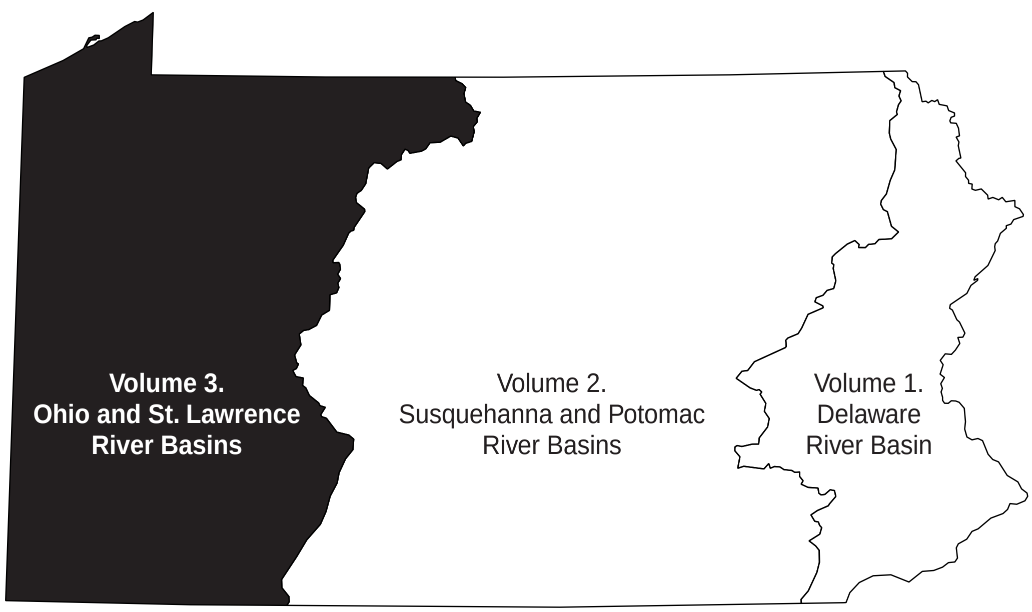
U.S. Department of the Interior
U.S. Geological Survey

Water Resources Data Pennsylvania Water Year 2003

Volume 3. Ohio and St. Lawrence River Basins

By Raymond W. Siwicki

Water-Data Report PA-03-3



Prepared in cooperation with the Pennsylvania Department of Environmental Protection, the Pittsburgh District of the U.S. Army Corps of Engineers, and with other State, municipal, and Federal agencies.

U.S. DEPARTMENT OF THE INTERIOR

GALE A. NORTON, *Secretary*

U.S. GEOLOGICAL SURVEY

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2004

PREFACE

This volume of the annual hydrologic data 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, local, 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 and Potomac River Basins
Volume 3. Ohio and St. Lawrence River Basins

Volume 3 was prepared in cooperation with the Commonwealth of Pennsylvania and other agencies under the general supervision of Patricia L. Lietman, District Chief, Pennsylvania District; Robert A. Hainly, Assistant District Chief for Hydrologic Surveillance and Data Management; Raymond W. Siwicki, 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 author, 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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REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

1. AGENCY USE ONLY *(Leave blank)*

2. REPORT DATE
April 2004

3. REPORT TYPE AND DATES COVERED
Annual Oct. 1, 2002 to Sept. 30, 2003

4. TITLE AND SUBTITLE
Water Resources Data for Pennsylvania
Water Year 2003
Volume 3, Ohio and St. Lawrence River Basins

5. FUNDING NUMBERS

6. AUTHOR(S)
Raymond W. Siwicki

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)
U.S. Geological Survey, Water Resources Discipline
215 Limekiln Road
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8. PERFORMING ORGANIZATION REPORT NUMBER
USGS-WDR-PA-03-3

9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES)
U.S. Geological Survey, Water Resources Discipline
215 Limekiln Road
New Cumberland, PA 17070

10. SPONSORING / MONITORING AGENCY REPORT NUMBER
USGS-WDR-PA-03-3

11. SUPPLEMENTARY NOTES
Prepared in cooperation with the Commonwealth of Pennsylvania and with other agencies.

12a. DISTRIBUTION / AVAILABILITY STATEMENT
No restrictions on distribution. This report may be purchased from:
National Technical Information Service, Springfield, Virginia 22161

12b. DISTRIBUTION CODE

13. ABSTRACT *(Maximum 200 words)*
Water resources data for the 2003 water year for Pennsylvania consist of records of discharge and water quality of streams; contents and elevations of lakes and reservoirs; and water levels and water quality of ground-water wells. This report, Volume 3 contains (1) discharge records for 61 continuous-record streamflow-gaging stations, 5 partial-record stations and 13 special study and miscellaneous streamflow sites; (2) elevation and contents records for 11 lakes and reservoirs; (3) water-quality records for 8 lakes and reservoirs; (4) water-quality records for 23 gaging stations and 26 ungaged streamsites; (5) water-level records for 23 ground-water network observation wells. Site locations are shown in figures throughout the report. Additional water data collected at various sites not involved in the systematic data-collection program are also presented. These data together with the data in Volumes 1 and 2, represent that part of the National Water Data System operated by the U.S. Geological Survey and cooperating State, 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
319

16. PRICE CODE

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

NSN 7540-01-280-5500

Standard Form 298 (Rev. 2-89)
Prescribed by ANSI Std 239-18
298-102

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SURFACE-WATER STATIONS, IN DOWNSTREAM ORDER, FOR WHICH RECORDS ARE PUBLISHED IN THIS VOLUME

[Letters after station name designate type of data: (d) discharge, (c) chemical, (b) biological, (e) elevation, gage heights, or contents.]

OHIO RIVER BASIN

SURFACE-WATER STATIONS, IN DOWNSTREAM ORDER, FOR WHICH RECORDS ARE PUBLISHED IN THIS VOLUME

OHIO RIVER BASIN--Continued

SURFACE-WATER STATIONS, IN DOWNSTREAM ORDER, FOR WHICH RECORDS ARE PUBLISHED IN THIS VOLUME

OHIO RIVER BASIN--Continued

GROUND-WATER WELLS, BY COUNTY, FOR WHICH RECORDS ARE PUBLISHED IN THIS VOLUME

(Letters after local well number designate type of data: (l) water level)

GROUND-WATER RECORDS

The following continuous-record surface-water discharge stations (listed by downstream order) have been discontinued. Daily streamflow records were collected and published for the period of record shown for each station. 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.

DISCONTINUED CONTINUOUS-RECORD SURFACE-WATER DISCHARGE STATIONS

Station name	Station number	Drainage area (mi^2)	Period of record (water years)
OHIO AND ST. LAWRENCE RIVER BASINS			
Newell Creek near Port Allegany	03008000	7.79	1966-78
Potato Creek at Smethport	03009680	160	1975-95
Allegheny River at Larabee	03010000	530	1921 1926-39
Kinzua Creek at Dewdrop	03012000	171	1909-16
Allegheny River at Kinzua Dam	03012550	2,180	1936-91
Jackson Run near North Warren	03015280	12.8	1963-78
Allegheny River at Warren	03015310*	3,131	1989-94
Tionesta Creek at Sheffield	03016500	128	1942-46
South Branch Tionesta Creek at Barnes	03017000	85.3	1942-46
Tionesta Creek at Lynch	03017500*	233	1938-79
Tionesta Creek at Mayburg	03018000	307	1942-46
Tionesta Creek at Butler Bridge (near Nebraska)	03018500	420	1919-23
Tionesta Creek at Nebraska	03019000	469	1910-11 1924-40
Tionesta Creek at Tionesta Dam	03020000	479	1941-91
Oil Creek near Rouseville	03021000	315	1910-32
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	1961-78
French Creek at Venango	03022000*	597	1939-46
French Creek at Saegerstown	03022500	629	1921-39
Woodcock Creek at Blooming Valley	03022540*	31.1	1975-95
Woodcock Creek at Woodcock Creek Dam	03022554	45.6	1975-91
Cussewago Creek near Meadville	03023000	90.2	1911-38
French Creek at Carlton	03023500	998	1908-25

DISCONTINUED CONTINUOUS-RECORD SURFACE-WATER DISCHARGE STATIONS—Continued

Station name	Station number	Drainage area (mi^2)	Period of record (water years)
Sugar Creek at Wyattville	03024500	153	1910-16
Sugar Creek at Sugarcreek	03025000*	166	1933-79
Patchel Run near Franklin	03025200	5.69	1965-78
E. Branch Clarion River at E. Branch Clarion River Dam	03027500	73.2	1949-91
Clarion River at Johnsonburg	03028500*	204	1946-95
Clarion River at Ridgway	03029000*	303	1941-53
Toms Run at Cooksburg	03029400	12.6	1960-78
Clarion River near Clarion	03030000	930	1919-23
Clarion River at Callensburg	03030852*	1,163	1979-85
Clarion River at St. Petersburg	03031000	1,246	1942-53,1974-75
Big Run near Sprankle Mills	03031950	7.38	1964-81
Allegheny River near Rimer	03033000	8,389	1939-45
Stump Creek at Cramer	03033500	22.1	1942-46
Mahoning Creek at Dayton	03035000	321	1921-40
Mahoning Creek at Mahoning Creek Dam	03036000	344	1939-91
Crooked Creek at Creekside	03037000	67.6	1942-46
South Branch Plum Creek at Five Points	03037350	33.3	1996-98
South Branch Plum Creek at Willet	03037500	30.0	1942-46
Crooked Creek at Crooked Creek Dam	03039000	278	1910-91
Clear Run near Buckstown	03039200	3.68	1965-78
Stony Creek at Hollsopple	03039500	244	1937-40
North Fork Bens Creek at North Fork Reservoir	03039925	3.45	1985,1988-98
Little Conemaugh River at East Conemaugh	03041000*	183	1939-95
Little Yellow Creek near Strongstown	03042200	7.36	1961-78,1987-88
Yellow Creek near Penn Run	03042250	50.4	1964-67
Blacklick Creek at Blacklick	03043000	390	1908-51
Conemaugh River at Tunnelton	03044000	1,358	1940-91
Loyalhanna Creek at New Alexandria	03045500	265	1920-23,1926-40
Loyalhanna Creek at Loyalhanna Dam	03047000	292	1940-91
Kiskiminetas River at Avonmore	03047500	1,723	1908-37

DISCONTINUED CONTINUOUS-RECORD SURFACE-WATER DISCHARGE STATIONS—Continued

Station name	Station number	Drainage area (mi^2)	Period of record (water years)
Deer Creek near Dorseyville	03049646	27.0	1996-98
Monongahela River at Point Marion	03063000	2,720	1937-55
Stony Fork Tributary near Gibbon Glade	03070420	0.93	1977-95
Stony Fork near Elliottsville	03070455	7.44	1977-85
Monongahela River at Greensboro	03072500	[a]4,367	1939-95
Georges Creek at Smithfield	03072590	16.3	1964-78
Tenmile Creek near Clarksville	03072840	133	1969-79
South Fork Tenmile Creek at Jefferson	03073000	180	1932-95
Dunlap Creek at Allison	03074000	33.1	1943-51
Lick Run at Hopwood	03074300	3.80	1967-78
Youghiogheny River at Youghiogheny River Dam	03077500	436	1940-91
Big Piney Run near Salisbury	03078500	24.5	1932-70
Poplar Run near Normalville	03082200	9.27	1962-78
Green Lick Run at Green Lick Reservoir	03083000	3.07	1942-79
Abers Creek near Murrysville	03084000	4.39	1949-93
Turtle Creek at Trafford	03084500	55.9	1921-52
Chartiers Creek at Crafton	03085500	270	1972-75
Big Sewickley Creek near Ambridge	03086100	15.6	1968-78
Shenango River near Turnersville	03100000	152	1912-22
Sugar Run at Pymatuning Dam	03101000	8.59	1934-55
Shenango River near Jamestown	03102000	181	1920-34
Pymatuning Creek near Orangeville	03103000	169	1914-23,1926-63
Shenango River at Sharpsville	03103500	584	1938-91
Shenango River at Sharon	03104000	608	1910-38
Shenango River at New Castle	03104500*	792	1910-11,1913-34
Cool Spring Creek near Jackson Center	03104580	13.0	1962-68
Harthegig Run near Greenfield	03104760	2.26	1969-81
Neshannock Creek at Eastbrook	03105000	228	1918-23
Wolf Creek near Slippery Rock	03106140	86.6	1977-82
Ohio River at Montgomery Island Dam	03108500	[b]22,960	1941-51

DISCONTINUED CONTINUOUS-RECORD SURFACE-WATER DISCHARGE STATIONS—Continued

Station name	Station number	Drainage area (mi^2)	Period of record (water years)
Brush Run near Buffalo	03111150	10.3	1961-78,1983-85
Enlow Fork near West Finley	03111585	38.1	1979-85
Raccoon Creek near West Springfield	04213040	2.53	1969-94

***** Currently operated as a partial-record station.
[a] Formerly published as 4,407.
[b] About.

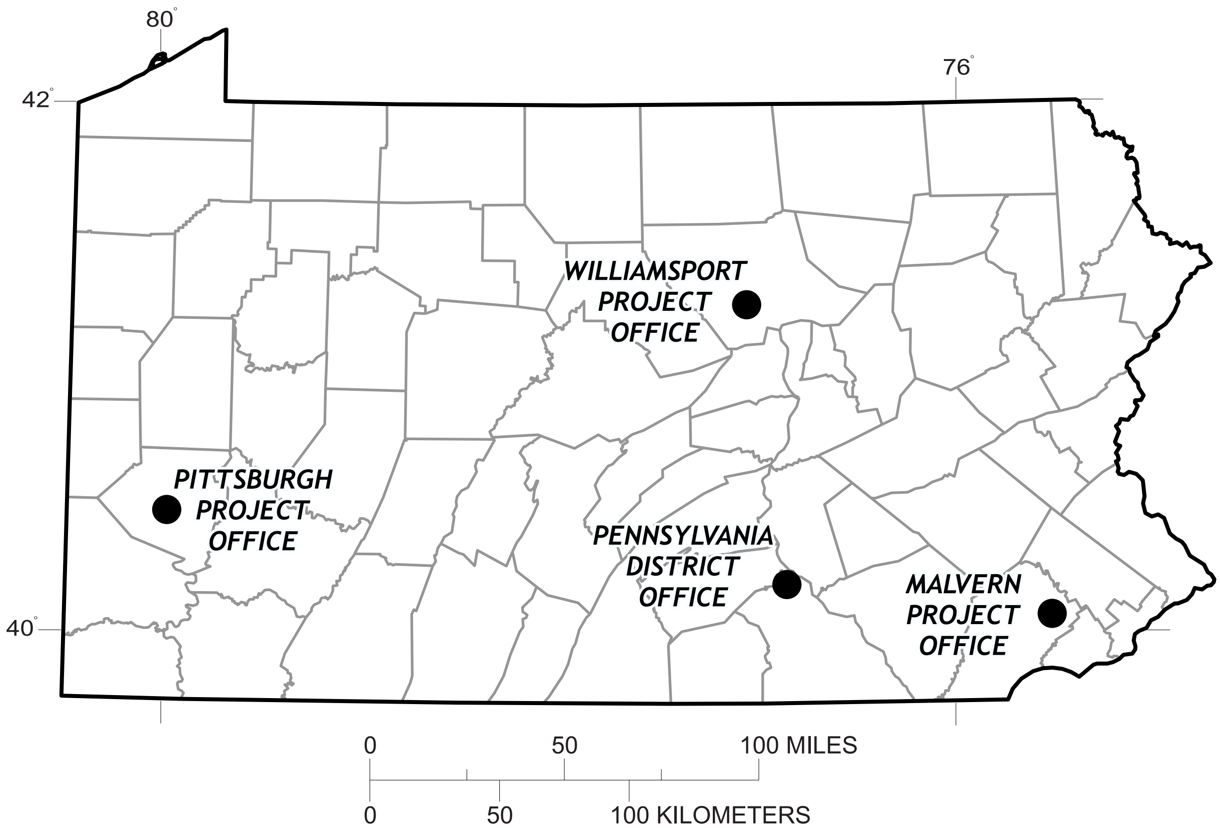
The following continuous-record water-quality stations (listed by downstream order) have been discontinued. Daily records were collected and published for the period shown for each constituent. Discontinued stations with less than 3 years of record, or stations with data collection less than daily, have not been included. If a station had one constituent with 3 or more years of record, all constituents having daily values will be listed for that station regardless of the length of record. 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.

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

DISCONTINUED CONTINUOUS-RECORD SURFACE-WATER-QUALITY STATIONS

Station name	Station number	Drainage area (mi^2)	Type of Record	Period of record (water years)
OHIO AND ST. LAWRENCE RIVER BASINS				
Brokenstraw Creek at Youngsville	03015500	321	Sed	1969-70
Oil Creek at Rouseville	03020500	300	Sed	1971-72
Clarion River at Cooksburg	03029500	807	Sed	1971-73
Redbank Creek at St. Charles	03032500	528	Sed	1969-70,1977-79
Beaver Run near Troutville	03033222	2.21	Sed	1980-81
East Branch Mahoning Creek near Big Run	03033225	29.6	Sed	1979-81
Stonycreek River at Ferndale	03040000	451	Sed	1978-79
			Temp	1978-79,1997-98
			SC,pH	1997-98
Loyalhanna Creek at Kingston	03045000	172	Sed	1970-77
Allegheny River at New Kensington	03049625	11,500	SC	1975-81
			Temp	1975-81,1997-98
			Sed	1977-79
Stony Fork Tributary near Gibbon Glade	03070420	0.93	Sed,Temp,SC,pH	1978-88
Stony Fork near Elliotsville	03070455	7.44	Sed,Temp,SC,pH	1978-85
Whiteley Creek near Kirby	03072670	5.95	Sed	1979-82
Castile Run at Clarksville	03073030	6.21	Sed	1980-81
Champion Run at Melcroft	03082120	13.8	Sed	1986-87
Poplar Run near Normalville	03082190	8.83	Sed,Temp,SC,pH	1986-88
Indian Creek at White Bridge	03082237	91.2	Temp,SC,pH	1986-87
Monongahela River at Braddock	03085000	7,337	Temp	1973-79,1997-98
			SC	1973-75
			Sed	1973-79
Enlow Fork near West Finley	03111585	38.1	Sed	1980-85

PENNSYLVANIA DISTRICT OFFICE LOCATIONS AND ADDRESSES



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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, these 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 and Potomac River Basins; and Volume 3, the Ohio and St. Lawrence River Basins.

This report, Volume 3, contains: (1) discharge records for 61 continuous-record streamflow-gaging stations, 5 partial-record stations, and 13 special study and miscellaneous streamflow sites; (2) elevation and contents records for 11 lakes and reservoirs; (3) water-quality records for 8 lakes and reservoirs; (4) water-quality records for 23 streamflow gaging stations and 26 ungaged streamsites; (5) water-level records for 23 ground-water network observation wells. Additional water data collected at various sites not involved in the systematic data-collection program may also be presented.

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-03-3." 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. 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, these 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 annually under the title "Ground-Water Levels in the United States." The above mentioned Water-Supply Papers may be consulted in the libraries of the principal cities of the United States and may be purchased from the U.S. Geological Survey, 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 Information Specialist by telephone at (717) 730-6916 or by FAX at (717) 730-6997.

COOPERATION

The U.S. Geological Survey (USGS) 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 USGS are listed below.

The Commonwealth of Pennsylvania, Department of Environmental Protection, Kathleen A. McGinty, Secretary, through the following:

Office of Water Management, Cathleen C. Myers, Deputy Secretary;

Bureau of Water Supply and Wastewater Management, Frederick Marrocco, Director;

Bureau of Watershed Management, Stuart I. Gansell, Director;

Bureau of Waterways Engineering, Michael Conway, Director.

Allegheny County Airport Authority, Richard C. Belotti, Director of Planning.

Harmony Water Authority, David Szakelyhidi, Chairman.

Indiana County Municipal Services Authority, Michael Duffalo, Executive Director.

COOPERATION--Continued

New York State Department of Environmental Conservation, Erin M. Crotty, Commissioner.
Federal Energy Regulatory Commission Licensee:
Reliant Energy, Mid-Atlantic Power

The following Federal agency assisted in the data-collection program by providing funds or services: Corps of Engineers, U.S. Army, Pittsburgh District.

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

SUMMARY OF HYDROLOGIC CONDITIONS

Surface Water

Streamflows in the Upper Ohio and St. Lawrence River Basins during water year 2003 were normal. The annual measured streamflow was 91 percent of the median of the 1971-2000 annual mean streamflow at the Ohio River index gaging station, Oil Creek at Rouseville, Pa. (station 03020500).

The monthly mean streamflow (fig. 1) was below normal for the months of October, November, and February, normal for the months of December, January, March, April, May, June and September, and above normal for the months of July and August. For the purposes of this analysis, an above normal streamflow is defined as flow greater than the long-term 75 percent flow, and below normal streamflow is less than the long-term 25 percent flow

For the last several years, a period of severe drought, followed by short-term partial recovery has occurred throughout the Commonwealth, but this year the pattern appears to have changed. The months of October, November, and February were below normal, but the months of December, January, March to June and September were normal, indicating a recharge in the water table and accompanying increase in streamflow.

The months of July and August were above normal, with July's statistical average having the highest monthly mean for the year. Above normal precipitation was recorded in July, especially in most counties of northwestern Pennsylvania. For example, the monthly precipitation totals were: Crawford County, 8.14 inches; Venango County, 8.74 inches; Warren County, 12.30 inches; McKean County, 9.60 inches; and Elk County, 7.06 inches. The normal July rainfall in these counties is about 4.5 inches.

A comparison of the monthly and yearly mean streamflow during the 2003 water year with that of the 1971-2000 reference period for Oil Creek at Rouseville, Pa., is shown in figure 1.

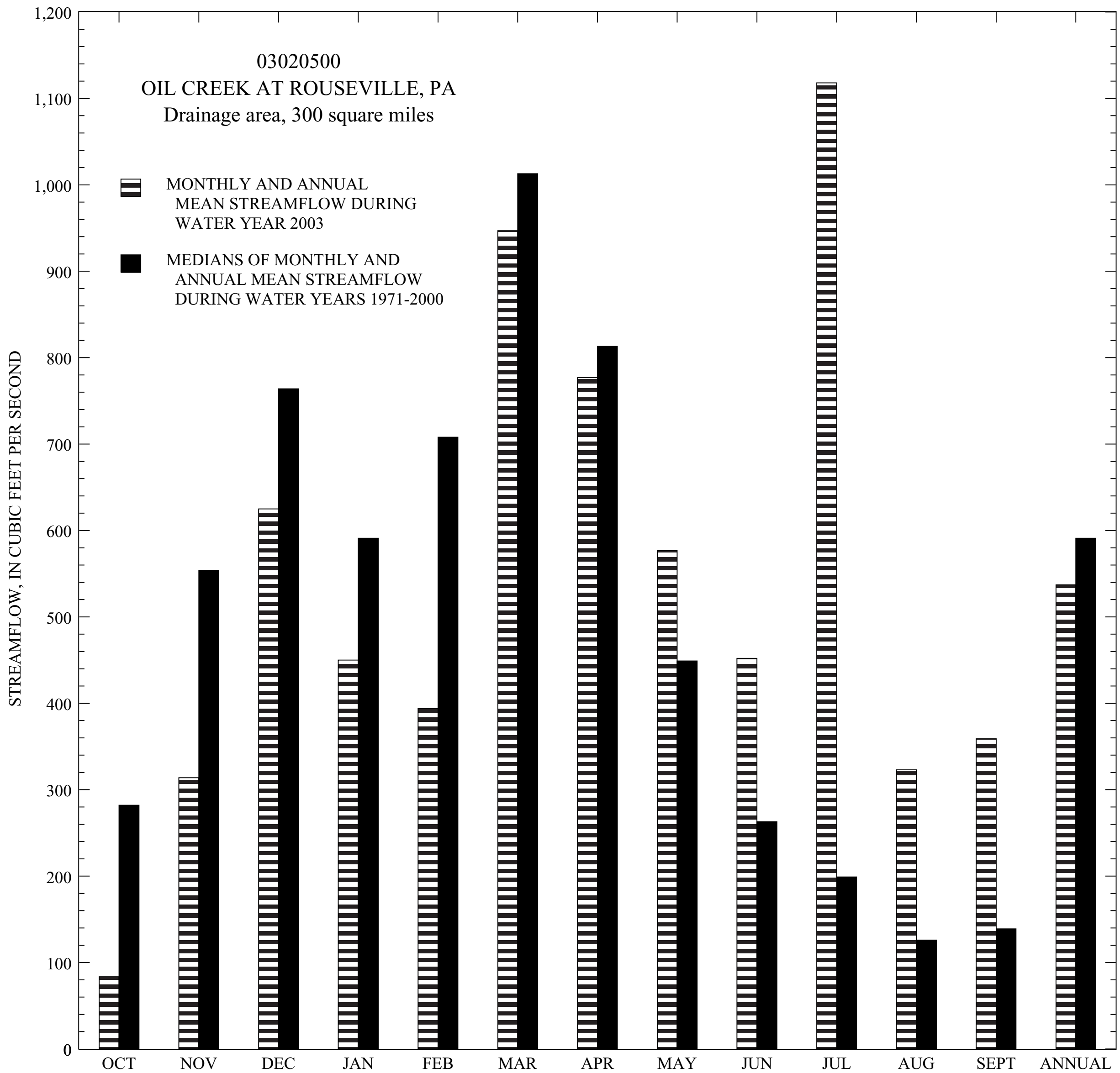

Figure 1.--Comparison of monthly and annual mean streamflow during water year 2003 with the medians of monthly and annual mean streamflow during water years 1971-2000.

SUMMARY OF HYDROLOGIC CONDITIONS

Ground Water

During the 2003 water year, ground-water levels reached annual lows during October and November of 2002 and reached annual highs in most observation wells during the late winter or spring. Water levels during the 2003 water year for 15 network wells were averaged by season and compared to the long-term water level for these seasons (fig. 2). Long-term water levels were calculated from records ranging from 21 to 66 years in length.

In the Fall of the 2003 water year, seasonal water levels were above normal in one well, normal in nine wells, below normal in two wells, and much-below normal in three wells (fig. 2). During the Winter, water levels were normal or higher in ten wells and below normal in two wells and much-below normal in three wells.

During May and June of 2003, most of western Pennsylvania received frequent rains resulting in above average precipitation. For example, rain fell on 23 separate days in the month of May in Pittsburgh with a total precipitation of 6.14 inches or 2.34 inches above normal. This wet Spring resulted in above normal recharge to the ground-water system. In the Spring, water levels were much-above normal in two wells, above normal in six wells, normal in four wells, and below normal in three wells.

Because of excess precipitation during the Summer and the subsequent above normal ground-water recharge, most of the wells increased to a higher category of water-level status during the Summer when compared to the Spring water levels. During the Summer, water levels were much-above normal in eight wells, above normal in three wells, normal in three wells, and below normal in one well.

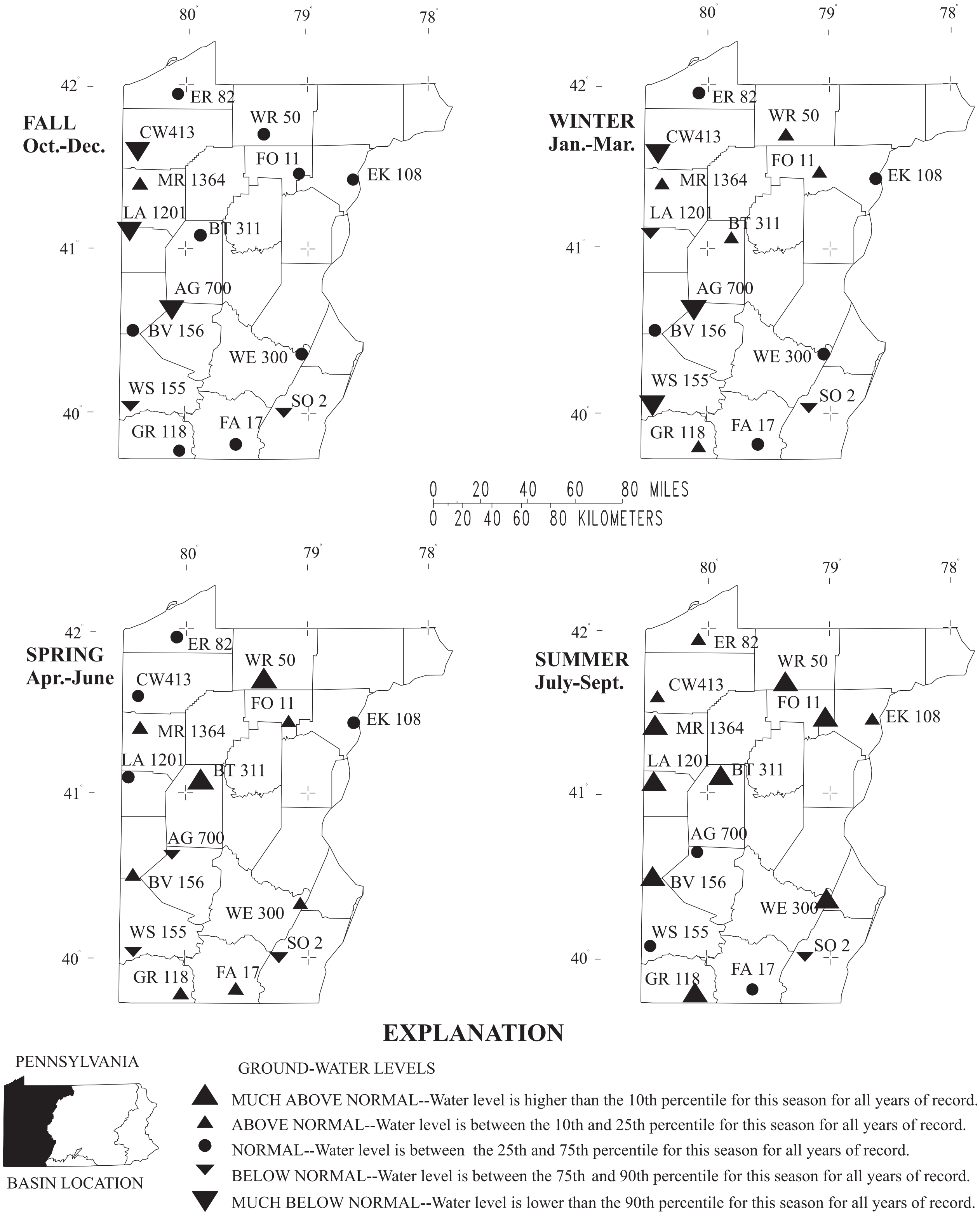

Figure 2.--Relation between 2003 seasonal mean ground-water levels and long-term mean ground-water levels *[Seasonal percentile values were determined by ranking the average monthly water levels for each month in the season from highest to lowest for all years of record and averaging the ranks for the 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.]*

SPECIAL NETWORKS AND PROGRAMS

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 streamflow representative undeveloped watersheds nationwide, and to provide analyses on a continuing basis to compare and contrast conditions observed in basins more obviously affected by human activities. At 10 of these sites, water-quality information is being gathered on major ions and nutrients, primarily to assess the affects of acid deposition on stream chemistry. Additional information on the Hydrologic Benchmark Program can be found at *http://water.usgs.gov/hbn/*.

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

The **National Atmospheric Deposition Program/National Trends Network** (NADP/NTN) provides continuous measurement and assessment of the chemical constituents in precipitation throughout the United States. As the lead federal agency, the USGS works together with over 100 organizations to provide a long-term, spatial and temporal record of atmospheric deposition generated from a network of 225 precipitation chemistry monitoring sites. This long-term, nationally consistent monitoring program, coupled with ecosystem research, provides critical information toward a national scorecard to evaluate the effectiveness of ongoing and future regulations intended to reduce atmospheric emissions and subsequent impacts to the Nation's land and water resources. Reports and other information on the NADP/NTN Program, as well as all data from the individual sites, can be found at *[http://bqs.usgs.gov/acidrain/]*.

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

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

Communication and coordination between USGS personnel and other local, State, and federal interests are critical components of the NAWQA Program. Each study unit has a local liaison committee consisting of representatives from key federal, State, and local water-resources agencies, Indian nations, and universities in the study unit. Liaison committees typically meet semiannually to discuss their information needs, monitoring plans and progress, desired information products, and opportunities to collaborate efforts among the agencies. Additional information about the NAWQA Program can be found at *[http://water.usgs.gov/nawqa/]*.

EXPLANATION OF THE RECORDS

The surface-water and ground-water records in this report are for the 2003 water year that began October 1, 2002, and ended September 30, 2003. 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 streamflow stations, and ground-water-level data. The location of these stations and wells are shown in figures throughout the report. The following sections of the introductory text are presented to provide users with a more detailed explanation of how these 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 streamsite 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 only random water-quality samples or discharge measurements are made.

Downstream-Order System

Since October 1, 1950, the order of listing hydrologic-station records in Survey reports is in a downstream direction along the main stream. All stations on a tributary entering upstream from a 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 indention in a list of stations in the front of the report. Each indention represents one rank. This downstream-order system of indention 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 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 (fig. 3).

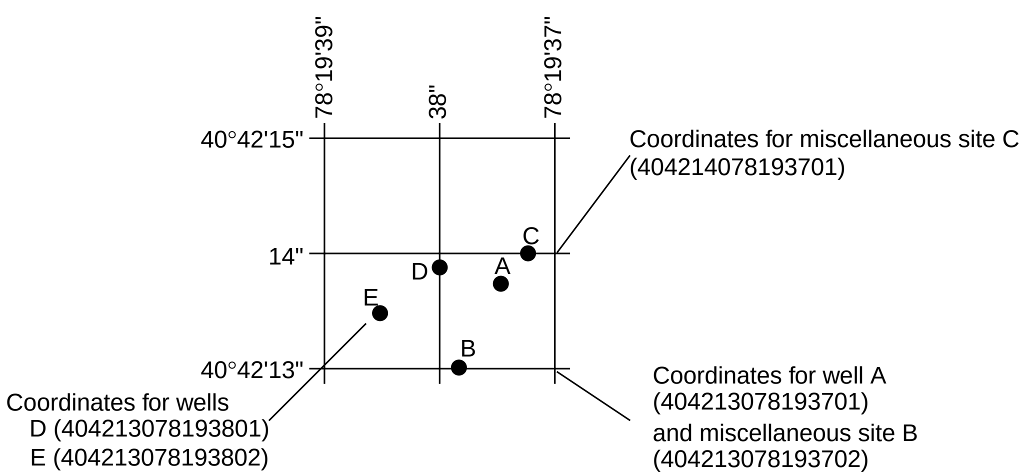

Figure 3.--System for numbering wells and miscellaneous sites (latitude and longitude).

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.

Data Collection and Computation

Those 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 solid-state electronic data loggers, or with data collection platforms (DCPs) that electronically record and 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 (TWRIs), 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-backwater 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 relation 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) 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.

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 and 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, 12:00 a.m. is 0000, 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 those data for a discontinued station were obtained by computer retrieval, these data would be current and accurate because published revisions of data are always accompanied by revisions of those data in computer storage.

Beginning with the 1991 annual State Data report, 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 PEAK DISCHARGES 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.

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 streamflow is affected by regulation or diversion. The monthly adjusting figure for known regulation or diversion may be shown at the bottom of the daily values table or in the appropriate lake or reservoir table.

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 may be affected by reservoir storage or diversion. The monthly adjusting figures for known regulation or diversions may be shown 1) at the bottom of the daily values table, or 2) in the appropriate lake or reservoir table.

ANNUAL MEAN.--The arithmetic mean of the individual daily mean discharges for the year noted or for the designated period. At some stations the annual total discharge may be affected by reservoir storage or diversion. The monthly adjusting figures for known regulation or diversions may be shown 1) at the bottom of the daily values table, or 2) in the appropriate lake or reservoir table.

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.)

MAXIMUM PEAK FLOW.--The maximum instantaneous peak discharge occurring for the water year or designated period. Occasionally the maximum flow for a year may occur at midnight at the beginning or end of the year, on a recession from or rise toward a higher peak in the adjoining year. In this case, the maximum peak flow is given in the table and the maximum flow may be reported in a footnote or in the REMARKS paragraph in the manuscript.

MAXIMUM PEAK STAGE.--The maximum instantaneous peak stage occurring for the water year or designated period. Occasionally the maximum stage for a year may occur at midnight at the beginning or end of the year, on a recession from or rise toward a higher peak in the adjoining year. In this case, the maximum peak stage is given in the table and the maximum stage may be reported in the REMARKS paragraph in the manuscript or in a footnote. If the dates of occurrence of the maximum peak stage and maximum peak flow are different, the REMARKS paragraph in the manuscript or a footnote may be used to provide further information.

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

ANNUAL RUNOFF.--Indicates the total quantity of water in runoff for a drainage area for the year. 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 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.,in.) indicates the depth to which the drainage area would be covered if all of the runoff for a given time period were uniformly distributed on it.

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

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

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

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

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 Estimated*".

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 ft^3/s (cubic foot per second); to the nearest tenth from 1.0 to 10 ft^3/s; to whole numbers from 10 to 1,000 ft^3/s; and to 3 significant figures when greater than 1,000 ft^3/s. The number of significant figures used is based solely on the magnitude of the discharge value. The same rounding rules apply to discharges listed for partial-record stations and miscellaneous sites.

Discharge at many stations, as indicated by the monthly mean, may not reflect natural runoff due to the effects of diversion, consumption, regulation by storage, increase or decrease in evaporation due to artificial causes, or to other factors. For such stations, figures of cubic feet per second per square mile and of runoff, in inches, are not published unless satisfactory adjustments can be made for diversions, for changes in contents of reservoirs, or for other changes 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 observations of water temperature, discharge measurements, gage-height records, and rating tables is on file in the District's offices. 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 (telephone (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. Specifically, a continuing record station is a site which meets one or all of the following conditions: (1) When chemical samples are collected daily or monthly for 10 or more months during the water year. (2) When water temperature records include observations taken one or more times daily. (3) When sediment discharge records include periods for which sediment loads are computed and are considered to be representative of the runoff for the water year. 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 recorded at short intervals. 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. Location of stations for which records on the quality of surface water appear in this report are shown in figures 4 and 5.

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 on-site measurements and for collecting, treating, and shipping samples are given in publications on "Techniques of Water-Resources Investigations," Book 1, Chap. D2; Book 3, Chap. A1, A3, and A4; Book 9, Chap. A1-A9. These references are listed 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 published 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 solid-state electronic data loggers, or with Data Collection Platforms (DCPs). More detailed records (measured values at a frequency greater than daily) 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 or from *[http://waterdata.usgs.gov/pa/nwis/]*.

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 and recorded data are available from the District Office or from *[http://waterdata.usgs.gov/pa/nwis//]*. In addition, water temperatures are measured at the time of discharge measurements for most 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.

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

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

Accuracy of the Records

The accuracy of water-quality records at continuous-record water-quality stations depends primarily on (1) hydrologic environment; (2) seasonal conditions; (3) operating accuracy of the equipment; (4) fouling of the probes; (5) calibration drift in the equipment; and (6) maintenance frequency.

Beginning with the 2000 water year, an additional statement describing the accuracy attributed to the records is included under the "REMARKS" heading. After the record has been evaluated for reporting continuous data (table 1), one of the four accuracy classifications is applied to each measured physical property on a scale ranging from poor to excellent. Table 2 shows the criteria used in rating continuous water-quality records.

In addition, beginning with the 2000 water year, the presentation of daily mean pH values has been discontinued and replaced by median pH values. (Wagner, R.J., Mattraw, H.C., Ritz, G.F., and Smith, B.A., 2000, Guidelines and standard procedures for continuous water-quality monitors—site selection, field operation, calibration, record computation, and reporting: U.S. Geological Survey Water-Resources Investigations Report 00-4252, 53 p.).

Table 1.--Maximum allowable limits for continuous water-quality monitoring sensors.

Measured physical property	Maximum allowable limits for water-quality sensor values
Temperature	± 2.0°C
Specific conductance	± 30 percent
Dissolved oxygen	The greater of ± 2.0 mg/L or 20 percent
pH	± 2 pH units
Turbidity	± 30 percent

Table 2.--Rating continuous water-quality records.

	Ratings			
Measured physical property	Excellent	Good	Fair	Poor
Water temperature	≤ ± 0.2°C	>± 0.2 to 0.5°C	>± 0.5 to 0.8°C	>± 0.8°C
Specific conductance	≤ ± 3%	>± 3 to 10%	>± 10 to 15%	>± 15%
Dissolved oxygen	≤ ± 0.3 mg/L	>± 0.3 to 0.5 mg/L	>± 0.5 to 0.8 mg/L	>± 0.8 mg/L
pH	≤ ± 0.2 unit	>± 0.2 to 0.5 unit	>± 0.5 to 0.8 unit	>± 0.8 unit
Turbidity	≤ ± 5%	>± 5 to 10%	>± 10 to 15%	>± 15%

Remark Codes

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

PRINTED OUTPUT	REMARK
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.
M	Presence of material verified, but not quantified.
N	Presumptive evidence of presence of material.
U	Material specifically analyzed for, but not detected.
A	Value is an average.
V	Analyte was detected in both the environmental sample and the associated blanks.
S	Most probable value.

Dissolved Trace-Element Concentrations

NOTE.--Traditionally, dissolved trace-element concentrations have been reported at the microgram per liter (µg/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 µg/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.

Change in National Trends Network Procedures

NOTE.--Sample handling procedures at all National Trends Network stations were changed substantially on January 11, 1994, in order to reduce contamination from the sample shipping container. The data for samples before and after that date are different and not directly comparable. A tabular summary of the differences based on a special intercomparison study, is available from the NADP Program Office, Illinois State Water Survey, 2204 Griffith Drive, Champaign, IL 61820-7459 (217-333-7873).

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 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 sample container used for an environmental sample and kept with the set of samples 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 sample 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 same preservatives used for an environmental sample.

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

REFERENCE SAMPLES.--Reference material samples are solutions or materials having a known composition that is certified by a laboratory. 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 this 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 which an environmental 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 x. Miscellaneous or short-term ground-water data collection projects are published following the basic network data.

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 of a water-level recorder, with solid-state electronic data loggers, or with Data Collection Platforms (DCPs). 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 for most wells, especially historical network wells, are reported in feet above or below land surface datum. For some short term project wells the water levels may be reported as elevation (feet above sea level) for convenience of the project work. Water levels are reported daily for all wells equipped with recording gages.

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.

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 daily maximum depth below land surface is reported in the table of water levels, this paragraph would reflect 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 electronic data loggers or DCPs, 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. Recorded data are available at the District Office or from *[http://waterdata.usgs.gov/pa/nwis//]*. 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 x, have water-quality data published in the report. Miscellaneous or short-term ground-water data collection projects are published following the basic network data.

Data Collection and Computation

The records of ground-water quality in this report are usually obtained mostly as a part of special studies in specific areas. Consequently, a number of chemical analyses may be 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 a particular year in context with similar records obtained 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 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. Any 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, if collected, are published with ground-water-level data at stations where level data are collected. Any 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.

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 Geological Survey provides near real-time stream stage, discharge, ground water well, and stream water-quality 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). These data may be accessed at *[http://waterdata.usgs.gov/pa/nwis//]*.

Water-quality and ground-water data also are available through the WWW at *[http://waterdata.usgs.gov/pa/nwis//]*. In addition, data can be provided in various machine-readable formats on compact disc 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://pa.water.usgs.gov/]*. Daily streamflow values for the period of record, annual peak stream discharges, and streamflow conditions for surrounding states may be obtained through the WWW at *[http://waterdata.usgs.gov/nwis/]*.

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/]*.

DEFINITION OF TERMS

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

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

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

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

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

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

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

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

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

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

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

Aspect is the direction toward which a slope faces with respect to the compass.

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

Bankfull stage, as used in this report, is the stage at which a stream first overflows its natural banks formed by floods with 1- to 3-year recurrence intervals.

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

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

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

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

Bed material is the sediment mixture of which a stream-bed, lake, pond, reservoir, or estuary bottom is composed. (See also “Bedload” and “Sediment”)

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

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

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

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

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

Bottom material (See “Bed material”)

Bulk electrical conductivity is the combined electrical conductivity of all material within a doughnut-shaped volume surrounding an induction probe. Bulk conductivity is affected by different physical and chemical properties of the material including the dissolved solids content of the pore water and lithology and porosity of the rock.

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

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

sphere $4/3\ \pi r^3$ cone $1/3\ \pi r^2 h$ cylinder $\pi r^2 h$.

pi (π) is the ratio of the circumference to the diameter of a circle; pi = 3.14159….

From cell volume, total algal biomass expressed as biovolume (μm^3/mL) is thus determined by multiplying the number of cells of a given species by its average cell volume and then summing these volumes for all species.

Cfs-day (See “Cubic foot per second-day”)

Channel bars, as used in this report, are the lowest prominent geomorphic features higher than the channel bed.

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

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

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

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

Confined aquifer is a term used to describe an aquifer containing water between two relatively impermeable bound-aries. The water level in a well tapping a confined aquifer stands above the top of the confined aquifer and can be higher or lower than the water table that may be present in the material above it. In some cases, the water level can rise above the ground surface, yielding a flowing well.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Embeddedness is the degree to which gravel-sized and larger particles are surrounded or enclosed by finer-sized particles. (See also “Substrate embeddedness class”)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Geomorphic channel units, as used in this report, are fluvial geomorphic descriptors of channel shape and stream velocity. Pools, riffles, and runs are types of geomorphic channel units considered for National Water-Quality Assessment (NAWQA) Program habitat sampling.

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

Habitat, as used in this report, includes all nonliving (physical) aspects of the aquatic ecosystem, although living components like aquatic macrophytes and riparian vegetation also are usually included. Measurements of habitat are typically made over a wider geographic scale than are measurements of species distribution.

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

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

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

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

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

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

Horizontal datum (See "Datum")

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

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

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

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

Island, as used in this report, is a mid-channel bar that has permanent woody vegetation, is flooded once a year on average, and remains stable except during large flood events.

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

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

Latent heat flux (often used interchangeably with latent heat-flux density) is the amount of heat energy that converts water from liquid to vapor (evaporation) or from vapor to liquid (condensation) across a specified cross-sectional area per unit time. Usually expressed in watts per square meter.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Minimum reporting level (MRL) is the smallest measured concentration of a constituent that may be reliably reported by using a given analytical method.

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

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

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

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

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

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

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

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

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

Open or screened interval is the length of unscreened opening or of well screen through which water enters a well, in feet below land surface.

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

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

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

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

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

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

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

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

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

Classification	Size (mm)	Method of analysis
Clay	>0.00024 - 0.004	Sedimentation
Silt	>0.004 - 0.062	Sedimentation
Sand	>0.062 - 2.0	Sedimentation/sieve
Gravel	>2.0 - 64.0	Sieve
Cobble	>64 - 256	Manual measurement
Boulder	>256	Manual measurement

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

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

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

Percent shading is a measure of the amount of sunlight potentially reaching the stream. A clinometer is used to measure left and right bank canopy angles. These values are added together, divided by 180, and multiplied by 100 to compute percentage of shade.

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

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

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

pH of water is the negative logarithm of the hydrogen-ion activity. Solutions with pH less than 7.0 standard units are termed “acidic,” and solutions with a pH greater than 7.0 are termed “basic.” Solutions with a pH of 7.0 are neutral. The presence and concentration of many dissolved chemical constituents found in water are affected, in part, by the hydrogen-ion activity of water. Biological processes including growth, distribution of organisms, and toxicity of the water to organisms also are affected, in part, by the hydrogen-ion activity of water.

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

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

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

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

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

Pool, as used in this report, is a small part of a stream reach with little velocity, commonly with water deeper than surrounding areas.

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

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

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

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

Reach, as used in this report, is a length of stream that is chosen to represent a uniform set of physical, chemical, and biological conditions within a segment. It is the principal sampling unit for collecting physical, chemical, and biological data.

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

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

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

Return period (See "Recurrence interval")

Riffle, as used in this report, is a shallow part of the stream where water flows swiftly over completely or partially submerged obstructions to produce surface agitation.

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

Run, as used in this report, is a relatively shallow part of a stream with moderate velocity and little or no surface turbulence.

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

Sea level, as used in this report, refers to one of the two commonly used national vertical datums (NGVD 1929 or NAVD 1988). See separate entries for definitions of these datums.

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

Sensible heat flux (often used interchangeably with latent sensible heat-flux density) is the amount of heat energy that moves by turbulent transport through the air across a specified cross-sectional area per unit time and goes to heating (cooling) the air. Usually expressed in watts per square meter.

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

Shelves, as used in this report, are streambank features extending nearly horizontally from the flood plain to the lower limit of persistent woody vegetation.

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

Soil heat flux (often used interchangeably with soil heat-flux density) is the amount of heat energy that moves by conduction across a specified cross-sectional area of soil per unit time and goes to heating (or cooling) the soil. Usually expressed in watts per square meter.

Soil-water content is the water lost from the soil upon drying to constant mass at 105 °C; expressed either as mass of water per unit mass of dry soil or as the volume of water per unit bulk volume of soil.

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

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

Stage (See "Gage height")

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

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

Substrate is the physical surface upon which an organism lives.

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

0	no gravel or larger substrate	3	26-50 percent
1	> 75 percent	4	5-25 percent
2	51-75 percent	5	< 5 percent

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

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

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

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

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

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

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

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

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

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

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

Taxa (Species) richness is the number of species (taxa) present in a defined area or sampling unit.

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

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

Thalweg is the line formed by connecting points of minimum streambed elevation (deepest part of the channel).

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Transect, as used in this report, is a line across a stream perpendicular to the flow and along which measurements are taken, so that morphological and flow characteristics along the line are described from bank to bank. Unlike a cross section, no attempt is made to determine known elevation points along the line.

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

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

Unconfined aquifer is an aquifer whose upper surface is a water table free to fluctuate under atmospheric pressure. (See “Water-table aquifer”)

Vertical datum (See “Datum”)

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

Water table is that surface in a ground-water body at which the water pressure is equal to the atmospheric pressure.

Water-table aquifer is an unconfined aquifer within which the water table is found.

Water year in USGS reports dealing with surface-water supply is the 12-month period October 1 through September 30. The water year is designated by the calendar year in which it ends and which includes 9 of the 12 months. Thus, the year ending September 30, 2002, is called the “2002 water year.”

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

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

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

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

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

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

Techniques of Water-Resources Investigations of the U.S. Geological Survey

The USGS publishes a series of manuals, the Techniques of Water-Resources Investigations, 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.

Reports in the Techniques of Water-Resources Investigations series, which are listed below, are online at *http://water.usgs.gov/pubs/twri/*. Printed copies are for sale by the USGS, Information Services, Box 25286, Federal Center, Denver, Colorado 80225 (authorized agent of the Superintendent of Documents, Government Printing Office), telephone 1-888-ASK-USGS. Please telephone 1-888-ASK-USGS for current prices, and refer to the title, book number, chapter number, and mention the “U.S. Geological Survey Techniques of Water-Resources Investigations.” Products can then be ordered by telephone, or online at http://www.usgs.gov/sales.html, or by FAX to (303)236-469 of an order form available online at *http://mac.usgs.gov/isb/pubs/forms/*. Prepayment by major credit card or by a check or money order payable to the “U.S. Geological Survey” is required.

Book 1. Collection of Water Data by Direct Measurement

Section D. Water Quality

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Book 2. Collection of Environmental Data

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3–A1.*General field and office procedures for indirect discharge measurements,* by M.A. Benson and Tate Dalrymple: USGS–TWRI book 3, chap. A1. 1967. 30 p.
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5–A4.*Methods for collection and analysis of aquatic biological and microbiological samples*, by L.J. Britton and P.E. Greeson, editors: USGS–TWRI book 5, chap. A4. 1989. 363 p.
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, chap. 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, chap. 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, chap. 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, chap. 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, chap. 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, chap. 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, chap. A4. 1992. 108 p.
6–A5.*A modular finite-element model (MODFE) for areal and axisymmetric ground-water-flow problems, Part 3: Design philosophy and programming details,* by L.J. Torak: USGS–TWRI book 6, chap. A5. 1993. 243 p.
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: USGS–TWRI book 6, chap. A6. 1996. 125 p.
6–A7.*User's guide to SEAWAT: A computer program for simulation of three-dimensional variable-density ground-water flow*, by Weixing Guo and Christian D. Langevin: USGS–TWRI book 6, chap. A7. 2002.
77 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, chap. 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, chap. C2. 1978. 90 p.
7–C3.*A model for simulation of flow in singular and interconnected channels*, by R.W. Schaffranek, R.A. Baltzer, and D.E. Goldberg: USGS–TWRI book 7, chap. C3. 1981. 110 p.

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, chap. A1. 1968. 23 p.

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

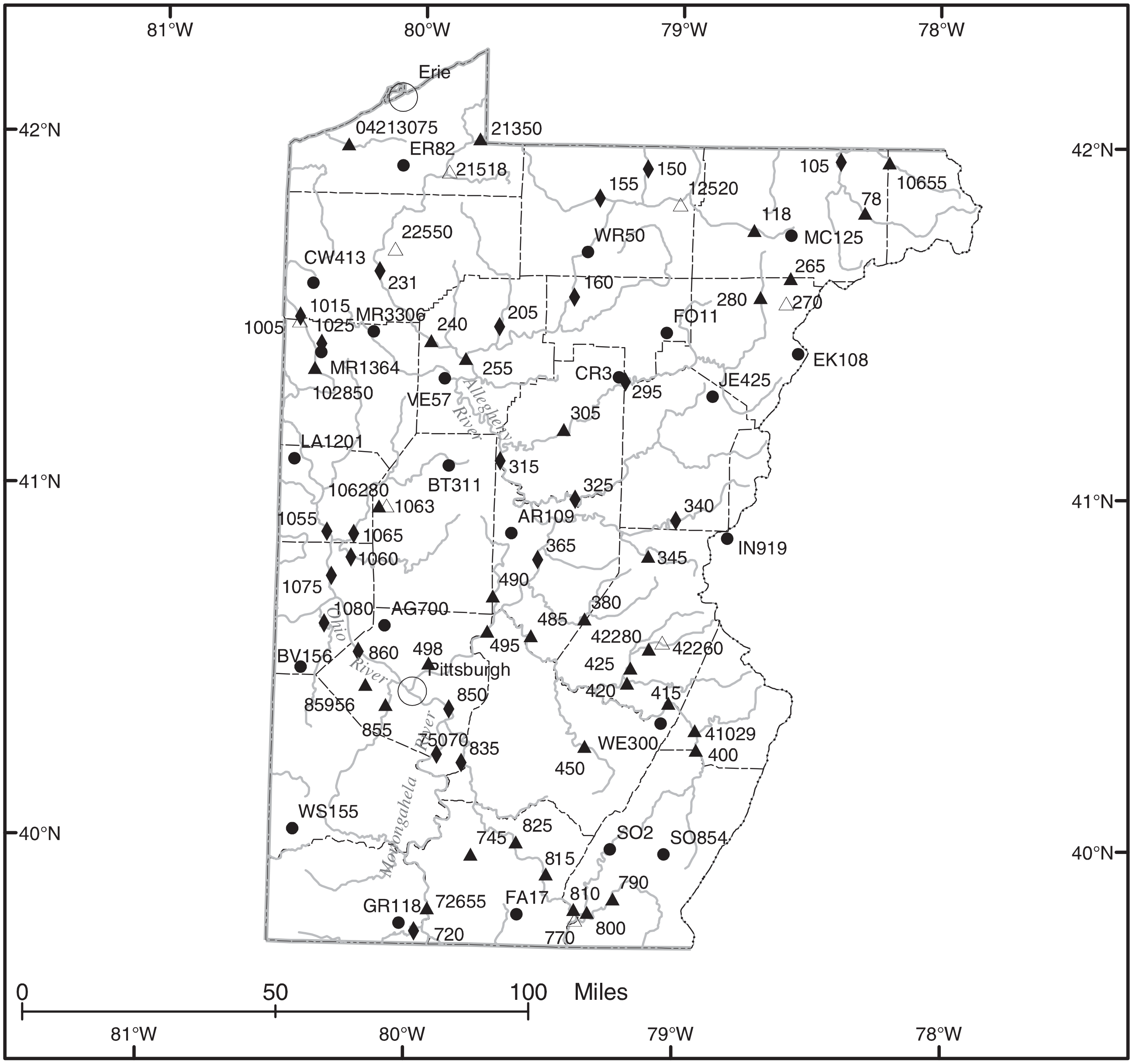
Section B. Instruments for Measurement of Discharge

8–B2.*Calibration and maintenance of vertical-axis type current meters,* by G.F. Smoot and C.E. Novak: USGS–TWRI book 8, chap. B2. 1968. 15 p.

Book 9. Handbooks for Water-Resources Investigations

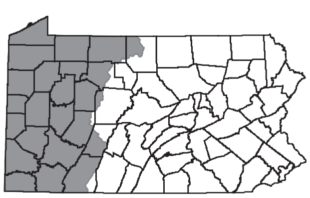
Section A. National Field Manual for the Collection of Water-Quality Data

9–A1.*National field manual for the collection of water-quality data: Preparations for water sampling,* by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS–TWRI book 9, chap. A1. 1998. 47 p.
9–A2.*National field manual for the collection of water-quality data: Selection of equipment for water sampling*, edited by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS–TWRI book 9, chap. A2. 1998. 94 p.
9–A3.*National field manual for the collection of water-quality data: Cleaning of equipment for water sampling*, edited by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS–TWRI book 9, chap. A3. 1998. 75 p.
9–A4.*National field manual for the collection of water-quality data: Collection of water samples*, edited by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS–TWRI book 9, chap. A4. 1999. 156 p.
9–A5.*National field manual for the collection of water-quality data: Processing of water samples,* edited by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS–TWRI book 9, chap. A5. 1999, 149 p.
9–A6.*National field manual for the collection of water-quality data: Field measurements*, edited by F.D. Wilde and D.B. Radtke: USGS–TWRI book 9, chap. A6. 1998. Variously paginated.
9–A7.*National field manual for the collection of water-quality data: Biological indicators*, edited by D.N. Myers and F.D. Wilde: USGS–TWRI book 9, chap. A7. 1997 and 1999. Variously paginated.
9–A8.*National field manual for the collection of water-quality data: Bottom-material samples*, by D.B. Radtke: USGS–TWRI book 9, chap. 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, chap. A9. 1998. 60 p.



EXPLANATION

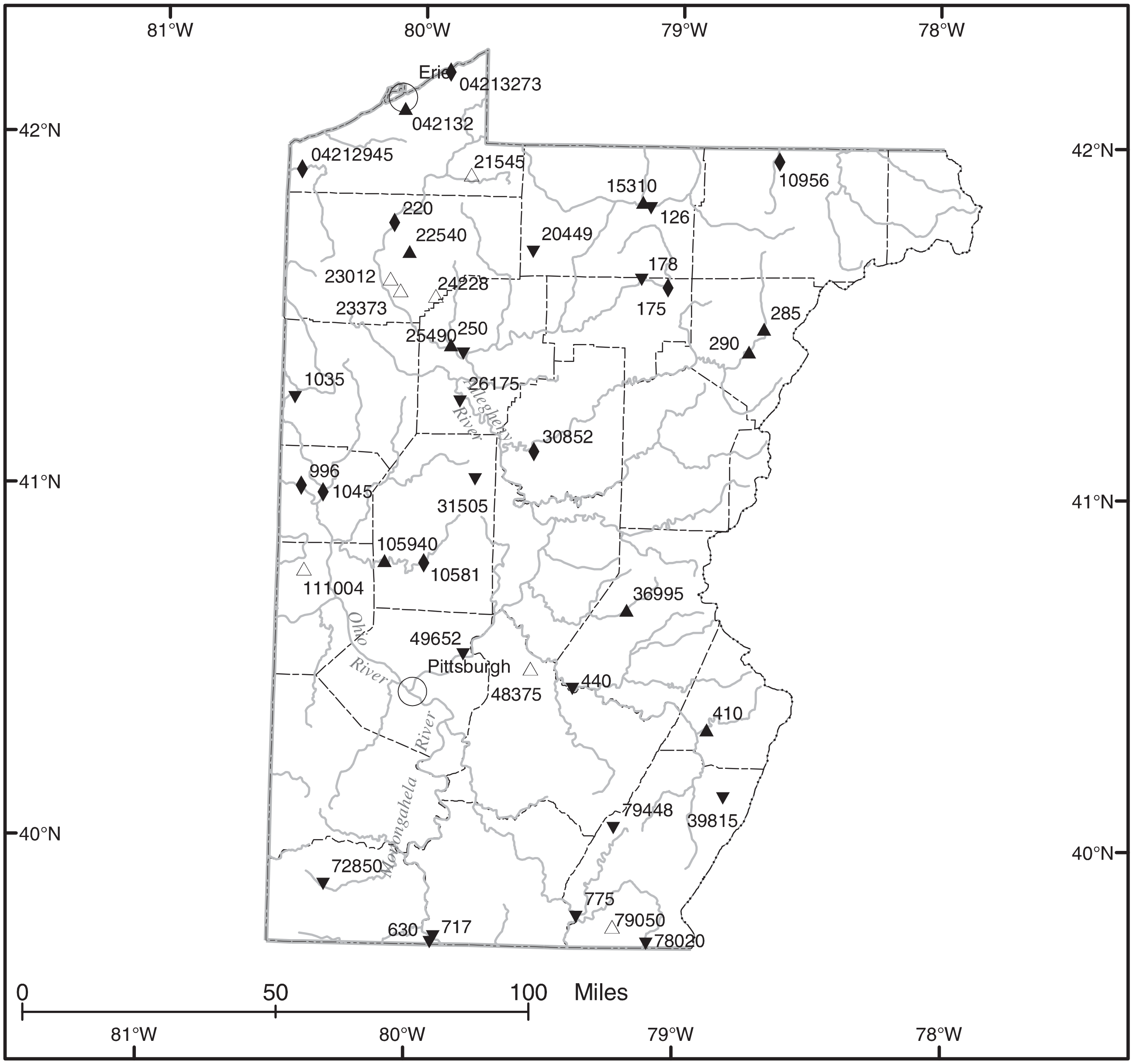
TYPE



- ▲ Streamflow station
- △ Lake
- ⧫ Streamflow and water-quality station
- ● Observation well

NOTE: Downstream station numbers are abbreviated; the first two digits (part number) and the last two digits (if zeros) are omitted (for example, station number 03041000 is shown as 410, and station number 03105940 is shown as 105940).

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



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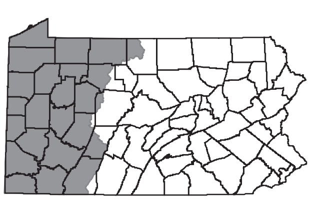


TYPE

- ▲ Streamflow station
- △ Lake
- ♦ Streamflow and water-quality station
- ▼ Water-quality station

NOTE: Downstream station numbers are abbreviated; the first two digits (part number) and the last two digits (if zeros) are omitted (for example, station number 03041000 is shown as 410, and station number 03105940 is shown as 105940).

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

SPECIAL NOTES, REMARK CODES, AND SELECTED CONSTITUENT DEFINITIONS

****

NOTES--Traditionally, dissolved trace-element concentrations have been reported at the microgram per liter(µG/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 µG/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.

--Sample handling procedures at all **National Trends Network** stations were changed substantially on January 11, 1994, in order to reduce contamination from the sample shipping container. The data for samples before and after that date are different and not directly comparable. A tabular summary of the differences based on a special intercomparison study, is available from the NADP/NTN Coordination Office, Colorado State University, Fort Collins, CO 80523 (Telephone: 303-491-5643).

--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:

$$MBASCOR = M - 0.0088N - 0.00019C$$

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:

PRINTED OUTPUT	REMARK
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.
M	Presence of material verified but not quantified.
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).
ND	Material specifically analyzed for but not detected.
V	Analyte was detected in both the environmental sample and the associated blanks.

****

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)

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.)
COLS/100 ML	colonies per 100 milliliters
DIS	dissolved
FET	fixed end-point titration
FLD	field (Measurement determined at field site.)
F/S	feet per second
G/M	gallons per minute
G/SQM; MG/M2	grams or milligrams per square meter
IT	incremental titration
KF AGAR	nutrient medium for growth of fecal streptococcal bacteria
µG/L	micrograms per liter
µS/CM	microsiemens per centimeter
MG/L	milligrams per liter
MG/M2	milligrams per square meter
MM OF HG	millimeters of mercury
NONCARB	noncarbonate
NTU	nephelometric turbidity unit
PCI/L	picocuries per liter
REC	recoverable
TOT	total
T/DAY	tons per day
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.)

****

(00027) AGENCY COLLECTING SAMPLE CODES:(partial listing)

1028 --U.S. Geological Survey

(00028) AGENCY ANALYZING SAMPLE CODES:(partial listing)

1028 --U.S. Geological Survey
80020 --U.S. Geological Survey, National Water-Quality Laboratory, Denver, Colorado
9813 --Pennsylvania Department of Environmental Protection
83613 --District Water-Quality Laboratory, Troy, New York

MEDIUM CODES: (partial listing)

9-- Surface water.
R-- Quality-control sample. Surface water.
Q-- Quality-control sample. Artificial

SURFACE-WATER 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 mi^2.

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 National Geodetic Vertical Datum of 1929.

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

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 23, 1972 reached a stage of at least 17.5 ft, discharge, 21,700 ft^3/s, from U.S. Army Corps of Engineers discharge measurement. Actual peak discharge may have been greater.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a base discharge of 2,500 ft^3/s and maximum (*****):

Date	Time	Discharge ft^3/s	Gage Height (ft)	Date	Time	Discharge ft^3/s	Gage Height (ft)
Mar. 22	0700	*4,670	*11.02	Aug. 4	0430	3,630	9.98
July 22	0615	2,670	8.61	Aug. 10	1145	3,570	9.92
Aug. 1	1545	3,430	9.79	Sept. 28	1700	2,640	8.54

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34	67	e185	569	e88	e273	723	172	638	163	2570	179
2	29	70	e166	e969	e84	e252	909	237	582	147	2820	1010
3	27	69	e149	790	e86	e237	875	202	574	134	2820	971
4	26	65	e128	701	e139	e216	937	182	583	124	3350	1570
5	29	64	e119	588	e184	e203	1930	185	601	117	2440	1120
6	30	98	e109	e482	e157	e192	1910	200	500	107	1700	834
7	26	112	e107	e423	e143	e175	1630	192	470	107	1320	638
8	23	100	e101	e371	e135	e168	1300	196	454	102	1120	510
9	20	93	e97	e324	e129	e206	1070	187	527	103	1200	422
10	19	90	e99	e279	e123	e189	906	182	438	107	3250	348
11	20	123	e110	e252	e117	e171	780	186	421	125	2850	296
12	22	116	e146	e238	e112	e169	694	202	595	96	2990	254
13	23	114	e212	e219	e110	e174	607	207	982	82	2260	227
14	23	106	e336	e197	e109	246	536	196	980	73	1570	227
15	22	100	e373	e186	e107	298	484	183	879	67	1090	218
16	28	107	e310	e172	e105	627	441	222	706	66	822	293
17	50	455	e250	e161	e104	1640	391	223	556	60	637	205
18	43	445	e229	e151	e103	2950	352	212	495	133	486	180
19	50	348	e239	e145	e104	3430	324	209	414	119	389	215
20	72	302	e771	e131	e105	3250	299	209	348	75	325	290
21	51	278	e1000	e125	e105	4100	299	300	579	650	278	225
22	41	361	928	e119	e109	4570	303	246	498	2200	244	231
23	35	366	758	e111	e252	3430	274	231	460	1470	212	772
24	32	331	599	e102	e333	2330	244	298	417	2040	187	632
25	32	318	531	e98	e353	1920	225	290	363	1830	172	723
26	133	290	449	e94	e350	1850	217	278	314	1310	165	651
27	119	268	371	e94	e326	1530	210	279	271	1230	195	624
28	87	239	327	e92	e299	1200	194	284	233	1580	164	2490
29	73	221	300	e88	---	1080	184	274	202	1110	151	2370
30	69	e202	265	e88	---	948	177	250	183	848	199	1690
31	66	---	284	e88	---	808	---	397	---	635	152	---
TOTAL	1354	5918	10048	8447	4471	38832	19425	7111	15263	17010	38128	20415
MEAN	43.7	197	324	272	160	1253	648	229	509	549	1230	680
MAX	133	455	1000	969	353	4570	1930	397	982	2200	3350	2490
MIN	19	64	97	88	84	168	177	172	183	60	151	179
CFSM	0.18	0.80	1.31	1.10	0.64	5.05	2.61	0.92	2.05	2.21	4.96	2.74
IN.	0.20	0.89	1.51	1.27	0.67	5.82	2.91	1.07	2.29	2.55	5.72	3.06

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1975 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	267	442	506	437	546	827	896	493	378	197	188	220
MAX	964	1018	1082	1119	1572	1730	2006	1127	1484	598	1230	1226
(WY)	1991	1997	1978	1998	1976	1979	1993	1996	1989	1977	2003	1977
MIN	31.2	39.7	150	78.2	98.0	326	359	142	48.5	28.5	15.0	20.7
(WY)	1983	1999	1999	1981	1980	1993	1976	1985	1991	1991	1999	1991

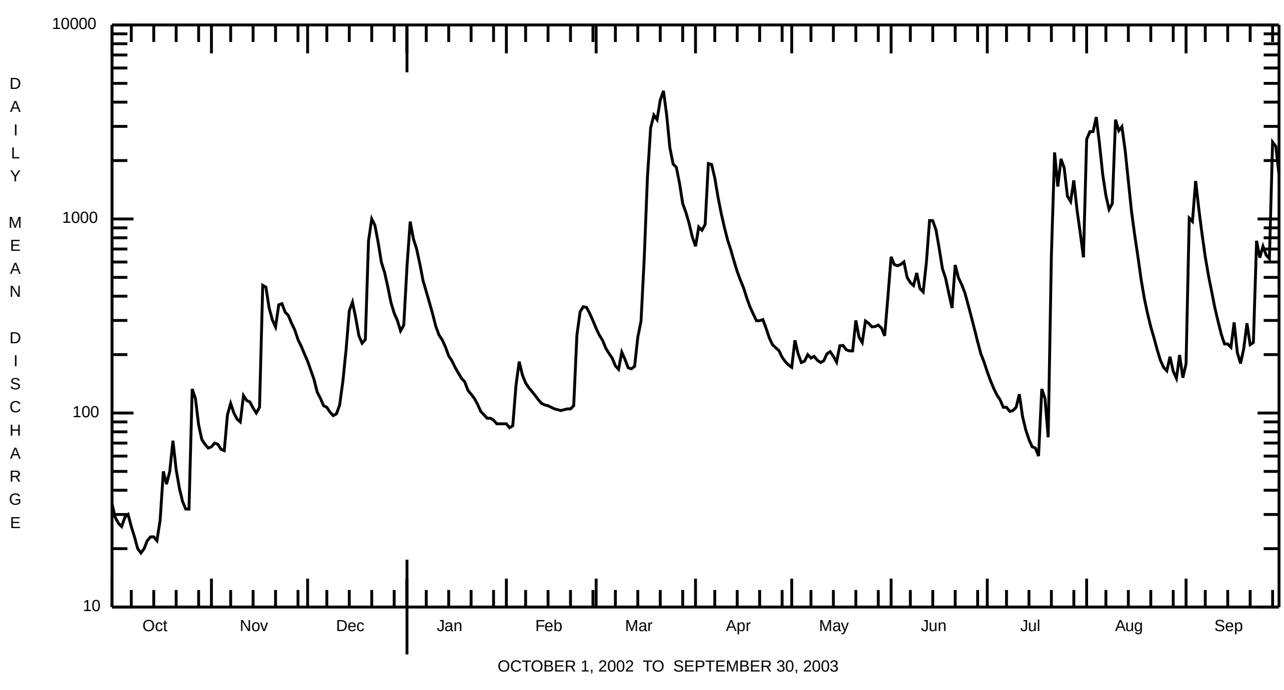
e Estimated.

OHIO RIVER MAIN STEM

03007800 ALLEGHENY RIVER AT PORT ALLEGANY, PA--Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1975 - 2003	
ANNUAL TOTAL	141701		186422			
ANNUAL MEAN	388		511		449	
HIGHEST ANNUAL MEAN					670	1994
LOWEST ANNUAL MEAN					275	2001
HIGHEST DAILY MEAN	3410	May 14	4570	Mar 22	8860	Jan 20 1996
LOWEST DAILY MEAN	15	Sep 26	19	Oct 10	5.4	Sep 5 1999
ANNUAL SEVEN-DAY MINIMUM	19	Sep 8	21	Oct 9	6.4	Aug 31 1999
MAXIMUM PEAK FLOW			4670	Mar 22	**a**12600	Jan 19 1996
MAXIMUM PEAK STAGE			11.02	Mar 22	**b**15.37	Jan 19 1996
INSTANTANEOUS LOW FLOW			19	Oct 10,11	5.1	Sep 6 1999
ANNUAL RUNOFF (CFSM)	1.57		2.06		1.81	
ANNUAL RUNOFF (INCHES)	21.26		27.96		24.58	
10 PERCENT EXCEEDS	937		1300		1010	
50 PERCENT EXCEEDS	264		237		246	
90 PERCENT EXCEEDS	26		73		47	

a From rating curve extended above 6,700 ft^3/s.
b From peak-stage indicator.



OHIO RIVER MAIN STEM

03010500 ALLEGHENY RIVER AT ELDRED, PA
(Pennsylvania Water-Quality Network Station)

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 mi^2.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 1,416.53 ft above National Geodetic Vertical Datum of 1929.

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

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a base discharge of 5,000 ft^3/s and maximum (*****):

Date	Time	Discharge ft^3/s	Gage Height (ft)	Date	Time	Discharge ft^3/s	Gage Height (ft)
Mar. 23	0300	*8,610	*16.35	Aug. 13	0200	6,210	14.11

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	113	185	e489	1360	e294	e853	1570	374	1770	321	2300	412
2	94	214	e433	e1960	e289	e796	1910	503	1400	285	3690	1870
3	88	218	e405	e1500	e294	e753	1910	582	1220	259	4080	1940
4	82	211	e386	e1280	e365	e696	1870	457	1190	237	4360	2500
5	79	206	e370	e1140	e623	e672	3620	426	1310	230	4690	2200
6	82	239	e355	e1040	e566	e634	4390	488	1160	223	4420	1630
7	80	396	e336	e947	e523	e615	4330	488	993	206	3300	1260
8	71	353	e336	e841	e487	e601	3610	479	994	230	2550	1040
9	63	304	e325	e771	e458	e655	2730	470	1200	205	2350	878
10	59	284	e331	e701	e430	e672	2290	450	1080	224	4260	741
11	57	375	e336	e666	e389	e696	2030	456	970	291	5010	634
12	57	516	e467	e638	e359	e706	1780	547	1170	261	5710	549
13	59	412	e723	e589	e341	e715	1550	624	2020	189	6010	487
14	61	376	e1280	e554	e341	e720	1340	630	1990	160	5070	474
15	62	339	e1900	e519	e329	e796	1180	564	1740	143	3310	589
16	69	331	e1150	e477	e319	1620	1060	601	1440	146	1920	968
17	101	999	e937	e463	e301	3250	958	710	1160	140	1550	631
18	136	1720	e877	e427	e307	4340	858	628	1010	355	1170	477
19	133	1130	e930	e392	e301	5380	777	582	918	493	929	457
20	260	941	e1750	e364	e294	6450	713	546	779	245	764	773
21	221	825	e2410	e343	e288	7030	680	772	909	789	648	635
22	149	1010	e1970	e343	e288	8150	702	783	1100	4190	566	532
23	123	1200	e1730	e329	e807	8400	656	652	857	4440	517	1330
24	108	1010	1510	e308	e1330	7090	583	698	749	4250	440	1410
25	100	944	1290	e308	e1170	5560	530	809	658	4510	390	1210
26	197	873	e1110	e301	e1050	4550	501	688	575	4040	373	1370
27	490	789	965	e308	e958	3790	486	648	504	2620	450	1100
28	299	711	837	e315	e887	2860	446	642	444	3080	422	2140
29	222	644	e739	e315	---	2270	411	618	391	2920	334	3070
30	192	e548	698	e307	---	2160	388	566	354	2020	449	2830
31	186	---	717	e302	---	1800	---	668	---	1470	392	---
TOTAL	4093	18303	28092	20108	14388	85280	45859	18149	32055	39172	72424	36137
MEAN	132	610	906	649	514	2751	1529	585	1068	1264	2336	1205
MAX	490	1720	2410	1960	1330	8400	4390	809	2020	4510	6010	3070
MIN	57	185	325	301	288	601	388	374	354	140	334	412
CFSM	0.24	1.11	1.65	1.18	0.93	5.00	2.78	1.06	1.94	2.30	4.25	2.19
IN.	0.28	1.24	1.90	1.36	0.97	5.77	3.10	1.23	2.17	2.65	4.90	2.44

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	443	811	1064	1030	1102	1870	2044	1180	793	425	278	324
MAX	1894	3175	2390	3359	3250	4697	5314	3273	6490	3893	2336	2340
(WY)	1991	1951	1973	1952	1976	1945	1940	1943	1972	1942	2003	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

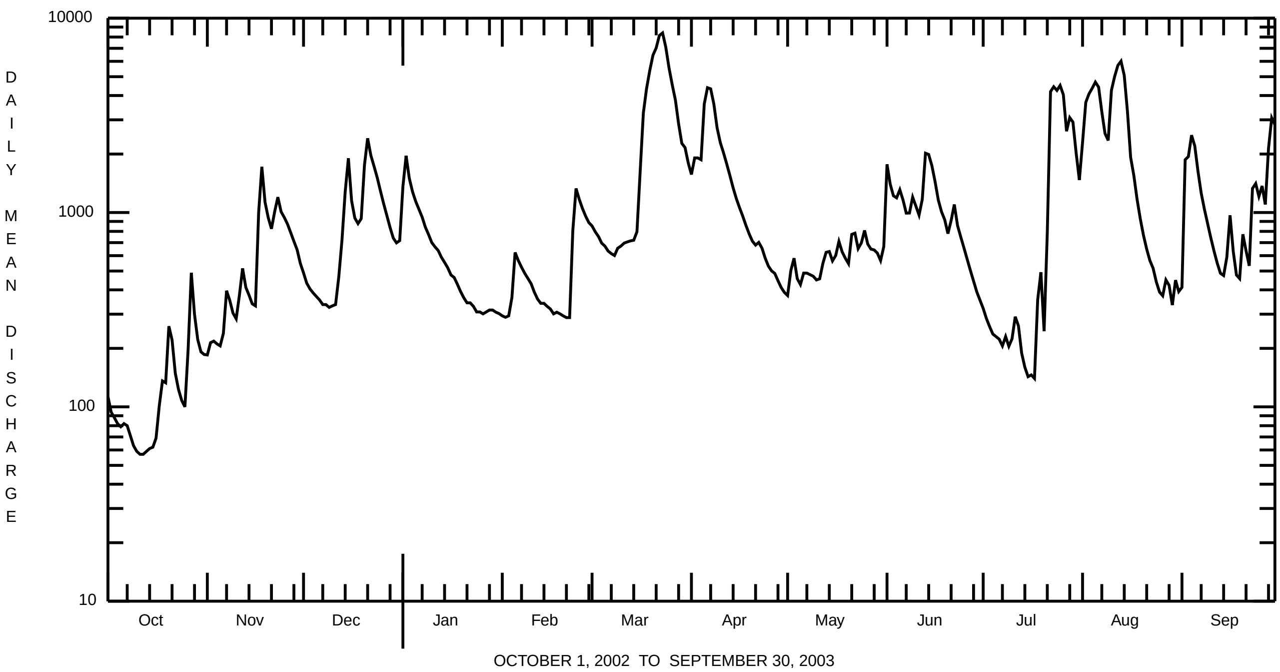
e Estimated.

OHIO RIVER MAIN STEM

03010500 ALLEGHENY RIVER AT ELDRED, PA--Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1940 - 2003	
ANNUAL TOTAL	345756		414060			
ANNUAL MEAN	947		1134		945	
HIGHEST ANNUAL MEAN					1475	1972
LOWEST ANNUAL MEAN					631	1962
HIGHEST DAILY MEAN	5790	May 16	8400	Mar 23	55700	Jun 23 1972
LOWEST DAILY MEAN	27	Sep 14	57	Oct 11,12	16	Sep 6 1999
ANNUAL SEVEN-DAY MINIMUM	34	Sep 8	60	Oct 9	20	Sep 1 1999
MAXIMUM PEAK FLOW			8610	Mar 23	**a**65400	Jun 23 1972
MAXIMUM PEAK STAGE			16.35	Mar 23	**b**29.05	Jun 23 1972
INSTANTANEOUS LOW FLOW			56	Oct 11-13	15	Sep 6 1999
ANNUAL RUNOFF (CFSM)	1.72		2.06		1.72	
ANNUAL RUNOFF (INCHES)	23.39		28.01		23.35	
10 PERCENT EXCEEDS	2260		2840		2260	
50 PERCENT EXCEEDS	717		648		520	
90 PERCENT EXCEEDS	76		213		85	

a From rating curve extended above 21,000 ft^3/s on basis of slope-area measurement at gage height 27.6 ft.
b From floodmark.



03010500 ALLEGHENY RIVER AT ELDRED, PA--Continued
(Pennsylvania Water-Quality Network Station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 2002 to current year.

REMARKS.--Other data for the Water-Quality Network can be found on pages 242-289.

COOPERATION.--Samples were collected as part of the Pennsylvania Department of Environmental Protection Water-Quality Network (WQN) with cooperation from the Pennsylvania Department of Environmental Protection.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Agency collecting sample, code (00027)	Agency analyzing sample, code (00028)	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf µS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water unfltrd recover -able, mg/L (00916)	Magnesium, water, unfltrd recover -able, mg/L (00927)	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (00417)
NOV 2002													
19...	1400	1028	9813	1090	40	12.7	7.6	77	3.9	26	7.0	1.9	14
MAY 2003													
13...	1230	1028	9813	629	40	9.6	7.3	92	12.6	30	8.4	2.3	15
JUL													
28...	1215	1028	9813	3180	40	8.7	6.9	60	16.3	22	6.0	1.7	13
SEP													
16...	1530	1028	9813	1020	40	8.3	7.2	80	17.7	28	7.8	2.2	19

Date	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 105degC wat flt mg/L (00515)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia water, unfltrd mg/L as N (00610)	Nitrate water unfltrd mg/L as N (00620)	Nitrite water, unfltrd mg/L as N (00615)	Orthophosphate, water, unfltrd mg/L as P (70507)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, unfltrd mg/L (00600)	Organic carbon, water, unfltrd mg/L (00680)	Aluminum, water, unfltrd recover -able, µg/L (01105)	Copper, water, unfltrd recover -able, µg/L (01042)	Iron, water, unfltrd recover -able, µg/L (01045)
NOV 2002													
19...	10.6	70	14	<.020	.48	<.040	.02	.019	.79	2.7	300	<10	570
MAY 2003													
13...	8.8	46	8	<.020	.23	<.040	.03	.025	.60	2.2	300	<10	660
JUL													
28...	7.3	6	46	<.020	.40	<.040	.07	.080	.70	4.6	1800	<10	2250
SEP													
16...	7.5	80	28	<.020	.32	<.040	.06	.056	.70	3.4	1700	<10	2030

Date	Lead, water, unfltrd recover -able, µg/L (01051)	Manganese, water, unfltrd recover -able, µg/L (01055)	Nickel, water, unfltrd recover -able, µg/L (01067)	Zinc, water, unfltrd recover -able, µg/L (01092)
NOV 2002				
19...	<1.0	80	<50	<10
MAY 2003				
13...	<1.0	70	<50	<10
JUL				
28...	1.9	110	<50	<10
SEP				
16...	2.5	130	<50	30

OHIO RIVER MAIN STEM

03010500 ALLEGHENY RIVER AT ELDRED, PA--Continued

BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES

REMARKS.--Samples were collected using rapid bioassessment protocols for benthic macroinvertebrates using a D-Frame net with a mesh size of 500 µm. Samples represent counts per 100 (approximate) subsamples.

Date	8/15/02
Benthic Macroinvertebrate	Count
Mollusca	
Gastropoda (SNAILS)	
Basommatophora	
Ancylidae	
Ferrissia sp	1
Hydrobiidae	
Amnicola sp	12
Lymnaeidae	1
Annelida	
Oligochaeta (AQUATIC EARTHWORMS)	34
Arthropoda	
Acariformes	
Hydrachnidia (WATER MITES)	
Lebertiidae	
Lebertia sp	1
Insecta	
Ephemeroptera (MAYFLIES)	
Baetiscidae	
Baetisca sp	4
Trichoptera (CADDISFLIES)	
Hydropsychidae	
Cheumatopsyche sp	3
Hydroptilidae	
Hydroptila sp	9
Coleoptera (BEETLES)	
Elmidae (RIFFLE BEETLES)	
Optioservus sp	1
Diptera (TRUE FLIES)	
Chironomidae (MIDGES)	37
Empididae (DANCE FLIES)	
Hemerodromia sp	5
Total Organisms	108

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 mi^2.

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

GAGE.--Water-stage recorder. Datum of gage is 1,460.34 ft above National Geodetic Vertical Datum of 1929 (U.S. Army Corps of Engineers benchmark).

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

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a base discharge of 1,000 ft^3/s and maximum (*****):

Date	Time	Discharge ft^3/s	Gage Height (ft)	Date	Time	Discharge ft^3/s	Gage Height (ft)
Mar. 22	0600	*1,940	*9.72	Aug. 10	1200	1,730	9.37
July 22	1500	1,620	9.17	Aug. 12	1200	1,840	9.55
Aug. 1	1700	1,400	8.78	Sept. 4	0800	1,190	8.32
Aug. 3	0400	1,110	8.12				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	20	e41	e151	e48	e170	249	58	161	58	924	120
2	11	22	e39	e184	e48	e159	333	87	158	52	919	446
3	12	21	e38	e222	e45	e143	336	75	165	47	919	380
4	13	21	e36	e201	e59	e135	381	74	171	43	772	1010
5	12	20	e34	e186	e114	e128	772	80	177	46	546	649
6	11	25	e33	e169	e83	e115	740	87	149	39	431	400
7	9.7	26	e32	e149	e75	100	589	85	142	37	348	286
8	8.8	25	e31	e138	e73	92	465	87	134	35	286	220
9	8.3	24	e31	e127	e67	142	382	80	153	42	368	176
10	8.4	23	e30	e113	e65	126	315	76	125	39	1480	145
11	8.4	31	e38	e100	e61	129	268	79	128	53	1080	121
12	8.8	29	e47	e88	e60	108	248	98	159	36	1520	101
13	9.2	30	e78	e80	e58	107	226	95	218	31	1030	89
14	9.8	28	e120	e74	e57	94	204	94	233	28	600	83
15	8.5	26	e177	e70	e56	120	184	92	235	25	403	77
16	11	29	e136	e65	59	252	168	111	206	30	309	87
17	19	119	e110	e61	e69	629	150	107	174	25	244	65
18	16	118	e97	e58	e71	1250	136	103	155	175	191	58
19	23	89	e116	e58	e71	1250	123	100	132	124	154	64
20	27	77	e246	e56	e67	1140	112	96	111	85	127	71
21	20	70	372	e53	e60	1530	110	116	224	345	107	58
22	16	111	319	e53	75	1840	110	96	197	1420	93	55
23	15	122	257	e50	e148	1280	99	89	196	1150	81	121
24	13	115	208	e51	240	846	88	102	180	1250	70	94
25	13	109	e182	e49	e231	649	81	92	155	977	63	106
26	34	97	160	e50	e198	614	77	88	130	593	67	103
27	29	88	136	e48	e185	495	73	84	109	432	116	103
28	24	78	e112	e47	e178	396	67	82	91	354	69	724
29	22	e63	e100	e46	---	360	64	78	76	256	62	617
30	20	e48	97	e48	---	311	59	72	68	204	100	429
31	19	---	116	e51	---	272	---	112	---	168	68	---
TOTAL	471.9	1704	3569	2896	2621	14982	7209	2775	4712	8199	13547	7058
MEAN	15.2	56.8	115	93.4	93.6	483	240	89.5	157	264	437	235
MAX	34	122	372	222	240	1840	772	116	235	1420	1520	1010
MIN	8.3	20	30	46	45	92	59	58	68	25	62	55
CFSM	0.15	0.58	1.17	0.95	0.95	4.90	2.43	0.91	1.59	2.68	4.43	2.38
IN.	0.18	0.64	1.35	1.09	0.99	5.65	2.72	1.05	1.78	3.09	5.11	2.66

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1975 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	89.0	148	178	159	197	282	310	170	127	72.3	65.1	66.8
MAX	331	371	318	388	561	517	755	489	612	264	437	452
(WY)	1991	1997	1978	1979	1976	1979	1993	1996	1989	2003	2003	1977
MIN	8.35	9.35	28.7	27.0	41.2	120	131	50.8	6.28	7.69	7.12	6.08
(WY)	1992	1999	1999	2001	1987	1981	1976	1993	1993	1993	1991	1991

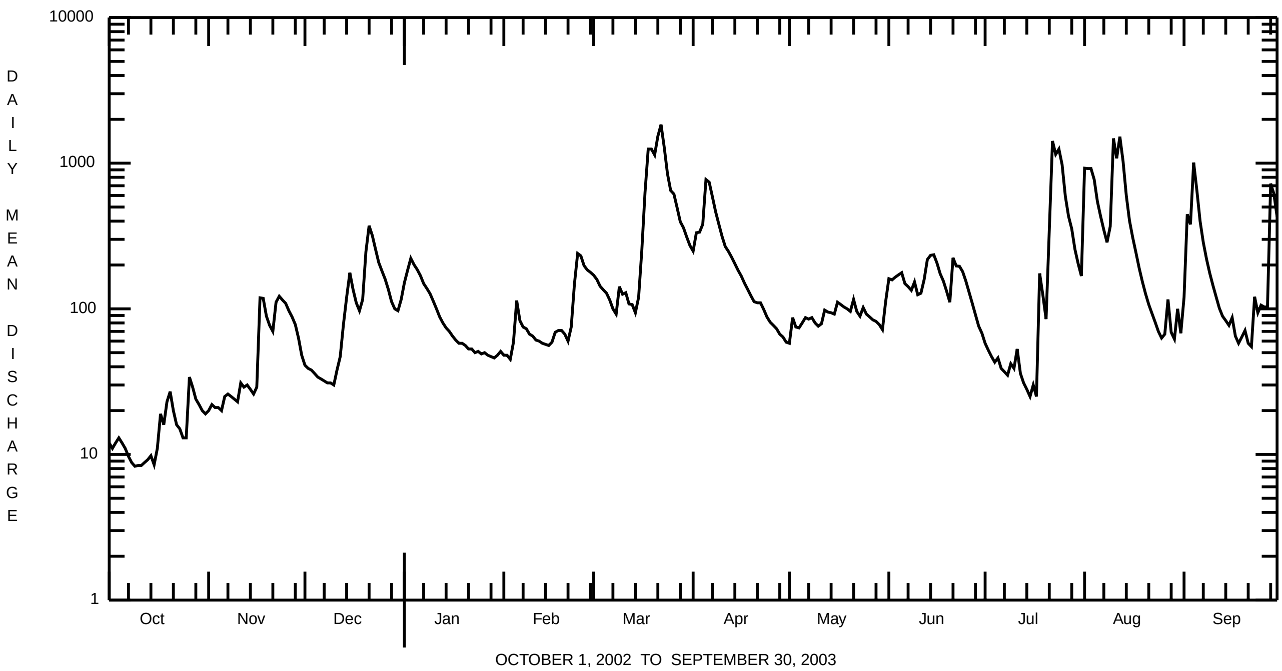
e Estimated.

OSWAYO CREEK BASIN

03010655 OSWAYO CREEK AT SHINGLEHOUSE, PA--Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1975 - 2003	
ANNUAL TOTAL	51525.7		69743.9			
ANNUAL MEAN	141		191		155	
HIGHEST ANNUAL MEAN					222	1994
LOWEST ANNUAL MEAN					85.0	2001
HIGHEST DAILY MEAN	1530	Jun 7	1840	Mar 22	3270	Jun 21 1989
LOWEST DAILY MEAN	6.6	Sep 26	8.3	Oct 9	3.2	Sep 13 1989
ANNUAL SEVEN-DAY MINIMUM	7.4	Sep 8	8.8	Oct 9	4.1	Aug 31 1999
MAXIMUM PEAK FLOW			1940	Mar 22	**a**4660	Jan 19 1996
MAXIMUM PEAK STAGE			9.72	Mar 22	**b**12.74	Jan 19 1996
INSTANTANEOUS LOW FLOW			8.0	Oct 8-10,15,16	3.5	Sep 6 1999
ANNUAL RUNOFF (CFSM)	1.43		1.94		1.57	
ANNUAL RUNOFF (INCHES)	19.42		26.29		21.35	
10 PERCENT EXCEEDS	352		431		354	
50 PERCENT EXCEEDS	91		97		85	
90 PERCENT EXCEEDS	11		25		15	

a From rating curve extended above 2,600 ft^3/s.
b From peak-stage indicator.



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 mi^2.

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 National Geodetic Vertical Datum of 1929 (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.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 73,000 ft^3/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 ft^3/s and maximum (*):

Date	Time	Discharge ft^3/s	Gage Height (ft)	Date	Time	Discharge ft^3/s	Gage Height (ft)
Mar. 22	1900	*23,600	*12.02	July 23	0100	19,700	10.84
Apr. 5	2200	17,200	10.00				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	475	597	1,930	5,640	e760	e2,200	4,600	1,150	4,360	894	4,020	1,570
2	383	649	1,800	6,550	e780	e1,950	6,080	1,510	3,940	816	6,410	5,940
3	534	693	e1,350	5,740	e820	e1,750	6,130	2,020	3,170	757	7,330	5,500
4	668	721	e1,150	4,670	e1,000	e1,550	5,530	1,640	2,900	709	7,780	4,640
5	626	748	e1,100	3,980	e1,400	e1,600	13,900	1,490	3,240	774	7,680	4,810
6	519	1,030	e1,050	3,450	e1,500	e1,900	14,900	1,600	3,130	732	7,900	3,630
7	434	1,440	e1,200	3,040	e1,300	e1,800	11,000	1,650	2,690	676	6,800	2,840
8	373	1,540	e1,350	2,810	e1,100	e1,700	9,030	1,610	2,640	664	5,350	2,330
9	326	1,370	e1,000	2,730	e950	e2,100	7,290	1,550	4,210	930	7,360	1,970
10	297	1,210	e950	2,820	e880	e3,700	6,190	1,450	3,710	1,130	12,000	1,700
11	277	1,410	1,020	2,510	e840	e3,000	6,120	1,530	3,540	1,920	13,200	1,480
12	257	1,660	1,700	2,180	e800	e2,500	5,290	1,990	5,250	1,360	12,500	1,290
13	252	1,490	2,450	e1,800	e760	e2,700	4,600	3,080	6,690	940	11,900	1,160
14	253	1,270	e4,100	e1,750	e720	e2,500	3,990	3,570	6,520	727	10,100	1,090
15	247	1,130	5,780	e1,500	e710	2,540	3,530	3,020	5,160	622	7,350	1,170
16	253	1,060	4,590	e1,350	e690	4,210	3,160	2,930	4,140	1,400	4,760	2,550
17	399	2,170	e3,350	e1,250	e660	10,400	2,810	2,910	3,290	1,220	3,730	1,940
18	428	4,510	e2,400	e1,100	e680	16,000	2,520	2,570	2,760	1,430	2,990	1,370
19	745	3,640	e2,450	e1,100	e690	16,800	2,280	2,250	2,470	2,160	2,410	1,240
20	1,250	2,900	5,600	e1,050	e710	17,300	2,090	2,010	2,150	1,320	2,020	1,520
21	1,080	2,880	9,120	e1,000	e720	20,100	2,020	2,380	2,340	1,970	1,740	1,550
22	1,040	2,860	6,920	e950	e850	23,100	2,150	2,470	3,000	16,100	1,570	1,240
23	806	3,530	5,280	e850	e1,500	21,900	2,080	2,070	2,370	18,700	1,390	2,050
24	611	3,130	4,240	e800	e3,400	18,700	1,870	2,100	1,990	16,400	1,230	2,810
25	510	2,730	3,600	e820	e3,800	15,000	1,680	2,240	1,750	15,700	1,100	2,220
26	673	2,540	3,220	e830	e3,000	13,600	1,570	2,020	1,540	11,000	1,040	2,220
27	993	2,290	2,800	e800	e2,600	11,400	1,500	1,820	1,350	7,920	1,510	2,070
28	1,040	2,080	2,370	e750	e2,400	8,710	1,400	1,770	1,200	7,650	1,410	2,670
29	789	1,900	2,270	e700	---	6,930	1,300	1,670	1,070	6,350	1,140	4,620
30	660	1,850	2,040	e720	---	6,360	1,210	1,560	973	4,730	1,350	4,510
31	595	---	2,450	e740	---	5,300	---	1,770	---	3,560	1,270	---
TOTAL	17,793	57,028	90,630	65,980	36,020	249,300	137,820	63,400	93,543	131,261	158,340	75,700
MEAN	574	1,901	2,924	2,128	1,286	8,042	4,594	2,045	3,118	4,234	5,108	2,523
MAX	1,250	4,510	9,120	6,550	3,800	23,100	14,900	3,570	6,690	18,700	13,200	5,940
MIN	247	597	950	700	660	1,550	1,210	1,150	973	622	1,040	1,090
CFSM	0.36	1.18	1.82	1.32	0.80	5.00	2.86	1.27	1.94	2.63	3.18	1.57
IN.	0.41	1.32	2.10	1.53	0.83	5.77	3.19	1.47	2.16	3.04	3.66	1.75

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1904 - 2003, BY WATER YEAR (WY)

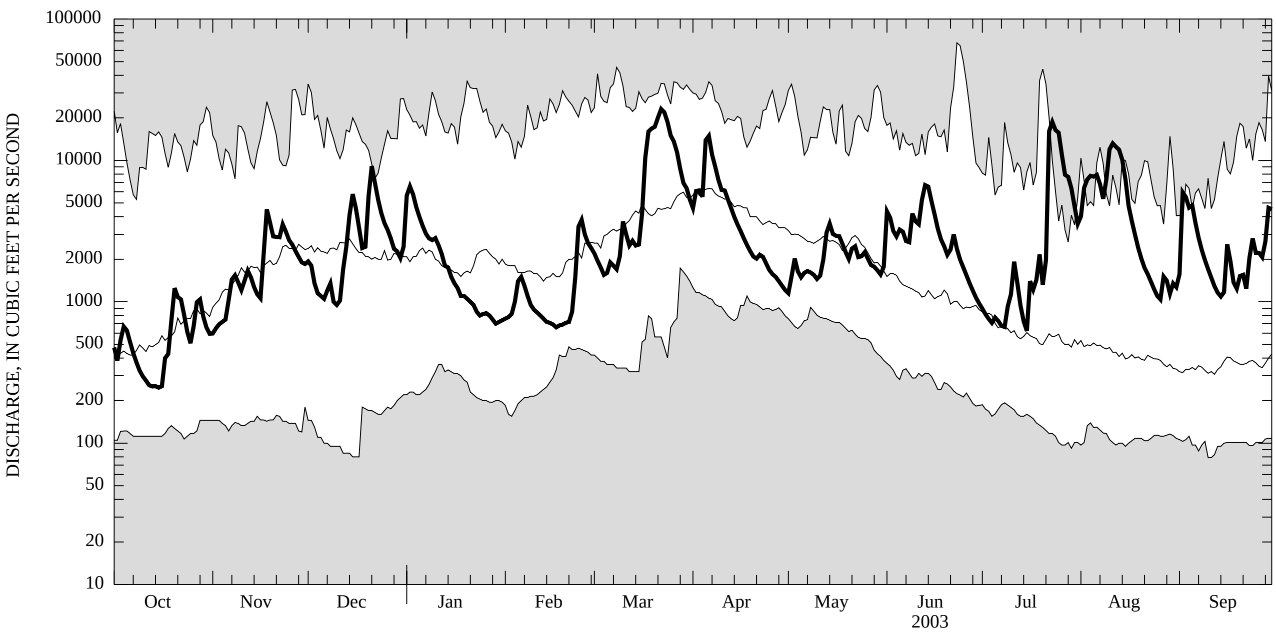
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1,322	2,502	3,070	3,312	3,178	5,919	5,815	3,455	2,036	1,114	757	838
MAX	5,801	8,605	9,147	10,200	9,683	14,850	15,540	9,574	11,520	6,074	5,108	7,477
(WY)	(1991)	(1928)	(1928)	(1913)	(1976)	(1936)	(1940)	(1943)	(1972)	(1942)	(2003)	(1977)
MIN	124	146	189	255	550	1,983	970	796	299	150	119	118
(WY)	(1931)	(1931)	(1961)	(1961)	(1905)	(1937)	(1946)	(1985)	(1934)	(1934)	(1930)	(1932)

e Estimated.

OHIO RIVER MAIN STEM

03011020 ALLEGHENY RIVER AT SALAMANCA, NY--Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1904 - 2003	
ANNUAL TOTAL	1,023,095		1,176,815			
ANNUAL MEAN	2,803		3,224		2,773	
HIGHEST ANNUAL MEAN					4,174	1916
LOWEST ANNUAL MEAN					1,777	1999
HIGHEST DAILY MEAN	16,200	Feb 1	23,100	Mar 22	67,900	Jun 23, 1972
LOWEST DAILY MEAN	151	Sep 13	247	Oct 15	79	Sep 10, 1971
ANNUAL SEVEN-DAY MINIMUM	165	Sep 8	262	Oct 10	84	Dec 11, 1908
ANNUAL RUNOFF (CFSM)	1.74		2.01		1.72	
ANNUAL RUNOFF (INCHES)	23.67		27.22		23.43	
10 PERCENT EXCEEDS	6,260		7,070		6,700	
50 PERCENT EXCEEDS	2,170		1,970		1,510	
90 PERCENT EXCEEDS	320		710		289	



CURRENT WATER YEAR DAILY MEAN DISCHARGE (BOLD) WITH DAILY MEDIAN FOR PERIOD OF RECORD.
SHADED AREAS SHOW HIGHEST AND LOWEST DAILY MEAN 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.--38.8 mi^2.

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 National Geodetic Vertical Datum of 1929, from topographic map.

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

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a base discharge of 500 ft^3/s and maximum (*****):

Date	Time	Discharge ft^3/s	Gage Height (ft)	Date	Time	Discharge ft^3/s	Gage Height (ft)
Mar. 21	2300	*989	*5.46	July 27	2000	750	4.91
Apr. 5	1000	664	4.68	Aug. 11	2100	518	4.33
July 22	0100	957	5.39				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.4	19	e42	e107	e30	e66	119	32	191	20	204	47
2	8.7	21	e36	188	e32	e59	176	47	119	19	156	185
3	8.3	20	e31	135	e33	e54	132	41	105	18	141	134
4	8.3	20	e25	e110	e115	e55	139	33	107	17	123	146
5	9.5	20	e24	e97	e91	e51	529	34	134	20	117	117
6	8.5	40	e22	e89	e71	e48	302	38	105	17	116	95
7	7.8	47	e22	e82	e65	e48	231	35	93	24	100	81
8	7.2	36	e21	79	e60	e48	197	37	89	22	103	69
9	7.1	32	e20	e78	e56	e67	178	36	126	21	92	59
10	7.3	30	e26	e69	e54	e71	173	35	91	21	84	52
11	7.5	69	e32	e61	e51	e58	162	38	86	26	155	44
12	7.5	60	e40	e56	e49	e51	141	55	134	20	241	39
13	8.2	43	e58	e51	e46	e58	122	82	193	17	146	36
14	8.5	35	e118	e46	e46	e62	107	79	138	15	116	36
15	7.7	30	e80	e43	e44	78	96	63	114	14	98	93
16	11	30	e65	e39	e46	149	88	74	97	15	94	147
17	13	135	e58	e34	e51	e250	78	74	83	14	93	77
18	12	120	e66	e34	e60	e349	72	65	81	28	62	59
19	31	81	e82	e28	e56	e458	66	58	73	42	48	91
20	29	72	e222	e27	e46	e562	60	58	63	22	41	114
21	19	73	e182	e27	e47	e606	64	133	70	286	36	76
22	14	107	e132	e26	e74	750	62	87	63	598	46	78
23	12	99	e109	e24	e172	497	55	80	48	203	36	188
24	11	81	e90	e24	e142	345	48	101	40	258	29	115
25	11	78	e78	e24	e124	275	43	88	35	196	26	110
26	43	70	e66	e24	e105	260	42	77	31	137	33	98
27	32	64	e59	e24	e88	200	40	71	28	249	40	88
28	21	56	e52	e25	e75	166	36	71	25	319	29	97
29	17	52	e50	e24	---	161	33	62	23	179	29	88
30	17	e46	e48	e26	---	150	32	55	23	144	48	81
31	16	---	e69	e28	---	124	---	132	---	113	31	---
TOTAL	430.5	1686	2025	1729	1929	6176	3623	1971	2608	3094	2713	2740
MEAN	13.9	56.2	65.3	55.8	68.9	199	121	63.6	86.9	99.8	87.5	91.3
MAX	43	135	222	188	172	750	529	133	193	598	241	188
MIN	7.1	19	20	24	30	48	32	32	23	14	26	36
CFSM	0.36	1.45	1.68	1.44	1.78	5.13	3.11	1.64	2.24	2.57	2.26	2.35
IN.	0.41	1.62	1.94	1.66	1.85	5.92	3.47	1.89	2.50	2.97	2.60	2.63

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	46.6	81.7	103	79.2	90.2	135	137	85.1	70.1	34.1	29.7	37.6
MAX	137	166	281	166	251	269	289	182	272	99.8	126	154
(WY)	1991	1971	1984	1998	1976	1979	1994	1989	1989	2003	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

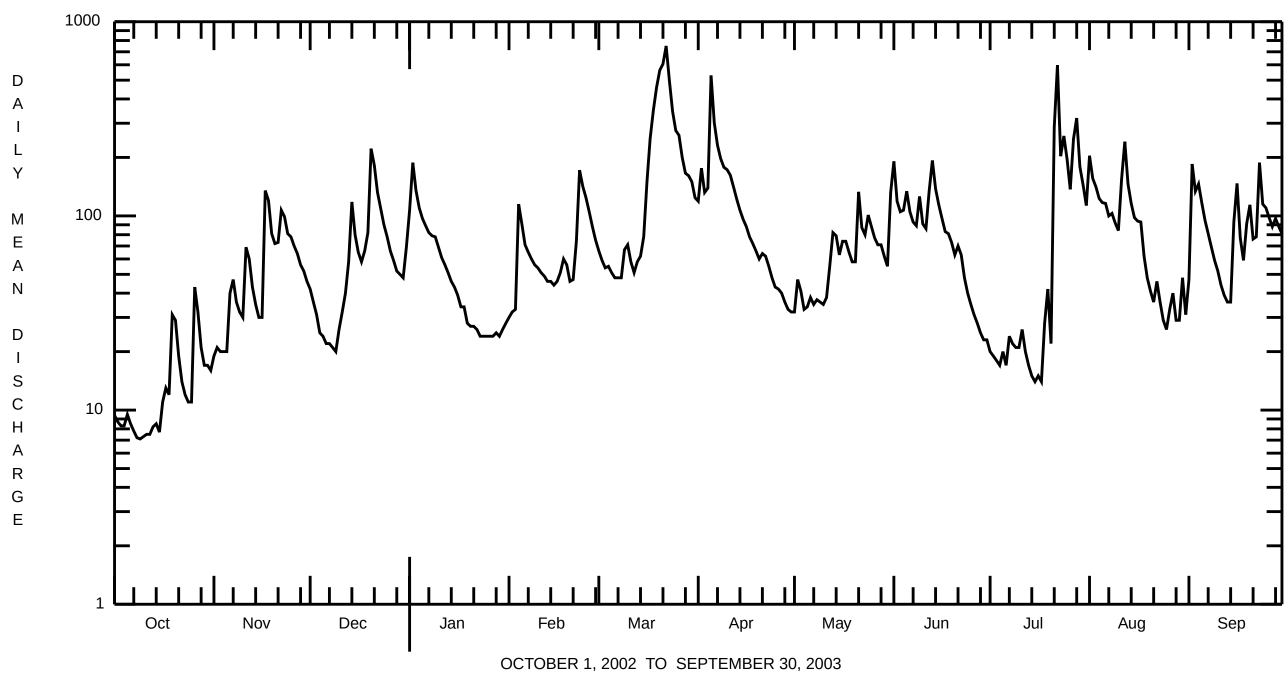
e Estimated.

KINZUA CREEK BASIN

03011800 KINZUA CREEK NEAR GUFFEY, PA--Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1966 - 2003	
ANNUAL TOTAL	25808.9		30724.5			
ANNUAL MEAN	70.7		84.2		77.3	
HIGHEST ANNUAL MEAN					113	1984
LOWEST ANNUAL MEAN					49.2	2001
HIGHEST DAILY MEAN	407	May 14	750	Mar 22	2120	Jun 23 1972
LOWEST DAILY MEAN	5.1	Sep 12-14,24	7.1	Oct 9	2.2	Sep 30 1995
ANNUAL SEVEN-DAY MINIMUM	5.3	Sep 8	7.5	Oct 7	3.3	Sep 10 1991
MAXIMUM PEAK FLOW			989	Mar 21	**a**5220	Jun 22 1972
MAXIMUM PEAK STAGE			5.46	Mar 21	**b**8.99	Jun 22 1972
INSTANTANEOUS LOW FLOW			7.1	Oct 8-10	2.0	Jul 29 1978
ANNUAL RUNOFF (CFSM)	1.82		2.17		1.99	
ANNUAL RUNOFF (INCHES)	24.74		29.46		27.07	
10 PERCENT EXCEEDS	159		168		168	
50 PERCENT EXCEEDS	52		59		50	
90 PERCENT EXCEEDS	6.9		20		11	

a From rating curve extended above 1,300 ft^3/s on basis of slope-area measurement at gage height 8.33 ft.
b From peak-stage indicator.



CONEWANGO CREEK BASIN

03015000 CONEWANGO CREEK AT RUSSELL, PA
(Pennsylvania Water-Quality Network Station)

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 mi^2.

WATER-DISCHARGE RECORDS

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 National Geodetic Vertical Datum of 1929. Prior to Apr. 10, 1941, nonrecording gage at same site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow regulated since November 1949 by Chautauqua Lake (station 03013946). Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemetry at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of March 1936 reached a stage of 10.9 ft from floodmark, discharge, 14,600 ft^3/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	320	428	1780	3820	e882	e1540	4670	528	1150	277	1850	830
2	251	498	1780	3990	e895	e1420	4340	772	1170	265	1370	2230
3	236	625	e1490	3890	954	e1300	3920	1020	969	254	1210	1980
4	310	665	e1450	3730	1820	e1280	3650	851	823	248	1070	1480
5	433	681	e1380	3320	2660	e1360	4870	721	794	333	718	1220
6	374	904	e1340	2780	e2380	e1160	4650	761	859	339	655	1120
7	312	1050	e1310	2310	e2160	e1140	4330	1070	868	309	861	1020
8	263	1020	e1260	2020	e1960	e1210	4000	1140	832	275	829	950
9	231	861	e1190	e1900	e1760	e1380	3700	969	1200	344	851	891
10	219	707	e1100	e1910	e1600	2280	3420	817	1270	506	1210	802
11	217	1070	1370	1790	e1400	1870	3090	722	1550	566	1280	477
12	206	1440	2230	e1620	e1260	e1640	2830	843	2400	460	1230	325
13	201	1280	2740	e1560	e1180	e1550	2510	2000	3620	375	1180	283
14	199	1060	3490	e1550	e1120	1500	2160	3310	3560	319	1020	269
15	193	918	3830	e1520	e1070	e1550	1880	3510	2910	279	864	276
16	201	857	3620	e1350	e1030	2570	1720	3710	2300	374	748	310
17	249	1340	3310	e1300	e977	4040	1600	3590	1810	342	680	319
18	285	2040	2850	e1250	e938	4640	1470	3060	1500	518	637	300
19	389	1960	2480	e1210	e925	4800	1370	2380	1320	398	584	401
20	893	1850	4010	e1180	e925	5110	1320	1850	870	298	429	759
21	1020	1780	4230	e1130	e938	5600	1470	1740	678	1140	331	578
22	762	1800	4030	e1100	1020	6160	1680	1850	637	3150	311	393
23	538	2170	3950	e1050	2120	6530	1540	1650	582	2560	303	838
24	422	2330	3740	e1010	2590	6600	1330	1460	504	2790	269	937
25	360	2340	3240	e1000	e2310	6340	1130	1450	441	2360	249	788
26	382	2170	2630	e961	e2090	6150	1030	1380	393	1920	271	608
27	450	1960	2200	e935	e1840	6070	853	1260	358	2050	419	539
28	480	1770	1900	e908	e1690	5980	718	871	326	3200	371	814
29	437	1620	1700	e908	---	5800	643	681	303	3200	326	974
30	441	1610	1560	e895	---	5500	570	587	288	2980	399	1050
31	438	---	2350	e895	---	5100	---	623	---	2510	558	---
TOTAL	11712	40804	75540	54792	42494	109170	72464	47176	36285	34939	23083	23761
MEAN	378	1360	2437	1767	1518	3522	2415	1522	1210	1127	745	792
MAX	1020	2340	4230	3990	2660	6600	4870	3710	3620	3200	1850	2230
MIN	193	428	1100	895	882	1140	570	528	288	248	249	269
CFSM	0.46	1.67	2.99	2.17	1.86	4.32	2.96	1.86	1.48	1.38	0.91	0.97
IN.	0.53	1.86	3.44	2.50	1.94	4.98	3.30	2.15	1.65	1.59	1.05	1.08

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	842	1585	2106	2015	2113	3133	2807	1386	887	479	419	585
MAX	3276	4070	4261	4986	5320	6715	6503	4016	2926	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

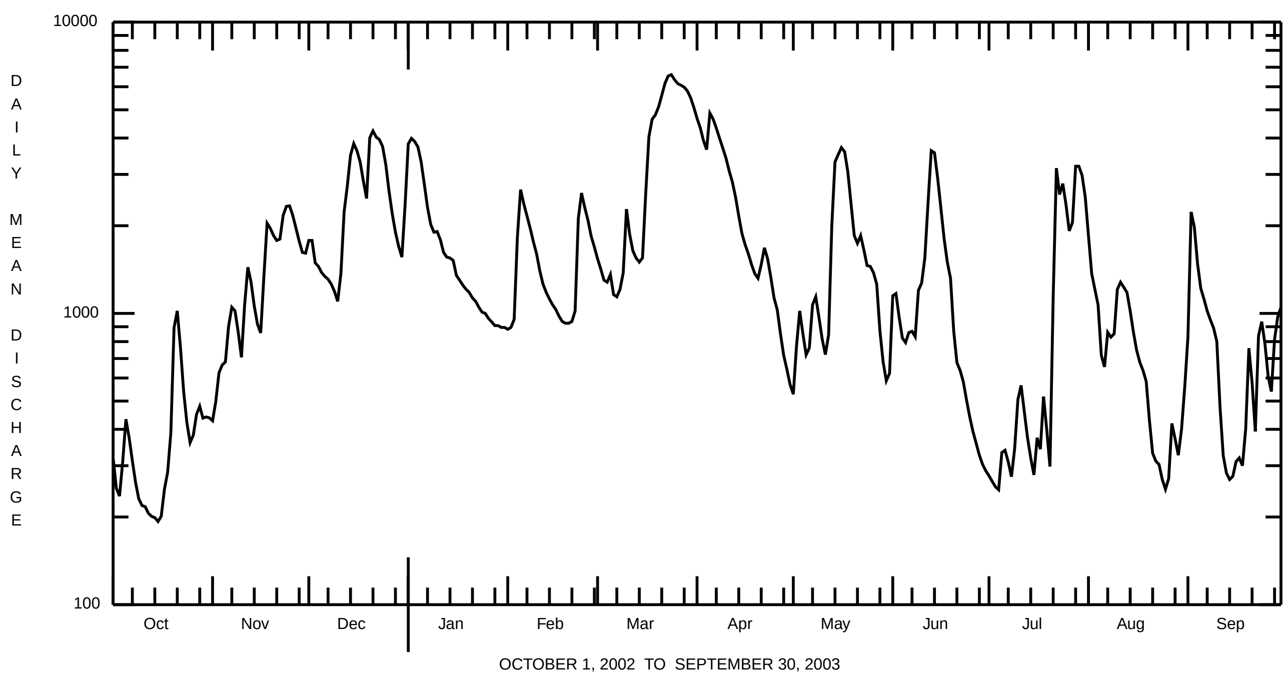
e Estimated.

CONEWANGO CREEK BASIN

03015000 CONEWANGO CREEK AT RUSSELL, PA--Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1940 - 2003	
ANNUAL TOTAL	596895		572220			
ANNUAL MEAN	1635		1568		1526	
HIGHEST ANNUAL MEAN					2057	1943
LOWEST ANNUAL MEAN					915	1999
HIGHEST DAILY MEAN	7700	Feb 4	6600	Mar 24	14700	Jan 10 1998
LOWEST DAILY MEAN	142	Sep 13	193	Oct 15	57	Oct 17 1960
ANNUAL SEVEN-DAY MINIMUM	149	Sep 8	205	Oct 10	59	Oct 12 1960
MAXIMUM PEAK FLOW			6630	Mar 24	**a**14900	Jan 10 1998
MAXIMUM PEAK STAGE			7.92	Mar 24	**b**10.88	Jan 10 1998
ANNUAL RUNOFF (CFSM)	2.00		1.92		1.87	
ANNUAL RUNOFF (INCHES)	27.21		26.09		25.41	
10 PERCENT EXCEEDS	3840		3620		3780	
50 PERCENT EXCEEDS	1230		1170		1000	
90 PERCENT EXCEEDS	192		319		162	

a From rating curve extended above 13,000 ft^3/s.
b From peak-stage indicator.



CONEWANGO CREEK BASIN

03015000 CONEWANGO CREEK AT RUSSELL, PA--Continued
(Pennsylvania Water-Quality Network Station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 2002 to current year.

REMARKS.--Other data for the Water-Quality Network can be found on pages 242-289.

COOPERATION.--Samples were collected as part of the Pennsylvania Department of Environmental Protection Water-Quality Network (WQN) with cooperation from the Pennsylvania Department of Environmental Protection.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Agency col-lecting sample, code (00027)	Agency ana-lyzing sample, code (00028)	Instan-taneous dis-charge, cfs (00061)	Sam-pling method, code (82398)	Dis-solved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conduc-tance, wat unf µS/cm 25 degC (00095)	Temper-ature, water, deg C (00010)	Hard-ness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water unfltrd recover -able, mg/L (00916)	Magnes-ium, water, unfltrd recover -able, mg/L (00927)	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (00417)
NOV 2002													
18...	1300	1028	9813	2080	40	12.2	7.5	247	4.8	91	27.1	5.7	70
JAN 2003													
29...	1030	1028	9813	E900	40	15.1	7.3	313	.0	100	32.0	5.8	78
MAR													
25...	1145	1028	9813	6340	40	10.7	7.1	152	5.9	49	14.3	3.1	34
MAY													
19...	1230	1028	9813	2360	40	9.6	7.4	226	13.4	73	20.6	5.3	66
JUL													
21...	1230	1028	9813	524	40	7.5	7.4	287	19.8	110	34.0	6.3	90
SEP													
22...	1345	1028	9813	370	40	7.7	7.6	277	17.9	100	31.9	5.7	83

Date	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 105degC wat flt mg/L (00515)	Residue total at 105 deg. C, sus-pended, mg/L (00530)	Ammonia water, unfltrd mg/L as N (00610)	Nitrate water unfltrd mg/L as N (00620)	Nitrite water, unfltrd mg/L as N (00615)	Ortho-phos-phate, water, unfltrd mg/L as P (70507)	Phos-phorus, water, unfltrd mg/L (00665)	Total nitro-gen, water, unfltrd mg/L (00600)	Organic carbon, water, unfltrd mg/L (00680)	Alum-inum, water, unfltrd recover -able, µg/L (01105)	Copper, water, unfltrd recover -able, µg/L (01042)	Iron, water, unfltrd recover -able, µg/L (01045)
NOV 2002													
18...	16.9	180	30	.040	.72	<.040	.07	.089	1.6	5.5	600	<10	1040
JAN 2003													
29...	15.3	204	10	.050	.81	<.040	.02	.031	1.2	3.3	<200	<10	310
MAR													
25...	9.9	110	10	<.020	.75	<.040	.02	.032	1.1	3.8	600	<10	940
MAY													
19...	10.8	146	12	<.020	.38	<.040	.02	.066	.88	5.0	800	<10	1410
JUL													
21...	12.2	196	38	.060	.70	<.040	.07	.090	1.0	5.0	1200	<10	1620
SEP													
22...	11.1	176	20	.040	.46	<.040	.04	.097	1.0	5.1	400	<10	820

Date	Lead, water, unfltrd recover -able, µg/L (01051)	Mangan-ese, water, unfltrd recover -able, µg/L (01055)	Nickel, water, unfltrd recover -able, µg/L (01067)	Zinc, water, unfltrd recover -able, µg/L (01092)
NOV 2002				
18...	1.1	80	<50	<10
JAN 2003				
29...	<1.0	70	<50	10
MAR				
25...	<1.0	40	<50	180
MAY				
19...	1.3	90	<50	80
JUL				
21...	1.8	200	<50	<10
SEP				
22...	1.3	120	<50	<10

CONEWANGO CREEK BASIN

03015000 CONEWANGO CREEK AT RUSSELL, PA--Continued

BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES

REMARKS.--Samples were collected using rapid bioassessment protocols for benthic macroinvertebrates using a D-Frame net with a mesh size of 500 µm. Samples represent counts per 100 (approximate) subsamples.

Date	8/20/02
Benthic Macroinvertebrate	Count
Platyhelminthes	
Turbellaria (FLATWORMS)	
Tricladida	
Dugesiidae	
Dugesia sp	3
Mollusca	
Gastropoda (SNAILS)	
Hydrobiidae	
Amnicola sp	3
Bivalvia (CLAMS)	
Veneroida	
Sphaeriidae	
Musiculum sp	11
Sphaerium sp	10
Annelida	
Oligochaeta (AQUATIC EARTHWORMS)	1
Arthropoda	
Insecta	
Ephemeroptera (MAYFLIES)	
Baetidae	
Acentrella sp	1
Baetis sp	6
Caenidae	
Caenis sp	24
Ephemerellidae	
Serratella sp	3
Heptageniidae	
Stenacron sp	5
Stenonema sp	9
Tricorythidae	
Tricorythodes sp	1
Megaloptera	
Corydalidae (FISHFLIES AND DOBSONFLIES)	
Corydalus sp	1
Trichoptera (CADDISFLIES)	
Hydropsychidae	
Cheumatopsyche sp	56
Hydropsyche sp	19
Macrostemum sp	12
Hydroptilidae	
Hydroptila sp	2
Philopotamidae	
Chimarra sp	2
Coleoptera (BEETLES)	
Elmidae (RIFFLE BEETLES)	
Optioservus sp	1
Stenelmis sp	3
Psephenidae (WATER PENNIES)	
Psephenus sp	1

CONEWANGO CREEK BASIN

03015000 CONEWANGO CREEK AT RUSSELL, PA--Continued

BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES--Continued

Date	8/20/02
Benthic Macroinvertebrate	Count
Diptera (TRUE FLIES)	
Chironomidae (MIDGES)	181
Empididae (DANCE FLIES)	
Hemerodromia sp	1
Simuliidae (BLACK FLIES)	
Simulium sp	4
Total Organisms	360

BROKENSTRAW CREEK BASIN

03015500 BROKENSTRAW CREEK AT YOUNGSVILLE, PA
(Pennsylvania Water-Quality Network Station)

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 mi^2, including that of Matthews Run.

WATER-DISCHARGE RECORDS

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 National Geodetic Vertical Datum of 1929. 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 those for estimated daily discharges, which are poor. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemetry at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a base discharge of 4,500 ft^3/s and maximum (*****):

Date	Time	Discharge ft^3/s	Gage Height (ft)	Date	Time	Discharge ft^3/s	Gage Height (ft)
Mar. 18	2300	4,890	7.62	July 22	0200	*8,920	*10.24
Apr. 5	0700	5,090	7.77	Aug. 10	2000	5,320	7.94
June 13	0500	5,210	7.86				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	96	147	e303	2590	e161	e490	805	246	869	127	437	410
2	78	199	e301	2780	e160	e445	1130	396	639	118	437	1380
3	72	234	e293	1780	e192	e400	1120	647	434	113	340	1510
4	78	253	e283	1030	e571	e380	1160	444	371	115	304	836
5	94	287	e263	760	e893	e390	4170	358	374	171	402	435
6	95	615	e270	e550	e1200	e440	2930	547	434	175	623	309
7	87	679	e254	e470	e924	e528	1950	584	377	153	618	239
8	78	483	e254	e438	e684	e723	1290	635	333	133	422	200
9	71	339	e253	e426	e530	e880	1280	651	451	167	790	177
10	68	283	e233	e400	e444	e930	1300	629	435	300	2110	158
11	66	1030	e521	e388	e363	e750	1150	580	522	352	1460	143
12	67	1140	e865	e369	e314	e637	927	702	1850	240	713	132
13	68	692	1220	e356	e254	e571	743	1800	4170	176	482	125
14	70	440	2400	e350	e235	534	613	2460	2810	139	361	118
15	69	333	2270	e337	e218	658	535	2170	1750	118	289	133
16	91	314	1800	e331	e218	1640	471	1280	850	363	253	167
17	134	761	1100	e306	e214	3370	419	807	562	218	276	154
18	126	1260	770	e300	e209	4440	382	631	579	484	287	127
19	216	997	717	e290	e197	4370	347	509	534	407	211	181
20	481	820	3100	e280	e205	3660	320	450	456	229	175	411
21	356	697	3150	e270	e189	2960	644	599	398	2920	156	368
22	195	662	2390	e260	e266	2460	865	490	373	6310	201	251
23	141	850	1300	e250	e767	1960	685	404	309	3220	318	1070
24	113	715	808	e240	e1260	1370	550	499	251	2400	212	958
25	99	599	660	e230	e952	1080	466	607	211	1520	154	482
26	192	541	550	e220	e728	1520	410	451	184	837	156	314
27	257	472	e447	e210	e592	1790	357	364	166	1470	385	383
28	227	410	e354	e205	e583	1290	316	333	155	2710	441	1050
29	171	e352	e298	e196	---	983	286	305	144	1640	260	829
30	147	e324	e363	e179	---	1240	260	262	139	848	305	868
31	142	---	1150	e170	---	990	---	394	---	520	326	---
TOTAL	4245	16928	28940	16961	13523	43879	27881	21234	21130	28693	13904	13918
MEAN	137	564	934	547	483	1415	929	685	704	926	449	464
MAX	481	1260	3150	2780	1260	4440	4170	2460	4170	6310	2110	1510
MIN	66	147	233	170	160	380	260	246	139	113	154	118
CFSM	0.43	1.76	2.91	1.70	1.50	4.41	2.90	2.13	2.19	2.88	1.40	1.45
IN.	0.49	1.96	3.35	1.97	1.57	5.09	3.23	2.46	2.45	3.33	1.61	1.61

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1910 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	312	619	752	786	772	1237	1020	604	380	233	180	225
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

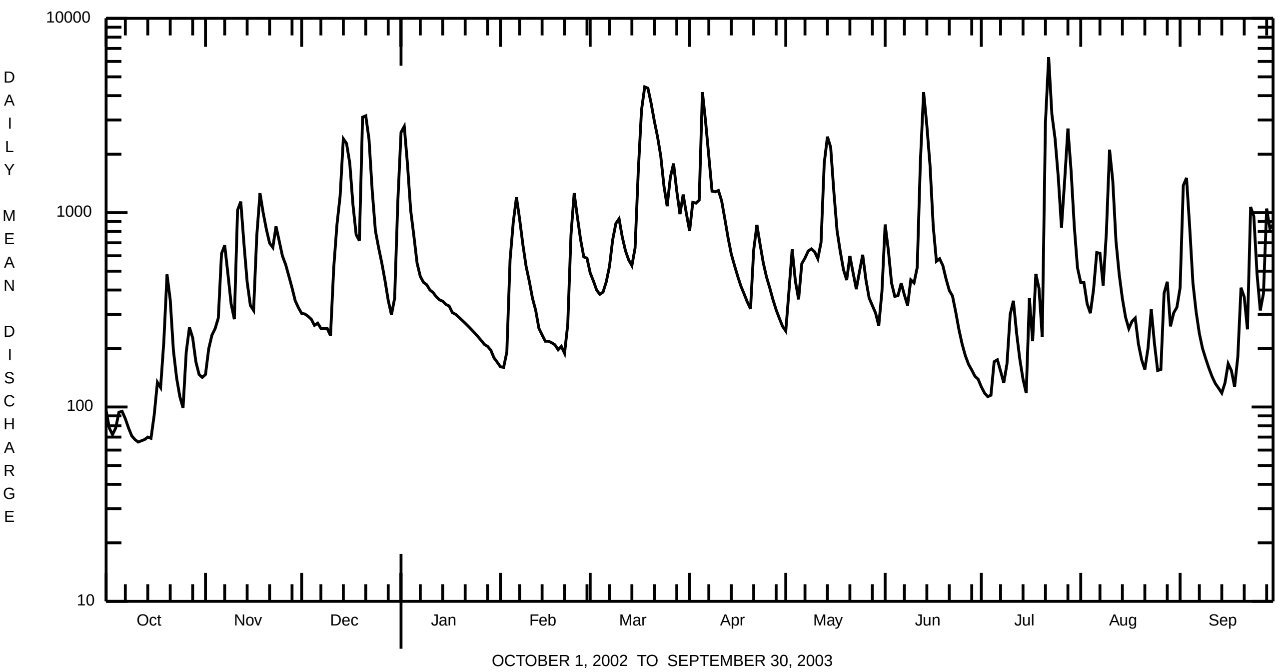
e Estimated.

BROKENSTRAW CREEK BASIN

03015500 BROKENSTRAW CREEK AT YOUNGSVILLE, PA--Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1910 - 2003	
ANNUAL TOTAL	225157		251236			
ANNUAL MEAN	617		688		592	
HIGHEST ANNUAL MEAN					864	1956
LOWEST ANNUAL MEAN					307	1931
HIGHEST DAILY MEAN	6380	May 14	6310	Jul 22	14000	Mar 25 1913
LOWEST DAILY MEAN	42	Sep 11	66	Oct 11	19	Oct 14 1934
ANNUAL SEVEN-DAY MINIMUM	44	Sep 7	68	Oct 9	24	Oct 11 1934
MAXIMUM PEAK FLOW			8920	Jul 22	**ab**18000	Mar 25 1913
MAXIMUM PEAK STAGE			10.24	Jul 22	14.20	Mar 25 1913
INSTANTANEOUS LOW FLOW			65	Oct 11,13	**c**19	Oct 14 1934
ANNUAL RUNOFF (CFSM)	1.92		2.14		1.85	
ANNUAL RUNOFF (INCHES)	26.09		29.12		25.07	
10 PERCENT EXCEEDS	1290		1520		1420	
50 PERCENT EXCEEDS	364		410		304	
90 PERCENT EXCEEDS	67		144		67	

a From rating curve extended above 9,400 ft^3/s.
b About.
c Minimum observed.



BROKENSTRAW CREEK BASIN

03015500 BROKENSTRAW CREEK AT YOUNGSVILLE, PA--Continued
(Pennsylvania Water-Quality Network Station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 2002 to current year.

REMARKS.--Other data for the Water-Quality Network can be found on pages 242-289.

COOPERATION.--Samples were collected as part of the Pennsylvania Department of Environmental Protection Water-Quality Network (WQN) with cooperation from the Pennsylvania Department of Environmental Protection.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Agency collecting sample, code (00027)	Agency analyzing sample, code (00028)	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf µS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water unfltrd recover -able, mg/L (00916)	Magnesium, water, unfltrd recover -able, mg/L (00927)	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (00417)
NOV 2002													
26...	0900	1028	9813	554	40	13.2	7.8	164	3.2	66	20.0	3.9	46
MAR 2003													
26...	1000	1028	9813	1530	40	11.3	7.5	119	7.4	44	12.8	3.0	32
MAY													
20...	1200	1028	9813	420	40	11.0	8.1	168	14.5	63	17.5	4.6	60
JUL													
29...	1315	1028	9813	1630	40	8.8	7.3	119	17.9	47	14.0	3.0	40
SEP													
23...	1310	1028	9813	1110	40	8.9	7.5	138	15.9	57	17.0	3.6	46

Date	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 105degC wat flt mg/L (00515)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia water, unfltrd mg/L as N (00610)	Nitrate water unfltrd mg/L as N (00620)	Nitrite water, unfltrd mg/L as N (00615)	Orthophosphate, water, unfltrd mg/L as P (70507)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, unfltrd mg/L (00600)	Organic carbon, water, unfltrd mg/L (00680)	Aluminum, water, unfltrd recover -able, µg/L (01105)	Copper, water, unfltrd recover -able, µg/L (01042)	Iron, water, unfltrd recover -able, µg/L (01045)
NOV 2002													
26...	13.6	122	<2	<.020	.57	<.040	.01	.022	.72	3.7	<200	<10	270
MAR 2003													
26...	10.2	72	24	<.020	.65	<.040	.02	.021	.90	3.2	600	<10	960
MAY													
20...	9.8	118	<2	<.020	.50	<.040	.02	.017	.75	3.7	<200	<10	420
JUL													
29...	7.0	92	24	<.020	.38	<.040	.04	.065	.84	7.6	700	<10	1410
SEP													
23...	7.0	130	46	<.020	.43	<.040	.08	.106	.95	7.4	1800	<10	2710

Date	Lead, water, unfltrd recover -able, µg/L (01051)	Manganese, water, unfltrd recover -able, µg/L (01055)	Nickel, water, unfltrd recover -able, µg/L (01067)	Zinc, water, unfltrd recover -able, µg/L (01092)
NOV 2002				
26...	<1.0	20	<50	<10
MAR 2003				
26...	<1.0	40	<50	40
MAY				
20...	<1.0	30	<50	80
JUL				
29...	1.2	60	<50	10
SEP				
23...	1.7	160	<50	60

BROKENSTRAW CREEK BASIN

03015500 BROKENSTRAW CREEK AT YOUNGSVILLE, PA--Continued

BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES

REMARKS.--Samples were collected using rapid bioassessment protocols for benthic macroinvertebrates using a D-Frame net with a mesh size of 500 µm. Samples represent counts per 100 (approximate) subsamples.

Date Benthic Macroinvertebrate	8/21/02 Count
Platyhelminthes	
Turbellaria (FLATWORMS)	
Tricladida	
Dugesiidae	
Dugesia sp	1
Nematoda (NEMATODES)	1
Mollusca	
Gastropoda (SNAILS)	
Basommatophora	
Ancylidae	
Ferrissia sp	2
Annelida	
Hirudinea (LEECHES)	1
Oligochaeta (AQUATIC EARTHWORMS)	5
Arthropoda	
Insecta	
Ephemeroptera (MAYFLIES)	
Baetidae	
Acentrella sp	2
Baetis sp	8
Plauditus sp	2
Procloeon sp	1
Caenidae	
Caenis sp	15
Ephemerellidae	
Serratella sp	2
Heptageniidae	
Stenonema sp	27
Isonychiidae	
Isonychia sp	3
Polymitarcyidae	
Ephoron sp	2
Plecoptera (STONEFLIES)	
Perlidae	1
Acroneuria sp	4
Neoperla sp	2
Megaloptera	
Corydalidae (FISHFLIES AND DOBSONFLIES)	
Corydalus sp	1
Trichoptera (CADDISFLIES)	
Hydropsychidae	
Cheumatopsyche sp	20
Hydropsyche sp	24
Hydroptilidae	
Leucotrichia sp	10
Philopotamidae	
Chimarra sp	2

BROKENSTRAW CREEK BASIN

03015500 BROKENSTRAW CREEK AT YOUNGSVILLE, PA--Continued

BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES--Continued

Date	8/21/02
Benthic Macroinvertebrate	Count
Coleoptera (BEETLES)	
Elmidae (RIFFLE BEETLES)	
Optioservus sp	5
Stenelmis sp	7
Diptera (TRUE FLIES)	
Chironomidae (MIDGES)	48
Tipulidae (CRANE FLIES)	
Antocha sp	7
Total Organisms	203

OHIO RIVER MAIN STEM

03016000 ALLEGHENY RIVER AT WEST HICKORY, PA
(Pennsylvania Water-Quality Network Station)

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 mi^2.

WATER-DISCHARGE RECORDS

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

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

GAGE.--Water-stage recorder. Datum of gage is 1,059.90 ft above National Geodetic Vertical Datum of 1929. Prior to Dec. 12, 1941, nonrecording gage at same site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow regulated since November 1949 by Chautauqua Lake (station 03013946), since October 1965 by Allegheny Reservoir (station 03012520) 39 mi upstream. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1790	1720	5930	11100	e2470	e6040	12500	2420	5170	1930	17600	2840
2	1640	2650	5910	12100	e2660	e5600	11000	2630	6870	1890	15600	5770
3	1610	2860	5080	11400	e3250	e5440	8930	3210	7820	1870	13400	7960
4	1580	2990	e4560	13300	e4670	e5360	8880	3010	7480	1870	13700	5270
5	1760	3070	e4100	13400	e6430	e5250	21400	2760	7120	1970	15600	4040
6	1690	4340	e3810	12600	e8220	e5250	18000	3000	5830	2030	12500	3590
7	1910	4870	e3690	11800	e7600	e5110	18800	4100	5860	2030	12800	3990
8	2200	5280	e3520	11300	e6940	e5250	14600	3730	5900	1690	11000	4940
9	2160	5000	e3400	10600	e6470	e5700	21400	3920	7030	1640	10100	5720
10	2130	4780	e3230	8620	e5930	e6580	21300	4360	6730	1860	11000	5580
11	2470	5790	e3380	7210	e5380	e5840	21100	4180	6770	2420	14400	5390
12	2630	6430	e4150	e6190	e5030	e5510	22500	4310	11200	2450	16900	5070
13	2160	6030	e5940	e5050	e4680	e4880	21100	5890	21200	2430	20300	2960
14	2090	5320	e8700	e4180	e4370	e4260	17700	9290	16900	2290	19600	4130
15	2070	4280	e12700	e3540	e4180	e3930	13200	11800	16200	2190	17700	5000
16	2190	4110	e11300	e3030	e3870	e4880	8850	9380	13800	2350	10300	4750
17	2320	4590	e10100	e2520	e3630	e9390	6960	12100	12500	2240	8670	5340
18	1920	6250	e9440	e2470	e3520	e13600	5400	11300	11600	2760	8100	6180
19	1790	7370	e9130	e2390	e3280	e16500	5210	9810	9520	3030	4850	4800
20	2190	8200	e11300	e2390	e3130	e14000	5040	7910	7530	2960	3530	4970
21	2530	8040	15200	e2270	e2860	e16700	5290	7350	5830	8100	2680	5050
22	2250	7830	13800	e2240	e2820	e21100	6110	7050	5670	26500	2470	3620
23	1950	8390	14000	e2350	e3840	e24300	5840	6780	5330	16200	2460	6090
24	1760	8400	13900	e2350	e4570	26300	5390	6650	3830	19800	2360	8040
25	1640	8390	13300	e2390	e5450	25600	4280	6750	3580	23500	2220	7980
26	1880	8240	12300	e2390	e6180	23200	4010	6360	2820	22600	2250	7300
27	1890	7680	11300	e2390	e6620	23400	3800	5300	2730	22400	2420	5860
28	1850	6060	9550	e2470	e6470	22400	3460	4600	2640	27600	2610	6570
29	1820	5780	8410	e2470	---	20100	3290	3410	2300	24600	2490	6600
30	1720	5730	7330	e2430	---	19500	2520	3200	2250	23000	2490	6700
31	1720	---	7270	e2390	---	16900	---	3480	---	21700	2590	---
TOTAL	61310	170470	255730	181330	134520	377870	327860	180040	230010	279900	284690	162100
MEAN	1978	5682	8249	5849	4804	12190	10930	5808	7667	9029	9184	5403
MAX	2630	8400	15200	13400	8220	26300	22500	12100	21200	27600	20300	8040
MIN	1580	1720	3230	2240	2470	3930	2520	2420	2250	1640	2220	2840
CFSM	0.54	1.55	2.25	1.60	1.31	3.33	2.99	1.59	2.09	2.47	2.51	1.48
IN.	0.62	1.73	2.60	1.84	1.37	3.84	3.33	1.83	2.34	2.84	2.89	1.65

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1942 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	4028	6429	8536	8439	8160	11870	11750	7552	4840	3114	2392	2735
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

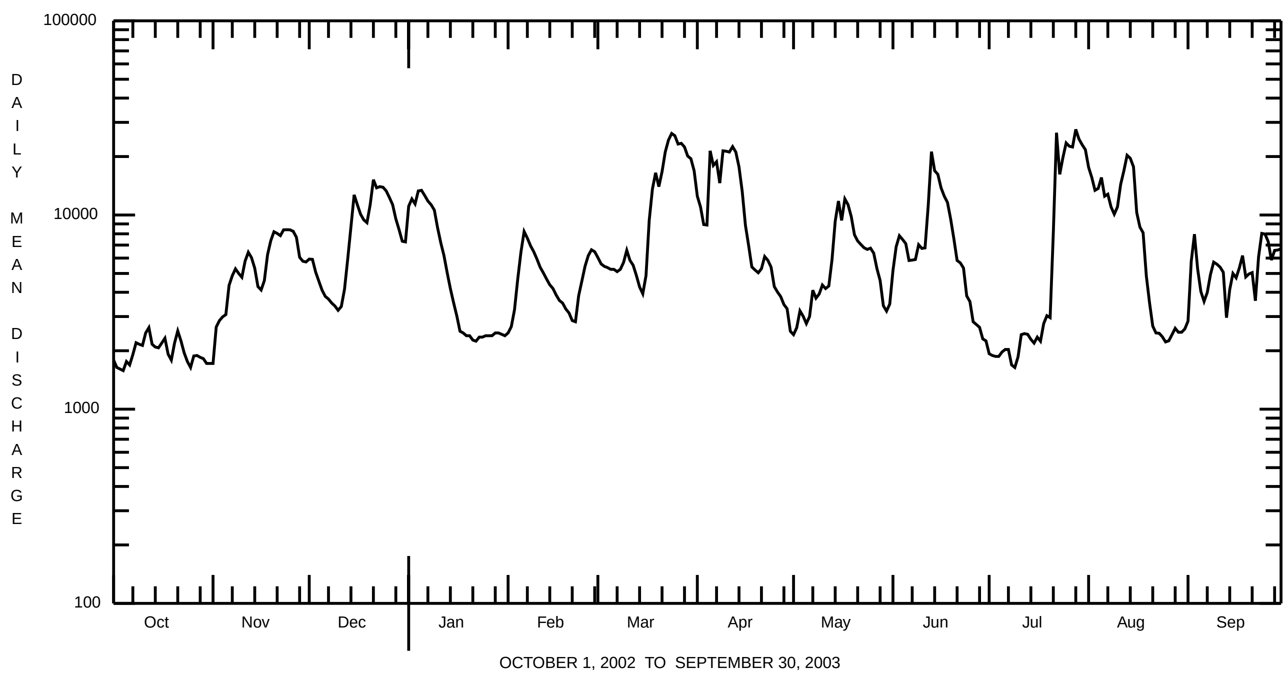
e Estimated.

OHIO RIVER MAIN STEM

03016000 ALLEGHENY RIVER AT WEST HICKORY, PA--Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1942 - 2003	
ANNUAL TOTAL	2512900		2645830			
ANNUAL MEAN	6885		7249		6645	
HIGHEST ANNUAL MEAN					9547	1956
LOWEST ANNUAL MEAN					3963	1999
HIGHEST DAILY MEAN	26600	May 20	27600	Jul 28	90800	Mar 8 1956
LOWEST DAILY MEAN	1580	Oct 4	1580	Oct 4	272	Oct 15 1963
ANNUAL SEVEN-DAY MINIMUM	1710	Oct 1	1710	Oct 1	276	Oct 14 1963
MAXIMUM PEAK FLOW			37600	Jul 22	**a**101000	Mar 8 1956
MAXIMUM PEAK STAGE			**b**10.50	Jul 22	**c**17.20	Mar 8 1956
ANNUAL RUNOFF (CFSM)	1.88		1.98		1.82	
ANNUAL RUNOFF (INCHES)	25.54		26.89		24.67	
10 PERCENT EXCEEDS	15500		16600		15300	
50 PERCENT EXCEEDS	5170		5340		4300	
90 PERCENT EXCEEDS	2040		2190		1120	

a From rating curve extended above 99,300 ft^3/s.
b Maximum gage height, 10.85 ft., Feb. 5 (backwater from ice).
c Maximum gage height, 17.83 ft., Jan. 25, 1964 (backwater from ice).



OHIO RIVER MAIN STEM

03016000 ALLEGHENY RIVER AT WEST HICKORY, PA--Continued
(Pennsylvania Water-Quality Network Station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 2002 to current year.

REMARKS.--Other data for the Water-Quality Network can be found on pages 242-289.

COOPERATION.--Samples were collected as part of the Pennsylvania Department of Environmental Protection Water-Quality Network (WQN) with cooperation from the Pennsylvania Department of Environmental Protection.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Agency collecting sample, code (00027)	Agency analyzing sample, code (00028)	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf µS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water unfltrd recover -able, mg/L (00916)	Magnesium, water, unfltrd recover -able, mg/L (00927)	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (00417)
NOV 2002													
26...	1130	1028	9813	8040	40	12.6	7.6	167	5.5	60	18.2	3.5	42
MAR 2003													
26...	1115	1028	9813	23200	40	12.8	7.4	128	4.3	38	10.9	2.5	24
MAY													
20...	1300	1028	9813	7680	40	11.3	7.9	146	13.2	43	12.0	3.1	34
JUL													
29...	1145	1028	9813	24400	40	9.2	7.1	120	16.8	40	11.8	2.7	34
SEP													
23...	1100	1028	9813	6020	40	8.5	7.5	142	18.2	47	14.2	2.9	36

Date	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 105degC wat flt mg/L (00515)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia water, unfltrd mg/L as N (00610)	Nitrate water unfltrd mg/L as N (00620)	Nitrite water, unfltrd mg/L as N (00615)	Orthophosphate, water, unfltrd mg/L as P (70507)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, unfltrd mg/L (00600)	Organic carbon, water, unfltrd mg/L (00680)	Aluminum, water, unfltrd recover -able, µg/L (01105)	Copper, water, unfltrd recover -able, µg/L (01042)	Iron, water, unfltrd recover -able, µg/L (01045)
NOV 2002													
26...	11.7	134	<2	<.020	.40	<.040	.03	.030	.50	2.9	300	<10	470
MAR 2003													
26...	9.2	84	16	<.020	.64	<.040	.03	.034	.84	2.9	700	<10	1060
MAY													
20...	9.5	68	<2	<.020	.38	<.040	.02	.023	.63	2.9	200	<10	370
JUL													
29...	8.5	114	20	<.020	.40	<.040	.05	.058	.65	3.3	1300	<10	1910
SEP													
23...	8.5	124	16	<.020	.32	<.040	.02	.035	.53	3.4	400	<10	660

Date	Lead, water, unfltrd recover -able, µg/L (01051)	Manganese, water, unfltrd recover -able, µg/L (01055)	Nickel, water, unfltrd recover -able, µg/L (01067)	Zinc, water, unfltrd recover -able, µg/L (01092)
NOV 2002				
26...	<1.0	70	<50	<10
MAR 2003				
26...	<1.0	80	<50	30
MAY				
20...	2.3	40	<50	50
JUL				
29...	1.7	130	<50	20
SEP				
23...	<1.0	100	<50	60

OHIO RIVER MAIN STEM

03016000 ALLEGHENY RIVER AT WEST HICKORY, PA--Continued

BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES

REMARKS.--Samples were collected using rapid bioassessment protocols for benthic macroinvertebrates using a D-Frame net with a mesh size of 500 µm. Samples represent counts per 100 (approximate) subsamples.

Date	8/21/02
Benthic Macroinvertebrate	Count
Platyhelminthes	
Turbellaria (FLATWORMS)	
Tricladida	
Dugesiidae	
Dugesia sp	6
Mollusca	
Gastropoda (SNAILS)	
Basommatophora	
Ancylidae	
Ferrissia sp	5
Hydrobiidae	
Amnicola sp	33
Physidae	
Aplexa sp	3
Bivalvia (CLAMS)	
Veneroida	
Sphaeriidae	
Sphaerium sp	5
Annelida	
Oligochaeta (AQUATIC EARTHWORMS)	22
Arthropoda	
Insecta	
Ephemeroptera (MAYFLIES)	
Baetidae	
Baetis sp	6
Heptageniidae	
Stenonema sp	7
Isonychiidae	
Isonychia sp	13
Plecoptera (STONEFLIES)	
Perlidae	
Acroneuria sp	3
Trichoptera (CADDISFLIES)	
Brachycentridae	
Brachycentrus sp	69
Hydropsychidae	
Cheumatopsyche sp	5
Hydropsyche sp	3
Macrostemum sp	1
Hydroptilidae	
Hydroptila sp	3
Leptoceridae	
Ceraclea sp	1
Uenoidae	
Neophylax sp	1
Lepidoptera (MOTHS AND BUTTERFLIES)	
Pyralidae	
Petrophila sp	1

03016000 ALLEGHENY RIVER AT WEST HICKORY, PA--Continued

BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES

Date	8/21/02
Benthic Macroinvertebrate	Count
Coleoptera (BEETLES)	
Elmidae (RIFFLE BEETLES)	
Optioservus sp	19
Stenelmis sp	8
Diptera (TRUE FLIES)	
Chironomidae (MIDGES)	22
Tipulidae (CRANE FLIES)	
Antocha sp	1
Total Organisms	237

ALLEGHENY RIVER BASIN

LAKES AND RESERVOIRS IN ALLEGHENY RIVER BASIN

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 mi^2. 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, 731,270 acre-ft July 26, elevation, 1,339.99 ft; minimum, 312,680 acre-ft Feb. 23, elevation 1,301.97 ft.

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 mi^2. 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 National Geodetic Vertical Datum of 1929. Dec. 21, 1956 to Sept. 30, 1975, water-stage recorder at site at outlet of Muddy Creek at datum 1,300.00 ft above National Geodetic Vertical Datum of 1929. Lake is regulated at outlet by Warner Dam. Capacity of lake not determined; area of water surface, 20.98 mi^2. Figures of change in contents computed from surface area multiplied by change in stage.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 1,311.23 ft, Mar. 5, 1976; minimum, 1,306.20 ft, Dec. 16, 1998.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 1,309.15 ft, Apr. 5, 6; minimum, 1,306.97 ft, Feb. 22.

MONTHEND ELEVATION, IN FEET ABOVE SEA LEVEL, AND CONTENTS AT 2400 HRS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	03012520 Allegheny Reservoir Elevation (feet)	Contents (acre-feet)	Change in contents (equivalent in ft^3/s)	03013946 Chautauqua Lake Elevation (feet)	Contents acre-feet)	Change in contents (equivalent in ft^3/s)
Sept. 30	1,311.99	402,960	---	1,307.52	--	--
Oct. 31	1,308.73	374,150	-469	1,307.47	--	-11
Nov. 30	1,304.06	334,140	-672	1,307.84	--	+83
Dec. 31	1,304.06	329,920	-69	1,308.11	--	+59
CAL YR 2002	--	--	+456	--	--	+11
Jan. 31	1,303.00	321,060	-144	1,307.28	--	-181
Feb. 28	1,303.22	322,950	+34	1,307.18	--	-24
Mar. 31	1,329.34	588,930	+4,330	1,309.03	--	+402
Apr. 30	1,329.20	587,290	-28	1,308.05	--	-220
May 31	1,329.61	592,280	+81	1,308.30	--	+54
June 30	1,329.32	588,930	-56	1,308.20	--	-22
July 31	1,333.64	643,840	+893	1,308.48	--	+61
Aug. 31	1,328.53	579,010	-1,050	1,308.38	--	-22
Sept. 30	1,325.51	543,480	-597	1,308.53	--	+34
WTR YR 2003	--	--	+194	--	--	+19

OIL CREEK BASIN

03020500 OIL CREEK AT ROUSEVILLE, PA
(Pennsylvania Water-Quality Network Station)

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 mi^2, including that of Cherrytree Run.

WATER-DISCHARGE RECORDS

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 National Geodetic Vertical Datum of 1929. Prior to June 9, 1941, nonrecording gage at same site and datum.

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

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a base discharge of 5,000 ft^3/s and maximum (*):

Date	Time	Discharge ft^3/s	Gage Height (ft)	Date	Time	Discharge ft^3/s	Gage Height (ft)
Apr. 5	1100	5,950	7.65	July 22	0130	*19,600	*11.78

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	70	111	e180	2520	e187	e365	570	237	833	130	313	254
2	59	124	e170	2260	e239	e399	749	290	512	121	285	1160
3	55	141	e165	1160	e329	e453	650	329	361	118	273	582
4	53	145	e160	837	e539	e475	632	263	338	113	265	383
5	53	151	e155	e600	e774	e420	4680	264	318	171	319	312
6	52	224	e150	e370	e524	e355	2490	492	312	167	672	243
7	48	249	e148	e340	e400	e340	1310	584	295	154	472	204
8	46	196	e146	e330	e359	e567	1200	585	293	146	323	181
9	44	157	e144	e310	e323	e828	1220	619	385	130	522	165
10	42	155	e170	e330	e309	e651	1060	661	338	230	1040	156
11	43	820	e200	e340	e294	e550	858	600	331	472	884	138
12	42	624	e375	e357	e280	e488	723	670	627	239	537	127
13	45	337	e634	e425	e279	e500	614	1500	2120	166	387	119
14	47	248	e1230	e250	e280	e587	520	2000	1490	131	303	115
15	45	199	e2050	e215	e280	e740	451	995	759	113	256	132
16	64	203	1140	e215	e272	e1480	407	731	514	191	247	171
17	123	436	761	e215	e273	e2520	375	580	398	284	234	153
18	94	724	553	e215	e267	3430	336	475	438	163	204	121
19	101	554	484	e215	e255	2600	309	403	421	539	180	195
20	177	537	2620	e215	e250	1840	291	385	402	214	164	384
21	134	415	2160	e215	e220	1390	442	785	320	3660	153	239
22	96	376	1030	e227	e276	1410	713	541	305	13300	153	201
23	79	452	771	e203	e682	1030	532	422	260	5760	153	1100
24	69	359	582	e203	e1010	807	415	653	219	2870	134	614
25	67	322	513	e215	e776	687	356	640	191	1330	124	375
26	186	303	e424	e227	e548	889	327	446	172	786	173	292
27	197	e240	e370	e215	e444	852	302	366	160	699	283	428
28	142	e214	e360	e191	e350	633	277	338	152	867	171	1170
29	114	e200	e338	e191	---	587	257	316	142	610	226	568
30	99	e190	e317	e180	---	853	240	283	140	423	359	475
31	106	---	e884	e172	---	618	---	444	---	355	211	---
TOTAL	2592	9406	19384	13958	11019	29344	23306	17897	13546	34652	10020	10757
MEAN	83.6	314	625	450	394	947	777	577	452	1118	323	359
MAX	197	820	2620	2520	1010	3430	4680	2000	2120	13300	1040	1170
MIN	42	111	144	172	187	340	240	237	140	113	124	115
CFSM	0.28	1.05	2.08	1.50	1.31	3.16	2.59	1.92	1.51	3.73	1.08	1.20
IN.	0.32	1.17	2.40	1.73	1.37	3.64	2.89	2.22	1.68	4.30	1.24	1.33

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1933 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	251	502	677	676	732	1083	929	592	384	234	172	198
MAX	1260	1560	1784	2385	2124	2574	1958	1706	1491	1118	786	1304
(WY)	1991	1986	1978	1937	1976	1936	1940	1953	1989	2003	1980	1990
MIN	34.5	65.0	80.9	108	158	400	266	129	75.2	38.3	38.8	34.5
(WY)	1964	1992	1961	1984	1987	2000	1935	1934	1934	1934	1934	1934

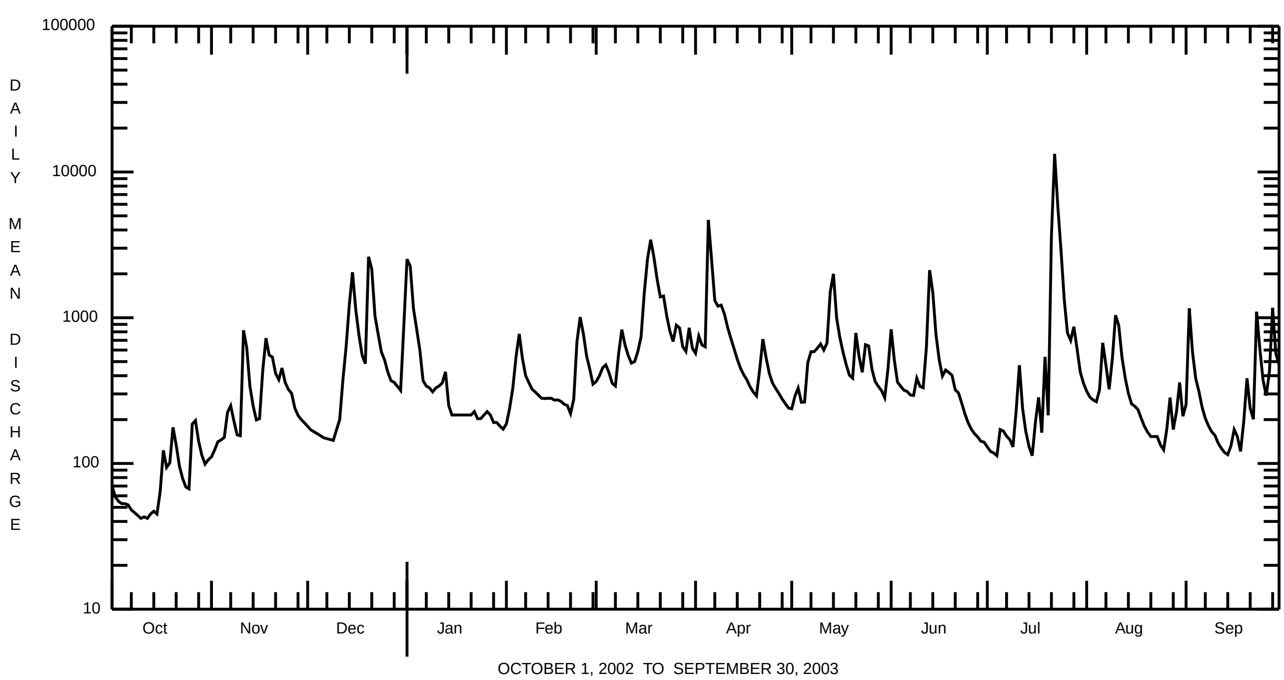
e Estimated.

OIL CREEK BASIN

03020500 OIL CREEK AT ROUSEVILLE, PA--Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1933 - 2003	
ANNUAL TOTAL	167233		195881			
ANNUAL MEAN	458		537		535	
HIGHEST ANNUAL MEAN					746	1956
LOWEST ANNUAL MEAN					303	1962
HIGHEST DAILY MEAN	5520	May 14	13300	Jul 22	16300	Jan 22 1959
LOWEST DAILY MEAN	28	Sep 13	42	Oct 10,12	23	Jul 26 1934
ANNUAL SEVEN-DAY MINIMUM	31	Sep 8	44	Oct 9	24	Sep 2 1934
MAXIMUM PEAK FLOW			**a**19600	Jul 22	**a**21000	Jan 22 1959
MAXIMUM PEAK STAGE			11.78	Jul 22	11.97	Jan 22 1959
INSTANTANEOUS LOW FLOW			41	Oct 10-13	**b**16	Oct 12 1993
ANNUAL RUNOFF (CFSM)	1.53		1.79		1.78	
ANNUAL RUNOFF (INCHES)	20.74		24.29		24.21	
10 PERCENT EXCEEDS	1010		1020		1210	
50 PERCENT EXCEEDS	269		323		291	
90 PERCENT EXCEEDS	51		126		62	

a From rating curve extended above 15,000 ft^3/s.
b Result of abnormal diversion.



OIL CREEK BASIN

03020500 OIL CREEK AT ROUSEVILLE, PA--Continued
(Pennsylvania Water-Quality Network Station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 2002 to current year.

REMARKS.--Other data for the Water-Quality Network can be found on pages 242-289.

COOPERATION.--Samples were collected as part of the Pennsylvania Department of Environmental Protection Water-Quality Network (WQN) with cooperation from the Pennsylvania Department of Environmental Protection.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Agency collecting sample, code (00027)	Agency analyzing sample, code (00028)	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf µS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water unfltrd recover -able, mg/L (00916)	Magnesium, water, unfltrd recover -able, mg/L (00927)	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (00417)
NOV 2002													
20...	0915	1028	9813	555	40	11.7	7.8	139	3.3	56	16.5	3.5	38
JAN 2003													
15...	0945	1028	9813	E215	40	14.3	8.1	175	.0	62	18.2	4.0	42
MAR													
19...	0930	1028	9813	2770	40	17.6	7.5	85	4.4	30	8.7	2.0	16
JUN													
09...	1145	1028	9813	414	40	12.2	8.5	167	17.0	64	19.3	3.9	54
JUL													
16...	1030	1028	9813	132	40	9.4	8.0	220	--	80	24.0	4.9	71
SEP													
16...	1020	1028	9813	178	40	11.1	8.1	222	18.0	86	26.7	4.7	70

Date	Fluoride, water, unfltrd mg/L (00951)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 105degC wat flt mg/L (00515)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia water, unfltrd mg/L as N (00610)	Nitrate water unfltrd mg/L as N (00620)	Nitrite water, unfltrd mg/L as N (00615)	Orthophosphate, water, unfltrd mg/L as P (70507)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, unfltrd mg/L (00600)	Organic carbon, water, unfltrd mg/L (00680)	Aluminum, water, unfltrd recover -able, µg/L (01105)	Copper, water, unfltrd recover -able, µg/L (01042)
NOV 2002													
20...	<.2	14.1	104	10	<.020	.48	<.040	.01	.012	.99	4.0	<200	<10
JAN 2003													
15...	<.2	13.6	130	6	<.020	.69	<.040	<.01	.012	.75	1.8	<200	<10
MAR													
19...	<.2	9.8	156	52	<.020	.66	<.040	.04	.039	.92	3.3	1400	<10
JUN													
09...	<.2	10.6	130	8	<.020	.16	<.040	.01	.027	.45	2.9	<200	<10
JUL													
16...	<.2	11.0	146	8	<.020	.11	<.040	.02	.020	.35	3.7	<200	<10
SEP													
16...	<.2	11.1	154	6	<.020	.27	<.040	.02	.021	.47	2.9	<200	<10

Date	Cyanide amenable to chlorination wat unf mg/L (00722)	Iron, water, unfltrd recover -able, µg/L (01045)	Lead, water, unfltrd recover -able, µg/L (01051)	Manganese, water, unfltrd recover -able, µg/L (01055)	Nickel, water, unfltrd recover -able, µg/L (01067)	Zinc, water, unfltrd recover -able, µg/L (01092)	Phenolic compounds, water, unfltrd µg/L (32730)
NOV 2002							
20...	<1.00	350	<1.0	20	<50	<10	<5
JAN 2003							
15...	--	240	<1.0	20	<50	<10	<5
MAR							
19...	<1.00	2090	3.1	100	<50	20	<5
JUN							
09...	<1.00	470	<1.0	30	<50	140	<5
JUL							
16...	<1.00	400	<1.0	40	<50	<10	<5
SEP							
16...	<1.00	240	<1.0	20	<50	<10	<5

OIL CREEK BASIN

03020500 OIL CREEK AT ROUSEVILLE, PA--Continued

BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES

REMARKS.--Samples were collected using rapid bioassessment protocols for benthic macroinvertebrates using a D-Frame net with a mesh size of 500 µm. Samples represent counts per 100 (approximate) subsamples.

Date	9/24/02
Benthic Macroinvertebrate	Count
Platyhelminthes	
Turbellaria (FLATWORMS)	
Tricladida	
Planariidae	1
Annelida	
Oligochaeta (AQUATIC EARTHWORMS)	
Lumbricina	1
Arthropoda	
Acariformes	
Hydrachnidia (WATER MITES)	2
Insecta	
Ephemeroptera (MAYFLIES)	
Baetidae	
<u>Baetis</u> sp	3
<u>Plauditus</u> sp	1
Caenidae	
<u>Caenis</u> sp	1
Ephemerellidae	
<u>Serratella</u> sp	17
Heptageniidae	
<u>Stenonema</u> sp	13
Isonychiidae	
<u>Isonychia</u> sp	16
Odonata (DRAGONFLIES AND DAMSELFLIES)	
Coenagrionidae	
<u>Argia</u> sp	3
Plecoptera (STONEFLIES)	
Perlidae	
<u>Paragnetina</u> sp	1
Trichoptera (CADDISFLIES)	
Brachycentridae	
<u>Brachycentrus</u> sp	6
Glossosomatidae	
<u>Protoptila</u> sp	1
Hydropsychidae	
<u>Cheumatopsyche</u> sp	25
<u>Hydropsyche</u> sp	11
Leptoceridae	
<u>Ceraclea</u> sp	2
Coleoptera (BEETLES)	
Elmidae (RIFFLE BEETLES)	
<u>Optioservus</u> sp	39
<u>Stenelmis</u> sp	6
Psephenidae (WATER PENNIES)	
<u>Psephenus</u> sp	13
Diptera (TRUE FLIES)	
Chironomidae (MIDGES)	25
Empididae (DANCE FLIES)	
<u>Hemerodromia</u> sp	2
Tipulidae (CRANE FLIES)	
<u>Antocha</u> sp	1
Total Organisms	204

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 mi^2.

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

GAGE.--Water-stage recorder. Datum of gage is 1,304.84 ft above National Geodetic Vertical Datum of 1929 (U.S. Army Corps of Engineers benchmark).

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

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a base discharge of 2,500 ft^3/s and maximum (*****):

Date	Time	Discharge ft^3/s	Gage Height (ft)	Date	Time	Discharge ft^3/s	Gage Height (ft)
May 14	0300	*2,670	*8.08	No other peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30	46	e121	1750	e67	154	246	52	448	27	67	758
2	22	72	e121	687	e65	125	533	160	182	25	58	1990
3	32	71	e121	315	e62	115	312	159	102	25	55	560
4	45	82	e118	228	e220	117	277	100	87	24	52	226
5	35	95	e118	184	e394	137	1260	84	133	46	62	140
6	30	204	e118	163	e301	224	578	109	171	48	165	105
7	24	185	e118	137	e218	202	335	110	114	39	164	80
8	20	130	e115	154	e174	167	297	104	93	37	117	67
9	17	90	e115	158	e146	373	317	108	160	84	152	59
10	15	87	e115	e132	e127	304	388	102	118	86	93	53
11	14	673	e129	e119	e108	211	375	89	120	59	82	47
12	14	341	e183	e112	e97	166	253	232	196	54	147	41
13	15	170	e344	e108	e90	166	187	1680	805	40	72	37
14	13	122	e511	e104	e85	153	152	2000	455	30	53	36
15	14	94	e690	e101	e82	179	131	484	200	24	43	49
16	15	93	451	e98	e77	619	112	276	124	34	83	76
17	28	253	280	e96	e74	1610	95	201	91	41	781	52
18	35	434	217	e96	e68	2160	83	153	123	81	169	39
19	189	254	232	e94	e61	1990	78	118	109	86	82	84
20	225	278	1990	e91	e55	1750	72	96	93	48	59	209
21	99	191	1350	e91	e52	1270	152	118	81	117	47	101
22	60	277	439	e88	e53	1240	185	94	81	657	541	78
23	44	439	290	e86	e463	703	157	79	66	900	234	471
24	36	254	217	e85	864	429	121	259	52	534	92	211
25	32	225	185	e82	570	470	96	218	46	298	60	115
26	70	199	160	e81	384	1530	81	122	41	131	111	94
27	92	161	143	e79	328	685	70	84	36	340	190	842
28	64	136	127	e76	236	344	63	108	33	1010	95	794
29	49	125	133	e74	---	488	58	85	30	239	228	841
30	43	e121	125	e71	---	544	54	66	29	117	596	670
31	37	---	1080	e69	---	280	---	132	---	78	157	---
TOTAL	1458	5902	10456	5809	5521	18905	7118	7782	4419	5359	4907	8925
MEAN	47.0	197	337	187	197	610	237	251	147	173	158	298
MAX	225	673	1990	1750	864	2160	1260	2000	805	1010	781	1990
MIN	13	46	115	69	52	115	54	52	29	24	43	36
CFSM	0.51	2.14	3.67	2.04	2.14	6.63	2.58	2.73	1.60	1.88	1.72	3.23
IN.	0.59	2.39	4.23	2.35	2.23	7.64	2.88	3.15	1.79	2.17	1.98	3.61

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1975 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	154	298	305	254	318	429	330	160	122	67.8	79.5	117
MAX	375	669	547	624	792	779	627	438	477	334	272	563
(WY)	1982	1986	1978	1998	1976	1979	1994	2002	1986	1986	1977	1977
MIN	13.3	31.0	81.2	79.3	75.9	139	157	38.2	14.6	6.58	5.93	4.84
(WY)	1992	1992	1990	1977	1987	2000	1976	1985	1991	1999	1991	1995

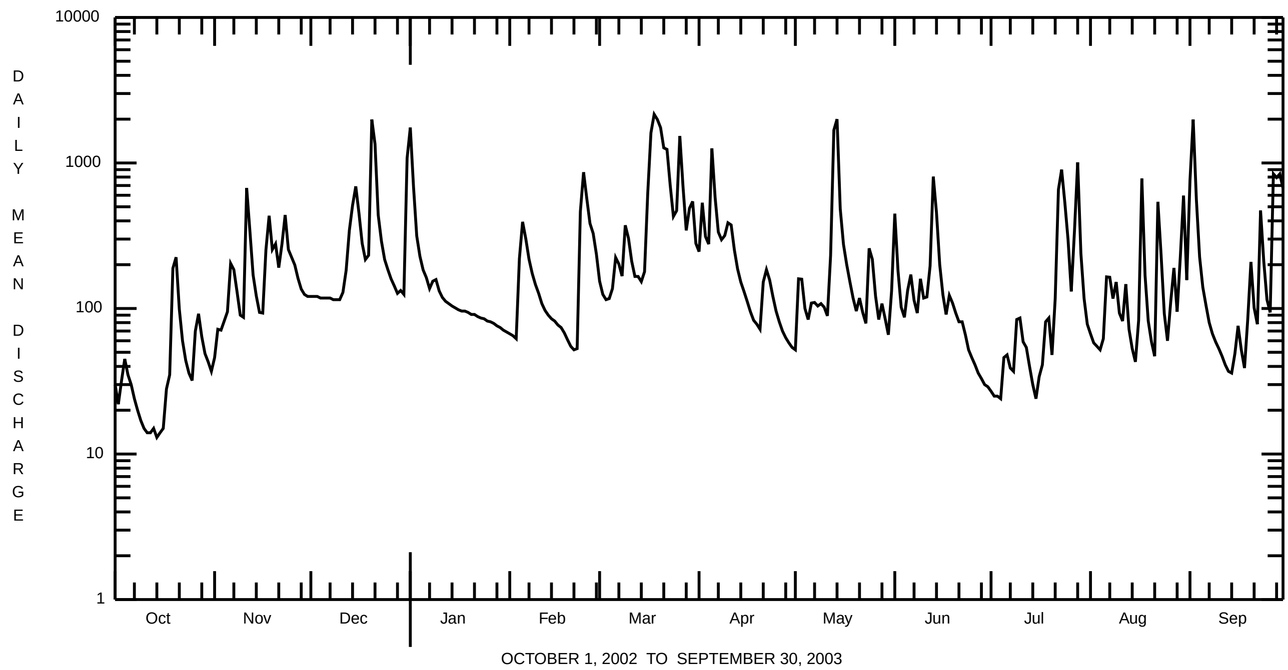
e Estimated.

FRENCH CREEK BASIN

03021350 FRENCH CREEK NEAR WATTSBURG, PA--Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1975 - 2003	
ANNUAL TOTAL	85396.5		86561			
ANNUAL MEAN	234		237		219	
HIGHEST ANNUAL MEAN					289	1996
LOWEST ANNUAL MEAN					136	1999
HIGHEST DAILY MEAN	3010	Feb 1	2160	Mar 18	**e**4900	Jan 19 1996
LOWEST DAILY MEAN	4.0	Sep 13	13	Oct 14	1.7	Aug 18 1999
ANNUAL SEVEN-DAY MINIMUM	4.9	Sep 7	14	Oct 10	2.4	Aug 14 1999
MAXIMUM PEAK FLOW			2670	May 14	**a**6350	Sep 14 1979
MAXIMUM PEAK STAGE			8.08	May 14	11.95	Sep 14 1979
INSTANTANEOUS LOW FLOW			12	Oct 14	1.5	Jul 31 1999**b**
ANNUAL RUNOFF (CFSM)	2.54		2.58		2.38	
ANNUAL RUNOFF (INCHES)	34.53		35.00		32.32	
10 PERCENT EXCEEDS	535		550		524	
50 PERCENT EXCEEDS	115		118		103	
90 PERCENT EXCEEDS	10		40		17	

a From rating curve extended above 4,400 ft^3/s.
b Also Aug. 18, 19, 1999.
e Estimated.



FRENCH CREEK BASIN

03023100 FRENCH CREEK AT MEADVILLE, PA
(Pennsylvania Water-Quality Network Station)

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 mi^2.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 1,058.83 ft above National Geodetic Vertical Datum of 1929 (U.S. Army Corps of Engineers benchmark). Prior to October 27, 1989, water-stage recorder at site 2,300 ft upstream at different datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow regulated since October 1971 by Union City Reservoir 43 mi upstream, serving as a retarding basin, and since January 1974 by Woodcock Creek Lake (station 03022550) 9.0 mi upstream. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemetry at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge 25,800 ft^3/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 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	377	433	e1210	5280	e539	e1740	2940	533	2240	318	1800	1340
2	268	451	e1220	5420	e537	e1640	2910	747	2120	296	1660	2920
3	215	563	e1050	4410	e616	e1560	2770	1330	1760	317	1540	2870
4	195	634	e969	3540	e1540	e1490	2740	1170	1310	285	1440	2230
5	201	666	e946	2800	e2700	e1470	6240	957	1090	327	1220	1920
6	211	716	e904	2430	e3520	e1530	6660	1340	1050	424	1040	1670
7	192	896	e870	2230	e3080	e1690	4860	1780	980	398	1390	1480
8	258	917	e835	2090	e2670	e1960	4170	1530	912	332	1330	1320
9	239	813	e812	1970	e2230	e2270	3960	1590	1230	343	1390	1140
10	199	727	e796	2030	e1860	e3240	3510	1670	1460	513	2310	852
11	183	1480	e786	1890	e1540	e2610	2930	1630	1300	647	2270	576
12	179	2350	e930	1650	e1240	e2110	2410	1670	2190	583	1580	428
13	177	1960	e1520	1370	e1040	e1860	2180	3460	4320	539	1290	373
14	167	1610	e2860	e1250	e948	e1730	2020	5630	4420	439	1080	338
15	156	1260	e4300	e1150	e868	e1910	1920	4700	3320	354	900	366
16	157	1040	3680	e1060	e809	e2650	1790	3550	2600	456	722	456
17	172	1170	3030	e927	e773	e3800	1630	2650	1810	496	593	564
18	233	1860	2250	e841	e737	e5040	1460	2160	1590	470	1020	476
19	376	2050	1970	e779	e723	6780	1270	1900	1520	571	1220	719
20	885	1910	3590	e740	e702	5880	992	1750	1500	523	1150	1630
21	1080	1740	4970	e702	e695	5390	1190	1800	1210	3310	983	1660
22	884	1530	3840	e671	e681	5670	1720	1680	986	7250	703	1250
23	678	1880	3170	e647	e1340	5290	1710	1480	865	8890	568	1910
24	484	2040	2560	e632	e2150	4440	1500	2150	721	8340	727	2270
25	398	1970	2220	e609	e2970	3530	1260	2250	585	4980	602	1670
26	410	1850	2000	e601	e2620	4050	1100	1790	496	2950	518	1280
27	584	1650	1830	e585	e2330	4600	890	1320	437	2310	776	2120
28	703	1400	1710	e562	e1980	3760	753	1070	395	3010	755	4240
29	619	1190	1660	e554	---	3450	647	894	357	2980	594	3460
30	516	1130	1540	e547	---	4100	575	753	333	2260	657	3570
31	453	---	2660	e539	---	3510	---	1260	---	1990	1110	---
TOTAL	11849	39886	62688	50506	43438	100750	70707	58194	45107	56901	34938	47098
MEAN	382	1330	2022	1629	1551	3250	2357	1877	1504	1836	1127	1570
MAX	1080	2350	4970	5420	3520	6780	6660	5630	4420	8890	2310	4240
MIN	156	433	786	539	537	1470	575	533	333	285	518	338
CFSM	0.49	1.69	2.57	2.07	1.97	4.12	2.99	2.38	1.91	2.33	1.43	1.99
IN.	0.56	1.88	2.96	2.38	2.05	4.76	3.34	2.75	2.13	2.69	1.65	2.22

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 2003, BY WATER YEAR (WY)

MEAN	967	1729	1962	2252	2157	2456	2454	1519	900	531	495	718
MAX	3181	3205	3039	4233	4190	4059	4023	3421	2659	1836	1771	2786
(WY)	1991	1997	1991	1998	1990	1997	1994	2002	1989	2003	2000	1990
MIN	104	154	510	815	757	1313	1556	451	155	134	81.3	52.6
(WY)	1992	1992	1999	2001	1993	2000	1995	1993	1991	1998	1998	1991

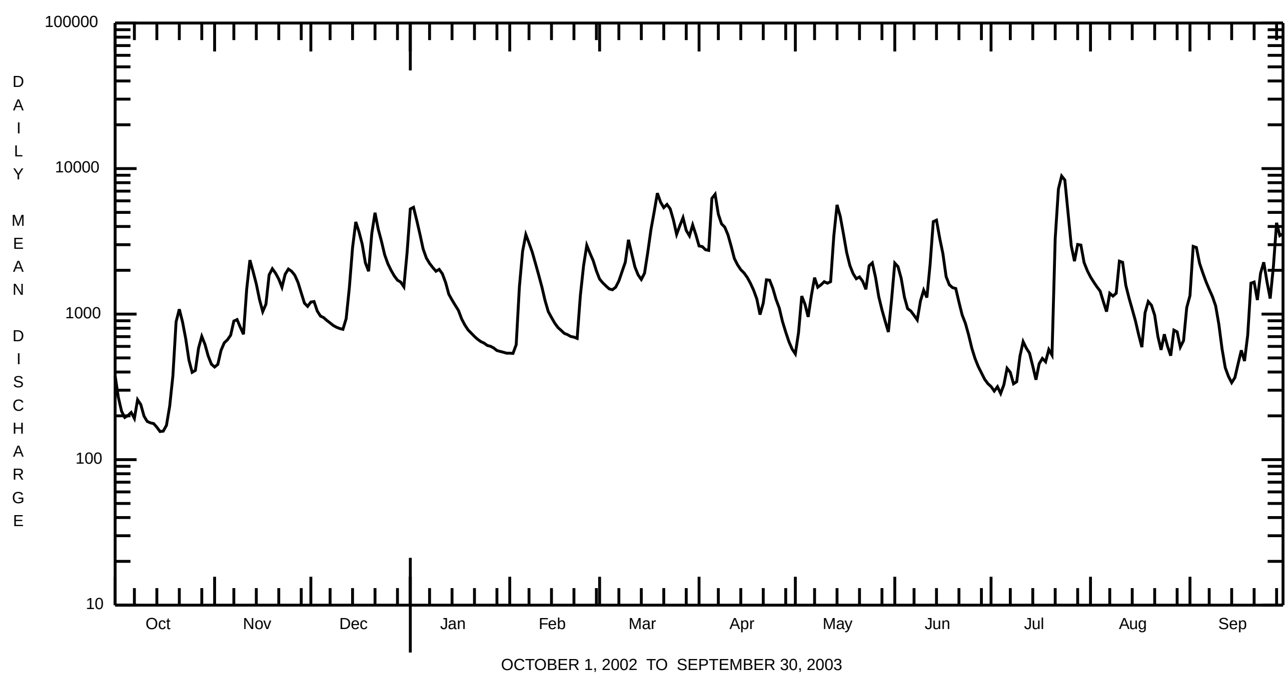
e Estimated.

FRENCH CREEK BASIN

03023100 FRENCH CREEK AT MEADVILLE, PA--Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1989 - 2003	
ANNUAL TOTAL	570145		622062			
ANNUAL MEAN	1562		1704		1507	
HIGHEST ANNUAL MEAN					1982	1996
LOWEST ANNUAL MEAN					824	1999
HIGHEST DAILY MEAN	10900	May 14	8890	Jul 23	14300	Jan 20 1996
LOWEST DAILY MEAN	65	Sep 11,12	156	Oct 15	37	Sep 22 1991
ANNUAL SEVEN-DAY MINIMUM	71	Sep 7	170	Oct 11	42	Sep 19 1991
MAXIMUM PEAK FLOW			9380	Jul 24	**a**14800	Jan 20 1996
MAXIMUM PEAK STAGE			12.21	Jul 24	15.52	Jan 20 1996
INSTANTANEOUS LOW FLOW			140	Oct 16	37	Sep 22 1991
ANNUAL RUNOFF (CFSM)	1.98		2.16		1.91	
ANNUAL RUNOFF (INCHES)	26.92		29.37		25.99	
10 PERCENT EXCEEDS	3280		3540		3470	
50 PERCENT EXCEEDS	1150		1340		1000	
90 PERCENT EXCEEDS	121		418		130	

a From rating curve extended above 10,300 ft^3/s.



03023100 FRENCH CREEK AT MEADVILLE, PA--Continued
(Pennsylvania Water-Quality Network Station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 2002 to current year.

REMARKS.--Other data for the Water-Quality Network can be found on pages 242-289.

COOPERATION.--Samples were collected as part of the Pennsylvania Department of Environmental Protection Water-Quality Network (WQN) with cooperation from the Pennsylvania Department of Environmental Protection.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Agency collecting sample, code (00027)	Agency analyzing sample, code (00028)	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf µS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water unfltrd recover -able, mg/L (00916)	Magnesium, water, unfltrd recover -able, mg/L (00927)	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (00417)
NOV 2002													
19...	1415	1028	9813	2040	40	10.6	7.6	211	4.5	94	29.6	4.9	62
JAN 2003													
14...	1430	1028	9813	E1250	40	14.9	7.9	266	.3	92	27.7	5.5	64
MAR													
18...	1430	1028	9813	E5040	40	13.5	7.3	144	3.2	51	14.9	3.4	31
JUN													
05...	1400	1028	9813	1080	40	10.0	7.9	238	14.5	94	29.1	5.1	75
JUL													
16...	1230	1028	9813	464	40	7.6	7.7	295	--	120	35.3	7.3	99
SEP													
23...	1440	1028	9813	1970	40	8.7	7.3	243	17.0	93	28.5	5.3	79

Date	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 105degC wat flt mg/L (00515)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia water, unfltrd mg/L as N (00610)	Nitrate water unfltrd mg/L as N (00620)	Nitrite water, unfltrd mg/L as N (00615)	Orthophosphate, water, unfltrd mg/L as P (70507)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, unfltrd mg/L (00600)	Organic carbon, water, unfltrd mg/L (00680)	Aluminum, water, unfltrd recover -able, µg/L (01105)	Copper, water, unfltrd recover -able, µg/L (01042)	Iron, water, unfltrd recover -able, µg/L (01045)
NOV 2002													
19...	20.5	154	16	.030	.81	<.040	.02	.037	1.5	5.0	300	<10	570
JAN 2003													
14...	16.1	194	2	.050	1.08	<.040	.01	.022	1.3	3.4	<200	<10	480
MAR													
18...	10.1	22	106	.040	<.04	<.040	.08	.101	1.4	4.1	2800	<10	3970
JUN													
05...	11.1	524	10	.040	.51	<.040	.02	.039	.95	4.5	400	<10	740
JUL													
16...	11.9	274	10	<.020	.42	<.040	.04	.055	.81	5.1	200	<10	500
SEP													
23...	10.5	156	46	.020	.42	<.040	.04	.077	.78	7.1	1000	<10	1680

Date	Lead, water, unfltrd recover -able, µg/L (01051)	Manganese, water, unfltrd recover -able, µg/L (01055)	Nickel, water, unfltrd recover -able, µg/L (01067)	Zinc, water, unfltrd recover -able, µg/L (01092)
NOV 2002				
19...	1.3	60	<50	<10
JAN 2003				
14...	6.7	50	<50	<10
MAR				
18...	3.4	160	<50	20
JUN				
05...	<1.0	60	<50	20
JUL				
16...	<1.0	80	<50	150
SEP				
23...	1.7	120	<50	<10

FRENCH CREEK BASIN

03023100 FRENCH CREEK AT MEADVILLE, PA--Continued

BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES

REMARKS.--Samples were collected using rapid bioassessment protocols for benthic macroinvertebrates using a D-Frame net with a mesh size of 500 µm. Samples represent counts per 100 (approximate) subsamples.

Date	9/24/02
Benthic Macroinvertebrate	Count
Platyhelminthes	
Turbellaria (FLATWORMS)	
Tricladida	
Planariidae	1
Nematoda (NEMATODES)	1
Nemertea (PROBOSAS WORMS)	
Enopla	
Hoplonemertea	
Tetrastemmatidae	
<u>Prostoma</u> sp	1
Mollusca	
Gastropoda (SNAILS)	
Basommatophora	
Ancylidae	
<u>Ferrissia</u> sp	1
Hydrobiidae	
<u>Amnicola</u> sp	1
Annelida	
Oligochaeta (AQUATIC EARTHWORMS)	
Lumbriculida	
Lumbriculidae	14
Arthropoda	
Acariformes	
Hydrachnidia (WATER MITES)	2
Insecta	
Ephemeroptera (MAYFLIES)	
Baetidae	
<u>Baetis</u> sp	1
Ephemerellidae	
<u>Serratella</u> sp	4
Heptageniidae	
<u>Stenonema</u> sp	2
Isonychiidae	
<u>Isonychia</u> sp	2
Potamanthidae	
<u>Anthopotamus</u> sp	14
Trichoptera (CADDISFLIES)	
Hydropsychidae	
<u>Macrostemum</u> sp	6
Coleoptera (BEETLES)	
Elmidae (RIFFLE BEETLES)	
<u>Optioservus</u> sp	14
<u>Stenelmis</u> sp	6
Diptera (TRUE FLIES)	
Chironomidae (MIDGES)	17
Empididae (DANCE FLIES)	
<u>Hemerodromia</u> sp	2
Simuliidae (BLACK FLIES)	
<u>Simulium</u> sp	1
Total Organisms	90

FRENCH CREEK BASIN

03024000 FRENCH CREEK AT UTICA, PA

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

DRAINAGE AREA.--1,028 mi^2.

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 National Geodetic Vertical Datum of 1929. Prior to Nov. 27, 1933, nonrecording gage at same site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow regulated since July 1970 by Union City Reservoir (station 03021518) 50 mi upstream, serving as a retarding basin, and since January 1974 by Woodcock Creek Lake (station 03022550), 25 mi upstream. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemetry at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1912, 15.7 ft in March 1913, discharge about 36,000 ft^3/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	529	445	1230	5200	e791	e1970	3580	823	3450	545	2350	1370
2	370	439	1300	5880	e777	e1860	3460	909	2940	514	2100	2950
3	284	487	1110	5050	e929	e1770	3360	1440	2600	509	1960	3350
4	237	599	1040	4240	e1880	e1670	3110	1500	2060	524	1870	2660
5	228	643	e1030	3480	e3010	e1740	e7190	1290	1730	500	1680	2270
6	228	710	e1020	2980	e3680	e1820	e7610	1670	1610	561	1570	1900
7	232	800	e967	2670	e3340	e1970	6500	2220	1530	618	1500	1630
8	220	912	e940	2510	e2910	e2320	5550	1990	1430	555	1640	1460
9	293	854	e913	2360	e2480	e2670	5000	2010	1630	529	1980	1290
10	252	763	e900	2390	e2080	e3690	4570	2300	1950	682	4870	1100
11	219	e1690	e886	2270	e1690	e3070	3990	2210	1850	897	3430	845
12	208	e2630	e1030	1980	e1440	e2490	3330	2200	2350	838	2270	637
13	205	e2140	e1680	1730	e1210	e2170	2970	3590	4570	749	1700	529
14	196	1690	e3010	1610	e1110	e2090	2680	5530	5090	682	1440	477
15	187	1390	e4680	1440	e1030	e2320	2530	5420	4160	560	1240	470
16	199	1120	4150	1260	e971	e3340	2330	4370	3440	544	1140	571
17	217	1140	3500	1160	e943	e4520	2130	3490	2570	656	993	627
18	225	1660	2720	1000	e920	e5820	1890	2830	2150	609	974	644
19	325	2090	2240	e1000	e902	7240	1700	2470	2000	685	1280	909
20	631	1990	3490	e937	e888	6450	1420	2280	1990	706	1260	1570
21	1070	1840	4940	e899	e874	5770	1540	2550	1740	4600	1140	1910
22	933	1610	4320	e862	e929	5900	2110	2290	1440	10900	945	1570
23	760	1750	3650	e824	e1680	5660	2230	2000	1270	9110	734	2600
24	568	2080	3010	e799	e2510	4990	1980	2680	1120	9450	776	2850
25	436	2020	2600	e799	e3230	4180	1700	2940	959	7020	770	2240
26	457	1930	2300	e786	e2880	4210	1500	2520	840	4480	1250	1720
27	485	1750	2130	e799	e2600	4860	1290	1930	762	3420	995	2730
28	659	1530	2010	e799	e2270	4320	1120	1630	687	3740	969	4520
29	662	1290	1840	e799	---	3910	993	1410	629	3880	863	4130
30	560	1190	1710	e811	---	4450	888	1240	581	3100	818	4000
31	481	---	2720	e786	---	4130	---	1810	---	2630	1010	---
TOTAL	12556	41182	69066	60110	49954	113370	90251	73542	61128	74793	47517	55529
MEAN	405	1373	2228	1939	1784	3657	3008	2372	2038	2413	1533	1851
MAX	1070	2630	4940	5880	3680	7240	7610	5530	5090	10900	4870	4520
MIN	187	439	886	786	777	1670	888	823	581	500	734	470
CFSM	0.39	1.34	2.17	1.89	1.74	3.56	2.93	2.31	1.98	2.35	1.49	1.80
IN.	0.45	1.49	2.50	2.18	1.81	4.10	3.27	2.66	2.21	2.71	1.72	2.01

e Estimated.

FRENCH CREEK BASIN

03024000 FRENCH CREEK AT UTICA, PA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1974 - 2003, BY WATER YEAR (WY) (SINCE REGULATION)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1232	2226	2727	2501	2906	3546	3082	1778	1267	833	723	909
MAX	3954	6309	6029	5426	6394	5778	5101	4200	4659	2629	3297	3408
(WY)	1991	1986	1978	1993	1976	1977	1994	2002	1986	1987	1980	1990
MIN	121	176	583	869	629	1622	1655	452	209	192	112	71.7
(WY)	1992	1992	1999	1977	1987	2000	1976	1985	1991	1995	1991	1995

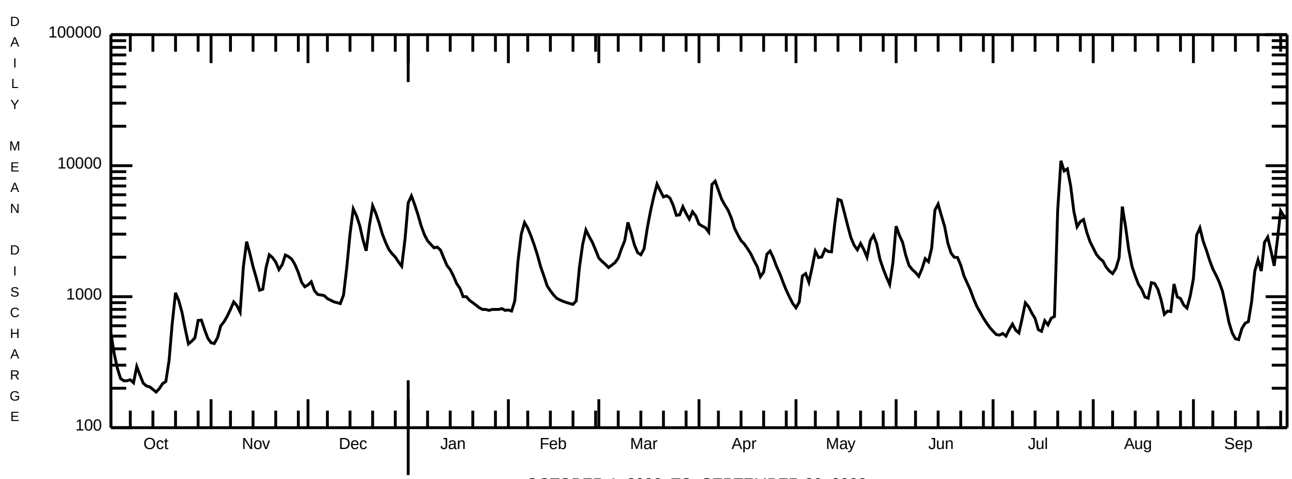
SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1974 - 2003	
ANNUAL TOTAL	680570		748998			
ANNUAL MEAN	1865		2052		1972	
HIGHEST ANNUAL MEAN					2459	1997
LOWEST ANNUAL MEAN					1044	1999
HIGHEST DAILY MEAN	11800	May 15	10900	Jul 22	18100	Feb 21 1981
LOWEST DAILY MEAN	80	Sep 13	187	Oct 15	60	Sep 15 1991
ANNUAL SEVEN-DAY MINIMUM	91	Sep 8	204	Oct 11	67	Sep 7 1995
MAXIMUM PEAK FLOW			13600	Jul 22	18400	Feb 21 1981
MAXIMUM PEAK STAGE			9.96	Jul 22	11.64	Feb 21 1981
ANNUAL RUNOFF (CFSM)	1.81		2.00		1.92	
ANNUAL RUNOFF (INCHES)	24.63		27.10		26.06	
10 PERCENT EXCEEDS	3840		4270		4470	
50 PERCENT EXCEEDS	1430		1680		1330	
90 PERCENT EXCEEDS	170		551		234	

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
MAXIMUM PEAK FLOW	**a**23800	Mar 7 1964
MAXIMUM PEAK STAGE	**b**13.2	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 rating curve extended above 20,700 ft^3/s.
b From floodmark in gage well.



OCTOBER 1, 2002 TO SEPTEMBER 30, 2003

FRENCH CREEK BASIN

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 mi^2. 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, 18,900 acre-ft, Mar. 22, elevation, 1,261.94 ft; minimum, 13 acre-ft, Oct. 13, elevation, 1,213.76 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 mi^2. PERIOD OF RECORD, January 1974 to current year. GAGE, water-stage recorder. Datum of gage is sea level (U.S. Army Corps of Engineers benchmark). 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, 11,500 acre-ft, July 24, elevation, 1,196.13 ft; minimum, 1,010 acre-ft, Feb. 11, elevation, 1,162.95 ft.

MONTHEND ELEVATION, IN FEET ABOVE SEA LEVEL, AND CONTENTS AT 2400 HRS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

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)
	03021518 Union City Reservoir			03022550 Woodcock Creek Lake		
Sept. 30	1,216.27	50	---	1,179.99	4,600	---
Oct. 31	1,217.00	68	+0.29	1,174.53	3,070	-25
Nov. 30	1,224.65	596	+8.8	1,165.79	1,400	-28
Dec. 31	1,238.71	3,520	+48	1,168.36	1,800	+6.5
CAL YR 2002	--	--	+4.2	--	--	+0.88
Jan. 31	1,219.27	159	-55	1,164.82	1,260	-8.9
Feb. 28	1,224.39	568	+7.4	1,169.35	1,980	+13
Mar. 31	1,257.85	14,200	+222	1,177.56	3,870	+31
Apr. 30	1,217.42	82	-237	1,181.53	5,110	+21
May 31	1,223.06	434	+5.7	1,183.42	5,780	+11
June 30	1,216.02	44	-6.6	1,181.46	5,090	-12
July 31	1,234.92	2,370	+38	1,189.84	8,400	+54
Aug. 31	1,229.28	1,220	-19	1,181.34	5,050	-54
Sept. 30	1,246.21	6,390	+87	1,183.56	5,830	+13
WTR YR 2003	--	--	+8.8	--	--	+1.7

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 mi^2.

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 National Geodetic Vertical Datum of 1929. 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 those for estimated daily discharges, which are poor. Flow regulated since December 1940 by Tionesta Lake, since November 1949 by Chautauqua Lake (station 03013946), since October 1965 by Allegheny Reservoir (station 03012520), since July 1970 by Union City Reservoir (station 03021518), and since January 1974 by Woodcock Creek Lake (station 03022550). Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemetry 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, discharges about, 200,000 ft^3/s and 190,000 ft^3/s, respectively, from rating curve extended above 111,000 ft^3/s. Maximum discharge since at least 1864 is that of Mar. 17, 1865.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3020	2830	8140	18600	e4510	e10500	20100	4490	12200	3480	24800	5400
2	2590	3220	8350	24100	e4790	e9770	17700	4840	12400	3170	21400	11200
3	2380	4110	7700	21300	e5510	e9260	16100	5770	13100	3110	17800	14200
4	2160	4410	7000	21700	e7660	e9060	14100	6360	12400	2990	16500	11700
5	2210	4580	6490	21800	e10400	e9380	31100	5870	11600	3030	17700	9760
6	2280	5360	6160	20200	e13400	e9380	33400	6310	9820	3250	19500	8310
7	2180	6450	6020	18200	e12400	e9380	30300	8010	9080	3380	14500	7710
8	2510	6940	5850	17200	e11400	e9760	25200	8080	8980	3290	15900	7860
9	2590	6830	5640	16300	e10300	e11100	28800	8320	10400	2970	13800	8420
10	2630	6540	5530	14000	e9710	e12700	30800	9530	11100	3330	18900	7810
11	2580	8350	5790	12200	e8450	e12300	30100	9260	10900	4770	20000	7340
12	3410	10200	6750	11100	e7630	e11200	30300	9290	14200	4310	20800	6790
13	2630	9920	9760	e9990	e7270	e9950	29300	12400	34500	4190	23700	5710
14	2570	8680	17100	e8640	e6910	e10400	25500	17800	29500	3900	23400	4440
15	2500	7450	22700	e7550	e6730	e12100	20300	20800	26800	3570	21200	6400
16	2660	6760	21000	e6550	e6460	e15000	14900	17200	23500	3320	15700	6640
17	3000	6840	20500	e5740	e6370	e22000	12000	17600	20300	4090	11800	6130
18	2770	9200	18000	e5290	e6090	e33200	9790	17000	18100	3520	10900	7890
19	2650	11300	16000	e5200	e6090	e35600	8760	15400	14600	5160	8510	7720
20	3100	12300	20900	e5020	e6180	e31600	8180	13100	12400	4490	6550	7980
21	4150	11900	26200	e4750	e6090	29700	8440	14100	9760	13800	5390	8210
22	4200	11500	22600	e4560	e5910	34200	10100	13000	8750	63100	4560	7030
23	3590	11800	21500	e4470	e7340	35800	10200	12900	8230	39400	4220	10800
24	3070	12400	20800	e4240	e8350	37400	9390	13100	6910	37600	4060	13200
25	2740	12100	19700	e4380	e9470	36100	8150	12900	6150	37700	3950	12700
26	3020	12000	18200	e4470	e10500	33600	7390	11500	5500	34600	6210	11500
27	3200	11500	16600	e4460	e11100	32100	6940	9550	4870	31500	5320	10900
28	3270	9370	14400	e4350	e11200	31200	6310	8560	4240	37700	4810	14100
29	3240	8310	12900	e4380	---	27600	5810	7290	3930	35000	4630	13300
30	3070	8030	11100	e4460	---	28100	5050	6530	3730	31700	5390	12900
31	2870	---	12000	e4460	---	25200	---	7740	---	29400	4770	---
TOTAL	88840	251180	421380	319660	228220	644640	514510	334600	377950	464820	396670	274050
MEAN	2866	8373	13590	10310	8151	20790	17150	10790	12600	14990	12800	9135
MAX	4200	12400	26200	24100	13400	37400	33400	20800	34500	63100	24800	14200
MIN	2160	2830	5530	4240	4510	9060	5050	4490	3730	2970	3950	4440
CFSM	0.48	1.40	2.27	1.72	1.36	3.48	2.87	1.80	2.11	2.51	2.14	1.53
IN.	0.55	1.56	2.62	1.99	1.42	4.01	3.20	2.08	2.35	2.89	2.47	1.70

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1915 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	5511	9903	13300	13750	13650	20750	19300	12150	7470	4527	3321	3593
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

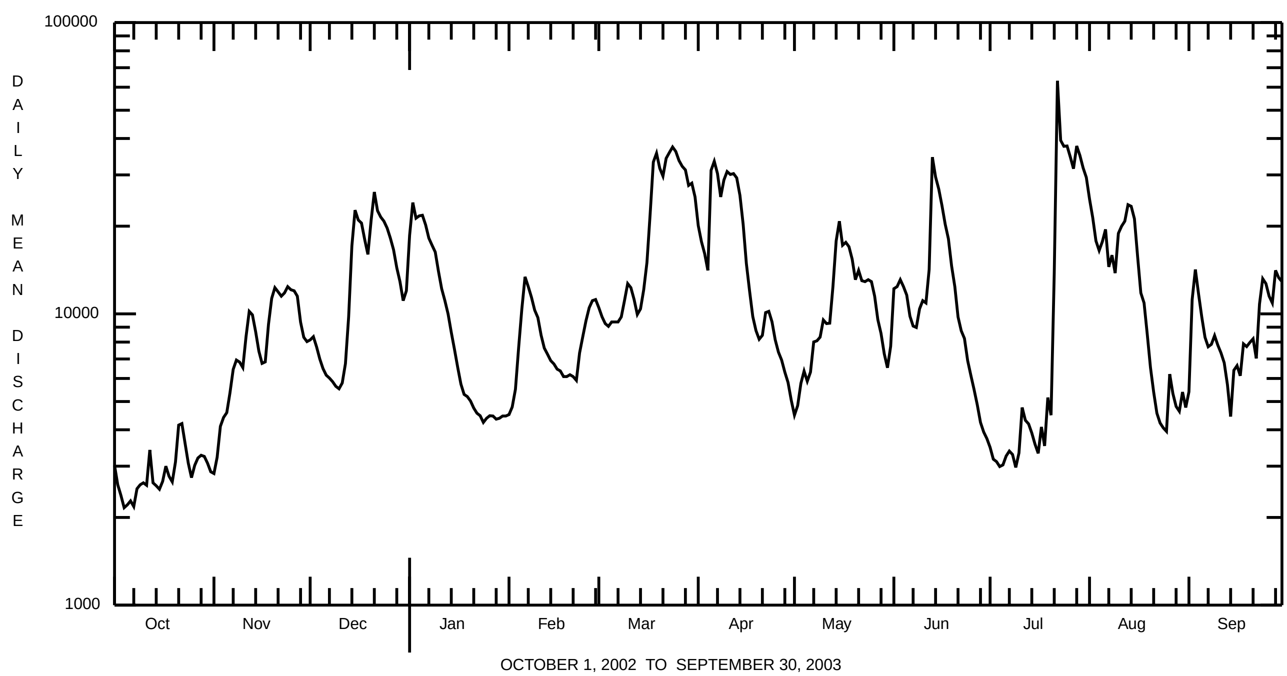
e Estimated.

OHIO RIVER MAIN STEM

03025500 ALLEGHENY RIVER AT FRANKLIN, PA--Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1915 - 2003	
ANNUAL TOTAL	3970600		4316520			
ANNUAL MEAN	10880		11830		10590	
HIGHEST ANNUAL MEAN					15560	1956
LOWEST ANNUAL MEAN					6482	1931
HIGHEST DAILY MEAN	47300	May 14	63100	Jul 22	130000	Mar 13 1920
LOWEST DAILY MEAN	2160	Oct 4	2160	Oct 4	335	Aug 21 1930
ANNUAL SEVEN-DAY MINIMUM	2330	Oct 2	2330	Oct 2	351	Aug 17 1930
MAXIMUM PEAK FLOW			79700	Jul 22	**a**138000	Mar 13 1920
MAXIMUM PEAK STAGE			15.64	Jul 22	**b**20.65	Mar 13 1920
ANNUAL RUNOFF (CFSM)	1.82		1.98		1.77	
ANNUAL RUNOFF (INCHES)	24.69		26.84		24.04	
10 PERCENT EXCEEDS	23100		25300		25100	
50 PERCENT EXCEEDS	8490		9260		6670	
90 PERCENT EXCEEDS	2760		3310		1430	

a From rating curve extended above 111,000 ft^3/s.
b Maximum gage height observed, 26.0 ft, Feb. 27, 1917 (backwater from ice), also Feb. 26, 1926 (backwater from ice).



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 mi^2.

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

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,690.73 ft above National Geodetic Vertical Datum of 1929.

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

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a base discharge of 200 ft^3/s and maximum (*****):

Date	Time	Discharge ft^3/s	Gage Height (ft)	Date	Time	Discharge ft^3/s	Gage Height (ft)
Mar. 21	1800	*323	*4.22	Aug. 8	0100	229	3.92

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.5	8.5	12	e15	3.7	10	18	4.6	37	3.7	52	5.0
2	2.1	8.3	10	37	3.6	9.7	28	8.9	24	3.3	39	28
3	1.9	7.9	9.8	e21	4.5	9.0	22	6.6	20	2.9	40	17
4	1.8	7.9	8.7	e16	19	9.1	22	5.6	21	2.7	28	15
5	2.4	8.0	8.3	e13	e9.6	9.0	75	6.4	23	2.6	25	12
6	1.8	20	7.7	e12	e7.9	9.8	48	8.3	18	2.5	21	9.6
7	1.4	19	e7.2	e10	e6.8	e8.7	38	7.5	16	2.5	27	7.9
8	1.4	15	e6.9	e9.5	e5.5	8.7	32	8.1	15	2.6	99	6.8
9	1.3	14	e6.6	e8.7	e4.7	15	28	8.3	21	2.4	50	5.9
10	1.3	13	e6.5	e8.1	e5.0	e9.2	28	8.4	18	2.7	46	5.3
11	1.2	24	e6.4	e7.5	e4.5	e9.4	24	8.9	16	3.7	49	4.6
12	1.2	18	e6.1	e6.9	e4.7	11	21	11	21	2.5	33	4.1
13	1.5	15	11	e6.5	e5.0	11	18	15	29	2.1	23	3.9
14	1.8	14	18	e6.3	e5.0	11	16	14	23	1.8	17	3.9
15	1.3	12	e11	e6.3	5.9	14	14	12	19	1.6	14	11
16	2.1	11	e7.8	e6.3	8.3	32	12	14	16	1.7	13	12
17	3.5	44	e7.0	e6.4	8.3	67	11	13	13	1.6	11	6.0
18	4.0	34	e7.0	e6.3	7.2	e89	10	12	13	2.1	9.3	4.6
19	11	26	e9.0	e6.3	5.3	109	9.5	11	12	2.0	7.8	14
20	11	23	52	e6.3	4.8	125	9.2	11	10	1.5	6.6	17
21	7.0	23	e36	e6.7	4.8	175	9.4	30	12	37	5.5	9.5
22	5.6	33	e25	e6.3	6.5	140	8.7	19	10	81	5.6	10
23	4.8	27	e20	e6.2	e8.9	79	7.8	17	7.9	38	4.7	31
24	3.9	23	e15	e6.0	41	56	6.9	23	6.7	38	4.0	15
25	3.8	21	e13	e5.9	22	45	6.4	19	5.8	26	3.5	26
26	26	18	e10	e5.4	e14	41	6.3	16	5.3	18	4.0	20
27	15	16	e9.2	5.4	12	32	5.9	15	4.7	35	3.9	16
28	11	14	e8.4	e4.6	11	26	5.3	15	4.2	58	3.0	21
29	9.1	13	e8.1	4.2	---	27	5.0	13	4.0	32	3.1	15
30	8.4	13	e8.2	3.7	---	22	4.6	12	4.3	22	4.7	14
31	8.1	---	e8.2	3.6	---	18	---	30	---	16	4.1	---
TOTAL	159.2	543.6	380.1	273.4	249.5	1237.6	550.0	403.6	449.9	449.5	656.8	371.1
MEAN	5.14	18.1	12.3	8.82	8.91	39.9	18.3	13.0	15.0	14.5	21.2	12.4
MAX	26	44	52	37	41	175	75	30	37	81	99	31
MIN	1.2	7.9	6.1	3.6	3.6	8.7	4.6	4.6	4.0	1.5	3.0	3.9
CFSM	0.66	2.31	1.56	1.12	1.14	5.09	2.34	1.66	1.91	1.85	2.70	1.58
IN.	0.76	2.58	1.80	1.30	1.18	5.87	2.61	1.92	2.13	2.13	3.12	1.76

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1952 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	7.91	14.3	17.1	14.7	16.8	28.2	28.8	17.4	11.9	5.45	5.46	6.10
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	0.32	0.66	0.94	1.55	2.22	9.85	11.2	4.05	1.14	0.50	0.52	0.28
(WY)	1965	1965	1961	1961	1987	1993	1976	1985	1991	1991	1966	1964

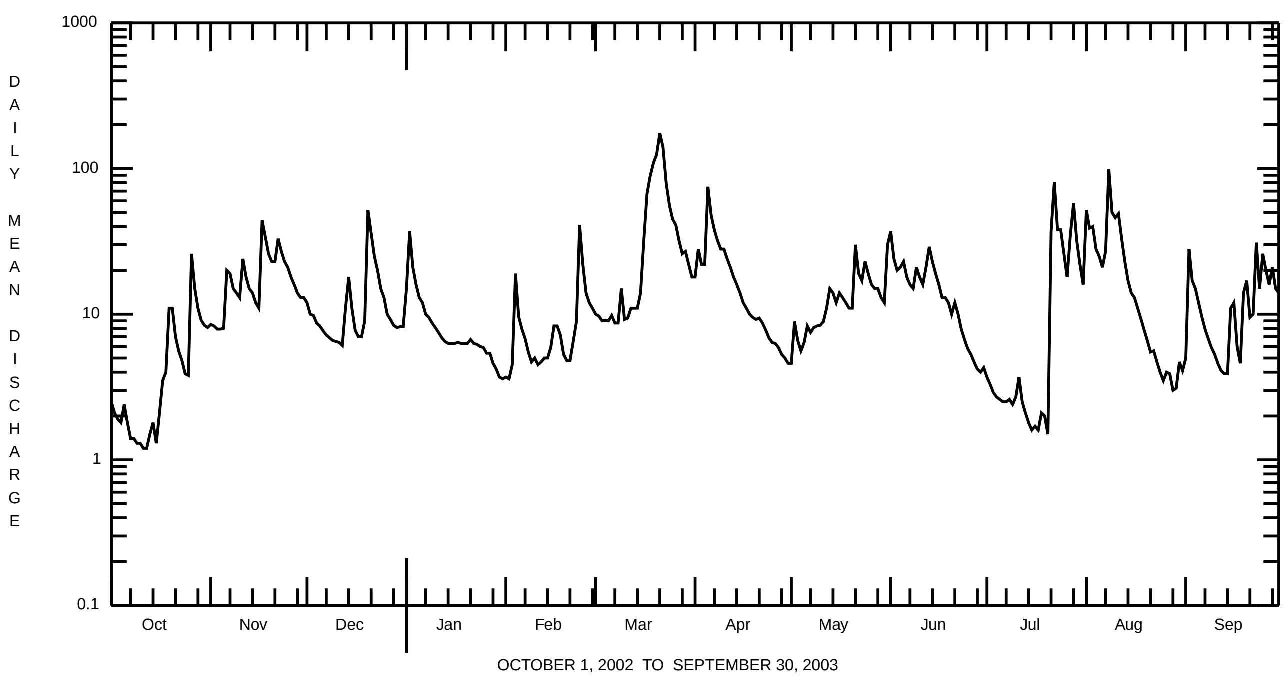
e Estimated.

CLARION RIVER BASIN

03026500 SEVENMILE RUN NEAR RASSELAS, PA--Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1952 - 2003	
ANNUAL TOTAL	5603.71		5724.3			
ANNUAL MEAN	15.4		15.7		14.4	
HIGHEST ANNUAL MEAN					21.1	1984
LOWEST ANNUAL MEAN					8.92	2001
HIGHEST DAILY MEAN	193	Jun 14	175	Mar 21	465	Jun 20 1989
LOWEST DAILY MEAN	0.41	Sep 24	1.2	Oct 11,12	0.07	Sep 21 1955
ANNUAL SEVEN-DAY MINIMUM	0.68	Sep 8	1.3	Oct 7	0.14	Sep 16 1955
MAXIMUM PEAK FLOW			323	Mar 21	**a**2300	Sep 13 1987
MAXIMUM PEAK STAGE			4.22	Mar 21	5.30	Sep 13 1987
INSTANTANEOUS LOW FLOW			1.1	Oct 12	0.07	Sep 21 1955
ANNUAL RUNOFF (CFSM)	1.96		2.00		1.84	
ANNUAL RUNOFF (INCHES)	26.59		27.16		24.99	
10 PERCENT EXCEEDS	36		32		32	
50 PERCENT EXCEEDS	11		9.8		8.1	
90 PERCENT EXCEEDS	1.2		3.4		1.0	

a From rating curve extended above 600 ft^3/s on basis of slope-area measurement at gage height 4.60 ft and contracted-opening measurement at gage height 5.02 ft.



CLARION RIVER BASIN

03027000 EAST BRANCH CLARION RIVER LAKE

LOCATION.--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 mi^2 (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).

REMARKS.--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.

COOPERATION.--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, 850 acre-ft, Nov. 9, 1957, elevation, 1,553.00 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 66,830 acre-ft, June 14, elevation, 1,671.30 ft; minimum, 32,360 acre-ft, Oct. 25, elevation, 1,635.09 ft.

MONTHEND ELEVATION, IN FEET ABOVE SEA LEVEL, AND CONTENTS AT 2400 HRS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (equivalent in ft^3/s)
Sept. 30	1,644.50	39,820	---
Oct. 31	1,635.27	32,500	-119
Nov. 30	1,643.47	38,950	+108
Dec. 31	1,650.39	45,000	+98
CAL YR 2002	--	--	+5.7
Jan. 31	1,650.27	44,890	-1.8
Feb. 28	1,651.33	45,870	+18
Mar. 31	1,667.72	62,700	+274
Apr. 30	1,670.09	65,410	+46
May 31	1,670.93	66,390	+16
June 30	1,670.18	65,520	-15
July 31	1,665.09	59,770	-94
Aug. 31	1,659.87	54,220	-90
Sept. 30	1,656.75	51,060	-53
WTR YR 2003	--	--	+16

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 mi^2.

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

GAGE.--Water-stage recorder. Datum of gage is 1,502.02 ft above National Geodetic Vertical Datum of 1929. 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 those for estimated daily discharges, which are poor. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemetry at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a base discharge of 1,000 ft^3/s and maximum (*****):

Date	Time	Discharge ft^3/s	Gage Height (ft)	Date	Time	Discharge ft^3/s	Gage Height (ft)
Mar. 21	2000	*1,930	*5.51	Aug. 8	0200	1,320	4.67
Aug. 2	2100	1,370	4.77				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	42	e94	e199	e41	e95	145	37	272	26	302	48
2	12	45	e81	e364	e41	e93	187	51	204	28	417	180
3	11	41	e67	301	e41	93	152	41	185	26	495	118
4	11	43	e52	251	142	e93	168	38	182	26	341	146
5	13	43	e51	208	136	e91	623	46	180	25	258	123
6	11	119	e47	179	110	e90	466	51	143	22	216	98
7	11	98	e47	155	e85	e87	393	47	136	21	245	86
8	12	80	e44	144	e79	86	309	54	132	22	637	72
9	8.1	74	e41	e133	e73	135	272	59	179	21	375	66
10	8.1	72	e44	e120	e68	110	243	59	137	23	295	63
11	8.7	162	e47	107	e65	139	212	63	137	29	288	55
12	10	117	e52	e95	e63	111	188	79	161	21	227	51
13	17	106	e110	e76	e62	116	160	94	208	20	173	46
14	21	95	204	e63	e60	114	140	91	175	21	146	44
15	23	85	177	e56	e60	144	129	85	158	20	129	66
16	40	90	e142	e52	e63	284	121	100	138	16	161	78
17	51	321	e118	e49	e66	577	100	95	117	15	132	56
18	56	235	e100	e47	e75	976	94	88	112	24	99	50
19	107	200	127	e46	e75	1030	92	85	103	28	92	99
20	96	182	e417	e46	72	1070	70	88	101	26	73	115
21	60	183	e354	e46	59	1350	76	218	97	301	65	86
22	50	239	296	e45	65	1180	72	143	74	568	61	88
23	47	207	241	e44	221	716	66	142	57	291	54	198
24	43	188	198	e43	167	523	59	170	52	453	47	138
25	45	178	179	e41	e142	423	49	140	49	303	43	155
26	164	158	152	e41	e121	367	50	129	40	214	42	140
27	72	145	129	e41	e107	277	47	128	39	286	45	134
28	47	127	115	e40	e99	223	43	114	35	377	37	142
29	38	120	107	e41	---	208	42	94	34	237	36	134
30	38	120	96	e42	---	180	41	82	32	182	48	129
31	38	---	125	e42	---	153	---	227	---	143	38	---
TOTAL	1181.9	3915	4054	3157	2458	11134	4809	2938	3669	3815	5617	3004
MEAN	38.1	130	131	102	87.8	359	160	94.8	122	123	181	100
MAX	164	321	417	364	221	1350	623	227	272	568	637	198
MIN	8.1	41	41	40	41	86	41	37	32	15	36	44
CFSM	0.61	2.07	2.08	1.62	1.39	5.70	2.54	1.50	1.94	1.95	2.88	1.59
IN.	0.70	2.31	2.39	1.86	1.45	6.57	2.84	1.73	2.17	2.25	3.32	1.77

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1954 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	69.6	124	152	127	144	240	247	145	96.9	57.1	51.1	54.7
MAX	236	390	311	319	448	494	483	369	417	252	249	231
(WY)	1982	1986	1978	1998	1976	1964	1970	2002	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

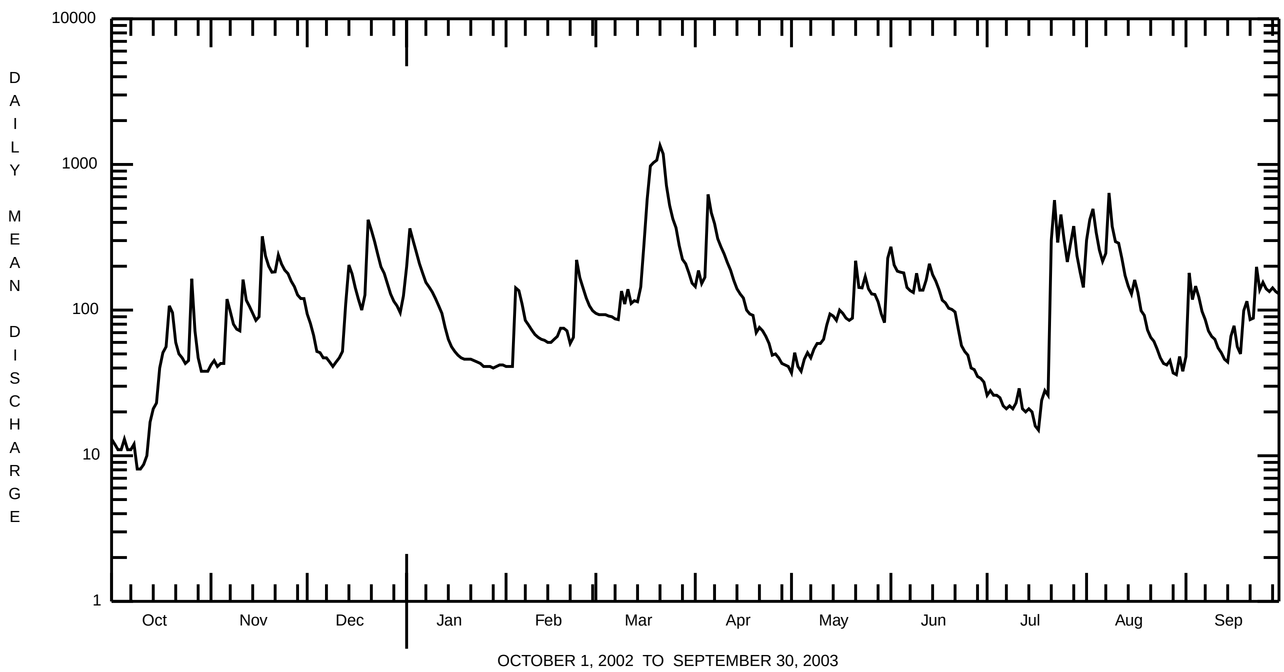
e Estimated.

CLARION RIVER BASIN

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

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1954 - 2003	
ANNUAL TOTAL	50000.4		49751.9			
ANNUAL MEAN	137		136		125	
HIGHEST ANNUAL MEAN					184	1956
LOWEST ANNUAL MEAN					80.4	2001
HIGHEST DAILY MEAN	1400	Jun 14	1350	Mar 21	2870	Jun 23 1972
LOWEST DAILY MEAN	6.3	Sep 26	8.1	Oct 9,10	4.5	Sep 21 1955
ANNUAL SEVEN-DAY MINIMUM	6.9	Sep 7	9.8	Oct 6	5.2	Sep 16 1955
MAXIMUM PEAK FLOW			1930	Mar 21	**a**5590	Jan 19 1996
MAXIMUM PEAK STAGE			5.51	Mar 21	**b**10.23	Jan 19 1996
INSTANTANEOUS LOW FLOW			8.1	Oct 9-11	4.2	Sep 21 1955
ANNUAL RUNOFF (CFSM)	2.17		2.16		1.99	
ANNUAL RUNOFF (INCHES)	29.52		29.38		27.06	
10 PERCENT EXCEEDS	312		280		286	
50 PERCENT EXCEEDS	100		94		74	
90 PERCENT EXCEEDS	10		33		15	

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



03029500 CLARION RIVER AT COOKSBURG, PA
(Pennsylvania Water-Quality Network Station)

LOCATION.--Lat 41°19'50", long 79°12'33", Clarion County, Hydrologic Unit 05010005, on right 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 mi^2.

WATER-DISCHARGE RECORDS

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 National Geodetic Vertical Datum of 1929. Prior to May 17, 1939, nonrecording gage at same site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow regulated since June 1952 by East Branch Clarion River Lake (station 03027000) 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 telemetry at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1935, 19 ft, Mar. 17, 1936, from floodmarks, discharge, about 56,000 ft^3/s.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a base discharge of 10,000 ft^3/s and maximum (*****):

Date	Time	Discharge ft^3/s	Gage Height (ft)	Date	Time	Discharge ft^3/s	Gage Height (ft)
Jan. 2	0700	10,200	9.59	Apr. 5	1700	*12,600	*10.42
Mar. 21	0800	11,800	10.16				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	405	433	915	3110	e988	e2020	1680	549	2570	483	5110	603
2	377	447	e781	8540	e997	e1890	1820	751	2010	444	5350	4370
3	356	449	e608	5300	e1060	e1800	1800	1080	1720	414	4480	3490
4	346	421	e479	4020	e1300	e1760	1640	855	1760	397	4320	3300
5	346	409	e461	3290	e2830	e1690	7810	787	1910	396	3320	2940
6	367	459	e434	2770	e2330	e1690	7080	986	1810	406	2990	2260
7	353	825	e470	2330	e2030	e1680	4950	1420	1500	441	2360	1790
8	333	692	e525	2050	e1810	e1830	4070	1500	1620	454	2780	1480
9	316	568	469	1860	e1700	e2340	3740	1990	2070	424	3180	1270
10	311	504	331	1780	e1600	e3190	3420	1940	2010	427	2550	1120
11	308	606	435	1590	e1510	e2580	3020	1770	1680	454	2330	971
12	308	981	734	1340	e1450	e2370	2550	1850	1760	502	2000	839
13	310	788	1380	1200	e1370	e2260	2110	1990	2920	383	1670	744
14	311	678	1380	1190	e1310	e2080	1820	1970	2620	347	1430	665
15	314	603	2280	1080	e1240	e2260	1650	1740	2270	325	1250	691
16	307	586	1800	945	e1170	e2830	1510	1660	2020	334	1060	1080
17	333	1450	1470	870	e1160	e3820	1390	1810	1650	338	1170	917
18	379	2620	1200	e915	e1150	e4930	1240	1560	1490	393	1000	701
19	340	1730	1100	e923	e1140	e6390	1110	1390	1280	436	868	670
20	502	1530	3150	e915	e1160	e7960	1030	1270	1110	406	767	1200
21	567	1370	5150	e956	e1170	10300	1010	2840	1040	881	713	1120
22	372	1670	3500	e956	e1270	9130	1070	2730	1210	7070	674	909
23	310	1930	2780	e980	e2000	6610	990	2230	959	5620	639	1820
24	293	1550	2230	e964	e3350	4880	894	2170	796	4960	594	1900
25	289	1370	1930	e956	e2860	3940	807	2110	690	4930	552	1500
26	481	1260	1710	e956	e2560	3430	828	1740	614	3070	e585	1530
27	1220	1140	1420	e939	e2330	2980	957	1480	553	2290	e699	1330
28	719	1030	1280	e948	e2160	2510	686	1370	512	6120	e712	1550
29	530	935	1180	e956	---	2220	625	1290	498	4410	585	1690
30	428	907	1090	e956	---	2110	569	1130	475	3100	639	1500
31	417	---	1190	e948	---	1850	---	1120	---	2400	705	---
TOTAL	12548	29941	43862	56533	47005	107330	63876	49078	45127	53055	57082	45950
MEAN	405	998	1415	1824	1679	3462	2129	1583	1504	1711	1841	1532
MAX	1220	2620	5150	8540	3350	10300	7810	2840	2920	7070	5350	4370
MIN	289	409	331	870	988	1680	569	549	475	325	552	603
CFSM	0.50	1.24	1.75	2.26	2.08	4.29	2.64	1.96	1.86	2.12	2.28	1.90
IN.	0.58	1.38	2.02	2.61	2.17	4.95	2.94	2.26	2.08	2.45	2.63	2.12

e Estimated.

CLARION RIVER BASIN

03029500 CLARION RIVER AT COOKSBURG, PA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1952 - 2003, BY WATER YEAR (WY) (SINCE REGULATIOIN)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	766	1298	1763	1591	1769	2725	2578	1872	1209	782	639	639
MAX	2357	3906	3821	5654	4138	6185	4721	4314	5307	2565	2732	1995
(WY)	1991	1986	1978	1952	1976	1979	1994	2002	1972	1992	1994	1992
MIN	86.6	204	150	211	369	764	1217	566	325	139	117	109
(WY)	1952	1961	1961	1961	1987	1969	1976	1985	1999	1952	1952	1952

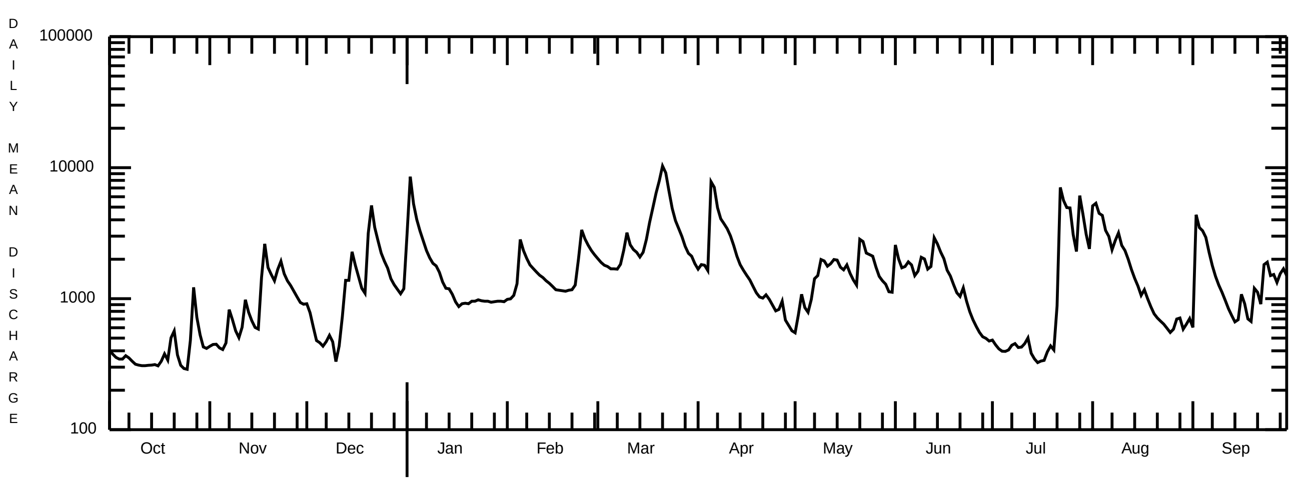
SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1952 - 2003	
ANNUAL TOTAL	528629		611387			
ANNUAL MEAN	1448		1675		1467	
HIGHEST ANNUAL MEAN					2066	1994
LOWEST ANNUAL MEAN					912	2001
HIGHEST DAILY MEAN	14700	May 13	10300	Mar 21	43200	Jun 23 1972
LOWEST DAILY MEAN	225	Sep 14	289	Oct 25	59	Sep 14 1952
ANNUAL SEVEN-DAY MINIMUM	231	Sep 8	310	Oct 10	67	Sep 8 1952
MAXIMUM PEAK FLOW			12600	Apr 5	**a**53300	Jun 23 1972
MAXIMUM PEAK STAGE			10.42	Apr 5	**b**18.84	Jun 23 1972
INSTANTANEOUS LOW FLOW			268	Dec 10	57	Sep 14 1952
ANNUAL RUNOFF (CFSM)	1.79		2.08		1.82	
ANNUAL RUNOFF (INCHES)	24.37		28.18		24.70	
10 PERCENT EXCEEDS	3370		3290		3200	
50 PERCENT EXCEEDS	968		1270		900	
90 PERCENT EXCEEDS	295		416		296	

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	1951
LOWEST ANNUAL MEAN	953	1944
HIGHEST DAILY MEAN	24600	Dec 30 1942
LOWEST DAILY MEAN	43	Aug 30 1939
ANNUAL SEVEN-DAY MINIMUM	50	Aug 29 1939
MAXIMUM PEAK FLOW	32700	Jul 19 1942
MAXIMUM PEAK STAGE	14.96	Jul 19 1942
INSTANTANEOUS LOW FLOW	41	Aug 30 1939
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 ft^3/s.
b From peak-stage indicator.



OCTOBER 1, 2002 TO SEPTEMBER 30, 2003

03029500 CLARION RIVER AT COOKSBURG, PA--Continued
(Pennsylvania Water-Quality Network Station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 2002 to current year.

REMARKS.--Some values for "*dissolved*" parameters exceed values for the corresponding "*total*" parameter. These results are within the limits of analytical precision and methods. Other data for the Water-Quality Network can be found on pages 242-289.

COOPERATION.--Samples were collected as part of the Pennsylvania Department of Environmental Protection Water-Quality Network (WQN) with cooperation from the Pennsylvania Department of Environmental Protection.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Agency collecting sample, code (00027)	Agency analyzing sample, code (00028)	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf µS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water unfltrd recover -able, mg/L (00916)	Magnesium, water, unfltrd recover -able, mg/L (00927)	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (00417)
NOV 2002													
26...	1330	1028	9813	1260	40	13.3	7.5	157	4.2	42	11.2	3.3	16
MAR 2003													
26...	1230	1028	9813	3430	40	11.1	7.1	118	8.4	36	9.0	3.2	8
MAY													
20...	1430	1028	9813	1220	40	11.4	8.3	147	14.8	42	10.6	3.7	14
JUL													
30...	1400	1028	9813	2990	40	9.2	6.8	97	18.3	31	8.0	2.6	10
SEP													
23...	0930	1028	9813	1500	40	8.8	7.3	155	16.3	39	10.2	3.3	18

Date	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 105degC wat flt mg/L (00515)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia water, unfltrd mg/L as N (00610)	Nitrate water unfltrd mg/L as N (00620)	Nitrite water, unfltrd mg/L as N (00615)	Orthophosphate, water, unfltrd mg/L as P (70507)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, unfltrd mg/L (00600)	Organic carbon, water, unfltrd mg/L (00680)	Aluminum, water, unfltrd recover -able, µg/L (01105)	Copper, water, unfltrd recover -able, µg/L (01042)	Iron, water, unfltrd recover -able, µg/L (01045)
NOV 2002													
26...	36.0	128	<2	<.020	.31	<.040	.02	.026	.28	2.1	<200	<10	230
MAR 2003													
26...	30.6	86	8	<.020	.34	<.040	<.01	.021	.40	1.9	400	<10	600
MAY													
20...	37.1	116	<2	<.020	.10	<.040	.01	.018	.24	2.0	<200	<10	250
JUL													
30...	22.2	40	24	<.020	.22	<.040	.02	.036	.37	2.7	400	<10	770
SEP													
23...	32.0	122	12	<.020	.19	<.040	.02	.046	.41	3.5	300	<10	840

Date	Lead, water, unfltrd recover -able, µg/L (01051)	Manganese, water, unfltrd recover -able, µg/L (01055)	Nickel, water, unfltrd recover -able, µg/L (01067)	Zinc, water, unfltrd recover -able, µg/L (01092)
NOV 2002				
26...	<1.0	120	<50	<10
MAR 2003				
26...	<1.0	240	<50	40
MAY				
20...	1.2	140	<50	40
JUL				
30...	<1.0	180	<50	50
SEP				
23...	<1.0	190	<50	50

CLARION RIVER BASIN

03029500 CLARION RIVER AT COOKSBURG, PA--Continued

BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES

REMARKS.--Samples were collected using rapid bioassessment protocols for benthic macroinvertebrates using a D-Frame net with a mesh size of 500 µm. Samples represent counts per 100 (approximate) subsamples.

Date Benthic Macroinvertebrate	8/22/02 Count
Nemertea (PROBOSAS WORMS)	1
Mollusca	
Gastropoda (SNAILS)	
Basommatophora	
Ancylidae	
Ferrissia sp	4
Planorbidae	
Helisoma sp	2
Bivalvia (CLAMS)	
Veneroida	
Sphaeriidae	
Sphaerium sp	2
Annelida	
Oligochaeta (AQUATIC EARTHWORMS)	4
Arthropoda	
Acariformes	
Hydrachnidia (WATER MITES)	
Hygrobatidae	
Hygrobates sp	1
Insecta	
Ephemeroptera (MAYFLIES)	
Baetidae	
Baetis sp	4
Heptageniidae	
Stenonema sp	13
Isonychiidae	
Isonychia sp	24
Tricorythidae	
Tricorythodes sp	6
Trichoptera (CADDISFLIES)	
Brachycentridae	
Brachycentrus sp	2
Hydropsychidae	
Cheumatopsyche sp	20
Hydropsyche sp	3
Macrostemum sp	7
Hydroptilidae	
Hydroptila sp	2
Leptoceridae	
Ceraclea sp	1
Coleoptera (BEETLES)	
Elmidae (RIFFLE BEETLES)	
Optioservus sp	6
Stenelmis sp	1
Diptera (TRUE FLIES)	
Chironomidae (MIDGES)	69
Total Organisms	172

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 Reliant Energy, 2.3 mi northeast of Piney, 2.4 mi upstream from Piney Creek, and 3 mi southwest of Clarion.

DRAINAGE AREA.--951 mi^2.

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 National Geodetic Vertical Datum of 1929 (Reliant Energy bench mark). Prior to Dec. 23, 1947, records from hydroelectric plant 0.2 mi upstream.

REMARKS.--No estimated daily discharges. Records good. Flow regulated since 1924 by hydroelectric plant at Piney Dam 0.2 mi upstream, and since June 1952 by East Branch Clarion River Lake (station 03027000), combined capacity of reservoirs, 113,200 acre-ft. Several measurements of water temperature were made during the year. Satellite telemetry at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--The flood of Mar. 18, 1936 reached a discharge of 50,000 ft^3/s, as determined by Reliant Energy, elevation, 1,028.5 ft, at lower pool of dam.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	399	881	1780	3940	616	1230	1480	472	2670	546	4290	1210
2	380	924	880	9640	229	951	2240	823	2350	503	6350	6370
3	353	377	1780	6310	840	2320	2270	1470	1910	510	4700	5060
4	458	827	644	5490	1640	1650	2090	659	2090	520	5160	4710
5	409	486	527	3860	977	1760	7150	1060	2090	578	3690	3970
6	104	533	699	3320	1380	2320	8550	1040	2520	616	3450	2810
7	434	306	513	2850	1320	1370	5680	1930	1570	642	2770	2010
8	405	803	263	2320	1770	1090	5330	1630	2040	518	2710	2020
9	308	491	1250	2120	572	1620	4390	2250	2540	521	3480	1410
10	443	829	499	2040	1200	2530	3950	2300	2740	688	2770	1240
11	286	967	373	1900	1700	2380	3440	1930	2080	1200	2430	1610
12	173	656	1030	1340	870	1170	3200	2090	2020	533	2350	748
13	351	1160	811	1080	1130	2910	2100	2490	4240	549	1830	1210
14	376	864	1530	1640	772	3220	2490	1910	3680	108	841	893
15	272	811	2550	1710	646	2670	1990	2220	2810	107	1900	915
16	1090	803	2870	957	2010	4080	2330	1690	2310	562	972	950
17	625	1890	1530	1360	1120	7000	1680	2010	2070	506	1190	1220
18	106	2360	1700	365	661	10000	1320	1840	1760	353	1570	1250
19	108	1990	1470	368	406	10300	586	1370	1550	690	811	707
20	348	1910	3430	981	450	8610	738	2190	1370	1040	1080	909
21	877	1780	5580	975	952	10900	1360	3780	1180	1370	1010	1270
22	494	2010	4700	1360	956	9700	1240	3060	1510	7350	285	1630
23	421	2380	2580	478	1250	7290	2200	2880	1120	6970	1060	1950
24	625	1960	2740	916	2980	5550	1010	2770	909	5340	103	2360
25	531	1110	2690	416	2670	4760	764	2410	989	5820	1250	1640
26	103	1490	2310	298	1270	3990	513	1740	886	4460	1110	2070
27	1240	1450	1600	1240	1480	3440	489	1920	382	2970	973	1250
28	1390	896	1220	535	1180	3110	2010	1960	483	7240	1090	1500
29	677	1040	2230	587	---	2550	337	1140	727	5690	865	2260
30	559	1060	867	568	---	2350	386	1110	588	4200	910	1540
31	101	---	1570	539	---	2500	---	1910	---	3000	1070	---
TOTAL	14446	35044	54216	61503	33047	125321	73313	58054	55184	65700	64070	58692
MEAN	466	1168	1749	1984	1180	4043	2444	1873	1839	2119	2067	1956
MAX	1390	2380	5580	9640	2980	10900	8550	3780	4240	7350	6350	6370
MIN	101	306	263	298	229	951	337	472	382	107	103	707
(†)	-119	+109	+96	+3.3	+22	+275	+47	+15	-12	-97	-89	-53

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1948 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	876	1548	2133	2047	2303	3271	3116	2225	1459	930	725	729
MAX	2743	5013	4611	6884	5775	6703	5186	5018	6354	3220	3096	2469
(WY)	1991	1986	1978	1952	1976	1964	1970	2002	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

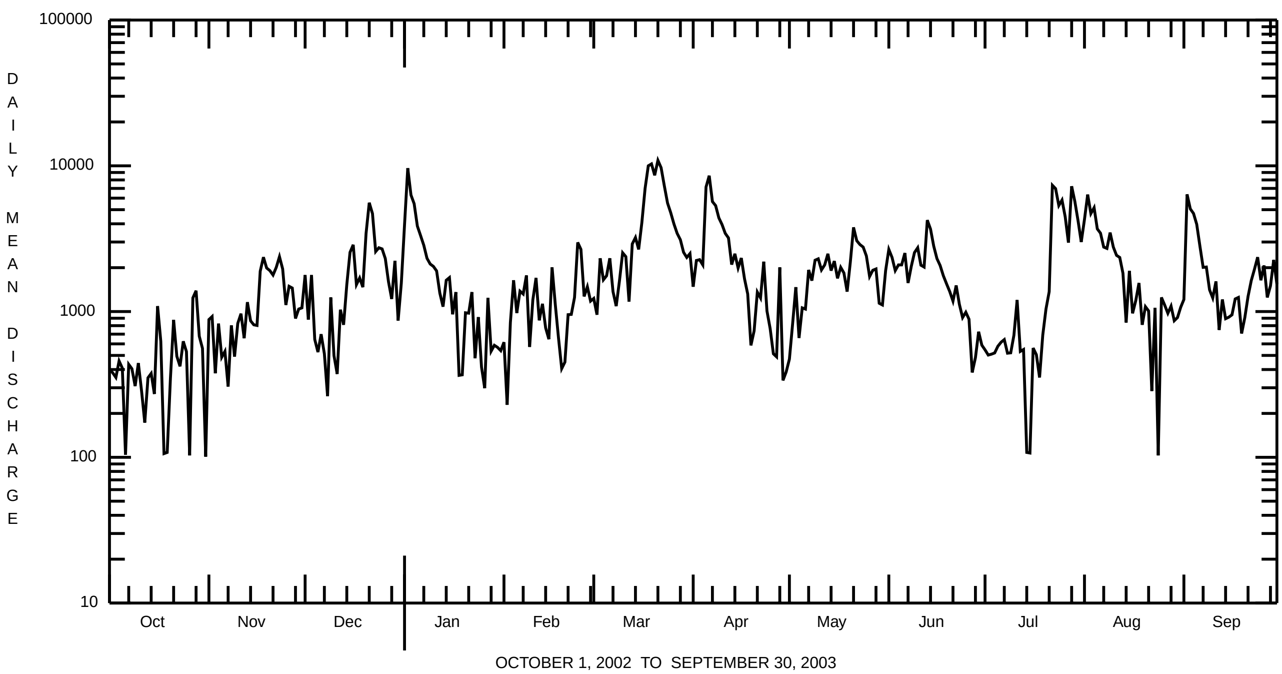
† Change in contents, equivalent in cubic feet per second, in East Branch Clarion River Lake and Piney Reservoir. Records of contents in Piney Reservoir furnished by Reliant Energy. Records of contents in East Branch Clarion River Lake furnished by U.S. Army Corps of Engineers.

CLARION RIVER BASIN

03030500 CLARION RIVER NEAR PINEY, PA--Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1948 - 2003	
ANNUAL TOTAL	629060		698590			
ANNUAL MEAN	1723	† +5.6	1914	† +16	1777	
HIGHEST ANNUAL MEAN					2443	1994
LOWEST ANNUAL MEAN					1092	2001
HIGHEST DAILY MEAN	16700	May 13	10900	Mar 21	51600	Jun 23 1972
LOWEST DAILY MEAN	101	Oct 31	101	Oct 31	11	Oct 1 1966
ANNUAL SEVEN-DAY MINIMUM	236	Aug 31	308	Oct 6	26	Oct 16 1949
MAXIMUM PEAK FLOW			16300	Apr 5	**a**74500	Jun 23 1972
MAXIMUM PEAK STAGE			12.27	Apr 5	**b**28.24	Jun 23 1972
10 PERCENT EXCEEDS	4030		4030		4030	
50 PERCENT EXCEEDS	1090		1370		1120	
90 PERCENT EXCEEDS	243		429		133	

† 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 Reliant Energy. Records of contents in East Branch Clarion River Lake furnished by U.S. Army Corps of Engineers.
a From rating curve extended above 59,000 ft^3/s.
b From floodmark.



03031500 ALLEGHENY RIVER AT PARKER, PA
(Pennsylvania Water-Quality Network Station)

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 mi^2.

WATER-DISCHARGE RECORDS

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 National Geodetic Vertical Datum of 1929. 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.--Records good except those for estimated daily discharges, which are poor. Flow regulated since 1924 by Piney Reservoir, since December 1940 by Tionesta Lake, since November 1949 by Chautauqua Lake (station 03013946), since June 1952 by East Branch Clarion River Lake (station 03027000), since October 1965 by Allegheny Reservoir (station 03012520), since July 1970 by Union City Reservoir (station 03021518), and since January 1974 by Woodcock Creek Lake (station 03022550). Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemetry at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 17, 1865 reached a stage of 29.4 ft, present datum, discharge, about 250,000 ft^3/s, from rating curve extended above 137,000 ft^3/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4010	3570	9370	27200	e6220	e17700	24900	5070	16700	4390	31700	6770
2	3500	3930	9710	42500	e6220	e16400	20900	5640	15800	4040	30700	26200
3	3170	4590	9520	33900	e6830	e14800	20000	6840	16300	3840	25000	25900
4	3270	4840	8320	30600	e9870	e14400	17200	7030	15800	3780	22700	21900
5	2890	5200	7120	28800	e12900	e13800	36900	7200	14700	3770	21700	17100
6	2820	5370	6530	26100	e16600	e13700	51000	7120	13400	3950	23800	13400
7	2670	6610	6900	23400	e18100	e13600	41200	9270	11400	4800	18300	11400
8	2980	7150	6280	21200	e16600	e14400	35400	9940	11100	4030	20400	10300
9	3380	7480	6470	19800	e15200	e15800	34800	10500	14000	3950	18600	10600
10	3100	7150	6330	18500	e13700	e18200	38100	12200	14600	4140	22300	9430
11	3370	8690	5410	15700	e11800	e19800	36400	12200	13900	5700	25500	9060
12	3160	10800	6500	13400	e10200	e18200	35300	12200	15100	5800	24100	8250
13	3750	11200	9770	11800	e8990	e15400	34000	14100	44600	4890	25400	7400
14	3390	10200	17500	11600	e8430	e16900	30400	19000	41100	4730	26500	6010
15	3150	8690	29200	10100	e8280	18400	24900	23800	32600	4030	24100	6440
16	3770	7830	26400	8570	e7730	21000	19500	21700	29200	3790	19800	7960
17	3610	8880	24600	7750	e8350	31000	15300	19400	24900	4340	14600	7560
18	3940	10800	21900	e6220	e7330	42700	12300	20000	21700	4430	12700	8120
19	3220	13200	18900	e5800	e7170	49100	10100	18200	18300	4520	10900	9410
20	3380	14700	23900	e6080	e7800	44800	8960	15900	15300	5540	8160	9400
21	4450	14500	35900	e6220	e7490	42600	9850	21300	12500	6340	6850	9720
22	5220	14000	31000	e7050	e8360	45900	10900	18600	10200	69300	5760	9720
23	4260	14700	26500	e6500	e10100	47500	12500	17100	9850	60300	5060	12100
24	4070	15000	25400	e4840	e12000	47300	11500	16800	8600	48900	4840	17000
25	3930	13800	24000	e5390	e13300	45000	9710	17100	7320	48200	4340	15800
26	3770	13600	22000	e4980	e15900	41100	8300	14800	6850	42700	8760	14300
27	4120	13400	19700	e4700	e17700	38800	7710	12600	5690	38100	12400	13400
28	5110	11700	17100	e5250	e18700	36700	8070	11500	4980	56700	6950	15300
29	4380	9560	16000	e5390	---	32400	6850	10200	4800	46500	6470	17100
30	4100	9210	13500	e5940	---	31900	5850	7810	4500	39400	7690	15400
31	3850	---	13900	e5670	---	29900	---	8750	---	35000	6970	---
TOTAL	113790	290350	505630	430950	311870	869200	638800	413870	475790	579900	503050	372450
MEAN	3671	9678	16310	13900	11140	28040	21290	13350	15860	18710	16230	12420
MAX	5220	15000	35900	42500	18700	49100	51000	23800	44600	69300	31700	26200
MIN	2670	3570	5410	4700	6220	13600	5850	5070	4500	3770	4340	6010
CFSM	0.48	1.26	2.13	1.81	1.45	3.66	2.78	1.74	2.07	2.44	2.12	1.62
IN.	0.55	1.41	2.45	2.09	1.51	4.22	3.10	2.01	2.31	2.81	2.44	1.81

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1933 - 2003, BY WATER YEAR (WY)

MEAN	6916	12220	17000	17460	17840	26280	24800	15570	9993	6197	4658	5033
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	950
(WY)	1964	1961	1961	1961	1934	1969	1946	1934	1934	1934	1934	1936

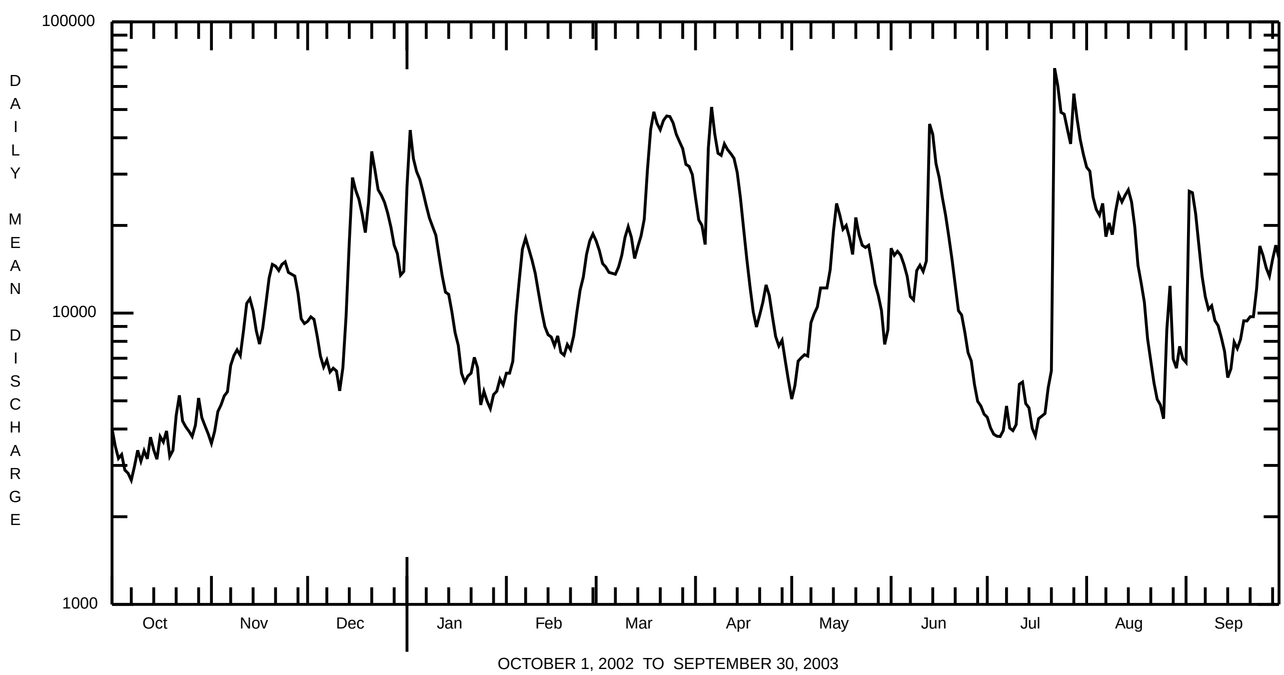
e Estimated.

OHIO RIVER MAIN STEM

03031500 ALLEGHENY RIVER AT PARKER, PA--Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1933 - 2003	
ANNUAL TOTAL	4986320		5505650			
ANNUAL MEAN	13660		15080		13640	
HIGHEST ANNUAL MEAN					19640	1956
LOWEST ANNUAL MEAN					8175	1934
HIGHEST DAILY MEAN	74400	May 14	69300	Jul 22	160000	Jan 22 1959
LOWEST DAILY MEAN	2670	Oct 7	2670	Oct 7	454	Jul 28 1934
ANNUAL SEVEN-DAY MINIMUM	3020	Oct 4	3020	Oct 4	508	Jul 25 1934
MAXIMUM PEAK FLOW			91100	Jul 22	**ab**175000	Jan 22 1959
MAXIMUM PEAK STAGE			15.76	Jul 22	**c**29.60	Jan 21 1959
INSTANTANEOUS LOW FLOW					409	Jul 30 1934
ANNUAL RUNOFF (CFSM)	1.78		1.97		1.78	
ANNUAL RUNOFF (INCHES)	24.18		26.70		24.16	
10 PERCENT EXCEEDS	29400		32500		31600	
50 PERCENT EXCEEDS	10200		11600		8830	
90 PERCENT EXCEEDS	3320		4110		2220	

a About.
b From rating curve extended above 137,000 ft^3/s.
c Backwater from ice.



OHIO RIVER MAIN STEM

03031500 ALLEGHENY RIVER AT PARKER, PA--Continued
(Pennsylvania Water-Quality Network Station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 2002 to current year.

REMARKS.--Some values for "*dissolved*" parameters exceed values for the corresponding "*total*" parameter. These results are within the limits of analytical precision and methods. Other data for the Water-Quality Network can be found on pages 242-289.

COOPERATION.--Samples were collected as part of the Pennsylvania Department of Environmental Protection Water-Quality Network (WQN) with cooperation from the Pennsylvania Department of Environmental Protection.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Agency collecting sample, code (00027)	Agency analyzing sample, code (00028)	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf µS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water unfltrd recover -able, mg/L (00916)	Magnesium, water, unfltrd recover -able, mg/L (00927)	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (00417)
OCT 2002													
22...	0915	1028	9813	5300	40	10.3	7.8	242	10.1	87	25.1	5.9	56
NOV													
21...	0800	1028	9813	14300	40	11.7	7.8	181	5.5	69	19.9	4.7	40
APR 2003													
15...	0900	1028	9813	25000	40	12.6	8.2	126	8.8	42	12.3	2.7	24
JUN													
10...	1015	1028	9813	12200	40	9.5	7.9	164	18.5	56	16.2	3.8	37
JUL													
15...	1215	1028	9813	4000	40	8.7	8.3	221	--	81	22.8	5.8	56
AUG													
26...	1400	1028	9813	E8760	40	12.3	7.3	200	--	68	19.6	4.6	47
SEP													
17...	1000	1028	9813	7300	40	10.3	7.3	163	18.0	58	17.2	3.6	42

Date	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, unfltrd mg/L (00951)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 105degC wat flt mg/L (00515)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia water, unfltrd mg/L as N (00610)	Nitrate water unfltrd mg/L as N (00620)	Nitrite water, unfltrd mg/L as N (00615)	Orthophosphate, water, unfltrd mg/L as P (70507)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, unfltrd mg/L (00600)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Fecal coliform, M-FC 0.45uMF col/ 100 mL (31616)
OCT 2002													
22...	20.8	<.2	34.0	182	<2	.050	.23	<.040	<.01	.012	.62	.9	100
NOV													
21...	17.9	<.2	24.5	134	36	.030	.48	<.040	.02	.036	1.1	1.3	100
APR 2003													
15...	12.8	<.2	13.5	100	8	<.020	.55	<.040	.02	.019	.58	1.4	180
JUN													
10...	14.9	<.2	18.5	110	16	<.020	.34	<.040	.01	.022	.65	<.2	200
JUL													
15...	20.5	<.2	19.5	134	<2	<.020	.25	<.040	.01	.012	.53	1.4	20
AUG													
26...	16.2	<.2	19.4	120	<2	<.020	.11	<.040	.01	.024	.38	1.6	260
SEP													
17...	13.6	<.2	13.1	106	8	<.020	.25	<.040	<.01	.024	.53	1.5	160

OHIO RIVER MAIN STEM

03031500 ALLEGHENY RIVER AT PARKER, PA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Alum-inum, water, fltrd, µg/L (01106)	Alum-inum, water, unfltrd recover -able, µg/L (01105)	Arsenic water, fltrd, µg/L (01000)	Cadmium water, fltrd, µg/L (01025)	Copper, water, fltrd, µg/L (01040)	Copper, water, unfltrd recover -able, µg/L (01042)	Iron, water, fltrd, µg/L (01046)	Iron, water, unfltrd recover -able, µg/L (01045)	Lead, water, fltrd, µg/L (01049)	Lead, water, unfltrd recover -able, µg/L (01051)	Mangan-ese, water, fltrd, µg/L (01056)	Mangan-ese, water, unfltrd recover -able, µg/L (01055)	Nickel, water, fltrd, µg/L (01065)
OCT 2002													
22...	57	86	<4.0	<.20	<4	<4	50	260	<1.0	<1.0	190	240	<4.0
NOV													
21...	28	300	<4.0	<.20	<4	<4	50	910	<1.0	1.2	120	260	<4.0
APR 2003													
15...	25	300	<4.0	<.20	<4	<4	40	530	<1.0	<1.0	50	90	<4.0
JUN													
10...	14	200	<4.0	<.20	<4	<4	40	530	<1.0	<1.0	70	140	<4.0
JUL													
15...	17	37	<4.0	<.20	<4	<4	30	100	<1.0	<1.0	40	70	<4.0
AUG													
26...	66	100	<4.0	<.20	<4	<4	140	280	<1.0	<1.0	60	80	<4.0
SEP													
17...	18	76	<4.0	<.20	<4	<4	40	200	<1.0	<1.0	10	50	<4.0

Date	Nickel, water, unfltrd recover -able, µg/L (01067)	Zinc, water, fltrd, µg/L (01090)	Zinc, water, unfltrd recover -able, µg/L (01092)	Phen-olic com-pounds, water, unfltrd µg/L (32730)
OCT 2002				
22...	<4.0	--	--	<5
NOV				
21...	4.2	--	--	5
APR 2003				
15...	<4.0	6.1	7.9	--
JUN				
10...	<4.0	<5.0	<5.0	<5
JUL				
15...	<4.0	<5.0	<5.0	<5
AUG				
26...	<4.0	5.7	<5.0	<5
SEP				
17...	<4.0	<5.0	<5.0	<5

OHIO RIVER MAIN STEM

03031500 ALLEGHENY RIVER AT PARKER, PA--Continued

BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES

REMARKS.--Samples were collected using rapid bioassessment protocols for benthic macroinvertebrates using a D-Frame net with a mesh size of 500 µm. Samples represent counts per 200 (approximate) subsamples.

Date	5/31/02
Benthic Macroinvertebrate	Count
Platyhelminthes	
Turbellaria (FLATWORMS)	
Tricladida	
Planariidae	2
Mollusca	
Gastropoda (SNAILS)	
Basommatophora	
Ancylidae	
Ferrissia sp	1
Hydrobiidae	2
Amnicola sp	4
Annelida	
Oligochaeta (AQUATIC EARTHWORMS)	
Lumbricina	3
Tubificidae	5
Arthropoda	
Acariformes	
Hydrachnidia (WATER MITES)	5
Crustacea	
Amphipoda (SCUDS)	
Gammaridae	
Gammarus sp	5
Isopoda (AQUATIC SOWBUGS)	
Asellidae	
Caecidotea sp	42
Insecta	
Ephemeroptera (MAYFLIES)	
Caenidae	
Caenis sp	1
Ephemerellidae	
Ephemerella sp	10
Eurylophella sp	3
Heptageniidae	3
Stenonema sp	18
Isonychiidae	
Isonychia sp	1
Odonata (DRAGONFLIES AND DAMSELFLIES)	
Coenagrionidae	
Argia sp	1
Plecoptera (STONEFLIES)	
Perlidae	
Perlesta sp	4
Hemiptera	
Corixidae	1
Trichoptera (CADDISFLIES)	
Brachycentridae	5
Glossosomatidae	
Protoptila sp	1
Hydropsychidae	
Hydropsyche sp	2
Leptoceridae	
Mystacides sp	1
Polycentropodidae	
Polycentropus sp	2

OHIO RIVER MAIN STEM

03031500 ALLEGHENY RIVER AT PARKER, PA--Continued

BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES--Continued

Date	5/31/02
Benthic Macroinvertebrate	Count
Coleoptera (BEETLES)	
Elmidae (RIFFLE BEETLES)	
Dubiraphia sp	1
Optioservus sp	2
Psephenidae (WATER PENNIES)	
Psephenus sp	1
Diptera (TRUE FLIES)	
Chironomidae (MIDGES)	96
Total Organisms	222

REDBANK CREEK BASIN

03032500 REDBANK CREEK AT ST. CHARLES, PA
(Pennsylvania Water-Quality Network Station)

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 mi^2.

WATER-DISCHARGE RECORDS

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 National Geodetic Vertical Datum of 1929. Prior to July 10, 1940, nonrecording gage at site 500 ft upstream at datum 3.10 ft higher.

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

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a base discharge of 7,000 ft^3/s and maximum (*****):

Date	Time	Discharge ft^3/s	Gage Height (ft)	Date	Time	Discharge ft^3/s	Gage Height (ft)
Jan. 2	--	--	Ice jam	Sept. 2	1400	9,110	10.34
July 28	0645	*17,900	*13.66				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	232	409	e439	e3670	e341	e635	736	306	1720	240	3550	943
2	174	394	e357	e7580	332	e589	853	373	1290	223	3700	5790
3	142	358	e304	5320	345	e600	878	463	892	205	2990	4520
4	126	315	e250	e3010	e649	e624	776	373	879	196	1970	5030
5	129	287	e245	e1790	e908	e630	3190	358	876	204	1900	3530
6	128	409	e240	e1360	e521	e829	3610	479	823	224	1600	2450
7	115	642	e230	e1050	e370	e630	2480	502	842	390	1190	1690
8	98	560	e222	e888	e347	e664	1890	650	1130	424	997	1250
9	84	454	e216	e745	e337	e1970	1570	868	1900	343	1070	1000
10	76	402	221	e602	e331	e1660	1310	1190	1430	326	1640	838
11	71	570	e227	e500	e323	1330	1140	1090	1060	437	1100	710
12	69	740	e254	e419	e312	1320	1130	1010	984	461	888	620
13	73	626	e623	e378	e302	e1840	979	990	1470	346	711	553
14	77	537	1590	e357	e291	e2140	826	876	1420	264	600	511
15	76	474	2150	e341	e278	e1880	739	741	1270	220	514	595
16	89	481	1750	e323	e270	e3120	682	686	971	198	459	871
17	125	1640	1230	e321	e268	5010	629	693	775	183	435	691
18	145	2010	e895	e324	e268	5160	576	636	798	175	401	529
19	181	1310	e859	e329	e266	4430	541	562	774	751	349	538
20	299	1190	e2100	e334	e268	3920	508	510	665	440	310	765
21	320	1040	4070	e359	e287	4980	514	2130	597	331	287	686
22	235	1300	2850	e390	e287	3710	530	1880	601	4020	268	556
23	178	1240	e1830	e372	e914	2600	505	1190	526	3410	252	1170
24	149	1010	e1360	e357	2050	1870	450	1070	433	3450	234	1090
25	132	844	e1090	e359	1310	1450	411	952	373	1980	217	811
26	399	756	e949	e359	1010	1220	389	786	331	1120	1000	760
27	768	686	e827	e357	e821	1080	378	680	298	1410	2090	678
28	523	623	739	e357	e658	940	355	738	276	11600	1140	719
29	375	568	713	e351	---	838	340	698	254	4740	720	940
30	338	e503	654	e337	---	813	326	584	246	2520	1600	752
31	382	---	e676	e337	---	776	---	669	---	1340	1310	---
TOTAL	6308	22378	30160	33576	14664	59258	29241	24733	25904	42171	35492	41586
MEAN	203	746	973	1083	524	1912	975	798	863	1360	1145	1386
MAX	768	2010	4070	7580	2050	5160	3610	2130	1900	11600	3700	5790
MIN	69	287	216	321	266	589	326	306	246	175	217	511
CFSM	0.39	1.41	1.84	2.05	0.99	3.62	1.85	1.51	1.64	2.58	2.17	2.63
IN.	0.44	1.58	2.12	2.37	1.03	4.17	2.06	1.74	1.83	2.97	2.50	2.93

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1919 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	374	740	1071	1124	1208	1798	1499	1068	687	423	288	296
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

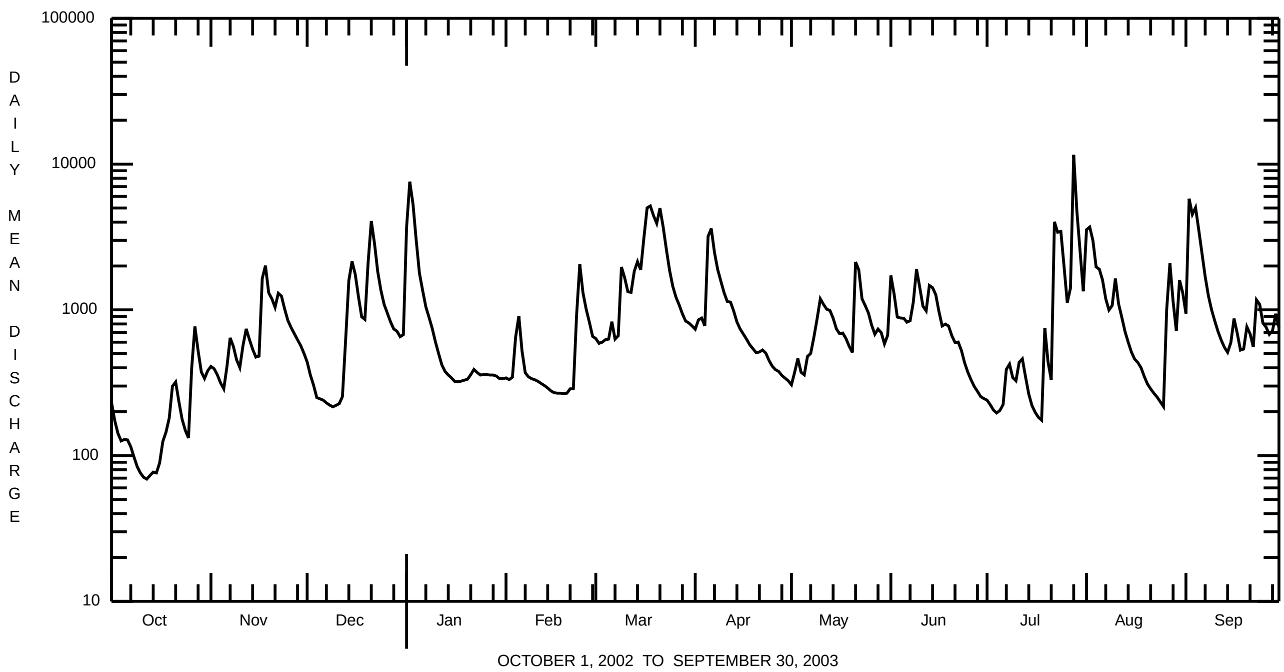
e Estimated.

REDBANK CREEK BASIN

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

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1919 - 2003	
ANNUAL TOTAL	349354		365471			
ANNUAL MEAN	957		1001		879	
HIGHEST ANNUAL MEAN					1333	1996
LOWEST ANNUAL MEAN					430	1934
HIGHEST DAILY MEAN	9030	May 13	11600	Jul 28	28100	Jul 19 1996
LOWEST DAILY MEAN	39	Sep 13,14	69	Oct 12	20	Sep 28 1922
ANNUAL SEVEN-DAY MINIMUM	45	Sep 8	75	Oct 9	24	Aug 30 1939
MAXIMUM PEAK FLOW			17900	Jul 28	**a**66300	Jul 19 1996
MAXIMUM PEAK STAGE			13.66	Jul 28	**b**23.90	Jul 19 1996
INSTANTANEOUS LOW FLOW			67	Oct 13	**c**19	Oct 1 1918
ANNUAL RUNOFF (CFSM)	1.81		1.90		1.66	
ANNUAL RUNOFF (INCHES)	24.61		25.75		22.62	
10 PERCENT EXCEEDS	2050		2070		2100	
50 PERCENT EXCEEDS	615		642		465	
90 PERCENT EXCEEDS	99		231		84	

a From rating curve extended above 35,000 ft^3/s on basis of slope-area measurement of peak flow.
b From floodmarks.
c Minimum observed.



03032500 REDBANK CREEK AT ST. CHARLES, PA--Continued
(Pennsylvania Water-Quality Network Station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 2002 to current year.

REMARKS.--Other data for the Water-Quality Network can be found on pages 242-289.

COOPERATION.--Samples were collected as part of the Pennsylvania Department of Environmental Protection Water-Quality Network (WQN) with cooperation from the Pennsylvania Department of Environmental Protection.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Agency collecting sample, code (00027)	Agency analyzing sample, code (00028)	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf µS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water unfltrd recoverable, mg/L (00916)	Magnesium, water, unfltrd recoverable, mg/L (00927)	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (00417)
NOV 2002													
25...	1230	1028	9813	842	40	13.2	7.7	214	4.4	92	23.0	8.5	18
MAR 2003													
26...	1200	1028	9813	1200	40	11.5	7.3	258	9.0	100	24.2	9.6	12
JUN													
11...	1120	1028	9813	1060	40	9.6	7.6	241	17.0	87	21.0	8.3	19
JUL													
17...	0825	1028	9813	187	40	7.8	7.7	463	--	200	49.8	19.0	34
SEP													
18...	0800	1028	9813	542	40	9.2	7.4	362	17.0	140	33.1	13.9	25

Date	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 105degC wat flt mg/L (00515)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia water, unfltrd mg/L as N (00610)	Nitrate water unfltrd mg/L as N (00620)	Nitrite water, unfltrd mg/L as N (00615)	Orthophosphate, water, unfltrd mg/L as P (70507)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, unfltrd mg/L (00600)	Organic carbon, water, unfltrd mg/L (00680)	Aluminum, water, unfltrd recoverable, µg/L (01105)	Copper, water, unfltrd recoverable, µg/L (01042)	Iron, water, unfltrd recoverable, µg/L (01045)
NOV 2002													
25...	68.3	198	<2	<.020	.84	<.040	<.01	.011	1.1	1.8	<200	<10	420
MAR 2003													
26...	82.2	226	2	<.020	.58	<.040	<.01	.014	.77	1.4	400	<10	760
JUN													
11...	63.1	178	6	<.020	.44	<.040	.02	.028	.63	2.2	500	<10	1070
JUL													
17...	145	400	10	<.020	.33	<.040	.01	.012	.54	2.2	<200	<10	220
SEP													
18...	108	302	2	<.020	.43	<.040	<.01	.012	.72	2.1	<200	<10	320

Date	Lead, water, unfltrd recoverable, µg/L (01051)	Manganese, water, unfltrd recoverable, µg/L (01055)	Nickel, water, unfltrd recoverable, µg/L (01067)	Zinc, water, unfltrd recoverable, µg/L (01092)
NOV 2002				
25...	<1.0	250	<50	<10
MAR 2003				
26...	<1.0	380	<50	90
JUN				
11...	<1.0	270	<50	110
JUL				
17...	<1.0	100	<50	10
SEP				
18...	<1.0	140	<50	<10

REDBANK CREEK BASIN

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

BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES

REMARKS.--Samples were collected using rapid bioassessment protocols for benthic macroinvertebrates using a D-Frame net with a mesh size of 500 µm. Samples represent counts per 100 (approximate) subsamples.

Date	9/25/02
Benthic Macroinvertebrate	Count
Arthropoda	
Acariformes	
Hydrachnidia (WATER MITES)	1
Insecta	
Ephemeroptera (MAYFLIES)	
Baetidae	
Acentrella sp	1
Baetis sp	1
Caenidae	
Caenis sp	1
Heptageniidae	
Stenonema sp	12
Isonychiidae	
Isonychia sp	12
Megaloptera	
Corydalidae (FISHFLIES AND DOBSONFLIES)	
Corydalus sp	2
Trichoptera (CADDISFLIES)	
Brachycentridae	
Brachycentrus sp	5
Hydropsychidae	
Cheumatopsyche sp	1
Hydropsyche sp	9
Hydroptilidae	
Hydroptila sp	1
Philopotamidae	
Chimarra sp	5
Coleoptera (BEETLES)	
Elmidae (RIFFLE BEETLES)	
Optioservus sp	8
Diptera (TRUE FLIES)	
Chironomidae (MIDGES)	2
Simuliidae (BLACK FLIES)	
Simulium sp	1
Total Organisms	62

MAHONING CREEK BASIN

03034000 MAHONING CREEK AT PUNXSUTAWNEY, PA
(Pennsylvania Water-Quality Network Station)

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 mi^2.

WATER-DISCHARGE RECORDS

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 National Geodetic Vertical Datum of 1929 (U.S. Army Corps of Engineers benchmark). Prior to Oct. 1, 1946, at site 2.9 mi upstream at datum 13.30 ft higher.

REMARKS.--Records good except those for estimated daily discharges, which are poor. 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 telemetry 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 ft^3/s, from rating curve extended above 4,300 ft^3/s.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a base discharge of 2,500 ft^3/s and maximum (*****):

Date	Time	Discharge ft^3/s	Gage Height (ft)	Date	Time	Discharge ft^3/s	Gage Height (ft)
Jan. 2	0300	3,660	7.16	Sept. 4	0500	*4,640	*8.13

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	61	148	168	1550	e109	e222	269	121	604	101	1430	622
2	58	141	150	2820	e109	e215	370	117	399	91	966	1290
3	54	127	134	1410	e109	e209	329	110	337	87	695	1470
4	62	117	e123	900	e180	e205	310	102	358	86	535	3200
5	74	112	e113	648	e332	e289	1150	117	323	95	675	1540
6	67	208	e108	512	e258	e421	1060	139	281	87	571	940
7	55	196	e104	424	e209	e316	764	129	311	298	412	639
8	53	165	e99	381	e190	e304	641	181	341	306	351	467
9	60	148	e97	364	e174	855	559	205	505	162	556	372
10	58	138	e92	372	e161	667	463	298	385	153	548	314
11	54	196	e89	318	e155	473	552	306	332	277	406	266
12	47	192	e101	279	e145	439	566	293	319	207	350	230
13	49	185	e123	e252	e142	874	459	272	363	152	289	205
14	50	166	e255	e230	e132	1210	395	239	314	126	241	192
15	46	153	e411	e208	e129	972	350	208	294	110	205	184
16	50	160	e350	e192	e129	1120	318	229	243	125	190	246
17	78	444	e295	e186	e129	1280	285	213	211	103	186	176
18	69	432	e247	e183	e126	1170	253	186	278	210	158	152
19	80	344	e253	e177	e116	922	232	168	242	559	139	193
20	120	352	1220	e170	e109	856	215	156	210	238	126	237
21	87	300	1180	e164	e106	1020	220	608	221	183	118	166
22	72	287	765	e161	e113	759	214	434	232	512	111	156
23	65	297	588	e158	e609	606	194	356	183	622	102	409
24	61	256	445	e151	e475	491	171	346	157	443	93	264
25	60	233	395	e139	e364	417	159	298	141	339	87	229
26	267	213	340	e133	e310	375	152	263	129	266	327	230
27	193	203	292	e130	e269	336	145	225	119	227	563	196
28	140	186	262	e123	e242	300	133	204	110	809	313	424
29	122	176	250	e120	---	281	133	186	102	524	227	326
30	138	181	224	e120	---	289	126	169	104	343	804	275
31	155	---	335	e114	---	272	---	337	---	275	691	---
TOTAL	2605	6456	9608	13089	5631	18165	11187	7215	8148	8116	12465	15610
MEAN	84.0	215	310	422	201	586	373	233	272	262	402	520
MAX	267	444	1220	2820	609	1280	1150	608	604	809	1430	3200
MIN	46	112	89	114	106	205	126	102	102	86	87	152
CFSM	0.53	1.36	1.96	2.67	1.27	3.71	2.36	1.47	1.72	1.66	2.54	3.29
IN.	0.61	1.52	2.26	3.08	1.33	4.28	2.63	1.70	1.92	1.91	2.93	3.68

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	116	218	323	335	406	558	466	330	213	153	109	99.3
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	23.0	27.2	61.0	96.6	132	112	79.9	48.9	26.4	23.0	16.9
(WY)	1965	1999	1961	1961	1993	1969	1946	1941	1991	1988	1949	1964

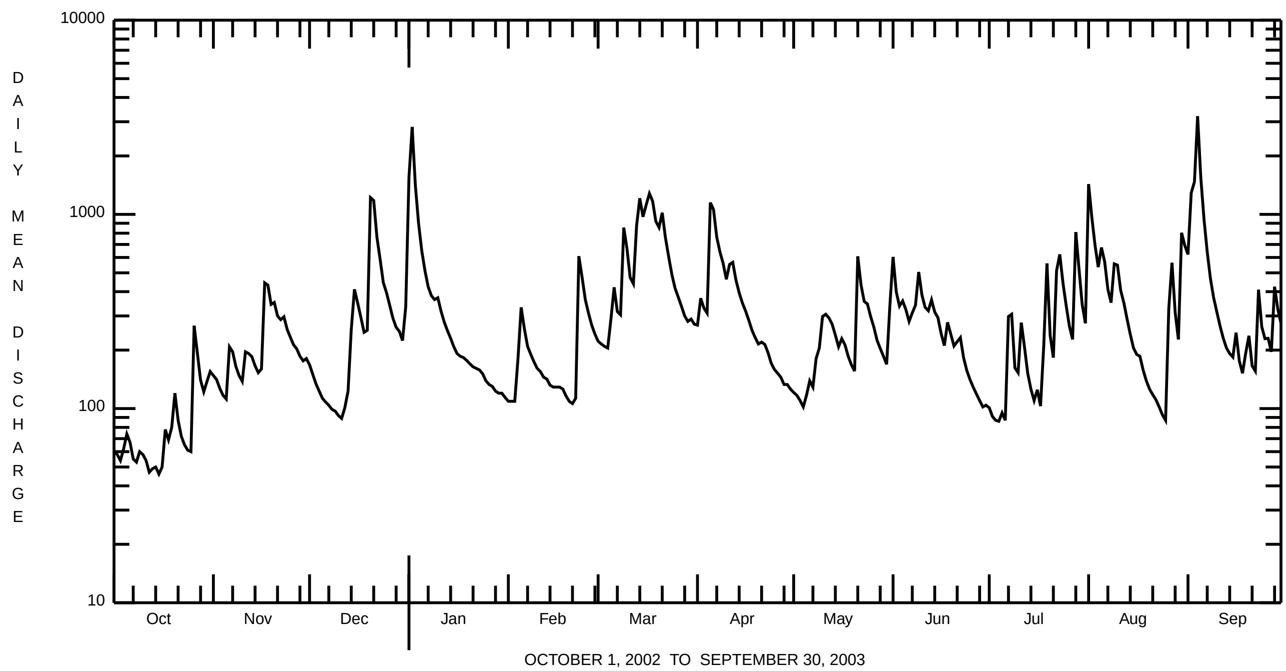
e Estimated.

MAHONING CREEK BASIN

03034000 MAHONING CREEK AT PUNXSUTAWNEY, PA--Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1939 - 2003	
ANNUAL TOTAL	100193		118295			
ANNUAL MEAN	275		324		277	
HIGHEST ANNUAL MEAN					433	1956
LOWEST ANNUAL MEAN					177	1963
HIGHEST DAILY MEAN	3510	Jun 6	3200	Sep 4	13200	Jun 23 1972
LOWEST DAILY MEAN	24	Sep 13,14	46	Oct 15	12	Oct 19 1939
ANNUAL SEVEN-DAY MINIMUM	25	Sep 8	51	Oct 10	13	Oct 14 1939
MAXIMUM PEAK FLOW			**a**4640	Sep 4	**a**20400	Jul 19 1996
MAXIMUM PEAK STAGE			8.13	Sep 4	**b**18.38	Jul 19 1996
INSTANTANEOUS LOW FLOW			43	Oct 15,16	2.6	Sep 26 1939
ANNUAL RUNOFF (CFSM)	1.74		2.05		1.75	
ANNUAL RUNOFF (INCHES)	23.59		27.85		23.79	
10 PERCENT EXCEEDS	521		640		620	
50 PERCENT EXCEEDS	193		227		154	
90 PERCENT EXCEEDS	44		101		34	

a From rating curve extended above 4,300 ft^3/s on basis of slope-area measurement at gage height 13.01 ft.
b From floodmark in gage well.



MAHONING CREEK BASIN

03034000 MAHONING CREEK AT PUNXSUTAWNEY, PA--Continued
(Pennsylvania Water-Quality Network Station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 2002 to current year.

REMARKS.--Other data for the Water-Quality Network can be found on pages 242-289.

COOPERATION.--Samples were collected as part of the Pennsylvania Department of Environmental Protection Water-Quality Network (WQN) with cooperation from the Pennsylvania Department of Environmental Protection.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Agency collecting sample, code (00027)	Agency analyzing sample, code (00028)	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf µS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water unfltrd recover -able, mg/L (00916)	Magnesium, water, unfltrd recover -able, mg/L (00927)	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (00417)
NOV 2002													
25...	1045	1028	9813	234	40	12.3	7.7	266	4.8	120	32.2	8.9	38
MAR 2003													
26...	0930	1028	9813	376	40	10.6	7.5	330	9.2	130	34.2	9.9	33
JUN													
11...	1330	1028	9813	333	40	9.9	7.6	288	15.5	110	29.2	8.9	36
JUL													
17...	1100	1028	9813	101	40	9.1	7.5	455	--	180	49.6	14.0	56
SEP													
18...	1000	1028	9813	152	40	10.8	7.4	432	14.5	180	47.0	15.0	50

Date	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 105degC wat flt mg/L (00515)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia water, unfltrd mg/L as N (00610)	Nitrate water unfltrd mg/L as N (00620)	Nitrite water, unfltrd mg/L as N (00615)	Orthophosphate, water, unfltrd mg/L as P (70507)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, unfltrd mg/L (00600)	Organic carbon, water, unfltrd mg/L (00680)	Aluminum, water, unfltrd recover -able, µg/L (01105)	Copper, water, unfltrd recover -able, µg/L (01042)	Iron, water, unfltrd recover -able, µg/L (01045)
NOV 2002													
25...	75.0	230	2	.030	1.07	<.040	.01	.014	1.2	1.3	<200	<10	540
MAR 2003													
26...	89.0	272	8	.020	.71	<.040	<.01	.015	8.6	1.4	200	<10	910
JUN													
11...	69.9	214	2	<.020	.71	<.040	.01	.024	.88	1.6	300	<10	1000
JUL													
17...	117	326	10	<.020	.56	<.040	.02	.018	.70	1.8	<200	<10	840
SEP													
18...	127	308	6	<.020	.38	<.040	<.01	.021	.49	1.5	<200	<10	530

Date	Lead, water, unfltrd recover -able, µg/L (01051)	Manganese, water, unfltrd recover -able, µg/L (01055)	Nickel, water, unfltrd recover -able, µg/L (01067)	Zinc, water, unfltrd recover -able, µg/L (01092)
NOV 2002				
25...	<1.0	160	<50	<10
MAR 2003				
26...	<1.0	210	<50	80
JUN				
11...	<1.0	150	<50	120
JUL				
17...	<1.0	140	<50	20
SEP				
18...	<1.0	160	<50	<10

MAHONING CREEK BASIN

03034000 MAHONING CREEK AT PUNXSUTAWNEY, PA--Continued

BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES

REMARKS.--Samples were collected using rapid bioassessment protocols for benthic macroinvertebrates using a D-Frame net with a mesh size of 500 µm. Samples represent counts per 100 (approximate) subsamples.

Date	9/25/02
Benthic Macroinvertebrate	Count
Mollusca	
Gastropoda (SNAILS)	
Basommatophora	
Ancylidae	
Ferrissia sp	9
Annelida	
Oligochaeta (AQUATIC EARTHWORMS)	
Tubificida	
Naididae	1
Arthropoda	
Acariformes	
Hydrachnidia (WATER MITES)	1
Crustacea	
Decapoda	
Cambaridae (CRAYFISH)	1
Insecta	
Ephemeroptera (MAYFLIES)	
Caenidae	
Caenis sp	8
Heptageniidae	
Stenonema sp	9
Isonychiidae	
Isonychia sp	9
Trichoptera (CADDISFLIES)	
Hydropsychidae	
Cheumatopsyche sp	31
Hydropsyche sp	5
Philopotamidae	
Chimarra sp	1
Rhyacophilidae	
Rhyacophila sp	3
Elmidae (RIFFLE BEETLES)	
Optioservus sp	3
Diptera (TRUE FLIES)	
Chironomidae (MIDGES)	9
Total Organisms	90

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 mi^2.

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

GAGE.--Water-stage recorder. Datum of gage is 1,164.88 ft above National Geodetic Vertical Datum of 1929 (U.S. Army Corps of Engineers benchmark). Prior to May 10, 1940, nonrecording gage at site 200 ft upstream at same datum.

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

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a base discharge of 2,000 ft^3/s and maximum (*****):

Date	Time	Discharge ft^3/s	Gage Height (ft)	Date	Time	Discharge ft^3/s	Gage Height (ft)
Jan. 2	Unknown	Unknown	Unknown	Aug. 30	1900	*2,070	*8.26

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	68	e105	e840	e48	e192	101	43	200	31	846	671
2	19	58	e100	e1960	e50	e168	156	41	115	28	410	1000
3	18	48	e87	e739	e64	e172	123	39	100	27	301	946
4	34	42	e78	e473	e376	e180	112	36	164	26	242	1200
5	35	40	e71	e322	e620	e271	610	40	171	28	348	654
6	30	135	e68	e254	e315	e374	458	62	132	28	227	390
7	23	125	e63	e182	e214	e279	329	69	183	96	150	255
8	20	98	e62	e150	e176	e254	280	94	205	61	115	185
9	18	76	e63	e124	e145	610	234	105	320	43	145	144
10	17	66	e60	e110	e125	365	185	221	206	45	332	119
11	18	88	e60	e98	e107	242	365	206	160	211	196	97
12	20	86	e59	e88	e94	208	384	160	162	92	156	81
13	25	92	e105	e87	e89	435	261	155	222	58	126	73
14	28	77	e400	e80	e81	559	199	127	182	45	93	68
15	27	65	e280	e72	e76	463	164	101	185	37	73	70
16	28	65	e184	e67	e73	541	138	113	131	63	65	81
17	54	299	e138	e60	e50	587	116	101	105	44	64	57
18	50	275	e135	e58	e50	507	100	88	171	33	52	49
19	52	217	e140	e49	e49	383	89	84	140	124	43	73
20	84	232	e805	e46	e50	360	80	74	108	59	37	107
21	54	194	e525	e46	e50	465	86	261	106	43	33	63
22	43	183	e335	e44	e73	334	81	171	105	372	31	57
23	38	183	e230	e40	e882	248	73	142	78	193	29	282
24	34	158	e164	e39	e621	197	63	144	63	149	26	138
25	32	147	e130	e39	e438	162	58	117	53	119	24	121
26	166	135	e99	e41	e326	143	56	102	48	78	144	128
27	91	132	e81	e40	e275	124	55	84	43	65	278	100
28	57	122	e70	e42	e220	108	50	78	39	352	137	241
29	46	117	e64	e42	---	101	49	72	35	162	83	166
30	71	e112	e55	e44	---	104	47	62	32	102	1070	132
31	82	---	e80	e44	---	99	---	99	---	77	573	---
TOTAL	1335	3735	4896	6320	5737	9235	5102	3291	3964	2891	6449	7748
MEAN	43.1	124	158	204	205	298	170	106	132	93.3	208	258
MAX	166	299	805	1960	882	610	610	261	320	372	1070	1200
MIN	17	40	55	39	48	99	47	36	32	26	24	49
CFSM	0.49	1.42	1.81	2.33	2.34	3.41	1.95	1.21	1.51	1.07	2.38	2.95
IN.	0.57	1.59	2.08	2.69	2.44	3.93	2.17	1.40	1.69	1.23	2.74	3.30

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	65.1	131	192	202	237	303	236	166	95.5	71.9	55.7	50.5
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	9.36	21.8	26.2	42.7	59.0	48.7	20.5	9.10	4.71	3.85	2.33
(WY)	1964	1999	1961	1940	1993	1969	1946	1941	1949	1966	1957	1952

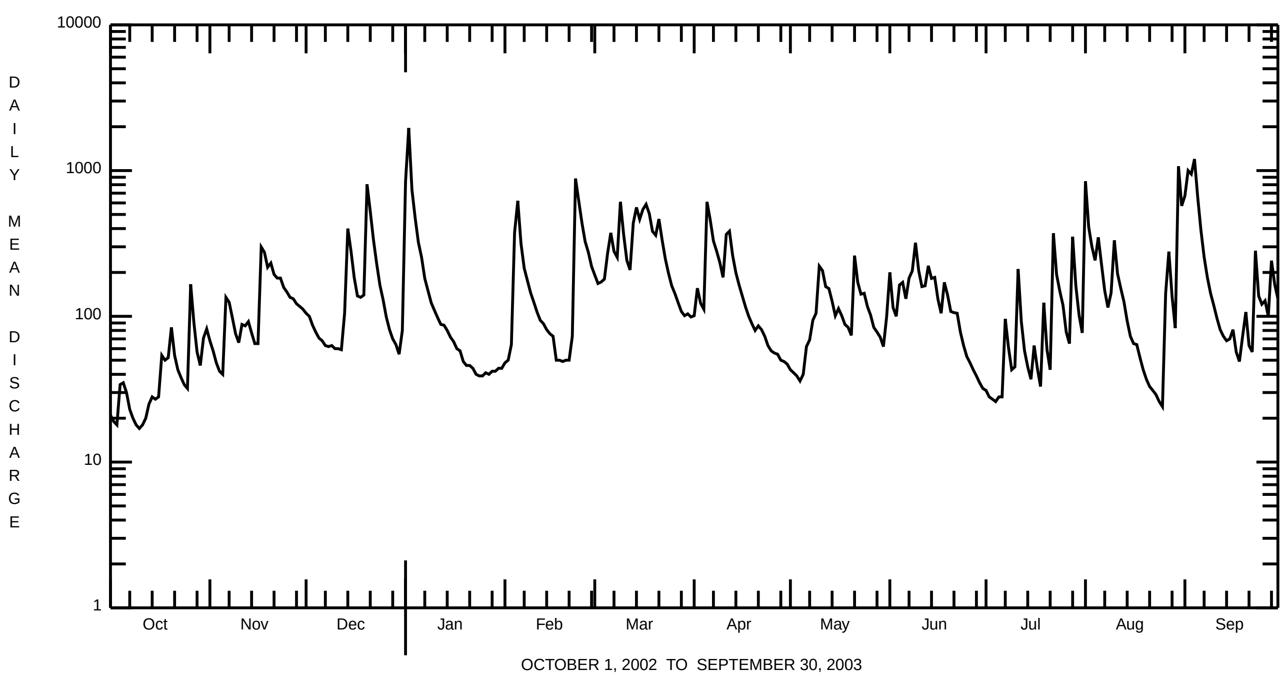
e Estimated.

MAHONING CREEK BASIN

03034500 LITTLE MAHONING CREEK AT McCORMICK, PA--Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1940 - 2003	
ANNUAL TOTAL	45986.3		60703			
ANNUAL MEAN	126		166		150	
HIGHEST ANNUAL MEAN					240	1956
LOWEST ANNUAL MEAN					92.2	1999
HIGHEST DAILY MEAN	1220	Mar 27	**e**1960	Jan 2	4620	Jun 23 1972
LOWEST DAILY MEAN	4.6	Sep 13	17	Oct 10	0.40	Sep 28 1959
ANNUAL SEVEN-DAY MINIMUM	6.2	Sep 8	20	Oct 7	0.69	Sep 23 1959
MAXIMUM PEAK FLOW			2070	Aug 30	**a**10600	Jul 19 1996
MAXIMUM PEAK STAGE			8.26	Aug 30	**b**14.46	Jul 19 1996
INSTANTANEOUS LOW FLOW			17	Oct 3,9-11	0.30	Sep 28 1959
ANNUAL RUNOFF (CFSM)	1.44		1.90		1.72	
ANNUAL RUNOFF (INCHES)	19.57		25.84		23.33	
10 PERCENT EXCEEDS	275		368		355	
50 PERCENT EXCEEDS	86		101		74	
90 PERCENT EXCEEDS	9.9		39		9.2	

a From rating curve extended above 8,500 ft^3/s.
b From peak-stage indicator.
e Estimated.



OHIO RIVER MAIN STEM

03036500 ALLEGHENY RIVER AT KITTANNING, PA
(Pennsylvania Water-Quality Network Station)

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 mi^2.

WATER-DISCHARGE RECORDS

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 National Geodetic Vertical Datum of 1929 (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.--Records good except those for estimated daily discharges and those below 2,000 ft^3/s, which are poor. Sharp rises and drops in discharge during periods of low flow may be caused by hydroelectric power production. Flow regulated since 1924 by Piney Reservoir, since December 1940 by Tionesta Lake, since June 1941 by Mahoning Creek Lake, since November 1949 by Chautauqua Lake (station 03013946), since June 1952 by East Branch Clarion River Lake (station 03027000), since October 1965 by Allegheny Reservoir (station 03012520), since July 1970 by Union City Reservoir (station 03021518), and since January 1974 by Woodcock Creek Lake (station 03022550). Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4460	4070	10400	28600	e5500	18700	28000	5950	17600	5060	36100	10900
2	3860	4690	11100	53900	e5940	17300	22700	6110	19800	4640	35600	29900
3	3300	5240	10400	44900	e5840	15800	22200	7340	18500	4310	31000	35000
4	3100	5360	9200	37900	e8330	16600	20200	8120	18600	4300	27200	34300
5	3000	6140	8030	35500	e13200	15600	30600	8030	17500	4060	25600	27300
6	2860	6250	7610	32000	e15500	16100	57100	7430	16100	4240	26000	22100
7	2590	7710	7060	28600	18000	15900	46700	10100	14400	6260	23000	17700
8	2800	8260	7200	25800	16600	15700	41300	11600	14300	5750	22000	14100
9	3090	8940	6110	23900	15400	19100	36900	11900	17300	5480	21000	13300
10	3110	8310	6200	22200	13500	23800	41500	14800	18300	5540	23200	11900
11	3240	9710	5520	19300	12100	22200	39900	15300	17600	6690	27200	10900
12	3020	12100	7210	15800	11100	20200	38100	14600	16800	7840	25800	10500
13	3700	12600	10600	13000	9410	19800	37100	15700	41700	6340	26000	8890
14	3180	11600	17300	11500	9310	26100	33600	19100	47600	5970	25700	7840
15	3070	10100	31500	11300	8740	26200	28600	24000	36700	4690	26300	7640
16	3350	9190	30500	9120	8260	27300	23000	24600	32800	4380	22900	9660
17	e4010	11000	28100	e7750	e8300	39700	17900	20800	27700	4620	16500	9230
18	e4480	13700	25000	e6500	e7200	51000	14700	21800	24600	5140	13700	9270
19	e3930	15400	22100	e5150	e7000	55600	12100	20200	e21700	4990	12900	11100
20	3680	16800	25100	e5700	e7100	52100	10800	17900	e18200	6750	9640	11300
21	4510	17000	40300	e6300	e7300	49400	11100	22100	14800	6730	8030	11100
22	5660	16600	36800	e6900	e8300	51900	12200	23100	12300	52000	6880	11200
23	4950	16600	31500	e5800	13600	52500	14000	20600	11900	67200	5370	13600
24	4340	16900	29400	e4820	18600	51000	13000	19900	10700	54700	5660	17800
25	4190	16000	27400	e4690	20800	49000	11200	20100	8770	51700	5170	18500
26	4600	15000	25300	e4700	19300	44700	9810	18200	8120	45700	7780	16400
27	4940	14800	22900	e4900	17900	40900	8890	15200	7040	39500	19200	15300
28	5960	13500	19800	e5500	19500	39200	8610	13500	5990	61900	10500	16200
29	5630	10900	17400	e5400	---	35100	8730	12800	5400	54100	9170	18300
30	4990	10500	16000	e5300	---	33100	6720	9700	5460	43700	12700	17300
31	4670	---	15700	e5300	---	32100	---	10300	---	37500	11800	---
TOTAL	122270	334970	568740	498030	331630	993700	707260	470880	548280	621780	579600	468530
MEAN	3944	11170	18350	16070	11840	32050	23580	15190	18280	20060	18700	15620
MAX	5960	17000	40300	53900	20800	55600	57100	24600	47600	67200	36100	35000
MIN	2590	4070	5520	4690	5500	15600	6720	5950	5400	4060	5170	7640
CFSM	0.44	1.24	2.04	1.79	1.32	3.57	2.63	1.69	2.04	2.24	2.08	1.74
IN.	0.51	1.39	2.36	2.06	1.37	4.12	2.93	1.95	2.27	2.58	2.40	1.94

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1904 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	8274	13980	18900	20800	20940	31840	27690	18410	11410	7062	5226	5607
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	8342	6585	4860	2893	1511	1274	930
(WY)	1924	1909	1961	1961	1963	1969	1946	1941	1936	1966	1910	1909

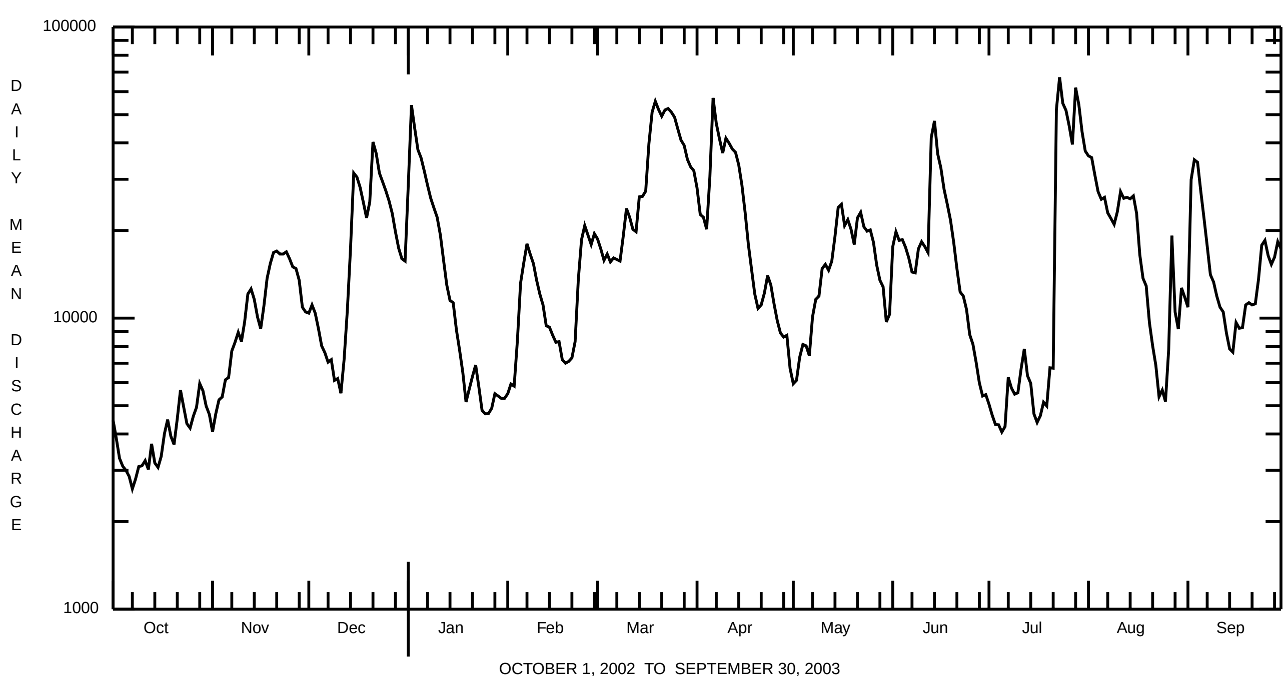
e Estimated.

OHIO RIVER MAIN STEM

03036500 ALLEGHENY RIVER AT KITTANNING, PA--Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1904 - 2003	
ANNUAL TOTAL	5595330		6245670			
ANNUAL MEAN	15330		17110		15820	
HIGHEST ANNUAL MEAN					22400	1928
LOWEST ANNUAL MEAN					10080	1999
HIGHEST DAILY MEAN	83400	May 14	67200	Jul 23	253000	Mar 26 1913
LOWEST DAILY MEAN	2470	Aug 9	2590	Oct 7	570	Sep 15 1913**a**
ANNUAL SEVEN-DAY MINIMUM	2940	Oct 4	2940	Oct 4	610	Sep 11 1913
MAXIMUM PEAK FLOW			88000	Jul 22	269000	Mar 26 1913
MAXIMUM PEAK STAGE			17.30	Jul 22	**b**30.70	Mar 26 1913
ANNUAL RUNOFF (CFSM)	1.71		1.91		1.76	
ANNUAL RUNOFF (INCHES)	23.20		25.89		23.96	
10 PERCENT EXCEEDS	34200		36800		36900	
50 PERCENT EXCEEDS	11500		13600		10000	
90 PERCENT EXCEEDS	3160		4700		2270	

a Also Sept. 16, 17, 1913.
b From Floodmark, site and datum then in use.



03036500 ALLEGHENY RIVER AT KITTANNING, PA--Continued
(Pennsylvania Water-Quality Network Station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 2002 to current year.

REMARKS.--Other data for the Water-Quality Network can be found on pages 242-289.

COOPERATION.--Samples were collected as part of the Pennsylvania Department of Environmental Protection Water-Quality Network (WQN) with cooperation from the Pennsylvania Department of Environmental Protection.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Agency collecting sample, code (00027)	Agency analyzing sample, code (00028)	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf µS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water unfltrd recoverable, mg/L (00916)	Magnesium, water, unfltrd recoverable, mg/L (00927)	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (00417)
NOV 2002													
25...	1400	1028	9813	14800	40	12.8	7.7	195	5.7	75	20.6	5.6	34
MAR 2003													
26...	1315	1028	9813	45300	40	13.4	7.5	150	8.5	47	13.2	3.5	22
MAY													
29...	1230	1028	9813	12500	40	9.8	7.9	183	18.5	63	17.6	4.6	30
JUL													
17...	1345	1028	9813	4670	40	8.0	7.6	277	--	100	27.3	7.6	43
SEP													
25...	1210	1028	9813	19100	40	9.5	7.6	221	18.0	79	21.7	6.1	43

Date	Fluoride, water, unfltrd mg/L (00951)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 105degC wat flt mg/L (00515)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia water, unfltrd mg/L as N (00610)	Nitrate water unfltrd mg/L as N (00620)	Nitrite water, unfltrd mg/L as N (00615)	Orthophosphate, water, unfltrd mg/L as P (70507)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, unfltrd mg/L (00600)	Organic carbon, water, unfltrd mg/L (00680)	Aluminum, water, unfltrd recoverable, µg/L (01105)	Copper, water, unfltrd recoverable, µg/L (01042)
NOV 2002													
25...	<.2	35.4	170	<2	.030	.56	<.040	.01	.022	.76	3.0	200	<10
MAR 2003													
26...	<.2	19.5	126	10	<.020	.60	<.040	.03	.038	.86	2.6	900	<10
MAY													
29...	<.2	30.7	132	12	<.020	.34	<.040	.02	.023	.50	2.7	400	<10
JUL													
17...	<.2	57.2	204	10	<.020	.42	<.040	.02	.018	.65	2.6	200	<10
SEP													
25...	<.2	36.9	154	<2	<.020	.38	<.040	.02	.023	.50	3.3	400	<10

Date	Cyanide amenable to chlorination wat unf mg/L (00722)	Iron, water, unfltrd recoverable, µg/L (01045)	Lead, water, unfltrd recoverable, µg/L (01051)	Manganese, water, unfltrd recoverable, µg/L (01055)	Nickel, water, unfltrd recoverable, µg/L (01067)	Zinc, water, unfltrd recoverable, µg/L (01092)	Phenolic compounds, water, unfltrd µg/L (32730)
NOV 2002							
25...	<1.00	450	<1.0	160	<50	<10	<5
MAR 2003							
26...	<1.00	1710	1.5	240	<50	50	<5
MAY							
29...	<1.00	640	<1.0	200	<50	<10	<5
JUL							
17...	1.33	370	<1.0	210	<50	20	<5
SEP							
25...	<1.00	720	<1.0	160	<50	90	<5

OHIO RIVER MAIN STEM

03036500 ALLEGHENY RIVER AT KITTANNING, PA--Continued

BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES

REMARKS.--Samples were collected using rapid bioassessment protocols for benthic macroinvertebrates using a D-Frame net with a mesh size of 500 µm. Samples represent counts per 100 (approximate) subsamples.

Date	9/27/02
Benthic Macroinvertebrate	Count
Platyhelminthes	
Turbellaria (FLATWORMS)	
Tricladida	
Planariidae	2
Mollusca	
Gastropoda (SNAILS)	
Basommatophora	
Ancylidae	
Ferrissia sp	1
Physidae	
Physa sp	4
Planorbidae	
Planorbella sp	12
Pleuroceridae	
Leptoxis carinata	3
Bivalvia (CLAMS)	
Veneroida	
Sphaeriidae	
Sphaerium sp	3
Annelida	
Oligochaeta (AQUATIC EARTHWORMS)	
Tubificida	
Naididae	11
Arthropoda	
Crustacea	
Cladocera	20
Insecta	
Ephemeroptera (MAYFLIES)	
Caenidae	
Caenis sp	5
Heptageniidae	
Stenacron sp	32
Tricorythidae	
Tricorythodes sp	1
Trichoptera (CADDISFLIES)	
Hydroptilidae	
Hydroptila sp	2
Polycentropodidae	
Neureclipsis sp	2
Polycentropus sp	5
Diptera (TRUE FLIES)	
Chironomidae (MIDGES)	193
Total Organisms	296

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 mi^2.

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 National Geodetic Vertical Datum of 1929 (Baltimore and Ohio Railroad bench mark).

REMARKS.--Records good. 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 ft^3/s. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemetry at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of March 1936 reached a stage of 18.6 ft, from floodmark, discharge, about 19,000 ft^3/s.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a base discharge of 2,500 ft^3/s and maximum (*****):

Date	Time	Discharge ft^3/s	Gage Height (ft)	Date	Time	Discharge ft^3/s	Gage Height (ft)
Jan. 2	0230	3,360	7.50	Aug. 31	0230	*4,610	*9.06
Feb. 23	0930	2,610	6.56				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	38	69	88	1770	e38	275	181	56	363	54	1080	982
2	35	52	71	2730	e38	370	197	52	218	31	631	1810
3	32	39	52	1300	e40	381	175	48	214	27	507	1270
4	42	33	45	853	e600	335	171	38	385	26	478	1570
5	57	29	71	557	e680	550	604	52	335	37	408	1140
6	51	144	68	435	e220	715	609	85	275	142	314	645
7	35	163	48	e330	e180	487	500	305	409	362	244	438
8	30	135	57	e260	e160	497	474	390	465	456	201	320
9	30	100	36	e220	e130	1210	390	351	808	228	176	248
10	31	81	32	e180	e110	830	334	747	520	215	281	198
11	29	99	45	e150	e90	552	890	702	392	1230	184	155
12	30	106	109	e120	e80	466	955	486	376	483	143	123
13	30	100	187	e110	e75	663	620	406	607	297	132	104
14	32	87	911	e95	e70	904	468	314	425	201	106	95
15	32	75	760	e80	e60	679	380	251	328	142	92	110
16	44	75	692	e70	e55	622	319	236	255	159	93	164
17	40	336	470	e65	e50	575	268	200	203	109	105	94
18	34	321	350	e60	e60	500	222	187	341	90	78	75
19	35	239	300	e55	e65	416	188	163	259	226	46	109
20	65	244	1440	e50	e70	403	163	130	212	127	35	146
21	43	195	989	e50	e80	479	188	466	182	92	29	90
22	25	171	573	e45	e200	422	181	363	166	1430	24	82
23	30	162	499	e42	2030	364	149	297	121	772	33	343
24	26	129	366	e40	1030	316	114	278	92	575	29	205
25	20	108	e290	e38	523	276	99	226	73	592	24	173
26	125	94	e240	e36	376	253	95	196	58	365	275	184
27	93	91	e190	e35	313	225	90	158	51	264	700	140
28	43	83	e155	e34	287	197	75	141	44	561	287	222
29	29	76	e150	e34	---	183	72	128	33	366	180	183
30	91	88	e140	e36	---	196	67	104	44	258	2840	148
31	107	---	352	e36	---	196	---	162	---	193	2680	---
TOTAL	1384	3724	9776	9916	7710	14537	9238	7718	8254	10110	12435	11566
MEAN	44.6	124	315	320	275	469	308	249	275	326	401	386
MAX	125	336	1440	2730	2030	1210	955	747	808	1430	2840	1810
MIN	20	29	32	34	38	183	67	38	33	26	24	75
CFSM	0.23	0.65	1.65	1.67	1.44	2.46	1.61	1.30	1.44	1.71	2.10	2.02
IN.	0.27	0.73	1.90	1.93	1.50	2.83	1.80	1.50	1.61	1.97	2.42	2.25

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	120	218	352	375	485	585	464	305	198	133	99.8	92.6
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

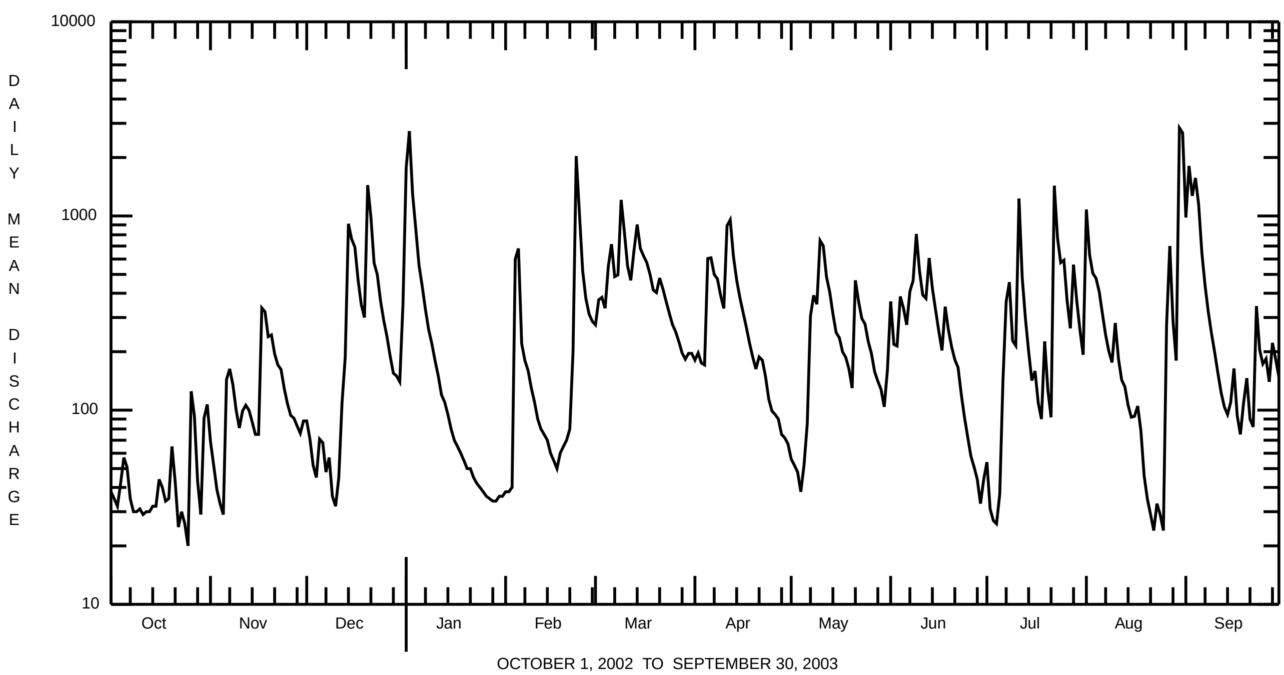
e Estimated.

CROOKED CREEK BASIN

03038000 CROOKED CREEK AT IDAHO, PA--Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1938 - 2003	
ANNUAL TOTAL	77130		106368			
ANNUAL MEAN	211		291		285	
HIGHEST ANNUAL MEAN					511	1956
LOWEST ANNUAL MEAN					148	1992
HIGHEST DAILY MEAN	2730	Mar 27	2840	Aug 30	9800	Jun 23 1972
LOWEST DAILY MEAN	20	Jul 15**a**	20	Oct 25	**b**1.0	Oct 22 1966
ANNUAL SEVEN-DAY MINIMUM	23	Jul 12	30	Oct 8	4.1	Sep 19 1939
MAXIMUM PEAK FLOW			4610	Aug 31	**c**13200	Jun 23 1972
MAXIMUM PEAK STAGE			9.06	Aug 31	15.93	Jun 23 1972
INSTANTANEOUS LOW FLOW			15	Oct 25**d**	4.6	Nov 1 1968
ANNUAL RUNOFF (CFSM)	1.11		1.53		1.49	
ANNUAL RUNOFF (INCHES)	15.02		20.72		20.24	
10 PERCENT EXCEEDS	491		637		682	
50 PERCENT EXCEEDS	108		175		126	
90 PERCENT EXCEEDS	28		36		24	

a Also Oct. 25.
b Result of upstream pumping.
c From rating curve extended above 12,800 ft^3/s.
d Also Dec. 4 (result of abnormal diversion).



03040000 STONYCREEK RIVER AT FERNDALE, PA

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 mi^2.

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 National Geodetic Vertical Datum of 1929. 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 those for estimated daily discharges, which are poor. 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 telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	142	570	560	3170	e350	823	989	389	3000	486	283	508
2	118	499	495	5930	e345	816	1470	375	2210	454	262	572
3	99	405	447	3300	e340	761	1210	353	3950	330	363	591
4	95	350	360	2300	e565	723	1030	402	8140	301	475	700
5	96	327	419	1750	e800	869	2890	541	4010	305	412	579
6	89	706	423	1460	e600	2190	2420	710	2540	330	342	438
7	80	865	367	1260	e550	2230	1940	574	3100	477	313	361
8	73	710	389	1160	e510	1830	1900	921	3040	410	352	316
9	67	575	313	1150	e480	2980	2090	1790	2410	461	552	284
10	67	508	324	1250	e450	2600	2010	4520	1800	434	1160	258
11	102	529	374	1080	e440	1780	2020	4190	1450	931	768	234
12	245	562	420	927	e375	1500	1920	2440	1260	557	615	216
13	206	756	427	777	e330	2250	1600	2460	1340	449	479	212
14	151	644	665	724	e335	3310	1360	2010	1160	375	385	223
15	122	526	725	646	e330	3220	1210	1570	999	329	321	243
16	238	487	681	555	e300	3830	1080	2180	854	416	289	246
17	523	875	605	578	e290	4460	982	1860	778	352	349	215
18	360	1160	546	493	e300	4420	885	1830	1100	297	287	215
19	261	932	497	e480	e320	3880	831	1580	964	279	237	2680
20	216	932	1930	e470	e330	3840	747	1330	936	252	212	2290
21	180	835	2370	e440	e365	4290	678	1520	1430	241	202	1090
22	153	762	1580	e400	e780	3640	674	1340	1260	265	187	792
23	141	712	1390	e395	1960	2730	618	1920	999	259	179	1380
24	130	625	1120	e395	1870	2160	548	1960	828	272	165	1070
25	124	608	1010	e390	1430	1770	510	1630	716	248	162	844
26	330	572	870	e385	1180	1520	512	1900	635	224	484	770
27	354	564	750	e380	969	1320	500	1580	575	222	739	705
28	252	519	682	e375	855	1120	449	1360	531	214	539	1730
29	249	494	640	e360	---	1020	420	1200	483	180	384	1280
30	559	537	586	e350	---	1020	403	1040	449	168	387	952
31	584	---	703	e350	---	968	---	1180	---	164	364	---
TOTAL	6406	19146	22668	33680	17749	69870	35896	48655	52947	10682	12248	21994
MEAN	207	638	731	1086	634	2254	1197	1570	1765	345	395	733
MAX	584	1160	2370	5930	1960	4460	2890	4520	8140	931	1160	2680
MIN	67	327	313	350	290	723	403	353	449	164	162	212
CFSM	0.46	1.42	1.62	2.41	1.41	5.00	2.65	3.48	3.91	0.76	0.88	1.63
IN.	0.53	1.58	1.87	2.78	1.46	5.76	2.96	4.01	4.37	0.88	1.01	1.81

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	239	414	666	757	1027	1601	1355	846	521	260	182	194
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

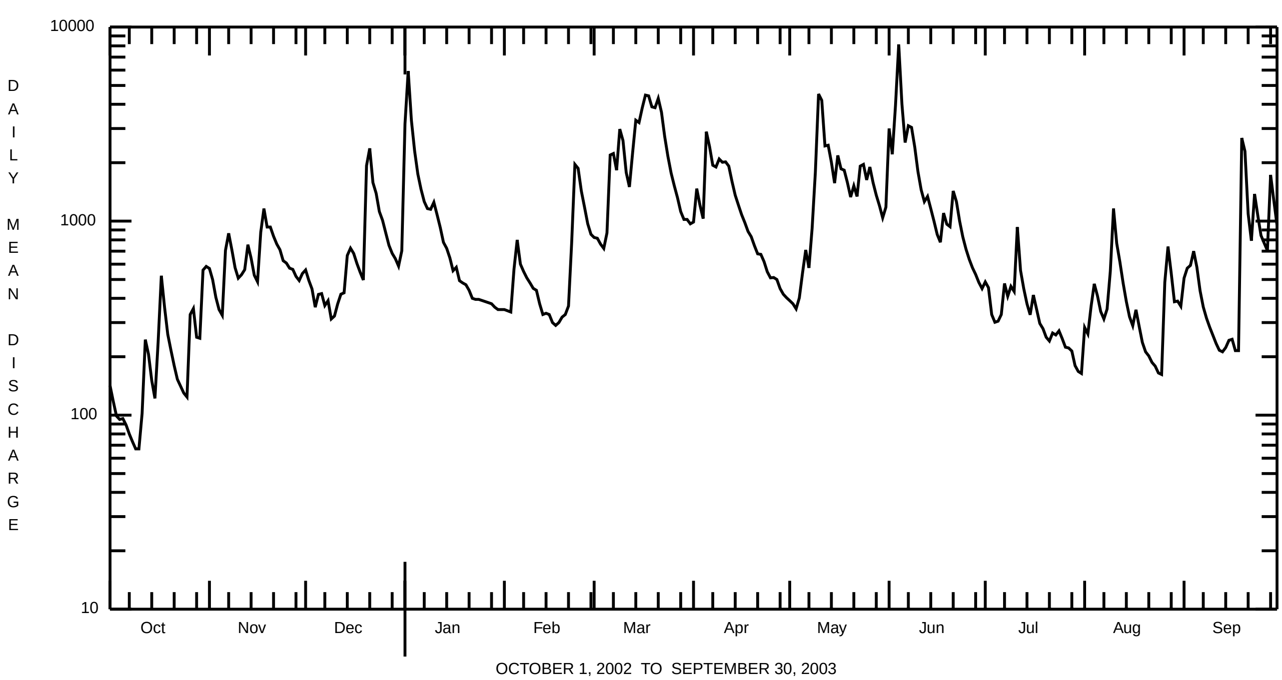
e Estimated.

KISKIMINETAS RIVER BASIN

03040000 STONYCREEK RIVER AT FERNDALE, PA--Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1939 - 2003	
ANNUAL TOTAL	221779		351941			
ANNUAL MEAN	608		964		672	
HIGHEST ANNUAL MEAN					1044	1996
LOWEST ANNUAL MEAN					280	1954
HIGHEST DAILY MEAN	4950	May 18	8140	Jun 4	15900	Jun 23 1972
LOWEST DAILY MEAN	51	Sep 9,11	67	Oct 9,10	11	Sep 26 1959
ANNUAL SEVEN-DAY MINIMUM	53	Sep 8	81	Oct 4	12	Oct 5 1963
MAXIMUM PEAK FLOW			11300	Jun 4	**ab**59000	Mar 18 1936
MAXIMUM PEAK STAGE			10.18	Jun 4	**c**30.26	Mar 18 1936
INSTANTANEOUS LOW FLOW			66	Oct 10	**d**5.0	Sep 8 1929
ANNUAL RUNOFF (CFSM)	1.35		2.14		1.49	
ANNUAL RUNOFF (INCHES)	18.29		29.03		20.24	
10 PERCENT EXCEEDS	1400		2200		1600	
50 PERCENT EXCEEDS	420		575		333	
90 PERCENT EXCEEDS	74		224		61	

a About.
b From rating curve extended above 13,000 ft^3/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.



03041029 CONEMAUGH RIVER AT MINERSVILLE, PA

LOCATION.--Lat 40°20'29", long 78°55'34", Cambria County, Hydrologic Unit 05010007, on right bank at upstream side of Fourth Avenue bridge at Minersville, 4,000 ft downstream from confluence of Little Conemaugh River and Stonycreek River.

DRAINAGE AREA.--678 mi^2.

PERIOD OF RECORD.--December 2001 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,140 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are poor. 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. Satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	242	683	728	5830	e350	1160	1460	549	3890	673	480	1690
2	216	614	634	9650	e370	1160	2230	539	2950	620	429	1600
3	195	504	573	4860	e420	1070	1890	507	5380	506	520	1430
4	193	443	457	3430	e590	1000	1590	533	10500	465	740	1470
5	199	427	534	2650	e1070	1220	4590	747	5700	457	711	1090
6	186	923	532	2240	e880	2980	3780	960	3750	512	531	810
7	177	1130	469	1880	e690	2940	3020	778	4650	762	481	652
8	165	925	492	1700	e520	2510	2850	1100	4420	590	503	558
9	158	739	411	1700	e430	4140	2960	2180	3640	601	774	492
10	159	651	408	1860	e420	3610	2810	5170	2830	604	1570	448
11	215	698	465	1530	e420	2590	2920	5090	2340	1590	1020	407
12	380	720	522	1250	e415	2260	2810	3150	2050	840	815	379
13	337	956	538	1120	e410	3380	2380	3240	2110	654	631	371
14	273	818	836	1030	e405	4720	2040	2720	1800	529	510	373
15	232	672	950	936	e410	4510	1800	2210	1520	459	431	384
16	341	628	909	795	e420	5380	1590	3070	1260	589	394	e390
17	674	1200	786	834	e425	6370	1400	2710	1140	491	674	e360
18	460	1660	699	707	e430	6280	1230	2620	2030	409	446	344
19	367	1270	637	726	e450	5490	1140	2300	1580	443	367	4000
20	324	1240	2640	721	e480	5500	1050	1920	1490	378	335	3480
21	289	1090	3330	e550	e515	6200	988	2380	2570	354	317	1840
22	261	982	2320	e480	e740	5410	999	2050	2270	534	306	1350
23	239	926	2100	e460	e2700	4050	915	2620	1740	484	298	2400
24	227	800	1640	e460	2750	3250	794	2740	1380	422	276	1810
25	229	772	1460	e455	2120	2720	736	2360	1150	378	266	1400
26	439	723	1230	e450	1700	2390	738	2690	993	344	1440	1240
27	478	720	1010	e435	1430	2070	722	2330	875	333	1520	1110
28	361	655	897	e420	1210	1740	647	2020	791	337	975	3110
29	356	626	846	e400	---	1550	605	1790	709	310	640	2200
30	694	686	758	e390	---	1560	572	1540	644	288	1060	1600
31	692	---	907	e380	---	1460	---	1660	---	282	864	---
TOTAL	9758	24881	30718	50329	23170	100670	53256	66273	78152	16238	20324	38788
MEAN	315	829	991	1624	828	3247	1775	2138	2605	524	656	1293
MAX	694	1660	3330	9650	2750	6370	4590	5170	10500	1590	1570	4000
MIN	158	427	408	380	350	1000	572	507	644	282	266	344

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2001 - 2003, BY WATER YEAR (WY)

MEAN	315	829	991	1119	829	2545	1644	2312	1706	388	418	751
MAX	315	829	991	1624	831	3247	1775	2486	2605	524	656	1293
(WY)	2003	2003	2003	2003	2002	2003	2003	2002	2003	2003	2003	2003
MIN	315	829	991	615	828	1842	1513	2138	806	252	181	210
(WY)	2003	2003	2003	2002	2003	2002	2002	2003	2002	2002	2002	2002

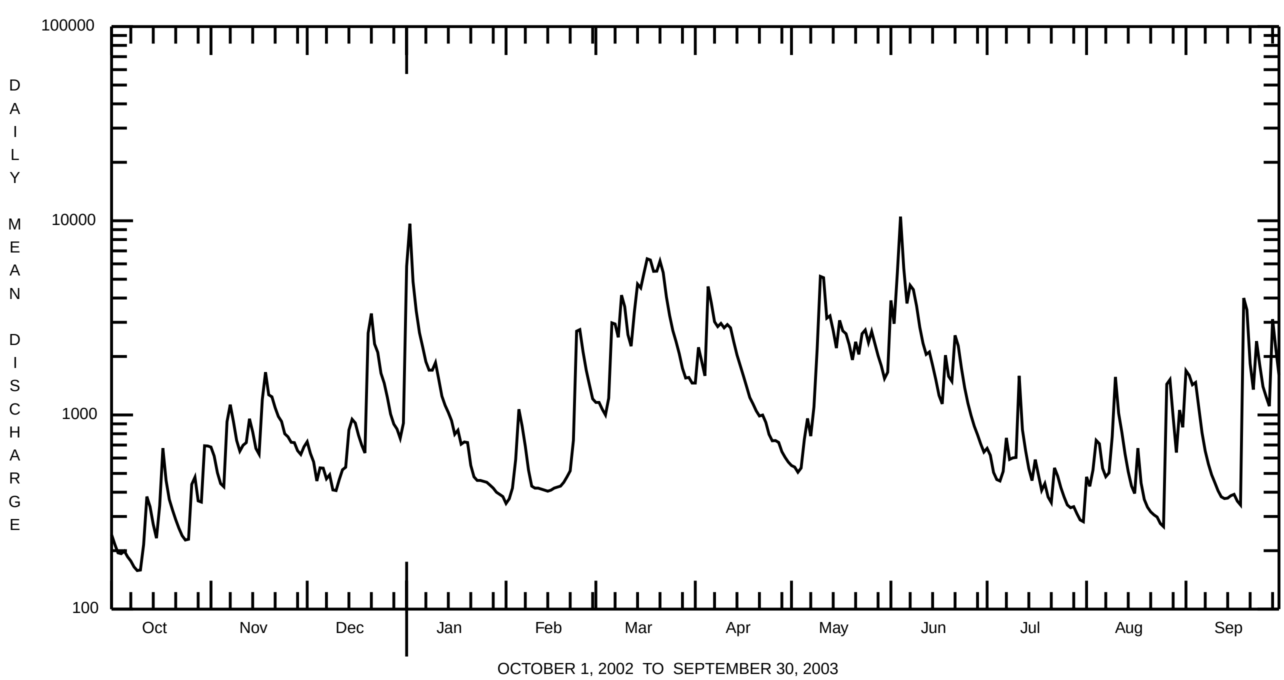
e Estimated.

KISKIMINETAS RIVER BASIN

03041029 CONEMAUGH RIVER AT MINERSVILLE, PA--Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 2001 - 2003	
ANNUAL TOTAL	331136		512557			
ANNUAL MEAN	907		1404		1404	
HIGHEST ANNUAL MEAN					1404	2003
LOWEST ANNUAL MEAN					1404	2003
HIGHEST DAILY MEAN	7940	May 18	10500	Jun 4	10500	Jun 4 2003
LOWEST DAILY MEAN	127	Sep 9-12	158	Oct 9	127	Sep 9 2002
ANNUAL SEVEN-DAY MINIMUM	128	Sep 7	177	Oct 4	128	Sep 7 2002
MAXIMUM PEAK FLOW			**a**15700	Jun 3	**a**15700	Jun 3 2003
MAXIMUM PEAK STAGE			10.56	Jun 3	10.56	Jun 3 2003
INSTANTANEOUS LOW FLOW			156	Oct 9,10	127	Sep 9-12 2002
10 PERCENT EXCEEDS	2150		3090		3090	
50 PERCENT EXCEEDS	614		815		815	
90 PERCENT EXCEEDS	167		355		355	

a From rating curve extended above 9,700 ft^3/s.



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 mi^2.

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 National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are poor. 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 telemetry at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 18, 1936 reached a stage of 26.4 ft, from floodmarks, discharge, about 75,000 ft^3/s, by contracted-opening measurement at site 6.7 mi downstream, adjusted for inflow.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	271	819	860	e6210	e390	1270	1500	592	4060	718	624	2190
2	239	742	760	e10600	e410	1270	2270	585	3160	670	546	2150
3	219	610	685	5770	e460	1190	2010	555	5220	562	680	1830
4	212	528	513	3990	e690	1100	1670	555	12400	500	1020	1850
5	217	501	599	3040	e1230	e1370	4800	816	6560	501	1060	1380
6	203	1070	e615	2530	e970	e3170	4200	1040	4200	535	773	1050
7	193	1300	e550	2160	e790	3260	3310	873	4910	851	657	849
8	181	1080	e580	1920	e590	2720	3090	1040	4870	669	742	716
9	171	881	e500	1810	e470	4520	3180	2120	3900	654	974	622
10	169	769	e495	1960	e455	4080	3020	5270	2990	720	2030	556
11	222	815	e560	1760	e460	2870	3130	5710	2430	1850	1360	501
12	422	848	e620	1390	e450	2420	3040	3430	2100	1040	1060	457
13	391	1060	e640	1150	e445	3590	2560	3460	2170	805	837	441
14	307	962	e945	1100	e440	5330	2170	2930	1840	647	665	441
15	252	800	e1060	982	e445	5030	1910	2340	1550	549	556	451
16	348	736	e1000	848	e455	6000	1690	3170	1300	677	501	453
17	783	1290	e890	891	e460	7270	1490	2860	1170	586	827	415
18	571	1870	e795	784	e460	7180	1320	2730	2110	482	579	387
19	447	1460	e780	835	e500	6270	1210	2390	1670	514	458	e3900
20	383	1400	e2740	e830	e560	6040	1100	1990	1540	438	406	3790
21	337	1260	e3600	e635	e650	7000	1050	2500	2590	403	379	1910
22	300	1140	e2520	e515	e870	6030	1070	2170	2390	733	368	1360
23	272	1080	e2280	e500	e2810	4490	989	2670	1830	633	355	2410
24	259	952	e1820	e495	3070	3540	871	2890	1450	538	320	1860
25	248	914	e1610	e490	2320	2930	802	2470	1220	478	308	1420
26	499	866	e1390	e490	1840	2540	794	2800	1070	419	1730	1280
27	586	859	e1170	e475	1580	2180	786	2470	952	394	1960	1140
28	435	786	e1050	e460	1310	1840	703	2110	865	403	1350	3150
29	416	742	e960	e440	---	1630	654	1880	777	366	882	2300
30	809	801	e905	e430	---	1620	619	1620	702	337	1370	1650
31	843	---	e1030	e420	---	1540	---	1650	---	322	1220	---
TOTAL	11205	28941	34522	55910	25580	111290	57008	69686	83996	18994	26597	42909
MEAN	361	965	1114	1804	914	3590	1900	2248	2800	613	858	1430
MAX	843	1870	3600	10600	3070	7270	4800	5710	12400	1850	2030	3900
MIN	169	501	495	420	390	1100	619	555	702	322	308	387
CFSM	0.51	1.35	1.56	2.52	1.28	5.02	2.66	3.14	3.92	0.86	1.20	2.00
IN.	0.58	1.51	1.80	2.91	1.33	5.79	2.97	3.63	4.37	0.99	1.38	2.23

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	557	859	1284	1430	1846	2780	2387	1562	1053	656	486	496
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	212	389	493	779	739	512	325	242	204	169
(WY)	1964	1939	1999	2000	1993	1990	1946	1941	1999	1965	2002	1959

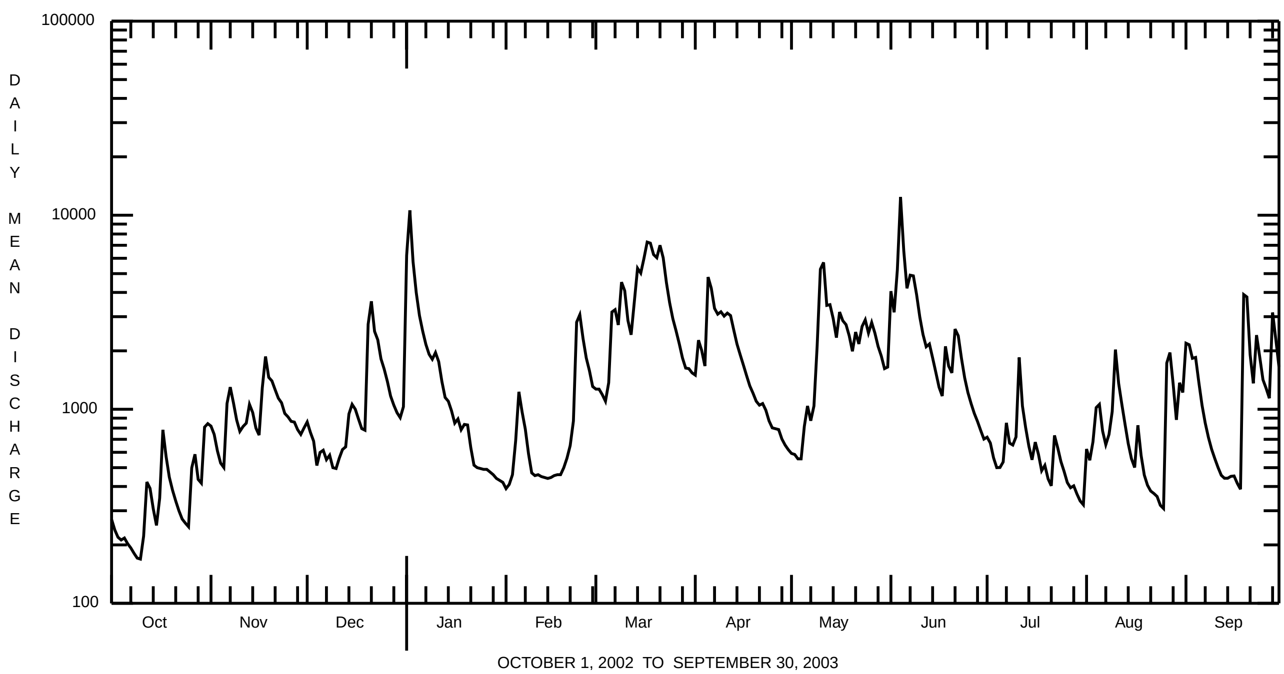
e Estimated.

KISKIMINETAS RIVER BASIN

03041500 CONEMAUGH RIVER AT SEWARD, PA--Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1939 - 2003	
ANNUAL TOTAL	372161		566638			
ANNUAL MEAN	1020		1552		1280	
HIGHEST ANNUAL MEAN					1814	1996
LOWEST ANNUAL MEAN					687	1954
HIGHEST DAILY MEAN	8670	May 18	12400	Jun 4	40900	Jul 20 1977
LOWEST DAILY MEAN	110	Sep 10	169	Oct 10	105	Dec 28 1938**a**
ANNUAL SEVEN-DAY MINIMUM	116	Sep 7	192	Oct 4	111	Dec 26 1938
MAXIMUM PEAK FLOW			17400	Jun 4	**b**115000	Jul 20 1977
MAXIMUM PEAK STAGE			10.74	Jun 4	**c**27.06	Jul 20 1977
INSTANTANEOUS LOW FLOW			160	Oct 10	104	Sep 10-13 2002
ANNUAL RUNOFF (CFSM)	1.43		2.17		1.79	
ANNUAL RUNOFF (INCHES)	19.36		29.48		24.32	
10 PERCENT EXCEEDS	2370		3280		2840	
50 PERCENT EXCEEDS	719		962		728	
90 PERCENT EXCEEDS	189		413		255	

a Also Dec. 29, 31, 1938.
b From rating curve extended above 23,000 ft^3/s on basis of slope-area measurement of peak flow.
c From highwater mark.



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 mi^2.

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 National Geodetic Vertical Datum of 1929. Prior to Aug. 25, 1953, nonrecording gage at same site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. 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 telemetry at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a base discharge of 2,700 ft^3/s and maximum (*****):

Date	Time	Discharge (ft^3/s)	Gage Height (ft)	Date	Time	Discharge (ft^3/s)	Gage Height (ft)
Jan. 2	0200	*5,060	*7.03	Aug. 30	1900	2,980	5.90
Feb. 23	--	--	Ice jam				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	101	181	e160	2020	e130	357	302	119	708	110	684	1460
2	96	173	e140	3450	e130	395	440	116	483	101	507	1860
3	93	148	e130	1580	e125	387	388	110	577	94	405	1410
4	104	133	e115	1130	e450	346	339	104	1910	93	1060	1200
5	101	122	e115	849	e750	469	1120	112	1230	96	729	826
6	98	451	e120	704	e500	845	998	166	851	109	547	615
7	95	431	e120	585	e350	678	785	169	814	353	441	465
8	92	332	e120	520	e300	606	786	246	801	228	357	368
9	89	250	e125	525	e270	1290	757	291	779	180	383	303
10	87	218	e130	e520	e230	1040	639	706	586	147	877	249
11	84	240	e135	e450	e235	716	837	759	477	865	564	211
12	101	253	e160	e360	e205	658	884	538	473	404	562	176
13	111	273	e210	e310	e210	1030	667	598	643	300	403	160
14	102	229	e450	e260	e210	1400	542	552	485	204	299	152
15	100	194	593	e240	e185	1140	458	415	389	154	229	158
16	100	179	511	e220	e165	1300	396	484	312	194	205	161
17	168	468	403	e180	e125	1520	351	470	257	169	283	131
18	147	711	332	e180	e140	1380	303	393	548	125	231	116
19	127	504	303	e180	e135	1150	273	371	443	220	171	260
20	141	506	1460	e175	e135	1070	247	314	389	158	139	391
21	119	425	1360	e170	e150	1470	233	752	411	120	124	211
22	104	372	880	e165	e250	1010	223	586	453	1030	121	167
23	102	354	752	e165	e1300	778	219	453	337	869	125	665
24	101	305	589	e160	e1020	619	189	466	258	604	108	442
25	99	295	524	e160	726	514	169	396	213	529	103	308
26	148	255	454	e155	520	446	162	454	181	348	912	306
27	188	242	365	e155	455	390	157	415	154	263	1100	260
28	131	222	309	e150	392	331	143	341	137	322	734	641
29	115	e200	305	e145	---	298	132	308	123	240	429	510
30	216	e180	261	e140	---	314	124	259	115	177	1750	361
31	209	---	414	e135	---	314	---	264	---	147	1390	---
TOTAL	3669	8846	12045	16138	9793	24261	13263	11727	15537	8953	15972	14543
MEAN	118	295	389	521	350	783	442	378	518	289	515	485
MAX	216	711	1460	3450	1300	1520	1120	759	1910	1030	1750	1860
MIN	84	122	115	135	125	298	124	104	115	93	103	116
CFSM	0.62	1.54	2.02	2.71	1.82	4.08	2.30	1.97	2.70	1.50	2.68	2.52
IN.	0.71	1.71	2.33	3.13	1.90	4.70	2.57	2.27	3.01	1.73	3.09	2.82

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1953 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	169	296	419	423	549	756	599	420	258	200	153	146
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

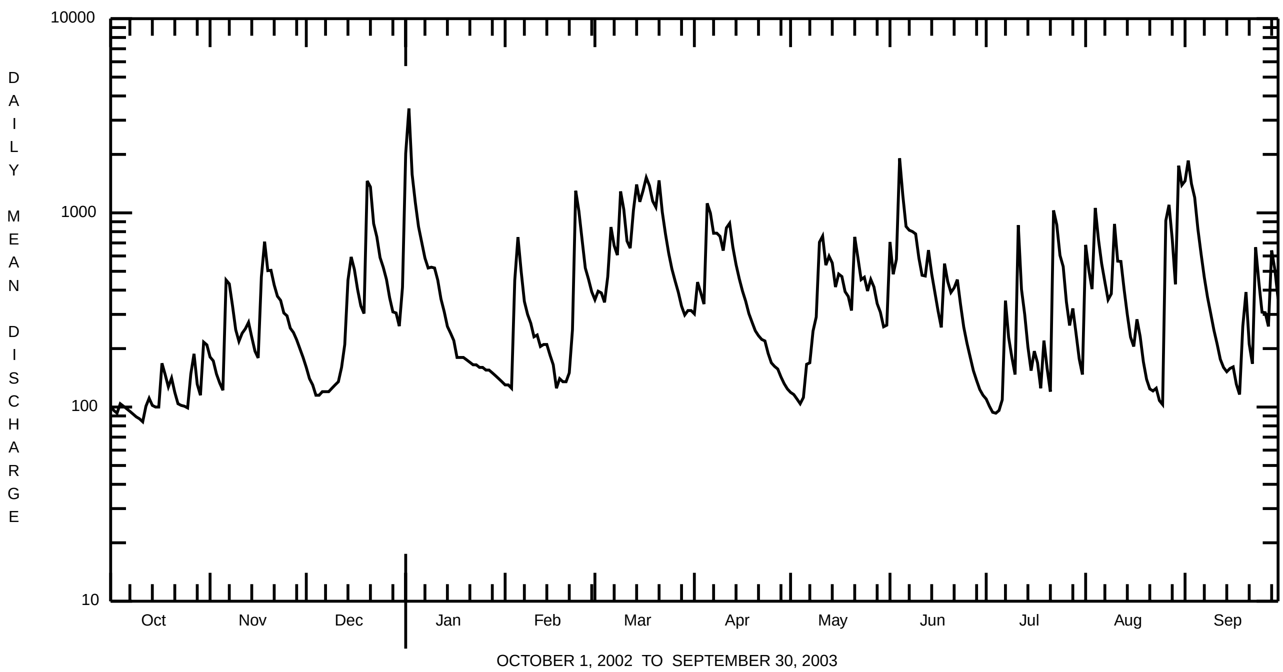
e Estimated.

KISKIMINETAS RIVER BASIN

03042000 BLACKLICK CREEK AT JOSEPHINE, PA--Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1953 - 2003	
ANNUAL TOTAL	124143		154747			
ANNUAL MEAN	340		424		365	
HIGHEST ANNUAL MEAN					523	1972
LOWEST ANNUAL MEAN					242	1954
HIGHEST DAILY MEAN	2960	Mar 27	3450	Jan 2	22800	Jul 20 1977
LOWEST DAILY MEAN	**e**21	Sep 10	84	Oct 11	15	Oct 13 1995
ANNUAL SEVEN-DAY MINIMUM	**a**23	Sep 9	92	Oct 5	23	Sep 9 2002
MAXIMUM PEAK FLOW			5060	Jan 2	**b**45700	Jul 20 1977
MAXIMUM PEAK STAGE			7.03	Jan 2	**c**19.89	Jul 20 1977
INSTANTANEOUS LOW FLOW			81	Oct 12	19	Sep 14 1952**d**
ANNUAL RUNOFF (CFSM)	1.77		2.21		1.90	
ANNUAL RUNOFF (INCHES)	24.05		29.98		25.81	
10 PERCENT EXCEEDS	775		878		797	
50 PERCENT EXCEEDS	204		303		210	
90 PERCENT EXCEEDS	57		116		52	

a Computed using estimated daily discharges.
b From rating curve extended above 16,000 ft^3/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.



KISKIMINETAS RIVER BASIN

03042260 YELLOW CREEK LAKE

LOCATION.--Lat 40°35'27", long 79°03'11", Indiana County, Hydrologic Unit 05010007, in gatehouse at right end of dam on Yellow Creek, at Yellow Creek State Park, and 3 mi southwest of Penn Run.

DRAINAGE AREA.--52.5 mi^2.

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).

REMARKS.--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.

COOPERATION.--Dam built by Pennsylvania Department of Forests and Waters and now maintained by Pennsylvania Department of Conservation and Natural Resources.

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, 15,380 acre-ft, Jan. 2, elevation, 1,281.75 ft; minimum, 12,800 acre-ft, Oct. 10 elevation, 1,278.87 ft.

MONTHEND ELEVATION, IN FEET ABOVE SEA LEVEL, AND CONTENTS AT 2400 HRS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (equivalent in ft^3/s)
Sept. 30	1,278.98	12,880	---
Oct. 31	1,279.51	13,360	+7.8
Nov. 30	1,279.67	13,500	+2.4
Dec. 31	1,280.08	13,870	+6.0
CAL YR 2002	--	--	+0.6
Jan. 31	1,279.48	13,330	-8.8
Feb. 28	1,280.17	13,950	+11
Mar. 31	1,280.33	14,100	+2.4
Apr. 30	1,279.50	13,350	-12.6
May 31	1,279.89	13,700	+5.7
June 30	1,279.48	13,330	-6.2
July 31	1,279.87	13,680	+5.7
Aug. 31	1,280.76	14,480	+13
Sept. 30	1,279.96	13,760	-12.1
WTR YR 2003	--	--	+1.2

KISKIMINETAS RIVER BASIN

03042280 YELLOW CREEK NEAR HOMER CITY, PA

LOCATION.--Lat 40°34'21", 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 mi^2, 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 National Geodetic Vertical Datum of 1929, from topographic map.

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.4	34	e38	332	e18	133	81	26	89	26	172	282
2	7.4	33	e36	875	e17	127	88	25	95	23	193	283
3	7.4	31	e34	609	e17	125	92	23	104	20	183	363
4	7.4	28	e32	423	e52	114	93	22	193	18	182	353
5	7.6	26	e28	305	92	125	169	22	254	18	164	273
6	7.4	47	e26	232	93	177	229	25	233	24	147	204
7	7.4	60	e24	198	92	185	232	28	213	40	129	164
8	7.4	64	e22	166	92	178	221	33	208	45	110	136
9	7.4	62	e20	150	89	269	201	40	189	47	104	111
10	7.4	57	e20	148	75	306	180	109	163	54	352	91
11	7.4	53	e18	138	73	247	216	155	140	158	285	75
12	7.4	53	e20	120	73	210	279	153	125	154	212	62
13	7.4	53	e32	108	73	247	244	153	129	131	166	52
14	7.4	52	90	e85	69	358	202	144	119	106	133	47
15	7.4	46	125	e70	49	341	172	129	103	84	107	44
16	8.2	43	141	e55	42	327	148	122	89	74	90	46
17	8.3	72	140	e47	42	325	131	114	76	63	77	42
18	8.0	99	125	e42	42	294	109	101	79	54	64	36
19	7.7	104	111	e35	39	246	94	93	80	59	53	41
20	8.4	110	292	e30	33	214	81	84	76	57	45	49
21	8.6	104	432	e24	30	232	72	111	73	50	38	48
22	8.6	96	347	e23	49	219	65	122	73	116	33	46
23	8.6	89	272	e21	220	192	59	119	68	220	28	82
24	8.6	79	212	e20	326	169	52	115	60	235	24	88
25	8.7	68	183	e20	272	148	47	111	52	240	21	86
26	16	59	157	e20	210	132	42	106	45	190	44	88
27	19	54	131	e20	178	119	39	105	39	154	92	86
28	20	47	111	e20	151	105	35	96	34	147	101	106
29	22	40	98	e20	---	93	32	87	31	127	88	116
30	31	38	87	e20	---	88	29	78	28	104	231	109
31	35	---	94	e20	---	85	---	73	---	85	369	---
TOTAL	337.9	1801	3498	4396	2608	6130	3734	2724	3260	2923	4037	3609
MEAN	10.9	60.0	113	142	93.1	198	124	87.9	109	94.3	130	120
MAX	35	110	432	875	326	358	279	155	254	240	369	363
MIN	7.4	26	18	20	17	85	29	22	28	18	21	36
CFSM	0.19	1.05	1.97	2.47	1.62	3.44	2.17	1.53	1.89	1.64	2.27	2.10
IN.	0.22	1.17	2.27	2.85	1.69	3.97	2.42	1.77	2.11	1.89	2.62	2.34

e Estimated.

03042280 YELLOW CREEK NEAR HOMER CITY, PA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1971 - 2003, BY WATER YEAR (WY) (SINCE REGULATION)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	51.9	93.2	133	122	160	202	157	118	77.9	60.5	31.7	38.8
MAX	186	303	254	314	374	447	246	358	324	443	130	163
(WY)	1978	1998	1973	1996	1981	1994	1987	1978	1972	1977	2003	1996
MIN	6.10	6.85	21.1	32.1	44.4	70.8	68.8	28.5	12.2	5.95	5.46	8.02
(WY)	1992	1999	1999	2000	1993	1990	1997	2001	1999	1971	1971	2002

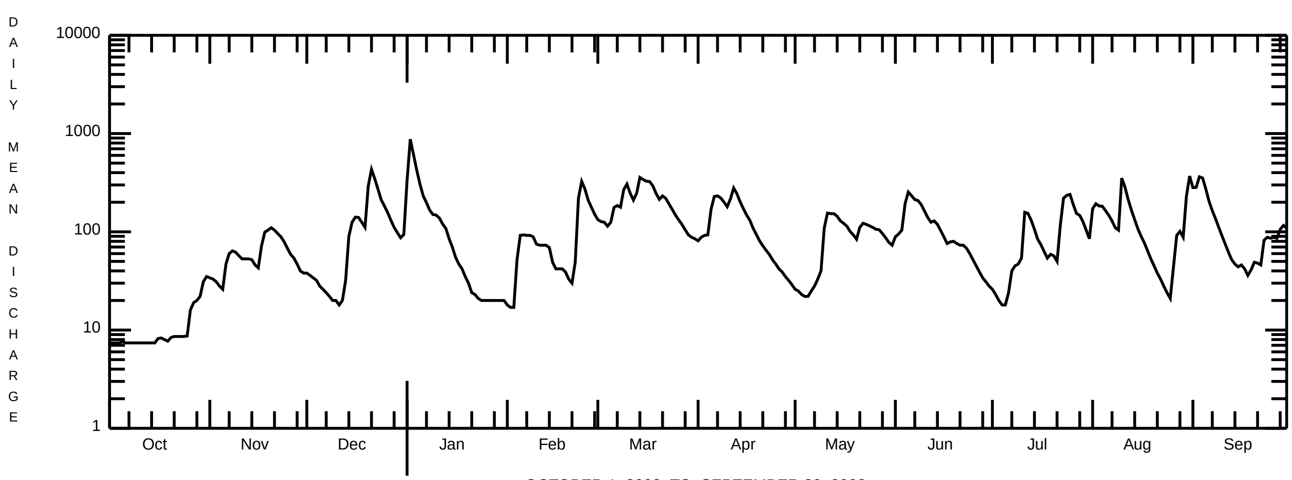
SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1971 - 2003	
ANNUAL TOTAL	37486.4		39057.9			
ANNUAL MEAN	103		107		104	
HIGHEST ANNUAL MEAN					145	1978
LOWEST ANNUAL MEAN					64.2	1999
HIGHEST DAILY MEAN	1230	Jun 15	875	Jan 2	7630	Jul 20 1977
LOWEST DAILY MEAN	6.9	Sep 24,25	7.4	Oct 1-4,6-15	3.4	Jul 8 1971
ANNUAL SEVEN-DAY MINIMUM	7.2	Sep 20	7.4	Oct 6	3.6	Jul 22 1971
MAXIMUM PEAK FLOW			940	Jan 2	**a**15000	Jul 20 1977
MAXIMUM PEAK STAGE			4.48	Jan 2	12.60	Jul 20 1977
ANNUAL RUNOFF (CFSM)	1.79		1.86		1.80	
ANNUAL RUNOFF (INCHES)	24.29		25.31		24.50	
10 PERCENT EXCEEDS	285		232		234	
50 PERCENT EXCEEDS	56		85		59	
90 PERCENT EXCEEDS	8.0		20		11	

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	1970
LOWEST ANNUAL MEAN	80.7	1969
HIGHEST DAILY MEAN	1100	Jan 31 1968
LOWEST DAILY MEAN	3.0	Jul 31 1968
ANNUAL SEVEN-DAY MINIMUM	3.3	Sep 18 1969
MAXIMUM PEAK FLOW	**b**1300	Jan 30 1968
MAXIMUM PEAK STAGE	**c**7.83	Jan 29 1970
INSTANTANEOUS LOW FLOW	1.4	Jul 19 1969
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 4,100 ft^3/s on basis of computation of peak flow over dam, gage height 7.46 ft.
b About.
c Backwater from ice.



OCTOBER 1, 2002 TO SEPTEMBER 30, 2003

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 mi^2.

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

GAGE.--Water-stage recorder. Datum of gage is 981.63 ft above National Geodetic Vertical Datum of 1929.

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

REMARKS.--Records good except those for estimated daily discharges, which are poor. 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 (station 03042260) 11 mi upstream. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	40	93	e100	e980	e90	325	229	96	330	86	989	827
2	38	86	e95	2750	e85	379	230	92	206	77	682	824
3	60	80	e90	1500	e80	368	229	89	284	69	488	1020
4	75	78	e85	986	e385	322	230	85	699	64	662	888
5	76	75	e95	686	349	397	515	93	613	67	481	754
6	63	176	e95	594	293	567	600	101	478	148	401	514
7	60	148	e85	534	236	547	610	119	583	211	353	373
8	59	136	e75	469	e200	552	591	131	504	285	316	332
9	61	125	e65	424	e180	730	515	160	534	254	314	299
10	62	118	e70	414	e170	690	446	603	426	214	1440	244
11	68	131	e75	387	e165	606	733	460	394	670	e475	183
12	78	125	e100	359	e150	561	860	365	366	382	e400	150
13	73	126	e140	289	e150	638	624	349	419	287	e295	146
14	62	116	e380	215	e145	769	547	316	296	217	e230	148
15	58	109	e530	203	e130	865	422	262	238	172	e200	165
16	90	110	e460	192	e120	737	386	273	203	172	191	168
17	74	251	e390	177	e85	792	347	235	191	138	192	315
18	69	231	e320	e165	e95	773	319	211	361	132	172	305
19	77	226	e280	e160	e90	575	220	194	227	239	130	298
20	66	225	e750	e155	e95	564	177	205	186	136	112	137
21	57	205	e830	e140	e110	578	199	439	272	121	103	104
22	56	190	e700	e135	e300	554	184	398	182	885	104	122
23	57	182	e650	e135	791	517	168	340	164	1040	94	235
24	56	159	e520	e130	637	488	141	331	149	613	76	164
25	57	143	e470	e130	530	460	132	241	132	697	69	179
26	150	130	e400	e125	445	372	128	212	114	393	e240	169
27	84	132	e340	e120	401	325	122	227	103	355	e575	254
28	74	119	e300	e120	345	267	113	220	90	482	e375	394
29	83	113	e280	e115	---	257	104	186	83	296	296	296
30	113	e105	e245	e100	---	263	99	169	84	207	2140	251
31	105	---	e280	e95	---	240	---	201	---	174	1340	---
TOTAL	2201	4243	9295	12984	6852	16078	10220	7403	8911	9283	13935	10258
MEAN	71.0	141	300	419	245	519	341	239	297	299	450	342
MAX	150	251	830	2750	791	865	860	603	699	1040	2140	1020
MIN	38	75	65	95	80	240	99	85	83	64	69	104
(†)	-3.2	+48	+6.8	+2.2	+9.6	+4.4	+0.4	+6.8	-5.5	+6.4	+11	-12

† 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 Midwest Generation.

e Estimated.

KISKIMINETAS RIVER BASIN

03042500 TWO LICK CREEK AT GRACETON, PA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1969 - 2003, BY WATER YEAR (WY) (SINCE REGULATION)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	145	252	356	347	428	524	427	312	228	183	120	138
MAX	466	689	722	745	925	1230	832	695	1091	1161	450	475
(WY)	1977	1998	1973	1996	1986	1994	1984	2002	1972	1977	2003	1996
MIN	21.0	53.2	87.0	106	116	93.9	179	86.2	53.6	52.1	48.9	41.9
(WY)	1969	1992	1999	1983	1993	1969	1997	1986	1992	1993	1988	1995

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1969 - 2003	
ANNUAL TOTAL	96831		111663			
ANNUAL MEAN	265	† +5.2	306	† +6.3	288	
HIGHEST ANNUAL MEAN					375	1994
LOWEST ANNUAL MEAN					178	1969
HIGHEST DAILY MEAN	2240	Mar 27	2750	Jan 2	21900	Jul 20 1977
LOWEST DAILY MEAN	38	Oct 2	38	Oct 2	12	Oct 1 1968
ANNUAL SEVEN-DAY MINIMUM	55	Sep 29	59	Oct 1	15	Oct 12 1968
MAXIMUM PEAK FLOW			3680	Aug 30	**a**32000	Jul 20 1977
MAXIMUM PEAK STAGE			7.72	Aug 30	**b**18.65	Jul 20 1977
INSTANTANEOUS LOW FLOW			37	Oct 2	12	Oct 1 1968
10 PERCENT EXCEEDS	685		637		600	
50 PERCENT EXCEEDS	148		214		177	
90 PERCENT EXCEEDS	60		78		59	

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1952 - 1968, BY WATER YEAR (WY) (PRIOR TO REGULATION)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	101	139	256	367	444	604	472	346	130	100	90.6	61.1
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	167	99.7	42.3	25.2	16.9	15.9
(WY)	1964	1954	1961	1956	1963	1957	1968	1955	1965	1962	1957	1952

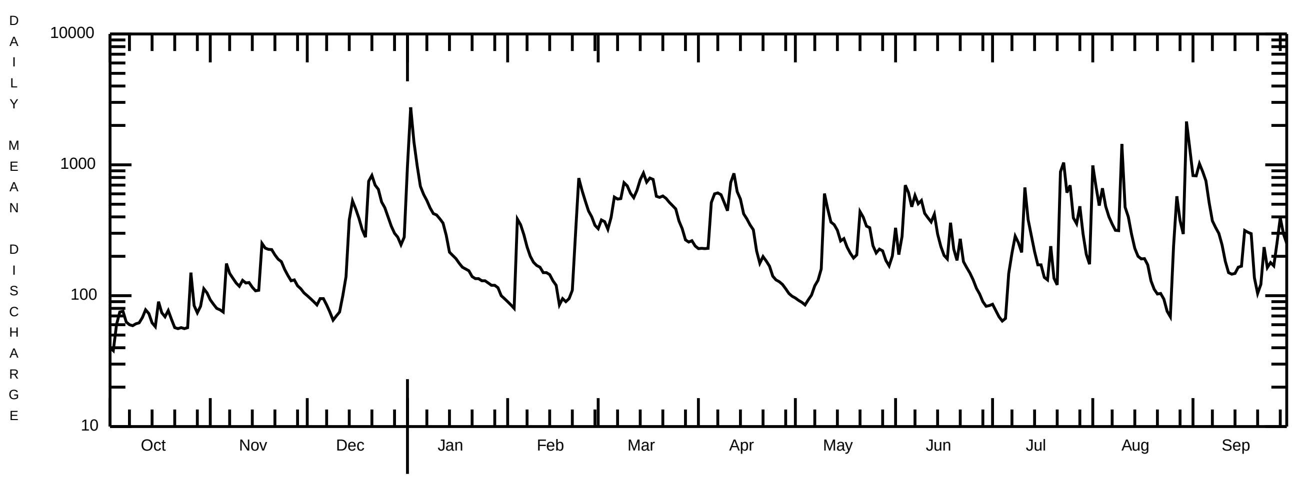
SUMMARY STATISTICS	WATER YEARS 1952 - 1968	
ANNUAL MEAN	259	
HIGHEST ANNUAL MEAN	415	1956
LOWEST ANNUAL MEAN	185	1954
HIGHEST DAILY MEAN	6800	Oct 16 1954
LOWEST DAILY MEAN	8.7	Sep 14 1952
ANNUAL SEVEN-DAY MINIMUM	12	Sep 6 1957
MAXIMUM PEAK FLOW	**c**12900	Oct 16 1954
MAXIMUM PEAK STAGE	12.71	Oct 16 1954
INSTANTANEOUS LOW FLOW	11	Sep 30 1968
ANNUAL RUNOFF (CFSM)	1.52	
ANNUAL RUNOFF (INCHES)	20.67	
10 PERCENT EXCEEDS	640	
50 PERCENT EXCEEDS	118	
90 PERCENT EXCEEDS	21	

† 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 Midwest Generation.

a From rating curve extended above 7,800 ft^3/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 From highwater mark.

c From rating curve extended above 4,500 ft^3/s on basis of contracted-opening measurement of peak flow at site 1.6 mi upstream from gage, adjusted to gage site.



OCTOBER 1, 2002 TO SEPTEMBER 30, 2003

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 mi^2.

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 National Geodetic Vertical Datum of 1929 (U.S. Army Corps of Engineers bench mark). Prior to Oct. 1, 1969, at datum 1.00 ft higher.

REMARKS.--Records good except those for estimated daily discharges, which are poor. 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 telemetry 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, about 21,000 ft^3/s, from rating curve extended above 8,700 ft^3/s.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a base discharge of 3,500 ft^3/s and maximum (*****):

Date	Time	Discharge ft^3/s	Gage Height (ft)	Date	Time	Discharge ft^3/s	Gage Height (ft)
May 10	1600	3,720	7.39	July 10	2300	*6,290	*8.96
June 3	2300	5,900	8.75				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	62	159	1740	e50	338	256	80	862	81	230	660
2	17	59	134	1850	e54	404	339	78	573	73	150	566
3	15	51	116	1150	e120	396	295	72	1600	68	529	434
4	15	46	87	836	e610	359	286	81	3080	77	699	e460
5	15	46	e85	596	e410	637	717	105	1390	144	336	306
6	15	155	e82	489	e280	1320	607	123	849	76	268	217
7	12	177	e78	401	e215	951	721	98	1040	178	275	170
8	11	134	e72	366	e190	821	735	357	821	989	650	139
9	10	108	e70	e395	e170	1290	606	671	735	442	693	117
10	10	91	e68	e400	e155	908	511	1860	523	1140	761	97
11	14	141	e80	e325	e145	649	490	1320	429	2180	479	82
12	36	138	e105	e270	e135	549	443	811	391	727	405	81
13	31	139	e140	e240	e125	726	374	766	525	511	524	77
14	30	114	592	e205	e120	908	320	564	390	319	305	e72
15	25	95	475	e185	e115	793	285	449	323	233	228	e74
16	50	87	433	e160	e105	831	259	387	261	389	200	e96
17	112	293	312	e145	e100	927	232	314	233	222	195	e70
18	94	408	248	e130	e125	866	205	310	476	166	146	62
19	76	284	226	e115	e120	716	183	252	314	147	116	526
20	83	296	1070	e105	e115	665	165	219	285	116	98	409
21	58	236	825	e96	e130	653	166	481	293	100	84	239
22	44	206	549	e86	e490	597	161	357	302	151	77	202
23	36	189	443	e82	2220	487	144	333	248	191	74	555
24	46	162	347	e75	1090	410	125	395	211	195	63	383
25	44	158	325	e70	688	356	116	322	179	496	57	e330
26	50	145	270	e66	517	324	114	343	153	212	123	e325
27	52	148	220	e62	427	289	107	293	136	149	343	e330
28	39	133	191	e58	371	251	93	269	122	124	224	e650
29	36	126	180	e56	---	234	89	248	104	104	124	e410
30	88	162	161	e52	---	244	84	211	90	83	309	313
31	75	---	358	e50	---	227	---	213	---	73	255	---
TOTAL	1260	4589	8501	10856	9392	19126	9228	12382	16938	10156	9020	8452
MEAN	40.6	153	274	350	335	617	308	399	565	328	291	282
MAX	112	408	1070	1850	2220	1320	735	1860	3080	2180	761	660
MIN	10	46	68	50	50	227	84	72	90	68	57	62
(†)	4.1	3.0	11	14	11	10	6.2	6.1	3.7	11	.17	7.6

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	104	207	345	372	466	608	522	372	232	120	101	89.5
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	29.4	79.0	137	175	178	83.4	38.3	7.76	7.04	4.20
(WY)	1954	1954	1999	1940	1978	1969	1997	2001	1999	1966	1957	1957

† 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

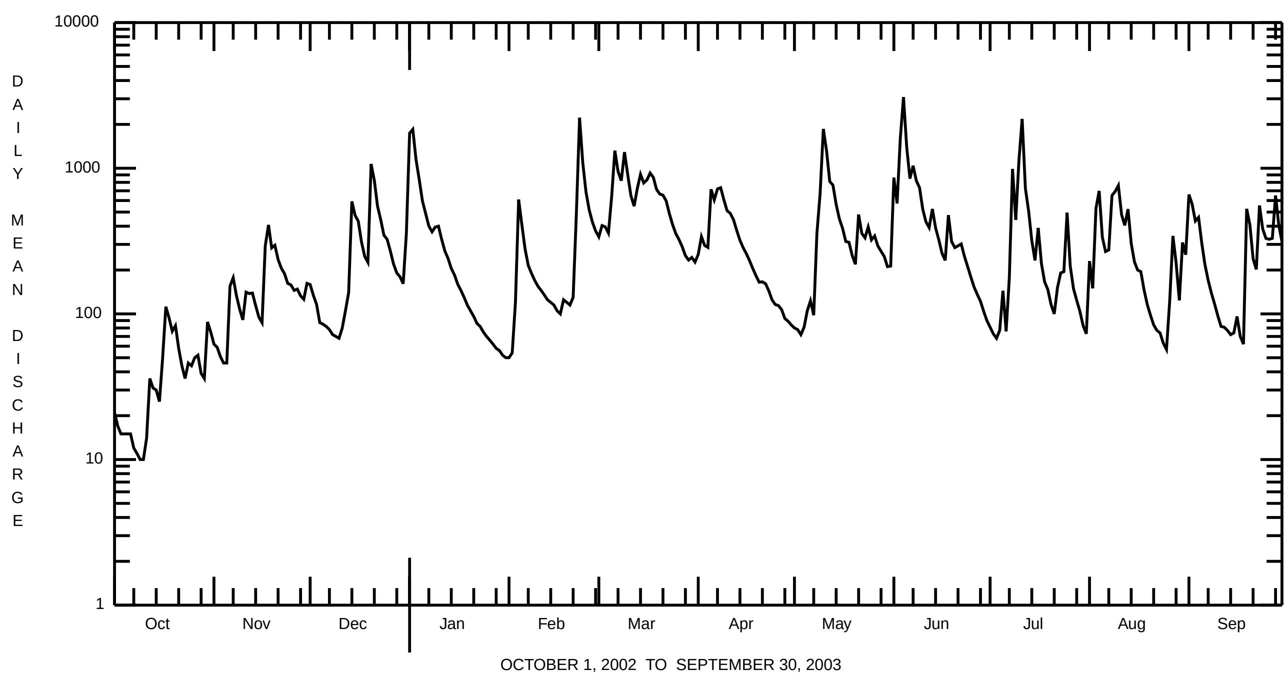
03045000 LOYALHANNA CREEK AT KINGSTON, PA--Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1940 - 2003	
ANNUAL TOTAL	85497.6		119900			
ANNUAL MEAN	234	† 8.1	328	† 7.3	294	
HIGHEST ANNUAL MEAN					447	1971
LOWEST ANNUAL MEAN					160	1954
HIGHEST DAILY MEAN	2960	May 18	3080	Jun 4	14200	Jun 23 1972
LOWEST DAILY MEAN	4.6	Sep 13,14	10	Oct 9,10	0.20	Oct 23 1953
ANNUAL SEVEN-DAY MINIMUM	4.9	Sep 9	12	Oct 5	0.63	Oct 19 1953
MAXIMUM PEAK FLOW			6290	Jul 10	**a**29700	Oct 15 1954
MAXIMUM PEAK STAGE			8.96	Jul 10	**b**15.80	Oct 15 1954
INSTANTANEOUS LOW FLOW			9.7	Oct 9,10	0.10	Sep 4 1953
10 PERCENT EXCEEDS	531		726		692	
50 PERCENT EXCEEDS	141		215		157	
90 PERCENT EXCEEDS	11		61		20	

† 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 From rating curve extended above 8,700 ft^3/s on basis of slope-area measurement at gage height 13.37 ft.

b Present datum, from floodmarks.



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 mi^2.

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 National Geodetic Vertical Datum of 1929 (U.S. Army Corps of Engineers benchmark). 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.--Records good except those for estimated daily discharges, which are poor. Flow regulated since November 1951 by Conemaugh River Lake, 23 mi upstream, since June 1942 by Loyalhanna Lake, 20 mi upstream, since July 1971 by Yellow Creek Lake (station 03042260), 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 ft^3/s. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemetry 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, about 185,000 ft^3/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1260	1360	1380	3450	e1280	7830	3390	656	3120	1020	1070	6920
2	798	1340	1500	4030	e1430	6850	3880	981	3800	1020	1210	7180
3	673	1330	1750	4730	e1420	5590	3830	976	5200	1040	2340	7560
4	680	1320	1620	11500	e1420	4450	3870	968	6140	1270	3520	7150
5	621	1230	1220	14600	2020	4530	4050	1000	13400	994	4610	6250
6	596	1050	766	14200	3400	4650	4540	1160	15200	1020	4180	4880
7	540	1250	857	12900	3680	5340	5670	1850	9130	1100	3470	3370
8	505	1900	1290	10200	3520	6390	5070	1910	8300	1260	2730	1990
9	311	1890	1320	8650	3010	7180	7020	2340	9090	1470	2900	1870
10	267	1870	1210	6120	2180	9150	7760	3440	9600	1630	3230	1840
11	274	1860	807	4030	2080	10500	8230	3570	10200	2430	3670	1650
12	280	1850	828	3520	2010	7830	8110	4310	8910	5050	4180	1350
13	286	1780	1050	3410	1870	5440	7780	7320	6780	5320	3700	1110
14	512	1770	2440	3440	1360	6420	7420	8540	5330	4670	2820	1060
15	555	1740	3910	3300	956	8030	6250	8080	4320	3130	2540	1080
16	635	1710	4810	3060	994	8470	4550	6570	3380	1500	1910	1120
17	621	1960	4610	2270	1400	10000	3850	5580	2720	1550	1590	1150
18	678	2130	3970	1450	1140	11400	3330	5060	3080	1720	1490	1150
19	1320	2980	2970	1430	1250	10700	2670	4580	3740	1940	1420	1220
20	1300	3150	3560	1550	1650	6910	2550	4860	3770	1820	1330	1610
21	1200	3490	3410	1870	1610	7810	2570	4390	3170	1100	968	4060
22	752	3390	4050	1630	1640	12400	2300	3960	2850	1520	693	3960
23	740	3150	6330	1400	2920	13400	1860	4800	4130	2210	661	3630
24	635	2610	6940	1400	2140	11000	2030	4880	4090	3310	680	3670
25	635	2290	5430	e1220	2430	5140	2260	4840	2570	3050	682	3780
26	713	1790	5150	e1020	4800	3790	1750	4500	1810	2840	736	2770
27	668	1790	4620	e1080	8410	3690	1720	3650	1700	2430	1060	2220
28	688	1760	3840	e1340	8230	4210	1430	3800	1660	1500	2950	2250
29	954	1680	3560	e1470	---	5010	1210	3600	1620	1440	4190	1980
30	997	1430	2970	e1170	---	4540	620	3350	1310	1350	5470	2470
31	1060	---	2590	e1010	---	3850	---	2800	---	1210	4620	---
TOTAL	21754	58850	90758	132450	70250	222500	121570	118321	160120	62914	76620	92300
MEAN	702	1962	2928	4273	2509	7177	4052	3817	5337	2029	2472	3077
MAX	1320	3490	6940	14600	8410	13400	8230	8540	15200	5320	5470	7560
MIN	267	1050	766	1010	956	3690	620	656	1310	994	661	1060
CFSM	0.38	1.07	1.60	2.34	1.37	3.93	2.22	2.09	2.92	1.11	1.35	1.69
IN.	0.44	1.20	1.85	2.70	1.43	4.54	2.48	2.41	3.26	1.28	1.56	1.88

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1282	1951	3326	3677	4658	6425	5639	3728	2492	1504	1150	1038
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	426	847	1724	1802	1727	1127	568	378	363	297
(WY)	1964	1954	1999	1956	1958	1969	1946	1941	1999	1965	1939	1939

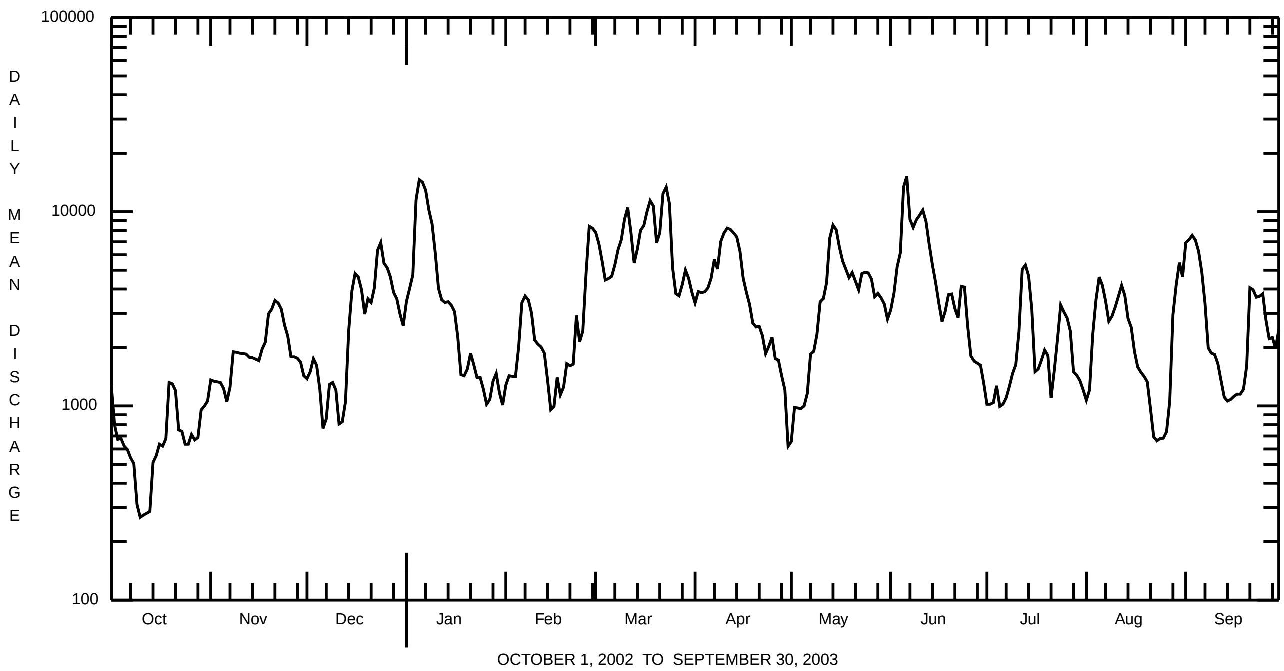
e Estimated.

KISKIMINETAS RIVER BASIN

03048500 KISKIMINETAS RIVER AT VANDERGRIFT, PA--Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1938 - 2003	
ANNUAL TOTAL	913516		1228407			
ANNUAL MEAN	2503		3365		3064	
HIGHEST ANNUAL MEAN					4518	1951
LOWEST ANNUAL MEAN					1777	1954
HIGHEST DAILY MEAN	14800	Mar 30	15200	Jun 6	60400	Mar 31 1940
LOWEST DAILY MEAN	197	Sep 20	267	Oct 10	60	Oct 15 1952
ANNUAL SEVEN-DAY MINIMUM	205	Sep 14	348	Oct 8	145	Nov 1 1952
MAXIMUM PEAK FLOW			17300	Jun 5	**a**71900	Mar 31 1940
MAXIMUM PEAK STAGE			12.66	Jun 5	25.70	Mar 31 1940
INSTANTANEOUS LOW FLOW					60	Oct 15 1952
ANNUAL RUNOFF (CFSM)	1.37		1.84		1.68	
ANNUAL RUNOFF (INCHES)	18.62		25.04		22.81	
10 PERCENT EXCEEDS	5740		7480		7100	
50 PERCENT EXCEEDS	1670		2470		1810	
90 PERCENT EXCEEDS	289		955		488	

a From rating curve extended above 61,000 ft^3/s.



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 mi^2.

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 National Geodetic Vertical Datum of 1929, by barometer. Prior to July 19, 1962, nonrecording gage at same site and datum.

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

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a base discharge of 2,000 ft^3/s and maximum (*****):

Date	Time	Discharge ft^3/s	Gage Height (ft)	Date	Time	Discharge ft^3/s	Gage Height (ft)
Jan. 1	1930	*2,920	***a**5.80	No other peak greater than base discharge.			

a Maximum gage height, 6.22 ft, Feb. 23 (backwater from ice).

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	29	36	1500	e84	e190	132	49	215	37	130	480
2	15	23	e26	1580	e82	e175	130	52	138	30	86	914
3	15	20	e24	873	e100	e165	117	51	126	27	86	980
4	30	19	e18	662	e350	e190	115	43	150	28	93	1370
5	34	18	e22	474	e202	e300	365	61	145	64	62	875
6	29	35	e22	385	e120	e395	309	101	121	34	53	549
7	23	45	e20	310	e105	e290	278	90	175	238	44	368
8	17	36	e24	278	e100	e300	279	121	189	333	56	267
9	15	30	e22	272	e95	774	243	149	374	179	80	208
10	15	27	e18	254	e90	531	220	610	249	240	273	170
11	14	58	e24	212	e85	387	217	450	209	472	129	144
12	14	63	e58	e195	e80	329	204	342	326	238	84	114
13	15	39	e100	e185	e75	599	172	313	1170	146	60	100
14	17	32	e570	e175	e70	713	148	244	696	95	45	90
15	17	28	503	e160	e70	574	135	199	456	71	35	132
16	26	32	390	e150	e65	566	126	187	301	81	31	171
17	56	152	258	e140	e70	546	116	156	227	54	34	96
18	38	122	183	e135	e80	463	106	135	356	44	31	75
19	35	88	150	e130	e90	372	97	120	242	45	23	158
20	62	115	543	e125	e75	331	91	115	186	34	19	190
21	42	83	413	e120	e70	309	113	383	157	33	18	112
22	30	77	292	e115	e110	285	111	246	137	493	17	108
23	25	75	249	e110	e1120	241	93	216	99	369	16	312
24	22	63	184	e105	e530	212	79	299	80	418	14	192
25	21	54	175	e98	e310	191	72	241	66	364	13	183
26	74	46	141	e96	e250	185	71	207	56	205	335	175
27	e69	43	104	e94	e220	163	66	176	50	149	e550	157
28	e33	39	90	e92	e200	145	57	155	45	424	193	195
29	21	36	90	e90	---	148	56	138	e42	220	89	145
30	29	36	69	e88	---	154	54	120	e40	144	1120	123
31	35	---	294	e86	---	135	---	165	---	102	655	---
TOTAL	905	1563	5112	9289	4898	10358	4372	5934	6823	5411	4474	9153
MEAN	29.2	52.1	165	300	175	334	146	191	227	175	144	305
MAX	74	152	570	1580	1120	774	365	610	1170	493	1120	1370
MIN	14	18	18	86	65	135	54	43	40	27	13	75
CFSM	0.21	0.38	1.20	2.19	1.28	2.44	1.06	1.40	1.66	1.27	1.05	2.23
IN.	0.25	0.42	1.39	2.52	1.33	2.81	1.19	1.61	1.85	1.47	1.21	2.49

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	68.5	133	239	254	313	397	314	218	135	82.0	64.2	57.8
MAX	571	720	625	821	861	964	704	525	732	522	511	305
(WY)	1955	1986	1991	1952	1956	1945	1957	1952	1972	1990	1984	2003
MIN	3.63	5.61	7.15	29.3	70.7	49.2	84.9	44.7	20.8	7.75	4.92	5.82
(WY)	1961	1961	1961	1977	1993	1969	1946	1941	1991	1966	1957	1946

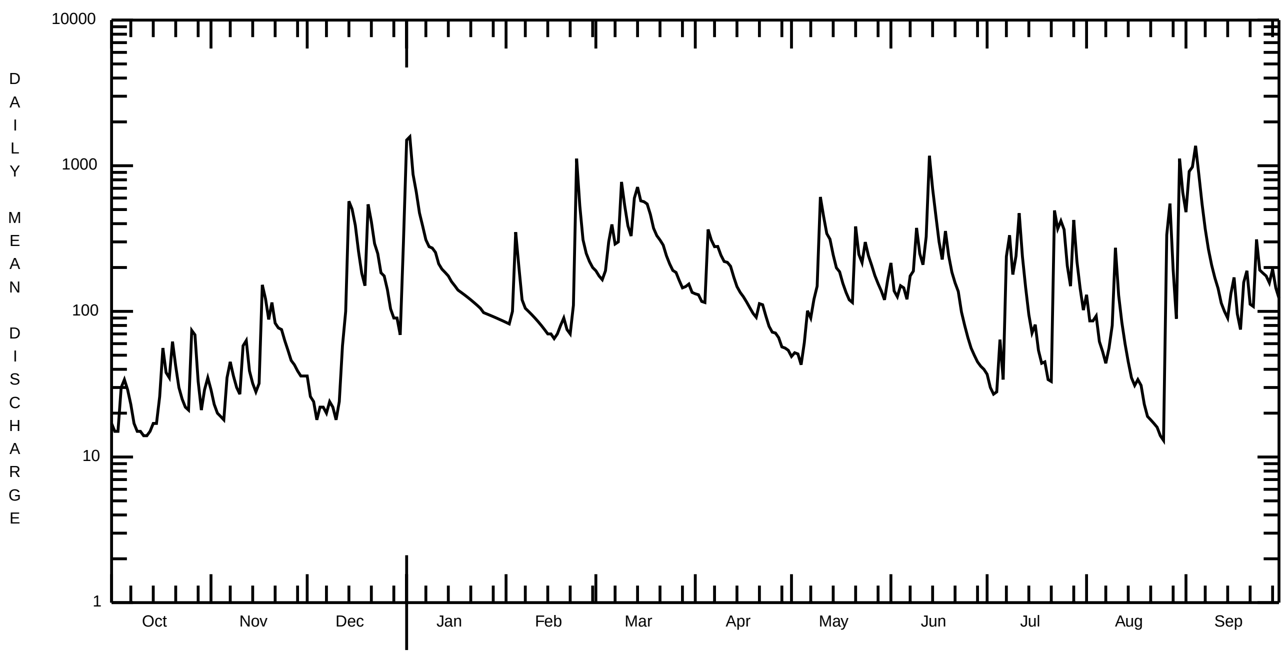
e Estimated.

BUFFALO CREEK BASIN

03049000 BUFFALO CREEK NEAR FREEPORT, PA--Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1941 - 2003	
ANNUAL TOTAL	53390.8		68292			
ANNUAL MEAN	146		187		189	
HIGHEST ANNUAL MEAN					312	1956
LOWEST ANNUAL MEAN					122	1999
HIGHEST DAILY MEAN	1600	Mar 27	1580	Jan 2	7710	Jun 23 1972
LOWEST DAILY MEAN	3.1	Sep 14	13	Aug 25	1.3	Oct 16 1960
ANNUAL SEVEN-DAY MINIMUM	4.2	Sep 9	15	Oct 8	1.7	Oct 13 1960
MAXIMUM PEAK FLOW			2920	Jan 1	**b**14000	Oct 15 1954
MAXIMUM PEAK STAGE			**a**5.80	Jan 1	**c**13.60	Oct 15 1954
INSTANTANEOUS LOW FLOW					1.3	Oct 16 1960**d**
ANNUAL RUNOFF (CFSM)	1.07		1.37		1.38	
ANNUAL RUNOFF (INCHES)	14.50		18.54		18.74	
10 PERCENT EXCEEDS	347		415		452	
50 PERCENT EXCEEDS	76		120		93	
90 PERCENT EXCEEDS	13		26		12	

a Maximum gage height, 6.22 ft, Feb. 23 (backwater from ice).
b From rating curve extended above 4,300 ft^3/s on basis of slope-area measurement of peak flow.
c From floodmarks.
d Also Sept. 15, 2002, minimum observed.



OCTOBER 1, 2002 TO SEPTEMBER 30, 2003

OHIO RIVER MAIN STEM

03049500 ALLEGHENY RIVER AT NATRONA, PA

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 mi^2, approximately.

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 National Geodetic Vertical Datum of 1929 (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.--Records good except those for estimated daily discharges and those below 2,000 ft^3/s, which are poor. Sharp rises and drops in discharge during periods of low flow may be caused by hydroelectric power production. Flow regulated since 1924 by Piney Reservoir, since May 1940 by Crooked Creek Lake, since December 1940 by Tionesta Lake, since June 1941 by Mahoning Creek Lake, since June 1942 by Loyalhanna Lake, since November 1949 by Chautauqua Lake (station 03013946), since November 1951 by Conemaugh River Lake, since June 1952 by East Branch Clarion River Lake (station 03027000), since October 1965 by Allegheny Reservoir (station 03012520), since July 1970 by Union City Reservoir (station 03021518), since January 1974 by Woodcock Creek Lake (station 03022550). Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemetry at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 18, 1936 reached a stage of 32.06 ft, discharge, 365,000 ft^3/s, determined by U.S. Army Corps of Engineers.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6040	5690	12200	30900	7010	28400	32400	6800	19900	6280	37100	20500
2	4880	6360	13100	57800	7780	26000	27400	7140	23800	5800	36800	33700
3	4340	6710	12600	51500	7890	22900	26400	8050	24400	5480	34700	45700
4	3870	6910	11200	49800	11300	22700	24900	9320	24600	5820	32100	45600
5	3900	7540	8990	51000	16700	22200	29100	9200	29800	5420	31500	37900
6	3530	7530	7920	47500	19400	22400	61900	8410	31100	5280	30700	31300
7	3190	8900	7020	43200	22600	22700	53000	12100	25100	6560	28900	24700
8	3180	10400	8010	38100	21000	23800	47300	14400	22700	8030	24500	18700
9	3300	11200	7400	34400	19600	27300	43300	15400	27000	7740	24900	16800
10	3520	10600	7590	29800	16700	33300	48400	19900	28700	8000	26300	15200
11	3450	11900	6340	24200	15000	34300	48100	21300	28800	9370	30800	13400
12	3350	14600	7520	21000	13100	30400	46000	20300	26700	14200	30600	12700
13	3890	15100	11300	17600	11500	27000	45200	23800	43300	13400	29900	10700
14	3630	14300	18800	15300	10700	32900	42000	28000	54700	11900	29500	9580
15	3640	12600	33800	15100	9860	35800	36900	31700	42600	9030	28500	8930
16	3740	11400	37800	12600	9110	35800	29500	32300	37500	6320	26100	11300
17	5370	13400	34700	11100	e9070	46800	23800	26900	31700	6340	19800	10900
18	4730	16500	31200	9110	e8320	59200	19800	27200	29000	7010	16100	10500
19	5080	19200	26800	6980	e7940	64300	16000	25500	27100	7070	14900	12800
20	5170	20900	28600	7500	e8170	58600	14200	23700	23500	8770	11900	13400
21	5810	21600	42100	7990	e8800	55100	14300	25700	19800	8150	9590	15600
22	6540	20900	41800	8840	e11200	60900	15500	28600	16100	39900	7900	15800
23	6070	20600	39200	7900	e17300	63000	16300	26600	16700	72500	6220	17500
24	5210	20300	38000	6280	21800	60400	16400	26000	15900	58100	6260	21400
25	5070	19600	34500	5890	24300	53700	14600	25600	12000	55300	5860	23300
26	5660	17700	31700	5860	25000	48600	12300	24100	10300	49600	8200	20500
27	5860	17600	28500	6070	27600	44300	11200	20400	9270	43200	20500	18800
28	6720	16400	24300	6730	28600	43200	10100	18100	7700	58400	15400	18700
29	6900	13400	21500	6690	---	40400	10800	17300	7230	56700	14500	20800
30	6320	12600	20500	7120	---	37100	7550	13900	6940	46100	20100	20200
31	6000	---	18900	6710	---	36600	---	13600	---	39200	19600	---
TOTAL	147960	412440	673890	650570	417350	1220100	844650	611320	723940	684970	679730	596910
MEAN	4773	13750	21740	20990	14910	39360	28160	19720	24130	22100	21930	19900
MAX	6900	21600	42100	57800	28600	64300	61900	32300	54700	72500	37100	45700
MIN	3180	5690	6340	5860	7010	22200	7550	6800	6940	5280	5860	8930
CFSM	0.42	1.20	1.91	1.84	1.31	3.45	2.47	1.73	2.11	1.94	1.92	1.74
IN.	0.48	1.34	2.20	2.12	1.36	3.98	2.75	1.99	2.36	2.23	2.22	1.95

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	9551	16210	23730	24290	27190	38020	35420	22870	14800	9104	6813	6972
MAX	34470	45220	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

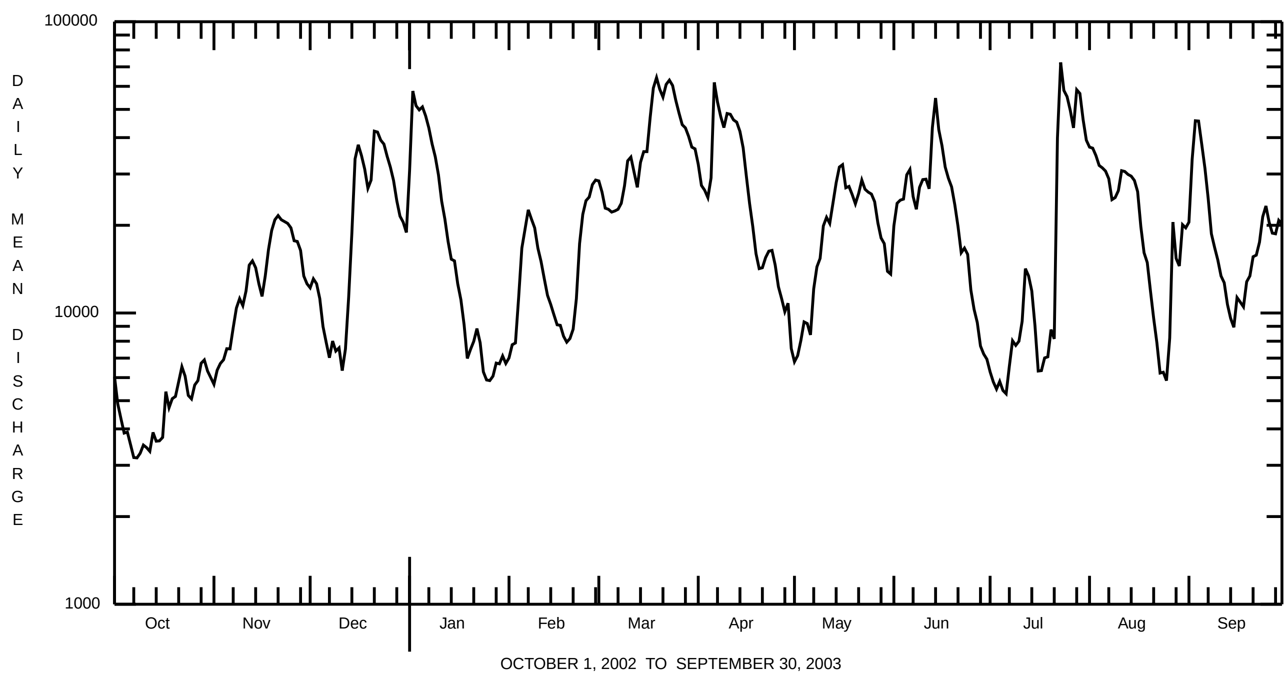
e Estimated.

OHIO RIVER MAIN STEM

03049500 ALLEGHENY RIVER AT NATRONA, PA--Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1939 - 2003	
ANNUAL TOTAL	6628830		7663830			
ANNUAL MEAN	18160		21000		19540	
HIGHEST ANNUAL MEAN					27810	1956
LOWEST ANNUAL MEAN					12680	1999
HIGHEST DAILY MEAN	88600	May 14	72500	Jul 23	206000	Dec 31 1942
LOWEST DAILY MEAN	2950	Sep 1	3180	Oct 8	949	Oct 26 1963
ANNUAL SEVEN-DAY MINIMUM	3250	Aug 31	3360	Oct 6	1030	Oct 25 1963
MAXIMUM PEAK FLOW			87200	Jul 22	**a**238000	Dec 30 1942
MAXIMUM PEAK STAGE			17.46	Jul 22	**b**27.46	Dec 30 1942
INSTANTANEOUS LOW FLOW					985	Oct 22 1963
ANNUAL RUNOFF (CFSM)	1.59		1.84		1.71	
ANNUAL RUNOFF (INCHES)	21.61		24.99		23.26	
10 PERCENT EXCEEDS	40300		43200		44800	
50 PERCENT EXCEEDS	13200		17600		13100	
90 PERCENT EXCEEDS	3580		6070		3190	

a From rating curve extended above 172,000 ft^3/s.
b Datum then in use.



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 mi^2.

PERIOD OF RECORD.--October 1962 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 774.26 ft above National Geodetic Vertical Datum of 1929. Prior ot Oct. 1, 1986 at datum 3.00 ft higher. Sept. 30, 1987 datum lowered 1.00 ft.

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

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a base discharge of 150 ft^3/s and maximum (*****):

Date	Time	Discharge ft^3/s	Gage Height (ft)	Date	Time	Discharge ft^3/s	Gage Height (ft)
Jan. 1	1130	213	3.78	July 23	0930	*216	*3.79

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.63	2.5	1.6	55	e1.4	8.1	3.8	2.6	3.4	1.9	1.9	6.4
2	0.52	2.1	1.4	26	e1.4	12	3.6	2.6	2.5	1.6	1.5	4.8
3	3.0	1.8	e1.3	19	e2.0	10	3.5	2.3	6.2	1.5	1.5	6.6
4	2.2	1.7	e1.3	13	e34	12	4.8	2.3	5.7	3.5	1.6	4.2
5	1.6	2.4	e1.3	8.5	12	15	16	5.2	4.3	2.5	1.4	2.3
6	0.79	4.9	e1.3	6.4	9.1	14	9.4	3.2	3.4	1.8	1.2	1.8
7	0.63	2.8	e1.3	4.8	5.3	12	16	5.7	11	2.0	2.4	1.5
8	0.61	2.4	e1.3	e4.8	6.8	15	15	4.6	7.3	3.0	1.9	1.2
9	0.47	2.2	e1.3	e4.8	8.5	28	12	17	7.2	2.4	3.5	1.1
10	0.48	2.6	e1.3	e4.4	4.2	16	9.1	22	4.6	3.6	2.2	0.96
11	0.66	9.8	e1.3	e3.9	e4.0	13	12	e14	4.2	3.3	1.7	0.88
12	0.60	3.6	e1.2	e3.7	e3.1	11	8.8	e10	16	2.0	1.2	0.78
13	1.4	2.6	e3.8	e7.5	e3.6	16	6.9	e7.0	32	1.5	1.0	0.81
14	0.62	2.4	e19	e3.4	e3.4	14	5.7	e5.0	11	1.3	0.95	0.86
15	0.53	2.2	13	e2.5	e2.8	12	5.2	e4.6	6.8	1.3	0.86	2.4
16	12	4.2	6.4	e1.6	e2.6	11	5.0	4.2	4.7	1.5	1.4	1.2
17	3.6	12	3.1	e1.4	e2.4	11	4.4	3.5	6.3	1.1	2.0	0.83
18	2.2	5.4	2.4	e1.4	e2.6	9.8	3.8	3.3	9.0	1.2	0.95	0.79
19	3.0	6.2	3.2	e1.3	e2.7	8.3	3.7	2.9	5.7	1.1	0.77	6.9
20	2.2	5.0	12	e1.3	e2.6	8.9	3.6	5.0	13	0.98	0.77	2.2
21	1.5	4.0	5.2	e1.3	e2.8	8.1	5.1	7.8	22	1.2	0.75	1.5
22	1.1	3.8	4.0	e1.3	e13	7.1	3.5	4.2	10	18	0.68	2.2
23	0.92	3.1	3.0	e1.4	53	5.6	3.2	4.7	6.5	48	0.70	2.1
24	0.81	2.6	2.4	e1.3	18	5.1	3.1	6.1	4.5	20	0.63	1.4
25	3.1	2.3	3.3	e1.4	10	4.8	3.1	4.0	3.6	5.8	0.62	2.8
26	7.2	2.1	2.2	e1.4	11	4.5	3.2	3.6	3.1	3.3	0.99	1.8
27	2.5	2.1	1.8	e1.4	6.6	4.0	2.7	3.1	2.6	3.1	3.4	2.4
28	1.8	1.8	1.6	e1.4	6.8	3.8	2.6	3.7	2.4	3.3	1.2	1.9
29	3.8	2.1	1.5	e1.4	---	4.3	2.9	2.9	2.1	2.0	0.89	1.4
30	5.7	2.1	1.5	e1.4	---	3.8	2.5	2.6	1.8	1.7	18	1.3
31	3.5	---	7.2	e1.4	---	3.7	---	4.4	---	1.8	3.2	---
TOTAL	69.67	104.8	112.5	189.8	235.7	311.9	184.2	174.1	222.9	147.28	61.76	67.31
MEAN	2.25	3.49	3.63	6.12	8.42	10.1	6.14	5.62	7.43	4.75	1.99	2.24
MAX	12	12	19	55	53	28	16	22	32	48	18	6.9
MIN	0.47	1.7	1.2	1.3	1.4	3.7	2.5	2.3	1.8	0.98	0.62	0.78
CFSM	0.39	0.60	0.63	1.06	1.46	1.74	1.06	0.97	1.29	0.82	0.34	0.39
IN.	0.45	0.67	0.72	1.22	1.52	2.01	1.19	1.12	1.43	0.95	0.40	0.43

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1.92	4.70	7.54	7.29	9.44	13.0	10.3	8.07	4.22	3.19	1.61	1.52
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	0.010	0.51	0.69	0.82	2.17	1.30	2.33	1.74	0.42	0.016	0.10	0.040
(WY)	1964	1964	1964	1977	1980	1969	1971	1965	1965	1965	1965	1963

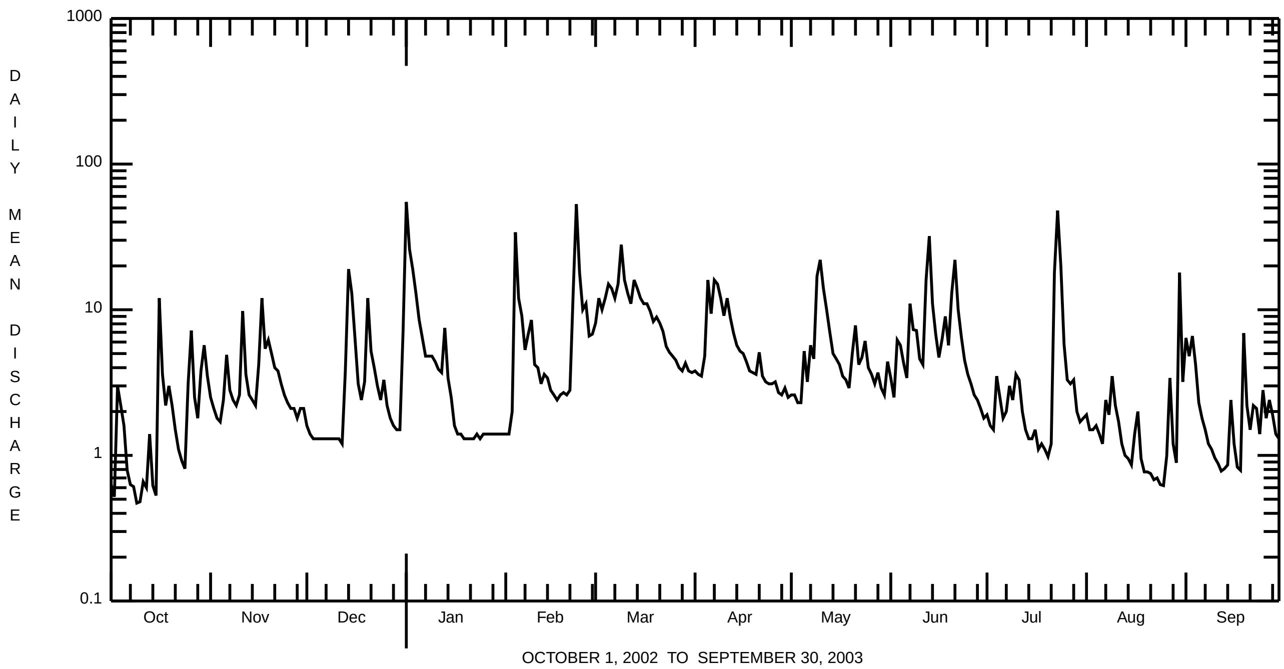
e Estimated.

PINE CREEK BASIN

03049800 LITTLE PINE CREEK NEAR ETNA, PA--Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1963 - 2003	
ANNUAL TOTAL	1555.85		1881.92			
ANNUAL MEAN	4.26		5.16		6.05	
HIGHEST ANNUAL MEAN					10.8	1987
LOWEST ANNUAL MEAN					2.68	1969
HIGHEST DAILY MEAN	73	Mar 26	55	Jan 1	525	May 30 1986
LOWEST DAILY MEAN	0.05	Sep 13,14	0.47	Oct 9	0.00	Many days
ANNUAL SEVEN-DAY MINIMUM	0.08	Sep 8	0.61	Oct 6	0.00	Aug 26 1963
MAXIMUM PEAK FLOW			216	Jul 23	**a**7190	May 30 1986
MAXIMUM PEAK STAGE			3.79	Jul 23	**b**10.28	May 30 1986
ANNUAL RUNOFF (CFSM)	0.74		0.89		1.05	
ANNUAL RUNOFF (INCHES)	10.01		12.11		14.23	
10 PERCENT EXCEEDS	8.8		12		14	
50 PERCENT EXCEEDS	2.5		3.1		2.7	
90 PERCENT EXCEEDS	0.48		1.1		0.33	

a From rating curve extended above 2,000 ft^3/s on basis of slope-area measurement of peak flow at site 0.6 mi downstream.
b Gage height 10.41 ft, from outside floodmark, datum then in use.



03072000 DUNKARD CREEK AT SHANNOPIN, PA
(Pennsylvania Water-Quality Network 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 mi^2.

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 National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers).

REMARKS.--Records fair except those for estimated daily discharges, which are poor. 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 telemetry at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a base discharge of 4,000 ft^3/s and maximum (*****):

Date	Time	Discharge ft^3/s	Gage Height (ft)	Date	Time	Discharge ft^3/s	Gage Height (ft)
Feb. 23	1600	7,760	10.42	June 4	0700	4,490	8.75
May 10	0100	*8,420	*10.71				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	35	110	75	579	e58	675	142	99	381	71	112	373
2	25	78	75	2240	e58	666	137	98	e352	67	103	2080
3	19	61	70	1290	e91	829	127	83	e1070	67	154	1370
4	15	51	e57	1460	e372	793	121	85	3470	68	451	e867
5	13	47	e55	832	e1040	1140	152	183	2170	74	225	e480
6	12	50	e60	602	677	2620	274	630	1320	133	136	e286
7	11	79	e57	468	478	2330	311	e431	1650	135	106	e190
8	11	101	e55	387	346	2270	749	e1250	1940	495	101	e138
9	9.8	81	e52	413	259	e2830	640	3440	1360	665	144	115
10	10	68	e59	425	e212	e1840	482	5150	910	546	157	95
11	14	80	e68	e351	e187	e957	478	2980	617	1400	184	82
12	19	136	e136	e273	e157	685	667	2000	420	625	243	75
13	30	114	e321	e223	e121	700	541	1370	393	762	186	69
14	31	86	1460	e185	e112	1230	424	905	406	395	162	66
15	24	70	1380	e155	e92	788	348	592	702	220	94	64
16	30	63	845	e123	e82	650	295	e507	567	552	72	67
17	211	159	584	e118	e77	546	251	e412	417	e342	65	64
18	126	413	401	e113	e102	436	209	e333	1370	e235	58	58
19	73	234	324	e113	e107	350	184	e286	1170	e166	50	76
20	55	265	478	e102	e106	295	161	e254	1430	e122	44	140
21	46	216	663	e100	e135	269	157	e254	934	e103	38	103
22	40	157	437	e90	286	242	206	e302	578	92	35	76
23	34	130	324	e82	4730	204	168	e602	369	88	31	98
24	28	109	241	e77	3220	181	141	1770	249	107	28	129
25	25	93	392	e74	2000	161	125	1180	177	99	25	91
26	25	84	686	e68	1430	153	120	718	139	75	23	84
27	22	79	448	e63	1070	155	114	476	117	63	202	78
28	24	76	340	e61	824	135	99	340	104	56	651	78
29	30	71	275	e58	---	128	91	279	91	52	270	92
30	88	69	220	e61	---	144	92	215	79	49	1150	82
31	179	---	190	e58	---	148	---	188	---	54	680	---
TOTAL	1314.8	3430	10828	11244	18429	24550	8006	27412	24952	7978	5980	7666
MEAN	42.4	114	349	363	658	792	267	884	832	257	193	256
MAX	211	413	1460	2240	4730	2830	749	5150	3470	1400	1150	2080
MIN	9.8	47	52	58	58	128	91	83	79	49	23	58
CFSM	0.19	0.50	1.53	1.58	2.87	3.46	1.17	3.86	3.63	1.12	0.84	1.12
IN.	0.21	0.56	1.76	1.83	2.99	3.99	1.30	4.45	4.05	1.30	0.97	1.25

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	67.7	156	324	418	508	628	463	336	189	91.9	78.4	73.7
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	2.38
(WY)	1952	1954	1954	1967	1954	1987	1971	1986	1966	1962	1962	1999

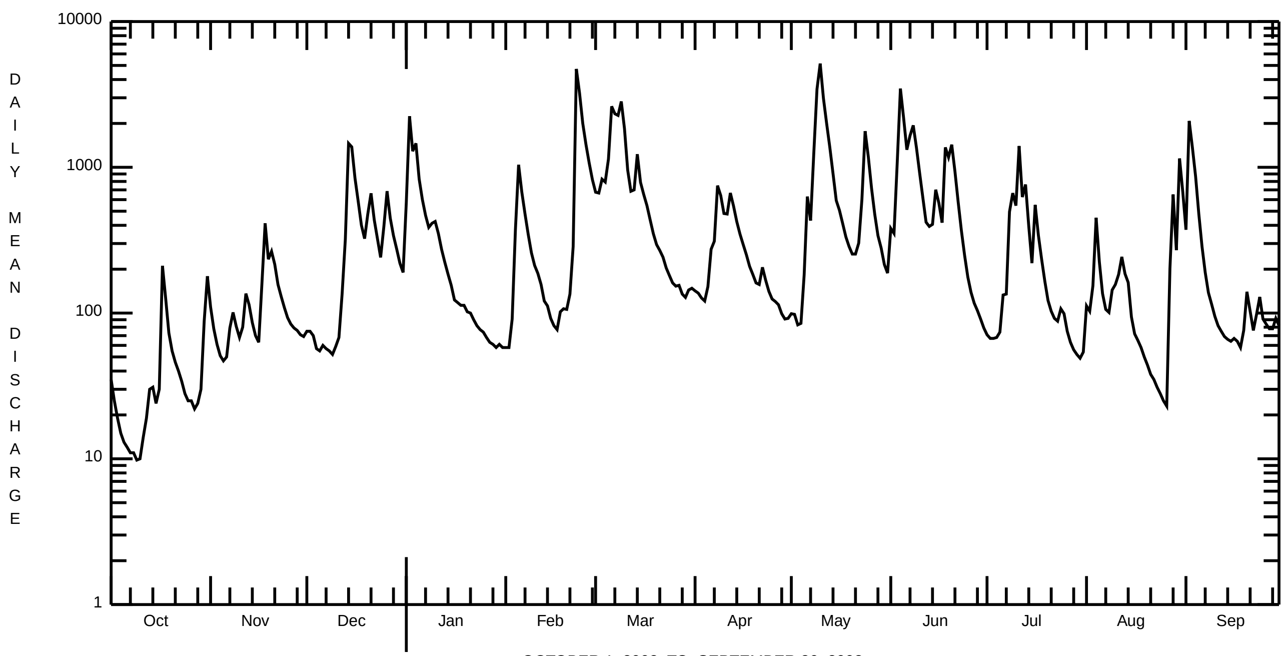
e Estimated.

MONONGAHELA RIVER BASIN

03072000 DUNKARD CREEK AT SHANNOPIN, PA--Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1941 - 2003	
ANNUAL TOTAL	95391.3		151789.8			
ANNUAL MEAN	261		416		277	
HIGHEST ANNUAL MEAN					462	1994
LOWEST ANNUAL MEAN					104	1954
HIGHEST DAILY MEAN	4170	Mar 27	5150	May 10	11200	Mar 5 1963
LOWEST DAILY MEAN	1.8	Sep 13,14	9.8	Oct 9	0.50	Aug 27 1944
ANNUAL SEVEN-DAY MINIMUM	2.3	Sep 10	12	Oct 5	0.73	Aug 25 1944
MAXIMUM PEAK FLOW			8420	May 10	**a**17600	Aug 18 1980
MAXIMUM PEAK STAGE			10.71	May 10	14.27	Aug 18 1980
INSTANTANEOUS LOW FLOW			9.5	Oct 9,10	0.40	Aug 28 1944
ANNUAL RUNOFF (CFSM)	1.14		1.82		1.21	
ANNUAL RUNOFF (INCHES)	15.50		24.66		16.45	
10 PERCENT EXCEEDS	666		1140		685	
50 PERCENT EXCEEDS	105		157		97	
90 PERCENT EXCEEDS	11		51		8.0	

a From rating curve extended above 16,000 ft^3/s.



MONONGAHELA RIVER BASIN

03072000 DUNKARD CREEK AT SHANNOPIN, PA--Continued
(Pennsylvania Water-Quality Network Station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 2002 to current year.

REMARKS.--Other data for the Water-Quality Network can be found on pages 242-289.

COOPERATION.--Samples were collected as part of the Pennsylvania Department of Environmental Protection Water-Quality Network (WQN) with cooperation from the Pennsylvania Department of Environmental Protection.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Agency collecting sample, code (00027)	Agency analyzing sample, code (00028)	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf µS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water unfltrd recover -able, mg/L (00916)	Magnesium, water, unfltrd recover -able, mg/L (00927)	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (00417)
NOV 2002													
06...	0845	1028	9813	49	40	11.0	7.8	833	7.6	200	54.1	16.4	84
JAN 2003													
07...	0930	1028	9813	482	40	14.6	7.6	322	1.8	110	29.6	7.7	60
MAR													
04...	0930	1028	9813	794	40	13.2	7.8	285	1.5	110	30.9	6.9	54
MAY													
06...	0845	1028	9813	696	40	8.9	7.6	476	14.7	120	35.1	8.7	87
JUL													
14...	1250	1028	9813	364	40	9.1	7.0	337	--	120	33.7	9.3	64
SEP													
10...	1205	1028	9813	94	40	10.2	7.5	582	20.0	190	52.0	15.1	91

Date	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 105degC wat flt mg/L (00515)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia water, unfltrd mg/L as N (00610)	Nitrate water unfltrd mg/L as N (00620)	Nitrite water, unfltrd mg/L as N (00615)	Orthophosphate, water, unfltrd mg/L as P (70507)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, unfltrd mg/L (00600)	Organic carbon, water, unfltrd mg/L (00680)	Aluminum, water, unfltrd recover -able, µg/L (01105)	Copper, water, unfltrd recover -able, µg/L (01042)	Iron, water, unfltrd recover -able, µg/L (01045)
NOV 2002													
06...	269	608	10	.450	.52	<.040	.02	.015	.88	2.8	800	<10	800
JAN 2003													
07...	78.0	286	14	.060	.89	<.040	.01	.012	1.1	1.8	400	<10	590
MAR													
04...	70.4	216	4	.070	.92	<.040	.03	.015	1.1	1.7	600	<10	700
MAY													
06...	106	348	66	.040	.38	<.040	.08	.060	.97	3.5	3000	<10	3060
JUL													
14...	82.7	258	30	<.020	.33	<.040	.07	.058	.64	3.7	2400	<10	2720
SEP													
10...	164	608	16	<.020	.16	<.040	<.01	.020	.31	2.2	1100	<10	1240

Date	Lead, water, unfltrd recover -able, µg/L (01051)	Manganese, water, unfltrd recover -able, µg/L (01055)	Nickel, water, unfltrd recover -able, µg/L (01067)	Zinc, water, unfltrd recover -able, µg/L (01092)
NOV 2002				
06...	<1.0	170	<50	<10
JAN 2003				
07...	<1.0	80	<50	30
MAR				
04...	<1.0	80	<50	20
MAY				
06...	2.7	210	<50	20
JUL				
14...	1.4	180	<50	150
SEP				
10...	<1.0	230	<50	20

MONONGAHELA RIVER BASIN

03072000 DUNKARD CREEK AT SHANNOPIN, PA--Continued

BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES

REMARKS.--Samples were collected using rapid bioassessment protocols for benthic macroinvertebrates using a D-Frame net with a mesh size of 500 µm. Samples represent counts per 100 (approximate) subsamples.

Date	9/5/02
Benthic Macroinvertebrate	Count
Mollusca	
Bivalvia (CLAMS)	
Veneroida	
Corbiculidae	
Corbicula fluminea	1
Annelida	
Oligochaeta (AQUATIC EARTHWORMS)	
Tubificida	
Enchytraeidae	1
Arthropoda	
Insecta	
Odonata (DRAGONFLIES AND DAMSELFLIES)	
Coenagrionidae	
Argia sp	1
Megaloptera	
Corydalidae (FISHFLIES AND DOBSONFLIES)	
Corydalus sp	2
Trichoptera (CADDISFLIES)	
Hydropsychidae	
Hydropsyche sp	76
Coleoptera (BEETLES)	
Elmidae (RIFFLE BEETLES)	
Oulimnius sp	1
Promoresia sp	1
Stenelmis sp	15
Diptera (TRUE FLIES)	
Athericidae	
Atherix sp	5
Chironomidae (MIDGES)	4
Total Organisms	107

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 mi^2.

PERIOD OF RECORD.--October 1938 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 National Geodetic Vertical Datum of 1929 (U.S. Army Corps of Engineers bench mark). Prior to Nov. 9, 1990, at datum 1.45 ft lower.

REMARKS.--No estimated daily discharges. Records good above 5,000 ft^3/s, fair below, except those below 1,000 ft^3/s, which are poor. Flow regulated since 1926 by Lake Lynn 11 mi upstream, since May 1938 by Tygart Lake (station 03055500) 69 mi upstream, and since April 1989 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 telemetry 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 ft^3/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2250	12500	8170	12100	5700	19000	6470	4820	22800	2520	8060	7190
2	1220	9090	8470	24500	6760	17000	9790	4350	24600	2090	4480	24600
3	1310	7590	7880	25900	9130	22500	10300	5120	26400	2490	3530	24600
4	2080	8490	7800	28100	16300	23000	9640	6850	32300	2710	4490	31900
5	1500	5940	5460	23500	18600	23400	10700	11200	25900	2170	3880	31700
6	1120	9430	6590	19400	16800	38700	8750	15900	22200	3290	3470	23300
7	1330	12400	3750	18600	16000	39000	11800	14900	23100	4290	3520	12600
8	1230	13500	2610	12500	14200	28000	20400	16000	27800	20800	3490	9950
9	1170	10100	5200	11500	10400	32900	21100	24400	21600	28300	4560	7910
10	1400	9870	4350	10800	7650	30700	23100	40700	18900	29200	7750	7340
11	2790	7260	2910	9520	7310	25100	21400	51900	13900	33100	7440	4220
12	2310	10300	6720	8600	6570	22500	22700	30700	8940	18700	7340	2820
13	3500	11200	11600	8410	6010	20300	18700	27500	8030	14800	9220	2760
14	2850	10800	23300	8620	4950	27400	16900	27100	12500	10200	8480	2550
15	3380	11300	23700	7580	3870	26500	14900	24000	21200	6850	6430	3290
16	4600	8280	17300	4410	5720	23900	10400	22100	18800	6030	5310	3740
17	10000	12500	15900	3960	4200	24000	8650	15400	15700	5020	5320	3340
18	7890	19300	13300	2350	6610	20800	5050	12300	21700	3540	7560	5590
19	7580	15200	12600	2240	8270	16900	4510	10300	16800	4270	10400	21000
20	5770	18100	15400	2290	7520	15500	3780	12100	19500	3590	7480	25700
21	6810	16900	26600	3010	9070	15800	4810	12200	24800	3980	4170	19700
22	6130	13800	18500	3980	14500	14200	5030	10600	20300	2780	2220	17600
23	5460	9510	14900	4300	49400	12400	6000	10300	15300	2610	2640	17900
24	4790	9460	14700	5100	41800	7660	7470	17900	11100	4190	2420	16600
25	4750	8450	16000	1970	28300	8610	6070	14900	6720	2490	1910	12000
26	3110	8600	17200	2360	28500	10500	5350	11600	6440	2560	2020	10900
27	3490	8990	14000	3810	28500	6950	5260	8870	4620	1440	7650	7270
28	5640	5970	11400	2410	23600	5230	5180	7160	4090	3490	11900	8750
29	3410	8360	10000	4530	---	3490	3600	5370	3180	7340	5760	10500
30	11400	7490	11400	3490	---	3930	4070	6690	3310	6390	6100	8920
31	12700	---	10000	3530	---	5780	---	7010	---	4330	8350	---
TOTAL	132970	320680	367710	283370	406240	591650	311880	490240	502530	245560	177350	386240
MEAN	4289	10690	11860	9141	14510	19090	10400	15810	16750	7921	5721	12870
MAX	12700	19300	26600	28100	49400	39000	23100	51900	32300	33100	11900	31900
MIN	1120	5940	2610	1970	3870	3490	3600	4350	3180	1440	1910	2550
(†)	-52	-419	-216	-40	+1390	-867	+1110	+188	-93	-17	-70	-470

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	3376	6547	10860	11780	14170	16030	11920	9214	5977	4140	3840	2887
MAX	15260	29580	26520	24690	30880	37830	23180	29230	22100	13240	15120	12870
(WY)	1980	1986	1973	1952	1994	1963	1940	1996	1981	1958	1956	2003
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

† 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 Energy Supply. Records of contents in Tygart Lake and Stonewall Jackson Lake furnished by U.S. Army Corps of Engineers.

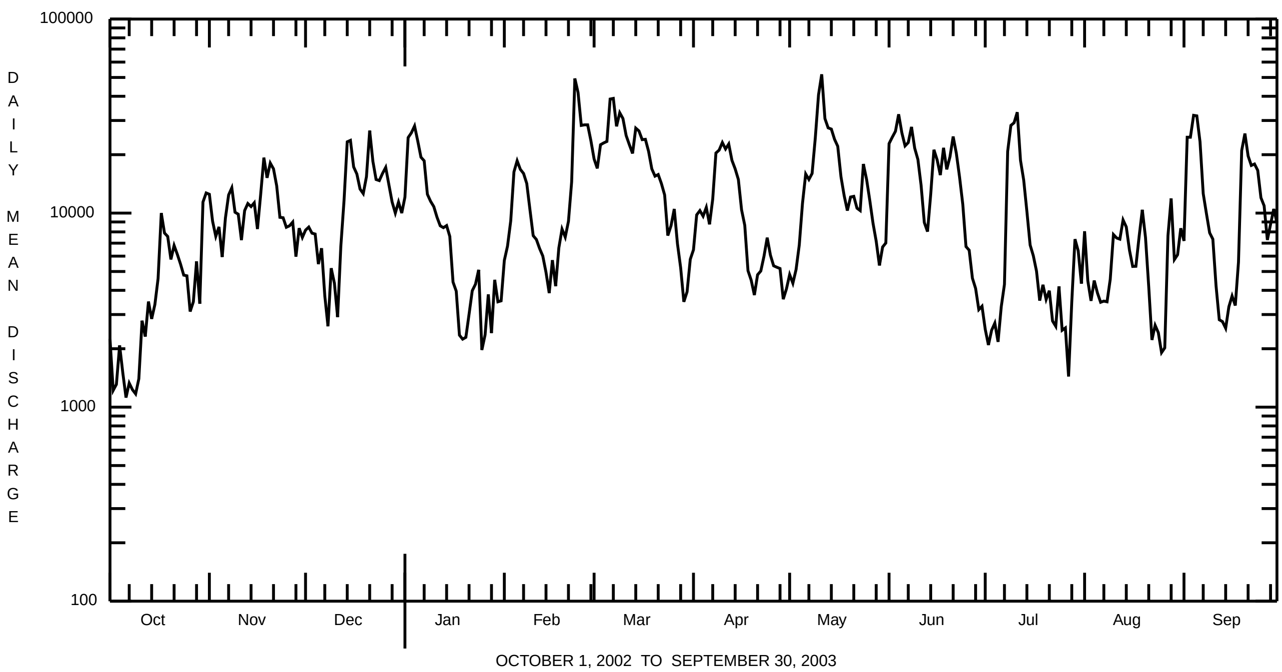
03072655 MONONGAHELA RIVER NEAR MASONTOWN, PA--Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1939 - 2003	
ANNUAL TOTAL	3045224		4216420			
ANNUAL MEAN	8343	† +15	11550	† +26	8360	
HIGHEST ANNUAL MEAN					13010	1994
LOWEST ANNUAL MEAN					4995	1966
HIGHEST DAILY MEAN	53200	Mar 21	51900	May 11	154000	Nov 5 1985
LOWEST DAILY MEAN	714	Sep 22	1120	Oct 6	177	Sep 11 1988
ANNUAL SEVEN-DAY MINIMUM	919	Sep 8	1390	Oct 3	267	Nov 4 1953
MAXIMUM PEAK FLOW			66800	Feb 23	**a**220000	Nov 5 1985
MAXIMUM PEAK STAGE			18.98	Feb 23	**b**39.39	Nov 5 1985
10 PERCENT EXCEEDS	19300		24400		20900	
50 PERCENT EXCEEDS	5650		8620		4780	
90 PERCENT EXCEEDS	1190		2810		1040	

† 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 Energy Supply. 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 ft^3/s.

b From outside floodmarks, datum then in use.



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 mi^2.

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 National Geodetic Vertical Datum of 1929. 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.--No estimated daily discharges. Records 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 telemetry at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a base discharge of 1,000 ft^3/s and maximum (*****):

Date	Time	Discharge ft^3/s	Gage Height (ft)	Date	Time	Discharge ft^3/s	Gage Height (ft)
Feb. 23	0600	*2,250	*7.60	June 3	2030	1,960	7.02
May 9	1430	1,420	5.94	June 7	1030	1,570	6.24
May 10	1300	1,310	5.73				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	29	50	375	51	143	88	62	256	35	167	118
2	16	27	45	348	55	194	100	48	163	34	72	321
3	18	25	42	346	58	187	95	45	594	33	68	169
4	21	26	35	273	440	180	93	123	695	36	71	129
5	17	26	39	198	231	270	131	108	380	55	59	104
6	16	45	40	167	147	414	103	95	236	37	59	88
7	16	44	35	137	126	284	180	90	669	36	69	75
8	16	39	36	134	100	243	210	272	340	223	87	66
9	16	33	34	158	87	263	166	607	241	185	246	60
10	16	32	33	152	83	213	140	740	178	117	207	54
11	29	76	49	125	76	172	140	459	144	150	107	51
12	27	47	75	104	68	149	128	274	122	111	118	47
13	20	43	140	94	59	154	109	240	116	97	104	46
14	19	36	379	85	58	182	99	175	112	75	71	44
15	18	33	236	76	59	159	91	146	101	67	61	58
16	60	36	163	65	48	155	84	138	84	76	55	59
17	45	169	114	69	48	158	79	112	97	56	51	45
18	30	123	94	60	58	145	72	109	111	67	47	43
19	26	93	83	59	58	125	67	91	85	69	42	288
20	25	84	189	58	71	111	63	87	80	49	39	141
21	22	68	168	54	85	105	69	123	80	44	37	103
22	21	63	123	50	495	96	63	94	74	52	35	94
23	20	64	98	47	1420	87	59	108	63	68	40	150
24	19	53	81	45	446	79	55	137	59	70	32	100
25	18	49	156	44	257	74	53	107	53	61	30	103
26	23	47	121	44	194	81	54	99	50	45	30	94
27	20	56	93	42	161	74	50	87	46	40	183	87
28	18	49	80	41	145	66	47	87	43	38	109	108
29	33	46	74	49	---	74	53	75	38	36	60	88
30	47	52	68	48	---	88	48	68	36	34	111	76
31	33	---	80	45	---	82	---	119	---	73	85	---
TOTAL	742	1613	3053	3592	5184	4807	2789	5125	5346	2169	2552	3009
MEAN	23.9	53.8	98.5	116	185	155	93.0	165	178	70.0	82.3	100
MAX	60	169	379	375	1420	414	210	740	695	223	246	321
MIN	16	25	33	41	48	66	47	45	36	33	30	43
CFSM	0.32	0.73	1.34	1.57	2.51	2.10	1.26	2.24	2.42	0.95	1.12	1.36
IN.	0.37	0.81	1.54	1.81	2.62	2.43	1.41	2.59	2.70	1.09	1.29	1.52

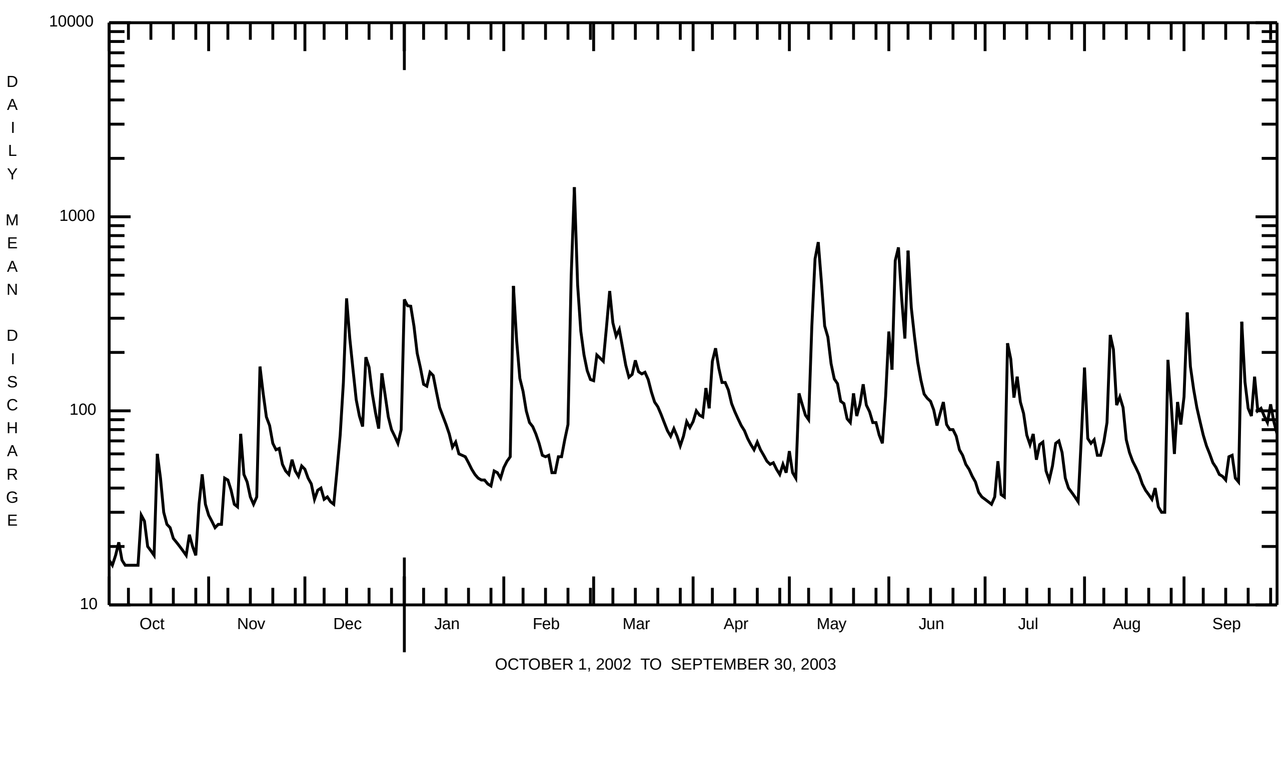
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1943 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	48.2	68.0	111	130	158	191	160	126	81.7	55.3	49.3	48.0
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

03074500 REDSTONE CREEK AT WALTERSBURG, PA--Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1943 - 2003	
ANNUAL TOTAL	31810		39981			
ANNUAL MEAN	87.2		110		102	
HIGHEST ANNUAL MEAN					166	1994
LOWEST ANNUAL MEAN					44.2	1954
HIGHEST DAILY MEAN	1160	May 18	1420	Feb 23	6620	Jun 23 1972
LOWEST DAILY MEAN	14	Sep 1-8	16	Oct 2,6-10	4.8	Sep 22 1991
ANNUAL SEVEN-DAY MINIMUM	14	Sep 1	17	Oct 4	5.3	Sep 28 1991
MAXIMUM PEAK FLOW			2250	Feb 23	**a**8660	Jun 23 1972
MAXIMUM PEAK STAGE			7.60	Feb 23	**b**14.83	Jun 23 1972
INSTANTANEOUS LOW FLOW			14	Oct 1-3,6-10	4.2	Aug 2 1962
ANNUAL RUNOFF (CFSM)	1.18		1.49		1.38	
ANNUAL RUNOFF (INCHES)	16.06		20.18		18.81	
10 PERCENT EXCEEDS	181		211		209	
50 PERCENT EXCEEDS	54		75		61	
90 PERCENT EXCEEDS	17		33		21	

a From rating curve extended above 8,200 ft^3/s.
b From peak-stage indicator.



MONONGAHELA RIVER BASIN

03075070 MONONGAHELA RIVER AT ELIZABETH, PA
(Pennsylvania Water-Quality Network Station)

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 mi^2.

WATER-DISCHARGE RECORDS

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 National Geodetic Vertical Datum of 1929 (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.--No estimated daily discharges. Records good, except those below 2,500 ft^3/s, which are poor. Flow regulated by locks above station, since 1938 by Tygart Lake (station 03055500), since May 1926 by Lake Lynn, and since April 1989 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 telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3050	11500	7970	13100	5170	20500	5630	4260	18300	3180	8380	7600
2	1710	9130	8380	31400	6660	18000	8990	4130	28400	2410	5320	22800
3	877	8060	7510	27500	7840	23200	9750	5200	26000	2060	3690	25600
4	1490	7450	8270	32200	14200	25500	9680	5580	46100	3090	5430	30900
5	2330	6050	4920	26200	21900	23600	10500	9910	31800	2670	4370	36700
6	864	8030	6090	20500	17200	44500	9570	15300	26100	3150	3350	26000
7	843	11100	4530	19800	16800	48700	12000	15600	23600	3340	3330	14200
8	1490	12900	2420	14500	15200	35600	20900	16200	33300	21900	4330	9920
9	1380	9410	4180	11900	12500	37200	23500	25300	25400	33900	3780	8360
10	1280	9690	4420	12000	7580	39400	23000	53000	19800	31800	7970	6960
11	1840	8280	3390	9670	7470	29100	23200	63200	15400	38300	7640	5110
12	2250	8390	4170	9620	7120	24000	23100	43500	11300	24100	7310	3700
13	2560	11800	9640	8720	6100	21300	20100	30200	7900	16200	9040	2030
14	3310	10500	23600	8860	4920	27400	17400	29400	11800	11500	8560	2950
15	2760	9570	29500	7680	4370	31300	16300	26700	19600	7150	7200	3010
16	4850	8840	18800	5930	4540	25300	11200	23500	19900	6450	5590	3310
17	8190	11300	17200	2980	5200	25200	10000	17600	17000	5550	5050	3450
18	8250	18800	13800	4290	6320	23500	6330	13300	21100	4370	6220	5100
19	7830	15200	13200	1970	7490	18000	5340	10900	18900	6240	9410	14000
20	5410	17100	13800	2710	8230	16700	3740	12900	18900	4500	8410	30400
21	6150	16700	27800	2580	8040	15200	4660	12600	24400	4520	5000	19900
22	5810	13800	19800	3790	12800	14900	5560	11000	22000	3100	3060	17300
23	5670	9500	14400	4490	55500	13400	6240	11400	16200	3050	1740	17400
24	3760	9990	15800	5150	70300	8570	7030	17100	12100	4440	3130	16800
25	5140	8000	14000	3270	34700	8440	5800	16000	7530	3000	2060	12200
26	2940	7480	18300	2050	30100	10400	6640	13900	6110	2950	1860	11100
27	2650	8980	15000	3490	31700	7980	4550	8990	5570	2560	4860	8030
28	5320	6260	11700	2720	26100	5710	5930	8500	4370	1430	15100	7600
29	3630	7420	10600	3550	---	4910	3360	6080	3310	6440	6900	9930
30	8510	6630	10800	3510	---	2490	4360	6210	3160	6900	6240	9620
31	12600	---	10600	4110	---	6330	---	7120	---	4810	9100	---
TOTAL	124744	307860	374590	310240	456050	656330	324360	544580	545350	275060	183430	391980
MEAN	4024	10260	12080	10010	16290	21170	10810	17570	18180	8873	5917	13070
MAX	12600	18800	29500	32200	70300	48700	23500	63200	46100	38300	15100	36700
MIN	843	6050	2420	1970	4370	2490	3360	4130	3160	1430	1740	2030
(†)	-52	-419	-216	-40	+1390	-867	+1110	+188	-93	-17	-70	-470

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1934 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	3566	6657	11480	13440	15450	18070	13470	10350	6506	4445	4143	3078
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	400	1991	2249	3210	6636	4478	2128	1009	915	812	581
(WY)	1954	1954	1966	1977	1934	1987	1971	1982	1936	1966	1957	1936

† 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 Energy Supply. Records of contents in Tygart Lake and Stonewall Jackson Lake furnished by U.S. Army Corps of Engineers.

MONONGAHELA RIVER BASIN

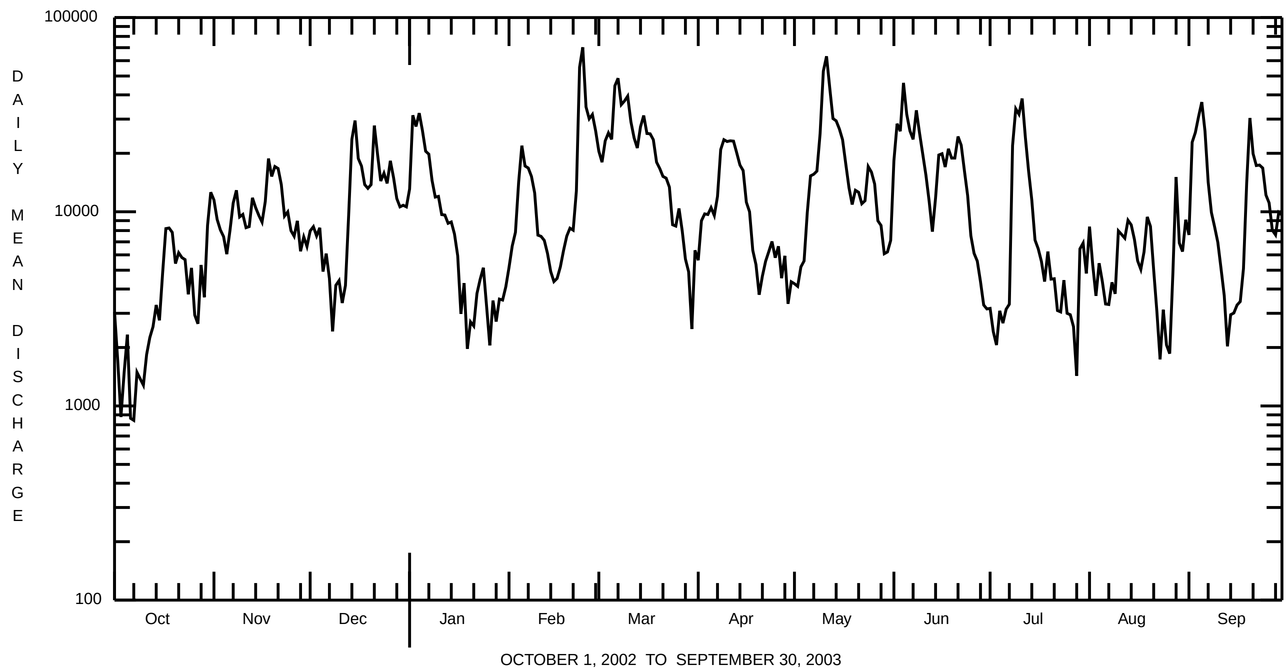
03075070 MONONGAHELA RIVER AT ELIZABETH, PA--Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR			FOR 2003 WATER YEAR			WATER YEARS 1934 - 2003	
ANNUAL TOTAL	3174040			4494574				
ANNUAL MEAN	8696	†	+15	12310	†	+26	9195	
HIGHEST ANNUAL MEAN							14400	1996
LOWEST ANNUAL MEAN							5282	1954
HIGHEST DAILY MEAN	71400		Mar 21	70300		Feb 24	158000	Jan 20 1996
LOWEST DAILY MEAN	614		Aug 18	843		Oct 7	206	Jun 29 1936
ANNUAL SEVEN-DAY MINIMUM	889		Sep 10	1320		Oct 3	301	Oct 1 1936
MAXIMUM PEAK FLOW				85200		Feb 24	**a**178000	Nov 6 1985
MAXIMUM PEAK STAGE				20.56		Feb 24	**b**30.39	Jan 20 1996
10 PERCENT EXCEEDS	20000			26100			22300	
50 PERCENT EXCEEDS	5700			8510			5180	
90 PERCENT EXCEEDS	1250			3030			1150	

† 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 Energy Supply. Records of contents in Tygart Lake and Stonewall Jackson Lake furnished by U.S. Army Corps of Engineers.

a From rating curve extended above 110,000 ft^3/s.

b Gage height 23.60 ft, datum then in use.



03075070 MONONGAHELA RIVER AT ELIZABETH, PA--Continued
(Pennsylvania Water-Quality Network Station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 2002 to current year.

REMARKS.--Other data for the Water-Quality Network can be found on pages 242-289.

COOPERATION.--Samples were collected as part of the Pennsylvania Department of Environmental Protection Water-Quality Network (WQN) with cooperation from the Pennsylvania Department of Environmental Protection.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Agency col- lecting sample, code (00027)	Agency ana- lyzing sample, code (00028)	Instan- taneous dis- charge, cfs (00061)	Sam- pling method, code (82398)	Dis- solved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conduc- tance, wat unf µS/cm 25 degC (00095)	Temper- ature, water, deg C (00010)	Hard- ness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water unfltrd recover -able, mg/L (00916)	Magnes- ium, water, unfltrd recover -able, mg/L (00927)	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (00417)
NOV 2002 07...	1245	1028	9813	11800	40	11.0	7.0	270	9.6	93	27.2	6.0	30
JAN 2003 09...	1300	1028	9813	10200	40	16.1	7.5	232	4.5	80	21.5	6.4	30
MAR 12...	1330	1028	9813	22600	40	14.9	7.1	220	6.0	79	22.4	5.7	25
MAY 22...	1100	1028	9813	11200	40	10.0	8.4	220	16.0	83	23.0	6.2	31
JUL 08...	1025	1028	9813	10200	40	8.4	7.2	331	--	120	33.0	8.6	45
SEP 30...	1045	1028	9813	8300	40	10.4	6.7	210	16.5	73	20.3	5.4	31

Date	Fluor- ide, water, unfltrd mg/L (00951)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 105degC wat flt mg/L (00515)	Residue total at 105 deg. C, sus- pended, mg/L (00530)	Ammonia water, unfltrd mg/L as N (00610)	Nitrate water unfltrd mg/L as N (00620)	Nitrite water, unfltrd mg/L as N (00615)	Ortho- phos- phate, water, unfltrd mg/L as P (70507)	Phos- phorus, water, unfltrd mg/L (00665)	Total nitro- gen, water, unfltrd mg/L (00600)	Organic carbon, water, unfltrd mg/L (00680)	Alum- inum, water, unfltrd recover -able, µg/L (01105)	Copper, water, unfltrd recover -able, µg/L (01042)
NOV 2002 07...	<.2	77.3	180	10	.060	.56	<.040	.02	.017	.91	2.5	300	<10
JAN 2003 09...	<.2	56.9	170	8	.090	.79	<.040	.03	.018	.92	1.9	800	<10
MAR 12...	<.2	59.0	146	12	.030	.79	<.040	.02	.023	.98	1.4	900	<10
MAY 22...	<.2	60.0	168	22	<.020	.43	<.040	.03	.017	.60	1.9	700	<10
JUL 08...	<.2	94.6	244	38	<.020	.39	<.040	.03	.047	.70	1.9	1000	<10
SEP 30...	<.2	55.0	460	8	.040	.50	<.040	.02	.019	.48	2.6	500	<10

Date	Cyanide amen- able to chlor- ination wat unf mg/L (00722)	Iron, water, unfltrd recover -able, µg/L (01045)	Lead, water, unfltrd recover -able, µg/L (01051)	Mangan- ese, water, unfltrd recover -able, µg/L (01055)	Nickel, water, unfltrd recover -able, µg/L (01067)	Zinc, water, unfltrd recover -able, µg/L (01092)	Phen- olic com- pounds, water, unfltrd µg/L (32730)
NOV 2002 07...	<1.00	670	2.4	130	<50	10	<5
JAN 2003 09...	<1.00	970	1.2	160	<50	20	<5
MAR 12...	<1.00	1300	1.5	170	<50	30	<5
MAY 22...	<1.00	920	<1.0	140	<50	160	<5
JUL 08...	<1.00	2150	2.2	230	<50	40	<5
SEP 30...	<1.00	800	<1.0	110	<50	80	<5

03075070 MONONGAHELA RIVER AT ELIZABETH, PA--Continued

BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES

REMARKS.--Samples were collected using rapid bioassessment protocols for benthic macroinvertebrates using a D-Frame net with a mesh size of 500 µm. Samples represent counts per 100 (approximate) subsamples.

Date	10/1/02
Benthic Macroinvertebrate	Count
Mollusca	
Gastropoda (SNAILS)	
Basommatophora	
Hydrobiidae	
Amnicola sp	10
Planorbidae	
Planorbella sp	5
Annelida	
Oligochaeta (AQUATIC EARTHWORMS)	
Tubificida	
Naididae	1
Arthropoda	
Crustacea	
Cladocera	5
Insecta	
Ephemeroptera (MAYFLIES)	
Heptageniidae	
Stenacron sp	5
Tricorythidae	
Tricorythodes sp	1
Trichoptera (CADDISFLIES)	
Polycentropodidae	
Neureclipsis sp	2
Diptera (TRUE FLIES)	
Chironomidae (MIDGES)	12
Total Organisms	41

MONONGAHELA RIVER BASIN

03076500 YOUGHIOGHENY RIVER AT FRIENDSVILLE, MD

LOCATION.--Lat 39°39'13.0", long 79°24'29.9", Garrett County, Hydrologic Unit 05020006, on left bank 0.7 mi upstream from bridge on State Highway 42 at Friendsville, and 1.5 mi upstream from Bear Creek.

DRAINAGE AREA.--295 mi^2.

PERIOD OF RECORD.--August 1898 to December 1904 and October 1940 to current year. Annual maximum, water years 1905, 1923-3l, 1940, published in WSP 1675. October, November 1940 monthly discharge only, published in WSP 1305. September 1922 to September 1926 (gage heights only) in reports of Pennsylvania Department of Forests and Waters.

REVISED RECORDS.--WSP 1385: Drainage area at former site, 1898-1905, 1941(M), 1942, 1944-45, 1948-49, 1951(M).

GAGE.--Water-stage recorder. Datum of gage is 1,487.33 ft above National Geodetic Vertical Datum of 1929. 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.--Records good except those for estimated daily discharges (ice effect), which are fair. 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 data collection platform at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,690 ft^3/s, July 27, gage height, 5.56 ft; minimum discharge, 51 ft^3/s, Sept. 17-19.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	96	671	481	2,020	176	628	475	229	3,600	192	345	936
2	78	560	464	3,060	196	659	1,050	331	2,570	234	438	2,930
3	67	457	503	2,400	242	883	979	321	2,330	205	428	2,920
4	130	392	332	1,400	501	717	655	269	2,960	230	385	3,880
5	131	360	360	1,040	1,150	825	1,020	527	2,170	245	225	3,320
6	59	1,200	365	954	749	2,850	969	772	1,690	1,390	219	1,490
7	124	1,440	368	859	631	3,140	1,600	573	1,990	1,590	176	825
8	53	912	306	793	478	2,070	2,170	1,360	2,400	2,120	320	890
9	50	745	465	808	388	2,860	1,910	2,490	1,430	3,700	475	674
10	52	650	357	916	e360	2,780	2,190	4,700	1,310	5,920	1,470	488
11	166	703	334	760	e340	1,980	2,150	4,660	1,390	3,590	689	327
12	280	685	437	621	322	1,380	1,630	2,940	1,290	2,430	753	348
13	209	1,270	359	568	350	2,050	1,280	2,660	1,340	2,370	578	265
14	221	915	966	594	e260	4,210	1,120	2,130	1,560	1,760	655	269
15	128	940	822	493	e200	3,250	715	1,620	2,210	1,640	535	328
16	237	827	904	441	e180	3,370	587	1,530	2,060	1,380	283	525
17	563	1,210	664	393	e190	3,460	507	1,350	1,610	635	422	626
18	396	1,410	690	281	e200	3,710	533	808	1,810	481	528	717
19	271	1,240	710	176	e220	3,240	397	558	1,110	373	381	7,380
20	268	1,610	2,470	e160	e230	2,870	353	418	1,300	303	361	4,810
21	307	1,360	2,700	143	259	2,650	404	505	1,680	385	332	2,480
22	256	1,120	1,650	143	599	2,220	357	566	1,320	408	379	1,710
23	214	1,000	1,500	120	2,330	1,350	321	431	956	357	176	1,790
24	247	876	1,090	135	2,670	898	272	489	749	403	146	1,540
25	163	883	1,040	e115	1,990	732	310	405	591	444	270	1,450
26	201	631	968	100	1,190	629	242	553	443	178	263	1,330
27	259	607	770	e125	940	566	235	508	406	150	892	1,000
28	239	517	559	e160	690	478	271	524	278	335	2,200	1,670
29	292	451	614	167	---	428	197	587	239	1,200	959	1,300
30	1,270	412	593	217	---	442	197	534	275	405	840	1,220
31	916	---	709	323	---	437	---	949	---	430	1,340	---
TOTAL	7,943	26,054	24,550	20,485	18,031	57,762	25,096	36,297	45,067	35,483	17,463	49,438
MEAN	256	868	792	661	644	1,863	837	1,171	1,502	1,145	563	1,648
MAX	1,270	1,610	2,700	3,060	2,670	4,210	2,190	4,700	3,600	5,920	2,200	7,380
MIN	50	360	306	100	176	428	197	229	239	150	146	265
(†)	4.88	-47.1	-29.3	0	12.6	164	80.7	30.9	-20.2	-35.8	-60.2	-37.0
MEAN‡	261	821	763	670	671	2,027	918	1,202	1,482	1,109	503	1,611
CFSM‡	0.88	2.78	2.59	2.27	2.27	6.87	3.11	4.07	5.02	3.76	1.71	5.46
IN.‡	1.02	3.10	2.99	2.62	2.36	7.92	3.47	4.69	5.60	4.34	1.97	6.09

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1898 - 1905, 1941 - 2003, BY WATER YEAR (WY)

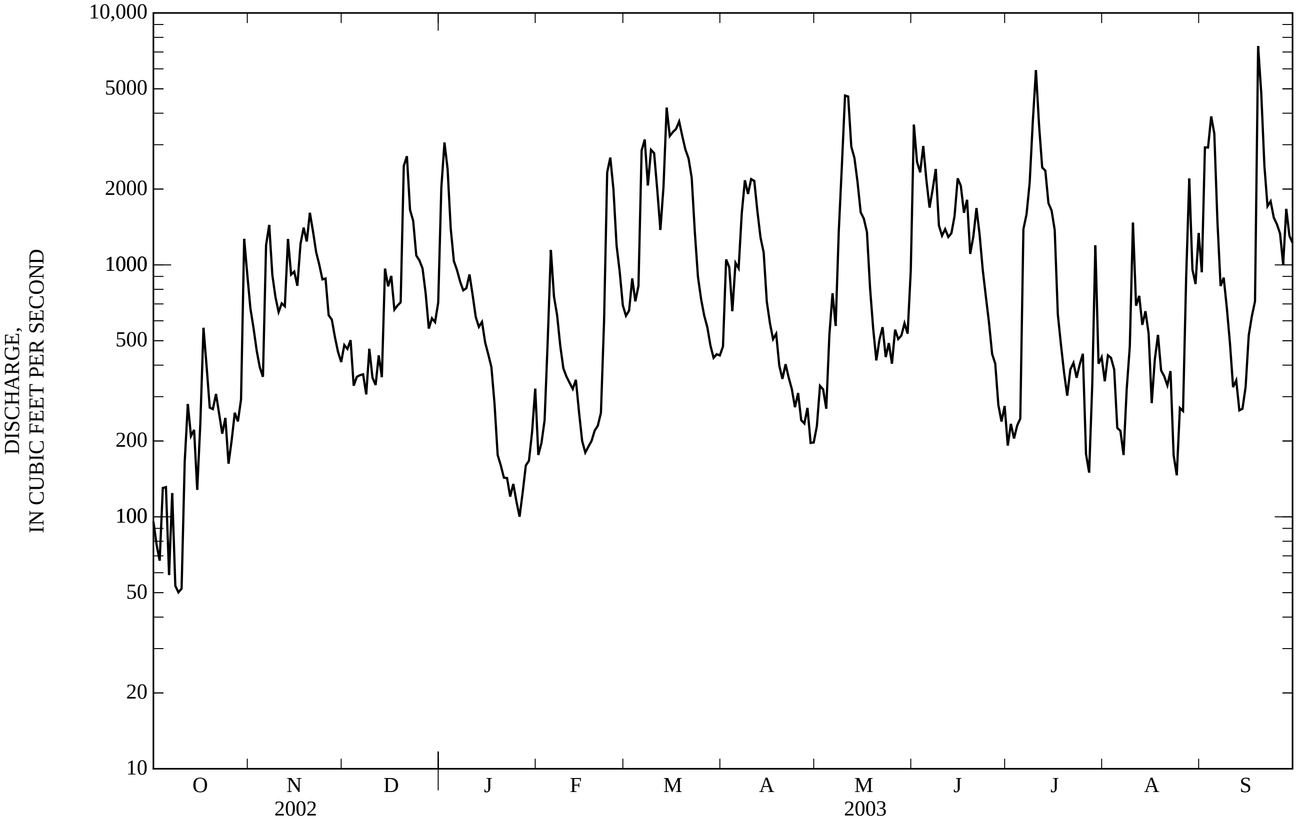
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	274	495	831	864	987	1,219	940	700	494	381	298	255
MAX	1,103	2,190	2,147	1,886	2,277	2,644	2,231	1,888	1,823	1,335	1,319	1,648
(WY)	(1955)	(1986)	(1903)	(1996)	(1903)	(1963)	(1901)	(1996)	(1903)	(1990)	(1956)	(2003)
MIN	50.2	55.7	145	140	337	285	327	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 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1898 - 1905, 1941 - 2003	
ANNUAL TOTAL	213,586		363,669			
ANNUAL MEAN	585		996		642	
ANNUAL MEAN‡	587		1,002		645	
HIGHEST ANNUAL MEAN					1,052	1903
LOWEST ANNUAL MEAN					375	1954
HIGHEST DAILY MEAN	3,480	Mar 21	7,380	Sep 19	11,200	Jan 19, 1996
LOWEST DAILY MEAN	50	Oct 9	50	Oct 9	8.2	Sep 11, 1966
ANNUAL SEVEN-DAY MINIMUM	75	Sep 5	86	Oct 4	29	Sep 21, 1972
MAXIMUM PEAK FLOW			9,490	Sep 19	(a)16,100	Jan 19, 1996
MAXIMUM PEAK STAGE			7.20	Sep 19	(b)14.20	Mar 29, 1924
INSTANTANEOUS LOW FLOW			48	Oct 10	UNKNOWN	
ANNUAL RUNOFF (CFSM)	1.98		3.38		2.18	
ANNUAL RUNOFF (CFSM)‡	1.99		3.47		2.19	
ANNUAL RUNOFF (INCHES)	26.93		45.86		29.56	
ANNUAL RUNOFF (INCHES)‡	27.02		46.11		29.70	
10 PERCENT EXCEEDS	1,360		2,400		1,430	
50 PERCENT EXCEEDS	360		614		405	
90 PERCENT EXCEEDS	117		199		104	

‡ Adjusted for change in reservoir contents since October 1940.
a From rating curve extended above 5,800 ft^3/s on basis of slope-area measurement of peak flow.
b From floodmarks.



DAILY MEAN DISCHARGE - 2003 WATER YEAR

MONONGAHELA RIVER BASIN

03078000 CASSELMAN RIVER AT GRANTSVILLE, MD

LOCATION.--Lat 39°42'07.9", long 79°08'11.0", Garrett County, Hydrologic Unit 05020006, on left bank at downstream side of highway bridge, 0.3 mi upstream from Slaubaugh Run, 0.7 mi downstream from U.S. Highway 40, and 1.0 mi northeast of Grantsville.

DRAINAGE AREA.--62.5 mi^2.

PERIOD OF RECORD.--July 1947 to current year.

REVISED RECORDS.--WSP 1143: 1948.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 2,088.97 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily discharges (ice effect), which are fair. U.S. Army Corps of Engineers satellite data collection platform at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan 1	1945	1,510	4.09	May 10	1500	1,310	3.79
Mar 13	2300	1,150	3.54	May 31	2300	1,120	3.46
Mar 16	2300	1,150	3.54	Jun 3	2145	1,240	3.65
Mar 17	2245	1,150	3.54	Jun 7	1430	1,170	3.53
Mar 20	1930	1,060	3.40	Aug 28	0015	1,340	3.81
May 9	1645	1,060	3.40	Sep 19	0745	*3,670	*6.64

Minimum discharge, 6.4 ft^3/s, Oct. 8-10.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	145	e87	886	e51	e180	200	62	904	43	22	70
2	9.0	137	e80	867	e51	e180	301	51	400	39	21	200
3	8.2	92	73	450	e80	e180	189	45	637	37	28	136
4	7.9	76	e72	313	e300	e200	152	58	753	32	50	117
5	7.8	91	e74	239	e250	e300	388	130	412	33	27	111
6	7.4	394	e76	201	e210	e880	276	146	285	117	20	78
7	7.0	239	e71	173	e170	e780	452	99	747	119	20	60
8	6.6	150	e67	163	e140	e600	395	311	531	190	22	50
9	6.5	113	e64	175	e120	e840	475	694	338	185	24	45
10	7.9	98	e61	181	e100	e640	406	990	246	173	23	42
11	56	116	e60	140	e86	e420	456	619	191	277	38	36
12	78	214	e62	123	e74	e400	393	416	168	143	79	30
13	35	246	90	110	e64	e660	280	748	314	160	34	33
14	22	145	168	112	e55	860	221	389	239	95	23	40
15	18	112	103	106	e50	693	181	300	245	87	18	38
16	170	100	e86	e98	e48	864	154	281	184	70	16	52
17	120	261	e82	e90	e50	989	138	232	257	58	23	32
18	62	218	e79	e82	e53	981	120	224	338	49	17	88
19	42	187	78	e76	e56	854	111	191	212	48	15	2,110
20	41	222	561	e70	e59	803	102	152	298	40	13	623
21	37	159	367	e66	e120	722	107	154	294	33	12	317
22	28	137	237	e63	e280	570	105	134	224	30	11	256
23	24	119	225	e59	e660	408	90	120	162	30	10	468
24	20	108	163	e56	e450	314	76	163	127	31	9.8	243
25	21	117	147	e52	e300	258	70	125	103	26	9.1	198
26	78	108	127	e50	e200	225	71	138	89	21	8.8	183
27	61	99	e115	e49	e190	189	66	114	77	19	245	321
28	43	86	e100	e48	e180	153	56	149	68	19	505	524
29	152	81	95	e50	---	141	53	134	57	37	90	264
30	279	89	84	e54	---	142	52	107	49	23	94	189
31	147	---	163	e52	---	134	---	382	---	18	75	---
TOTAL	1,613.3	4,459	3,917	5,254	4,447	15,560	6,136	7,858	8,949	2,282	1,602.7	6,954
MEAN	52.0	149	126	169	159	502	205	253	298	73.6	51.7	232
MAX	279	394	561	886	660	989	475	990	904	277	505	2,110
MIN	6.5	76	60	48	48	134	52	45	49	18	8.8	30
CFSM	0.83	2.38	2.02	2.71	2.54	8.03	3.27	4.06	4.77	1.18	0.83	3.71
IN.	0.96	2.65	2.33	3.13	2.65	9.26	3.65	4.68	5.33	1.36	0.95	4.14

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1947 - 2003, BY WATER YEAR (WY)

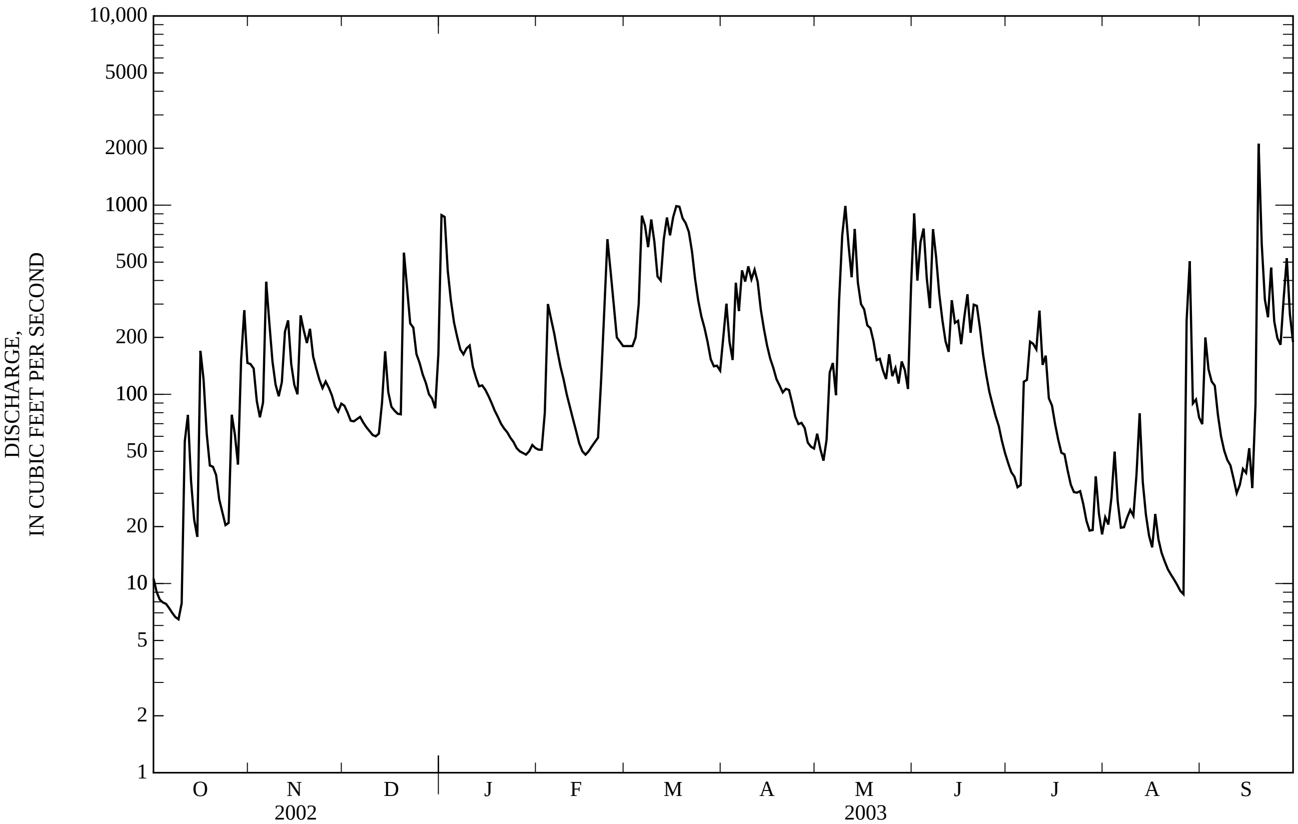
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	44.8	87.1	144	161	196	265	211	139	78.9	49.1	38.4	36.9
MAX	288	449	341	376	414	582	468	312	298	175	202	290
(WY)	(1955)	(1986)	(1973)	(1996)	(1956)	(1963)	(1970)	(1996)	(2003)	(1996)	(1956)	(1996)
MIN	1.65	3.38	13.8	26.4	60.3	57.0	77.1	40.1	10.0	4.30	2.87	1.58
(WY)	(1954)	(1954)	(1999)	(1977)	(1964)	(1990)	(1968)	(1976)	(1965)	(1965)	(1991)	(1991)

MONONGAHELA RIVER BASIN

03078000 CASSELMAN RIVER AT GRANTSVILLE, MD--Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1947 - 2003	
ANNUAL TOTAL	40,897.9		69,032.0			
ANNUAL MEAN	112		189		121	
HIGHEST ANNUAL MEAN					203	1996
LOWEST ANNUAL MEAN					64.2	1954
HIGHEST DAILY MEAN	992	Mar 20	2,110	Sep 19	(e)3,600	Jan 19, 1996
LOWEST DAILY MEAN	3.5	Sep 13	6.5	Oct 9	(a)0.00	Aug 31, 1962
ANNUAL SEVEN-DAY MINIMUM	3.8	Sep 9	7.3	Oct 4	0.89	Aug 27, 1962
MAXIMUM PEAK FLOW			3,670	Sep 19	(b)8,400	Oct 15, 1954
MAXIMUM PEAK STAGE			6.64	Sep 19	10.70	Oct 15, 1954
INSTANTANEOUS LOW FLOW			6.4	(c)	(a)0.00	(d)
ANNUAL RUNOFF (CFSM)	1.79		3.03		1.93	
ANNUAL RUNOFF (INCHES)	24.34		41.09		26.21	
10 PERCENT EXCEEDS	250		451		281	
50 PERCENT EXCEEDS	80		112		67	
90 PERCENT EXCEEDS	7.1		23		8.2	

a Result of regulation from unknown source.
b From rating curve extended above 1,600 ft^3/s on basis of contracted-opening measurement at gage height of 8.13 ft.
c Oct. 8-10.
d Aug. 31, Sept. 1, 1962.
e Estimated.



DAILY MEAN DISCHARGE - 2003 WATER YEAR

YOUGHIOGHENY 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 mi^2.

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 National Geodetic Vertical Datum of 1929. Prior to Nov. 19, 1940, nonrecording gage at same site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Slight diversion upstream of 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 telemetry at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a base discharge of 8,000 ft^3/s and maximum (*****):

Date	Time	Discharge ft^3/s	Gage Height (ft)	Date	Time	Discharge ft^3/s	Gage Height (ft)
Jan. 1	2300	10,500	7.51	June 4	0100	*11,000	*7.64
May 10	1800	9,440	7.15	Sept. 19	1400	10,300	7.44

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	120	638	e350	4640	e246	829	789	299	3430	226	166	243
2	100	598	e301	6210	e244	848	1300	292	1860	209	144	1020
3	89	464	e264	2720	e265	768	990	265	3370	205	181	1570
4	110	387	e232	1870	e390	697	831	261	6540	196	183	948
5	103	349	e243	1400	e780	1020	1980	358	2790	196	182	716
6	86	1340	e243	1180	e560	3670	1640	660	1780	194	138	489
7	70	1160	e249	1010	e380	3090	1800	470	3320	329	121	367
8	56	830	e256	917	e300	2040	2150	1780	3060	797	163	298
9	52	634	e261	962	e290	4240	2230	3470	2040	1130	282	252
10	49	533	e260	1070	e280	2760	2120	6400	1430	713	280	215
11	115	572	e260	819	e270	1740	2070	4290	1150	1500	172	194
12	345	639	e265	661	e260	1530	2010	2310	947	714	209	173
13	235	1150	e363	572	e250	2630	1490	3630	1180	556	204	164
14	161	787	694	e502	e240	4430	1200	2210	1010	428	138	171
15	126	620	652	e438	e230	3630	1020	1600	898	330	111	172
16	372	534	585	e360	e220	4230	874	1660	761	287	94	169
17	712	1030	504	e341	e240	4720	773	1390	663	234	90	166
18	390	1140	494	e295	e230	4430	675	1360	1180	205	128	137
19	270	901	452	e254	e250	3720	605	1230	802	198	88	6600
20	216	1040	2780	e246	e270	3630	553	1030	804	192	73	3310
21	190	816	2520	e237	e300	3850	532	1200	1260	170	63	1380
22	171	718	1450	e239	e395	2840	556	1010	983	161	59	959
23	150	631	1300	e238	e1450	2040	488	1250	754	166	59	1900
24	133	549	1000	e238	2580	1570	415	1260	602	178	55	1200
25	124	546	890	e235	1620	1290	384	1020	485	163	47	923
26	356	501	766	e264	1170	1140	369	1250	405	139	152	907
27	363	482	643	e237	1050	1000	366	1020	357	122	313	777
28	257	434	579	e237	904	833	323	935	320	114	911	2280
29	295	399	551	e243	---	755	304	919	281	113	377	1300
30	1350	e376	485	e247	---	750	299	755	251	120	246	947
31	842	---	649	e250	---	722	---	903	---	110	286	---
TOTAL	8008	20798	20541	29132	15664	71442	31136	46487	44713	10395	5715	29947
MEAN	258	693	663	940	559	2305	1038	1500	1490	335	184	998
MAX	1350	1340	2780	6210	2580	4720	2230	6400	6540	1500	911	6600
MIN	49	349	232	235	220	697	299	261	251	110	47	137
CFSM	0.68	1.81	1.73	2.46	1.46	6.03	2.72	3.93	3.90	0.88	0.48	2.61
IN.	0.78	2.03	2.00	2.84	1.53	6.96	3.03	4.53	4.35	1.01	0.56	2.92

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1921 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	272	464	751	854	1042	1483	1159	801	455	260	219	203
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	55.3	133	153	307	316	126	60.6	35.6	24.5	19.9
(WY)	1954	1954	1999	1925	1934	1990	1921	1926	1965	1965	1957	1943

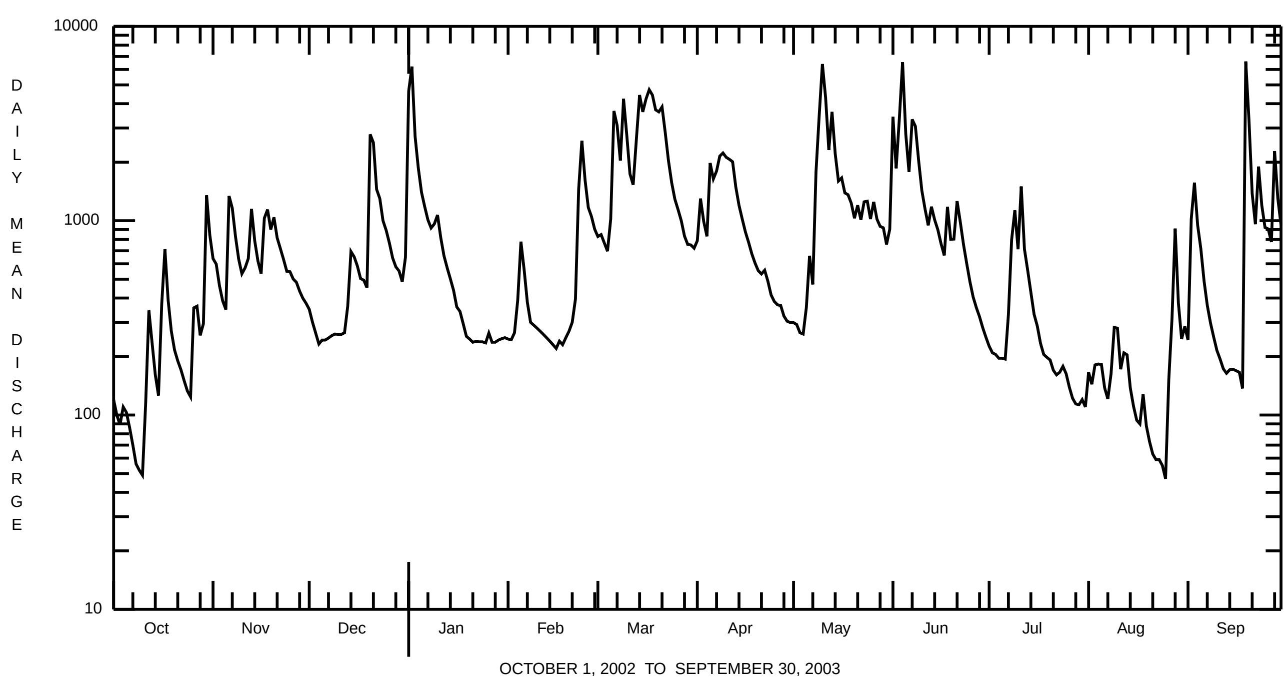
e Estimated.

YOUGHIOGHENY RIVER BASIN

03079000 CASSELMAN RIVER AT MARKLETON, PA--Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1921 - 2003	
ANNUAL TOTAL	200106		333978			
ANNUAL MEAN	548		915		662	
HIGHEST ANNUAL MEAN					1151	1996
LOWEST ANNUAL MEAN					336	1954
HIGHEST DAILY MEAN	5270	Mar 20	6600	Sep 19	**e**25000	Jan 19 1996
LOWEST DAILY MEAN	23	Sep 13	47	Aug 25	11	Jul 23 1936**a**
ANNUAL SEVEN-DAY MINIMUM	25	Sep 9	63	Aug 19	12	Sep 4 1957
MAXIMUM PEAK FLOW			11000	Jun 4	**b**50000	Oct 15 1954
MAXIMUM PEAK STAGE			7.64	Jun 4	14.06	Oct 15 1954
INSTANTANEOUS LOW FLOW			45	Aug 25	10	Sep 9 1957
ANNUAL RUNOFF (CFSM)	1.44		2.40		1.73	
ANNUAL RUNOFF (INCHES)	19.49		32.52		23.54	
10 PERCENT EXCEEDS	1250		2170		1540	
50 PERCENT EXCEEDS	350		534		340	
90 PERCENT EXCEEDS	54		148		56	

a Also Sept. 7-9, 1957.
b Estimated on basis of summation of peak flows at nearby stations.
e Estimated.



YOUGHIOGHENY RIVER BASIN

03080000 LAUREL HILL CREEK AT URSINA, PA

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 mi^2.

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 National Geodetic Vertical Datum of 1929. Prior to July 18, 1939, nonrecording gage at bridge 0.5 mi downstream at datum 6.20 ft lower.

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

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a base discharge of 3,000 ft^3/s and maximum (*****):

Date	Time	Discharge ft^3/s	Gage Height (ft)	Date	Time	Discharge ft^3/s	Gage Height (ft)
May 10	1500	3,310	4.77	June 3	2200	*3,870	*5.23

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28	230	e144	1510	e74	291	229	100	1660	66	86	94
2	20	208	e131	2080	e75	277	334	84	1070	59	82	358
3	18	167	e126	1230	e75	264	287	76	1490	54	75	413
4	17	144	e117	830	e220	254	269	103	2520	47	210	263
5	25	135	e117	566	e400	291	698	195	1280	53	104	215
6	24	579	e117	437	e233	828	682	327	723	47	72	151
7	20	602	e109	361	e184	795	846	241	976	90	69	118
8	18	396	e103	314	e147	635	970	1130	906	353	98	94
9	15	301	e104	307	e130	1140	868	1860	667	668	386	80
10	14	255	e100	340	e125	988	706	2390	471	330	256	70
11	26	270	e100	298	e125	632	588	1980	368	494	165	61
12	73	266	e137	262	e120	485	506	1090	312	301	169	52
13	71	291	231	222	e120	651	394	1490	441	227	117	50
14	49	247	535	e175	e123	1150	324	1010	319	163	81	49
15	38	213	329	e148	e120	1220	281	673	277	129	67	51
16	76	194	296	e108	e120	1590	249	514	224	115	58	62
17	174	500	254	e101	e125	1970	221	387	206	106	53	46
18	120	561	218	e95	e135	2000	191	370	346	80	47	43
19	91	437	196	e102	e130	1690	168	312	267	76	39	784
20	87	547	748	e98	e130	1480	151	256	253	65	34	639
21	78	416	946	e96	e120	1420	148	389	367	57	31	332
22	64	359	602	e96	e150	1240	146	339	312	52	28	263
23	54	314	510	e93	e800	904	131	654	238	58	29	611
24	48	262	388	e93	986	645	112	811	192	66	35	384
25	44	e236	345	e89	670	495	101	592	156	70	27	333
26	131	e221	284	e93	507	415	98	555	131	53	26	341
27	166	e209	232	e92	404	344	93	435	114	41	125	302
28	108	e194	235	e88	321	285	82	362	99	38	196	569
29	110	e181	189	e83	---	260	80	309	84	37	91	412
30	354	e160	170	e75	---	250	79	253	74	32	72	314
31	297	---	208	e75	---	228	---	294	---	29	90	---
TOTAL	2458	9095	8321	10557	6869	25117	10032	19581	16543	4056	3018	7554
MEAN	79.3	303	268	341	245	810	334	632	551	131	97.4	252
MAX	354	602	946	2080	986	2000	970	2390	2520	668	386	784
MIN	14	135	100	75	74	228	79	76	74	29	26	43
CFSM	0.66	2.51	2.22	2.81	2.03	6.70	2.76	5.22	4.56	1.08	0.80	2.08
IN.	0.76	2.80	2.56	3.25	2.11	7.72	3.08	6.02	5.09	1.25	0.93	2.32

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1919 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	114	219	326	349	403	556	443	319	188	104	97.6	82.5
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	25.8	57.0	89.3	155	114	52.0	21.2	9.20	8.90	5.73
(WY)	1931	1931	1999	1925	1934	1990	1921	1926	1999	1966	1983	1959

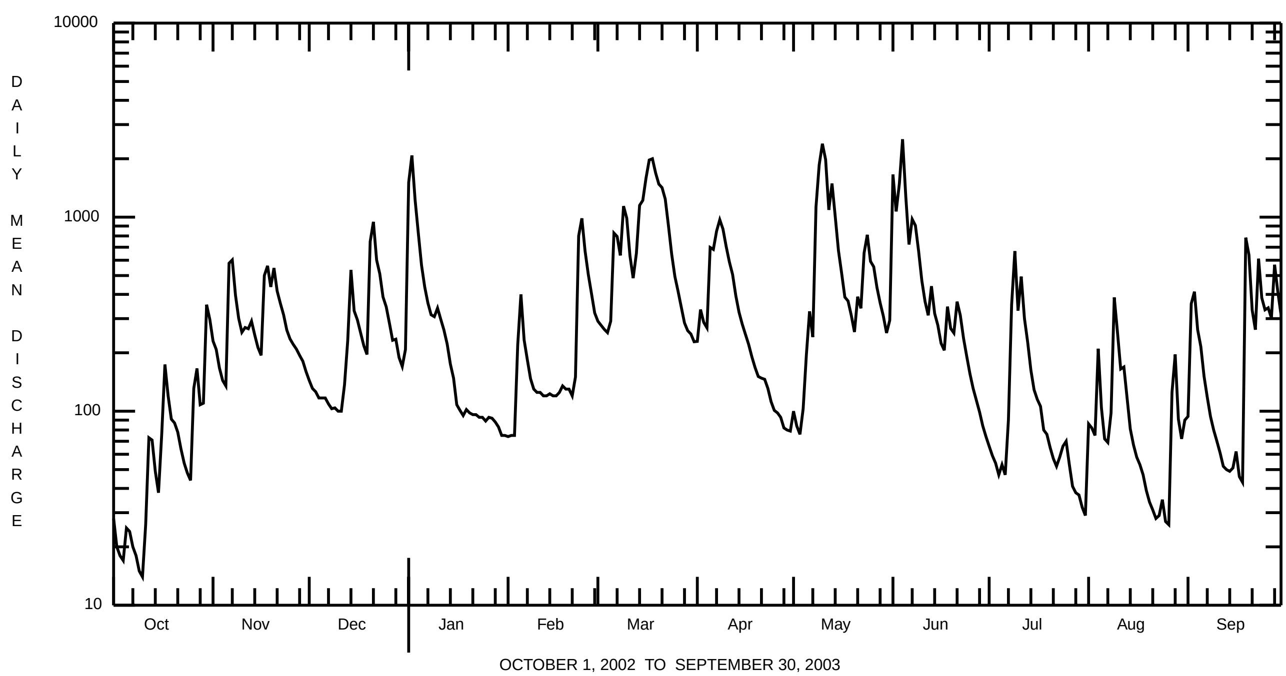
e Estimated.

YOUGHIOGHENY RIVER BASIN

03080000 LAUREL HILL CREEK AT URSINA, PA--Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1919 - 2003	
ANNUAL TOTAL	89947.2		123201			
ANNUAL MEAN	246		338		266	
HIGHEST ANNUAL MEAN					395	1996
LOWEST ANNUAL MEAN					164	1931
HIGHEST DAILY MEAN	2390	Mar 20	2520	Jun 4	6980	Mar 17 1936
LOWEST DAILY MEAN	2.7	Sep 13	14	Oct 10	2.3	Sep 3 1999
ANNUAL SEVEN-DAY MINIMUM	3.4	Sep 9	19	Oct 4	3.4	Sep 5 1957
MAXIMUM PEAK FLOW			3870	Jun 3	**a**10900	Oct 15 1954
MAXIMUM PEAK STAGE			5.23	Jun 3	10.63	Oct 15 1954
INSTANTANEOUS LOW FLOW			14	Oct 9,10	2.2	Sep 26 1932**b**
ANNUAL RUNOFF (CFSM)	2.04		2.79		2.20	
ANNUAL RUNOFF (INCHES)	27.65		37.88		29.88	
10 PERCENT EXCEEDS	590		818		637	
50 PERCENT EXCEEDS	160		208		147	
90 PERCENT EXCEEDS	11		52		20	

a From rating curve extended above 6,100 ft^3/s on basis of slope-area measurement of peak flow.
b Also Sept. 4, 1999.



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 mi^2.

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 National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Flow regulated since January 1925 by Deep Creek Reservoir (station 03076000) 28 mi upstream and since December 1942 by Youghiogheny River Lake (03077000) 1.7 mi upstream. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemetry 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 ft^3/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	679	1290	2270	6280	1010	2000	1500	775	6920	823	1190	1390
2	667	1220	2120	10200	1010	1870	2330	738	6310	786	1260	2680
3	730	1060	2070	6140	1000	1750	1940	694	7370	870	1250	3670
4	808	938	1340	5660	1410	1520	1970	707	12800	1060	1470	2350
5	821	892	1320	5190	2000	1760	3730	877	8710	1040	1310	2020
6	773	2260	1940	4220	1420	5460	4260	2380	7880	1040	1260	1910
7	740	2430	1880	3320	1270	5440	4760	2450	8290	1200	1230	1860
8	722	1790	1940	2720	1080	3820	5900	4260	7930	2170	1320	1970
9	714	1410	1320	2560	1000	6740	5920	7670	7670	3890	1910	2080
10	712	1240	536	2670	1020	5820	5660	10900	7030	3420	1430	2020
11	761	1270	1460	2450	960	4620	5360	8710	5780	5670	1190	1960
12	1030	1310	1950	2300	924	4150	5310	5810	4990	5860	1220	1780
13	936	1970	2010	2160	827	5340	4560	9650	4630	5520	1050	1480
14	791	1560	2280	2270	848	8300	4590	8950	3330	5280	894	1610
15	768	1290	1880	2300	901	7790	4680	7830	2470	3810	1080	1900
16	896	1160	1900	2050	800	9460	4440	7600	2990	2600	1230	1910
17	1430	1900	2030	2170	669	11500	3470	7150	3200	2280	1320	1900
18	907	2330	2170	2010	838	11700	2180	6990	4730	1620	1260	1690
19	841	1860	2140	2010	899	9640	1760	6280	4410	1270	1230	8640
20	826	2080	4550	2020	908	7470	1670	4290	3080	1240	1260	7530
21	839	2010	5040	1670	895	9250	1500	2970	3280	1200	1280	6100
22	845	1970	3720	1340	1460	9240	1330	2420	3050	1170	1270	5760
23	811	1830	3090	1320	4970	8280	1180	2900	2820	1190	1260	7460
24	785	1630	2170	1300	4770	7490	1020	2840	2350	1230	1260	6760
25	808	1620	2170	1310	3250	5550	912	2240	1710	1220	1240	5060
26	1050	1760	2190	1310	2670	3440	893	2530	1360	1180	1240	3740
27	1220	2180	2000	1270	2580	3150	880	2160	1150	1150	1660	3470
28	1020	2230	1890	1240	2320	2570	824	1900	991	995	1830	5670
29	996	2150	1840	1140	---	2200	770	1860	930	980	1160	4480
30	2230	2220	1730	1030	---	2090	740	1720	868	1040	1210	3770
31	1670	---	1570	1020	---	1710	---	1820	---	1040	1380	---
TOTAL	28826	50860	66516	84650	43709	171120	86039	130071	139029	63844	40154	104620
MEAN	930	1695	2146	2731	1561	5520	2868	4196	4634	2059	1295	3487
MAX	2230	2430	5040	10200	4970	11700	5920	10900	12800	5860	1910	8640
MIN	667	892	536	1020	669	1520	740	694	868	786	894	1390
(†)	-276	+479	-33	-185	+526	+950	+97	+110	-70	-257	-321	+196

† 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 Reliant Energy. 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

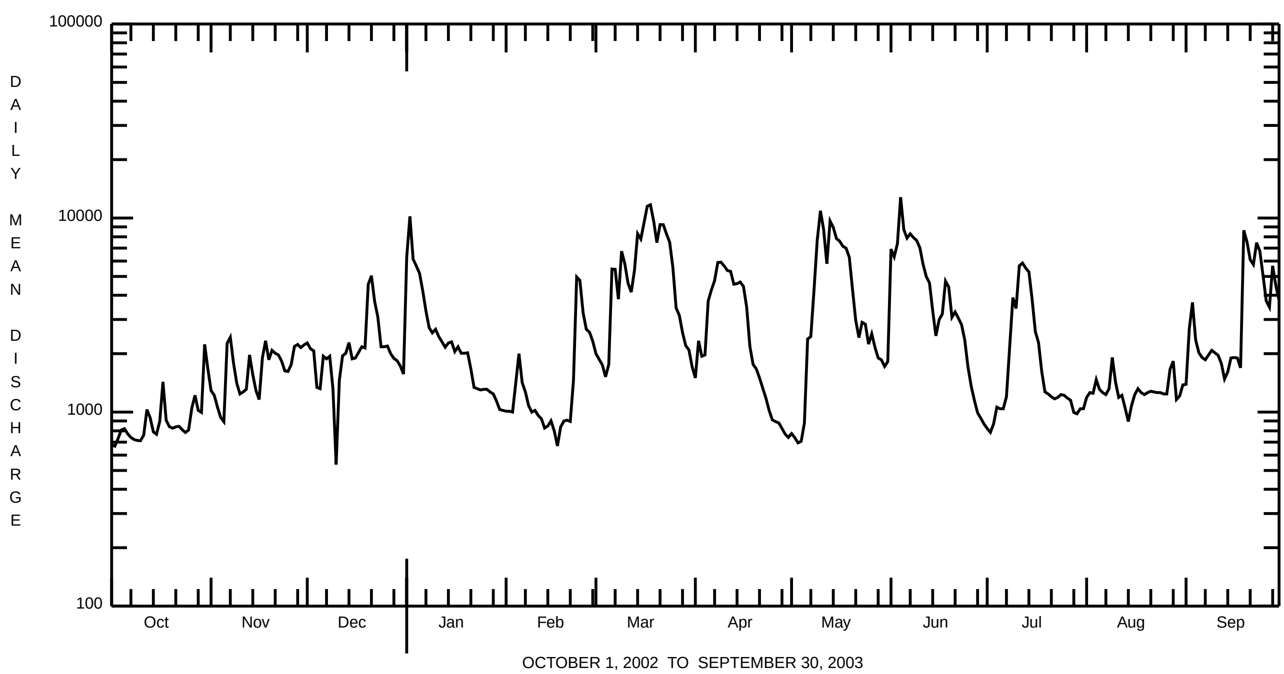
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 2003, BY WATER YEAR (WY) (SINCE REGULATION)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1168	1514	2295	2450	2833	3623	3065	2379	1557	1117	1078	1118
MAX	4699	5065	6171	5441	5204	7868	6984	5052	4634	2950	3565	3882
(WY)	1980	1986	1973	1974	1956	1963	1993	1996	2003	1985	1956	1971
MIN	287	433	246	496	903	778	1157	602	491	384	290	214
(WY)	1948	1954	1999	1981	1954	1990	1963	1982	1965	1942	1944	1946

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1941 - 2003	
ANNUAL TOTAL	614717		1009438			
ANNUAL MEAN	1684	† +78	2766	† +97	2013	
HIGHEST ANNUAL MEAN					2910	1996
LOWEST ANNUAL MEAN					1074	1954
HIGHEST DAILY MEAN	8620	Mar 21	12800	Jun 4	34600	Oct 16 1954
LOWEST DAILY MEAN	471	Sep 5	536	Dec 10	121	Sep 27 1943
ANNUAL SEVEN-DAY MINIMUM	551	Mar 9	745	Oct 1	175	Sep 16 1946
MAXIMUM PEAK FLOW			17100	Jun 4	**a**69500	Oct 15 1954
MAXIMUM PEAK STAGE			9.90	Jun 4	19.92	Oct 15 1954
10 PERCENT EXCEEDS	3880		6290		4470	
50 PERCENT EXCEEDS	1010		1900		1260	
90 PERCENT EXCEEDS	639		869		612	

† 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 Reliant Energy. Records of contents in Youghiogheny River Lake furnished by U.S. Army Corps of Engineers.

a From rating curve extended above 25,000 ft^3/s on basis of slope-area measurement of peak flow.



YOUGHIOGHENY RIVER BASIN

03081500 YOUGHIOGHENY RIVER AT OHIOPYLE, PA

LOCATION.--Lat 39°51'57", long 79°29'41", Fayette County, Hydrologic Unit 05020006, on left bank 900 ft downstream from Pa. Rt. 381 highway bridge at Ohiopyle and 1,100 ft upstream from mouth of Meadow Run.

DRAINAGE AREA.--1,062 mi^2.

PERIOD OF RECORD.--October 2002 to current year. (discontinued) Monthly discharge only, November 1927 to October 1950, published in WSP 1305.

GAGE.--Water-stage recorder. Datum of gage is 1,164.67 ft above National Geodetic Vertical Datum of 1929 (Pennsylvania Department of Conservation and Natural Resources benchmark). From Nov. 1927 to Oct. 1950 at site 1,400 ft upstream at datum then in use.

REMARKS.--No estimated daily discharges. Records good. Flow regulated since January 1925 by Deep Creek Reservoir (station 03076000), and since December 1942 by Youghiogheny River Lake (station 03077000), and by several smaller reservoirs above station. The flood of Mar. 18, 1936 reached a stage of 13.3 ft, discharge 82,100 ft^3/s, datum then in use. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	759	1470	2360	5750	1100	2240	1580	906	7140	899	1150	1420
2	751	1370	2210	10800	1120	2050	2400	892	6800	865	1270	2760
3	790	1220	2160	6570	1110	1960	2100	849	7310	880	1230	3740
4	893	1090	1600	5980	1480	1720	2050	875	13400	1080	1440	2650
5	918	1030	1250	5530	2270	1910	3630	1020	8900	1070	1310	2060
6	888	2190	2030	4500	1650	5480	4470	2370	8100	1060	1250	1940
7	857	2690	1980	3530	1460	6080	4800	2840	8320	1170	1220	1870
8	844	1990	2020	2850	1230	4140	6270	4480	8270	2010	1280	1920
9	837	1600	1590	2670	1160	6880	6140	8160	7930	3880	1840	2110
10	836	1400	685	2780	1180	6360	5950	11400	7330	3530	1580	2030
11	887	1400	1330	2570	1140	5010	5580	9790	6180	5590	1190	1960
12	1100	1440	2030	2440	1080	4390	5600	6370	5290	6060	1310	1820
13	1110	1980	2100	2280	959	5460	4820	9820	5040	5630	1110	1440
14	936	1680	2550	2360	995	8570	4760	9460	3710	5380	956	1530
15	921	1400	2100	2420	1020	8060	4860	8190	2670	4080	1050	1890
16	979	1260	2020	2230	1000	9590	4630	7970	3070	2610	1230	1900
17	1600	1870	2160	2260	873	11700	3750	7480	3370	2330	1320	1870
18	1090	2530	2280	2120	1090	12000	2430	7310	4760	1690	1250	1730
19	981	1990	2290	2100	1130	10100	1910	6700	4800	1260	1250	7820
20	977	2250	4450	2090	1040	7600	1810	4830	3280	1220	1250	8010
21	974	2130	5610	1820	1020	9350	1670	3240	3410	1190	1280	6240
22	1000	2110	3910	1430	1550	9330	1500	2690	3200	1170	1260	5910
23	969	1960	3360	1460	5430	8450	1310	3090	3010	1190	1250	7410
24	940	1750	2360	1440	5400	7670	1170	3180	2540	1230	1260	6940
25	960	1730	2290	1410	3640	5980	1050	2570	1830	1210	1240	5420
26	1140	1810	2320	1390	2870	3660	1030	2760	1370	1170	1230	3870
27	1400	2250	2130	1370	2820	3300	1000	2470	1210	1140	1630	3500
28	1170	2330	1990	1350	2550	2780	965	2170	1050	1060	1840	5700
29	1110	2240	1940	1280	---	2320	907	2100	993	998	1260	4690
30	2280	2290	1830	1110	---	2180	859	1920	937	1050	1200	3840
31	1890	---	1690	1110	---	1860	---	1960	---	1060	1380	---
TOTAL	32787	54450	70625	89000	49367	178180	91001	139862	145220	64762	40316	105990
MEAN	1058	1815	2278	2871	1763	5748	3033	4512	4841	2089	1301	3533
MAX	2280	2690	5610	10800	5430	12000	6270	11400	13400	6060	1840	8010
MIN	751	1030	685	1110	873	1720	859	849	937	865	956	1420
(†)	-276	+479	-33	-185	+526	+950	+97	+110	-70	-257	-321	+196

† 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 Reliant Energy. Records of contents in Youghiogheny River Lake furnished by U.S. Army Corps of Engineers.

YOUGHIOGHENY RIVER BASIN

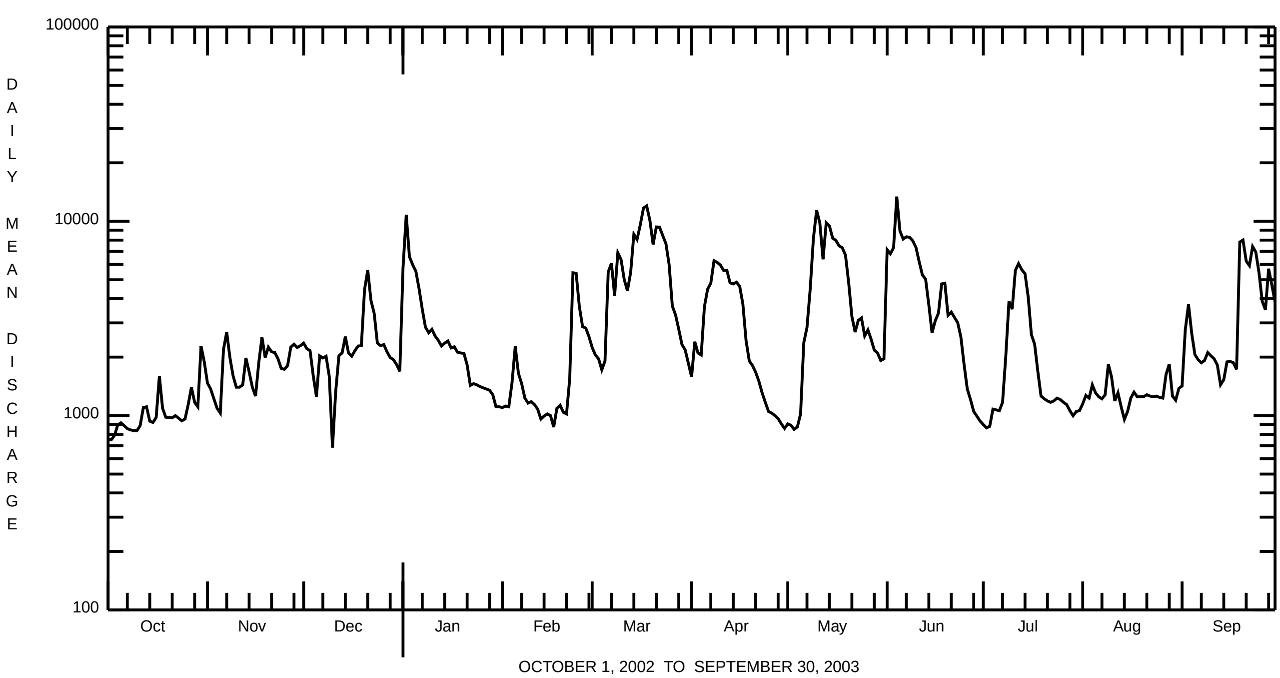
03081500 YOUGHIOGHENY RIVER AT OHIOPYLE, PA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEAR 2003, BY WATER YEAR (WY)

MEAN	1058	1815	2278	2871	1763	5748	3033	4512	4841	2089	1301	3533
MAX	1058	1815	2278	2871	1763	5748	3033	4512	4841	2089	1301	3533
(WY)	2003	2003	2003	2003	2003	2003	2003	2003	2003	2003	2003	2003
MIN	1058	1815	2278	2871	1763	5748	3033	4512	4841	2089	1301	3533
(WY)	2003	2003	2003	2003	2003	2003	2003	2003	2003	2003	2003	2003

SUMMARY STATISTICS	FOR 2003 WATER YEAR	
ANNUAL TOTAL	1061560	
ANNUAL MEAN	2908 †	+97
HIGHEST ANNUAL MEAN		
LOWEST ANNUAL MEAN		
HIGHEST DAILY MEAN	13400	Jun 4
LOWEST DAILY MEAN	685	Dec 10
ANNUAL SEVEN-DAY MINIMUM	837	Oct 1
MAXIMUM PEAK FLOW	17500	Jun 4
MAXIMUM PEAK STAGE	11.37	Jun 4
10 PERCENT EXCEEDS	6740	
50 PERCENT EXCEEDS	1980	
90 PERCENT EXCEEDS	994	

† 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 Reliant Energy. Records of contents in Youghiogheny River Lake furnished by U.S. Army Corps of Engineers.



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 Connellsville, 1.2 mi upstream from Mounts Creek, at mile 44.0.

DRAINAGE AREA.--1,326 mi^2.

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 National Geodetic Vertical Datum of 1929. 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.--Records good except those for estimated daily discharges, which are poor. Flow regulated since January 1925 by Deep Creek Reservoir (station 03076000), since December 1942 by Youghiogheny River Lake (station 03077000) 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 telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	697	1580	2630	6780	1270	2820	2000	1020	9350	945	1290	1590
2	690	1410	2480	14800	1240	2600	2890	984	7880	894	1420	3260
3	689	1270	2400	8410	1230	2530	2720	918	8950	854	1470	4000
4	875	1100	2040	7090	2290	2270	2530	1060	18700	1110	2000	3430
5	881	1020	1130	6310	3310	2590	3850	1340	11100	1150	1540	2380
6	835	1950	2130	5290	2450	6420	5350	2580	9230	1140	1400	2230
7	765	3160	2110	4260	2060	7650	5490	3440	9590	1190	1350	2080
8	747	2320	2150	3430	1710	5430	7480	5520	9780	2000	1670	2000
9	723	1830	1980	e2980	1480	8510	6930	11300	8600	4260	2070	2230
10	728	1540	885	e2990	1480	7950	6580	16300	7720	3850	2450	2130
11	795	1570	1030	e2850	1400	5960	6030	13800	6510	5280	1350	2060
12	994	1670	2230	e2710	1280	5120	6020	7630	5380	6100	1570	1980
13	1160	2090	2350	e2560	1160	5990	5220	11000	5180	5580	1400	1520
14	857	2000	3710	e2620	1190	10200	4880	10700	4150	5280	1130	1500
15	841	1630	3030	e2560	1260	9570	5070	8840	2890	4430	1060	1980
16	911	1410	2700	e2420	1020	11300	4790	8200	3070	2800	1330	2070
17	1640	2010	2670	e2450	803	14000	4230	7620	3490	2580	1400	1970
18	1210	3230	2670	e2360	1100	14200	2860	7300	4400	2010	1340	1920
19	948	2550	2680	e2280	1250	11900	2210	6720	4970	1380	1300	7540
20	964	2880	5230	e2290	1300	8140	2100	5180	3580	1320	1270	9310
21	907	2550	7220	e2080	1280	10100	2000	3630	3410	1270	1320	6320
22	939	2520	4800	1580	2290	10100	1810	3060	3370	1260	1300	5910
23	896	2350	4250	1620	8750	8980	1550	3390	3180	1290	1300	7620
24	847	2080	3020	1570	7580	7910	1380	3980	2740	1390	1280	7160
25	832	2040	2810	1630	4990	6490	1200	3280	2120	1440	1260	5850
26	975	2000	2800	1610	3780	4080	1160	3210	1560	1290	1260	4250
27	1420	2420	2540	1540	3550	3650	1150	2970	1410	1230	1730	3790
28	1180	2570	2360	1480	3150	3180	1070	2540	1160	1160	2170	5880
29	1070	2460	2280	1540	---	2680	1030	2460	1080	993	1570	5170
30	2150	2510	2170	1330	---	2630	965	2210	998	1090	1270	4220
31	2140	---	2210	1290	---	2370	---	2340	---	1110	1530	---
TOTAL	31306	61720	84695	104710	65653	207320	102545	164522	165548	67676	45800	113350
MEAN	1010	2057	2732	3378	2345	6688	3418	5307	5518	2183	1477	3778
MAX	2150	3230	7220	14800	8750	14200	7480	16300	18700	6100	2450	9310
MIN	689	1020	885	1290	803	2270	965	918	998	854	1060	1500
(†)	-276	+479	-33	-185	+526	+950	+97	+110	-70	-257	-321	+196

† 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 Reliant Energy. Records of contents in Youghiogheny River Lake furnished by U.S. Army Corps of Engineers.

e Estimated.

YOUGHIOGHENY RIVER BASIN

03082500 YOUGHIOGHENY RIVER AT CONNELLSVILLE, PA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1925 - 2003, BY WATER YEAR (WY) (SINCE REGULATION)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1408	1908	2925	3261	3800	4883	4143	3125	1933	1333	1274	1223
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	295	465	630	1189	1321	662	504	279	155	146
(WY)	1931	1931	1999	1925	1934	1990	1925	1926	1925	1930	1930	1925

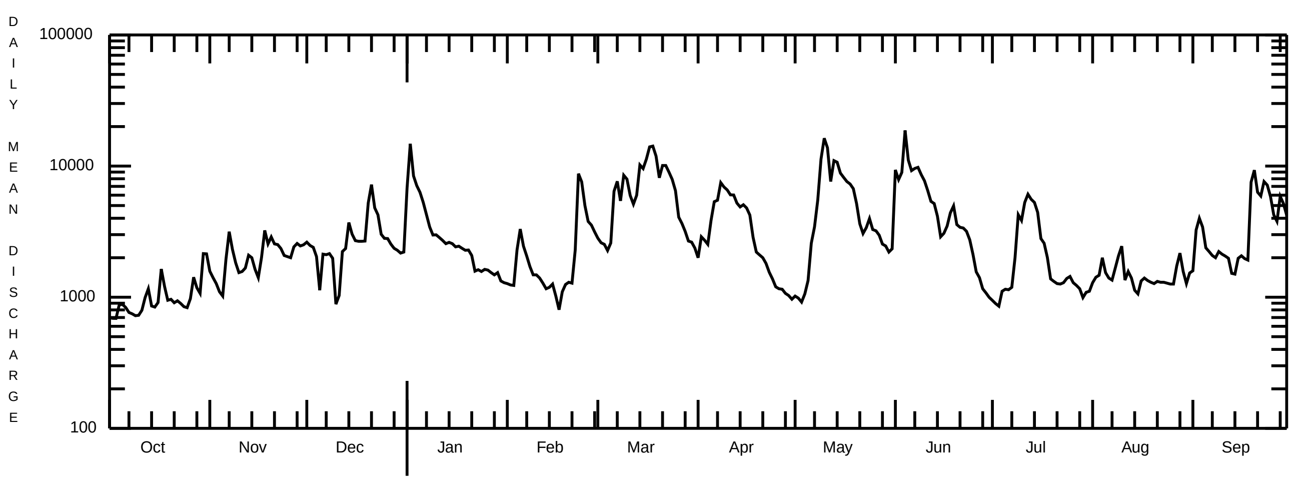
SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR			FOR 2003 WATER YEAR			WATER YEARS 1925 - 2003	
ANNUAL TOTAL	786366			1214845				
ANNUAL MEAN	2154	†	+78	3328	†	+97	2595	
HIGHEST ANNUAL MEAN							3944	1996
LOWEST ANNUAL MEAN							1223	1925
HIGHEST DAILY MEAN	13900		Mar 21	18700		Jun 4	58100	Mar 18 1936
LOWEST DAILY MEAN	362		Sep 5	689		Oct 3	39	Nov 16 1930
ANNUAL SEVEN-DAY MINIMUM	554		Sep 5	776		Oct 1	62	Nov 14 1930
MAXIMUM PEAK FLOW				23600		Jun 4	**a**103000	Oct 16 1954
MAXIMUM PEAK STAGE				11.16		Jun 4	21.96	Oct 16 1954
INSTANTANEOUS LOW FLOW				689		Oct 3		
10 PERCENT EXCEEDS	5080			7620			5800	
50 PERCENT EXCEEDS	1390			2280			1610	
90 PERCENT EXCEEDS	711			1030			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
MAXIMUM PEAK FLOW	**b**65900	Mar 29 1924
MAXIMUM PEAK STAGE	**c**20.5	Mar 29 1924
INSTANTANEOUS LOW FLOW	11	Sep 23 1908**d**
ANNUAL RUNOFF (CFSM)	1.98	
ANNUAL RUNOFF (INCHES)	26.84	
10 PERCENT EXCEEDS	6200	
50 PERCENT EXCEEDS	1370	
90 PERCENT EXCEEDS	195	

† 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 Reliant Energy. Records of contents in Youghiogheny River Lake furnished by U.S. Army Corps of Engineers.
a From rating curve extended above 55,000 ft^3/s.
b Estimated from hydrograph.
c From graph based on gage readings.
d Also Sept. 26, 27, 1908 and Oct. 18, 1910.



OCTOBER 1, 2002 TO SEPTEMBER 30, 2003

YOUGHIOGHENY RIVER BASIN

03083500 YOUGHIOGHENY RIVER AT SUTERSVILLE, PA
(Pennsylvania Water-Quality Network 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 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1920 to current year. Monthly discharge for 1926, 1930, part of 1931, 1937, 1938, and part of 1939, 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 National Geodetic Vertical Datum of 1929. Prior to June 1, 1939, nonrecording gage at site 500 ft downstream at same datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow regulated since January 1925 by Deep Creek Reservoir (station 03076000), since December 1942 by Youghiogheny River Lake (station 03077000) 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 telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	887	2090	2980	e6050	e1680	e3420	2650	1170	8240	1120	1880	1920
2	828	1730	2850	e15600	e1680	e3160	3050	1210	9790	1060	1860	2890
3	807	1620	2710	e10600	e1700	e3160	3490	1120	9720	1010	1770	3950
4	897	1430	2490	e7960	e2510	e3100	3040	1140	e22400	1070	2660	4680
5	1020	1300	1770	e6790	e3680	e3160	3920	1410	15100	1420	2200	2840
6	994	1510	2020	e5890	e3020	6680	6440	2140	11600	1300	1860	2600
7	931	3630	2440	e4950	e2610	9960	6390	3770	11000	1340	1690	2330
8	871	2950	2390	e4260	e2220	7260	9220	5190	12200	2060	1910	2170
9	856	2330	2370	e3740	e1930	8460	8340	12300	9990	4340	2140	2350
10	846	1970	1620	e3420	e1890	10100	7830	17400	9150	4760	2990	2330
11	879	2000	1020	e3140	e1780	7390	7390	17700	7890	6570	1960	2220
12	1000	2130	2310	e2960	e1700	6140	7260	10200	6510	7220	1750	2150
13	1310	2170	2880	e2900	e1630	6210	6420	10700	6300	6330	1760	1880
14	1190	2570	5740	e2880	e1500	10200	5560	12200	5170	5880	1480	1630
15	975	2090	5200	e2880	e1440	10500	5860	10200	3730	5620	1210	1870
16	1250	1820	4000	e2830	e1240	11200	5520	9230	3280	3600	1350	2320
17	1690	2550	3570	e2820	e1070	12900	5180	8700	3970	3140	1500	2170
18	1950	4080	3330	e2760	e1240	13600	3720	8240	4850	2580	1560	2080
19	1350	3430	3270	e2720	e1390	12700	2800	7880	5960	1950	1450	4090
20	1250	3450	4790	e2500	e1430	9340	2550	6670	4450	1600	1390	12100
21	1160	3180	9290	e2250	e1530	10000	2500	4760	3790	1510	1400	7190
22	1120	3040	6130	e2040	e2410	10700	2300	4140	3800	1590	1420	6670
23	1100	2880	5370	e2020	e10200	9920	2020	3780	3630	1650	1410	7650
24	1060	2570	3860	e1970	e8790	8740	1790	4760	3240	1700	1390	8390
25	1010	2410	e3110	e1990	e6750	7860	1580	4330	2660	1980	1370	6970
26	1080	2380	e2920	e1990	e4600	5210	1460	3740	1970	1720	1350	4960
27	1410	2620	e2820	e1960	e4040	4170	1420	e3590	1720	1530	1550	4240
28	1520	2900	e2540	e1920	e3660	3930	1350	e3200	1470	1460	2480	5460
29	1320	2810	e2470	e1890	---	3300	1280	2810	1290	1270	2070	6220
30	1750	2820	e2410	e1800	---	3260	1220	2580	1190	1210	1680	4780
31	2840	---	e2430	e1720	---	3120	---	2490	---	1250	1780	---
TOTAL	37151	74460	103100	119200	79320	228850	123550	188750	196060	80840	54270	123100
MEAN	1198	2482	3326	3845	2833	7382	4118	6089	6535	2608	1751	4103
MAX	2840	4080	9290	15600	10200	13600	9220	17700	22400	7220	2990	12100
MIN	807	1300	1020	1720	1070	3100	1220	1120	1190	1010	1210	1630
(†)	-276	+479	-33	-185	+526	+950	+97	+110	-70	-257	-321	+196

† 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 Reliant Energy. Records of contents in Youghiogheny River Lake furnished by U.S. Army Corps of Engineers.

e Estimated.

YOUGHIOGHENY RIVER BASIN

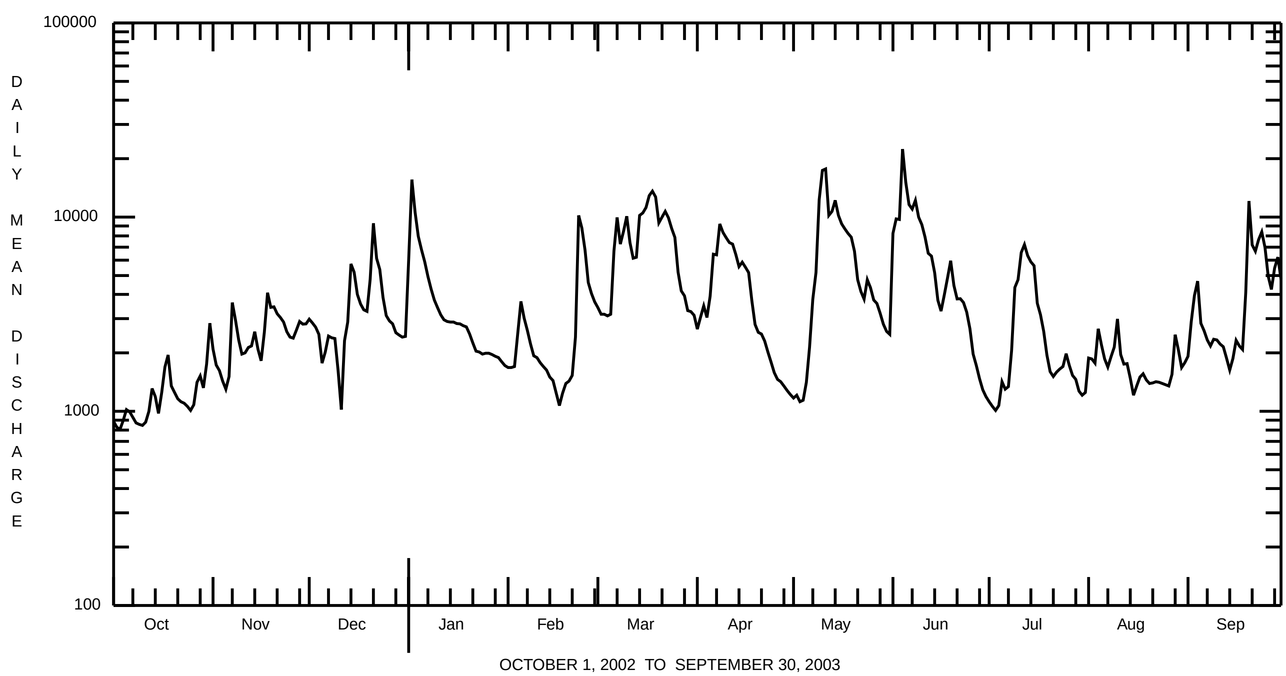
03083500 YOUGHIOGHENY RIVER AT SUTERSVILLE, PA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1921 - 2003, BY WATER YEAR (WY) (SINCE REGULATION)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1501	2103	3548	3935	4548	5907	4924	3702	2325	1571	1461	1389
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	412	611	716	1539	1637	1012	585	614	309	185
(WY)	1924	1923	1999	1925	1934	1990	1921	1982	1925	1942	1922	1922

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1921 - 2003	
ANNUAL TOTAL	964510		1408651			
ANNUAL MEAN	2642	† +78	3859	† +97	3072	
HIGHEST ANNUAL MEAN					4537	1996
LOWEST ANNUAL MEAN					1496	1925
HIGHEST DAILY MEAN	18100	Mar 21	**e**22400	Jun 4	79000	Mar 18 1936
LOWEST DAILY MEAN	493	Sep 6	807	Oct 3	57	Sep 30 1922
ANNUAL SEVEN-DAY MINIMUM	660	Sep 6	907	Oct 2	64	Sep 24 1922
MAXIMUM PEAK FLOW			27600	Jun 4	**a**108000	Oct 16 1954
MAXIMUM PEAK STAGE			15.39	Jun 4	**b**32.50	Oct 16 1954
INSTANTANEOUS LOW FLOW					**c**57	Sep 29 1922
10 PERCENT EXCEEDS	6150		8760		6810	
50 PERCENT EXCEEDS	1690		2620		1920	
90 PERCENT EXCEEDS	847		1250		700	

† 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 Reliant Energy. Records of contents in Youghiogheny River Lake furnished by U.S. Army Corps of Engineers.
a From rating curve extended above 100,000 ft^3/s.
b From floodmark.
c Minimum observed.
e Estimated.



03083500 YOUGHIOGHENY RIVER AT SUTERSVILLE, PA--Continued
(Pennsylvania Water-Quality Network Station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 2002 to current year.

REMARKS.--Other data for the Water-Quality Network can be found on pages 242-289.

COOPERATION.--Samples were collected as part of the Pennsylvania Department of Environmental Protection Water-Quality Network (WQN) with cooperation from the Pennsylvania Department of Environmental Protection.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Agency collecting sample, code (00027)	Agency analyzing sample, code (00028)	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf µS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water unfltrd recoverable, mg/L (00916)	Magnesium, water, unfltrd recoverable, mg/L (00927)	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (00417)
NOV 2002 07...	1115	1028	9813	4000	40	10.0	7.1	245	7.2	86	23.8	6.4	24
JAN 2003 09...	1030	1028	9813	4280	40	15.6	7.6	277	2.1	81	22.1	6.3	26
MAR 12...	1100	1028	9813	6200	40	13.2	7.1	224	2.1	70	19.1	5.5	21
MAY 28...	1115	1028	9813	3010	40	9.8	7.7	264	15.0	81	22.4	6.2	29
JUL 08...	1240	1028	9813	2640	40	8.0	7.4	510	--	180	49.3	14.2	56
SEP 09...	0955	1028	9813	2450	40	8.6	7.2	210	21.0	67	18.8	4.9	27

Date	Fluoride, water, unfltrd mg/L (00951)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 105degC wat flt mg/L (00515)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia water, unfltrd mg/L as N (00610)	Nitrate water unfltrd mg/L as N (00620)	Nitrite water, unfltrd mg/L as N (00615)	Orthophosphate, water, unfltrd mg/L as P (70507)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, unfltrd mg/L (00600)	Organic carbon, water, unfltrd mg/L (00680)	Aluminum, water, unfltrd recoverable, µg/L (01105)	Copper, water, unfltrd recoverable, µg/L (01042)
NOV 2002 07...	<.2	49.7	118	90	<.020	.94	<.040	.02	.098	1.8	2.9	1900	<10
JAN 2003 09...	<.2	50.2	218	<2	<.020	1.37	<.040	<.01	.017	1.5	1.7	400	<10
MAR 12...	<.2	42.5	160	6	<.020	1.32	<.040	.01	.018	1.5	1.5	400	<10
MAY 28...	<.2	60.2	176	14	<.020	.74	<.040	.02	.020	.97	2.0	400	<10
JUL 08...	<.2	115	456	324	.080	1.39	<.200	.02	.736	2.7	3.7	6700	20
SEP 09...	<.2	45.2	168	24	<.020	.68	<.040	.02	.022	.94	2.4	400	<10

Date	Cyanide amenable to chlorination wat unf mg/L (00722)	Iron, water, unfltrd recoverable, µg/L (01045)	Lead, water, unfltrd recoverable, µg/L (01051)	Manganese, water, unfltrd recoverable, µg/L (01055)	Nickel, water, unfltrd recoverable, µg/L (01067)	Zinc, water, unfltrd recoverable, µg/L (01092)	Phenolic compounds, water, unfltrd µg/L (32730)
NOV 2002 07...	<1.00	5240	4.3	1130	<50	60	<5
JAN 2003 09...	<1.00	680	<1.0	140	<50	10	<5
MAR 12...	<1.00	600	<1.0	180	<50	20	<5
MAY 28...	<1.00	690	<1.0	90	<50	<10	<5
JUL 08...	<1.00	26800	19.9	1410	<50	140	<5
SEP 09...	<1.00	900	<1.0	130	<50	80	<5

YOUGHIOGHENY RIVER BASIN

03083500 YOUGHIOGHENY RIVER AT SUTERSVILLE, PA--Continued

BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES

REMARKS.--Samples were collected using rapid bioassessment protocols for benthic macroinvertebrates using a D-Frame net with a mesh size of 500 µm. Samples represent counts per 100 (approximate) subsamples.

Date	9/19/02
Benthic Macroinvertebrate	Count
Mollusca	
Gastropoda (SNAILS)	
Basommatophora	
Ancylidae	
Ferrissia sp	1
Bivalvia (CLAMS)	
Veneroida	
Corbiculidae	
Corbicula fluminea	43
Arthropoda	
Insecta	
Ephemeroptera (MAYFLIES)	
Baetidae	8
Acentrella sp	1
Caenidae	
Caenis sp	1
Heptageniidae	
Stenonema sp	27
Isonychiidae	
Isonychia sp	1
Tricorythidae	
Tricorythodes sp	28
Trichoptera (CADDISFLIES)	
Glossosomatidae	7
Hydropsychidae	
Cheumatopsyche sp	16
Hydropsyche sp	10
Macrostemum sp	5
Hydroptilidae	
Hydroptila sp	1
Polycentropodidae	2
Coleoptera (BEETLES)	
Elmidae (RIFFLE BEETLES)	
Stenelmis sp	2
Diptera (TRUE FLIES)	
Chironomidae (MIDGES)	7
Total Organisms	160

MONONGAHELA RIVER BASIN

03085000 MONONGAHELA RIVER AT BRADDOCK, PA
(Pennsylvania Water-Quality Network 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 mi^2.

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 National Geodetic Vertical Datum of 1929 (U.S. Army Corps of Engineers benchmark). 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 fair. Flow regulated by locks and hydroelectric plants, since January 1925 by Deep Creek Reservoir (station 03076000), since 1926 by Lake Lynn, since May 1938 by Tygart Lake (station 03055500), since December 1942 by Youghiogheny River Lake (station 03077000), and since April 1989 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 telemetry at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 18, 1936 reached a stage of 38.8 ft from floodmarks, discharge, 210,000 ft^3/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4290	13300	10600	18800	6300	26200	8200	5370	22000	4650	9460	9670
2	2940	11100	11100	49000	7860	22900	10400	5530	40300	3570	7400	21800
3	2200	9950	9930	41200	8700	27300	13000	5960	34700	3520	5920	30100
4	2340	8090	10600	42500	14700	30700	12700	6570	65700	4520	7420	33300
5	3660	7740	7380	36100	27900	28200	14000	10200	50700	4870	7180	39200
6	2310	8830	7370	28700	21500	50300	16000	16500	39800	4530	5490	29300
7	2030	13900	7230	26300	20200	60800	17600	19700	35200	4990	5210	17400
8	2520	15900	4880	20500	18200	47400	29600	20700	47000	19500	6330	12500
9	2470	12100	6000	16000	14600	46300	33000	35500	38200	38400	5870	11200
10	2470	11500	6510	16300	9940	52900	31500	66100	30600	36900	9910	9010
11	2620	10900	4800	14100	9200	40700	32500	67500	24100	43500	9860	7950
12	3710	9550	5530	13400	8640	33300	31500	53400	19000	34600	8900	6200
13	3580	14100	11600	11800	7440	29900	28400	41800	14200	22900	10400	4420
14	4960	12800	27600	11700	6590	38900	23400	43500	16600	17900	9990	4820
15	3920	11400	36800	11000	5940	45200	22100	38900	22400	13300	8670	4630
16	6330	11400	24800	8730	6080	39800	17500	34100	23600	10900	7020	6100
17	8700	13000	21400	5560	6480	40500	15300	27600	21000	9280	6480	5900
18	10900	22300	17800	6510	6690	39900	11000	22000	25100	7210	7130	6600
19	9280	19400	16500	3990	8500	33200	8210	18900	25300	8220	10600	14900
20	7360	20500	17200	4870	9960	27600	6430	19200	23500	6450	10400	42900
21	7020	20600	36500	4940	9350	24700	6940	17500	28300	6060	6710	28500
22	7270	17200	27900	5660	14300	26400	7640	15600	27100	5320	4680	24200
23	6750	13300	20400	6160	64100	23800	7720	14500	20600	4930	3500	24800
24	5150	12200	20200	6740	90400	17600	8420	20500	16200	6080	4320	25800
25	6010	10200	17100	5400	46700	15900	7820	20900	10900	5520	3860	20400
26	4630	9890	22300	3710	36800	16100	8050	18100	8490	4900	3370	16800
27	4060	11300	19000	4880	37400	12200	6080	12700	7470	4450	5270	13000
28	6290	9470	15300	4710	31800	9770	7100	11800	5930	3050	16700	12300
29	5710	9410	13400	4950	---	8270	4870	8840	5100	7100	10000	16600
30	8780	9590	12900	5220	---	5580	5720	8230	4670	8220	8970	14800
31	13800	---	13600	5660	---	8570	---	9570	---	6460	10500	---
TOTAL	164060	380920	484230	445090	556270	930890	452700	717270	753760	361800	237520	515100
MEAN	5292	12700	15620	14360	19870	30030	15090	23140	25130	11670	7662	17170
MAX	13800	22300	36800	49000	90400	60800	33000	67500	65700	43500	16700	42900
MIN	2030	7740	4800	3710	5940	5580	4870	5370	4670	3050	3370	4420
CFSM	0.72	1.73	2.13	1.96	2.71	4.09	2.06	3.15	3.42	1.59	1.04	2.34
IN.	0.83	1.93	2.46	2.26	2.82	4.72	2.30	3.64	3.82	1.83	1.20	2.61

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 2003, BY WATER YEAR (WY)

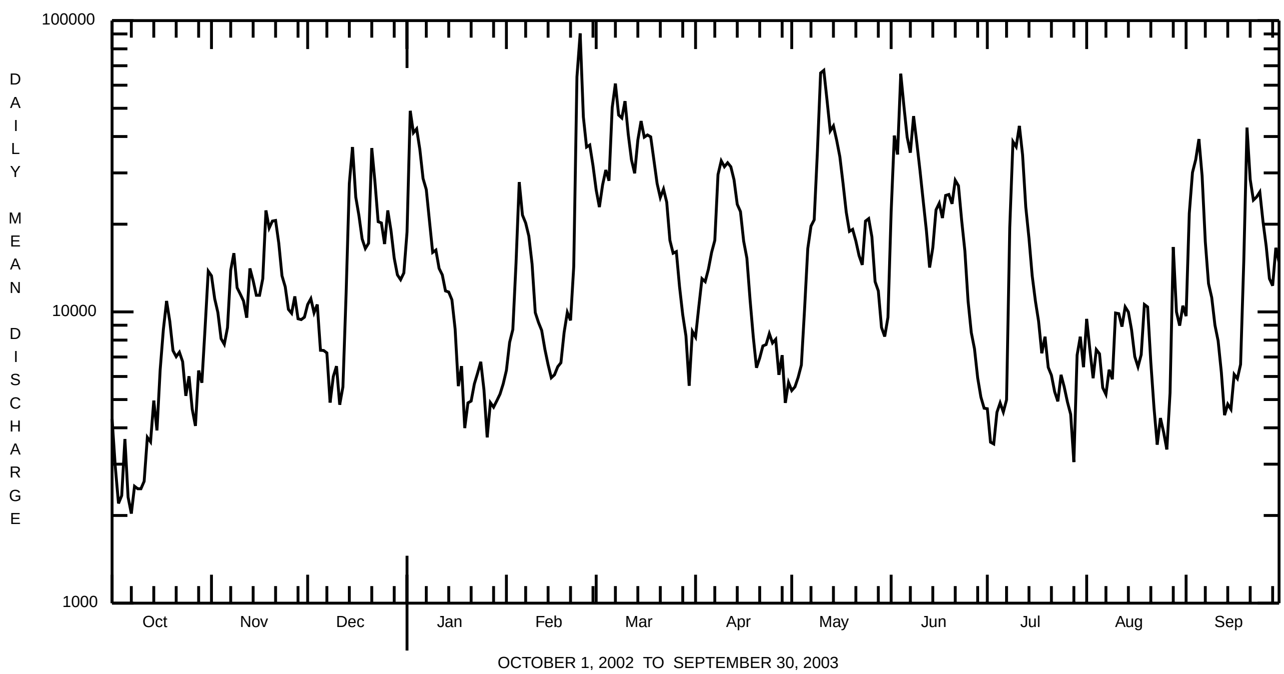
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	5295	9240	15310	17040	20690	23980	18800	14370	9442	6403	5836	4812
MAX	23130	42130	37600	36150	43120	54500	39180	40310	30240	15620	23720	18290
(WY)	1980	1986	1973	1952	1956	1963	1940	1996	1981	1958	1956	1971
MIN	1200	971	2748	3389	6387	8042	6473	3352	2107	1765	1531	1005
(WY)	1954	1954	1954	1977	1954	1969	1971	1982	1965	1966	1957	1946

MONONGAHELA RIVER BASIN

03085000 MONONGAHELA RIVER AT BRADDOCK, PA--Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1939 - 2003	
ANNUAL TOTAL	4284470		5999610			
ANNUAL MEAN	11740		16440		12550	
HIGHEST ANNUAL MEAN					18440	1996
LOWEST ANNUAL MEAN					6946	1954
HIGHEST DAILY MEAN	**a**94600	Mar 21	90400	Feb 24	188000	Jan 20 1996
LOWEST DAILY MEAN	1640	Sep 10	2030	Oct 7	703	Sep 3 1946**b**
ANNUAL SEVEN-DAY MINIMUM	1840	Sep 7	2500	Oct 3	839	Nov 17 1953
MAXIMUM PEAK FLOW			108000	Feb 24	**c**210000	Jan 20 1996
MAXIMUM PEAK STAGE			20.39	Feb 24	**d**29.07	Jan 20 1996
ANNUAL RUNOFF (CFSM)	1.60		2.24		1.71	
ANNUAL RUNOFF (INCHES)	21.72		30.42		23.25	
10 PERCENT EXCEEDS	27900		36800		29300	
50 PERCENT EXCEEDS	7900		11200		7700	
90 PERCENT EXCEEDS	2280		4850		2270	

a Based on river summation.
b Also Sept. 4, 22, 1946.
c From rating curve extended above 183,000 ft^3/s.
d Maximum gage height, 31.39 ft, June 24, 1972 (backwater from Allegheny River). Datum then in use.



03085000 MONONGAHELA RIVER AT BRADDOCK, PA--Continued
(Pennsylvania Water-Quality Network Station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 2002 to current year.

REMARKS.--Other data for the Water-Quality Network can be found on pages 242-289.

COOPERATION.--Samples were collected as part of the Pennsylvania Department of Environmental Protection Water-Quality Network (WQN) with cooperation from the Pennsylvania Department of Environmental Protection.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Agency collecting sample, code (00027)	Agency analyzing sample, code (00028)	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf µS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water unfltrd recover -able, mg/L (00916)	Magnesium, water, unfltrd recover -able, mg/L (00927)	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (00417)
NOV 2002													
04...	0930	1028	9813	7860	40	10.7	7.8	290	9.8	95	27.5	6.3	32
MAY 2003													
28...	1410	1028	9813	11800	40	9.6	7.8	306	17.0	100	30.4	7.0	43
JUL													
08...	1425	1028	9813	20000	40	8.4	7.5	365	--	130	36.1	9.8	47
SEP													
09...	1320	1028	9813	11500	40	8.4	7.2	208	23.0	70	20.4	4.6	34

Date	Fluoride, water, unfltrd mg/L (00951)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 105degC wat flt mg/L (00515)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia water, unfltrd mg/L as N (00610)	Nitrate water unfltrd mg/L as N (00620)	Nitrite water, unfltrd mg/L as N (00615)	Orthophosphate, water, unfltrd mg/L as P (70507)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, unfltrd mg/L (00600)	Organic carbon, water, unfltrd mg/L (00680)	Aluminum, water, unfltrd recover -able, µg/L (01105)	Copper, water, unfltrd recover -able, µg/L (01042)
NOV 2002													
04...	<.2	72.1	214	14	.080	.90	<.040	.02	.027	1.3	2.8	400	<10
MAY 2003													
28...	<.2	75.8	196	<2	.050	.60	<.040	.05	.029	.83	2.1	1000	<10
JUL													
08...	.3	91.6	272	38	.040	.68	<.040	.05	.069	1.2	2.2	1500	<10
SEP													
09...	<.2	46.7	154	26	.040	.62	<.040	.05	.032	.72	2.5	800	<10

Date	Cyanide amenable to chlorination wat unf mg/L (00722)	Iron, water, unfltrd recover -able, µg/L (01045)	Lead, water, unfltrd recover -able, µg/L (01051)	Manganese, water, unfltrd recover -able, µg/L (01055)	Nickel, water, unfltrd recover -able, µg/L (01067)	Zinc, water, unfltrd recover -able, µg/L (01092)	Phenolic compounds, water, unfltrd µg/L (32730)
NOV 2002							
04...	<1.00	820	1.2	110	<50	<10	<5
MAY 2003							
28...	<1.00	1140	1.2	120	<50	10	<5
JUL							
08...	<1.00	2370	3.1	160	<50	50	<5
SEP							
09...	<1.00	1250	1.3	120	<50	90	<5

03085000 MONONGAHELA RIVER AT BRADDOCK, PA--Continued

BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES

REMARKS.--Samples were collected using rapid bioassessment protocols for benthic macroinvertebrates using a D-Frame net with a mesh size of 500 µm. Samples represent counts per 100 (approximate) subsamples.

Date	10/1/02
Benthic Macroinvertebrate	Count
Platyhelminthes	
Turbellaria (FLATWORMS)	
Tricladida	
Planariidae	14
Mollusca	
Bivalvia (CLAMS)	
Veneroida	
Sphaeriidae	2
Annelida	
Oligochaeta (AQUATIC EARTHWORMS)	
Tubificida	
Naididae	33
Arthropoda	
Crustacea	
Cladocera	229
Amphipoda (SCUDS)	
Gammaridae	
Gammarus sp	1
Insecta	
Ephemeroptera (MAYFLIES)	
Heptageniidae	1
Tricorythidae	
Tricorythodes sp	1
Trichoptera (CADDISFLIES)	
Hydroptilidae	1
Polycentropodidae	
Neureclipsis sp	26
Diptera (TRUE FLIES)	
Chironomidae (MIDGES)	189
Empididae (DANCE FLIES)	
Hemerodromia sp	1
Total Organisms	498

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 mi^2. 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.

REMARKS.--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.

COOPERATION.--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, 197,300 acre-ft, May 12, elevation, 1,135.62 ft; minimum 33,250 acre-ft, Dec. 31, elevation, 1,036.60 ft.

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 mi^2. PERIOD OF RECORD, July 1925 to current year. Prior to October 1950, monthend contents published in WSP 1305, and October 1950 to September 1955, monthend contents published in WSP 1385. GAGE, water-stage recorder at right end of spillway. Datum of gage is at sea level (unadjusted).

REMARKS.--Reservoir is formed by an earthfill dam completed January 1925, with storage beginning at that time. Usable capacity, 92,975 acre-ft between elevations 2,425 ft (top of intake to outlet tunnel) and 2,462 ft (crest of spillway). Dead storage, 13,085 acre-ft. Figures given herein represent usable contents. Reservoir is used for hydroelectric power.

COOPERATION.--Records furnished by Reliant Energy.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 93,800 acre-ft, July 14, 1990, elevation, 2,462.25 ft; minimum observed, 11,760 acre-ft, Sept. 30, 1925, elevation, 2,433.45 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 90,400 acre-ft, July 10, elevation, 2,461.30 ft; minimum 71,500 acre-ft, Feb. 19, elevation, 2,456.10 ft.

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 mi^2. PERIOD OF RECORD, October 1943 to current year. Prior to October 1970 published as "Youghiogheny River Reservoir." GAGE, water-stage recorder since Mar. 9, 1948. Datum of gage is at sea level. Prior to Mar. 9, 1948, non-recording gage at dam at same datum.

REMARKS.--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.

COOPERATION.--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, 194,500 acre-ft, May 13, elevation, 1,453.28 ft; minimum 52,300 acre-ft, Oct. 29, elevation, 1,394.10 ft.

MONONGAHELA RIVER BASIN

Lakes and Reservoirs in Monongahela River Basin--Continued

MONTHEND ELEVATION, IN FEET ABOVE SEA LEVEL, AND CONTENTS AT 2400 HRS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

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)
	03055500 Tygart Lake			03076000 Deep Creek Reservoir		
Sept. 30	1,069.76	73,170	---	2,457.40	76,100	---
Oct. 31	1,065.93	67,910	-86	2,457.50	76,400	+5
Nov. 30	1,048.17	45,600	-375	2,456.70	73,600	-47
Dec. 31	1,036.60	33,250	-201	2,456.20	71,800	-29
CAL YR 2002	--	--	-1.0	--	--	+1.8
Jan. 31	1,042.86	39,730	+105	2,456.20	71,800	0
Feb. 28	1,088.00	101,140	+1,110	2,456.40	72,500	+13
Mar. 31	1,053.94	52,360	-793	2,459.20	82,600	+164
Apr. 30	1,090.92	105,990	+901	2,460.50	87,400	+81
May 31	1,097.32	117,140	+181	2,461.00	89,300	+31
June 30	1,094.31	111,790	-90	2,460.70	88,100	-20
July 31	1,094.13	111,480	-5	2,460.10	85,900	-36
Aug. 31	1,093.36	110,150	-22	2,459.10	82,200	-60
Sept. 30	1,076.20	82,480	-465	2,458.50	80,000	-37
WTR YR 2003	--	--	+13	--	--	+5.4

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (equivalent in ft^3/s)
	03077000 Youghiogheny River Lake		
Sept. 30	1,406.23	73,410	---
Oct. 31	1,396.50	56,130	-281
Nov. 30	1,413.18	87,440	+526
Dec. 31	1,413.05	87,170	-4.4
CAL YR 2002	--	--	+76
Jan. 31	1,407.47	75,810	-185
Feb. 28	1,420.72	104,310	+513
Mar. 31	1,439.29	152,620	+786
Apr. 30	1,439.63	153,570	+16
May 31	1,441.33	158,450	+79
June 30	1,440.30	155,490	-50
July 31	1,435.45	141,900	-221
Aug. 31	1,429.43	125,830	-261
Sept. 30	1,434.64	139,690	+233
WTR YR 2003	--	--	+92

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 mi^2.

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 National Geodetic Vertical Datum of 1929. 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 National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are poor. 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 telemetry at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Sept. 2, 1912 reached a discharge of 20,000 ft^3/s, from U.S. Army Corps of Engineers.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a base discharge of 2,500 ft^3/s and maximum (*****):

Date	Time	Discharge ft^3/s	Gage Height (ft)	Date	Time	Discharge ft^3/s	Gage Height (ft)
Jan. 1	2000	3,860	6.76	May 9	1500	2,980	5.67
Feb. 23	1100	4,200	7.17	May 10	1400	*6,020	*9.12

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	67	136	e100	1920	140	431	195	171	468	210	291	407
2	62	106	e95	1740	149	564	186	163	312	214	243	530
3	62	92	e89	870	139	557	176	149	453	200	244	394
4	68	87	e89	722	984	468	201	141	783	354	569	254
5	89	93	e88	520	572	749	526	264	526	356	376	190
6	66	192	e86	442	328	1020	310	216	397	219	247	162
7	62	167	e88	376	287	703	967	255	687	222	240	147
8	58	129	e86	358	224	741	1070	833	573	1220	299	137
9	55	110	e86	399	e193	1150	596	1600	634	1170	241	130
10	54	116	e94	e330	e174	732	460	3220	442	853	213	124
11	64	314	121	e278	e154	544	912	1400	387	1460	210	117
12	72	204	164	e244	e140	476	740	799	416	570	190	111
13	119	146	227	e218	e133	585	518	677	481	436	179	110
14	84	123	945	e194	e121	645	428	547	357	351	171	109
15	69	110	652	e180	e116	509	388	487	319	308	166	177
16	572	174	395	e168	e115	471	355	563	289	360	180	175
17	309	444	284	e160	e128	444	324	452	404	271	174	108
18	152	280	233	e152	201	407	298	456	615	366	158	109
19	136	249	219	e144	184	373	276	388	395	636	138	458
20	128	256	424	e142	183	358	261	417	493	318	144	252
21	99	194	318	e140	173	344	388	812	1530	274	143	154
22	88	184	248	e140	385	312	297	513	553	530	145	158
23	78	185	216	e140	3150	287	255	444	405	496	157	227
24	75	156	191	e135	1030	266	228	551	338	773	136	160
25	87	139	390	e131	559	252	214	415	300	561	132	164
26	187	127	365	e127	431	247	210	380	277	376	129	143
27	106	e121	255	158	376	232	196	339	262	330	293	153
28	87	e115	220	374	353	217	181	336	241	390	246	176
29	125	e109	202	136	---	224	181	307	224	293	165	130
30	282	e105	191	134	---	218	173	286	219	259	714	122
31	198	---	237	126	---	198	---	382	---	252	342	---
TOTAL	3760	4963	7398	11298	11122	14724	11510	17963	13780	14628	7275	5788
MEAN	121	165	239	364	397	475	384	579	459	472	235	193
MAX	572	444	945	1920	3150	1150	1070	3220	1530	1460	714	530
MIN	54	87	86	126	115	198	173	141	219	200	129	108
CFSM	0.47	0.64	0.93	1.42	1.55	1.85	1.49	2.25	1.79	1.84	0.91	0.75
IN.	0.54	0.72	1.07	1.64	1.61	2.13	1.67	2.60	1.99	2.12	1.05	0.84

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1920 - 2003, BY WATER YEAR (WY)

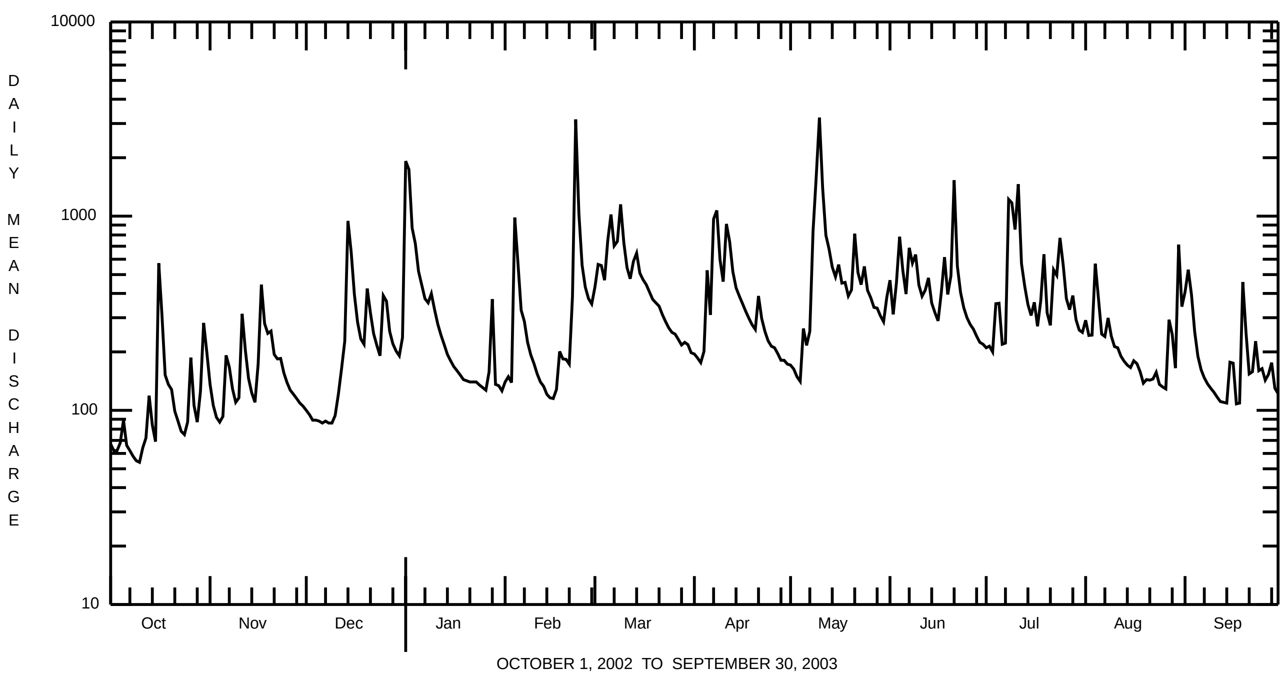
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	114	194	282	350	453	577	468	352	238	178	143	128
MAX	393	1400	1003	986	1255	1361	999	887	694	951	960	757
(WY)	1980	1986	1951	1924	1926	1945	1961	1924	1980	1928	1980	1926
MIN	31.3	35.5	36.5	37.8	80.9	101	154	92.7	46.5	30.0	28.4	24.1
(WY)	1933	1931	1931	1931	1964	1969	1925	1926	1926	1926	1930	1927

e Estimated.

03085500 CHARTIERS CREEK AT CARNEGIE, PA--Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1920 - 2003	
ANNUAL TOTAL	79983		124209			
ANNUAL MEAN	219		340		289	
HIGHEST ANNUAL MEAN					527	1928
LOWEST ANNUAL MEAN					132	1954
HIGHEST DAILY MEAN	2060	Mar 27	3220	May 10	11100	Aug 6 1956
LOWEST DAILY MEAN	39	Sep 13	54	Oct 10	16	Aug 9 1926
ANNUAL SEVEN-DAY MINIMUM	45	Sep 8	62	Oct 6	19	Sep 26 1927
MAXIMUM PEAK FLOW			6020	May 10	**a**13500	Aug 6 1956
MAXIMUM PEAK STAGE			9.12	May 10	**b**16.37	Aug 6 1956
INSTANTANEOUS LOW FLOW			52	Oct 9-11	**c**16	Aug 9 1926**d**
ANNUAL RUNOFF (CFSM)	0.85		1.32		1.12	
ANNUAL RUNOFF (INCHES)	11.58		17.98		15.27	
10 PERCENT EXCEEDS	425		640		615	
50 PERCENT EXCEEDS	136		243		162	
90 PERCENT EXCEEDS	61		107		56	

a From rating curve extended above 13,100 ft^3/s.
b Site and datum then in use.
c Minimum observed.
d Also at times in September 1932.



MONTOUR RUN BASIN

03085956 MONTOUR RUN AT SCOTT STATION NEAR IMPERIAL, PA

LOCATION.--Lat 40°27’23", long 80°10'34", Allegheny County, Hydrologic Unit 05030101, on left bank at upstream side of privately owned single span bridge on south side of Montour Run Road, SR3072, 0.3 mi downstream from McCalrens Run, and 0.9 mi upstream from Trout Run.

DRAINAGE AREA.--25.4 mi^2.

PERIOD OF RECORD.--August 2000 to current year.

GAGE.--Water-stage recorder. Datum of gage is 850.00 ft above National Geodetic Vertical Datum of 1929.

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

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a base discharge of 1,000 ft^3/s and maximum (*****):

Date	Time	Discharge ft^3/s	Gage Height (ft)	Date	Time	Discharge ft^3/s	Gage Height (ft)
Jan. 1	1330	1,040	6.25	Aug. 30	0845	*1,200	*6.60
May 10	0900	1,030	6.22				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.2	11	7.6	356	e8.6	50	17	7.9	35	6.1	16	34
2	4.6	9.3	6.9	109	e8.6	67	14	7.2	16	5.6	11	33
3	5.4	8.3	6.0	93	e16	48	12	6.7	56	5.4	79	27
4	8.3	8.2	6.9	65	e123	53	30	6.4	36	36	30	14
5	13	17	6.5	49	e46	79	96	50	23	18	16	9.5
6	5.0	31	6.5	42	e31	68	43	13	17	7.1	13	7.9
7	4.2	15	e6.8	33	e22	65	108	18	72	27	15	7.0
8	3.8	11	e6.7	e30	e16	72	77	23	113	107	12	6.5
9	3.7	8.9	e6.8	e27	e12	122	54	96	95	37	11	6.2
10	3.7	17	e6.0	e25	e13	64	40	264	35	57	11	5.9
11	5.2	61	e6.0	e23	e12	47	38	63	34	42	9.7	5.5
12	4.7	16	e7.0	e21	e13	44	30	43	44	16	11	5.4
13	13	11	e18	e18	e13	71	24	28	91	11	10	5.4
14	5.5	9.3	e81	e15	e12	56	21	20	29	9.3	8.0	5.5
15	4.7	9.0	56	e13	e11	45	19	18	22	8.7	7.3	16
16	85	32	34	e12	e12	45	16	27	16	13	7.0	8.3
17	20	60	21	e11	e25	43	15	15	71	7.9	7.4	5.7
18	10	23	16	e10	e17	38	14	19	60	8.3	6.5	7.9
19	24	30	22	e9.9	e12	32	12	12	29	8.1	6.1	134
20	12	20	73	e9.7	e14	30	11	42	22	6.8	5.8	22
21	7.9	14	34	e9.0	e19	36	49	52	17	13	5.7	11
22	6.5	17	28	e8.3	e40	28	19	20	14	135	5.6	36
23	5.8	16	22	e8.2	e198	22	14	67	11	119	5.7	40
24	5.3	11	17	e8.2	66	20	11	146	9.8	59	5.3	15
25	25	9.9	52	e8.0	42	18	11	40	8.7	25	5.1	26
26	48	9.2	30	e8.0	32	20	12	29	8.0	17	5.1	12
27	12	10	21	e8.0	27	16	9.6	20	11	26	17	23
28	8.4	8.6	17	e8.4	38	15	8.6	32	7.3	40	7.4	15
29	e44	8.1	15	e8.4	---	22	11	17	6.6	16	5.8	10
30	38	8.2	16	e8.6	---	16	8.3	14	6.3	13	257	8.7
31	18	---	37	e8.8	---	15	---	51	---	12	20	---
TOTAL	459.9	520.0	689.7	1063.5	899.2	1367	844.5	1267.2	1015.7	912.3	632.5	563.4
MEAN	14.8	17.3	22.2	34.3	32.1	44.1	28.1	40.9	33.9	29.4	20.4	18.8
MAX	85	61	81	356	198	122	108	264	113	135	257	134
MIN	3.7	8.1	6.0	8.0	8.6	15	8.3	6.4	6.3	5.4	5.1	5.4

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2000 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	13.6	14.6	29.1	26.6	26.3	47.1	37.9	32.5	23.3	15.6	17.3	13.4
MAX	15.7	19.6	36.9	34.3	32.1	49.5	50.9	42.6	33.9	29.4	22.4	18.8
(WY)	2001	2002	2001	2003	2003	2002	2001	2002	2003	2003	2001	2003
MIN	10.2	7.01	22.2	17.4	19.3	44.1	28.2	13.9	15.6	5.58	9.17	9.21
(WY)	2002	2001	2003	2002	2002	2003	2003	2001	2001	2002	2002	2001

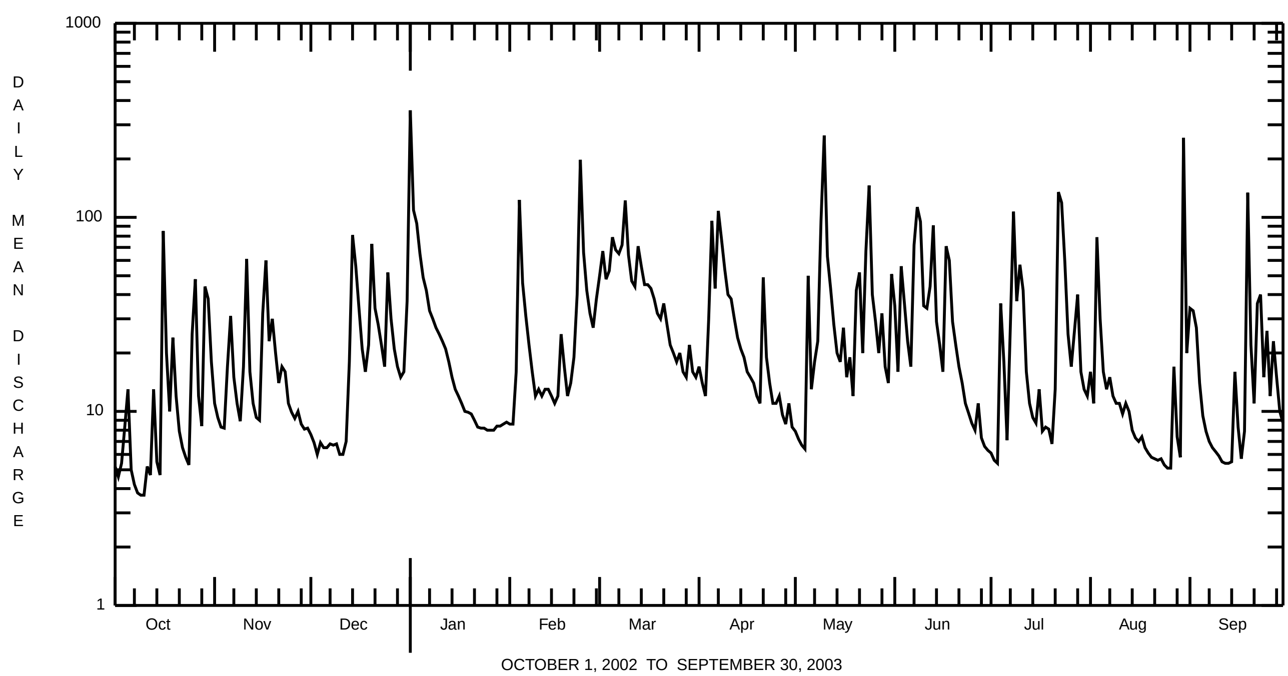
e Estimated.

OHIO RIVER MAIN STEM

03085956 MONTOUR RUN AT SCOTT STATION NEAR IMPERIAL, PA--Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 2000 - 2003	
ANNUAL TOTAL	8081.2		10234.9			
ANNUAL MEAN	22.1		28.0		24.8	
HIGHEST ANNUAL MEAN					28.0	2003
LOWEST ANNUAL MEAN					22.4	2002
HIGHEST DAILY MEAN	406	Mar 26	356	Jan 1	406	Mar 26 2002
LOWEST DAILY MEAN	2.0	Aug 11	3.7	Oct 9,10	2.0	Aug 11 2002
ANNUAL SEVEN-DAY MINIMUM	2.4	Aug 8	4.3	Oct 6	2.4	Aug 8 2002
MAXIMUM PEAK FLOW			**a**1200	Aug 30	**a**2080	Aug 28 2001
MAXIMUM PEAK STAGE			6.60	Aug 30	8.31	Aug 28 2001
INSTANTANEOUS LOW FLOW			3.6	Oct 8-10	1.8	Aug 12 2002
10 PERCENT EXCEEDS	48		63		53	
50 PERCENT EXCEEDS	12		16		12	
90 PERCENT EXCEEDS	3.0		6.3		4.1	

a From rating curve extended above 850 ft^3/s.



OHIO RIVER MAIN STEM

03086000 OHIO RIVER AT SEWICKLEY, PA
(Pennsylvania Water-Quality Network Station)
(National Stream-Quality Accounting Network Station)

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 mi^2, approximately.

WATER-DISCHARGE RECORDS

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 National Geodetic Vertical Datum of 1929 (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 those for estimated daily discharges, which are poor. Some regulation by locks, and by many reservoirs above station. Combined capacity of reservoirs and lakes, excluding that of Chautauqua Lake (station 03013946), but including Lake Lynn, Deep Creek Reservoir (station 03076000), and 15 smaller reservoirs, 2,773,000 acre-ft. Several measurements of water temperature were made during the year. Satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9790	19900	23000	54100	13600	58800	43700	12300	39200	11300	48200	31200
2	7500	18600	24100	112000	17200	52900	39200	13300	65700	9270	45200	51700
3	7090	17300	22900	103000	18100	52600	41900	13400	60600	9250	43200	82600
4	6810	14400	22600	97500	28000	56000	39600	16900	91500	10400	41100	83300
5	7430	16800	19500	94100	47400	52500	42200	20200	83400	12700	40000	82900
6	5910	16100	17100	82000	43200	73800	81600	25000	74100	9190	36000	65400
7	4320	23300	16600	75100	e42800	84800	78600	32400	64300	12300	36100	45000
8	5380	26200	13000	64300	e39200	73400	82600	35900	71800	27100	30500	31900
9	5750	25100	13800	54500	e34200	75200	80400	52600	67300	49300	30500	28200
10	5440	22000	15300	49800	28400	88100	85300	93600	62600	46000	36100	24300
11	5470	24200	12400	41500	25800	78500	86700	111000	55800	55300	41800	21800
12	7670	23000	13200	36800	23500	66400	82800	84600	49000	52500	40900	17800
13	6730	29600	23300	30400	20500	59500	79200	66200	58400	37000	40200	14700
14	9100	27400	47200	27800	18900	72500	70600	72900	79200	30200	41800	14100
15	7570	24500	73200	27500	17300	83300	64400	73000	70500	23900	35700	13100
16	12300	24300	69400	22900	16100	77800	51100	69700	66600	18500	34500	17200
17	13900	25800	60600	18600	17600	87700	41500	58100	58000	16900	26200	16500
18	16100	39000	52900	16700	16100	102000	33400	52100	57900	13800	23000	16200
19	15800	40400	46600	12100	18200	104000	25500	46000	56400	15800	25500	27800
20	13100	41900	47500	13200	20900	94000	21300	45300	50400	15200	22800	57700
21	12400	44200	80700	13800	20300	84300	21700	44700	53800	13300	16600	43800
22	14400	38900	75000	15400	26600	92800	23800	48400	46800	37700	11800	40700
23	12700	35200	64600	14900	83900	93500	23700	42900	38700	92200	10400	41800
24	10400	32500	62400	14100	120000	84700	25400	47600	33600	71700	9960	48100
25	11200	30100	55300	12500	76100	76000	24000	49600	24700	66100	9040	45100
26	11400	28000	58900	9960	64900	70800	21300	44800	19500	59100	9850	38500
27	9400	29000	51600	10600	68500	61000	17100	34200	18100	51100	25200	32200
28	13400	26600	42700	12700	63400	57400	17900	31500	13000	60700	32000	29900
29	13100	22900	36600	11900	---	53600	16400	26600	13100	69900	24700	37600
30	14900	23200	34300	13900	---	44200	14200	23000	11700	58500	32400	34500
31	22600	---	33500	13800	---	49300	---	24100	---	49000	31500	---
TOTAL	319060	810400	1229800	1177460	1030700	2261400	1377100	1411900	1555700	1105210	932750	1135600
MEAN	10290	27010	39670	37980	36810	72950	45900	45550	51860	35650	30090	37850
MAX	22600	44200	80700	112000	120000	104000	86700	111000	91500	92200	48200	83300
MIN	4320	14400	12400	9960	13600	44200	14200	12300	11700	9190	9040	13100
CFSM	0.53	1.39	2.03	1.95	1.89	3.74	2.35	2.34	2.66	1.83	1.54	1.94
IN.	0.61	1.55	2.35	2.25	1.97	4.31	2.63	2.69	2.97	2.11	1.78	2.17

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1934 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	14970	25570	39800	44430	49500	65090	56340	38420	24760	16040	13300	12000
MAX	51010	83490	88890	132000	91820	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

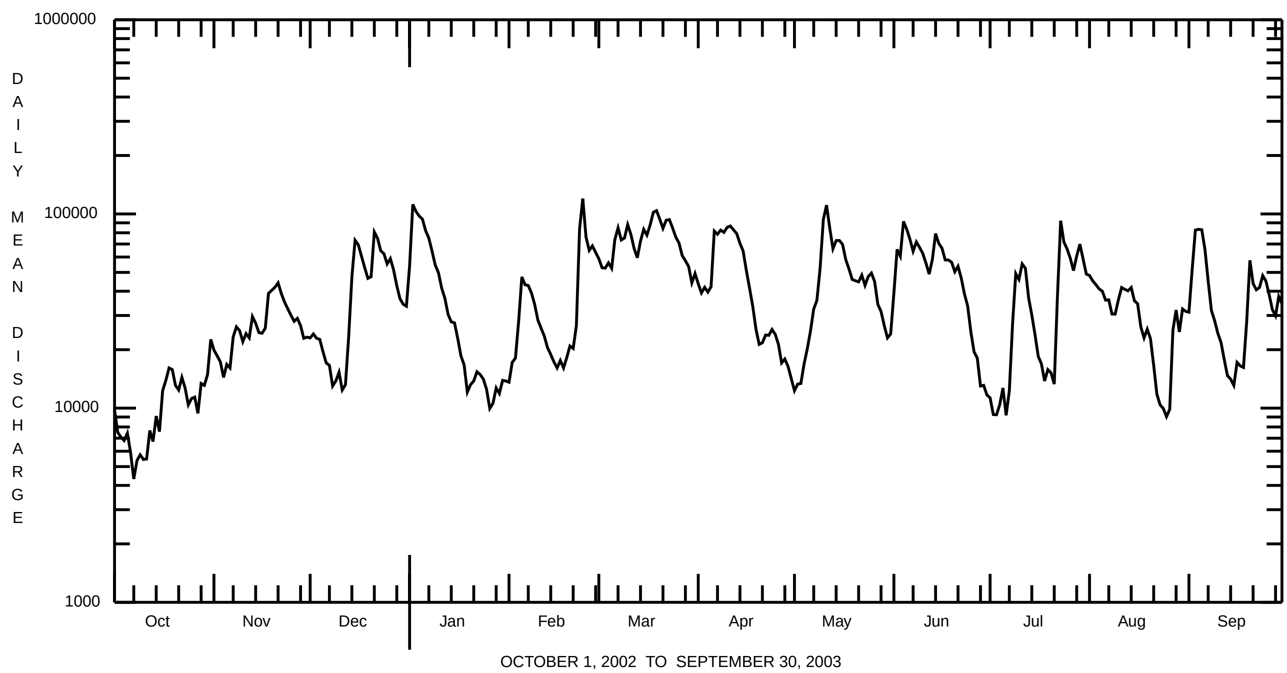
e Estimated.

OHIO RIVER MAIN STEM

03086000 OHIO RIVER AT SEWICKLEY, PA--Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1934 - 2003	
ANNUAL TOTAL	11324380		14347080			
ANNUAL MEAN	31030		39310		33270	
HIGHEST ANNUAL MEAN					46520	1994
LOWEST ANNUAL MEAN					21110	1934
HIGHEST DAILY MEAN	135000	May 19	120000	Feb 24	465000	Mar 18 1936
LOWEST DAILY MEAN	3920	Sep 14	4320	Oct 7	2100	Sep 4 1957
ANNUAL SEVEN-DAY MINIMUM	4810	Sep 8	5670	Oct 5	2330	Sep 1 1957
MAXIMUM PEAK FLOW			132000	Feb 24	**a**574000	Mar 18 1936
MAXIMUM PEAK STAGE			19.38	Feb 24	**b**34.75	Mar 18 1936
INSTANTANEOUS LOW FLOW					1800	Sep 4 1957
ANNUAL RUNOFF (CFSM)	1.59		2.02		1.71	
ANNUAL RUNOFF (INCHES)	21.60		27.37		23.18	
10 PERCENT EXCEEDS	69100		78800		73900	
50 PERCENT EXCEEDS	22900		33500		22800	
90 PERCENT EXCEEDS	5930		12300		5990	

a From rating curve extended above 535,000 ft^3/s.
b From floodmarks in gage house, site and datum then in use.



OHIO RIVER MAIN STEM

03086000 OHIO RIVER AT SEWICKLEY, PA--Continued
(Pennsylvania Water-Quality Network Station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 2000 to current year.

REMARKS.--Other data for the Water-Quality Network can be found on pages 242-289.

COOPERATION.--Samples were collected as part of the Pennsylvania Department of Environmental Protection Water-Quality Network (WQN) with cooperation from the Pennsylvania Department of Environmental Protection.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Agency collecting sample, code (00027)	Agency analyzing sample, code (00028)	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf µS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water unfltrd recover -able, mg/L (00916)	Magnesium, water, unfltrd recover -able, mg/L (00927)	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (00417)
NOV 2002													
04...	1330	1028	9813	13700	40	10.8	7.5	411	10.7	140	39.1	9.5	50
MAR 2003													
27...	1400	1028	9813	56800	40	13.4	7.1	208	4.5	70	19.1	5.4	21
MAY													
21...	0950	1028	9813	43900	40	10.0	7.4	239	14.5	75	21.1	5.3	32
JUL													
23...	1500	1028	9813	94300	40	8.5	7.5	267	24.0	97	26.1	7.6	45
SEP													
03...	1010	1028	9813	81700	40	8.1	7.6	279	22.5	86	23.6	6.5	35

Date	Fluoride, water, unfltrd mg/L (00951)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 105degC wat flt mg/L (00515)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia water, unfltrd mg/L as N (00610)	Nitrate water unfltrd mg/L as N (00620)	Nitrite water, unfltrd mg/L as N (00615)	Orthophosphate, water, unfltrd mg/L as P (70507)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, unfltrd mg/L (00600)	Organic carbon, water, unfltrd mg/L (00680)	Aluminum, water, unfltrd recover -able, µg/L (01105)	Copper, water, unfltrd recover -able, µg/L (01042)
NOV 2002													
04...	<.2	99.9	296	8	.170	.97	<.040	.02	.033	1.5	2.8	<200	<10
MAR 2003													
27...	<.2	41.2	122	50	.040	.86	<.040	.03	.047	1.1	1.9	1600	<10
MAY													
21...	<.2	46.9	194	18	<.020	.60	<.040	.03	.040	1.1	2.6	1000	<10
JUL													
23...	<.2	44.7	172	236	.040	.42	<.040	.06	.195	1.1	3.4	4600	10
SEP													
03...	<.2	64.1	520	32	.050	.65	<.040	.03	.12	1.1	3.2	3200	<10

Date	Cyanide amenable to chlorination wat unf mg/L (00722)	Iron, water, unfltrd recover -able, µg/L (01045)	Lead, water, unfltrd recover -able, µg/L (01051)	Manganese, water, unfltrd recover -able, µg/L (01055)	Nickel, water, unfltrd recover -able, µg/L (01067)	Zinc, water, unfltrd recover -able, µg/L (01092)	Phenolic compounds, water, unfltrd µg/L (32730)	Gross alpha radioac water unfltrd pCi/L (01519)	Gross beta radioac water unfltrd pCi/L (85817)	Tritium water unfltrd pCi/L (07000)
NOV 2002										
04...	<1.00	360	<1.0	90	<50	<10	<5	--	--	--
MAR 2003										
27...	<1.00	2590	2.5	370	<50	30	--	.88	3	4
MAY										
21...	<1.00	1280	2.0	160	<50	20	<5	.19	3	69
JUL										
23...	<1.00	11200	14.0	1350	<50	90	<5	1.8	4	--
SEP										
03...	1.92	4590	6.3	460	<50	<10	<5	--	--	--

OHIO RIVER MAIN STEM

03086000 OHIO RIVER AT SEWICKLEY, PA--Continued

BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES

REMARKS.--Samples were collected using rapid bioassessment protocols for benthic macroinvertebrates using a D-Frame net with a mesh size of 500 µm. Samples represent counts per 100 (approximate) subsamples.

Date	10/2/02
Benthic Macroinvertebrate	Count
Platyhelminthes	
Turbellaria (FLATWORMS)	
Tricladida	
Planariidae	27
Mollusca	
Bivalvia (CLAMS)	
Veneroida	
Dreissenidae	
Dreissena polymorpha	38
Sphaeriidae	2
Annelida	
Oligochaeta (AQUATIC EARTHWORMS)	
Tubificida	
Naididae	24
Arthropoda	
Crustacea	
Cladocera	461
Gammaridae	
Gammarus sp	1
Ostracoda	1
Insecta	
Ephemeroptera (MAYFLIES)	
Caenidae	
Caenis sp	1
Heptageniidae	
Stenacron sp	4
Trichoptera (CADDISFLIES)	
Hydroptila sp	2
Polycentropodidae	
Neureclipsis sp	16
Diptera (TRUE FLIES)	
Chironomidae (MIDGES)	211
Total Organisms	788

OHIO RIVER MAIN STEM

03086000 OHIO RIVER AT SEWICKLEY, PA--Continued
(National Stream-Quality Accounting Network Station)

REMARKS.--All water-quality samples were collected and analyzed by the U.S. Geological Survey. An explanation of selected abbreviations used in the water-quality tables is given on pages 40-41. Some values for '*dissolved*' parameters exceed values for the corresponding '*total*' parameter. These results are within the limits of analytical precision and methods.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Medium code	Instantaneous discharge, cfs (00061)	Turbidity, wat unf lab, Hach 2100AN NTU (99872)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf µS/cm 25 degC (00095)
NOV 2002										
18...	1015	9	40000	--	.060	.045	747	11.4	7.2	332
DEC										
16...	0945	9	72400	38	.049	.036	741	14.5	7.5	381
16...	0950	R	72400	38	.047	.034	741	14.5	7.5	381
FEB 2003										
25...	0945	9	71200	180	.039	.028	754	14.8	7.4	316
MAR										
19...	1115	9	104000	E31	E.036	E.026	742	13.4	7.1	208
31...	1015	9	50800	15	.052	.039	744	12.3	7.3	215
31...	1020	R	50700	15	.051	.038	744	12.3	7.3	215
APR										
25...	1000	9	25200	--	.041	.031	738	10.4	7.6	302
MAY										
12...	1100	9	77800	120	.060	.044	732	9.3	7.2	232
21...	0950	9	43900	18	.063	.046	749	10.0	7.4	239
JUN										
09...	1000	9	70900	30	.055	.040	738	9.5	7.3	237
09...	1010	R	70900	25	.055	.040	738	9.5	7.3	234
23...	1020	9	41500	19	.057	.042	742	9.0	7.7	285
JUL										
23...	1500	9	94300	160	.074	.056	739	8.5	7.5	267
31...	1100	9	51400	39	.093	.069	743	9.0	7.5	201
AUG										
12...	1120	9	43900	17	.072	.053	743	8.2	7.5	278
12...	1128	Q	44000	--	<.004	<.004	--	--	--	--
SEP										
03...	1010	9	81700	62	.073	.054	742	8.1	7.6	279
03...	1013	R	81700	--	--	--	742	8.1	7.6	279
11...	1045	9	22700	12	.076	.056	748	8.3	7.7	238

Date	Temperature, water, deg C (00010)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	Alkalinity, wat flt inc tit field, mg/L as CaCO3 (39086)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 180degC wat flt mg/L (70300)
NOV 2002											
18...	9.0	31.8	7.97	2.04	22.2	37	24.3	<.17	4.43	72.0	201
DEC											
16...	2.0	28.0	7.04	1.81	25.7	39	34.8	<.17	4.29	61.9	212
16...	2.0	28.3	7.13	1.85	25.9	39	34.9	<.17	4.37	61.9	207
FEB 2003											
25...	.6	24.9	6.10	1.74	23.2	27	40.8	.07	4.90	52.8	185
MAR											
19...	4.5	16.9	4.79	1.16	11.0	19	18.0	.10	4.61	39.5	119
31...	7.5	17.5	4.73	1.17	11.9	18	18.3	.07	4.63	37.7	120
31...	7.5	17.6	4.72	1.19	11.8	18	18.1	.07	4.65	37.7	118
APR											
25...	13.5	26.4	7.39	1.65	17.1	28	24.1	<.17	3.85	63.9	176
MAY											
12...	16.0	22.7	5.32	1.58	10.6	27	13.3	<.17	4.86	50.3	135
21...	14.5	21.5	5.53	1.44	13.6	29	18.1	<.2	4.82	46.9	146
JUN											
09...	16.5	23.1	5.92	1.55	11.5	33	13.8	<.2	5.65	50.3	126
09...	16.5	22.3	5.78	1.51	11.4	30	14.3	<.2	5.46	48.0	137
23...	18.5	26.7	7.11	1.64	14.0	40	15.7	<.2	5.97	61.2	160
JUL											
23...	24.0	26.6	6.61	1.70	14.5	42	20.4	<.2	2.74	44.7	151
31...	20.5	23.8	4.93	1.56	10.8	26	12.9	<.2	5.39	36.4	119
AUG											
12...	23.0	26.6	7.15	1.76	14.8	33	16.6	<.2	5.17	57.8	175
12...	--	.02	<.008	<.008	E.06	--	<.01	.01	.02	<.01	--
SEP											
03...	22.5	25.6	6.41	2.12	13.2	33	14.9	<.2	5.22	64.1	164
03...	22.5	--	--	--	--	33	--	--	--	--	--
11...	21.0	23.1	6.26	2.01	11.9	28	14.2	<.2	5.49	47.7	145

03086000 OHIO RIVER AT SEWICKLEY, PA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Ortho-phos-phate, water, fltrd, mg/L as P (00671)	Partic-ulate nitro-gen, susp, water, mg/L (49570)	Phos-phorus, water, fltrd, mg/L (00666)	Phos-phorus, water, unfltrd mg/L (00665)
NOV 2002									
18...	.24	.35	.07	.93	.021	.010	.13	.015	.073
DEC									
16...	.25	.55	.09	.93	.014	<.007	.28	.007	.113
16...	.25	.60	.09	.93	.015	E.004	.24	.007	.125
FEB 2003									
25...	.35	1.3	.18	1.16	.010	<.007	.88	.007	.33
MAR									
19...	E.21	E.43	E.06	E.83	E.006	<.007	E.28	E.003	E.087
31...	.18	.28	.08	.76	.009	<.007	.09	.007	.047
31...	.18	.28	.06	.76	.009	<.007	.11	.007	.047
APR									
25...	.21	.29	.05	.74	.018	<.007	.13	E.004	.025
MAY									
12...	.20	.74	.05	.62	E.007	<.007	.34	.006	.155
21...	.23	.39	.04	.62	.010	E.004	.18	.009	.040
JUN									
09...	.17	.34	E.03	.63	E.007	<.007	.17	.005	.058
09...	.18	.36	E.03	.64	.008	<.007	.13	.005	.065
23...	.20	.28	E.02	.63	.011	<.007	.09	.006	.051
JUL									
23...	.20	1.2	E.02	.42	E.006	E.004	.82	.010	.20
31...	.24	.54	<.04	.57	.008	<.007	.11	.010	.082
AUG									
12...	.21	.35	<.04	.57	E.005	E.005	.14	.010	.057
12...	--	--	<.015	<.022	<.002	<.007	.02	--	--
SEP									
03...	.24	.65	E.03	.68	.010	<.007	.37	.008	.122
03...	--	--	--	--	--	--	--	--	--
11...	.22	.32	E.04	.73	.016	E.005	.11	.011	.036

Date	Total carbon, suspnd sedimnt total, mg/L (00694)	Inor-ganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)	Alum-inum, water, fltrd, µg/L (01106)	Anti-mony, water, fltrd, µg/L (01095)	Arsenic water, fltrd, µg/L (01000)	Barium, water, fltrd, µg/L (01005)	Beryll-ium, water, fltrd, µg/L (01010)	Cadmium water, fltrd, µg/L (01025)
NOV 2002										
18...	1.4	<.1	1.4	2.2	14	<.30	E.2	44	<.06	E.03
DEC										
16...	3.2	<.1	3.2	2.0	11	<.30	E.2	41	<.06	E.03
16...	2.7	<.1	2.6	1.9	12	<.30	E.2	41	<.06	E.03
FEB 2003										
25...	10.9	<.1	10.8	1.7	9	<.30	E.3	41	<.06	<.04
MAR										
19...	E3.3	<.1	E3.2	E1.5	21	<.30	E.2	37	<.06	E.03
31...	.6	<.1	.6	1.8	16	<.30	.3	41	<.06	E.03
31...	.9	<.1	.9	1.9	15	<.30	.3	41	<.06	E.03
APR										
25...	.7	<.1	.7	1.6	40	<.30	.3	43	<.06	<.04
MAY										
12...	4.2	<.1	4.1	2.3	22	<.30	.3	39	<.06	<.04
21...	1.8	<.1	1.7	2.2	24	<.30	.3	38	<.06	E.03
JUN										
09...	2.0	<.1	2.0	2.0	39	<.30	E.2	37	<.06	<.04
09...	1.4	<.1	1.4	2.0	--	--	E.2	--	--	--
23...	.9	<.1	.9	2.1	34	<.30	.3	39	<.06	<.04
JUL										
23...	9.4	.2	9.2	2.6	18	<.30	.5	40	<.06	<.04
31...	.9	<.1	.9	3.1	19	<.30	.3	35	<.06	<.04
AUG										
12...	1.2	<.1	1.1	2.4	19	<.30	.5	42	<.06	<.04
12...	.1	--	--	E.2	--	--	<.3	--	--	--
SEP										
03...	4.2	<.1	4.1	2.7	19	<.30	.4	39	<.06	<.04
03...	--	--	--	--	--	--	--	--	--	--
11...	.8	<.1	.7	2.7	19	<.30	.3	38	<.06	E.02

OHIO RIVER MAIN STEM

03086000 OHIO RIVER AT SEWICKLEY, PA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Chromium, water, fltrd, µg/L (01030)	Cobalt water, fltrd, µg/L (01035)	Copper, water, fltrd, µg/L (01040)	Iron, water, fltrd, µg/L (01046)	Lead, water, fltrd, µg/L (01049)	Lithium water, fltrd, µg/L (01130)	Manganese, water, fltrd, µg/L (01056)	Molybdenum, water, fltrd, µg/L (01060)	Nickel, water, fltrd, µg/L (01065)	Selenium, water, fltrd, µg/L (01145)
NOV 2002										
18...	<.8	.271	1.3	40	E.08	5.5	47.7	1.3	3.81	<.5
DEC										
16...	<.8	.743	.9	26	E.06	5.4	135	.8	5.81	<.5
16...	<.8	.745	.9	27	E.05	5.5	138	.8	5.90	<.5
FEB 2003										
25...	<.8	1.24	.8	18	<.08	4.1	331	.8	4.10	E.3
MAR										
19...	<.8	1.04	.9	23	<.08	4.1	131	E.3	5.10	E.3
31...	<.8	1.19	1.0	29	<.08	4.4	128	.5	4.99	<.5
31...	E.5	1.17	1.0	29	<.08	4.4	128	.6	4.84	<.5
APR										
25...	<.8	1.08	1.1	21	<.08	7.1	154	1.1	5.64	E.4
MAY										
12...	<.8	.234	1.1	23	E.04	4.0	44.4	.6	2.95	<.5
21...	<.8	.357	1.2	32	.09	4.8	68.0	.9	3.74	E.3
JUN										
09...	<.8	.260	1.3	27	<.08	4.1	47.5	.7	3.21	E.3
09...	--	--	--	24	--	4.1	--	--	--	<.5
23...	<.8	.249	1.5	27	E.05	4.9	61.7	.8	3.26	E.3
JUL										
23...	<.8	.144	1.3	19	<.08	3.5	2.7	.8	2.28	E.3
31...	<.8	.089	1.3	43	E.06	3.5	4.7	.6	2.10	<.5
AUG										
12...	<.8	.154	1.4	34	E.06	5.1	18.0	.9	2.40	E.3
12...	--	--	--	<8	--	<.5	--	--	--	<.5
SEP										
03...	<.8	.140	1.7	21	<.08	6.0	8.4	.9	2.33	<.5
03...	--	--	--	--	--	--	--	--	--	--
11...	<.8	.152	2.8	58	E.07	4.8	64.5	1.4	2.23	<.5

Date	Silver, water, fltrd, µg/L (01075)	Strontium, water, fltrd, µg/L (01080)	Vanadium, water, fltrd, µg/L (01085)	Suspnd. sediment, sieve diametr percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)
NOV 2002					
18...	<.2	175	.3	98	21
DEC					
16...	<.2	176	E.1	96	67
16...	<.2	177	<.1	96	66
FEB 2003					
25...	<.2	124	.4	97	319
MAR					
19...	<.2	83.7	.1	92	65
31...	<.2	97.1	.1	100	18
31...	<.2	97.7	.1	100	19
APR					
25...	<.2	160	.6	100	7
MAY					
12...	<.2	122	.4	95	153
21...	<.2	118	.1	99	19
JUN					
09...	<.2	127	E.1	100	28
09...	--	119	E.1	100	32
23...	<.2	158	.6	99	22
JUL					
23...	<.2	105	.2	97	247
31...	<.2	79.3	.2	100	58
AUG					
12...	<.2	146	.2	98	25
12...	--	<.20	<.1	--	--
SEP					
03...	<.2	156	.1	95	102
03...	--	--	--	--	--
11...	<.2	111	.2	100	12

OHIO RIVER MAIN STEM

03086000 OHIO RIVER AT SEWICKLEY, PA--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 (µg/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 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Phosphorus, suspnd sedimnt total, percent (30292)	Total carbon, suspnd sedimnt total, percent (30244)	Organic carbon, suspnd sedimnt percent (50465)	Aluminum, suspnd sedimnt total, percent (30221)	Antimony, suspnd sedimnt total, µg/g (29816)	Arsenic suspnd sedimnt total, µg/g (29818)	Barium, suspnd sedimnt total, µg/g (29820)	Beryllium, suspnd sedimnt total, µg/g (29822)
NOV 2002										
18...	1015	40000	.210	6.1	5.7	8.2	2.0	23	590	4
DEC										
16...	0945	72400	.160	5.2	5.2	7.8	1.4	20	570	4
FEB 2003										
25...	0945	71200	.130	3.7	3.6	9.1	1.1	17	610	4
MAR										
19...	1115	103800	.130	5.4	5.4	6.9	1.0	18	550	4
31...	1015	50800	.180	--	--	8.0	.8	27	700	4
APR										
25...	1000	25200	.240	--	--	6.8	1.2	28	650	4
MAY										
12...	1100	77800	.120	4.6	4.9	8.5	1.1	17	570	4
21...	0950	43900	.190	--	--	8.1	1.6	19	600	4
JUN										
09...	1000	70900	.130	4.7	4.6	7.0	2.5	17	390	4
23...	1020	40400	.120	4.9	4.5	7.0	1.7	20	520	4
JUL										
23...	1500	94300	.120	3.9	4.0	7.4	.9	21	580	4
31...	1100	51400	.130	4.1	4.1	8.4	.8	24	760	4
AUG										
12...	1120	43900	.140	5.0	5.1	8.0	1.3	21	610	3
SEP										
03...	1010	81700	.130	4.5	4.7	7.9	1.6	20	560	3
11...	1045	22700	.170	4.5	4.4	8.4	1.5	22	650	4

Date	Cadmium suspnd sedimnt total, µg/g (29826)	Chromium, suspnd sedimnt total, µg/g (29829)	Cobalt, suspnd sedimnt total, µg/g (35031)	Copper, suspnd sedimnt total, µg/g (29832)	Iron, suspnd sedimnt total, percent (30269)	Lead, suspnd sedimnt total, µg/g (29836)	Lithium suspnd sedimnt total, µg/g (35050)	Manganese, suspnd sedimnt total, µg/g (29839)	Mercury suspnd sedimnt total, µg/g (29841)	Molybdenum, suspnd sedimnt total, µg/g (29843)
NOV 2002										
18...	2.3	140	80	110	6.0	100	84	6800	.20	6
DEC										
16...	1.8	120	89	68	5.7	72	79	6800	.17	4
FEB 2003										
25...	1.5	92	54	56	5.5	52	73	3100	--	3
MAR										
19...	1.7	100	92	47	5.1	50	60	5500	--	6
31...	2.8	100	120	60	5.9	64	78	8600	.27	4
APR										
25...	3.4	120	190	110	5.6	68	82	19000	.16	8
MAY										
12...	1.7	93	54	54	5.5	51	82	3300	.08	3
21...	2.3	140	79	73	5.6	82	73	6100	.68	6
JUN										
09...	1.4	100	32	52	4.4	42	63	3200	.17	5
23...	2.2	110	33	56	4.3	62	56	3900	.15	5
JUL										
23...	2.0	89	40	59	4.9	56	71	4700	.12	2
31...	2.0	130	36	65	5.4	57	59	4800	.15	6
AUG										
12...	1.7	120	58	90	5.1	61	76	6000	.10	3
SEP										
03...	1.6	130	56	70	5.3	70	71	4100	.17	4
11...	1.1	130	58	75	5.5	67	79	8900	.19	5

OHIO RIVER MAIN STEM

03086000 OHIO RIVER AT SEWICKLEY, PA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Nickel, suspnd sedimnt total, µg/g (29845)	Selen-ium, suspnd sedimnt total, µg/g (29847)	Silver, suspnd sedimnt total, µg/g (29850)	Stront-ium, suspnd sedimnt total, µg/g (35040)	Thall-ium, suspnd sedimnt µg/g (49955)	Titan-ium, suspnd sedimnt total, percent (30317)	Vanad-ium, suspnd sedimnt total, µg/g (29853)	Zinc, suspnd sedimnt total, µg/g (29855)	Uranium suspnd sedimnt total, µg/g (35046)	Suspnd. sedimnt conc, flow through cntrfug mg/L (50279)
NOV 2002										
18...	200	1	--	140	<100	.460	110	660	<100	23
DEC										
16...	170	1	<.5	130	<50	.450	100	580	<50	76
FEB 2003										
25...	94	1	<.5	150	<50	.540	120	820	<50	304
MAR										
19...	150	1	<.5	100	<50	.440	91	600	<50	74
31...	210	1	1	120	<50	--	110	660	<50	21
APR										
25...	390	2	2	120	<50	.340	90	750	<50	10
MAY										
12...	97	1	M	140	<50	.460	100	410	<50	156
21...	170	2	2	160	<50	--	110	660	<50	2
JUN										
09...	120	1	<.5	260	<50	.390	92	490	<50	61
23...	140	2	<.5	170	<50	.420	94	500	<50	26
JUL										
23...	120	1	1	110	<50	.470	98	350	<50	278
31...	120	M	<1	130	<100	.520	130	390	<100	55
AUG										
12...	160	1	M	150	<50	.470	120	410	<50	28
SEP										
03...	130	1	M	130	<50	.460	110	440	<50	118
11...	180	2	<.5	200	<50	.420	120	450	<50	13

OHIO RIVER MAIN STEM

03086000 OHIO RIVER AT SEWICKLEY, PA--Continued

REMARKS.--The following data are for analytes from the National Water Quality Laboratory (NWQL) schedule 2001-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. The filtered samples are then sent to the NWQL where they are analyzed by gas chromatography/mass spectrometric detector.

A field-matrix spike containing the series of organic compounds used in the analytical schedule was added to the replicate sample collected on Sept. 3 at 1013. Data from the spiked sample can be used to determine extraction and elution recoveries from the filtered water and to evaluate the accuracy and precision of the results.

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 and recovery is reported in percent.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Medium code	2,6-Diethylaniline water fltrd 0.7µ GF µg/L (82660)	Acetochlor, water, fltrd, µg/L (49260)	Alachlor, water, fltrd, µg/L (46342)	alpha-HCH, water, fltrd, µg/L (34253)	Atrazine, water, fltrd, µg/L (39632)	Benfluralin, water, fltrd 0.7µ GF µg/L (82673)	Butylate, water, fltrd, µg/L (04028)
NOV 2002									
18...	1015	9	<.006	<.006	<.004	<.005	.012	<.010	<.002
DEC									
16...	0945	9	<.006	<.006	<.004	<.005	.010	<.010	<.002
16...	0950	R	--	--	--	--	--	--	--
FEB 2003									
25...	0945	9	<.006	<.006	<.004	<.005	.009	<.010	<.002
MAR									
19...	1115	9	<.006	<.006	<.004	<.005	E.006	<.010	<.002
31...	1015	9	<.006	<.006	<.004	<.005	E.005	<.010	<.002
31...	1020	R	<.006	<.006	<.004	<.005	E.005	<.010	<.002
APR									
25...	1000	9	<.006	<.006	<.004	<.005	.007	<.010	<.002
MAY									
12...	1100	9	<.006	.007	<.004	<.005	.039	<.010	<.002
21...	0950	9	<.006	.015	<.004	<.005	.039	<.010	<.002
JUN									
09...	1000	9	<.006	.009	<.004	<.005	.138	<.010	<.002
09...	1010	R	--	--	--	--	--	--	--
23...	1020	9	<.006	<.006	<.004	<.005	.047	<.010	<.002
JUL									
23...	1500	9	<.006	<.010	<.004	<.005	.076	<.010	<.002
31...	1100	9	<.006	<.006	<.004	<.005	.062	<.010	<.002
AUG									
12...	1120	9	<.006	<.006	<.004	<.005	.045	<.010	<.002
12...	1128	Q	<.006	<.006	<.004	<.005	<.007	<.010	<.002
SEP									
03...	1010	9	<.006	<.006	<.004	<.005	.024	<.010	<.002
03...	1013	R	.090	.148	.146	.118	.121	.092	.123
11...	1045	9	<.006	<.006	<.004	<.005	.022	<.010	<.002

OHIO RIVER MAIN STEM

03086000 OHIO RIVER AT SEWICKLEY, PA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	CIAT, water, fltrd, µg/L (04040)	Car-baryl, water, fltrd 0.7µ GF µg/L (82680)	Carbo-furan, water, fltrd 0.7µ GF µg/L (82674)	Chlor-pyrifos water, fltrd, µg/L (38933)	Cyana-zine, water, fltrd, µg/L (04041)	DCPA, water fltrd 0.7µ GF µg/L (82682)	Diazi-non, water, fltrd, µg/L (39572)	Diazi-non-d10 surrog. wat flt 0.7µ GF percent recovry (91063)	Diel-drin, water, fltrd, µg/L (39381)	Disul-foton, water, fltrd 0.7µ GF µg/L (82677)
NOV 2002										
18...	E.005	E.005	<.020	<.005	<.018	<.003	E.003	113	<.005	<.02
DEC										
16...	E.005	<.041	<.020	<.005	<.018	<.003	<.006	101	<.005	<.02
16...	--	--	--	--	--	--	--	--	--	--
FEB 2003										
25...	E.005	<.041	<.020	<.005	<.018	<.003	<.005	106	<.005	<.02
MAR										
19...	E.004	<.041	<.020	<.005	<.018	<.003	<.005	E117	<.005	<.02
31...	E.004	<.041	<.020	<.005	<.018	<.003	<.005	121	<.005	<.02
31...	E.004	<.041	<.020	<.005	<.018	<.003	<.005	112	<.005	<.02
APR										
25...	E.004	<.041	<.020	<.005	<.018	<.003	<.005	107	<.005	<.02
MAY										
12...	E.007	E.004	<.020	<.005	<.018	<.003	<.005	100	<.005	<.02
21...	E.009	<.041	<.020	<.005	<.018	<.003	<.005	107	<.005	<.02
JUN										
09...	E.012	E.012	<.020	<.005	<.018	<.003	E.004	117	<.005	<.02
09...	--	--	--	--	--	--	--	--	--	--
23...	E.008	E.005	<.020	<.005	<.018	<.003	<.005	102	<.005	<.02
JUL										
23...	E.008	E.020	<.020	<.005	<.018	<.003	<.005	121	<.005	<.02
31...	E.009	E.017	<.020	<.005	<.018	<.003	<.005	115	<.005	<.02
AUG										
12...	E.010	<.041	<.020	<.005	<.018	<.003	<.005	104	<.005	<.02
12...	<.006	<.041	<.020	<.005	<.018	<.003	<.005	99.1	<.005	<.02
SEP										
03...	E.010	<.041	<.020	<.005	<.018	<.003	<.005	116	<.005	<.02
03...	E.044	E.116	E.129	.110	.126	.103	.138	128	.155	.08
11...	E.004	<.041	<.020	<.005	<.018	<.003	<.005	105	<.005	<.02

Date	alpha-HCH-d6, surrog, wat flt 0.7µ GF percent recovry (91065)	Azin-phos-methyl, water, fltrd 0.7µ GF µg/L (82686)	EPTC, water, fltrd 0.7µ GF µg/L (82668)	Ethal-flur-alin, water, fltrd 0.7µ GF µg/L (82663)	Etho-prop, water, fltrd 0.7µ GF µg/L (82672)	Fonofos water, fltrd, µg/L (04095)	Lindane water, fltrd, µg/L (39341)	Linuron water fltrd 0.7µ GF µg/L (82666)	Mala-thion, water, fltrd, µg/L (39532)	Methyl para-thion, water, fltrd 0.7µ GF µg/L (82667)
NOV 2002										
18...	89.6	<.050	<.002	<.009	<.005	<.003	<.004	<.035	<.027	<.006
DEC										
16...	91.9	<.050	<.002	<.009	<.005	<.003	<.004	<.035	<.027	<.006
16...	--	--	--	--	--	--	--	--	--	--
FEB 2003										
25...	77.4	<.050	<.002	<.009	<.005	<.003	<.004	<.035	<.027	<.006
MAR										
19...	90.0	<.050	<.002	<.009	<.005	<.003	<.004	<.035	<.027	<.006
31...	89.4	<.050	<.002	<.009	<.005	<.003	<.004	<.035	<.027	<.006
31...	82.4	<.050	<.002	<.009	<.005	<.003	<.004	<.035	<.027	<.006
APR										
25...	92.9	<.050	<.002	<.009	<.005	<.003	<.004	<.035	<.027	<.006
MAY										
12...	91.7	<.050	<.002	<.009	<.005	<.003	<.004	<.035	<.027	<.006
21...	85.9	<.050	<.002	<.009	<.005	<.003	<.004	<.035	<.027	<.006
JUN										
09...	99.1	<.050	<.002	<.009	<.005	<.003	<.004	<.035	<.027	<.006
09...	--	--	--	--	--	--	--	--	--	--
23...	102	<.050	<.002	<.009	<.005	<.003	<.004	<.035	<.027	<.006
JUL										
23...	109	<.050	<.002	<.009	<.005	<.003	<.004	<.035	<.027	<.006
31...	98.1	<.050	<.002	<.009	<.005	<.003	<.004	<.035	<.027	<.006
AUG										
12...	93.8	<.050	<.002	<.009	<.005	<.003	<.004	<.035	<.027	<.006
12...	88.4	<.050	<.002	<.009	<.005	<.003	<.004	<.035	<.027	<.006
SEP										
03...	78.2	<.050	<.002	<.009	<.005	<.003	<.004	<.035	<.027	<.006
03...	84.7	E.218	.095	.113	.120	.143	.113	.100	.125	.147
11...	82.3	<.050	<.002	<.009	<.005	<.003	<.004	<.035	<.027	<.006

OHIO RIVER MAIN STEM

03086000 OHIO RIVER AT SEWICKLEY, PA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	cis-Permethrin water fltrd 0.7µ GF µg/L (82687)	Metolachlor, water, fltrd, µg/L (39415)	Metribuzin, water, fltrd, µg/L (82630)	Molinate, water, fltrd 0.7µ GF µg/L (82671)	Napropamide, water, fltrd 0.7µ GF µg/L (82684)	p,p'-DDE, water, fltrd, µg/L (34653)	Parathion, water, fltrd, µg/L (39542)	Pebulate, water, fltrd 0.7µ GF µg/L (82669)	Pendimethalin, water, fltrd 0.7µ GF µg/L (82683)	Phorate water fltrd 0.7µ GF µg/L (82664)
NOV 2002										
18...	<.006	E.007	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.011
DEC										
16...	<.006	E.003	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.011
16...	--	--	--	--	--	--	--	--	--	--
FEB 2003										
25...	<.006	E.006	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.011
MAR										
19...	<.006	E.004	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.011
31...	<.006	E.004	<.006	<.005	<.007	<.003	<.010	<.004	<.022	<.011
31...	<.006	E.003	<.006	<.005	<.007	<.003	<.010	<.004	<.022	<.011
APR										
25...	<.006	E.001	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.011
MAY										
12...	<.006	.015	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.011
21...	<.006	.013	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.011
JUN										
09...	<.006	.039	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.011
09...	--	--	--	--	--	--	--	--	--	--
23...	<.006	E.011	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.011
JUL										
23...	<.006	.019	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.011
31...	<.006	.016	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.011
AUG										
12...	<.006	E.011	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.011
12...	<.006	<.013	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.011
SEP										
03...	<.006	E.009	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.011
03...	.046	.136	.087	.109	.160	.057	.122	.119	.143	.100
11...	<.006	E.011	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.011

Date	Prometon, water, fltrd, µg/L (04037)	Pronamide, water, fltrd 0.7µ GF µg/L (82676)	Propachlor, water, fltrd, µg/L (04024)	Propanil, water, fltrd 0.7µ GF µg/L (82679)	Propargite, water, fltrd 0.7µ GF µg/L (82685)	Simazine, water, fltrd, µg/L (04035)	Tebuthiuron water fltrd 0.7µ GF µg/L (82670)	Terbacil, water, fltrd 0.7µ GF µg/L (82665)	Terbufos, water, fltrd 0.7µ GF µg/L (82675)	Thiobencarb water, fltrd 0.7µ GF µg/L (82681)
NOV 2002										
18...	E.01	<.004	<.010	<.011	<.02	.005	<.02	<.034	<.02	<.005
DEC										
16...	<.01	<.004	<.010	<.011	<.02	<.005	<.02	<.034	<.02	<.005
16...	--	--	--	--	--	--	--	--	--	--
FEB 2003										
25...	<.01	<.004	<.010	<.011	<.02	<.005	<.02	<.034	<.02	<.005
MAR										
19...	<.01	<.004	<.010	<.011	<.02	<.005	<.02	<.034	<.02	<.005
31...	<.01	<.004	<.010	<.011	<.02	<.005	<.02	<.034	<.02	<.005
31...	<.01	<.004	<.010	<.011	<.02	<.005	<.02	<.034	<.02	<.005
APR										
25...	E.01	<.004	<.010	<.011	<.02	.007	<.02	<.034	<.02	<.005
MAY										
12...	E.01	<.004	<.010	<.011	<.02	.009	<.02	<.034	<.02	<.005
21...	<.01	<.004	<.010	<.011	<.02	<.005	<.02	<.034	<.02	<.005
JUN										
09...	E.01	<.004	<.010	<.011	<.02	.009	<.02	<.034	<.02	<.005
09...	--	--	--	--	--	--	--	--	--	--
23...	E.01	<.004	<.010	<.011	<.02	.010	<.02	<.034	<.02	<.005
JUL										
23...	E.01	<.004	<.010	<.011	<.02	E.004	<.02	<.034	<.02	<.005
31...	E.01	<.004	<.010	<.011	<.02	.010	<.02	<.034	<.02	<.005
AUG										
12...	E.01	<.004	<.010	<.011	<.02	.007	<.02	<.034	<.02	<.005
12...	<.01	<.004	<.010	<.011	<.02	<.005	<.02	<.034	<.02	<.005
SEP										
03...	E.01	<.004	<.010	<.011	<.02	.008	<.02	<.034	<.02	<.005
03...	.13	.110	.143	.114	.17	.098	.14	E.106	.09	.122
11...	E.01	<.004	<.010	<.011	<.02	<.005	<.02	<.034	<.02	<.005

OHIO RIVER MAIN STEM

03086000 OHIO RIVER AT SEWICKLEY, PA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Thiobencarb water fltrd 0.7µ GF µg/L (82681)	Trifluralin, water, fltrd 0.7µ GF µg/L (82661)
NOV 2002		
18...	<.005	<.009
DEC		
16...	<.005	<.009
16...	--	--
FEB 2003		
25...	<.005	<.009
MAR		
19...	<.005	<.009
31...	<.005	<.009
31...	<.005	<.009
APR		
25...	<.005	<.009
MAY		
12...	<.005	<.009
21...	<.005	<.009
JUN		
09...	<.005	<.009
09...	--	--
23...	<.005	<.009
JUL		
23...	<.005	<.009
31...	<.005	<.009
AUG		
12...	<.005	<.009
12...	<.005	<.009
SEP		
03...	<.005	<.009
03...	.122	.095
11...	<.005	<.009

BEAVER RIVER BASIN

03101500 SHENANGO RIVER AT PYMATUNING DAM, PA
(Pennsylvania Water-Quality Network Station)

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 mi^2.

WATER-DISCHARGE RECORDS

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 National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Flow regulated since December 1933 by Pymatuning Reservoir (station 03100500). Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	87	83	83	193	182	191	196	138	288	71	494	134
2	87	83	84	176	184	195	196	114	304	71	568	137
3	87	83	84	169	185	195	194	79	343	71	474	130
4	87	82	85	198	227	192	214	75	343	85	519	132
5	87	82	85	196	209	213	346	78	343	81	582	132
6	87	83	84	196	198	212	210	89	339	73	578	132
7	87	82	83	191	196	195	213	80	339	73	576	132
8	87	81	83	194	193	210	220	78	339	72	571	132
9	87	81	83	199	193	269	250	86	340	78	568	132
10	87	81	83	200	193	171	270	102	341	81	568	132
11	86	91	83	191	191	122	266	88	339	86	567	132
12	86	85	86	186	187	122	266	168	345	72	562	132
13	85	82	89	183	189	141	262	220	405	69	558	132
14	85	81	111	182	188	140	262	208	355	67	556	133
15	85	81	100	182	186	147	262	204	346	67	554	134
16	85	81	93	182	183	156	262	204	445	54	552	135
17	85	82	90	185	183	144	262	202	504	73	550	229
18	85	83	88	193	185	131	262	200	506	122	506	272
19	85	83	119	193	185	126	262	156	509	121	175	161
20	85	84	169	193	184	125	262	134	506	120	125	147
21	85	85	150	193	184	141	239	143	504	496	125	140
22	85	86	145	193	189	152	215	135	503	199	125	148
23	85	85	144	191	243	131	213	134	499	156	125	171
24	85	85	142	193	215	126	209	198	496	363	125	197
25	78	85	140	192	200	153	181	190	496	510	128	222
26	85	83	141	193	194	212	141	208	239	495	130	219
27	85	85	141	193	192	200	140	204	122	460	130	285
28	83	84	140	193	193	196	138	223	123	423	130	241
29	83	85	141	193	---	212	138	235	124	504	130	266
30	83	85	142	193	---	206	138	232	91	566	130	294
31	83	---	209	190	---	197	---	328	---	593	130	---
TOTAL	2642	2502	3500	5899	5431	5323	6689	4933	10776	6372	11611	5115
MEAN	85.2	83.4	113	190	194	172	223	159	359	206	375	170
MAX	87	91	209	200	243	269	346	328	509	593	582	294
MIN	78	81	83	169	182	122	138	75	91	54	125	130
CFSM	0.51	0.50	0.68	1.14	1.16	1.03	1.34	0.95	2.15	1.23	2.24	1.02
IN.	0.59	0.56	0.78	1.31	1.21	1.19	1.49	1.10	2.40	1.42	2.59	1.14

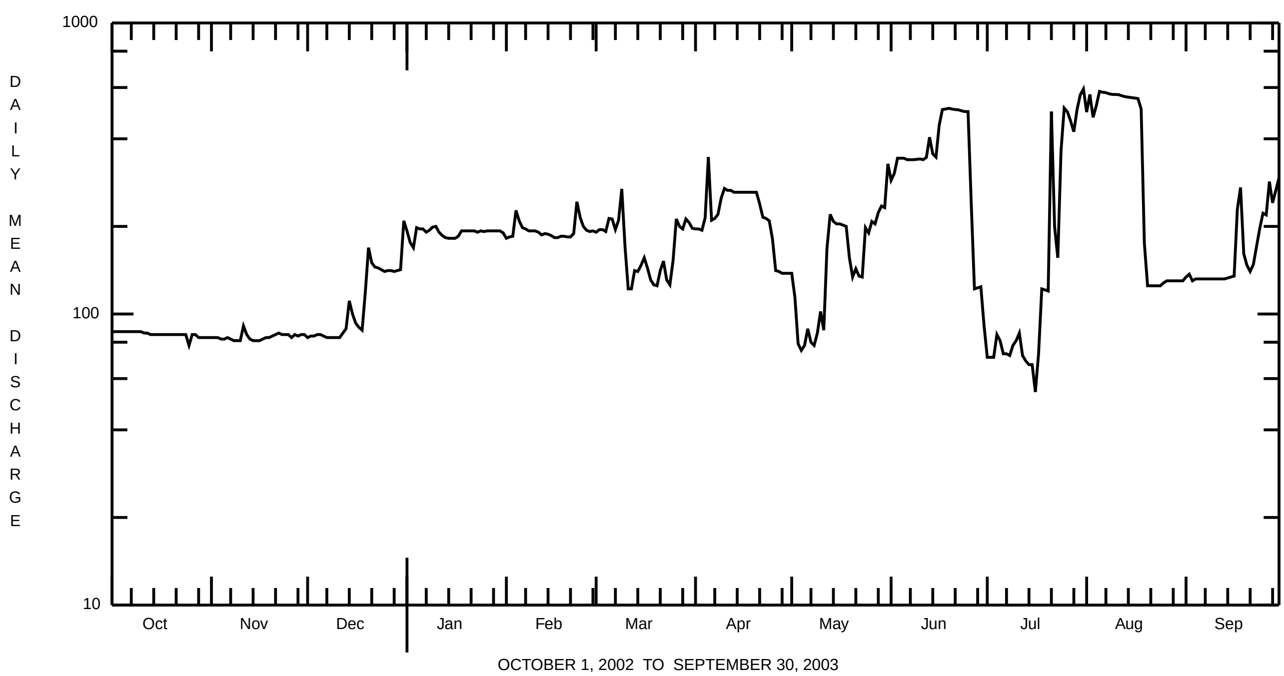
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1935 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	165	179	292	276	276	256	198	165	162	150	162	181
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

BEAVER RIVER BASIN

03101500 SHENANGO RIVER AT PYMATUNING DAM, PA--Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1935 - 2003	
ANNUAL TOTAL	67305		70793			
ANNUAL MEAN	184		194		205	
HIGHEST ANNUAL MEAN					330	1956
LOWEST ANNUAL MEAN					16.6	1935
HIGHEST DAILY MEAN	527	May 30	593	Jul 31	1240	Jan 28 1937
LOWEST DAILY MEAN	66	Jul 6,7	54	Jul 16	0.40	Aug 25 1935
ANNUAL SEVEN-DAY MINIMUM	69	Jul 1	70	Jul 11	0.73	Jun 6 1935
MAXIMUM PEAK FLOW			1010	Jul 21	1540	Sep 4 1937
MAXIMUM PEAK STAGE			7.29	Jul 21	9.20	Sep 4 1937
ANNUAL RUNOFF (CFSM)	1.10		1.16		1.23	
ANNUAL RUNOFF (INCHES)	14.99		15.77		16.67	
10 PERCENT EXCEEDS	481		412		545	
50 PERCENT EXCEEDS	130		161		134	
90 PERCENT EXCEEDS	83		83		26	



BEAVER RIVER BASIN

03101500 SHENANGO RIVER AT PYMATUNING DAM, PA--Continued
(Pennsylvania Water-Quality Network Station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 2002 to current year.

REMARKS.--Other data for the Water-Quality Network can be found on pages 242-289.

COOPERATION.--Samples were collected as part of the Pennsylvania Department of Environmental Protection Water-Quality Network (WQN) with cooperation from the Pennsylvania Department of Environmental Protection.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Agency collecting sample, code (00027)	Agency analyzing sample, code (00028)	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf µS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water unfltrd recoverable, mg/L (00916)	Magnesium, water, unfltrd recoverable, mg/L (00927)	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (00417)
NOV 2002													
18...	0830	1028	9813	84	40	10.0	7.9	173	6.8	77	23.0	4.8	56
JAN 2003													
14...	1230	1028	9813	182	40	15.2	7.8	193	.8	74	21.3	5.1	53
MAR													
18...	0900	1028	9813	132	40	12.9	7.3	203	4.0	76	21.8	5.3	53
JUN													
04...	1405	1028	9813	343	40	9.4	7.7	186	16.5	72	21.1	4.6	51
JUL													
29...	1310	1028	9813	504	40	8.5	6.9	184	--	70	20.2	4.7	55
SEP													
23...	1310	1028	9813	165	40	9.1	7.2	178	19.5	69	20.1	4.6	53

Date	Fluoride, water, unfltrd mg/L (00951)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 105degC wat flt mg/L (00515)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia water, unfltrd mg/L as N (00610)	Nitrate water unfltrd mg/L as N (00620)	Nitrite water, unfltrd mg/L as N (00615)	Orthophosphate, water, unfltrd mg/L as P (70507)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, unfltrd mg/L (00600)	Organic carbon, water, unfltrd mg/L (00680)	Aluminum, water, unfltrd recoverable, µg/L (01105)	Copper, water, unfltrd recoverable, µg/L (01042)
NOV 2002													
18...	--	16.2	142	4	.060	--	--	--	.068	1.2	5.3	<200	<10
JAN 2003													
14...	<.2	15.3	132	8	.060	.27	<.040	.02	.042	.92	6.4	<200	<10
MAR													
18...	--	16.3	156	8	.220	.68	<.040	.02	.024	1.5	6.0	<200	<10
JUN													
04...	<.2	14.7	122	30	.290	.14	<.040	.06	.062	1.5	6.0	1000	<10
JUL													
29...	<.2	13.0	128	4	.180	.15	<.040	.02	.036	.99	6.5	<200	<10
SEP													
23...	<.2	12.8	112	14	.030	.16	<.040	.04	.049	.78	6.7	400	<10

Date	Cyanide amenable to chlorination wat unf mg/L (00722)	Iron, water, unfltrd recoverable, µg/L (01045)	Lead, water, unfltrd recoverable, µg/L (01051)	Manganese, water, unfltrd recoverable, µg/L (01055)	Nickel, water, unfltrd recoverable, µg/L (01067)	Zinc, water, unfltrd recoverable, µg/L (01092)	Phenolic compounds, water, unfltrd µg/L (32730)
NOV 2002							
18...	--	200	<1.0	80	<50	<10	--
JAN 2003							
14...	--	100	<1.0	50	<50	<10	<5
MAR							
18...	--	150	<1.0	290	<50	50	--
JUN							
04...	<1.00	1040	<1.0	200	<50	20	<5
JUL							
29...	<1.00	240	49.3	110	<50	<10	<5
SEP							
23...	<1.00	570	<1.0	130	<50	<10	<5

BEAVER RIVER BASIN

03101500 SHENANGO RIVER AT PYMATUNING DAM, PA--Continued

BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES

REMARKS.--Samples were collected using rapid bioassessment protocols for benthic macroinvertebrates using a D-Frame net with a mesh size of 500 µm. Samples represent counts per 100 (approximate) subsamples.

Date Benthic Macroinvertebrate	9/24/02 Count
Nematoda (NEMATODES)	1
Annelida	
Oligochaeta (AQUATIC EARTHWORMS)	
Tubificida	
Naididae	6
Tubificidae	2
Arthropoda	
Crustacea	
Amphipoda (SCUDS)	
Gammaridae	
Gammarus sp	1
Isopoda (AQUATIC SOWBUGS)	
Asellidae	
Caecidotea sp	1
Insecta	
Trichoptera (CADDISFLIES)	
Hydropsychidae	
Cheumatopsyche sp	4
Hydroptilidae	
Hydroptila sp	1
Coleoptera (BEETLES)	
Elmidae (RIFFLE BEETLES)	
Stenelmis sp	1
Diptera (TRUE FLIES)	
Chironomidae (MIDGES)	112
Empididae (DANCE FLIES)	
Hemerodromia sp	2
Simuliidae (BLACK FLIES)	
Simulium sp	1
Total Organisms	132

03102500 LITTLE SHENANGO RIVER AT GREENVILLE, PA
(Pennsylvania Water-Quality Network Station)

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 mi^2.

WATER-DISCHARGE RECORDS

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 National Geodetic Vertical Datum of 1929. 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 those for estimated daily discharges, which are poor. Several measurements of water temperature were made during the year. Satellite telemetry at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a base discharge of 1,500 ft^3/s and maximum (*****):

Date	Time	Discharge ft^3/s	Gage Height (ft)	Date	Time	Discharge ft^3/s	Gage Height (ft)
July 22	1000	*3,730	*9.76	No other peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	26	e34	621	e74	e136	166	51	939	33	105	73
2	11	27	e30	604	e80	e133	174	78	424	29	86	286
3	9.8	27	e30	e357	e83	e123	146	75	232	38	216	203
4	9.1	26	e30	e233	e238	e118	155	61	190	73	292	111
5	7.9	26	e25	e185	e511	e112	1020	68	160	108	237	87
6	8.4	33	e27	e153	e297	e108	977	113	135	82	607	69
7	7.8	35	e22	e122	e195	e103	436	141	112	166	266	59
8	7.1	41	e22	e118	e147	e110	528	127	124	94	146	53
9	6.8	36	e20	128	e112	e631	362	142	302	118	118	48
10	7.6	32	e22	179	e107	e401	275	247	177	214	679	43
11	7.5	126	e20	139	e99	e214	218	231	164	435	824	39
12	7.4	111	e27	e105	e96	e192	173	182	284	196	288	34
13	7.4	66	e39	e90	e96	e256	137	294	501	95	165	32
14	9.1	47	e124	e86	e93	444	113	249	346	67	120	32
15	9.0	38	299	e82	e99	368	100	162	202	51	99	46
16	12	39	160	e78	e96	419	90	133	135	43	85	75
17	18	54	112	e76	e101	426	81	111	105	37	77	53
18	18	80	87	e76	e99	332	77	92	102	34	67	42
19	20	73	77	e69	e99	259	71	79	103	34	57	193
20	22	72	240	e67	e96	204	67	80	108	30	51	301
21	21	65	e193	e67	e99	219	152	296	90	1170	46	125
22	18	60	e143	e63	e139	308	203	218	78	3450	43	117
23	16	72	e100	e58	e358	236	149	125	67	1950	39	582
24	15	64	e79	e53	e240	177	112	437	57	e1370	35	385
25	14	56	e73	e52	e176	145	94	306	50	e802	32	203
26	29	50	e69	e57	e163	245	82	177	44	e563	39	153
27	42	46	e69	e58	e155	234	72	128	41	e428	78	520
28	31	41	e67	e59	e147	165	64	113	42	e667	53	732
29	25	38	e65	e62	---	192	58	103	37	e511	42	326
30	25	38	e62	e70	---	287	54	88	35	e292	60	226
31	26	---	360	e72	---	193	---	391	---	127	59	---
TOTAL	481.9	1545	2727	4239	4295	7490	6406	5098	5386	13307	5111	5248
MEAN	15.5	51.5	88.0	137	153	242	214	164	180	429	165	175
MAX	42	126	360	621	511	631	1020	437	939	3450	824	732
MIN	6.8	26	20	52	74	103	54	51	35	29	32	32
CFSM	0.15	0.50	0.85	1.31	1.47	2.32	2.05	1.58	1.73	4.13	1.59	1.68
IN.	0.17	0.55	0.98	1.52	1.54	2.68	2.29	1.82	1.93	4.76	1.83	1.88

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1914 - 2003, BY WATER YEAR (WY)

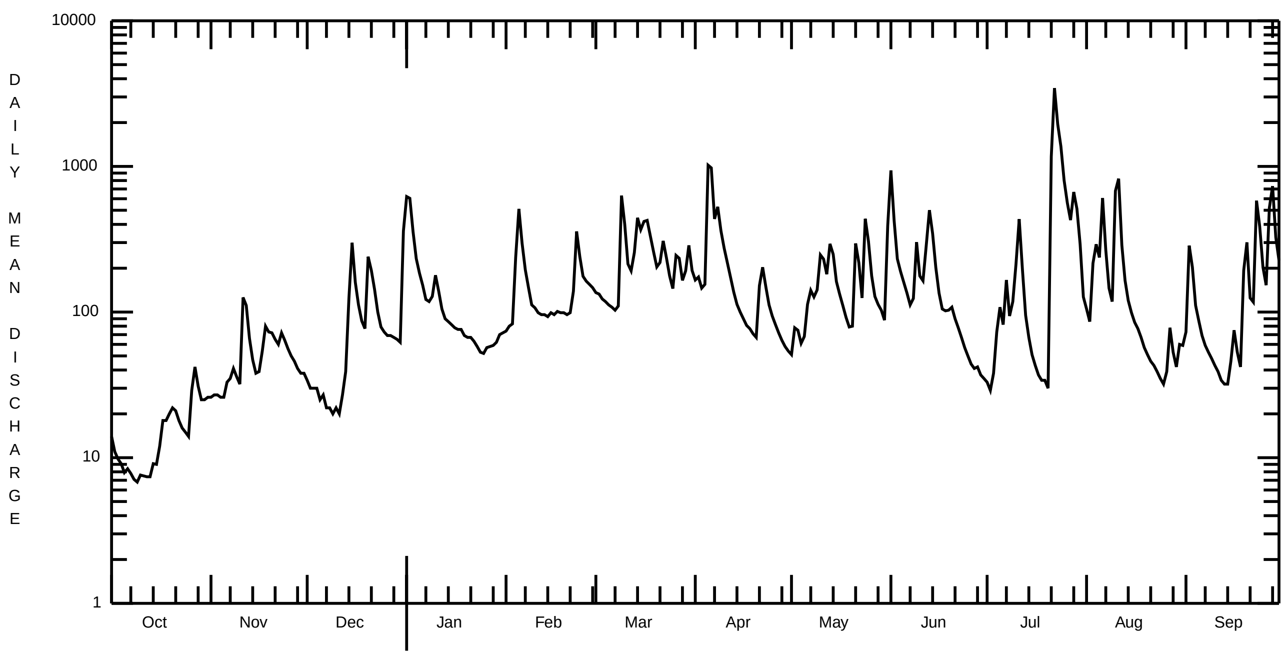
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	58.8	121	175	205	222	293	233	156	93.6	63.8	43.2	42.0
MAX	343	639	521	773	553	659	506	511	395	457	284	316
(WY)	1927	1986	1928	1937	1976	1963	1957	1929	1989	1958	1980	1926
MIN	5.19	6.31	16.8	21.3	36.0	66.5	16.7	21.8	11.9	5.91	5.33	5.90
(WY)	1964	1931	1961	1977	1963	1915	1915	1934	1934	1934	1930	1930

e Estimated.

03102500 LITTLE SHENANGO RIVER AT GREENVILLE, PA--Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1914 - 2003	
ANNUAL TOTAL	42494.8		61333.9			
ANNUAL MEAN	116		168		142	
HIGHEST ANNUAL MEAN					218	1956
LOWEST ANNUAL MEAN					65.6	1931
HIGHEST DAILY MEAN	1760	May 14	3450	Jul 22	5980	Jan 22 1959
LOWEST DAILY MEAN	3.7	Sep 13	6.8	Oct 9	2.8	Aug 16 2001
ANNUAL SEVEN-DAY MINIMUM	5.2	Sep 8	7.4	Oct 7	3.3	Sep 7 2001
MAXIMUM PEAK FLOW			**a**3730	Jul 22	**a**8540	Jan 22 1959
MAXIMUM PEAK STAGE			9.76	Jul 22	14.30	Jan 22 1959
INSTANTANEOUS LOW FLOW			6.5	Oct 9	2.4	Aug 16 2001**b**
ANNUAL RUNOFF (CFSM)	1.12		1.62		1.36	
ANNUAL RUNOFF (INCHES)	15.20		21.94		18.52	
10 PERCENT EXCEEDS	279		361		326	
50 PERCENT EXCEEDS	64		96		66	
90 PERCENT EXCEEDS	8.7		26		13	

a From rating curve extended above 3,200 ft^3/s on basis of slope-area measurement at gage height 12.26 ft.
b Also Sept. 13.



OCTOBER 1, 2002 TO SEPTEMBER 30, 2003

BEAVER RIVER BASIN

03102500 LITTLE SHENANGO RIVER AT GREENVILLE, PA--Continued
(Pennsylvania Water-Quality Network Station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 2002 to current year.

REMARKS.--Other data for the Water-Quality Network can be found on pages 242-289.

COOPERATION.--Samples were collected as part of the Pennsylvania Department of Environmental Protection Water-Quality Network (WQN) with cooperation from the Pennsylvania Department of Environmental Protection.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Agency collecting sample, code (00027)	Agency analyzing sample, code (00028)	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf µS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water unfltrd recoverable, mg/L (00916)	Magnesium, water, unfltrd recoverable, mg/L (00927)	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (00417)
NOV 2002													
19...	0945	1028	9813	71	40	10.4	7.6	283	4.4	130	39.5	7.4	84
JAN 2003													
14...	1100	1028	9813	E86	40	14.4	7.7	279	.0	98	28.4	6.5	60
MAR													
18...	1030	1028	9813	337	40	12.5	7.2	164	6.2	60	17.3	4.0	32
JUN													
04...	1230	1028	9813	190	40	9.8	7.7	194	13.5	76	22.5	4.8	56
JUL													
29...	1105	1028	9813	E510	40	7.4	6.5	174	19.2	69	20.4	4.3	53
SEP													
23...	1145	1028	9813	656	40	8.3	6.9	157	16.5	68	19.2	4.8	48

Date	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 105degC wat flt mg/L (00515)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia water, unfltrd mg/L as N (00610)	Nitrate water unfltrd mg/L as N (00620)	Nitrite water, unfltrd mg/L as N (00615)	Orthophosphate, water, unfltrd mg/L as P (70507)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, unfltrd mg/L (00600)	Organic carbon, water, unfltrd mg/L (00680)	Aluminum, water, unfltrd recoverable, µg/L (01105)	Copper, water, unfltrd recoverable, µg/L (01042)	Iron, water, unfltrd recoverable, µg/L (01045)
NOV 2002													
19...	35.3	208	14	<.020	.62	<.040	.01	.023	1.3	5.5	<200	<10	500
JAN 2003													
14...	27.5	186	6	.040	1.41	<.040	.01	.016	1.7	4.4	<200	<10	460
MAR													
18...	18.2	66	44	.030	1.04	<.040	.03	.032	1.4	4.3	900	<10	1410
JUN													
04...	14.7	146	26	.070	.73	<.040	.04	.059	1.4	6.8	900	<10	1780
JUL													
29...	12.1	132	100	.060	.52	<.040	.07	.133	1.3	9.7	2300	<10	4220
SEP													
23...	10.7	394	204	.020	.43	<.040	.16	.206	1.2	9.1	5900	<10	7800

Date	Lead, water, unfltrd recoverable, µg/L (01051)	Manganese, water, unfltrd recoverable, µg/L (01055)	Nickel, water, unfltrd recoverable, µg/L (01067)	Zinc, water, unfltrd recoverable, µg/L (01092)
NOV 2002				
19...	<1.0	40	<50	<10
JAN 2003				
14...	<1.0	80	<50	<10
MAR				
18...	1.1	80	<50	40
JUN				
04...	1.3	130	<50	230
JUL				
29...	3.1	190	<50	20
SEP				
23...	5.2	330	<50	20

BEAVER RIVER BASIN

03102500 LITTLE SHENANGO RIVER AT GREENVILLE, PA--Continued

BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES

REMARKS.--Samples were collected using rapid bioassessment protocols for benthic macroinvertebrates using a D-Frame net with a mesh size of 500 µm. Samples represent counts per 100 (approximate) subsamples.

Date	9/25/02
Benthic Macroinvertebrate	Count
Nematoda (NEMATODES)	1
Mollusca	
Gastropoda (SNAILS)	
Basommatophora	
Hydrobiidae	
Amnicola sp	1
Bivalvia (CLAMS)	
Veneroida	
Sphaeriidae	
Sphaerium sp	8
Arthropoda	
Acariformes	
Hydrachnidia (WATER MITES)	1
Insecta	
Ephemeroptera (MAYFLIES)	
Baetidae	
Baetis sp	6
Caenidae	
Caenis sp	11
Heptageniidae	
Stenonema sp	4
Trichoptera (CADDISFLIES)	
Helicopsychidae	
Helicopsyche sp	1
Hydropsychidae	
Cheumatopsyche sp	14
Hydropsyche sp	5
Philopotamidae	
Chimarra sp	25
Coleoptera (BEETLES)	
Elmidae (RIFFLE BEETLES)	
Optioservus sp	5
Stenelmis sp	2
Psephenidae (WATER PENNIES)	
Psephenus sp	1
Diptera (TRUE FLIES)	
Chironomidae (MIDGES)	29
Empididae (DANCE FLIES)	
Hemerodromia sp	2
Total Organisms	116

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 northeast of Transfer, at mile 71.8.

DRAINAGE AREA.--337 mi^2.

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 National Geodetic Vertical Datum of 1929 (Pennsylvania Department of Transportation benchmark).

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow regulated since December 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 telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	101	121	138	1260	e319	e381	452	212	1910	130	733	283
2	98	121	e133	1080	e319	e376	452	264	865	119	788	593
3	95	120	e128	643	e323	e376	407	203	668	115	1040	399
4	95	120	e128	e534	e586	e381	443	188	617	281	998	272
5	96	121	e126	e442	e1060	e486	2780	202	575	339	1180	233
6	95	134	e122	e388	e645	e752	1590	259	536	311	1850	212
7	94	134	e118	e361	e426	e480	884	267	502	331	1090	200
8	93	136	e115	e361	e370	e590	1050	244	551	232	884	188
9	93	132	e114	e350	e342	1710	760	289	819	327	852	180
10	94	144	e112	e350	e325	920	667	550	592	536	1470	172
11	94	342	e114	e353	e309	474	582	445	598	745	1730	167
12	94	253	e121	e350	e314	420	522	410	837	354	1040	161
13	95	174	e149	e353	e314	787	466	680	1400	215	865	157
14	96	147	e228	e350	e286	859	423	558	889	178	795	160
15	97	133	e398	e332	e265	758	399	421	648	161	757	198
16	111	133	e284	e325	e266	882	385	396	593	147	739	222
17	113	171	e201	e314	e266	818	376	360	679	96	720	225
18	108	210	e182	e307	e260	625	367	327	686	165	699	304
19	119	193	e173	e303	e262	491	357	289	695	164	369	678
20	120	189	e512	e303	e249	414	353	293	686	159	198	590
21	116	174	e411	e307	e258	473	536	648	649	2840	186	313
22	111	181	e337	e307	e316	677	516	421	628	5560	180	392
23	107	208	e295	e307	e893	483	424	319	606	3260	173	1110
24	106	181	e263	e307	e645	382	367	1230	590	2840	168	669
25	107	165	e245	e303	e516	341	338	628	581	1670	165	484
26	142	159	e236	e303	e477	653	257	460	450	1070	201	406
27	141	153	e230	e311	e415	572	241	377	186	1060	220	1450
28	127	148	e228	e311	e399	450	230	366	176	1560	193	1340
29	118	143	e232	e307	---	573	223	366	167	1220	202	676
30	119	138	e241	e319	---	676	215	338	163	895	228	581
31	118	---	963	e319	---	500	---	1490	---	879	207	---
TOTAL	3313	4878	7277	12460	11425	18760	17062	13500	19542	27959	20920	13015
MEAN	107	163	235	402	408	605	569	435	651	902	675	434
MAX	142	342	963	1260	1060	1710	2780	1490	1910	5560	1850	1450
MIN	93	120	112	303	249	341	215	188	163	96	165	157
CFSM	0.32	0.48	0.70	1.19	1.21	1.80	1.69	1.29	1.93	2.68	2.00	1.29
IN.	0.37	0.54	0.80	1.38	1.26	2.07	1.88	1.49	2.16	3.09	2.31	1.44

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 2003, BY WATER YEAR (WY)

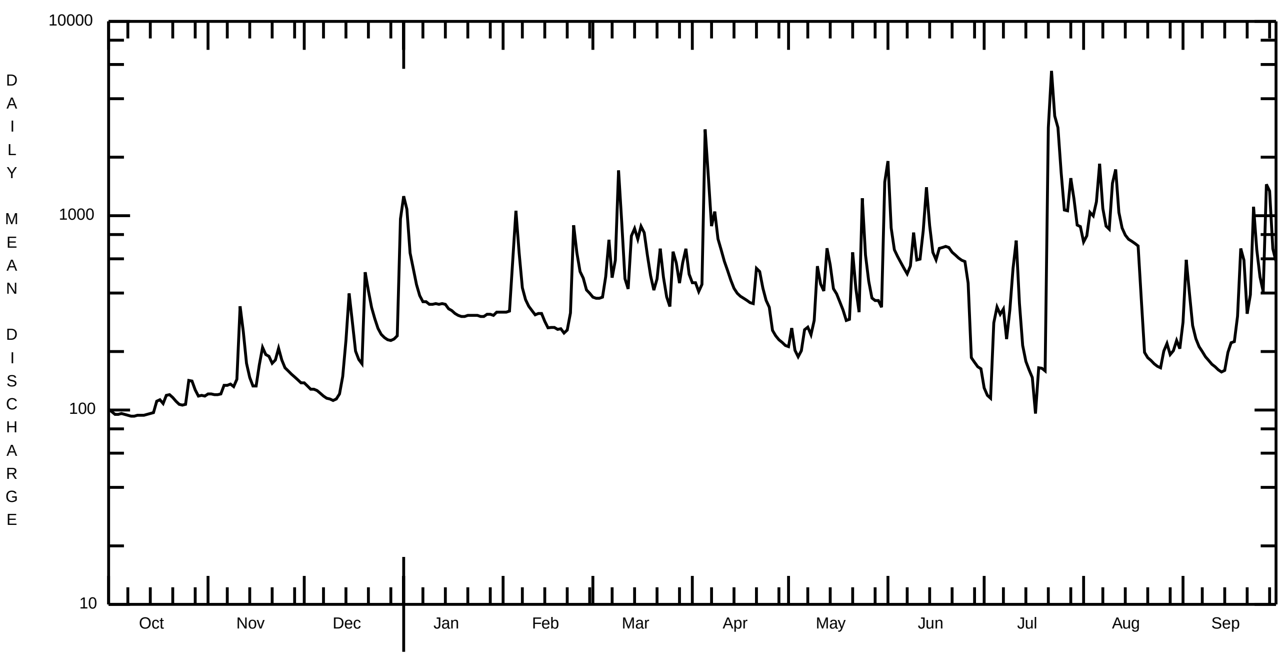
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	279	509	783	649	654	657	563	435	337	260	208	249
MAX	1034	1627	1343	1242	1319	1212	1273	1162	1080	902	1005	717
(WY)	1991	1986	1991	1993	1990	1985	1994	2002	1989	2003	1980	1987
MIN	57.9	88.4	128	151	121	172	207	82.9	86.2	46.5	81.6	101
(WY)	1983	1999	1999	1977	1987	1969	1968	1987	1967	1968	1982	1999

e Estimated.

03102850 SHENANGO RIVER NEAR TRANSFER, PA--Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1966 - 2003	
ANNUAL TOTAL	141545		170111			
ANNUAL MEAN	388		466		464	
HIGHEST ANNUAL MEAN					663	1997
LOWEST ANNUAL MEAN					265	1999
HIGHEST DAILY MEAN	3880	May 13	5560	Jul 22	5560	Jul 22 2003
LOWEST DAILY MEAN	93	Oct 8,9	93	Oct 8,9	33	Jul 21 1968
ANNUAL SEVEN-DAY MINIMUM	94	Oct 6	94	Oct 6	39	Jul 17 1968
MAXIMUM PEAK FLOW			**a**6150	Jul 22	**a**6150	Jul 22 2003
MAXIMUM PEAK STAGE			11.33	Jul 22	11.33	Jul 22 2003
INSTANTANEOUS LOW FLOW			73	Jul 17	33	Jul 20 1968
ANNUAL RUNOFF (CFSM)	1.15		1.38		1.38	
ANNUAL RUNOFF (INCHES)	15.62		18.78		18.72	
10 PERCENT EXCEEDS	877		886		992	
50 PERCENT EXCEEDS	238		327		287	
90 PERCENT EXCEEDS	111		120		101	

a From rating curve extended above 4,800 ft^3/s.



OCTOBER 1, 2002 TO SEPTEMBER 30, 2003

BEAVER RIVER BASIN

03105500 BEAVER RIVER AT WAMPUM, PA
(Pennsylvania Water-Quality Network Station)

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 mi^2.

WATER-DISCHARGE RECORDS

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 National Geodetic Vertical Datum of 1929 (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 1916 by Milton Reservoir, since November 1929 by Meander Creek Reservoir, since December 1933 by Pymatuning Reservoir (station 03100500), since December 1942 by Berlin Lake, since October 1943 by Mosquito Creek Lake, since December 1966 by Michael J. Kirwan Reservoir, and since January 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 telemetry at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1912, 29.9 ft, Mar. 26, 1913, from floodmark, discharge, about 87,000 ft^3/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	757	581	967	5850	951	2860	3110	1240	10700	1270	6940	2530
2	666	532	922	6780	1040	2610	2840	1220	7660	1210	6790	15300
3	591	463	879	5020	1040	2710	2600	1350	5670	1270	8680	9730
4	578	439	811	4330	2660	2640	2460	1320	4440	1300	9070	6230
5	620	448	851	4190	3310	3930	6040	1310	4660	2300	8600	4500
6	591	583	845	3920	2550	5470	7590	1770	4510	1760	8910	4100
7	561	666	815	3830	3040	4190	6710	1800	4280	3630	8300	3650
8	541	615	841	3970	2660	4030	6060	1460	3530	4240	7670	3460
9	535	546	811	3860	2430	7850	6830	1620	4990	8290	6780	2790
10	534	530	784	3680	2290	7190	6520	5900	4350	7170	12900	2080
11	532	2370	840	3190	1810	5580	6040	7540	3310	11600	8080	2000
12	528	1970	1080	2610	1700	5040	3920	5580	3070	7450	6430	1840
13	533	1330	1220	2290	1320	6460	3220	4870	4830	5810	5600	1480
14	524	985	2120	2180	1250	8320	3020	5950	7440	4780	5190	1400
15	513	822	3110	1950	1220	6820	2740	5750	5130	4000	4990	1470
16	624	861	2480	1480	1140	6540	2240	5910	3910	3860	4870	1830
17	855	1050	2040	1290	1100	6450	2400	5860	3540	3530	5090	1490
18	682	1310	1760	1100	1200	6290	2300	5450	4270	3030	4640	1370
19	616	1260	1630	1100	1190	5450	2100	4130	4160	2790	4410	5120
20	697	1360	2770	1110	1200	3960	1630	3670	4130	2440	3560	5570
21	636	1210	2890	1080	1230	3110	2410	6940	3630	2510	2320	4380
22	584	1150	2230	1010	1440	3050	2450	6260	2700	15100	1630	3910
23	549	1310	2150	968	5400	3300	2110	4770	2350	27500	1300	8410
24	505	1310	1990	996	4430	2950	2220	10100	2170	25700	1330	6670
25	510	1220	1980	952	3840	2690	2120	8830	1650	13400	1290	5470
26	995	1100	1920	951	3580	2810	1650	6430	1510	6820	2010	4730
27	969	1040	1600	889	3150	3380	1510	5490	1540	7090	2610	5920
28	753	1000	1460	911	3110	3240	1420	4830	1500	24300	1800	9230
29	645	968	1380	895	---	3140	1190	4190	1280	16700	1500	8040
30	626	963	1350	830	---	4040	1150	3170	1250	9290	6530	5890
31	612	---	2830	830	---	3730	---	4630	---	7550	3600	---
TOTAL	19462	29992	49356	74042	61281	139830	98600	139340	118160	237690	163420	140590
MEAN	628	1000	1592	2388	2189	4511	3287	4495	3939	7667	5272	4686
MAX	995	2370	3110	6780	5400	8320	7590	10100	10700	27500	12900	15300
MIN	505	439	784	830	951	2610	1150	1220	1250	1210	1290	1370
CFSM	0.28	0.45	0.71	1.07	0.98	2.02	1.47	2.01	1.76	3.43	2.36	2.10
IN.	0.32	0.50	0.82	1.23	1.02	2.33	1.64	2.32	1.97	3.96	2.72	2.34

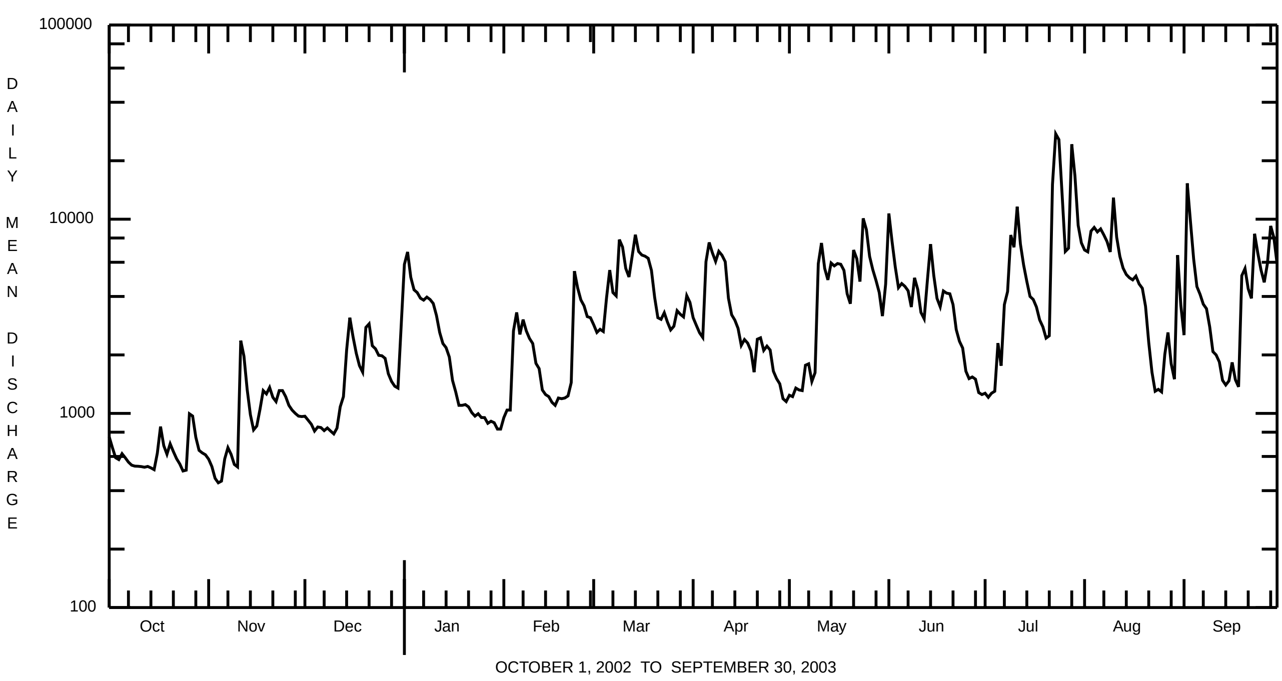
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1915 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1243	1775	2810	3391	3859	4818	3922	2702	1999	1553	1300	1226
MAX	5888	7936	7978	13030	8779	9098	9226	8362	8004	7667	5272	4759
(WY)	1991	1986	1991	1937	1915	1916	1994	1996	1989	2003	2003	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

03105500 BEAVER RIVER AT WAMPUM, PA--Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1915 - 2003	
ANNUAL TOTAL	821980		1271763			
ANNUAL MEAN	2252		3484		2550	
HIGHEST ANNUAL MEAN					3995	1956
LOWEST ANNUAL MEAN					834	1934
HIGHEST DAILY MEAN	17900	May 14	27500	Jul 23	47500	Jan 22 1959
LOWEST DAILY MEAN	439	Nov 4	439	Nov 4	88	Oct 5 1914
ANNUAL SEVEN-DAY MINIMUM	523	Oct 31	523	Oct 31	94	Oct 3 1914
MAXIMUM PEAK FLOW			**a**29100	Jul 23	**a**50100	May 28 1946
MAXIMUM PEAK STAGE			15.65	Jul 23	**b**21.53	May 28 1946
INSTANTANEOUS LOW FLOW					**c**74	Jul 30 1933
ANNUAL RUNOFF (CFSM)	1.01		1.56		1.14	
ANNUAL RUNOFF (INCHES)	13.68		21.17		15.50	
10 PERCENT EXCEEDS	5520		7000		5850	
50 PERCENT EXCEEDS	1310		2530		1430	
90 PERCENT EXCEEDS	666		731		577	

a From slope-rating curve extended above 28,000 ft^3/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.



03105500 BEAVER RIVER AT WAMPUM, PA--Continued
(Pennsylvania Water-Quality Network Station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 2002 to current year.

REMARKS.--Other data for the Water-Quality Network can be found on pages 242-289.

COOPERATION.--Samples were collected as part of the Pennsylvania Department of Environmental Protection Water-Quality Network (WQN) with cooperation from the Pennsylvania Department of Environmental Protection.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Agency collecting sample, code (00027)	Agency analyzing sample, code (00028)	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf µS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water unfltrd recoverable, mg/L (00916)	Magnesium, water, unfltrd recoverable, mg/L (00927)	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (00417)
NOV 2002													
12...	0930	1028	9813	2010	40	8.4	7.4	509	12.3	160	49.0	9.6	88
JAN 2003													
22...	1300	1028	9813	970	40	14.8	7.5	673	2.0	200	56.3	14.0	91
MAR													
11...	1030	1028	9813	5440	40	13.9	7.3	469	.8	120	34.4	8.5	55
MAY													
20...	1245	1028	9813	3510	40	8.3	8.2	448	16.5	120	30.9	10.3	74
JUL													
10...	1445	1028	9813	6480	40	7.4	7.6	360	--	110	32.3	8.0	68
SEP													
15...	1400	1028	9813	1420	40	6.7	7.5	504	22.5	170	48.4	11.9	99

Date	Fluoride, water, unfltrd mg/L (00951)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 105degC wat flt mg/L (00515)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia water, unfltrd mg/L as N (00610)	Nitrate water unfltrd mg/L as N (00620)	Nitrite water, unfltrd mg/L as N (00615)	Orthophosphate, water, unfltrd mg/L as P (70507)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, unfltrd mg/L (00600)	Organic carbon, water, unfltrd mg/L (00680)	Aluminum, water, unfltrd recoverable, µg/L (01105)	Copper, water, unfltrd recoverable, µg/L (01042)
NOV 2002													
12...	.3	65.5	346	26	.080	1.40	<.040	.12	.202	2.5	6.7	700	10
JAN 2003													
22...	.3	75.4	454	<2	.330	2.65	<.200	.09	.115	3.5	4.8	<200	<10
MAR													
11...	<.2	43.4	300	38	.180	1.51	<.200	.07	.125	2.4	5.9	1400	<10
MAY													
20...	.2	47.3	340	26	.070	.99	<.200	.05	.127	1.8	6.3	--	<10
JUL													
10...	.2	38.7	210	80	.040	.87	<.200	.12	.221	1.7	9.4	2300	10
SEP													
15...	.2	64.5	368	<2	.040	1.38	<.040	.08	.100	.84	6.0	<200	<10

Date	Cyanide amenable to chlorination wat unf mg/L (00722)	Iron, water, unfltrd recoverable, µg/L (01045)	Lead, water, unfltrd recoverable, µg/L (01051)	Manganese, water, unfltrd recoverable, µg/L (01055)	Nickel, water, unfltrd recoverable, µg/L (01067)	Zinc, water, unfltrd recoverable, µg/L (01092)	Phenolic compounds, water, unfltrd µg/L (32730)
NOV 2002							
12...	<1.00	1700	4.2	140	<50	30	<5
JAN 2003							
22...	--	520	<1.0	130	<50	30	<5
MAR							
11...	<1.00	2410	3.8	210	<50	40	<5
MAY							
20...	<1.00	1710	4.0	160	<50	140	<5
JUL							
10...	<1.00	4520	9.0	290	<50	70	<5
SEP							
15...	<1.00	730	2.0	100	<50	40	<5

BEAVER RIVER BASIN

03105500 BEAVER RIVER AT WAMPUM, PA--Continued

BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES

REMARKS.--Samples were collected using rapid bioassessment protocols for benthic macroinvertebrates using a D-Frame net with a mesh size of 500 µm. Samples represent counts per 100 (approximate) subsamples.

Date Benthic Macroinvertebrate	9/6/02 Count
Platyhelminthes	
Turbellaria (FLATWORMS)	
Tricladida	
Planariidae	1
Mollusca	
Gastropoda (SNAILS)	
Basommatophora	
Ancylidae	
Ferrissia sp	9
Bivalvia (CLAMS)	
Veneroida	
Corbiculidae	
Corbicula fluminea	1
Annelida	
Hirudinea (LEECHES)	
Arhynchobdellida	
Erpobdellidae	
Erpobdella punctata	1
Oligochaeta (AQUATIC EARTHWORMS)	
Tubificida	
Tubificidae	4
Branchiura sowerbyi	1
Arthropoda	
Crustacea	
Amphipoda (SCUDS)	
Crangonyctidae	
Crangonyx sp	1
Gammaridae	
Gammarus sp	3
Insecta	
Ephemeroptera (MAYFLIES)	
Baetidae	
Baetis sp	6
Heptageniidae	
Stenacron sp	6
Stenonema sp	4
Tricorythidae	
Tricorythodes sp	4
Odonata (DRAGONFLIES AND DAMSELFLIES)	
Coenagrionidae	
Argia sp	1
Trichoptera (CADDISFLIES)	
Hydropsychidae	
Cheumatopsyche sp	1
Hydropsyche sp	1
Coleoptera (BEETLES)	
Elmidae (RIFFLE BEETLES)	
Stenelmis sp	40

03105500 BEAVER RIVER AT WAMPUM, PA--Continued

BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES--Continued

Date	9/6/02
Benthic Macroinvertebrate	Count
Diptera (TRUE FLIES)	
Chironomidae (MIDGES)	34
Simuliidae (BLACK FLIES)	
Simulium sp	1
Total Organisms	119

03106000 CONNOQUENESSING CREEK NEAR ZELIENOPLE, PA
(Pennsylvania Water-Quality Network Station)

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 mi^2.

WATER-DISCHARGE RECORDS

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 National Geodetic Vertical Datum of 1929. Prior to June 23, 1941, nonrecording gage at same site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Some regulation by mills above station. Several measurements of water temperature were made during the year. Satellite telemetry at station. Estimated record during non-winter periods is a result of bridge construction.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a base discharge of 5,000 ft^3/s and maximum (*****):

Date	Time	Discharge ft^3/s	Gage Height (ft)	Date	Time	Discharge ft^3/s	Gage Height (ft)
Jan. 2	0200	*6,150	**a**8.83	No other peak greater than base discharge.			

a Maximum gage height 9.87 ft, Feb. 28 (backwater from ice).

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41	82	93	2310	e220	e257	e344	e159	e1530	e98	304	910
2	35	66	88	4370	e239	e204	e325	e239	e824	e92	281	2120
3	31	58	75	2060	e234	e171	e319	e421	e545	e92	392	2040
4	71	54	72	1560	e454	e131	e322	e354	e462	e199	508	2910
5	91	53	e70	1090	e1050	e131	e915	e303	e405	e452	289	1970
6	69	67	e68	880	e965	e962	e1190	e612	e363	e508	230	1220
7	46	e160	e59	711	e855	e787	e826	e462	e354	e1280	194	862
8	37	97	e59	624	e741	e671	e713	e414	e306	e1070	313	611
9	32	80	e59	e549	e654	e1350	e624	e484	e538	e1000	1220	675
10	32	73	e56	e487	e592	e1170	e481	e1140	e376	e782	835	480
11	32	134	e59	e420	e535	e869	e396	e916	e347	e718	510	309
12	31	207	e62	e382	e487	e718	e376	e759	e401	e520	322	239
13	33	121	e138	e329	e416	e1100	e322	e930	e449	e336	230	199
14	35	92	e623	e296	e377	e1570	e284	e767	e1600	e238	176	177
15	39	78	e1030	e282	e339	e1850	e274	e554	e1360	e182	145	181
16	48	86	e780	e277	e301	e1570	e239	e459	e950	e186	171	235
17	122	239	536	e286	e256	e1300	e226	e360	e767	e212	673	180
18	91	e230	396	e277	e233	e1080	e194	e303	e670	e147	246	134
19	68	214	324	e272	e210	e857	e175	e284	e536	183	155	743
20	105	234	894	e272	e203	e636	e188	e290	e403	146	113	949
21	90	200	829	e258	e195	e578	e204	e1330	e328	135	95	445
22	61	169	623	e277	e241	e542	e382	e990	e269	1800	86	366
23	48	170	592	e253	e572	e485	e264	e765	e239	1790	76	1250
24	41	156	465	e243	e1200	e421	e223	e797	e179	1420	68	833
25	39	131	428	e229	e858	e421	e201	e625	e164	1170	59	668
26	121	117	409	e229	e636	e421	e175	e492	e127	794	109	643
27	183	110	311	e229	e503	e370	e162	e408	e135	614	273	544
28	88	106	255	e220	e363	e363	e166	e385	e105	1340	312	700
29	66	94	257	e215	---	e366	e159	e366	e83	995	167	486
30	68	91	224	e224	---	e421	e147	e341	e98	593	2320	366
31	93	---	414	e205	---	e379	---	e557	---	404	1550	---
TOTAL	1987	3769	10348	20316	13929	22151	10816	17266	14913	19496	12422	23445
MEAN	64.1	126	334	655	497	715	361	557	497	629	401	782
MAX	183	239	1030	4370	1200	1850	1190	1330	1600	1800	2320	2910
MIN	31	53	56	205	195	131	147	159	83	92	59	134
CFSM	0.18	0.35	0.94	1.84	1.40	2.01	1.01	1.56	1.40	1.77	1.13	2.20
IN.	0.21	0.39	1.08	2.12	1.46	2.31	1.13	1.80	1.56	2.04	1.30	2.45

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1920 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	159	329	553	650	747	968	769	516	327	204	150	138
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

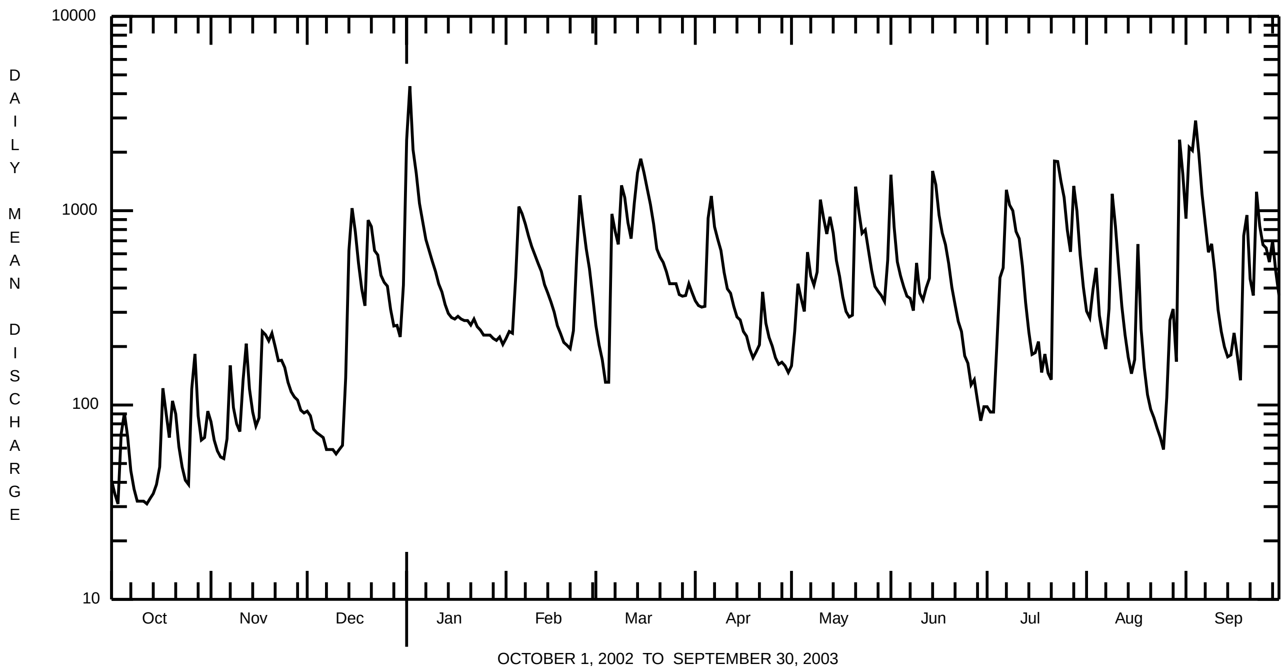
e Estimated.

BEAVER RIVER BASIN

03106000 CONNOQUENESSING CREEK NEAR ZELIENOPLE, PA--Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1920 - 2003	
ANNUAL TOTAL	124825		170858			
ANNUAL MEAN	342		468		458	
HIGHEST ANNUAL MEAN					816	1928
LOWEST ANNUAL MEAN					221	1931
HIGHEST DAILY MEAN	4340	Mar 27	4370	Jan 2	16000	Jun 29 1924
LOWEST DAILY MEAN	17	Sep 11,12,14	31	Oct 3,12	6.5	Jul 21 1936
ANNUAL SEVEN-DAY MINIMUM	18	Sep 8	33	Oct 8	8.7	Oct 13 1939
MAXIMUM PEAK FLOW			6150	Jan 2	**b**23000	Jun 29 1924
MAXIMUM PEAK STAGE			**a**8.83	Jan 2	16.66	Jun 29 1924
INSTANTANEOUS LOW FLOW			30	Oct 3,9-13	6.0	Jul 21 1936
ANNUAL RUNOFF (CFSM)	0.96		1.31		1.29	
ANNUAL RUNOFF (INCHES)	13.04		17.85		17.47	
10 PERCENT EXCEEDS	740		1060		1090	
50 PERCENT EXCEEDS	169		311		210	
90 PERCENT EXCEEDS	29		71		32	

a Maximum gage height 9.87 ft, Feb. 28 (backwater from ice).
b About.



03106000 CONNOQUENESSING CREEK NEAR ZELIENOPLE, PA--Continued
(Pennsylvania Water-Quality Network Station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 2002 to current year.

REMARKS.--Other data for the Water-Quality Network can be found on pages 242-289.

COOPERATION.--Samples were collected as part of the Pennsylvania Department of Environmental Protection Water-Quality Network (WQN) with cooperation from the Pennsylvania Department of Environmental Protection.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Agency collecting sample, code (00027)	Agency analyzing sample, code (00028)	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf µS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water unfltrd recover -able, mg/L (00916)	Magnesium, water, unfltrd recover -able, mg/L (00927)	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (00417)
NOV 2002													
05...	1300	1028	9813	52	40	12.2	7.7	475	6.2	290	91.9	14.9	88
JAN 2003													
08...	1330	1028	9813	616	40	15.8	7.6	494	2.2	130	36.6	9.6	38
MAY													
20...	1430	1028	9813	E290	40	9.7	8.3	480	16.0	160	45.9	10.7	50
JUL													
24...	1400	1028	9813	1540	40	8.6	7.2	338	--	100	29.5	7.3	55
SEP													
04...	1355	1028	9813	2690	40	8.6	7.2	267	20.0	88	24.6	6.5	47

Date	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 105degC wat flt mg/L (00515)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia water, unfltrd mg/L as N (00610)	Nitrate water unfltrd mg/L as N (00620)	Nitrite water, unfltrd mg/L as N (00615)	Orthophosphate, water, unfltrd mg/L as P (70507)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, unfltrd mg/L (00600)	Organic carbon, water, unfltrd mg/L (00680)	Aluminum, water, unfltrd recover -able, µg/L (01105)	Copper, water, unfltrd recover -able, µg/L (01042)	Iron, water, unfltrd recover -able, µg/L (01045)
NOV 2002													
05...	132	704	<2	.060	1.78	<.200	.01	.023	2.5	3.9	<200	<10	200
JAN 2003													
08...	58.4	268	4	.050	3.04	<.200	.02	.026	3.5	2.1	200	<10	450
MAY													
20...	70.0	344	<2	<.020	1.19	<.200	.03	.025	1.6	2.5	<200	<10	480
JUL													
24...	40.8	252	28	<.020	1.43	<.040	.07	.140	1.9	3.9	3300	<10	4720
SEP													
04...	31.9	408	86	.050	1.53	<.040	.14	.291	2.4	5.4	4300	10	8740

Date	Lead, water, unfltrd recover -able, µg/L (01051)	Manganese, water, unfltrd recover -able, µg/L (01055)	Nickel, water, unfltrd recover -able, µg/L (01067)	Zinc, water, unfltrd recover -able, µg/L (01092)
NOV 2002				
05...	<1.0	30	<50	10
JAN 2003				
08...	<1.0	150	<50	<10
MAY				
20...	<1.0	100	<50	20
JUL				
24...	6.2	280	<50	20
SEP				
04...	11.1	540	<50	50

03106000 CONNOQUENESSING CREEK NEAR ZELIENOPLE, PA--Continued

BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES

REMARKS.--Samples were collected using rapid bioassessment protocols for benthic macroinvertebrates using a D-Frame net with a mesh size of 500 µm. Samples represent counts per 100 (approximate) subsamples.

Date	9/6/02
Benthic Macroinvertebrate	Count
Mollusca	
Bivalvia (CLAMS)	
Veneroida	
Corbiculidae	
Corbicula fluminea	1
Arthropoda	
Insecta	
Ephemeroptera (MAYFLIES)	
Baetidae	
Baetis sp	8
Heptageniidae	
Stenonema sp	1
Isonychiidae	
Isonychia sp	1
Megaloptera	
Corydalidae (FISHFLIES AND DOBSONFLIES)	
Corydalus sp	1
Trichoptera (CADDISFLIES)	
Hydropsychidae	
Cheumatopsyche sp	46
Hydropsyche sp	11
Coleoptera (BEETLES)	
Elmidae (RIFFLE BEETLES)	
Stenelmis sp	20
Diptera (TRUE FLIES)	
Chironomidae (MIDGES)	25
Total Organisms	114

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 mi^2.

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 National Geodetic Vertical Datum of 1929 (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.--No estimated daily discharges. Records poor. 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. Satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.7	3.7	45	87	83	29	68	34	74	27	123	72
2	5.4	3.6	46	83	83	31	65	57	71	23	110	132
3	5.2	3.4	46	41	83	32	63	56	70	19	105	179
4	5.8	3.1	46	3.6	84	70	64	53	68	23	98	210
5	6.2	3.3	46	9.7	83	108	84	61	61	32	88	218
6	5.4	3.5	45	33	84	107	91	63	56	32	82	203
7	5.4	2.6	45	53	83	106	101	68	55	44	75	181
8	5.2	2.1	44	88	83	106	95	68	52	62	69	160
9	4.5	2.7	44	112	82	108	94	75	54	74	73	144
10	4.2	3.3	43	108	82	107	92	101	51	84	70	126
11	4.3	4.7	43	105	82	107	87	105	47	85	69	109
12	4.5	4.4	44	101	82	106	81	110	51	87	63	98
13	4.8	4.6	44	97	81	108	78	119	76	82	57	83
14	4.8	3.9	46	94	81	105	75	118	114	75	51	75
15	4.9	3.9	45	92	81	108	70	115	150	66	45	72
16	6.0	3.7	45	91	81	116	66	112	163	58	40	68
17	6.4	4.6	44	91	81	123	70	102	158	52	38	63
18	6.8	3.9	44	90	78	125	62	93	146	45	34	58
19	7.9	3.3	45	90	57	91	53	84	126	38	30	77
20	7.9	3.4	47	88	28	65	49	79	114	32	27	82
21	8.8	3.7	48	87	28	72	53	99	103	40	24	79
22	8.3	4.9	48	87	29	77	50	98	90	104	21	82
23	8.9	4.8	49	87	32	79	46	96	79	132	18	96
24	7.7	4.7	49	87	29	78	44	103	70	150	16	97
25	6.8	21	50	87	29	76	43	100	62	150	14	93
26	6.9	44	52	87	28	78	42	96	54	140	23	90
27	5.6	44	68	86	29	78	39	89	43	129	33	93
28	5.1	37	85	86	29	77	36	85	37	150	38	100
29	4.5	40	85	84	---	73	37	78	30	155	38	91
30	3.5	43	84	83	---	71	37	71	29	151	60	85
31	3.5	---	84	83	---	68	---	77	---	138	64	---
TOTAL	180.9	318.8	1599	2501.3	1795	2685	1935	2665	2354	2479	1696	3316
MEAN	5.84	10.6	51.6	80.7	64.1	86.6	64.5	86.0	78.5	80.0	54.7	111
MAX	8.9	44	85	112	84	125	101	119	163	155	123	218
MIN	3.5	2.1	43	3.6	28	29	36	34	29	19	14	58

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 2003, BY WATER YEAR (WY)

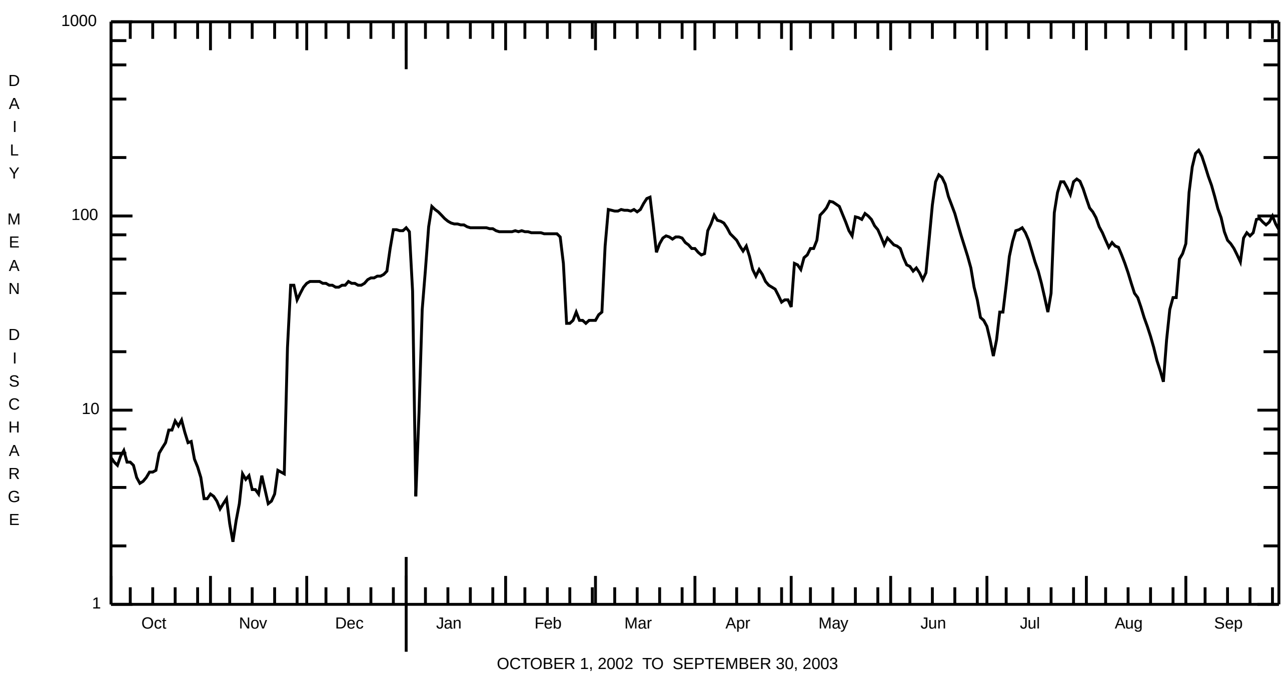
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	27.2	57.7	101	93.2	104	107	108	74.6	54.5	32.3	21.1	23.3
MAX	268	248	268	212	220	298	200	187	332	155	127	227
(WY)	1976	1973	1973	1965	1990	1964	1972	1983	1989	1990	1980	1975
MIN	1.11	1.50	2.41	2.40	31.0	4.31	2.78	2.97	1.53	3.01	1.98	0.61
(WY)	1964	1970	1970	1970	1980	1999	1986	1986	1969	1965	1966	1969

BEAVER RIVER BASIN

03106300 MUDDY CREEK NEAR PORTERSVILLE, PA--Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1963 - 2003	
ANNUAL TOTAL	15043.7		23525.0			
ANNUAL MEAN	41.2		64.5		67.1	
HIGHEST ANNUAL MEAN					98.9	1973
LOWEST ANNUAL MEAN					24.1	1970
HIGHEST DAILY MEAN	212	Apr 16,17	218	Sep 5	1450	Mar 10 1964
LOWEST DAILY MEAN	2.1	Nov 8	2.1	Nov 8	0.50	Sep 1 1969
ANNUAL SEVEN-DAY MINIMUM	2.9	Nov 4	2.9	Nov 4	0.54	Aug 29 1969
MAXIMUM PEAK FLOW			223	Sep 4,5	**a**1640	Mar 10 1964
MAXIMUM PEAK STAGE			4.22	Sep 4,5	8.18	Mar 10 1964
INSTANTANEOUS LOW FLOW					0.40	Sep 17 1966
10 PERCENT EXCEEDS	92		109		174	
50 PERCENT EXCEEDS	36		68		38	
90 PERCENT EXCEEDS	5.2		5.2		3.9	

a From rating curve extended above 820 ft^3/s on basis of slope-area measurement of peak flow.



03106500 SLIPPERY ROCK CREEK AT WURTEMBURG, PA
(Pennsylvania Water-Quality Network Station)

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 Wurtemburg, and 2.8 mi upstream from mouth.

DRAINAGE AREA.--398 mi^2.

WATER-DISCHARGE RECORDS

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 National Geodetic Vertical Datum of 1929. 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 those for estimated daily discharges, which are poor. 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 telemetry at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a base discharge of 3,500 ft^3/s and maximum (*****):

Date	Time	Discharge ft^3/s	Gage Height (ft)	Date	Time	Discharge ft^3/s	Gage Height (ft)
Jan. 1	2300	4,530	5.49	July 28	0800	6,580	6.92
Feb. 23	1500	Unknown	Ice jam	Sept. 2	0800	*6,740	*7.03
July 24	1900	3,550	4.79	Sept. 4	1600	3,710	4.91

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	82	102	194	2510	e361	e560	431	236	1980	171	807	1000
2	69	96	184	3530	e361	e492	431	458	1060	153	595	5500
3	63	89	e183	2350	e478	e483	398	515	698	138	628	4800
4	61	87	e179	1600	e964	e449	379	368	659	277	751	3840
5	60	85	e179	1130	e2430	e449	1360	368	548	602	599	2090
6	62	96	e179	843	e1770	e1310	1460	636	467	606	623	1400
7	60	123	e171	675	e1360	e938	1020	539	418	1560	523	1040
8	58	144	e163	620	e1220	e918	936	475	449	1200	828	797
9	54	119	e167	720	e1100	e1650	802	563	585	1230	1010	625
10	53	111	e167	e700	e988	e1310	668	1750	493	875	1610	530
11	52	212	e175	e589	e953	e999	565	1410	399	871	1260	450
12	52	474	e183	e508	e883	e857	501	991	456	624	761	394
13	54	278	e252	e406	e849	e1350	433	1170	1260	427	523	351
14	56	183	e681	e369	e779	e1710	383	1070	1990	335	368	331
15	56	146	e1220	e361	e733	e2020	354	761	1730	283	313	354
16	69	146	e960	e361	e687	e1670	328	606	1280	289	304	430
17	102	266	640	e361	e629	e1370	307	505	947	286	548	358
18	113	460	446	e354	e582	e1170	287	403	890	197	371	295
19	97	367	371	e339	e606	e978	273	350	799	179	278	1150
20	116	387	993	e354	e571	e841	266	357	622	164	217	1570
21	128	354	1230	e354	e606	e755	371	1720	449	172	186	812
22	94	283	797	e332	e733	e703	467	1340	398	1430	172	627
23	78	272	606	e347	e1750	e652	373	877	352	3040	161	1720
24	69	260	486	e332	e3060	e600	318	1100	297	2730	151	1220
25	68	225	427	e317	e2410	540	278	958	241	2070	141	797
26	132	247	399	e332	e1980	533	256	681	218	1200	455	614
27	266	224	356	e339	e1200	547	238	535	198	932	1240	660
28	160	208	322	e339	e818	472	222	485	181	5730	642	1230
29	110	192	340	e354	---	446	222	447	166	4100	393	829
30	98	185	323	e339	---	517	243	396	166	1730	1790	580
31	100	---	734	e347	---	454	---	711	---	1120	1400	---
TOTAL	2692	6421	13707	22412	30861	27743	14570	22781	20396	34721	19648	36394
MEAN	86.8	214	442	723	1102	895	486	735	680	1120	634	1213
MAX	266	474	1230	3530	3060	2020	1460	1750	1990	5730	1790	5500
MIN	52	85	163	317	361	446	222	236	166	138	141	295
CFSM	0.22	0.54	1.11	1.82	2.77	2.25	1.22	1.85	1.71	2.81	1.59	3.05
IN.	0.25	0.60	1.28	2.09	2.88	2.59	1.36	2.13	1.91	3.25	1.84	3.40

e Estimated.

03106500 SLIPPERY ROCK CREEK AT WURTEMBURG, PA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1969 - 2003, BY WATER YEAR (WY) (SINCE REGULATION)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	258	522	772	679	872	1022	952	637	527	347	266	261
MAX	741	1822	1576	1369	1949	1972	1608	1400	2075	1120	1323	1213
(WY)	1976	1986	1978	1999	1981	1972	1987	1983	1989	2003	1980	2003
MIN	56.5	82.2	178	153	289	243	345	215	112	84.8	51.1	53.0
(WY)	1992	1992	1990	1977	1987	1969	1971	1976	1992	1998	2001	1999

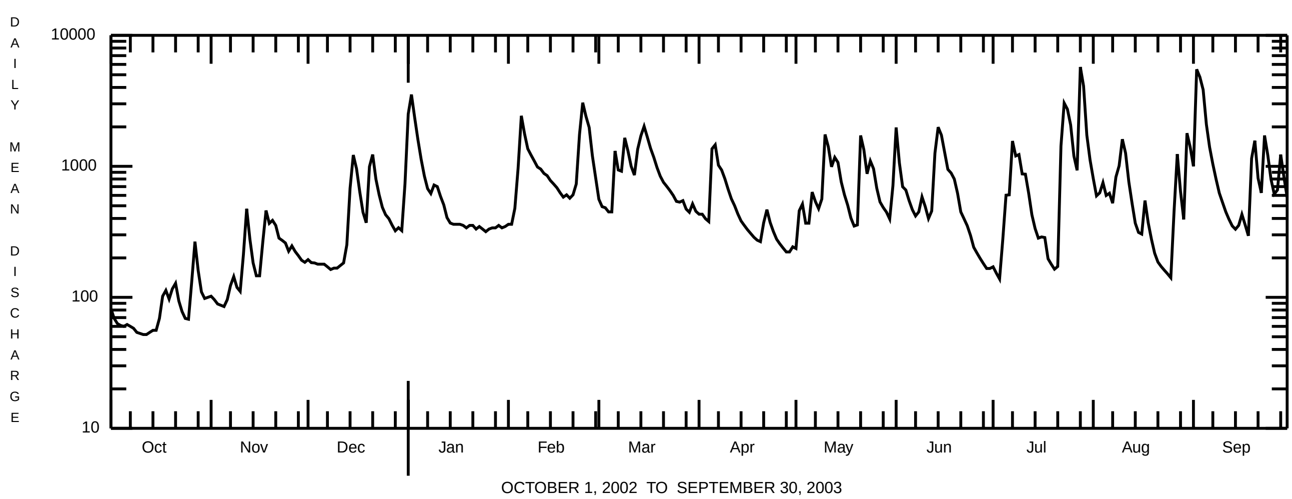
SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1969 - 2003	
ANNUAL TOTAL	165051		252346			
ANNUAL MEAN	452		691		591	
HIGHEST ANNUAL MEAN					813	1984
LOWEST ANNUAL MEAN					317	2001
HIGHEST DAILY MEAN	4360	Apr 15	5730	Jul 28	8620	Jun 24 1972
LOWEST DAILY MEAN	36	Sep 14	52	Oct 11,12	36	Sep 14 2002
ANNUAL SEVEN-DAY MINIMUM	41	Sep 9	54	Oct 9	39	Aug 13 2001
MAXIMUM PEAK FLOW			6740	Sep 2	9090	Jun 24 1972
MAXIMUM PEAK STAGE			7.03	Sep 2	8.09	Jun 24 1972
INSTANTANEOUS LOW FLOW			51	Oct 11,12	36	Sep 13-15 2002
ANNUAL RUNOFF (CFSM)	1.14		1.74		1.49	
ANNUAL RUNOFF (INCHES)	15.43		23.59		20.18	
10 PERCENT EXCEEDS	973		1420		1350	
50 PERCENT EXCEEDS	278		458		360	
90 PERCENT EXCEEDS	60		126		91	

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
MAXIMUM PEAK FLOW	**a**19000	Jan 25 1937
MAXIMUM PEAK STAGE	**b**12.05	Jan 25 1937
INSTANTANEOUS LOW FLOW	**c**16	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 ft^3/s.
b From floodmark, site and datum then in use.
c Minimum observed.



BEAVER RIVER BASIN

03106500 SLIPPERY ROCK CREEK AT WURTEMBURG, PA--Continued
(Pennsylvania Water-Quality Network Station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 2002 to current year.

REMARKS.--Other data for the Water-Quality Network can be found on pages 242-289.

COOPERATION.--Samples were collected as part of the Pennsylvania Department of Environmental Protection Water-Quality Network (WQN) with cooperation from the Pennsylvania Department of Environmental Protection.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Agency collecting sample, code (00027)	Agency analyzing sample, code (00028)	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf µS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water unfltrd recoverable, mg/L (00916)	Magnesium, water, unfltrd recoverable, mg/L (00927)	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (00417)
NOV 2002 12...	0830	1028	9813	556	40	11.5	7.7	482	9.5	210	62.4	12.3	86
JAN 2003 22...	1100	1028	9813	E332	40	15.9	7.8	402	.0	170	47.9	13.0	63
MAR 11...	0900	1028	9813	E1000	40	15.5	7.6	286	.0	110	31.9	8.0	36
MAY 27...	1400	1028	9813	523	40	10.5	8.1	323	16.0	130	35.5	9.6	49
JUL 24...	1155	1028	9813	2310	40	9.3	7.6	251	--	95	27.3	6.5	50
SEP 25...	0830	1028	9813	812	40	9.7	7.5	308	16.0	130	37.5	8.9	62

Date	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 105degC wat flt mg/L (00515)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia water, unfltrd mg/L as N (00610)	Nitrate water unfltrd mg/L as N (00620)	Nitrite water, unfltrd mg/L as N (00615)	Orthophosphate, water, unfltrd mg/L as P (70507)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, unfltrd mg/L (00600)	Organic carbon, water, unfltrd mg/L (00680)	Aluminum, water, unfltrd recoverable, µg/L (01105)	Copper, water, unfltrd recoverable, µg/L (01042)	Iron, water, unfltrd recoverable, µg/L (01045)
NOV 2002 12...	105	354	38	.050	.85	<.040	.06	.143	1.7	4.8	500	<10	1360
JAN 2003 22...	91.2	282	2	.040	.92	<.040	.03	.018	1.1	2.7	400	<10	580
MAR 11...	63.0	208	14	.050	.90	<.040	.04	.034	1.2	3.6	400	<10	820
MAY 27...	76.3	232	12	.020	.42	<.040	.03	.033	.69	3.8	400	<10	810
JUL 24...	43.8	260	34	.020	.50	<.040	.07	.100	1.2	8.2	1900	<10	2900
SEP 25...	66.8	210	22	<.020	.50	<.040	.03	.038	.70	5.3	400	<10	990

Date	Lead, water, unfltrd recoverable, µg/L (01051)	Manganese, water, unfltrd recoverable, µg/L (01055)	Nickel, water, unfltrd recoverable, µg/L (01067)	Zinc, water, unfltrd recoverable, µg/L (01092)
NOV 2002 12...	1.4	420	<50	<10
JAN 2003 22...	<1.0	320	<50	10
MAR 11...	1.1	400	<50	60
MAY 27...	<1.0	240	<50	10
JUL 24...	3.2	450	<50	20
SEP 25...	<1.0	200	<50	<10

BEAVER RIVER BASIN

03106500 SLIPPERY ROCK CREEK AT WURTEMBURG, PA--Continued

BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES

REMARKS.--Samples were collected using rapid bioassessment protocols for benthic macroinvertebrates using a D-Frame net with a mesh size of 500 µm. Samples represent counts per 100 (approximate) subsamples.

Date	9/24/02
Benthic Macroinvertebrate	Count
Nematoda (NEMATODES)	1
Mollusca	
Gastropoda (SNAILS)	
Basommatophora	
Ancylidae	
Ferrissia sp	1
Arthropoda	
Insecta	
Ephemeroptera (MAYFLIES)	
Baetidae	
Baetis sp	8
Caenidae	
Caenis sp	4
Heptageniidae	
Stenonema sp	19
Isonychiidae	
Isonychia sp	27
Tricorythidae	
Tricorythodes sp	7
Odonata (DRAGONFLIES AND DAMSELFLIES)	
Coenagrionidae	
Argia sp	1
Gomphidae	1
Megaloptera	
Corydalidae (FISHFLIES AND DOBSONFLIES)	
Nigronia sp	1
Trichoptera (CADDISFLIES)	
Hydropsychidae	
Cheumatopsyche sp	19
Hydropsyche sp	100
Macrostemum sp	2
Hydroptilidae	
Leucotrichia sp	3
Coleoptera (BEETLES)	
Elmidae (RIFFLE BEETLES)	
Optioservus sp	16
Stenelmis sp	1
Diptera (TRUE FLIES)	
Chironomidae (MIDGES)	11
Total Organisms	222

BEAVER RIVER BASIN

03107500 BEAVER RIVER AT BEAVER FALLS, PA
(Pennsylvania Water-Quality Network Station)

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 mi^2.

WATER-DISCHARGE RECORDS

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); Instantaneous low flow for water years 1997, 1998 were published in error.

GAGE.--Water-stage recorder and concrete dam control. Datum of gage is 727.48 ft above National Geodetic Vertical Datum of 1929 (U.S. Army Corps of Engineers bench mark). Prior to Dec. 3, 1941, nonrecording gage at site 200 ft downstream at same datum.

REMARKS.--No estimated daily discharges. Records good above 2,000 ft^3/s, and fair below, except those below 1,200 ft^3/s, which are poor. Pumpage from gage pool, averaging 3.4 ft^3/s in 1935 and 6.0 ft^3/s at present, for local water supply, returns to river 2 mi downstream; information furnished by Beaver Falls Municipal Authority. Flow regulated since 1916 by Milton Reservoir, since November 1929 by Meander Creek Reservoir, since December 1933 by Pymatuning Reservoir (station 03100500), since December 1942 by Berlin Lake, since October 1943 by Mosquito Creek Lake, since December 1966 by Michael J. Kirwan Reservoir, since January 1967 by Shenango River Lake, all over 50 mi upstream, and since May 1969 by Lake Arthur (station 03106280) 29 mi upstream. U.S. Army Corps of Engineers satellite telemetry at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 27, 1913 reached a stage of 17.4 ft, discharge, 103,000 ft^3/s, from rating curve extended above 60,000 ft^3/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	908	791	1130	9070	1280	3970	3790	1650	12900	1480	8120	4360
2	789	719	1090	15200	1390	3730	3540	1940	9150	1370	7560	22800
3	707	620	987	9490	1420	3960	3300	2180	6410	1390	9410	17300
4	732	584	830	7370	3180	3760	3130	2000	5270	1460	10800	13400
5	815	503	937	6210	5250	5390	7260	1930	5240	3390	9810	8730
6	755	534	916	5410	3760	7820	10000	2820	5000	2280	10100	6580
7	677	714	830	4940	3960	5840	8350	2670	4700	4920	9020	5400
8	628	719	919	4880	3370	5540	7530	2260	4220	5750	9030	4700
9	621	602	829	4900	3000	11700	8080	2490	5680	9950	8700	3940
10	609	571	778	4810	2880	10800	7650	9000	5020	8320	15500	3310
11	610	2150	889	4190	2350	7510	6950	11000	3850	13900	10500	2750
12	597	2550	1180	3400	2160	6530	4970	7590	3710	9050	7470	2460
13	605	1680	1510	2920	1740	8610	4030	6500	8160	6650	6170	2010
14	596	1180	3060	2780	1630	13300	3710	7260	11300	5270	5500	1870
15	583	945	5400	2520	1630	10200	3410	6680	7820	4320	5210	1930
16	715	956	3980	2010	1470	9420	2910	6660	5800	4180	5040	2460
17	1080	1350	3080	1760	1360	9180	2970	6460	4900	3870	6070	2040
18	971	1960	2480	1520	1490	8670	2870	5990	5870	3360	5130	1760
19	822	1740	2220	1530	1560	7330	2650	4620	5530	3040	4660	6410
20	923	1810	3960	1550	1590	5580	2210	4090	5140	2620	3760	8510
21	920	1690	4740	1490	1590	4700	3010	9060	4390	2690	2630	5860
22	770	1480	3490	1380	1850	4480	3360	8070	3420	16200	1860	4950
23	681	1600	3140	1270	7770	4520	2840	5930	2960	32200	1660	11500
24	612	1620	2820	1300	7660	4030	2800	11900	2670	30700	1550	9120
25	595	1500	2680	1270	5810	3630	2650	11000	2110	17700	1500	7050
26	1110	1410	2620	1270	4880	3690	2190	7840	1890	8730	2230	6060
27	1480	1270	2220	1180	4270	4240	1990	6440	1860	8400	4180	6920
28	1080	1220	1940	1190	4140	3990	1900	5570	1770	30600	2970	11600
29	858	1150	1890	1240	---	3800	1710	4820	1520	23000	2120	9900
30	802	1130	1810	1160	---	4750	1610	3770	1450	12300	10000	7000
31	819	---	3210	1160	---	4440	---	4930	---	9160	7250	---
TOTAL	24470	36748	67565	110370	84440	195110	123370	175120	149710	288250	195510	202680
MEAN	789	1225	2180	3560	3016	6294	4112	5649	4990	9298	6307	6756
MAX	1480	2550	5400	15200	7770	13300	10000	11900	12900	32200	15500	22800
MIN	583	503	778	1160	1280	3630	1610	1650	1450	1370	1500	1760
CFSM	0.25	0.39	0.70	1.15	0.97	2.03	1.32	1.82	1.61	2.99	2.03	2.18
IN.	0.29	0.44	0.81	1.32	1.01	2.34	1.48	2.10	1.79	3.45	2.34	2.43

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1957 - 2003, BY WATER YEAR (WY)

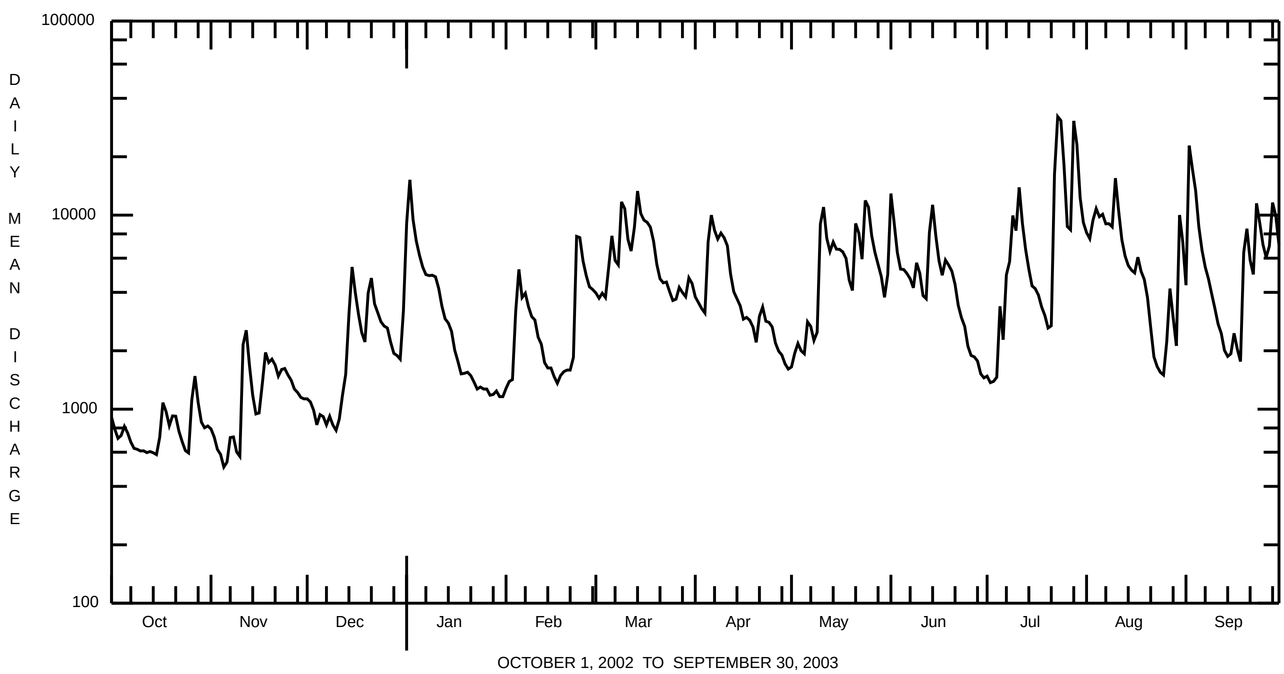
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1789	2976	4684	4779	5455	6681	5851	4061	2965	2406	1783	1850
MAX	6760	11520	11880	11620	12360	13040	13620	10880	11090	9298	6505	6756
(WY)	1991	1986	1991	1993	1990	1993	1957	1996	1989	2003	1980	2003
MIN	531	439	540	714	887	1606	1861	1271	966	916	777	739
(WY)	1992	1992	1961	1961	1963	1969	1971	1962	1992	1965	1991	1999

BEAVER RIVER BASIN

03107500 BEAVER RIVER AT BEAVER FALLS, PA--Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1957 - 2003	
ANNUAL TOTAL	1106897		1653343			
ANNUAL MEAN	3033		4530		3764	
HIGHEST ANNUAL MEAN					5146	1997
LOWEST ANNUAL MEAN					1938	1963
HIGHEST DAILY MEAN	25000	Apr 15**a**	32200	Jul 23	65400	Jan 22 1959
LOWEST DAILY MEAN	503	Nov 5	503	Nov 5	320	Nov 5 1991
ANNUAL SEVEN-DAY MINIMUM	603	Oct 9	603	Oct 9	333	Nov 1 1991
MAXIMUM PEAK FLOW			36600	Jul 28	**b**69900	Jan 22 1959
MAXIMUM PEAK STAGE			10.40	Jul 28	14.42	Jan 22 1959
ANNUAL RUNOFF (CFSM)	0.98		1.46		1.21	
ANNUAL RUNOFF (INCHES)	13.26		19.80		16.47	
10 PERCENT EXCEEDS	7050		9170		8300	
50 PERCENT EXCEEDS	1790		3360		2330	
90 PERCENT EXCEEDS	801		847		900	

a Also May 14.
b From rating curve extended above 57,000 ft^3/s.



03107500 BEAVER RIVER AT BEAVER FALLS, PA--Continued
(Pennsylvania Water-Quality Network Station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 2002 to current year.

REMARKS.--Other data for the Water-Quality Network can be found on pages 242-289.

COOPERATION.--Samples were collected as part of the Pennsylvania Department of Environmental Protection Water-Quality Network (WQN) with cooperation from the Pennsylvania Department of Environmental Protection.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Agency collecting sample, code (00027)	Agency analyzing sample, code (00028)	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf µS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water unfltrd recover -able, mg/L (00916)	Magnesium, water, unfltrd recover -able, mg/L (00927)	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (00417)
JAN 2003													
08...	1130	1028	9813	4850	40	15.8	7.6	579	4.0	140	38.8	10.0	63
MAR													
05...	1200	1028	9813	4910	40	14.6	7.6	676	3.5	160	46.8	10.5	64
MAY													
20...	0935	1028	9813	3840	40	8.2	8.5	433	18.0	120	30.5	10.4	69
JUL													
07...	1345	1028	9813	4770	40	6.5	7.3	393	--	130	37.7	8.5	72
SEP													
04...	1000	1028	9813	14300	40	8.3	7.0	301	20.0	100	29.4	7.0	60

Date	Fluoride, water, unfltrd mg/L (00951)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 105degC wat flt mg/L (00515)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia water, unfltrd mg/L as N (00610)	Nitrate water unfltrd mg/L as N (00620)	Nitrite water, unfltrd mg/L as N (00615)	Orthophosphate, water, unfltrd mg/L as P (70507)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, unfltrd mg/L (00600)	Organic carbon, water, unfltrd mg/L (00680)	Aluminum, water, unfltrd recover -able, µg/L (01105)	Copper, water, unfltrd recover -able, µg/L (01042)
JAN 2003													
08...	<.2	59.7	384	8	.100	1.91	<.200	.04	.081	2.6	4.8	400	<10
MAR													
05...	<.2	64.2	436	<2	.130	1.93	<.200	.04	.065	2.5	4.5	300	<10
MAY													
20...	<.2	54.3	348	14	.060	.97	<.200	.04	.152	1.8	5.9	1400	<10
JUL													
07...	<.2	48.2	299	86	.060	1.30	<.200	.18	.201	2.1	6.6	2700	<10
SEP													
04...	<.2	39.4	230	108	.040	.82	<.040	.07	.160	1.4	6.9	2700	<10

Date	Iron, water, unfltrd recover -able, µg/L (01045)	Lead, water, unfltrd recover -able, µg/L (01051)	Manganese, water, unfltrd recover -able, µg/L (01055)	Nickel, water, unfltrd recover -able, µg/L (01067)	Zinc, water, unfltrd recover -able, µg/L (01092)	Phenolic compounds, water, unfltrd µg/L (32730)
JAN 2003						
08...	780	4.2	130	<50	30	<5
MAR						
05...	660	1.2	160	<50	20	<5
MAY						
20...	2680	5.6	240	<50	150	<5
JUL						
07...	4210	3.5	180	<50	30	<5
SEP						
04...	4350	5.8	320	<50	30	<5

03107500 BEAVER RIVER AT BEAVER FALLS, PA--Continued

BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES

REMARKS.--Samples were collected using rapid bioassessment protocols for benthic macroinvertebrates using a D-Frame net with a mesh size of 500 µm. Samples represent counts per 100 (approximate) subsamples.

Date	9/25/02
Benthic Macroinvertebrate	Count
Platyhelminthes	
Turbellaria (FLATWORMS)	
Tricladida	
Planariidae	3
Mollusca	
Gastropoda (SNAILS)	
Basommatophora	
Ancylidae	
Ferrissia sp	4
Hydrobiidae	63
Amnicola limosa	1
Bivalvia (CLAMS)	
Veneroida	
Corbiculidae	
Corbicula fluminea	1
Arthropoda	
Crustacea	
Cladocera	59
Insecta	
Ephemeroptera (MAYFLIES)	
Heptageniidae	3
Stenacron sp	3
Tricorythidae	
Tricorythodes sp	1
Trichoptera (CADDISFLIES)	
Polycentropodidae	
Neureclipsis sp	16
Diptera (TRUE FLIES)	
Chironomidae (MIDGES)	160
Total Organisms	314

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 mi^2. 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. Controlled storage began Dec. 1933. 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 Conservation and Natural Resources.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 211,820 acre-ft, July 24, 2003 (elevation, 1,009.67 ft); minimum (after first filling), 110,570 acre-ft, Dec. 4, 1953 (elevation, 1,002.17 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 211,820 acre-ft, July 24, elevation, 1,009.67 ft; minimum, 150,950 acre-ft, Nov. 8, 10, elevation, 1,005.34 ft.

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 mi^2. 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 Conservation and Natural Resources.

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, 40,540 acre-ft, Sept. 4, 5, elevation, 1,190.92 ft; minimum, 34,490 acre-ft, Feb. 15, 16, elevation, 1,188.96 ft..

MONTHEND ELEVATION, IN FEET ABOVE SEA LEVEL, AND CONTENTS AT 2400 HRS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

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)
	03100500 Pymatuning Reservoir			03106280 Lake Arthur		
Sept. 30	1,005.92	158,780	--	1,189.24	35,320	--
Oct. 31	1,005.51	153,220	-90	1,189.19	35,170	-2.4
Nov. 30	1,005.65	155,120	+32	1,189.27	35,410	+4.0
Dec. 31	1,006.00	159,870	+77	1,189.33	35,590	+2.9
CAL YR 2002	--	--	-23	-- --	+1.9	
Jan. 31	1,005.95	159,190	-11	1,189.24	35,320	-4.4
Feb. 28	1,006.13	161,650	+44	1,189.39	35,770	+8.1
Mar. 31	1,007.33	173,740	+197	1,190.44	39,010	+53
Apr. 30	1,007.67	183,280	+160	1,190.21	38,270	-12
May 31	1,008.81	199,920	+271	1,190.51	39,230	+16
June 30	1,008.30	192,410	-126	1,190.25	38,400	-14
July 31	1,009.32	207,240	+241	1,190.65	39,680	+21
Aug. 31	1,007.71	183,850	-380	1,190.39	38,850	-14
Sept. 30	1,008.00	188,040	+70	1,190.47	39,100	+4.2
WTR YR 2003	--	--	+40	--	--	+5.2

03108000 RACCOON CREEK AT MOFFATTS MILL, PA
(Pennsylvania Water-Quality Network Station)

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 mi^2.

WATER-DISCHARGE RECORDS

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 National Geodetic Vertical Datum of 1929 (U.S. Army Corps of Engineers benchmark). 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 those for estimated daily discharges, which are poor. 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 ft^3/s at the close of 1957 to 6.8 ft^3/s for the present year; diversion began with 2.0 ft^3/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 telemetry at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Apr. 15, 1922, reached a stage of 9.80 ft, discharge, 10,000 ft^3/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 ft^3/s and maximum (*****):

Date	Time	Discharge ft^3/s	Gage Height (ft)	Date	Time	Discharge ft^3/s	Gage Height (ft)
May 11	0500	*2,910	*5.46	July 8	2200	2,120	4.77
May 24	1000	1,840	4.48				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	61	50	596	e94	263	134	110	251	69	116	160
2	15	45	44	1040	e91	318	128	106	178	66	113	261
3	16	38	41	535	e98	339	118	99	179	65	266	258
4	26	33	37	461	e213	295	112	92	267	65	378	290
5	22	33	e32	343	467	435	360	125	218	180	256	192
6	21	43	e24	282	265	578	371	188	179	90	176	143
7	16	65	e23	225	228	406	402	121	198	74	154	118
8	13	58	e22	207	159	437	659	158	252	902	149	103
9	12	51	e22	225	153	764	473	475	289	1000	208	100
10	12	46	e27	211	149	597	378	1390	226	494	817	126
11	11	84	e37	181	119	429	321	1540	195	782	466	106
12	12	117	e51	153	109	365	302	556	209	405	291	89
13	14	73	e91	141	101	448	249	439	521	268	204	79
14	16	58	e171	e135	95	564	211	327	354	198	153	72
15	17	51	360	e124	e80	473	194	270	270	166	123	75
16	23	56	233	e120	e80	454	177	303	221	155	108	91
17	96	103	160	e106	e81	444	162	260	208	129	101	74
18	50	136	122	e97	e86	400	147	232	365	118	89	62
19	38	102	106	e93	e93	351	136	202	284	241	78	354
20	41	103	233	e84	e91	307	128	202	226	138	71	397
21	35	91	246	e82	e90	287	181	428	189	111	66	222
22	26	83	182	e81	e105	275	179	334	166	322	66	185
23	22	87	152	e80	808	231	146	292	138	336	67	450
24	20	76	121	e76	666	206	125	1200	120	382	57	296
25	20	67	132	e76	379	191	120	680	106	287	50	221
26	59	60	174	e78	297	196	120	454	96	199	48	189
27	72	57	132	e84	271	174	117	337	91	165	84	168
28	44	55	113	e160	227	155	107	291	85	264	93	200
29	36	52	109	e86	---	154	109	245	78	192	66	161
30	55	51	96	e90	---	152	110	209	73	145	366	135
31	80	---	129	e91	---	136	---	204	---	124	260	---
TOTAL	959	2035	3472	6343	5695	10824	6476	11869	6232	8132	5540	5377
MEAN	30.9	67.8	112	205	203	349	216	383	208	262	179	179
MAX	96	136	360	1040	808	764	659	1540	521	1000	817	450
MIN	11	33	22	76	80	136	107	92	73	65	48	62
CFSM	0.17	0.38	0.63	1.15	1.14	1.96	1.21	2.15	1.17	1.47	1.00	1.01
IN.	0.20	0.43	0.73	1.33	1.19	2.26	1.35	2.48	1.30	1.70	1.16	1.12

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1942 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	61.1	109	189	246	314	400	339	264	143	87.8	71.2	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

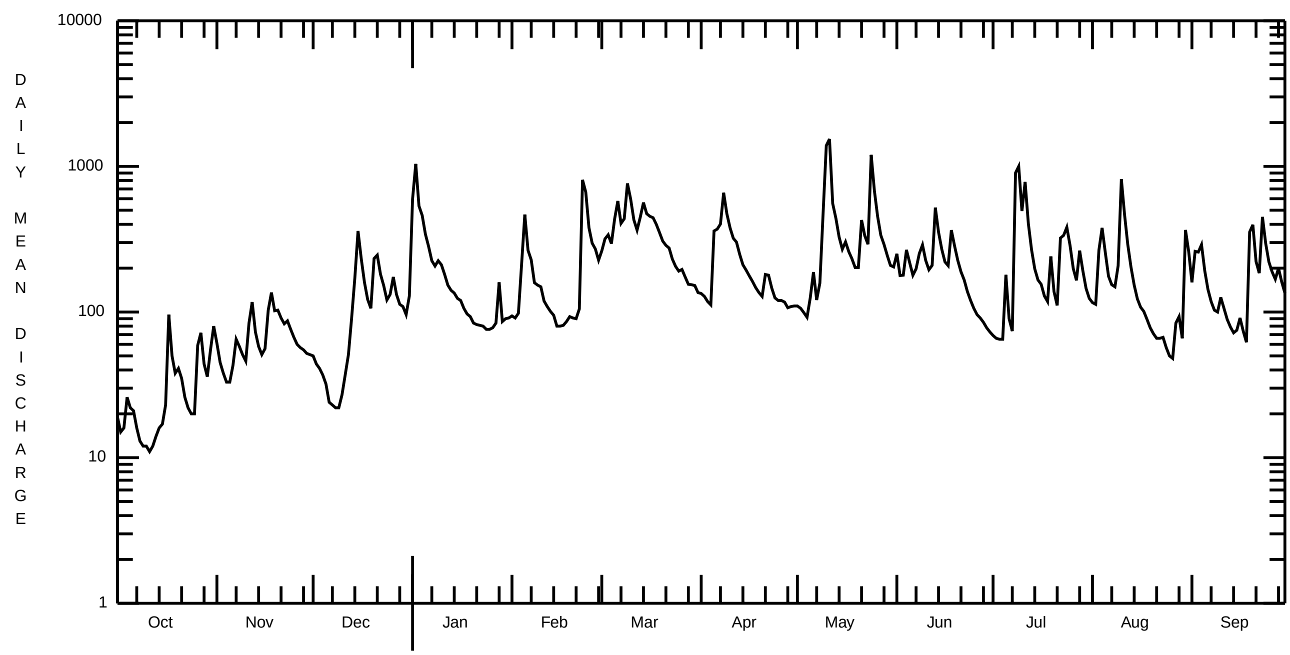
e Estimated.

RACCOON CREEK BASIN

03108000 RACCOON CREEK AT MOFFATTS MILL, PA--Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1942 - 2003	
ANNUAL TOTAL	45921.4		72954			
ANNUAL MEAN	126		200		189	
HIGHEST ANNUAL MEAN					314	1951
LOWEST ANNUAL MEAN					90.9	1954
HIGHEST DAILY MEAN	1720	Mar 27	1540	May 11	6120	Jan 27 1952
LOWEST DAILY MEAN	6.4	Sep 14,24-26	11	Oct 11	4.8	Sep 8 1945
ANNUAL SEVEN-DAY MINIMUM	6.7	Sep 20	13	Oct 7	5.6	Aug 20 1965
MAXIMUM PEAK FLOW			2910	May 11	**a**8590	Jan 27 1952
MAXIMUM PEAK STAGE			5.46	May 11	9.71	Jan 27 1952
INSTANTANEOUS LOW FLOW			11	Oct 9,11,12	4.5	Aug 24 1965
ANNUAL RUNOFF (CFSM)	0.71		1.12		1.06	
ANNUAL RUNOFF (INCHES)	9.60		15.25		14.45	
10 PERCENT EXCEEDS	304		428		441	
50 PERCENT EXCEEDS	78		138		97	
90 PERCENT EXCEEDS	9.3		42		20	

a From rating curve extended above 7,400 ft^3/s.



OCTOBER 1, 2002 TO SEPTEMBER 30, 2003

03108000 RACCOON CREEK AT MOFFATTS MILL, PA--Continued
(Pennsylvania Water-Quality Network Station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 2002 to current year.

REMARKS.--Other data for the Water-Quality Network can be found on pages 242-289.

COOPERATION.--Samples were collected as part of the Pennsylvania Department of Environmental Protection Water-Quality Network (WQN) with cooperation from the Pennsylvania Department of Environmental Protection.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Agency collecting sample, code (00027)	Agency analyzing sample, code (00028)	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf µS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water unfltrd recoverable, mg/L (00916)	Magnesium, water, unfltrd recoverable, mg/L (00927)	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (00417)
NOV 2002													
05...	0815	1028	9813	31	40	11.2	7.5	--	5.3	590	135	61.2	94
JAN 2003													
08...	0830	1028	9813	205	40	15.6	7.8	720	1.6	280	75.7	21.1	76
MAR													
05...	0830	1028	9813	430	40	13.8	7.8	671	2.8	260	69.6	20.7	67
MAY													
19...	1045	1028	9813	205	40	11.3	8.3	694	17.4	330	86.2	27.6	76
JUL													
07...	0835	1028	9813	73	40	7.8	7.2	943	--	480	122	41.5	83
SEP													
02...	1315	1028	9813	290	40	8.4	7.5	738	20.5	320	83.2	26.4	80

Date	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 105degC wat flt mg/L (00515)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia water, unfltrd mg/L as N (00610)	Nitrate water unfltrd mg/L as N (00620)	Nitrite water, unfltrd mg/L as N (00615)	Orthophosphate, water, unfltrd mg/L as P (70507)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, unfltrd mg/L (00600)	Organic carbon, water, unfltrd mg/L (00680)	Aluminum, water, unfltrd recoverable, µg/L (01105)	Copper, water, unfltrd recoverable, µg/L (01042)	Iron, water, unfltrd recoverable, µg/L (01045)
NOV 2002													
05...	552	1060	<2	<.020	.90	<.040	.02	.021	1.3	3.5	<200	<10	160
JAN 2003													
08...	183	542	6	.040	1.94	<.200	.01	.016	2.3	1.9	400	40	710
MAR													
05...	179	552	98	.050	1.62	<.200	.04	.081	1.9	2.3	2600	<10	4970
MAY													
19...	234	596	<2	<.020	.66	<.040	.01	.014	.85	2.0	300	<10	440
JUL													
07...	366	760	40	.020	.82	<.200	.01	.025	1.0	2.8	300	<10	390
SEP													
02...	241	792	74	<.020	.73	<.040	.03	.065	1.1	3.0	1700	<10	2690

Date	Lead, water, unfltrd recoverable, µg/L (01051)	Manganese, water, unfltrd recoverable, µg/L (01055)	Nickel, water, unfltrd recoverable, µg/L (01067)	Zinc, water, unfltrd recoverable, µg/L (01092)
NOV 2002				
05...	<1.0	100	<50	<10
JAN 2003				
08...	1.0	280	<50	50
MAR				
05...	8.6	430	<50	220
MAY				
19...	1.0	150	<50	10
JUL				
07...	<1.0	80	<50	10
SEP				
02...	3.9	240	<50	60

RACCOON CREEK BASIN

03108000 RACCOON CREEK AT MOFFATTS MILL, PA--Continued

BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES

REMARKS.--Samples were collected using rapid bioassessment protocols for benthic macroinvertebrates using a D-Frame net with a mesh size of 500 µm. Samples represent counts per 100 (approximate) subsamples.

Date	9/6/02
Benthic Macroinvertebrate	Count
Nematoda (NEMATODES)	1
Mollusca	
Gastropoda (SNAILS)	
Basommatophora	
Ancylidae	
Ferrissia sp	3
Bivalvia (CLAMS)	
Veneroida	
Corbiculidae	
Corbicula fluminea	1
Arthropoda	
Insecta	
Ephemeroptera (MAYFLIES)	
Baetidae	
Baetis sp	11
Caenidae	
Caenis sp	4
Tricorythidae	
Tricorythodes sp	7
Odonata (DRAGONFLIES AND DAMSELFLIES)	
Gomphidae	
Dromogomphus sp	1
Megaloptera	
Corydalidae (FISHFLIES AND DOBSONFLIES)	
Corydalus sp	2
Trichoptera (CADDISFLIES)	
Helicopsychidae	
Helicopsyche sp	1
Hydropsychidae	
Cheumatopsyche sp	24
Hydropsyche sp	17
Hydroptilidae	
Hydroptila sp	2
Psychomyiidae	
Psychomyia sp	6
Coleoptera (BEETLES)	
Psephenidae (WATER PENNIES)	
Psephenus sp	1
Diptera (TRUE FLIES)	
Chironomidae (MIDGES)	41
Total Organisms	122

04213000 CONNEAUT CREEK AT CONNEAUT, OHIO

LOCATION.--Latitude 41°55'37", longitude 80°36'15", Ashtabula County, Hydrologic Unit 04120101, on right bank at downstream side of Keefus Road bridge at Conneaut, Ohio, and 6.4 mi upstream from mouth.

DRAINAGE AREA.--175 mi^2.

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 National Geodetic Vertical Datum of 1929. Prior to Aug. 17, 1924, nonrecording gage at same site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Water-quality and sediment data formerly collected at this site.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23	e32	e130	e700	e64	e250	e400	59	1090	33	57	52
2	18	e31	e280	e900	e74	e200	e280	97	750	33	47	329
3	16	e34	e220	e660	e94	e180	e200	268	279	31	49	295
4	14	e39	e180	e420	e200	e160	e330	194	169	28	51	111
5	12	e36	e140	e280	e330	e200	e900	134	136	28	66	54
6	11	e33	e110	e200	e440	e300	e1700	147	128	27	63	36
7	9.2	e30	e84	e160	e560	e390	e1400	653	117	26	87	29
8	8.6	e33	e70	e140	e300	e560	e760	354	98	38	79	24
9	8.1	e32	e60	e165	e200	e400	e900	545	421	73	73	21
10	8.7	e31	e52	e240	e160	e700	e640	570	529	52	122	19
11	8.7	e48	e56	e400	e140	e1000	e400	458	197	49	71	17
12	8.6	e280	e68	e300	e120	e700	e240	348	575	51	64	17
13	8.5	e150	e210	e250	e110	e430	e180	687	2610	45	48	16
14	7.4	e100	e310	e210	e100	e600	e160	948	4990	34	36	14
15	6.9	e82	e450	e180	e94	e940	e140	478	771	29	30	15
16	9.2	e70	e600	e170	e90	e780	e120	261	357	26	28	16
17	14	e90	e380	e160	e86	e900	e100	183	213	28	26	37
18	e17	e140	e240	e150	e84	e1300	e86	146	269	46	25	30
19	e36	e180	e170	e140	e82	934	e72	119	642	30	24	50
20	e41	e160	e200	e130	e80	608	e62	103	672	52	23	217
21	e46	e110	e240	e120	e88	518	e70	111	330	286	21	229
22	e37	e160	e300	e110	e230	888	e100	177	204	1550	19	101
23	e33	e300	e250	e100	e600	729	e150	147	161	1740	17	359
24	e35	e470	e200	e94	e1000	476	e190	877	104	720	16	562
25	e29	e340	e150	e86	e2000	362	142	1060	75	514	15	200
26	e32	e210	e210	e80	e1400	802	114	384	59	255	16	96
27	e41	e150	e270	e76	e560	e600	96	200	51	128	19	488
28	e50	e130	e310	e72	e300	e560	82	140	43	96	33	2020
29	e46	e120	e370	e70	---	e390	69	111	39	168	37	993
30	e40	e110	e320	e68	---	e440	62	97	36	100	30	899
31	e35	---	e500	e66	---	e580	---	133	---	70	28	---
TOTAL	709.9	3731	7130	6897	9586	17877	10145	10189	16115	6386	1320	7346
MEAN	22.9	124	230	222	342	577	338	329	537	206	42.6	245
MAX	50	470	600	900	2000	1300	1700	1060	4990	1740	122	2020
MIN	6.9	30	52	66	64	160	62	59	36	26	15	14
CFSM	0.13	0.71	1.31	1.27	1.96	3.30	1.93	1.88	3.07	1.18	0.24	1.40
IN.	0.15	0.79	1.52	1.47	2.04	3.80	2.16	2.17	3.43	1.36	0.28	1.56

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1922 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	132	313	411	417	456	526	392	239	140	76.3	68.2	102
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	147	69.9	20.2	5.46	2.79	3.19	3.56
(WY)	1924	1954	1961	1977	1934	2000	1935	1934	1934	1934	1923	1932

e Estimated.

STREAMS TRIBUTARY TO LAKE ERIE

04213000 CONNEAUT CREEK AT CONNEAUT, OHIO

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1922 - 2003	
ANNUAL TOTAL	85431.6		97431.9			
ANNUAL MEAN	234		267		272	
HIGHEST ANNUAL MEAN					401	1986
LOWEST ANNUAL MEAN					140	1931
HIGHEST DAILY MEAN	3700	May 14	4990	Jun 14	11000	Jan 31 1968
LOWEST DAILY MEAN	2.5	Sep 12	6.9	Oct 15	0.30	Jul 30 1933
ANNUAL SEVEN-DAY MINIMUM	2.7	Sep 7	8.1	Oct 9	0.64	Aug 27 1933
MAXIMUM PEAK FLOW	X		7060	Jun 14	17000	Jan 22 1959
MAXIMUM PEAK STAGE	X		11.79	Mar 17a	12.94	Mar 4 1934
INSTANTANEOUS LOW FLOW	X		6.6	Oct 15	0.20	Jul 31 1933
ANNUAL RUNOFF (CFSM)	1.34		1.53		1.56	
ANNUAL RUNOFF (INCHES)	18.16		20.71		21.13	
10 PERCENT EXCEEDS	520		678		680	
50 PERCENT EXCEEDS	110		128		98	
90 PERCENT EXCEEDS	9.6		25		10	

a Ice.

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 mi^2.

PERIOD OF RECORD.--May 1986 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 800 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REVISED RECORDS.--WDR PA-94-3: 1987-89 (M).

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

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a base discharge of 200 ft^3/s and maximum (*****):

Date	Time	Discharge ft^3/s	Gage Height (ft)	Date	Time	Discharge ft^3/s	Gage Height (ft)
Sept. 29	0930	*259	*2.04	No other peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.3	3.4	8.4	20	e4.2	e4.4	7.4	2.4	9.6	0.94	8.9	15
2	1.2	3.0	5.8	11	e3.7	e6.0	6.9	12	2.5	0.93	9.0	9.8
3	2.7	2.5	e5.1	7.1	e4.1	e8.1	4.3	5.4	1.9	0.93	4.8	3.5
4	2.3	2.2	e4.7	6.0	e4.1	e4.9	21	3.6	1.7	1.9	2.8	2.4
5	2.5	2.2	e4.0	5.3	e28	e4.6	62	4.7	2.3	1.8	28	1.9
6	2.2	2.8	e4.0	5.0	e19	e4.0	13	5.5	1.9	1.1	14	1.7
7	2.2	2.6	e3.8	7.0	e7.2	e16	10	4.0	1.5	1.6	4.9	1.5
8	2.5	2.3	e3.6	5.4	e6.2	e4.8	17	4.6	1.9	1.1	2.9	1.5
9	2.2	2.2	e3.5	10	e5.3	e26	11	5.0	3.5	10	2.4	1.5
10	2.2	2.6	e3.5	9.6	e4.7	e43	7.9	16	1.5	1.8	2.4	1.4
11	2.3	11	e3.8	7.9	e4.1	e27	6.1	9.8	1.3	1.9	3.0	1.4
12	2.3	4.2	e6.2	8.4	e3.7	e6.1	5.3	14	4.1	1.7	2.1	1.4
13	2.2	3.0	10	18	e6.5	e7.3	4.2	21	38	1.2	1.9	1.4
14	2.1	2.6	28	7.3	e4.5	e8.4	3.7	12	6.2	1.0	1.7	1.6
15	2.1	2.4	13	e5.9	e3.7	e12	3.3	5.9	2.4	1.0	1.6	3.1
16	4.4	3.3	8.3	e5.7	e4.8	e15	2.8	4.1	1.7	1.2	1.8	2.1
17	4.4	9.2	5.8	e5.5	e9.1	41	3.3	3.1	2.0	1.0	1.8	1.5
18	6.2	11	4.8	e5.3	e5.2	24	2.9	2.4	5.1	1.0	1.5	1.5
19	12	6.2	7.0	e5.2	e4.1	15	2.6	2.2	12	0.93	1.4	8.2
20	4.8	5.4	16	e5.0	e3.5	13	2.9	3.2	3.1	0.92	1.4	3.6
21	2.5	3.3	7.8	e5.1	e3.3	20	20	2.7	2.1	12	1.4	2.0
22	1.9	14	6.4	e5.3	e3.5	e13	9.7	2.2	1.9	4.4	1.3	4.6
23	2.3	11	5.4	e5.5	e5.1	e11	7.0	4.5	1.4	2.0	1.3	7.2
24	2.4	8.9	4.1	e8.8	e7.1	e9.9	4.9	23	1.3	1.7	1.2	2.5
25	2.3	9.3	4.2	e5.5	e13	12	3.9	5.1	1.2	1.2	1.2	2.1
26	6.1	6.7	3.7	e4.5	e57	46	2.9	2.7	1.1	1.1	3.6	1.8
27	3.2	5.2	3.6	e4.2	e28	15	2.5	2.2	1.0	6.0	1.8	32
28	2.3	5.2	5.0	e4.1	e11	9.9	2.4	2.0	1.0	3.2	1.4	10
29	2.0	5.7	3.7	e4.0	---	55	2.3	1.8	1.0	1.5	3.1	62
30	1.9	12	9.2	e13	---	18	2.3	1.7	0.99	1.2	2.1	16
31	1.7	---	45	e6.2	---	8.4	---	7.5	---	17	1.5	---
TOTAL	92.7	165.4	247.4	226.8	263.7	508.8	255.5	196.3	117.19	85.25	118.2	206.2
MEAN	2.99	5.51	7.98	7.32	9.42	16.4	8.52	6.33	3.91	2.75	3.81	6.87
MAX	12	14	45	20	57	55	62	23	38	17	28	62
MIN	1.2	2.2	3.5	4.0	3.3	4.0	2.3	1.7	0.99	0.92	1.2	1.4
CFSM	0.67	1.24	1.79	1.64	2.12	3.69	1.91	1.42	0.88	0.62	0.86	1.54
IN.	0.77	1.38	2.07	1.90	2.20	4.25	2.14	1.64	0.98	0.71	0.99	1.72

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	4.82	7.19	8.48	8.77	9.25	10.5	11.6	6.61	3.87	2.13	3.32	3.58
MAX	12.1	17.2	17.0	19.2	28.7	17.6	22.8	14.4	10.9	6.13	19.1	11.1
(WY)	1988	1993	1998	1998	1990	1989	1996	1989	1994	1992	1987	1992
MIN	1.24	0.89	1.49	3.13	2.21	3.71	6.24	1.56	0.86	0.71	0.49	0.75
(WY)	1999	1999	1999	1987	1987	1999	1999	1991	1991	1999	1991	1995

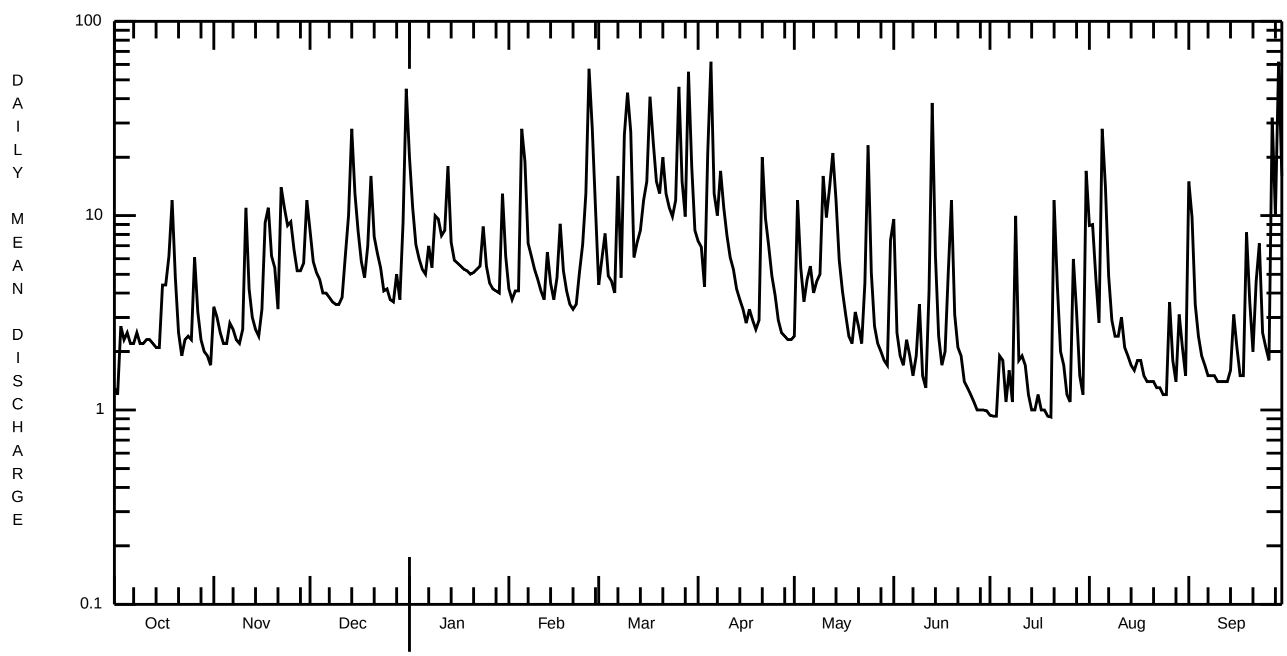
e Estimated.

STREAMS TRIBUTARY TO LAKE ERIE

04213075 BRANDY RUN NEAR GIRARD, PA--Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1986 - 2003	
ANNUAL TOTAL	2485.56		2483.44			
ANNUAL MEAN	6.81		6.80		6.68	
HIGHEST ANNUAL MEAN					9.84	1996
LOWEST ANNUAL MEAN					2.82	1999
HIGHEST DAILY MEAN	132	Feb 1	62	Apr 5**a**	405	Aug 2 1987
LOWEST DAILY MEAN	0.54	Aug 11	0.92	Jul 20	0.14	Aug 3 1991
ANNUAL SEVEN-DAY MINIMUM	0.57	Aug 8	0.97	Jun 27	0.16	Aug 1 1991
MAXIMUM PEAK FLOW			**b**259	Sep 29	**b**708	Jun 13 1994
MAXIMUM PEAK STAGE			2.04	Sep 29	**c**3.36	Jun 13 1994
ANNUAL RUNOFF (CFSM)	1.53		1.53		1.50	
ANNUAL RUNOFF (INCHES)	20.78		20.76		20.38	
10 PERCENT EXCEEDS	12		14		13	
50 PERCENT EXCEEDS	4.3		4.1		3.3	
90 PERCENT EXCEEDS	0.84		1.4		0.92	

a Also Sept. 29.
b From rating curve extended above 140 ft^3/s.
c Maximum gage height, 4.55 ft., Dec. 19, 1989 (backwater from ice).



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 others 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 2003

Station name and number	Location and drainage area	Period of Record	Water year 2003 maximum: Date	Water year 2003 maximum: Gage height (ft)	Water year 2003 maximum: Discharge (ft^3/s)	Period of record maximum: Date	Period of record maximum: Gage height (ft)	Period of record maximum: Discharge (ft^3/s)
OHIO RIVER BASIN								
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 municipal parking lot at Warren, Pa., 1,400 ft downstream from confluence of Conewango Creek, and at mile 188.7. Drainage area is 3,131 mi^2.	1988-94≠ 1995-2003	7-27-03	10.13	25,900	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, Pa., and 3.4 mi upstream from Woodcock Creek Dam. Drainage area is 31.1 mi^2.	1974-95≠ 1996-2003	7-22-03	[a]9.23	1,420	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, Pa., 0.1 mi downstream from confluence of East and West Branches. Drainage area is 204 mi^2.	1945-95≠ 1996-2003	3-21-03	5.97	3,330	1-19-96	10.14	12,800

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Annual maximum discharge at crest-stage partial-record stations during water year 2003—Continued

			Water year 2003 maximum			Period of record maximum		
Station name and number	Location and drainage area	Period of Record	Date	Gage height (ft)	Discharge (ft^3/s)	Date	Gage height (ft)	Discharge (ft^3/s)
			OHIO RIVER BASIN--Continued					
			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, Pa., 300 ft downstream from Clapboard Run, and 2.7 mi upstream from confluence with Stonycreek River. Drainage area is 183 mi^2.	1939-95≠ 1996-2003	6-03-03	[b]12.64	3,960	7-20-77	18.85	40,000
			LAKE ERIE BASIN					
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, Pa. Drainage area is 9.16 mi^2.	1964-2003	9-29-03	10.44	452	9-17-96	15.06	3,310

≠ Operated as a continuous-record gaging station.
a Maximum gage height, 10.74 ft, Feb. 4 (backwater from ice).
b Maximum gage height, 13.52 ft, Jan. 1 (backwater from ice).

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Miscellaneous sites

Discharge measurements made at miscellaneous sites during water year 2003

Stream	Tributary to	Location	Drainage area (mi^2)	Measured previously (water years)	Measurements: Date	Measurements: Discharge (ft^3/s)
		OHIO RIVER BASIN				
		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 at Bradford, Pa., and 1.5 mi downstream from confluence of East and West Branch Tunungwant Creek.	138	1989-2002	11-05-02 3-20-03 5-06-03 6-25-03 8-18-03	65.5 1,200 143 99.3 138
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, Pa., 500 ft upstream from Bluejay Creek and 7 mi south of Sheffield, Pa.	233	1939-79≠ 1981 1988-2002	10-30-02 4-09-03 8-07-03 9-24-03	84.6 954 338 334
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, Pa., 1.2 mi upstream from Gravel Run and 2.2 mi downstream from Boles Run.	597	1938-46≠ 1994-2002	10-02-02 11-20-02 1-09-03 4-07-03 5-21-03 7-10-03 8-26-03	198 1,500 1,500 2,730 1,590 445 302
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, Pa., 0.9 mi upstream from mouth, and 3 mi northeast of Franklin, Pa.	166	1932-79≠ 1989-2002	10-23-02 3-04-03 4-11-03 6-12-03 8-04-03 9-22-03	62.7 233 444 419 170 135
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, Pa., 50 ft downstream from Elk Creek.	303	1940-53≠ 1954-2002	11-04-02 3-21-03 5-05-03 6-30-03 8-20-03	200 3,650 286 231 358
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, Pa., and 0.3 mi upstream from Licking Creek.	1,163	1979-2002	10-31-02 12-12-02 3-07-03 4-16-03 6-09-03 8-08-03 9-29-03	182 256 3,240 3,930 5,730 1,060 2,840
03036995 Crooked Creek	Allegheny River	Lat 40°40'54", long 79°11'27", Indiana County, at bridge on State Highway 110 at Creekside, Pa.,and 150 ft upstream from McKee Run.	53.4	1996, 2002	11-04-02 12-09-02 1-16-03 3-05-03 4-23-03 6-04-03 7-21-03 9-16-03	16.6 17.1 28.3 152 48.1 125 42.7 53.0

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Discharge measurements made at miscellaneous sites during water year 2003—Continued

Stream	Tributary to	Location	Drainage area (mi^2)	Measured previously (water years)	Measurements: Date	Measurements: Discharge (ft^3/s)
		OHIO RIVER BASIN--Continued				
		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 North Edinburg, Pa.	1,099	1989-2002	10-03-02	319
					11-21-02	412
					1-14-03	809
					3-03-03	871
					4-10-03	2,540
					5-27-03	2,440
					7-15-03	2,320
					8-27-03	1,020
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, Pa., and 0.6 mi above confluence with Neshannock Creek.	792	1910-34≠ 1989-2002	10-03-02	162
					11-21-02	428
					1-13-03	832
					4-10-03	3,180
					5-21-03	1,640
					7-15-03	1,140
					8-27-03	574
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, Pa., and 0.8 mi upstream from Thorn Creek.	137	1989-2002	11-01-02	42.8
					4-16-03	106
					8-11-03	96.6
					9-30-03	119
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	1996-2002	10-07-02	3.53
					11-21-02	23.9
					1-13-03	36.0
					3-04-03	114
					4-11-03	72.6
					5-23-03	90.2
					7-14-03	56.4
					8-28-03	30.5
		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, Pa., and 1.9 mi south of West Springfield, Pa.	149	1989-2002	10-02-02	9.84
					11-18-02	487
					1-08-03	142
					4-08-03	1,280
					5-20-03	69.5
					7-09-03	36.2
					8-27-03	21.3
04213273 Twelvemile Creek	Lake Erie	Lat 42°12’15”, long 79°54’16”, Erie County, Hydrologic Unit 04120101, at bridge on Malbert Place near Mooreheadville, Pa., and 0.5 mi upstream from mouth.	12.5	1989-2002	10-02-02	1.50
					11-19-02	18.9
					1-09-03	28.5
					4-08-03	30.4
					5-20-03	11.1
					7-09-03	14.7
					8-20-03	3.88

≠ Operated as a continuous-record gaging station.

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

The Pennsylvania Water-Quality Network (WQN) is a statewide, fixed station water-quality sampling system currently operated by the Department of Environmental Protection (PaDEP), Bureau of Water Supply and Wastewater Management in cooperation with the United States Geological Survey (USGS). It is designed to assess both the quality of Pennsylvania's surface waters and the effectiveness of the water quality management program by accomplishing three basic objectives:

* Monitor temporal water-quality trends in major surface streams throughout the Commonwealth of Pennsylvania.

* Monitor temporal water-quality trends in selected reference waters.

* Monitor temporal water-quality trends in selected Pennsylvania lakes.

Major streams are defined as interstate waters and intrastate streams with drainage areas of roughly 200 mi^2 or greater. These waters are sampled at or near their mouths to measure overall quality before flows enter the next higher order stream or before exiting the Commonwealth. In this way, trends can be established and the effectiveness of water-quality management programs can be assessed by watershed. Samples are collected on fixed time intervals resulting in coverage of a range of flow regimes. All samples collected from April 1, 2002 through September 30, 2003 were collected by the USGS and analyzed by the PaDEP laboratory in Harrisburg.

Most of the current WQN standard sites are co-located with USGS gage stations and others are equipped with a wire-weight gage. Currently the network consists of 120 standard stream sites, and 26 reference stream sites, and 27 lakes distributed across the Commonwealth. This report contains only those sites in the Ohio or St. Lawrence River basins. The locations of these sites can be found in figures 4-5. Other data for the WQN can be found in the annual Water Data Reports PA-03-1 and PA-03-2.

Standard stations are sampled bimonthly (6 timer per year) for physical and chemical parameters and stream discharge or a stage reading. Reference stations are sampled monthly at 25-30 day intervals for physical and chemical parameters and stream discharge or a stage reading. Benthic macroinvertebrates are also collected annually at all WQN stations.

Ninety lakes are part of the WQN. Of these 90 lakes, approximately 15-20 are sampled annually during mid-summer stratification for five years; and then a different set of 15-20 lakes is sampled for five years. Using this schedule, all 90 lakes are sampled over a 30-year period. However, 27 lakes are scheduled for sampling in the current 5-year sampling period. Lakes are sampled for physical and chemical parameters. Two samples are collected from the deepest point of the lake with the first sample being collected 1-meter below the surface and the second sample collected 1-meter from the bottom. Each sample is analyzed separately. A temperature and dissolved oxygen profile is collected at the site through the water column. This report contains only data for lakes in the Ohio or St. Lawrence River basins. The locations of these sites can be found in figures 4-5.

For additional information, contact Andrew Reif at the U.S. Geological Survey, 111 Great Valley Parkway, Malvern, PA 19355; 610-647-9008, (email: agreif@usgs.gov).

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

TABLE 3.--Pennsylvania Water-Quality Network (WQN) station list.

Station number	WQN No.	Location	Latitude	Longitude	Drainage area (mi^2)
[a]03010500	807	Allegheny River at Eldred, PA	41°57’48"	78°23’11"	550
03010956	858	Tunungwant Creek at Bradford, PA	41°57’44"	78°37’30"	138
03012600	866	Allegheny River at Warren, PA	41°49’28"	79°07’09"	2,223
[a]03015000	832	Conewango Creek at Russell, PA	41°56’17"	79°08’00"	816
[a]03015500	831	Brokenstraw Creek at Youngsville, PA	41°51’09"	79°19’03"	321
[a]03016000	805	Allegheny River at West Hickory, PA	41°34’15"	79°24’29"	3,660
03017500	830	Tionesta Creek at Lynch, PA	41°36’07"	79°03’01"	233
03017800	871	Minister Creek at Truemans, PA	41°37’16"	79°09’11"	10.2
03020449	873	West Branch Caldwell Creek near Grand Valley, PA	41°41’40"	79°34’16"	18.1
[a]03020500	868	Oil Creek at Rouseville, PA	41°28’54"	79°41’44"	300
03022000	869	French Creek at Venango, PA	41°46’19"	80°06’29"	597
[a]03023100	846	French Creek at Meadville, PA	41°37’57"	80°09’35"	788
03025490	845	French Creek at Franklin, PA	41°24’06"	79°49’54"	1,237
03026175	867	Allegheny River at Kennerdell, PA	41°15’51"	79°50’29"	6,266
[a]03029500	822	Clarion River at Cooksburg, PA	41°19’50"	79°12’33"	807
03030852	843	Clarion River at Callensburg, PA	41°07’47"	79°33’18"	1,163
[a]03031500	803	Allegheny River at Parker, PA	41°06’02"	79°40’53"	7,671
03031505	875	Silver Creek at Walley Mill near North Washington, PA	41°02’39"	79°46’36"	5.50
[a]03032500	820	Redbank Creek at St. Charles, PA	40°59’40"	79°23’40"	528
[a]03034000	861	Mahoning Creek at Punxsutawney, PA	40°56’21"	79°00’31"	158
[a]03036500	802	Allegheny River at Kittanning, PA	40°49’13"	79°31’54"	8,973
03039815	870	Clear Shade Creek above Confluence near Cairnbrook, PA	40°08’54"	78°49’03"	32.1
03044000	810	Conemaugh River at Tunnelton, PA	40°27’16"	79°23’28"	1,358
03049652	801	Allegheny River at Hulton Bridge at Oakmont, PA	40°31’39"	79°50’51"	11,577
03063000	725	Monongahela River at Lock and Dam 8 at Point Marion, PA	39°43’37"	79°54’42"	2,720
03071700	727	Cheat River at Point Marion, PA	39°44’31"	79°53’59"	1,422
[a]03072000	714	Dunkard Creek at Shannopin, PA	39°45’33"	79°58’15"	229
03072850	731	South Fork Ten Mile Creek near Rogersville, PA	39°53’00"	80°18’59"	18.7
[a]03075070	702	Monongahela River at Elizabeth, PA	40°15’44"	79°54’05"	5,340
03077500	709	Youghiogheny River at Youghiogheny River Dam, PA	39°48’19"	79°21’52"	436
03078020	726	Casselman River near Salisbury, PA	39°43’56"	79°06’03"	70.8
03079448	730	Kooser Run at Kooser State Park near Bakersville, PA	40°03’37"	79°13’41"	2.60
[a]03083500	706	Youghiogheny River at Sutersville, PA	40°14’24"	79°48’24"	1,715
[a]03085000	701	Monongahela River at Braddock, PA	40°23’28"	79°51’30"	7,337
[a]03086000	901	Ohio River at Sewickley, PA	40°32’57"	80°12’21"	19,500
03099600	915	Mahoning River at North Edinburg, PA	41°01’06"	80°26’27"	1,099
[a]03101500	911	Shenango River at Pymatuning Dam, PA	41°29’53"	80°27’37"	167
[a]03102500	913	Little Shenango River at Greenville, PA	41°25’19"	80°22’35"	104
03103500	910	Shenango River at Sharpsville, PA	41°15’58"	80°28’22"	584

TABLE 3.--Pennsylvania Water-Quality Network (WQN) station list--continued.

Station number	WQN No.	Location	Latitude	Longitude	Drainage area (mi^2)
03104500	909	Shenango River at New Castle, PA	41°00’00"	80°21’21"	792
[a]03105500	906	Beaver River at Wampum, PA	40°53’19"	80°20’14"	2,235
03105810	917	Connoquenessing Creek at Renfrew, PA	40°48’21"	79°57’55"	137
[a]03106000	907	Connoquenessing Creek near Zelienople, PA	40°49’01"	80°14’33"	356
[a]03106500	922	Slippery Rock Creek at Wurtemburg, PA	40°53’02"	80°14’02"	398
[a]03107500	905	Beaver River at Beaver Falls, PA	40°45’48"	80°18’55"	3,106
[a]03108000	903	Raccoon Creek at Moffatts Mill, PA	40°37’40"	80°20’16"	178
03109670	901	Ohio River at mile 44.5 at Newell, WV	40°37’10"	80°35’24"	22,784
04212945	643	Conneaut Creek near Cherry Hill, PA	41°55’04"	80°28’09"	149
04213273	641	Twelvemile Creek near Moorheadville, PA	42°12’15"	79°54’46"	12.5

[a]Other data for this station can be found in the continuous station records section of this report.

TABLE 4.--List of lakes sampled as part of the Pennsylvania Water-Quality Network.

Station number	WQN No.	Location	Latitude	Longitude	Drainage area (mi^2)
03021545	L811	Union City Reservoir near Union City, PA	41°54’54"	79°48’55"	2.15
03023012	L810W	Tamarack Lake West near Meadville, PA	41°36’45"	80°07’02"	2.11
03023373	L810E	Tamarack Lake East near Meadville, PA	41°34’47"	80°04’39"	2.11
03024228	L809	Sugar Lake near Bradleytown, PA	41°33’59"	79°56’36"	21.8
[a]03042260	L808	Yellow Creek Lake near Brush Valley, PA	40°35’27"	79°03’11"	52.5
03048375	L807	Beaver Run Reservoir near Perryville, PA	40°30’44"	79°33’09"	42.7
03079050	L701	High Point Lake at Savage, PA	39°46’54"	79°13’36"	2.87
03111004	L903	Cross Creek Lake near Avella, PA	40°46’54"	80°25’14"	11.1

[a]Other data for this station can be found in the continuous station records section of this report.

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

MISCELLANEOUS STATION ANALYSES

Date	Time	Agency collecting sample, code (00027)	Agency analyzing sample, code (00028)	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf µS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Calcium water unfltrd recoverable, mg/L (00916)	Magnesium, water, fltrd, mg/L (00925)
03010956 Tunungwant Creek at Bradford, PA (LAT 41 57 44N LONG 078 37 30W)													
NOV 2002 25...	1315	1028	9813	169	40	13.6	7.3	260	4.2	56	--	16.8	--
MAR 2003 31...	1145	1028	9813	316	40	13.6	7.3	154	3.3	34	--	9.8	--
MAY 21...	1045	1028	9813	257	40	11.3	7.5	184	10.6	40	--	11.6	--
JUL 30...	0800	1028	9813	316	40	9.5	7.3	149	13.7	35	--	10.0	--
SEP 24...	1330	1028	9813	117	40	11.7	8.3	216	16.2	50	--	15.0	--
03012600 Allegheny River at Warren, PA (LAT 41 49 28N LONG 079 07 09W)													
NOV 2002 18...	1130	1028	9813	4700	40	12.2	7.6	143	8.1	49	--	14.6	--
JAN 2003 28...	1015	1028	9813	2550	40	12.5	7.3	152	.0	42	--	12.1	--
MAR 25...	1015	1028	9813	24800	40	14.8	7.3	121	2.4	35	--	10.1	--
MAY 19...	1100	1028	9813	8600	40	12.9	7.9	103	10.6	30	--	8.6	--
JUL 21...	1030	1028	9813	4500	40	9.7	7.5	121	17.9	36	--	9.8	--
SEP 22...	1215	1028	9813	4000	40	9.7	7.4	107	19.7	34	--	10.1	--
03017500 Tionesta Creek at Lynch, PA (LAT 41 36 07N LONG 079 03 01W)													
NOV 2002 25...	1130	1028	9813	306	40	12.9	7.2	69	3.8	20	5.27	5.3	1.72
MAR 2003 31...	1000	1028	9813	504	40	13.4	7.3	56	2.7	16	3.83	4.0	1.38
MAY 21...	1400	1028	9813	797	40	11.0	7.0	57	11.6	17	4.05	4.3	1.36
JUL 29...	1015	1028	9813	885	40	9.8	6.9	48	14.2	15	3.72	3.8	1.28
SEP 23...	1500	1028	9813	625	40	9.6	7.2	64	16.1	18	4.93	4.7	1.62
03017800 Minister Creek at Trumans, PA (LAT 41 37 16N LONG 079 09 11W)													
OCT 2002 17...	1400	1028	9813	3.9	30	11.0	7.7	39	8.7	12	2.70	2.9	1.13
NOV 25...	1000	1028	9813	12	30	12.5	7.3	34	4.3	11	2.47	2.5	1.10
MAR 2003 27...	1430	1028	9813	20	30	11.6	6.4	30	8.2	9	2.04	2.1	.93
APR 16...	1330	1028	9813	19	30	10.5	7.0	31	12.3	10	--	2.2	--
MAY 21...	1230	1028	9813	49	30	11.2	6.9	28	9.3	9	1.93	2.0	.84
JUN 12...	1345	1028	9831	26	30	9.9	6.9	30	12.7	10	2.08	2.1	1.02
JUL 30...	1200	1028	9813	19	30	10.3	6.5	29	13.0	9	2.13	2.1	1.03
AUG 27...	1045	1028	9813	13	30	9.4	6.7	34	16.5	10	2.25	2.3	.98
SEP 24...	1130	1028	9813	9.4	30	10.3	7.3	33	11.7	10	2.23	2.3	.99

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

MISCELLANEOUS STATION ANALYSES

Date	Magnesium, water, unfltrd recoverable, mg/L (00927)	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (00417)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, unfltrd mg/L (00951)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 105degC wat flt mg/L (00515)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia water, unfltrd mg/L as N (00610)	Nitrate water unfltrd mg/L as N (00620)	Nitrite water, unfltrd mg/L as N (00615)	Orthophosphate, water, unfltrd mg/L as P (70507)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, unfltrd mg/L (00600)
03010956 Tunungwant Creek at Bradford, PA (LAT 41 57 44N LONG 078 37 30W)													
NOV 2002													
25...	3.5	28	--	<.2	11.0	166	10	<.020	.30	<.040	.01	<.010	.39
MAR 2003													
31...	2.3	21	--	<.2	9.4	106	10	<.020	.36	<.040	<.01	.011	.58
MAY													
21...	2.7	28	--	<.2	7.7	140	10	<.020	.14	<.040	.02	.016	.40
JUL													
30...	2.5	23	--	<.2	8.0	82	10	<.020	.27	<.040	.01	.013	.33
SEP													
24...	3.1	38	--	<.2	7.6	168	8	<.020	.05	<.040	.01	.017	.16
03012600 Allegheny River at Warren, PA (LAT 41 49 28N LONG 079 07 09W)													
NOV 2002													
18...	3.0	38	--	--	10.0	114	4	<.020	.27	<.040	.01	.010	.82
JAN 2003													
28...	2.8	27	--	--	10.3	118	2	<.020	.52	<.040	.01	.014	1.5
MAR													
25...	2.3	20	--	--	9.1	102	4	<.020	.58	<.040	.05	.031	.76
MAY													
19...	2.1	21	--	--	8.6	76	2	<.020	.46	<.040	.01	.012	.62
JUL													
21...	2.7	24	--	--	8.2	90	90	<.020	.28	<.040	.07	.082	.84
SEP													
22...	2.2	28	--	--	7.9	68	<2	<.020	.21	<.040	<.01	.014	.49
03017500 Tionesta Creek at Lynch, PA (LAT 41 36 07N LONG 079 03 01W)													
NOV 2002													
25...	1.7	11	--	--	9.5	106	<2	<.020	.34	<.040	<.01	<.010	.66
MAR 2003													
31...	1.4	8	--	--	9.6	84	28	<.020	.34	<.040	.01	.013	.37
MAY													
21...	1.5	11	--	--	7.6	64	24	<.020	.18	<.040	.03	.026	.46
JUL													
29...	1.3	10	--	--	8.1	50	8	<.020	.24	<.040	.02	.024	.35
SEP													
23...	1.5	13	--	--	6.8	66	28	<.020	.16	<.040	.03	.042	.42
03017800 Minister Creek at Trumans, PA (LAT 41 37 16N LONG 079 09 11W)													
OCT 2002													
17...	1.2	8	1.6	<.2	6.9	8	14	.150	<.04	<.040	<.01	<.010	.22
NOV													
25...	1.1	5	1.5	<.2	7.8	28	2	<.020	.25	<.040	<.01	<.010	.37
MAR 2003													
27...	.9	3	1.1	<.2	7.8	28	<2	<.020	.25	<.040	<.01	<.010	.25
APR													
16...	1.0	3	1.2	<.2	7.5	36	<2	<.020	.21	<.040	<.01	<.010	.30
MAY													
21...	.9	5	.8	<.2	7.0	48	8	<.020	.09	<.040	<.01	.010	.18
JUN													
12...	1.1	5	.9	<.2	7.3	24	<2	<.020	.15	<.040	.01	.012	.24
JUL													
30...	1.0	3	.9	<.2	7.2	22	20	<.020	.18	<.040	<.01	.011	.42
AUG													
27...	1.0	6	1.1	<.2	6.9	32	<2	<.020	.16	<.040	<.01	.012	.23
SEP													
24...	1.0	5	1.2	<.2	6.6	58	<2	.030	.10	<.040	<.01	<.010	.12

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

MISCELLANEOUS STATION ANALYSES

Date	Organic carbon, water, unfltrd mg/L (00680)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Fecal coli-form, M-FC 0.45µMF col/ 100 mL (31616)	Alum-inum, water, fltrd, µg/L (01106)	Alum-inum, water, unfltrd recover -able, µg/L (01105)	Arsenic water, fltrd, µg/L (01000)	Cadmium water, fltrd, µg/L (01025)	Copper, water, fltrd, µg/L (01040)	Copper, water, unfltrd recover -able, µg/L (01042)	Iron, water, fltrd, µg/L (01046)	Iron, water, unfltrd recover -able, µg/L (01045)	Lead, water, fltrd, µg/L (01049)	Lead, water, unfltrd recover -able, µg/L (01051)
03010956 Tunungwant Creek at Bradford, PA (LAT 41 57 44N LONG 078 37 30W)													
NOV 2002 25...	2.1	--	--	--	<200	--	--	--	<10	--	410	--	<1.0
MAR 2003 31...	1.5	--	--	--	<200	--	--	--	<10	--	280	--	<1.0
MAY 21...	2.9	--	--	--	500	--	--	--	<10	--	1020	--	<1.0
JUL 30...	2.1	--	--	--	<200	--	--	--	<10	--	450	--	<1.0
SEP 24...	3.1	--	--	--	<200	--	--	--	<10	--	550	--	<1.0
03012600 Allegheny River at Warren, PA (LAT 41 49 28N LONG 079 07 09W)													
NOV 2002 18...	2.0	--	--	--	<200	--	--	--	<10	--	160	--	<1.0
JAN 2003 28...	2.0	--	--	--	<200	--	--	--	<10	--	190	--	<1.0
MAR 25...	1.9	--	--	--	500	--	--	--	<10	--	730	--	<1.0
MAY 19...	1.7	--	--	--	<200	--	--	--	<10	--	60	--	<1.0
JUL 21...	4.0	--	--	--	3800	--	--	--	<10	--	5650	--	5.8
SEP 22...	3.0	--	--	--	<200	--	--	--	<10	--	170	--	<1.0
03017500 Tionesta Creek at Lynch, PA (LAT 41 36 07N LONG 079 03 01W)													
NOV 2002 25...	--	.6	--	32	78	--	--	<4	<4	60	240	<1.0	<1.0
MAR 2003 31...	--	<.2	--	50	100	--	--	<4	<4	70	260	<1.0	<1.0
MAY 21...	--	1.4	--	38	700	--	--	<4	<4	60	1580	<1.0	1.9
JUL 29...	--	.9	--	51	300	--	--	<4	<4	120	770	<1.0	<1.0
SEP 23...	--	1.1	--	--	--	--	--	<4	<4	1710	140	1.4	<1.0
03017800 Minister Creek at Trumans, PA (LAT 41 37 16N LONG 079 09 11W)													
OCT 2002 17...	--	1.6	<20	32	56	<4.0	<.20	<4	<4	110	200	2.5	<1.0
NOV 25...	--	.2	<20	57	74	<4.0	<.20	<4	<4	30	60	<1.0	<1.0
MAR 2003 27...	--	.7	<20	103	200	<4.0	<.20	<4	<4	30	120	<1.0	<1.0
APR 16...	--	.8	<20	54	100	<4.0	<.20	<4	<4	<20	80	<1.0	<1.0
MAY 21...	--	.9	20	107	300	<4.0	<.20	<4	<4	90	200	<1.0	<1.0
JUN 12...	--	1.2	<20	50	200	<4.0	<.20	<4	40	30	230	<1.0	4.6
JUL 30...	--	.3	60	48	100	<4.0	<.20	<4	<4	40	110	<1.0	<1.0
AUG 27...	--	.9	80	26	37	<4.0	<.20	<4	<4	50	120	<1.0	<1.0
SEP 24...	--	1.1	60	42	63	<4.0	<.20	<4	<4	50	110	<1.0	<1.0

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

MISCELLANEOUS STATION ANALYSES

Date	Mangan-ese, water, fltrd, µg/L (01056)	Mangan-ese, water, unfltrd recover-able, µg/L (01055)	Nickel, water, fltrd, µg/L (01065)	Nickel, water, unfltrd recover-able, µg/L (01067)	Zinc, water, fltrd, µg/L (01090)	Zinc, water, unfltrd recover-able, µg/L (01092)	Phen-olic com-pounds, water, unfltrd µg/L (32730)
03010956 Tunungwant Creek at Bradford, PA (LAT 41 57 44N LONG 078 37 30W)							
NOV 2002							
25...	--	110	--	<50	--	<10	5
MAR 2003							
31...	--	80	--	<50	--	<10	<5
MAY							
21...	--	130	--	<50	--	10	<5
JUL							
30...	--	100	--	<50	--	40	<5
SEP							
24...	--	80	--	<50	--	<10	<5
03012600 Allegheny River at Warren, PA (LAT 41 49 28N LONG 079 07 09W)							
NOV 2002							
18...	--	50	--	<50	--	<10	--
JAN 2003							
28...	--	20	--	<50	--	<10	--
MAR							
25...	--	80	--	<50	--	240	--
MAY							
19...	--	20	--	<50	--	30	--
JUL							
21...	--	410	--	<50	--	30	--
SEP							
22...	--	50	--	<50	--	<10	--
03017500 Tionesta Creek at Lynch, PA (LAT 41 36 07N LONG 079 03 01W)							
NOV 2002							
25...	30	40	<4.0	<4.0	<5.0	<5.0	--
MAR 2003							
31...	40	40	<4.0	<4.0	6.5	8.6	--
MAY							
21...	40	130	<4.0	<4.0	<5.0	10	--
JUL							
29...	40	80	<4.0	<4.0	7.5	10	--
SEP							
23...	--	--	<4.0	<4.0	--	--	--
03017800 Minister Creek at Trumans, PA (LAT 41 37 16N LONG 079 09 11W)							
OCT 2002							
17...	10	20	<4.0	<4.0	<5.0	<5.0	<5
NOV							
25...	20	20	<4.0	<4.0	10	20	<5
MAR 2003							
27...	40	50	<4.0	4.0	20	20	<5
APR							
16...	20	30	<4.0	<4.0	10	20	<5
MAY							
21...	40	70	<4.0	<4.0	20	20	<5
JUN							
12...	20	40	<4.0	<4.0	10	10	<5
JUL							
30...	30	40	<4.0	<4.0	10	10	<5
AUG							
27...	10	10	<4.0	<4.0	<5.0	<5.0	<5
SEP							
24...	10	20	<4.0	<4.0	<5.0	<5.0	<5

**ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK**

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

MISCELLANEOUS STATION ANALYSES

Date	Time	Agency col- lecting sample, code (00027)	Agency ana- lyzing sample, code (00028)	Instan- taneous dis- charge, cfs (00061)	Sam- pling method, code (82398)	Dis- solved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conduc- tance, wat unf µS/cm 25 degC (00095)	Temper- ature, water, deg C (00010)	Hard- ness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Calcium water unfltrd recover -able, mg/L (00916)	Magnes- ium, water, fltrd, mg/L (00925)
03020449 West Branch Caldwell Creek near Grand Valley, PA (LAT 41 41 40N LONG 079 34 16W)													
OCT 2002													
17...	1115	1028	9813	8.0	30	11.1	7.7	123	8.2	34	--	9.2	--
NOV													
26...	0945	1028	9813	7.9	30	13.4	7.5	82	2.8	25	--	6.8	--
MAR 2003													
27...	1145	1028	9813	47	30	12.3	7.1	65	5.9	20	--	5.4	--
APR													
16...	1100	1028	9813	40	30	10.8	7.4	69	10.9	23	--	6.1	--
MAY													
20...	1000	1028	9813	25	30	10.8	7.3	69	11.8	23	--	6.1	--
JUN													
12...	1145	1028	9813	22	30	9.4	6.2	82	14.8	27	--	7.2	--
JUL													
30...	0930	1028	9813	21	30	9.9	7.3	72	13.6	25	--	6.4	--
AUG													
27...	1300	1028	9813	11	30	9.1	7.2	95	18.8	30	--	8.3	--
SEP													
24...	0815	1028	9813	25	30	10.3	7.2	77	11.4	23	--	6.3	--
03022000 French Creek at Venango, PA (LAT 41 46 35N LONG 080 06 30W)													
OCT 2002													
21...	1030	1028	9813	951	40	10.5	7.7	301	9.9	120	--	36.3	--
NOV													
18...	1030	1028	9813	1600	40	11.6	7.4	218	5.0	96	--	28.8	--
DEC													
16...	1000	1028	9813	2440	40	13.8	7.7	191	1.2	68	--	20.5	--
JAN 2003													
13...	1030	1028	9813	1180	40	14.7	7.5	253	.0	94	--	28.7	--
MAR													
17...	1045	1028	9813	4540	40	13.8	7.3	159	1.4	63	--	18.1	--
APR													
14...	1400	1028	9813	1720	40	12.3	7.6	209	8.4	77	--	23.2	--
JUN													
05...	1115	1028	9813	868	40	10.2	7.9	238	14.0	100	--	31.1	--
JUL													
30...	0810	1028	9813	4810	40	6.7	7.1	189	--	81	--	24.6	--
AUG													
27...	0825	1028	9813	783	40	10.2	7.2	254	--	100	--	30.7	--
SEP													
24...	0825	1028	9813	1560	40	8.2	7.4	206	15.5	85	--	25.4	--

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

MISCELLANEOUS STATION ANALYSES

Date	Magnesium, water, unfltrd recover -able, mg/L (00927)	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (00417)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, unfltrd mg/L (00951)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 105degC wat flt mg/L (00515)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia water, unfltrd mg/L as N (00610)	Nitrate water unfltrd mg/L as N (00620)	Nitrite water, unfltrd mg/L as N (00615)	Orthophosphate, water, unfltrd mg/L as P (70507)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, unfltrd mg/L (00600)
03020449 West Branch Caldwell Creek near Grand Valley, PA (LAT 41 41 40N LONG 079 34 16W)													
OCT 2002													
17...	2.7	30	13.0	<.2	8.7	90	4	.170	<.04	<.040	<.01	.015	.38
NOV													
26...	2.0	15	7.2	<.2	9.4	68	<2	<.020	.38	<.040	<.01	.011	.35
MAR 2003													
27...	1.7	11	5.9	<.2	8.8	48	4	<.020	.42	<.040	.01	.011	.58
APR													
16...	1.9	14	4.6	<.2	8.7	68	<2	<.020	.38	<.040	.01	.024	.48
MAY													
20...	2.0	17	4.4	<.2	8.2	62	<2	<.020	.29	<.040	.01	.013	.38
JUN													
12...	2.2	22	6.1	<.2	7.2	58	<2	<.020	.25	<.040	.01	.019	.44
JUL													
30...	2.1	15	5.0	<.2	8.1	34	10	<.020	.48	<.040	.02	.015	.56
AUG													
27...	2.3	24	7.1	<.2	7.1	82	2	<.020	.31	<.040	.01	.019	.52
SEP													
24...	1.8	16	5.5	<.2	7.5	82	<2	<.020	.24	<.040	.02	.016	.39
03022000 French Creek at Venango, PA (LAT 41 46 35N LONG 080 06 30W)													
OCT 2002													
21...	7.0	90	17.3	<.2	21.9	204	32	.040	.67	<.040	.03	.058	1.4
NOV													
18...	5.9	70	18.0	<.2	19.9	138	14	<.020	.70	<.040	.03	.030	1.4
DEC													
16...	4.2	--	17.8	<.2	14.6	--	--	.040	.89	<.040	.04	.042	1.4
JAN 2003													
13...	5.4	67	24.1	<.2	15.4	152	8	<.020	1.09	<.040	.02	.021	1.2
MAR													
17...	4.4	36	16.0	<.2	10.0	92	340	.080	.96	<.040	.07	.188	4.0
APR													
14...	4.5	58	18.9	<.2	11.5	130	22	.030	.86	<.040	.02	.021	1.1
JUN													
05...	5.7	83	16.4	<.2	9.9	166	8	<.020	.54	<.040	.02	.040	.92
JUL													
30...	4.8	67	11.1	<.2	8.2	136	40	<.020	.62	<.040	.04	.067	1.1
AUG													
27...	6.3	87	15.4	<.2	10.7	170	38	.050	.68	<.040	.05	.070	1.1
SEP													
24...	5.3	73	12.8	<.2	9.1	198	10	.020	.49	<.040	.06	.071	.82

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

MISCELLANEOUS STATION ANALYSES

03020449 West Branch Caldwell Creek near Grand Valley, PA (LAT 41 41 40N LONG 079 34 16W)

Date	Organic carbon, water, unfltrd mg/L (00680)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Fecal coli-form, M-FC 0.45µMF col/ 100 mL (31616)	Alum-inum, water, fltrd, µg/L (01106)	Alum-inum, water, unfltrd recover -able, µg/L (01105)	Arsenic water, fltrd, µg/L (01000)	Cadmium water, fltrd, µg/L (01025)	Copper, water, fltrd, µg/L (01040)	Copper, water, unfltrd recover -able, µg/L (01042)	Iron, water, fltrd, µg/L (01046)	Iron, water, unfltrd recover -able, µg/L (01045)	Lead, water, fltrd, µg/L (01049)	Lead, water, unfltrd recover -able, µg/L (01051)
OCT 2002 17...	--	2.2	240	17	86	<4.0	<.20	<4	<4	200	620	<1.0	<1.0
NOV 26...	--	2.2	--	37	77	<4.0	<.20	<4	<4	150	270	<1.0	<1.0
MAR 2003 27...	--	.8	<20	37	100	<4.0	<.20	<4	<4	90	310	<1.0	<1.0
APR 16...	--	1.3	<20	29	97	<4.0	<.20	<4	<4	60	250	<1.0	<1.0
MAY 20...	--	.8	<20	--	--	<4.0	<.20	<4	<4	--	--	<1.0	<1.0
JUN 12...	--	1.6	180	10	100	<4.0	<.20	<4	<4	120	650	<1.0	<1.0
JUL 30...	--	.6	100	20	100	<4.0	<.20	<4	<4	220	450	<1.0	<1.0
AUG 27...	--	.8	260	29	100	<4.0	<.20	<4	<4	180	680	<1.0	<1.0
SEP 24...	--	1.2	400	19	200	<4.0	<.20	<4	<4	230	660	<1.0	<1.0

03022000 French Creek at Venango, PA (LAT 41 46 35N LONG 080 06 30W)

Date	Organic carbon, water, unfltrd mg/L (00680)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Fecal coli-form, M-FC 0.45µMF col/ 100 mL (31616)	Alum-inum, water, fltrd, µg/L (01106)	Alum-inum, water, unfltrd recover -able, µg/L (01105)	Arsenic water, fltrd, µg/L (01000)	Cadmium water, fltrd, µg/L (01025)	Copper, water, fltrd, µg/L (01040)	Copper, water, unfltrd recover -able, µg/L (01042)	Iron, water, fltrd, µg/L (01046)	Iron, water, unfltrd recover -able, µg/L (01045)	Lead, water, fltrd, µg/L (01049)	Lead, water, unfltrd recover -able, µg/L (01051)
OCT 2002 21...	--	.2	2600	30	500	<4.0	<.20	<4	<4	60	1020	<1.0	<1.0
NOV 18...	--	.9	220	31	300	<4.0	<.20	<4	<4	90	660	<1.0	<1.0
DEC 16...	--	<.2	550	32	500	<4.0	<.20	<4	<4	70	1270	<1.0	1.1
JAN 2003 13...	--	1.0	20	26	100	<4.0	<.20	<4	<4	100	420	<1.0	<1.0
MAR 17...	--	.6	1000	28	3100	<4.0	<.20	5	7	60	7900	<1.0	5.3
APR 14...	--	<.2	<20	27	400	<4.0	<.20	<4	<4	80	940	<1.0	<1.0
JUN 05...	--	1.8	--	25	200	<4.0	<.20	<4	<4	130	880	<1.0	<1.0
JUL 30...	--	1.6	620	12	800	<4.0	<.20	6	<4	80	1730	<1.0	1.4
AUG 27...	--	1.9	13000	16	700	<4.0	<.20	<4	<4	160	1410	<1.0	1.3
SEP 24...	--	1.8	3300	17	700	<4.0	<.20	<4	<4	200	1620	<1.0	1.2

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

MISCELLANEOUS STATION ANALYSES

Date	Mangan-ese, water, fltrd, µg/L (01056)	Mangan-ese, water, unfltrd recover-able, µg/L (01055)	Nickel, water, fltrd, µg/L (01065)	Nickel, water, unfltrd recover-able, µg/L (01067)	Zinc, water, fltrd, µg/L (01090)	Zinc, water, unfltrd recover-able, µg/L (01092)	Phen-olic com-pounds, water, unfltrd µg/L (32730)
03020449 West Branch Caldwell Creek near Grand Valley, PA (LAT 41 41 40N LONG 079 34 16W)							
OCT 2002							
17...	20	30	<4.0	<4.0	<5.0	<5.0	<5
NOV							
26...	30	30	<4.0	<4.0	<5.0	<5.0	<5
DEC							
17...	--	--	--	--	--	--	--
MAR 2003							
27...	10	20	<4.0	<4.0	<5.0	<5.0	<5
APR							
16...	10	20	<4.0	<4.0	<5.0	<5.0	<5
MAY							
20...	10	10	<4.0	<4.0	<5.0	<5.0	<5
JUN							
12...	10	30	<4.0	<4.0	<5.0	<5.0	<5
JUL							
30...	20	20	<4.0	<4.0	<5.0	5.5	<5
AUG							
27...	10	20	<4.0	<4.0	<5.0	<5.0	<5
SEP							
24...	20	30	<4.0	<4.0	<5.0	<5.0	<5
03022000 French Creek at Venango, PA (LAT 41 46 35N LONG 080 06 30W)							
OCT 2002							
21...	30	100	<4.0	<4.0	6.3	6.9	<5
NOV							
18...	30	60	<4.0	<4.0	--	--	<5
DEC							
16...	30	80	<4.0	<4.0	10	20	<5
JAN 2003							
13...	50	60	<4.0	<4.0	8.2	5.6	<5
MAR							
17...	30	280	<4.0	7.9	9.5	30	<5
APR							
14...	30	60	<4.0	<4.0	<5.0	<5.0	--
JUN							
05...	50	90	<4.0	<4.0	<5.0	<5.0	<5
JUL							
30...	10	100	<4.0	<4.0	<5.0	5.4	<5
AUG							
27...	50	120	<4.0	<4.0	<5.0	5.6	<5
SEP							
24...	10	70	<4.0	<4.0	<5.0	<5.0	5

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

MISCELLANEOUS STATION ANALYSES

Date	Time	Agency collecting sample, code (00027)	Agency analyzing sample, code (00028)	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf µS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as $CaCO_3$ (00900)	Calcium water, fltrd, mg/L (00915)	Calcium water unfltrd recoverable, mg/L (00916)	Magnesium, water, fltrd, mg/L (00925)
03025490 French Creek at Franklin, PA (LAT 41 24 06N LONG 079 49 54W)													
JAN 2003													
15...	1130	1028	9813	2380	40	15.3	7.7	253	.1	96	--	28.7	--
MAR													
19...	1130	1028	9813	8205	40	17.1	7.5	85	6.0	49	--	14.4	--
JUN													
09...	1405	1028	9813	1730	40	10.5	8.2	214	18.5	84	--	25.9	--
JUL													
16...	1415	1028	9813	505	40	11.2	8.6	277	--	120	--	34.2	--
SEP													
16...	1355	1028	9813	658	40	12.0	8.4	280	19.0	110	--	33.8	--
03026175 Allegheny River at Kennerdell, PA (LAT 41 15 51N LONG 079 50 29W)													
NOV 2002													
20...	1300	1028	9813	12800	40	11.2	7.8	169	6.5	64	--	19.1	--
JAN 2003													
15...	1300	1028	9813	10900	40	14.6	7.7	110	.7	65	--	19.1	--
MAR													
19...	1300	1028	9813	35700	40	17.4	7.5	113	6.0	37	--	10.4	--
JUN													
11...	0820	1028	9813	10800	40	9.1	8.0	155	17.0	52	--	15.4	--
JUL													
16...	0830	1028	9813	3400	40	7.6	8.2	194	--	67	--	20.5	--
SEP													
17...	1430	1028	9813	4500	40	10.6	8.2	163	20.0	55	--	16.6	--
03030852 Clarion River at Callensburg, PA (LAT 41 07 47N LONG 079 33 16W)													
NOV 2002													
20...	1430	1028	9813	2950	40	10.9	7.3	263	7.1	83	--	20.2	--
JAN 2003													
16...	0800	1028	9813	3940	40	13.8	7.5	179	.8	56	--	13.5	--
MAR													
19...	1445	1028	9813	11300	40	18.6	6.4	110	5.9	32	--	8.1	--
JUN													
10...	0805	1028	9813	720	40	10.7	7.6	205	14.0	70	--	17.0	--
JUL													
15...	1420	1028	9813	152	40	8.2	6.6	408	--	150	--	34.3	--
SEP													
17...	0755	1028	9813	301	40	8.5	7.1	188	16.5	62	--	14.8	--
03031505 Silver Creek at Walley Mill near North Washington PA (LAT 41 02 39N LONG 079 46 36W)													
OCT 2002													
22...	1130	1028	9813	.98	30	12.1	7.5	266	5.6	81	--	22.3	--
NOV													
21...	0930	1028	9813	--	30	11.9	7.5	202	3.9	68	--	17.9	--
JAN 2003													
16...	1000	1028	9813	2.9	30	14.4	7.7	203	.1	67	--	17.5	--
MAR													
20...	1030	1028	9813	17	30	21.4	7.2	140	5.8	42	--	10.5	--
APR													
15...	1030	1028	9813	8.7	30	12.5	7.5	152	8.1	50	--	13.0	--
JUN													
10...	1240	1028	9813	12	30	10.3	7.5	153	13.5	48	--	12.2	--
SEP													
17...	1200	1028	9813	3.6	30	10.6	7.4	155	13.5	50	--	13.6	--

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

MISCELLANEOUS STATION ANALYSES

Date	Magnes-ium, water, unfltrd recover -able, mg/L (00927)	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (00417)	Chlor-ide, water, fltrd, mg/L (00940)	Fluor-ide, water, unfltrd mg/L (00951)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 105degC wat flt mg/L (00515)	Residue total at 105 deg. C, sus-pended, mg/L (00530)	Ammonia water, unfltrd mg/L as N (00610)	Nitrate water unfltrd mg/L as N (00620)	Nitrite water, unfltrd mg/L as N (00615)	Ortho-phos-phate, water, unfltrd mg/L as P (70507)	Phos-phorus, water, unfltrd mg/L (00665)	Total nitro-gen, water, unfltrd mg/L (00600)
03025490 French Creek at Franklin, PA (LAT 41 24 06N LONG 079 49 54W)													
JAN 2003 15...	5.8	61	--	--	17.2	116	2	.040	1.05	<.040	.02	.027	1.2
MAR 19...	3.2	31	--	--	10.8	1360	80	.040	.84	<.040	.06	.082	1.3
JUN 09...	4.7	67	--	--	11.2	166	12	<.020	.48	<.040	.02	.035	.87
JUL 16...	7.3	96	--	--	12.2	206	20	<.020	.28	<.040	.02	.015	.60
SEP 16...	7.0	91	--	--	12.8	192	4	<.020	.56	<.040	.02	.019	.86
03026175 Allegheny River at Kennerdell, PA (LAT 41 15 51N LONG 079 50 29W)													
NOV 2002 20...	4.0	46	--	--	14.8	136	22	<.020	.49	<.040	.02	.024	1.1
JAN 2003 15...	4.1	42	--	--	13.3	144	<2	.040	.66	<.040	.01	.022	.82
MAR 19...	2.5	20	--	--	10.3	76	80	.030	.65	<.040	.04	.081	1.1
JUN 11...	3.2	39	--	--	9.9	94	8	<.020	.37	<.040	.01	.024	.66
JUL 16...	3.9	52	--	--	11.3	120	6	<.020	.23	<.040	.01	.015	.48
SEP 17...	3.3	41	--	--	9.8	110	<2	<.020	.31	<.040	<.01	.024	.70
03030852 Clarion River at Callensburg, PA (LAT 41 07 47N LONG 079 33 16W)													
NOV 2002 20...	8.0	22	--	--	84.1	210	10	.060	.42	<.040	.02	.022	.89
JAN 2003 16...	5.3	8	--	--	51.1	168	<2	.060	.39	<.040	<.01	<.010	.48
MAR 19...	2.9	5	--	--	27.5	1360	22	.020	.41	<.040	.02	.024	.55
JUN 10...	6.7	11	--	--	66.2	188	<2	.030	.44	<.040	<.01	.016	.72
JUL 15...	16.4	5	--	--	155	314	<2	.030	.39	<.040	<.01	.020	.50
SEP 17...	6.0	10	--	--	56.5	158	<2	.030	.19	<.040	<.01	.016	.40
03031505 Silver Creek at Walley Mill near North Washington PA (LAT 41 02 39N LONG 079 46 36W)													
OCT 2002 22...	6.0	44	28.7	<.2	30.0	90	10	.100	--	<.040	<.01	<.010	.52
NOV 21...	5.6	--	25.7	<.2	27.5	106	<2	<.020	3.05	<.040	<.01	<.010	3.2
JAN 2003 16...	5.8	17	20.7	<.2	32.6	280	<2	.020	2.40	<.040	<.01	<.010	2.6
MAR 20...	3.9	11	13.7	<.2	23.1	136	2	<.020	1.53	<.040	<.01	<.010	1.6
APR 15...	4.2	15	14.3	<.2	25.4	104	<2	<.020	1.25	<.040	<.01	<.010	1.2
JUN 10...	4.3	19	15.6	<.2	22.5	126	10	<.020	1.25	<.040	.01	.016	1.4
SEP 17...	4.0	22	14.0	<.2	22.5	122	<2	<.020	1.12	<.040	<.01	<.013	1.3

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

MISCELLANEOUS STATION ANALYSES

Date	Organic carbon, water, unfltrd mg/L (00680)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Fecal coli-form, M-FC 0.45µMF col/ 100 mL (31616)	Alum-inum, water, fltrd, µg/L (01106)	Alum-inum, water, unfltrd recover -able, µg/L (01105)	Arsenic water, fltrd, µg/L (01000)	Cadmium water, fltrd, µg/L (01025)	Copper, water, fltrd, µg/L (01040)	Copper, water, unfltrd recover -able, µg/L (01042)	Iron, water, fltrd, µg/L (01046)	Iron, water, unfltrd recover -able, µg/L (01045)	Lead, water, fltrd, µg/L (01049)	Lead, water, unfltrd recover -able, µg/L (01051)
03025490 French Creek at Franklin, PA (LAT 41 24 06N LONG 079 49 54W)													
JAN 2003													
15...	2.8	--	--	--	<200	--	--	--	<10	--	380	--	<1.0
MAR													
19...	3.8	--	--	--	2200	--	--	--	<10	--	3110	--	3.3
JUN													
09...	4.2	--	--	--	200	--	--	--	<10	--	620	--	<1.0
JUL													
16...	4.7	--	--	--	<200	--	--	--	<10	--	240	--	<1.0
SEP													
16...	3.8	--	--	--	<200	--	--	--	10	--	270	--	<1.0
03026175 Allegheny River at Kennerdell, PA (LAT 41 15 51N LONG 079 50 29W)													
NOV 2002													
20...	3.8	--	--	--	400	--	--	--	<10	--	820	--	3.4
JAN 2003													
15...	2.7	--	--	--	<200	--	--	--	<10	--	320	--	<1.0
MAR													
19...	2.9	--	--	--	2100	--	--	--	<10	--	3030	--	3.4
JUN													
11...	3.1	--	--	--	300	--	--	--	<10	--	600	--	<1.0
JUL													
16...	3.4	--	--	--	<200	--	--	--	<10	--	140	--	<1.0
SEP													
17...	3.2	--	--	--	<200	--	--	--	<10	--	160	--	<1.0
03030852 Clarion River at Callensburg, PA (LAT 41 07 47N LONG 079 33 16W)													
NOV 2002													
20...	3.1	--	--	--	500	--	--	--	<10	--	1100	--	<1.0
JAN 2003													
16...	1.6	--	--	--	300	--	--	--	<10	--	570	--	<1.0
MAR													
19...	2.2	--	--	--	700	--	--	--	<10	--	1190	--	1.4
JUN													
10...	1.8	--	--	--	200	--	--	--	<10	--	390	--	<1.0
JUL													
15...	1.3	--	--	--	<200	--	--	--	<10	--	160	--	<1.0
SEP													
17...	2.1	--	--	--	<200	--	--	--	<10	--	320	--	<1.0
03031505 Silver Creek at Walley Mill near North Washington PA (LAT 41 02 39N LONG 079 46 36W)													
OCT 2002													
22...	--	.7	240	20	59	<4.0	<.20	<4	<4	100	340	<1.0	<1.0
NOV													
21...	--	1.0	540	25	42	<4.0	<.20	<4	<4	50	130	<1.0	<1.0
JAN 2003													
16...	--	.5	<10	28	44	<4.0	<.20	<4	<4	60	120	<1.0	<1.0
MAR													
20...	--	.5	20	34	100	<4.0	<.20	7	<4	30	220	<1.0	<1.0
APR													
15...	--	1.2	80	22	47	<4.0	<.20	<4	<4	20	90	<1.0	<1.0
JUN													
10...	--	1.1	160	<10	62	<4.0	<.20	<4	<4	20	220	<1.0	<1.0
SEP													
17...	--	.7	100	<10	41	<4.0	<.20	<4	<4	80	180	<1.0	<1.0

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

MISCELLANEOUS STATION ANALYSES

Date	Mangan-ese, water, fltrd, µg/L (01056)	Mangan-ese, water, unfltrd recover-able, µg/L (01055)	Nickel, water, fltrd, µg/L (01065)	Nickel, water, unfltrd recover-able, µg/L (01067)	Zinc, water, fltrd, µg/L (01090)	Zinc, water, unfltrd recover-able, µg/L (01092)	Phen-olic com-pounds, water, unfltrd µg/L (32730)
03025490 French Creek at Franklin, PA (LAT 41 24 06N LONG 079 49 54W)							
JAN 2003							
15...	--	40	--	<50	--	<10	--
MAR							
19...	--	140	--	<50	--	20	--
JUN							
09...	--	40	--	<50	--	<10	--
JUL							
16...	--	30	--	<50	--	140	--
SEP							
16...	--	30	--	<50	--	140	--
03026175 Allegheny River at Kennerdell, PA (LAT 41 15 51N LONG 079 50 29W)							
NOV 2002							
20...	--	120	--	<50	--	20	--
JAN 2003							
15...	--	30	--	<50	--	10	--
MAR							
19...	--	210	--	<50	--	20	--
JUN							
11...	--	50	--	<50	--	70	--
JUL							
16...	--	40	--	<50	--	<10	--
SEP							
17...	--	40	--	<50	--	20	--
03030852 Clarion River at Callensburg, PA (LAT 41 07 47N LONG 079 33 16W)							
NOV 2002							
20...	--	880	--	<50	--	40	--
JAN 2003							
16...	--	580	--	<50	--	40	--
MAR							
19...	--	560	--	<50	--	40	--
JUN							
10...	--	800	--	<50	--	10	--
JUL							
15...	--	1890	--	<50	--	40	--
SEP							
17...	--	750	--	<50	--	20	--
03031505 Silver Creek at Walley Mill near North Washington PA (LAT 41 02 39N LONG 079 46 36W)							
OCT 2002							
22...	100	120	<4.0	<4.0	7.1	8.3	<5
NOV							
21...	50	60	<4.0	<4.0	10	10	<5
JAN 2003							
16...	50	50	<4.0	<4.0	7.4	7.1	<5
MAR							
20...	20	30	<4.0	<4.0	8.5	7.8	<5
APR							
15...	30	40	<4.0	<4.0	7.9	5.7	--
JUN							
10...	40	50	<4.0	<4.0	<5.0	<5.0	<5
SEP							
17...	40	50	<4.0	<4.0	<5.0	<5.0	<5

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

MISCELLANEOUS STATION ANALYSES

Date	Time	Agency col-lecting sample, code (00027)	Agency ana-lyzing sample, code (00028)	Instan-taneous dis-charge, cfs (00061)	Sam-pling method, code (82398)	Dis-solved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conduc-tance, wat unf µS/cm 25 degC (00095)	Temper-ature, water, deg C (00010)	Hard-ness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Calcium water unfltrd recover -able, mg/L (00916)	Magnes-ium, water, fltrd, mg/L (00925)
03039815 Clear Shade Creek above Confluence near Cairnbrook, PA (LAT 40 08 54N LONG 078 49 03W)													
OCT 2002													
17...	1230	1028	9813	37	40	10.9	6.8	67	9.7	22	7.06	6.8	1.30
NOV													
13...	1300	1028	9813	67	40	12.2	6.4	51	7.2	16	4.07	4.8	.90
DEC													
10...	1100	1028	9813	--	40	15.2	8.6	5	.1	16	4.13	4.5	.97
MAR 2003													
24...	1400	1028	9813	--	40	10.8	5.7	39	7.7	11	3.07	3.1	.73
APR													
30...	1300	1028	9813	37	40	10.5	7.0	56	9.7	15	4.48	4.6	.84
JUN													
19...	1305	1028	9813	78	40	11.7	7.7	38	15.0	12	3.31	3.3	.73
JUL													
22...	0000	1028	9813	21	40	8.6	6.7	61	--	23	7.20	7.1	1.35
AUG													
06...	1235	1028	9813	25	40	9.0	6.6	52	--	18	5.67	5.3	1.12
SEP													
29...	1115	1028	9813	127	40	9.9	5.9	36	11.0	11	3.08	3.1	.70
03044000 Conemaugh River at Tunnelton, PA (LAT 40 27 16N LONG 079 23 28W)													
NOV 2002													
07...	0915	1028	9813	925	40	10.8	7.2	810	7.0	250	--	68.0	--
JAN 2003													
09...	0900	1028	9813	6160	40	15.8	7.7	322	2.4	100	--	26.3	--
MAR													
12...	0900	1028	9813	7220	40	13.2	7.1	351	2.1	99	--	25.9	--
MAY													
29...	1015	1028	9813	2000	40	9.9	7.8	363	16.0	120	--	34.2	--
JUL													
22...	1330	1028	9813	1380	40	7.2	6.6	586	--	220	--	58.3	--
SEP													
18...	1230	1028	9813	915	40	9.2	7.4	686	20.0	230	--	61.9	--
03049652 Allegheny River at Hulton Bridge at Oakmont, PA (LAT 40 31 39N LONG 079 50 51W)													
NOV 2002													
04...	1100	1028	9813	6430	40	11.4	7.7	430	9.1	150	--	41.9	--
JUN 2003													
12...	0950	1028	9813	27400	40	9.6	7.5	236	19.0	80	--	21.0	--
JUL													
09...	1100	1028	9813	8000	40	8.8	7.4	333	--	115	--	31.2	--
SEP													
08...	1245	1028	9813	18700	40	8.7	7.3	218	21.0	73	--	19.4	--
03063000 Monongahela River at Lock & Dam 8, at Point Marion, PA (LAT 39 43 37N LONG 079 54 42W)													
NOV 2002													
06...	1100	1028	9813	2940	40	11.0	7.6	283	10.7	100	--	31.0	--
JAN 2003													
07...	1130	1028	9813	21600	40	18.0	7.7	191	4.6	75	--	20.8	--
MAR													
04...	1130	1028	9813	24800	40	14.4	7.7	236	3.0	88	--	25.5	--
MAY													
06...	1030	1028	9813	11500	40	10.6	7.3	378	16.5	140	--	40.2	--
JUL													
14...	1430	1028	9813	13000	40	9.7	6.8	253	--	110	--	30.2	--
SEP													
10...	1115	1028	9813	4000	40	9.7	7.5	181	21.5	66	--	19.3	--

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

MISCELLANEOUS STATION ANALYSES

Date	Magnesium, water, unfltrd recover -able, mg/L (00927)	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (00417)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, unfltrd mg/L (00951)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 105degC wat flt mg/L (00515)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia water, unfltrd mg/L as N (00610)	Nitrate water unfltrd mg/L as N (00620)	Nitrite water, unfltrd mg/L as N (00615)	Orthophosphate, water, unfltrd mg/L as P (70507)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, unfltrd mg/L (00600)
03039815 Clear Shade Creek above Confluence near Cairnbrook, PA (LAT 40 08 54N LONG 078 49 03W)													
OCT 2002 17...	1.3	--	4.2	<.2	15.3	48	<2	.250	.16	<.040	<.01	<.010	.48
NOV 13...	1.1	--	3.8	<.2	11.3	332	<2	<.020	.22	<.040	<.01	.020	.64
DEC 10...	1.1	4	3.2	<.2	10.3	56	6	<.020	.33	<.040	<.01	<.010	.58
MAR 2003 24...	.8	--	2.9	<.2	7.7	20	6	<.020	.37	<.040	<.01	<.010	.66
APR 30...	.9	7	4.9	<.2	7.8	56	6	<.020	.30	<.040	<.01	<.010	.38
JUN 19...	.8	5	2.4	<.2	7.4	44	<2	<.020	.18	<.040	<.01	<.010	.26
JUL 22...	1.3	9	3.4	<.2	11.2	40	2	<.020	.24	<.040	<.01	<.010	.28
AUG 06...	1.1	8	4.0	<.2	8.1	52	<2	<.020	.25	<.040	<.01	<.010	.29
SEP 29...	.7	3	2.1	<.2	7.9	6	2	<.020	.21	<.040	<.01	<.010	2.5
03044000 Conemaugh River at Tunnelton, PA (LAT 40 27 16N LONG 079 23 28W)													
NOV 2002 07...	20.5	17	--	--	210	556	2	.200	1.34	<.200	<.01	<.010	2.0
JAN 2003 09...	9.3	11	--	--	88.7	254	<2	.070	1.54	<.040	<.01	<.010	1.8
MAR 12...	8.3	13	--	--	76.5	230	2	.100	1.59	<.040	<.01	.012	2.0
MAY 29...	9.3	12	--	--	103	280	8	.110	.74	<.040	.01	.016	.98
JUL 22...	18.5	16	--	--	198	432	14	.270	.76	<.040	.01	.012	1.2
SEP 18...	18.9	10	--	--	211	562	<2	.120	.86	<.200	<.01	.011	1.1
03049652 Allegheny River at Hulton Bridge at Oakmont, PA (LAT 40 31 39N LONG 079 50 51W)													
NOV 2002 04...	10.6	50	--	<.2	102	292	12	.050	.64	<.040	.01	.016	1.0
JUN 2003 12...	6.6	28	--	<.2	54.5	184	<2	.030	.61	<.040	.02	.021	.86
JUL 09...	9.1	38	--	<.2	78.4	226	12	<.020	.46	<.040	.02	.025	.69
SEP 08...	6.0	27	--	<.2	46.0	120	60	.040	.65	<.040	.02	.027	.64
03063000 Monongahela River at Lock & Dam 8, at Point Marion, PA (LAT 39 43 37N LONG 079 54 42W)													
NOV 2002 06...	6.7	36	--	--	82.1	182	<2	.060	.67	<.040	.02	.024	1.1
JAN 2003 07...	5.5	23	--	--	50.6	162	4	.050	.74	<.040	.04	.040	1.0
MAR 04...	5.9	28	--	--	62.5	150	38	.040	.81	<.040	.04	.030	1.0
MAY 06...	9.9	46	--	--	118	274	<2	.070	.42	<.040	.02	.023	.73
JUL 14...	7.3	41	--	--	69.7	196	52	.040	.45	.040	.07	.057	.80
SEP 10...	4.4	29	--	--	46.2	158	14	.050	.52	<.040	.02	.029	.47

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

MISCELLANEOUS STATION ANALYSES

Date	Organic carbon, water, unfltrd mg/L (00680)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Fecal coli-form, M-FC 0.45µMF col/ 100 mL (31616)	Alum-inum, water, fltrd, µg/L (01106)	Alum-inum, water, unfltrd recover -able, µg/L (01105)	Arsenic water, fltrd, µg/L (01000)	Cadmium water, fltrd, µg/L (01025)	Copper, water, fltrd, µg/L (01040)	Copper, water, unfltrd recover -able, µg/L (01042)	Iron, water, fltrd, µg/L (01046)	Iron, water, unfltrd recover -able, µg/L (01045)	Lead, water, fltrd, µg/L (01049)	Lead, water, unfltrd recover -able, µg/L (01051)
03039815 Clear Shade Creek above Confluence near Cairnbrook, PA (LAT 40 08 54N LONG 078 49 03W)													
OCT 2002													
17...	--	2.0	380	289	400	<4.0	<.20	<4	<4	110	300	3.1	3.9
NOV													
13...	--	1.0	10	176	400	<4.0	<.20	<4	<4	40	210	<1.0	<1.0
DEC													
10...	--	1.4	<20	59	200	<4.0	<.20	<4	<4	30	80	<1.0	<1.0
MAR 2003													
24...	--	--	<20	171	300	<4.0	<.20	<4	<4	30	90	<1.0	<1.0
APR													
30...	--	.9	40	67	200	<4.0	<.20	<4	<4	20	70	<1.0	<1.0
JUN													
19...	--	.7	<20	134	300	<4.0	<.20	<4	<4	80	230	<1.0	<1.0
JUL													
22...	--	.8	190	37	100	<4.0	<.20	<4	<4	40	160	<1.0	<1.0
AUG													
06...	--	.9	80	54	100	<4.0	<.20	<4	<4	70	250	<1.0	<1.0
SEP													
29...	--	.9	80	180	300	<4.0	.20	<4	<4	100	190	<1.0	<1.0
03044000 Conemaugh River at Tunnelton, PA (LAT 40 27 16N LONG 079 23 28W)													
NOV 2002													
07...	1.9	--	--	--	<200	--	--	--	<10	--	760	--	<1.0
JAN 2003													
09...	1.5	--	--	--	<200	--	--	--	<10	--	1110	--	<1.0
MAR													
12...	1.5	--	--	--	500	--	--	--	<10	--	1510	--	1.3
MAY													
29...	1.4	--	--	--	500	--	--	--	<10	--	1100	--	<1.0
JUL													
22...	1.8	--	--	--	400	--	--	--	<10	--	1560	--	<1.0
SEP													
18...	1.3	--	--	--	<200	--	--	--	<10	--	350	--	<1.0
03049652 Allegheny River at Hulton Bridge at Oakmont, PA (LAT 40 31 39N LONG 079 50 51W)													
NOV 2002													
04...	2.6	--	--	--	<200	--	--	--	<10	--	360	--	<1.0
JUN 2003													
12...	2.2	--	--	--	500	--	--	--	<10	--	960	--	<1.0
JUL													
09...	2.2	--	--	--	300	--	--	--	<10	--	430	--	<1.0
SEP													
08...	3.5	--	--	--	400	--	--	--	<10	--	890	--	<1.0
03063000 Monongahela River at Lock & Dam 8, at Point Marion, PA (LAT 39 43 37N LONG 079 54 42W)													
NOV 2002													
06...	1.9	--	--	--	200	--	--	--	<10	--	550	--	<1.0
JAN 2003													
07...	1.8	--	--	--	1500	--	--	--	<10	--	2100	--	2.3
MAR													
04...	1.7	--	--	--	1200	--	--	--	<10	--	1600	--	1.6
MAY													
06...	1.8	--	--	--	500	--	--	--	<10	--	770	--	<1.0
JUL													
14...	2.7	--	--	--	1600	--	--	--	20	--	2520	--	3.1
SEP													
10...	2.7	--	--	--	400	--	--	--	<10	--	1010	--	1.3

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

MISCELLANEOUS STATION ANALYSES

Date	Mangan-ese, water, fltrd, µg/L (01056)	Mangan-ese, water, unfltrd recover -able, µg/L (01055)	Nickel, water, fltrd, µg/L (01065)	Nickel, water, unfltrd recover -able, µg/L (01067)	Zinc, water, fltrd, µg/L (01090)	Zinc, water, unfltrd recover -able, µg/L (01092)	Phen-olic com-pounds, water, unfltrd µg/L (32730)
03039815 Clear Shade Creek above Confluence near Cairnbrook, PA (LAT 40 08 54N LONG 078 49 03W)							
OCT 2002							
17...	90	120	<4.0	4.3	20	30	<5
NOV							
13...	70	100	<4.0	<4.0	30	30	<5
DEC							
10...	60	70	<4.0	<4.0	30	20	<5
MAR 2003							
24...	60	90	<4.0	<4.0	10	20	<5
APR							
30...	40	50	<4.0	<4.0	6.7	9.3	<5
JUN							
19...	70	80	<4.0	<4.0	10	10	<5
JUL							
22...	10	20	<4.0	<4.0	<5.0	<5.0	<5
AUG							
06...	20	20	<4.0	<4.0	<5.0	<5.0	<5
SEP							
29...	80	90	<4.0	<4.0	20	10	<5
03044000 Conemaugh River at Tunnelton, PA (LAT 40 27 16N LONG 079 23 28W)							
NOV 2002							
07...	--	880	--	<50	--	50	--
JAN 2003							
09...	--	500	--	<50	--	40	--
MAR							
12...	--	440	--	<50	--	40	--
MAY							
29...	--	590	--	<50	--	40	--
JUL							
22...	--	970	--	<50	--	240	--
SEP							
18...	--	760	--	<50	--	40	--
03049652 Allegheny River at Hulton Bridge at Oakmont, PA (LAT 40 31 39N LONG 079 50 51W)							
NOV 2002							
04...	--	220	--	<50	--	<10	<5
JUN 2003							
12...	--	260	--	<50	--	100	<5
JUL							
09...	--	160	--	<50	--	<10	<5
SEP							
08...	--	220	--	<50	--	100	<5
03063000 Monongahela River at Lock & Dam 8, at Point Marion, PA (LAT 39 43 37N LONG 079 54 42W)							
NOV 2002							
06...	--	110	--	<50	--	<10	--
JAN 2003							
07...	--	250	--	<50	--	60	--
MAR							
04...	--	180	--	<50	--	40	--
MAY							
06...	--	170	--	<50	--	30	--
JUL							
14...	--	180	--	<50	--	160	--
SEP							
10...	--	140	--	<50	--	20	--

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
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WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

MISCELLANEOUS STATION ANALYSES

Date	Time	Agency collecting sample, code (00027)	Agency analyzing sample, code (00028)	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf µS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Calcium water unfltrd recoverable, mg/L (00916)	Magnesium, water, fltrd, mg/L (00925)
03071700 Cheat River at Point Marion, PA (LAT 39 44 31N LONG 079 53 59W)													
NOV 2002													
06...	1000	1028	9813	8000	40	10.8	7.9	89	8.8	34	--	10.0	--
JAN 2003													
07...	1030	1028	9813	8000	40	13.4	8.0	100	3.6	35	--	9.7	--
MAR													
04...	1030	1028	9813	8000	40	12.8	8.2	126	3.8	39	--	10.8	--
MAY													
06...	0930	1028	9813	9700	40	9.0	7.0	126	16.1	46	--	13.2	--
JUL													
14...	1525	1028	9813	8000	40	9.0	6.6	91	--	37	--	10.4	--
SEP													
10...	0955	1028	9813	2000	40	8.1	7.3	109	19.5	41	--	11.8	--
03072850 South Fork Tenmile Creek near Rogersville, PA (LAT 39 53 00N LONG 080 18 59W)													
OCT 2002													
31...	0900	1028	9813	9.7	40	10.5	7.5	313	7.7	120	--	39.4	--
NOV													
06...	1245	1028	9813	9.4	40	9.6	7.6	326	8.0	130	--	41.2	--
DEC													
09...	1130	1028	9813	--	40	15.2	7.4	344	.4	120	--	37.3	--
JAN 2003													
07...	1300	1028	9813	30	40	15.7	7.8	256	.8	110	--	33.7	--
MAR													
04...	1330	1028	9813	53	40	13.2	7.7	230	3.3	92	--	30.3	--
APR													
23...	0930	1028	9813	9.2	40	12.6	7.9	286	9.1	110	--	35.8	--
MAY													
06...	1300	1028	9813	8.5	40	8.7	7.7	307	14.5	120	--	38.2	--
JUL													
14...	0900	1028	9813	7.3	40	7.7	7.0	332	--	140	--	44.6	--
AUG													
13...	0950	1028	9813	5.5	40	7.6	7.2	356	--	140	--	44.5	--
SEP													
10...	1400	1028	9813	4.7	40	9.2	7.8	377	20.5	140	--	45.1	--
03077500 Youghiogheny River at Youghiogheny River Dam, PA (LAT 39 48 19N LONG 079 21 52W)													
NOV 2002													
14...	1030	1028	9813	440	40	10.2	7.1	114	9.2	38	--	11.3	--
JAN 2003													
30...	1030	1028	9813	395	40	14.6	7.2	123	2.4	33	--	9.5	--
MAR													
25...	1230	1028	9813	3400	40	13.0	7.2	136	3.6	31	--	9.1	--
JUN													
03...	1100	1028	9813	2160	40	11.0	7.8	99	11.0	28	--	8.2	--
JUL													
21...	1240	1028	9813	1020	40	7.7	6.6	91	--	28	--	8.4	--
SEP													
11...	0815	1028	9813	710	40	8.0	7.1	92	19.0	28	--	8.4	--

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
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MISCELLANEOUS STATION ANALYSES

03071700 Cheat River at Point Marion, PA (LAT 39 44 31N LONG 079 53 59W)

Date	Magnesium, water, unfltrd recoverable, mg/L (00927)	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (00417)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, unfltrd mg/L (00951)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 105degC wat flt mg/L (00515)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia water, unfltrd mg/L as N (00610)	Nitrate water unfltrd mg/L as N (00620)	Nitrite water, unfltrd mg/L as N (00615)	Orthophosphate, water, unfltrd mg/L as P (70507)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, unfltrd mg/L (00600)
NOV 2002 06...	2.1	14	--	--	20.2	52	4	<.020	.43	<.040	.01	<.010	.68
JAN 2003 07...	2.5	11	--	--	25.5	96	8	.030	.58	<.040	.01	<.010	.71
MAR 04...	2.9	5	--	--	33.8	32	<2	.070	.67	<.040	<.01	<.010	.77
MAY 06...	3.2	9	--	--	37.7	70	10	.230	.33	<.040	<.01	<.010	.68
JUL 14...	2.6	11	--	--	24.4	78	6	.050	.34	<.040	.04	.021	.58
SEP 10...	2.8	14	--	--	28.4	106	14	.060	.41	<.040	.03	.018	.68

03072850 South Fork Tenmile Creek near Rogersville, PA (LAT 39 53 00N LONG 080 18 59W)

Date	(00927)	(00417)	(00940)	(00951)	(00945)	(00515)	(00530)	(00610)	(00620)	(00615)	(70507)	(00665)	(00600)
OCT 2002 31...	6.1	88	13.3	<.2	37.8	210	<2	<.020	1.22	<.040	.04	.046	1.6
NOV 06...	6.2	--	16.5	<.2	35.8	116	16	.100	.57	<.040	.06	.052	1.0
DEC 09...	6.5	--	24.2	<.2	35.8	198	6	<.020	.63	<.040	.02	.016	1.1
JAN 2003 07...	5.3	65	13.9	<.2	31.8	172	<2	<.020	1.35	<.040	.02	.024	1.6
MAR 04...	3.8	--	11.7	<.2	29.4	152	12	<.020	1.47	<.040	.03	.032	1.6
APR 23...	5.8	95	13.2	<.2	32.1	160	18	<.020	.10	<.040	.02	.017	.36
MAY 06...	5.9	99	16.9	<.2	30.3	194	20	.050	.22	<.040	.04	.039	.63
JUL 14...	7.4	116	16.2	<.2	28.4	232	18	<.020	.28	<.040	.05	.047	.57
AUG 13...	6.9	122	16.1	<.2	29.9	236	12	<.020	.18	<.040	.05	.047	.38
SEP 10...	7.7	132	17.8	<.2	33.1	270	<2	<.020	.06	<.040	.03	.042	.39

03077500 Youghiogheny River at Youghiogheny River Dam, PA (LAT 39 48 19N LONG 079 21 52W)

Date	(00927)	(00417)	(00940)	(00951)	(00945)	(00515)	(00530)	(00610)	(00620)	(00615)	(70507)	(00665)	(00600)
NOV 2002 14...	2.3	18	--	--	15.6	82	<2	.060	.65	<.040	.01	<.010	1.1
JAN 2003 30...	2.1	12	--	--	14.1	136	10	<.020	.91	<.040	.01	.011	1.1
MAR 25...	2.1	12	--	--	13.2	90	<2	.040	1.01	<.040	.01	.019	1.2
JUN 03...	1.8	14	--	--	12.6	80	<2	.020	.62	<.040	<.01	.013	.91
JUL 21...	1.8	14	--	--	11.6	60	4	.020	.62	<.040	.01	.016	.72
SEP 11...	1.8	17	--	--	11.4	98	<2	.030	.55	<.040	.01	.015	.57

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
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WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

MISCELLANEOUS STATION ANALYSES

Date	Organic carbon, water, unfltrd mg/L (00680)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Fecal coli-form, M-FC 0.45µMF col/ 100 mL (31616)	Alum-inum, water, fltrd, µg/L (01106)	Alum-inum, water, unfltrd recover -able, µg/L (01105)	Arsenic water, fltrd, µg/L (01000)	Cadmium water, fltrd, µg/L (01025)	Copper, water, fltrd, µg/L (01040)	Copper, water, unfltrd recover -able, µg/L (01042)	Iron, water, fltrd, µg/L (01046)	Iron, water, unfltrd recover -able, µg/L (01045)	Lead, water, fltrd, µg/L (01049)	Lead, water, unfltrd recover -able, µg/L (01051)
03071700 Cheat River at Point Marion, PA (LAT 39 44 31N LONG 079 53 59W)													
NOV 2002													
06...	3.0	--	--	--	400	--	--	--	<10	--	360	--	<1.0
JAN 2003													
07...	2.1	--	--	--	600	--	--	--	<10	--	570	--	<1.0
MAR													
04...	.9	--	--	--	300	--	--	--	<10	--	480	--	<1.0
MAY													
06...	1.1	--	--	--	300	--	--	--	<10	--	340	--	<1.0
JUL													
14...	3.5	--	--	--	900	--	--	--	<10	--	970	--	<1.0
SEP													
10...	3.7	--	--	--	700	--	--	--	<10	--	950	--	<1.0
03072850 South Fork Tenmile Creek near Rogersville, PA (LAT 39 53 00N LONG 080 18 59W)													
OCT 2002													
31...	--	1.7	1900	31	37	<4.0	<.20	<4	<4	60	520	<1.0	<1.0
NOV													
06...	--	3.2	5700	23	400	<4.0	<.20	<4	<4	40	720	<1.0	<1.0
DEC													
09...	--	2.0	330	22	98	<4.0	<.20	<4	<4	20	280	<1.0	<1.0
JAN 2003													
07...	--	1.3	260	25	300	<4.0	<.20	<4	<4	20	450	<1.0	<1.0
MAR													
04...	--	1.4	160	24	200	<4.0	<.20	6	<4	30	530	<1.0	<1.0
APR													
23...	--	1.3	2000	20	100	<4.0	<.20	<4	<4	60	250	<1.0	<1.0
MAY													
06...	--	1.5	3900	30	700	<4.0	<.20	<4	<4	20	750	<1.0	<1.0
JUL													
14...	--	1.2	1700	<10	300	<4.0	<.20	<4	<4	<20	700	<1.0	<1.0
AUG													
13...	--	1.7	680	<10	200	<4.0	<.20	<4	<4	<20	580	<1.0	<1.0
SEP													
10...	--	1.1	--	<10	200	<4.0	<.20	<4	<4	<20	460	<1.0	<1.0
03077500 Youghiogheny River at Youghiogheny River Dam, PA (LAT 39 48 19N LONG 079 21 52W)													
NOV 2002													
14...	2.5	--	--	--	<200	--	--	--	<10	--	280	--	<1.0
JAN 2003													
30...	2.0	--	--	--	<200	--	--	--	<10	--	190	--	<1.0
MAR													
25...	1.6	--	--	--	200	--	--	--	<10	--	270	--	<1.0
JUN													
03...	2.0	--	--	--	<200	--	--	--	<10	--	110	--	<1.0
JUL													
21...	2.4	--	--	--	<200	--	--	--	<10	--	160	--	<1.0
SEP													
11...	3.2	--	--	--	<200	--	--	--	<10	--	260	--	<1.0

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WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

MISCELLANEOUS STATION ANALYSES

Date	Mangan-ese, water, fltrd, µg/L (01056)	Mangan-ese, water, unfltrd recover-able, µg/L (01055)	Nickel, water, fltrd, µg/L (01065)	Nickel, water, unfltrd recover-able, µg/L (01067)	Zinc, water, fltrd, µg/L (01090)	Zinc, water, unfltrd recover-able, µg/L (01092)	Phen-olic com-pounds, water, unfltrd µg/L (32730)
03071700 Cheat River at Point Marion, PA (LAT 39 44 31N LONG 079 53 59W)							
NOV 2002							
06...	--	90	--	<50	--	10	--
JAN 2003							
07...	--	130	--	<50	--	20	--
MAR							
04...	--	160	--	<50	--	20	--
MAY							
06...	--	200	--	<50	--	20	--
JUL							
14...	--	120	--	<50	--	60	--
SEP							
10...	--	120	--	<50	--	10	--
03072850 South Fork Tenmile Creek near Rogersville, PA (LAT 39 53 00N LONG 080 18 59W)							
OCT 2002							
31...	30	30	<4.0	<4.0	7.9	7.1	<5
NOV							
06...	40	60	<4.0	<4.0	10	<5.0	<5
DEC							
09...	60	70	<4.0	<4.0	30	20	<5
JAN 2003							
07...	40	60	<4.0	<4.0	8.3	8.0	<5
MAR							
04...	30	40	<4.0	<4.0	8.9	6.6	<5
APR							
23...	60	60	<4.0	<4.0	<5.0	<5.0	--
MAY							
06...	130	150	<4.0	<4.0	<5.0	<5.0	<5
JUL							
14...	50	70	<4.0	<4.0	<5.0	<5.0	<5
AUG							
13...	60	80	<4.0	<4.0	5.1	<5.0	<5
SEP							
10...	50	70	<4.0	<4.0	<5.0	<5.0	<5
03077500 Youghiogheny River at Youghiogheny River Dam, PA (LAT 39 48 19N LONG 079 21 52W)							
NOV 2002							
14...	--	120	--	<50	--	<10	--
JAN 2003							
30...	--	70	--	<50	--	10	--
MAR							
25...	--	90	--	<50	--	550	--
JUN							
03...	--	60	--	<50	--	<10	--
JUL							
21...	--	150	--	<50	--	<10	--
SEP							
11...	--	350	--	<50	--	50	--

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PENNSYLVANIA WATER-QUALITY NETWORK

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

MISCELLANEOUS STATION ANALYSES

Date	Time	Agency collecting sample, code (00027)	Agency analyzing sample, code (00028)	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf µS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Calcium water unfltrd recoverable, mg/L (00916)	Magnesium, water, fltrd, mg/L (00925)
03078020 Casselman River near Salisbury, PA (LAT 39 43 56N LONG 079 06 03W)													
NOV 2002 14...	0900	1028	9813	805	40	11.7	7.2	146	5.4	49	--	14.0	3.07
MAR 2003 25...	1030	1028	9813	1300	40	12.0	6.1	130	6.1	35	9.3	9.8	2.32
JUN 03...	1345	1028	9813	1300	40	10.6	7.6	124	11.0	39	10.6	10.8	2.68
JUL 21...	1415	1028	9813	172	40	10.1	7.7	190	--	61	17.5	17.7	3.89
SEP 11...	1030	1028	9813	223	40	10.8	7.4	159	14.0	50	13.8	14.4	3.23
03079448 Kooser Run at Kooser State Park near Bakersville, PA (LAT 40 03 37N LONG 079 13 41W)													
OCT 2002 17...	0930	1028	9813	5.5	30	10.5	7.6	288	9.4	79	26.5	28.3	1.93
NOV 13...	1000	1028	9813	5.5	30	11.8	7.7	247	6.9	82	26.5	29.5	1.96
DEC 10...	0900	1028	9813	--	30	13.5	8.4	278	1.5	71	22.7	25.1	1.79
MAR 2003 24...	1030	1028	9813	19.6	30	11.5	7.4	261	6.3	61	19.7	21.7	1.49
APR 30...	0930	1028	9813	285	30	10.7	7.8	245	9.1	68	22.0	24.3	1.57
JUN 19...	0915	1028	9813	7.3	30	10.0	7.6	228	13.0	72	24.3	25.6	1.71
JUL 21...	1000	1028	9813	2.3	30	9.2	7.5	253	--	81	28.7	28.9	2.07
AUG 06...	0000	1028	9813	29	30	9.4	6.9	242	--	78	26.9	27.5	2.18
SEP 11...	1245	1028	9813	2.3	30	10.0	7.8	262	14.0	78	27.8	28.2	1.89
03099600 Mahoning River at North Edinburg, PA (LAT 41 01 06N LONG 080 26 27W)													
NOV 2002 12...	1130	1028	9813	980	40	9.6	7.5	596	11.8	180	--	53.8	--
JAN 2003 13...	1300	1028	9813	1050	40	15.2	7.4	751	1.0	200	--	55.3	--
MAR 11...	1300	1028	9813	2850	40	14.4	7.3	538	2.3	120	--	34.8	--
MAY 27...	0945	1028	9813	2500	40	8.9	7.4	492	16.5	140	--	40.0	--
JUL 10...	0950	1028	9813	5070	40	12.6	7.3	354	--	110	--	30.0	--
SEP 15...	1005	1028	9813	550	40	6.2	7.1	570	23.0	170	--	46.7	--

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

MISCELLANEOUS STATION ANALYSES

Date	Magnesium, water, unfltrd recoverable, mg/L (00927)	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (00417)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, unfltrd mg/L (00951)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 105degC wat flt mg/L (00515)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia water, unfltrd mg/L as N (00610)	Nitrate water unfltrd mg/L as N (00620)	Nitrite water, unfltrd mg/L as N (00615)	Orthophosphate, water, unfltrd mg/L as P (70507)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, unfltrd mg/L (00600)
03078020 Casselman River near Salisbury, PA (LAT 39 43 56N LONG 079 06 03W)													
NOV 2002													
14...	3.4	16	--	--	24.9	110	<2	<.020	1.14	<.040	.01	.016	1.5
MAR 2003													
25...	2.5	9	--	--	19.9	110	<2	<.020	.76	<.040	.01	.013	.91
JUN													
03...	2.8	17	--	--	19.8	582	18	.020	.80	<.040	.05	.077	1.1
JUL													
21...	4.0	20	--	--	33.3	140	2	<.020	.38	<.040	.01	.014	.48
SEP													
11...	3.4	20	--	--	25.0	134	<2	<.020	.35	<.040	.01	.013	.51
03079448 Kooser Run at Kooser State Park near Bakersville, PA (LAT 40 03 37N LONG 079 13 41W)													
OCT 2002													
17...	1.9	52	39.3	<.2	14.9	176	6	.070	1.59	<.040	<.01	<.010	2.0
NOV													
13...	2.1	--	29.0	<.2	17.2	762	<2	<.020	2.48	<.040	<.01	.011	3.3
DEC													
10...	2.0	--	42.2	<.2	13.3	--	2	<.020	1.46	<.040	<.01	<.010	1.8
MAR 2003													
24...	1.6	--	48.4	<.2	12.3	104	8	<.020	1.51	<.040	.01	.013	1.8
APR													
30...	1.7	38	40.2	<.2	12.1	186	10	<.020	1.22	<.040	<.01	<.010	1.4
JUN													
19...	1.8	42	30.7	<.2	13.5	154	<2	<.020	1.59	<.040	.01	.013	1.9
JUL													
21...	2.1	45	33.1	<.2	15.0	186	8	<.020	1.99	<.040	<.01	<.010	1.8
AUG													
06...	2.1	46	34.4	<.2	12.8	156	2	<.020	1.28	<.040	<.01	<.010	1.3
SEP													
11...	1.9	46	35.6	<.2	14.9	208	<2	<.020	1.86	<.040	.01	<.010	1.9
03099600 Mahoning River at North Edinburg, PA (LAT 41 01 06N LONG 080 26 27W)													
NOV 2002													
12...	11.1	96	--	.4	77.1	416	14	.180	1.94	<.040	.13	.195	3.1
JAN 2003													
13...	15.0	95	--	.3	84.7	496	16	.130	1.80	<.200	.06	.094	2.5
MAR													
11...	8.9	58	--	<.2	54.6	368	38	.190	1.43	<.200	.10	.144	2.4
MAY													
27...	10.6	75	--	.2	55.6	332	20	.070	1.23	<.200	.06	.096	2.1
JUL													
10...	7.9	63	--	<.2	39.9	234	62	.070	.77	<.040	.13	.180	1.6
SEP													
15...	12.1	100	--	.3	71.8	410	<2	.100	1.76	.070	.10	.129	1.9

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

MISCELLANEOUS STATION ANALYSES

03078020 Casselman River near Salisbury, PA (LAT 39 43 56N LONG 079 06 03W)

Date	Organic carbon, water, unfltrd mg/L (00680)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Fecal coli-form, M-FC 0.45µMF col/ 100 mL (31616)	Alum-inum, water, fltrd, µg/L (01106)	Alum-inum, water, unfltrd recover -able, µg/L (01105)	Arsenic water, fltrd, µg/L (01000)	Cadmium water, fltrd, µg/L (01025)	Copper, water, fltrd, µg/L (01040)	Copper, water, unfltrd recover -able, µg/L (01042)	Iron, water, fltrd, µg/L (01046)	Iron, water, unfltrd recover -able, µg/L (01045)	Lead, water, fltrd, µg/L (01049)	Lead, water, unfltrd recover -able, µg/L (01051)
NOV 2002 14...	--	1.7	--	80	300	--	--	<4	<4	50	320	<1.0	<1.0
MAR 2003 25...	--	--	--	79	300	--	--	<4	<4	350	410	<1.0	<1.0
JUN 03...	--	1.2	--	48	800	--	--	<4	<4	40	1210	<1.0	1.2
JUL 21...	--	1.1	--	285	400	--	--	<4	<4	100	360	<1.0	<1.0
SEP 11...	--	.8	--	100	200	--	--	<4	<4	200	270	<1.0	<1.0

03079448 Kooser Run at Kooser State Park near Bakersville, PA (LAT 40 03 37N LONG 079 13 41W)

Date	Organic carbon, water, unfltrd mg/L (00680)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Fecal coli-form, M-FC 0.45µMF col/ 100 mL (31616)	Alum-inum, water, fltrd, µg/L (01106)	Alum-inum, water, unfltrd recover -able, µg/L (01105)	Arsenic water, fltrd, µg/L (01000)	Cadmium water, fltrd, µg/L (01025)	Copper, water, fltrd, µg/L (01040)	Copper, water, unfltrd recover -able, µg/L (01042)	Iron, water, fltrd, µg/L (01046)	Iron, water, unfltrd recover -able, µg/L (01045)	Lead, water, fltrd, µg/L (01049)	Lead, water, unfltrd recover -able, µg/L (01051)
OCT 2002 17...	--	1.9	140	30	73	<4.0	<.20	<4	<4	30	140	2.6	2.9
NOV 13...	--	1.3	<20	32	63	<4.0	<.20	<4	<4	20	90	<1.0	<1.0
DEC 10...	--	1.4	20	22	26	<4.0	<.20	<4	<4	<20	20	<1.0	<1.0
MAR 2003 24...	--	--	<20	36	100	<4.0	<.20	<4	<4	20	140	<1.0	<1.0
APR 30...	--	1.0	<20	19	50	<4.0	<.20	<4	<4	<20	70	<1.0	<1.0
JUN 19...	--	.8	40	18	100	<4.0	<.20	<4	<4	<20	210	<1.0	<1.0
JUL 21...	--	.9	40	12	72	<4.0	<.20	<4	<4	<20	80	<1.0	<1.0
AUG 06...	--	1.2	40	24	100	<4.0	<.20	<4	<4	<20	240	<1.0	<1.0
SEP 11...	--	.5	20	--	--	<4.0	<.20	<4	<4	--	--	<1.0	<1.0

03099600 Mahoning River at North Edinburg, PA (LAT 41 01 06N LONG 080 26 27W)

Date	Organic carbon, water, unfltrd mg/L (00680)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Fecal coli-form, M-FC 0.45µMF col/ 100 mL (31616)	Alum-inum, water, fltrd, µg/L (01106)	Alum-inum, water, unfltrd recover -able, µg/L (01105)	Arsenic water, fltrd, µg/L (01000)	Cadmium water, fltrd, µg/L (01025)	Copper, water, fltrd, µg/L (01040)	Copper, water, unfltrd recover -able, µg/L (01042)	Iron, water, fltrd, µg/L (01046)	Iron, water, unfltrd recover -able, µg/L (01045)	Lead, water, fltrd, µg/L (01049)	Lead, water, unfltrd recover -able, µg/L (01051)
NOV 2002 12...	7.2	--	--	--	300	--	--	--	<10	--	800	--	2.9
JAN 2003 13...	6.4	--	--	--	300	--	--	--	<10	--	570	--	4.7
MAR 11...	7.0	--	--	--	1700	--	--	--	<10	--	3040	--	5.7
MAY 27...	7.3	--	--	--	700	--	--	--	<10	--	1930	--	4.0
JUL 10...	10.0	--	--	--	2500	--	--	--	10	--	5010	--	10
SEP 15...	7.4	--	--	--	<200	--	--	--	<10	--	410	--	1.3

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

MISCELLANEOUS STATION ANALYSES

Date	Manganese, water, fltrd, µg/L (01056)	Manganese, water, unfltrd recoverable, µg/L (01055)	Nickel, water, fltrd, µg/L (01065)	Nickel, water, unfltrd recoverable, µg/L (01067)	Zinc, water, fltrd, µg/L (01090)	Zinc, water, unfltrd recoverable, µg/L (01092)	Phenolic compounds, water, unfltrd µg/L (32730)
03078020 Casselman River near Salisbury, PA (LAT 39 43 56N LONG 079 06 03W)							
NOV 2002 14...	60	80	<4.0	<4.0	20	10	--
MAR 2003 25...	80	100	4.1	4.8	10	20	--
JUN 03...	70	130	<4.0	5.3	70	100	--
JUL 21...	70	80	<4.0	4.0	<5.0	7.2	--
SEP 11...	40	50	<4.0	<4.0	<5.0	<5.0	--
03079448 Kooser Run at Kooser State Park near Bakersville, PA (LAT 40 03 37N LONG 079 13 41W)							
OCT 2002 17...	10	20	<4.0	<4.0	6.6	<5.0	<5
NOV 13...	8.0	10	<4.0	<4.0	8.5	5.5	<5
DEC 10...	7.2	8.3	<4.0	<4.0	20	20	<5
MAR 2003 24...	10	20	<4.0	<4.0	<5.0	7.7	<5
APR 30...	6.9	20	<4.0	<4.0	<5.0	<5.0	<5
JUN 19...	10	30	<4.0	<4.0	<5.0	<5.0	<5
JUL 21...	6.7	20	<4.0	<4.0	<5.0	<5.0	<5
AUG 06...	10	20	<4.0	<4.0	<5.0	<5.0	<5
SEP 11...	6.7	10	<4.0	<4.0	<5.0	<5.0	<5
03099600 Mahoning River at North Edinburg, PA (LAT 41 01 06N LONG 080 26 27W)							
NOV 2002 12...	--	120	--	<50	--	20	<5
JAN 2003 13...	--	100	--	<50	--	<10	--
MAR 11...	--	260	--	<50	--	90	<5
MAY 27...	--	140	--	<50	--	40	<5
JUL 10...	--	290	--	<50	--	40	<5
SEP 15...	--	90	--	<50	--	10	<5

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

MISCELLANEOUS STATION ANALYSES

Date	Time	Agency col- lecting sample, code (00027)	Agency ana- lyzing sample, code (00028)	Instan- taneous dis- charge, cfs (00061)	Sam- pling method, code (82398)	Dis- solved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conduc- tance, wat unf µS/cm 25 degC (00095)	Temper- ature, water, deg C (00010)	Hard- ness, water, unfltrd mg/L as $CaCO_3$ (00900)	Calcium water, fltrd, mg/L (00915)	Calcium water unfltrd recover -able, mg/L (00916)	Magnes- ium, water, fltrd, mg/L (00925)
03103500 Shenango River at Sharpsville, PA (LAT 41 15 58N LONG 080 28 22W)													
NOV 2002 19...	1130	1028	9813	340	40	10.6	7.8	219	7.1	96	--	28.1	--
JAN 2003 14...	0945	1028	9813	715	40	14.8	7.8	275	.8	90	--	25.3	--
MAR 18...	1145	1028	9813	1660	40	14.7	7.2	235	2.6	71	--	20.5	--
JUN 04...	1040	1028	9813	1330	40	9.8	7.8	221	16.5	83	--	24.5	--
JUL 29...	0905	1028	9813	2240	40	8.9	7.0	160	--	57	--	16.5	--
SEP 23...	1015	1028	9813	840	40	8.4	6.7	213	20.5	84	--	24.8	--
03104500 Shenango River at New Castle, PA (LAT 41 00 00N LONG 080 21 21W)													
NOV 2002 12...	1030	1028	9813	392	40	8.7	7.5	388	11.1	120	--	37.0	--
JAN 2003 13...	1200	1028	9813	968	40	15.5	7.4	366	.8	110	--	31.1	--
MAR 11...	1130	1028	9813	1730	40	14.1	7.3	535	.8	140	--	43.5	--
MAY 27...	1150	1028	9813	2270	40	8.5	7.6	269	17.0	91	--	26.5	--
JUL 10...	1220	1028	9813	941	40	7.2	7.5	319	--	110	--	31.3	--
SEP 15...	1200	1028	9813	368	40	7.2	7.3	363	21.0	130	--	36.3	--
03105810 Connoquenessing Creek at Renfrew, PA (LAT 40 48 21N LONG 079 57 55W)													
NOV 2002 21...	1100	1028	9813	80.1	40	11.3	7.3	803	5.5	270	--	89.9	--
JAN 2003 16...	1130	1028	9813	82.4	40	14.3	7.3	725	.2	220	--	66.4	--
MAR 20...	1230	1028	9813	333	40	18.2	7.0	460	7.3	110	--	32.0	--
JUN 09...	0915	1028	9813	215	40	9.4	7.5	532	16.5	160	--	49.0	--
JUL 24...	0935	1028	9813	439	40	9.1	7.3	417	--	120	--	36.3	--
SEP 16...	0915	1028	9813	99	40	8.8	7.3	623	16.0	200	--	60.7	--
03109670 Ohio River at Mile 44.5 at Newell, WV (LAT 40 37 10N LONG 080 35 24W)													
NOV 2002 05...	0930	1028	9813	18500	40	10.6	7.6	452	10.3	120	--	33.6	--
MAR 2003 05...	0945	1028	9813	57600	40	15.4	7.7	362	3.8	92	--	25.7	--
MAY 19...	1045	1028	9813	51400	40	10.7	7.0	251	16.0	86	--	24.4	--
JUL 07...	1115	1028	9813	16300	40	8.6	7.5	390	--	130	--	35.7	--
SEP 04...	0930	1028	9813	98600	40	8.8	6.8	289	22.0	110	--	29.6	--

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

MISCELLANEOUS STATION ANALYSES

Date	Magnes-ium, water, unfltrd recover-able, mg/L (00927)	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (00417)	Chlor-ide, water, fltrd, mg/L (00940)	Fluor-ide, water, unfltrd mg/L (00951)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 105degC wat flt mg/L (00515)	Residue total at 105 deg. C, sus-pended, mg/L (00530)	Ammonia water, unfltrd mg/L as N (00610)	Nitrate water unfltrd mg/L as N (00620)	Nitrite water, unfltrd mg/L as N (00615)	Ortho-phos-phate, water, unfltrd mg/L as P (70507)	Phos-phorus, water, unfltrd mg/L (00665)	Total nitro-gen, water, unfltrd mg/L (00600)
03103500 Shenango River at Sharpsville, PA (LAT 41 15 58N LONG 080 28 22W)													
NOV 2002 19...	6.3	72	--	<.2	20.7	170	12	.080	.11	<.040	.02	.037	1.1
JAN 2003 14...	6.5	43	--	<.2	27.8	208	8	.080	2.35	<.040	.03	.039	3.0
MAR 18...	4.8	40	--	<.2	20.8	56	8	.050	<.04	<.040	.03	.038	2.2
JUN 04...	5.2	57	--	<.2	16.8	160	16	.130	.54	.040	.04	.048	1.6
JUL 29...	3.7	44	--	<.2	12.4	128	10	.100	.47	<.040	.04	.057	1.1
SEP 23...	5.4	66	--	<.2	14.5	138	18	.160	.08	<.040	.04	.051	.72
03104500 Shenango River at New Castle, PA (LAT 41 00 00N LONG 080 21 21W)													
NOV 2002 12...	7.5	76	--	.2	39.6	10660	20	.100	.95	<.040	.16	.219	3.0
JAN 2003 13...	7.4	52	--	<.2	36.6	270	4	.180	2.24	<.040	.04	.071	3.0
MAR 11...	8.0	65	--	<.2	41.7	352	6	.090	1.69	<.200	.04	.057	2.5
MAY 27...	6.1	63	--	<.2	23.7	182	22	.080	.47	<.040	.04	.098	1.2
JUL 10...	7.0	76	--	<.2	28.2	246	56	.070	.89	<.200	.10	.210	1.6
SEP 15...	8.7	82	--	<.2	35.8	256	8	.030	.95	<.040	.07	.099	1.1
03105810 Connoquenessing Creek at Renfrew, PA (LAT 40 48 21N LONG 079 57 55W)													
NOV 2002 21...	12.0	64	--	--	110	280	<2	.040	3.07	<.200	.04	.064	3.4
JAN 2003 16...	12.0	44	--	--	99.9	566	6	.130	3.33	<.200	.05	.072	3.8
MAR 20...	7.4	28	--	--	50.3	346	16	.120	1.88	<.200	.02	.030	2.2
JUN 09...	9.6	55	--	--	63.2	390	26	.030	1.46	<.200	.06	.103	2.0
JUL 24...	7.5	54	--	--	44.4	318	32	<.020	1.48	<.040	.06	.120	2.1
SEP 16...	10.9	66	--	--	69.8	550	6	.040	1.90	<.200	.06	.070	2.4
03109670 Ohio River at Mile 44.5 at Newell, WV (LAT 40 37 10N LONG 080 35 24W)													
NOV 2002 05...	9.6	48	--	--	115	294	2	.070	.96	<.040	.02	.032	1.6
MAR 2003 05...	6.8	34	--	--	55.1	240	22	.090	1.15	<.040	.04	.041	1.4
MAY 19...	6.1	35	--	--	50.7	174	<2	<.020	.64	<.040	.04	.050	.99
JUL 07...	9.8	52	--	--	79.8	266	14	.030	.72	<.200	.02	.043	1.1
SEP 04...	7.8	44	--	--	58.8	198	124	.280	.67	<.040	.05	.141	1.1

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

MISCELLANEOUS STATION ANALYSES

Date	Organic carbon, water, unfltrd mg/L (00680)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Fecal coli-form, M-FC 0.45µMF col/ 100 mL (31616)	Alum-inum, water, fltrd, µg/L (01106)	Alum-inum, water, unfltrd recover -able, µg/L (01105)	Arsenic water, fltrd, µg/L (01000)	Cadmium water, fltrd, µg/L (01025)	Copper, water, fltrd, µg/L (01040)	Copper, water, unfltrd recover -able, µg/L (01042)	Iron, water, fltrd, µg/L (01046)	Iron, water, unfltrd recover -able, µg/L (01045)	Lead, water, fltrd, µg/L (01049)	Lead, water, unfltrd recover -able, µg/L (01051)
03103500 Shenango River at Sharpsville, PA (LAT 41 15 58N LONG 080 28 22W)													
NOV 2002													
19...	5.4	--	--	--	<200	--	--	--	<10	--	320	--	2.2
JAN 2003													
14...	6.2	--	--	--	400	--	--	--	<10	--	600	--	<1.0
MAR													
18...	5.1	--	--	--	500	--	--	--	<10	--	640	--	<1.0
JUN													
04...	7.6	--	--	--	600	--	--	--	<10	--	890	--	<1.0
JUL													
29...	7.7	--	--	--	600	--	--	--	<10	--	900	--	1.0
SEP													
23...	6.4	--	--	--	400	--	--	--	<10	--	750	--	<1.0
03104500 Shenango River at New Castle, PA (LAT 41 00 00N LONG 080 21 21W)													
NOV 2002													
12...	7.0	--	--	--	500	--	--	--	<10	--	1850	--	4.8
JAN 2003													
13...	5.3	--	--	--	400	--	--	--	<10	--	930	--	16.1
MAR													
11...	4.5	--	--	--	400	--	--	--	<10	--	740	--	13.3
MAY													
27...	7.1	--	--	--	900	--	--	--	<10	--	1920	--	2.9
JUL													
10...	7.3	--	--	--	1900	--	--	--	<10	--	3370	--	6.2
SEP													
15...	5.9	--	--	--	300	--	--	--	<10	--	1000	--	1.6
03105810 Connoquenessing Creek at Renfrew, PA (LAT 40 48 21N LONG 079 57 55W)													
NOV 2002													
21...	2.9	--	--	--	<200	--	--	--	<10	--	380	--	<1.0
JAN 2003													
16...	2.5	--	--	--	<200	--	--	--	<10	--	400	--	<1.0
MAR													
20...	2.1	--	--	--	300	--	--	--	<10	--	530	--	4.6
JUN													
09...	3.2	--	--	--	900	--	--	--	<10	--	1750	--	2.5
JUL													
24...	3.4	--	--	--	1800	--	--	--	10	--	2820	--	4.4
SEP													
16...	3.5	--	--	--	200	--	--	--	<10	--	680	--	1.0
03109670 Ohio River at Mile 44.5 at Newell, WV (LAT 40 37 10N LONG 080 35 24W)													
NOV 2002													
05...	2.6	--	--	--	<200	--	--	--	<10	--	280	--	1.1
MAR 2003													
05...	2.2	--	--	--	800	--	--	--	<10	--	1370	--	1.5
MAY													
19...	2.7	--	--	--	1100	--	--	--	<10	--	1640	--	2.1
JUL													
07...	2.9	--	--	--	200	--	--	--	<10	--	370	--	<1.0
SEP													
04...	3.8	--	--	--	3000	--	--	--	20	--	5310	--	8.3

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

MISCELLANEOUS STATION ANALYSES

Date	Mangan-ese, water, fltrd, µg/L (01056)	Mangan-ese, water, unfltrd recover-able, µg/L (01055)	Nickel, water, fltrd, µg/L (01065)	Nickel, water, unfltrd recover-able, µg/L (01067)	Zinc, water, fltrd, µg/L (01090)	Zinc, water, unfltrd recover-able, µg/L (01092)	Phen-olic com-pounds, water, unfltrd µg/L (32730)
03103500 Shenango River at Sharpsville, PA (LAT 41 15 58N LONG 080 28 22W)							
NOV 2002							
19...	--	80	--	<50	--	<10	<5
JAN 2003							
14...	--	70	--	<50	--	<10	<5
MAR							
18...	--	70	--	<50	--	<10	<5
JUN							
04...	--	120	--	<50	--	420	<5
JUL							
29...	--	120	--	<50	--	<10	<5
SEP							
23...	--	120	--	<50	--	<10	<5
03104500 Shenango River at New Castle, PA (LAT 41 00 00N LONG 080 21 21W)							
NOV 2002							
12...	--	160	--	<50	--	40	<5
JAN 2003							
13...	--	90	--	<50	--	30	<5
MAR							
11...	--	70	--	<50	--	80	<5
MAY							
27...	--	130	--	<50	--	40	<5
JUL							
10...	--	220	--	<50	--	60	<5
SEP							
15...	--	160	--	<50	--	20	<5
03105810 Connoquenessing Creek at Renfrew, PA (LAT 40 48 21N LONG 079 57 55W)							
NOV 2002							
21...	--	90	--	<50	--	30	--
JAN 2003							
16...	--	160	--	<50	--	20	--
MAR							
20...	--	100	--	<50	--	10	--
JUN							
09...	--	150	--	<50	--	200	--
JUL							
24...	--	200	--	<50	--	20	--
SEP							
16...	--	90	--	<50	--	250	--
03109670 Ohio River at Mile 44.5 at Newell, WV (LAT 40 37 10N LONG 080 35 24W)							
NOV 2002							
05...	--	60	--	<50	--	<10	--
MAR 2003							
05...	--	220	--	<50	--	90	--
MAY							
19...	--	180	--	<50	--	20	<5
JUL							
07...	--	90	--	<50	--	30	--
SEP							
04...	--	530	--	<50	--	180	--

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

MISCELLANEOUS STATION ANALYSES

Date	Time	Agency collecting sample, code (00027)	Agency analyzing sample, code (00028)	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf µS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Calcium water unfltrd recoverable, mg/L (00916)	Magnesium, water, fltrd, mg/L (00925)
04212945 Conneaut Creek at Cherry Hill, PA (LAT 41 55 04N LONG 080 28 09W)													
NOV 2002 18...	1215	1028	9813	483	40	11.7	7.5	267	4.5	110	--	31.7	--
MAR 2003 17...	1230	1028	9813	2000	40	13.7	7.2	99	1.6	50	--	12.4	--
JUN 04...	1610	1028	9813	110	40	10.8	7.9	194	15.5	81	--	24.0	--
SEP 24...	1345	1028	9813	285	40	8.7	7.3	168	16.0	69	--	19.3	--
04213273 Twelvemile Creek near Moorheadville, PA (LAT 42 12 15N LONG 079 54 46W)													
OCT 2002 21...	1300	1028	9813	164	30	11.5	7.8	413	9.5	120	--	35.5	--
NOV 18...	1400	1028	9813	350	30	12.6	7.7	224	4.8	78	--	23.1	--
DEC 16...	1230	1028	9813	359	30	16.5	8.0	333	1.2	81	--	24.3	--
MAR 2003 17...	1430	1028	9813	350	30	14.0	7.3	217	4.6	55	--	15.5	--
APR 14...	1400	1028	9813	14.9	30	12.2	8.5	343	11.2	100	--	30.8	--
JUN 05...	0820	1028	9813	10.6	30	11.4	8.1	364	13.0	120	--	37.9	--
JUL 30...	1055	1028	9813	7.8	30	10.1	7.9	339	--	110	--	34.3	--
AUG 27...	1110	1028	9813	3.8	30	13.8	8.5	412	--	150	--	43.9	--
SEP 24...	1100	1028	9813	9.4	30	10.2	7.7	269	14.0	82	--	24.5	--

Date	Magnesium, water, unfltrd recoverable, mg/L (00927)	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (00417)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, unfltrd mg/L (00951)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 105degC wat flt mg/L (00515)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia water, unfltrd mg/L as N (00610)	Nitrate water unfltrd mg/L as N (00620)	Nitrite water, unfltrd mg/L as N (00615)	Orthophosphate, water, unfltrd mg/L as P (70507)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, unfltrd mg/L (00600)
04212945 Conneaut Creek at Cherry Hill, PA (LAT 41 55 04N LONG 080 28 09W)													
NOV 2002 18...	8.3	64	--	--	34.3	256	20	.020	1.91	<.040	.05	.053	3.2
MAR 2003 17...	4.7	21	--	--	10.7	6	270	.030	.62	<.040	.11	.196	1.2
JUN 04...	5.1	56	--	--	16.1	158	4	.040	.68	<.040	.03	.037	1.2
SEP 24...	5.1	47	--	--	14.5	182	4	.030	.53	<.040	.10	.127	1.2
04213273 Twelvemile Creek near Moorheadville, PA (LAT 42 12 15N LONG 079 54 46W)													
OCT 2002 21...	6.9	54	43.1	<.2	52.7	286	<2	.080	2.02	<.040	<.01	<.010	2.5
NOV 18...	4.9	36	29.4	<.2	30.8	174	20	<.020	1.40	<.040	.02	.012	2.1
DEC 16...	4.8	--	58.6	<.2	27.8	182	10	<.020	1.48	<.200	<.01	.025	1.8
MAR 2003 17...	4.0	20	40.2	<.2	14.8	198	326	<.020	1.08	<.040	.07	.082	1.6
APR 14...	5.9	49	44.9	<.2	33.9	270	<2	<.020	1.95	<.040	<.01	<.010	2.0
JUN 05...	6.7	68	43.2	<.2	35.1	274	4	.050	1.92	<.040	<.01	.016	7.5
JUL 30...	6.4	69	40.1	<.2	32.1	220	4	<.020	1.55	<.040	.01	.010	1.7
AUG 27...	8.8	84	44.5	<.2	41.6	310	8	<.020	2.10	<.040	<.01	.020	2.7
SEP 24...	5.0	60	30.9	<.2	21.9	172	10	<.020	.74	<.040	.01	.011	.82

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

MISCELLANEOUS STATION ANALYSES

Date	Organic carbon, water, unfltrd mg/L (00680)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Fecal coli- form, M-FC 0.45µMF col/ 100 mL (31616)	Alum- inum, water, fltrd, µg/L (01106)	Alum- inum, water, unfltrd recover -able, µg/L (01105)	Arsenic water, fltrd, µg/L (01000)	Cadmium water, fltrd, µg/L (01025)	Copper, water, fltrd, µg/L (01040)	Copper, water, unfltrd recover -able, µg/L (01042)	Iron, water, fltrd, µg/L (01046)	Iron, water, unfltrd recover -able, µg/L (01045)	Lead, water, fltrd, µg/L (01049)	Lead, water, unfltrd recover -able, µg/L (01051)
04212945 Conneaut Creek at Cherry Hill, PA (LAT 41 55 04N LONG 080 28 09W)													
NOV 2002 18...	6.4	--	--	--	900	--	--	--	<10	--	1290	--	2.7
MAR 2003 17...	4.9	--	--	--	7200	--	--	--	<10	--	13600	--	6.7
JUN 04...	6.8	--	--	--	300	--	--	--	<10	--	910	--	<1.0
SEP 24...	11.2	--	--	--	1500	--	--	--	<10	--	2350	--	1.5
04213273 Twelvemile Creek near Moorheadville, PA (LAT 42 12 15N LONG 079 54 46W)													
OCT 2002 21...	--	<.2	920	36	55	<4.0	<.20	<4	<4	<20	70	<1.0	<1.0
NOV 18...	--	.5	100	37	200	<4.0	<.20	<4	<4	30	280	<1.0	<1.0
DEC 16...	--	.5	160	39	100	<4.0	<.20	<4	<4	20	160	<1.0	<1.0
MAR 2003 17...	--	<.2	90	36	3300	<4.0	<.20	<4	5	50	7370	<1.0	4.0
APR 14...	--	<.2	60	31	56	<4.0	<.20	<4	<4	30	80	<1.0	<1.0
JUN 05...	--	1.6	--	20	92	<4.0	<.20	<4	<4	<20	190	<1.0	<1.0
JUL 30...	--	.9	200	<10	26	<4.0	<.20	<4	<4	<20	60	<1.0	<1.0
AUG 27...	--	1.3	180	<10	26	<4.0	<.20	<4	<4	20	90	<1.0	<1.0
SEP 24...	--	1.2	220	18	39	<4.0	<.20	<4	<4	80	120	<1.0	<1.0

Date	Mangan- ese, water, fltrd, µg/L (01056)	Mangan- ese, water, unfltrd recover -able, µg/L (01055)	Nickel, water, fltrd, µg/L (01065)	Nickel, water, unfltrd recover -able, µg/L (01067)	Zinc, water, fltrd, µg/L (01090)	Zinc, water, unfltrd recover -able, µg/L (01092)	Phen- olic com- pounds, water, unfltrd µg/L (32730)
04212945 Conneaut Creek at Cherry Hill, PA (LAT 41 55 04N LONG 080 28 09W)							
NOV 2002 18...	--	70	--	<50	--	<10	--
MAR 2003 17...	--	230	--	<50	--	40	--
JUN 04...	--	40	--	<50	--	30	--
SEP 24...	--	60	--	<50	--	80	--
04213273 Twelvemile Creek near Moorheadville, PA (LAT 42 12 15N LONG 079 54 46W)							
OCT 2002 21...	5.2	6.7	<4.0	<4.0	5.7	<5.0	<5
NOV 18...	6.3	10	<4.0	<4.0	10	9.4	<5
DEC 16...	8.7	10	<4.0	<4.0	10	100	<5
MAR 2003 17...	20	120	<4.0	7.3	<5.0	30	<5
APR 14...	8.2	10	<4.0	<4.0	<5.0	<5.0	--
JUN 05...	7.3	20	<4.0	<4.0	<5.0	<5.0	<5
JUL 30...	4.0	6.1	<4.0	<4.0	<5.0	<5.0	<5
AUG 27...	5.3	10	<4.0	<4.0	<5.0	<5.0	<5
SEP 24...	5.3	7.3	<4.0	<4.0	<5.0	<5.0	<5

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
MISCELLANEOUS LAKE ANALYSES

Date	Time	Agency collecting sample, code (00027)	Agency analyzing sample, code (00028)	Sampling depth, meters (00098)	Transparency Secchi disc, meters (00078)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf µS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water unfltrd recoverable, mg/L (00916)	Magnesium, water, unfltrd recoverable, mg/L (00927)	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (00417)
03021545 Union City Reservoir near Union City, PA (LAT 41 54 54N LONG 079 48 55W)													
AUG 2003													
06...	0820	1028	9813	1.0	1.7	4.9	7.6	200	22.0	103	30.3	6.6	83
06...	0830	1028	9813	6.0	1.7	2.8	7.3	217	21.2	110	32.3	7.2	92
03023012 Tamarack Lake West near Meadville, PA (LAT 41 34 37N LONG 080 04 39W)													
AUG 2003													
05...	1320	1028	9813	1.0	.3	8.9	8.4	124	24.4	43	12.0	3.1	22
05...	1340	1028	9813	3.0	.3	1.0	7.1	137	22.7	45	12.5	3.3	28
03023373 Tamarack Lake East near Meadville, PA (LAT 41 36 45N LONG 080 07 02W)													
AUG 2003													
05...	1140	1028	9813	1.0	.7	6.1	7.3	123	23.5	40	11.1	2.9	23
05...	1200	1028	9813	3.0	.7	0.1	6.8	127	22.7	44	12.2	3.3	34
03024228 Sugar Lake near Bradleytown, PA (LAT 41 33 59N LONG 079 56 36W)													
AUG 2003													
05...	1610	1028	9813	1.0	1.1	7.5	7.5	129	23.1	57	16.9	3.6	45
05...	1620	1028	9813	3.0	1.1	0.4	6.8	158	18.7	52	15.1	3.5	44
03042260 Yellow Creek Lake near Bush Valley, PA (LAT 40 35 27N LONG 079 03 11W)													
JUL 2003													
29...	1035	1028	9813	1.0	1.8	9.8	8.1	159	23.3	59	16.2	4.6	27
29...	1110	1028	9813	7.0	1.8	0.5	6.9	174	15.3	60	16.7	4.5	39
03079050 High Point Lake at Savage, PA (LAT 39 46 54N LONG 079 13 36W)													
JUL 2003													
28...	1120	1028	9813	1.0	3.1	6.6	7.5	77	22.3	31	10.3	1.2	23
28...	1150	1028	9813	5.0	3.1	5.4	7.1	77	22.2	31	10.3	1.2	24

Date	Sulfate water, fltrd, mg/L (00945)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia water, unfltrd mg/L as N (00610)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, unfltrd mg/L (00600)	Organic carbon, water, unfltrd mg/L (00680)	Aluminum, water, fltrd, µg/L (01106)	Aluminum, water, unfltrd recoverable, µg/L (01105)	Copper, water, fltrd, µg/L (01040)	Copper, water, unfltrd recoverable, µg/L (01042)	Iron, water, fltrd, µg/L (01046)	Iron, water, unfltrd recoverable, µg/L (01045)	Lead, water, fltrd, µg/L (01049)
03021545 Union City Reservoir near Union City, PA (LAT 41 54 54N LONG 079 48 55W)													
AUG 2003													
13...	6.3	4	.08	.02	.66	9.4	<10	22	<4	<4	210	490	<1.0
13...	6.7	2	.15	.03	1.0	9.4	14	35	<4	<4	360	730	<1.0
03023012 Tamarack Lake West near Meadville, PA (LAT 41 34 47N LONG 080 04 39W)													
AUG 2003													
05...	11.2	36	<.02	.14	2.1	11.8	22	110	<4	<4	120	1200	<1.0
05...	10.7	14	.30	.06	.59	9.6	21	110	<4	<4	130	1000	<1.0
03023373 Tamarack Lake East near Meadville, PA (LAT 41 36 45N LONG 080 07 02W)													
AUG 2003													
05...	11.0	12	<.02	.05	.96	9.6	19	93	<4	<4	70	840	<1.0
05...	9.1	2	.06	.04	1.4	8.9	21	57	<4	<4	1300	1600	<1.0
03024228 Sugar Lake near Bradleytown, PA (LAT 41 33 59N LONG 079 56 36W)													
AUG 2003													
05...	5.7	6	<.02	.06	.64	9.4	12	27	<4	<4	130	730	<1.0
05...	6.4	6	.34	.04	1.1	9.9	20	76	<4	<4	230	720	<1.0
03042260 Yellow Creek Lake near Bush Valley, PA (LAT 40 35 27N LONG 079 03 11W)													
JUL 2003													
29...	31.0	8	<.02	.02	.86	2.7	36	90	<4	<4	<20	110	<1.0
29...	28.1	8	.31	.01	.52	2.2	40	100	<4	<4	150	410	<1.0
03079050 High Point Lake at Savage, PA (LAT 39 46 54N LONG 079 13 36W)													
JUL 2003													
28...	7.2	8	.05	.02	.32	2.4	18	26	<4	<4	30	110	<1.0
28...	7.1	2	.07	.01	.32	2.3	19	29	<4	<4	27	140	<1.0

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
MISCELLANEOUS LAKE ANALYSES

Date	Lead, water, unfltrd recover -able, µg/L (01051)	Mangan- ese, water, fltrd, µg/L (01056)	Mangan- ese, water, unfltrd recover -able, µg/L (01055)	Zinc, water, fltrd, µg/L (01090)	Zinc, water, unfltrd recover -able, µg/L (01092)
003021545 Union City Reservoir near Union City, PA (LAT 41 54 54N LONG 079 48 55W)					
AUG 2003					
13...	<1.0	140	310	<5.0	<5.0
13...	<1.0	420	610	<5.0	6.4
03023012 Tamarack Lake West near Meadville, PA (LAT 41 34 47N LONG 080 04 39W)					
AUG 2003					
05...	<1.0	3	120	<5.0	<5.0
05...	<1.0	1200	1400	<5.0	<5.0
03023373 Tamarack Lake East near Meadville, PA (LAT 41 36 45N LONG 080 07 02W)					
AUG 2003					
05...	<1.0	5	140	<5.0	<5.0
05...	<1.0	2800	2800	<5.0	<5.0
003024228 Sugar Lake near Bradleytown, PA (LAT 41 33 59N LONG 079 56 36W)					
AUG 2003					
05...	<1.0	18	250	<5.0	<5.0
05...	<1.0	1600	2000	<5.0	<5.0
03042260 Yellow Creek Lake near Bush Valley, PA (LAT 40 35 27N LONG 079 03 11W)					
JUL 2003					
29...	<1.0	<2	50	<5.0	5.3
29...	<1.0	2800	3200	5.2	<5.0
03079050 High Point Lake at Savage, PA (LAT 39 46 54N LONG 079 13 16W)					
JUL 2003					
28...	<1.0	49	110	14	9.8
28...	<1.0	78	160	11	7.3

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

REMARKS.--Samples were collected using a D-Frame net with a mesh size of 500 µm. A (*) indicates that samples were collected using a multiplate sampler that was deployed for 5 weeks. A dash(--) indicates there were no observations of the organism in the sample. Samples represent counts per 100 (approximate) subsamples.

BIOLOGICAL DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
BENTHIC MACROINVERTEBRATES

Station Number	03010956	03012600	03017500	03025490	03026175	03030852
Date	8/22/02	8/20/02	8/22/02	9/24/02	9/24/02	9/24/02
Benthic Macroinvertebrate	Count	Count	Count	Count	Count	Count
Platyhelminthes						
Turbellaria (FLATWORMS)						
Tricladida						
Planariidae	--	--	--	1	--	--
Nematoda (NEMATODES)	1	--	--	--	--	--
Mollusca						
Gastropoda (SNAILS)						
Basommatophora						
Ancylidae						
Ferrissia sp	--	15	5	--	--	--
Hydrobiidae						
Amnicola sp	--	21	--	--	1	--
Physidae						
Physa sp	--	--	--	--	1	--
Planorbidae						
Planorbella sp	--	--	--	--	--	--
Pleuroceridae						
Elimia sp	--	1	--	1	--	--
Leptoxis carinata	--	--	--	--	9	--
Bivalvia (CLAMS)						
Veneroida						
Corbiculidae						
Corbicula fluminea	--	--	--	--	--	--
Sphaeriidae						
Pisidium sp	--	1	--	--	--	--
Sphaerium sp	--	4	2	--	2	--
Annelida						
Hirudinea (LEECHES)	14	--	7	--	--	--
Oligochaeta (AQUATIC EARTHWORMS)	34	6	5	--	--	--
Lumbriculida						
Lumbriculidae	--	--	--	12	2	--
Tubificida						
Enchytraeidae	--	--	--	--	--	--
Naididae	--	--	--	--	--	--
Tubificidae	--	--	--	--	--	--
Arthropoda						
Acariformes						
Hydrachnidia (WATER MITES)	9	1	1	--	--	--

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

BIOLOGICAL DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
BENTHIC MACROINVERTEBRATES

03044000	03049652*	0306300*	03071700*	03077500	03078020	Station Number
9/21/02	9/27/02	9/26/02	9/26/02	9/19/02	9/19/02	Date
Count	Count	Count	Count	Count	Count	Benthic Macroinvertebrate
						Platyhelminthes
						Turbellaria (FLATWORMS)
						Tricladida
--	7	14	--	--	--	Planariidae
--	--	--	--	1	--	Nematoda (NEMATODES)
						Mollusca
						Gastropoda (SNAILS)
						Basommatophora
						Ancylidae
--	--	--	1	--	7	Ferrissia sp
						Hydrobiidae
--	--	--	--	--	--	Amnicola sp
						Physidae
--	--	2	2	--	--	Physa sp
						Planorbidae
--	1	2	1	--	--	Planorbella sp
						Pleuroceridae
--	5	--	--	--	--	Elimia sp
--	--	--	--	--	--	Leptoxis carinata
						Bivalvia (CLAMS)
						Veneroida
						Corbiculidae
3	--	1	--	--	--	Corbicula fluminea
--	--	2	--	--	--	Sphaeriidae
--	--	--	--	--	--	Pisidium sp
--	1	--	3	--	--	Sphaerium sp
						Annelida
--	--	--	--	--	--	Hirudinea (LEECHES)
--	--	--	--	--	--	Oligochaeta (AQUATIC EARTHWORMS)
						Lumbriculida
--	--	--	--	--	--	Lumbriculidae
						Tubificida
--	--	--	--	1	--	Enchytraeidae
--	5	12	7	19	--	Naididae
--	--	--	--	--	--	Tubificidae
						Arthropoda
						Acariformes
--	--	1	--	--	--	Hydrachnidia (WATER MITES)

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

BIOLOGICAL DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
BENTHIC MACROINVERTEBRATES

Station Number	03010956	03012600	03017500	03025490	03026175	03030852
Date	8/22/02	8/20/02	8/22/02	9/24/02	9/24/02	9/24/02
Benthic Macroinvertebrate	Count	Count	Count	Count	Count	Count
Crustacea						
Cladocera	--	--	--	--	--	--
Amphipoda (SCUDS)						
Crangonyctidae						
Crangonyx sp	--	--	--	--	--	--
Gammaridae						
Gammarus sp	--	2	--	--	--	--
Isopoda (AQUATIC SOWBUGS)						
Asellidae						
Caecidotea sp	--	--	--	--	--	--
Copepoda	--	--	--	--	--	--
Insecta						
Ephemeroptera (MAYFLIES)						
Baetidae						
Acentrella sp	1	--	--	18	--	--
Baetis sp	3	1	--	5	2	--
Heterocloeon sp	--	--	--	1	2	--
Plauditus sp	--	--	--	--	--	6
Procloeon sp	1	--	--	--	--	--
Caenidae						
Caenis sp	--	3	--	--	--	--
Ephemerellidae						
Serratella sp	--	3	--	12	6	--
Heptageniidae	--	--	--	--	1	--
Stenacron sp	--	--	--	--	--	--
Stenonema sp	--	57	5	6	11	--
Isonychiidae						
Isonychia sp	--	5	6	11	22	1
Potamanthidae						
Anthopotamus sp	--	--	--	1	--	--
Tricorythidae						
Tricorythodes sp	--	--	--	3	--	--
Odonata (DRAGONFLIES AND DAMSELFLIES)						
Coenagrionidae						
Argia sp	--	--	--	--	--	--
Gomphidae						
Dromogomphus sp	--	--	--	--	--	--
Ophiogomphus sp	--	--	6	--	--	--
Libellulidae	--	--	--	--	--	--
Plecoptera (STONEFLIES)						
Perlidae						
Acroneuria sp	--	--	1	--	--	--
Paragnetina sp	--	--	--	--	--	--
Megaloptera						
Corydalidae (FISHFLIES AND DOBSONFLIES)						
Corydalus sp	--	--	--	--	--	4

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

BIOLOGICAL DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
BENTHIC MACROINVERTEBRATES

03044000	03049652*	0306300*	03071700*	03077500	03078020	Station Number
9/21/02	9/27/02	9/26/02	9/26/02	9/19/02	9/19/02	Date
Count	Count	Count	Count	Count	Count	Benthic Macroinvertebrate
						Crustacea
--	341	28	--	--	--	Cladocera
						Amphipoda (SCUDS)
						Crangonyctidae
--	--	--	4	2	--	Crangonyx sp
						Gammaridae
--	--	--	--	--	--	Gammarus sp
						Isopoda (AQUATIC SOWBUGS)
						Asellidae
--	--	--	--	11	--	Caecidotea sp
--	6	--	--	--	--	Copepoda
						Insecta
						Ephemeroptera (MAYFLIES)
						Baetidae
--	--	--	--	--	--	Acentrella sp
--	--	--	--	--	--	Baetis sp
--	--	--	--	--	--	Heterocloeon sp
--	--	--	--	--	1	Plauditus sp
--	--	--	--	--	--	Procloeon sp
						Caenidae
--	--	--	--	--	--	Caenis sp
						Ephemerellidae
--	--	--	--	--	--	Serratella sp
--	4	--	1	--	--	Heptageniidae
--	--	2	--	--	1	Stenacron sp
--	--	--	--	--	19	Stenonema sp
						Isonychiidae
--	--	--	--	--	7	Isonychia sp
						Potamanthidae
--	--	--	--	--	--	Anthopotamus sp
						Tricorythidae
--	1	--	--	--	--	Tricorythodes sp
						Odonata (DRAGONFLIES AND DAMSELFLIES)
						Coenagrionidae
--	--	--	2	--	--	Argia sp
						Gomphidae
--	--	--	--	--	1	Dromogomphus sp
--	--	--	--	--	--	Ophiogomphus sp
--	--	--	1	--	--	Libellulidae
						Plecoptera (STONEFLIES)
						Perlidae
--	--	--	--	--	--	Acroneuria sp
--	--	--	--	--	1	Paragnetina sp
						Megaloptera
						Corydalidae (FISHFLIES AND DOBSONFLIES)
--	--	--	--	--	--	Corydalus sp

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

BIOLOGICAL DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
BENTHIC MACROINVERTEBRATES

Station Number	03010956	03012600	03017500	03025490	03026175	03030852
Date	8/22/02	8/20/02	8/22/02	9/24/02	9/24/02	9/24/02
Benthic Macroinvertebrate	Count	Count	Count	Count	Count	Count
Trichoptera (CADDISFLIES)						
Brachycentridae						
Brachycentrus sp	--	--	7	1	7	--
Glossosomatidae						
Protoptila sp	--	--	--	--	2	--
Helicopsychidae						
Helicopsyche sp	--	--	--	2	--	--
Hydropsychidae						
Cheumatopsyche sp	3	10	1	25	11	3
Hydropsyche sp	2	11	2	41	32	71
Macrostemum sp	--	10	13	3	9	12
Hydroptilidae						
Hydroptila sp	--	--	--	--	--	--
Leptoceridae						
Oecetis sp	--	--	--	--	--	--
Philopotamidae						
Chimarra sp	--	1	1	--	--	--
Polycentropodidae						
Neureclipsis sp	--	--	--	--	--	1
Polycentropus sp	--	--	--	--	--	--
Elmidae (RIFFLE BEETLES)						
Dubiraphia sp	--	1	--	--	--	--
Optioservus sp	--	2	8	10	--	2
Stenelmis sp	--	2	--	12	2	--
Psephenidae (WATER PENNIES)						
Psephenus sp	2	2	2	--	--	--
Diptera (TRUE FLIES)						
Chironomidae (MIDGES)	141	2	42	45	33	3
Empididae (DANCE FLIES)	--	--	1	--	--	--
Simuliidae (BLACK FLIES)						
Simulium sp	--	--	--	1	--	--
Tipulidae (CRANE FLIES)						
Antocha sp	--	--	1	--	--	--
Total Organisms	211	161	116	211	155	103

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

BIOLOGICAL DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
BENTHIC MACROINVERTEBRATES

03044000	03049652*	0306300*	03071700*	03077500	03078020	Station Number
9/21/02	9/27/02	9/26/02	9/26/02	9/19/02	9/19/02	Date
Count	Count	Count	Count	Count	Count	Benthic Macroinvertebrate
						Trichoptera (CADDISFLIES)
						Brachycentridae
--	--	--	--	--	--	Brachycentrus sp
						Glossosomatidae
--	--	--	--	--	--	Protoptila sp
						Helicopsychidae
--	--	--	--	--	--	Helicopsyche sp
						Hydropsychidae
91	--	--	--	2	33	Cheumatopsyche sp
22	--	--	--	--	32	Hydropsyche sp
--	--	--	--	--	--	Macrostemum sp
						Hydroptilidae
--	2	3	--	2	--	Hydroptila sp
						Leptoceridae
1	1	1	6	--	--	Oecetis sp
						Philopotamidae
--	--	--	--	--	2	Chimarra sp
						Polycentropodidae
1	9	14	--	--	--	Neureclipsis sp
--	--	--	6	--	--	Polycentropus sp
						Coleoptera (BEETLES)
						Elmidae (RIFFLE BEETLES)
--	--	--	--	--	--	Dubiraphia sp
--	--	--	--	--	5	Optioservus sp
1	--	--	--	--	2	Stenelmis sp
						Psephenidae (WATER PENNIES)
--	--	--	--	--	--	Psephenus sp
						Diptera (TRUE FLIES)
1	160	191	18	23	6	Chironomidae (MIDGES)
						Simuliidae (BLACK FLIES)
1	--	--	--	69	1	Simulium sp
						Tipulidae (CRANE FLIES)
--	--	--	--	--	1	Antocha sp
121	543	274	52	130	119	Total Organisms

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

BIOLOGICAL DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
BENTHIC MACROINVERTEBRATES

Station Number	03099600	03103500	03104500	03105810	03109670*	04212945
Date	9/25/02	9/25/02	9/23/02	9/13/02	9/25/02	9/24/02
Benthic Macroinvertebrate	Count	Count	Count	Count	Count	Count
Platyhelminthes						
Turbellaria (FLATWORMS)						
Tricladida						
Planariidae	4	6	1	--	26	7
Mollusca						
Gastropoda (SNAILS)						
Basommatophora						
Ancylidae						
Ferrissia sp	--	2	1	--	6	--
Hydrobiidae	--	--	--	--	6	--
Amnicola sp	2	--	--	--	10	--
Physidae						
Physa sp	--	1	--	--	6	--
Planorbidae						
Planorbella sp	--	--	--	--	7	--
Bivalvia (CLAMS)						
Veneroida						
Corbiculidae						
Corbicula fluminea	2	1	9	--	3	--
Dreissenidae						
Dreissena polymorpha	--	--	--	--	34	--
Sphaeriidae						
Pisidium sp	--	--	--	--	--	2
Sphaerium sp	--	--	1	--	--	--
Annelida						
Oligochaeta (AQUATIC EARTHWORMS)						
Tubificida						
Naididae	18	2	--	--	1	--
Tubificidae	1	4	1	--	--	1
Arthropoda						
Crustacea						
Cladocera	--	--	--	--	261	---
Amphipoda (SCUDS)						
Gammaridae						
Gammarus sp	16	9	--	--	15	--
Isopoda (AQUATIC SOWBUGS)						
Asellidae						
Caecidotea sp	1	--	--	--	--	--
Copepoda	--	--	--	--	8	--

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

BIOLOGICAL DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
BENTHIC MACROINVERTEBRATES

Station Number	03099600	03103500	03104500	03105810	03109670*	04212945
Date	9/25/02	9/25/02	9/23/02	9/13/02	9/25/02	9/24/02
Benthic Macroinvertebrate	Count	Count	Count	Count	Count	Count
Insecta						
Ephemeroptera (MAYFLIES)						
Baetidae						
Baetis sp	2	--	--	--	--	1
Caenidae						
Caenis sp	--	--	--	--	1	--
Ephemerellidae	--	--	--	--	--	5
Serratella sp	--	--	--	--	--	2
Heptageniidae						
Stenacron sp	--	--	--	--	3	--
Stenonema sp	--	--	6	--	--	2
Isonychiidae						
Isonychia sp	--	--	--	--	--	1
Tricorythidae						
Tricorythodes sp	1	--	1	--	--	--
Plecoptera (STONEFLIES)						
Perlidae						
Agnetina sp	--	--	--	--	--	2
Trichoptera (CADDISFLIES)						
Helicopsychidae						
Helicopsyche sp	--	--	--	--	--	4
Hydropsychidae	--	--	--	--	--	6
Cheumatopsyche sp	7	36	31	56	--	24
Hydropsyche sp	1	22	43	71	--	6
Macrostemum sp	--	--	--	1	--	--
Philopotamidae						
Chimarra sp	--	--	--	--	--	23
Polycentropodidae						
Neureclipsis sp	--	3	--	--	--	--
Coleoptera (BEETLES)						
Elmidae (RIFFLE BEETLES)						
Optioservus sp	--	--	--	1	--	3
Stenelmis sp	4	2	14	8	2	22
Psephenidae (WATER PENNIES)						
Psephenus sp	--	--	--	--	--	2
Diptera (TRUE FLIES)						
Chironomidae (MIDGES)	28	82	2	4	121	6
Empididae (DANCE FLIES)						
Hemerodromia sp	--	5	--	--	3	--
Simuliidae (BLACK FLIES)						
Simulium sp	--	1	3	--	--	--
Total Organisms	87	176	113	141	513	119

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

REMARKS.--Samples were collected using rapid bioassessment protocols for benthic macroinvertebrates using a D-Frame net with a mesh size of 500 µm. A dash (--) indicates there were no observations of the organism in the sample. Samples represent counts per 200 (approximate) subsamples.

BIOLOGICAL DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
BENTHIC MACROINVERTEBRATES

Station Number	03017800	03020449	03022000	03031505	03039815	03072850	03079448	04213273
Date	3/25/02	3/27/02	5/24/02	5/8/02	5/3/02	4/17/02	5/2/02	5/24/02
Benthic Macroinvertebrate	Count	Count	Count	Count	Count	Count	Count	Count
Nematoda (NEMATODES)	--	1	--	--	--	--	1	--
Mollusca								
Gastropoda (SNAILS)								
Basommatophora								
Ancylidae								
Ferrissia sp	--	1	2	--	--	--	--	--
Hydrobiidae								
Amnicola sp	--	--	4	--	--	--	--	--
Pleuroceridae								
Elimia sp.	--	--	3	--	--	--	--	--
Bivalvia (CLAMS)								
Sphaeriidae								
Pisidium sp	--	--	20	--	--	--	--	--
Sphaerium sp	--	1	42	--	--	1	--	--
Annelida								
Oligochaeta (AQUATIC EARTHWORMS)								
Lumbricina	2	--	1	--	--	--	3	1
Lumbriculida								
Lumbriculidae	--	16	--	--	--	--	--	--
Tubificida								
Naididae	--	--	--	--	--	2	1	--
Tubificidae	--	--	--	--	1	--	--	--
Arthropoda								
Acariformes								
Hydrachnidia (WATER MITES)	--	--	--	--	--	1	1	2
Crustacea								
Amphipoda (SCUDS)								
Crangonyctidae								
Crangonyx sp	--	--	--	--	--	--	1	--
Talitridae								
Hyallela sp	--	--	--	--	--	1	--	--
Isopoda (AQUATIC SOWBUGS)								
Asellidae								
Caecidotea sp	--	--	--	--	1	--	1	--
Decapoda								
Cambaridae (CRAYFISH)	--	--	--	2	--	--	--	--
Cambarus sp	--	--	--	--	1	--	--	--
Insecta								
Ephemeroptera (MAYFLIES)								
Baetidae								
Acentrella sp	--	--	--	9	--	--	5	5
Baetis sp	--	1	--	--	--	1	5	13
Baetiscidae								
Baetisca sp	--	1	--	--	1	--	--	--
Caenidae								
Caenis sp	--	--	--	--	--	7	--	--
Ephemerellidae								
Drunella sp	--	4	--	1	--	--	10	--
Ephemerella sp	--	19	24	78	--	--	6	--
Eurylophella sp	--	1	--	--	1	1	--	--
Serratella sp	--	--	--	--	--	--	1	--

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

BIOLOGICAL DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
BENTHIC MACROINVERTEBRATES

Station Number	03017800	03020449	03022000	03031505	03039815	03072850	03079448	04213273
Date	3/25/02	3/27/02	5/24/02	5/8/02	5/3/02	4/17/02	5/2/02	5/24/02
Benthic Macroinvertebrate	Count	Count	Count	Count	Count	Count	Count	Count
Ephemeroptera (MAYFLIES)								
Ephemeridae								
Ephemera sp	--	1	--	4	1	--	2	--
Heptageniidae	--	--	--	--	--	--	--	1
Cinygmula sp	--	3	--	--	--	--	--	--
Epeorus sp	5	8	--	--	6	--	1	24
Leucrocuta sp	--	--	--	--	--	--	--	8
Stenacron sp	--	4	--	--	--	--	--	--
Stenonema sp	--	6	10	--	6	5	--	--
Isonychiidae								
Isonychia sp	--	1	--	1	--	--	--	--
Leptophlebiidae	--	--	--	--	--	--	2	--
Paraleptophlebia sp	--	13	--	--	--	--	--	27
Potamanthidae								
Anthopotamus sp	--	--	4	--	--	--	--	--
Siphlonuridae								
Ameletus sp	--	--	--	--	--	1	--	--
Odonata								
Coenagrionidae								
Argia sp	--	--	1	--	--	--	--	--
Gomphidae								
Lanthus sp	--	--	--	--	1	--	--	--
Plecoptera (STONEFLIES)								
Capniidae								
Paracapnia sp	--	1	--	--	1	2	--	--
Chloroperlidae								
Haploperla sp	--	--	--	1	--	--	--	--
Sweltsa sp	--	--	--	--	--	--	--	2
Leuctridae								
Leuctra sp	--	2	--	2	2	1	9	--
Nemouridae								
Amphinemura sp	--	--	--	26	9	3	27	1
Perlidae								
Acroneuria sp	1	1	--	--	4	--	4	--
Agnetina sp	--	1	--	--	--	--	--	--
Perlesta sp	--	--	8	--	--	2	--	--
Perlodidae								
Isoperla sp	2	5	--	6	3	--	3	--
Pteronarcyidae								
Pteronarcys sp	1	--	--	--	--	--	--	--
Taeniopterygidae								
Taenionema sp	1	--	--	--	--	--	--	--
Megaloptera								
Corydalidae								
Nigronia sp	1	2	--	--	--	1	1	--
Sialidae (ALDERFLIES)								
Sialis sp	--	1	--	--	--	--	--	--

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

BIOLOGICAL DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
BENTHIC MACROINVERTEBRATES

Station Number	03017800	03020449	03022000	03031505	03039815	03072850	03079448	04213273
Date	3/25/02	3/27/02	5/24/02	5/8/02	5/3/02	4/17/02	5/2/02	5/24/02
Benthic Macroinvertebrate	Count	Count	Count	Count	Count	Count	Count	Count
Trichoptera (CADDISFLIES)								
Brachycentridae								
Micrasema sp	--	--	--	--	--	--	1	--
Glossosomatidae								
Agapetus sp	--	--	--	7	--	--	--	--
Glossosoma sp	--	--	1	--	--	--	--	--
Hydropsychidae								
Cheumatopsyche sp	1	1	--	3	--	4	--	--
Diplectrona sp	1	--	--	3	--	--	7	--
Hydropsyche sp	1	4	--	1	11	2	--	1
Macrostemum sp	--	--	2	--	--	--	--	--
Hydroptilidae								
Hydroptila sp	--	1	--	--	--	--	--	--
Ochrotrichia sp	--	1	--	--	--	--	--	--
Stactobiella sp	--	--	--	--	--	--	1	--
Lepidostomatidae								
Lepidostoma sp	--	--	--	1	1	--	1	--
Leptoceridae								
Nectopsyche sp	--	--	--	--	--	2	--	--
Limnephilidae								
Hydatophylax sp	--	--	--	--	--	1	--	--
Philopotamidae								
Chimarra sp	--	--	--	--	--	--	1	--
Dolophilodes sp	1	1	--	2	1	--	--	7
Wormaldia sp	--	--	1	--	--	--	--	--
Polycentropodidae								
Nyctiophylax sp	--	--	--	--	1	--	--	--
Polycentropus sp	--	1	--	--	2	--	1	2
Rhyacophilidae								
Rhyacophila sp	3	1	--	5	3	1	20	1
Uenoidae								
Neophylax sp	1	2	--	--	1	--	2	--
Coleoptera (BEETLES)								
Elmidae (RIFFLE BEETLES)								
Dubiraphia sp	--	--	--	--	--	1	--	--
Macronychus sp	--	--	1	--	--	--	--	--
Optioservus sp	--	7	4	14	1	3	24	1
Oulimnius sp	1	--	--	1	12	--	16	--
Promoresia sp	--	--	--	1	43	--	6	--
Stenelmis sp	--	--	35	--	--	65	--	1
Psephenidae (WATER PENNIES)								
Psephenus sp	--	--	20	--	--	--	--	6

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

BIOLOGICAL DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
BENTHIC MACROINVERTEBRATES

Station Number	03017800	03020449	03022000	03031505	03039815	03072850	03079448	04213273
Date	3/25/02	3/27/02	5/24/02	5/8/02	5/3/02	4/17/02	5/2/02	5/24/02
Benthic Macroinvertebrate	Count	Count	Count	Count	Count	Count	Count	Count
Diptera (TRUE FLIES)								
Athericidae								
Atherix sp	--	1	--	--	--	--	--	--
Ceratopogonidae (BITING MIDGES)								
Probezzia sp	--	--	--	--	2	1	--	--
Chironomidae (MIDGES)	6	38	8	31	18	84	29	16
Empididae (DANCE FLIES)								
Chelifera sp	--	--	--	2	--	--	9	--
Hemerodromia sp	--	--	1	--	1	4	--	--
Simuliidae (BLACK FLIES)								
Prosimulium sp	4	63	--	--	3	20	1	--
Simulium sp	--	--	7	13	--	30	4	1
Tabanidae								
Chrysops sp	--	--	--	--	1	--	--	--
Tipulidae (CRANE FLIES)								
Antocha sp	--	2	--	1	--	--	11	--
Dicranota sp	--	--	--	1	6	--	2	--
Hexatoma sp	4	5	--	1	6	--	--	--
Limnophila sp	--	--	--	--	1	--	--	--
Tipula sp	--	--	--	--	--	1	--	1
Total Organisms	36	222	199	217	152	248	220	121

SPECIAL NOTES, REMARK CODES, AND SELECTED CONSTITUENT DEFINITIONS

****

NOTES--Traditionally, dissolved trace-element concentrations have been reported at the microgram per liter(µG/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 µG/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.

--Sample handling procedures at all **National Trends Network** stations were changed substantially on January 11, 1994, in order to reduce contamination from the sample shipping container. The data for samples before and after that date are different and not directly comparable. A tabular summary of the differences based on a special intercomparison study, is available from the NADP/NTN Coordination Office, Colorado State University, Fort Collins, CO 80523 (Telephone: 303-491-5643).

--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:

$$MBASCOR = M - 0.0088N - 0.00019C$$

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:

PRINTED OUTPUT	REMARK
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.
M	Presence of material verified but not quantified.
M	Presence of material verified, but not quantified.
N	Presumptive evidence of presence of material.
U	Material specifically analyzed for, but not detected.
A	Value is an average.
V	Analyte was detected in both the environmental sample and the associated blanks.
S	Most probable value.

****

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)

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.)
COLS/100 ML	colonies per 100 milliliters
DIS	dissolved
FET	fixed end-point titration
FLD	field (Measurement determined at field site.)
F/S	feet per second
G/M	gallons per minute
G/SQM; MG/M2	grams or milligrams per square meter
IT	incremental titration
KF AGAR	nutrient medium for growth of fecal streptococcal bacteria
µG/L	micrograms per liter
µS/CM	microsiemens per centimeter
MG/L	milligrams per liter
MG/M2	milligrams per square meter
MM OF HG	millimeters of mercury
NONCARB	noncarbonate
NTU	nephelometric turbidity unit
PCI/L	picocuries per liter
REC	recoverable
TOT	total
T/DAY	tons per day
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.)

****

(00027) AGENCY COLLECTING SAMPLE CODES: (partial listing)

1028 --U.S. Geological Survey

(00028) AGENCY ANALYZING SAMPLE CODES: (partial listing)

1028 --U.S. Geological Survey
80020 --U.S. Geological Survey, National Water-Quality Laboratory, Denver, Colorado
9813 --Pennsylvania Department of Environmental Protection
83613 --District Water-Quality Laboratory, Troy, New York

MEDIUM CODES: (partial listing)

9-- Surface water.
R-- Quality-control sample. Surface water.
Q-- Quality-control sample. Artificial.

GROUND-WATER-LEVEL STATION RECORDS

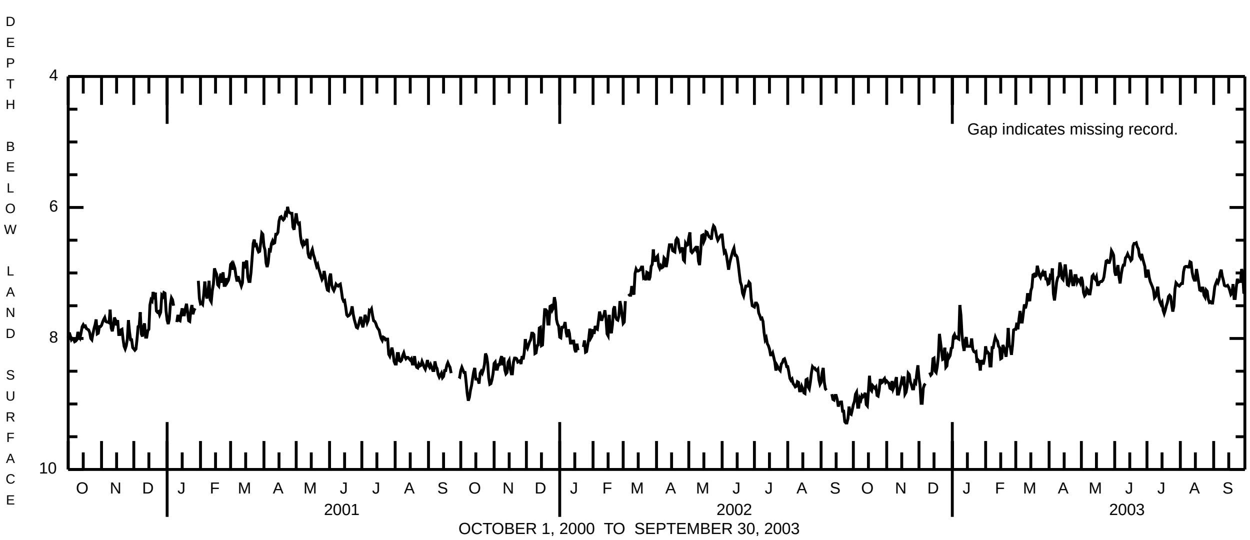
ALLEGHENY COUNTY

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 National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 3.40 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.--November 1967 to current year.
EXTREMES FOR PERIOD OF RECORD.--Prior to October 2000, the extremes were based on extremes of the daily maximum depth below land-surface datum. Since that date, the extremes are based on the instantaneous depth below land-surface datum.
Highest water level, 4.67 ft below land-surface datum, Mar. 21, 1997, also May 2, 1998; lowest, 9.29 ft below land-surface datum, Sept. 25, 2002.
EXTREMES FOR CURRENT YEAR.--Highest water level, 6.41 ft below land-surface datum, June 19; lowest, 9.05 ft below land-surface datum, Oct. 5, 6.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.01	8.65	8.60	8.14	8.12	7.86	7.16	7.06	6.98	7.02	7.18	7.35
2	8.96	8.67	8.71	7.97	8.22	7.76	7.05	7.12	7.04	6.95	7.16	7.21
3	8.85	8.68	8.99	7.94	8.21	7.86	7.07	7.30	6.97	7.06	7.16	7.16
4	8.82	8.76	8.99	7.99	8.23	7.70	6.93	7.35	6.88	7.13	6.98	7.12
5	9.05	8.77	8.76	7.98	8.42	7.58	7.32	7.33	7.06	7.17	6.91	7.15
6	9.05	8.65	8.71	8.00	8.42	7.75	7.42	7.24	7.16	7.21	6.90	7.10
7	8.91	8.77	8.69	8.01	8.14	7.75	7.29	7.26	7.03	7.26	6.90	7.00
8	8.94	8.73	---	7.49	8.14	7.62	7.14	7.32	6.93	7.38	6.91	6.95
9	8.87	8.66	---	7.64	8.05	7.48	7.07	7.32	6.88	7.36	6.91	7.05
10	8.89	8.59	---	7.94	7.98	7.54	7.05	7.22	6.88	7.29	6.83	7.11
11	8.87	8.85	8.52	8.10	8.02	7.47	6.84	7.05	6.77	7.21	6.84	7.19
12	8.83	8.85	8.56	8.19	8.04	7.31	6.91	7.03	6.75	7.37	6.99	7.20
13	9.01	8.78	8.54	8.03	8.12	7.39	7.08	7.08	6.71	7.44	7.07	7.20
14	9.03	8.71	8.31	7.98	8.14	7.43	7.10	7.10	6.75	7.48	7.11	7.19
15	8.81	8.63	8.30	8.12	8.31	7.27	6.98	7.06	6.77	7.45	7.11	7.22
16	8.57	8.67	8.50	8.12	8.30	7.22	6.87	7.18	6.81	7.57	6.94	7.27
17	8.78	8.58	8.52	8.12	8.10	7.03	7.01	7.18	6.79	7.62	7.03	7.33
18	8.80	8.85	8.43	8.12	8.14	7.02	7.18	7.14	6.59	7.57	7.14	7.31
19	8.72	8.82	8.28	8.00	8.20	7.05	7.19	7.13	6.55	7.50	7.26	7.17
20	8.74	8.73	7.93	8.16	8.28	7.04	7.12	7.13	6.55	7.45	7.27	7.39
21	8.76	8.53	8.05	8.20	8.10	6.89	6.95	7.11	6.54	7.36	7.23	7.39
22	8.74	8.55	8.19	8.21	7.84	6.96	7.07	7.06	6.60	7.34	7.23	7.22
23	8.87	8.66	8.32	8.20	8.11	7.04	7.18	6.94	6.63	7.36	7.34	7.09
24	8.88	8.71	8.31	8.37	8.14	7.07	7.18	6.82	6.74	7.49	7.37	7.14
25	8.79	8.77	8.14	8.33	8.25	7.02	7.04	6.81	6.77	7.59	7.26	7.13
26	8.62	8.77	8.44	8.35	8.10	6.99	7.04	6.84	6.71	7.51	7.28	7.13
27	8.68	8.66	8.42	8.49	7.87	7.05	7.14	6.84	6.78	7.25	7.40	6.94
28	8.67	8.68	8.26	8.33	7.86	6.97	7.10	6.79	6.84	7.15	7.45	7.01
29	8.63	8.53	8.29	8.38	---	7.09	7.11	6.66	6.90	7.17	7.44	7.30
30	8.61	8.41	8.26	8.38	---	7.09	7.15	6.69	7.07	7.19	7.46	7.31
31	8.67	---	8.15	8.30	---	7.17	---	6.73	---	7.20	7.46	---
MEAN	8.82	8.69	8.43	8.12	8.14	7.31	7.09	7.06	6.81	7.33	7.15	7.18
MAX	9.05	8.85	8.99	8.49	8.42	7.86	7.42	7.35	7.16	7.62	7.46	7.39
MIN	8.57	8.41	7.93	7.49	7.84	6.89	6.84	6.66	6.54	6.95	6.83	6.94



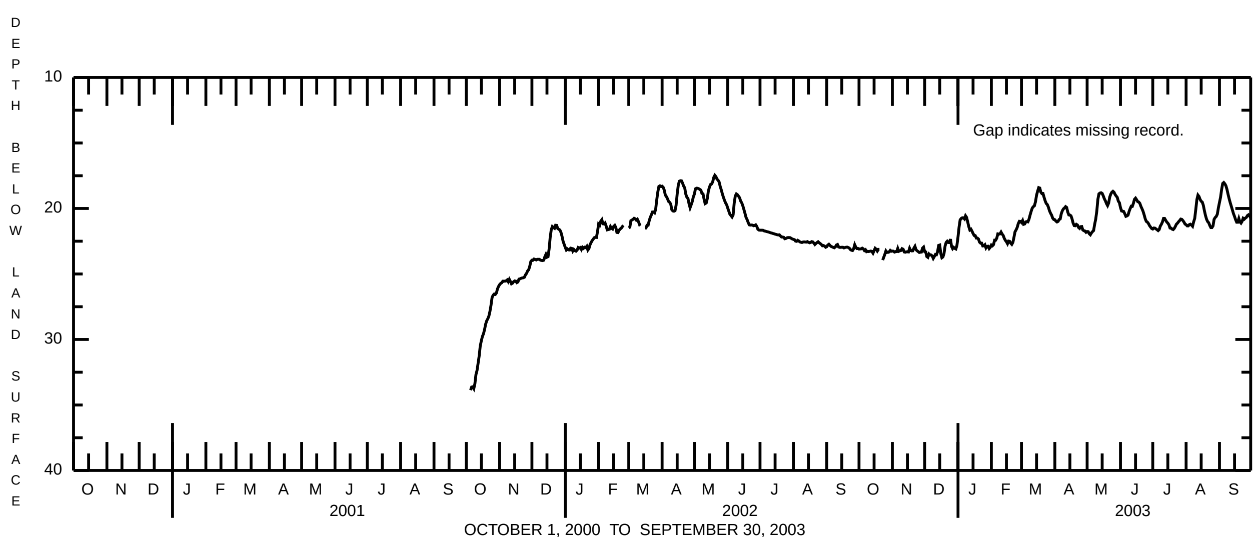
ARMSTRONG COUNTY

405344079380201. Local number, AR 109.

LOCATION.--Lat 40°53'44", long 79°38'02", Hydrologic Unit 05010009, at State Game Lands No. 259.
Owner: U.S. Geological Survey.
AQUIFER.--Allegheny Formation, Middle Pennsylvanian age.
WELL CHARACTERISTICS.--Drilled observation well, diameter 6 in., depth 152.5 ft, cased to 19 ft.
INSTRUMENTATION.--Data collection platform with 60-minute recording interval. Satellite telemetry at station.
DATUM.--Elevation of land-surface datum is 1,400 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of instrument shelf, 2.00 ft above land-surface datum.
REMARKS.--In addition to the daily mean water level table shown below, daily maximum and minimum water levels are available from the District Office. Water levels of Oct. 21-25, 2002 affected by well pumping and clean out of Oct. 21, 2002.
PERIOD OF RECORD.--October 2001 to current year.
EXTREMES FOR PERIOD OF RECORD.--The extremes shown are extremes of the instantaneous depth below land surface for the period of record indicated above.
Highest water level, 17.46 ft below land-surface datum, May 20, 2002; lowest, 34.64 ft below land-surface datum, Oct. 4, 2001.
EXTREMES FOR CURRENT YEAR.--Highest water level, 17.98 ft below land-surface datum, Sept. 4; lowest, 24.06 ft below land-surface datum, Oct. 23.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23.10	23.25	23.29	22.17	22.79	21.07	20.86	21.76	19.93	21.57	21.24	19.54
2	23.09	23.26	23.32	21.42	22.85	20.92	20.97	21.77	20.19	21.49	21.33	19.15
3	23.08	23.33	23.67	20.87	22.76	21.21	21.03	21.93	20.21	21.50	21.33	18.56
4	23.03	23.30	23.73	20.76	22.42	21.18	20.99	22.01	20.23	21.56	21.23	18.09
5	23.08	23.29	23.47	20.71	22.42	21.02	20.84	21.87	20.40	21.62	21.20	18.02
6	23.21	23.05	23.54	20.71	22.27	21.00	20.80	21.77	20.60	21.69	21.27	18.12
7	23.15	23.27	23.55	20.80	21.94	21.02	20.39	21.69	20.57	21.61	21.36	18.27
8	23.30	23.23	23.62	20.56	21.96	20.81	20.17	21.21	20.51	21.35	21.02	18.55
9	23.27	23.21	23.81	20.68	21.94	20.50	20.03	20.81	20.23	21.21	20.76	18.92
10	23.29	23.07	23.67	21.03	21.80	20.22	19.96	20.19	20.01	21.03	20.07	19.26
11	23.27	23.11	23.51	21.38	21.95	19.97	19.86	19.30	19.83	20.76	19.32	19.56
12	23.25	23.32	23.53	21.64	22.06	19.86	19.92	18.88	19.84	20.76	18.98	19.83
13	23.28	23.34	23.31	21.58	22.28	19.80	20.28	18.82	19.61	20.90	19.09	20.11
14	23.41	23.31	22.82	21.73	22.43	19.49	20.49	18.80	19.30	21.03	19.31	20.39
15	23.22	23.31	22.79	21.91	22.54	18.99	20.50	18.85	19.21	21.12	19.45	20.61
16	23.04	23.32	23.44	22.06	22.69	18.68	20.56	19.04	19.33	21.24	19.51	20.86
17	23.11	23.04	23.76	22.07	22.49	18.41	20.80	19.26	19.48	21.49	19.76	21.05
18	23.25	23.21	23.70	22.26	22.51	18.44	21.12	19.42	19.51	21.50	20.17	21.05
19	23.12	23.24	23.44	22.26	22.65	18.76	21.31	19.63	19.61	21.58	20.54	20.77
20	23.12	23.23	22.86	22.33	22.74	18.87	21.32	19.78	19.84	21.61	20.82	21.03
21	---	23.03	22.59	22.57	22.59	18.86	21.21	19.59	20.02	21.52	21.00	21.12
22	---	22.89	22.50	22.65	22.20	19.15	21.26	19.13	20.22	21.37	21.09	20.99
23	23.94	23.15	22.60	22.65	21.78	19.42	21.45	18.90	20.49	21.20	21.30	20.75
24	23.72	23.23	22.60	22.86	21.63	19.62	21.52	18.76	20.79	21.12	21.46	20.82
25	23.50	23.29	22.34	22.85	21.45	19.70	21.39	18.69	20.99	21.01	21.46	20.74
26	23.24	23.36	22.90	22.77	21.16	19.90	21.38	18.76	21.04	20.92	21.33	20.68
27	23.35	23.34	23.07	23.01	20.98	20.17	21.64	18.93	21.15	20.81	20.83	20.54
28	23.35	23.33	22.97	22.89	20.99	20.36	21.70	19.05	21.31	20.83	20.69	20.48
29	23.32	23.03	23.05	22.88	---	20.51	21.72	19.15	21.42	20.92	20.61	20.57
30	23.20	22.95	23.09	23.06	---	20.74	21.82	19.44	21.53	21.04	20.44	20.73
31	23.27	---	22.82	22.96	---	20.84	---	19.56	---	21.19	19.94	---
MEAN	23.26	23.21	23.21	21.94	22.15	19.98	20.91	19.90	20.25	21.24	20.58	19.97
MAX	23.94	23.36	23.81	23.06	22.85	21.21	21.82	22.01	21.53	21.69	21.46	21.12
MIN	23.03	22.89	22.34	20.56	20.98	18.41	19.86	18.69	19.21	20.76	18.98	18.02



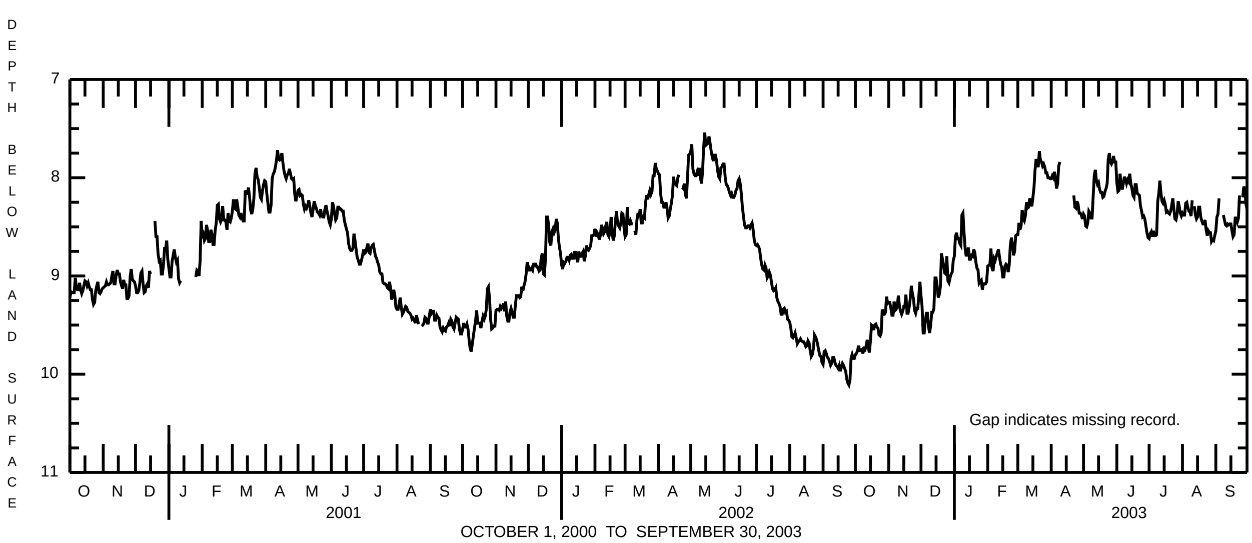
BEAVER COUNTY

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.--Data collection platform with 60-minute recording interval since Aug. 23, 2001. Satellite telemetry at station.
DATUM.--Elevation of land-surface datum is 930 ft above National Geodetic Vertical Datum of 1929, 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 1991, are available from the District Office.
PERIOD OF RECORD.--November 1967 to current year.
EXTREMES FOR PERIOD OF RECORD.--Prior to October 2000, the extremes were based on extremes of the daily maximum depth below land-surface datum. Since that date, the extremes are based on the instantaneous depth below land-surface datum.
Highest water level, 7.46 ft below land-surface datum, May 14, 2002: lowest, 13.72 ft below land-surface datum, June 5, 1968.
EXTREMES FOR CURRENT YEAR.--Highest water level, 7.64 ft below land-surface datum, Mar. 21; lowest, 9.80 ft below land-surface datum, Oct. 1.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.80	9.27	9.20	8.80	8.90	8.58	8.01	8.37	8.05	8.62	8.36	8.54
2	9.79	9.27	9.31	8.60	8.89	8.46	7.98	8.39	8.14	8.57	8.38	8.40
3	9.76	9.33	9.58	8.56	8.89	8.53	8.00	8.49	8.13	8.55	8.38	8.37
4	9.71	9.40	9.58	8.62	8.72	8.49	7.94	8.50	7.96	8.60	8.26	8.21
5	9.76	9.40	9.46	8.62	8.92	8.33	8.00	8.46	8.07	8.54	8.25	---
6	9.76	9.26	9.38	8.67	8.95	8.42	8.11	8.34	8.12	8.59	8.30	---
7	9.75	9.35	9.38	8.69	8.82	8.44	8.06	8.36	8.06	8.59	8.34	---
8	9.79	9.34	9.52	8.38	8.84	8.39	7.88	8.41	7.99	8.58	8.35	8.38
9	9.74	9.29	9.58	8.36	8.80	8.25	7.84	8.41	8.02	8.24	8.39	8.43
10	9.75	9.20	9.50	8.56	8.76	8.31	---	8.19	8.06	8.16	8.23	8.48
11	9.71	9.31	9.37	8.72	8.73	8.30	---	7.98	8.02	8.03	---	8.49
12	9.65	9.36	9.37	8.80	8.81	8.21	---	7.92	8.04	8.16	8.29	8.47
13	9.73	9.39	9.33	8.76	8.88	8.26	---	8.03	7.96	8.24	8.38	8.48
14	9.78	9.36	9.02	8.71	8.91	8.29	---	8.07	8.06	8.26	8.42	8.47
15	9.66	9.31	9.02	8.83	9.01	8.20	---	8.05	8.11	8.23	8.40	8.47
16	9.50	9.31	9.10	8.83	9.01	8.10	---	8.12	8.18	8.27	8.30	8.54
17	9.51	9.19	9.22	8.79	8.90	7.92	---	8.15	8.20	8.35	8.30	8.60
18	9.55	9.38	9.19	8.80	8.88	7.81	---	8.15	8.07	8.34	8.40	8.58
19	9.50	9.38	9.11	8.73	8.89	7.88	---	8.20	8.07	8.36	8.44	8.41
20	9.49	9.32	8.77	8.76	8.96	7.88	---	8.19	8.16	8.37	8.47	8.41
21	9.52	9.23	8.83	8.86	8.89	7.73	---	8.14	8.17	8.34	8.47	8.45
22	9.53	9.10	8.89	8.92	8.69	7.82	8.18	8.11	8.18	8.28	8.43	8.41
23	9.60	9.18	8.97	8.94	8.61	7.84	8.30	8.06	8.29	8.21	8.53	8.18
24	9.61	9.23	8.98	9.07	8.67	7.88	8.31	7.81	8.34	8.32	8.59	---
25	9.58	9.35	8.80	9.05	8.79	7.86	8.24	7.75	8.40	8.42	8.54	---
26	9.34	9.38	9.05	9.04	8.75	7.89	8.27	7.84	8.39	8.43	8.56	8.20
27	9.39	9.33	9.07	9.14	8.59	7.95	8.36	7.86	8.42	8.37	8.56	8.09
28	9.39	9.33	9.02	9.08	8.58	7.95	8.36	7.83	8.49	8.24	8.65	8.12
29	9.37	9.20	8.98	9.08	---	8.00	8.38	7.78	8.56	8.29	8.63	8.27
30	9.21	9.06	8.96	9.08	---	8.00	8.42	7.84	8.61	8.36	8.64	8.32
31	9.28	---	8.84	9.06	---	8.01	---	7.84	---	8.39	8.59	---
MEAN	9.60	9.29	9.17	8.80	8.82	8.13	8.15	8.12	8.18	8.36	8.43	8.39
MAX	9.80	9.40	9.58	9.14	9.01	8.58	8.42	8.50	8.61	8.62	8.65	8.60
MIN	9.21	9.06	8.77	8.36	8.58	7.73	7.84	7.75	7.96	8.03	8.23	8.09



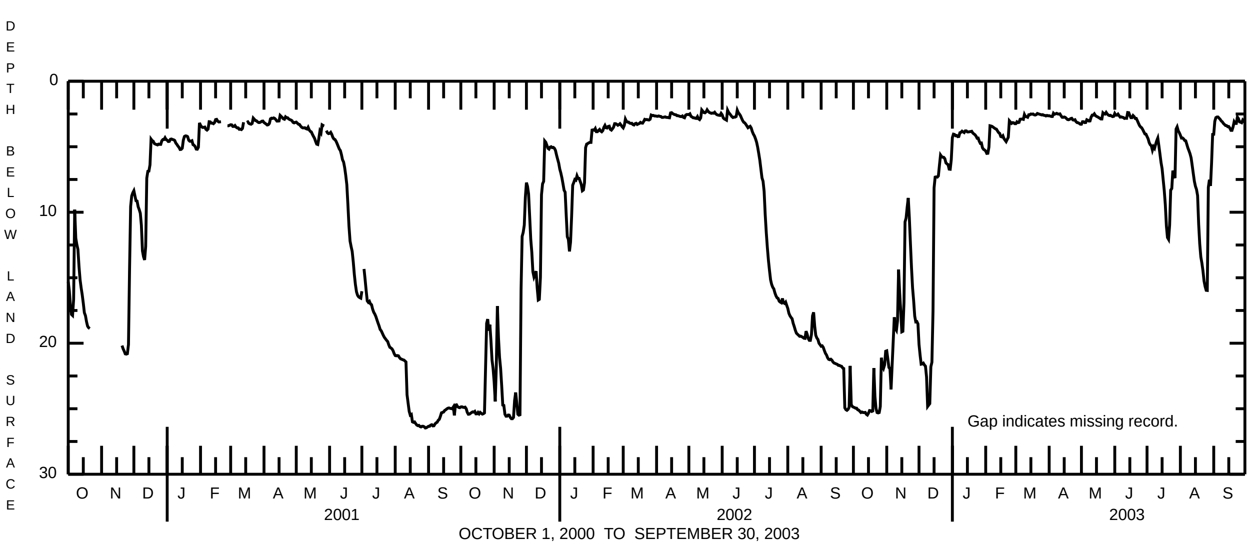
BUTLER COUNTY

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.--Data collection platform with 60-minute recording interval since March 15, 2001. Satellite telemetry at station.
DATUM.--Elevation of land-surface datum is 1,465 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 3.14 ft above land-surface datum. Prior to Mar. 15, 2001, top of casing, 2.30 ft.
REMARKS.--In addition to the daily maximum water level table shown below, daily minimum and mean water levels, since March 2001, are available from the District Office.
PERIOD OF RECORD.--November 1970 to current year.
EXTREMES FOR PERIOD OF RECORD.--Prior to October 2000, the extremes were based on extremes of the daily maximum depth below land-surface datum. Since that date, the extremes are based on the instantaneous depth below land-surface datum.
Highest water level, 1.98 ft below land-surface datum, May 18, 2002; lowest, 31.06 ft below land-surface datum, Oct. 16, 17, 18, 1983.
EXTREMES FOR CURRENT YEAR.--Highest water level, 2.14 ft below land-surface datum, Apr. 5, May 31; lowest, 25.48 ft below land-surface datum, Oct. 14.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24.88	20.58	20.09	4.30	5.33	3.24	2.63	3.28	2.46	4.22	4.12	4.05
2	24.91	21.19	20.91	4.04	5.51	3.10	2.66	3.09	2.59	4.39	4.34	3.06
3	24.96	21.85	21.60	4.06	5.50	3.16	2.69	3.09	2.59	4.69	4.33	2.78
4	24.96	21.95	21.58	4.16	5.03	3.14	2.69	3.16	2.51	4.85	4.40	2.73
5	25.08	23.53	21.52	4.14	3.40	2.90	2.44	3.15	2.63	4.92	4.52	2.73
6	25.11	21.67	21.66	4.23	3.42	2.89	2.52	2.94	2.74	5.26	4.55	2.82
7	25.20	19.88	21.75	4.22	3.45	2.89	2.49	2.98	2.72	5.00	4.82	2.91
8	25.29	18.02	22.58	3.93	3.51	2.91	2.45	3.04	2.75	5.12	5.10	3.03
9	25.25	18.87	24.83	3.90	3.57	2.54	2.50	3.03	2.77	4.81	5.31	3.10
10	25.29	19.01	24.72	3.81	3.63	2.70	2.51	2.74	2.84	4.54	5.54	3.22
11	25.29	18.29	24.61	3.87	3.66	2.71	2.49	2.59	2.82	4.34	5.86	3.30
12	25.28	14.37	21.80	3.92	3.80	2.75	2.63	2.59	2.83	4.93	6.44	3.38
13	25.42	16.13	21.45	3.79	3.92	2.56	2.75	2.49	2.39	5.55	7.04	3.39
14	25.48	17.54	17.54	3.79	3.98	2.56	2.76	2.62	2.40	6.19	7.64	3.47
15	25.34	19.13	8.14	3.87	4.22	2.50	2.73	2.68	2.62	6.68	8.02	3.46
16	25.14	19.09	7.32	3.87	4.25	2.52	2.76	2.72	2.78	7.51	8.26	3.58
17	25.15	16.91	7.30	3.85	4.16	2.50	2.84	2.77	2.78	8.33	8.73	3.75
18	25.21	10.74	7.32	3.84	4.38	2.56	2.92	2.82	2.62	9.44	10.91	3.75
19	25.17	10.44	7.23	3.82	4.50	2.58	2.94	2.88	2.70	11.05	12.42	3.48
20	21.90	9.60	6.40	3.95	4.61	2.55	2.91	2.88	2.84	11.93	13.41	3.09
21	24.06	8.91	5.63	4.02	4.44	2.46	2.85	2.41	2.84	12.07	13.88	3.22
22	24.98	10.42	5.75	4.08	4.28	2.49	2.83	2.49	3.01	10.99	14.47	3.22
23	25.29	12.38	5.80	4.19	3.02	2.52	2.95	2.51	3.20	8.31	15.25	2.73
24	25.32	14.22	5.81	4.35	3.12	2.54	2.97	2.38	3.38	8.19	15.67	2.85
25	25.29	15.76	5.91	4.34	3.22	2.57	2.94	2.50	3.49	6.82	15.96	3.10
26	24.83	16.76	6.23	4.58	3.16	2.55	3.09	2.58	3.55	7.19	15.97	3.13
27	21.11	17.93	6.31	4.74	3.17	2.60	3.16	2.62	3.69	7.39	8.10	3.17
28	21.74	18.37	6.36	4.72	3.24	2.61	3.17	2.60	3.86	3.65	7.52	2.96
29	21.92	18.35	6.71	5.08	---	2.65	3.22	2.66	4.02	3.48	7.99	3.05
30	21.65	18.52	6.72	5.20	---	2.61	3.28	2.70	4.04	3.78	6.25	3.14
31	20.61	---	5.98	5.25	---	2.64	---	2.68	---	3.93	4.06	---
MEAN	24.42	17.01	13.47	4.19	3.98	2.69	2.79	2.76	2.95	6.44	8.42	3.19
MAX	25.48	23.53	24.83	5.25	5.51	3.24	3.28	3.28	4.04	12.07	15.97	4.05
MIN	20.61	8.91	5.63	3.79	3.02	2.46	2.44	2.38	2.39	3.48	4.06	2.73



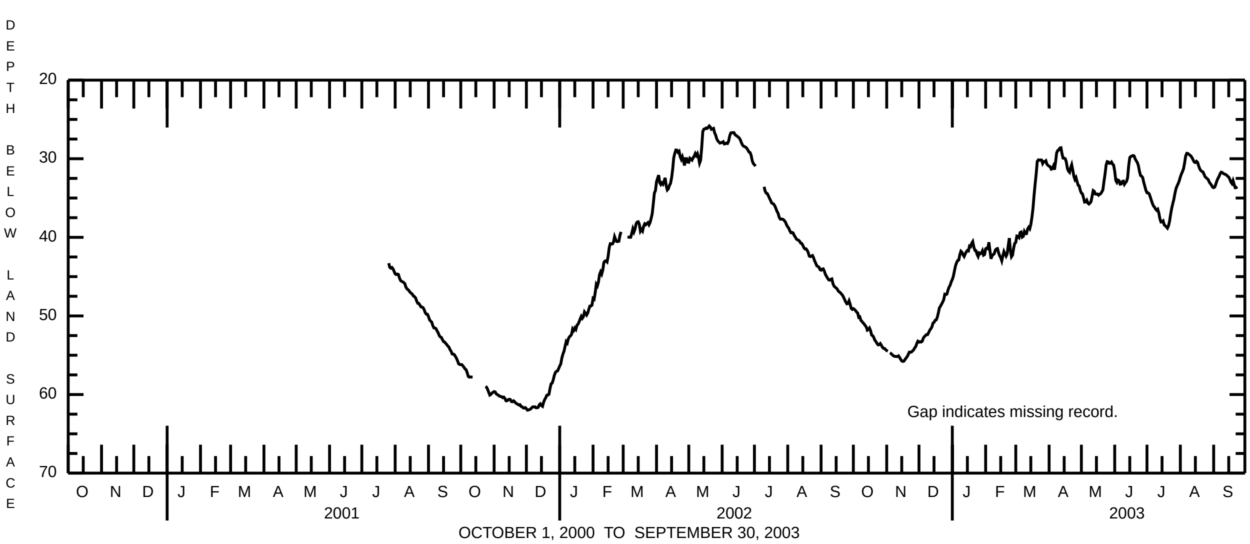
CLARION COUNTY

412020079133901. Local number, CR 3.

LOCATION.--Lat 41°20'20", long 79°13'39", Hydrologic Unit 05010005, at Cooks Forest State Park.
Owner: Commonwealth of Pennsylvania.
AQUIFER.--Pottsville Formation, Middle Pennsylvanian age.
WELL CHARACTERISTICS.--Drilled observation well, diameter 6 in., depth 130 ft, cased to 12 ft.
INSTRUMENTATION.--Data collection platform with 60-minute recording interval. Satellite telemetry at station.
DATUM.--Elevation of land-surface datum is 1,545 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 0.80 ft above land-surface datum.
REMARKS.--In addition to the daily mean water level table shown below, daily maximum and minimum water levels are available from the District Office.
PERIOD OF RECORD.--Jan. 1970 to Dec. 1974; July 2001 to current year.
EXTREMES FOR PERIOD OF RECORD.--The extremes shown are extremes of the instantaneous depth below land surface for the period of record indicated above.
Highest water level, 25.82 ft below land-surface datum, May 20, 2002; lowest, 75.90 ft below land-surface datum, Dec. 1, 1971.
EXTREMES FOR CURRENT YEAR.--Highest water level, 28.47 ft below land-surface datum, Apr. 12; lowest, 55.81 ft below land-surface datum, Nov. 16, 17.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	49.07	54.41	53.33	45.36	41.46	40.64	30.95	34.37	31.59	34.33	32.32	33.68
2	49.17	54.50	53.27	44.94	41.37	39.84	31.02	34.47	32.77	34.34	31.94	33.60
3	49.31	---	53.32	44.25	41.44	39.89	31.33	34.97	33.01	34.46	31.64	33.23
4	49.50	54.69	53.23	43.61	40.63	40.03	31.27	35.52	32.71	34.83	31.26	32.81
5	49.63	54.78	52.84	43.22	41.70	39.40	30.94	35.49	32.79	35.27	30.52	32.50
6	50.18	54.92	52.64	42.95	42.73	39.33	31.39	35.28	33.24	35.68	29.64	32.25
7	50.12	55.05	52.50	42.89	42.34	39.97	30.43	35.63	33.22	36.00	29.31	31.91
8	50.57	55.13	52.37	42.20	42.20	39.88	29.27	35.76	32.90	36.16	29.33	31.71
9	50.70	55.15	52.38	41.77	42.09	39.27	28.95	35.65	32.85	36.41	29.45	31.76
10	50.88	55.16	52.12	41.90	41.63	39.54	28.89	35.43	33.26	36.56	29.55	31.88
11	51.02	55.17	51.82	42.23	41.47	39.53	28.64	34.76	33.05	36.43	29.68	31.95
12	51.22	55.08	51.64	42.44	41.43	38.95	28.60	34.05	32.88	36.90	29.89	32.00
13	51.40	55.29	51.41	42.12	41.95	38.72	29.38	34.15	32.41	37.63	30.19	32.09
14	51.81	55.53	50.92	41.84	42.34	38.91	29.92	34.49	30.86	38.05	30.43	32.23
15	51.72	55.73	50.82	41.67	42.58	38.38	29.93	34.51	29.86	38.03	30.48	32.34
16	51.54	55.79	50.56	41.73	42.99	37.47	30.00	34.49	29.70	37.91	30.33	32.61
17	51.88	55.75	50.51	41.11	42.34	36.33	30.41	34.64	29.67	38.41	30.45	32.97
18	52.44	55.56	50.20	41.19	41.81	34.68	31.23	34.53	29.59	38.54	30.90	33.16
19	52.51	55.35	49.62	40.76	42.12	33.21	31.58	34.44	29.64	38.66	31.27	32.78
20	52.74	55.19	48.97	40.54	42.40	31.91	31.73	34.22	30.02	38.83	31.50	33.25
21	53.10	54.91	48.76	41.23	42.11	30.33	31.14	33.96	30.26	38.54	31.61	33.69
22	53.26	54.61	48.50	41.65	41.06	30.15	30.76	32.90	30.48	37.96	31.68	33.67
23	53.51	54.62	48.25	41.70	40.10	30.19	31.45	31.97	30.87	37.04	31.96	33.57
24	53.68	54.59	47.95	42.16	41.65	30.15	32.21	30.81	31.60	36.29	32.29	---
25	53.66	54.46	47.24	42.44	42.47	30.17	32.63	30.37	32.13	35.71	32.42	---
26	53.51	54.32	47.29	41.99	42.26	30.60	32.40	30.40	32.22	35.15	32.54	---
27	53.72	54.08	47.22	42.09	41.40	30.36	32.92	30.59	32.40	34.41	32.67	---
28	53.97	53.89	46.71	42.02	40.78	30.38	33.37	30.57	33.01	33.80	33.00	---
29	54.13	53.50	46.33	41.72	---	30.26	33.47	30.42	33.51	33.45	33.18	---
30	54.14	53.22	46.09	42.27	---	30.70	34.03	30.68	34.02	33.16	33.37	---
31	54.28	---	45.66	42.19	---	30.85	---	30.82	---	32.80	33.62	---
MEAN	51.88	54.84	50.14	42.26	41.82	35.48	31.01	33.56	31.88	36.19	31.24	32.68
MAX	54.28	55.79	53.33	45.36	42.99	40.64	34.03	35.76	34.02	38.83	33.62	33.69
MIN	49.07	53.22	45.66	40.54	40.10	30.15	28.60	30.37	29.59	32.80	29.31	31.71



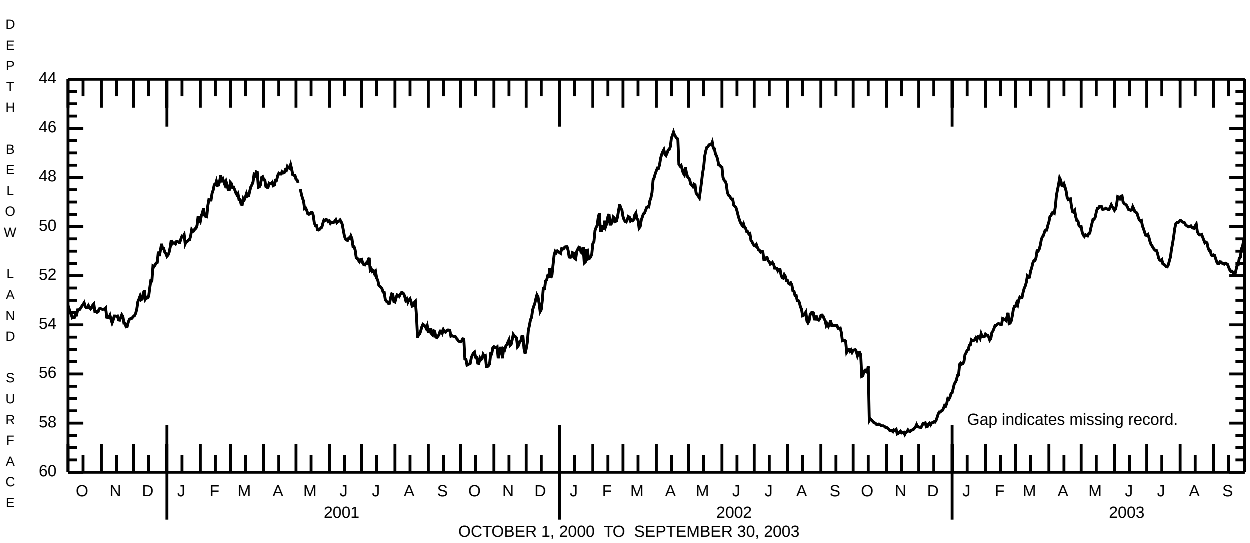
CRAWFORD COUNTY

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.--Data collection platform with 60-minute recording interval since May 4, 2001. Satellite telemetry at station.
DATUM.--Elevation of land-surface datum is 1,110 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 2.43 ft above land-surface datum. Prior to May 2, 2001, 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. In addition to the daily maximum water level table shown below, daily minimum and mean water levels, since May 2001, are available from the District Office. Since the Oct. 16, 2002 well pumping and clean out, the water level recovered by 2.2 ft less than the prior static level.
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.--Prior to October 2000, the extremes were based on extremes of the daily maximum depth below land-surface datum. Since that date, the extremes are based on the instantaneous depth below land-surface datum.
Highest water level, 20.02 ft below land-surface datum, Feb. 23, 1975; lowest, 58.46 ft below land-surface datum, Nov. 18, 2002.
EXTREMES FOR CURRENT YEAR.--Highest water level, 47.86 ft below land-surface datum, Apr. 12; lowest, 58.46 ft below land-surface datum, Nov. 18.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	55.04	58.17	58.16	56.77	54.38	53.24	49.81	50.00	49.34	50.36	49.75	51.15
2	55.02	58.21	58.17	56.60	54.42	53.11	49.59	50.24	49.28	50.32	49.76	51.17
3	55.01	58.24	58.18	56.41	54.42	53.19	49.55	50.35	49.08	50.44	49.80	51.30
4	55.09	58.30	58.11	56.34	54.49	52.98	49.44	50.40	48.78	50.61	49.83	51.43
5	55.26	58.30	58.01	56.25	54.62	52.87	49.43	50.33	48.80	50.73	49.84	51.51
6	55.14	58.31	58.02	56.06	54.56	52.90	49.46	50.36	48.86	50.79	49.92	51.51
7	55.12	58.35	57.99	56.04	54.31	52.89	49.19	50.38	48.76	50.87	49.96	51.43
8	55.21	58.28	58.15	55.61	54.25	52.68	48.73	50.29	48.75	50.93	49.99	51.44
9	56.10	58.30	58.14	55.56	54.14	52.52	48.50	50.27	49.00	50.97	50.01	51.49
10	56.08	58.26	58.04	55.60	54.02	52.42	48.29	50.06	49.06	50.97	49.99	51.50
11	55.89	58.44	58.00	55.58	54.02	52.27	48.02	49.88	49.09	51.09	49.97	51.53
12	55.85	58.42	58.07	55.50	53.98	52.02	48.11	49.70	49.12	51.28	50.03	51.49
13	55.91	58.37	57.99	55.21	53.95	52.07	48.32	49.70	49.20	51.36	50.06	51.51
14	55.93	58.33	57.98	55.14	53.96	52.06	48.34	49.63	49.30	51.39	50.07	51.53
15	55.69	58.40	57.95	55.03	53.99	51.81	48.26	49.42	49.31	51.35	49.97	51.64
16	57.90	58.38	57.96	55.02	53.98	51.68	48.39	49.26	49.34	51.52	49.90	51.75
17	57.83	58.37	57.90	54.83	53.74	51.49	48.55	49.25	49.32	51.54	50.20	51.82
18	57.87	58.46	57.78	54.81	53.76	51.39	48.82	49.18	49.19	51.57	50.29	51.81
19	57.92	58.37	57.64	54.61	53.78	51.39	48.90	49.20	49.28	51.63	50.34	51.85
20	57.97	58.36	57.55	54.64	53.82	51.27	48.88	49.19	49.40	51.64	50.34	51.96
21	57.99	58.28	57.55	54.64	53.68	50.99	48.87	49.30	49.41	51.56	50.32	51.94
22	58.02	58.33	57.50	54.60	53.51	51.00	49.18	49.29	49.46	51.40	50.43	51.76
23	58.07	58.34	57.48	54.53	53.95	50.92	49.39	49.28	49.61	51.24	50.55	51.56
24	58.07	58.29	57.40	54.62	53.93	50.76	49.42	49.25	49.72	50.92	50.66	51.56
25	58.04	58.28	57.28	54.48	53.84	50.52	49.35	49.28	49.77	50.69	50.63	51.28
26	58.07	58.26	57.31	54.49	53.63	50.41	49.61	49.30	49.75	50.41	50.66	51.24
27	58.10	58.21	57.20	54.56	53.36	50.36	49.76	49.30	49.98	50.08	50.86	50.90
28	58.11	58.16	57.00	54.36	53.25	50.20	49.77	49.21	50.09	49.88	50.97	50.81
29	58.11	58.06	57.03	54.47	---	50.14	49.96	49.11	50.23	49.84	50.98	50.59
30	58.13	58.15	56.95	54.49	---	50.14	50.01	49.20	50.35	49.84	51.16	50.55
31	58.17	---	56.80	54.48	---	49.95	---	49.26	---	49.81	51.18	---
MEAN	56.80	58.30	57.72	55.20	53.99	51.67	49.06	49.64	49.35	50.87	50.27	51.43
MAX	58.17	58.46	58.18	56.77	54.62	53.24	50.01	50.40	50.35	51.64	51.18	51.96
MIN	55.01	58.06	56.80	54.36	53.25	49.95	48.02	49.11	48.75	49.81	49.75	50.55



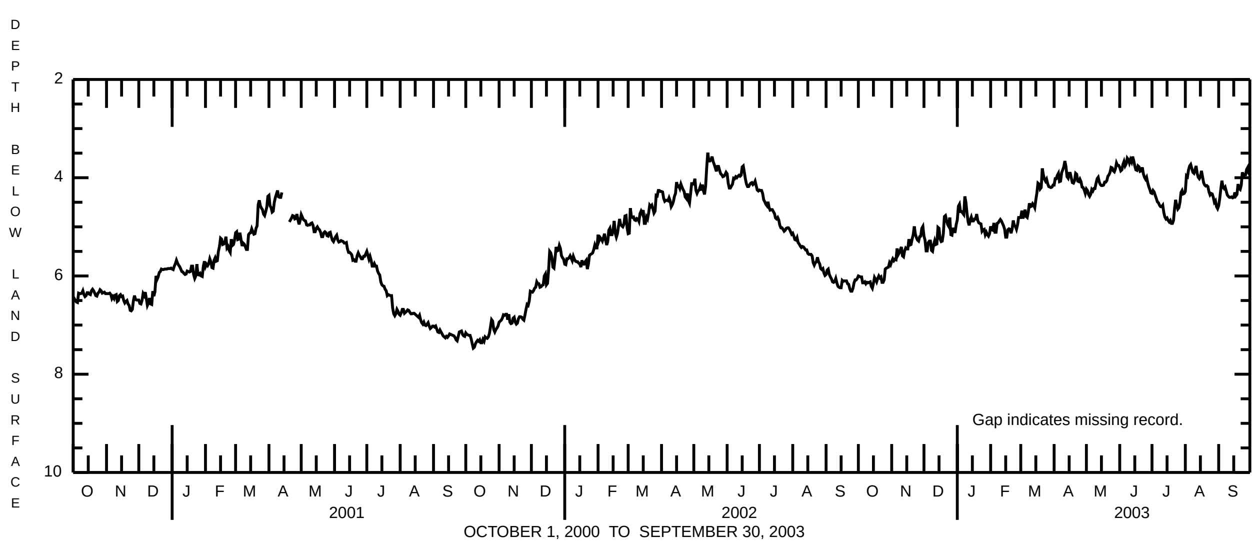
ELK COUNTY

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.--Data collection platform with 60-minute recording interval since July 25, 2001. Satellite telemetry at station.
DATUM.--Elevation of land-surface datum is 1,740 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of plywood instrument shelf, 2.65 ft above land-surface datum. Prior to July 25, 2001, top of casing, 2.30 ft above land-surface datum.
REMARKS.--In addition to the daily maximum water level table shown below, daily minimum and mean water levels, since May 2001, are available from the District Office.
PERIOD OF RECORD.--October 1974 to current year.
EXTREMES FOR PERIOD OF RECORD.--Prior to October 2000, the extremes were based on extremes of the daily maximum depth below land-surface datum. Since that date, the extremes are based on the instantaneous depth below land-surface datum.
Highest water level, 1.95 ft below land-surface datum, Mar. 4, 1991; lowest, 9.24 ft below land-surface datum, Jan. 21, 1996.
EXTREMES FOR CURRENT YEAR.--Highest water level, 3.50 ft below land-surface datum, June 9; lowest, 6.25 ft below land-surface datum, Oct. 14.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.00	5.70	5.19	4.86	4.99	4.81	4.15	4.23	3.79	4.32	4.28	4.57
2	6.01	5.65	5.27	4.58	5.06	4.67	4.02	4.26	3.86	4.26	3.96	4.42
3	6.02	5.69	5.49	4.54	5.07	4.83	4.02	4.34	3.84	4.29	3.98	4.23
4	6.02	5.66	5.49	4.69	4.92	4.77	3.95	4.38	3.73	4.36	3.84	4.06
5	6.14	5.67	5.32	4.69	5.11	4.65	3.91	4.34	3.67	4.42	3.76	4.19
6	6.14	5.44	5.29	4.72	5.11	4.79	4.08	4.24	3.76	4.49	3.73	4.22
7	6.12	5.57	5.29	4.75	4.93	4.81	4.07	4.27	3.72	4.51	3.81	4.19
8	6.16	5.53	5.48	4.38	4.92	4.70	3.90	4.22	3.60	4.56	3.89	4.27
9	6.13	5.47	5.50	4.50	4.88	4.52	3.84	4.22	3.63	4.59	3.91	4.35
10	6.14	5.41	5.36	4.72	4.85	4.59	3.78	4.11	3.70	4.59	3.84	4.38
11	6.13	5.59	5.28	4.89	4.88	4.58	3.66	4.02	3.63	4.56	3.76	4.40
12	6.12	5.61	5.36	4.97	4.93	4.53	3.77	3.99	3.68	4.71	3.91	4.40
13	6.21	5.49	5.35	4.86	4.98	4.56	3.98	4.09	3.57	4.80	3.99	4.39
14	6.25	5.43	5.01	4.80	5.05	4.61	4.01	4.14	3.65	4.84	4.02	4.41
15	6.15	5.45	5.03	4.88	5.21	4.45	3.91	4.16	3.76	4.82	3.98	4.40
16	6.03	5.45	5.25	4.88	5.21	4.31	3.91	4.16	3.84	4.87	3.86	4.30
17	6.07	5.25	5.30	4.84	5.06	4.11	4.01	4.15	3.85	4.90	3.98	4.37
18	6.12	5.37	5.29	4.84	5.04	4.13	4.10	4.09	3.76	4.87	4.10	4.34
19	6.05	5.36	5.14	4.74	5.05	4.23	4.11	4.09	3.78	4.93	4.15	4.13
20	6.00	5.25	4.79	4.87	5.13	4.20	4.06	4.06	3.87	4.93	4.17	4.22
21	6.04	5.16	4.77	4.92	5.04	3.81	3.91	3.97	3.86	4.87	4.16	4.24
22	6.02	4.99	4.87	4.93	4.87	3.94	3.93	3.94	3.79	4.63	4.18	4.15
23	6.13	5.15	4.95	4.94	4.97	4.03	4.07	3.89	3.92	4.45	4.29	3.89
24	6.13	5.22	4.99	5.09	4.99	4.07	4.08	3.79	3.99	4.57	4.35	3.96
25	6.08	5.27	4.81	5.06	5.05	4.03	4.03	3.80	4.03	4.64	4.32	3.94
26	5.86	5.29	5.16	5.05	4.96	4.12	4.08	3.86	3.99	4.61	4.33	3.94
27	5.84	5.20	5.17	5.16	4.81	4.18	4.19	3.88	4.10	4.50	4.40	3.83
28	5.83	5.19	5.02	5.11	4.81	4.19	4.20	3.82	4.18	4.30	4.50	3.79
29	5.82	5.03	5.10	5.16	---	4.20	4.25	3.70	4.24	4.26	4.47	3.91
30	5.73	4.99	5.10	5.19	---	4.19	4.32	3.75	4.31	4.33	4.59	3.94
31	5.77	---	4.95	5.14	---	4.15	---	3.75	---	4.32	4.63	---
MEAN	6.04	5.38	5.17	4.86	5.00	4.38	4.01	4.06	3.84	4.58	4.10	4.19
MAX	6.25	5.70	5.50	5.19	5.21	4.83	4.32	4.38	4.31	4.93	4.63	4.57
MIN	5.73	4.99	4.77	4.38	4.81	3.81	3.66	3.70	3.57	4.26	3.73	3.79



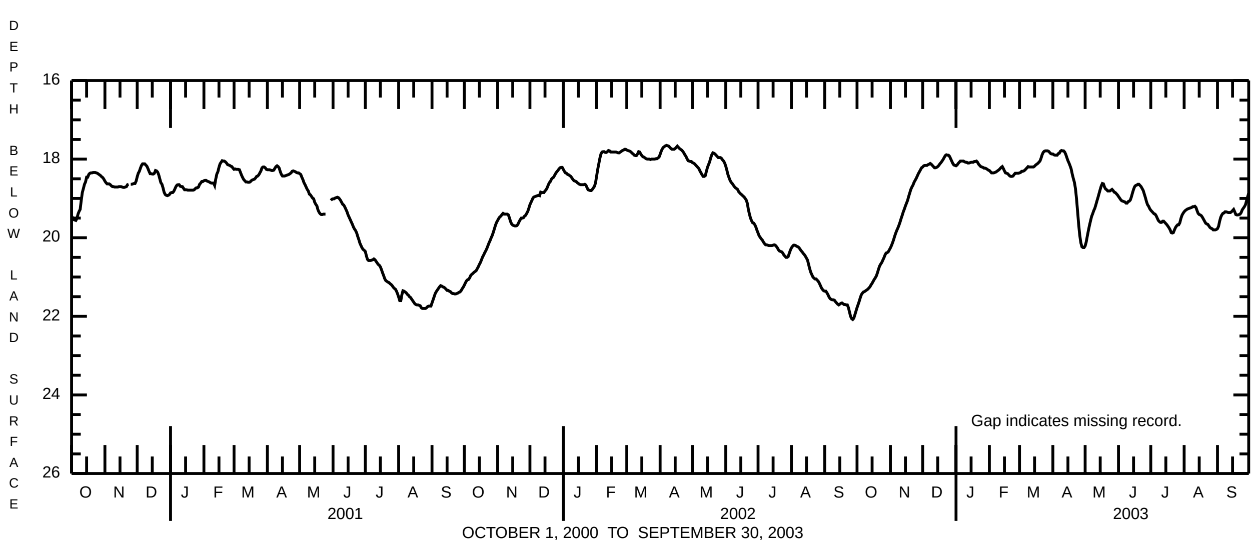
ERIE COUNTY

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.--Data collection platform with 60-minute recording interval since May 17, 2001. Satellite telemetry at station.
DATUM.--Elevation of land-surface datum is 1,419 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of metal table, 3.44 ft above land-surface datum. Prior to May 17, 2001, top of plywood cover, 3.50 ft above land-surface datum.
REMARKS.--In addition to the daily maximum water level table shown below, daily minimum and mean water levels, since May 2001, are available from the District Office.
PERIOD OF RECORD.--July 1966 to current year.
EXTREMES FOR PERIOD OF RECORD.--Prior to October 2000, the extremes were based on extremes of the daily maximum depth below land-surface datum. Since that date, the extremes are based on the instantaneous depth below land-surface datum.
Highest water level, 10.00 ft below land-surface datum, Mar. 17, 1973; lowest, 24.89 ft below land-surface datum, Oct. 21-23, 1998.
EXTREMES FOR CURRENT YEAR.--Highest water level, 17.78 ft below land-surface datum, Apr. 8-10; lowest, 21.78 ft below land-surface datum, Oct. 1.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21.78	20.26	18.20	18.17	18.29	18.35	17.87	20.21	18.95	19.30	19.34	19.77
2	21.70	20.20	18.17	18.15	18.32	18.34	17.89	20.11	18.99	19.33	19.31	19.71
3	21.62	20.13	18.16	18.11	18.35	18.31	17.90	19.96	19.03	19.36	19.29	19.58
4	21.53	20.05	18.16	18.08	18.35	18.31	17.90	19.82	19.06	19.39	19.27	19.48
5	21.45	19.96	18.16	18.05	18.35	18.30	17.90	19.69	19.07	19.40	19.26	19.42
6	21.41	19.88	18.14	18.05	18.34	18.28	17.86	19.57	19.08	19.44	19.25	19.38
7	21.38	19.81	18.13	18.05	18.33	18.25	17.85	19.46	19.09	19.50	19.24	19.37
8	21.37	19.75	18.11	18.05	18.31	18.22	17.80	19.39	19.12	19.56	19.23	19.34
9	21.35	19.68	18.13	18.07	18.29	18.19	17.78	19.31	19.12	19.59	19.21	19.34
10	21.33	19.60	18.16	18.08	18.27	18.20	17.79	19.25	19.08	19.61	19.21	19.35
11	21.31	19.51	18.19	18.08	18.24	18.20	17.79	19.16	19.07	19.61	19.20	19.36
12	21.28	19.43	18.22	18.10	18.21	18.20	17.82	19.06	19.04	19.58	19.23	19.36
13	21.25	19.34	18.22	18.10	18.19	18.20	17.88	18.97	18.96	19.58	19.31	19.36
14	21.20	19.27	18.21	18.09	18.24	18.20	17.96	18.87	18.86	19.61	19.38	19.34
15	21.16	19.19	18.19	18.08	18.30	18.18	18.04	18.77	18.77	19.64	19.41	19.31
16	21.11	19.12	18.16	18.08	18.35	18.15	18.10	18.68	18.70	19.67	19.42	19.28
17	21.06	19.05	18.12	18.08	18.36	18.13	18.17	18.62	18.67	19.71	19.44	19.34
18	21.02	18.95	18.09	18.06	18.37	18.11	18.25	18.63	18.66	19.75	19.48	19.41
19	20.97	18.86	18.05	18.06	18.40	18.08	18.38	18.71	18.64	19.80	19.53	19.42
20	20.89	18.77	18.01	18.05	18.43	18.05	18.49	18.76	18.64	19.87	19.58	19.42
21	20.80	18.71	17.96	18.08	18.44	17.98	18.59	18.78	18.67	19.88	19.63	19.41
22	20.72	18.66	17.91	18.13	18.44	17.89	18.75	18.81	18.70	19.87	19.65	19.40
23	20.67	18.59	17.89	18.16	18.43	17.83	19.01	18.81	18.75	19.80	19.66	19.36
24	20.63	18.54	17.90	18.19	18.39	17.80	19.34	18.81	18.80	19.74	19.70	19.29
25	20.57	18.49	17.90	18.20	18.36	17.79	19.67	18.79	18.89	19.70	19.74	19.25
26	20.51	18.43	17.93	18.21	18.36	17.79	19.94	18.77	18.98	19.67	19.76	19.21
27	20.44	18.37	17.99	18.23	18.36	17.79	20.13	18.80	19.08	19.67	19.77	19.16
28	20.39	18.32	18.05	18.23	18.36	17.80	20.23	18.84	19.16	19.62	19.80	19.06
29	20.38	18.27	18.11	18.24	---	17.83	20.25	18.85	19.20	19.51	19.80	18.96
30	20.36	18.22	18.15	18.26	---	17.86	20.25	18.88	19.26	19.43	19.80	18.87
31	20.31	---	18.16	18.28	---	17.87	---	18.91	---	19.38	19.79	---
MEAN	21.03	19.18	18.09	18.12	18.34	18.08	18.52	19.10	18.94	19.60	19.47	19.34
MAX	21.78	20.26	18.22	18.28	18.44	18.35	20.25	20.21	19.26	19.88	19.80	19.77
MIN	20.31	18.22	17.89	18.05	18.19	17.79	17.78	18.62	18.64	19.30	19.20	18.87



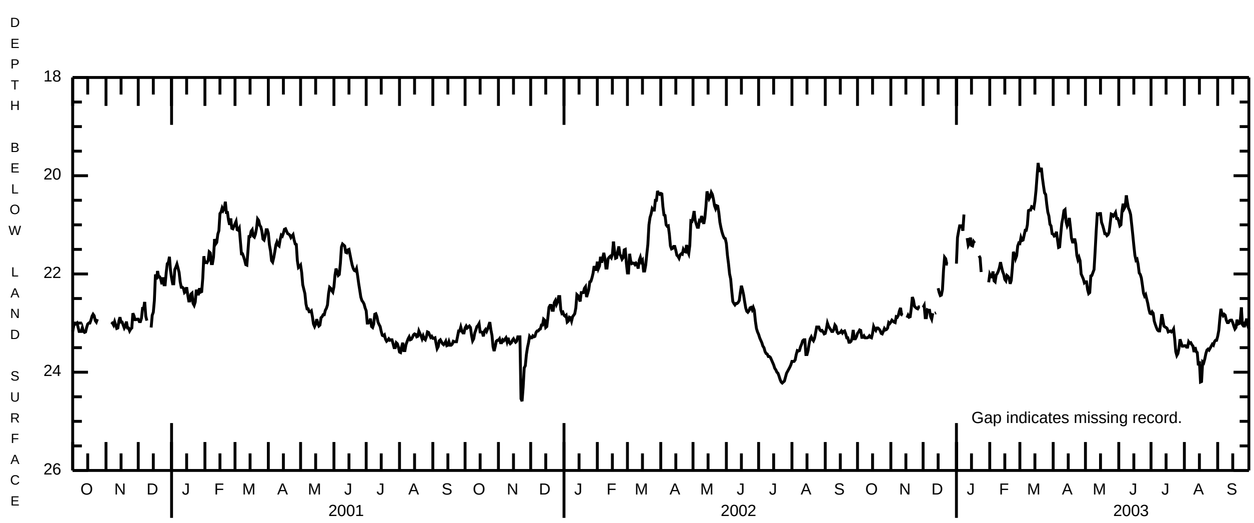
FAYETTE COUNTY

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.--Data collection platform with 60-minute recording interval since Dec. 12, 2000. Satellite telemetry at station.
DATUM.--Elevation of land-surface datum is 1,910 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 2.00 ft above land-surface datum.
REMARKS.--Water levels affected by intermittent pumping. In addition to the daily maximum water level table shown below, daily minimum and mean water levels, since December 2000, are available from the District Office.
PERIOD OF RECORD.--November 1967 to current year.
EXTREMES FOR PERIOD OF RECORD.--Prior to October 2000, the extremes were based on extremes of the daily maximum depth below land-surface datum. Since that date, the extremes are based on the instantaneous depth below land-surface datum.
Highest water level, 18.56 ft below land-surface datum, Apr. l, 1992; lowest, 40.00 ft below land-surface datum, Nov. 8, 1967.
EXTREMES FOR CURRENT YEAR.--Highest water level, 19.68 ft below land-surface datum, Mar. 18; lowest, 24.20 ft below land-surface datum, Aug. 16.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23.21	22.98	22.68	21.79	22.01	21.38	21.19	22.16	20.93	22.81	23.46	23.27
2	23.18	22.94	22.64	21.26	22.06	21.26	21.23	22.16	21.02	22.77	23.46	23.15
3	23.14	22.96	22.89	21.13	22.06	21.32	21.22	22.32	21.00	22.80	23.49	22.91
4	23.15	22.98	22.89	21.02	21.95	21.31	21.14	22.40	20.72	22.96	23.49	22.71
5	23.29	22.99	22.73	21.02	22.14	21.21	21.30	22.38	20.57	23.03	23.38	22.81
6	23.29	22.87	22.74	21.02	22.16	21.11	21.46	22.04	20.67	23.09	23.41	22.85
7	23.26	22.88	22.74	21.12	22.02	21.11	21.45	22.03	20.63	23.14	23.40	22.82
8	23.30	22.84	22.87	20.79	21.99	21.00	21.20	21.97	20.40	23.16	23.44	22.84
9	23.30	22.75	22.92	---	21.94	20.71	20.97	21.91	20.54	23.16	23.47	22.94
10	23.30	22.69	22.80	---	21.87	20.70	20.86	21.54	20.66	23.01	23.59	22.99
11	23.29	22.83	---	21.27	21.76	20.70	20.71	21.13	20.71	22.82	23.49	22.99
12	23.26	22.84	22.80	21.42	21.86	20.63	20.69	20.78	20.79	22.93	23.58	22.95
13	23.29	---	22.79	21.38	21.95	20.64	20.94	20.79	20.99	23.06	23.60	22.94
14	23.30	---	---	21.26	22.01	20.66	21.02	20.77	21.20	23.08	23.86	22.94
15	23.21	---	22.29	21.42	22.11	20.52	20.97	20.77	21.42	23.09	23.78	22.99
16	23.07	22.89	22.38	21.43	22.14	20.30	20.86	20.95	21.62	23.11	24.20	23.06
17	23.12	22.84	22.44	21.34	22.03	20.01	21.04	21.01	21.72	23.18	24.19	23.12
18	23.15	22.88	22.43	21.37	22.05	19.74	21.27	21.09	21.70	23.17	23.79	23.09
19	23.10	22.87	22.32	---	22.09	19.90	21.35	21.18	21.80	23.16	23.81	22.93
20	23.10	22.70	21.92	---	22.20	19.90	21.35	21.18	21.98	23.18	23.73	23.02
21	23.12	22.47	21.66	---	22.13	19.84	21.28	21.22	22.01	23.16	23.62	23.01
22	23.15	22.53	21.69	21.63	21.88	20.05	21.39	21.20	22.08	23.12	23.55	22.95
23	23.21	22.66	21.80	21.67	21.55	20.21	21.62	21.15	22.23	23.32	23.53	22.68
24	23.22	22.68	21.80	21.96	21.60	20.35	21.71	20.97	22.39	23.58	23.55	23.03
25	23.17	22.70	---	---	21.69	20.38	21.66	20.78	22.45	23.66	23.51	23.06
26	23.11	22.71	---	---	21.63	20.58	21.73	20.79	22.42	23.62	23.47	23.06
27	23.14	22.67	---	22.10	21.43	20.74	22.00	20.82	22.51	23.51	23.43	22.98
28	23.13	22.67	---	---	21.37	20.82	22.05	20.79	22.60	23.33	23.45	22.91
29	23.10	---	---	---	---	20.99	22.10	20.75	22.72	23.40	23.38	23.05
30	22.99	---	---	---	---	21.02	22.18	20.87	22.80	23.47	23.35	23.12
31	23.01	---	---	22.17	---	21.18	---	20.87	---	23.47	23.35	---
MEAN	23.18	22.79	22.46	21.41	21.92	20.65	21.33	21.32	21.51	23.17	23.57	22.97
MAX	23.30	22.99	22.92	22.17	22.20	21.38	22.18	22.40	22.80	23.66	24.20	23.27
MIN	22.99	22.47	21.66	20.79	21.37	19.74	20.69	20.75	20.40	22.77	23.35	22.68



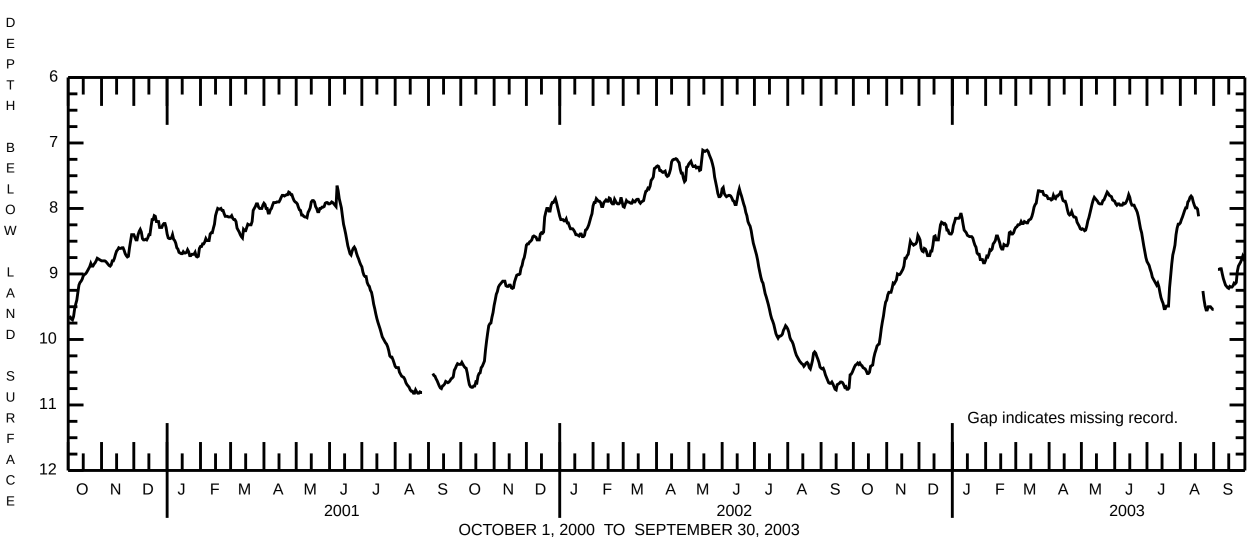
FOREST COUNTY

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.--Data collection platform with 60-minute recording interval since June 7, 2001. Satellite telemetry at station
DATUM.--Elevation of land-surface datum is 1,780 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of plywood table, 1.47 ft above land-surface datum. Prior to June 7, 2001, top of casing, 1.40 ft above land-surface datum.
REMARKS.--In addition to the daily maximum water level table shown below, daily minimum and mean water levels, since June 2001, are available from the District Office. Well pumping and cleanout on Aug. 19, 2003 caused water levels to be about 0.9 ft lower.
PERIOD OF RECORD.--August 1973 to current year.
EXTREMES FOR PERIOD OF RECORD.--Prior to October 2000, the extremes were based on extremes of the daily maximum depth below land-surface datum. Since that date, the extremes are based on the instantaneous depth below land-surface datum.
Highest water level, 7.06 ft below land-surface datum, May 14, 15, 2002; lowest, 12.07 ft below land-surface datum, Sept. 18, 19, 1982.
EXTREMES FOR CURRENT YEAR.--Highest water level, 7.71 ft below land-surface datum, Mar. 22, 23, 26, Apr. 12; lowest, 10.52 ft below land-surface datum, Oct. 14, 15.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10.46	9.40	8.44	8.36	8.79	8.29	7.85	8.32	7.89	8.81	8.22	9.54
2	10.42	9.32	8.48	8.26	8.73	8.28	7.85	8.31	7.93	8.84	8.17	---
3	10.39	9.28	8.61	8.21	8.74	8.25	7.87	8.32	7.95	8.87	8.13	---
4	10.38	9.28	8.65	8.15	8.70	8.25	7.86	8.34	7.93	8.93	8.08	---
5	10.36	9.28	8.66	8.15	8.63	8.24	7.80	8.33	7.93	8.98	8.03	8.93
6	10.38	9.22	8.61	8.15	8.64	8.20	7.84	8.27	7.95	9.05	7.99	8.93
7	10.36	9.14	8.62	8.15	8.62	8.23	7.85	8.19	7.95	9.08	7.99	8.92
8	10.39	9.15	8.66	8.13	8.54	8.23	7.81	8.14	7.95	9.11	7.90	8.92
9	10.40	9.12	8.72	8.07	8.52	8.20	7.81	8.07	7.92	9.14	7.88	9.00
10	10.43	9.09	8.72	8.14	8.49	8.21	7.79	8.00	7.93	9.17	7.83	9.07
11	10.44	9.00	8.72	8.24	8.42	8.22	7.78	7.93	7.92	9.14	7.81	9.12
12	10.45	9.01	8.65	8.33	8.42	8.22	7.73	7.87	7.89	9.19	7.83	9.17
13	10.48	9.01	8.65	8.35	8.47	8.18	7.83	7.83	7.85	9.28	7.90	9.19
14	10.52	8.99	8.56	8.37	8.52	8.17	7.88	7.85	7.79	9.36	7.95	9.21
15	10.52	8.96	8.43	8.41	8.59	8.16	7.89	7.87	7.83	9.41	7.99	9.22
16	10.50	8.93	8.42	8.42	8.62	8.12	7.89	7.89	7.91	9.45	7.99	9.19
17	10.41	8.88	8.48	8.43	8.62	8.06	7.94	7.92	7.95	9.53	8.01	9.20
18	10.40	8.76	8.48	8.43	8.55	7.98	8.02	7.93	7.95	9.53	8.12	9.20
19	10.39	8.76	8.48	8.43	8.56	7.94	8.08	7.93	7.95	9.49	---	9.18
20	10.28	8.72	8.36	8.45	8.57	7.92	8.10	7.93	7.99	9.49	---	9.14
21	10.21	8.70	8.25	8.51	8.57	7.82	8.09	7.88	8.02	9.49	---	9.15
22	10.16	8.60	8.21	8.56	8.53	7.73	8.05	7.87	8.06	9.21	9.26	9.13
23	10.10	8.50	8.22	8.59	8.37	7.73	8.10	7.83	8.13	9.03	9.39	8.96
24	10.08	8.53	8.24	8.68	8.36	7.74	8.13	7.79	8.22	8.85	9.49	8.88
25	10.07	8.54	8.23	8.70	8.39	7.74	8.13	7.75	8.31	8.71	9.55	8.85
26	9.96	8.56	8.25	8.70	8.39	7.74	8.14	7.77	8.37	8.64	9.55	8.82
27	9.83	8.55	8.33	8.78	8.37	7.79	8.21	7.80	8.47	8.56	9.50	8.78
28	9.73	8.54	8.33	8.78	8.32	7.80	8.24	7.81	8.57	8.40	9.50	8.73
29	9.64	8.51	8.38	8.78	---	7.80	8.27	7.82	8.66	8.30	9.50	8.77
30	9.52	8.41	8.39	8.83	---	7.81	8.31	7.87	8.75	8.24	9.52	8.81
31	9.43	---	8.39	8.83	---	7.85	---	7.88	---	8.24	9.54	---
MEAN	10.23	8.89	8.47	8.43	8.54	8.03	7.97	7.98	8.06	9.02	8.52	9.04
MAX	10.52	9.40	8.72	8.83	8.79	8.29	8.31	8.34	8.75	9.53	9.55	9.54
MIN	9.43	8.41	8.21	8.07	8.32	7.73	7.73	7.75	7.79	8.24	7.81	8.73



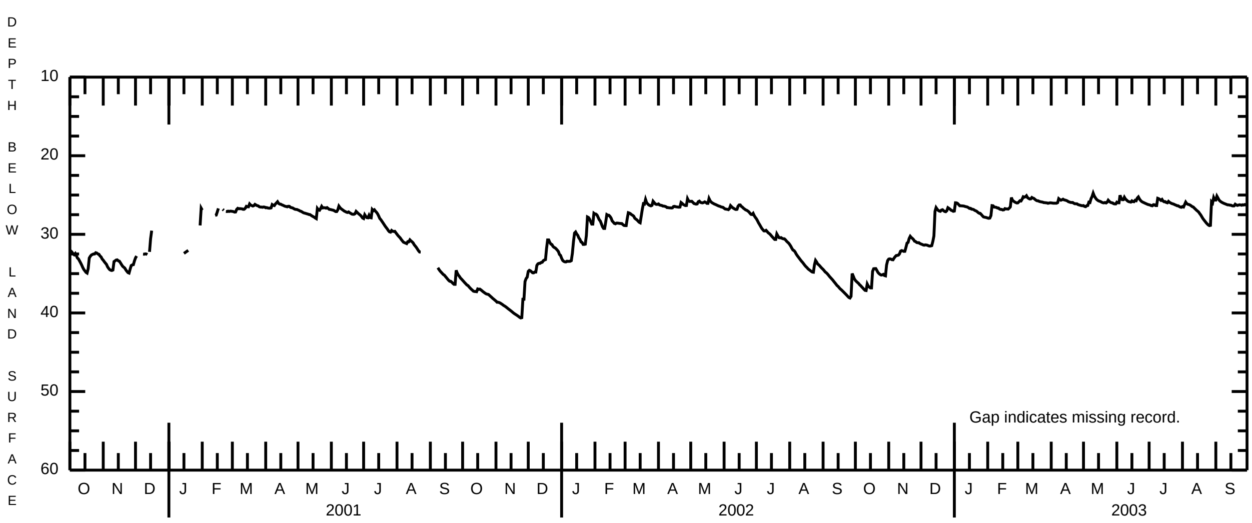
GREENE COUNTY

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. Data collection platform with 60-minute recording interval since Sept. 7, 2001. Satellite telemetry at station.
DATUM.--Elevation of land-surface datum is 1,000 ft above National Geodetic Vertical Datum of 1929, 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.--Prior to October 2000, the extremes were based on extremes of the daily maximum depth below land-surface datum. Since that date, the extremes are based on the instantaneous depth below land-surface datum.
Highest water level, 22.10 ft below land-surface datum, Mar. 18, 1999; lowest, 52.38 ft below land-surface datum, Nov. 25, 26, 1999.
EXTREMES FOR CURRENT YEAR.--Highest water level, 23.01 ft below land-surface datum, Aug. 29; lowest, 37.15 ft below land-surface datum, Oct. 11.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	35.86	33.15	31.23	27.04	27.93	26.00	26.00	26.34	25.91	26.24	26.47	25.64
2	36.00	33.12	31.28	25.99	27.96	25.86	26.02	26.45	25.99	26.28	26.52	25.14
3	36.13	33.15	31.35	26.00	27.93	25.72	26.04	26.48	25.99	26.35	26.21	25.38
4	36.25	33.23	31.38	26.07	27.61	25.75	26.04	26.36	25.03	26.37	25.90	25.64
5	36.42	33.24	31.34	26.22	26.35	25.52	26.04	26.33	25.43	26.23	26.10	25.78
6	36.54	33.02	31.36	26.37	26.37	25.22	26.04	25.91	25.59	26.24	26.18	25.88
7	36.70	32.84	31.39	26.37	26.53	25.28	25.97	25.95	25.59	26.34	26.21	25.96
8	36.84	32.70	31.46	26.38	26.55	25.23	25.46	25.47	25.28	26.34	26.27	26.03
9	36.99	32.68	31.49	26.39	26.57	25.09	25.57	25.19	25.51	25.42	26.36	26.09
10	37.13	32.65	31.48	26.41	26.65	25.33	25.66	24.76	25.63	25.47	26.47	26.14
11	37.15	32.49	31.44	26.46	26.65	25.43	25.61	25.11	25.76	25.56	26.52	26.20
12	36.32	32.14	30.90	26.49	26.78	25.50	25.53	25.33	25.84	25.68	26.66	26.25
13	36.59	32.07	30.21	26.52	26.83	25.49	25.62	25.53	25.87	25.56	26.79	26.25
14	36.72	32.11	27.07	26.60	26.83	25.31	25.65	25.65	25.90	25.77	26.93	26.29
15	36.82	32.17	26.60	26.70	26.90	25.39	25.69	25.74	25.74	25.86	27.04	26.29
16	36.82	32.16	26.80	26.69	26.88	25.44	25.75	25.79	25.84	25.84	27.16	26.36
17	34.71	31.67	26.96	26.80	26.73	25.56	25.85	25.84	25.85	25.95	27.36	26.39
18	34.38	31.12	27.04	26.81	26.77	25.67	25.89	25.92	25.67	25.99	27.54	26.38
19	34.36	31.03	27.07	26.86	26.77	25.73	25.94	25.98	25.72	25.81	27.77	26.17
20	34.36	30.53	26.91	26.96	26.79	25.74	25.95	26.00	25.39	25.93	28.00	26.26
21	34.60	30.25	26.87	27.01	26.67	25.82	25.95	25.95	25.24	26.01	28.18	26.32
22	34.85	30.41	27.00	27.09	26.51	25.85	26.05	26.01	25.49	26.08	28.35	26.28
23	35.00	30.52	27.09	27.22	25.32	25.88	26.11	25.91	25.68	26.12	28.53	26.24
24	35.11	30.66	27.12	27.31	25.66	25.90	26.11	25.66	25.82	26.17	28.68	26.26
25	35.18	30.87	27.00	27.33	25.78	25.96	26.12	25.81	25.90	26.24	28.81	26.30
26	35.16	30.92	26.61	27.47	25.88	25.97	26.22	25.92	25.96	26.29	28.89	26.24
27	35.09	31.04	26.70	27.63	25.95	25.99	26.26	25.98	26.03	26.36	28.86	26.27
28	35.24	31.07	26.80	27.78	26.01	26.00	26.30	26.00	26.09	26.37	25.86	26.21
29	35.28	31.06	26.94	27.82	---	26.05	26.34	26.10	26.15	26.46	26.01	26.27
30	33.91	31.17	26.99	27.84	---	26.02	26.36	26.13	26.21	26.53	25.33	26.30
31	33.34	---	27.07	27.88	---	25.99	---	26.13	---	26.56	25.64	---
MEAN	35.67	31.84	28.74	26.86	26.65	25.67	25.94	25.86	25.74	26.08	27.02	26.11
MAX	37.15	33.24	31.49	27.88	27.96	26.05	26.36	26.48	26.21	26.56	28.89	26.39
MIN	33.34	30.25	26.60	25.99	25.32	25.09	25.46	24.76	25.03	25.42	25.33	25.14



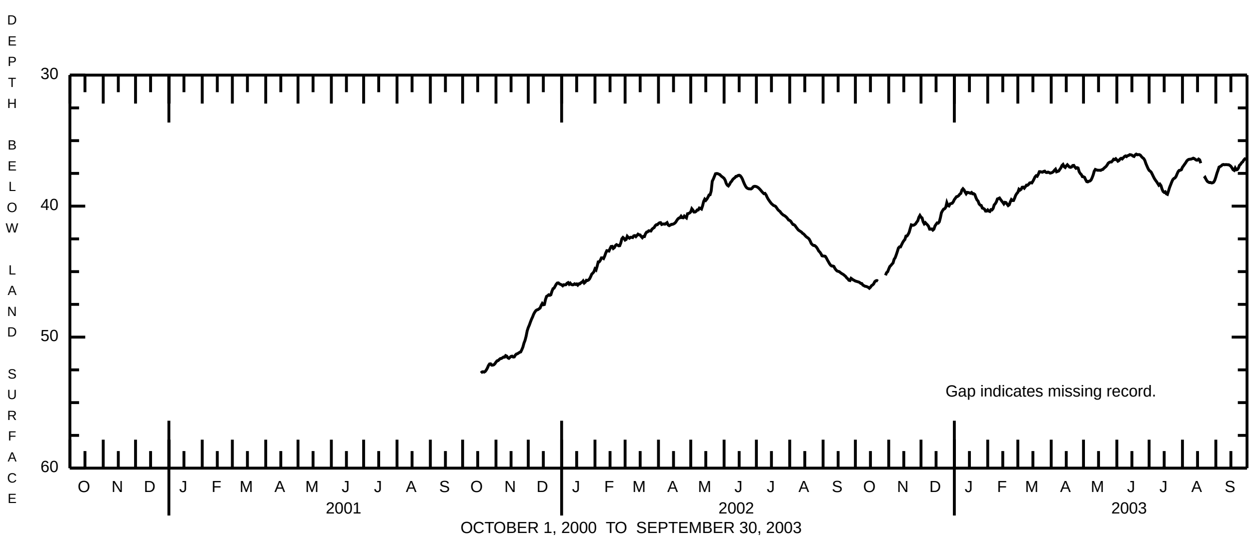
INDIANA COUNTY

405320078483901. Local number, IN 919.

LOCATION.--Lat 40°53'20", long 78°48'39", Hydrologic Unit 02050201, at State Game Lands 174.
Owner: U.S. Geological Survey.
AQUIFER.--Pottsville Formation, Middle Pennsylvanian age.
WELL CHARACTERISTICS.--Drilled observation well, diameter 6 in., depth 140 ft, cased to 18 ft.
INSTRUMENTATION.--Data collection platform with 60-minute recording interval. Satellite telemetry at station.
DATUM.--Elevation of land-surface datum is 1,620 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of instrument shelf, 3.00 ft above land-surface datum.
REMARKS.--In addition to the daily mean water level table shown below, daily maximum and minimum water levels are available from the District Office.
PERIOD OF RECORD.--October 2001 to current year.
EXTREMES FOR PERIOD OF RECORD.--The extremes shown are extremes of the instantaneous depth below land surface for the period of record indicated above.
Highest water level, 36.03 ft below land-surface datum, June 19, 2003; lowest, 52.76 ft below land-surface datum, Oct. 18, 2001.
EXTREMES FOR CURRENT YEAR.--Highest water level, 36.03 ft below land-surface datum, June 19; lowest, 46.30 ft below land-surface datum, Oct. 14.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	45.72	44.80	40.84	39.50	40.29	38.95	37.46	37.76	36.47	37.27	37.03	37.78
2	45.74	44.61	40.90	39.39	40.38	38.71	37.43	37.80	36.57	37.33	36.92	37.50
3	45.77	44.53	41.20	39.28	40.41	38.78	37.37	37.98	36.52	37.42	36.80	37.27
4	45.79	44.43	41.35	39.26	40.27	38.72	37.26	38.13	36.40	37.58	36.69	37.02
5	45.83	44.34	41.26	39.20	40.29	38.56	37.18	38.15	36.35	37.75	36.55	36.98
6	45.90	44.06	41.35	39.09	40.18	38.55	37.38	38.10	36.40	37.91	36.47	36.93
7	45.91	43.94	41.43	39.03	39.91	38.63	37.35	38.08	36.31	38.03	36.43	36.85
8	46.03	43.72	41.54	38.77	39.82	38.52	37.32	38.01	36.22	38.14	36.42	36.82
9	46.07	43.47	41.76	38.67	39.68	38.40	37.20	37.84	36.17	38.27	36.41	36.84
10	46.12	43.20	41.76	38.76	39.45	38.41	37.08	37.62	36.22	38.40	36.38	36.83
11	46.13	43.11	41.74	38.93	39.42	38.34	36.90	37.33	36.15	38.32	36.34	36.83
12	46.16	43.11	41.83	39.06	39.38	38.23	36.82	37.20	36.13	38.43	36.37	36.84
13	46.20	42.94	41.76	38.95	39.50	38.21	36.99	37.23	36.07	38.70	36.44	36.84
14	46.27	42.77	41.51	38.96	39.61	38.23	37.05	37.26	36.08	38.88	36.49	36.89
15	46.19	42.64	41.39	38.99	39.71	38.10	36.93	37.26	36.11	38.95	36.49	36.96
16	46.07	42.55	41.28	39.02	39.83	37.94	36.84	37.26	36.18	38.91	36.41	37.08
17	46.02	42.29	41.30	38.96	39.71	37.77	36.93	37.27	36.21	39.06	36.47	37.22
18	45.94	42.28	41.20	39.06	39.73	37.68	37.02	37.22	36.09	39.10	36.72	37.27
19	45.77	42.16	40.89	39.05	39.85	37.72	37.04	37.20	36.03	38.85	---	37.09
20	45.70	42.00	40.50	39.11	39.96	37.57	37.01	37.11	36.08	38.58	---	37.23
21	45.68	41.70	40.35	39.34	39.90	37.37	36.90	37.04	36.07	38.37	37.88	37.21
22	45.73	41.43	40.23	39.52	39.67	37.37	36.89	36.97	36.07	38.16	37.80	37.09
23	---	41.46	40.20	39.61	39.50	37.40	37.02	36.86	36.12	37.98	37.97	36.88
24	---	41.46	40.09	39.83	39.57	37.41	37.11	36.72	36.23	37.89	38.10	36.81
25	---	41.42	39.74	39.92	39.57	37.35	37.06	36.66	36.31	37.85	38.16	36.68
26	---	41.35	39.96	39.95	39.39	37.33	37.09	36.63	36.37	37.74	38.20	36.62
27	---	41.22	39.99	40.15	39.17	37.42	37.37	36.63	36.51	37.54	38.19	36.48
28	---	41.12	39.83	40.18	39.04	37.44	37.51	36.54	36.75	37.36	38.23	36.39
29	45.28	40.86	39.80	40.23	---	37.40	37.59	36.42	36.94	37.27	38.22	36.42
30	45.08	40.71	39.78	40.38	---	37.43	37.75	36.45	37.13	37.26	38.17	36.48
31	45.01	---	39.67	40.38	---	37.48	---	36.38	---	37.22	38.03	---
MEAN	45.84	42.66	40.85	39.37	39.76	37.98	37.16	37.26	36.31	38.08	37.13	36.94
MAX	46.27	44.80	41.83	40.38	40.41	38.95	37.75	38.15	37.13	39.10	38.23	37.78
MIN	45.01	40.71	39.67	38.67	39.04	37.33	36.82	36.38	36.03	37.22	36.34	36.39



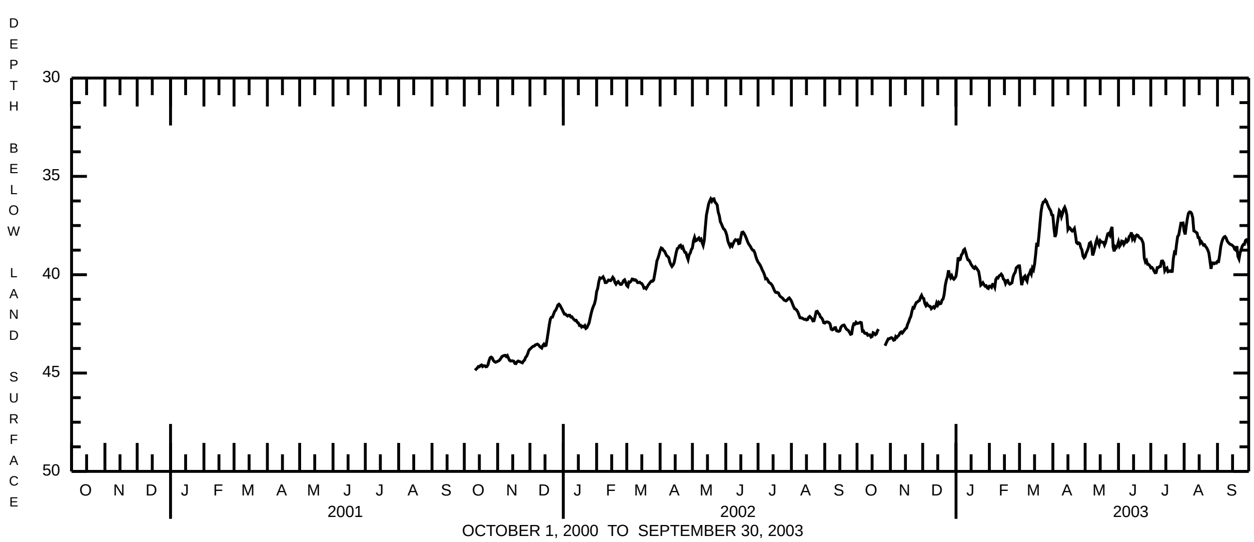
JEFFERSON COUNTY

411734078522101. Local number, JE 425.

LOCATION.--Lat 41°17'34", long 78°52'21", Hydrologic Unit 05010006, at State Game Lands 54.
Owner: U.S. Geological Survey.
AQUIFER.--Pottsville Formation, Middle Pennsylvanian age.
WELL CHARACTERISTICS.--Drilled observation well, diameter 6 in., depth 152 ft, cased to 20 ft.
INSTRUMENTATION.--Data collection platform with 60-minute recording interval. Satellite telemetry at station.
DATUM.--Elevation of land-surface datum is 2,030 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 1.30 ft above land-surface datum.
REMARKS.--In addition to the daily mean water level table shown below, daily maximum and minimum water levels are available from the District Office.
PERIOD OF RECORD.--October 2001 to current year.
EXTREMES FOR PERIOD OF RECORD.--The extremes shown are extremes of the instantaneous depth below land surface for the period of record indicated above.
Highest water level, 36.10 ft below land-surface datum, May 21, 2002; lowest, 44.90 ft below land-surface datum, Oct. 11, 2001.
EXTREMES FOR CURRENT YEAR.--Highest water level, 36.17 ft below land-surface datum, Mar. 25; lowest, 43.67 ft below land-surface datum, Oct. 27.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	42.48	43.22	41.18	40.07	40.58	39.55	36.98	39.08	38.33	39.65	37.78	39.32
2	42.47	43.20	41.21	39.68	40.58	40.03	37.62	38.90	38.56	39.63	37.95	39.33
3	42.45	43.24	41.46	39.12	40.64	40.53	38.08	38.78	38.48	39.69	37.51	39.00
4	42.42	43.33	41.57	39.25	40.49	40.32	37.91	38.63	38.29	39.81	37.14	38.58
5	42.44	43.31	41.48	39.22	40.50	40.13	37.43	38.40	38.31	39.90	36.88	38.34
6	42.87	43.14	41.56	38.99	40.63	40.07	37.07	38.36	38.46	39.89	36.81	38.18
7	42.86	43.19	41.60	38.93	40.24	40.24	36.74	38.54	38.37	39.64	36.82	38.09
8	42.97	43.13	41.61	38.75	40.15	40.33	36.81	39.02	38.23	39.64	36.89	38.06
9	42.99	43.07	41.73	38.70	40.17	40.04	37.05	38.85	38.32	39.59	37.10	38.13
10	42.98	42.95	41.68	38.86	40.06	39.97	36.89	38.64	38.26	39.58	37.77	38.28
11	43.08	42.91	41.63	39.08	40.03	39.83	36.67	38.35	38.05	39.31	37.80	38.36
12	43.06	42.97	41.69	39.24	39.97	39.96	36.57	38.19	38.01	39.30	37.84	38.42
13	43.06	42.90	41.61	39.26	40.04	39.66	36.71	38.38	37.85	39.39	37.88	38.46
14	43.17	42.82	41.43	39.35	40.22	39.75	36.97	38.50	38.18	39.80	38.11	38.48
15	43.14	42.75	41.54	39.48	40.27	39.47	37.69	38.27	38.08	39.71	38.12	38.52
16	42.95	42.71	41.41	39.55	40.44	38.97	37.59	38.33	38.21	39.66	38.39	38.57
17	42.98	42.52	41.48	39.64	40.31	38.38	37.63	38.35	38.04	39.85	38.32	38.71
18	43.05	42.40	41.46	39.68	40.29	38.57	37.73	38.35	37.98	39.83	38.41	38.75
19	43.01	42.23	41.29	39.60	40.43	38.02	37.78	38.49	38.00	39.80	38.50	38.55
20	42.85	42.12	41.23	39.66	40.48	37.41	37.73	38.36	38.09	39.84	38.48	39.07
21	42.77	41.87	41.00	39.75	40.45	36.81	37.65	38.13	38.14	39.83	38.57	39.20
22	---	41.67	40.54	39.83	40.41	36.47	37.98	37.92	38.16	39.18	38.64	38.89
23	---	41.69	40.28	40.13	40.11	36.31	38.37	37.89	38.27	38.86	38.75	38.72
24	---	41.54	40.11	40.53	39.88	36.29	38.42	37.99	38.41	38.90	38.90	38.55
25	---	41.42	39.78	40.48	39.88	36.20	38.38	37.72	39.16	38.43	39.29	38.46
26	---	41.39	40.01	40.41	39.65	36.27	38.42	37.57	39.35	38.05	39.70	38.46
27	43.61	41.34	40.15	40.51	39.60	36.42	38.63	38.60	39.28	37.98	39.40	38.26
28	43.49	41.31	40.05	40.58	39.55	36.55	38.74	38.81	39.47	37.68	39.40	38.22
29	43.37	41.15	40.18	40.56	---	36.66	39.05	38.57	39.48	37.38	39.44	38.25
30	43.26	41.05	40.23	40.67	---	36.75	39.14	38.62	39.53	37.38	39.40	38.53
31	43.26	---	40.17	40.70	---	36.96	---	38.51	---	37.37	39.41	---
MEAN	42.96	42.42	41.04	39.69	40.22	38.48	37.68	38.42	38.45	39.18	38.24	38.56
MAX	43.61	43.33	41.73	40.70	40.64	40.53	39.14	39.08	39.53	39.90	39.70	39.33
MIN	42.42	41.05	39.78	38.70	39.55	36.20	36.57	37.57	37.85	37.37	36.81	38.06



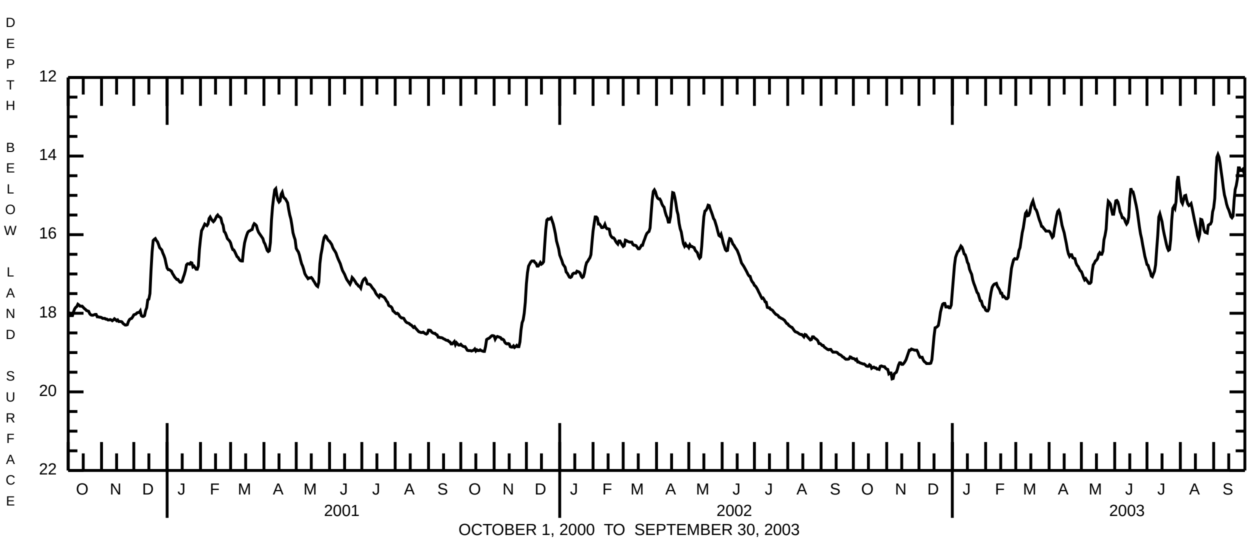
LAWRENCE COUNTY

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 National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 3.40 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. Well pumping and cleanout on Aug. 19, 2003 caused water levels to be about 1.1 ft higher.
PERIOD OF RECORD.--November 1967 to current year.
EXTREMES FOR PERIOD OF RECORD.--Prior to October 2000, the extremes were based on extremes of the daily maximum depth below land-surface datum. Since that date, the extremes are based on the instantaneous depth below land-surface datum.
Highest water level, 12.25 ft below land-surface datum, May 19, 1978; lowest, 22.94 ft below land-surface datum, Apr. 15, 1986.
EXTREMES FOR CURRENT YEAR.--Highest water level, 13.89 ft below land-surface datum, Sept. 4, 5; lowest, 19.67 ft below land-surface datum, Nov. 6.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19.15	19.42	19.07	17.45	17.92	16.62	15.91	16.94	15.31	16.76	14.94	15.32
2	19.16	19.43	19.12	17.12	17.94	16.62	15.94	17.01	15.14	16.78	15.16	15.08
3	19.19	19.54	19.12	16.78	17.94	16.56	16.01	17.09	15.13	16.87	15.21	14.48
4	19.17	19.52	19.12	16.58	17.89	16.40	16.07	17.15	15.17	16.94	15.11	14.03
5	19.24	19.52	19.19	16.50	17.64	16.33	16.04	17.12	15.28	17.05	15.01	13.96
6	19.24	19.67	19.23	16.43	17.47	16.14	15.84	17.16	15.42	17.07	15.00	14.03
7	19.26	19.66	19.25	16.41	17.34	15.95	15.70	17.20	15.48	17.00	15.13	14.19
8	19.27	19.54	19.28	16.35	17.29	15.83	15.52	17.24	15.57	16.93	15.22	14.40
9	19.28	19.52	19.28	16.29	17.26	15.65	15.41	17.24	15.57	16.77	15.26	14.59
10	19.29	19.50	19.28	16.32	17.25	15.46	15.38	17.21	15.60	16.38	15.24	14.81
11	19.29	19.42	19.28	16.39	17.24	15.42	15.45	16.95	15.68	16.02	15.21	14.99
12	19.31	19.32	19.27	16.49	17.32	15.52	15.61	16.77	15.73	15.55	15.33	15.09
13	19.34	19.26	19.18	16.51	17.36	15.51	15.76	16.73	15.69	15.47	15.47	15.22
14	19.35	19.26	18.89	16.59	17.41	15.44	15.86	16.67	15.56	15.57	15.61	15.31
15	19.35	19.30	18.59	16.70	17.49	15.29	15.95	16.65	15.07	15.67	15.74	15.37
16	19.31	19.30	18.37	16.75	17.49	15.20	16.09	16.61	14.82	15.85	15.86	15.45
17	19.33	19.27	18.36	16.88	17.58	15.14	16.22	16.50	14.90	15.99	16.02	15.54
18	19.40	19.23	18.34	16.95	17.57	15.24	16.38	16.46	14.91	16.11	16.10	15.57
19	19.38	19.18	18.31	17.01	17.60	15.34	16.49	16.50	15.01	16.24	15.99	15.53
20	19.37	19.10	18.16	17.15	17.63	15.37	16.55	16.50	15.14	16.34	15.61	15.13
21	19.39	19.02	17.97	17.24	17.63	15.44	16.51	16.42	15.26	16.40	15.62	14.85
22	19.39	18.94	17.86	17.31	17.60	15.54	16.51	16.13	15.41	16.38	15.72	14.75
23	19.42	18.94	17.77	17.39	17.34	15.63	16.59	16.02	15.61	16.13	15.88	14.59
24	19.42	18.91	17.75	17.47	17.10	15.70	16.60	15.86	15.81	15.64	15.94	14.30
25	19.43	18.92	17.75	17.50	16.86	15.79	16.61	15.41	15.98	15.33	15.95	14.30
26	19.35	18.93	17.84	17.59	16.74	15.80	16.72	15.15	16.10	15.28	15.96	14.37
27	19.34	18.94	17.84	17.68	16.64	15.84	16.78	15.18	16.26	15.33	15.76	14.37
28	19.35	18.94	17.83	17.69	16.61	15.87	16.81	15.22	16.40	15.16	15.74	14.34
29	19.36	18.94	17.86	17.79	---	15.91	16.87	15.36	16.55	14.65	15.73	14.41
30	19.36	18.99	17.86	17.84	---	15.91	16.92	15.48	16.65	14.51	15.67	14.49
31	19.40	---	17.79	17.85	---	15.91	---	15.48	---	14.76	15.42	---
MEAN	19.32	19.25	18.54	17.00	17.40	15.75	16.17	16.43	15.54	16.03	15.54	14.76
MAX	19.43	19.67	19.28	17.85	17.94	16.62	16.92	17.24	16.65	17.07	16.10	15.57
MIN	19.15	18.91	17.75	16.29	16.61	15.14	15.38	15.15	14.82	14.51	14.94	13.96



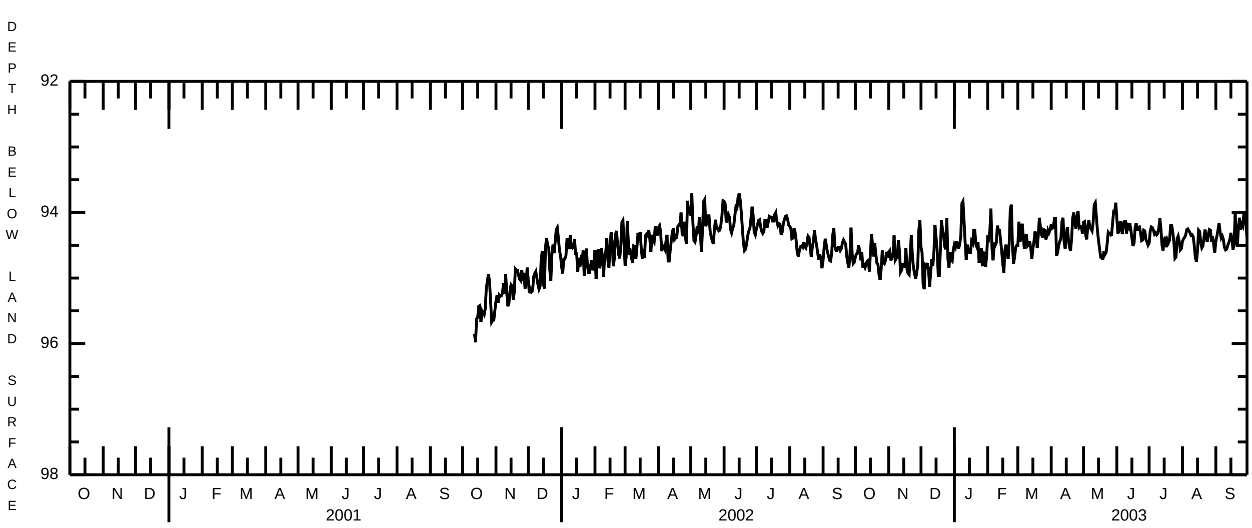
McKEAN COUNTY

414509078343401. Local number, MC 125.

LOCATION.--Lat 41°45'09", long 78°34'34", Hydrologic Unit 05010001, at State Game Lands 62.
Owner: U.S. Geological Survey.
AQUIFER.--Pottsville Formation, Middle Pennsylvanian age.
WELL CHARACTERISTICS.--Drilled observation well, diameter 6 in., depth 173.5 ft, cased to 17 ft.
INSTRUMENTATION.--Data collection platform with 60-minute recording interval. Satellite telemetry at station.
DATUM.--Elevation of land-surface datum is 2,169 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 3.00 ft above land-surface datum.
REMARKS.--In addition to the daily mean water level table shown below, daily maximum and minimum water levels are available from the District Office.
PERIOD OF RECORD.--October 2001 to current year.
EXTREMES FOR PERIOD OF RECORD.--The extremes shown are extremes of the instantaneous depth below land surface for the period of record indicated above.
Highest water level, 93.45 ft below land-surface datum, Feb. 23, 2003; lowest, 96.03 ft below land-surface datum, Oct. 13, 2001.
EXTREMES FOR CURRENT YEAR.--Highest water level, 93.45 ft below land-surface datum, Feb. 23; lowest, 95.25 ft below land-surface datum, Dec. 3.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	94.68	94.60	94.53	94.49	94.35	94.50	94.18	94.15	94.09	94.47	94.44	94.44
2	94.63	94.58	94.61	94.53	94.39	94.14	94.24	94.14	94.32	94.29	94.40	94.36
3	94.62	94.73	95.10	94.44	94.28	94.45	94.23	94.34	94.28	94.22	94.38	94.27
4	94.50	94.69	95.17	94.49	93.94	94.39	94.09	94.41	94.15	94.23	94.34	94.16
5	94.58	94.66	94.80	94.55	94.55	94.17	94.09	94.21	94.15	94.27	94.26	94.30
6	94.73	94.35	94.82	94.48	94.73	94.35	94.66	94.12	94.33	94.33	94.25	94.39
7	94.61	94.73	94.77	94.36	94.46	94.55	94.61	94.23	94.21	94.31	94.28	94.36
8	94.84	94.70	94.88	93.86	94.50	94.37	94.50	94.25	94.14	94.34	94.31	94.41
9	94.80	94.68	95.13	93.83	94.46	94.33	94.44	94.28	94.14	94.32	94.35	94.53
10	94.84	94.42	94.92	94.12	94.20	94.51	94.40	94.15	94.32	94.24	94.34	94.57
11	94.79	94.59	94.71	94.45	94.27	94.49	94.14	93.88	94.20	94.09	94.37	94.56
12	94.74	94.91	94.81	94.72	94.27	94.44	94.08	93.85	94.23	94.26	94.51	94.51
13	94.73	94.88	94.61	94.49	94.43	94.54	94.45	94.07	94.16	94.50	94.69	94.46
14	94.90	94.79	94.19	94.58	94.59	94.71	94.55	94.28	94.26	94.58	94.75	94.41
15	94.62	94.79	94.38	94.61	94.78	94.55	94.34	94.43	94.39	94.42	94.58	94.31
16	94.33	94.84	94.56	94.61	94.92	94.44	94.22	94.56	94.51	94.37	94.27	94.41
17	94.49	94.54	94.96	94.44	94.57	94.29	94.41	94.68	94.47	94.53	94.29	94.57
18	94.67	94.87	94.96	94.47	94.49	94.34	94.53	94.68	94.23	94.42	94.46	94.48
19	94.47	94.93	94.58	94.27	94.61	94.54	94.58	94.72	94.16	94.46	94.54	94.00
20	94.63	94.95	94.12	94.27	94.71	94.35	94.39	94.59	94.28	94.42	94.51	94.44
21	94.77	94.63	94.26	94.49	94.47	94.08	94.08	94.64	94.23	94.20	94.38	94.52
22	94.79	94.34	94.33	94.53	93.94	94.22	94.00	94.61	94.22	94.20	94.26	94.22
23	94.95	94.66	94.52	94.45	93.88	94.34	94.17	94.48	94.30	94.30	94.38	94.08
24	95.03	94.84	94.56	94.77	94.50	94.38	94.25	94.30	94.43	94.45	94.45	94.26
25	94.86	94.93	94.09	94.66	94.78	94.26	94.05	94.32	94.42	94.70	94.33	94.18
26	94.58	95.01	94.71	94.54	94.68	94.27	93.98	94.32	94.27	94.68	94.26	94.21
27	94.76	94.92	94.84	94.82	94.53	94.41	94.23	94.36	94.28	94.40	94.27	94.02
28	94.78	94.80	94.61	94.61	94.50	94.37	94.21	94.17	94.41	94.36	94.45	94.02
29	94.73	94.27	94.72	94.62	---	94.27	94.21	93.99	94.45	94.44	94.36	94.19
30	94.60	94.12	94.74	94.83	---	94.31	94.32	94.00	94.50	94.57	94.49	94.39
31	94.69	---	94.57	94.67	---	94.27	---	93.85	---	94.55	94.61	---
MEAN	94.70	94.69	94.66	94.49	94.46	94.38	94.29	94.29	94.28	94.38	94.41	94.33
MAX	95.03	95.01	95.17	94.83	94.92	94.71	94.66	94.72	94.51	94.70	94.75	94.57
MIN	94.33	94.12	94.09	93.83	93.88	94.08	93.98	93.85	94.09	94.09	94.25	94.00



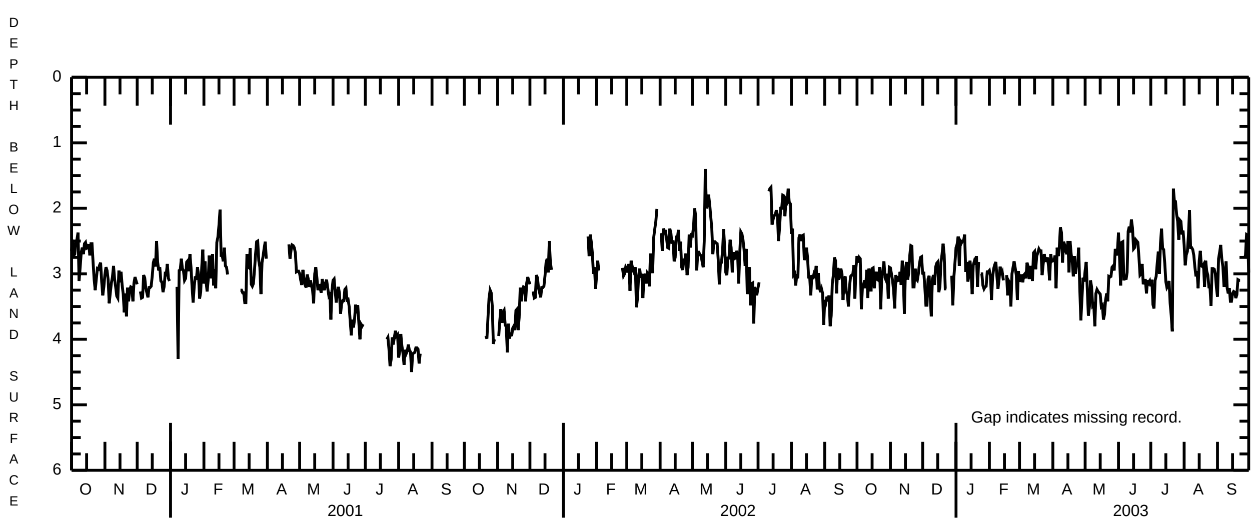
MERCER COUNTY

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 National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of plywood cover, 2.26 ft above land-surface datum.
REMARKS.--Water levels after Sept. 25, 1998 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.--Prior to October 2000, the extremes were based on extremes of the daily maximum depth below land-surface datum. Since that date, the extremes are based on the instantaneous depth below land-surface datum.
Highest water level, 0.25 ft below land-surface datum, Apr. 17, 1998; lowest, 8.31 ft below land-surface datum, Feb. 12, 1967.
EXTREMES FOR CURRENT YEAR.--Highest water level, 1.11 ft below land-surface datum, July 22; lowest, 3.88 ft below land-surface datum, July 21.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.73	2.91	3.01	2.60	2.95	3.12	2.80	2.95	2.37	3.19	2.56	3.35
2	2.83	3.00	2.97	2.55	3.04	3.08	2.80	2.82	2.77	3.09	2.87	2.77
3	2.75	3.10	3.20	2.43	3.40	3.01	2.72	3.24	3.18	3.47	2.71	2.67
4	2.77	3.26	3.48	2.88	3.05	3.13	3.22	3.64	2.52	3.53	2.66	2.56
5	3.54	3.53	3.48	2.50	2.92	3.02	2.60	3.50	2.51	3.10	2.41	2.77
6	3.21	3.02	3.08	2.53	2.86	3.00	2.73	3.10	3.10	3.04	2.03	2.89
7	3.17	3.09	3.03	2.50	2.82	3.07	2.59	3.20	3.02	2.84	2.60	3.18
8	3.10	3.04	3.34	2.50	3.04	2.83	2.29	3.49	3.09	2.66	2.60	3.18
9	3.22	3.12	3.65	2.40	3.23	2.89	2.37	3.47	2.98	3.00	2.63	2.81
10	2.94	2.97	3.08	2.97	3.08	3.08	2.83	3.80	2.35	2.54	2.72	3.22
11	3.37	3.17	3.02	2.82	2.89	2.90	2.51	3.30	2.28	2.31	2.90	3.30
12	2.92	2.80	3.17	3.12	3.02	2.90	2.56	3.24	2.37	2.61	3.04	3.22
13	2.98	3.09	2.90	3.02	2.98	3.11	2.66	3.27	2.17	2.63	2.96	3.42
14	3.27	3.61	2.84	2.80	3.10	2.68	2.70	3.29	2.30	2.84	3.22	3.42
15	2.92	2.93	2.82	2.97	---	2.66	2.50	3.31	2.62	3.12	2.80	3.30
16	2.91	2.82	3.28	3.31	---	2.93	2.98	3.50	2.60	3.21	2.65	3.27
17	3.22	3.09	3.20	2.87	3.02	2.73	2.50	3.48	2.48	3.18	2.88	3.28
18	3.03	3.00	2.83	2.81	3.33	2.68	2.70	3.70	2.50	3.11	2.89	3.37
19	2.97	2.72	2.70	2.86	3.11	2.62	2.81	3.62	2.52	3.45	2.86	3.32
20	3.09	2.57	2.54	2.73	3.14	2.65	3.04	3.40	2.75	3.64	3.20	3.09
21	3.10	2.58	2.71	3.20	3.50	2.65	2.73	3.30	3.02	3.88	2.80	3.10
22	2.90	3.20	3.23	2.82	3.00	3.02	3.00	3.42	3.00	1.70	2.96	3.10
23	3.54	3.20	3.23	---	2.90	2.85	2.86	3.04	2.85	1.90	3.02	---
24	3.03	2.92	---	3.00	2.81	2.70	2.85	3.05	3.16	1.90	3.20	---
25	2.95	3.08	---	3.00	2.91	2.80	2.60	3.04	3.10	2.09	3.20	---
26	2.81	3.10	---	3.18	3.02	2.80	3.22	2.90	3.10	2.20	3.49	2.76
27	3.06	3.00	---	3.23	3.40	2.75	3.71	2.88	3.30	2.48	2.92	2.72
28	3.10	2.85	3.03	3.20	2.96	2.89	3.39	2.95	3.10	2.18	2.92	2.40
29	3.00	2.75	3.48	3.19	---	3.10	3.06	2.62	3.14	2.20	2.93	2.41
30	3.38	2.74	3.05	2.97	---	2.70	3.12	2.72	3.11	2.40	3.00	2.98
31	2.90	---	2.83	2.97	---	2.81	---	2.65	---	2.34	3.21	---
MEAN	3.06	3.01	3.08	2.86	3.06	2.88	2.81	3.22	2.78	2.77	2.87	3.03
MAX	3.54	3.61	3.65	3.31	3.50	3.13	3.71	3.80	3.30	3.88	3.49	3.42
MIN	2.73	2.57	2.54	2.40	2.81	2.62	2.29	2.62	2.17	1.70	2.03	2.40



OCTOBER 1, 2000 TO SEPTEMBER 30, 2003

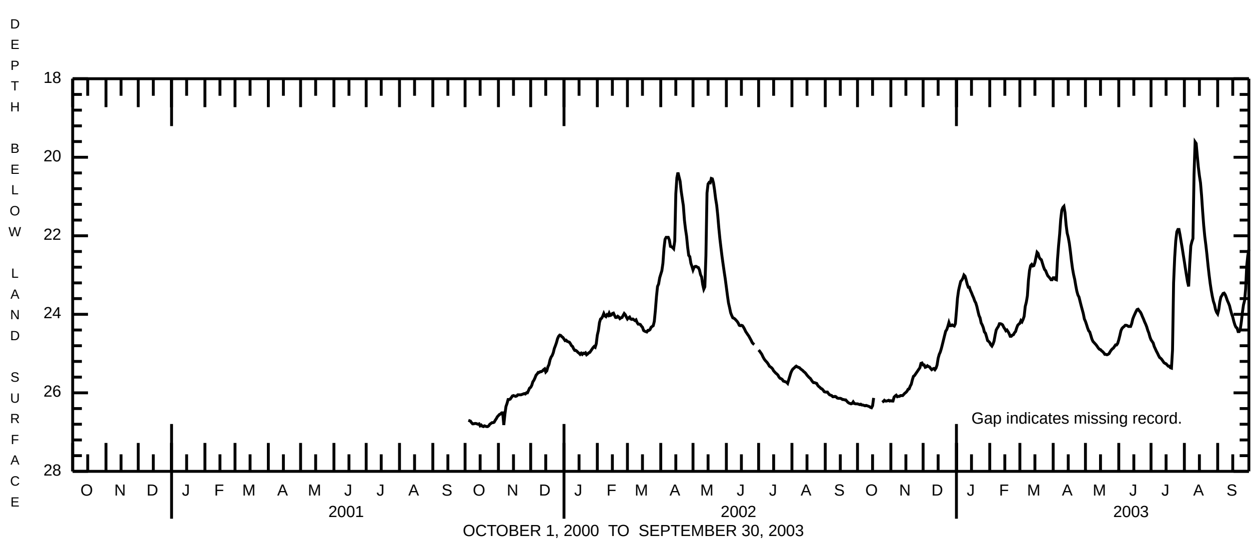
MERCER COUNTY

412739080104201. Local number, MR 3306.

LOCATION.--Lat 41°27'39", long 80°10'42", Hydrologic Unit 05010003, at State Game Lands 270.
Owner: U.S. Geological Survey.
AQUIFER.--Cuyahoga Group, Mississippian age.
WELL CHARACTERISTICS.--Drilled observation well, diameter 6 in., depth 120 ft, cased to 30 ft.
INSTRUMENTATION.--Data collection platform with 60-minute recording interval. Satellite telemetry at station.
DATUM.--Elevation of land-surface datum is 1,310 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 3.50 ft above land-surface datum.
REMARKS.--In addition to the daily mean water level table shown below, daily maximum and minimum water levels are available from the District Office.
PERIOD OF RECORD.--October 2001 to current year.
EXTREMES FOR PERIOD OF RECORD.--The extremes shown are extremes of the instantaneous depth below land surface for the period of record indicated above.
Highest water level, 19.53 ft below land-surface datum, Aug. 11, 2003; lowest, 27.64 ft below land-surface datum, Nov. 6, 2001.
EXTREMES FOR CURRENT YEAR.--Highest water level, 19.53 ft below land-surface datum, Aug. 11; lowest, 26.39 ft below land-surface datum, Oct. 13, 14.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26.28	26.20	25.29	23.93	24.72	24.23	23.07	24.18	24.65	24.65	22.66	23.99
2	26.29	26.21	25.29	23.59	24.78	24.16	23.07	24.26	24.54	24.69	22.84	23.88
3	26.30	26.21	25.35	23.39	24.81	24.19	23.11	24.35	24.42	24.73	23.01	23.68
4	26.29	26.11	25.34	23.27	24.76	24.13	23.12	24.42	24.36	24.82	23.18	23.56
5	26.31	26.08	25.31	23.16	24.68	24.05	22.61	24.45	24.33	24.88	23.29	23.52
6	26.31	26.06	25.33	23.13	24.53	23.80	22.25	24.54	24.31	24.94	22.71	23.47
7	26.32	26.10	25.34	23.08	24.40	23.69	21.96	24.63	24.28	24.99	22.26	23.46
8	26.33	26.09	25.38	23.00	24.35	23.53	21.58	24.69	24.28	25.05	22.15	23.50
9	26.32	26.09	25.41	23.03	24.31	23.13	21.35	24.72	24.29	25.10	22.07	23.57
10	26.33	26.07	25.39	23.12	24.24	22.88	21.28	24.75	24.31	25.12	20.44	23.65
11	26.34	26.07	25.38	23.23	24.24	22.76	21.25	24.78	24.31	25.15	19.61	23.71
12	26.35	26.07	25.41	23.31	24.25	22.73	21.41	24.82	24.31	25.19	19.65	23.78
13	26.37	26.04	25.37	23.31	24.27	22.77	21.72	24.86	24.24	25.23	19.96	23.89
14	26.38	26.01	25.29	23.39	24.33	22.76	21.93	24.89	24.12	25.25	20.25	23.99
15	26.33	25.99	25.12	23.45	24.37	22.68	22.04	24.90	24.05	25.26	20.47	24.07
16	26.13	25.96	25.02	23.52	24.42	22.55	22.19	24.93	23.99	25.29	20.65	24.18
17	---	25.91	24.96	23.58	24.40	22.42	22.40	24.95	23.93	25.32	20.97	24.27
18	---	25.90	24.87	23.66	24.44	22.45	22.64	24.98	23.88	25.32	21.38	24.33
19	---	25.83	24.76	23.71	24.49	22.55	22.84	25.02	23.87	25.36	21.74	24.35
20	---	25.78	24.65	23.80	24.56	22.59	22.99	25.02	23.91	25.37	22.02	24.44
21	---	25.67	24.54	23.92	24.56	22.61	23.11	25.03	23.94	24.91	22.24	24.44
22	---	25.58	24.43	24.03	24.53	22.70	23.27	25.02	23.99	23.20	22.48	24.38
23	---	25.56	24.39	24.09	24.52	22.79	23.41	25.00	24.06	22.55	22.75	24.19
24	26.24	25.52	24.31	24.22	24.47	22.86	23.51	24.95	24.12	22.13	22.99	23.95
25	26.22	25.48	24.21	24.27	24.44	22.89	23.56	24.91	24.19	21.90	23.21	23.76
26	26.19	25.44	24.29	24.34	24.35	22.96	23.67	24.88	24.25	21.84	23.39	23.65
27	26.21	25.40	24.29	24.45	24.28	23.02	23.78	24.86	24.32	21.84	23.54	23.35
28	26.21	25.36	24.27	24.48	24.25	23.05	23.88	24.82	24.41	21.98	23.67	22.77
29	26.20	25.25	24.29	24.57	---	23.08	23.98	24.78	24.48	22.15	23.75	22.51
30	26.19	25.24	24.30	24.67	---	23.12	24.12	24.78	24.58	22.31	23.88	22.35
31	26.21	---	24.24	24.69	---	23.12	---	24.74	---	22.49	23.95	---
MEAN	26.28	25.84	24.90	23.72	24.46	23.10	22.70	24.77	24.22	24.16	22.17	23.75
MAX	26.38	26.21	25.41	24.69	24.81	24.23	24.12	25.03	24.65	25.37	23.95	24.44
MIN	26.13	25.24	24.21	23.00	24.24	22.42	21.25	24.18	23.87	21.84	19.61	22.35



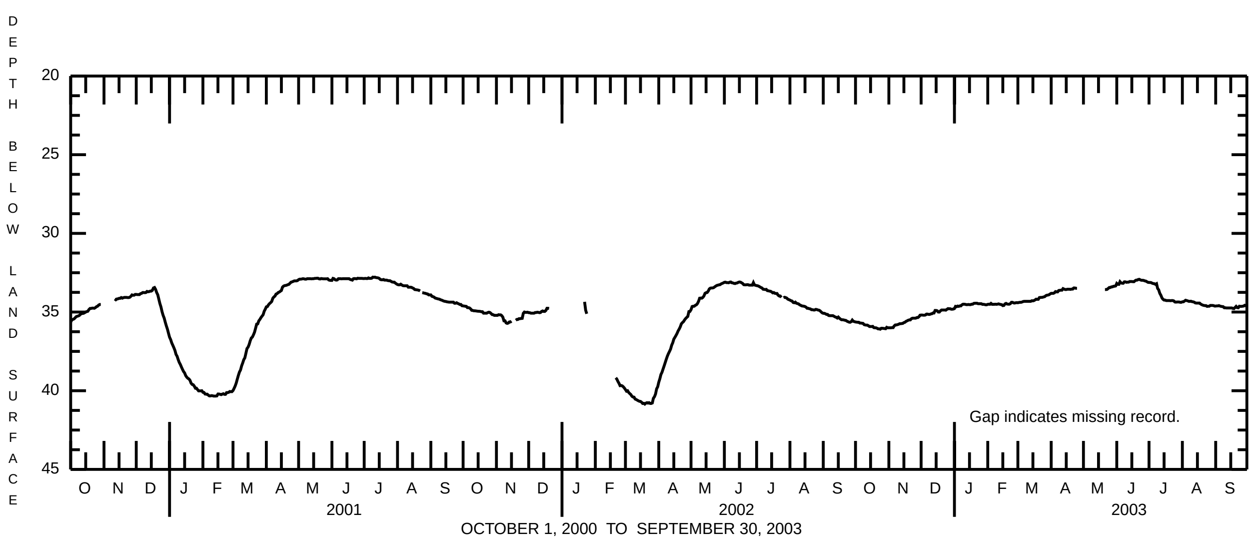
SOMERSET COUNTY

400008079142801. Local number, SO 2.

LOCATION.--Lat 40°00'04", long 79°14'22", 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 National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 1.43 ft above land-surface datum.
REMARKS.--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).
EXTREMES FOR CURRENT YEAR.--Highest water level, 32.91 ft below land-surface datum, June 21, 22; lowest, 36.09 ft below land-surface datum, Oct. 24.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	35.63	36.00	35.19	34.78	34.51	34.41	33.81	---	33.18	33.12	34.35	34.62
2	35.64	36.00	35.19	34.64	34.50	34.39	33.81	---	33.24	33.12	34.35	34.61
3	35.65	36.00	35.20	34.66	34.51	34.38	33.81	---	33.24	33.13	34.30	34.61
4	35.65	35.99	35.20	34.62	34.45	34.38	33.78	---	33.07	33.17	34.25	34.59
5	35.70	35.99	35.19	34.64	34.51	34.36	33.70	---	33.15	33.19	34.27	34.62
6	35.70	35.88	35.13	34.61	34.51	34.33	33.72	---	33.17	33.20	34.29	34.64
7	35.71	35.82	35.13	34.61	34.51	34.32	33.72	---	33.17	33.24	34.32	34.65
8	35.72	35.82	35.15	34.54	34.50	34.32	33.63	---	33.08	33.20	34.32	34.66
9	35.80	35.80	35.15	34.50	34.51	34.32	33.62	---	33.08	33.50	34.31	34.73
10	35.82	35.78	35.12	34.50	34.50	34.32	33.61	---	33.11	33.59	34.34	34.73
11	35.83	35.74	35.11	34.51	34.48	34.32	33.61	---	33.10	33.81	34.35	34.74
12	35.83	35.74	35.06	34.53	34.50	34.32	33.51	---	33.10	33.93	34.37	34.74
13	35.87	35.73	35.06	34.53	34.52	34.32	33.54	---	33.06	34.10	34.42	34.74
14	35.92	35.72	34.90	34.52	34.53	34.28	33.57	---	33.06	34.19	34.43	34.74
15	35.92	35.67	34.90	34.53	34.59	34.29	33.57	---	33.06	34.24	34.43	34.74
16	35.92	35.65	34.92	34.53	34.58	34.27	33.55	---	33.07	34.24	34.43	34.74
17	35.91	35.59	35.00	34.50	34.48	34.23	33.55	---	33.07	34.27	34.43	34.77
18	35.99	35.56	35.00	34.50	34.45	34.18	33.55	---	33.01	34.27	34.49	34.78
19	36.00	35.52	34.92	34.45	34.49	34.19	33.56	---	32.97	34.27	34.53	34.71
20	36.00	35.50	34.87	34.44	34.50	34.19	33.54	---	32.97	34.27	34.56	34.64
21	36.03	35.50	34.87	34.44	34.50	34.08	33.54	33.57	32.93	34.28	34.58	34.72
22	36.07	35.42	34.87	34.44	34.47	34.07	33.47	33.57	32.92	34.27	34.59	34.73
23	36.07	35.39	34.87	34.47	34.38	34.07	33.47	33.56	32.96	34.27	34.59	34.63
24	36.09	35.39	34.88	34.47	34.38	34.06	33.49	33.50	32.98	34.29	34.64	34.64
25	36.03	35.39	34.83	34.47	34.42	34.04	33.49	33.44	32.98	34.36	34.63	34.64
26	36.03	35.39	34.78	34.47	34.43	34.02	---	33.44	32.99	34.37	34.63	34.63
27	36.04	35.35	34.79	34.51	34.41	33.96	---	33.40	33.02	34.36	34.58	34.62
28	36.05	35.35	34.79	34.51	34.40	33.93	---	33.40	33.03	34.36	34.58	34.57
29	36.06	35.30	34.82	34.52	---	33.92	---	33.36	33.07	34.36	34.58	34.60
30	35.97	35.20	34.82	34.54	---	33.90	---	33.36	33.11	34.38	34.59	34.61
31	36.00	---	34.81	34.54	---	33.85	---	33.34	---	34.38	34.62	---
MEAN	35.89	35.64	34.98	34.53	34.48	34.19	33.61	33.45	33.06	33.93	34.46	34.67
MAX	36.09	36.00	35.20	34.78	34.59	34.41	33.81	33.57	33.24	34.38	34.64	34.78
MIN	35.63	35.20	34.78	34.44	34.38	33.85	33.47	33.34	32.92	33.12	34.25	34.57



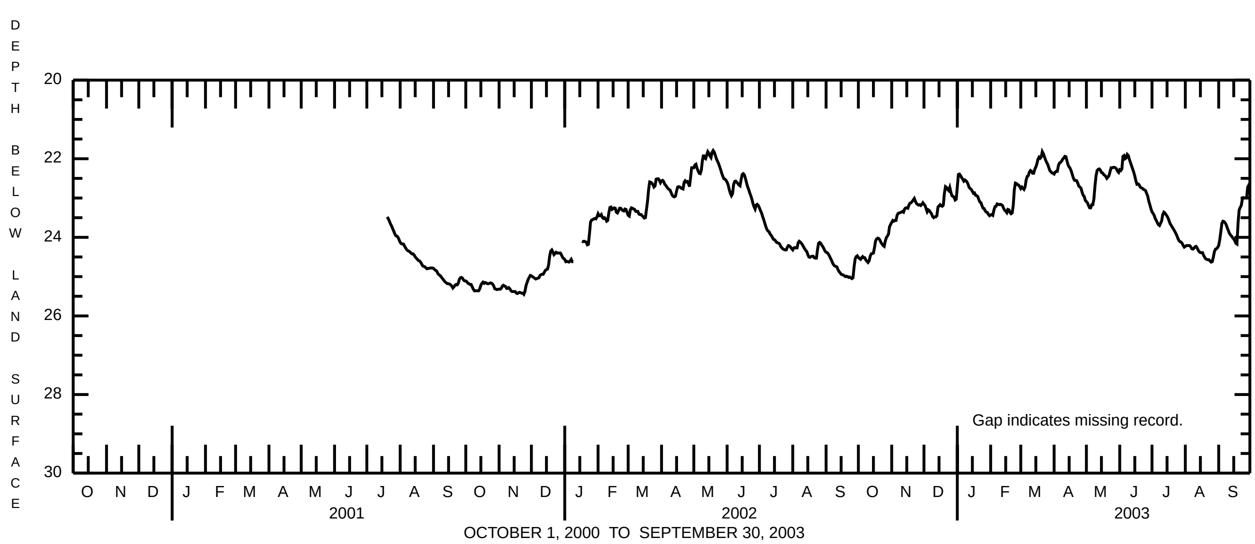
SOMERSET COUNTY

395920079021501. Local number, SO 854.

LOCATION.--Lat 39°59'20", long 79°02'15", Hydrologic Unit 05020006, at Somerset County Conservancy.
Owner: Somerset County Conservancy.
AQUIFER.--Allegheny Formation, Pennsylvanian age.
WELL CHARACTERISTICS.--Drilled observation well, diameter 6 in., depth 121 ft, cased to 42 ft.
INSTRUMENTATION.--Data collection platform with 60-minute recording interval. Satellite telemetry at station.
DATUM.--Elevation of land-surface datum is 2,280 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of instrument shelf, 1.50 ft above land-surface datum.
REMARKS.--In addition to the daily mean water level table shown below, daily maximum and minimum water levels are available from the District Office.
PERIOD OF RECORD.--July 2001 to current year.
EXTREMES FOR PERIOD OF RECORD.--The extremes shown are extremes of the instantaneous depth below land surface for the period of record indicated above.
Highest water level, 21.77 ft below land-surface datum, May 19, 2002; lowest, 25.45 ft below land-surface datum, Nov. 18, 24, 25, 2001.
EXTREMES FOR CURRENT YEAR.--Highest water level, 21.81 ft below land-surface datum, Mar. 21; lowest, 24.65 ft below land-surface datum, Aug. 25, 26.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24.51	23.62	23.16	22.72	23.43	22.76	22.39	23.09	22.28	23.35	24.23	24.21
2	24.54	23.57	23.19	22.40	23.42	22.72	22.34	23.12	22.30	23.39	24.21	24.06
3	24.56	23.59	23.27	22.39	23.44	22.75	22.32	23.19	22.26	23.44	24.21	23.86
4	24.52	23.57	23.35	22.43	23.31	22.78	22.32	23.25	21.94	23.52	24.21	23.64
5	24.49	23.57	23.30	22.48	23.22	22.72	22.17	23.25	21.92	23.57	24.21	23.59
6	24.52	23.44	23.32	22.52	23.21	22.54	22.11	23.17	22.00	23.63	24.24	23.60
7	24.52	23.39	23.36	22.57	23.15	22.45	22.09	23.17	21.98	23.68	24.29	23.63
8	24.58	23.38	23.40	22.54	23.16	22.43	22.06	23.02	21.89	23.70	24.30	23.68
9	24.61	23.37	23.47	22.56	23.17	22.34	22.01	22.69	21.92	23.64	24.28	23.76
10	24.64	23.36	23.50	22.59	23.16	22.30	21.98	22.43	22.02	23.58	24.24	23.83
11	24.60	23.34	23.48	22.65	23.17	22.32	21.94	22.30	22.10	23.42	24.23	23.90
12	24.48	23.36	23.48	22.73	23.19	22.37	21.95	22.27	22.18	23.36	24.27	23.94
13	24.42	23.28	23.45	22.76	23.26	22.37	22.06	22.26	22.26	23.38	24.33	23.97
14	24.41	23.25	23.23	22.78	23.31	22.27	22.16	22.29	22.34	23.42	24.37	24.01
15	24.40	23.25	23.20	22.83	23.33	22.21	22.21	22.35	22.44	23.46	24.39	24.04
16	24.26	23.26	23.17	22.88	23.37	22.13	22.25	22.36	22.56	23.51	24.39	24.09
17	24.09	23.18	23.20	22.87	23.29	22.01	22.32	22.40	22.65	23.59	24.39	24.15
18	24.04	23.13	23.21	22.93	23.30	21.96	22.41	22.42	22.64	23.66	24.46	24.17
19	24.02	23.12	23.18	22.94	23.37	21.99	22.50	22.45	22.66	23.70	24.51	23.64
20	24.03	23.09	22.88	22.96	23.40	21.96	22.55	22.50	22.72	23.75	24.55	23.31
21	24.07	23.05	22.71	23.04	23.38	21.82	22.55	22.47	22.74	23.79	24.56	23.24
22	24.13	23.01	22.73	23.10	23.19	21.87	22.56	22.43	22.75	23.84	24.57	23.19
23	24.17	23.08	22.78	23.12	22.79	21.95	22.62	22.33	22.78	23.89	24.57	23.03
24	24.21	23.14	22.81	23.20	22.62	22.03	22.70	22.23	22.79	23.95	24.60	22.99
25	24.23	23.16	22.73	23.26	22.63	22.09	22.72	22.23	22.81	24.02	24.63	23.00
26	24.10	23.18	22.85	23.27	22.66	22.14	22.75	22.22	22.88	24.08	24.62	23.00
27	24.01	23.17	22.94	23.33	22.67	22.22	22.85	22.22	22.95	24.11	24.51	22.98
28	23.97	23.19	22.96	23.36	22.71	22.30	22.93	22.23	23.08	24.12	24.37	22.72
29	23.92	23.16	22.98	23.37	---	22.33	22.96	22.26	23.17	24.15	24.30	22.67
30	23.73	23.12	23.05	23.42	---	22.36	23.06	22.32	23.27	24.21	24.29	22.73
31	23.67	---	23.03	23.45	---	22.37	---	22.35	---	24.25	24.26	---
MEAN	24.27	23.28	23.14	22.89	23.15	22.29	22.39	22.56	22.48	23.71	24.37	23.55
MAX	24.64	23.62	23.50	23.45	23.44	22.78	23.06	23.25	23.27	24.25	24.63	24.21
MIN	23.67	23.01	22.71	22.39	22.62	21.82	21.94	22.22	21.89	23.35	24.21	22.67



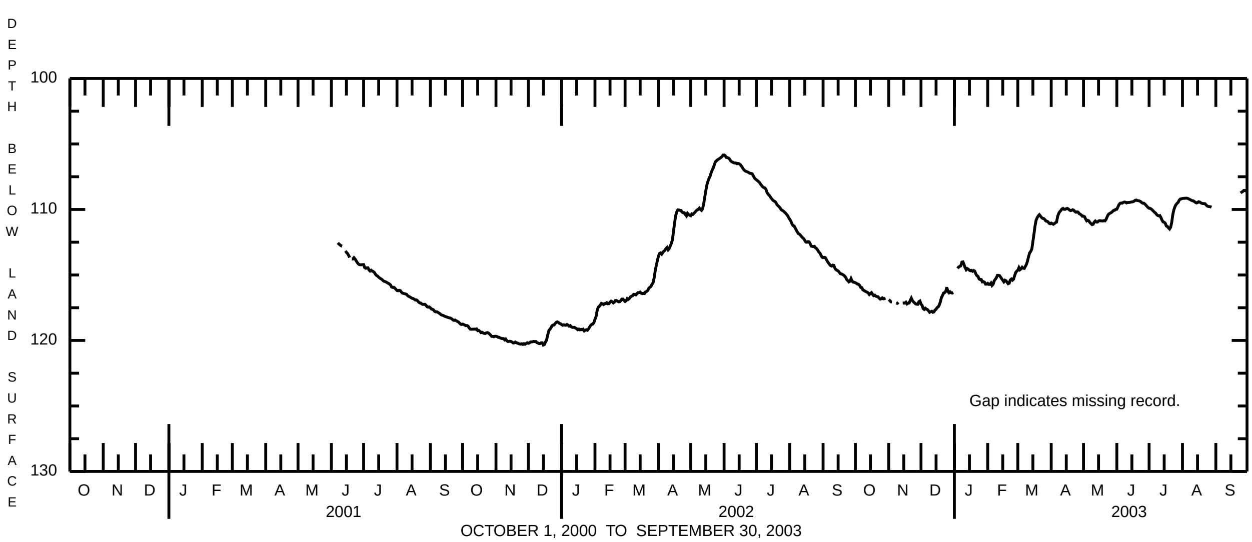
VENANGO COUNTY

411958079540202. Local number, VE 57.

LOCATION.--Lat 41°19'58", long 79°54'02", Hydrologic Unit 05010003, at State Game Lands 39.
Owner: U.S. Geological Survey.
AQUIFER.--Shale of Venango Formation of Late Devonian age.
WELL CHARACTERISTICS.--Drilled observation well, diameter 6 in., depth 215 ft, cased to 9 ft.
INSTRUMENTATION.--Data collection platform with 60-minute recording interval. Satellite telemetry at station.
DATUM.--Elevation of land-surface datum is 1,518 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of pipe on instrument shelf, 2.52 ft above land-surface datum.
REMARKS.--In addition to the daily mean water level table shown below, daily maximum and minimum water levels are available from the District Office.
PERIOD OF RECORD.--Aug. 1974 to Aug. 1977; June 2001 to current year.
EXTREMES FOR PERIOD OF RECORD.--The extremes shown are extremes of the instantaneous depth below land surface for the period of record indicated above.
Highest water level, 102.62 ft below land-surface datum, May 2, 1976; lowest, 120.40 ft below land-surface datum, Dec. 15, 16, 2001.
EXTREMES FOR CURRENT YEAR.--Highest water level, 108.52 ft below land-surface datum, Sept. 27; lowest, 117.91 ft below land-surface datum, Dec. 12.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	115.59	116.89	117.23	---	115.64	114.64	111.04	110.51	109.98	109.91	109.16	---
2	115.64	116.95	117.31	---	115.72	114.44	111.08	110.55	109.81	109.92	109.15	---
3	115.70	117.05	117.57	---	115.72	114.60	111.13	110.73	109.63	109.97	109.15	---
4	115.71	117.06	117.63	114.50	115.62	114.53	111.08	110.87	109.53	110.04	109.14	---
5	115.80	---	117.54	114.39	115.80	114.41	111.01	110.83	109.51	110.13	109.14	---
6	115.95	---	117.61	114.35	115.71	114.48	110.96	110.87	109.52	110.21	109.16	---
7	115.97	---	117.64	114.30	115.45	114.50	110.52	111.00	109.46	110.27	109.20	---
8	116.14	117.15	117.74	114.02	115.34	114.34	110.30	111.08	109.43	110.39	109.24	---
9	116.18	117.17	117.85	114.00	115.22	114.19	110.17	111.16	109.45	110.46	109.29	---
10	116.24	117.09	117.81	114.21	115.03	113.93	110.08	111.13	109.50	110.49	109.33	---
11	116.28	---	117.77	114.44	115.03	113.58	109.96	110.96	109.47	110.47	109.34	---
12	116.32	---	117.85	114.60	115.05	113.31	109.92	110.88	109.47	110.62	109.39	---
13	116.37	---	117.82	114.51	115.17	113.20	109.99	110.96	109.46	110.82	109.46	---
14	116.49	117.15	117.68	114.56	115.29	113.01	109.99	110.96	109.44	110.95	109.50	---
15	116.42	117.14	117.62	114.64	115.40	112.44	109.94	110.88	109.42	110.98	109.48	---
16	116.35	117.15	117.49	114.68	115.52	111.87	109.92	110.85	109.41	111.05	109.41	---
17	116.48	117.08	117.43	114.65	115.40	111.25	109.97	110.87	109.37	111.26	109.43	---
18	116.58	117.21	117.29	114.72	115.44	110.81	110.04	110.87	109.30	111.30	109.49	---
19	116.54	117.16	117.05	114.66	115.56	110.63	110.09	110.88	109.28	111.41	109.53	---
20	116.62	117.14	116.72	114.71	115.67	110.49	110.07	110.85	109.32	111.49	109.55	---
21	116.65	116.94	116.56	114.93	115.63	110.40	110.02	110.87	109.33	111.36	109.55	---
22	116.66	116.77	116.38	115.06	115.38	110.50	110.06	110.76	109.35	110.99	109.56	---
23	116.76	116.95	116.35	115.11	115.31	110.61	110.16	110.56	109.39	110.40	109.66	---
24	116.84	117.05	116.25	115.31	115.40	110.68	110.21	110.39	109.47	110.02	109.74	108.74
25	116.82	117.13	115.94	115.35	115.32	110.69	110.18	110.32	109.52	109.79	109.77	108.68
26	116.75	117.21	116.27	115.35	115.06	110.76	110.20	110.27	109.52	109.63	109.78	108.63
27	116.82	117.23	116.36	115.53	114.81	110.88	110.32	110.23	109.58	109.53	109.79	108.55
28	116.81	117.24	116.28	115.51	114.71	110.90	110.36	110.15	109.67	109.46	109.83	108.55
29	116.77	117.04	116.36	115.55	---	110.94	110.43	110.07	109.76	109.29	---	108.59
30	---	116.99	116.38	115.70	---	111.05	110.52	110.06	109.85	109.20	---	108.60
31	---	---	116.34	115.70	---	111.09	---	109.99	---	109.19	---	---
MEAN	116.35	117.08	117.10	114.82	115.37	112.36	110.32	110.69	109.51	110.35	109.44	108.62
MAX	116.84	117.24	117.85	115.70	115.80	114.64	111.13	111.16	109.98	111.49	109.83	108.74
MIN	115.59	116.77	115.94	114.00	114.71	110.40	109.92	109.99	109.28	109.19	109.14	108.55



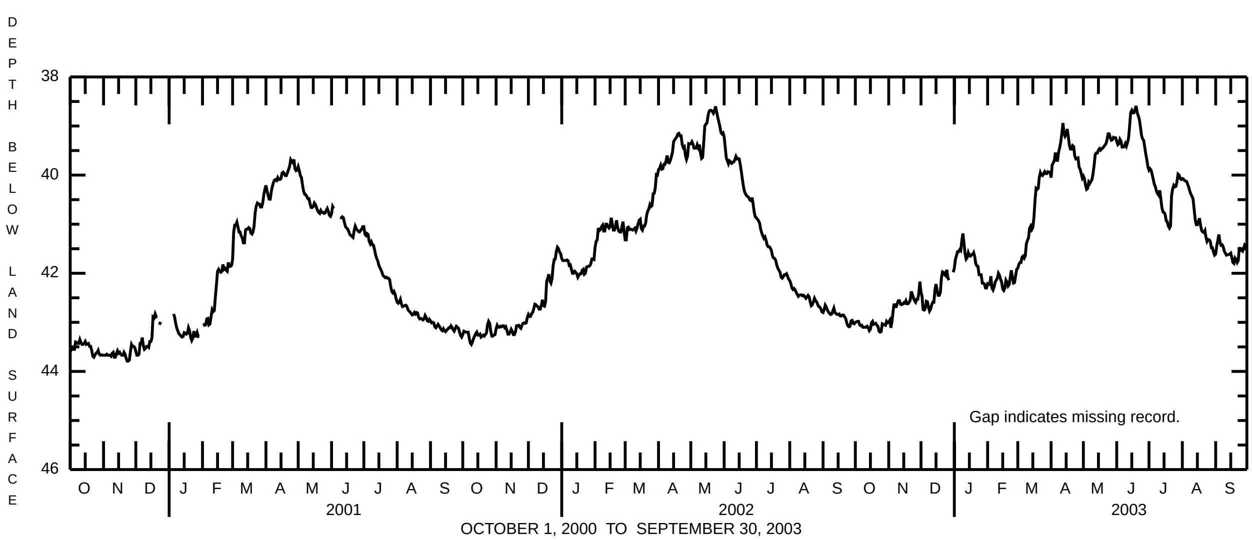
WARREN COUNTY

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 National Geodetic Vertical Datum of 1929, 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.--August 1972 to current year.
EXTREMES FOR PERIOD OF RECORD.--Prior to October 2000, the extremes were based on extremes of the daily maximum depth below land-surface datum. Since that date, the extremes are based on the instantaneous depth below land-surface datum.
Highest water level, 38.55 ft below land-surface datum, June 19, 2003; lowest, 45.42 ft below land-surface datum, Nov. 2, 1983.
EXTREMES FOR CURRENT YEAR.--Highest water level, 38.55 ft below land-surface datum, June 19; lowest, 43.20 ft below land-surface datum, Oct. 24.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	43.00	43.00	42.38	41.90	42.21	41.90	40.05	40.02	39.31	39.90	40.07	41.61
2	42.99	42.96	42.47	41.72	42.22	41.82	39.79	40.07	39.38	39.87	40.08	41.44
3	42.98	43.11	42.74	41.64	42.23	41.78	39.75	40.21	39.36	39.90	40.11	41.33
4	42.98	42.99	42.75	41.56	42.06	41.78	39.70	40.29	39.27	39.99	40.12	41.21
5	43.05	42.79	42.72	41.56	42.30	41.67	39.54	40.27	39.31	40.09	40.13	41.36
6	43.07	42.62	42.57	41.52	42.34	41.65	39.70	40.14	39.43	40.19	40.19	41.43
7	43.06	42.68	42.58	41.54	42.28	41.69	39.70	40.17	39.43	40.24	40.25	41.42
8	43.10	42.68	42.69	41.33	42.18	41.64	39.53	40.13	39.42	40.33	40.33	41.46
9	43.10	42.61	42.77	41.19	42.14	41.40	39.44	40.09	39.36	40.38	40.39	41.55
10	43.10	42.56	42.73	41.39	42.10	41.33	39.32	39.97	39.41	40.41	40.43	41.59
11	43.10	42.56	42.64	41.60	42.00	41.28	39.15	39.80	39.34	40.31	40.49	41.63
12	43.08	42.63	42.59	41.71	42.04	41.08	38.94	39.58	39.25	40.48	40.70	41.62
13	43.11	42.64	42.59	41.68	42.12	41.04	39.15	39.55	39.00	40.66	40.91	41.62
14	43.17	42.63	42.34	41.58	42.18	41.11	39.21	39.55	38.72	40.75	41.01	41.61
15	43.14	42.60	42.22	41.64	42.32	41.07	39.17	39.49	38.68	40.76	41.01	41.59
16	43.01	42.61	42.35	41.65	42.35	40.87	39.06	39.46	38.73	40.80	40.94	41.68
17	42.98	42.56	42.45	41.62	42.30	40.53	39.22	39.49	38.73	40.93	40.88	41.78
18	43.04	42.62	42.45	41.62	42.14	40.27	39.39	39.46	38.66	40.95	41.03	41.80
19	43.03	42.62	42.39	41.58	42.18	40.29	39.47	39.45	38.59	41.04	41.13	41.69
20	43.02	42.59	42.10	41.66	42.26	40.27	39.47	39.42	38.72	41.08	41.16	41.72
21	43.06	42.55	41.97	41.81	42.23	40.05	39.40	39.39	38.79	41.04	41.17	41.78
22	43.08	42.37	41.98	41.85	42.09	39.95	39.42	39.36	38.86	40.42	41.13	41.74
23	43.18	42.43	42.03	41.86	41.94	40.00	39.61	39.28	39.01	40.28	41.27	41.47
24	43.20	42.50	42.05	42.03	42.07	40.01	39.67	39.16	39.18	40.21	41.35	41.53
25	43.19	42.56	41.93	42.03	42.20	39.97	39.66	39.16	39.26	40.24	41.31	41.53
26	43.03	42.59	42.09	42.03	42.19	39.93	39.65	39.24	39.29	40.23	41.32	41.55
27	43.04	42.53	42.14	42.20	42.05	39.97	39.84	39.29	39.42	40.14	41.35	41.49
28	43.05	42.53	---	42.20	41.92	39.97	39.88	39.28	39.57	39.98	41.48	41.42
29	43.06	42.41	---	42.22	---	39.93	39.97	39.23	39.69	40.00	41.48	41.44
30	42.98	42.17	---	42.30	---	39.94	40.06	39.24	39.83	40.07	41.57	41.52
31	43.01	---	41.98	42.30	---	39.94	---	39.24	---	40.09	41.63	---
MEAN	43.06	42.62	42.38	41.76	42.17	40.78	39.53	39.63	39.17	40.38	40.85	41.55
MAX	43.20	43.11	42.77	42.30	42.35	41.90	40.06	40.29	39.83	41.08	41.63	41.80
MIN	42.98	42.17	41.93	41.19	41.92	39.93	38.94	39.16	38.59	39.87	40.07	41.21



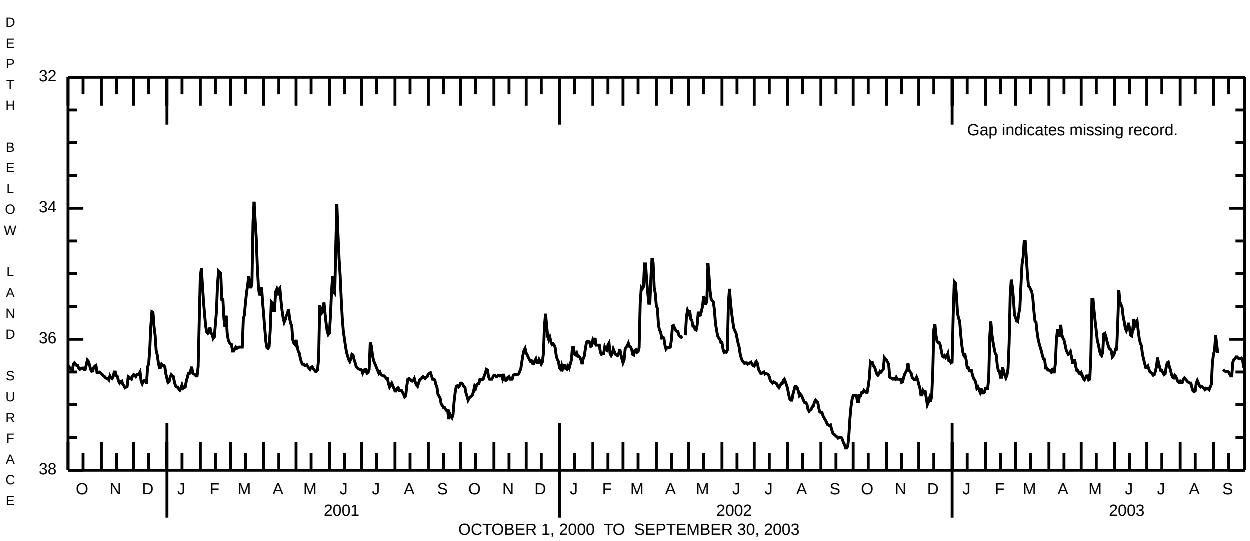
WASHINGTON COUNTY

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.--Data collection platform with 60-minute recording interval since Aug. 23, 2001. Satellite telemetry at station.
DATUM.--Elevation of land-surface datum is 1,110 ft above National Geodetic Vertical Datum of 1929, 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.--Prior to October 2000, the extremes were based on extremes of the daily maximum depth below land-surface datum. Since that date, the extremes are based on the instantaneous depth below land-surface datum.
Highest water level, 32.25 ft below land-surface datum, Jan. 14, 1974; lowest, 39.01 ft below land-surface datum, July 11, 1971.
EXTREMES FOR CURRENT YEAR.--Highest water level, 34.40 ft below land-surface datum, Mar. 9, 10; lowest, 37.00 ft below land-surface datum, Dec. 9.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	36.86	36.32	36.69	36.35	36.75	35.67	36.47	36.51	36.21	36.43	36.64	36.23
2	36.86	36.35	36.74	35.63	36.75	35.72	36.48	36.55	36.15	36.41	36.66	36.17
3	36.86	36.38	36.85	35.12	36.75	35.73	36.50	36.60	36.15	36.46	36.66	35.94
4	36.86	36.58	36.85	35.14	36.61	35.61	36.47	36.62	35.75	36.50	36.61	36.08
5	36.95	36.59	36.78	35.32	35.95	35.52	36.50	36.59	35.25	36.51	36.59	36.21
6	36.95	36.60	36.80	35.60	35.73	35.18	36.50	36.56	35.43	36.53	36.61	---
7	36.86	36.61	36.80	35.68	35.93	34.86	36.37	36.56	35.47	36.55	36.63	---
8	36.86	36.60	36.90	35.72	36.04	34.75	36.00	36.62	35.51	36.54	36.65	---
9	36.81	36.61	37.00	35.93	36.13	34.51	35.85	36.61	35.65	36.49	36.66	---
10	36.81	36.58	36.96	36.09	36.21	34.51	35.94	36.25	35.73	36.42	36.67	36.46
11	36.78	36.61	36.90	36.20	36.24	34.75	35.94	35.39	35.83	36.28	36.67	36.48
12	36.80	36.61	36.95	36.25	36.40	35.01	35.78	35.39	35.87	36.37	36.74	36.49
13	36.81	36.61	36.87	36.24	36.48	35.19	35.93	35.57	35.83	36.43	36.79	36.49
14	36.81	36.61	36.51	36.31	36.49	35.20	35.98	35.73	35.75	36.48	36.80	36.49
15	36.72	36.66	35.85	36.43	36.58	35.24	36.01	35.87	35.84	36.48	36.79	36.50
16	36.60	36.65	35.77	36.43	36.58	35.27	36.08	36.02	35.94	36.51	36.67	36.53
17	36.35	36.58	35.94	36.48	36.43	35.36	36.16	36.08	35.95	36.54	36.63	36.56
18	36.37	36.53	36.03	36.48	36.50	35.56	36.20	36.17	35.84	36.53	36.67	36.56
19	36.36	36.50	36.05	36.48	36.55	35.72	36.23	36.23	35.69	36.43	36.71	36.35
20	36.41	36.47	36.05	36.55	36.59	35.74	36.22	36.25	35.79	36.36	36.73	36.31
21	36.43	36.37	36.09	36.60	36.55	35.89	36.19	36.20	35.75	36.35	36.72	36.30
22	36.48	36.47	36.18	36.62	36.45	36.00	36.27	35.92	35.72	36.42	36.73	36.27
23	36.53	36.50	36.26	36.66	36.06	36.07	36.36	35.91	35.87	36.47	36.75	36.27
24	36.55	36.52	36.27	36.75	35.33	36.13	36.36	35.96	35.99	36.54	36.77	36.29
25	36.53	36.59	36.25	36.73	35.09	36.18	36.31	36.03	36.06	36.58	36.75	36.30
26	36.49	36.60	36.28	36.77	35.20	36.25	36.42	36.09	36.10	36.59	36.76	36.30
27	36.50	36.62	36.26	36.81	35.38	36.30	36.48	36.14	36.23	36.55	36.75	36.29
28	36.48	36.62	36.22	36.75	35.63	36.31	36.48	36.15	36.30	36.57	36.77	36.31
29	36.46	36.58	36.33	36.82	---	36.44	36.52	36.18	36.37	36.61	36.73	36.42
30	36.28	36.62	36.33	36.82	---	36.44	36.53	36.27	36.43	36.65	36.69	36.44
31	36.30	---	36.36	36.81	---	36.47	---	36.25	---	36.66	36.36	---
MEAN	36.64	36.55	36.46	36.28	36.19	35.60	36.25	36.17	35.88	36.49	36.69	36.35
MAX	36.95	36.66	37.00	36.82	36.75	36.47	36.53	36.62	36.43	36.66	36.80	36.56
MIN	36.28	36.32	35.77	35.12	35.09	34.51	35.78	35.39	35.25	36.28	36.36	35.94



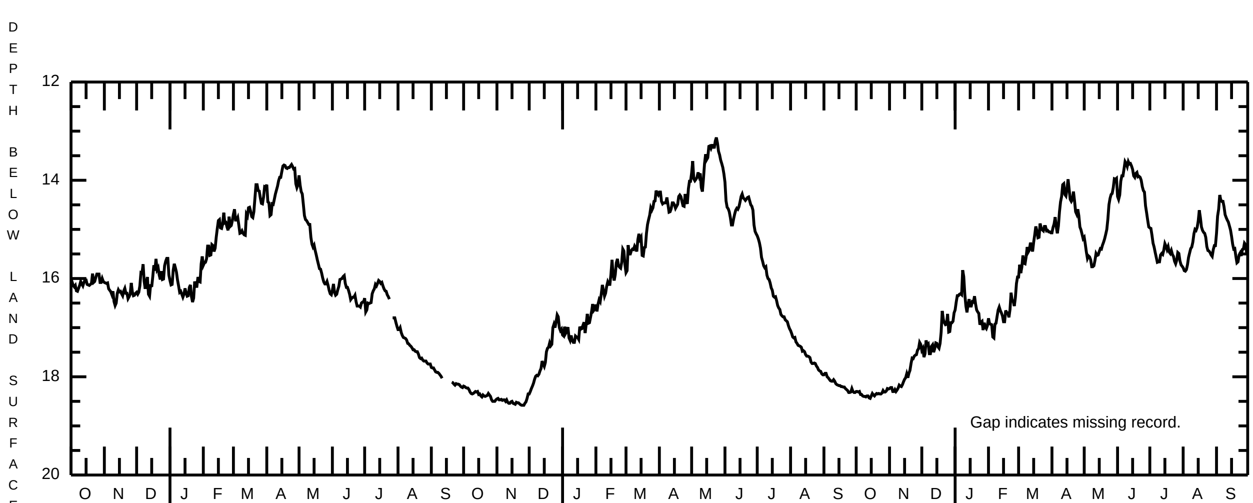
WESTMORELAND COUNTY

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.--Data collection platform with 60-minute recording interval since Sept. 19, 2001. Satellite telemetry at station.
DATUM.--Elevation of land-surface datum is 1,270 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of metal cover, 3.02 ft above land-surface datum. Prior to Sept. 19, 2001, top of plywood cover, 3.05 ft above land-surface datum.
PERIOD OF RECORD.--February 1968 to current year.
EXTREMES FOR PERIOD OF RECORD.--Prior to October 2000, the extremes were based on extremes of the daily maximum depth below land-surface datum. Since that date, the extremes are based on the instantaneous depth below land-surface datum.
Highest water level, 13.00 ft below land-surface datum, May 23, 24, 2002; lowest, 29.22 ft below land-surface datum, July 3, 1968.
EXTREMES FOR CURRENT YEAR.--Highest water level, 13.48 ft below land-surface datum, June 8; lowest, 18.44 ft below land-surface datum, Oct. 14.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18.30	18.24	17.46	16.64	16.81	15.97	15.07	15.16	14.33	14.97	15.78	15.08
2	18.30	18.22	17.42	16.48	16.92	15.72	14.96	15.30	14.39	14.98	15.84	14.73
3	18.31	18.22	17.60	16.35	16.93	15.89	14.89	15.46	14.30	15.12	15.85	14.59
4	18.30	18.30	17.53	16.35	16.94	15.77	14.75	15.59	14.02	15.28	15.82	14.30
5	18.36	18.30	17.26	16.32	17.19	15.53	14.95	15.54	13.91	15.36	15.72	14.40
6	18.36	18.26	17.35	16.31	17.21	15.69	15.08	15.56	13.91	15.47	15.57	14.43
7	18.39	18.30	17.33	16.33	16.93	15.70	14.93	15.62	13.77	15.57	15.48	14.43
8	18.40	18.27	17.53	15.83	16.91	15.56	14.64	15.76	13.62	15.67	15.39	14.54
9	18.40	18.23	17.53	15.96	16.77	15.36	14.44	15.76	13.66	15.66	15.36	14.70
10	18.41	18.17	17.38	16.32	16.64	15.46	14.33	15.74	13.72	15.66	15.26	14.76
11	18.39	18.19	17.35	16.56	16.58	15.42	14.09	15.63	13.62	15.52	15.09	14.81
12	18.39	18.20	17.50	16.69	16.65	15.27	14.07	15.49	13.67	15.49	15.00	14.85
13	18.43	18.16	17.43	16.53	16.70	15.36	14.29	15.53	13.66	15.51	15.02	14.93
14	18.44	18.10	17.31	16.42	16.76	15.45	14.32	15.52	13.71	15.42	14.96	15.01
15	18.39	18.05	17.32	16.56	16.88	15.26	14.17	15.45	13.78	15.29	14.83	15.14
16	18.34	18.02	17.39	16.56	16.88	15.11	13.98	15.39	13.91	15.34	14.61	15.30
17	18.37	17.94	17.42	16.47	16.65	14.94	14.19	15.40	13.94	15.41	14.76	15.40
18	18.39	18.02	17.32	16.48	16.70	15.03	14.39	15.32	13.86	15.35	14.95	15.39
19	18.36	17.93	17.09	16.36	16.70	15.17	14.43	15.26	13.84	15.46	15.02	15.55
20	18.34	17.87	16.66	16.52	16.79	15.16	14.39	15.19	13.93	15.49	15.06	15.68
21	18.35	17.73	16.83	16.64	16.63	14.88	14.23	15.10	13.92	15.43	15.08	15.66
22	18.34	17.62	16.90	16.68	16.29	14.97	14.42	15.00	13.94	15.51	15.16	15.52
23	18.35	17.63	16.94	16.71	16.45	15.01	14.64	14.79	14.00	15.55	15.35	15.48
24	18.35	17.58	16.93	16.94	16.46	15.03	14.69	14.50	14.13	15.65	15.43	15.54
25	18.33	17.56	16.72	16.89	16.56	14.94	14.59	14.37	14.21	15.70	15.44	15.41
26	18.28	17.55	17.09	16.87	16.39	14.94	14.72	14.29	14.24	15.63	15.47	15.40
27	18.31	17.46	17.08	17.05	16.10	15.03	14.95	14.27	14.52	15.47	15.52	15.28
28	18.31	17.43	16.90	16.90	15.97	15.02	15.01	14.15	14.66	15.49	15.55	15.31
29	18.29	17.30	16.90	16.99	---	15.05	15.10	13.97	14.81	15.64	15.41	15.47
30	18.24	17.34	16.87	17.02	---	15.05	15.19	13.98	14.95	15.72	15.33	15.48
31	18.25	---	16.70	16.96	---	15.07	---	13.96	---	15.75	15.33	---
MEAN	18.35	17.94	17.19	16.57	16.69	15.28	14.60	15.10	14.03	15.47	15.30	15.09
MAX	18.44	18.30	17.60	17.05	17.21	15.97	15.19	15.76	14.95	15.75	15.85	15.68
MIN	18.24	17.30	16.66	15.83	15.97	14.88	13.98	13.96	13.62	14.97	14.61	14.30



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CALENDAR FOR WATER YEAR 2003

2002

OCTOBER

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

NOVEMBER

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

DECEMBER

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

2003

JANUARY

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

FEBRUARY

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

MARCH

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

APRIL

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

MAY

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

JUNE

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

JULY

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

AUGUST

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

SEPTEMBER

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

Conversion Factors

Multiply	By	To obtain
	Length	
inch (in.)	2.54×10^{1}	millimeter (mm)
	2.54×10^{-2}	meter (m)
foot (ft)	3.048×10^{-1}	meter (m)
mile (mi)	1.609×10^{0}	kilometer (km)
	Area	
acre	4.047×10^{3}	square meter (m^2)
	4.047×10^{-1}	square hectometer (hm^2)
	4.047×10^{-3}	square kilometer (km^2)
square mile (mi^2)	2.590×10^{0}	square kilometer (km^2)
	Volume	
gallon (gal)	3.785×10^{0}	liter (L)
	3.785×10^{-3}	cubic meter (m^3)
	3.785×10^{0}	cubic decimeter (dm^3)
million gallons (Mgal)	3.785×10^{3}	cubic meter (m^3)
	3.785×10^{-3}	cubic hectometer (hm^3)
cubic foot (ft^3)	2.832×10^{-2}	cubic meter (m^3)
	2.832×10^{1}	cubic decimeter (dm^3)
cubic-foot-per-second-per-day [(ft^3/s/d)]	2.447×10^{3}	cubic meter (m^3)
	2.447×10^{-3}	cubic hectometer (hm^3)
acre-foot (acre-ft)	1.223×10^{3}	cubic meter (m^3)
	1.223×10^{-3}	cubic hectometer (hm^3)
	1.223×10^{-6}	cubic kilometer (km^3)
	Flow rate	
cubic foot per second (ft^3/s)	2.832×10^{1}	liter per second (L/s)
	2.832×10^{-2}	cubic meter per second (m^3/s)
	2.832×10^{1}	cubic decimeter per second (dm^3/s)
gallon per minute (gal/min)	6.309×10^{-2}	liter per second (L/s)
	6.309×10^{-5}	cubic meter per second (m^3/s)
	6.309×10^{-2}	cubic decimeter per second (dm^3/s)
million gallons per day (Mgal/d)	4.381×10^{-2}	cubic meter per second (m^3/s)
	4.381×10^{1}	cubic decimeter per second (dm^3/s)
	Mass	
ton, short (2,000 lb)	9.072×10^{-1}	megagram (Mg) or metric ton

Temperature in degrees Celsius (˚C) may be converted to degrees Fahrenheit (˚F) as follows:

$$°F = (1.8 \times °C) + 32$$