.3	18.5	16	--	2.4
03070455 STONY FORK NEAR ELLIOTTSVILLE, PA (51) (LAT 39 46 08N LONG 079 36 34W) Site 64								
AUG 1998 18...	1220	2.7	258	7.6	20.0	29	--	4.8
03072777 MUDDY CREEK NEAR CARMICHAELS, PA (LAT 39 52 50N LONG 079 59 51W) Site 66								
AUG 1998 15...	1220	.34	503	7.9	21.0	210	--	7.2
03072820 DANIELS RUN AT WEST ZOLLARSVILLE, PA (LAT 40 01 51N LONG 080 05 32W) Site 68								
AUG 1998 13...	0830	.49	564	8.1	16.5	224	--	13
03072865 PURSLEY CREEK NEAR WAYNESBURG, PA (LAT 39 52 40N LONG 080 13 46W) Site 69								
AUG 1998 13...	1635	.34	509	8.1	27.5	180	--	3.5

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WATER QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	SULFATE DIS- SOLVED (MG/L AS SO4 (00945)	ALUM- INUM, TOTAL RECOV- ERABLE (µG/L AS AL (01105)	ALUM- INUM, DIS- SOLVED (µG/L AS AL (01106)	IRON, TOTAL RECOV- ERABLE (µG/L AS FE (01045)	IRON, DIS- SOLVED (µG/L AS FE (01046)	MANGA- NESE, TOTAL RECOV- ERABLE (µG/L AS MN (01055)	MANGA- NESE, DIS- SOLVED (µG/L AS MN (01056)
03040100 L CONEMAUGH RIVER AT WILMORE, PA (LAT 40 23 02N LONG 078 43 11W) Site 51							
AUG 1998 13...	460	4100	2950	11000	8100	2300	2070
03042040 S BR TWO LICK C NR WANDIN JUNCTION, PA. (LAT 40 40 29N LONG 078 56 41W) Site 55							
AUG 1998 13...	150	30	<10	250	14	23	11
03044800 LOYALHANNA C AT RECTOR, PA (LAT 40 11 42N LONG 079 14 15W) Site 56							
AUG 1998 13...	12	60	15	400	80	71	49
03045480 CRABTREE C AT CRABTREE, PA (LAT 40 21 43N LONG 079 27 18W) Site 57							
AUG 1998 13...	710	640	38	58000	54100	2300	2280
03048400 BEAVER RN AT PAULTON, PA (LAT 40 34 26N LONG 079 34 06W) Site 58							
AUG 1998 13...	78	100	24	230	<10	140	96
03048550 PINE RN AT WEST VANDERGRIFT, PA (LAT 40 36 15N LONG 079 35 18W) Site 59							
AUG 1998 13...	170	90	<10	12000	480	370	356
03049660 PLUM C AT VERONA, PA (LAT 40 31 10N LONG 079 50 37W) Site 60							
AUG 1998 18...	180	80	60	60	2700	35	38
03049818 GIRTYS RUN AT MILLVALE, PA (LAT 40 29 41N LONG 079 58 30W) Site 62							
AUG 1998 18...	78	30	23	20	<10	12	6.6
03052500 SAND RUN NEAR BUCKHANNON, WV (LAT 38 57 50N LONG 080 09 10W) Site 63							
AUG 1998 21...	46	80	19	290	14	130	104
03070455 STONY FORK NEAR ELLIOTTSVILLE, PA (51) (LAT 39 46 08N LONG 079 36 34W) Site 64							
AUG 1998 18...	77	170	22	410	<10	300	241
03072777 MUDDY CREEK NEAR CARMICHAELS, PA (LAT 39 52 50N LONG 079 59 51W) Site 66							
AUG 1998 15...	53	220	<10	670	<10	400	373
03072820 DANIELS RUN AT WEST ZOLLARSVILLE, PA (LAT 40 01 51N LONG 080 05 32W) Site 68							
AUG 1998 13...	59	50	<10	70	<10	25	20
03072865 PURSLEY CREEK NEAR WAYNESBURG, PA (LAT 39 52 40N LONG 080 13 46W) Site 69							
AUG 1998 13...	59	300	15	640	17	290	168

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WATER QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (μ S/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	ANC WATER UNFLTRD FET FIELD MG/L AS CACO3 (00410)	ALKA- LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)
03072975 RUFF CREEK NEAR MATHER, PA (LAT 39 56 35N LONG 080 07 33W) Site 70								
AUG 1998 13...	1430	.97	473	8.2	21.5	168	--	15
03075035 N BR PIGEON C AT BENTLYVILLE, PA (LAT 40 07 54N LONG 080 00 19W) Site 71								
AUG 1998 13...	0910	.54	990	8.2	19.0	232	--	33
03075058 MINGO C AT RIVER VIEW, PA (LAT 40 12 31N LONG 079 57 53W) Site 72								
AUG 1998 13...	1105	1.3	1690	8.0	19.0	210	--	53
03075340 YOUGHIOGHENY R AT UNDERWOOD RD NR CRELLIN, MD (LAT 39 21 50N LONG 079 27 45W) Site 73								
AUG 1998 14...	1640	9.7	118	7.7	20.5	31	--	7.4
03075495 L YOUGHIOGHENY R AT 3RD ST AT OAKLAND, MD (LAT 39 24 19N LONG 079 24 23W) Site 75								
AUG 1998 14...	1440	11	166	7.5	21.5	37	--	14
03075700 MUDDY CREEK AT SWALLOW FALLS STATE PARK, MD (LAT 39 30 05N LONG 079 25 08W) Site 76								
AUG 1998 15...	1550	19	49	7.1	20.0	10	--	1.7
03075900 CHERRY CREEK NEAR MCHENRY, MD (LAT 39 32 20N LONG 079 18 55W) Site 77								
AUG 1998 14...	1320	2.6	173	6.5	19.0	5	--	2.1
03078500 BIG PINEY RN NR SALISBURY, PA (LAT 39 43 34N LONG 079 02 55W) Site 81								
AUG 1998 14...	1000	2.3	2320	7.5	18.5	25	--	42
03078648 FLAUGHERTY C AT MEYERSDALE, PA (LAT 39 48 45N LONG 079 01 41W) Site 82								
AUG 1998 14...	0845	3.7	1550	8.4	19.0	34	--	7.3
03078710 BLUE LICK C NR MEYERSDALE, PA (LAT 39 50 10N LONG 079 02 27W) Site 83								
AUG 1998 14...	0730	2.6	1320	8.0	18.5	88	--	6.7
03078785 E BR COXES C NR SOMERSET, PA (LAT 39 58 25N LONG 079 05 54W) Site 84								
AUG 1998 13...	1945	5.3	812	8.2	21.5	98	--	79
03078900 MIDDLE C NR CASSELMAN, PA (LAT 39 54 04N LONG 079 12 32W) Site 85								
AUG 1998 13...	1820	1.6	265	8.3	23.0	52	--	12
03080000 LAUREL HILL CREEK AT URSINA, PA. (LAT 39 49 13N LONG 079 19 18W) Site 124								
AUG 1998 18...	1050	43	107	7.6	22.0	19	--	--

ANALYSIS OF STREAMFLOW SAMPLES COLLECTED AT SPECIAL-STUDY SITES

ALLEGHENY-MONONGAHELA RIVER BASIN NAWQA PROJECT

LOW-FLOW SYNOPTIC SURVEY OF STREAMS THROUGHOUT THE ALLEGHENY AND MONONGAHELA RIVER BASINS--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	ALUM- INUM, TOTAL RECOV- ERABLE (µG/L AS AL) (01105)	ALUM- INUM, DIS- SOLVED (µG/L AS AL) (01106)	IRON, TOTAL RECOV- ERABLE (µG/L AS FE) (01045)	IRON, DIS- SOLVED (µG/L AS FE) (01046)	MANGA- NESE, TOTAL RECOV- ERABLE (µG/L AS MN) (01055)	MANGA- NESE, DIS- SOLVED (µG/L AS MN) (01056)
	03072975 RUFF CREEK NEAR MATHER, PA (LAT 39 56 35N LONG 080 07 33W) Site 70						
AUG 1998 13...	47	90	<10	140	<10	38	28
	03075035 N BR PIGEON C AT BENTLYVILLE, PA (LAT 40 07 54N LONG 080 00 19W) Site 71						
AUG 1998 13...	280	200	<10	240	<10	62	30
	03075058 MINGO C AT RIVER VIEW, PA (LAT 40 12 31N LONG 079 57 53W) Site 72						
AUG 1998 13...	670	40	<10	30	<10	36	40
	03075340 YOUGHIOGHENY R AT UNDERWOOD RD NR CRELLIN, MD (LAT 39 21 50N LONG 079 27 45W) Site 73						
AUG 1998 14...	8.5	160	20	810	150	69	65
	03075495 L YOUGHIOGHENY R AT 3RD ST AT OAKLAND, MD (LAT 39 24 19N LONG 079 24 23W) Site 75						
AUG 1998 14...	10	440	15	2000	180	210	122
	03075700 MUDDY CREEK AT SWALLOW FALLS STATE PARK, MD (LAT 39 30 05N LONG 079 25 08W) Site 76						
AUG 1998 15...	6.9	350	89	1000	450	52	7.3
	03075900 CHERRY CREEK NEAR MCHENRY, MD (LAT 39 32 20N LONG 079 18 55W) Site 77						
AUG 1998 14...	61	190	46	2200	200	260	180
	03078500 BIG PINEY RN NR SALISBURY, PA (LAT 39 43 34N LONG 079 02 55W) Site 81						
AUG 1998 14...	9.1	40	<10	390	66	25	14
	03078648 FLAUGHERTY C AT MEYERSDALE, PA (LAT 39 48 45N LONG 079 01 41W) Site 82						
AUG 1998 14...	20	150	72	160	54	65	50
	03078710 BLUE LICK C NR MEYERSDALE, PA (LAT 39 50 10N LONG 079 02 27W) Site 83						
AUG 1998 14...	660	40	16	70	<10	130	162
	03078785 E BR COXES C NR SOMERSET, PA (LAT 39 58 25N LONG 079 05 54W) Site 84						
AUG 1998 13...	150	130	24	420	51	130	58
	03078900 MIDDLE C NR CASSELMAN, PA (LAT 39 54 04N LONG 079 12 32W) Site 85						
AUG 1998 13...	50	60	31	430	94	53	40
	03080000 LAUREL HILL CREEK AT URSINA, PA. (LAT 39 49 13N LONG 079 19 18W) Site 124						
AUG 1998 18...	8.9	60	<10	110	13	29	17

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LOW-FLOW SYNOPTIC SURVEY OF STREAMS IN THE COAL FIELDS OF THE ALLEGHENY AND MONONGAHELA RIVER BASINS--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (μ S/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	ANC WATER UNFLTRD PET FIELD MG/L AS CACO3 (00410)	ALKA- LITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)
03081650 MEADOW RN NR FARMINGTON, PA (LAT 39 50 07N LONG 079 30 30W) Site 86								
AUG 1998 18...	1120	13	158	7.9	20.0	25	--	15
03083805 LONG RN AT VERSAILLES, PA (LAT 40 19 25N LONG 079 50 20W) Site 87								
AUG 1998 13...	1315	2.5	790	7.9	21.0	123	--	72
03084800 THOMPSON RN AT TURTLE CREEK (LAT 40 24 19N LONG 079 49 41W) Site 88								
AUG 1998 18...	1400	6.6	1090	8.4	24.5	63	--	140
384352080084839 L F R F BUCKHANNON R @ HWY 46 BR @ CZAR WV (LAT 38 43 52N LONG 080 08 48W) Site 91								
AUG 1998 20...	1930	13	102	7.6	19.0	30	--	1.6
384401079584939 MILL CR @ HWY 46 BR @ MILL CREEK WV (LAT 38 44 01N LONG 079 58 49W) Site 92								
AUG 1998 21...	0950	22	36	7.3	15.0	14	14	.42
384517080093039 L F BUCKHANNON R @ HWY 9 BR @ PALACE VLY WV (LAT 38 45 17N LONG 080 09 30W) Site 94								
AUG 1998 20...	1840	54	37	6.9	18.0	6	--	.52
390020080083539 SAND RUN @ HWY 3/2 BR NR MOUTH WV (LAT 39 00 20N LONG 080 08 35W) Site 98								
AUG 1998 14...	0910	9.6	185	7.8	20.0	22	--	4.0
390627080294039 FREEMANS CR @ BR @ VALLEY CHAPEL WV (LAT 39 06 27N LONG 080 29 40W) Site 100								
AUG 1998 20...	1710	3.6	328	8.1	25.0	93	--	2.8
390853079424839 CLOVER RUN @ HWY 21 BR @ ST. GEORGE WV (LAT 39 08 53N LONG 079 42 48W) Site 101								
AUG 1998 15...	1150	6.7	66	7.3	19.0	18	--	1.7
390856079261839 BEAVER CR @ HWY 93 BR NR DAVIS WV (LAT 39 08 56N LONG 079 26 18W) Site 102								
AUG 1998 15...	0820	15	238	4.7	19.0	1	--	2.2
391000079421039 MINEAR RUN @ HWY 5 BR @ ST. GEORGE WV (LAT 39 10 00N LONG 079 42 10W) Site 103								
AUG 1998 15...	1100	1.6	49	7.1	19.5	10	--	1.4
391108079354239 HORSESHOE RUN @ HWY 9 BR @ LEAD MINE WV (LAT 39 11 08N LONG 079 35 42W) Site 104								
AUG 1998 15...	0950	11	66	7.4	19.0	19	--	1.8
391952079303339 RHINE CR @ HWY 108 BR @ BROOKSIDE WV (LAT 39 19 52N LONG 079 30 33W) Site 105								
AUG 1998 14...	1920	3.4	114	7.7	18.5	32	32	6.5

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WATER QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	SULFATE DIS- SOLVED (MG/L AS S04) (00945)	ALUM- INUM, TOTAL RECOV- ERABLE (µG/L AS AL) (01105)	ALUM- INUM, TOTAL DIS- SOLVED (µG/L AS AL) (01106)	IRON, TOTAL RECOV- ERABLE (µG/L AS FE) (01045)	IRON, TOTAL DIS- SOLVED (µG/L AS FE) (01046)	MANGA- NESE, TOTAL RECOV- ERABLE (µG/L AS MN) (01055)	MANGA- NESE, TOTAL DIS- SOLVED (µG/L AS MN) (01056)
03081650 MEADOW RN NR FARMINGTON, PA (LAT 39 50 07N LONG 079 30 30W) Site 86							
AUG 1998 18...	14	180	15	370	23	30	7.5
03083805 LONG RN AT VERSAILLES, PA (LAT 40 19 25N LONG 079 50 20W) Site 87							
AUG 1998 13...	130	290	167	320	<10	130	126
03084800 THOMPSON RN AT TURTLE CREEK (LAT 40 24 19N LONG 079 49 41W) Site 88							
AUG 1998 18...	270	300	134	20	<10	27	24
384352080084839 L F R F BUCKHANNON R @ HWY 46 BR @ CZAR WV (LAT 38 43 52N LONG 080 08 48W) Site 91							
AUG 1998 20...	14	40	14	120	13	14	8.5
384401079584939 MILL CR @ HWY 46 BR @ MILL CREEK WV (LAT 38 44 01N LONG 079 58 49W) Site 92							
AUG 1998 21...	4.6	40	14	90	14	13	12
384517080093039 L F BUCKHANNON R @ HWY 9 BR @ PALACE VLY WV (LAT 38 45 17N LONG 080 09 30W) Site 94							
AUG 1998 20...	7.0	30	<10	70	<10	15	8.0
390020080083539 SAND RUN @ HWY 3/2 BR NR MOUTH WV (LAT 39 00 20N LONG 080 08 35W) Site 98							
AUG 1998 14...	51	50	10	160	<10	35	27
390627080294039 FREEMANS CR @ BR @ VALLEY CHAPEL WV (LAT 39 06 27N LONG 080 29 40W) Site 100							
AUG 1998 20...	69	152	11	354	19	79	66
390853079424839 CLOVER RUN @ HWY 21 BR @ ST. GEORGE WV (LAT 39 08 53N LONG 079 42 48W) Site 101							
AUG 1998 15...	7.0	20	<10	50	<10	<10	<4.0
390856079261839 BEAVER CR @ HWY 93 BR NR DAVIS WV (LAT 39 08 56N LONG 079 26 18W) Site 102							
AUG 1998 15...	92	840	767	380	110	1600	1610
391000079421039 MINEAR RUN @ HWY 5 BR @ ST. GEORGE WV (LAT 39 10 00N LONG 079 42 10W) Site 103							
AUG 1998 15...	6.8	30	<10	50	<10	<10	<4.0
391108079354239 HORSESHOE RUN @ HWY 9 BR @ LEAD MINE WV (LAT 39 11 08N LONG 079 35 42W) Site 104							
AUG 1998 15...	6.4	40	10	70	610	<10	<4.0
391952079303339 RHINE CR @ HWY 108 BR @ BROOKSIDE WV (LAT 39 19 52N LONG 079 30 33W) Site 105							
AUG 1998 14...	7.5	180	19	730	60	34	16

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LOW-FLOW SYNOPTIC SURVEY OF STREAMS IN THE COAL FIELDS OF THE ALLEGHENY AND MONONGAHELA RIVER BASINS--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	TIME	DIS- CHARGE, CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (μ S/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	ANC WATER UNFLTRD PET FIELD MG/L AS CACO3 (00410)	ALKA- LITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)
391958079520739 L SANDY CR @ HWY 92/14 BR @ EVANSVILLE WV (LAT 39 19 58N LONG 079 52 07W) Site 106								
AUG 1998	20...	1530	23	186	5.0	18.5	2	-- 3.7
392258079293139 LAUREL RN @ HWY 94/2 BR @ TURNER DOUGLAS WV (LAT 39 22 58N LONG 079 29 31W) Site 108								
AUG 1998	20...	1320	10	51	5.9	19.0	4	-- .50
392335080114839 HUSTEAD FK @ HWY 3/16 BR @ BOOTHSVILLE WV (LAT 39 23 35N LONG 080 11 48W) Site 109								
AUG 1998	20...	1250	1.7	285	8.1	18.5	58	-- 5.7
392947080054139 PRICKETTS CR @ HWY 73 BR @ MEADOWDALE WV (LAT 39 29 47N LONG 080 05 41W) Site 110								
AUG 1998	20...	0850	3.0	237	8.1	17.0	82	-- 5.7
393059079483739 DECKERS CR @ HWY 27 BR @ REEDSVILLE WV (LAT 39 30 59N LONG 079 48 37W) Site 111								
AUG 1998	20...	0830	7.1	494	7.2	18.5	29	-- 4.4
393114080232039 BUFFALO CR @ HWY 1/10 BR @ DEEP VALLEY WV (LAT 39 31 14N LONG 080 23 20W) Site 112								
AUG 1998	18...	1850	.44	500	7.7	26.0	82	-- 140
393250080023439 WHITEDAY CR @ HWY 36 BR NR SMITHTOWN WV (LAT 39 32 50N LONG 080 02 34W) Site 113								
AUG 1998	20...	1045	8.9	84	7.6	18.0	19	-- 3.6
393308080100339 PAW PAW CR @ HWY 17 BR @ GRANT TOWN WV (LAT 39 33 08N LONG 080 10 03W) Site 114								
AUG 1998	18...	1400	4.5	1890	8.2	25.0	136	-- 100
393838079361239 L SANDY CR @ HWY 3/4 BR NR BRANDONVILLE WV (LAT 39 38 38N LONG 079 36 12W) Site 118								
AUG 1998	20...	1045	7.1	259	7.5	15.0	28	-- 8.2
394208080180239 WEST VIRGINIA FK @ HWY 7 BR @ WANNA WV (LAT 39 42 08N LONG 080 18 02W) Site 119								
AUG 1998	15...	1900	.59	3140	8.4	23.5	262	-- 450
394227080065739 DOLLS RUN @ HWY 7 BR NR CORE WV (LAT 39 42 27N LONG 080 06 57W) Site 121								
AUG 1998	15...	1440	.53	444	8.2	22.5	138	-- 9.3

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LOW-FLOW SYNOPTIC SURVEY OF STREAMS IN THE COAL FIELDS OF THE ALLEGHENY AND MONONGAHELA RIVER BASINS--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	ALUM- INUM, TOTAL RECOV- ERABLE (µG/L AS AL) (01105)	ALUM- INUM, TOTAL DIS- SOLVED (µG/L AS AL) (01106)	IRON, TOTAL RECOV- ERABLE (µG/L AS FE) (01045)	IRON, TOTAL DIS- SOLVED (µG/L AS FE) (01046)	MANGA- NESE, TOTAL RECOV- ERABLE (µG/L AS MN) (01055)	MANGA- NESE, TOTAL DIS- SOLVED (µG/L AS MN) (01056)
391958079520739 L SANDY CR @ HWY 92/14 BR @ EVANSVILLE WV (LAT 39 19 58N LONG 079 52 07W) Site 106							
AUG 1998 20...	69	2000	857	2100	1100	210	210
392258079293139 LAUREL RN @ HWY 94/2 BR @ TURNER DOUGLAS WV (LAT 39 22 58N LONG 079 29 31W) Site 108							
AUG 1998 20...	15	300	75	820	480	210	220
392335080114839 HUSTEAD FK @ HWY 3/16 BR @ BOOTHSVILLE WV (LAT 39 23 35N LONG 080 11 48W) Site 109							
AUG 1998 20...	66	50	<10	130	<10	20	14
392947080054139 PRICKETTS CR @ HWY 73 BR @ MEADOWDALE WV (LAT 39 29 47N LONG 080 05 41W) Site 110							
AUG 1998 20...	33	60	<10	120	<10	15	11
393059079483739 DECKERS CR @ HWY 27 BR @ REEDSVILLE WV (LAT 39 30 59N LONG 079 48 37W) Site 111							
AUG 1998 20...	190	130	<10	430	68	280	294
393114080232039 BUFFALO CR @ HWY 1/10 BR @ DEEP VALLEY WV (LAT 39 31 14N LONG 080 23 20W) Site 112							
AUG 1998 18...	2500	20	<50	60	<50	260	301
393250080023439 WHITEDAY CR @ HWY 36 BR NR SMITHTOWN WV (LAT 39 32 50N LONG 080 02 34W) Site 113							
AUG 1998 20...	12	70	<10	180	13	<10	6.3
393308080100339 PAW PAW CR @ HWY 17 BR @ GRANT TOWN WV (LAT 39 33 08N LONG 080 10 03W) Site 114							
AUG 1998 18...	670	30	11	120	<10	76	80
393838079361239 L SANDY CR @ HWY 3/4 BR NR BRANDONVILLE WV (LAT 39 38 38N LONG 079 36 12W) Site 118							
AUG 1998 20...	72	110	14	480	16	40	21
394208080180239 WEST VIRGINIA FK @ HWY 7 BR @ WANNA WV (LAT 39 42 08N LONG 080 18 02W) Site 119							
AUG 1998 15...	650	150	<30	480	<30	310	241
394227080065739 DOLLS RUN @ HWY 7 BR NR CORE WV (LAT 39 42 27N LONG 080 06 57W) Site 121							
AUG 1998 15...	65	40	<10	80	<10	16	13

GROUND-WATER LEVELS

ALLEGHENY COUNTY

403734080063001. Local number, AG 700.

LOCATION.--Lat 40°37'34", long 80°06'30", Hydrologic Unit 05030101, at State Game Land Number 203, Bradford Woods. Owner: U.S. Geological Survey.

AQUIFER.--Sandstone and shale of Glenshaw Formation of Late Pennsylvanian age.

WELL CHARACTERISTICS.--Drilled observation artesian well, diameter 6 in, depth 100 ft, cased to 24 ft, open hole.

INSTRUMENTATION.--Data collection platform with 60-minute recording interval. Satellite telemetry at station.

DATUM.--Elevation of land-surface datum is 1,035 ft above sea level, from topographic map. Measuring point: Top of casing, 3.45 ft above land-surface datum.

REMARKS.--Missing record May 20, 21, and Sept. 14, 15. In addition to the daily maximum water level table shown below, daily minimum and mean water levels, since October 1987, are available from the District Office.

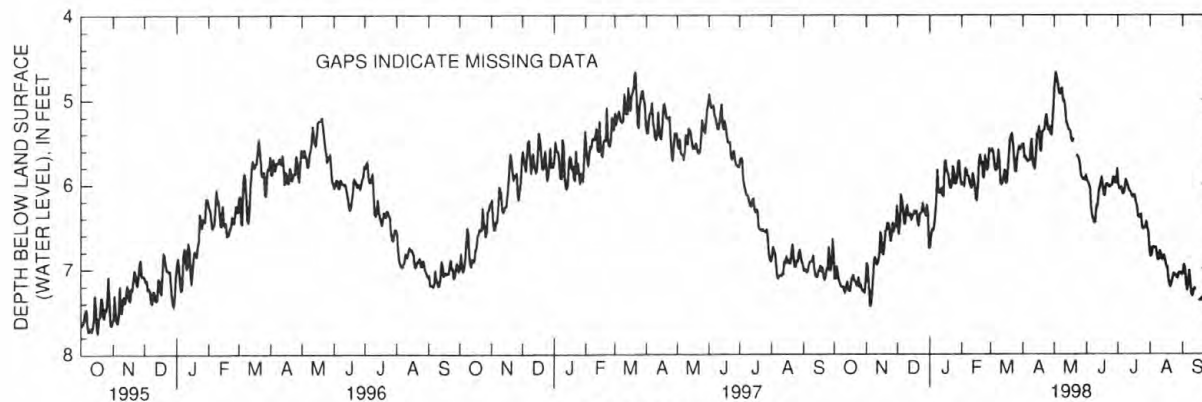
PERIOD OF RECORD.--November 1967 to current year.

EXTREMES FOR PERIOD OF RECORD.--The extremes shown are extremes of the daily maximum depth below land surface for the period of record indicated above. Highest water level, 4.67 ft below land-surface datum, Mar. 21, 1997, also May 2, 1998; lowest, 8.94 ft below land-surface datum, Nov. 14, 1968.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.11	6.93	6.50	6.75	5.98	5.61	5.52	4.80	5.96	6.00	6.85	7.04
2	7.11	6.98	6.59	6.61	6.00	5.58	5.68	4.67	5.97	6.05	6.84	6.95
3	6.97	7.19	6.45	6.53	6.02	5.62	5.67	4.73	6.01	6.05	6.75	7.00
4	7.06	7.43	6.12	6.55	5.81	5.75	5.71	4.78	6.05	6.03	6.74	7.17
5	7.13	7.43	6.19	6.50	5.83	5.83	5.73	4.91	6.27	6.11	6.75	7.25
6	7.16	7.31	6.28	6.35	5.89	5.83	5.72	4.93	6.37	6.11	6.75	7.16
7	7.20	7.10	6.46	6.20	5.90	5.79	5.72	4.89	6.42	6.07	6.83	7.02
8	7.21	6.89	6.47	5.83	5.97	5.59	5.55	4.86	6.46	5.94	6.89	7.14
9	7.20	6.86	6.29	6.07	6.02	5.73	5.46	5.01	6.45	5.97	6.89	7.28
10	7.25	6.93	6.24	6.10	6.04	5.98	5.74	4.99	6.24	6.01	6.79	7.32
11	7.28	6.95	6.36	6.09	5.87	6.00	5.79	5.06	6.27	6.06	6.83	7.27
12	7.20	6.91	6.37	6.04	5.94	5.97	5.82	5.25	6.11	6.08	6.89	7.22
13	7.15	6.84	6.34	6.13	6.00	5.91	5.67	5.28	6.03	6.10	6.88	7.25
14	7.23	6.57	6.42	6.14	6.16	5.83	5.39	5.33	5.99	6.14	6.84	---
15	7.26	6.62	6.38	5.73	6.19	5.98	5.43	5.35	5.91	6.15	6.91	---
16	7.26	6.81	6.35	5.72	6.03	5.98	5.31	5.36	6.03	6.12	6.97	7.36
17	7.14	6.83	6.31	5.84	5.75	5.86	5.58	5.47	6.12	6.13	6.97	7.37
18	7.09	6.74	6.33	5.86	5.65	5.65	5.61	5.49	6.13	6.21	7.10	7.37
19	7.07	6.55	6.31	5.91	5.75	5.47	5.38	5.45	6.00	6.25	7.18	7.34
20	7.14	6.54	6.44	6.03	5.73	5.43	5.36	---	5.99	6.38	7.21	7.37
21	7.14	6.45	6.49	6.04	5.91	5.39	5.35	---	6.00	6.39	7.17	7.30
22	7.19	6.46	6.36	6.00	5.92	5.53	5.24	5.65	6.03	6.39	7.11	7.43
23	7.19	6.57	6.33	5.79	5.66	5.69	5.17	5.67	6.01	6.35	7.05	7.48
24	7.10	6.67	6.33	5.86	5.75	5.84	5.27	5.69	6.02	6.51	7.06	7.44
25	7.21	6.61	6.22	5.99	5.83	5.85	5.35	5.75	6.01	6.53	7.07	7.35
26	7.17	6.45	6.31	5.99	5.81	5.68	5.31	5.87	5.91	6.52	7.10	7.35
27	7.23	6.56	6.32	5.92	5.58	5.60	5.40	5.91	5.92	6.50	7.11	7.30
28	7.26	6.48	6.37	5.74	5.60	5.55	5.41	5.94	5.98	6.44	7.04	7.41
29	7.27	6.50	6.24	5.72	---	5.59	5.24	5.93	5.98	6.52	7.04	7.41
30	7.28	6.25	6.34	5.90	---	5.55	5.03	5.95	5.81	6.59	7.05	7.30
31	7.13	---	6.75	6.00	---	5.52	---	5.89	---	6.77	7.07	---
MEAN	7.17	6.78	6.36	6.06	5.88	5.72	5.49	5.34	6.08	6.24	6.96	7.27
MAX	7.28	7.43	6.75	6.75	6.19	6.00	5.82	5.95	6.46	6.77	7.21	7.48
MIN	6.97	6.25	6.12	5.72	5.58	5.39	5.03	4.67	5.81	5.94	6.74	6.95

WTR YR 1998: MEAN 6.28; HIGH 4.67, MAY 2; LOW 7.48, SEPT 23.



BEAVER COUNTY

403006080252301. Local number, BV 156.

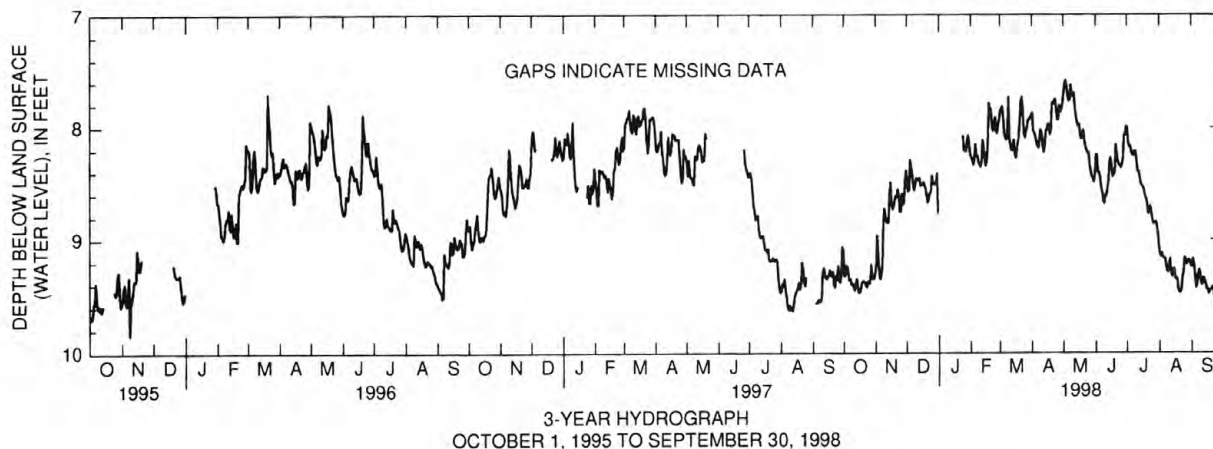
LOCATION--Lat 40°30'06", long 80°25'23", Hydrologic Unit 05030101, at Raccoon State Park.

Owner: U.S. Geological Survey.

AQUIFER--Shale of Glenshaw Formation of Late Pennsylvanian age.**WELL CHARACTERISTICS**--Drilled observation artesian well, diameter 6 in, depth 101 ft, cased to 25 ft, open hole.**INSTRUMENTATION**--Digital data logger recorder with 15-minute recording interval.**DATUM**--Elevation of land-surface datum is 930 ft above sea level, from topographic map. Measuring point: Top of casing, 2.00 ft above land-surface datum.**REMARKS**--Missing record Jan. 1-23. In addition to the daily maximum water level table shown below, daily minimum and mean water levels, since October 1991, are available from the District Office.**PERIOD OF RECORD**--November 1967 to current year.**EXTREMES FOR PERIOD OF RECORD**--The extremes shown are extremes of the daily maximum depth below land surface for the period of record indicated above. Highest water level, 7.47 ft below land-surface datum, Apr. 14, 1994: lowest, 13.72 ft below land-surface datum, June 5, 1968.DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.32	9.22	8.49	---	8.26	7.85	7.87	7.70	8.24	8.00	9.13	9.24
2	9.32	8.96	8.57	---	8.29	7.83	8.03	7.61	8.24	8.13	9.15	9.17
3	9.23	9.13	8.56	---	8.33	7.81	8.05	7.58	8.40	8.17	9.12	9.23
4	9.24	9.30	8.29	---	8.29	7.93	8.08	7.63	8.40	8.16	9.16	9.32
5	9.31	9.35	8.35	---	8.15	8.06	8.13	7.72	8.44	8.22	9.16	9.43
6	9.36	9.31	8.40	---	8.24	8.09	8.16	7.76	8.54	8.25	9.17	9.40
7	9.35	9.21	8.52	---	8.25	8.11	8.18	7.75	8.57	8.25	9.22	9.31
8	9.40	8.85	8.56	---	8.31	8.05	8.10	7.62	8.66	8.21	9.28	9.27
9	9.39	8.72	8.50	---	8.33	7.73	8.02	7.72	8.68	8.21	9.29	9.31
10	9.42	8.79	8.45	---	8.35	8.10	8.05	7.69	8.60	8.31	9.23	9.40
11	9.45	8.84	8.46	---	8.30	8.17	8.15	7.69	8.61	8.39	9.17	9.40
12	9.40	8.85	8.47	---	8.11	8.20	8.22	7.83	8.55	8.39	9.29	9.34
13	9.35	8.85	8.45	---	8.17	8.20	8.17	7.90	8.48	8.45	9.33	9.36
14	9.42	8.59	8.52	---	8.27	8.11	8.03	7.96	8.31	8.50	9.27	9.39
15	9.47	8.49	8.52	---	8.34	8.23	8.02	7.99	8.27	8.52	9.26	9.44
16	9.47	8.67	8.51	---	8.30	8.27	7.97	7.97	8.34	8.53	9.35	9.44
17	9.44	8.73	8.49	---	8.15	8.23	7.97	8.07	8.44	8.56	9.34	9.48
18	9.38	8.71	8.52	---	7.78	8.13	8.06	8.10	8.42	8.61	9.35	9.46
19	9.37	8.65	8.54	---	7.83	8.09	8.02	8.07	8.41	8.64	9.45	9.45
20	9.37	8.61	8.61	---	7.83	7.93	7.78	8.02	8.15	8.68	9.47	9.44
21	9.38	8.62	8.67	---	7.98	7.77	7.79	8.11	8.22	8.77	9.47	9.42
22	9.41	8.55	8.64	---	8.03	7.73	7.76	8.17	8.30	8.76	9.44	9.46
23	9.42	8.61	8.58	---	7.97	7.85	7.75	8.20	8.33	8.70	9.33	9.58
24	9.37	8.75	8.58	8.07	7.91	8.05	7.83	8.23	8.34	8.76	9.29	9.58
25	9.37	8.75	8.43	8.20	8.04	8.09	7.93	8.22	8.36	8.83	9.16	9.58
26	9.39	8.59	8.50	8.21	8.05	8.03	7.93	8.33	8.32	8.86	9.18	9.52
27	9.22	8.69	8.50	8.21	7.96	8.00	7.80	8.39	8.28	8.84	9.22	9.50
28	9.32	8.67	8.51	8.12	7.93	7.93	7.86	8.44	8.07	8.84	9.19	9.53
29	9.35	8.48	8.49	8.07	---	7.93	7.84	8.45	8.07	8.86	9.18	9.54
30	9.35	8.38	8.41	8.14	---	7.91	7.79	8.49	7.99	8.93	9.20	9.52
31	9.31	---	8.77	8.24	---	7.89	---	8.43	---	9.04	9.24	---
MEAN	9.37	8.80	8.51	8.16	8.13	8.01	7.98	7.99	8.37	8.53	9.26	9.42
MAX	9.47	9.35	8.77	8.24	8.35	8.27	8.22	8.49	8.68	9.04	9.47	9.58
MIN	9.22	8.38	8.29	8.07	7.78	7.73	7.75	7.58	7.99	8.00	9.12	9.17

WTR YR 1998: MEAN 8.57; HIGH 7.58, MAY 3; LOW 9.58, SEPT 23-25.



BUTLER COUNTY

410501079524401. Local number, BT 311.

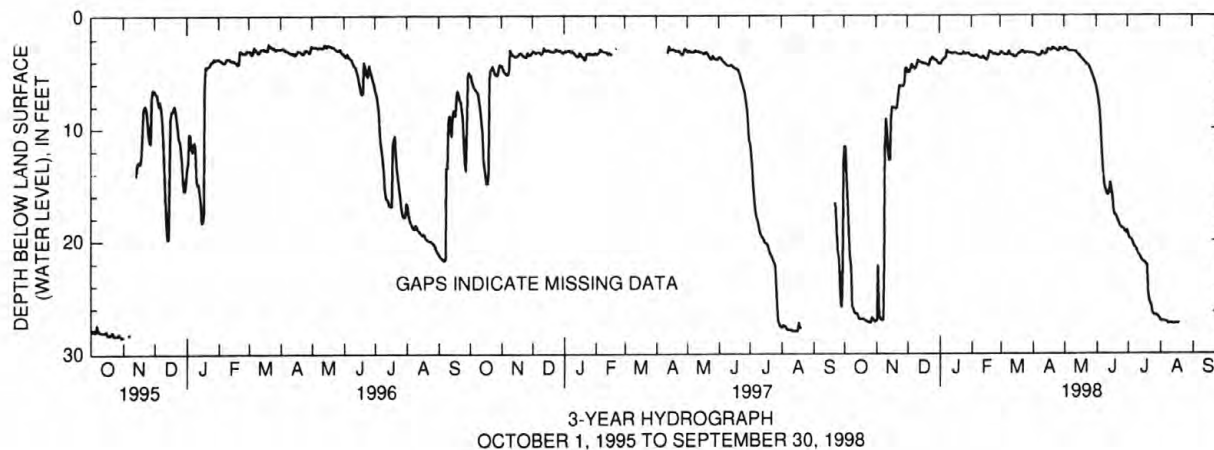
LOCATION.--Lat 41°05'01", long 79°52'44", Hydrologic Unit 05030105, at State Game Land Number 95.

Owner: U.S. Geological Survey.

AQUIFER.--Kittanning Formation of Middle Pennsylvanian age.**WELL CHARACTERISTICS.**--Drilled observation artesian well, diameter 6 in, depth 89 ft, cased to 12 ft, open hole.**INSTRUMENTATION.**--Continuous strip-chart recorder.**DATUM.**--Elevation of land-surface datum is 1,465 ft above sea level, from topographic map. Measuring point: Top of casing, 2.30 ft above land-surface datum.**REMARKS.**--Missing record Aug. 20 to Sept. 20. Water levels are affected by pumping from local mines.**PERIOD OF RECORD.**--November 1970 to current year.**EXTREMES FOR PERIOD OF RECORD.**--Highest water level, 2.31 ft below land-surface datum, Apr. 12, 1994; lowest, 31.06 ft below land-surface datum, Oct. 16, 17, 18, 1983.DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11.57	27.04	4.97	4.25	3.50	3.17	3.29	2.91	6.48	19.47	27.12	---
2	11.65	22.20	4.97	4.27	3.55	3.21	3.31	2.80	6.92	19.77	27.13	---
3	14.40	26.60	4.97	4.06	3.59	3.30	3.32	2.85	7.67	19.85	27.10	---
4	16.90	26.85	4.63	3.91	3.55	3.39	3.42	2.97	8.37	19.91	27.12	---
5	19.60	27.02	4.29	3.80	3.43	3.40	3.45	3.04	10.05	20.09	27.15	---
6	21.45	27.03	4.43	3.75	3.50	3.43	3.51	3.10	12.15	20.41	27.16	---
7	22.25	27.00	4.68	3.69	3.58	3.45	3.53	3.10	13.57	20.55	27.20	---
8	25.83	21.95	4.70	3.04	3.67	3.42	3.49	3.10	14.85	20.63	27.36	---
9	25.98	11.80	4.57	3.16	3.71	3.12	3.41	3.09	15.31	20.83	27.35	---
10	26.35	9.15	4.36	3.27	3.73	3.35	3.14	3.12	15.60	21.06	27.34	---
11	26.44	10.07	3.91	3.28	3.72	3.48	3.28	3.12	15.91	21.24	27.29	---
12	26.44	11.95	4.00	3.28	3.57	3.48	3.37	3.13	15.90	21.37	27.33	---
13	26.49	12.81	4.05	3.33	3.69	3.48	3.38	3.25	15.60	21.50	27.35	---
14	26.80	12.78	4.12	3.33	3.81	3.60	3.34	3.37	14.81	21.70	27.35	---
15	26.93	9.05	4.14	3.26	3.87	3.62	2.92	3.45	15.45	21.81	27.34	---
16	26.96	8.11	4.15	3.24	3.86	3.62	2.93	3.55	16.03	21.87	27.34	---
17	26.93	8.11	4.20	3.33	3.58	3.48	2.97	3.70	17.28	21.90	27.33	---
18	26.95	8.15	4.22	3.35	3.10	3.38	3.04	3.77	17.71	22.09	27.32	---
19	26.93	8.21	4.22	3.35	3.17	3.29	3.03	3.85	17.72	22.13	27.35	---
20	27.03	8.25	4.33	3.35	3.17	3.30	2.81	3.98	17.90	24.50	---	---
21	27.04	7.98	4.39	3.39	3.32	3.15	2.86	4.11	18.23	25.32	---	26.24
22	27.15	6.98	4.37	3.42	3.39	3.08	2.93	4.21	18.39	25.59	---	26.35
23	27.17	6.17	3.84	3.38	3.36	3.16	2.96	4.32	18.66	25.67	---	26.45
24	27.17	6.22	3.86	3.19	3.32	3.30	3.05	4.35	18.79	26.38	---	26.45
25	27.28	6.22	3.63	3.34	3.45	3.31	3.10	4.50	18.88	26.51	---	26.41
26	27.28	6.22	3.74	3.36	3.46	3.22	3.10	4.72	18.89	26.59	---	26.41
27	26.80	6.22	3.83	3.32	3.42	3.22	2.85	4.96	19.02	26.58	---	26.38
28	26.94	5.97	3.92	3.30	3.44	3.26	2.93	5.19	19.21	26.58	---	26.47
29	27.05	4.66	3.91	3.29	---	3.26	2.96	5.45	19.27	26.67	---	26.48
30	27.18	4.60	4.10	3.41	---	3.26	2.97	5.78	19.06	26.80	---	26.43
31	27.10	---	4.20	3.49	---	3.28	---	6.02	---	26.93	---	---
MEAN	24.58	12.85	4.25	3.46	3.52	3.34	3.15	3.83	15.46	22.98	27.26	26.41
MAX	27.28	27.04	4.97	4.27	3.87	3.62	3.53	6.02	19.27	26.93	27.36	26.48
MIN	11.57	4.60	3.63	3.04	3.10	3.08	2.81	2.80	6.48	19.47	27.10	26.24

WTR YR 1998: HIGH 2.80, MAY 2; LOW 27.36, AUG 8.



CRAWFORD COUNTY

413542080245002. Local number, CW 413.

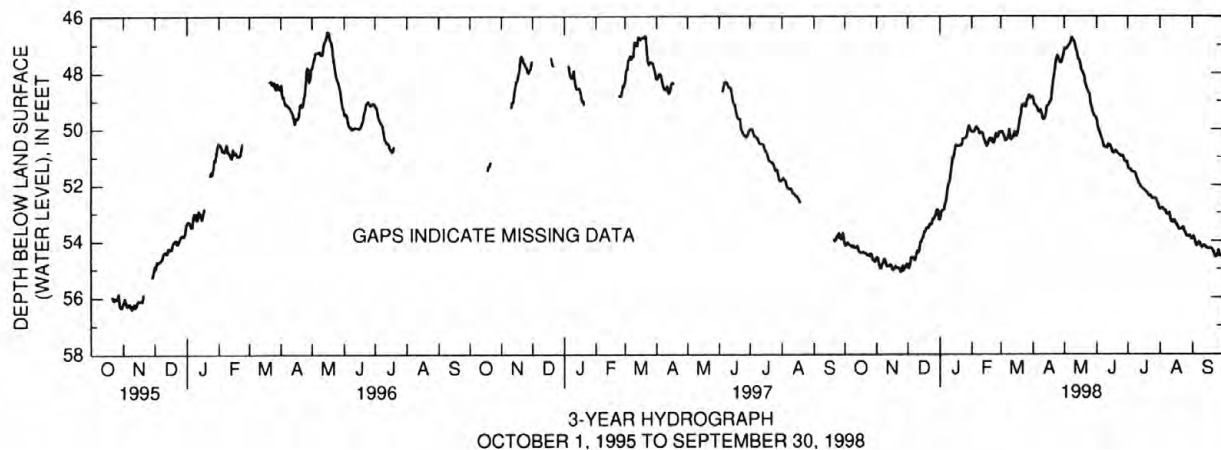
LOCATION.--Lat 41°35'42", long 80°24'50", Hydrologic Unit 05030102, at State Game Land Number 214 near Hartstown.

Owner: U.S. Geological Survey.

AQUIFER.--Sandstone of Cussewago Formation of Early Mississippian age.**WELL CHARACTERISTICS.**--Drilled observation artesian well, diameter 6 in, depth 100 ft, cased to 19 ft, open hole.**INSTRUMENTATION.**--Continuous strip-chart recorder.**DATUM.**--Elevation of land-surface datum is 1,110 ft above sea level, from topographic map. Measuring point: Top of casing, 2.70 ft above land-surface datum.**REMARKS.**--Since the June 9, 1981 well pumping and clean out, the monthly mean water levels have generally been from 12 to 24 feet lower. Water levels were also affected by intermittent pumping.**PERIOD OF RECORD.**--July 1967 to current year. Prior to June 1981, water-level data stored with well identification number 413542080245001.**EXTREMES FOR PERIOD OF RECORD.**--Highest water level, 20.02 ft below land-surface datum, Feb. 23, 1975; lowest, 56.39 ft below land-surface datum, Nov. 9, 1995.DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	54.15	54.57	54.94	53.23	50.07	50.09	48.91	47.11	49.68	51.36	52.86	53.91
2	54.14	54.61	54.98	52.98	50.08	50.07	49.12	47.10	49.95	51.42	52.84	53.82
3	54.05	54.82	54.85	52.90	50.09	50.18	49.12	47.13	50.04	51.42	52.81	53.94
4	54.07	54.96	54.58	52.90	49.99	50.25	49.20	47.07	50.13	51.48	52.86	54.08
5	54.13	54.97	54.57	52.86	49.90	50.40	49.25	47.00	50.26	51.52	52.91	54.18
6	54.14	54.85	54.56	52.66	49.99	50.39	49.38	46.96	50.35	51.53	52.90	54.11
7	54.19	54.77	54.66	52.54	50.00	50.34	49.39	46.85	50.50	51.52	53.03	54.03
8	54.20	54.63	54.67	52.16	50.16	50.29	49.30	46.71	50.63	51.58	53.06	54.06
9	54.14	54.67	54.47	51.94	50.11	50.01	49.40	46.83	50.64	51.70	53.06	54.18
10	54.23	54.85	54.34	51.90	50.13	50.34	49.63	46.83	50.63	51.81	52.99	54.23
11	54.24	54.90	54.40	51.63	50.12	50.36	49.65	46.95	50.67	51.91	53.23	54.19
12	54.20	54.90	54.32	51.36	50.31	50.32	49.62	47.16	50.53	51.98	53.33	54.15
13	54.17	54.89	54.03	51.00	50.40	50.27	49.49	47.23	50.60	52.04	53.34	54.17
14	54.31	54.83	54.00	51.04	50.52	50.08	49.17	47.49	50.57	52.10	53.26	54.24
15	54.38	54.87	53.91	50.79	50.60	50.18	49.16	47.50	50.68	52.13	53.27	54.23
16	54.40	55.01	53.80	50.57	50.54	50.24	49.10	47.61	50.81	52.15	53.39	54.28
17	54.41	55.02	53.65	50.57	50.40	50.14	49.00	47.85	50.85	52.19	53.40	54.26
18	54.41	54.98	53.65	50.60	50.32	49.90	49.00	47.93	50.85	52.24	53.50	54.26
19	54.38	54.90	53.53	50.60	50.42	49.63	48.62	48.01	50.75	52.26	53.58	54.26
20	54.43	54.95	53.52	50.57	50.33	49.51	48.30	48.10	50.81	52.31	53.58	54.30
21	54.43	54.95	53.53	50.59	50.49	49.16	48.05	48.37	50.86	52.39	53.56	54.37
22	54.45	54.97	53.41	50.56	50.49	49.12	47.75	48.50	50.90	52.37	53.56	54.49
23	54.51	54.97	53.39	50.34	50.32	49.10	47.50	48.61	50.91	52.37	53.49	54.57
24	54.48	55.10	53.40	50.34	50.15	49.19	47.35	48.69	50.96	52.48	53.63	54.57
25	54.53	55.07	53.19	50.33	50.29	49.19	47.43	48.73	50.97	52.48	53.68	54.51
26	54.43	54.88	53.21	50.31	50.26	48.96	47.53	49.09	50.94	52.48	53.80	54.31
27	54.47	55.04	53.15	50.20	50.10	48.87	47.63	49.20	51.07	52.47	53.83	54.50
28	54.67	54.91	53.02	50.00	50.12	48.77	47.61	49.38	51.15	52.49	53.82	54.53
29	54.69	54.94	52.87	49.87	---	48.90	47.46	49.48	51.17	52.60	53.79	54.54
30	54.74	54.81	52.89	50.00	---	48.86	47.30	49.54	51.14	52.69	53.86	54.53
31	54.66	---	53.23	50.07	---	48.83	---	49.57	---	52.82	53.94	---
MEAN	54.35	54.89	53.89	51.21	50.24	49.74	48.65	47.89	50.67	52.07	53.36	54.26
MAX	54.74	55.10	54.98	53.23	50.60	50.40	49.65	49.57	51.17	52.82	53.94	54.57
MIN	54.05	54.57	52.87	49.87	49.90	48.77	47.30	46.71	49.68	51.36	52.81	53.82

WTR YR 1998: HIGH 46.71, MAY 8; LOW 55.10, NOV 24.



ELK COUNTY

412458078324601. Local number, EK 108.

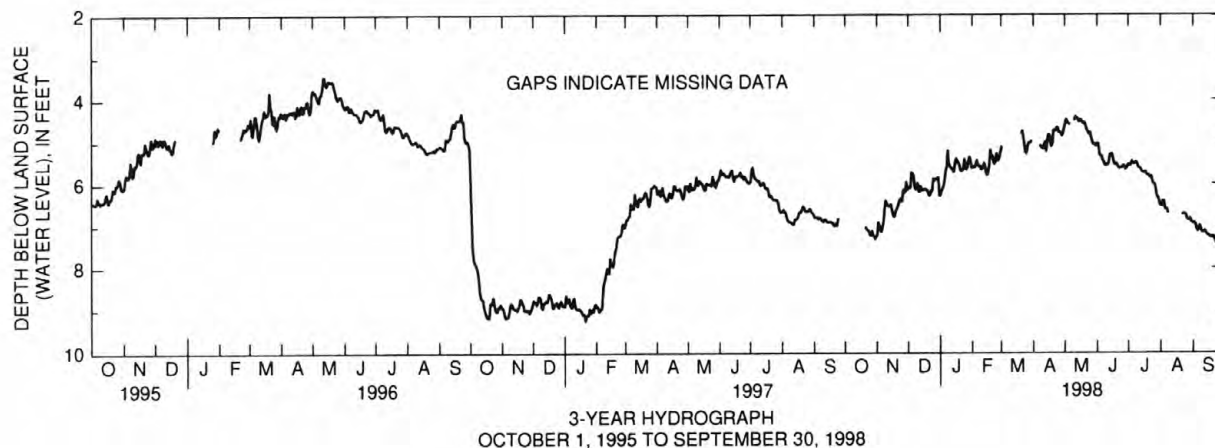
LOCATION.--Lat 41°24'58", long 78°32'46", Hydrologic Unit 05010005, at St. Marys.

Owner: St. Marys Municipal Joint Water Authority.

AQUIFER.--Pottsville Group of Middle Pennsylvanian age.**WELL CHARACTERISTICS.**--Drilled artesian well, diameter 12 in, depth 340 ft, cased to 40 ft, open hole.**INSTRUMENTATION.**--Continuous strip-chart recorder.**DATUM.**--Elevation of land-surface datum is 1,740 ft above sea level, from topographic map. Measuring point: Top of casing, 2.30 ft above land-surface datum.**REMARKS.**--Missing record Oct. 1-19, Mar. 3-19, 31, Apr. 1-6, and Aug. 9-20. Installation of sanitary sewer affected water levels after October 1996.**PERIOD OF RECORD.**--October 1974 to current year.**EXTREMES FOR PERIOD OF RECORD.**--Highest water level, 1.95 ft below land-surface datum, Mar. 4, 1991; lowest, 9.24 ft below land-surface datum, Jan. 21, 1996.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998												
MAXIMUM VALUES												
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	7.22	6.08	6.28	5.62	5.12	---	4.58	5.04	5.54	6.51	6.94
2	---	6.92	6.10	6.16	5.59	5.11	---	4.47	5.05	5.57	6.54	6.93
3	---	7.00	6.09	6.12	5.61	---	---	4.52	5.31	5.56	6.41	6.97
4	---	7.12	5.73	6.05	5.55	---	---	4.55	5.34	5.46	6.42	7.07
5	---	7.14	5.75	5.93	5.44	---	---	4.58	5.34	5.52	6.61	7.14
6	---	7.05	5.80	5.68	5.56	---	---	4.59	5.44	5.53	6.61	7.11
7	---	6.90	6.07	5.61	5.58	---	5.07	---	5.47	5.51	6.62	7.00
8	---	6.62	6.13	5.21	5.58	---	5.13	---	5.55	5.48	6.73	7.07
9	---	6.40	6.05	5.51	5.65	---	5.13	4.48	5.58	5.52	---	7.15
10	---	6.47	5.98	5.59	5.66	---	5.17	4.48	5.54	5.61	---	7.17
11	---	6.53	6.18	5.63	5.60	---	5.07	4.41	5.56	5.62	---	7.16
12	---	6.54	6.18	5.63	5.51	---	5.00	4.44	5.51	5.64	---	7.13
13	---	6.54	6.06	5.69	5.58	---	5.23	4.44	5.31	5.69	---	7.18
14	---	6.50	6.16	5.72	5.75	---	4.96	4.52	5.30	5.72	---	7.22
15	---	6.60	6.15	5.49	5.79	---	4.83	4.52	5.29	5.74	---	7.22
16	---	6.74	6.14	5.40	5.71	---	4.83	4.47	5.41	5.74	---	7.26
17	---	6.79	6.12	5.45	5.57	---	5.02	4.52	5.53	5.71	---	7.26
18	---	6.77	6.15	5.52	5.19	---	5.11	4.56	5.55	5.78	---	7.29
19	---	6.63	6.14	5.52	5.37	---	5.03	4.53	5.52	5.80	---	7.26
20	7.04	6.60	6.21	5.67	5.33	4.82	4.72	4.55	5.56	5.79	---	7.30
21	7.05	6.53	6.28	5.70	5.50	4.74	4.74	4.64	5.61	5.84	6.75	7.27
22	7.10	6.43	6.27	5.68	5.54	4.90	4.74	4.73	5.64	5.86	6.73	7.37
23	7.11	6.35	6.15	5.65	5.46	5.08	4.66	4.77	5.62	5.82	6.72	7.42
24	7.13	6.42	6.18	5.42	5.28	5.25	4.67	4.82	5.62	5.96	6.73	7.41
25	7.22	6.42	5.88	5.60	5.45	5.28	4.78	4.78	5.61	6.01	6.75	7.40
26	7.22	6.14	5.93	5.66	5.45	5.12	4.77	4.89	5.56	6.01	6.85	7.40
27	7.13	6.21	5.89	5.61	5.36	5.03	4.80	4.98	5.61	6.10	6.87	7.37
28	7.23	6.19	5.90	5.45	5.25	5.03	4.86	5.06	5.66	6.30	6.87	7.43
29	7.25	5.96	5.86	5.36	---	5.02	4.80	5.05	5.64	6.31	6.83	7.44
30	7.31	6.14	5.85	5.47	---	4.97	4.68	5.10	5.56	6.39	6.91	7.40
31	7.26	---	6.28	5.62	---	---	---	5.09	---	6.52	6.94	---
MEAN	7.17	6.60	6.06	5.65	5.52	5.04	4.91	4.66	5.48	5.80	6.71	7.22
MAX	7.31	7.22	6.28	6.28	5.79	5.28	5.23	5.10	5.66	6.52	6.94	7.44
MIN	7.04	5.96	5.73	5.21	5.19	4.74	4.66	4.41	5.04	5.46	6.41	6.93

WTR YR 1998: HIGH 4.41, MAY 11; LOW 7.44, SEPT 29.



ERIE COUNTY

415607080044601. Local number, ER 82.

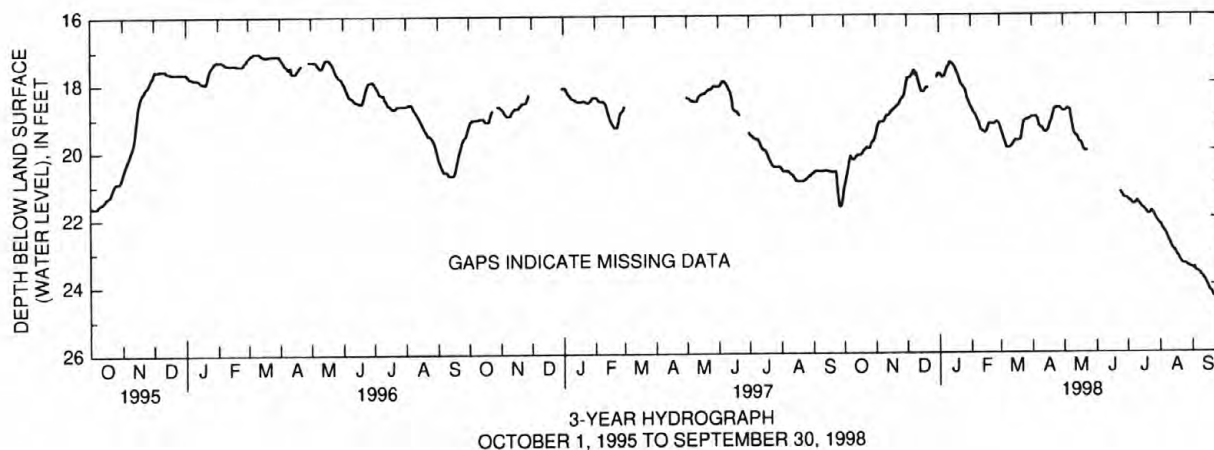
LOCATION.--Lat 41°56'07", long 80°04'46", Hydrologic Unit 05010004, near McLane.

Owner: U.S. Geological Survey.

AQUIFER.--Shale of Riceville Formation of Late Devonian age.**WELL CHARACTERISTICS.**--Drilled observation artesian well, diameter 6 in, depth 82 ft, cased to 56 ft, open hole.**INSTRUMENTATION.**--Continuous strip-chart recorder.**DATUM.**--Elevation of land-surface datum is 1,419 ft above sea level, from topographic map. Measuring point: Top of plywood cover, 3.50 ft above land-surface datum.**REMARKS.**--Missing record Dec. 23-28, and May 25 to June 23.**PERIOD OF RECORD.**--July 1966 to current year.**EXTREMES FOR PERIOD OF RECORD.**--Highest water level, 10.00 ft below land-surface datum, Mar. 17, 1973; lowest, 24.66 ft below land-surface datum, Sept. 30, 1998.DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21.05	19.47	17.88	17.72	18.74	19.32	19.00	18.83	---	21.46	22.20	23.52
2	20.90	19.32	17.84	17.73	18.82	19.44	19.00	18.83	---	21.50	22.23	23.54
3	20.76	19.23	17.84	17.79	18.87	19.52	18.99	18.81	---	21.51	22.31	23.50
4	20.62	19.16	17.84	17.83	18.90	19.64	18.99	18.78	---	21.53	22.37	23.59
5	20.47	19.14	17.79	17.83	18.95	19.72	19.02	18.77	---	21.58	22.41	23.61
6	20.28	19.14	17.74	17.81	19.03	19.82	19.07	18.78	---	21.60	22.45	23.63
7	20.16	19.14	17.66	17.72	19.10	19.92	19.23	18.80	---	21.60	22.50	23.64
8	20.24	19.14	17.63	17.62	19.17	19.93	19.31	19.03	---	21.60	22.59	23.67
9	20.25	19.10	17.77	17.52	19.28	19.93	19.33	19.21	---	21.56	22.67	23.73
10	20.25	19.02	17.70	17.52	19.38	19.92	19.33	19.38	---	21.52	22.72	23.76
11	20.25	18.96	17.82	17.39	19.41	19.89	19.38	19.50	---	21.56	22.79	23.78
12	20.21	18.95	17.96	17.39	19.43	19.87	19.44	19.55	---	21.60	22.88	23.85
13	20.16	18.95	18.06	17.41	19.46	19.82	19.47	19.58	---	21.64	22.94	23.88
14	20.14	18.91	18.19	17.44	19.47	19.77	19.47	19.58	---	21.69	22.97	23.95
15	20.13	18.85	18.26	17.49	19.47	19.71	19.44	19.68	---	21.72	22.99	24.00
16	20.13	18.84	18.26	17.54	19.40	19.70	19.38	19.75	---	21.74	23.05	24.08
17	20.13	18.78	18.26	17.60	19.29	19.71	19.29	19.76	---	21.77	23.11	24.15
18	20.11	18.77	18.22	17.69	19.21	19.71	19.19	19.80	---	21.81	23.16	24.19
19	20.06	18.74	18.16	17.74	19.20	19.70	19.12	19.90	---	21.85	23.20	24.22
20	20.00	18.71	18.14	17.85	19.20	19.70	19.00	19.98	---	21.90	23.28	24.27
21	19.97	18.68	18.14	17.95	19.21	19.62	18.88	20.02	---	21.91	23.33	24.36
22	19.95	18.66	18.14	18.04	19.21	19.41	18.77	20.02	---	21.91	23.36	24.33
23	19.90	18.62	---	18.07	19.21	19.23	18.76	20.02	---	21.88	23.39	24.36
24	19.93	18.56	---	18.11	19.19	19.13	18.75	20.02	21.23	21.82	23.39	24.42
25	19.93	18.49	---	18.16	19.15	19.10	18.74	---	21.30	21.85	23.39	24.44
26	19.93	18.46	---	18.21	19.16	19.09	18.74	---	21.34	21.91	23.41	24.42
27	19.82	18.42	---	18.32	19.18	19.08	18.74	---	21.40	21.97	23.44	24.46
28	19.75	18.36	---	18.46	19.23	19.08	18.77	---	21.42	22.02	23.46	24.54
29	19.73	18.22	17.84	18.54	---	19.04	18.80	---	21.43	22.09	23.48	24.61
30	19.68	18.03	17.82	18.60	---	19.04	18.83	---	21.43	22.13	23.49	24.66
31	19.59	---	17.73	18.69	---	19.01	---	---	---	22.18	23.49	---
MEAN	20.14	18.83	17.95	17.86	19.19	19.53	19.07	19.43	21.36	21.76	22.98	24.04
MAX	21.05	19.47	18.26	18.69	19.47	19.93	19.47	20.02	21.43	22.18	23.49	24.66
MIN	19.59	18.03	17.63	17.39	18.74	19.01	18.74	18.77	21.23	21.46	22.20	23.50

WTR YR 1998: HIGH 17.39, JAN 11, 12; LOW 24.66, SEPT 30.



FAYETTE COUNTY

394843079351401. Local number, FA 17.

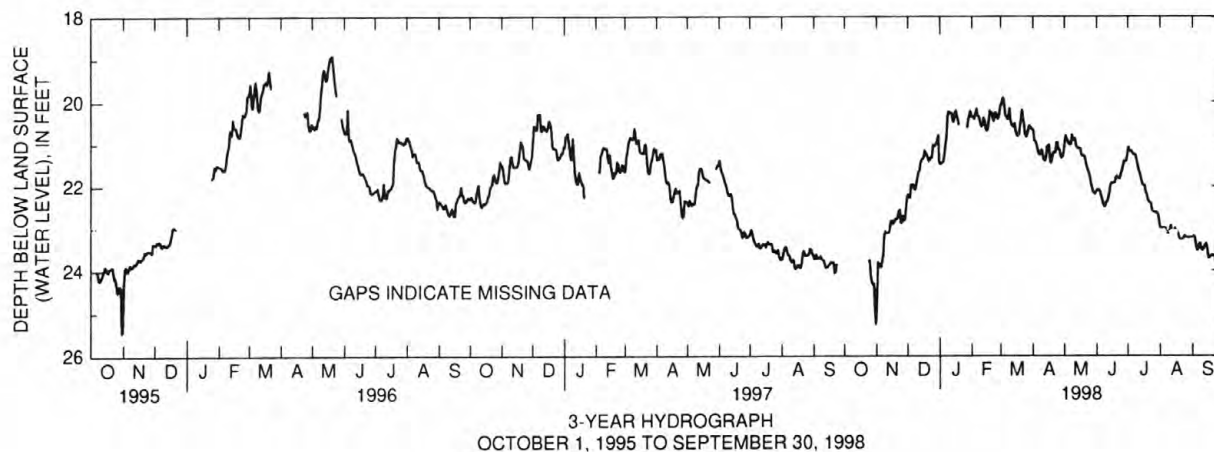
LOCATION.--Lat 39°48'43", long 79°35'14", Hydrologic unit 05020006, at Fort Necessity National Battlefield.

Owner: U.S. Geological Survey.

AQUIFER.--Shale and sandstone of Glenshaw Formation of Late Pennsylvanian age.**WELL CHARACTERISTICS.**--Drilled observation artesian well, diameter 6 in, depth 100 ft, cased to 19 ft, open hole.**INSTRUMENTATION.**--Continuous strip-chart recorder.**DATUM.**--Elevation of land-surface datum is 1,910 ft above sea level, from topographic map. Measuring point: Top of plywood cover 2.05 ft above land-surface datum.**REMARKS.**--Missing record Oct. 1-23, Jan. 20-26, and Sept. 26-30. Water levels affected by intermittent pumping.**PERIOD OF RECORD.**--November 1967 to current year.**EXTREMES FOR PERIOD OF RECORD.**--Highest water level, 18.56 ft below land-surface datum, Apr. 1, 1992; lowest, 40.00 ft below land-surface datum, Nov. 8, 1967.DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	24.65	22.19	21.47	20.34	20.07	20.68	20.96	22.09	21.07	23.01	23.21
2	---	23.80	22.26	21.44	20.37	19.95	20.92	20.80	22.08	21.15	23.01	23.18
3	---	23.85	22.26	21.43	20.40	19.90	20.94	20.88	22.09	21.16	23.00	23.21
4	---	23.91	21.96	21.41	20.28	20.08	21.00	20.92	22.12	21.16	22.99	23.42
5	---	23.91	21.97	21.26	20.17	20.32	21.12	20.99	22.22	21.20	23.00	23.53
6	---	23.78	21.96	21.01	20.32	20.36	21.22	21.01	22.31	21.24	23.00	23.51
7	---	23.60	22.06	20.83	20.34	20.41	21.25	21.00	22.42	21.24	23.06	23.38
8	---	23.16	22.07	20.35	20.42	20.39	21.20	20.78	22.48	21.25	23.12	23.36
9	---	23.07	21.93	20.23	20.55	20.16	21.13	20.90	22.48	21.36	23.12	23.48
10	---	23.10	21.80	20.26	20.58	20.44	21.26	20.90	22.37	21.47	23.03	23.53
11	---	23.11	21.66	20.26	20.55	20.54	21.37	20.86	22.37	21.60	22.94	23.51
12	---	23.11	21.63	20.26	20.38	20.57	21.39	21.04	22.27	21.67	23.05	23.44
13	---	23.07	21.45	20.44	20.42	20.59	21.34	21.08	22.15	21.77	23.06	23.39
14	---	22.87	21.36	20.47	20.62	20.51	21.07	21.09	21.97	21.88	23.05	23.37
15	---	22.82	21.35	20.27	20.68	20.72	21.04	21.11	21.92	21.97	23.00	23.51
16	---	22.88	21.31	20.20	20.65	20.78	21.01	21.10	21.93	21.98	23.05	23.71
17	---	22.89	21.15	20.33	20.47	20.81	21.39	21.24	21.92	21.98	23.05	23.70
18	---	22.82	21.20	20.42	20.21	20.78	21.44	21.27	21.92	22.15	23.09	23.67
19	---	22.77	21.24	20.55	20.28	20.58	21.33	21.27	21.80	22.20	23.23	23.64
20	---	22.78	21.31	---	20.26	20.42	21.20	21.27	21.76	22.32	23.26	23.65
21	---	22.74	21.39	---	20.42	20.19	21.19	21.39	21.79	22.38	23.26	23.64
22	---	22.60	21.37	---	20.45	20.39	21.20	21.50	21.81	22.39	23.25	23.67
23	---	22.56	21.30	---	20.26	20.53	20.97	21.61	21.82	22.40	23.23	23.80
24	23.80	22.86	21.31	---	20.26	20.76	20.96	21.66	21.70	22.58	23.18	23.79
25	23.75	22.87	21.01	---	20.38	20.82	21.12	21.75	21.62	22.60	23.20	23.72
26	24.11	22.70	21.04	---	20.40	20.78	21.12	21.90	21.51	22.62	23.21	---
27	24.27	22.81	21.03	20.62	20.31	20.66	21.26	22.00	21.39	22.62	23.22	---
28	24.31	22.79	20.98	20.43	20.12	20.56	21.32	22.11	21.40	22.61	23.22	---
29	24.30	22.54	20.95	20.33	---	20.59	21.30	22.15	21.40	22.64	23.21	---
30	24.95	22.26	20.79	20.21	---	20.64	21.18	22.18	21.26	22.70	23.21	---
31	25.25	---	21.42	20.34	---	20.65	---	22.14	---	22.88	23.21	---
MEAN	24.34	23.09	21.51	20.62	20.39	20.48	21.16	21.32	21.95	21.94	23.11	23.52
MAX	25.25	24.65	22.26	21.47	20.68	20.82	21.44	22.18	22.48	22.88	23.26	23.80
MIN	23.75	22.26	20.79	20.20	20.12	19.90	20.68	20.78	21.26	21.07	22.94	23.18

WTR YR 1998: HIGH 19.90, MAR 3; LOW 25.25, OCT 31.



FOREST COUNTY

412823079030601. Local number, FO 11.

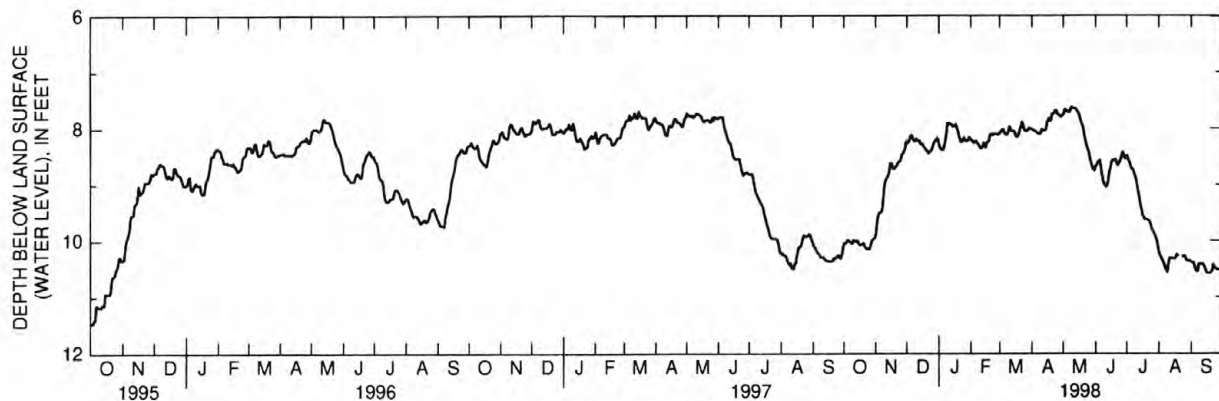
LOCATION.--Lat 41°28'23", long 79°03'06", Hydrologic Unit 05010005, in Allegheny National Forest.

Owner: U.S. Geological Survey.

AQUIFER.--Clarion Formation of Middle Pennsylvanian age.**WELL CHARACTERISTICS.**--Drilled observation artesian well, diameter 6 in, depth 110 ft, cased to 23 ft, open hole.**INSTRUMENTATION.**--Continuous strip-chart recorder.**DATUM.**--Elevation of land-surface datum is 1,780 ft above sea level, from topographic map. Measuring point: Top of casing, 1.40 ft above land-surface datum.**REMARKS.**--Missing record Aug. 21, 22.**PERIOD OF RECORD.**--August 1973 to current year.**EXTREMES FOR PERIOD OF RECORD.**--Highest water level, 7.44 ft below land-surface datum, Apr. 16-17, 1994; lowest, 12.07 ft below land-surface datum, Sept. 18, 19, 1982.DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10.04	9.88	8.26	8.30	8.21	8.07	8.02	7.74	8.67	8.48	10.22	10.39
2	10.04	9.69	8.26	8.35	8.22	8.06	8.03	7.67	8.66	8.55	10.27	10.39
3	10.04	9.55	8.22	8.37	8.25	8.03	8.05	7.66	8.60	8.59	10.31	10.39
4	9.99	9.51	8.15	8.38	8.26	8.02	8.05	7.69	8.60	8.65	10.34	10.45
5	9.99	9.49	8.12	8.38	8.23	8.07	8.07	7.70	8.57	8.71	10.39	10.52
6	10.00	9.49	8.14	8.31	8.23	8.11	8.09	7.71	8.71	8.72	10.43	10.55
7	10.02	9.45	8.21	8.22	8.27	8.11	8.10	7.71	8.82	8.74	10.49	10.55
8	10.04	9.24	8.22	8.08	8.29	8.11	8.10	7.64	8.93	8.82	10.53	10.43
9	10.05	9.05	8.22	7.91	8.33	8.06	8.10	7.62	8.99	8.86	10.57	10.42
10	9.99	8.94	8.19	7.90	8.35	7.97	8.02	7.64	9.02	8.95	10.42	10.42
11	10.00	8.90	8.22	7.91	8.35	8.01	8.03	7.64	9.04	9.06	10.32	10.42
12	10.01	8.86	8.22	7.92	8.32	8.05	8.04	7.64	9.02	9.16	10.31	10.42
13	10.00	8.83	8.22	7.92	8.26	8.05	8.04	7.65	8.93	9.25	10.32	10.45
14	10.00	8.73	8.28	7.96	8.30	8.05	8.02	7.69	8.78	9.37	10.32	10.49
15	10.04	8.62	8.27	7.96	8.34	8.07	7.90	7.71	8.71	9.45	10.32	10.55
16	10.07	8.62	8.28	7.94	8.25	8.14	7.86	7.75	8.61	9.55	10.33	10.58
17	10.07	8.70	8.32	7.92	8.25	8.15	7.82	7.83	8.57	9.57	10.31	10.58
18	10.07	8.71	8.34	7.99	8.23	8.15	7.86	7.90	8.57	9.62	10.25	10.58
19	10.06	8.71	8.37	8.03	8.12	8.10	7.86	7.93	8.57	9.62	10.27	10.58
20	10.04	8.68	8.40	8.12	8.11	8.02	7.74	8.01	8.55	9.62	10.29	10.56
21	10.10	8.67	8.40	8.19	8.10	7.96	7.74	8.14	8.62	9.63	---	10.54
22	10.12	8.62	8.44	8.24	8.12	7.89	7.72	8.22	8.66	9.65	---	10.43
23	10.15	8.59	8.42	8.24	8.10	7.92	7.69	8.30	8.64	9.65	10.29	10.48
24	10.15	8.59	8.40	8.20	8.10	8.01	7.68	8.36	8.59	9.71	10.29	10.49
25	10.14	8.56	8.37	8.17	8.10	8.05	7.74	8.41	8.55	9.78	10.27	10.50
26	10.15	8.46	8.30	8.22	8.11	8.05	7.75	8.50	8.46	9.83	10.29	10.52
27	10.07	8.45	8.26	8.22	8.11	8.04	7.77	8.58	8.42	9.87	10.35	10.52
28	10.00	8.41	8.22	8.22	8.11	8.03	7.79	8.65	8.48	9.90	10.36	10.51
29	9.98	8.36	8.21	8.21	---	7.99	7.79	8.71	8.54	9.95	10.36	10.53
30	9.96	8.23	8.17	8.16	---	8.01	7.77	8.74	8.54	10.02	10.36	10.53
31	9.95	---	8.20	8.18	---	8.01	---	8.75	---	10.12	10.37	---
MEAN	10.04	8.89	8.27	8.13	8.22	8.04	7.91	8.00	8.68	9.34	10.34	10.49
MAX	10.15	9.88	8.44	8.38	8.35	8.15	8.10	8.75	9.04	10.12	10.57	10.58
MIN	9.95	8.23	8.12	7.90	8.10	7.89	7.68	7.62	8.42	8.48	10.22	10.39

WTR YR 1998: HIGH 7.62, MAY 9; LOW 10.58, SEPT 16-19.

3-YEAR HYDROGRAPH
OCTOBER 1, 1995 TO SEPTEMBER 30, 1997

GREENE COUNTY

394655080014301. Local number, GR 118.

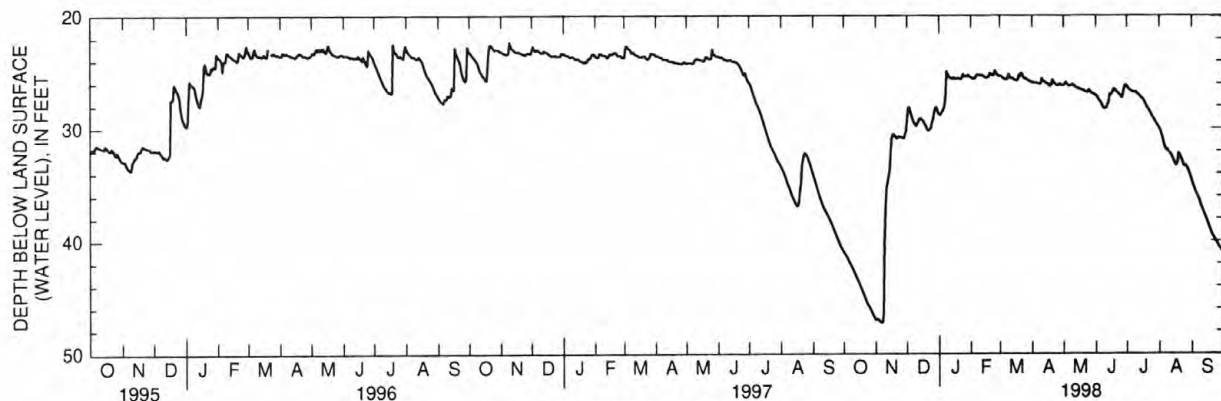
LOCATION.--Lat 39°46'55", long 80°01'43", Hydrologic Unit 05020005, at State Game Land Number 223.

Owner: U.S. Geological Survey.

AQUIFER.--Shale and sandstone of lower member of Waynesburg Formation of Late Pennsylvanian and Early Permian age.**WELL CHARACTERISTICS.**--Drilled observation artesian well, diameter 6 in, depth 104 ft, cased to 22 ft, open hole.**INSTRUMENTATION.**--Pressure transducer and digital data logger with 60-minute recording interval.**DATUM.**--Elevation of land-surface datum is 1,000 ft above sea level, from topographic map. Measuring point: Top of casing, 1.40 ft above land-surface datum.**REMARKS.**--Water levels affected by water cascading into the well. In addition to the daily maximum water level table shown below, daily minimum and mean water levels, since October 1987, are available from the District Office.**PERIOD OF RECORD.**--June 1973 to current year.**EXTREMES FOR PERIOD OF RECORD.**--The extremes shown are extremes of the daily maximum depth below land surface for the period of record indicated above. Highest water level, 22.33 ft below land-surface datum, Mar. 22, 1993, and Nov. 9, 1996; lowest, 48.18 ft below land-surface datum, Aug. 17, 1987.DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41.02	47.04	29.10	28.74	25.49	25.35	25.92	26.17	27.03	26.31	30.08	34.76
2	41.18	46.99	28.18	28.79	25.58	25.41	25.96	26.05	27.21	26.46	30.27	35.08
3	41.33	47.00	28.12	28.63	25.59	25.50	25.95	25.92	27.37	26.56	30.58	35.31
4	41.48	47.12	28.44	28.48	25.54	25.56	25.96	26.04	27.51	26.61	30.96	35.58
5	41.66	47.20	28.78	28.31	25.52	25.62	25.97	26.16	27.64	26.70	31.36	35.80
6	41.83	47.27	29.08	27.99	25.33	25.64	26.00	26.22	27.78	26.73	31.73	35.99
7	42.03	47.27	29.40	27.37	25.24	25.67	26.00	26.22	27.97	26.76	31.92	36.19
8	42.22	46.42	29.54	24.94	25.28	25.63	26.06	26.21	28.19	26.74	31.84	36.45
9	42.42	40.25	29.74	25.18	25.28	25.20	26.04	26.09	28.25	26.75	32.02	36.73
10	42.62	37.10	29.74	25.36	25.31	25.38	25.57	26.14	28.21	26.87	32.16	36.99
11	42.82	35.31	29.53	25.49	25.26	25.52	25.74	26.21	28.16	26.93	32.25	37.23
12	43.03	34.80	29.33	25.51	25.34	25.54	25.82	26.30	27.88	27.00	32.37	37.47
13	43.24	34.28	29.13	25.59	25.37	25.56	25.88	26.36	27.75	27.11	32.57	37.71
14	43.45	33.78	29.09	25.58	25.45	25.65	25.98	26.40	26.96	27.25	32.81	37.95
15	43.65	32.21	29.16	25.50	25.50	25.71	26.02	26.44	27.00	27.33	33.02	38.20
16	43.86	30.89	29.26	25.57	25.47	25.73	26.06	26.48	26.90	27.39	33.23	38.44
17	44.08	30.55	29.48	25.58	25.44	25.75	26.21	26.53	26.70	27.57	33.29	38.70
18	44.31	30.51	29.65	25.58	25.42	25.71	26.22	26.56	26.50	27.77	33.04	38.96
19	44.54	30.63	29.79	25.54	25.10	25.31	26.17	26.60	26.53	27.95	32.22	39.22
20	44.77	30.79	30.02	25.59	25.15	25.38	25.70	26.62	26.67	28.15	32.36	39.48
21	45.02	30.89	30.14	25.59	25.25	25.10	25.85	26.70	26.77	28.28	32.57	39.65
22	45.25	30.78	30.17	25.61	25.29	25.17	25.97	26.73	26.86	28.45	32.79	39.76
23	45.48	30.71	30.08	25.52	25.26	25.40	26.06	26.78	26.94	28.60	33.07	39.93
24	45.70	30.76	29.98	25.22	24.89	25.54	26.14	26.77	27.05	28.79	33.32	40.10
25	45.79	30.74	29.40	25.36	25.11	25.58	26.18	26.58	27.20	28.94	33.35	40.26
26	45.97	30.77	29.17	25.38	25.19	25.62	26.18	26.69	27.28	29.10	33.32	40.43
27	46.17	30.84	28.61	25.39	25.35	25.67	26.06	26.80	26.89	29.27	33.49	40.58
28	46.38	30.85	28.19	25.36	25.36	25.75	26.11	26.85	26.45	29.46	33.69	40.71
29	46.58	30.48	28.12	25.27	---	25.81	26.15	26.93	26.16	29.59	33.93	40.86
30	46.78	30.21	28.29	25.36	---	25.86	26.16	26.95	26.16	29.77	34.17	41.02
31	46.94	---	28.66	25.46	---	25.88	---	27.03	---	29.91	34.46	---
MEAN	43.92	36.15	29.21	26.09	25.33	25.55	26.00	26.47	27.20	27.78	32.52	38.18
MAX	46.94	47.27	30.17	28.79	25.59	25.88	26.22	27.03	28.25	29.91	34.46	41.02
MIN	41.02	30.21	28.12	24.94	24.89	25.10	25.57	25.92	26.16	26.31	30.08	34.76

WTR YR 1998: HIGH 24.89, FEB 24; LOW 47.27, NOV 6, 7.

3-YEAR HYDROGRAPH
OCTOBER 1, 1995 TO SEPTEMBER 30, 1998

LAWRENCE COUNTY

410538080280801. Local number, LA 1201.

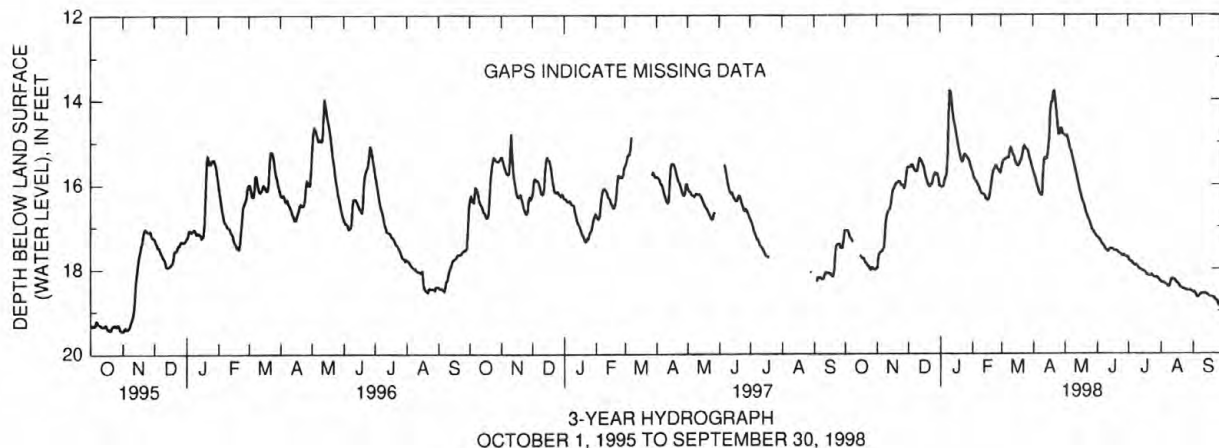
LOCATION.--Lat 41°05'38", long 80°28'08", Hydrologic Unit 05030102, at State Game Land 150, near Pulaski.

Owner: U.S. Geological Survey.

AQUIFER.--Shale and sandstone of Connoquenessing Formation of Early Pennsylvanian age.**WELL CHARACTERISTICS.**--Drilled observation artesian well, diameter 6 in, depth 150 ft, cased to 30 ft, open hole.**INSTRUMENTATION.**--Data collection platform with 60-minute recording interval. Satellite telemetry at station.**DATUM.**--Elevation of land-surface datum is 1,040 ft above sea level, from topographic map. Measuring point: Top of casing, 3.40 ft above land-surface datum.**REMARKS.**--Missing record Oct. 9-14. In addition to the daily maximum water level table shown below, daily minimum and mean water levels, since October 1987, are available from the District Office.**PERIOD OF RECORD.**--November 1967 to current year.**EXTREMES FOR PERIOD OF RECORD.**--The extremes shown are extremes of the daily maximum depth below land surface for the period of record indicated above. Highest water level, 12.25 ft below land-surface datum, May 19, 1978; lowest, 22.94 ft below land-surface datum, Apr. 15, 1986.DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17.08	17.96	15.58	16.02	15.70	15.58	15.72	14.84	17.25	17.76	18.30	18.55
2	17.07	17.68	15.59	16.05	15.82	15.46	15.78	14.83	17.26	17.81	18.31	18.54
3	17.07	17.61	15.58	16.04	15.87	15.41	15.88	14.83	17.30	17.81	18.32	18.58
4	17.14	17.59	15.52	16.02	15.90	15.41	16.01	14.92	17.33	17.82	18.32	18.63
5	17.22	17.58	15.52	15.90	15.93	15.39	16.06	15.02	17.38	17.87	18.35	18.67
6	17.26	17.54	15.59	15.81	15.99	15.37	16.16	15.14	17.41	17.89	18.35	18.64
7	17.30	17.50	15.66	15.76	16.04	15.36	16.21	15.20	17.44	17.91	18.38	18.62
8	17.36	17.27	15.68	15.30	16.11	15.36	16.25	15.31	17.50	17.89	18.41	18.59
9	---	16.89	15.69	14.44	16.18	15.17	16.25	15.43	17.54	17.92	18.41	18.58
10	---	16.72	15.65	13.77	16.21	15.12	15.74	15.53	17.55	17.96	18.32	18.58
11	---	16.65	15.48	13.80	16.21	15.18	15.41	15.62	17.58	17.99	18.24	18.57
12	---	16.60	15.38	14.00	16.23	15.28	15.36	15.74	17.55	18.00	18.23	18.58
13	---	16.59	15.40	14.28	16.26	15.32	15.39	15.86	17.51	18.01	18.24	18.58
14	---	16.46	15.46	14.47	16.34	15.42	15.38	15.98	17.52	18.04	18.25	18.60
15	17.67	16.27	15.52	14.60	16.35	15.49	15.15	16.10	17.52	18.04	18.29	18.62
16	17.69	16.12	15.58	14.73	16.35	15.54	14.88	16.20	17.53	18.05	18.32	18.64
17	17.73	16.08	15.71	14.90	16.29	15.55	14.32	16.31	17.56	18.09	18.33	18.65
18	17.73	16.03	15.81	15.04	16.12	15.53	14.05	16.40	17.56	18.13	18.36	18.66
19	17.74	15.97	15.90	15.17	15.96	15.44	14.05	16.45	17.56	18.13	18.41	18.66
20	17.83	15.95	15.99	15.30	15.79	15.42	13.84	16.54	17.58	18.15	18.43	18.67
21	17.83	15.94	16.03	15.41	15.67	15.31	13.78	16.64	17.61	18.16	18.45	18.69
22	17.88	15.91	16.03	15.46	15.62	15.16	14.01	16.71	17.62	18.15	18.46	18.73
23	17.92	15.93	15.98	15.43	15.55	15.07	14.26	16.79	17.63	18.13	18.47	18.75
24	17.92	16.00	15.97	15.28	15.55	15.13	14.56	16.84	17.66	18.17	18.49	18.76
25	18.00	16.00	15.82	15.29	15.63	15.16	14.81	16.91	17.68	18.18	18.49	18.86
26	18.00	16.01	15.76	15.32	15.65	15.18	14.81	16.99	17.66	18.19	18.50	18.80
27	17.95	16.08	15.71	15.36	15.70	15.24	14.67	17.06	17.68	18.19	18.50	18.78
28	17.97	16.00	15.76	15.40	15.72	15.36	14.68	17.10	17.70	18.19	18.50	18.80
29	18.00	15.79	15.74	15.45	---	15.44	14.80	17.14	17.71	18.22	18.50	18.80
30	18.00	15.59	15.82	15.56	---	15.54	14.81	17.18	17.70	18.24	18.52	18.83
31	17.97	---	16.01	15.64	---	15.64	---	17.21	---	18.29	18.54	---
MEAN	17.65	16.54	15.71	15.19	15.95	15.36	15.10	16.09	17.54	18.04	18.39	18.67
MAX	18.00	17.96	16.03	16.05	16.35	15.64	16.25	17.21	17.71	18.29	18.54	18.86
MIN	17.07	15.59	15.38	13.77	15.55	15.07	13.78	14.83	17.25	17.76	18.23	18.54

WTR YR 1998: HIGH 13.77, JAN. 10; LOW 18.86, SEPT. 25.



MERCER COUNTY

412350080223701. Local number, MR 1364.

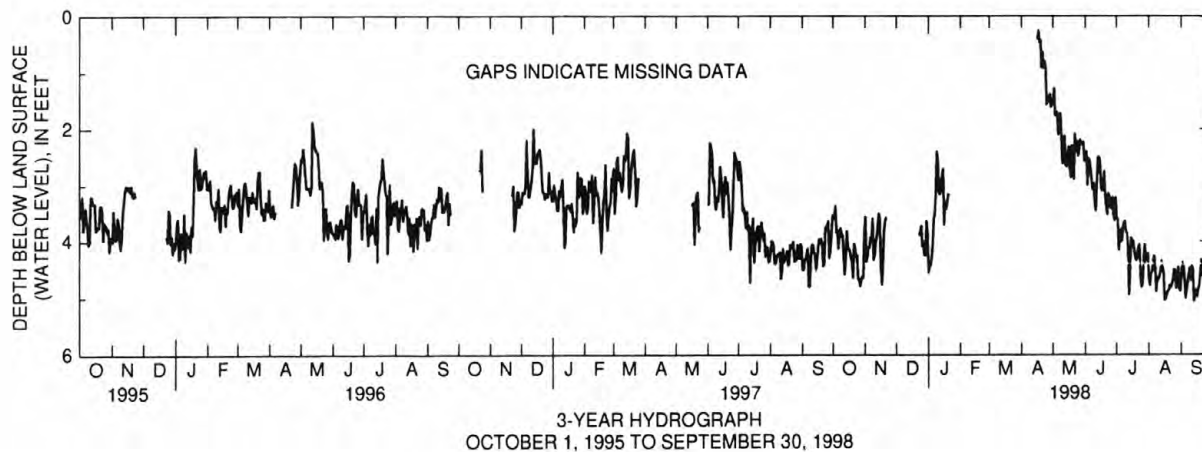
LOCATION.--Lat 41°23'50", long 80°22'37", Hydrologic Unit 05030102, at Greenville.

Owner: Borough of Greenville.

AQUIFER.--Sandstone of Cussewago Formation of Early Mississippian age.**WELL CHARACTERISTICS.**--Drilled artesian well, diameter 6 in, depth 235 ft, cased to 41 ft, open hole.**INSTRUMENTATION.**--Continuous strip-chart recorder.**DATUM.**--Elevation of land-surface datum is 965 ft above sea level, from topographic map. Measuring point: Top of plywood cover, 2.26 ft above land-surface datum.**REMARKS.**--Missing record Nov. 22 to Dec. 22, and Jan. 21 to Apr. 15. Water levels after Sept. 25 affected by Pymatuning earthquake (magnitude 5.2). Water levels affected by intermittent pumping.**PERIOD OF RECORD.**--March 1964 to current year.**EXTREMES FOR PERIOD OF RECORD.**--Highest water level, 0.25 ft below land-surface datum, Apr. 17, 1998; lowest, 8.31 ft below land-surface datum, Feb. 12, 1967.DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.53	3.57	---	4.55	---	---	---	1.55	2.50	3.60	4.65	4.60
2	3.61	4.35	---	4.40	---	---	---	1.28	2.40	3.60	4.78	4.37
3	3.37	4.25	---	4.43	---	---	---	1.75	2.99	4.15	4.57	4.38
4	3.84	4.10	---	4.30	---	---	---	1.69	2.53	3.95	4.54	4.63
5	3.81	4.10	---	4.05	---	---	---	1.72	2.55	3.79	4.35	5.01
6	4.12	3.93	---	3.60	---	---	---	2.10	2.72	4.00	4.26	4.85
7	3.82	3.93	---	3.52	---	---	---	1.82	2.92	3.75	4.40	4.73
8	3.76	3.59	---	3.10	---	---	---	1.72	3.07	3.66	4.89	4.60
9	3.90	4.32	---	2.41	---	---	---	2.14	2.97	3.65	4.64	4.47
10	3.89	4.22	---	2.60	---	---	---	2.61	3.34	3.83	4.69	4.69
11	4.27	4.02	---	3.13	---	---	---	2.50	3.46	3.85	4.62	4.39
12	4.58	3.90	---	3.16	---	---	---	2.13	3.00	4.10	4.53	4.50
13	4.23	3.71	---	3.08	---	---	---	2.65	2.51	4.95	4.34	5.06
14	3.82	3.51	---	2.84	---	---	---	2.67	2.50	4.59	4.44	4.95
15	4.09	3.62	---	2.71	---	---	---	2.52	2.56	3.94	4.58	4.86
16	4.13	4.45	---	3.70	---	---	.41	2.32	3.04	3.99	5.04	4.98
17	4.17	4.77	---	3.30	---	---	.25	2.67	3.10	3.99	5.03	4.85
18	4.28	4.40	---	3.42	---	---	.46	2.86	3.04	4.17	4.95	4.80
19	4.35	3.80	---	3.33	---	---	.42	2.30	2.75	4.28	4.89	4.60
20	4.64	3.65	---	3.15	---	---	.91	2.48	3.19	4.35	4.87	4.32
21	4.04	3.57	---	---	---	---	.63	2.89	3.36	4.22	4.78	4.61
22	4.10	---	---	---	---	---	.92	2.09	3.53	4.10	4.82	4.38
23	4.26	---	3.90	---	---	---	.80	2.39	3.15	4.06	4.75	4.36
24	4.25	---	3.83	---	---	---	.92	2.22	3.20	4.64	4.69	4.44
25	4.67	---	3.72	---	---	---	1.56	2.48	3.40	4.81	4.50	4.24
26	4.66	---	4.08	---	---	---	1.47	2.37	3.42	4.75	4.51	1.91
27	4.79	---	4.00	---	---	---	1.50	2.20	3.22	4.28	4.83	1.77
28	4.69	---	4.24	---	---	---	1.38	2.27	3.53	4.06	4.75	1.75
29	4.62	---	4.24	---	---	---	1.61	2.28	3.63	4.39	4.45	1.90
30	4.64	---	3.64	---	---	---	1.49	2.23	3.22	4.23	4.84	1.36
31	3.85	---	3.85	---	---	---	---	2.57	---	4.21	4.88	---
MEAN	4.15	3.99	3.94	3.44	---	---	.98	2.24	3.03	4.13	4.67	4.15
MAX	4.79	4.77	4.24	4.55	---	---	1.61	2.89	3.63	4.95	5.04	5.06
MIN	3.37	3.51	3.64	2.41	---	---	.25	1.28	2.40	3.60	4.26	1.36

WTR YR 1998: HIGH 0.25, APR 17; LOW 5.06, SEPT 13.



SOMERSET COUNTY

400008079142801. Local number, SO 2.

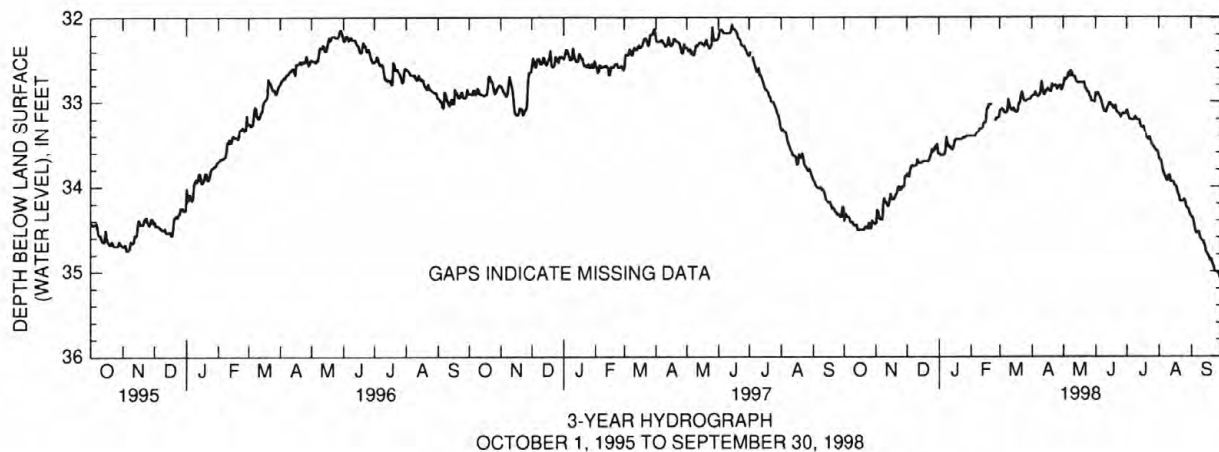
LOCATION.--Lat 40°00'08", long 79°14'28", Hydrologic Unit 05020006, at Laurel Hill State Park.

Owner: Commonwealth of Pennsylvania.

AQUIFER.--Shale and sandstone of Allegheny Group of Middle Pennsylvanian age.**WELL CHARACTERISTICS.**--Drilled artesian well, diameter 6 in to 4 in, depth 450 ft, cased to 311 ft, open hole.**INSTRUMENTATION.**--Continuous strip-chart recorder.**DATUM.**--Elevation of land-surface datum is 2,040 ft above sea level, from topographic map. Measuring point: Top of casing, 1.43 ft above land-surface datum.**REMARKS.**--Missing record Feb. 22, 23. Water levels affected by intermittent pumping.**PERIOD OF RECORD.**--April 1937 to current year.**EXTREMES FOR PERIOD OF RECORD.**--Highest water level, 27.42 ft below land-surface datum, Apr. 9, 1980; lowest, 50.33 ft below land-surface datum, May 31, 1987 (affected by pumping of nearby well).DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34.40	34.43	33.85	33.61	33.40	33.10	32.93	32.80	32.89	33.10	33.67	34.36
2	34.32	34.28	33.88	33.63	33.40	33.09	32.92	32.72	32.89	33.14	33.69	34.36
3	34.34	34.30	33.88	33.63	33.40	33.08	32.92	32.74	32.89	33.20	33.69	34.41
4	34.36	34.37	33.80	33.63	33.40	33.09	32.88	32.73	32.92	33.20	33.77	34.47
5	34.36	34.39	33.76	33.63	33.40	33.13	32.92	32.70	32.94	33.20	33.83	34.54
6	34.37	34.39	33.75	33.62	33.37	33.13	32.93	32.65	32.97	33.21	33.86	34.55
7	34.42	34.39	33.76	33.58	33.36	33.13	32.93	32.70	33.02	33.21	33.88	34.54
8	34.42	34.17	33.76	33.42	33.36	33.11	32.92	32.63	33.07	33.20	33.92	34.53
9	34.42	34.14	33.75	33.49	33.32	32.97	32.88	32.65	33.11	33.17	33.93	34.58
10	34.45	34.18	33.75	33.52	33.32	33.03	32.76	32.70	33.10	33.20	33.87	34.62
11	34.45	34.19	33.68	33.54	33.32	33.08	32.84	32.70	33.12	33.21	33.86	34.63
12	34.45	34.23	33.72	33.53	33.31	33.10	32.91	32.70	33.07	33.21	33.94	34.64
13	34.45	34.23	33.72	33.56	33.25	33.10	32.91	32.75	33.05	33.21	33.94	34.67
14	34.51	34.16	33.72	33.56	33.24	33.07	32.87	32.77	33.01	33.28	33.94	34.71
15	34.51	34.09	33.72	33.53	33.24	33.10	32.86	32.77	33.01	33.30	33.95	34.77
16	34.51	34.13	33.71	33.46	33.08	33.12	32.84	32.77	33.04	33.30	33.99	34.79
17	34.51	34.15	33.70	33.44	33.08	33.12	32.86	32.77	33.04	33.29	33.99	34.81
18	34.51	34.15	33.70	33.44	33.03	33.11	32.87	32.77	33.08	33.35	34.02	34.84
19	34.51	34.13	33.70	33.44	33.03	33.02	32.88	32.77	33.08	33.38	34.08	34.87
20	34.51	34.10	33.70	33.44	33.03	33.02	32.79	32.77	33.04	33.42	34.11	34.85
21	34.48	34.08	33.70	33.44	33.04	32.93	32.82	32.77	33.11	33.43	34.17	34.91
22	34.47	34.02	33.70	33.44	---	32.88	32.81	32.84	33.13	33.45	34.17	34.93
23	34.49	34.00	33.65	33.44	---	32.93	32.80	32.85	33.13	33.41	34.17	34.99
24	34.49	34.04	33.63	33.42	33.23	32.98	32.81	32.88	33.15	33.45	34.17	35.00
25	34.43	34.04	33.56	33.42	33.19	32.99	32.85	32.88	33.18	33.50	34.15	35.00
26	34.49	34.00	33.59	33.42	33.19	32.99	32.83	32.93	33.15	33.52	34.17	35.01
27	34.49	34.00	33.58	33.41	33.18	32.98	32.81	32.94	33.13	33.53	34.24	35.02
28	34.40	34.00	33.53	33.40	33.18	32.97	32.80	32.99	33.14	33.56	34.25	35.07
29	34.43	33.88	33.53	33.40	---	32.97	32.86	32.99	33.14	33.57	34.26	35.08
30	34.43	33.87	33.50	33.40	---	32.97	32.83	32.99	33.12	33.57	34.31	35.08
31	34.44	---	33.61	33.40	---	32.94	---	33.00	---	33.60	34.34	---
MEAN	34.45	34.15	33.70	33.49	33.24	33.04	32.86	32.79	33.06	33.33	34.01	34.75
MAX	34.51	34.43	33.88	33.63	33.40	33.13	32.93	33.00	33.18	33.60	34.34	35.08
MIN	34.32	33.87	33.50	33.40	33.03	32.88	32.76	32.63	32.89	33.10	33.67	34.36

WTR YR 1998: HIGH 32.63, MAY 8; LOW 35.08, SEPT 29, 30.



WARREN COUNTY

414159079213601. Local number, WR 50.

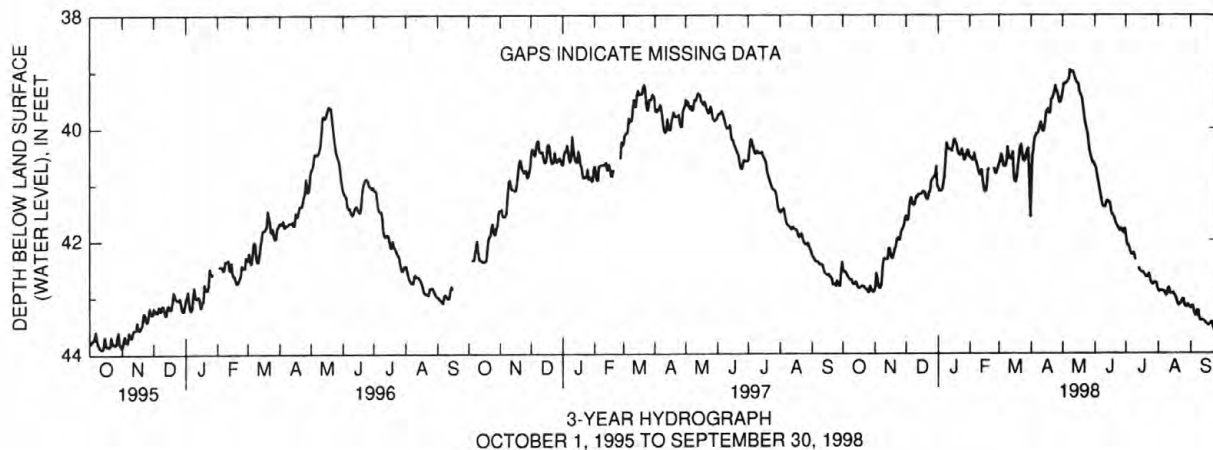
LOCATION.--Lat 41°41'59", long 79°21'36", Hydrologic Unit 05010003, at State Game Land Number 86.

Owner: U.S. Geological Survey.

AQUIFER.--Shale of Venango Formation of Late Devonian age.**WELL CHARACTERISTICS.**--Drilled observation artesian well, diameter 6 in, depth 105 ft, cased to 46 ft, open hole.**INSTRUMENTATION.**--Data collection platform with 60-minute recording interval. Satellite telemetry at station.**DATUM.**--Elevation of land-surface datum is 1,170 ft above sea level, from topographic map. Measuring point: Top of casing, 2.00 ft above land-surface datum.**REMARKS.**--Missing record Feb. 21-23, and July 11, 12. In addition to the daily maximum water level table shown below, daily minimum and mean water levels, since October 1987, are available from the District Office.**PERIOD OF RECORD.**--August 1972 to current year.**EXTREMES FOR PERIOD OF RECORD.**--The extremes shown are extremes of the daily maximum depth below land surface for the period of record indicated above. Highest water level, 38.96 ft below land-surface datum. May 8, 1998; lowest, 45.42 ft below land-surface datum, Nov. 2, 1983.DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	42.53	42.83	41.56	41.06	40.51	40.63	40.96	39.34	40.68	41.95	42.90	43.20
2	42.55	42.58	41.64	41.11	40.55	40.56	40.49	39.21	40.71	42.08	42.91	43.16
3	42.55	42.65	41.63	41.11	40.57	40.46	40.35	39.20	40.84	42.09	42.89	43.17
4	42.58	42.80	41.40	41.11	40.56	40.54	40.17	39.21	40.94	42.12	42.89	43.27
5	42.62	42.84	41.26	41.08	40.45	40.67	40.13	39.18	41.03	42.21	42.90	43.33
6	42.64	42.84	41.23	40.95	40.56	40.68	40.09	39.16	41.14	42.24	42.90	43.33
7	42.68	42.78	41.34	40.86	40.60	40.68	40.09	39.12	41.25	42.25	42.93	43.25
8	42.69	42.51	41.37	40.53	40.68	40.62	40.03	38.96	41.36	42.22	42.98	43.25
9	42.69	42.35	41.36	40.26	40.77	40.33	39.95	39.00	41.40	42.26	42.97	43.37
10	42.75	42.31	41.28	40.32	40.83	40.46	39.89	39.01	41.39	42.36	42.86	43.42
11	42.77	42.33	41.21	40.37	40.82	40.54	40.00	38.99	41.41	---	42.84	43.42
12	42.77	42.33	41.22	40.37	40.74	40.55	40.05	39.06	41.32	---	42.94	43.41
13	42.73	42.33	41.17	40.38	40.90	40.55	40.04	39.12	41.29	42.48	42.94	43.42
14	42.75	42.15	41.17	40.41	41.06	40.42	39.89	39.17	41.31	42.53	42.94	43.44
15	42.82	42.14	41.17	40.33	41.12	40.86	39.72	39.20	41.31	42.55	42.93	43.46
16	42.84	42.25	41.16	40.19	41.12	40.95	39.68	39.21	41.37	42.56	42.97	43.48
17	42.84	42.31	41.12	40.19	41.05	40.96	39.65	39.34	41.51	42.56	42.99	43.50
18	42.82	42.31	41.13	40.26	40.74	40.87	39.73	39.40	41.55	42.59	43.04	43.51
19	42.80	42.23	41.13	40.28	40.73	40.68	39.72	39.43	41.56	42.62	43.11	43.48
20	42.81	42.15	41.23	40.41	40.73	40.52	39.49	39.51	41.62	42.64	43.15	43.46
21	42.81	42.10	41.26	40.46	---	40.34	39.47	39.67	41.69	42.65	43.15	43.45
22	42.84	41.98	41.26	40.48	---	40.29	39.43	39.82	41.73	42.62	43.12	43.52
23	42.86	41.95	41.13	40.44	---	40.40	39.34	39.94	41.76	42.59	43.09	43.59
24	42.86	41.99	41.13	40.37	40.71	40.57	39.25	40.01	41.81	42.69	43.04	43.59
25	42.91	41.99	40.94	40.46	40.80	40.59	39.35	40.11	41.83	42.75	43.05	43.59
26	42.92	41.84	40.92	40.56	40.81	40.57	39.36	40.28	41.79	42.78	43.15	43.59
27	42.80	41.81	40.89	40.56	40.76	40.45	39.48	40.41	41.80	42.78	43.18	43.58
28	42.86	41.77	40.87	40.49	40.69	40.39	39.54	40.50	41.86	42.74	43.18	43.63
29	42.89	41.72	40.84	40.41	---	40.35	39.53	40.56	41.87	42.75	43.14	43.64
30	42.91	41.59	40.68	40.39	---	40.99	39.45	40.62	41.79	42.75	43.16	43.62
31	42.90	---	41.02	40.50	---	41.58	---	40.62	---	42.85	43.19	---
MEAN	42.77	42.26	41.18	40.54	40.75	40.61	39.81	39.56	41.43	42.49	43.01	43.44
MAX	42.92	42.84	41.64	41.11	41.12	41.58	40.96	40.62	41.87	42.85	43.19	43.64
MIN	42.53	41.59	40.68	40.19	40.45	40.29	39.25	38.96	40.68	41.95	42.84	43.16

WTR YR 1998: HIGH 38.96, MAY 8; LOW 43.64, SEPT 29.



WASHINGTON COUNTY

400233080261301. Local number, WS 155.

LOCATION.--Lat 40°02'33", long 80°26'13", Hydrologic Unit 05030106, at State Game Land Number 245, near Good Intent.

Owner: U.S. Geological Survey.

AQUIFER.--Washington Formation of Early Permian age.

WELL CHARACTERISTICS.--Drilled observation artesian well, diameter 6 in, depth 160 ft, cased to 19 ft, open hole.

INSTRUMENTATION.--Digital data logger recorder with 15-minute recording interval.

DATUM.--Elevation of land-surface datum is 1,110 ft above sea level, from topographic map. Measuring point: Top of casing, 2.00 ft above land-surface datum.

REMARKS.--In addition to the daily maximum water level table shown below, daily minimum and mean water levels, since October 1987, are available from the District Office.

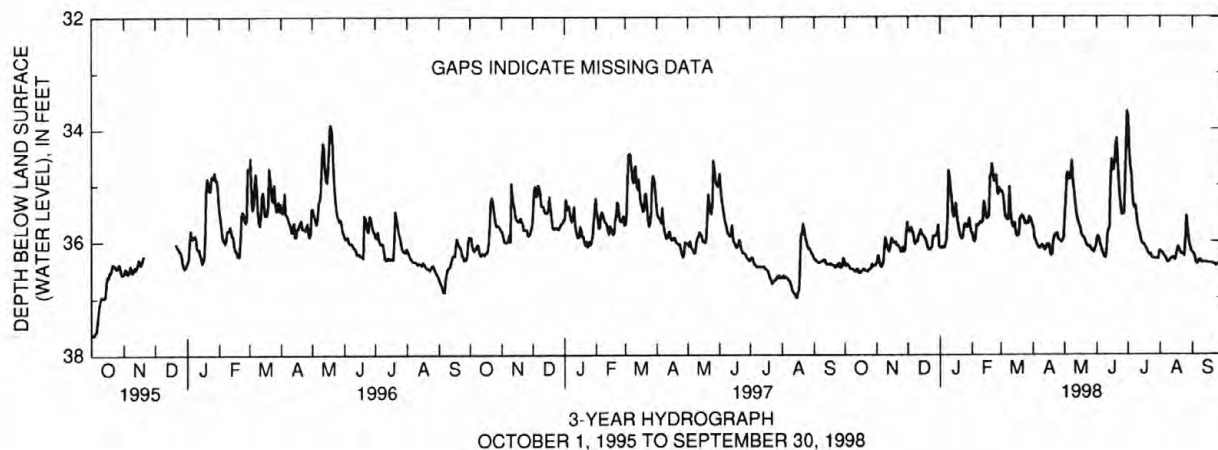
PERIOD OF RECORD.--July 1971 to current year.

EXTREMES FOR PERIOD OF RECORD.--The extremes shown are extremes of the daily maximum depth below land surface for the period of record indicated above. Highest water level, 32.25 ft below land-surface datum, Jan. 14, 1974; lowest, 39.01 ft below land-surface datum, July 11, 1971.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	36.43	36.36	35.78	36.11	35.85	35.11	35.76	35.58	35.93	33.78	36.18	36.20
2	36.43	36.24	35.82	36.11	35.97	35.12	35.94	35.25	35.90	34.36	36.19	36.22
3	36.40	36.33	35.82	36.09	36.00	35.18	35.97	34.83	35.95	34.68	36.20	36.26
4	36.42	36.43	35.75	36.11	35.96	35.41	36.03	34.78	36.03	34.77	36.24	36.36
5	36.45	36.45	35.82	36.11	35.70	35.56	36.07	34.90	36.10	35.17	36.26	36.40
6	36.48	36.42	35.86	36.05	35.72	35.59	36.11	34.89	36.17	35.36	36.29	36.38
7	36.48	36.37	36.01	35.97	35.71	35.62	36.12	34.76	36.22	35.41	36.33	36.33
8	36.49	36.10	36.04	35.59	35.67	35.61	36.10	34.57	36.27	35.36	36.37	36.32
9	36.50	35.93	36.00	34.74	35.65	35.03	36.06	34.96	36.29	35.54	36.36	36.35
10	36.52	36.02	36.00	34.85	35.67	35.43	36.07	35.09	36.19	35.71	36.34	36.38
11	36.53	36.10	35.90	35.08	35.65	35.63	36.12	35.27	35.87	35.79	36.31	36.37
12	36.50	36.17	35.86	35.20	35.29	35.73	36.15	35.47	35.80	35.86	36.29	36.36
13	36.48	36.17	35.79	35.49	35.38	35.74	36.12	35.58	35.74	35.95	36.30	36.37
14	36.54	36.04	35.86	35.56	35.53	35.67	36.05	35.65	35.01	36.02	36.28	36.37
15	36.55	35.94	35.88	35.51	35.59	35.84	36.08	35.70	34.54	36.05	36.33	36.38
16	36.55	35.98	35.90	35.32	35.58	35.90	36.05	35.76	34.74	36.05	36.25	36.38
17	36.52	36.02	35.93	35.55	35.55	35.90	36.20	35.86	34.72	36.08	36.18	36.38
18	36.50	36.02	35.96	35.67	34.84	35.87	36.25	35.91	34.58	36.12	36.09	36.38
19	36.48	36.00	36.03	35.77	34.82	35.61	36.21	35.92	34.25	36.15	36.14	36.38
20	36.51	36.06	36.10	35.88	34.62	35.56	35.99	35.95	34.17	36.20	36.18	36.39
21	36.51	36.06	36.15	35.92	34.82	35.54	35.92	36.00	34.59	36.23	36.22	36.39
22	36.52	36.09	36.14	35.95	34.93	35.56	35.87	36.06	34.95	36.24	36.22	36.39
23	36.53	36.11	36.12	35.90	34.88	35.61	35.87	36.08	35.21	36.22	36.22	36.43
24	36.50	36.18	36.11	35.72	34.82	35.68	35.86	36.10	35.42	36.28	36.26	36.42
25	36.48	36.18	35.90	35.69	35.12	35.69	35.96	36.08	35.53	36.29	35.94	36.41
26	36.48	36.10	35.91	35.74	35.17	35.66	35.97	36.13	35.51	36.30	35.55	36.39
27	36.40	36.18	35.90	35.75	35.05	35.68	35.99	36.15	35.51	36.30	35.77	36.37
28	36.44	36.14	35.89	35.69	35.08	35.56	36.01	36.18	34.98	36.30	35.92	36.41
29	36.42	35.87	35.86	35.59	---	35.59	35.98	36.19	34.25	36.30	36.06	36.41
30	36.43	35.66	35.71	35.74	---	35.64	35.93	36.13	33.68	36.31	36.12	36.39
31	36.40	---	36.09	35.84	---	35.71	---	36.08	---	36.16	36.19	---
MEAN	36.48	36.12	35.93	35.69	35.38	35.58	36.03	35.61	35.34	35.79	36.18	36.37
MAX	36.55	36.45	36.15	36.11	36.00	35.90	36.25	36.19	36.29	36.31	36.37	36.43
MIN	36.40	35.66	35.71	34.74	34.62	35.03	35.76	34.57	33.68	33.78	35.55	36.20

WTR YR 1998: HIGH 33.68, JUNE 30; LOW 36.55, OCT 15, 16.



WESTMORELAND COUNTY

402138079031802. Local number, WE 300.

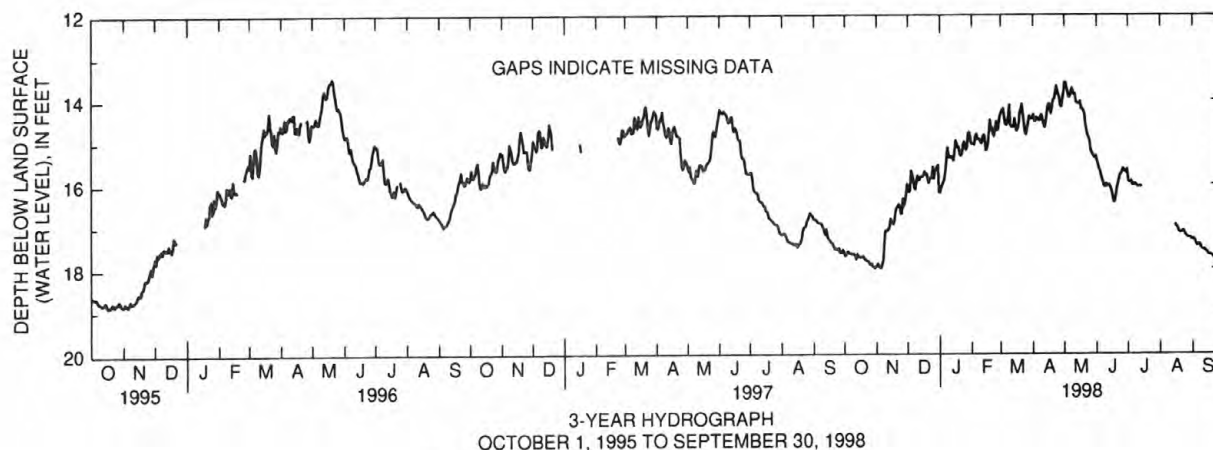
LOCATION.--Lat 40°21'38", long 79°03'18", Hydrologic Unit 05010007, at State Game Land Number 42.

Owner: U.S. Geological Survey.

AQUIFER.--Shale of Clarion Formation of Middle Pennsylvanian age.**WELL CHARACTERISTICS.**--Drilled observation artesian well, diameter 6 in, depth 110 ft, cased to 22 ft, open hole.**INSTRUMENTATION.**--Continuous strip-chart recorder.**DATUM.**--Elevation of land-surface datum is 1,270 ft above sea level, from topographic map. Measuring point: Top of plywood cover, 3.05 ft above land-surface datum.**REMARKS.**--Missing record July 15 to Aug. 14**PERIOD OF RECORD.**--February 1968 to current year.**EXTREMES FOR PERIOD OF RECORD.**--Highest water level, 13.46 ft below land-surface datum, May 20, 1996; lowest, 29.22 ft below land-surface datum, July 3, 1968.DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17.69	17.93	16.09	16.20	15.03	14.29	14.34	13.58	15.45	15.91	---	17.30
2	17.68	17.88	16.17	16.07	15.03	14.24	14.50	13.58	15.52	15.95	---	17.30
3	17.62	17.94	16.13	16.02	15.06	14.19	14.50	13.70	15.64	15.94	---	17.34
4	17.59	17.97	15.67	15.95	14.85	14.39	14.40	13.80	15.68	15.92	---	17.42
5	17.62	17.97	15.76	15.90	14.80	14.57	14.46	13.93	15.79	16.02	---	17.46
6	17.63	17.89	15.85	15.68	14.92	14.59	14.47	13.93	15.89	16.02	---	17.44
7	17.63	17.79	16.07	15.48	14.92	14.53	14.49	13.83	15.96	15.98	---	17.42
8	17.65	17.45	16.11	15.12	14.92	14.41	14.37	13.72	16.06	16.00	---	17.45
9	17.64	17.11	15.95	15.26	15.00	14.11	14.35	13.79	16.06	16.02	---	17.52
10	17.65	17.09	15.79	15.36	15.02	14.59	14.48	13.87	15.99	16.06	---	17.55
11	17.69	17.11	15.89	15.36	14.87	14.64	14.58	13.85	16.05	16.05	---	17.56
12	17.77	17.05	15.89	15.33	14.82	14.64	14.65	14.05	16.02	16.05	---	17.55
13	17.65	17.05	15.81	15.37	14.86	14.62	14.53	14.07	16.02	16.04	---	17.59
14	17.70	16.81	15.82	15.43	15.19	14.44	14.30	14.08	16.08	16.08	---	17.61
15	17.71	16.85	15.81	15.17	15.18	14.66	14.14	14.08	16.15	---	16.95	17.64
16	17.73	16.91	15.77	14.95	15.05	14.73	14.08	14.04	16.28	---	17.01	17.67
17	17.71	16.95	15.69	15.04	14.81	14.69	14.20	14.21	16.42	---	17.02	17.67
18	17.72	16.84	15.76	15.12	14.47	14.56	14.32	14.20	16.42	---	17.10	17.68
19	17.70	16.63	15.74	15.11	14.66	14.30	14.16	14.25	16.27	---	17.14	17.69
20	17.77	16.55	15.85	15.29	14.65	14.22	14.00	14.31	16.10	---	17.15	17.73
21	17.77	16.51	15.96	15.32	14.81	14.09	13.99	14.57	16.00	---	17.14	17.72
22	17.80	16.47	15.88	15.27	14.86	14.36	13.84	14.71	15.90	---	17.12	17.78
23	17.81	16.50	15.82	15.08	14.69	14.53	13.66	14.84	15.78	---	17.11	17.82
24	17.82	16.69	15.84	14.98	14.51	14.76	13.77	14.88	15.76	---	17.16	17.82
25	17.89	16.69	15.58	15.14	14.71	14.82	13.86	14.97	15.70	---	17.21	17.84
26	17.89	16.33	15.86	15.17	14.71	14.69	13.96	15.17	15.62	---	17.24	17.86
27	17.88	16.51	15.68	15.10	14.49	14.53	14.14	15.24	15.66	---	17.26	17.84
28	17.94	16.41	15.64	14.80	14.35	14.38	14.16	15.30	15.70	---	17.26	17.88
29	17.95	16.25	15.58	14.75	---	14.43	14.00	15.34	15.72	---	17.26	17.90
30	17.98	15.99	15.54	14.86	---	14.44	13.82	15.37	15.64	---	17.28	17.90
31	17.94	---	16.18	15.03	---	14.40	---	15.32	---	---	17.31	---
MEAN	17.75	17.00	15.84	15.31	14.83	14.48	14.22	14.34	15.91	16.00	17.16	17.63
MAX	17.98	17.97	16.18	16.20	15.19	14.82	14.65	15.37	16.42	16.08	17.31	17.90
MIN	17.59	15.99	15.54	14.75	14.35	14.09	13.66	13.58	15.45	15.91	16.95	17.30

WTR YR 1998: HIGH 13.58, MAY 1, 2; LOW 17.98, OCT 30.



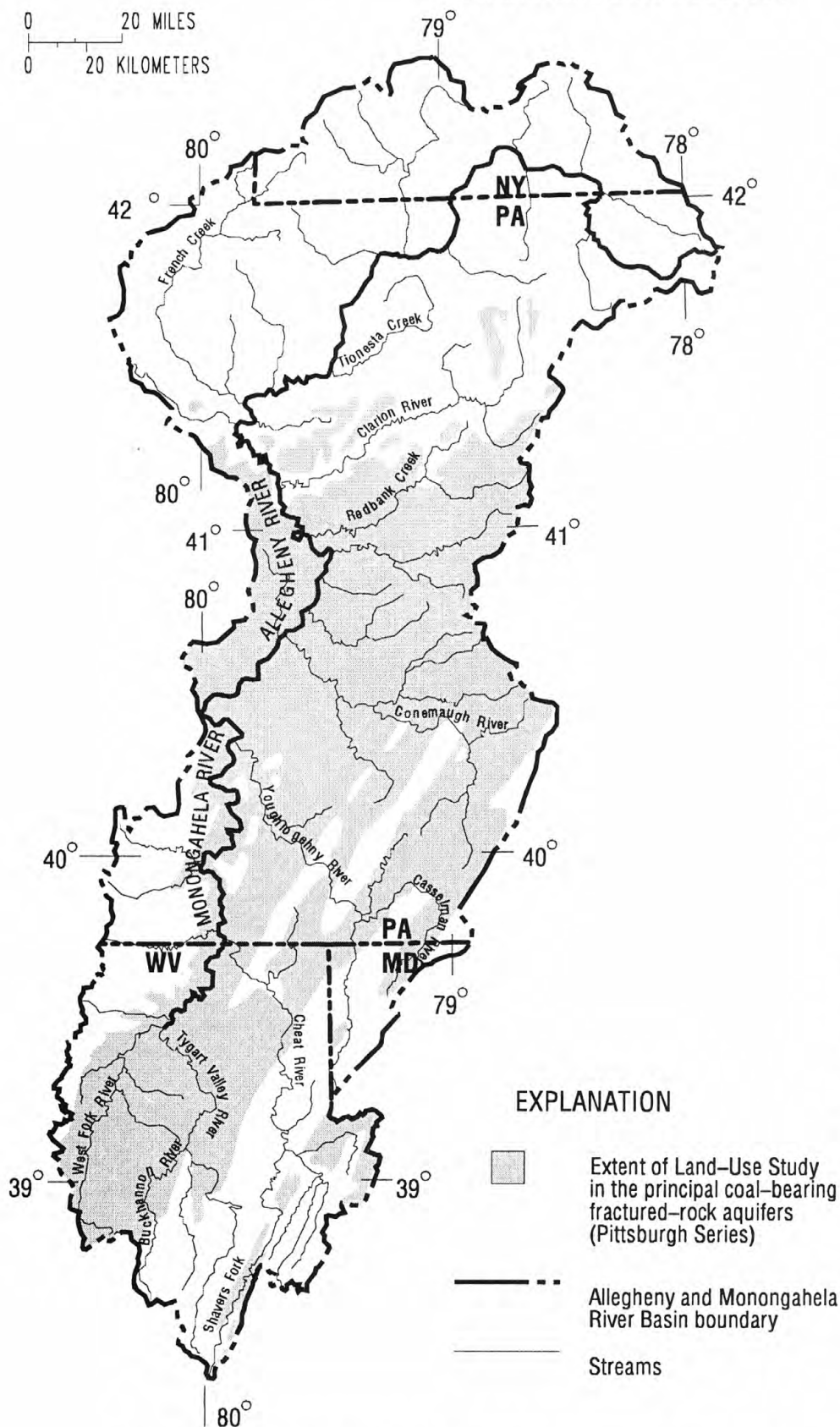
GROUND-WATER DATA COLLECTED AT SPECIAL-STUDY SITES
ALLEGHENY AND MONONGAHELA RIVER BASIN NAWQA PROJECT

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SUBAREA OF FRACTURED, COAL-BEARING SEDIMENTARY ROCK OF THE APPALACHIAN PLATEAU

PHYSIOGRAPHIC PROVINCE

COAL MINING LAND-USE STUDY



The following tables contain water-level and water-quality records from two networks of thirty five privately owned wells used to supply water to homes. The networks were established as part of the National Water-Quality Assessment (NAWQA) project in the Allegheny and Monongahela River Basin.

A 30-site network was designed to represent wells down-gradient from reclaimed surface coal mines. A second 5-site network was designed to represent wells not affected by mine related runoff. All wells are within a sub-area of the Appalachian Plateau Physiographic Province. The sub-area is limited to basins underlain by Pittsburgh Series rocks of upper Pennsylvanian and lower Permian Age. The network includes twelve counties in western Pennsylvania, eight counties in West Virginia and one county in Maryland. The wells were sampled to assess the affects of reclaimed surface mines on ground water quality. This sampling is termed a Land-Use Study for the NAWQA program.

Field parameters were measured and water samples collected for laboratory analysis of nutrients, major ions, radon, and volatile organic compounds (VOC's). Many of the measured VOC concentrations were below detection limits in the samples taken from the 35 wells. A listing all of VOC's (table 1) and their detection levels precede the water-quality table. The concentrations of VOC's detected in one or more of the samples are included in the water-quality table. Only those compounds with at least one detected concentration are listed in the table.

The shaded portion of figures 8 and 9 show the sampling subarea in the Pittsburgh Series of the Appalachian Plateau Physiographic Province.

Figure 8. Location and extent of the reclaimed coal mine Land-Use Study in the principal coal-bearing area underlain by fractured-rock aquifers of the Appalachian Plateau Physiographic Province.

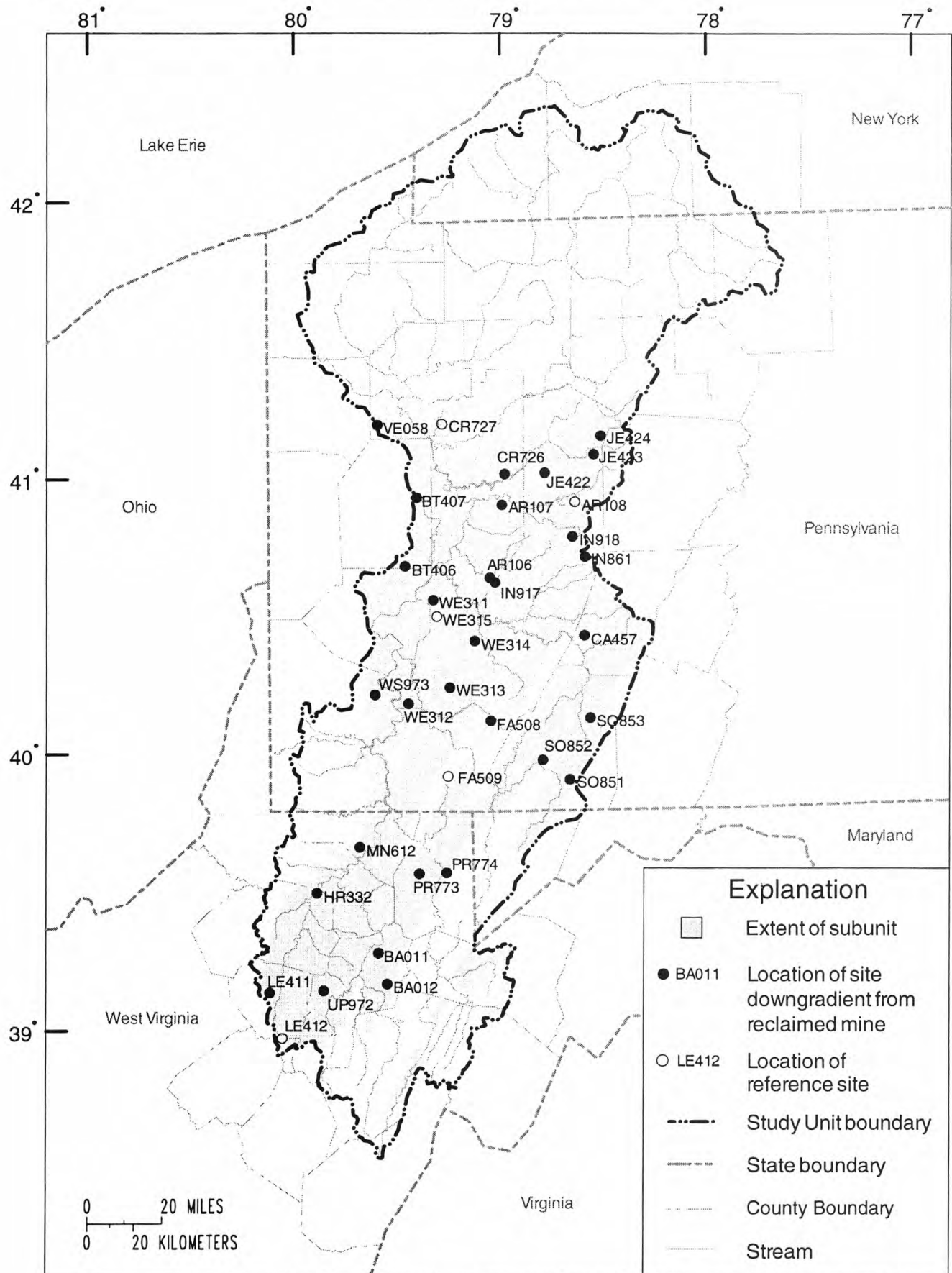


Figure 9. Location of wells sampled in the reclaimed coal mine Land-Use Study of the National Water Quality Assessment Program. The reference sites are wells that fall within the study unit boundary but are not affected by mine drainage.

GROUND-WATER DATA COLLECTED AT SPECIAL-STUDY SITES

ALLEGHENY AND MONONGAHELA RIVER BASIN NAWQA PROJECT

SUBAREA OF FRACTURED, COAL-BEARING SEDIMENTARY BEDROCK OF THE PITTSBURGH SERIES IN THE APPALACHIAN

PLATEAU PHYSIOGRAPHIC PROVINCE

COAL MINING LAND-USE STUDY

This table contains water level records and well characteristics for a network of thirty five privately-owned wells used to supply water for domestic use. The network of wells was established as part of the National Water-Quality Assessment (NAWQA) project in the Allegheny and Monongahela River Basin.

The wells were sampled to assess the status of ground-water quality in areas downgradient of reclaimed surface coal mines. These areas are underlain by a subarea of the Appalachian Plateau Physiographic Province limited to the Pittsburgh Series fractured rock. This sampling is termed a Land-Use Study for the NAWQA program. Five wells were selected as reference sites. These wells fall inside the Land-Use Study boundary but are not influenced by mine drainage.

Explanation of column headings- SITE IDENTIFIER: 15 digit unique identifier based on site latitude (first 6 digits), longitude (digits 7-13), and a 2 digit sequence number suffix. LOCATION: Name of 1:24,000 U.S. Geological Survey topographic quadrangle. ELEVATION OF LAND SURFACE DATUM: Land-surface at well site, in feet above sea level. SOURCE OF DEPTH DATA: D, Driller; O, Owner; M, Measured. WATER LEVEL METHOD: T, electric tape.

SITE IDENTIFIER	LOCAL ID	LOCATION	ELEV. OF LAND SURFACE DATUM (FT. ABOVE NGVD) (72000)	DEPTH OF WELL, TOTAL (FEET) (72008)	SOURCE OF DEPTH DATA	DATE	DEPTH BELOW LAND SURFACE (WATER LEVEL FEET) (72019)	WATER-LEVEL METHOD
PENNSYLVANIA								
ARMSTRONG COUNTY								
403756079234001	AR106	Whitesburg	980	55.0	M	08-28-97	26.4	T
405449079193901	AR107	Distant	1455	154.0	M	08-27-97	35.0	T
BUTLER COUNTY								
404050079494001	BT406	Curtisville	965	68.0	M	08-19-97	20.1	T
405642079455601	BT407	East Butler	1195	65.0	M	10-16-97	11.8	T
CAMBRIA COUNTY								
402415078544301	CA457	Vintondale	2040	100.0	M	09-15-97	36.7	T
CLARION COUNTY								
410156079183801	CR726	New Bethlehem	1270	70.0	M	08-25-97	44.1	T
FAYETTE COUNTY								
400434079235201	FA508	Donegal	1600	135.0	M	08-21-97	58.6	T
INDIANA COUNTY								
403650079220201	IN917	McIntyre	1140	82.0	M	09-03-97	31.1	T
404230078540901	IN861	Commodore	1590	85.0	M	10-01-97	37.3	T
404712078575501	IN918	Rochester Mills	1590	65.0	M	09-02-97	24.3	T
JEFFERSON COUNTY								
410205079061101	JE422	Coolsprings	1245	60.0	M	08-26-97	17.3	T
410609078505701	JE423	DuBois	1460	98.0	M	09-11-97	40.7	T
411026078484301	JE424	Falls Creek	1670	50.0	M	09-10-97	3.2	T
SOMERSET COUNTY								
395040078595401	S0851	Wittenberg	2065	44.0	M	09-17-97	13.2	T
395520079080301	S0852	Rockwood	1965	70.0	M	08-14-97	19.2	T
400455078532101	S0853	Stoystown	2380	115.0	M	09-16-97	31.0	T
VENANGO COUNTY								
411336079574901	VE058	Barkeyville	1410	63.0	M	09-08-97	28.9	T
WASHINGTON COUNTY								
401053079590001	WS973	Monongahela	1090	98.0	M	09-18-97	28.2	T

GROUND-WATER DATA COLLECTED AT SPECIAL-STUDY SITES
 ALLEGHENY AND MONONGAHELA RIVER BASIN NAWQA PROJECT
 SUBAREA OF FRACTURED, COAL-BEARING SEDIMENTARY BEDROCK OF THE PITTSBURGH SERIES IN THE APPALACHIAN
 PLATEAU PHYSIOGRAPHIC PROVINCE
COAL MINING LAND-USE STUDY--Continued

SITE IDENTIFIER	LOCAL ID	LOCATION	ELEV. OF LAND SURFACE DATUM (FT. ABOVE NGVD) (72000)	DEPTH OF WELL, TOTAL (FEET) (72008)	SOURCE OF DEPTH DATA	DATE	DEPTH BELOW LAND SURFACE (WATER LEVEL FEET) (72019)	WATER- LEVEL METHOD
WESTMORELAND COUNTY								
403253079410701	WE311	New Kensington East	1280	220.0	M	09-25-97	132.5	T
400846079485701	WE312	Donora	1150	150.0	M	08-07-97	18.1	T
401225079361501	WE313	Mount Pleasant	1020	135.0	M	08-20-97	75.9	T
402319079283001	WE314	Saltsburg	1100	140.0	M	10-02-97	26.8	T
WEST VIRGINIA								
BARBOUR COUNTY								
391103079582901	BA011	Nestorville	1460	52.0	M	10-21-97	8.3	T
390353079555601	BA012	Belington	1700	90.0	M	10-08-97	12.1	T
HARRISON COUNTY								
392458080165301	HR332	Shinnston	970	96.0	M	09-30-97	38.0	T
LEWIS COUNTY								
390201080311301	LE411	Camden	1070	85.0	M	10-09-97	14.0	T
MONONGALIA COUNTY								
393533080035501	MN612	Rivesville	1140	41.0	M	09-23-97	11.7	T
PRESTON COUNTY								
392917079460501	PR773	Newberry	2010	41.0	M	09-24-97	10.1	T
392924079374601	PR774	Kingwood	1290	110.0	M	09-29-97	68.0	T
UPSHUR COUNTY								
390227080145801	UP972	Century	1430	68.0	M	10-20-97	20.7	T
REFERENCE WELLS								
PENNSYLVANIA								
ARMSTRONG COUNTY								
404924079155201	AR108	Rural Valley	1240	100.0	M	07-29-98	14.0	T
CLARION COUNTY								
411335079375301	CR727	Emlenton	1438	178.0	M	07-16-98	55.0	T
FAYETTE COUNTY								
395201079383601	FA509	Brownfield	2385	200.0	M	07-22-98	120.8	T
WESTMORELAND COUNTY								
402905079400001	WE315	Murrysville	1120	30.0	M	09-08-98	13.1	T
WEST VIRGINIA								
LEWIS COUNTY								
385131080272501	LE412	Walkersville	1110	112.0	M	08-27-98	40.3	T

GROUND-WATER DATA COLLECTED AT SPECIAL-STUDY SITES

ALLEGHENY AND MONONGAHELA RIVER BASIN NAWQA PROJECT

SUBAREA OF FRACTURED, COAL-BEARING SEDIMENTARY BEDROCK OF THE PITTSBURGH SERIES IN THE APPALACHIAN

PLATEAU PHYSIOGRAPHIC PROVINCE

COAL MINING LAND-USE STUDY

TABLE 1.--VOLATILE ORGANIC COMPOUNDS ANALYZED IN GROUND-WATER.

REMARKS.-- Water from each of the 35 wells in this study was tested for volatile organic compounds (VOC's). The table below lists the compounds analyzed, the unit of measure (micrograms per liter, $\mu\text{G/L}$), the U.S. Geological Survey National Water Information System parameter code, and the method detection limit (MDL).

The volatile organic compounds in this schedule included selected (VOC's) that are thermally desorbed from a water sample by the purge and trap method and then analyzed by gas chromatography.

Each sample was analyzed for all of the compounds in this schedule. Volatile organic compounds measured at or above the MDL for one or more wells are listed in the water-quality table following the schedule lists. The MDL provides an index to indicate where measurement uncertainty is increased. When an analyte is detected and all criteria for a positive result are met, the concentration is reported. If the concentration is less than the 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, result will be qualified 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 (<).

ACETATE VINYL ($\mu\text{G/L}$) (77057)	ACETONE ($\mu\text{G/L}$) (81552)	ACROLEIN ($\mu\text{G/L}$) (34210)	ACRYLO- NITRILE ($\mu\text{G/L}$) (34215)	BENZENE ($\mu\text{G/L}$) (34030)	BENZENE BROMO- ($\mu\text{G/L}$) (81555)
5.00	5.00	2.00	2.00	0.050	0.050
BENZENE CHLORO- ($\mu\text{G/L}$) (34301)	BENZENE O-DI- CHLORO- ($\mu\text{G/L}$) (34536)	BENZENE 1,3-DI- CHLORO- ($\mu\text{G/L}$) (34566)	BENZENE 1,4-DI- CHLORO- ($\mu\text{G/L}$) (34571)	BENZENE 1,2,3- TRICHLORO- ($\mu\text{G/L}$) (77613)	BENZENE 1,2,4- TRICHLORO- ($\mu\text{G/L}$) (34551)
0.050	0.050	0.050	0.050	0.200	0.200
BENZENE 1,2,3- TRIMETHYL- ($\mu\text{G/L}$) (77221)	BENZENE 1,2,4- TRIMETHYL- ($\mu\text{G/L}$) (77222)	BENZENE 1,3,5- TRIMETHYL- ($\mu\text{G/L}$) (77226)	BENZENE ETHYL- ($\mu\text{G/L}$) (34371)	BENZENE N-PROPYL- ($\mu\text{G/L}$) (77224)	BENZENE ISOPROPYL- ($\mu\text{G/L}$) (77223)
0.050	0.050	0.050	0.050	0.050	0.050
BENZENE N-BUTYL- ($\mu\text{G/L}$) (77342)	BENZENE SEC-BUTYL- ($\mu\text{G/L}$) (77350)	BENZENE TERT-BUTYL- ($\mu\text{G/L}$) (77353)	2-BUTENE TRANS-1,4- DICHLORO- ($\mu\text{G/L}$) (73547)	CARBON DISULFIDE ($\mu\text{G/L}$) (77041)	ETHANE 1,2- DIBROMO- ($\mu\text{G/L}$) (77651)
0.050	0.050	0.050	5.00	0.050	0.100
ETHANE CHLORO- ($\mu\text{G/L}$) (34311)	ETHANE 1,1- DICHLORO- ($\mu\text{G/L}$) (34496)	ETHANE 1,2- DICHLORO- ($\mu\text{G/L}$) (32103)	ETHANE 1,1,1- TRICHLORO- ($\mu\text{G/L}$) (34506)	ETHANE 1,1,2- TRICHLORO- ($\mu\text{G/L}$) (34511)	ETHANE, 1,1,1,2- TETRACHLORO- ($\mu\text{G/L}$) (77562)
0.100	0.050	0.050	0.050	0.100	0.050
ETHANE 1,1,2,2- TETRACHLORO- ($\mu\text{G/L}$) (34516)	ETHANE HEXACHLORO- ($\mu\text{G/L}$) (34396)	ETHENE BROMO- ($\mu\text{G/L}$) (50002)	ETHENE CHLORO- ($\mu\text{G/L}$) (34423)	ETHENE 1,1- DICHLORO- ($\mu\text{G/L}$) (34501)	ETHENE CIS-1,2- DICHLORO- ($\mu\text{G/L}$) (77093)
0.100	0.050	0.100	0.100	0.100	0.050
ETHENE TRANS-1,2- DICHLORO- ($\mu\text{G/L}$) (34546)	ETHENE TRICHLORO- ($\mu\text{G/L}$) (39180)	ETHENE TETRACHLORO- ($\mu\text{G/L}$) (34475)	ETHER DI- ISOPROPYL- ($\mu\text{G/L}$) (81577)	ETHER ETHYL- ($\mu\text{G/L}$) (81576)	ETHER METHYL- TERT-BUTYL- ($\mu\text{G/L}$) (78032)
0.050	0.050	0.050	0.100	0.100	0.100

GROUND-WATER DATA COLLECTED AT SPECIAL-STUDY SITES
ALLEGHENY AND MONONGAHELA RIVER BASIN NAWQA PROJECT
SUBAREA OF FRACTURED, COAL-BEARING SEDIMENTARY BEDROCK OF THE PITTSBURGH SERIES IN THE APPALACHIAN
PLATEAU PHYSIOGRAPHIC PROVINCE

COAL MINING LAND-USE STUDY--Continued

TABLE 1.--VOLATILE ORGANIC COMPOUNDS ANALYZED IN GROUND-WATER--Continued

ETHER ETHYL- TERT-BUTYL- ($\mu\text{G/L}$) (50004)	ETHER TERT- PENTYL- METHYL- ($\mu\text{G/L}$) (50005)	FREON-113 ($\mu\text{G/L}$) (77652)	FURAN TETRAHYDRO- ($\mu\text{G/L}$) (81607)	HEXACHLORO- BUTADIENE ($\mu\text{G/L}$) (39702)	2-HEXANONE ($\mu\text{G/L}$) (77103)
0.100	0.100	0.050	5.00	0.200	5.00
ISODURENE ($\mu\text{G/L}$) (50000)	METHACRYLATE METHYL- ($\mu\text{G/L}$) (81597)	METHACRYLATE ETHYL- ($\mu\text{G/L}$) (73570)	METHANE BROMO- ($\mu\text{G/L}$) (34413)	METHANE CHLORO- ($\mu\text{G/L}$) (34418)	METHANE CHLORO- BROMO- ($\mu\text{G/L}$) (77297)
0.050	1.00	1.00	0.100	0.200	0.100
METHANE CHLORO- DIBROMO- ($\mu\text{G/L}$) (32105)	METHANE DIBROMO- ($\mu\text{G/L}$) (30217)	METHANE DICHLORO- BROMO- ($\mu\text{G/L}$) (32101)	METHANE DIFLUORO- DICHLORO- ($\mu\text{G/L}$) (34668)	METHANE IODO- ($\mu\text{G/L}$) (77424)	METHANE TETRACHLORO- ($\mu\text{G/L}$) (32102)
0.100	0.100	0.100	0.200	0.050	0.050
METHANE TRIBROMO- ($\mu\text{G/L}$) (32104)	METHANE TRICHLORO- ($\mu\text{G/L}$) (32106)	METHANE FLUORO- TRICHLORO- ($\mu\text{G/L}$) (34488)	METHYL ACRYLATE ($\mu\text{G/L}$) (49991)	METHACRYLO- NITRITE ($\mu\text{G/L}$) (81593)	METHYL- KETONE ($\mu\text{G/L}$) (81595)
0.200	0.050	0.100	2.00	2.00	5.00
METHYL- ISOBUTYL- KETONE ($\mu\text{G/L}$) (78133)	NAPHTHALENE ($\mu\text{G/L}$) (34696)	PREHNITENE ($\mu\text{G/L}$) (49999)	PROPANE 1,2- DICHLORO- ($\mu\text{G/L}$) (34541)	PROPANE 2,2- DICHLORO- ($\mu\text{G/L}$) (77170)	PROPANE 1,3- DICHLORO- ($\mu\text{G/L}$) (77173)
5.00	0.200	0.050	0.050	0.050	0.050
PROPANE 1,2,3- TRICHLORO- ($\mu\text{G/L}$) (77443)	PROPANE CHLORO- DIBROMO- ($\mu\text{G/L}$) (82625)	PROPENE 3-CHLORO- ($\mu\text{G/L}$) (78109)	PROPENE 1,1- DICHLORO- ($\mu\text{G/L}$) (77168)	PROPENE CIS-1,3- DICHLORO- ($\mu\text{G/L}$) (34704)	PROPENE TRANS-1,3- DICHLORO- ($\mu\text{G/L}$) (34699)
0.200	0.500	0.100	0.050	0.100	0.100
STYRENE ($\mu\text{G/L}$) (77128)	TOLUENE ($\mu\text{G/L}$) (34010)	TOLUENE O-CHLORO- ($\mu\text{G/L}$) (77275)	TOLUENE P-CHLORO- ($\mu\text{G/L}$) (77277)	TOLUENE O-ETHYL- ($\mu\text{G/L}$) (77220)	TOLUENE P-ISOPROPYL- ($\mu\text{G/L}$) (77356)
0.050	0.050	0.050	0.050	0.050	0.050
VINYL- CHLORIDE ($\mu\text{G/L}$) (39175)	XYLENE O- ($\mu\text{G/L}$) (77135)	XYLENE M- and P- ($\mu\text{G/L}$) (85795)			
0.100	0.050	0.050			

GROUND-WATER DATA COLLECTED AT SPECIAL-STUDY SITES

ALLEGHENY AND MONONGAHELA RIVER BASIN NAWQA PROJECT

SUBAREA OF FRACTURED, COAL-BEARING SEDIMENTARY BEDROCK OF THE PITTSBURGH SERIES IN THE APPALACHIAN

PLATEAU PHYSIOGRAPHIC PROVINCE

COAL MINING LAND-USE STUDY--Continued

REMARKS.--Explanation of the column headings--SITE IDENTIFIER: 15-digit unique identifier based on site latitude (first 6 digits), longitude (digits 7 through 13), and a 2-digit sequence number suffix;
DEG C: degrees Celsius; NTU: nephelometric turbidity units; µS/CM: microsiemens per centimeter at 25 degrees Celsius; mg/L: milligrams per liter; PCI/L: Picocurie per liter; µG/L: micrograms per liter;
2 SIGMA: counting statistics that represents error in the reported radon value caused by variation in sample counting, background radiation, volume of sample, and decay since sample was collected; DISS: dissolved; REC: recoverable; WH TOT IT: alkalinity, as determined by incremental titration of unfiltered water; DIS TOT IT: alkalinity as determined by incremental titration of filtered water.

WATER QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

SITE IDENTIFIER	LOCAL ID	DATE	TIME	SPE-CIFIC CON-DUCT-ANCE (µS/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)	HARD NESS TOTAL (mg/L AS CaCO3) (00900)
PENNSYLVANIA									
ARMSTRONG COUNTY									
403756079234001	AR106	08-28-97	0800	348	7.1	12.8	2.2	0.0	78
405449079193901	AR107	08-27-97	0800	665	6.9	13.2	93	5.2	820
BUTLER COUNTY									
404050079494001	BT406	08-19-97	0800	301	6.6	15.7	2.5	1.8	160
405642079455601	BT407	10-16-97	0800	876	6.9	12.1	1.7	7.8	340
CAMBRIA COUNTY									
402415078544301	CA457	09-15-97	0800	141	6.9	14.1	92	11.0	65
CLARION COUNTY									
410156079183801	CR726	08-25-97	0800	658	6.6	13.2	4.6	.1	300
FAYETTE COUNTY									
400434079235201	FA508	08-21-97	0800	353	6.8	19.0	7.8	10.1	160
INDIANA COUNTY									
403650079220201	IN917	09-03-97	0800	1140	6.9	14.5	3.2	.1	500
404230078540901	IN861	10-01-97	0800	808	7.1	14.1	3.2	.8	440
404712078575501	IN918	09-02-97	0800	273	7.0	13.2	2.3	.1	120
JEFFERSON COUNTY									
410205079061101	JE422	08-26-97	0800	388	7.1	12.0	3.6	.3	200
410609078505701	JE423	09-11-97	0800	1160	6.8	13.1	2.2	.1	680
411026078484301	JE424	09-10-97	0800	603	6.0	11.6	1.9	.3	260
SOMERSET COUNTY									
395040078595401	SO851	09-17-97	0800	275	7.2	11.4	9.0	.1	120
395520079080301	SO852	08-14-97	0800	347	7.5	13.3	4.7	.5	180
400455078532101	SO853	09-16-97	0800	638	3.0	11.8	20	.1	69
VENANGO COUNTY									
411336079574901	VE058	09-08-97	0800	615	5.6	11.8	.25	--	690
WASHINGTON COUNTY									
401053079590001	WS973	09-18-97	0800	752	7.1	14.9	14	.4	360

GROUND-WATER DATA COLLECTED AT SPECIAL-STUDY SITES
 ALLEGHENY AND MONONGAHELA RIVER BASIN NAWQA PROJECT
 SUBAREA OF FRACTURED, COAL-BEARING SEDIMENTARY BEDROCK OF THE PITTSBURGH SERIES IN THE APPALACHIAN
 PLATEAU PHYSIOGRAPHIC PROVINCE
COAL MINING LAND-USE STUDY--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

SITE IDENTIFIER	LOCAL ID	DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (μ S/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)	HARD- NESS TOTAL (mg/L AS CaCO ₃) (00900)
WESTMORELAND COUNTY									
403253079410701	WE311	09-25-97	0800	363	7.4	13.8	2.4	6.3	140
400846079485701	WE312	08-07-97	0800	750	6.7	15.0	.41	1.0	320
401225079361501	WE313	08-20-97	0800	660	7.6	14.5	4.4	.1	330
402319079283001	WE314	10-02-97	0800	681	6.7	12.7	4.0	.8	330
WEST VIRGINIA									
HARBOUR COUNTY									
391103079582901	BA011	10-21-97	0800	500	6.1	12.8	98	.1	190
390353079555601	BA012	10-08-97	0800	449	6.7	14.4	14	.2	210
HARRISON COUNTY									
392458080165301	HR332	09-30-97	0800	727	6.9	14.0	13	3.1	340
LEWIS COUNTY									
390201080311301	LE411	10-09-97	0800	521	8.8	16.7	6.3	.1	38
MONONGALIA COUNTY									
393533080035501	MN612	09-23-97	0800	586	6.0	14.4	4.8	.9	270
PRESTON COUNTY									
392917079460501	PR773	09-24-97	0800	291	7.0	14.0	27	8.4	140
392924079374601	PR774	09-29-97	0800	372	6.9	13.9	6.0	1.5	180
UPSHUR COUNTY									
390227080145801	UP972	10-20-97	0800	507	7.4	13.9	3.2	.2	150
REFERENCE WELLS									
PENNSYLVANIA									
ARMSTRONG COUNTY									
404924079155201	AR108	07-29-98	0800	220	7.4	12.8	16	.1	110
CLARION COUNTY									
411335079375301	CR727	07-16-98	0800	155	7.1	15.1	33	.1	63
FAYETTE COUNTY									
395201079383601	FA509	07-22-98	0800	117	4.2	13.0	6.2	4.9	22
WESTMORELAND COUNTY									
402905079400001	WE315	09-08-98	0800	375	6.9	11.8	1.9	5.5	170
WEST VIRGINIA									
LEWIS COUNTY									
385131080272501	LE412	08-27-98	0800	1350	7.8	19.6	3.8	.04	70

GROUND-WATER DATA COLLECTED AT SPECIAL-STUDY SITES
 ALLEGHENY AND MONONGAHELA RIVER BASIN NAWQA PROJECT
 SUBAREA OF FRACTURED, COAL-BEARING SEDIMENTARY BEDROCK OF THE PITTSBURGH SERIES IN THE APPALACHIAN
 PLATEAU PHYSIOGRAPHIC PROVINCE
COAL MINING LAND-USE STUDY--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

LOCAL ID	CALCIUM DIS- SOLVED (mG/L AS CA) (000915)	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)	ALKA- LINITY WAT DIS TOT IT FIELD (mG/L AS CACO3) (39086)	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)
PENNSYLVANIA									
ARMSTRONG COUNTY									
AR106	23	5.1	38	1.5	126	128	12	25	.24
AR107	230	57	7.1	3.3	359	357	460	23	.13
BUTLER COUNTY									
BT406	44	13	2.9	1.5	130	123	22	12	.22
BT407	100	23	53	3.3	176	175	280	16	.19
CAMBRIA COUNTY									
CA457	19	4.4	.52	.92	46	47	9.6	2.1	<.10
CLARION COUNTY									
CR726	74	29	3.1	2.4	73	73	250	11	.23
FAYETTE COUNTY									
FA508	46	11	2.4	2.6	145	144	13	12	.20
INDIANA COUNTY									
IN917	150	29	40	1.6	152	152	420	20	.12
IN861	130	28	8.5	.93	205	203	240	3.9	.21
IN918	34	7.2	6.2	1.7	132	132	9.9	2.3	.18
JEFFERSON COUNTY									
JE422	68	6.5	1.3	1.1	127	127	70	1.5	.22
JE423	200	44	5.3	2.9	169	169	510	1.5	.14
JE424	57	28	4.3	1.7	97	95	200	20	.14
SOMERSET COUNTY									
SO851	34	9.7	3.8	.96	110	108	10	12	.15
SO852	57	8.7	.85	1.4	138	135	35	5.5	.18
SO853	14	8.5	17	1.3	0	0	68	82	<.10
VENANGO COUNTY									
VE058	220	35	2.0	2.4	41	40	700	6.1	.26
WASHINGTON COUNTY									
WS973	110	23	15	1.5	276	270	53	47	.31

GROUND-WATER DATA COLLECTED AT SPECIAL-STUDY SITES
 ALLEGHENY AND MONONGAHELA RIVER BASIN NAWQA PROJECT
 SUBAREA OF FRACTURED, COAL-BEARING SEDIMENTARY BEDROCK OF THE PITTSBURGH SERIES IN THE APPALACHIAN
 PLATEAU PHYSIOGRAPHIC PROVINCE
COAL MINING LAND-USE STUDY--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

LOCAL ID	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)	ALKA- LINIT WAT DIS TOT IT FIELD (mG/L AS CACO3) (39086)	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)
WESTMORELAND COUNTY									
WE311	37	11	27	1.3	152	151	31	2.7	.15
WE312	85	26	44	1.9	308	297	73	29	.19
WE313	94	22	12	3.8	226	219	120	12	.17
WE314	110	16	8.7	1.1	217	219	97	29	.12
WEST VIRGINIA									
HARBOUR COUNTY									
BA011	49	15	11	3.0	73	73	160	8.7	<.10
BA012	62	13	10	1.7	155	151	76	1.0	<.10
HARRISON COUNTY									
HR332	100	20	12	3.2	152	149	210	8.5	.17
LEWIS COUNTY									
LE411	12	2.0	116	.53	254	257	4.7	12	1.2
MONONGALIA COUNTY									
MN612	66	26	13	3.6	76	75	220	9.5	.12
PRESTON COUNTY									
PR773	53	1.8	2.2	.86	96	101	38	1.3	<.10
PR774	53	12	8.5	2.7	151	156	33	3.4	.21
UPSHUR COUNTY									
UP972	45	10	57	1.9	252	252	14	3.7	.26
REFERENCE WELLS									
PENNSYLVANIA									
ARMSTRONG COUNTY									
AR108	27	10	7.2	.75	92	96	20	4.0	.24
CLARION COUNTY									
CR727	18	4.2	1.5	1.4	55	52	10	8.4	.12
FAYETTE COUNTY									
FA509	3.3	3.4	3.1	2.0	0	0	4.1	27	<.10
WESTMORELAND COUNTY									
WE315	52	10	7.3	1.4	127	127	36	12	.11
WEST VIRGINIA									
LEWIS COUNTY									
LE412	21	4.2	270	2.5	312	306	12	240	.67

GROUND-WATER DATA COLLECTED AT SPECIAL-STUDY SITES
 ALLEGHENY AND MONONGAHELA RIVER BASIN NAWQA PROJECT
 SUBAREA OF FRACTURED, COAL-BEARING SEDIMENTARY BEDROCK OF THE PITTSBURGH SERIES IN THE APPALACHIAN
 PLATEAU PHYSIOGRAPHIC PROVINCE
COAL MINING LAND-USE STUDY--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

LOCAL ID	BROMIDE DIS- SOLVED (mG/L AS BR) (71870)	SILICA, DIS- SOLVED (mG/L AS SI02) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (mG/L) (70300)	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 DIS. (mG/L AS N) (00623)	PHOS- PHORUS DIS- SOLVED (mG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (mG/L AS P) (00671)
PENNSYLVANIA									
ARMSTRONG COUNTY									
AR106	.079	7.7	194	<.010	<.050	.578	.61	<.050	<.010
AR107	.018	6.7	1110	.010	.089	<.015	<.20	<.050	<.010
BUTLER COUNTY									
BT406	.029	7.2	215	<.010	.067	.018	<.20	<.050	<.010
BT407	.12	13	627	<.010	<.050	.484	.51	<.050	<.010
CAMBRIA COUNTY									
CA457	.013	4.5	80	<.010	1.74	<.015	<.20	<.050	<.010
CLARION COUNTY									
CR726	<.010	9.3	453	.010	<.050	.191	<.20	<.050	.035
FAYETTE COUNTY									
FA508	.021	6.9	186	.010	.337	.049	<.20	<.050	<.010
INDIANA COUNTY									
IN917	.049	18	664	<.010	.051	.176	.29	<.050	.017
IN861	.035	16	584	.013	.111	.040	<.20	<.050	<.010
IN918	.032	6.8	153	<.010	<.050	.146	<.20	<.050	<.010
JEFFERSON COUNTY									
JE422	.032	10	264	<.010	<.050	.039	<.20	<.050	.019
JE423	.022	11	899	<.010	<.050	.133	<.20	<.050	<.010
JE424	.044	10	401	<.010	<.050	.084	<.20	<.050	.027
SOMERSET COUNTY									
SO851	.027	15	158	<.010	<.050	.109	<.20	.053	.042
SO852	.019	6.7	213	<.010	<.050	.155	<.20	<.050	<.010
SO853	.087	7.9	155	<.010	<.050	.066	<.20	<.050	<.010
VENANGO COUNTY									
VE058	.040	14	1140	<.010	<.050	.146	<.20	<.050	<.010
WASHINGTON COUNTY									
WS973	.059	20	453	<.010	<.050	.071	<.20	<.050	<.010

GROUND-WATER DATA COLLECTED AT SPECIAL-STUDY SITES
 ALLEGHENY AND MONONGAHELA RIVER BASIN NAWQA PROJECT
 SUBAREA OF FRACTURED, COAL-BEARING SEDIMENTARY BEDROCK OF THE PITTSBURGH SERIES IN THE APPALACHIAN
 PLATEAU PHYSIOGRAPHIC PROVINCE
COAL MINING LAND-USE STUDY--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

LOCAL ID	BROMIDE DIS- SOLVED (mG/L AS BR) (71870)	SILICA, DIS- SOLVED (mG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (mG/L) (70300)	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 DIS- SOLVED (mG/L AS N) (00623)	PHOS- PHORUS DIS- SOLVED (mG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (mG/L AS P) (00671)
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WESTMORELAND COUNTY

WE311	.031	11	220	<.010	1.03	<.015	<.20	<.050	<.010
WE312	.042	13	480	<.010	.306	.025	<.20	<.050	.012
WE313	.028	10	438	.013	<.050	.411	.44	<.050	.026
WE314	.081	15	438	<.010	<.050	.099	<.20	<.050	.015

WEST VIRGINIA

BARBOUR COUNTY

BA011	.058	5.7	288	.017	.156	.192	<.20	<.050	<.010
BA012	.082	8.9	268	<.010	<.050	.151	.22	<.050	<.010

HARRISON COUNTY

HR332	.038	16	482	<.010	.346	.669	.77	<.050	.014
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LEWIS COUNTY

LE411	.093	10	325	<.010	<.050	.096	<.20	<.050	.040
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MONONGALIA COUNTY

MN612	.059	19	427	<.010	.254	.083	<.20	<.050	<.010
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PRESTON COUNTY

PR773	.027	7.3	182	<.010	2.01	.040	<.20	<.050	.021
PR774	.049	7.5	221	<.010	.144	.174	<.20	<.050	<.010

UPSHUR COUNTY

UP972	.028	11	311	<.010	<.050	.456	.47	<.050	<.010
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REFERENCE WELLS

PENNSYLVANIA

ARMSTRONG COUNTY

AR108	.033	12	141	<.010	.073	.034	<.10	<.050	<.010
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CLARION COUNTY

CR727	.020	10	89	.012	<.050	.073	<.10	<.050	.017
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FAYETTE COUNTY

FA509	--	7.6	67	<.010	.060	.040	<.10	<.050	<.010
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WESTMORELAND COUNTY

WE315	.035	7.6	226	.012	2.16	.078	<.10	<.050	.016
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WEST VIRGINIA

LEWIS COUNTY

LE412	1.6	8.4	773	<.010	<.050	.193	.17	<.050	.014
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GROUND-WATER DATA COLLECTED AT SPECIAL-STUDY SITES
 ALLEGHENY AND MONONGAHELA RIVER BASIN NAWQA PROJECT
 SUBAREA OF FRACTURED, COAL-BEARING SEDIMENTARY BEDROCK OF THE PITTSBURGH SERIES IN THE APPALACHIAN
 PLATEAU PHYSIOGRAPHIC PROVINCE
COAL MINING LAND-USE STUDY--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

LOCAL ID	ALUM- INUM, DIS- SOLVED (μ G/L AS AL) (01106)	ANTI- MONY, DIS- SOLVED (μ G/L AS SB) (01095)	ARSENIC DIS- SOLVED (μ G/L AS AS) (01000)	BARIUM, DIS- SOLVED (μ G/L AS BA) (01005)	BERYL- LIUM, DIS- SOLVED (μ G/L AS BE) (01010)	CADMIUM DIS- SOLVED (μ G/L AS CD) (01025)	CHRO- MIUM, DIS- SOLVED (μ G/L AS CR) (01030)	COBALT, DIS- SOLVED (μ G/L AS CO) (01035)	COPPER, DIS- SOLVED (μ G/L AS CU) (01040)	IRON, DIS- SOLVED (μ G/L AS FE) (01046)
PENNSYLVANIA										
ARMSTRONG COUNTY										
AR106	3.8	<1.0	<1	435	<1.0	<1.0	1.2	<1.0	<1.0	860
AR107	3.3	<1.0	<1	17	<1.0	<1.0	3.1	<1.0	1.4	510
BUTLER COUNTY										
BT406	3.3	<1.0	<1	154	<1.0	<1.0	1.1	<1.0	25	68
BT407	2.7	<1.0	<1	27	<1.0	<1.0	2.9	<1.0	1.6	7500
CAMBRIA COUNTY										
CA457	6.4	<1.0	<1	201	<1.0	<1.0	1.4	<1.0	<1.0	9.0
CLARION COUNTY										
CR726	4.0	<1.0	1	19	<1.0	<1.0	1.3	4.1	2.7	22700
FAYETTE COUNTY										
FA508	3.8	<1.0	<1	302	<1.0	<1.0	<1.0	<1.0	8.0	13
INDIANA COUNTY										
IN917	2.9	<1.0	<1	25	<1.0	<1.0	1.1	<1.0	1.4	6800
IN861	5.7	<1.0	<1	30	<1.0	<1.0	3.3	<1.0	6.5	69
IN918	3.2	<1.0	<1	245	<1.0	<1.0	<1.0	<1.0	<1.0	1700
JEFFERSON COUNTY										
JE422	2.7	<1.0	<1	71	<1.0	<1.0	1.3	<1.0	<1.0	100
JE423	3.5	<1.0	<1	14	<1.0	<1.0	1.0	4.4	1.4	3600
JE424	3.5	<1.0	<1	23	<1.0	<1.0	2.6	14	1.2	23700
SOMERSET COUNTY										
SO851	3.9	<1.0	<1	250	<1.0	<1.0	1.2	<1.0	<1.0	1800
SO852	3.1	<1.0	3	196	<1.0	<1.0	<1.0	<1.0	<1.0	820
SO853	26	<1.0	<1	191	<1.0	<1.0	5.0	20	125	18500
VENANGO COUNTY										
VE058	971	<1.0	<1	10	1.4	<1.0	3.0	158	<1.0	18100
WASHINGTON COUNTY										
WS973	3.3	<1.0	<1	183	<1.0	<1.0	2.5	<1.0	<1.0	<3.0

GROUND-WATER DATA COLLECTED AT SPECIAL-STUDY SITES
 ALLEGHENY AND MONONGAHELA RIVER BASIN NAWQA PROJECT
 SUBAREA OF FRACTURED, COAL-BEARING SEDIMENTARY BEDROCK OF THE PITTSBURGH SERIES IN THE APPALACHIAN
 PLATEAU PHYSIOGRAPHIC PROVINCE
COAL MINING LAND-USE STUDY--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

LOCAL ID	ALUM- INUM, DIS- SOLVED (μG/L AS AL) (01106)	ANTI- MONY, DIS- SOLVED (μG/L AS SB) (01095)	ARSENIC DIS- SOLVED (μG/L AS AS) (01000)	BARIUM, DIS- SOLVED (μG/L AS BA) (01005)	BERYL- LIUM, DIS- SOLVED (μG/L AS BE) (01010)	CADMIUM DIS- SOLVED (μG/L AS CD) (01025)	CHRO- MIUM, DIS- SOLVED (μG/L AS CR) (01030)	COBALT, DIS- SOLVED (μG/L AS CO) (01035)	COPPER, DIS- SOLVED (μG/L AS CU) (01040)	IRON, DIS- SOLVED (μG/L AS FE) (01046)
WESTMORELAND COUNTY										
WE311	4.2	<1.0	<1	175	<1.0	<1.0	2.6	<1.0	69	5.6
WE312	3.3	<1.0	<1	81	<1.0	<1.0	8.3	<1.0	9.6	11
WE313	9.0	<1.0	<1	79	<1.0	<1.0	<1.0	<1.0	<1.0	30
WE314	6.3	<1.0	3	53	<1.0	<1.0	3.9	4.1	<1.0	3500
WEST VIRGINIA										
BARBOUR COUNTY										
BA011	25	<1.0	<1	363	<1.0	<1.0	2.1	55	1.6	20200
BA012	3.5	<1.0	2	77	<1.0	<1.0	3.0	<1.0	<1.0	7700
HARRISON COUNTY										
HR332	4.3	<1.0	<1	125	<1.0	<1.0	2.8	2.3	<1.0	6400
LEWIS COUNTY										
LE411	4.0	<1.0	2	87	<1.0	<1.0	2.5	<1.0	<1.0	19
MONONGALIA COUNTY										
MN612	13	<1.0	<1	34	<1.0	2.3	1.9	2.0	1.2	590
PRESTON COUNTY										
PR773	4.5	<1.0	<1	51	<1.0	<1.0	1.2	<1.0	12	85
PR774	3.5	<1.0	<1	242	<1.0	<1.0	2.9	<1.0	<1.0	44
UPSHUR COUNTY										
UP972	3.2	<1.0	<1	1990	<1.0	<1.0	4.0	<1.0	<1.0	950
REFERENCE WELLS										
PENNSYLVANIA										
ARMSTRONG COUNTY										
AR108	3.0	<1.0	<1	142	<1.0	<1.0	1.5	<1.0	<1.0	96
CLARION COUNTY										
CR727	4.1	<1.0	2	228	<1.0	<1.0	1.4	2.5	<1.0	4900
FAYETTE COUNTY										
FA509	9.8	<1.0	<1	40	<1.0	<1.0	1.5	17	409	1900
WESTMORELAND COUNTY										
WE315	3.2	<1.0	<1	64	<1.0	<1.0	1.9	<1.0	17	74
WEST VIRGINIA										
LEWIS COUNTY										
LE412	3.2	<1.0	<1	404	<1.0	<1.0	3.1	<1.0	<1.0	27

GROUND-WATER DATA COLLECTED AT SPECIAL-STUDY SITES
 ALLEGHENY AND MONONGAHELA RIVER BASIN NAWQA PROJECT
 SUBAREA OF FRACTURED, COAL-BEARING SEDIMENTARY BEDROCK OF THE PITTSBURGH SERIES IN THE APPALACHIAN
 PLATEAU PHYSIOGRAPHIC PROVINCE
COAL MINING LAND-USE STUDY--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

LOCAL ID	LEAD, DIS- SOLVED (μG/L AS PB) (01049)	MANGA- NESE, DIS- SOLVED (μG/L AS MN) (01056)	MOLYB- DENUM, DIS- SOLVED (μG/L AS MO) (01060)	NICKEL, DIS- SOLVED (μG/L AS NI) (01065)	SELE- NIUM, DIS- SOLVED (μG/L AS SE) (01145)	SILVER, DIS- SOLVED (μG/L AS AG) (01075)	ZINC, DIS- SOLVED (μG/L AS ZN) (01090)	URANIUM NATURAL DIS- SOLVED (μG/L AS U) (22703)	RADON 222 TOTAL (PCI/L) (82303)	RN-222 2 SIGMA WATER, WHOLE, TOTAL, (PCI/L) (76002)
PENNSYLVANIA										
ARMSTRONG COUNTY										
AR106	<1.0	96	<1.0	<1.0	<1	<1.0	1.2	<1.0	<80	16
AR107	<1.0	185	<1.0	3.9	<1	<1.0	373	2.2	527	26
BUTLER COUNTY										
BT406	<1.0	712	<1.0	3.7	<1	<1.0	17	<1.0	164	19
BT407	<1.0	490	<1.0	1.1	<1	<1.0	1.3	<1.0	<80	16
CAMBRIA COUNTY										
CA457	<1.0	26	<1.0	4.1	<1	<1.0	6.9	<1.0	359	21
CLARION COUNTY										
CR726	<1.0	2780	<1.0	5.8	<1	<1.0	7.6	<1.0	168	19
FAYETTE COUNTY										
FA508	<1.0	20	<1.0	<1.0	<1	<1.0	9.5	<1.0	103	26
INDIANA COUNTY										
IN917	<1.0	2370	<1.0	2.0	<1	<1.0	2.2	<1.0	278	21
IN861	<1.0	54	<1.0	3.6	<1	<1.0	12	<1.0	117	19
IN918	<1.0	427	<1.0	<1.0	<1	<1.0	1.6	<1.0	212	19
JEFFERSON COUNTY										
JE422	<1.0	644	<1.0	<1.0	<1	<1.0	1.0	2.7	220	20
JE423	<1.0	1300	<1.0	7.4	<1	<1.0	2.0	<1.0	110	18
JE424	<1.0	4.9	<1.0	15	<1	<1.0	7.6	<1.0	<80	15
SOMERSET COUNTY										
SO851	<1.0	148	<1.0	<1.0	<1	<1.0	19	<1.0	304	22
SO852	<1.0	305	<1.0	<1.0	<1	<1.0	1.6	<1.0	530	51
SO853	19	1660	<1.0	33	<1	<1.0	55	<1.0	<80	18
VENANGO COUNTY										
VE058	<1.0	<1.0	<1.0	166	<1	<1.0	105	<1.0	860	30
WASHINGTON COUNTY										
WS973	<1.0	124	<1.0	1.5	<1	<1.0	1.2	<1.0	222	20

GROUND-WATER DATA COLLECTED AT SPECIAL-STUDY SITES
 ALLEGHENY AND MONONGAHELA RIVER BASIN NAWQA PROJECT
 SUBAREA OF FRACTURED, COAL-BEARING SEDIMENTARY BEDROCK OF THE PITTSBURGH SERIES IN THE APPALACHIAN
 PLATEAU PHYSIOGRAPHIC PROVINCE
COAL MINING LAND-USE STUDY--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

LOCAL ID	LEAD, DIS- SOLVED (μG/L AS PB) (01049)	MANGA- NESE, DIS- SOLVED (μG/L AS MN) (01056)	MOLYB- DENUM, DIS- SOLVED (μG/L AS MO) (01060)	NICKEL, DIS- SOLVED (μG/L AS NI) (01065)	SELE- NIUM, DIS- SOLVED (μG/L AS SE) (01145)	SILVER, DIS- SOLVED (μG/L AS AG) (01075)	ZINC, DIS- SOLVED (μG/L AS ZN) (01090)	URANIUM NATURAL DIS- SOLVED (μG/L AS U) (22703)	RADON 222 TOTAL (PCI/L) (82303)	RN-222 2 SIGMA WATER, WHOLE, TOTAL, (PCI/L) (76002)
WESTMORELAND COUNTY										
WE311	<1.0	<1.0	<1.0	<1.0	<1	<1.0	10	<1.0	320	21
WE312	<1.0	20	<1.0	<1.0	<1	<1.0	12	<1.0	222	20
WE313	<1.0	187	<1.0	1.3	<1	--	1.5	<1.0	263	21
WE314	<1.0	1740	<1.0	5.9	<1	<1.0	3.5	<1.0	93	17
WEST VIRGINIA										
HARBOUR COUNTY										
BA011	<1.0	1360	<1.0	64	<1	<1.0	138	<1.0	309	23
BA012	<1.0	1170	<1.0	1.2	<1	<1.0	21	<1.0	300	22
HARRISON COUNTY										
HR332	<1.0	2040	<1.0	3.1	<1	<1.0	8.0	<1.0	250	21
LEWIS COUNTY										
LE411	<1.0	31	7.4	<1.0	<1	<1.0	12	<1.0	1244	34
MONONGALIA COUNTY										
MN612	<1.0	414	<1.0	30	<1	<1.0	472	<1.0	1149	35
PRESTON COUNTY										
PR773	<1.0	31	<1.0	2.1	<1	<1.0	21	<1.0	4132	59
PR774	<1.0	240	<1.0	<1.0	<1	<1.0	1.6	<1.0	181	18
UPSHUR COUNTY										
UP972	<1.0	50	<1.0	<1.0	<1	<1.0	<1.0	<1.0	360	27
REFERENCE WELLS										
PENNSYLVANIA										
ARMSTRONG COUNTY										
AR108	<1.0	709	<1.0	<1.0	<1	<1.0	1.0	<1.0	94	18
CLARION COUNTY										
CR727	<1.0	546	<1.0	2.2	<1	<1.0	1.9	<1.0	43	16
FAYETTE COUNTY										
FA509	29	1460	<1.0	9.1	<1	<1.0	46	<1.0	338	22
WESTMORELAND COUNTY										
WE315	<1.0	<1.0	<1.0	<1.0	<1	<1.0	1.9	<1.0	4688	63
WEST VIRGINIA										
LEWIS COUNTY										
LE412	<1.0	15	<1.0	<1.0	<1	<1.0	<1.0	<1.0	420	24

GROUND-WATER DATA COLLECTED AT SPECIAL-STUDY SITES
 ALLEGHENY AND MONONGAHELA RIVER BASIN NAWQA PROJECT
 SUBAREA OF FRACTURED, COAL-BEARING SEDIMENTARY BEDROCK OF THE PITTSBURGH SERIES IN THE APPALACHIAN
 PLATEAU PHYSIOGRAPHIC PROVINCE
COAL MINING LAND-USE STUDY--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

LOCAL ID	CARBON, ORGANIC DIS- SOLVED (mG/L AS C) (00681)	ACETONE WATER WHOLE TOTAL (µG/L) (81552)	BENZENE TOTAL (µG/L) (34030)	BENZENE 1,2,4, TRI METHYL UNFILT RECOVER (µG/L) (77222)	ETHYL- BENZENE TOTAL (µG/L) (34371)	CARBON DI- SULFIDE WATER WHOLE TOTAL (µG/L) (77041)	1,1,1- TRI- CHLORO- ETHANE TOTAL (µG/L) (34506)	METHYL TERT- BUTYL ETHER WAT UNF REC (µG/L) (78032)
PENNSYLVANIA								
ARMSTRONG COUNTY								
AR106	.30	<4.90	<.032	E.040	<.030	<.080	<.032	<.112
AR107	1.6	<4.90	<.032	<.056	<.030	<.080	<.032	<.112
BUTLER COUNTY								
BT406	1.3	<4.90	<.032	E.020	<.030	<.080	<.032	<.112
BT407	4.3	<4.90	<.032	<.056	<.030	<.080	<.032	<.112
CAMBRIA COUNTY								
CA457	2.5	<4.90	<.032	E.050	<.030	<.080	<.032	<.112
CLARION COUNTY								
CR726	2.9	<4.90	<.032	E.034	<.030	<.080	<.032	<.112
FAYETTE COUNTY								
FA508	1.6	<4.90	<.032	E.040	<.030	<.080	<.032	<.112
INDIANA COUNTY								
IN917	1.3	<4.90	<.032	E.080	<.030	<.080	<.032	<.112
IN861	1.2	<4.90	<.032	<.056	<.030	.318	<.032	<.112
IN918	.50	<4.90	<.032	.137	<.030	<.080	<.032	<.112
JEFFERSON COUNTY								
JE422	1.2	<4.90	<.032	E.030	<.030	E.030	<.032	<.112
JE423	.40	<4.90	<.032	<.056	<.030	<.080	<.032	<.112
JE424	2.6	<4.90	<.032	<.056	<.030	<.080	<.032	<.112
SOMERSET COUNTY								
SO851	.70	<4.90	<.032	E.100	<.030	E.010	<.032	<.112
SO852	.50	<4.90	<.032	E.070	<.030	<.080	<.032	<.112
SO853	1.4	<4.90	<.032	E.007	<.030	E.010	<.032	<.112
VENANGO COUNTY								
VE058	4.4	<4.90	<.032	<.056	<.030	<.080	<.032	<.112
WASHINGTON COUNTY								
WS973	.80	<4.90	<.032	E.100	<.030	<.080	<.032	<.112

GROUND-WATER DATA COLLECTED AT SPECIAL-STUDY SITES
 ALLEGHENY AND MONONGAHELA RIVER BASIN NAWQA PROJECT
 SUBAREA OF FRACTURED, COAL-BEARING SEDIMENTARY BEDROCK OF THE PITTSBURGH SERIES IN THE APPALACHIAN
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COAL MINING LAND-USE STUDY--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

LOCAL ID	CARBON, ORGANIC DIS- SOLVED (mG/L AS C) (00681)	ACETONE WATER WHOLE TOTAL (µG/L) (81552)	BENZENE TOTAL (µG/L) (34030)	BENZENE 1,2,4 TRI I METHYL UNFILT RECOVER (µG/L) (77222)	ETHYL- BENZENE TOTAL (µG/L) (34371)	CARBON DI- SULFIDE WATER WHOLE TOTAL (µG/L) (77041)	1,1,1- TRI- CHLORO- ETHANE TOTAL (µG/L) (34506)	METHYL TERT- BUTYL ETHER WAT UNF REC (µG/L) (78032)
WESTMORELAND COUNTY								
WE311	.80	<4.90	E.010	<.056	<.030	.152	<.032	<.112
WE312	.90	<4.90	E.010	E.040	<.030	E.010	<.032	<.112
WE313	1.9	<4.90	<.032	E.080	<.030	.249	<.032	<.112
WE314	.90	<4.90	<.032	E.030	<.030	<.080	<.032	E.030
WEST VIRGINIA								
BARBOUR COUNTY								
BA011	.60	<4.90	<.032	E.030	<.030	<.080	<.032	<.112
BA012	7.3	<4.90	<.032	<.056	<.030	<.080	<.032	<.112
HARRISON COUNTY								
HR332	1.7	<4.90	E.008	<.056	<.030	<.080	<.032	<.112
LEWIS COUNTY								
LE411	1.7	<4.90	.598	<.056	E.010	<.080	<.032	<.112
MONONGALIA COUNTY								
MN612	6.4	<4.90	<.032	E.080	<.030	<.080	E.020	<.112
PRESTON COUNTY								
PR773	.60	<4.90	E.010	.140	<.030	<.080	<.032	<.112
PR774	.80	<4.90	E.007	<.056	<.030	<.080	<.032	<.112
UPSHUR COUNTY								
UP972	3.3	<4.90	<.032	<.056	<.030	<.080	<.032	<.112
REFERENCE WELLS								
PENNSYLVANIA								
ARMSTRONG COUNTY								
AR108	.60	<4.90	<.100	<.056	<.030	<.370	<.032	<.166
CLARION COUNTY								
CR727	.50	<4.90	<.100	E.041	<.030	<.370	<.032	<.166
FAYETTE COUNTY								
FA509	.20	<4.90	<.100	E.029	<.030	<.370	<.032	<.166
WESTMORELAND COUNTY								
WE315	.80	<4.90	<.100	E.008	<.030	<.370	<.032	<.166
WEST VIRGINIA								
LEWIS COUNTY								
LE41	.60	<4.90	<.100	E.032	<.030	E.057	<.032	<.166

GROUND-WATER DATA COLLECTED AT SPECIAL-STUDY SITES
 ALLEGHENY AND MONONGAHELA RIVER BASIN NAWQA PROJECT
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COAL MINING LAND-USE STUDY--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

LOCAL ID	FURAN, TETRA- HYDRO- WATER UNFLTRD RECOVER (μ G/L) (81607)	METHYL- CHLO- RIDE TOTAL (μ G/L) (34418)	METHYL IODIDE WATER UNFLTRD RECOVER (μ G/L) (77424)	CARBON TETRA- CHLO- RIDE TOTAL (μ G/L) (32102)	CHLORO- FORM TOTAL (μ G/L) (32106)	METHYL ISO- BUTYL KETONE WAT. WH. TOTAL (μ G/L) (78133)	TOLUENE TOTAL (μ G/L) (34010)	META/ PARA- XYLENE WATER UNFLTRD REC (μ G/L) (85795)
PENNSYLVANIA								
ARMSTRONG COUNTY								
AR106	<1.15	<.254	<.076	<.088	<.052	<.374	<.038	<.064
AR107	<1.15	<.254	<.076	<.088	E.090	<.374	<.038	<.064
BUTLER COUNTY								
BT406	E.500	<.254	<.076	<.088	<.052	<.374	<.038	<.064
BT407	<1.15	<.254	<.076	<.088	<.052	<.374	<.038	<.064
CAMBRIA COUNTY								
CA457	<1.15	<.254	<.076	<.088	E.008	E.100	<.038	<.064
CLARION COUNTY								
CR726	<1.15	<.254	<.076	<.088	<.052	<.374	<.038	<.064
FAYETTE COUNTY								
FA508	E.200	<.254	<.076	<.088	.119	<.374	<.038	<.064
INDIANA COUNTY								
IN917	<1.15	<.254	<.076	<.088	<.052	<.374	<.038	<.064
IN861	<1.15	E.010	<.076	<.088	<.052	<.374	<.038	<.064
IN918	<1.15	<.254	<.076	<.088	<.052	<.374	<.038	<.064
JEFFERSON COUNTY								
JE422	<1.15	<.254	<.076	<.088	<.052	<.374	E.040	<.064
JE423	<1.15	<.254	<.076	<.088	<.052	<.374	<.038	<.064
JE424	<1.15	<.254	<.076	<.088	<.052	<.374	<.038	<.064
SOMERSET COUNTY								
SO851	<1.15	<.254	<.076	<.088	<.052	<.374	<.038	<.064
SO852	<1.15	<.254	<.076	<.088	<.052	<.374	<.038	<.064
SO853	<1.15	<.254	E.010	<.088	E.030	<.374	E.010	<.064
VENANGO COUNTY								
VE058	<1.15	<.254	E.010	<.088	<.052	<.374	<.038	<.064
WASHINGTON COUNTY								
WS973	E.400	<.254	<.076	<.088	<.052	<.374	<.038	<.064

GROUND-WATER DATA COLLECTED AT SPECIAL-STUDY SITES
 ALLEGHENY AND MONONGAHELA RIVER BASIN NAWQA PROJECT
 SUBAREA OF FRACTURED, COAL-BEARING SEDIMENTARY BEDROCK OF THE PITTSBURGH SERIES IN THE APPALACHIAN
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COAL MINING LAND-USE STUDY--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

LOCAL ID	FURAN, TETRA- HYDRO- WATER UNFLTRD RECOVER (μ G/L) (81607)	METHYL- CHLO- RIDE TOTAL (μ G/L) (34418)	METHYL IODIDE WATER UNFLTRD RECOVER (μ G/L) (77424)	CARBON TETRA- CHLO- RIDE TOTAL (μ G/L) (32102)	CHLORO- FORM TOTAL (μ G/L) (32106)	METHYL ISO- BUTYL KETONE WAT.WH. TOTAL (μ G/L) (78133)	TOLUENE TOTAL (μ G/L) (34010)	META/ PARA- XYLENE WATER UNFLTRD REC (μ G/L) (85795)
WESTMORELAND COUNTY								
WE311	E.500	E.010	<.076	<.088	<.052	<.374	<.038	<.064
WE312	E.300	E.100	<.076	<.088	<.052	<.374	<.038	<.064
WE313	<1.15	<.254	<.076	<.088	E.010	<.374	E.009	<.064
WE314	<1.15	<.254	<.076	<.088	<.052	<.374	<.038	<.064
WEST VIRGINIA								
BARBOUR COUNTY								
BA011	<1.15	<.254	<.076	<.088	<.052	<.374	<.038	<.064
BA012	<1.15	<.254	<.076	E.010	.110	<.374	<.038	<.064
HARRISON COUNTY								
HR332	<1.15	<.254	E.080	<.088	E.070	<.374	<.038	<.064
LEWIS COUNTY								
LE411	E2.00	<.254	<.076	<.088	<.052	<.374	<.038	E.008
MONONGALIA COUNTY								
MN612	<1.15	<.254	<.076	<.088	<.052	<.374	<.038	<.064
PRESTON COUNTY								
PR773	<1.15	<.254	<.076	<.088	E.070	<.374	<.038	<.064
PR774	<1.15	<.254	<.076	<.088	<.052	<.374	<.038	<.064
UPSHUR COUNTY								
UP972	E3.00	<.254	<.076	<.088	<.052	<.374	<.038	<.064
REFERENCE WELLS								
PENNSYLVANIA								
ARMSTRONG COUNTY								
AR108	<8.79	E.029	<.208	<.088	<.052	<.374	<.054	<.064
CLARION COUNTY								
CR727	<8.79	<.254	<.208	<.088	<.052	<.374	<.054	<.064
FAYETTE COUNTY								
FA509	<8.79	<.254	<.208	<.088	E.025	<.374	E.067	<.064
WESTMORELAND COUNTY								
WE315	<8.79	<.254	<.208	<.088	<.052	<.374	<.054	<.064
WEST VIRGINIA								
LEWIS COUNTY								
LE41	<8.79	<.254	<.208	<.088	<.052	<.374	<.054	<.064

GROUND-WATER DATA COLLECTED AT SPECIAL-STUDY SITES

HYDROGEOLOGIC FRAMEWORK AND SAMPLING DESIGN

AGRICULTURAL LAND USE--GROUND-WATER QUALITY IN WELLS

TABLE 2.--PESTICIDES ANALYZED IN GROUND-WATER BY U.S. GEOLOGICAL SURVEY.

REMARKS.--Water from each of 11 wells in this study was tested for pesticides by the U.S. Geological Survey's National Water Quality Laboratory in Denver, Colorado. The table below lists the 47 pesticides on this schedule, the unit of measure (micrograms per liter, $\mu\text{G/L}$), the U.S. Geological Survey National Water Information System parameter code, and the method detection level. This schedule includes selected pesticides and metabolites that are efficiently partitioned from a water sample by solid-phase extraction and are sufficiently volatile and thermally stable for analysis by gas chromatography. This schedule is suitable for compounds dissolved in water. This pesticide schedule and associated detection levels are applicable only to samples analyzed during the 1998 water year. Results of the pesticide analyses are listed in the water-quality table on pages 348-349.

ACETOCHLOR ($\mu\text{G/L}$) (49260)	ALACHLOR ($\mu\text{G/L}$) (46342)	ALPHA BHC ($\mu\text{G/L}$) (34253)	ATRAZINE ($\mu\text{G/L}$) (39632)	BENFLURALIN ($\mu\text{G/L}$) (82673)	BUTYLATE ($\mu\text{G/L}$) (04028)
0.002	0.002	0.002	0.001	0.002	0.002
CARBARYL ($\mu\text{G/L}$) (82680)	CARBOFURAN ($\mu\text{G/L}$) (82674)	CHLOR- PYRIFOS ($\mu\text{G/L}$) (38933)	CYANAZINE ($\mu\text{G/L}$) (04041)	DCPA ($\mu\text{G/L}$) (82682)	DESETHYL ATRAZINE ($\mu\text{G/L}$) (04040)
0.003	0.003	0.004	0.004	0.002	0.002
DIAZINON ($\mu\text{G/L}$) (39572)	DIELDRIN ($\mu\text{G/L}$) (39381)	DIETHYL- ANILINE-2,6 ($\mu\text{G/L}$) (82660)	DISULFOTON ($\mu\text{G/L}$) (82677)	EPTC ($\mu\text{G/L}$) (82668)	ETHAL- FLURALIN ($\mu\text{G/L}$) (82663)
0.002	0.001	0.003	0.017	0.002	0.004
ETHOPROP ($\mu\text{G/L}$) (82672)	FONOFOS ($\mu\text{G/L}$) (04095)	LINDANE ($\mu\text{G/L}$) (39341)	LINURON ($\mu\text{G/L}$) (82666)	MALATHION ($\mu\text{G/L}$) (39532)	METHYL- AZINPHOS ($\mu\text{G/L}$) (82686)
0.003	0.003	0.004	0.002	0.005	0.001
METHYL- PARATHION ($\mu\text{G/L}$) (82667)	METOLACHLOR ($\mu\text{G/L}$) (39415)	METRIBUZIN ($\mu\text{G/L}$) (82630)	MOLINATE ($\mu\text{G/L}$) (82671)	NAPROP- AMIDE ($\mu\text{G/L}$) (82684)	P, P-DDE ($\mu\text{G/L}$) (34653)
0.006	0.002	0.004	0.004	0.003	0.006
ETHYL- PARATHION ($\mu\text{G/L}$) (39542)	PEBULATE ($\mu\text{G/L}$) (82669)	PENDI- METHALIN ($\mu\text{G/L}$) (82683)	CIS- PERMETHRIN ($\mu\text{G/L}$) (82687)	PHORATE ($\mu\text{G/L}$) (82664)	PROMETON ($\mu\text{G/L}$) (04037)
0.004	0.004	0.004	0.005	0.002	0.018
PRONAMIDE ($\mu\text{G/L}$) (82676)	PROPACHLOR ($\mu\text{G/L}$) (04024)	PROPANIL ($\mu\text{G/L}$) (82679)	PROPARGITE ($\mu\text{G/L}$) (82685)	SIMAZINE ($\mu\text{G/L}$) (04035)	TEBUTHIURON ($\mu\text{G/L}$) (82670)
0.003	0.007	0.004	0.013	0.005	0.010
TERBACIL ($\mu\text{G/L}$) (82665)	TERBUFOS ($\mu\text{G/L}$) (82675)	THIOBENCARB ($\mu\text{G/L}$) (82681)	TRIALATE ($\mu\text{G/L}$) (82678)	TRIFLURALIN ($\mu\text{G/L}$) (82661)	
0.007	0.013	0.002	0.001	0.002	

GROUND-WATER DATA COLLECTED AT SPECIAL-STUDY SITES

HYDROGEOLOGIC FRAMEWORK AND SAMPLING DESIGN

AGRICULTURAL LAND USE--GROUND-WATER QUALITY IN WELLS--Continued

TABLE 3.--PESTICIDES ANALYZED IN GROUND-WATER BY PA. DEPARTMENT OF ENVIRONMENTAL PROTECTION.

REMARKS.--Water from each of 20 wells in this study was tested for pesticides by the Pennsylvania Department of Environmental Protection (DEP) Laboratory in Harrisburg, Pennsylvania. The table below lists the 9 pesticides analyzed, the unit of measure (micrograms per liter, $\mu\text{g/L}$), the associated U.S. Geological Survey National Water Information System parameter code, and the method reporting level. This schedule includes selected pesticides and metabolites that are efficiently partitioned from a water sample by solid-phase extraction and are sufficiently volatile and thermally stable for analysis by gas chromatography. A summary of the results of the pesticides analyzed by the Pennsylvania DEP laboratory is listed in the water-quality table on pages 348-349.

ALACHLOR ($\mu\text{G/L}$) (77825)	ATRAZINE ($\mu\text{G/L}$) (39630)	CHLORO- THALONIL ($\mu\text{G/L}$) (70314)	CHLOR- PYRIFOS ($\mu\text{G/L}$) (39832)	CYANAZINE ($\mu\text{UG/L}$) (81757)	METOLACHLOR ($\mu\text{G/L}$) (82612)
0.1	0.1	0.1	0.1	0.1	0.1
		PENDI- METRIBUZIN ($\mu\text{G/L}$) (82611)	METHALIN ($\mu\text{G/L}$) (79190)	SIMAZINE ($\mu\text{G/L}$) (39055)	
		0.1	0.1	0.1	

GROUND-WATER DATA COLLECTED AT SPECIAL-STUDY SITES

HYDROGEOLOGIC FRAMEWORK AND SAMPLING DESIGN

AGRICULTURAL LAND USE--GROUND-WATER QUALITY IN WELLS--Continued

REMARKS.--The following tables contain water-level and water-quality data from a network of privately-owned wells used to supply water to rural homes and businesses throughout the state of Pennsylvania. The network was established as part of a U.S. Geological Survey hydrogeologic framework and sampling design project done in cooperation with the Pennsylvania Department of Agriculture. Water samples were analyzed for nutrients, bacteria, and pesticides as part of the Pennsylvania Pesticides and Ground Water Strategy. Analyses were performed by the Pennsylvania Department of Environmental Protection Laboratory in Harrisburg, PA and/or the U.S. Geological Survey National Water-Quality Laboratory in Arvada, Colorado. Data collected as part of this study are being used to help assess the ground-water quality of the State and to develop guidelines for prioritizing a sampling plan to assess areas of the State which have not been adequately characterized.

Additional data collected as part of this study can be found in Water Data Reports PA-98-1 and PA-98-2 of this data report.

Explanation of column headings--SITE IDENTIFIER: 15-digit unique identifier based on site latitude (first six digits), longitude (digits seven through thirteen), and a 2-digit sequence number suffix; ELEVATION OF LAND SURFACE: Land surface at well site in feet above sea level, from topographic map; G/M: gallons per minute; μ S/CM: microsiemens per centimeter at 25 degrees Celsius; DEG.C: degrees Celsius; MG/L: milligrams per liter; μ G/L: micrograms per liter; COLS.PER 100 ML: colonies per 100 milliliters. The remark code "E" indicates an estimated value with uncertain accuracy and precision for the analyte.

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

SITE IDENTIFIER	LOCAL WELL		LOCATION	DATE	TIME	AGENCY ANA- LYZING SAMPLE (CODE NUMBER) (00028)	DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET) (72019)	DEPTH OF WELL, TOTAL (FEET) (72008)	ELEV. OF LAND SURFACE DATUM (FT. ABOVE NGVD) (72000)	FLOW RATE (G/M) (00059)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	
	NUMBER											
415718080241501	ER	318	Girard	08-25-98	1530	9813	59.00	86.00	790	10.0	484	
415702080215801	ER	9567	Girard	08-25-98	1700	9813	17.80	30.00	845	4.8	525	
420127080180501	ER	9566	Lake City	08-26-98	0900	80020	4.60	30.00	220	6.0	531	
				08-26-98	0901	9813	4.60	30.00	220	6.0	531	
420208080114101	ER	9565	Fairview	08-26-98	1100	9813	19.20	43.00	850	2.7	152	
421111079521701	ER	9564	Northeast	08-26-98	1230	9813	8.00	21.00	850	6.0	289	
LOCAL WELL NUMBER	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	COLI- FORM, TOTAL, IMMED. (COLS. PER 100 ML) (31501)	COLI- FORM, CON- FIRMED (MPN) (31505)	E. COLI WATER WHOLE TOTAL UREASE (COL / 100 ML) (31633)	E. COLI ONPG- MUG, AUTO AN (COLO- NIES/ 100 ML) (50468)	NITRO- GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO- GEN, NITRATE TOTAL (MG/L AS N) (00620)	ACETO- CHLOR, WATER FLTRD REC (MG/L) (49260)	ALA- CHLOR, WATER, DISS, REC, (MG/L) (46342)	ALA- CHLOR, TOTAL RECOVER (MG/L) (77825)
ER 318	8.0	17.9	.1	0	--	0	--	.010	<.040	--	--	<.100
ER 9567	7.6	11.8	5.8	>80	--	0	--	<.010	8.11	--	--	<.100
ER 9566	7.6	11.9	.2	--	--	--	--	--	--	<.0020	<.002	--
	7.6	11.9	.2	--	110	--	0	<.010	<.040	--	--	<.100
ER 9565	6.6	12.2	7.3	--	0	--	0	<.010	.290	--	--	<.100
ER 9564	6.2	13.5	2.8	--	6	--	0	<.010	.670	--	--	<.100
LOCAL WELL NUMBER	ALPHA BHC DIS- SOLVED (MG/L) (34253)	ATRA- ZINE, WATER, DISS, REC (MG/L) (39632)	ATRA- ZINE WATER UNFLTRD REC (MG/L) (39630)	BEN- FLUR- ALIN WAT FLD 0.7 U GF, REC (MG/L) (82673)	BUTYL- ATE, WATER, DISS, REC (MG/L) (04028)	CAR- BARYL WATER FLTRD 0.7 U GF, REC (MG/L) (82680)	CARBO- FURAN WATER FLTRD 0.7 U GF, REC (MG/L) (82674)	CHLOR- OTHAL- ONIL WATER WHOLE REC (MG/L) (70314)	CHLOR- PYRIFOS DIS- SOLVED (MG/L) (38933)	CHLOR- PYRIFOS TOTAL RECOVER (MG/L) (38932)	CYANA- ZINE, WATER, DISS, REC (MG/L) (04041)	CYAN- AZINE TOTAL (MG/L) (81757)
ER 318	--	--	<.100	--	--	--	--	<.10	--	<.100	--	<.100
ER 9567	--	--	<.100	--	--	--	--	<.10	--	<.100	--	<.100
ER 9566	<.0020	<.001	--	<.0020	<.0020	<.0030	<.0030	--	<.0040	--	<.0040	--
	--	--	<.100	--	--	--	--	<.10	--	<.100	--	<.100
ER 9565	--	--	<.100	--	--	--	--	<.10	--	<.100	--	<.100
ER 9564	--	--	<.100	--	--	--	--	<.10	--	<.100	--	<.100

AGRICULTURAL LAND USE--GROUND-WATER QUALITY IN WELLS--Continued

[illegible]

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CONVERSION FACTORS AND VERTICAL DATUM

Multiply	By	To obtain
<i>Length</i>		
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
<i>Area</i>		
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
<i>Volume</i>		
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
<i>Flow</i>		
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
<i>Mass</i>		
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.



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