Water Resources Data New Jersey Water Year 1989

Volume 2. Delaware River Basin and tributaries to Delaware Bay

U.S. GEOLOGICAL SURVEY WATER-DATA REPORT NJ-89-2
Prepared in cooperation with the New Jersey Department of Environmental Protection and with other agencies

CALENDAR FOR WATER YEAR 1989

1988

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United States Department of the Interior

GEOLOGICAL SURVEY

Water Resources Division
Mountain View Office Park
810 Bear Tavern Road, Suite 206
West Trenton, New Jersey 08628

I am pleased to announce the release of our Annual Report "Water Resources Data for New Jersey, Water Year 1989". This report was prepared by the U.S. Geological Survey, in cooperation with the State of New Jersey and several local and federal government agencies.

Once again this year, the report is issued in two volumes:

Volume 1.--Atlantic Slope Basins, Hudson River to Cape May.
Volume 2.--Delaware River Basin and tributaries to Delaware Bay.

The report contains records of stream discharge and water-quality measurements, elevations of lakes and reservoirs, major water-supply diversions and tidal elevations. Also included are records of sediment concentrations and records of ground-water quality and ground-water levels. Special sections are devoted to low-flow and crest-stage data as well as summaries of tidal crest elevations in the New Jersey estuaries and intracoastal waterways.

Streamflow data in this report are again presented in the new format that was introduced in the 1988 report. The new format includes tabular presentations of streamflow statistics rather than some of the written text. Station numbers are included in the table of contents. Tables of discontinued surface-water and water-quality stations are also included. Hydrographs have been included for ground-water stations. Another new addition is a bar graph showing precipitation as reported at three National Weather Service stations. We extend our thanks to those who took the time to respond to the questionnaire concerning this new format. The overwhelming majority of the responses preferred the new format to the old.

Copies of this report in paper or microfiche are for sale through the National Technical Information Service, U.S. Department of Commerce, Springfield, Virginia 22161. When ordering, refer to U.S. Geological Survey Water-Data Report NJ-89-1 (for volume 1) and NJ-89-2 (for volume 2). For further information on this report, or to change or remove your address from our mailing list, please contact me at the above address or telephone (609) 771-3900.

Sincerely,

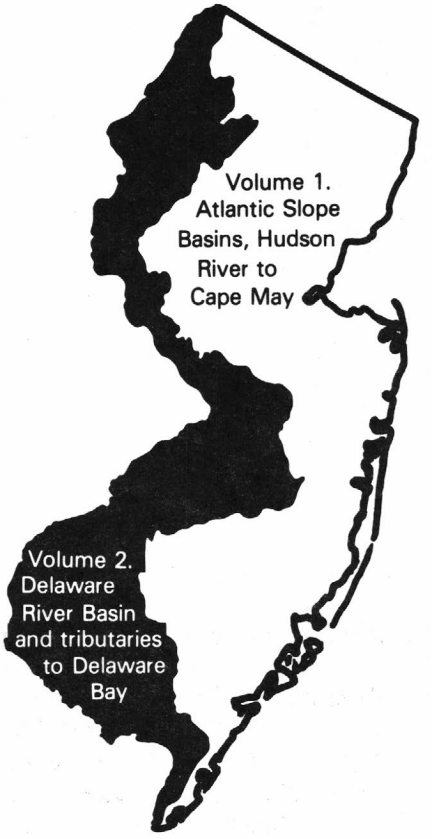
William R. Bauersfeld

William R. Bauersfeld, Chief
Hydrologic Data Assessment Program

Water Resources Data New Jersey Water Year 1989

Volume 2. Delaware River Basin and tributaries to Delaware Bay

by W.R. Bauersfeld, E.W. Moshinsky, E.A. Pustay, and W.D. Jones



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT NJ-89-2
Prepared in cooperation with the New Jersey
Department of Environmental Protection
and with other agencies

UNITED STATES DEPARTMENT OF THE INTERIOR

MANUEL LUJAN, JR., Secretary

GEOLOGICAL SURVEY

Dallas L. Peck, Director

For information on the water program in New Jersey write to

District Chief, Water Resources Division
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1990

PREFACE

This volume of the annual hydrologic data report of New Jersey 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 water quality 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 New Jersey are contained in 2 volumes:

Volume 1. Atlantic Slope Basins, Hudson River to Cape May
Volume 2. Delaware River Basin and tributaries to Delaware Bay

This report is the culmination of a concerted 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. The authors 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 completion of the report.

Eugene Dorr Jacob Gibs Robert D. Schopp

M.D. Morgan word processed the text of the report, and G.L. Simpson drafted the illustrations.

The data were collected, computed, and processed by the following personnel:

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R.S. Cole	C.E. Gurney	T.J. Reed	A.J. Velnich
M.J. DeLuca	J.D. Joyner	R.G. Reiser	

This report was prepared in cooperation with the State of New Jersey and with other agencies under the general supervision of Janice R. Ward, Associate District Chief for Hydrologic Data Assessment and Information Management; Donald E. Vaupel, District Chief, New Jersey; and Stanley P. Sauer, Regional Hydrologist, Northeastern Region.

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13. Type of Report & Period Covered
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14.

15. Supplementary Notes
Prepared in cooperation with the New Jersey Department of Environmental Protection and with other agencies.

16. Abstract (Limit: 200 words)

Water Resources data for the 1989 water year for New Jersey consist of records of stage, discharge, and water quality of streams; stage, contents, and water quality of lakes and reservoirs; and water levels and water quality of ground water. This volume of the report contains discharge records for 24 gaging stations; tide summaries for 3 stations; stage and contents for 18 lakes and reservoirs; water quality for 30 surface-water sites and 50 wells; and water levels for 55 observation wells. Also included are data for 23 crest-stage partial-record stations, 2 tidal crest-stage gages, and 18 low-flow partial-record stations. Additional water data were collected at 10 sites, not part of the systematic data collection program, and are published as miscellaneous measurements. These data represent that part of the national water data system operated by U.S. Geological Survey and cooperating State and Federal agencies in New Jersey.

17. Document Analysis a. Descriptors
*New Jersey, *Hydrologic data, *Surface water, *Ground water, *water quality, Flow rate, Gaging stations, Lakes, Reservoirs, Chemical analyses, Sediments, Water temperatures, Sampling sites, Water Levels, Water Analyses

b. Identifiers/Open-Ended Terms

c. COSATI Field/Group

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(Formerly NTIS-35)
Department of Commerce

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[Letter after station name designates type of data: (d) discharge, (c) chemical, (m) microbiological, (s) sediment, (t) water temperature, (e) elevation, gage height or contents, (b) biological]

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WATER RESOURCES DATA - NEW JERSEY, 1989

INTRODUCTION

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

This report series includes records of stage, discharge, and water quality of streams; stage, contents, and water quality of lakes and reservoirs; and water levels and water quality of ground-water wells. This volume contains records for water discharge at 24 gaging stations; tide summaries at 3 gaging stations; stage and content at 18 lakes and reservoirs; water quality at 30 surface-water stations and 50 wells; and water levels at 55 observation wells. Records included for ground-water levels are only a part of those obtained during the year. Also included are data for 23 crest-stage partial-record stations and stage only at 2 tidal crest-stage gages. Locations of these sites are shown on figures 11, 12, 13, and 14. Additional water data were collected at various sites not involved in the systematic data-collection program. Discharge measurements were made at 18 low-flow partial-record stations. Miscellaneous data were collected at 10 measuring sites. These data represent that part of the National Water Data System collected by the U.S. Geological Survey and cooperating State and Federal agencies in New Jersey.

This series of annual reports for New Jersey began with the 1961 water year with a report that contained only data relating to the quantities of surface water. For the 1964 water year, a similar report was introduced that contained only data relating to water quality. Beginning with the 1975 water year, the report format was changed to present, in one volume, data on quantities of surface water, quality of surface and ground water, and ground-water levels. Beginning with the 1977 water year, these data were published in two volumes.

Prior to introduction of this series and for several water years concurrent with it, water-resources data for New Jersey 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, Part 1B." For the 1961 through 1970 water years, the data were published in two 5-year reports. Data on chemical quality, temperature, and suspended sediment for the 1941 through 1970 water years were published annually under the title "Quality of Surface Waters of the United States," and water levels for the 1935 through 1974 water years were published under the title "Ground-Water Levels in the United States." The above mentioned Water-Supply Papers may be consulted in the libraries of the principal cities of the United States and may be purchased from Books and Open-file Reports Section, Federal Center, Building 4, Box 25425, Denver, CO, 80225.

Publications similar to this report are published annually by the Geological Survey for all States. These official Survey reports have an identification number consisting of the two-letter State abbreviation, the last two digits of the water year, and the volume number. For example, this volume is identified as "U.S. Geological Survey Water-Data Report NJ-89-2." For archiving and general distribution, the reports for 1971-74 water years also are identified as water-data reports. These water-data reports are for sale in paper copy or in microfiche by the National Technical Information, Service, U.S. Department of Commerce, Springfield, VA 22161.

Additional information, including current prices, for ordering specific reports may be obtained from the District Chief at the address given on the back of the title page or by telephone (609) 771-3900.

COOPERATION

This report was prepared by the U.S. Geological Survey under cooperative agreement with the following organizations:

New Jersey Department of Environmental Protection, Judith A. Yaskin, Commissioner.
Division of Water Resources, Eric J. Evenson, Acting Director.
New Jersey Water Supply Authority, Rocco Ricci, Executive Director.
North Jersey District Water Supply Commission, Dean C. Noll, Chief Engineer.
Passaic Valley Water Commission, W.I. Inhoffer, General Superintendent and Chief Engineer.
County of Bergen, Edward R. Ranuska, director of Public Works and County Engineer.
County of Camden, Barton Harrison, Chairman of Camden County Planning Board.
County of Gloucester, Robert V. Scolpino, Director of Planning.
County of Somerset, Thomas E. Decker, County Engineer, and Thomas Harris, Administrative Engineer.
Township of West Windsor, Larry Ellery, Chairman of Environmental Commission.

Assistance in the form of funds was given by the Corps of Engineers, U.S. Army, in collecting records for 17 surface water stations, and by the U.S. Army Armament Research and Development Center for the collection of records at 3 surface-water stations. In addition, several stations were operated fully or partially from funds appropriated directly to the Geological Survey. Funding was also supplied by the following Federal Energy Regulatory Commission licensee: Jersey Central Power and Light Company and Independent Hydro Developers Inc. Assistance was provided by the National Weather Service and the National Ocean Service.

The following organizations aided in collecting records:

Municipalities of Atlantic City, Jersey City, Newark, New Brunswick and Spotswood; American Cyanamid Company; Elizabethown Water Company; Ewing-Lawrence Sewerage Authority; Hackensack Water Company; New Jersey--American Water Company (formerly Monmouth Consolidated Water Company and Commonwealth Water Company); and Jersey Central Power and Light Company.

Organizations that supplied data are acknowledged in station descriptions.

SUMMARY OF HYDROLOGIC CONDITIONS

Streamflow

Streamflow for the 1989 water year was about normal. The year began with below-normal streamflow but ended with well above-normal streamflow. Precipitation ranged from 56.40 inches (133 percent of the 1951-80 30-year mean) at Newark to 48.08 inches (115 percent of the 30-year mean) at Atlantic City. Figure 1 shows monthly precipitation at three National Weather Service sites compared with 30-year means. Combined contents at 13 major water-supply reservoirs was about average at the beginning of the year and, at most sites, water levels were above spillway elevations from April through July (see figure 2).

Water year 1989 began with below-normal streamflow, ranging from 84 percent of long-term normal (1918-89) in the northern part of the State to 72 percent of long-term normal (1926-89) in the southern part. Streamflow continued to be deficient through March, reflecting below-normal precipitation. Snow cover, which accounts for much of the spring runoff, was light, with snowfall about 20 inches less than normal. A drought warning was issued in January in the Delaware River basin as contents of reservoirs in the upper basin in New York fell to about 50 percent of capacity. Water conservation also was stressed in other areas of the State. Streamflow began to increase significantly in March and April, when precipitation was about normal. In May, precipitation was extremely high, with reports of 12.4 inches at Charlotteburg (8.5 inches above normal) and 12.5 inches at Morris Plains (8.3 inches above normal). Some minor flooding was reported in northern communities. Streamflow increased to more than 200 percent of normal in May. Reservoir contents also rose sharply and, by the end of May, the Delaware River reservoirs were at about 88 percent of capacity, and some reservoirs in the Hackensack and Passaic River basins were spilling. Drought warning in the Delaware River basin was lifted on May 12. Above-normal precipitation was recorded in June, July, August, and September, with September precipitation more than 200 percent of normal (see figure 1). At some sites in September, precipitation was recorded on 11 consecutive days. Long Valley, in northern New Jersey, reported 7.7 inches in the 48-hour period September 20-21. Peak flow for the year was recorded at many stream-gaging sites on September 20. No major flooding was reported during these periods, reflecting the uniform precipitation distribution. At the end of the water year, streamflow was 327 percent of normal in the north and 244 percent of normal in the south.

Streamflow at the index station for northern New Jersey (South Branch Raritan River near High Bridge) averaged 122 ft^3/s for the water year; this flow is 100 percent of the 1918-89 average. Streamflow at the index station for southern New Jersey (Great Egg Harbor River at Folsom) averaged 86.3 ft^3/s for the water year; this flow is 100 percent of the 1926-89 average. The observed annual mean discharge of the Delaware River at Trenton was 10,510 ft^3/s, which is 90 percent of the 1913-89 average. The Delaware River is highly regulated by reservoirs and diversions. The natural flow at Trenton (adjusted for upstream storage and diversion) was 99 percent of normal for the year. Figure 3 compares monthly mean discharge at each of these index gaging stations during the current water year with the long-term normal (1951-80) monthly discharge. Figure 4 compares annual mean discharge at each of these index gaging stations with the mean annual discharge for the period of record.

Combined usable storage in 13 major water-supply reservoirs in New Jersey increased from 55.4 billion gallons (72 percent of capacity) on October 1, 1988, to 67.9 billion gallons (88 percent of capacity) on September 30, 1989. Storage in Wanaque Reservoir increased from 14.9 billion gallons (54 percent of capacity) on October 1, 1988, to 24.2 billion gallons (82 percent of capacity) on September 30, 1989. Pumped storage in Round Valley Reservoir, the largest capacity reservoir in the State, increased from 53.2 billion gallons (96.7 percent of capacity) on October 1, 1988, to 53.4 billion gallons (97.1 percent of capacity) on September 30, 1989.

Water Quality

Below-normal streamflow during the first half of the water year decreased dilution of dissolved solids in streams throughout the State, and increased dilution during the second half of the year as streamflow increased to normal and above normal. Dilution of dissolved solids generally results in an improvement in water quality because concentrations of undesirable substances, such as trace elements, organic compounds, nutrients, bacteria, and nuisance aquatic organisms, usually also are diluted. The degree of dilution is apparent when monthly mean values of specific conductance, which is related directly to dissolved-solids concentration, for 1989 are compared with mean specific-conductance values for an earlier period. Figure 5 compares specific-conductance values for the Delaware River at Trenton, a large drainage area in central New Jersey as well as parts of New York and Pennsylvania, in 1989 with those for 1988, and with the mean for 1981-88. High specific-conductance values are readily apparent for most of the months from October through March. The values for most of the remaining months are normal or below normal. The month of September is omitted because of insufficient data.

Polychlorinated biphenyls (PCBs) and a number of pesticides commonly are detected in New Jersey streams. Table 1 summarizes the frequency of detection of these compounds in bottom sediments from 1976 through 1989. Detection limits during this period were 1.0 µg/kg (micrograms per kilogram) for PCN, chlordane, and PCB; 1.0 to 10 µg/kg for toxaphene, and 0.1 µg/kg for the other compounds. The number of sites at which samples were collected ranged from 13 to 35 per year, with a median of 27 per year. Sites sampled more than once in a year were counted only once. The organochlorine compounds chlordane, dieldrin, DDT (and its decomposition products DDD and DDE), and PCBs are the most commonly detected organic compounds in stream-bottom sediments in the State. Chlordane and dieldrin have been used widely to control soil pests as well as termites and ants. The production and use of DDT, a common, low-cost, broad-spectrum pesticide, have been banned in the United States since 1972. PCBs were used in many industrial and manufactured items (for example, lubricants, dyes, and hydraulic fluids), but their use has been restricted to environmentally closed systems (for example, electrical capacitors and transformers) since 1971. Common sources of PCBs include industrial and municipal effluents, landfills and other soil-disposal sites, and incineration of material containing PCBs (Natural Resources Council, 1979). All of these organochlorine compounds persist in the environment and still are found in surface and ground waters in the State despite the restriction or prohibition of their use.

Figure 6 summarizes the frequency of detection of chlordane, DDT, DDD, DDE, and PCBs in New Jersey stream-bottom samples for 1976-89. Only those sites for which water-quality data are presented in either volume of this report are included. Figure 6 shows the percentage of samples collected in which the concentration of at least one compound exceeded 20 µg/kg--a level selected to include the highest 15 to 20 percent of values measured nationwide (J. S. Cragwall, Jr., U.S. Geological Survey, written commun., 1977). Although it is detected frequently, dieldrin is not included in figure 6 because a concentration greater than 20 µg/kg was measured only three times during this period. Figure 7 shows the locations of water-quality stations sampled during the 1989 water year at which the concentration of at least one of these compounds exceeded 20 µg/kg.

The U.S. Geological Survey maintains a network of saltwater-observation wells in the Coastal Plain of New Jersey to document and evaluate the movement of saline water into freshwater aquifers that serve as sources of water supply. During the 1989 water year, 138 samples were collected in eight counties. The results of the sampling of these wells are presented in the ground-water-quality tables in these reports.

Ground-Water Levels

Changes in ground-water levels during the 1989 water year were determined from a statewide network of observation wells. Ground-water levels in many water-table observation wells rose significantly during the year. Water levels in most observation wells that tap the heavily stressed confined aquifers of the Coastal Plain continued to show long-term net declines. Increased withdrawals of ground water contributed to these declines.

Monthly water levels in two water-table observation wells in 1989 are compared with monthly extremes and long-term averages in figure 8. The wells are the Bird well (NJ-WRD well number 19-0002) in Hunterdon County and the Crammer well (NJ-WRD well number 29-0486) in Ocean County. For further comparison, 20-year water-level hydrographs of two Coastal Plain wells, one water-table well (NJ-WRD well number 05-0689) and one artesian well (NJ-WRD well number 07-0413), are presented in figure 9. In addition, multi-year hydrographs are provided with the 1989 water year water-level data for most of the wells included in this report.

Water levels in the water-table aquifers of the Coastal Plain were declining slowly at the beginning of the 1989 water year. This decline continued through February, when some water levels were near record lows. Water levels rose significantly through the remainder of the water year. One of the greatest increases occurred in the Lebanon State Forest 23-D well (NJ-WRD well number 05-0689), where the water level rose by 6.1 feet during the last 7 months of the water year.

Observation wells that tap the heavily stressed confined Coastal Plain aquifers continued to show long-term net declines in many areas. New lows of record were set in nine Coastal Plain artesian observation wells. The greatest water-level decline in the 1989 water year occurred in the Wenonah-Mount Laurel aquifer at the New Brooklyn Park 3 observation well (NJ-WRD well number 07-0478), where the previous record low was exceeded by 4.18 feet. Other aquifers in which previous lows of record were exceeded include the Potomac-Raritan-Magothy aquifer system, the Englishtown aquifer system, and the Piney Point aquifer.

Table 1.--Frequency of detection of organochlorine and organophosphorus compounds in bottom materials of New Jersey streams, for water years, 1976-89

COMPOUND	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Organochlorine compounds														
Chlordane	●	⊖	⊖	●	●	◒	◒	◒	◒	◒	◒	⊖	●	◒
DDD	●	⊖	◒	●	●	●	◒	●	◒	◒	◒	●	●	●
DDE	●		◒	◒	◒	◒	●	⊖	◒	◒	◒	●	◒	◒
DDT	●	⊖	◒	◒	◒	●	◒	◒	◒	◒	⊖	●	⊖	⊖
PCB	◒	⊖	◒	◒	●	◒	●	◒	◒	◒	⊖	◒	◒	⊖
Dieldrin	●	⊖	⊖	◒	◒	◒	◒	⊖	⊖	⊖	◒	⊖	⊖	◒
Endosulfane		○		○	○	○	○	○	○	○	○	⊖	○	○
Heptachlor Epoxide	○	○	○	○	○	○	○	○	○	○	⊖	⊖	⊖	⊖
Aldrin, Lindane, Endrin Toxaphene, Heptachlor	○	○	○	○	○	○	○	○	○	○	○	○	⊖	○
Perthane														○
PCN			○	○	○	○	○	○	○	○	○	○	○	○
Mirex					○	○	○	○	○	○	○	○	○	○
Organophosphorus compounds														
Methoxychlor, Malathion, Parathion, Diazanon, Methyl Parathion, Ethyl Trithion, Methyl Trithion, Ethion			○	○	○	○	○	○	○	○	○	○	⊖	⊖

Frequency (rounded to nearest whole number): ○(0 - 25%), ⊖(26 - 50%), ◒(51 - 75%), ●(76 - 100%)

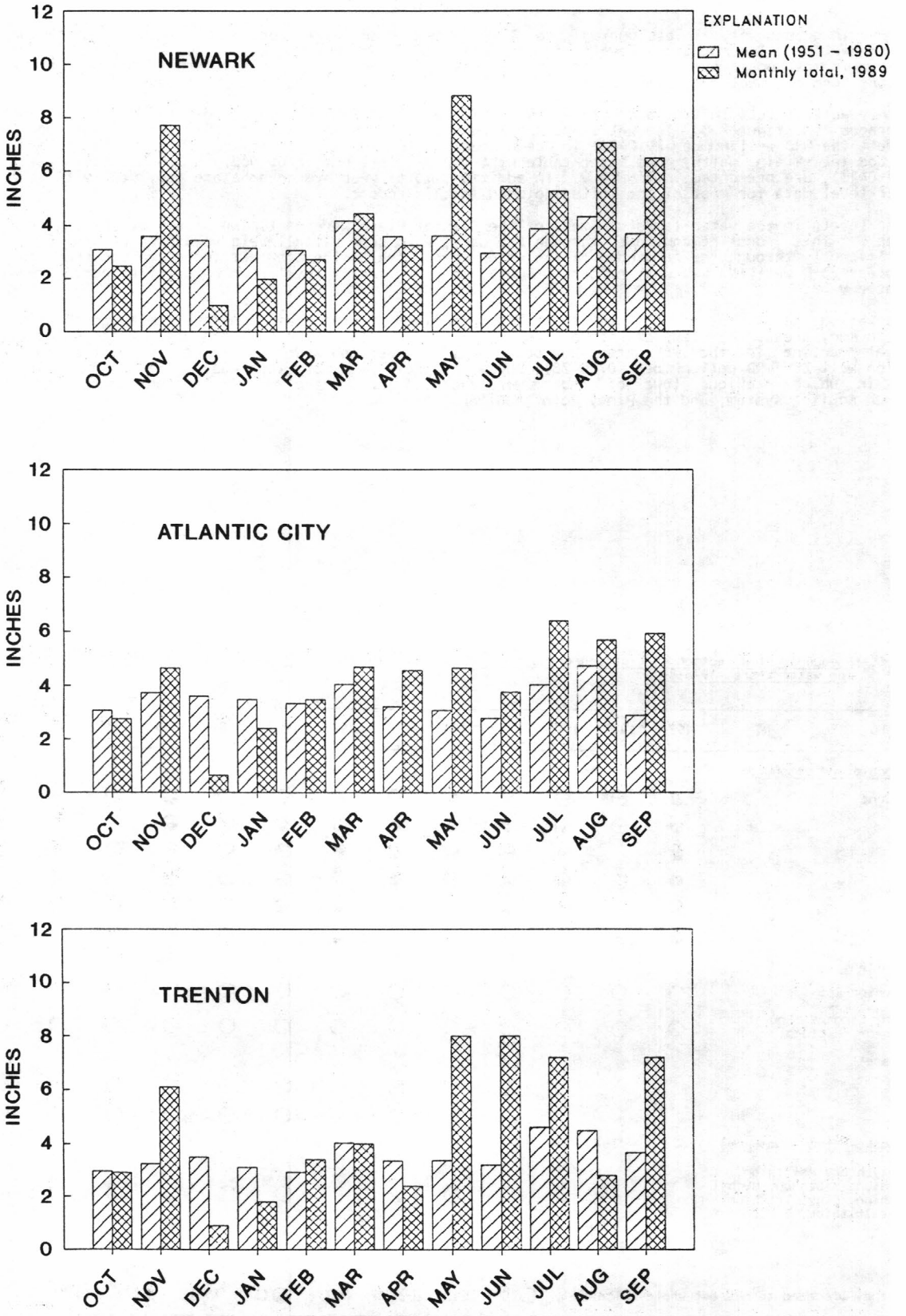
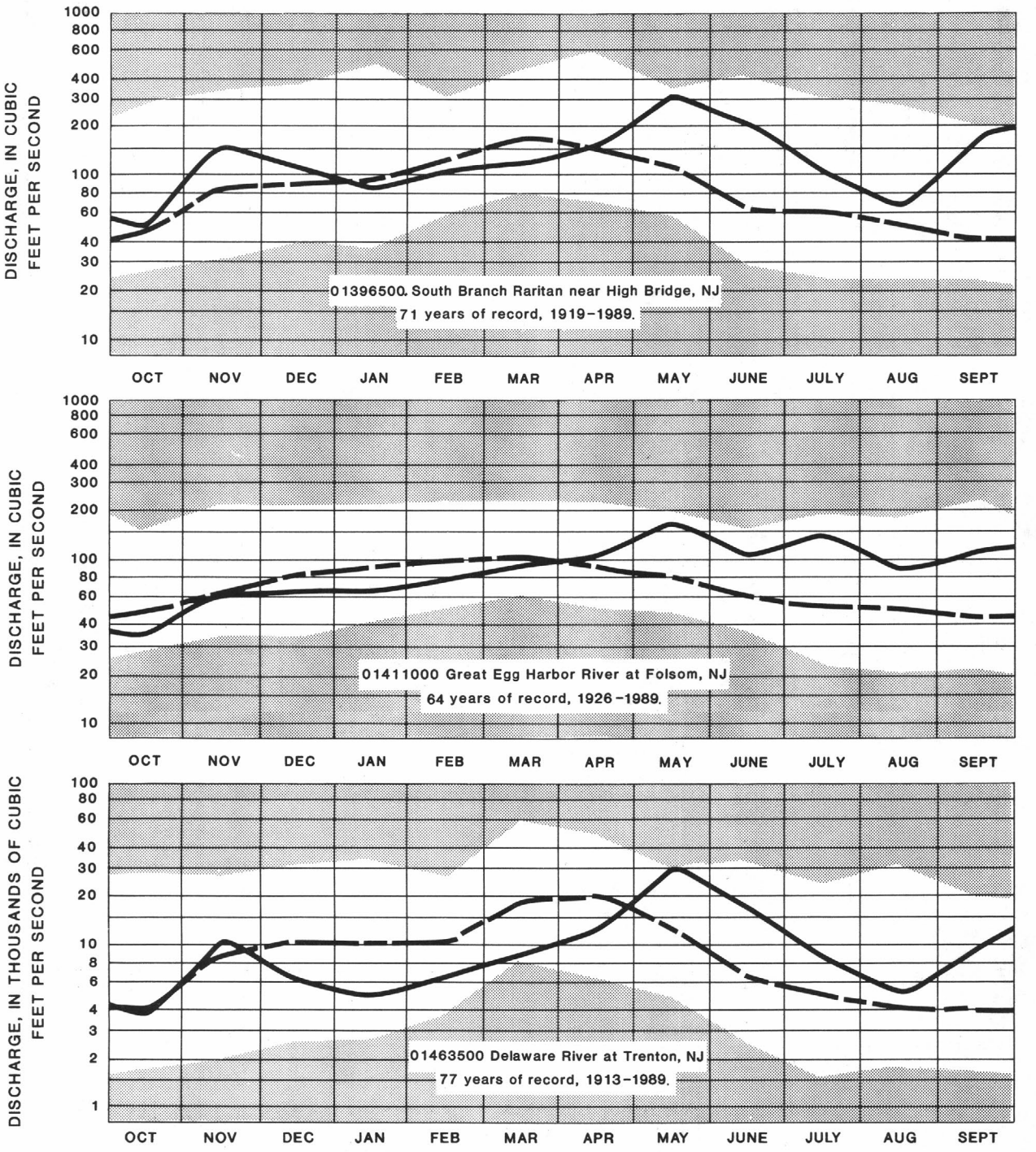


Figure 1.--Monthly precipitation at three National Weather Service locations.



Unshaded area.--Indicates range between highest and lowest mean recorded for the month, prior to 1989 water year.

Broken line.--Indicates normal (median of the monthly means) for the standard reference period, 1951-1980.

Solid line.--Indicates observed monthly mean flow for the 1989 water year.

Figure 2.--Monthly mean discharge at index gaging station.

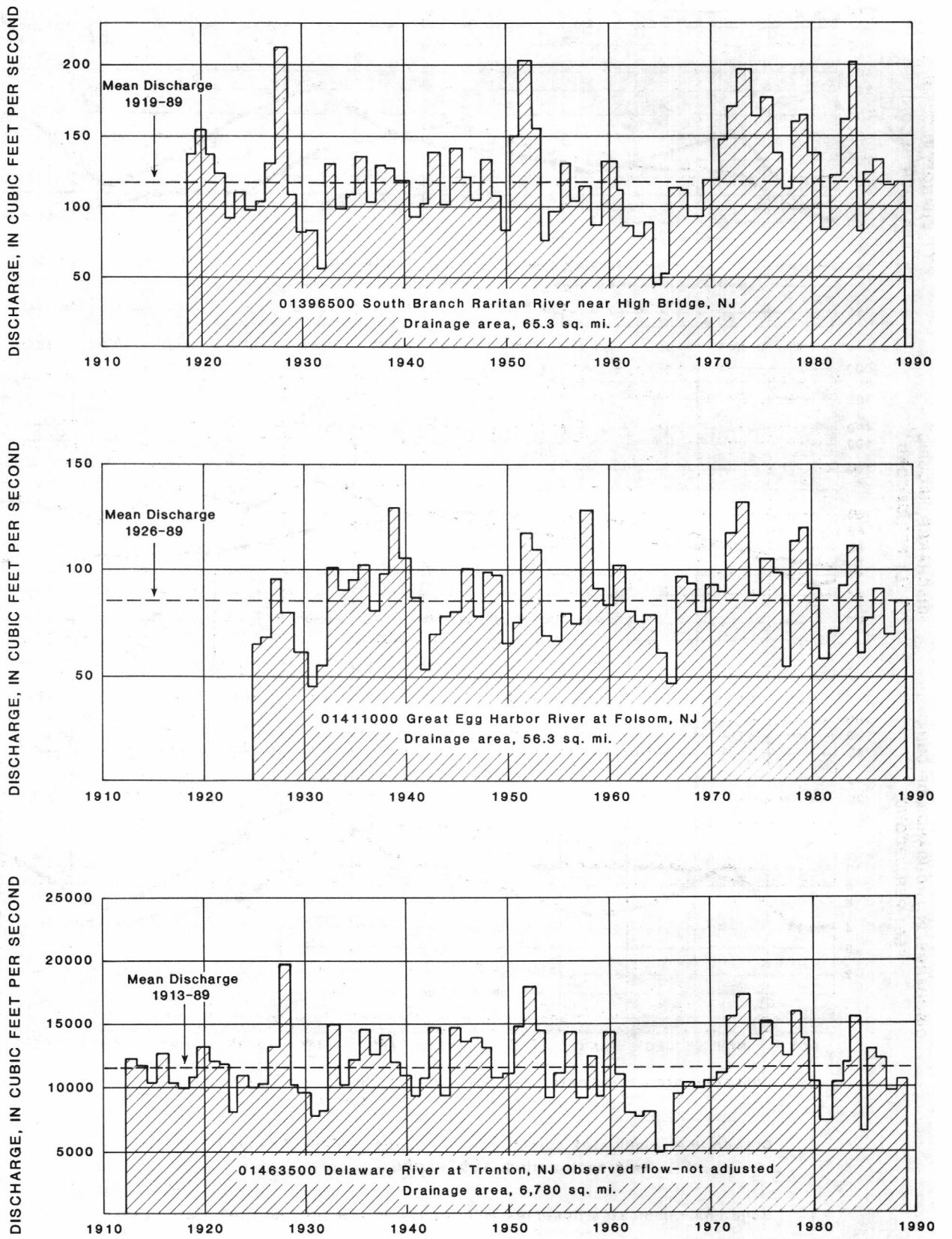


Figure 3.--Annual mean discharge at index gaging stations.

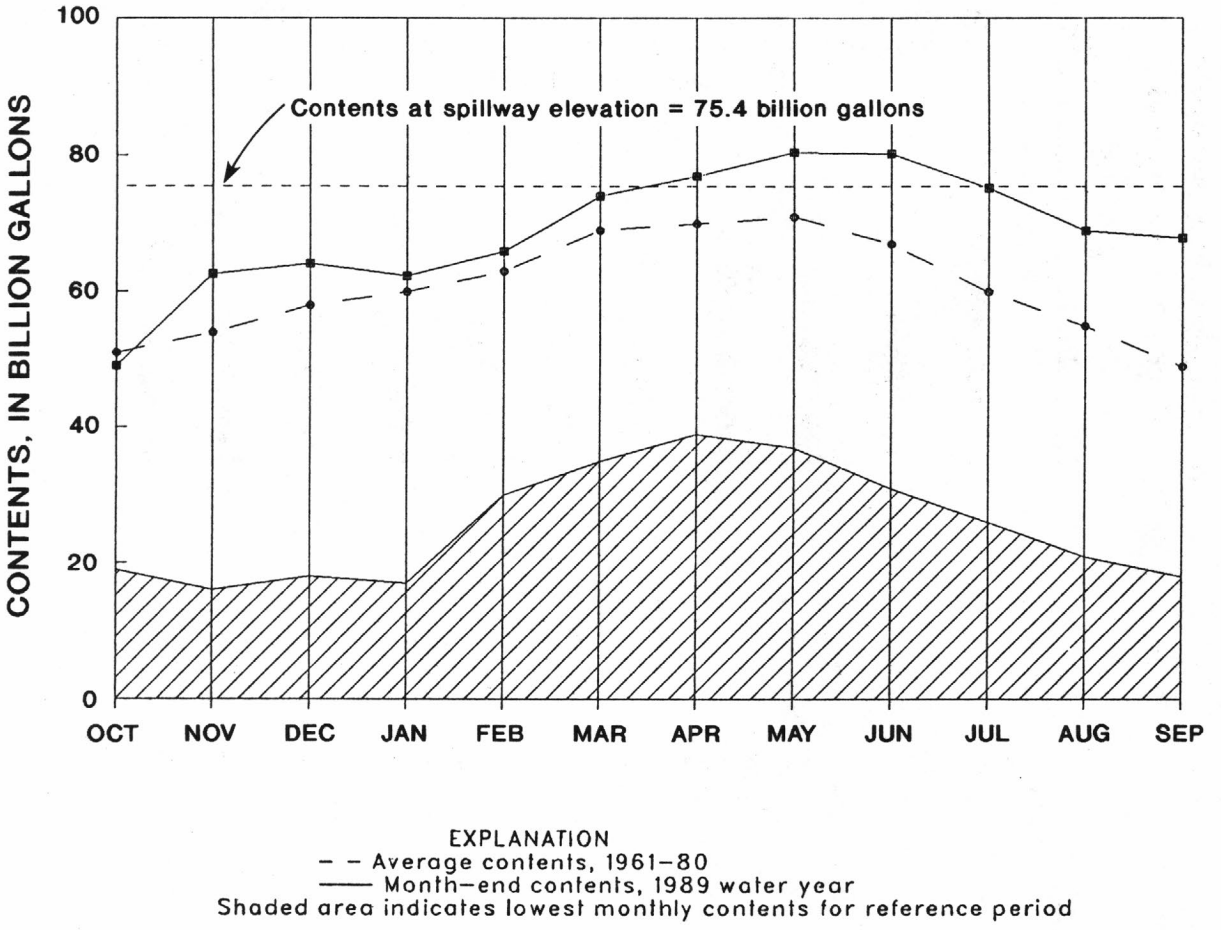


Figure 4.--Combined usable storage in 13 major water-supply reservoirs.

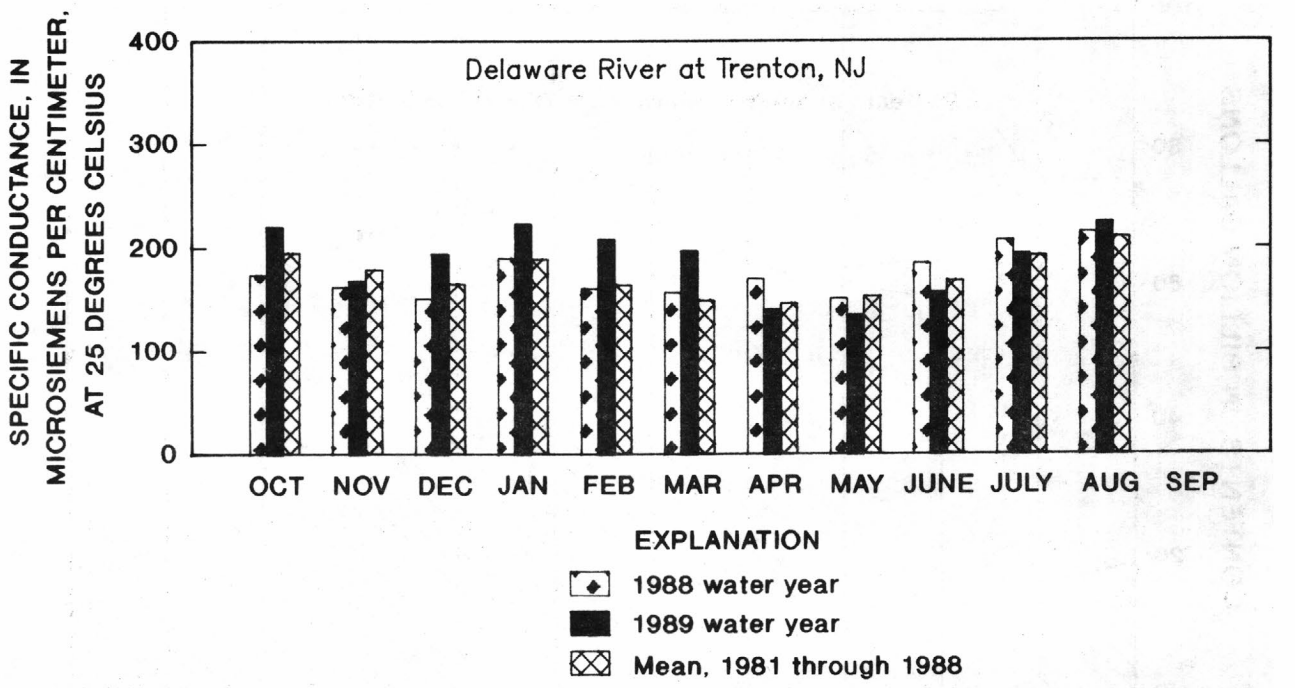


Figure 5.--Monthly mean specific conductance at Delaware River at Trenton.

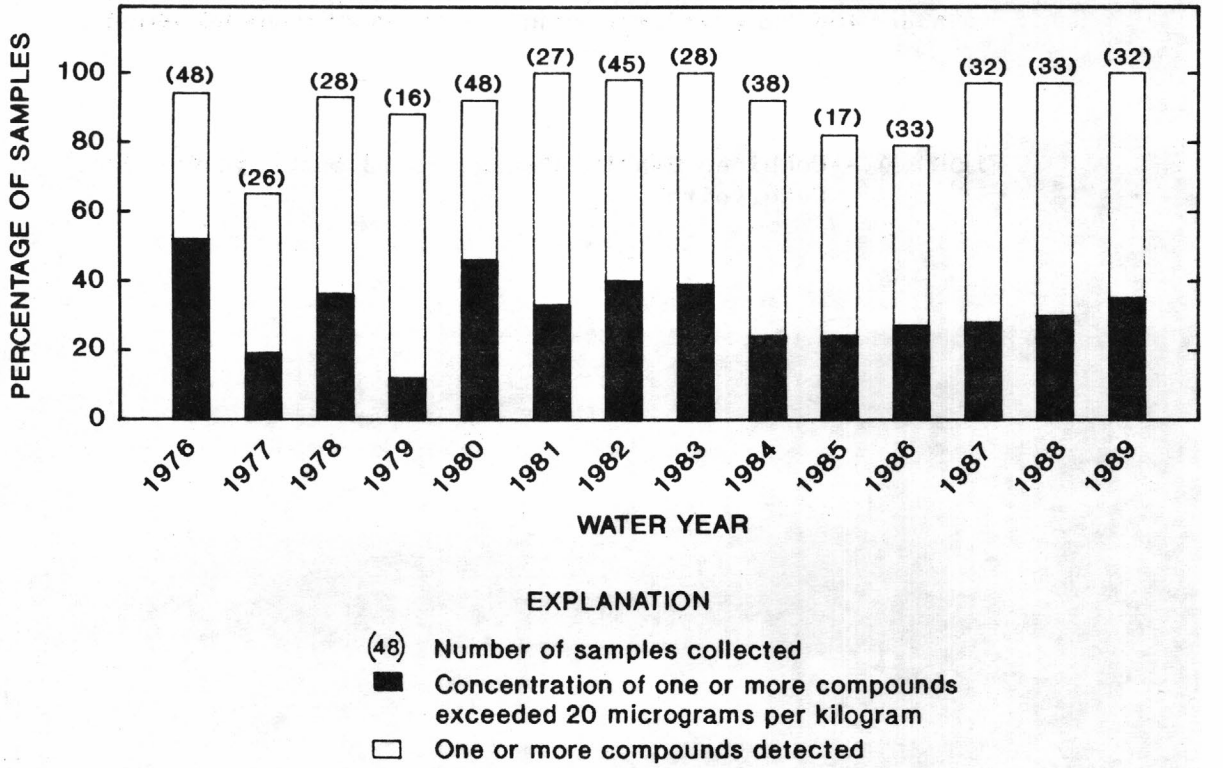


Figure 6.--Frequency of detection of chlordane, DDT, DDE, DDD and PCBs in stream bottom material.

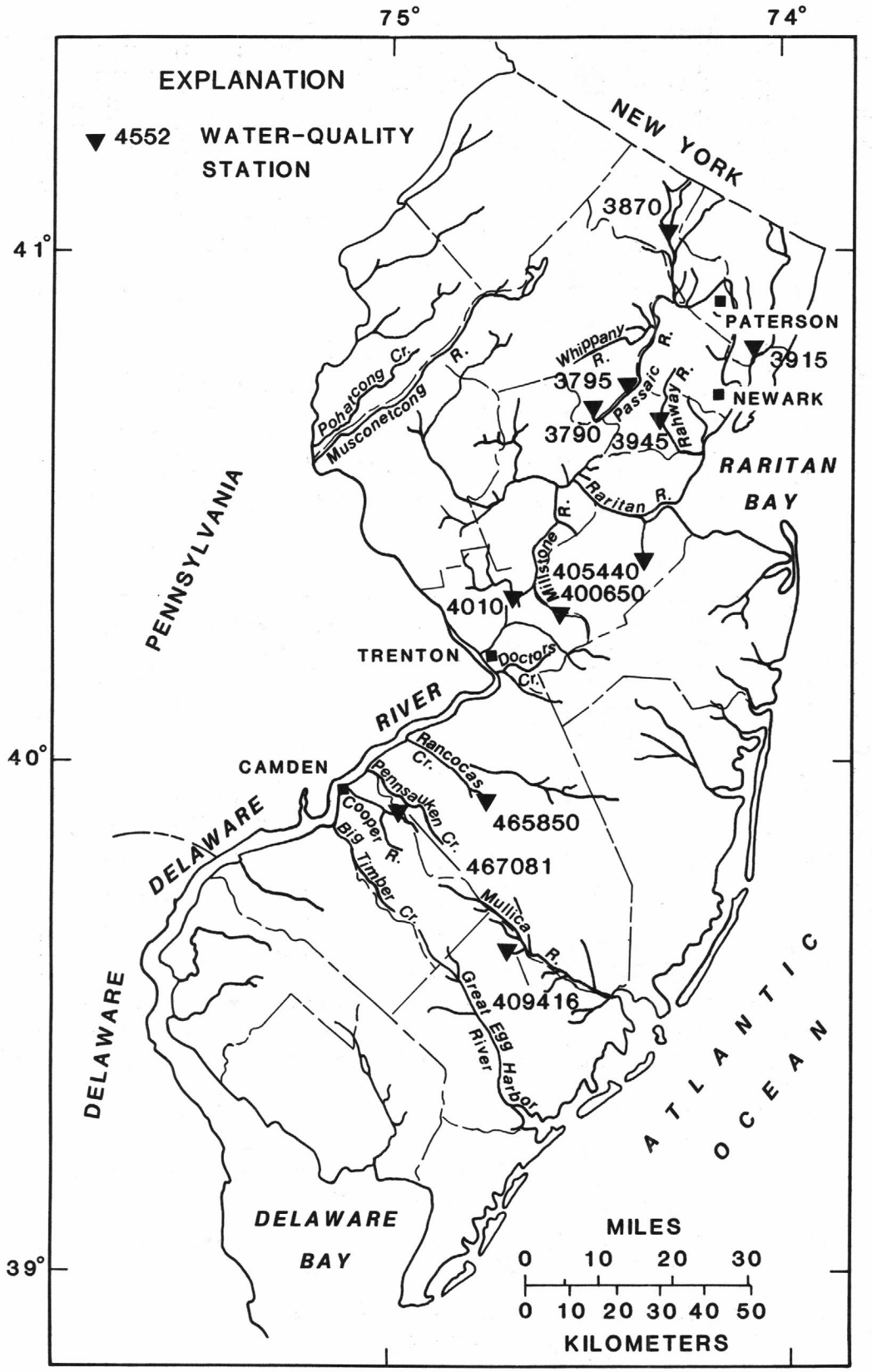
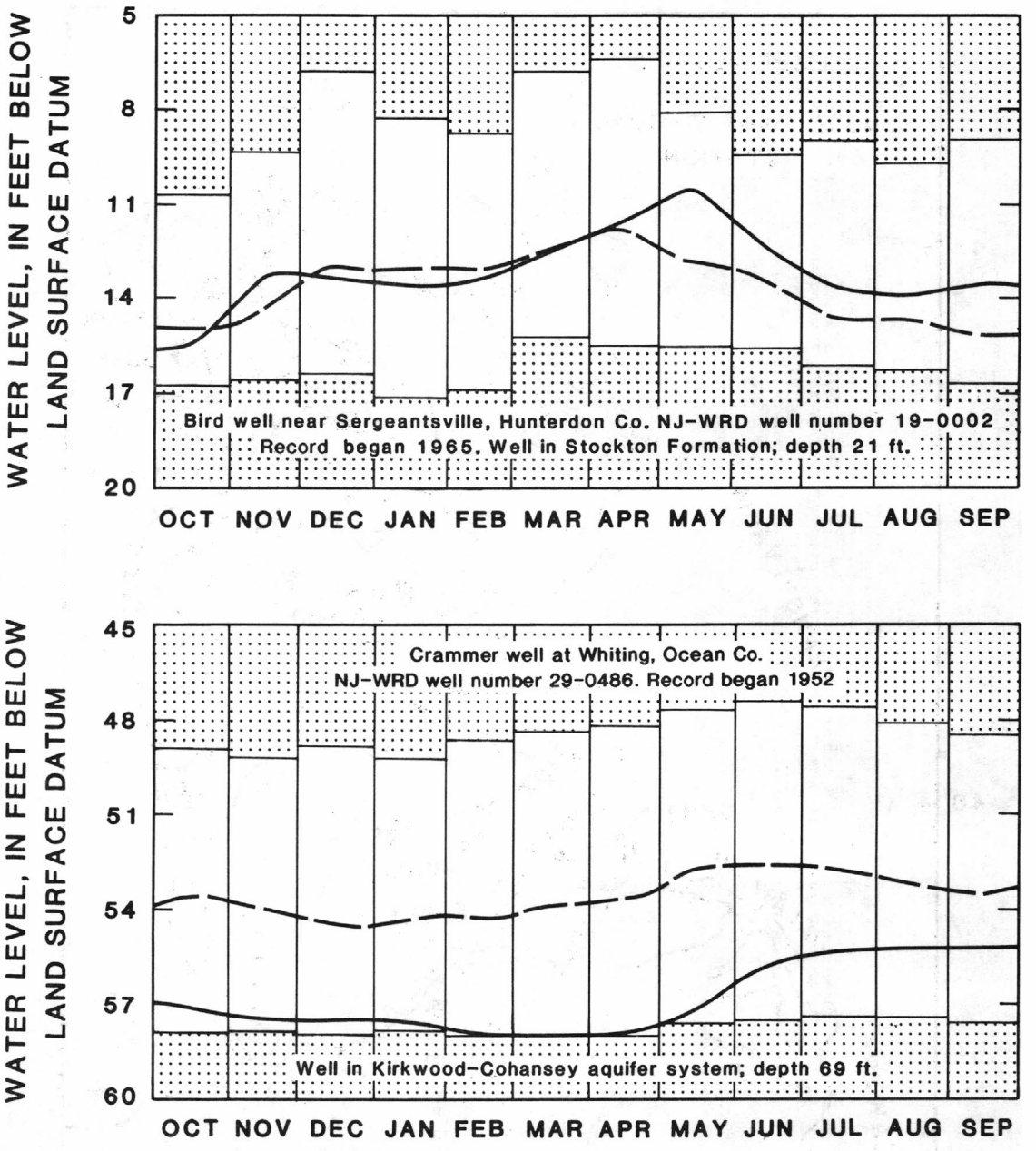


Figure 7.--Locations of water-quality stations with concentrations of chlordane, DDD, DDE, DDT, or PCBs in bottom material greater than 20 micrograms per kilogram, water year 1989.



Unshaded area -- Indicates range between highest and lowest recorded monthly water levels, prior to current year.

Dashed line -- Indicates average of monthly water levels, prior to current year.

Solid line -- Indicates monthly mean water level for the current year.

Figure 8.--Monthly ground-water levels at key water-table observation wells.

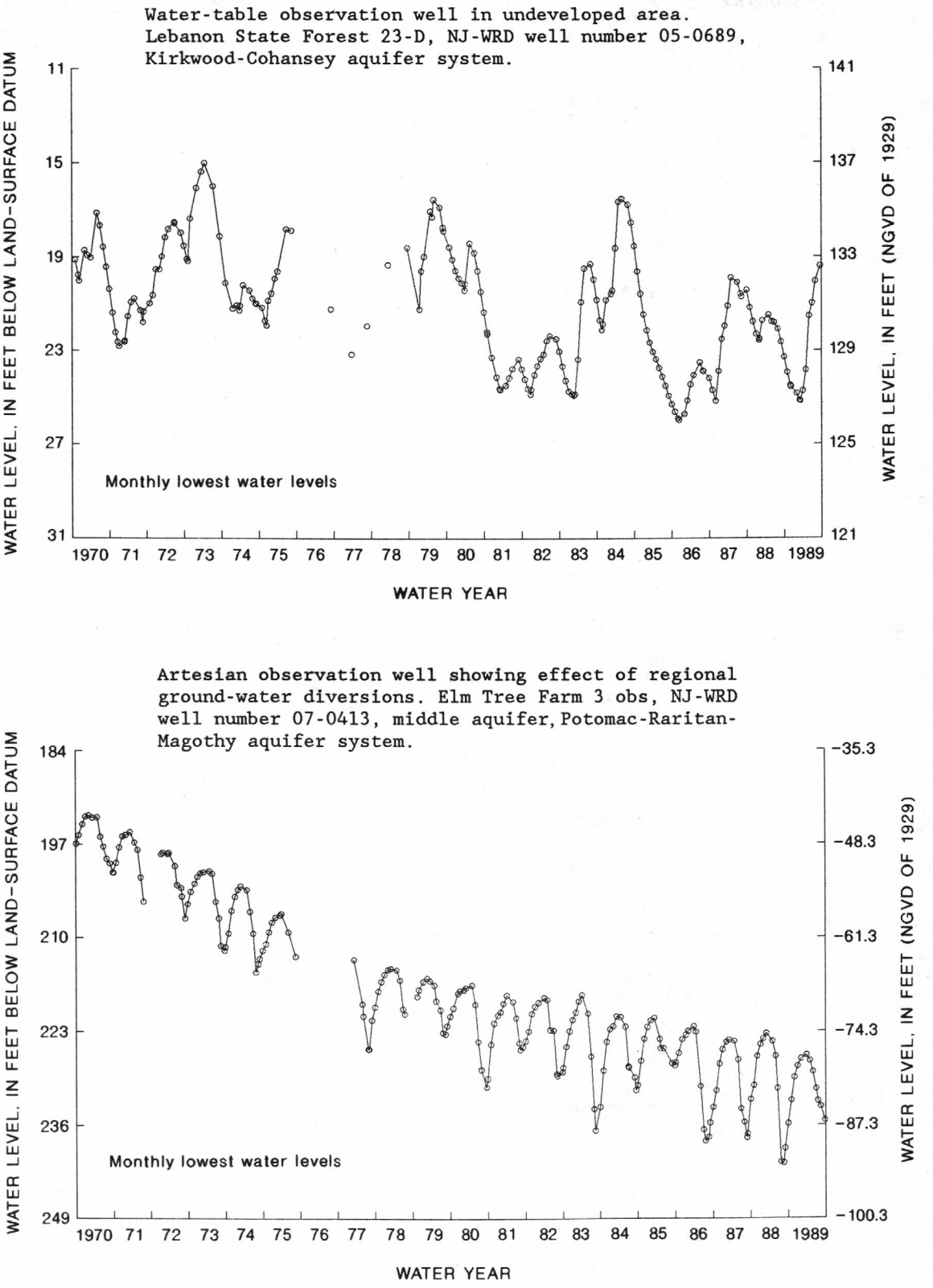


Figure 9.--Twenty-year water-level hydrographs of one artesian and one water-table observation well.

SPECIAL NETWORKS AND PROGRAMS

Hydrologic Bench-mark Network is a network of 57 sites in small drainage basins around the country whose purpose is to provide consistent data on the hydrology, including water quality, and related factors in representative undeveloped watersheds nationwide, and to provide analyses on a continuing basis to compare and contrast conditions observed in basins more obviously affected by the activities of man. The Bench-mark Network station published in this report is McDonalds Branch in Lebanon State Forest, NJ (01466500).

National Stream Quality Accounting Network (NASQAN) is a nationwide data-collection network designed by the U.S. Geological Survey to meet many of the information needs of government agencies and other groups involved in natural or regional water-quality planning and management. The 500 or so sites in NASQAN are generally located at the downstream ends of hydrologic accounting units designated by the U.S. Geological Survey Office of Water Data Coordination in consultation with the Water Resources Council. The objectives of NASQAN are (1) to obtain information on the quality and quantity of water moving within and from the United States through a systematic and uniform process of data collection, summarization, analysis, and reporting such that the data may be used for, (2) description of the areal variability of water quality in the Nation's rivers through analysis of data from this and other programs, (3) detection of changes or trends with time in the pattern of occurrence of water-quality characteristics, and (4) providing a nationally consistent data base useful for water-quality assessment and hydrologic research. NASQAN stations published in this report are: Passaic River at Little Falls, NJ (01389500), Raritan River, at Queens Bridge, at Bound Brook, NJ (01403300), Toms River near Toms River, NJ (01408500), West Branch Wading River at Maxwell, NJ (01409815), Maurice River at Norma, NJ (01411500), and Delaware River at Trenton, NJ (01463500).

The National Trends Network (NTN) is a 150-station network for sampling atmospheric deposition in the United States. The purpose of the network is to determine the variability, both in location and in time, of the composition of atmospheric deposition, which includes snow, rain, dust particles, aerosols, and gases. The core from which the NTN was built was the already-existing deposition-monitoring network of the National Atmospheric Deposition Program (NADP). No NTN stations are published in this report.

Radiochemical Program is a network of regularly sampled water-quality stations where samples are collected to be analyzed for radioisotopes. The streams that are sampled represent major drainage basins in the conterminous United States. The Radiochemical Program station published in this report is Delaware River at Trenton, NJ (01463500).

Tritium Network is a network of stations which has been established to provide baseline information or the occurrence of tritium in the Nation's surface waters. In addition to the surface-water stations in the network, tritium data are also obtained at a number of precipitation stations. The purpose of the precipitation stations is to provide an estimate sufficient for hydrologic studies of the tritium input to the United States. No Tritium Network stations are published in this report.

EXPLANATION OF THE RECORDS

The surface-water and ground-water records published in this report are for the 1989 water year that began October 1, 1988, and ended September 30, 1989. A calendar of the water year is provided on the inside of the front cover. The records contain streamflow data, stage and content data for lakes and reservoirs, water-quality data for surface and ground water, and ground-water-level data. The locations of the stations and wells where the data were collected are shown in figures 11, 12, 13, and 14. The following sections of the introductory text are presented to provide users with a more detailed explanation of how the hydrologic data published in this report were collected, analyzed, computed, and arranged for presentation.

Station Identification Numbers

Each data station, whether streamsite or well, in this report is assigned a unique identification number. This number is unique in that it applies specifically to a given station and to no other. The number usually is assigned when a station is first established and is retained for that station indefinitely. The systems used by the U.S. Geological Survey to assign identification numbers for surface-water stations and for ground-water well sites differ, but both are based on geographic location. Generally the "downstream order" system is used for regular surface-water stations and the "latitude-longitude" system is used for wells.

Downstream Order System

Since October 1, 1950, the order of listing hydrologic-station records in Survey reports is in a downstream direction along the main stream. All stations on a tributary entering upstream from a mainstream station are listed before that station. A station on a tributary that enters between two mainstream stations is listed between them. A similar order is followed in listing stations on first rank, second rank, and other ranks of tributaries. The rank of any tributary with respect to the stream to which it is immediately tributary is indicated by an indention in the "List of Stations" in the front of this report. Each indention represents one rank. This downstream order and 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 according to downstream order. In assigning station numbers, no distinction is made between partial-record stations and other stations; therefore, the station number for a partial-record station indicates downstream-order position in a list made up of both types of stations. Gaps are left in the series of numbers to allow for new stations that may be established; hence, the numbers are not consecutive. The complete eight-digit number for each station, such as 01396500, which appears just to the left of the station name, includes the two-digit Part number "01" plus the 6-digit downstream-order number "396500". The Part number designates the major drainage basin; for example, Part "01" covers the North Atlantic slope basins.

Latitude-Longitude System

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

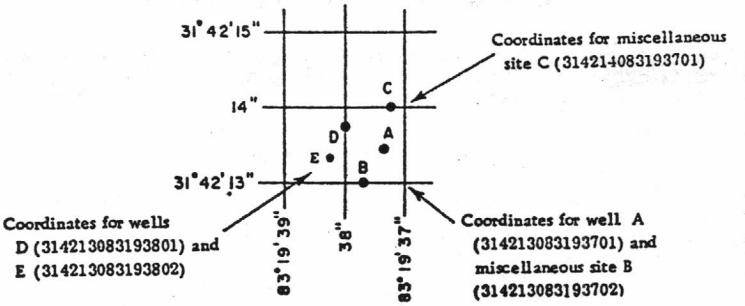


Figure 10.--System for numbering wells and miscellaneous sites (latitude and longitude).

Records of Stage and Water Discharge

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

By contrast, partial records are obtained through discrete measurements without using a continuous stage-recording device and pertain only to a few flow characteristics, or perhaps only one. The nature of the partial record is indicated by table titles such as "Crest-stage partial records," or "Low-flow partial records." Records of miscellaneous discharge measurements or of measurements from special studies, such as low-flow seepage studies, may be considered as partial records, but they are presented separately in this report. Location of all complete-record and crest-stage partial-record stations for which data are given in this report are shown in figures 11 and 12.

Data Collection and Computation

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

Continuous records of stage are obtained with analog recorders that trace continuous graphs of stage, with digital recorders that punch stage values on paper tapes at selected time intervals, or with Data Collection Platforms (DCP) that electronically record and then transmit the data via satellite to ground receiving stations. Measurements of discharge are made with current meters using methods adopted by the Geological Survey as a result of experience accumulated since 1880. These methods are described in standard textbooks, in Water-Supply Paper 2175, and in U.S. Geological Survey Techniques of Water-Resources Investigations, Book 3, Chapter A6.

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

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

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

In computing records of lake or reservoir contents, it is necessary to have available from surveys, curves or tables defining the relationship of 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 relationship changes because of deposition of sediment in a lake or reservoir, periodic resurveys may be necessary to redefine the relationship. Even when this is done, the contents computed may become increasingly in error as the lapsed time since the last survey increases. Discharges over lake or reservoir spillways are computed from stage-discharge relationships much as other stream discharges are computed.

For some gaging stations, there are periods when no gage-height record is obtained, or the recorded gage height is so faulty that it cannot be used to compute daily discharge or contents. This happens when the recorder stops or otherwise fails to operate properly, intakes are plugged, the float is frozen in the well, or for various other reasons. For such periods, the daily discharges are estimated from the recorded range in stage, previous or following record, discharge measurements, weather records, and comparison with other station records from the same or

nearby basins. Likewise, daily contents may be estimated from operator's logs, previous or following record, inflow-outflow studies, and other information. Information explaining how estimated daily-discharge values are identified in station records is included in the next two sections, "Data Presentation" (REMARKS paragraph) and "Identifying Estimated Daily Discharge."

Data Presentation

The records published for each gaging station consist of three parts, the manuscript or station description, the data table for the current water year, and tables of monthly, annual, and other statistics. The manuscript provides, under various headings, descriptive information, such as station location; period of record; historical extremes; record accuracy; and other remarks pertinent to station operation and regulation. The following information, as appropriate, is provided with each continuous record of discharge or lake content. Comments to follow clarify information presented under the various headings of the station description.

LOCATION.--Information on locations is obtained from the most accurate maps available. The location of the gage 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, given for only a few stations, were determined by methods given in "River Mileage Measurement," Bulletin 14, Revision of October 1968, prepared by the Water Resources Council or were provided by the U.S. Army Corps of Engineers or the Delaware River Basin Commission.

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 there are published records 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 records from it can reasonably be considered equivalent with records from the present station.

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

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

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

COOPERATION.--Records provided by a cooperating organization or obtained for the 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.

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 offices whose addresses are given on the back of the title page of this report to determine if the published records were ever revised after the station was discontinued. Of course, if the data were obtained by computer retrieval, the data would be current and there would be no need to check because any published revision of data is always accompanied by revision of the corresponding data in computer storage.

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

The daily table for stream-gaging stations gives mean discharge for each day and is followed by monthly summaries. In the monthly summary below the daily table, the line headed "MEAN" gives the average flow in cubic feet per second during the month. The lines headed "MAX" and "MIN" give the maximum and minimum daily discharges, respectively, for the month. Discharge for the month for some stations can also be expressed in inches (line headed "IN"). Figures for runoff in inches are omitted if there is extensive regulation or diversion or if the drainage area includes large noncontributing areas. At some stations, monthly and (or) yearly observed discharges are adjusted for reservoir storage or diversion, or diversions or reservoir contents are given. These figures are identified by a symbol and corresponding footnote.

Beginning with the 1988 water year, below the monthly summary, statistical figures are listed for current water year and period of record. The first heading is the average monthly flow data for the period of record. The line headed "MEAN" gives the average flow in cubic feet per second for that month for the period of record. The lines headed "MAX" and "MIN" give the highest and lowest mean for that month and the water year (WY) in which it occurred. Below the monthly flow statistics, summary statistics for the current water year and period of record are listed. The line headed "AVERAGE FLOW" is the average for the current year and period of record. The following lines list the extremes and date of each for the current year and period of record. The line headed "ANNUAL RUNOFF (INCHES)" is the annual total discharge in inches. The following lines list the discharges for the 10, 50, and 95 percentiles.

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

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

Accuracy of the Records

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

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

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

Discharge at many stations, as indicated by the monthly mean, may not reflect natural runoff due to the effects of diversion, consumption, regulation by storage, increase or decrease in evaporation due to artificial causes, or to other factors. For such stations, figures of cubic feet per second per square mile and of runoff, in inches, are not published unless satisfactory adjustments can be made for diversions, for changes in contents of reservoirs, or for other changes 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 used in the preparation of the records in this publication, such as discharge- measurement notes, gage-height records, temperature measurements, and rating tables is on file in the New Jersey District office. Also, most of the daily mean discharges are in computer-readable form and have been analyzed statistically. Information on the availability of the unpublished information or on the results of statistical analyses of the published records may be obtained from the offices whose addresses are given on the back of the title page of this report.

Records of Surface-Water Quality

Records of surface-water quality ordinarily are obtained at or near stream-gaging stations because interpretation of records of surface-water quality nearly always requires corresponding discharge data. Records of surface-water quality in this report may involve a variety of types of data and measurement frequencies. Locations of stations for which records on the quality of surface water appear in this report are shown in figure 10.

Classification of Records

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

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

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 which are not at a surface-water daily record station appear in separate tables following the table of discharge measurements at miscellaneous sites.

On-site Measurements and Sample Collection

Water-quality data must represent the in-situ quality of the water. To assure this, certain measurements, such as water temperature, pH, and dissolved oxygen, must be made onsite when the samples are collected. In addition, specific procedures must be used in collecting, treating, and shipping the samples to the laboratory. Procedures for onsite 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. C2; Book 5, Chap. A1, A3, and A4. These references are listed under "PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS" at the end of the introductory text. Also, detailed information on collecting, treating, and shipping samples may be obtained from the Geological Survey, New Jersey District office.

In streams, concentrations of various constituents may vary within the cross section depending on variables such as flow rate, the sources of the constituents, and mixing. Generally, constituents in solid phases are more variable in the cross section than are dissolved constituents. In many cases, samples must integrate several parts of the stream cross section to be representative, especially if loads will be calculated. One sample may be representative of the cross section when the distribution of constituents is homogeneous. All samples obtained for the National Stream Quality Accounting Network (see definitions) are obtained from several verticals.

Chemical-quality data published in this report are considered to be the most representative values available for the stations listed. In some instances, apparent inconsistencies may exist in the data. For example, the orthophosphate-phosphorus concentration may exceed total phosphorus concentration. However, the difference in the inconsistent values normally is smaller than the precision of the analytical techniques. Inconsistencies between pH and carbonate and bicarbonate concentrations are commonly caused by intake or loss of carbon dioxide by the sample before it can be analyzed.

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

Water Temperature

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

At stations where recording instruments are used, maximum, minimum and mean temperatures for each day are published. Water temperatures measured at the time of water-discharge measurements are on file in the New Jersey District Office.

Sediment

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

During periods of rapidly changing flow or rapidly changing concentration, samples may have been collected more frequently (twice daily or, in some instances, hourly). The published sediment discharges for days of rapidly changing flow or concentration were computed by the subdivided-day method (time-discharge weighted average). Therefore, for those days when the published sediment discharge value differs from the value computed as the product of discharge times mean concentration times 0.0027, the reader can assume that the sediment discharge for that day was computed by the subdivided-day method. For periods when no samples were collected, daily discharges of suspended sediment were estimated on the basis of water discharge, sediment concentrations observed immediately before and after the periods, and suspenced-sediment loads for other periods of similar discharge.

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

Samples for biochemical-oxygen demand and for fecal coliform and fecal streptococcal bacteria are analyzed at the District laboratory or at the New Jersey Department of Health, Division of Laboratories and Epidemiology. Samples for nutrients are analyzed at the New Jersey Department of Health or at the Geological Survey Laboratory in Arvada, Colorado. Sediment samples are analyzed in the Geological Survey Laboratory in Harrisburg, Pennsylvania. All other samples are analyzed in the Geological Survey laboratory in Arvada, Colorado. Methods used in analyzing sediment samples and computing sediment records are given in TWRI, Book 5, Chap. C1. Methods used by the Geological Survey laboratory are given in TWRI, Book 1, Chap. D2; Book 3, Chap. C2; Book 5, Chap. A1, A3, and A4.

In March 1989 the National Water-Quality Laboratory discovered a bias in the turbidimetric method for sulfate analysis, 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. Sulfate values in this report have not been corrected for this bias.

Data Presentation

For continuing-record stations, information pertinent to the history of station operation is provided in descriptive headings preceeding the tabular data. These descriptive headings give details regarding location, drainage area, period of record, type of data available, instrumentation, general remarks, cooperation, and extremes for parameters currently measured daily. Tables of chemical, physical, biological, radiochemical 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 discharge gaging station, neither the LOCATION nor the DRAINAGE AREA statements are repeated. The following information, as appropriate, is provided with each continuous-record station. Comments 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 parameters measured daily or continuously and those measured less than daily. For those measured daily or continuously, periods of record are given for the parameters individually.

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

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

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

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

REVISIONS.--If errors in published water-quality records are discovered after publication, appropriate updates are made to the Water-Quality File in the U.S. Geological Survey's computerized data system, WATSTORE, and subsequently by monthly transfer of update transactions to the U.S. Environmental Protection Agency's STORET system. Because the usual volume of updates makes it impractical to document individual changes in the State data-report series or elsewhere, potential users of U.S. Geological Survey water-quality data are encouraged to obtain all required data from the appropriate computer file to insure the most recent updates.

The surface-water-quality records for partial-record stations and miscellaneous sampling sites which are not at a surface-water daily record station are published in separate tables following the table of discharge measurements at miscellaneous sites. No descriptive statements are given for these records. Each station is published with its own station number and name in the regular downstream-order sequence.

Remark Codes

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

PRINTED OUTPUT	REMARK
E	Estimated value
>	Actual value is known to be greater than the value shown
<	Actual value is known to be less than the value shown
K	Results based on colony count outside the acceptance range (non-ideal colony count)
L	Biological organism count less than 0.5 percent (organism may be observed rather than counted)
D	Biological organism count equal to or greater than 15 percent (dominant)
&	Biological organism estimated as dominant

Records of Ground-Water Levels

Only water-level data from a national network of observation wells are given in this report. These data are intended to provide a sampling and historical record of water-level changes in the Nation's most important aquifers. Locations of the observation wells in this network in New Jersey are shown in figure 13.

Data Collection and Computation

Measurements of water levels are made 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.

Tables of water-level data are presented by counties arranged in alphabetical order. The prime identification number for a given well is the 15-digit number that appears in the upper left corner of the table. The secondary identification number is the NJ-WRD well number, a hyphenated 6 digit identification number assigned to all New Jersey wells in the Ground Water Site Inventory (GWSI) data base. The first two digits are a code for the county in which the well is located and the last four digits are a sequence number. These NJ-WRD well numbers are being used now in the ground-water level descriptions, wells sampled for water quality analyses, and on the corresponding location maps in these reports.

Water-level records are obtained from direct measurments with a steel tape, from the punched tape of a water-level recorder, or from water-level extremes recorder. Beginning in the 1977 water year, water-level recorders were removed from some wells and replaced by water-level extremes recorders. The extremes are read from these recorders at about three month intervals, but the actual dates of occurrence of these extremes (highest and lowest water levels) are unknown. In these reports, the water-level extremes are given together with the manually measured water levels.

Most 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. The elevation of the land-surface datum is given in the well description. The height of the measuring point (MP) above or below land-surface datum is given in each well description. Water levels in wells equipped with water-level recorders are reported for every fifth day and the end of each month (eom).

Water levels are reported to as many significant figures as can be justified by the local conditions. For example, in a measurement of a depth to water of several hundred feet, the error of determining the absolute value of the total depth to water may be a few tenths of a foot, whereas the error in determining the net change of water level between successive measurements may be only a hundredth or a few hundredths of a foot. For lesser depths to water, the accuracy is greater. All measurements published herein are reported to a hundredth of a foot.

Data Presentation

Each well record consists of three parts, the station description, the data table of water levels observed during the water year, and a multi-year hydrograph. The description of the well is presented first through use of descriptive headings preceding the tabular data. The comments to follow clarify information presented under the various headings.

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

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

WELL CHARACTERISTICS.--This entry describes the well in terms of depth, diameter, casing depth and/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 used, allowing the user to better evaluate the reported water-level extremes by knowing whether they are based on weekly, monthly, 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 National Geodetic Vertical Datum of 1929 (NGVD of 1929); it is reported with a precision depending on 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 water levels of the period of record and the dates of their occurrence.

A table of water levels follows the station description for each well. Water levels are reported in feet below land-surface datum or elevation of water level. For wells equipped with recorders, only abbreviated tables are published. Mean daily water-levels are listed for every fifth day and at the end of the month (eom). The highest and lowest water levels of the water year and their dates of occurrence are shown on a line below the abbreviated table. Because all values are not published for wells with recorders, the extremes may be values that are not listed in the table. Missing records are indicated by dashes in place of the water level.

Records of Ground-Water Quality

Records of ground-water quality in this report consist of only one set of measurements for the water year. Because ground-water movement is normally slow compared to surface water, frequent measurements are not necessary for monitoring purposes. More frequent measurements may be necessary for studying ground-water problems, trends, or processes. Locations of wells for which water-quality data are published are shown in figure 13.

Laboratory Measurements

In March 1989 the National Water-Quality Laboratory discovered a bias in the turbidimetric method for sulfate analysis, 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. Sulfate values in this report have not been corrected for this bias.

Data Collection and Computation

The records of ground-water quality in this report were obtained from water-quality monitoring studies in specific areas. Consequently, chemical analyses are presented for some counties but not for others. As a result, the records for this year, by themselves, do not provide a balanced view of ground-water quality Statewide. Such a view can be attained only by considering records for this year in context with similar records obtained for these and other counties in earlier years.

In ground-water observation wells, water in the casing may not be representative of aquifer water quality. To collect samples representative of aquifer water, samples are collected only after at least three casing volumes of water have been pumped from the well and measurements of temperature, specific conductance, and pH have stabilized during the pumping.

Data Presentation

The records of ground-water quality are published in a section titled QUALITY OF GROUND WATER immediately following the ground-water-level records. Data for quality of ground water are listed alphabetically by County and are identified by NJ-WRD well number. 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.

CURRENT WATER RESOURCES PROJECTS IN NEW JERSEY

The Geological Survey is currently involved in a number of hydrologic investigations in the State of New Jersey. The following is a list of these investigations. Results are published at the conclusion of short-term projects or periodically in the case of long-term projects. Hydrologic data from these projects are entered into the WATSTORE data base. Subsequent sections contain information on recent publications and on WATSTORE.

Agricultural Water Demand Model for the State of New Jersey

An Assessment of Impacts of Rolling Knoll Landfill on Nearby Water Resources

Assessement of Ground-Water Resources in the Vicinity of Ground-Water Contamination Sites in Greenwich Township, Gloucester County, New Jersey

Assessment of the Water Resources of Logan Township, Gloucester County, New Jersey

Compositional Modeling of Organic Transport and Biodegradation in the Unsaturated Zone and Ground Water

Effects of Streamflow Diversions on the Water-Quality of Selected New Jersey Estuaries

Evaluation of Field Sampling Techniques and Analytical Methods for Organic Compounds in Ground-Water

Flood Characteristics of New Jersey Streams

Flood Insurance Studies for Federal Insurance Administration, HUD

Geochemical Effects on the Corrosivity of Ground Water in the Kirkwood-Cohansey Aquifer in the New Jersey Coastal Plain

Geochemical Processes Controlling Aluminum and Sulfate Transport in Acidic Surface, Ground and Soil Waters In a Watershed In the New Jersey Coastal Plain

Geohydrology of Picatinny Arsenal in Morris County, New Jersey

Geophysical and Water-Quality Reconnaissance of the Ciba-Geigy Superfund Site, Toms River, Ocean County, New Jersey

Geophysical Characteristics of Aquifers in New Jersey

Ground Water Data Collection Network

Ground-Water Contamination by Light Chlorinated Hydrocarbons at Picatinny Arsenal, Morris County, New Jersey

Ground-Water Flow and Water Quality, Newark Basin, New Jersey

Ground-Water Quality and its Relationship to Geohydrology and Land Use in the Outcrop Area of the Potomac-Raritan-Magothy Aquifer System, Mercer and Middlesex Counties, New Jersey

Ground-Water Quality of the Central Passaic River Basin, Northeastern, New Jersey

Ground-Water Resources Investigation of the Rockaway River Buried Valley

Ground-Water Resources of the Buried Valley and Carbonate Rock Systems of the Lamington River and the South Branch Raritan River Drainage Areas in Northern New Jersey

Hydrologic Conditions in the Jacobs Creek, Stony Brook and Beden Brook Drainage Basins in West Central New Jersey, 1986-1988

Hydrologic Conditions of the Upper Rockaway River Basin, New Jersey, 1984-1986

Hydrologic Processes With Special Emphasis on Ground-Water Quality near Camden, New Jersey

Hydrologic Processes With Special Emphasis on Ground-Water Quality near South River, New Jersey

Hydrology of the Kirkwood-Cohansey Aquifer System in Metedeconk and Toms River Basin

Interpretation of Water Quality Trends in New Jersey Streams, 1976-85

Investigation of Naturally Occurring Radioactive Substances in Ground Water of the Triassic Formations in New Jersey

Land Subsidence Related to Ground-Water Withdrawls in the Coastal Plain Aquifer of New Jersey

Mobility, Transport and Fate of Naturally Occurring Radionuclides in Ground-Water Newark Basin, New Jersey

Modeling and Experimental Investigation of Hydrocarbon Transport and Biodegradation in the Unsaturated Zone

Natural Radioactivity in Ground-Water of the Kirkwood-Cohansey Aquifer System, Southern Coastal Plain, New Jersey

Optimal Withdrawls from a Coastal Aquifer Subject to Salt-Water Encroachment: Numerical Analysis and Case Study

Potential Effects of Climate Change on the Water Resources of the Delaware River Basin

Preliminary Natural Resource Surveys of Superfund Sites in New Jersey

Quality of Water Data Collection Network

Regionalization of Low Flows for New Jersey Streams

Removing Volatile Ground-Water Contaminants by Inducing Air-Phase Transport

Somerset County Flood-Monitoring Network

Spatial Analysis of Statewide Water-Quality Data

Surface Water Data Collection Network

Surfactant Sorption to Soil and its Effect on the Distribution of Anthropogenic Organic Compounds

Water Levels in Major Artesian Aquifers of the New Jersey Coastal Plain and Surrounding Areas, 1989

Water Resources and Saltwater Intrusion of the Holly Beach-Cohansey, Rio Grande, Atlantic City 800-Foot Sand, and Piney Point Aquifers, Cape May County

Water Table, Hydrologic Properties and Ground-Water Quality of the Kirkwood-Cohansey Aquifer System, Gloucester County and Maurice River Basin North of Norma, New Jersey

Water Use

WATER-RELATED REPORTS FOR NEW JERSEY COMPLETED BY THE GEOLOGICAL SURVEY IN RECENT YEARS

Ayers, M.A. and Leavesley, G. H., 1989, Assessment of the potential effects of climate change on water resources of the Delaware River basin: Work plan for 1988-90: U.S. Geological Survey Open-File Report 88-478.

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Barringer, T. H., Dunn, Dennis, Battaglin, W. A., and Vowinkel, E. F., 1988, Relating land use to ground-water quality: Methods and problems: Water Resources Bulletin.

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Barton, G. J., and Krebs, Martha, 1989, Hydrogeologic reconnaissance of the Swope Oil Superfund site and vicinity, Camden and Burlington Counties, New Jersey: U.S. Geological Survey Open-File Report 89-402.

Battaglin, W. A. and Hill, M. C., 1988, Simulated effects of future withdrawals on water levels in the northeastern Coastal Plain aquifers of New Jersey: U. S. Geological Survey Water-Resources Investigations Report 88-4199.

Battaglin, W. A., Ulery, R. L., and Vowinkel, Eric, 1988, Method for simulating water-table altitudes from stream and drainage-basin locations by use of a geographic information system: Proceedings of the Fourth Toxic Substances Hydrology Technical Meeting, September 25-30, 1988.

Clark, J. S. and Paulachok, G. N., 1987, Water levels in the principal aquifers of Atlantic County and vicinity, New Jersey, 1985-86: New Jersey Department of Environmental Protection.

Ehlke, T. A., 1988, Microbiological transformation of trichloroethylene in soil at Picatinny Arsenal, New Jersey: Proceedings of the Fourth Toxic Substances Hydrology Technical Meeting, September 25-10, 1988.

Fulton, J. L., 1989, Application of a distributed-routing rainfall-runoff model to flood-frequency estimation in Somerset County, New Jersey: U.S. Geological Survey Water-Resources Investigations Report 89-4210.

Fusillo, T. V. and Ehlke, T. A., 1987, Movement and fate of chlorinated solvents in ground water: Research activities at Picatinny Arsenal, New Jersey: U.S. Geological Survey Open-File Report 87-395.

Gibs, Jacob and Imbrigiotta, T. E., 1988, Evaluation of well-purging criteria for sampling purgeable organic compounds: Proceedings of the Second National Outdoor Action Conference on Aquifer Restoration.

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ACCESS TO WATSTORE DATA

The National Water Data Storage and Retrieval System (WATSTORE) was established in 1972 to provide an effective and efficient means for the processing and maintenance of water data collected through the activities of the U.S. Geological Survey. A variety of useful products ranging from data tables to complex statistical analyses such as Log Pearson Type III statistics can be produced using WATSTORE. The system resides on the central computer facilities of the U.S. Geological Survey at its National Center in Reston, Virginia and consists of related files and data bases.

- Station Header File - Contains descriptive information on over 440,000 sites throughout the United States and it's territories where the U.S. Geological Survey collects or has collected data.
- Daily Values File - Contains over 220 million daily values of stream flows, stages, reservoir contents, water temperatures, specific conductances, sediment concentrations, sediment discharges, and ground-water levels.
- Peak Flow File - Contains approximately 500,000 maximum (peak) streamflow and gage height values at surfce-water sites.
- Water Quality File - Contains approximately 2 million analyses of water samples that describe the chemical, physical, biological, and radiochemical characteristics of both surface and ground water.
- Ground-Water Site Inventory Data Base - Contains inventory data for over 900,000 wells, springs, and other sources of ground water. The data includes site location, geohydrologic characteristics, well-construction history, and one-time field measurements such as water temperature.

In 1976, the U.S. Geological Survey opened WATSTORE to the public for direct access. The signing of a Memorandum of Agreement with the Survey is required to obtain direct access to WATSTORE. The system can be accessed either synchronously or asynchronously. The requestor will be expected to pay all computer costs he/she incurs. Direct access may be obtained by contacting:

U.S. Geological Survey
National Water Data Exchange
421 USGS National Center
Reston, Virginia 22092

In addition to providing direct access to WATSTORE, the National Water Data Exchange (NAWDEX) services include data-search assistance, data dissemination, and data referrals. Data can be provided in various machine-readable formats on magnetic tape or 5-1/4 inch floppy disk. The request for water-data should be forwarded to the local Geological Survey District office:

District Chief
U.S. Geological Survey
Mountain View Office Park
810 Bear Tavern Road, Suite 206
West Trenton, New Jersey 08628

If the district office does not have the facility to fulfill the request, it will be referred to the National Water Data Exchange (NAWDEX) office in Reston, Virginia.

DEFINITION OF TERMS

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

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

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

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

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

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

Aquifer codes and geologic names:

The following list shows the aquifer unit codes and geologic names of the formations in which the sampled wells are finished. The aquifer unit codes also appear in the ground-water quality and ground-water level tables.

112SFDF	Stratified drift
112HLBC	Holly Beach water-bearing zone
112CPMY	Cape May Formation, undifferentiated
112ESRNS	Cape May Formation, estuarine sand facies
121CNSY	Cohansey Sand
121CKKD	Kirkwood-Cohansey aquifer system
122KRKDU	Rio Grande water-bearing zone of the Kirkwood Formation
122KRKDL	Atlantic City 800-foot sand of the Kirkwood Formation
124PNPN	Piney Point aquifer
125VNCN	Vincentown Formation
211MLRW	Wenonah-Mount Laurel aquifer
211EGLS	Englishtown aquifer system
211MRPA	Potomac-Raritan-Magothy aquifer system, undifferentiated
211MRPAU	Upper aquifer, Potomac-Raritan-Magothy aquifer system
211MRPAM	Middle aquifer, Potomac-Raritan-Magothy aquifer system
211MRPAL	Lower aquifer, Potomac-Raritan-Magothy aquifer system
211ODBG	Old Bridge aquifer, Potomac-Raritan-Magothy aquifer system (Mercer, Middlesex, Monmouth Counties)
211FRNG	Farrington aquifer, Potomac-Raritan-Magothy aquifer system (Mercer, Middlesex, Monmouth Counties)
227BRCK	Brunswick Group, undifferentiated
227HKMN	Hook Mountain Basalt of Olsen (1980)
227PSSC	Passaic Formation of Olsen (1980)
230TRSC	Triassic System
231LCKG	Lockatong Formation
231SCKN	Stockton Formation
340DVNN	Devonian System
374LSVL	Leithsville Formation
400PCMB	Precambrian Erathem

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

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

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

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

Fecal streptococcal bacteria are bacteria found also in the intestine of warm-blooded animals. Their presence in water is considered to verify fecal pollution. They are characterized as Gram-positive, cocci bacteria which are capable of growth in brain-heart infusion broth. In the laboratory they are defined as all the organisms which produce red or pink colonies within 48 hours at 35°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.

Bedload is the sediment which moves along in essentially continuous contact with the streambed by rolling, sliding, and making brief excursions into the flow a few diameters above the bed.

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

Benthic invertebrates are invertebrate animals inhabiting the bottoms of lakes, streams, and other water bodies. 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 micro-organisms, such as bacteria.

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

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

Dry mass refers to the mass of residue present after drying in an oven at 105°C for zooplankton and periphyton, until the mass remains unchanged. This mass represents the total organic matter, ash and sediment, in the sample. Dry-mass values are expressed in the same units as ash mass.

Organic mass or volatile mass of the living substance is the difference between the dry mass and ash mass and represents the actual mass of the living matter. The organic mass is expressed in the same units as for ash mass and dry mass.

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

Bottom material: See Bed material.

Cells/volume refers to the number of cells of any organism which is counted by using a microscope and grid or counting cell. Many planktonic organisms are multicelled and are counted according to the number of contained cells per sample, usually milliliters (mL) or liters (L).

Cfs-day is the volume of water represented by a flow of 1 cubic foot per second for 24 hours. It is equivalent to 86,400 cubic feet, approximately 1.9835 acre-feet, about 646,000 gallons, or 2,447 cubic meters.

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.

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

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

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

Continuing-record station is a specified site which meets one or all conditions listed:

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.

Control designates a feature downstream from the gage that determines the stage-discharge relation at the gage. This feature may be a natural constriction of the channel, an artificial structure, or a uniform cross section over a long reach of the channel.

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

Cubic foot per second (ft^3/s) is the rate of discharge representing a volume of 1 cubic foot passing a given point during 1 second and is equivalent to 7.48 gallons per second or 448.8 gallons per minute or 0.02832 cubic meters per second.

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

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

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

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

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

Dissolved-solids concentration of water is determined either analytically by the "residue-on-evaporation" method, or mathematically by totaling the concentrations of individual constituents reported in a comprehensive chemical analysis. During the analytical determination of dissolved solids, the bicarbonate (generally a major dissolved component of water) is converted to carbonate. Therefore, in the mathematical calculation of dissolved-solids concentration, the bicarbonate value, in milligrams per liter, is multiplied by 0.492 to reflect the change.

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

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

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

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

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

High tide is the maximum height reached by each rising tide.

Hydrologic Bench-Mark Network is a network of 57 sites in small drainage basins around the country whose purpose is to provide consistent data on the hydrology, including water quality, and related factors in representative undeveloped watersheds nationwide, and to provide analyses on a continuing basis to compare and contrast conditions observed in basins more obviously affected by the activities of man.

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

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

Low-tide is the minimum height reached by each falling tide.

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

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

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

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 ($\mu g/g$) is a unit expressing the concentration of a chemical constituent as the mass (micrograms) of the element per unit mass (gram) of material analyzed.

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

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

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.

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

National Stream Quality Accounting Network (NASQAN) is a nationwide data-collection network designed by the U.S. Geological Survey to meet many of the information needs of government agencies and other groups involved in natural or regional water-quality planning and management. The 500 or so sites in NASQAN are generally located at the downstream ends of hydrologic accounting units designated by the U.S. Geological Survey Office of Water Data Coordination in consultation with the Water Resources Council. The objectives of NASQAN are (1) to obtain information on the quality and quantity of water moving within and from the United States through a systematic and uniform process of data collection, summarization, analysis, and reporting such that the data may be used for, (2) description of the areal variability of water quality in the Nation's rivers through analysis of data from this and other programs, (3) detection of changes or trends with time in the pattern of occurrence of water-quality characteristics, and (4) providing a nationally consistent data base useful for water-quality assessment and hydrologic research.

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

NJ-WRD well number is a hyphenated, 6-digit identification number which the U.S. Geological Survey assigned to all New Jersey wells in the Ground Water Site Inventory (GWSI) data base. This numbering system was developed in 1978 to simplify identification of wells. The first two digits are a code for the county in which the well is located, and the last four digits are a sequence number. Each well added to GWSI is assigned the next higher sequence number for the county in which the well is located. These NJ-WRD well numbers are being used now in the ground-water level descriptions, wells sampled for water-quality analyses, and on the corresponding location maps in these reports.

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.

Organism is any living entity.

Organism count/area refers to the number of organisms collected and enumerated in a sample and adjusted to the number per 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.

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

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

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

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

Particle-size classification used in this report agrees with 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.....	.004 - .062	Sedimentation
Sand.....	.062 - 2.0	Sedimentation or sieve
Gravel.....	2.0 - 64.0	Sieve

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

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

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

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

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

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 ar commonly known as algae.

Blue-green algae are a group of phytoplankton organisms having a blue pigment, in addition to the green pigment called chlorophyll. Blue-green algae often cause nuisance conditions in water.

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

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

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

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

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

Milligrams of carbon per area or volume per unit time [mg C/(m^2/time)] for periphyton and macrophytes and [mg C/(m^3/time)] for phytoplankton are units for expressing primary productivity. They define the amount of carbon dioxide consumed as measured by radioactive carbon (carbon 14). The carbon 14 method is of greater sensitivity than the oxygen light and dark bottle method and is preferred for use in unenriched waters. Unit time may be either the hour or day, depending on the incubation period.

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

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

Recoverable from bottom material is the amount of a given constituent that is in solution after a representative sample of bottom material has been digested by a method (usually using an acid or mixture of acids) that results in dissolution of 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.

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

River mile as used herein, is the distance above the mouth of Delaware Bay, measured along the center line of the navigation channel or the main stem of the Delaware River. River mile data were furnished by the Delaware River Basin Commission.

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

Screened interval is the length of well screen through which water enters a well, in feet below land surface.

Sediment is solid material that originates mostly from disintegrated rocks and is transported by, suspended in, or deposited from water; it includes chemical and biochemical precipitates and decomposed organic material, such as humus. The quantity, characteristics, and cause of the occurrence of sediment in streams are influenced by environmental factors. Some major factors are degree of slope, length of slope, soil characteristics, land usage, and quantity and intensity of precipitation.

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

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

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

Suspended-sediment concentration is the velocity-weighted concentration of suspended sediment in the sampled zone (from the water surface to a point approximately 0.3 ft above the bed) expressed as milligrams of dry sediment per liter of water-sediment mixture (mg/L).

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

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

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

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

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

7-day 10-year low flow (MA7CD10) is the discharge at the 10-year recurrence interval taken from a frequency curve of annual values of the lowest mean discharge for 7 consecutive days (the 7-day low flow).

Sodium-adsorption-ratio (SAR) is the expression of relative activity of sodium ions in exchange reactions within soil and is an index of sodium or alkali hazard to the soil. Waters range in respect to sodium hazard from those which can be used for irrigation on almost all soils to those which are generally unsatisfactory for irrigation.

Solute is any substance that is dissolved in water.

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

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

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

Substrate is the physical surface upon which an organism lives.

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

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

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

Surficial bed material is the part (0.1 to 0.2 ft) 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 associated with 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 water-suspended sediment sample that is retained on a 0.45 um 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 analyzing portions of the material collected on the filter or, more commonly, by difference, based on determinations of (1) dissolved and (2) total recoverable concentrations of the constituent.

Suspended, total is the total amount of a given constituent in the part of a representative water-suspended sediment sample that is retained on a 0.45 um membrane filter. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent determined. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to determine when the results should be reported as "suspended, total."

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

Taxonomy is the division of biology concerned with the classification and naming of organisms. The classification of organisms is based upon a 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

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

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

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

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

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

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

Tritium Network is a network of stations which has been established to provide baseline information on the occurrence of tritium in the Nation's surface waters. In addition to the surface-water stations in the network, tritium data are also obtained at a number of precipitation stations. The purpose of the precipitation stations is to provide an estimate sufficient for hydrologic studies of the tritium input to the United States.

Water table is that surface in an unconfined ground-water body at which the pressure is atmospheric.

Water year in Geological Survey 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, 1985, is called the "1985 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.

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

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

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

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

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

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

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

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

3-A12. *Fluorometric procedures for dye tracing*, by J. F. Wilson, Jr., E. D. Cobb, and F. A. Kilpatrick: USGS--TWRI Book 3, Chapter A12. 1986. 41 pages.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

DISCONTINUED GAGING STATIONS

The following continuous-record streamflow stations in New Jersey have been discontinued or converted to partial-record stations. Daily streamflow records were collected and published for the period of record shown for each station.

Station number	Station name	Drainage area (sq mi)	Period of record (water years)
01368000	Wallkill River near Unionville, NY	140	1938-81
01368720	Auxiliary outlet of Upper Greenwood Lake at Moe, NJ	------	1968-80a
01378690	Passaic River near Bernardsville, NJ	8.83	1968-77
01379630	Russia Brook tributary at Milton, NJ	2.51	1969-71
01384000	Wanaque River at Monks, NJ	40.4	1935-85
01385000	Cupsaw Brook near Wanaque, NJ	4.37	1935-58
01385500	Erskine Brook near Wanaque, NJ	1.14	1934-38
01386000	West Brook near Wanaque, NJ	11.8	1935-78
01386500	Blue Mine Brook near Wanaque, NJ	1.01	1935-58
01389800	Passaic River at Paterson, NJ	785	1897-1955
01392000	Weasel Brook at Clifton, NJ	4.45	1937-62
01392500	Second River at Belleville, NJ	11.6	1938-64
01393000	Elizabeth River at Irvington, NJ	2.90	1931-38
01393500	Elizabeth River at Elizabeth, NJ	20.2	1922-73
01393800	East Fork East Branch Rahway River at West Orange, NJ	.83	1972-74
01394000	West Branch Rahway River at Millburn, NJ	7.10	1940-50
01395500	Robinsons Branch Rahway River at Goodmans, NJ	12.7	1921-24
01397500	Walnut Brook near Flemington, NJ	2.24	1936-61
01398045	Back Brook tributary near Ringoes, NJ		1977-88
01399000	North Branch Raritan River at Pluckimen, NJ	52.0	1903-06
01399190	Lamington (Black) River at Succasunna, NJ	7.37	1976-87
01399200	Lamington (Black) River near Ironia, NJ	10.9	1975-87
01399525	Axle Brook near Pattersville, NJ		1977-88
01399690	South Branch Rockaway Creek at Whitehouse, NJ	13.2	1964-67
01399830	North Branch Raritan River at North Branch, NJ	174	1977-81
01400932	Baldwin Creek at Baldwin Lake, near Pennington, NJ	2.52	1963-70
01400953	Honey Branch near Pennington, NJ	.70	1967-75
01401500	Millstone River near Kingston, NJ	171	1934-49
01402590	Royce Brook tributary at Frankfort, NJ	.29	1969-74
01403000	Raritan River at Bound Brook, NJ	779	1903-09, 1945-66
01403500	Green Brook at Plainfield, NJ	9.75	1938-84
01403900	Bound Brook at Middlesex, NJ	48.4	1972-77
01404000	Bound Brook at Bound Brook, NJ	49.0	1923-30
01404500	Lawrence Brook at Patricks Corner, NJ	29.0	1922-26
01405300	Matchaponix Brook at Spotswood, NJ	43.9	1957-67
01405500	South River at Old Bridge, NJ		1939-88
01406000	Deep Run near Browntown, NJ	8.07	1932-40
01406500	Tennent Brook near Browntown, NJ	5.25	1932-41
01407000	Matawan Creek at Matawan, NJ	6.11	1932-55
01408140	South Branch Metedeconk River at Lakewood, NJ	26.0	1973-76
01409000	Cedar Creek at Lanoka Harbor, NJ	55.3	1933-58, 1971
01409095	Oyster Creek near Brookville, NJ	7.43	1965-84
01409280	Westecunk Creek at Stafford Forge, NJ		1939-88
01410500	Absecon Creek at Absecon, NJ	17.9	1946-85
01410787	Great Egg Harbor River tributary at Sicklerville, NJ	1.64	1972-79
01410810	Fourmile Branch at New Brooklyn, NJ	7.74	1973-79
01410820	Great Egg Harbor River near Blue Anchor, NJ	37.3	1972-79
01412000	Menantico Creek near Millville, NJ	23.2	1931-57, 1978-85
01412500	WB Cohansey River at Seeley, NJ	2.58	1951-67
01413000	Loper Run near Bridgeton, NJ	2.34	1937-59
01444000	Paulins Kill at Columbia, NJ	179	1908-09
01445000	Pequest River at Huntsville, NJ	31.0	1940-62
01445430	Pequest River at Townsbury, NJ	92.5	1977-80
01446000	Beaver Brook near Belvidere, NJ	36.7	1923-61
01455160	Brass Castle Creek near Washington, NJ	2.34	1970-83
01455200	Pohatcong Creek at New Village, NJ	33.3	1960-70
01455355	Beaver Brook near Weldon, NJ	1.72	1969-71
01455500	Musconetcong River at outlet of Lake Hopatcong, NJ	25.3	1961-75
01456000	Musconetcong River near Hackettstown, NJ	68.9	1922-74
01457500	Delaware River at Riegelsville, NJ	6328	1906-71
01462000	Delaware River at Lambertville, NJ	6680	1898-1906
01463587	New Sharon Run at Carsons Mills, NJ	6.63	1976-77
01463620	Assunpink Creek near Clarksville, NJ	34.3	1972-82
01463657	Shipetaukin Creek tributary at Lawrenceville, NJ	.78	1976-77
01463690	Little Shabakunk Creek at Bakersville, NJ	3.98	1976-77
01464525	Thornton Creek at Bordentown, NJ	.84	1976-77
01465850	South Branch Rancocas Creek at Vincentown, NJ	64.5	1961-75
01466000	Middle Branch Mount Misery Brook in Lebanon State Forest, NJ	2.82	1953-65, 1977
01467019	Mill Creek near Willingboro, NJ	4.12	1975-78
01467021	Mill Creek at Levitt Parkway, at Willingboro, NJ	9.12	1975-77

DISCONTINUED GAGING STATIONS--Continued

Station number	Station name	Drainage area (sq mi)	Period of record (water years)
01476600	Still Run near Mickleton, NJ	3.98	1957-66
01477500	Oldmans Creek near Woodstown, NJ	18.5	1932-40
01482500	Salem River at Woodstown, NJ	14.6	1940, 1941-85
01483000	Alloway Creek at Alloway, NJ	20.3	1953-72

a Not published, on file at U.S. Geological Survey, West Trenton, NJ

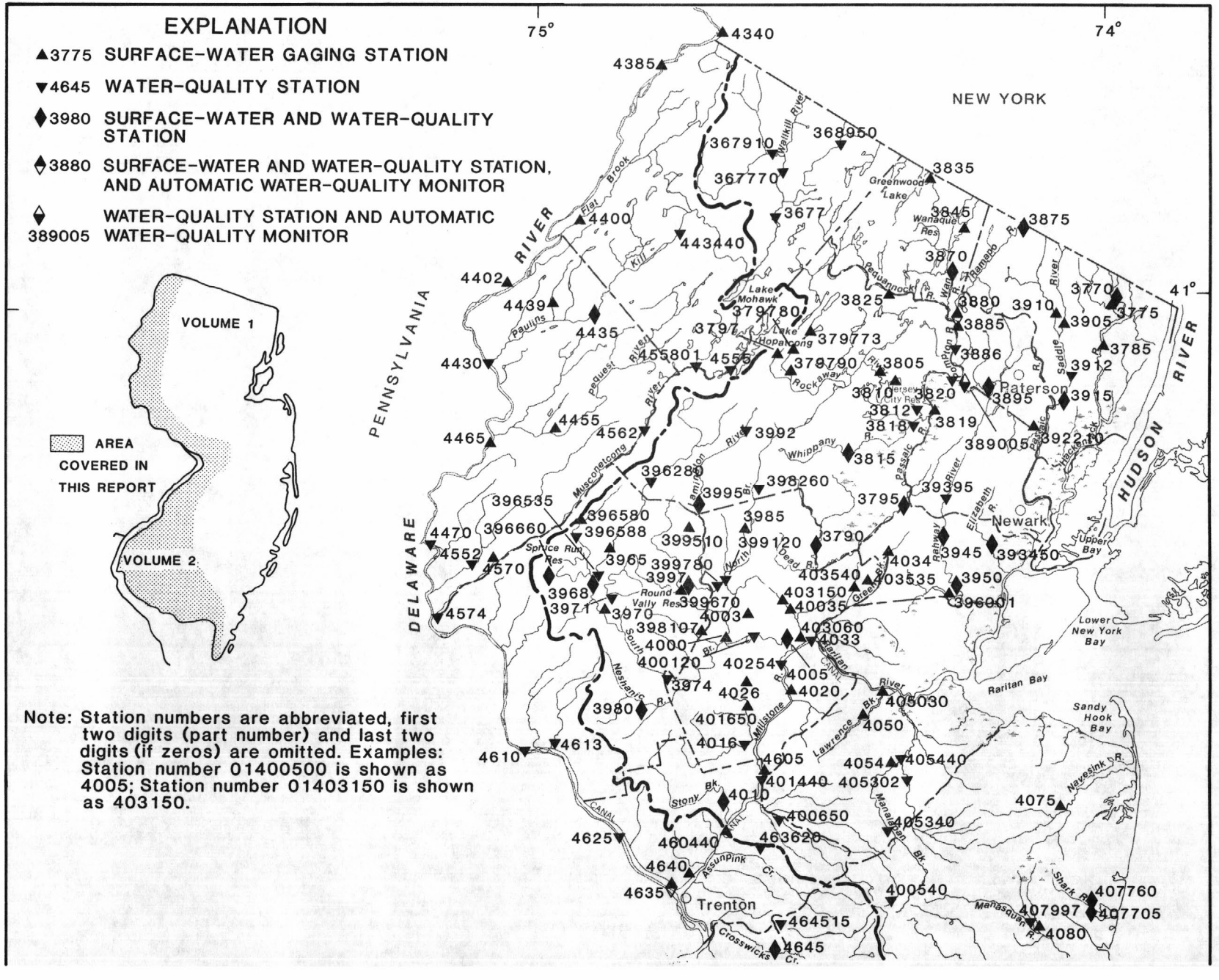
DISCONTINUED CONTINUOUS WATER-QUALITY STATIONS

The following stations were discontinued as continuous water-quality stations prior to the 1987 water year. Daily records of temperature, specific conductance, pH, dissolved oxygen or sediment were collected and published for the period of record shown for each station.

Station number	Station name	Drainage area (sq mi)	Type of record	Period of record (water years)
01379500	Passaic River near Chatham, NJ	100	Sed.	1964-68
01379773	Green Pond Brook at Picatinny Arsenal, NJ		Temp., S.C., pH, D.O.	1984-86
01382000	Passaic River at Two Bridges, NJ	361	Temp., S.C., pH, D.O.	1969-74
01387500	Ramapo River near Mahwah, NJ	118	Sed.	1964-65
01389000	Pompton River near Two Bridges, NJ	372	Temp., S.C., pH, D.O.	1969-74
01389500	Passaic River at Little Falls, NJ	762	Sed.	1964-65
			Temp., S.C.	1981-86
01396500	South Branch Raritan River near High Bridge, NJ	65.3	Temp.	1961-79
			S.C.	1969-79
01397000	South Branch Raritan River at Stanton, NJ	147	Temp., S.C.	1969-79
			Sed.	1960-63
01399690	South Branch Rockaway Creek at Whitehouse, NJ	13.2	Temp., S.C.	1977-78
			Sed.	1977
01399700	Rockaway Creek at Whitehouse, NJ	37.1	Temp., S.C.	1977-78
01400510	Raritan River near Manville, NJ	497	Temp., S.C., pH, D.O.	1968-74
01400932	Baldwin Creek at Baldwin Lake, near Pennington, NJ	2.52	Temp.	1963-66
			Sed.	1963-69
01401000	Stony Brook at Princeton, NJ	44.5	Sed.	1959-70
01402900	Millstone River near Manville, NJ	287	Temp., S.C., pH, D.O.	1968-74
01404100	Raritan River near South Bound Brook, NJ	862	Temp., S.C., pH, D.O.	1969-77
01408000	Manasquan River at Squankum, NJ	44	Temp., S.C., pH, D.O.	1969-74
01408500	Toms River near Toms River, NJ	123	Temp., S.C.	1964-66, 1975-81
			S.C.	1975-81
01409095	Oyster Creek near Brookville, NJ	7.43	Temp., D.O.	1975-76
			S.C., pH	1975-77
01409810	West Branch Wading River near Jenkins, NJ	84.1	Temp., S.C.	1978-81
01410787	Great Egg Harbor River trib. at Sicklerville, NJ	1.64	Sed.	1974-78
01410810	Fourmile Branch at New Brooklyn, NJ	7.74	Sed.	1974-78
01411000	Great Egg Harbor River at Folsom, NJ	57.1	Temp.	1961-80
01411500	Maurice River at Norma, NJ	112	Temp., S.C.	1980-86
01440200	Delaware River near Delaware Water Gap, Pa.	3850	Sed.	1964-65, 1972
01442750	Delaware River at Dunnfield, NJ	4150	Sed.	1966-76
01463500	Delaware River at Trenton, NJ	6780	Sed.	1949-82
01464040	Delaware River at Marine Terminal, at Trenton, NJ	6870	Temp., S.C.	1973-76
01464500	Crosswicks Creek near Extonville, NJ	81.5	Sed.	1965-70
01467016	Rancocas Creek at Willingboro, NJ	315	Temp., S.C., pH	1969-74
			D.O.	1970-72
			pH	1970-74
01467150	Cooper River at Haddonfield, NJ	17.0	Sed.	1968-69
01477120	Raccoon Creek near Swedesboro, NJ	26.9	Temp.	1966-73
			Sed.	1966-69

Type of record: Temp. (temperature), S.C. (specific conductance), pH (pH), D.O. (dissolved oxygen), Sed. (sediment).

WATER RESOURCES DATA–NEW JERSEY, 1989



Note: Station numbers are abbreviated, first two digits (part number) and last two digits (if zeros) are omitted. Examples: Station number 01400500 is shown as 4005; Station number 01403150 is shown as 403150.

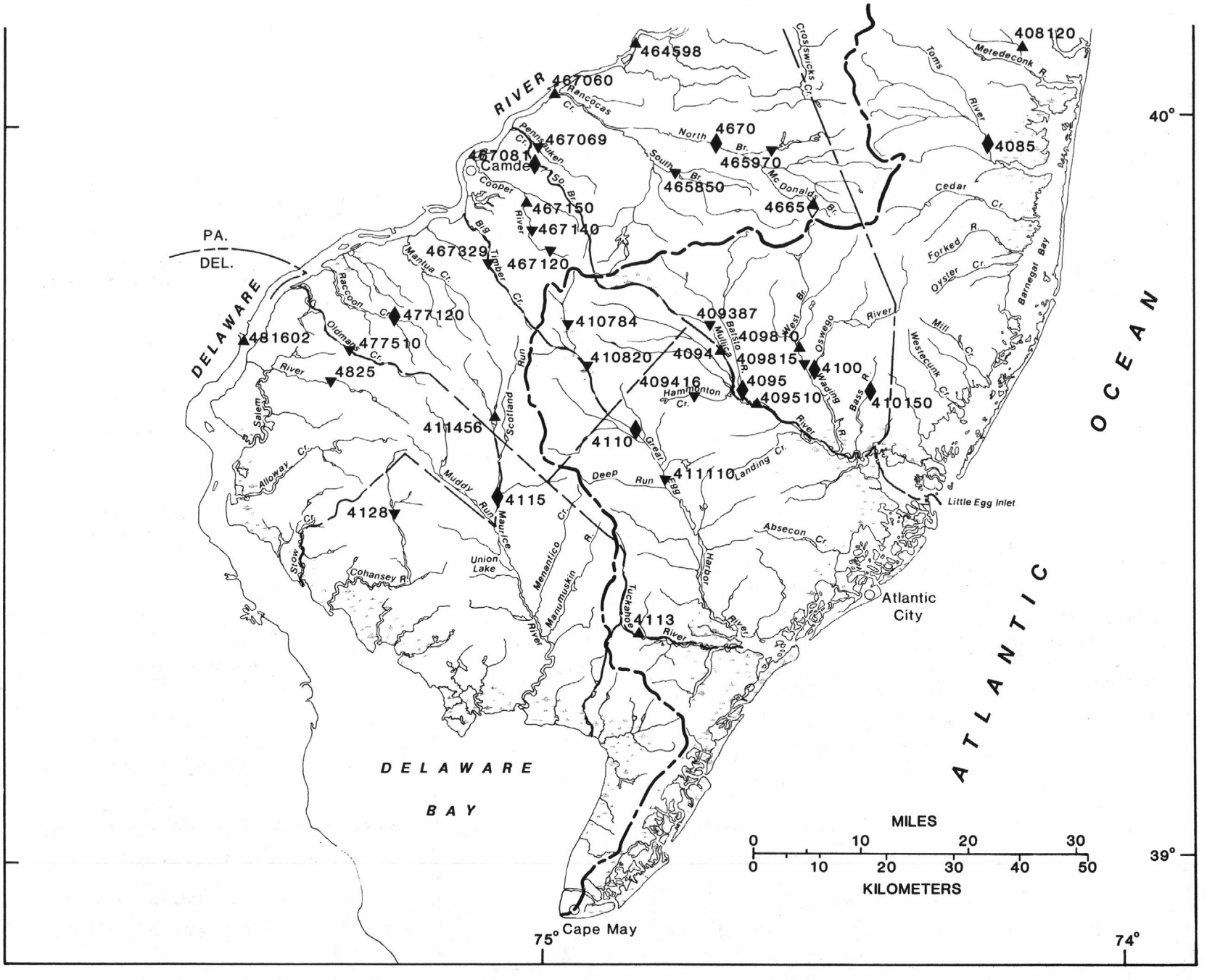
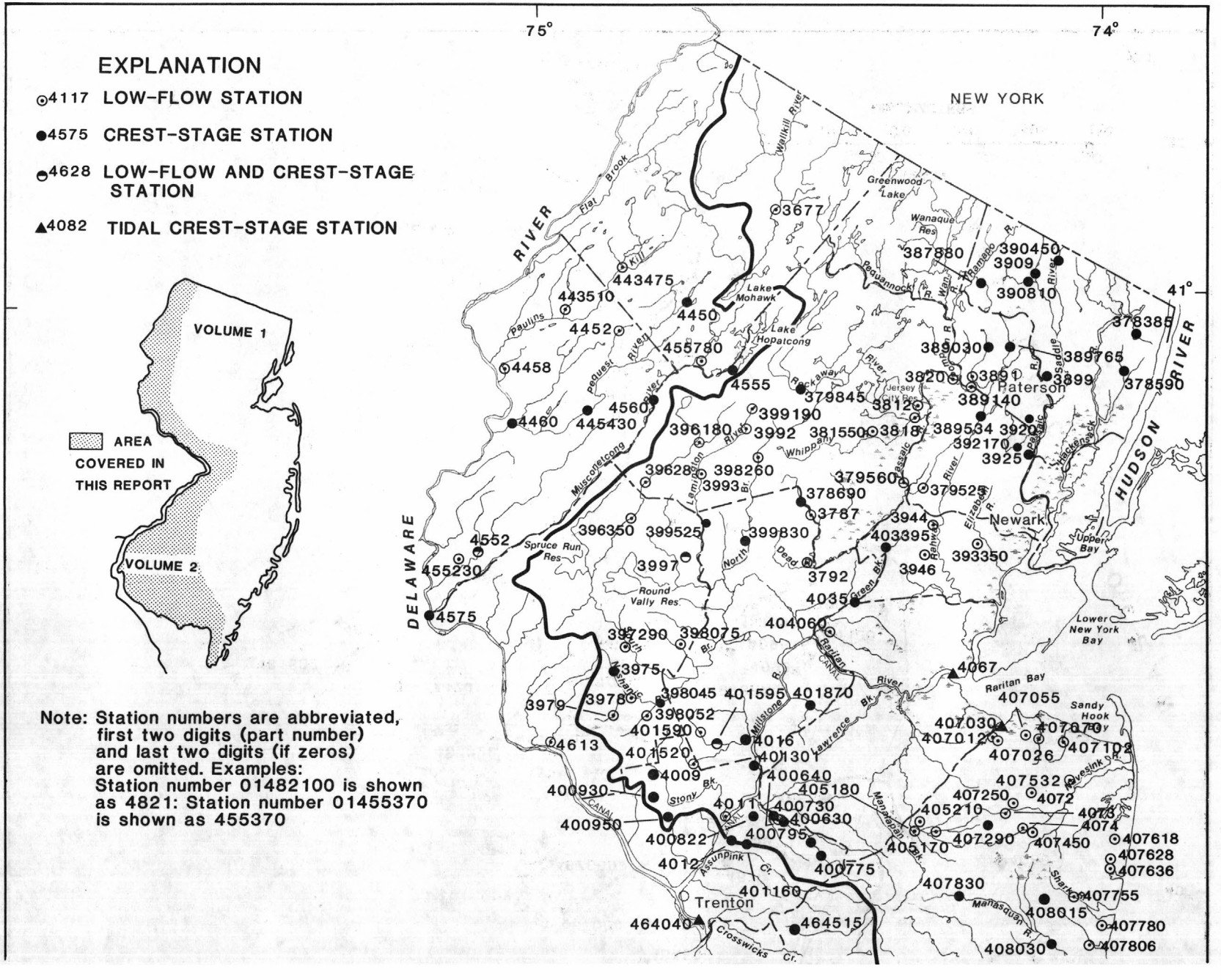


Figure 11.--Map showing location of gaging stations and surface-water quality stations.

WATER RESOURCES DATA–NEW JERSEY, 1989



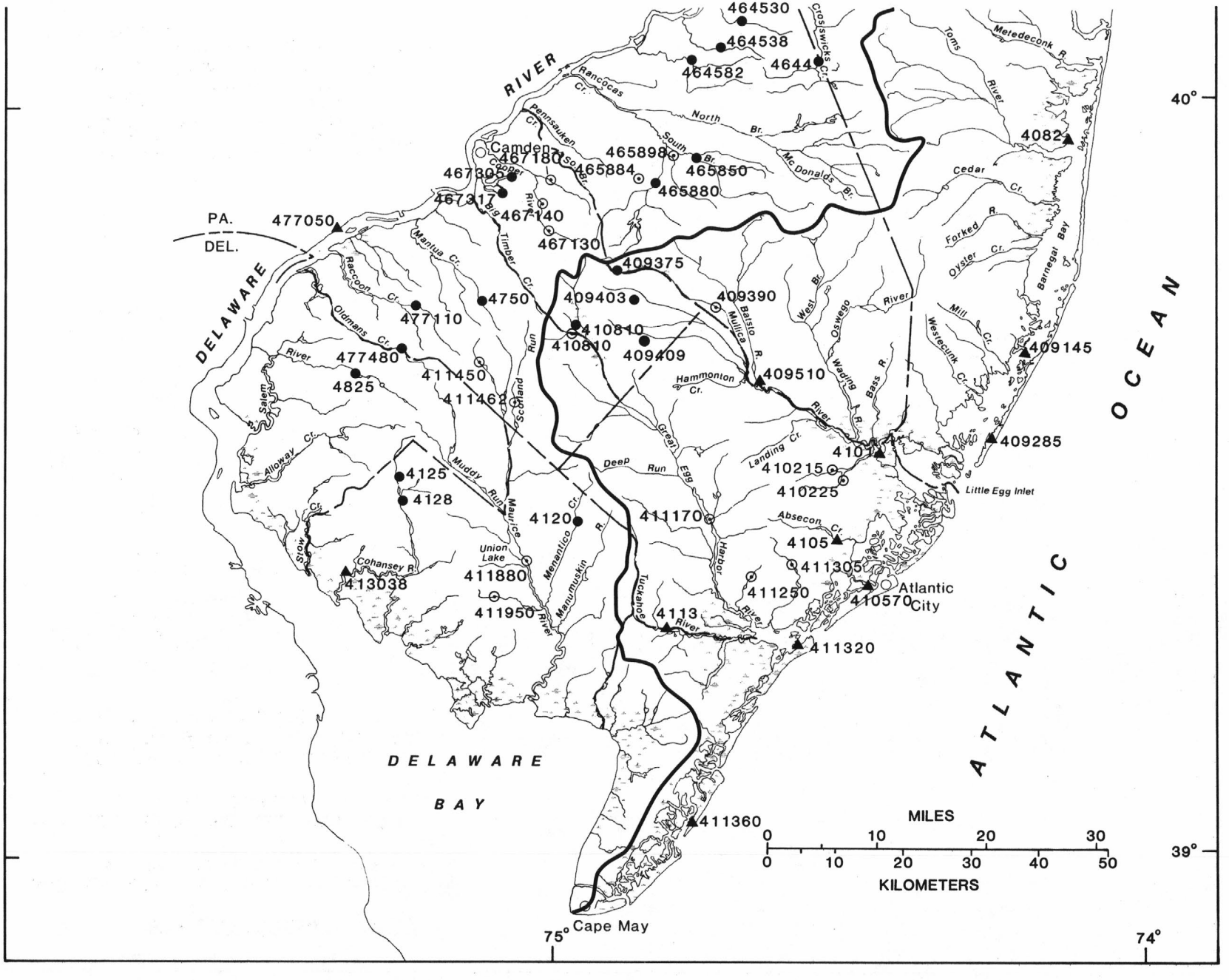
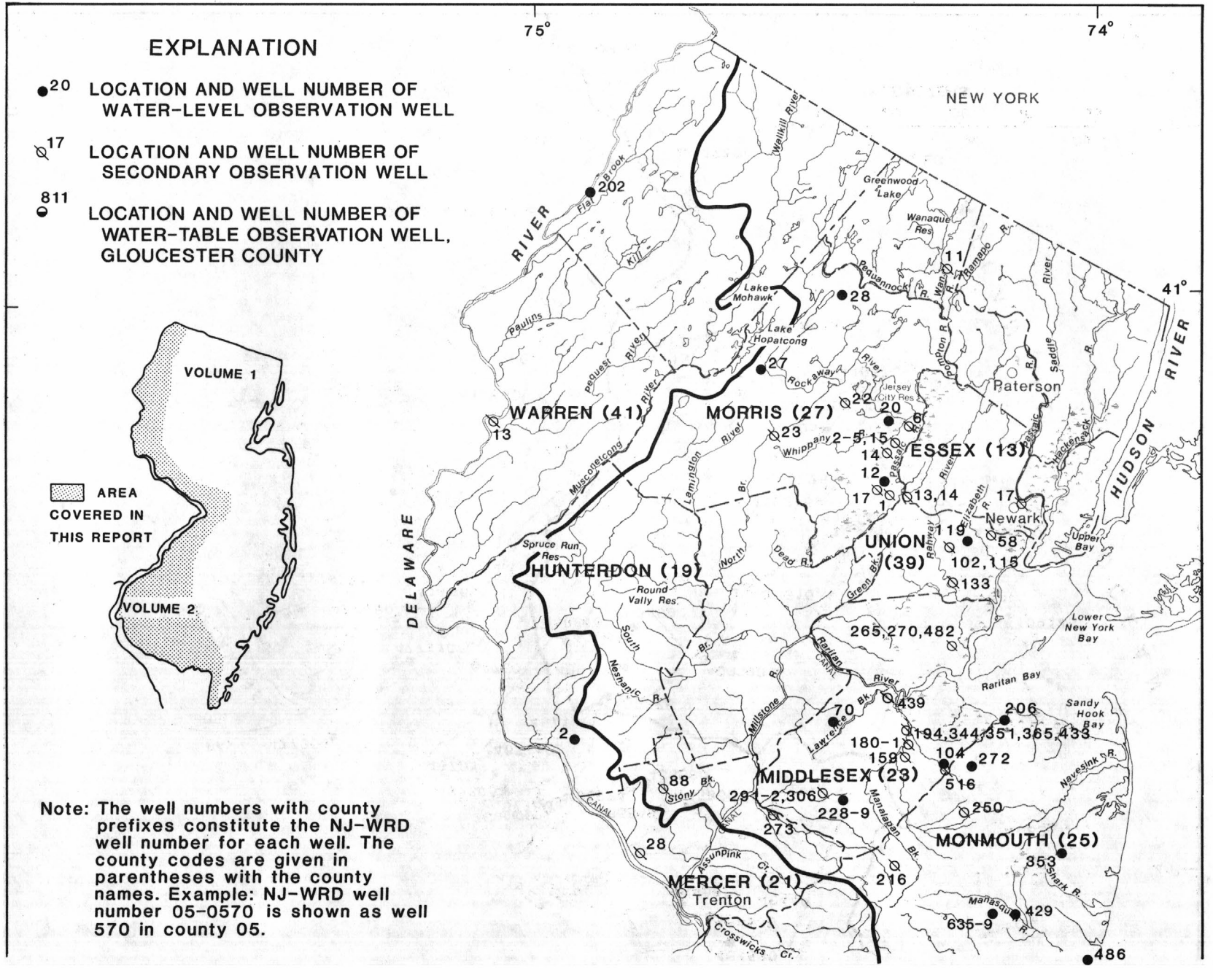


Figure 12.--Map showing location of low-flow and crest-stage partial-record stations.


EXPLANATION
●20 LOCATION AND WELL NUMBER OF WATER-LEVEL OBSERVATION WELL
⌀17 LOCATION AND WELL NUMBER OF SECONDARY OBSERVATION WELL
811 LOCATION AND WELL NUMBER OF WATER-TABLE OBSERVATION WELL, GLOUCESTER COUNTY
VOLUME 1
VOLUME 2
AREA COVERED IN THIS REPORT
Note: The well numbers with county prefixes constitute the NJ-WRD well number for each well. The county codes are given in parentheses with the county names. Example: NJ-WRD well number 05-0570 is shown as well 570 in county 05.
75°
74°
41°
NEW YORK
DELAWARE RIVER
HUDSON RIVER
WARREN (41)
MORRIS (27)
ESSEX (13)
UNION (39)
HUNTERDON (19)
MIDDLESEX (23)
MONMOUTH (25)
MERCER (21)
Trenton
Paterson
Newark
Wallkill River
Greenwood Lake
Wanaque Res
Lake Mohawk
Lake Hopatcong
Jersey City Res
Spruce Run Res
Round Valley Res
Raritan Bay
Sandy Hook Bay
Lower New York Bay
Upper Bay
Raritan River
Delaware and Raritan Canal
Assunpink Cr.
Crosswicks Cr.
Manasquan R.
Navesink R.
Shrewsbury R.
202
11
28
27
22
20
6
13
23
2-5,15
14
12
17
1
13,14
17
119
58
102,115
133
265,270,482
439
70
206
194,344,351,365,433
180-1
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104
272
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228-9
273
250
28
216
353
429
635-9
486

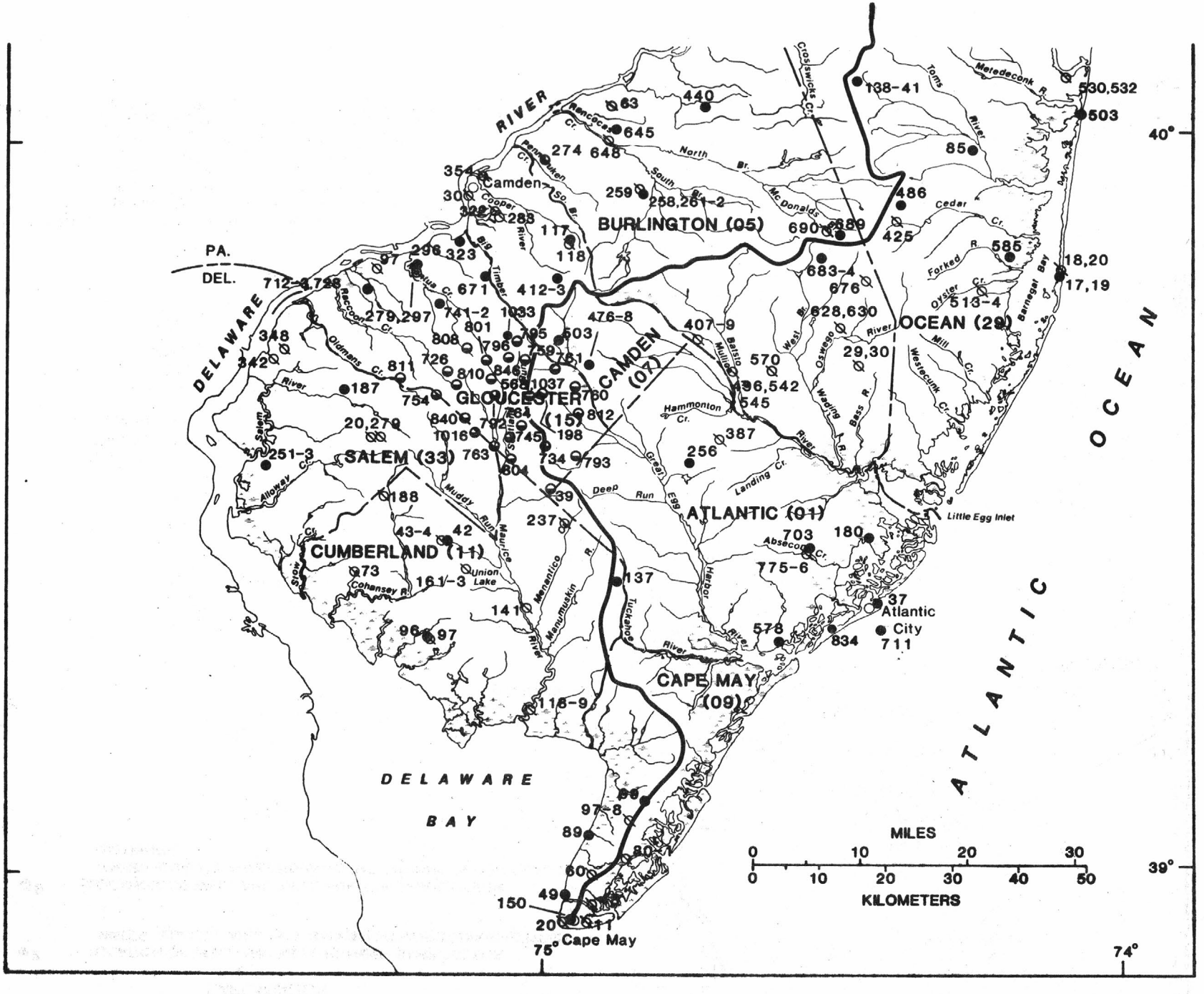
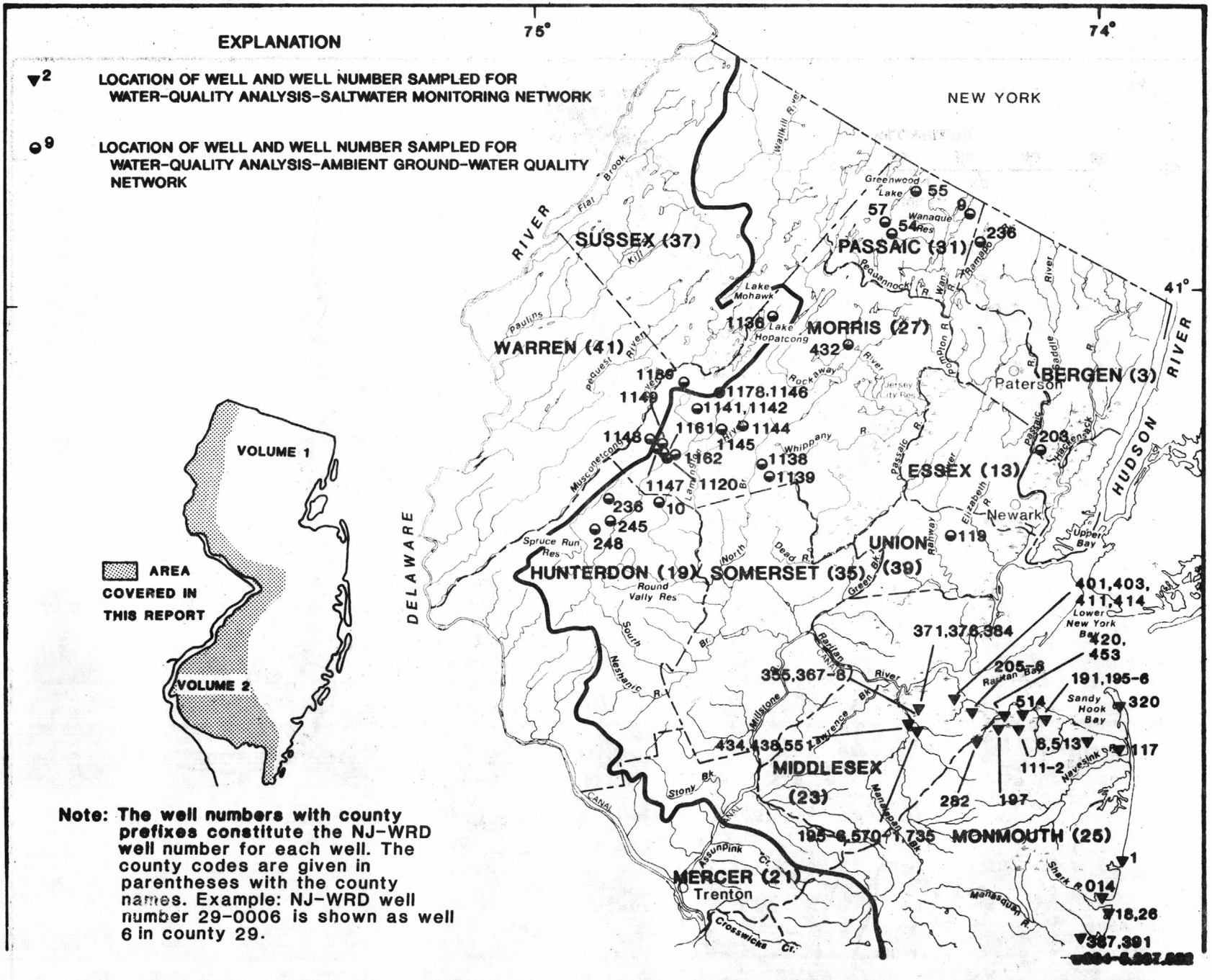


Figure 13.--Map showing location of ground-water observation well.

WATER RESOURCES DATA-NEW JERSEY, 1989



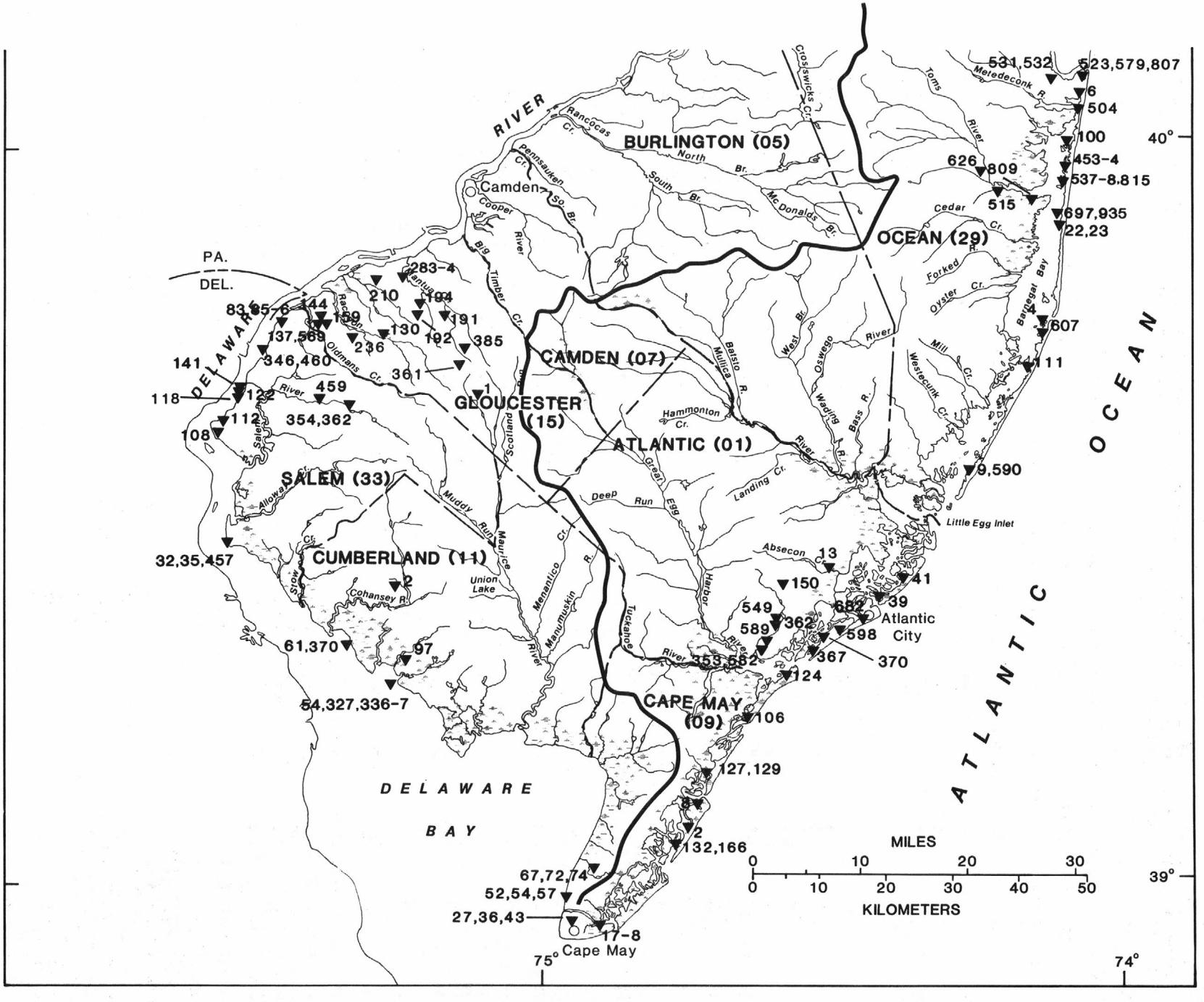


Figure 14.--Map showing location of ground-water quality stations.

MAURICE RIVER BASIN

01411456 LITTLE EASE RUN NEAR CLAYTON, NJ

LOCATION.--Lat 39°39'32", long 75°04'04", Gloucester County, Hydrologic Unit 02040206, on right bank 30 ft downstream from bridge on Academy Road (County Route 610), 0.9 mi west of Fries Mill, 1.3 mi east of Clayton, and 1.4 mi downstream from Beaverdam Branch.

DRAINAGE AREA.--9.77 mi^2.

PERIOD OF RECORD.--Occasional low-flow measurements, water years 1966, 1976-84, 1987. February 1988 to current year.

GAGE.--Water-stage recorder. Datum of gage is 100.94 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except above 40 ft^3/s, which are fair. Several measurements of water temperature were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989, MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.1	4.6	19	5.6	7.8	14	19	16	12	8.3	12	7.4
2	1.1	6.2	17	6.1	7.2	13	18	25	11	7.3	11	6.9
3	1.3	5.4	14	6.1	8.2	11	17	30	9.5	6.7	10	6.3
4	1.4	4.8	11	5.6	11	e10	16	29	8.4	6.4	9.2	5.9
5	1.6	4.8	9.2	4.9	11	e9.1	16	26	7.6	18	8.3	5.7
6	1.5	5.2	8.0	4.6	10	e14	20	40	14	29	7.5	5.6
7	1.4	4.7	7.2	4.5	9.3	e18	23	52	18	29	7.1	5.5
8	1.4	4.3	6.6	6.0	8.6	e15	29	39	20	24	7.6	5.3
9	1.4	3.8	6.1	9.1	8.0	e13	31	31	20	17	7.8	5.2
10	1.4	3.4	5.7	9.2	7.3	e13	29	43	22	12	7.4	5.2
11	1.3	3.3	5.3	8.6	6.7	e12	25	74	19	9.7	8.5	5.0
12	1.3	3.0	4.8	9.4	6.2	e12	21	61	16	8.0	22	5.0
13	1.2	3.2	4.1	12	5.9	e13	18	41	13	12	28	5.0
14	1.3	3.8	3.9	11	7.5	e13	16	31	11	19	28	5.6
15	1.3	3.4	4.1	15	10	e12	17	26	11	15	26	8.2
16	1.2	3.1	4.6	18	12	e11	21	24	14	15	30	12
17	1.2	6.0	4.4	16	12	e9.9	22	24	16	27	23	28
18	1.2	9.0	4.1	15	11	e9.8	21	22	15	25	17	26
19	1.3	8.4	3.9	13	9.4	e11	21	20	13	21	25	42
20	1.4	11	4.0	11	8.5	e11	20	18	11	26	31	111
21	2.2	15	4.2	9.9	15	e16	18	15	9.8	38	26	74
22	6.1	15	4.6	8.5	26	15	17	13	12	38	22	42
23	4.2	13	4.9	7.5	30	14	15	14	24	32	18	27
24	2.9	11	6.7	7.0	29	18	14	31	33	24	14	20
25	2.8	9.4	8.9	6.7	24	27	12	34	30	18	12	14
26	2.8	8.2	8.3	6.8	20	28	12	30	22	15	10	26
27	2.7	7.6	7.4	7.5	17	26	11	26	17	23	9.2	34
28	2.7	17	7.0	7.2	15	23	11	23	13	20	8.4	28
29	2.5	21	6.8	6.8	---	20	11	19	11	17	8.4	23
30	2.3	21	6.3	7.3	---	17	15	16	9.6	15	9.8	17
31	2.3	---	5.9	8.2	---	18	---	14	---	13	8.3	---
MEAN	1.93	7.99	7.03	8.84	12.6	15.1	18.5	29.3	15.4	19.0	15.2	20.4
MAX	6.1	21	19	18	30	28	31	74	33	38	31	111
MIN	1.1	3.0	3.9	4.5	5.9	9.1	11	13	7.6	6.4	7.1	5.0
IN.	.23	.91	.83	1.04	1.35	1.78	2.12	3.45	1.76	2.24	1.80	2.33

STATISTICS OF MONTHLY FLOW DATA FOR PERIOD OF RECORD, BY WATER YEAR (WY)

MEAN	1.93	7.99	7.03	8.84	12.6	14.7	16.5	20.5	8.79	10.4	8.40	11.1
MAX	1.93	7.99	7.03	8.84	12.6	15.1	18.5	29.3	15.4	19.0	15.2	20.4
(WY)	1989	1989	1989	1989	1989	1989	1989	1989	1989	1989	1989	1989
MIN	1.93	7.99	7.03	8.84	12.6	14.3	14.6	11.7	2.18	1.83	1.60	1.77
(WY)	1989	1989	1989	1989	1989	1988	1988	1988	1988	1988	1988	1988

SUMMARY STATISTICS	FOR 1989 WATER YEAR		FOR PERIOD OF RECORD	
AVERAGE FLOW	14.3		*****	
HIGHEST ANNUAL MEAN			14.3	1989
LOWEST ANNUAL MEAN			14.3	1989
HIGHEST DAILY MEAN	111	Sep 20	111	Sep 20 1989
LOWEST DAILY MEAN	1.1	Oct 1	.41	Aug 16 1988
INSTANTANEOUS PEAK FLOW	124	Sep 20	124	Sep 20 1989
INSTANTANEOUS PEAK STAGE	4.27	Sep 20	4.27	Sep 20 1989
INSTANTANEOUS LOW FLOW	1.0	Oct 1	.35	Aug 15 1988
ANNUAL RUNOFF (INCHES)	19.87		*****	
10 PERCENTILE	28		28	
50 PERCENTILE	12		12	
95 PERCENTILE	1.4		1.4	

e Estimated
***** Indicates not enough data, therefore statistic is not computed

01411500 MAURICE RIVER AT NORMA, NJ
(National stream quality accounting network station)

LOCATION.--Lat 39°29'42", long 75°04'38", Salem County, Hydrologic Unit 02040206, on right bank just upstream from bridge on Almond Road (State Route 540) at Norma, and 0.8 mi downstream from Blackwater Branch.

DRAINAGE AREA.--112 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1932 to current year. Monthly discharge only for December 1933, published in WSP 1302.

REVISED RECORDS.--WSP 1382: 1933. WDR NJ-79-1: 1967(P). WDR NJ-82-2: Drainage area.

GAGE.--Water-stage recorder. Concrete control since Dec. 27, 1937. Datum of gage is 46.94 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Occasional regulation by ponds above station. Several measurments of water temperature, other than those published, were made during the year. Satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989, MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	60	82	188	103	114	177	200	201	209	173	215	199
2	59	102	178	104	117	166	192	242	200	172	203	187
3	68	102	165	104	121	157	187	317	190	168	191	178
4	69	101	153	103	136	151	187	289	181	161	180	175
5	68	97	142	98	134	135	188	286	173	180	165	164
6	67	97	133	96	131	151	207	322	189	249	161	159
7	66	94	126	100	128	170	215	356	226	274	172	159
8	65	90	123	104	124	157	248	368	249	287	214	158
9	64	87	120	108	118	161	286	363	281	265	187	149
10	62	85	118	109	112	164	276	416	281	235	168	149
11	60	84	116	109	109	160	258	547	264	203	164	149
12	59	84	113	111	108	157	240	495	245	179	226	148
13	58	82	111	117	105	157	205	493	227	161	291	145
14	57	86	109	117	114	154	200	447	211	192	293	145
15	57	84	107	132	123	154	193	392	200	200	295	163
16	56	82	106	141	133	152	207	316	215	225	289	178
17	55	97	106	143	132	149	209	309	229	355	273	212
18	55	112	102	143	129	146	209	300	258	307	258	223
19	55	109	99	139	125	154	214	273	244	327	428	288
20	55	126	98	131	121	153	212	235	223	316	902	549
21	59	139	98	120	141	162	202	236	209	291	657	563
22	94	144	99	119	186	166	198	230	238	286	424	627
23	97	143	101	116	218	160	192	224	296	329	364	464
24	97	138	107	113	215	176	183	252	316	323	311	356
25	94	130	121	110	211	216	167	286	408	289	270	283
26	86	122	122	109	205	218	147	353	357	237	235	305
27	79	117	120	110	197	220	153	328	300	225	205	333
28	75	168	114	110	188	220	153	304	226	225	186	339
29	73	195	112	109	---	211	155	274	214	225	192	341
30	70	193	109	111	---	203	194	201	200	240	200	318
31	68	---	105	116	---	202	---	210	---	222	198	---
MEAN	68.0	112	120	115	143	170	203	318	242	243	275	260
MAX	97	195	188	143	218	220	286	547	408	355	902	627
MIN	55	82	98	96	105	135	147	201	173	161	161	145
IN.	.70	1.12	1.24	1.18	1.33	1.75	2.02	3.28	2.41	2.50	2.83	2.59

STATISTICS OF MONTHLY FLOW DATA FOR PERIOD OF RECORD, BY WATER YEAR (WY)

MEAN	112	143	168	191	203	231	227	192	149	126	127	126
MAX	264	330	385	380	418	427	437	387	291	333	327	591
(WY)	1980	1973	1973	1936	1939	1979	1984	1958	1979	1975	1958	1940
MIN	48.6	46.7	57.1	64.7	95.7	97.2	90.9	79.5	57.7	35.6	34.6	40.6
(WY)	1966	1966	1966	1966	1981	1981	1966	1977	1966	1966	1966	1965

SUMMARY STATISTICS	FOR 1989 WATER YEAR		FOR PERIOD OF RECORD	
AVERAGE FLOW	189		166	
HIGHEST ANNUAL MEAN			253	1973
LOWEST ANNUAL MEAN			67.4	1966
HIGHEST DAILY MEAN	902	Aug 20	5260	Sep 2 1940
LOWEST DAILY MEAN	55	Oct 17	23	Sep 8 1964
INSTANTANEOUS PEAK FLOW	1140	Aug 20	7360a	Sep 2 1940
INSTANTANEOUS PEAK STAGE	4.70	Aug 20	8.72	Sep 2 1940
INSTANTANEOUS LOW FLOW	55	Oct 16	23	Sep 8 1964
ANNUAL RUNOFF (INCHES)	22.94		20.15	
10 PERCENTILE	311		287	
50 PERCENTILE	169		147	
95 PERCENTILE	67		57	

a From rating curve extended above 3,000 ft^3/s, highest since 1867

01411500 MAURICE RIVER AT NORMA, NJ--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1923, 1953, 1960-62, 1965 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: January 1980 to November 1986 (discontinued).
WATER TEMPERATURE: October 1966 to January 1968 (once daily), January 1980 to November 1986 (discontinued).
SUSPENDED-SEDIMENT DISCHARGE: February 1965 to January 1968.

INSTRUMENTATION.--Water-quality monitor, January 1980 to November 1986.

REMARKS.--Missing continuous water-quality records are the result of malfunction of the instrument.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 151 microsiemens, Jan. 25, 1984; 52 microsiemens, June 16, 1982.
WATER TEMPERATURE: Maximum, 28.0°C, July 21, 1980; minimum 0.0°C on many days during winter months.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS TOTAL (MG/L AS CACO3)
NOV 1988												
16...	0930	82	73	6.7	9.5	2.0	8.4	74	3.6	K14	70	21
JAN 1989												
17...	0800	141	96	5.4	3.5	1.3	12.2	91	0.5	6	--	22
MAR												
23...	1230	159	90	6.2	8.0	1.2	11.2	94	--	K4	76	22
MAY												
19...	1230	271	72	5.7	18.0	0.80	7.4	78	--	K1	310	18
JUL												
24...	1215	325	71	6.2	24.5	1.4	6.0	72	0.9	57	--	17
SEP												
21...	1100	544	64	5.3	21.5	1.9	5.4	61	0.9	>60	1000	14

DATE	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE IT-FLD (MG/L AS HCO3)	ALKA-LINITY, CARBON-ATE IT-FLD (MG/L - CACO3)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
NOV 1988												
16...	4.2	2.6	5.3	2.0	1.6	1.3	2	12	9.2	0.1	6.1	50
JAN 1989												
17...	4.5	2.5	5.8	1.8	1.1	0.9	2	15	9.6	0.1	6.8	55
MAR												
23...	4.6	2.6	5.6	1.8	--	--	3	17	9.6	0.1	4.6	55
MAY												
19...	4.1	2.0	4.7	1.9	2.0	2.0	2	12	8.7	0.1	3.5	42
JUL												
24...	3.7	1.9	4.3	1.8	6.5	7.9	9	6.0	9.9	0.1	5.9	40
SEP												
21...	3.0	1.6	4.6	1.9	--	--	3*	8.0	8.6	0.1	5.5	38

DATE	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHOROUS TOTAL (MG/L AS P)	PHOS-PHOROUS DIS-SOLVED (MG/L AS P)	PHOS-PHOROUS ORTHO, DIS-SOLVED (MG/L AS P)
NOV 1988											
16...	--	--	--	<0.010	1.70	0.020	0.050	0.40	0.010	<0.010	<0.010
JAN 1989											
17...	1	0.38	100	<0.010	1.70	0.040	0.030	0.50	0.010	<0.010	0.030
MAR											
23...	14	6.0	58	<0.010	1.60	0.020	0.030	0.20	0.010	<0.010	<0.010
MAY											
19...	12	8.8	55	<0.010	0.960	0.040	0.030	0.90	0.020	0.010	<0.010
JUL											
24...	12	11	70	<0.010	0.350	0.040	0.030	1.0	0.030	0.010	<0.010
SEP											
21...	15	22	56	<0.010	0.460	0.020	0.010	0.50	0.030	0.020	0.010

* Laboratory determination

01411500 MAURICE RIVER AT NORMA, NJ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	BERYLLIUM, DISSOLVED (UG/L AS BE)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, DISSOLVED (UG/L AS CO)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)
JAN 1989											
17...	0800	120	21	68	<0.5	<1	<1	<3	<1	150	7
MAR											
23...	1230	110	20	71	<0.5	<1	1	<3	3	130	11
JUL											
24...	1215	230	32	58	<0.5	<1	2	<3	4	840	6
SEP											
21...	1100	200	17	46	<0.5	2	2	<3	3	460	2

DATE	LITHIUM DISSOLVED (UG/L AS LI)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	STRONTIUM, DISSOLVED (UG/L AS SR)	VANADIUM, DISSOLVED (UG/L AS V)	ZINC, DISSOLVED (UG/L AS ZN)
JAN 1989										
17...	<4	29	0.1	<10	<1	<1	<1.0	29	<6	21
MAR										
23...	<4	25	0.7	<10	6	<1	<1.0	29	<6	14
JUL										
24...	<4	27	0.4	<10	5	<1	<1.0	24	<6	16
SEP										
21...	<4	35	<0.1	<10	2	<1	<1.0	19	<6	15

01412800 COHANSEY RIVER AT SEELEY, NJ

LOCATION.--Lat 39°28'21", long 75°15'21", Cumberland County, Hydrologic Unit 02040206, on right bank just downstream from bridge on Silver Lake Road, 0.6 mi south of Seeley, 2.6 mi east of Shiloh, 4.1 mi north of Bridgeton, and 22.5 mi upstream from mouth.

DRAINAGE AREA.--28.0 mi^2.

PERIOD OF RECORD.--Water years 1975 to current year.

COOPERATION.--Analyses of fecal coliform and fecal streptococci by the MPN method, and water-phase nutrients were performed by the New Jersey Department of Health, Division of Laboratories and Epidemiology.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, EC BROTH (MPN)	STREP-TOCOCCI FECAL (MPN)
OCT 1988										
18...	1130	E13	186	5.5	14.0	13.6	133	<1.2	490	220
FEB 1989										
28...	0945	E22	170	6.6	4.5	12.6	98	<1.0	80	540
MAR										
22...	1100	E27	205	7.6	8.0	11.0	93	2.9	90	280
JUN										
13...	0900	E28	203	7.0	19.0	7.2	79	E2.1	700	5400
JUL										
18...	1030	E41	171	6.9	19.5	7.0	76	E1.8	5400	>2400
AUG										
03...	1100	E28	198	6.5	20.0	7.6	84	E1.3	130	1600

DATE	HARD-NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
OCT 1988									
18...	61	12	7.6	14	4.7	10	25	28	0.1
FEB 1989									
28...	55	11	6.6	10	4.3	9.0	27	22	0.1
MAR									
22...	56	11	6.9	9.4	2.5	10	26	22	0.1
JUN									
13...	58	12	6.8	10	4.7	17	21	21	0.1
JUL									
18...	41	8.5	4.8	6.5	4.8	14	16	15	0.2
AUG									
03...	58	12	6.8	9.8	5.5	16	21	21	0.1

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
OCT 1988									
18...	7.9	105	0.013	4.80	0.060	0.33	5.1	0.030	2.4
FEB 1989									
28...	7.5	94	0.029	3.95	0.140	0.75	4.7	0.220	5.2
MAR									
22...	6.6	90	0.023	5.60	0.090	0.46	6.1	0.090	3.1
JUN									
13...	7.6	93	0.043	3.98	0.120	0.94	4.9	0.120	7.1
JUL									
18...	6.5	71	0.042	2.69	0.110	0.94	3.6	0.190	7.9
AUG									
03...	7.6	93	0.043	4.76	<0.050	0.72	5.5	0.080	4.8

01412800 COHANSEY RIVER AT SEELEY, NJ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SULFIDE TOTAL (MG/L AS S)	ALUM-INUM, DIS-SOLVED (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE)	BORON, TOTAL RECOV-ERABLE (UG/L AS B)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)
OCT 1988									
18...	1130	<0.5	20	1	<10	<10	<1	<1	4
JUN 1989									
13...	0900	<0.5	60	2	<10	40	<1	<1	4

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)	SELE-NIUM, TOTAL (UG/L AS SE)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	PHENOLS TOTAL (UG/L)
OCT 1988								
18...	590	<5	70	0.10	3	<1	20	1
JUN 1989								
13...	1700	2	130	<0.10	4	<1	<10	6

01434000 DELAWARE RIVER AT PORT JERVIS, NY

LOCATION.--Lat 41°22'14", long 74°41'52", Pike County, Pa., Hydrologic Unit 02040104, on right bank 250 ft downstream from bridge (on U.S. Highway 6 and 209) between Port Jervis, N.Y. and Matamoras, Pa., 1.2 mi upstream from Neversink River, and 6.5 mi downstream from Mongaup River. Water-quality sampling site at discharge station.

DRAINAGE AREA.--3,070 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1904 to current year.

REVISED RECORDS.--WSP 1031: 1905-36. WDR NY-71-1: 1970. WDR NY-82-1: Drainage area. WDR NY-86-1: 1979-80.

GAGE.--Water-stage recorder. Datum of gage is 415.35 ft above National Geodetic Vertical Datum of 1929. October 1904 to August 13, 1928, nonrecording gage at bridge 250 ft upstream at present datum; operated by U.S. Weather Bureau prior to June 20, 1914.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Flow regulated by Lake Wallenpaupack and by Toronto, Cliff Lake, and Swinging Bridge Reservoirs (see Reservoirs in Delaware River Basin) and smaller reservoirs. Large diurnal fluctuations at medium and low flows caused by powerplants on tributary streams. Subsequent to September 1954, entire flow from 371 mi^2 of drainage area controlled by Pepacton Reservoir, and subsequent to October 1963, entire flow from 454 mi^2 of drainage area controlled by Cannonsville Reservoir (see Reservoirs in Delaware River Basin). Part of flow from these reservoirs diverted for New York City municipal supply. Remainder of flow (except for conservation releases and spill) impounded for release during periods of low flow in the lower Delaware River basin, as directed by the Delaware River Master. Telephone gage-height telemeter and satellite gage-height telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--The U.S. Weather Bureau reported a discharge of 205,000 ft^3/s, Oct. 10, 1903, gage height, 23.1 ft, from rating curve extended above 70,000 ft^3/s, by velocity-area studies; maximum gage height, 25.5 ft, Mar. 8, 1904 (ice jam).

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989, MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1760	1550	3170	1710	2080	2660	12900	1980	4100	3410	1800	1670
2	1610	1620	3120	1870	2220	2310	10100	6810	4500	2760	1710	1560
3	1600	1030	2480	2130	2430	2100	7900	14200	3690	2960	2000	1580
4	1440	1790	2040	e1880	1800	1830	7410	9440	2890	2540	2150	1530
5	1580	1630	2500	e2310	1560	1610	7430	6760	2840	2900	1740	1600
6	1560	2540	2390	e2090	2040	1990	8040	27900	2810	7270	1560	1550
7	1520	6650	2200	1890	2000	2380	8920	38200	3410	5230	1810	1550
8	1480	4430	2090	1690	1720	2400	7980	23300	3500	4070	2220	1740
9	1540	3610	2290	1850	1970	2060	6800	16200	3490	3510	1910	1770
10	1460	2990	1730	2230	1680	1890	6240	14700	5090	3340	1890	1790
11	1770	2390	1350	1960	1380	1340	5310	25900	5480	3640	1740	2350
12	1570	2150	1700	1800	1050	1140	4730	23200	4370	3050	1550	2240
13	1610	1910	e1920	1700	1340	1450	4170	16900	3990	2690	1710	2140
14	1650	2880	2010	1790	1810	1170	4080	13300	4600	2610	1970	1770
15	1610	3860	1680	1580	1790	1170	3630	11800	7950	2150	1920	1900
16	1680	3290	1830	1660	2440	1300	4450	10600	13000	1520	1880	2150
17	1680	2880	e1730	2200	2360	2140	4850	18500	12300	1640	2060	1980
18	1690	3100	e1960	1730	1640	1650	4610	17900	12400	2300	1500	1350
19	1790	3170	e2010	1550	1250	1880	4140	13100	9790	2240	1260	1300
20	1730	3220	e1780	1540	1070	2650	3770	11100	8700	2050	1640	3140
21	1830	12100	1590	1440	2010	2400	3570	9690	7490	2710	1790	4860
22	1880	10800	1920	1150	8920	1970	3270	8550	8130	2550	2120	4630
23	1730	7250	1350	1560	6600	1730	3010	6880	7670	2240	2150	3760
24	2110	5310	1510	1760	4490	1980	2960	7620	9000	2320	2050	3150
25	1780	4710	2090	1670	3690	5980	2790	7240	11700	2820	1590	3310
26	1860	4090	2620	1650	2320	8870	2360	6160	10600	2800	1510	3600
27	1430	3300	2820	1980	2590	7800	2190	5430	8020	2860	1580	3370
28	1070	3440	1970	2010	2660	6810	2020	4580	7190	2790	1600	2490
29	1050	3400	e1990	1560	---	7230	2030	3980	6220	2140	1690	2200
30	1280	3500	e2110	2020	---	10600	1750	4090	5280	1530	1750	1830
31	1540	---	e1800	2250	---	13000	---	3970	---	1650	2190	---
MEAN	1609	3820	2056	1813	2461	3403	5114	12580	6673	2848	1808	2329
MAX	2110	12100	3170	2310	8920	13000	12900	38200	13000	7270	2220	4860
MIN	1050	1030	1350	1150	1050	1140	1750	1980	2810	1520	1260	1300

STATISTICS OF MONTHLY FLOW DATA FOR PERIOD OF RECORD, BY WATER YEAR (WY)

MEAN	3161	4756	5437	5374	5273	10090	11110	6396	3858	2738	2271	2454
MAX	13140	15950	15240	14880	16240	28470	27400	13700	12650	10110	12430	10270
(WY)	1956	1928	1928	1913	1909	1936	1940	1943	1972	1928	1955	1938
MIN	504	535	1113	1132	1331	2583	2954	1946	993	593	552	357
(WY)	1911	1910	1923	1931	1920	1981	1985	1965	1965	1913	1913	1908

01434000 DELAWARE RIVER AT PORT JERVIS, NY--Continued

WATER-DISCHARGE RECORDS--Continued

SUMMARY STATISTICS	FOR 1989 WATER YEAR		FOR PERIOD OF RECORD	
AVERAGE FLOW	3881		5239	
HIGHEST ANNUAL MEAN			9882	1928
LOWEST ANNUAL MEAN			2028	1965
HIGHEST DAILY MEAN	38200	May 7	163000	Aug 19 1955
LOWEST DAILY MEAN	1030	Nov 3	175	Sep 23 1908
INSTANTANEOUS PEAK FLOW	50500	May 6	233000a	Aug 19 1955
INSTANTANEOUS PEAK STAGE	11.21	May 6	26.6b	Feb 12 1981
INSTANTANEOUS LOW FLOW	---		175c	Sep 23 1908
10 PERCENTILE	8370		11600	
50 PERCENTILE	2220		3120	
95 PERCENTILE	1370		872	

a From rating curve extended above 89,000 ft^3/s, on basis of slope-area measurement of peak flow
b Floodmarks from ice jam
c Ice Jam
e Estimated

01434000 DELAWARE RIVER AT PORT JERVIS, NY--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1957-60, 1964 to current year.
CHEMICAL DATA: 1958-59 (e), 1964-65 (c), 1966 (a), 1967-68 (c), 1969-76 (d), 1987 (b), 1988-89 (c).
MINOR ELEMENTS DATA: 1970 (a), 1972-73 (a), 1974-76 (c), 1987 (b), 1988-89 (c).
PESTICIDE DATA: 1974 (a).
ORGANIC DATA: OC--1974 (b), 1975 (d).
NUTRIENT DATA: 1968 (a), 1969-76 (d).
BIOLOGICAL DATA:
Bacteria--1973-76 (d).
Phytoplankton--1974 (b), 1975-76 (c).
Periphyton--1976 (a).
SEDIMENT DATA: 1959 (c), 1976 (c), 1988 (b), 1989 (c).

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: January 1973 to September 1973.
WATER TEMPERATURES: February 1957 to September 1960, January 1973 to September 1973, June 1974 to current year.
SUSPENDED-SEDIMENT DISCHARGE: February 1957 to September 1960, March 1970 to June 1976.

INSTRUMENTATION.--Water-temperature digital recorder since January 1973, provides one-hour-interval punches.

REMARKS.--Interruption of record was due to malfunction of recording instrument. Water-quality samples were collected by personnel of the New York State Department of Environmental Conservation, and were analyzed by USGS laboratories.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: Maximum (water years 1957-59, 1973-81, 1983-84, 1988-89), 30.0°C, July 13, 1981; minimum after years 1958-60, 1973, 1975-89), 0.0°C, on many days during winter periods, except 1984.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURES: Maximum recorded, 27.0°C, July 26, but may have been higher during period of instrument malfunction; minimum, 0.0°C, on many days during winter period.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	BARO-METRIC PRES-SURE (MM OF HG)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	HARD-NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)
OCT 18...	1000	1710	86	7.00	12.0	--	10.3	--	27	7.6	1.9	4.8
NOV 15...	1000	3740	81	7.20	5.5	--	11.9	--	23	6.9	1.4	3.9
APR 12...	1200	4820	81	6.90	6.0	760	10.5	85	21	6.2	1.4	4.7
MAY 08...	1000	23700	65	8.40	9.5	746	10.9	97	17	5.2	1.0	4.9
JUN 14...	1000	4220	81	7.30	17.5	750	6.4	68	22	6.5	1.3	4.7
AUG 29...	1200	1590	96	8.90	22.0	751	7.9	91	25	7.3	1.7	5.1

DATE	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL)	ALUM-INUM, DIS-SOLVED (UG/L AS AL)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CADMIUM DIS-SOLVED (UG/L AS CD)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)
OCT 18...	1.1	18	9.9	7.5	<0.10	20	10	<1	<1	4	2	80
NOV 15...	0.90	13	12	6.9	<0.10	70	--	<1	--	7	--	150
APR 12...	0.80	9.0	10	8.1	0.10	80	--	1	--	7	--	150
MAY 08...	1.1	6.0	10	5.1	0.10	450	--	<1	--	6	--	720
JUN 14...	0.90	10	9.0	7.5	0.10	80	--	<1	--	4	--	270
AUG 29...	0.90	16	9.0	8.3	0.10	250	--	<1	--	6	--	260

01434000 DELAWARE RIVER AT PORT JERVIS, NY--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)	NICKEL, DIS-SOLVED (UG/L AS NI)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	ZINC, DIS-SOLVED (UG/L AS ZN)
OCT										
18...	12	<5	5	20	3	<0.10	1	2	<10	4
NOV										
15...	--	<5	--	30	--	<0.10	3	--	<10	--
APR										
12...	--	<5	--	30	--	<0.10	5	--	20	--
MAY										
08...	39	8	--	120	--	<0.10	3	--	10	--
JUN										
14...	--	1	--	60	--	<0.10	1	--	10	--
AUG										
29...	--	2	--	30	--	<0.10	3	--	20	--

SUSPENDED SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)
OCT				
18...	1000	1710	1	4.6
NOV				
15...	1000	3740	3	30
APR				
12...	1200	4820	2	26
MAY				
08...	1000	23700	30	1920
JUN				
14...	1000	4220	4	46
AUG				
29...	1200	1590	3	13

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	19.0	17.0	18.0	5.0	4.5	4.5	4.0	3.0	3.5	.0	.0	.0
2	19.0	18.0	18.5	6.5	5.0	5.5	3.0	2.5	3.0	.5	.0	.0
3	19.0	17.5	18.5	6.5	5.5	6.0	3.0	2.0	2.5	.5	.0	.0
4	18.0	16.5	17.0	6.0	4.5	5.5	2.5	1.0	1.5	.0	.0	.0
5	16.5	15.5	16.0	8.5	6.0	7.0	2.0	.5	1.5	.0	.0	.0
6	15.5	13.5	14.0	9.0	8.0	8.5	2.0	1.0	1.5	.0	.0	.0
7	13.5	12.0	12.5	9.0	8.5	9.0	2.5	1.0	1.5	.0	.0	.0
8	12.5	11.5	12.0	8.5	8.0	8.0	2.5	1.5	2.0	.0	.0	.0
9	11.5	10.5	11.0	8.0	7.5	7.5	2.0	1.0	1.5	.0	.0	.0
10	12.0	10.5	11.5	7.5	6.5	7.0	1.5	.0	.5	.0	.0	.0
11	12.5	11.5	12.0	7.5	6.0	6.5	.5	.0	.0	.0	.0	.0
12	12.5	10.5	11.0	6.0	5.0	5.5	.0	.0	.0	.0	.0	.0
13	10.5	9.0	9.5	6.0	5.0	5.5	.0	.0	.0	.0	.0	.0
14	9.5	8.0	9.0	6.5	5.0	6.0	.0	.0	.0	.0	.0	.0
15	10.0	8.0	9.0	6.5	5.5	6.0	.0	.0	.0	.0	.0	.0
16	11.5	9.5	10.5	6.0	5.5	6.0	.0	.0	.0	.0	.0	.0
17	13.0	11.0	12.0	7.0	6.0	6.5	.0	.0	.0	.0	.0	.0
18	13.0	12.0	12.5	6.5	5.5	6.0	.0	.0	.0	.0	.0	.0
19	12.5	11.5	12.0	5.0	5.0	5.0	.0	.0	.0	.0	.0	.0
20	11.5	10.0	10.5	5.5	5.0	5.0	.5	.0	.0	.0	.0	.0
21	10.0	9.0	9.5	5.5	5.5	5.5	.5	.0	.5	.0	.0	.0
22	9.0	8.0	8.5	5.0	5.0	5.0	.5	.0	.0	.0	.0	.0
23	8.5	7.5	8.0	5.0	4.0	4.5	.0	.0	.0	.0	.0	.0
24	9.0	8.5	8.5	4.0	3.0	3.5	.0	.0	.0	.0	.0	.0
25	9.0	7.5	8.0	3.5	2.5	3.0	.5	.0	.0	.0	.0	.0
26	7.0	6.5	7.0	4.0	3.0	3.5	.0	.0	.0	.0	.0	.0
27	7.0	6.0	6.5	4.5	3.5	4.0	.0	.0	.0	.5	.0	.0
28	6.5	6.0	6.5	5.5	4.5	5.5	.5	.0	.5	.5	.0	.5
29	6.5	5.5	6.0	5.0	4.5	5.0	.0	.0	.0	.5	.0	.5
30	6.0	5.5	6.0	4.5	4.0	4.5	.0	.0	.0	.5	.0	.5
31	5.5	4.5	5.0	---	---	---	.0	.0	.0	1.5	.0	.5
MONTH	19.0	4.5	11.0	9.0	2.5	5.5	4.0	0.0	0.5	1.5	0.0	0.0

01434000 DELAWARE RIVER AT PORT JERVIS, NY--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	2.5	.5	1.5	2.0	.5	1.0	5.0	4.5	4.5	15.0	13.5	14.0
2	2.0	1.0	1.5	2.0	.0	1.0	5.5	3.5	4.5	14.0	12.0	13.0
3	1.0	.5	1.0	3.0	.5	2.0	5.5	5.0	5.5	11.5	10.5	11.0
4	.5	.0	.0	2.5	1.5	2.0	6.5	5.5	6.0	11.5	9.5	10.5
5	.0	.0	.0	2.5	2.0	2.0	7.0	6.0	6.5	11.0	10.5	11.0
6	.0	.0	.0	2.0	1.0	1.5	7.0	7.0	7.0	11.0	10.5	11.0
7	.0	.0	.0	1.0	.0	.5	7.0	6.0	6.5	11.0	10.5	10.5
8	.5	.0	.0	1.5	.0	.5	7.0	6.0	6.5	10.0	9.0	9.5
9	.0	.0	.0	2.5	.0	1.5	7.0	6.0	6.5	9.5	8.5	9.0
10	.0	.0	.0	3.5	1.0	2.5	6.5	5.5	6.0	9.5	9.5	9.5
11	.5	.0	.0	3.5	1.5	2.5	6.5	4.5	5.5	9.5	9.0	9.0
12	.0	.0	.0	3.5	1.5	2.5	6.5	5.0	6.0	9.5	9.0	9.0
13	.0	.0	.0	3.0	.5	2.0	7.0	6.0	6.5	10.5	9.0	9.5
14	.0	.0	.0	4.5	2.0	3.0	8.0	5.5	7.0	10.5	10.0	10.0
15	.5	.0	.0	7.0	4.0	5.5	7.5	7.0	7.0	11.5	10.0	11.0
16	1.5	.0	1.0	7.5	6.0	7.0	7.5	7.0	7.0	11.5	11.0	11.5
17	.0	.0	.0	8.0	6.0	7.0	9.5	6.5	8.0	13.5	11.5	12.0
18	.0	.0	.0	7.5	6.5	7.0	11.0	9.0	10.0	15.0	13.0	14.0
19	.5	.0	.0	6.5	5.0	6.0	11.5	10.0	10.5	16.5	14.5	15.5
20	.5	.0	.5	5.5	3.0	4.0	12.0	9.5	11.0	17.5	15.5	16.5
21	1.5	.5	1.0	4.0	3.0	3.5	12.0	10.0	11.0	18.0	16.5	17.0
22	1.0	.0	.5	4.5	2.0	3.0	11.5	9.0	10.5	17.5	16.0	17.0
23	1.0	.0	.5	4.5	2.0	3.5	11.0	8.0	9.5	17.0	16.0	16.5
24	.5	.0	.0	4.5	3.5	3.5	11.0	8.0	9.5	16.0	14.5	15.0
25	.5	.0	.0	4.5	3.0	3.5	11.5	8.0	10.0	16.0	14.0	15.0
26	.5	.0	.0	5.0	3.0	4.0	12.5	9.5	11.0	17.0	16.0	16.5
27	1.0	.0	.5	6.5	4.0	5.5	14.5	10.5	12.5	17.0	16.0	16.5
28	1.5	.0	.5	9.0	6.5	7.5	14.5	11.5	13.5	17.5	15.5	16.5
29	---	---	---	10.0	8.5	9.5	14.0	12.5	13.0	18.0	15.5	17.0
30	---	---	---	10.0	7.5	8.5	15.5	12.0	13.5	18.0	16.5	17.0
31	---	---	---	7.5	5.0	6.0	---	---	---	18.5	17.0	17.5
MONTH	2.5	0.0	0.5	10.0	0.0	4.0	15.5	3.5	8.5	18.5	8.5	13.0

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

01437500 NEVERSINK RIVER AT GODEFFROY, NY

LOCATION.--Lat 41°26'28", long 74°36'07", Orange County, Hydrologic Unit 02040104, on right bank just upstream from highway bridge on Graham Road, 0.5 mi downstream from Basher Kill, 0.8 mi southeast of Godeffroy, 1.7 mi south of Cuddebackville, and 8.5 mi upstream from mouth.

DRAINAGE AREA.--307 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August to October 1903, July 1937 to current year. Gage heights and discharge measurements, August 1909 to April 1914. Twice-daily figures of discharge, January 1911 to December 1912, which do not represent daily mean discharges because of diurnal fluctuation. August to October 1903, published as "Naversink River at Godeffroy, NY."

REVISED RECORDS.--WSP 1502: 1951 (M). WDR NY-82-1: Drainage area. WDR NY-87-1: 1986.

GAGE.--Water-stage recorder. Datum of gage is 459.66 ft above National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Apr. 30, 1914, nonrecording gages at same site (August to October 1903 at datum 0.98 ft higher).

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Prior to 1949, diurnal fluctuation at low and medium flow caused by powerplant at Cuddebackville. Subsequent to June 1953, entire flow from 92.5 mi^2 of drainage area controlled by Neversink Reservoir (see Reservoirs in Delaware River Basin). Part of flow diverted for New York City municipal supply. Remainder of flow (except for conservation releases and spill), impounded for release during periods of low flow in the lower Delaware River basin, as directed by the Delaware River Master.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989, MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	100	124	456	186	217	e210	1140	239	443	337	179	126
2	98	174	403	184	227	e190	769	882	683	314	159	123
3	99	164	363	178	206	e190	719	938	500	287	232	120
4	96	147	334	e180	160	193	756	588	438	284	222	112
5	95	164	301	e170	e150	191	696	531	402	407	201	109
6	93	809	283	e180	e140	200	849	2870	466	457	199	108
7	90	479	267	e180	e130	e170	895	2010	575	348	193	107
8	93	361	249	e180	e120	e170	756	1470	498	311	177	104
9	95	308	228	e170	e120	e160	649	1160	482	276	154	108
10	92	273	203	167	e110	e150	610	1450	993	259	131	133
11	91	257	e200	154	e110	e140	543	3110	731	264	129	134
12	94	229	e190	150	e110	e150	494	2040	569	232	173	129
13	92	262	e190	199	e109	e130	463	1550	625	219	247	104
14	93	467	181	198	117	e140	498	1280	649	211	313	117
15	90	354	190	195	140	158	473	1060	1240	197	214	149
16	89	298	162	242	201	188	670	1130	1550	192	187	147
17	85	300	150	205	140	177	614	4140	1290	193	189	303
18	86	350	e140	178	130	188	538	3060	1050	187	174	228
19	88	294	140	177	120	224	501	2390	850	178	176	199
20	83	663	148	176	115	195	437	1850	709	182	227	1490
21	86	1560	160	170	300	206	399	1450	698	224	212	1140
22	181	1080	160	160	700	214	369	1300	703	205	185	832
23	224	886	157	160	400	204	339	870	677	197	180	873
24	156	747	172	151	350	240	319	968	982	183	171	681
25	142	623	300	147	280	713	299	1020	800	181	160	517
26	130	531	240	144	260	827	281	839	624	186	150	792
27	123	474	201	198	240	682	265	755	533	178	127	832
28	128	576	200	200	220	640	259	659	482	188	123	607
29	131	531	257	194	---	748	249	564	447	190	126	509
30	122	473	217	213	---	815	242	510	380	168	152	457
31	116	---	183	224	---	906	---	479	---	169	140	---
MEAN	109	465	227	181	201	313	536	1392	702	239	181	380
MAX	224	1560	456	242	700	906	1140	4140	1550	457	313	1490
MIN	83	124	140	144	109	130	242	239	380	168	123	104

STATISTICS OF MONTHLY FLOW DATA FOR PERIOD OF RECORD, BY WATER YEAR (WY)

MEAN	296	448	516	438	474	841	979	650	422	285	230	238
MAX	2033	1210	1272	1504	1271	2303	2669	1519	1722	1404	1327	967
(WY)	1956	1952	1953	1949	1951	1945	1940	1943	1972	1945	1955	1938
MIN	75.2	86.3	119	72.6	118	297	248	180	111	54.2	64.7	68.4
(WY)	1942	1966	1981	1981	1980	1981	1985	1962	1957	1966	1949	1941

SUMMARY STATISTICS	FOR 1989 WATER YEAR		FOR PERIOD OF RECORD	
AVERAGE FLOW	411		484a	Unadjusted
HIGHEST ANNUAL MEAN			943	1952
LOWEST ANNUAL MEAN			215	1965
HIGHEST DAILY MEAN	4140	May 17	15900	Aug 19 1955
LOWEST DAILY MEAN	83	Oct 20	32	Aug 17 1965
INSTANTANEOUS PEAK FLOW	5420	May 17	33000a	Aug 19 1955
INSTANTANEOUS PEAK STAGE	7.29	May 17	12.49	Aug 19 1955
INSTANTANEOUS LOW FLOW	80	Oct 20	.00	Jul 21 1911

a Since water year 1938
b From rating curve extended above 11,000 ft^3/s, on basis of slope-area measurement of peak flow
e Estimated

01437500 NEVERSINK RIVER AT GODEFFROY, NY--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--May 1987 to current year. Records prior to water year 1989 are unpublished and available in files of the Geological Survey.
CHEMICAL DATA: 1987 (b), 1988-89 (c).
MINOR ELEMENTS DATA: 1987 (b), 1988-89 (c).
SEDIMENT DATA: 1988 (b), 1989 (c).

REMARKS.--Water-quality samples were collected by personnel of the New York State Department of Environmental Conservation, and were analyzed in USGS laboratories.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	BARO-METRIC PRES-SURE (MM OF HG)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	HARD-NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)
OCT 18...	0800	84	103	6.60	11.0	--	10.5	--	27	8.2	1.6	7.8
NOV 15...	0900	362	95	7.10	5.0	--	12.8	--	24	7.0	1.5	6.6
APR 12...	1000	502	101	6.40	5.5	759	13.0	103	23	6.9	1.4	7.9
MAY 08...	1200	1480	80	6.80	9.5	746	10.8	97	19	5.5	1.2	6.5
JUN 14...	1200	631	89	6.80	15.5	751	--	--	22	6.5	1.3	6.0
AUG 29...	1000	122	116	7.10	19.5	751	9.5	105	28	8.4	1.6	7.9

DATE	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL)	ALUM-INUM, DIS-SOLVED (UG/L AS AL)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CADMIUM DIS-SOLVED (UG/L AS CD)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	COPPER, DIS-SOLVED (UG/L AS CU)
OCT 18...	1.2	17	10	11	0.10	30	<10	<1	<1	19	3
NOV 15...	1.1	13	14	11	0.10	110	--	3	--	10	--
APR 12...	0.90	10	10	12	0.10	70	--	<1	--	4	--
MAY 08...	0.90	8.0	10	8.4	0.10	190	--	1	--	9	--
JUN 14...	0.70	12	9.0	9.5	0.10	150	--	<1	--	11	--
AUG 29...	1.1	18	10	12	0.10	20	--	<1	--	5	--

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)	NICKEL, DIS-SOLVED (UG/L AS NI)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	ZINC, DIS-SOLVED (UG/L AS ZN)
OCT 18...	80	21	<5	<5	<10	5	<0.10	5	<1	110	5
NOV 15...	200	--	<5	--	20	--	<0.10	10	--	<10	--
APR 12...	140	--	<5	--	40	--	<0.10	3	--	20	--
MAY 08...	290	72	6	--	60	--	<0.10	5	--	10	--
JUN 14...	330	--	4	--	60	--	<0.10	2	--	20	--
AUG 29...	150	--	1	--	20	--	--	2	--	<10	--

01437500 NEVERSINK RIVER AT GODEFFROY, NY--Continued

SUSPENDED SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY)
OCT				
18...	0800	84	1	0.23
NOV				
15...	0900	362	3	2.9
APR				
12...	1000	502	4	5.4
MAY				
08...	1200	1480	9	36
JUN				
14...	1200	631	6	10
AUG				
29...	1000	122	4	1.3

01438500 DELAWARE RIVER AT MONTAGUE, NJ

LOCATION.--Lat 41°18'33", long 74°47'44", Pike County, PA, Hydrologic Unit 02040104, on right bank 1,500 ft upstream from toll bridge (on U.S. Route 206) between Montague, NJ and Milford, PA, 0.8 mi downstream from Sawkill Creek, and at river mile 246.3.

DRAINAGE AREA.--3,480 mi^2.

PERIOD OF RECORD.--March 1936 to September 1939 (gage heights only, published as "at Milford, PA"). October 1939 to current year. Monthly discharge only for some periods, published in WSP 1302.

REVISED RECORDS.--WDR-NJ-81-2: 1980.

GAGE.--Water-stage recorder. Datum of gage is 369.93 ft above National Geodetic Vertical Datum of 1929. Prior to Feb. 9, 1940, nonrecording gage on upstream side of left span of subsequently dismantled bridge at present site at datum 70 ft lower.

REMARKS.--Records excellent except for periods of ice effect, Dec. 12 to Jan. 29, and Feb. 8-20, and periods of shifting control, Oct. 1 to Nov. 6, and Aug. 20 to Sept. 30, which are good. Diurnal fluctuations at medium and low flow caused by powerplants on tributary streams. Flow regulated by Lake Wallenpaupack and by Pepacton, Cannonsville, Swinging Bridge, Toronto, Cliff Lake, and Neversink Reservoirs (see Delaware River basin, reservoirs in) and smaller reservoirs. Diversion from Pepacton, Cannonsville, and Neversink Reservoirs (see Delaware River basin, diversions). Several measurements of water temperature were made during the year. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of October 10, 1903, reached a stage of 35.5 ft, from floodmark, present datum.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989, MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1950	1740	3720	e1900	2500	3100	14100	2260	4810	4150	2240	1820
2	1810	1800	3730	e2100	2560	2730	11400	6340	5500	3330	2070	1650
3	1720	1350	3320	e2100	2770	2450	9240	15100	4690	3130	2210	1660
4	1640	1850	2560	e2100	2380	2230	8670	10600	3660	3160	2520	1590
5	1670	1850	2700	e2600	1730	1890	8670	7810	3340	3100	2310	1620
6	1750	2900	2940	e2400	1950	2250	9240	27000	3450	7550	1840	1600
7	1680	7180	2630	e2000	2440	2560	10200	41900	4190	5840	2000	1590
8	1650	5080	2520	e1800	e2000	2650	9380	26700	4330	4710	2600	1710
9	1700	4100	2560	e1900	e2100	2490	8060	18300	4250	3980	2200	1740
10	1650	3440	2370	e2300	e2000	2020	7430	16200	6260	3490	2250	1750
11	1900	2850	1630	e2200	e1750	1840	6420	29500	6770	4020	2040	2270
12	1760	2530	e1650	e1950	e1200	1380	5690	27200	5330	3480	2090	2350
13	1750	2290	e2300	e1900	e1300	1520	5030	19700	4910	3020	2040	2030
14	1810	3200	e2000	e2100	e2000	1510	4950	15100	5450	2850	2280	1870
15	1770	4400	e2100	e1800	e2000	1440	4470	13100	8870	2710	2390	1800
16	1810	3850	e1700	e1800	e2600	1450	5310	12100	14600	1820	2260	1980
17	1800	3290	e2100	e2200	e2500	2320	5940	22900	13700	1750	2570	2170
18	1810	3560	e2000	e2200	e2200	2020	5560	22700	13500	2470	1840	1530
19	1890	3670	e2100	e1800	e1500	2130	5070	16200	10900	2510	1700	1380
20	1830	3790	e2100	e1800	e1300	2950	4580	13400	9810	2420	1890	5040
21	1920	12800	e1900	e1600	1990	2770	4280	11600	8510	2790	2090	6770
22	2060	12100	e2000	e1400	9450	2380	3920	10400	9120	3060	2470	6400
23	2020	8560	e1800	e1500	7670	2010	3590	8460	8640	2460	2440	5280
24	2270	6510	e1600	e2000	5260	2330	3500	9180	9910	2440	2400	4510
25	2010	5610	e2300	e1800	4270	6490	3300	9110	12300	3110	1800	4150
26	2050	4930	e2900	e1700	2730	9780	2900	7700	11200	3080	1740	4790
27	1670	4090	e2800	e2200	2920	9010	2580	6780	8880	3100	1710	4910
28	1280	4120	e2400	e2400	3030	8010	2450	5910	7930	3150	1710	3570
29	1190	4190	e2000	e1750	---	8200	2410	4970	6960	2650	1860	3150
30	1370	4240	e2400	2210	---	11200	2100	4810	5970	1810	1860	2710
31	1630	---	e2200	2650	---	13500	---	4840	---	1830	2310	---
MEAN	1768	4396	2356	2005	2789	3826	6015	14450	7591	3193	2120	2846
MAX	2270	12800	3730	2650	9450	13500	14100	41900	14600	7550	2600	6770
MIN	1190	1350	1600	1400	1200	1380	2100	2260	3340	1750	1700	1380

STATISTICS OF MONTHLY FLOW DATA FOR PERIOD OF RECORD, BY WATER YEAR (WY)

MEAN	3333	5049	6144	5672	5968	10180	12000	7616	4523	3068	2596	2725
MAX	15690	11760	14050	15050	15120	24480	31560	16090	15200	11220	14230	9167
(WY)	1956	1952	1974	1949	1976	1945	1940	1943	1972	1945	1955	1960
MIN	806	995	1968	1318	1748	3191	3322	2215	1214	864	715	892
(WY)	1942	1965	1965	1981	1980	1981	1985	1965	1965	1954	1954	1941

01438500 DELAWARE RIVER AT MONTAGUE, NJ--Continued

SUMMARY STATISTICS	FOR 1989 WATER YEAR		FOR PERIOD OF RECORD	
AVERAGE FLOW	4451		5734	Unadjusted
HIGHEST ANNUAL MEAN			8621	1952
LOWEST ANNUAL MEAN			2309	1965
HIGHEST DAILY MEAN	41900	May 7	187000	Aug 19 1955
LOWEST DAILY MEAN	1190	Oct 29	412	Aug 23 1954
INSTANTANEOUS PEAK FLOW	52200	May 6	250000a	Aug 19 1955
INSTANTANEOUS PEAK STAGE	16.19	May 6	35.15	Aug 19 1955
INSTANTANEOUS LOW FLOW	960	Sep 15	382	Aug 24 1954
10 PERCENTILE	9580		12400	
50 PERCENTILE	2530		3440	
95 PERCENTILE	1600		1250	

a From rating curve extended above 90,000 ft^3/s on basis of flood-routing study
e Estimated

01440000 FLAT BROOK NEAR FLATBROOKVILLE, NJ

LOCATION.--Lat 41°06'24", long 74°57'09", Sussex County, Hydrologic Unit 02040104, on right bank 1.0 mi upstream from Flatbrookville, and 1.5 mi upstream from mouth.

DRAINAGE AREA.--64.0 mi^2.

PERIOD OF RECORD.--July 1923 to current year.

REVISED RECORDS.--WSP 1432: 1924(M), 1928(M), 1929, 1930(M), 1932, 1933(M), 1936, 1938(M), 1939-40, 1949(M), 1952-53(M). WDR-NJ-80-2: 1970(M). WDR NJ-82-2: Drainage area.

GAGE.--Water-stage recorder. Concrete control since Aug. 19, 1929. Datum of gage is 347.73 ft above National Geodetic Vertical Datum of 1929. Prior to Jan. 6, 1926, nonrecording gage at same site and datum.

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989, MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	20	110	55	55	76	160	65	148	78	44	21
2	16	28	100	47	56	69	136	170	132	73	47	21
3	17	31	95	45	53	66	121	215	119	68	44	19
4	17	27	84	e42	48	62	122	138	108	63	38	18
5	17	26	74	e38	45	61	120	121	106	93	33	18
6	16	67	71	e39	e40	69	152	930	114	117	36	17
7	16	64	70	e39	e35	63	196	765	159	96	51	17
8	16	45	67	e44	e33	e55	159	416	266	106	38	16
9	16	38	64	e50	e31	e59	144	302	175	80	32	16
10	16	35	59	51	e32	55	137	355	289	66	29	16
11	16	32	56	46	e33	54	121	964	204	62	28	15
12	14	30	48	46	e34	56	115	620	146	57	55	15
13	15	37	49	67	e35	50	106	409	158	55	100	15
14	14	95	52	60	36	53	110	321	165	53	80	14
15	14	70	55	62	41	54	110	280	218	47	59	15
16	16	57	48	74	55	62	142	382	392	45	46	18
17	15	59	46	64	43	59	137	943	391	47	41	60
18	31	78	45	59	42	60	114	703	271	44	38	42
19	34	65	50	59	44	70	107	428	206	42	34	39
20	27	163	46	63	36	61	99	328	168	46	35	1010
21	22	513	47	51	78	66	92	274	162	62	34	834
22	38	264	47	58	207	80	87	234	156	59	31	359
23	47	186	44	e60	172	70	81	208	152	70	29	324
24	34	142	49	e54	124	77	77	343	185	52	27	271
25	32	122	82	e50	97	235	73	416	162	47	25	193
26	28	108	66	49	101	199	72	269	131	48	23	306
27	25	98	52	53	86	153	69	236	112	40	22	329
28	23	159	50	52	77	136	66	210	100	37	21	215
29	21	164	63	50	---	128	64	175	96	33	21	175
30	20	124	55	53	---	121	64	162	86	31	23	149
31	20	---	54	57	---	131	---	159	---	31	23	---
MEAN	21.6	98.2	61.2	52.8	63.2	84.2	112	372	176	59.6	38.3	153
MAX	47	513	110	74	207	235	196	964	392	117	100	1010
MIN	14	20	44	38	31	50	64	65	86	31	21	14
IN.	.39	1.71	1.10	.95	1.03	1.52	1.95	6.71	3.07	1.07	.69	2.66

STATISTICS OF MONTHLY FLOW DATA FOR PERIOD OF RECORD, BY WATER YEAR (WY)

MEAN	51.6	95.4	118	116	133	204	205	143	88.3	58.3	50.9	48.3
MAX	306	292	369	367	275	513	570	372	334	333	386	258
(WY)	1956	1928	1974	1979	1951	1936	1983	1989	1972	1928	1955	1933
MIN	9.57	12.2	20.6	24.5	37.3	82.0	65.9	44.0	23.7	13.1	9.55	7.01
(WY)	1964	1965	1947	1981	1940	1985	1946	1941	1965	1966	1966	1964

SUMMARY STATISTICS	FOR 1989 WATER YEAR		FOR PERIOD OF RECORD	
AVERAGE FLOW	108		109	
HIGHEST ANNUAL MEAN			210	1928
LOWEST ANNUAL MEAN			43.4	1965
HIGHEST DAILY MEAN	1010	Sep 20	6310	Aug 19 1955
LOWEST DAILY MEAN	14	Oct 12	4.1	Sep 11 1966
INSTANTANEOUS PEAK FLOW	1980	Sep 20	9560a	Aug 19 1955
INSTANTANEOUS PEAK STAGE	6.02	Sep 20	12.58b	Aug 19 1955
INSTANTANEOUS LOW FLOW	12	Jan 14	3.6	Sep 25 1964
ANNUAL RUNOFF (INCHES)	22.85		23.16	
10 PERCENTILE	229		238	
50 PERCENTILE	60		70	
95 PERCENTILE	17		14	

a From rating curve extended above 2,000 ft^3/s on basis of slope-area measurement of peak flow
b From high-water mark in gage house
e Estimated

01440200 DELAWARE RIVER BELOW TOCKS ISLAND DAMSITE, NEAR DELAWARE WATER GAP, PA

LOCATION.--Lat 41°00'42", long 75°05'09", Warren County, NJ, Hydrologic Unit 02040105, on left bank 40 ft streamward from River Road, 1.0 mi downstream from Tocks Island, 3.7 mi northeast of Delaware Water Gap, PA, 4.0 mi upstream from bridge on Interstate Route 80, and at mile 216.1.

DRAINAGE AREA.--3,850 mi^2, approximately.

PERIOD OF RECORD.--May 1964 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 293.64 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair except for estimated daily discharges, which are poor. Diurnal fluctuation at medium and low flow caused by powerplants on tributary streams. Flow regulated by Lake Wallenpaupack, and by Pepacton, Cannonsville, Swinging Bridge, Toronto, Cliff Lake, and Neversink Reservoirs (see Delaware River basin, reservoirs in) and smaller reservoirs. Diversion from Pepacton, Cannonsville, and Neversink Reservoirs (see Delaware River basin, diversions). Several measurements of water temperature were made during the year. Gage height satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Aug. 19, 1955, reached a stage of 37.4 ft, present datum (discharge about 260,000 cfs). Information on stage supplied by Harlan Fish, retired caretaker of Worthington State Forest.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989, MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e1970	1960	4760	e2450	3040	3770	16100	2590	5620	5560	2540	2330
2	e2000	1940	4600	e2150	2840	3400	13800	3740	5960	4250	2430	2000
3	e1850	2030	4270	e2150	3020	2890	10800	16800	5760	3590	2310	1890
4	e1860	1480	3300	e2830	3120	2730	9680	13100	4590	4070	2740	1880
5	e1780	2300	3020	e2870	2000	2500	9650	9340	3960	3450	2750	1800
6	e1810	2380	3750	e3020	e2060	2490	9820	23900	4080	6610	2050	1890
7	e1840	6200	3190	e2870	e2610	3000	11300	60200	4560	7570	2180	1810
8	e1770	6510	3070	e2070	e2310	3040	11000	38600	5540	6310	2560	1840
9	e1780	4770	2890	e2110	e2290	3100	9410	23900	5200	4900	2600	2050
10	e1800	4130	3030	e2550	e2200	2380	8500	19100	6490	4080	2390	1900
11	e1850	3520	2120	e2470	e2010	2470	7680	34600	7940	4640	2260	2210
12	e2000	2940	e1760	e2300	e1750	1750	6730	38200	6700	4260	2330	2810
13	1840	2670	e2310	e2060	1630	1660	6200	26000	5940	3550	2340	2350
14	1890	2810	e2550	e2290	2000	2040	5860	19300	6140	3260	2960	2290
15	1870	4770	e2620	e2090	2270	1710	5530	15800	7790	3170	3100	2000
16	1860	4580	e2030	e2000	2350	1660	5700	14600	15700	2220	2700	2190
17	1900	3840	e2550	e2230	3370	2140	6830	25600	17000	1980	2810	2870
18	1940	3920	e2270	e2650	3060	2740	6550	31700	15800	2480	2300	2540
19	1970	4150	e2400	e2170	1990	2350	6140	21600	13100	2710	1990	2030
20	2040	4310	e2740	e1990	1670	2970	5590	16800	11300	2680	1760	6680
21	2010	11800	e2300	e2100	1710	3430	5080	14200	9710	2690	2280	11000
22	2280	15900	e2180	e1770	7000	3080	4800	12200	10100	3510	2570	9410
23	2450	10800	e2710	e1660	10400	2610	4350	10400	10200	2990	2700	8030
24	2350	8340	e1740	e2270	6840	2570	4090	10400	10600	3070	2940	6830
25	2640	6750	e2440	e1980	5870	5100	3950	11100	13300	3540	2190	6100
26	2310	6180	e3180	e1920	3870	11200	3640	9510	13200	3610	2050	6370
27	2200	5400	e3030	e2380	3510	10300	3250	8210	10600	3330	1940	7530
28	1740	4910	e3070	e2530	3630	9230	3040	7550	8970	3470	2000	5820
29	1420	5270	e2490	e2020	---	8780	2920	6160	8150	3140	2070	4930
30	1420	5240	e2900	2330	---	11600	2760	5700	7160	2240	2080	4320
31	1710	---	e2980	2970	---	13900	---	6110	---	1960	2370	---
MEAN	1940	5060	2847	2298	3229	4277	7025	17970	8705	3706	2396	3923
MAX	2640	15900	4760	3020	10400	13900	16100	60200	17000	7570	3100	11000
MIN	1420	1480	1740	1660	1630	1660	2760	2590	3960	1960	1760	1800

STATISTICS OF MONTHLY FLOW DATA FOR PERIOD OF RECORD, BY WATER YEAR (WY)

MEAN	3910	5092	6708	5922	7145	10470	12130	8655	5522	3538	2766	3180
MAX	13030	12870	16730	17960	17320	21490	24100	17970	18150	9455	6242	10310
(WY)	1978	1973	1974	1979	1976	1977	1983	1989	1972	1973	1969	1987
MIN	1193	992	1914	1437	1936	3873	3796	2746	1397	950	1101	1283
(WY)	1965	1965	1965	1981	1980	1981	1985	1965	1965	1965	1965	1965

SUMMARY STATISTICS	FOR 1989 WATER YEAR		FOR PERIOD OF RECORD	
AVERAGE FLOW	5288		6271	Unadjusted
HIGHEST ANNUAL MEAN			9418	1973
LOWEST ANNUAL MEAN			2572	1965
HIGHEST DAILY MEAN	60200	May 7	96000	Mar 16 1986
LOWEST DAILY MEAN	1420	Oct 29	580	Jul 7 1965
INSTANTANEOUS PEAK FLOW	67900	May 7	110000	Mar 16 1986
INSTANTANEOUS PEAK STAGE	16.89a	May 7	24.00	Mar 16 1986
10 PERCENTILE	11000		13400	
50 PERCENTILE	2990		3790	
95 PERCENTILE	1780		1600	

e Estimated

01443000 DELAWARE RIVER AT PORTLAND, PA

LOCATION.--Lat 40°55'26", long 75°05'46", Northampton County, Hydrologic Unit 02040105, at walkbridge connecting Portland, PA and Columbia, NJ, and 0.5 mi upstream of Paulins Kill.

DRAINAGE AREA.--4,165 mi^2.

PERIOD OF RECORD.--Water years 1976 to current year.

COOPERATION.--Field data and samples for laboratory analyses provided by New Jersey Department of Environmental Protection, Division of Water Resources. Analyses of fecal coliform and fecal streptococci by the MPN method, and water-phase nutrients were performed by the New Jersey Department of Health, Division of Laboratories and Epidemiology.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, EC BROTH (MPN)	STREP-TOCOCCI FECAL (MPN)
OCT 1988										
06...	1200	E 1880	107	7.4	14.0	9.9	96	E1.5	790	920
JAN 1989										
24...	1130	E 2710	105	6.6	1.0	14.0	99	<1.1	40	4
APR										
17...	1100	E 7720	95	7.2	7.0	12.4	102	<1.1	<20	33
MAY										
17...	1100	E28100	80	6.4	9.0	10.7	93	E1.6	170	140
JUL										
31...	1330	E 2420	120	6.8	20.0	8.5	93	4.4	130	240
AUG										
15...	1215	E 3530	104	7.1	21.0	8.4	95	E2.4	90	130

DATE	HARD-NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
OCT 1988									
06...	33	9.5	2.2	6.8	1.2	25	12	9.6	<0.1
JAN 1989									
24...	42	12	2.9	7.7	1.0	27	15	12	0.1
APR									
17...	26	7.9	1.6	5.6	0.9	14	11	9.6	0.1
MAY									
17...	22	6.6	1.3	3.8	0.7	11	10	6.3	0.1
JUL									
31...	41	12	2.6	6.6	0.9	27	12	10	0.1
AUG									
15...	32	9.7	1.9	5.4	0.9	21	11	7.3	0.1

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
OCT 1988									
06...	0.93	57	0.009	0.27	<0.05	0.29	0.56	--	2.6
JAN 1989									
24...	2.5	69	0.010	0.51	0.18	0.38	0.89	0.12	3.6
APR									
17...	2.2	47	0.005	0.35	0.06	0.27	0.62	0.03	2.5
MAY									
17...	3.2	39	0.010	0.35	<0.05	0.41	0.76	--	3.7
JUL									
31...	2.0	62	0.022	0.44	<0.05	0.60	1.0	0.50	3.3
AUG									
15...	2.9	52	0.010	0.33	<0.05	0.39	0.72	--	3.3

01443440 PAULINS KILL AT BALESVILLE, NJ

LOCATION.--Lat 41°06'20", long 74°45'19", Sussex County, Hydrologic Unit 02040105, at bridge on unnamed road at Balesville, 2.2 mi downstream from Dry Brook, and 3.4 mi north of Newton.

DRAINAGE AREA.--67.1 mi^2.

PERIOD OF RECORD.--January 1979 to current year.

COOPERATION.--Field data and samples for laboratory analyses provided by New Jersey Department of Environmental Protection, Division of Water Resources. Analyses of fecal coliform and fecal streptococci by the MPN method, and water-phase nutrients were performed by the New Jersey Department of Health, Division of Laboratories and Epidemiology.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, EC BROTH (MPN)	STREP-TOCOCCI FECAL (MPN)
OCT 1988										
20...	1100	16E	592	7.8	8.5	12.0	104	<0.6	330	140
JAN 1989										
26...	1115	38E	300	7.6	2.0	15.5	114	<1.1	80	13
APR										
26...	1100	52E	390	7.9	10.5	11.9	108	<0.7	330	23
JUN										
20...	1100	180E	400	7.5	18.0	8.8	93	E1.9	790	350
JUL										
05...	1100	96E	450	7.8	19.0	8.9	97	E1.3	1300	>2400
AUG										
03...	1200	56E	464	7.4	20.0	9.5	106	E1.8	3500	1600

DATE	HARD-NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
OCT 1988									
20...	240	58	23	30	2.5	186	33	59	0.1
JAN 1989									
26...	170	43	15	26	1.9	127	33	50	0.1
APR									
26...	180	45	16	23	1.5	131	28	42	0.1
JUN									
20...	140	36	11	19	1.4	106	18	29	0.1
JUL									
05...	170	44	15	21	1.8	136	20	35	0.1
AUG									
03...	190	49	16	25	2.2	149	23	44	0.1

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
OCT 1988									
20...	6.2	323	0.027	1.41	<0.05	0.46	1.9	0.26	5.2
JAN 1989									
26...	5.1	250	0.015	1.26	0.42	0.69	2.0	0.09	3.5
APR									
26...	2.3	236	0.021	0.10	0.10	0.46	0.56	0.07	4.9
JUN									
20...	6.4	184	0.028	0.92	0.12	0.82	1.7	0.12	8.2
JUL									
05...	7.1	226	0.030	1.15	0.07	0.75	1.9	0.10	5.7
AUG									
03...	7.4	256	0.040	1.36	<0.05	0.49	1.8	0.12	5.4

01443440 PAULINS KILL AT BALESVILLE, NJ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SULFIDE TOTAL (MG/L AS S)	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE)	BORON, TOTAL RECOVERABLE (UG/L AS B)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)
OCT 1988 20...	1100	<0.5	10	<1	<10	30	1	<1	5

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)	SELENIUM, TOTAL (UG/L AS SE)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	PHENOLS TOTAL (UG/L)
OCT 1988 20...	120	<5	70	<0.10	2	<1	<10	1

01443500 PAULINS KILL AT BLAIRSTOWN, NJ

LOCATION.--Lat 40°58'44", long 74°57'15", Warren County, Hydrologic Unit 02040105, on right bank 1,200 ft upstream from bridge on State Highway 94 in Blairstown, 1,400 ft upstream from Blairs Creek, and 10 mi upstream from mouth. Water-quality samples collected at bridge 1,200 ft downstream from gage at high flows.

DRAINAGE AREA.--126 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.- 1921 to September 1976, October 1977 to current year.

REVISED RECORDS.--WSP 971: 1942. WSP 1382: 1952-53(M).

GAGE.--Water-stage recorder and concrete control (Aug. 1, 1931, to Aug. 3, 1941, concrete control at site 280 ft, downstream). Datum of gage is 335.86 ft above National Geodetic Vertical Datum of 1929. Prior to May 24, 1922, nonrecording gage and May 24, 1922 to July 31, 1931, water-stage recorder, at site of former highway bridge 1,300 ft downstream at different datum. Aug. 1, 1931 to July 28, 1939, water-stage recorder at site 100 ft downstream at present datum.

REMARKS.--No estimated daily discharges. Records good. Diurnal fluctuations caused by unknown source and flow regulated slightly by Swartswood Lake. Several measurements of water temperature, other than those published, were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989, MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	31	34	214	108	87	149	322	108	280	224	85	47
2	30	43	194	104	90	139	284	237	253	201	84	46
3	35	48	210	100	108	133	263	330	228	186	106	43
4	35	44	233	88	109	125	276	253	206	172	92	40
5	35	86	221	85	106	120	264	219	198	219	85	39
6	31	177	210	78	99	144	306	950	199	268	96	39
7	29	165	199	78	57	138	352	1070	250	243	85	39
8	29	150	184	85	54	111	312	742	347	258	79	38
9	27	132	167	92	49	116	293	549	292	199	70	37
10	28	94	128	85	49	115	276	596	785	169	63	36
11	32	52	74	84	52	118	251	1190	515	153	63	35
12	29	37	62	92	79	125	229	1040	384	132	128	34
13	27	43	66	111	77	114	219	785	381	122	194	34
14	26	85	70	102	54	111	219	606	371	115	175	36
15	26	82	70	120	58	127	223	521	411	109	139	42
16	26	79	65	129	67	177	265	709	548	111	115	49
17	26	86	64	178	59	180	254	1510	567	120	100	83
18	25	87	60	198	58	183	225	1370	479	112	92	72
19	26	84	68	158	57	190	208	1080	399	105	84	81
20	25	198	67	153	52	154	188	801	341	110	87	1460
21	24	444	71	145	135	174	173	617	337	127	81	1900
22	48	538	77	160	402	205	162	501	358	115	74	1300
23	52	371	77	120	346	174	146	450	488	139	69	1070
24	52	300	88	67	262	202	137	662	618	116	72	822
25	47	234	108	60	202	442	129	765	522	101	69	528
26	42	192	96	61	184	400	125	589	427	123	60	660
27	38	197	91	66	172	329	118	491	363	103	55	634
28	35	286	96	64	161	292	112	426	320	99	53	449
29	35	289	107	64	---	274	107	359	292	92	55	372
30	34	242	102	72	---	266	107	318	252	80	57	323
31	32	---	113	74	---	311	---	301	---	74	52	---
MEAN	32.8	163	118	103	117	188	218	650	380	145	87.7	346
MAX	52	538	233	198	402	442	352	1510	785	268	194	1900
MIN	24	34	60	60	49	111	107	108	198	74	52	34
IN.	.30	1.45	1.08	.94	.97	1.72	1.93	5.95	3.37	1.33	.80	3.07

STATISTICS OF MONTHLY FLOW DATA FOR PERIOD OF RECORD, BY WATER YEAR (WY)

MEAN	100	163	205	214	249	368	334	223	155	118	106	109
MAX	634	479	588	712	516	963	930	650	690	527	663	626
(WY)	1956	1933	1974	1979	1951	1936	1983	1989	1972	1945	1955	1933
MIN	20.5	22.1	39.5	50.5	67.4	139	106	54.6	41.0	19.4	19.6	18.2
(WY)	1964	1965	1947	1981	1940	1965	1985	1941	1965	1955	1932	1964

SUMMARY STATISTICS	FOR 1989 WATER YEAR		FOR PERIOD OF RECORD	
AVERAGE FLOW	212		195	
HIGHEST ANNUAL MEAN			362	1952
LOWEST ANNUAL MEAN			67.4	1965
HIGHEST DAILY MEAN	1900	Sep 21	5950	Aug 19 1955
LOWEST DAILY MEAN	24	Oct 21	5.0	Aug 13 1930
INSTANTANEOUS PEAK FLOW	2390	Sep 20	8750	Aug 19 1955
INSTANTANEOUS PEAK STAGE	6.25	Sep 20	11.12a	Aug 19 1955
INSTANTANEOUS LOW FLOW	23	Oct 20	2.8	Nov 1 1922
ANNUAL RUNOFF (INCHES)	22.90		20.99	
10 PERCENTILE	491		412	
50 PERCENTILE	122		131	
95 PERCENTILE	33		27	

a From high-water mark in gage house

01443500 PAULINS KILL AT BLAIRSTOWN, NJ--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1921, 1925, 1957-60, 1962-63, 1976 to current year.

COOPERATION.--Field data and samples for laboratory analyses provided by New Jersey Department of Environmental Protection, Division of Water Resources. Analyses of fecal coliform and fecal streptococci by the MPN method, and water-phase nutrients were performed by the New Jersey Department of Health, Division of Laboratories and Epidemiology.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)	COLIFORM, FECAL, EC BROTH (MPN)	STREPTOCOCCI FECAL (MPN)
OCT 1988										
20...	1330	25	471	7.8	10.0	11.8	105	<0.6	50	49
JAN 1989										
26...	1315	60	265	7.7	2.5	15.0	112	<1.0	80	49
APR										
26...	1300	126	330	8.3	12.0	13.0	123	E1.5	<20	7
JUN										
20...	1300	335	364	7.8	19.0	8.2	89	E2.3	80	140
JUL										
05...	1300	214	380	8.1	21.0	8.8	100	E1.4	1700	>2400
AUG										
09...	1145	69	432	7.9	19.5	9.6	105	<1.0	130	350

DATE	HARDNESS TOTAL (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
OCT 1988									
20...	210	50	21	25	2.0	166	31	47	0.1
JAN 1989									
26...	150	35	14	18	1.3	120	24	31	0.1
APR									
26...	150	38	14	18	1.3	123	24	31	0.1
JUN									
20...	120	30	11	14	1.1	97	15	22	0.1
JUL									
05...	150	37	14	16	1.4	134	16	24	0.1
AUG									
09...	180	44	17	19	1.5	146	19	31	0.1

DATE	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	PHOSPHORUS TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
OCT 1988									
20...	3.6	279	0.015	0.63	<0.05	0.35	0.98	0.03	3.6
JAN 1989									
26...	3.6	199	0.007	0.86	<0.05	0.34	1.2	0.03	2.5
APR									
26...	2.0	202	0.011	0.45	0.07	0.48	0.93	0.04	4.2
JUN									
20...	5.8	157	0.010	0.62	0.10	0.86	1.5	0.09	6.7
JUL									
05...	6.2	195	0.014	0.58	0.08	0.72	1.3	0.07	5.9
AUG									
09...	4.2	223	0.009	0.54	<0.05	0.36	0.90	0.06	4.0

01443500 PAULINS KILL AT BLAIRSTOWN, NJ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SULFIDE TOTAL (MG/L AS S)	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE)	BORON, TOTAL RECOVERABLE (UG/L AS B)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)
OCT 1988									
20...	1330	<0.5	<10	<1	<10	30	<1	<1	3
JUN 1989									
20...	1300	<0.5	20	<1	<10	30	<1	<1	3

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)	SELENIUM, TOTAL (UG/L AS SE)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	PHENOLS TOTAL (UG/L)
OCT 1988								
20...	70	<5	30	<0.10	1	<1	<10	<1
JUN 1989								
20...	470	2	60	<0.10	1	<1	20	<1

01443900 YARDS CREEK NEAR BLAIRSTOWN, NJ

LOCATION.--Lat 40°58'51", long 75°02'25", Warren County, Hydrologic Unit 02040105, on left bank 100 ft upstream from bridge on Hainesburg-Mount Vernon Road, 1.4 mi downstream of Yards Creek Reservoir, 2.2 mi northeast of Hainesburg, 2.4 mi upstream from mouth, and 4.2 mi west of Blairstown.

DRAINAGE AREA.--5.34 mi^2.

PERIOD OF RECORD.--October 1966 to current year.

REVISED RECORDS.--WDR NJ-77-2: 1976. WDR NJ-79-2: 1977(m). WDR NJ-82-2: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 606.8 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily dischages. Records fair. Complete regulation by the Jersey Central Power and Light Co., at Yards Creek Reservoir 1.4 mi above station. Several measurements of water temperature, other than those published, were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989, MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.7	1.8	2.9	2.9	2.7	7.5	49	1.9	19	17	3.8	3.5
2	1.8	1.8	2.8	2.8	2.8	7.7	28	6.7	19	16	3.5	3.6
3	1.6	1.8	2.5	3.0	3.0	8.1	8.9	3.5	19	9.9	3.7	3.5
4	1.6	1.8	2.0	2.6	2.9	8.0	10	3.1	17	4.1	3.4	3.3
5	1.5	2.4	3.6	3.1	2.7	7.8	11	5.0	17	5.5	4.3	3.2
6	1.6	2.4	8.2	2.0	2.8	8.6	15	35	14	4.5	5.0	3.3
7	1.7	1.9	13	2.0	2.8	9.9	16	28	8.9	4.8	3.7	3.4
8	1.8	1.8	19	3.4	2.7	14	15	30	14	5.2	3.5	3.4
9	1.7	1.7	20	2.4	2.5	8.4	16	37	25	4.1	3.4	3.5
10	1.5	1.2	20	2.4	3.0	8.0	14	57	24	3.9	3.5	3.6
11	1.5	.97	18	2.3	2.9	8.0	13	83	17	3.7	3.6	3.4
12	1.5	1.4	26	3.1	2.5	7.4	11	78	16	3.8	4.9	3.4
13	1.6	2.7	30	3.8	2.4	7.7	4.8	34	18	3.9	6.0	3.4
14	1.6	1.9	19	3.5	2.7	7.7	3.1	28	17	3.9	4.5	3.6
15	1.7	1.8	13	4.1	3.0	7.7	3.6	29	19	4.5	4.2	3.6
16	1.6	1.9	4.8	3.5	3.2	7.8	3.5	59	22	3.9	4.0	4.3
17	1.5	2.8	4.8	3.5	2.9	7.9	3.4	91	20	3.7	3.9	4.8
18	1.6	2.3	5.7	3.4	2.8	8.3	3.0	60	18	3.6	3.9	3.4
19	1.6	2.2	6.1	3.4	2.6	7.5	2.9	31	17	3.6	4.1	5.7
20	1.6	16	4.9	3.4	2.5	7.7	2.9	24	17	4.8	3.8	53
21	1.9	9.7	2.8	3.2	6.1	9.2	2.8	20	25	4.1	3.6	118
22	3.1	4.9	2.8	3.4	8.6	8.4	2.8	25	33	4.0	3.7	174
23	1.8	3.8	3.2	3.0	13	8.3	2.6	33	33	4.0	3.8	97
24	2.0	3.1	4.3	2.9	13	12	2.4	38	34	3.5	3.7	22
25	1.8	2.7	3.8	2.8	19	12	2.0	42	32	3.5	3.7	20
26	1.8	2.4	3.0	3.0	8.3	9.4	1.9	37	30	3.6	3.7	30
27	1.7	2.3	3.1	3.3	7.7	15	1.9	31	23	3.5	3.4	30
28	1.8	5.3	3.6	3.0	7.8	29	1.9	27	17	3.4	3.5	31
29	1.8	3.2	3.2	2.9	---	41	1.8	25	17	3.8	3.7	33
30	1.6	2.9	3.3	2.9	---	37	1.9	22	16	3.1	3.5	33
31	1.6	---	3.3	2.9	---	47	---	20	---	3.3	3.6	---
MEAN	1.72	3.10	8.47	3.03	4.96	12.7	8.54	33.7	20.6	4.97	3.89	23.7
MAX	3.1	16	30	4.1	19	47	49	91	34	17	6.0	174
MIN	1.5	.97	2.0	2.0	2.4	7.4	1.8	1.9	8.9	3.1	3.4	3.2

STATISTICS OF MONTHLY FLOW DATA FOR PERIOD OF RECORD, BY WATER YEAR (WY)

MEAN	4.25	7.80	14.0	14.7	15.5	16.6	18.7	14.7	9.42	5.05	4.10	4.96
MAX	17.3	22.4	37.7	51.0	36.4	50.1	55.3	33.7	35.2	19.9	21.6	27.0
(WY)	1980	1976	1974	1979	1979	1977	1983	1989	1972	1984	1969	1987
MIN	.97	1.20	.91	1.66	2.24	6.99	4.43	1.58	1.00	.89	.65	.59
(WY)	1981	1967	1981	1981	1985	1973	1981	1970	1980	1980	1980	1980

SUMMARY STATISTICS	FOR 1989 WATER YEAR		FOR PERIOD OF RECORD	
AVERAGE FLOW	10.8		10.8	
HIGHEST ANNUAL MEAN			14.9	1984
LOWEST ANNUAL MEAN			3.17	1985
HIGHEST DAILY MEAN	174	Sep 22	225	Jan 18 1977
LOWEST DAILY MEAN	.97	Nov 11	.02	Jun 19 1970
INSTANTANEOUS PEAK FLOW	196	Sep 21	583	Feb 24 1977
INSTANTANEOUS PEAK STAGE	3.17	Sep 21	3.92	Feb 24 1977
INSTANTANEOUS LOW FLOW	.94	Nov 11	.00	Sep 12 1971
10 PERCENTILE	29		26	
50 PERCENTILE	3.6		4.4	
95 PERCENTILE	1.5		.75	

01445500 PEQUEST RIVER AT PEQUEST, NJ

LOCATION.--Lat 40°49'50", long 74°58'43", Warren County, Hydrologic Unit 02040105, on right bank at Pequest, 100 ft upstream from CONRAIL (formerly Lehigh and Hudson River Railway) bridge, and 300 ft downstream from Furnace Brook.

DRAINAGE AREA.--106 mi^2.

PERIOD OF RECORD.--October 1921 to current year. Monthly discharge only for October 1921, published in WSP 1302.

REVISED RECORDS.--WSP 1902: 1940(M), 1945, 1955(M), 1957, 1959(M).

GAGE.--Water-stage recorder. Concrete control since Sept. 29, 1929. Datum of gage is 398.78 ft above National Geodetic Vertical Datum of 1929. Prior to June 22, 1926, nonrecording gage at site 10 ft upstream at same datum.

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989, MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	35	39	e134	77	86	108	261	112	234	214	81	53
2	37	42	128	75	86	102	218	204	238	196	80	51
3	45	43	122	75	87	100	197	240	226	177	83	50
4	43	40	115	67	85	98	199	181	199	176	90	48
5	39	43	116	50	79	99	199	155	179	241	94	47
6	37	75	112	69	77	118	243	605	167	286	106	45
7	36	63	105	65	75	117	276	546	215	237	96	45
8	34	55	99	79	70	97	234	447	279	272	86	44
9	33	50	96	98	59	106	209	353	243	220	76	44
10	34	47	92	84	59	104	199	409	441	185	70	43
11	38	46	85	79	70	106	184	547	329	162	67	42
12	37	43	58	90	63	123	169	529	248	144	151	41
13	36	52	80	127	60	112	163	455	249	137	213	40
14	35	78	73	97	73	108	168	394	248	132	198	41
15	35	63	75	127	73	127	174	371	256	119	141	42
16	33	57	70	125	95	134	227	473	316	122	126	48
17	32	77	67	103	86	124	221	828	352	140	104	69
18	33	87	62	96	75	124	188	811	305	130	88	60
19	33	73	68	95	75	139	173	718	252	120	81	89
20	32	207	69	95	70	119	155	595	219	117	83	1100
21	33	474	72	83	169	158	145	501	218	119	79	1490
22	51	e307	72	70	300	162	143	428	252	118	77	1430
23	51	e289	71	87	226	134	139	387	451	119	70	1300
24	47	e230	82	77	167	174	121	537	490	104	73	1110
25	46	e198	110	79	129	359	118	536	463	94	69	786
26	42	e193	93	76	125	264	116	466	389	91	64	663
27	40	e184	84	87	118	219	113	384	317	88	62	571
28	39	e251	86	84	114	198	110	335	281	85	61	474
29	37	e249	112	83	---	187	110	288	267	79	60	399
30	36	e208	95	85	---	179	114	258	237	75	60	346
31	37	---	85	88	---	250	---	245	---	76	57	---
MEAN	37.9	129	89.9	86.2	102	147	176	430	285	148	91.8	354
MAX	51	474	134	127	300	359	276	828	490	286	213	1490
MIN	32	39	58	50	59	97	110	112	167	75	57	40
IN.	.41	1.36	.98	.94	1.00	1.60	1.86	4.68	3.00	1.61	1.00	3.72

STATISTICS OF MONTHLY FLOW DATA FOR PERIOD OF RECORD, BY WATER YEAR (WY)

MEAN	82.6	126	157	165	197	275	259	184	130	107	92.5	91.7
MAX	337	409	425	627	371	750	720	430	556	487	409	354
(WY)	1956	1928	1974	1979	1939	1936	1983	1989	1972	1945	1928	1989
MIN	18.0	21.4	27.0	33.9	60.8	93.8	76.9	55.7	35.0	19.0	15.1	16.6
(WY)	1965	1966	1966	1966	1940	1965	1985	1965	1965	1965	1965	1964

SUMMARY STATISTICS	FOR 1989 WATER YEAR		FOR PERIOD OF RECORD	
AVERAGE FLOW	173		155	
HIGHEST ANNUAL MEAN			285	1952
LOWEST ANNUAL MEAN			45.8	1965
HIGHEST DAILY MEAN	1490	Sep 21	2040	Jan 25 1979
LOWEST DAILY MEAN	32	Oct 17	12	Aug 18 1965
INSTANTANEOUS PEAK FLOW	1640	Sep 21	2130	Jan 25 1979
INSTANTANEOUS PEAK STAGE	5.15	Sep 21	5.97a	Jan 25 1979
INSTANTANEOUS LOW FLOW	28	Jan 6	12	Aug 17 1965
ANNUAL RUNOFF (INCHES)	22.15		19.91	
10 PERCENTILE	368		330	
50 PERCENTILE	107		111	
95 PERCENTILE	38		28	

a From high-water mark
e Estimated

01446500 DELAWARE RIVER AT BELVIDERE, NJ

LOCATION.--Lat 40°49'36", long 75°05'02", Warren County, Hydrologic Unit 02040105, on left bank at Belvidere, 800 ft downstream from Pequest River, and at river mile 197.7.

DRAINAGE AREA.--4,535 mi^2.

PERIOD OF RECORD.--October 1922 to current year.

REVISED RECORDS.--WSP 781: 1933(M). WSP 951: 1940-41, Drainage area. WSP 1432: 1923, 1924(M).

GAGE.--Water-stage recorder. Datum of gage 226.43 ft above National Geodetic Vertical Datum of 1929. Prior to Jan. 1, 1929, nonrecording gage at site 200 ft upstream at same datum.

REMARKS.--No estimated daily discharges. Records good. Diurnal fluctuations at medium and low flow caused by powerplants on tributary streams. Flow regulated by Lake Wallenpaupack, and by Pepacton, Cannonsville, Swinging Bridge, Toronto, Cliff Lake, and Neversink Reservoirs (see Delaware River basin, reservoirs in) and smaller reservoirs. Diversions from Pepacton, Cannonsville, and Neversink Reservoirs (see Delaware River basin, diversions). National Weather Service gage-height telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Oct. 10, 1903, reached a stage of 28.6 ft, from floodmark, discharge, 220,000 ft^3/s, from rating curve extended above 170,000 ft^3/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989, MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2140	2180	6230	3080	3730	4620	18600	3330	7130	7500	2920	2830
2	2260	2270	5870	3010	3550	4370	16500	5040	7640	5810	3090	2360
3	2190	2360	5510	3120	3770	3900	13300	16700	7110	4990	2970	2190
4	2140	1790	4590	3010	3900	3680	11900	16100	5830	5220	3210	2150
5	2020	2470	4150	2440	2880	3420	11700	11800	5190	5140	3330	2090
6	2000	3340	4690	2900	2560	3380	12100	25800	5500	7190	3290	2130
7	2060	5890	4260	2670	3260	3750	13600	63100	6610	9660	2900	2100
8	2000	7800	4060	2780	3020	3620	13400	44100	7370	8300	2950	2090
9	1970	5700	3840	2850	2390	3950	11700	29000	e7250	6370	3200	2260
10	2020	4900	3920	2860	2270	3530	10600	24000	e8700	5470	2830	2260
11	1950	4180	3140	3160	2370	3310	9650	36800	e11200	5530	2760	2310
12	2230	3520	2060	2980	2370	2870	8440	43200	e9300	5310	2960	2890
13	2070	3280	2270	3220	1850	2550	7750	31600	e8100	4570	4230	2710
14	2060	3580	3030	2840	2160	2700	7220	24100	e8600	4230	4440	2590
15	2120	5000	3370	3370	2900	2620	6970	20100	e10200	4030	4120	2340
16	2090	5320	2640	3350	3080	2700	7150	18900	e18200	3490	3600	2430
17	2150	4790	2580	3180	3550	2790	8340	29200	e20200	3080	3370	3460
18	2160	4650	2780	3570	3300	3700	8060	37700	e19800	3090	3220	3080
19	2190	4800	2790	3460	2760	3420	7490	27400	e16500	3550	2670	2610
20	2280	6220	3080	3130	2310	3640	6820	21500	e14500	3580	2600	7530
21	2250	14800	3230	2690	2670	4560	6240	18300	e12700	3740	2840	18200
22	2830	19300	2760	2240	7800	4450	5910	15800	e12900	4320	2960	14300
23	2970	14000	2950	2400	12900	3790	5400	14200	e13300	4360	3120	12300
24	2810	10900	2740	2610	8990	3800	5060	14000	e13800	4020	3280	10600
25	3100	8690	3150	2990	6840	6820	4890	15000	e17300	4140	2910	8670
26	2680	7770	3770	2860	5160	13300	4630	13000	e16900	4370	2450	9130
27	2650	6920	3840	2960	4550	13000	4130	11300	e13800	4060	2320	10600
28	2220	6830	4060	3400	4690	11700	3860	10400	e12100	4110	2310	8400
29	1790	7080	3460	3250	---	10900	3670	8420	10800	3800	2350	6880
30	1660	6620	3370	2920	---	13000	3630	7690	9210	3150	2490	5970
31	1850	---	3520	3530	---	15800	---	7930	---	2560	2500	---
MEAN	2223	6232	3604	2995	3985	5472	8624	21470	11260	4798	3038	5315
MAX	3100	19300	6230	3570	12900	15800	18600	63100	20200	9660	4440	18200
MIN	1660	1790	2060	2240	1850	2550	3630	3330	5190	2560	2310	2090

STATISTICS OF MONTHLY FLOW DATA FOR PERIOD OF RECORD, BY WATER YEAR (WY)

MEAN	4575	7110	8315	7821	8313	14120	15860	10020	6024	4365	3668	3865
MAX	19570	21140	20590	20890	19930	42520	40720	21470	22280	16840	19260	13940
(WY)	1956	1928	1974	1949	1976	1936	1940	1989	1972	1928	1955	1938
MIN	1055	1226	1481	1683	2452	5243	4512	3261	1590	1017	881	1199
(WY)	1942	1965	1923	1981	1980	1981	1985	1965	1965	1965	1954	1941

SUMMARY STATISTICS	FOR 1989 WATER YEAR		FOR PERIOD OF RECORD	
AVERAGE FLOW	6592		7831	Unadjusted
HIGHEST ANNUAL MEAN			14130	1928
LOWEST ANNUAL MEAN			2990	1965
HIGHEST DAILY MEAN	63100	May 7	184000	Aug 19 1955
LOWEST DAILY MEAN	1660	Oct 30	610	Aug 25 1954
INSTANTANEOUS PEAK FLOW	70800	May 7	273000a	Aug 19 1955
INSTANTANEOUS PEAK STAGE	14.98	May 7	30.21b	Aug 19 1955
INSTANTANEOUS LOW FLOW	1590	Feb 9	609	Sep 28 1943
10 PERCENTILE	14100		16700	
50 PERCENTILE	3790		5030	
95 PERCENTILE	2100		1480	

a From rating curve extended above 170,000 ft^3/s on basis of flood-routing study
b From high-water mark in gage house
e Estimated

01447000 DELAWARE RIVER AT NORTHAMPTON STREET AT EASTON, PA

LOCATION.--Lat 40°41'30", long 75°12'15", Northampton County, Hydrologic Unit 02040105, at bridge on Northampton Street in Easton, 600 ft upstream from Lehigh River, and 0.2 mi downstream from U.S. Route 22 toll bridge in Easton.

DRAINAGE AREA.--4,717 mi^2.

PERIOD OF RECORD.--Water years 1976 to current year.

COOPERATION.--Field data and samples for laboratory analyses provided by New Jersey Department of Environmental Protection, Division of Water Resources. Analyses of fecal coliform and fecal streptococci by the MPN method, and water-phase nutrients were performed by the New Jersey Department of Health, Division of Laboratories and Epidemiology.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, EC BROTH (MPN)	STREP-TOCOCCI FECAL (MPN)
OCT 1988 06...	1330	2340E	153	7.4	15.0	10.2	100	E2.0	40	70
JAN 1989 24...	1300	2090E	180	7.3	5.0	15.8	124	4.1	50	17
APR 17...	1345	7280E	145	7.3	6.0	12.0	97	E2.1	490	130
MAY 17...	1315	18900E	95	7.2	9.5	10.5	93	E1.6	5400	1600
JUL 31...	1130	3230E	180	7.5	23.5	7.3	86	<1.1	1300	350
AUG 30...	1130	2380E	184	8.4	23.0	8.9	105	<1.0	80	130

DATE	HARD-NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
OCT 1988 06...	51	14	4.0	9.2	1.6	37	14	12	<0.1
JAN 1989 24...	59	16	4.6	11	1.2	39	20	16	0.1
APR 17...	48	13	3.7	7.4	1.0	32	13	12	0.1
MAY 17...	36	10	2.7	5.0	0.9	22	12	7.7	0.1
JUL 31...	61	17	4.6	7.2	1.1	42	15	10	0.1
AUG 30...	58	16	4.5	8.1	1.1	43	16	13	0.1

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
OCT 1988 06...	1.0	78	0.007	0.61	<0.05	0.36	0.97	--	3.3
JAN 1989 24...	2.4	95	0.009	0.95	<0.05	1.0	2.0	0.11	2.8
APR 17...	2.7	72	0.009	0.54	0.06	0.69	1.2	0.05	4.1
MAY 17...	3.6	55	0.009	0.67	0.06	0.47	1.1	--	4.5
JUL 31...	2.7	83	0.022	0.71	<0.05	0.25	0.96	0.04	3.4
AUG 30...	2.3	87	0.008	0.77	0.07	0.39	1.2	0.06	2.7

01447000 DELAWARE RIVER AT NORTHAMPTON STREET AT EASTON, PA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SULFIDE TOTAL (MG/L AS S)	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE)	BORON, TOTAL RECOVERABLE (UG/L AS B)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)
MAY 1989 17...	1315	<0.5	30	1	<10	<10	<1	2	4

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)	SELENIUM, TOTAL (UG/L AS SE)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	PHENOLS TOTAL (UG/L)
MAY 1989 17...	500	20	100	<0.10	2	<1	20	4

01453000 LEHIGH RIVER AT BETHLEHEM, PA

LOCATION.--Lat 40°36'55", long 75°22'45", Lehigh County, PA, Hydrologic Unit 02040106, on left bank 110 ft upstream from New Street Bridge at Bethlehem, and 1,800 ft upstream from Monocacy Creek. Records include flow of Monocacy Creek.

DRAINAGE AREA.--1,279 mi^2 includes that of Monocacy Creek. At site used prior to Oct. 1, 1928, 1,229 mi^2.

PERIOD OF RECORD.--September 1902 to February 1905, April 1909 to current year. Monthly discharge only for some periods, published in WSP 1302. Published as "at South Bethlehem" prior to October 1913.

REVISED RECORDS.--WSP 261: 1903-5, WSP 321: 1910-11. WSO 1051: Drainage area. WSP 1141: 1929-34(M). WSP 1302: 1914(M), 1916(M), 1918, 1921, 1927-28. WSP 1432: 1903, 1919(M), 1920-21, 1929, 1933.

GAGE.--Water-stage recorder. Datum of gage is 210.94 ft above National Geodetic Vertical Datum of 1929. Prior to October 1928, nonrecording gage at New Street Bridge 120 ft downstream at same datum. Oct. 1, 1928, to Sept. 30, 1962, water-stage recorder at site 4,250 ft downstream at datum 2.49 ft lower. Oct. 1, 1963, to Dec. 14, 1975, water-stage recorder at site 40 ft downstream at same datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. Flow regulated by Wild Creek Reservoir (station (01449700) since January 1941, Penn Forest Reservoir (station 01449400) since October 1958, Francis E. Walter Reservoir (station 01447780) since February 1961, and Beltzville Lake (station 01449790) since February 1971. Several measurements of water temperature were made during the year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Feb. 28, 1902, reached a stage of 24.9 ft, from floodmark, present site and datum, discharge, about 88,000 ft^3/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989, MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	910	897	2200	1130	1150	1560	3230	1120	2600	2500	1310	754
2	1230	892	2090	1140	1160	1460	2910	2980	2420	2290	1300	749
3	826	880	1820	1120	1170	1440	2790	3500	2230	2450	1280	712
4	776	910	1710	1010	1130	1370	2660	2820	2130	1980	1170	685
5	774	1000	1670	e680	1010	1350	2490	2920	2080	2460	1240	676
6	735	1240	1680	850	1010	1500	2760	22600	2350	2550	1210	674
7	713	1460	1650	855	1060	1390	2850	14900	2680	2470	1180	637
8	700	2010	1600	1090	1040	1240	2620	14900	3300	2270	1300	621
9	687	1870	1490	1240	871	1240	2600	14300	3120	2080	1320	594
10	689	1450	1410	1240	e780	1240	2520	13500	4710	2000	1120	599
11	683	1310	1350	1290	685	1280	2260	12000	3700	1970	997	590
12	681	1280	1140	1210	680	1360	2020	9960	3320	1850	1070	579
13	774	1390	e1000	1460	900	1370	1940	7440	3270	1980	1490	567
14	744	1650	e1050	1280	1060	1320	1930	6260	3070	1880	1140	548
15	766	1420	1280	1680	1060	1340	1890	5820	3290	1520	1310	543
16	1070	1420	1250	1820	1090	1490	1980	6410	5180	1640	1210	608
17	683	1670	1110	1550	984	1530	1890	11500	6000	2650	1070	1520
18	656	1730	1050	1520	910	1570	2060	11000	4990	2080	918	822
19	701	1530	e1050	1380	888	1670	1830	7880	4410	1860	974	971
20	655	3350	1080	1300	902	1560	1690	5810	4050	2340	1100	2320
21	817	7050	1180	1170	1490	1680	1550	4920	3980	2290	1080	3120
22	1680	5800	1250	1040	3380	1810	1480	4570	4710	2050	1150	2880
23	1510	4940	1170	1190	3170	1710	1430	4400	4700	1910	1330	2510
24	1590	3710	1200	1160	2580	1970	1370	4720	4780	1790	1140	2060
25	1630	3120	1410	1150	2030	3740	1340	4250	4680	1730	980	1730
26	1420	2530	1470	1110	1890	3640	1340	3700	4490	1870	965	2150
27	1240	2310	1450	1190	1820	3690	1330	3240	4880	1590	891	2050
28	1050	2770	1320	1200	1770	3270	1260	2990	4270	1510	883	1990
29	935	2720	1320	1140	---	3050	1210	2790	3630	1340	898	1760
30	916	2390	1270	1170	---	3080	1280	2690	3270	1270	862	1480
31	901	---	1200	1180	---	3320	---	2380	---	1350	825	---
MEAN	940	2223	1385	1211	1345	1911	2017	7041	3743	1985	1120	1250
MAX	1680	7050	2200	1820	3380	3740	3230	22600	6000	2650	1490	3120
MIN	655	880	1000	680	680	1240	1210	1120	2080	1270	825	543
IN.	.85	1.94	1.25	1.09	1.10	1.72	1.76	6.35	3.27	1.79	1.01	1.09

STATISTICS OF MONTHLY FLOW DATA FOR PERIOD OF RECORD, BY WATER YEAR (WY)

MEAN	1521	2109	2573	2478	2645	3943	3843	2790	1963	1612	1307	1329
MAX	5778	5660	6991	7898	5913	11920	9038	7041	7272	6362	6192	6907
(WY)	1956	1927	1984	1979	1915	1936	1983	1989	1972	1945	1955	1987
MIN	308	370	470	286	668	1632	1428	1020	681	365	405	333
(WY)	1911	1910	1931	1981	1934	1981	1985	1926	1965	1965	1964	1964

01453000 LEHIGH RIVER AT BETHLEHEM, PA--Continued

SUMMARY STATISTICS	FOR 1989 WATER YEAR		FOR PERIOD OF RECORD	
AVERAGE FLOW	2186		2341	
HIGHEST ANNUAL MEAN			3973	1952
LOWEST ANNUAL MEAN			1165	1965
HIGHEST DAILY MEAN	22600	May 6	70400	Aug 19 1955
LOWEST DAILY MEAN	543	Sep 15	160	Oct 15 1910
INSTANTANEOUS PEAK FLOW	31900	May 6	92000a	May 23 1942
INSTANTANEOUS PEAK STAGE	12.88	May 6	25.9b	May 23 1942
INSTANTANEOUS LOW FLOW	---		125	Jun 28 1965
ANNUAL RUNOFF (INCHES)	23.21		24.85	
10 PERCENTILE	3800		4760	
50 PERCENTILE	1940		1650	
95 PERCENTILE	771		494	

a From rating curve extended above 48,000 ft^3/s
b From floodmark, present site, and datum
e Estimated

01455200 POHATCONG CREEK AT NEW VILLAGE, NJ

LOCATION.--Lat 40°42'57", long 75°04'20", Warren County, Hydrologic Unit 02040105, at bridge on Edison Road, 0.4 mi southeast of New Village, and 4.3 mi upstream from Merrill Creek.

DRAINAGE AREA.--33.3 mi^2.

PERIOD OF RECORD.--Water years 1959, 1962 and January 1979 to current year.

COOPERATION.--Field data and samples for laboratory analyses provided by New Jersey Department of Environmental Protection, Division of Water Resources. Analyses of fecal coliform and fecal streptococci by the MPN method, and water-phase nutrients were performed by the New Jersey Department of Health, Division of Laboratories and Epidemiology.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, EC BROTH (MPN)	STREP-TOCOCCI FECAL (MPN)
OCT 1988										
17...	1210	E 4.4	271	6.9	13.0	13.1	125	2.9	790	540
FEB 1989										
22...	1300	E72	130	7.7	2.5	13.3	99	3.2	1100	>2400
APR										
26...	1200	E25	160	8.6	12.0	17.6	166	E1.9	<20	26
JUN										
14...	1030	E45	178	6.4	12.0	9.4	88	2.9	3500	>2400
JUL										
24...	1030	E27	280	8.0	20.5	10.3	115	2.7	9200	>2400
AUG										
01...	1130	E25	295	7.3	13.0	9.3	89	E1.8	1700	920

DATE	HARD-NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
OCT 1988									
17...	100	22	11	13	2.8	77	20	17	0.1
FEB 1989									
22...	47	12	4.2	9.3	2.6	26	20	13	0.1
APR									
26...	68	16	6.7	9.2	1.5	45	17	14	0.1
JUN									
14...	69	17	6.5	7.8	1.8	49	16	12	0.1
JUL									
24...	140	33	15	13	1.6	113	20	24	<0.1
AUG									
01...	93	22	9.3	9.0	1.9	68	17	13	0.1

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
OCT 1988									
17...	10	142	0.068	2.45	0.13	0.46	2.9	--	6.3
FEB 1989									
22...	9.0	86	0.020	1.42	0.25	0.95	2.4	0.38	7.0
APR									
26...	8.2	100	0.051	1.58	0.12	0.44	2.0	0.18	3.4
JUN									
14...	13	104	0.058	1.68	0.13	0.96	2.6	--	5.3
JUL									
24...	9.1	183	0.070	2.27	<0.05	1.0	3.3	0.21	5.3
AUG									
01...	14	127	0.082	2.41	0.09	0.42	2.8	0.63	3.1

01455200 POHATCONG CREEK AT NEW VILLAGE, NJ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SULFIDE TOTAL (MG/L AS S)	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE)	BORON, TOTAL RECOVERABLE (UG/L AS B)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)
OCT 1988 17...	1210	<0.5	<10	<1	<10	30	<1	2	10

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)	SELENIUM, TOTAL (UG/L AS SE)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	PHENOLS TOTAL (UG/L)
OCT 1988 17...	70	<5	10	0.20	4	<1	100	4

01455500 MUSCONETCONG RIVER AT OUTLET OF LAKE HOPATCONG, NJ

LOCATION.--Lat 40°55'00", long 74°39'55", Morris County, Hydrologic Unit 02040105, just upstream of bridge on Warren County Route 43 and 300 ft downstream from Lake Hopatcong dam in Landing.

DRAINAGE AREA.--25.3 mi^2.

PERIOD OF RECORD.--Water years 1962, 1976 to current year.

COOPERATION.--Field data and samples for laboratory analyses provided by New Jersey Department of Environmental Protection, Division of Water Resources. Analyses of fecal coliform and fecal streptococci by the MPN method, and water-phase nutrients were performed by the New Jersey Department of Health, Division of Laboratories and Epidemiology.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)	COLIFORM, FECAL, EC BROTH (MPN)	STREPTOCOCCI FECAL (MPN)
OCT 1988										
31...	1100	2.4E	282	7.8	6.5	12.2	102	<1.0	20	70
FEB 1989										
06...	1100	12.5E	305	7.5	1.0	15.9	116	3.0	<20	13
APR										
19...	1330	20 E	250	7.9	11.5	11.2	106	E1.5	20	9
JUN										
21...	1300	45 E	345	7.8	24.0	8.2	100	E2.3	130	23
JUL										
18...	1045	12 E	275	7.6	22.5	8.6	102	E1.9	<20	21
AUG										
22...	1330	9.2E	265	8.7	23.0	9.1	110	<0.9	<20	79

DATE	HARDNESS TOTAL (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
OCT 1988									
31...	64	16	5.8	29	1.1	34	17	53	0.1
FEB 1989									
06...	62	16	5.3	28	1.1	30	19	55	0.1
APR									
19...	65	17	5.4	29	1.1	33	16	57	0.1
JUN									
21...	67	18	5.4	29	1.3	37	15	53	0.1
JUL									
18...	57	15	4.8	26	0.7	31	13	46	0.1
AUG									
22...	55	14	4.9	25	0.5	29	14	49	0.1

DATE	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	PHOSPHORUS TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
OCT 1988									
31...	1.6	144	0.003	<0.05	<0.05	0.44	--	<0.02	2.9
FEB 1989									
06...	1.4	144	<0.003	0.07	<0.05	0.33	0.40	0.02	3.0
APR									
19...	0.19	146	<0.003	0.07	0.06	0.38	0.45	0.04	3.9
JUN									
21...	0.85	145	0.005	0.07	0.07	0.68	0.75	0.05	4.3
JUL									
18...	1.9	126	0.004	0.09	<0.05	0.35	0.44	0.03	4.3
AUG									
22...	1.0	126	<0.003	0.06	<0.05	0.32	0.38	0.04	3.5

01455500 MUSCONETCONG RIVER AT OUTLET OF LAKE HOPATCONG, NJ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SULFIDE TOTAL (MG/L AS S)	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE)	BORON, TOTAL RECOVERABLE (UG/L AS B)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)
JUN 1989 21...	1300	<0.5	<10	3	<10	30	<1	<1	1

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)	SELENIUM, TOTAL (UG/L AS SE)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	PHENOLS TOTAL (UG/L)
JUN 1989 21...	220	1	70	<0.10	<1	<1	<10	3

01455801 MUSCONETCONG RIVER AT LOCKWOOD, NJ

LOCATION.--Lat 40°55'10", long 74°44'07", Sussex County, Hydrologic Unit 02040105, at bridge in Lockwood, at boundary between Sussex County and Morris County, 0.2 mi southeast of Cage Hill, 0.4 mi south of Jefferson Lake, and 0.9 mi downstream from Lubbers Run.

DRAINAGE AREA.--60.1 mi^2.

PERIOD OF RECORD.--Water years 1976 to current year.

COOPERATION.--Field data and samples for laboratory analyses provided by New Jersey Department of Environmental Protection, Division of Water Resources. Analyses of fecal coliform and fecal streptococci by the MPN method, and water-phase nutrients were performed by the New Jersey Department of Health, Division of Laboratories and Epidemiology.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)	COLIFORM, FECAL, EC BROTH (MPN)	STREPTOCOCCI FECAL (MPN)
OCT 1988										
26...	1100	E 27	409	7.5	7.0	11.4	97	2.3	130	23
JAN 1989										
24...	1200	E 43	295	7.8	3.0	15.1	114	<1.1	220	79
APR										
20...	1330	E 95	380	8.0	12.0	11.2	105	3.8	80	110
JUN										
20...	1045	E170	310	7.8	22.0	8.7	101	E2.2	70	34
JUL										
18...	1215	E 71	370	7.7	21.0	8.6	98	E1.9	170	>2400
AUG										
31...	1115	E 26	432	7.9	20.0	7.5	84	2.6	3500	920

DATE	HARDNESS TOTAL (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
OCT 1988									
26...	140	31	14	29	2.0	80	27	59	0.1
JAN 1989									
24...	93	23	8.7	28	1.4	58	19	53	0.2
APR									
20...	100	25	9.2	32	1.2	58	19	59	0.1
JUN									
20...	83	21	7.4	23	1.1	54	14	41	0.1
JUL									
18...	100	26	9.5	26	1.4	70	15	48	0.1
AUG									
31...	130	31	12	32	2.1	83	17	61	0.1

DATE	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	PHOSPHOROUS TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
OCT 1988									
26...	7.2	217	0.054	0.55	0.97	1.5	2.0	0.04	5.2
JAN 1989									
24...	4.6	173	0.012	0.31	0.46	0.87	1.2	0.03	3.7
APR									
20...	3.8	184	0.039	0.45	0.37	0.90	1.3	0.07	4.4
JUN									
20...	6.5	146	0.036	0.39	0.20	0.82	1.2	0.09	4.4
JUL									
18...	7.9	176	0.110	0.93	0.18	0.67	1.6	0.07	4.5
AUG									
31...	7.5	212	0.204	1.66	0.15	0.78	2.4	0.09	3.7

01455801 MUSCONETCONG RIVER AT LOCKWOOD, NJ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SULFIDE TOTAL (MG/L AS S)	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE)	BORON, TOTAL RECOVERABLE (UG/L AS B)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)
OCT 1988 26...	1100	<0.5	<10	1	<10	60	<1	<1	3
JUN 1989 20...	1045	<0.5	10	2	<10	10	<1	<1	3

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)	SELENIUM, TOTAL (UG/L AS SE)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	PHENOLS TOTAL (UG/L)
OCT 1988 26...	200	<5	60	<0.10	4	<1	<10	2
JUN 1989 20...	460	3	120	<0.10	3	<1	<10	<1

01456200 MUSCONETCONG RIVER AT BEATTYSTOWN, NJ

LOCATION.--Lat 40°48'48", long 74°50'32", Warren County, Hydrologic Unit 02040105, at bridge at Beattystown, 1.6 mi upstream of Hanes Brook, 2.1 mi northeast of Stephensburg, and 3.5 mi northeast of Scrappy Corner.

DRAINAGE AREA.--90.3 mi^2.

PERIOD OF RECORD.--Water years 1976 to current year.

COOPERATION.--Field data and samples for laboratory analyses provided by New Jersey Department of Environmental Protection, Division of Water Resources. Analyses of fecal coliform and fecal streptococci by the MPN method, and water-phase nutrients were performed by the New Jersey Department of Health, Division of Laboratories and Epidemiology.

WATER QUALITY DATA, WATER OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)	COLIFORM, FECAL, EC BROTH (MPN)	STREPTOCOCCI FECAL (MPN)
OCT 1988										
25...	1300	E 64	452	7.7	7.5	12.6	108	E1.5	20	33
JAN 1989										
24...	1045	E105	314	7.8	1.0	16.3	116	<0.9	50	79
APR										
20...	1045	E210	320	7.9	10.5	11.6	105	2.7	1300	130
JUN										
20...	1300	E250	265	8.1	21.5	9.3	107	E1.6	490	70
JUL										
18...	1345	E130	310	8.1	19.5	9.8	109	E1.7	80	220
AUG										
31...	1400	E 70	426	8.5	20.5	8.8	99	2.3	130	350

DATE	HARDNESS TOTAL (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
OCT 1988									
25...	160	36	17	28	2.8	112	30	51	0.1
JAN 1989									
24...	120	27	12	25	1.7	84	20	50	0.1
APR									
20...	110	24	11	20	1.0	72	17	36	0.1
JUN									
20...	100	25	10	21	1.3	74	14	38	0.1
JUL									
18...	130	30	13	21	1.4	98	14	37	0.1
AUG									
31...	160	35	17	23	2.1	120	17	41	0.1

DATE	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	PHOSPHORUS TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
OCT 1988									
25...	7.9	240	0.059	1.19	0.61	1.1	2.3	0.05	4.4
JAN 1989									
24...	6.3	192	0.024	0.70	0.66	0.94	1.6	0.04	3.6
APR									
20...	4.5	157	0.020	0.55	0.17	0.58	1.1	0.07	3.7
JUN									
20...	7.9	162	0.031	0.78	0.15	0.62	1.4	0.07	3.6
JUL									
18...	8.5	184	0.034	1.16	0.17	0.47	1.6	0.05	3.5
AUG									
31...	7.9	215	0.104	1.42	0.27	0.94	2.4	0.07	2.9

01456200 MUSCONETCONG RIVER AT BEATTYSTOWN, NJ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SULFIDE TOTAL (MG/L AS S)	ALUM-INUM, DIS-SOLVED (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE)	BORON, TOTAL RECOV-ERABLE (UG/L AS B)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)
OCT 1988 25...	1300	<0.5	30	<1	<10	60	1	1	2
JUN 1989 20...	1300	<0.5	10	1	<10	50	<1	<1	3

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)	SELE-NIUM, TOTAL (UG/L AS SE)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	PHENOLS TOTAL (UG/L)
OCT 1988 25...	120	<5	30	<0.10	3	<1	<10	2
JUN 1989 20...	380	2	50	<0.10	2	<1	<10	3

01457000 MUSCONETCONG RIVER NEAR BLOOMSBURY, NJ

LOCATION.--Lat 40°40'20", long 75°03'40", Warren County, Hydrologic Unit 02040105, on right bank just downstream from bridge on Limekiln Road (Person Road), 1.5 mi upstream from Bloomsbury, and 9.5 mi upstream from mouth.

DRAINAGE AREA.--141 mi^2.

PERIOD OF RECORD.--July 1903 to March 1907, July 1921 to current year.

REVISED RECORDS.--WSP 1051: 1944-45. WSP 1382: 1904-06, 1922, 1923-29(M), 1931(M), 1933-34(M), 1936(M), 1940, 1942(M), 1944-45(M), 1951-52(M). WDR NJ-82-2: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Concrete control since Sept. 29, 1932. Datum of gage is 274.83 ft above National Geodetic Vertical Datum of 1929. July 1903 to Mar. 31, 1907, nonrecording gage at bridge 15 ft upstream at different datum. July 26 to Sept. 12, 1921, nonrecording gage at bridge at present datum.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by Lake Hopatcong (see Delaware River basin, reservoirs in). Several measurements of water temperature were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989, MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	79	90	306	158	144	161	342	176	369	358	136	101
2	86	103	330	155	138	154	301	325	345	297	137	97
3	129	102	354	155	140	148	279	364	322	269	139	95
4	109	99	348	149	136	144	289	307	301	274	135	91
5	98	110	339	131	130	144	318	295	280	387	133	89
6	89	197	332	144	127	165	352	827	275	435	135	92
7	85	168	326	148	125	172	356	873	349	364	151	88
8	83	137	320	169	120	152	313	732	424	434	158	88
9	82	121	314	190	117	147	293	638	386	343	138	87
10	82	112	309	171	120	144	277	807	516	296	125	87
11	81	106	304	159	113	145	256	957	439	264	124	88
12	80	104	303	172	111	152	240	883	367	238	233	98
13	79	146	311	206	108	149	232	769	432	229	220	93
14	79	201	275	170	118	144	230	674	387	209	172	91
15	78	186	206	232	128	155	241	619	391	190	153	93
16	78	167	148	216	147	165	328	811	535	197	145	116
17	77	224	133	186	138	158	299	1190	549	230	136	135
18	78	237	129	171	124	163	270	1250	446	196	128	118
19	77	217	129	166	119	196	252	1100	389	180	126	193
20	77	566	125	164	116	177	235	921	339	189	126	3190
21	83	741	129	158	249	208	226	771	322	199	124	1770
22	162	545	130	148	359	218	214	667	325	190	128	984
23	142	442	129	148	298	191	205	609	624	178	122	748
24	130	376	150	145	236	229	200	767	790	166	117	601
25	120	330	194	144	192	391	195	730	800	160	117	477
26	109	301	170	145	180	337	189	631	657	156	110	513
27	99	287	148	161	177	290	182	580	581	152	106	479
28	93	402	147	157	170	260	179	528	566	151	104	424
29	89	372	177	149	---	241	174	476	487	138	107	388
30	88	322	166	153	---	243	175	429	418	134	113	357
31	84	---	163	156	---	321	---	387	---	136	106	---
MEAN	93.7	250	227	164	156	196	255	680	447	237	136	396
MAX	162	741	354	232	359	391	356	1250	800	435	233	3190
MIN	77	90	125	131	108	144	174	176	275	134	104	87

STATISTICS OF MONTHLY FLOW DATA FOR PERIOD OF RECORD, BY WATER YEAR (WY)

MEAN	169	224	258	260	277	344	352	273	198	163	152	160
MAX	770	701	686	924	582	935	1027	680	843	659	583	454
(WY)	1904	1928	1974	1979	1973	1936	1983	1989	1972	1975	1928	1960
MIN	41.2	61.2	57.3	73.7	99.4	127	103	98.1	56.8	38.1	38.5	37.3
(WY)	1964	1966	1966	1977	1923	1965	1985	1965	1965	1965	1965	1965

SUMMARY STATISTICS	FOR 1989 WATER YEAR		FOR PERIOD OF RECORD	
AVERAGE FLOW	270		236	
HIGHEST ANNUAL MEAN			425	1928
LOWEST ANNUAL MEAN			82.6	1965
HIGHEST DAILY MEAN	3190	Sep 20	5850	Oct 10 1903
LOWEST DAILY MEAN	77	Oct 17	27	Sep 8 1966
INSTANTANEOUS PEAK FLOW	4830a	Sep 20	7200a	Jan 25 1979
INSTANTANEOUS PEAK STAGE	7.20	Sep 20	8.50b	Jan 25 1979
INSTANTANEOUS LOW FLOW	66	Sep 11	8.1	Aug 2 1955
10 PERCENTILE	551		461	
50 PERCENTILE	178		182	
95 PERCENTILE	86		64	

a From rating curve extended above 1,800 ft^3/s on basis of slope-area measurement at gage height 6.95 ft
b From floodmark

01457400 MUSCONETCONG RIVER AT RIEGELSVILLE, NJ

LOCATION.--Lat 40°35'32", long 75°11'20", Warren County, Hydrologic Unit 02040105, at bridge on State Highway 13 in Riegelsville, 0.2 mi north of Mount Joy, and 0.2 mi upstream from mouth.

DRAINAGE AREA.--156 mi^2.

PERIOD OF RECORD.--Water years 1962, 1976 to current year.

REMARKS.--Water-quality samples do not include Riegelsville Paper Company bypass.

COOPERATION.--Field data and samples for laboratory analyses provided by New Jersey Department of Environmental Protection, Division of Water Resources. Analyses of fecal coliform and fecal streptococci by the MPN method, and water-phase nutrients were performed by the New Jersey Department of Health, Division of Laboratories and Epidemiology.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, EC BROTH (MPN)	STREP-TOCOCCI FECAL (MPN)
OCT 1988										
17...	1350	E 88	404	8.1	11.0	11.6	105	E1.8	170	70
FEB 1989										
22...	0940	E350	258	6.9	4.5	12.3	97	3.4	9200	>2400
APR										
26...	0950	E210	263	7.5	11.0	12.5	114	E1.8	130	130
JUN										
14...	1150	E420	280	7.4	13.5	10.2	98	<0.1	490	>2400
JUL										
24...	1230	E180	420	8.1	21.0	9.0	100	E1.3	1700	280
AUG										
01...	1315	E150	375	7.8	13.0	9.1	87	3.9	1300	240

DATE	HARD-NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
OCT 1988									
17...	170	37	20	15	2.2	132	30	24	0.1
FEB 1989									
22...	82	19	8.3	14	2.3	56	21	24	0.1
APR									
26...	130	29	14	15	1.5	96	20	29	0.1
JUN									
14...	110	25	11	15	1.6	83	16	27	0.1
JUL									
24...	93	22	9.2	9.4	2.4	116	17	13	0.1
AUG									
01...	160	35	17	13	1.9	123	20	23	0.2

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
OCT 1988									
17...	6.8	214	0.022	2.45	0.16	1.7	4.1	--	4.1
FEB 1989									
22...	6.2	128	0.028	1.50	0.16	1.1	2.6	0.41	7.2
APR									
26...	5.3	171	0.022	1.67	0.18	0.81	2.5	0.11	3.3
JUN									
14...	9.3	155	0.029	1.57	0.14	1.1	2.7	--	4.7
JUL									
24...	14	157	0.023	2.24	0.08	1.0	3.3	0.06	2.4
AUG									
01...	9.9	194	0.057	2.49	0.19	1.3	3.8	0.48	2.9

01457400 MUSCONETCONG RIVER AT RIEGELSVILLE, NJ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SULFIDE TOTAL (MG/L AS S)	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE)	BORON, TOTAL RECOVERABLE (UG/L AS B)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)
OCT 1988 17...	1350	<0.5	80	<1	<10	<10	<1	2	3

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)	SELENIUM, TOTAL (UG/L AS SE)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	PHENOLS TOTAL (UG/L)
OCT 1988 17...	70	<5	20	<0.10	<1	<1	80	1

01460500 DELAWARE AND RARITAN CANAL AT KINGSTON, NJ

LOCATION.--Lat 40°22'24", long 74°37'08", Middlesex County, Hydrologic Unit 02040105, on right bank at canal lock at Kingston, and 250 ft upstream from new bridge on State Highway 27.

PERIOD OF RECORD.--March 1947 to current year.

GAGE.--Two water-stage recorders and concrete control. Datum of gage is 40.00 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records fair. The canal diverts water from the Delaware River at Raven Rock and discharges into Raritan River at New Brunswick. Some water may be released to the Millstone River 500 ft and 2.3 mi above station (see Diversions in Raritan River basin). Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989, MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	136	137	152	136	117	103	100	112	.00	123	107	117
2	136	138	151	136	115	103	99	112	.00	122	105	116
3	137	141	150	136	109	102	77	113	.00	120	105	114
4	136	135	148	136	109	102	51	114	.00	120	104	113
5	136	126	147	135	108	102	65	113	.00	154	104	113
6	135	125	147	134	107	103	79	111	.00	151	104	112
7	135	133	147	133	107	103	86	39	.00	147	108	111
8	136	147	140	134	105	103	86	12	.00	143	108	111
9	135	146	135	136	101	103	86	.00	.00	129	109	111
10	134	145	136	136	101	104	99	.00	20	140	110	110
11	134	144	136	137	101	105	105	.00	2.6	127	107	110
12	133	145	136	139	101	105	104	.00	.00	112	111	110
13	133	145	136	137	101	105	104	.00	.00	117	106	108
14	133	148	136	130	102	105	103	.00	.00	119	91	110
15	133	147	136	132	103	105	103	.00	44	110	109	117
16	133	146	136	132	104	105	104	5.2	135	109	108	121
17	132	70	135	126	103	103	104	43	130	26	117	128
18	132	.00	136	120	102	100	107	.59	123	42	119	128
19	132	51	136	119	102	100	109	.00	120	104	117	137
20	133	150	136	119	102	102	110	.00	102	106	106	156
21	134	161	136	118	105	89	110	.00	97	107	107	120
22	140	154	136	118	108	95	108	.00	96	104	109	132
23	136	150	137	116	105	96	108	.00	117	105	113	138
24	131	150	137	105	105	98	112	.00	108	105	117	149
25	133	149	138	110	104	100	113	.00	108	105	116	146
26	134	148	138	115	104	100	113	.00	108	104	116	139
27	136	148	137	116	104	100	113	.00	108	104	114	138
28	135	158	137	116	103	99	113	.00	107	105	113	138
29	134	154	137	116	---	99	113	.00	119	105	113	138
30	136	154	136	117	---	99	113	.00	123	105	113	138
31	136	---	136	117	---	102	---	.00	---	106	104	---
MEAN	134	135	139	126	105	101	99.9	25.0	58.9	112	109	124
MAX	140	161	152	139	117	105	113	114	135	154	119	156
MIN	131	.00	135	105	101	89	51	.00	.00	26	91	108

STATISTICS OF MONTHLY FLOW DATA FOR PERIOD OF RECORD, BY WATER YEAR (WY)

MEAN	70.7	74.5	76.8	75.3	75.5	78.3	77.8	73.8	74.8	76.2	73.0	71.4
MAX	134	135	139	126	119	124	139	119	131	146	147	140
(WY)	1989	1989	1989	1989	1988	1980	1957	1988	1988	1988	1988	1988
MIN	.00	.03	.00	1.39	7.52	4.03	10.4	18.3	6.92	2.83	7.13	1.88
(WY)	1986	1982	1982	1982	1948	1948	1949	1949	1986	1985	1985	1985

SUMMARY STATISTICS	FOR 1989 WATER YEAR		FOR PERIOD OF RECORD	
AVERAGE FLOW	106		75.3	
HIGHEST ANNUAL MEAN			124	1988
LOWEST ANNUAL MEAN			21.7	1948
HIGHEST DAILY MEAN	161	Nov 21	174	Apr 6 1957
LOWEST DAILY MEAN	.00	Nov 18	.00	Dec 31 1948
10 PERCENTILE	150		121	
50 PERCENTILE	113		81	
95 PERCENTILE	.00		11	

01461000 DELAWARE RIVER AT LUMBERVILLE, PA

LOCATION.--Lat 40°24'27", long 75°02'16", Bucks County, Hydrologic Unit 02040105, at pedestrian bridge at Lumberville, 1.4 mi upstream of Lockatong Creek.

DRAINAGE AREA.--6,598 mi^2.

PERIOD OF RECORD.--Water years 1976 to current year.

COOPERATION.--Field data and samples for laboratory analyses provided by New Jersey Department of Environmental Protection, Division of Water Resources. Analyses of fecal coliform and fecal streptococci by the MPN method, and water-phase nutrients were performed by the New Jersey Department of Health, Division of Laboratories and Epidemiology.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, EC BROTH (MPN)	STREP-TOCOCCI FECAL (MPN)
OCT 1988										
11...	1000	3000E	236	7.7	13.0	10.1	97	<0.6	50	11
FEB 1989										
08...	1045	4350E	200	7.6	3.0	15.0	110	E1.3	20	5
APR										
04...	1030	16200E	130	7.7	8.0	12.6	107	E2.5	40	11
MAY										
22...	1045	22900E	150	7.7	18.0	9.0	95	E1.8	110	33
JUL										
10...	1100	8700E	180	7.6	24.0	8.6	103	E2.1	490	79
AUG										
02...	1045	5000E	254	7.3	22.5	8.8	102	E1.5	790	170

DATE	HARD-NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
OCT 1988									
11...	85	21	8.0	12	1.9	58	25	16	0.1
FEB 1989									
08...	75	19	6.6	12	1.6	47	25	19	0.1
APR									
04...	44	12	3.4	7.0	1.1	23	18	11	<0.1
MAY									
22...	45	12	3.6	5.9	1.1	27	15	8.9	0.1
JUL									
10...	66	17	5.6	8.0	1.4	43	16	12	0.1
AUG									
02...	87	22	7.9	9.9	1.7	57	24	12	0.1

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	PHOS-PHOROUS TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
OCT 1988									
11...	2.0	121	0.015	1.03	<0.05	0.30	1.3	0.09	2.9
FEB 1989									
08...	2.3	114	0.026	1.25	0.56	0.80	2.1	0.13	2.6
APR									
04...	3.7	70	0.010	0.86	0.09	0.46	1.3	0.07	3.2
MAY									
22...	3.8	67	0.009	0.72	0.05	0.47	1.2	0.07	4.2
JUL									
10...	4.2	90	0.034	1.04	0.05	0.40	1.4	0.06	3.7
AUG									
02...	4.5	116	0.098	1.64	0.12	0.53	2.2	0.09	3.1

01461000 DELAWARE RIVER AT LUMBERVILLE, PA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE)	BORON, TOTAL RECOVERABLE (UG/L AS B)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)
MAY 1989 22...	1045	30	1	<10	30	<1	1	9

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)	SELENIUM, TOTAL (UG/L AS SE)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	PHENOLS TOTAL (UG/L)
MAY 1989 22...	440	31	80	<0.10	14	<1	30	3

01461300 WICKECHEOKE CREEK AT STOCKTON, NJ

LOCATION.--Lat 40°24'41", long 74°59'13", Hunterdon County, Hydrologic Unit 02040105, at bridge on State Route 29 in Stockton, 900 ft upstream from mouth.

DRAINAGE AREA.--26.6 mi^2.

PERIOD OF RECORD.--Water years 1959-63, 1976 to current year.

COOPERATION.--Field data and samples for laboratory analyses provided by New Jersey Department of Environmental Protection, Division of Water Resources. Analyses of fecal coliform and fecal streptococci by the MPN method, and water-phase nutrients were performed by the New Jersey Department of Health, Division of Laboratories and Epidemiology.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)	COLIFORM, FECAL, EC BROTH (MPN)	STREPTOCOCCI FECAL (MPN)
OCT 1988										
11...	1130	1.2E	229	7.5	10.5	10.9	99	<0.4	20	110
FEB 1989										
08...	1215	13 E	370	7.3	0.0	16.9	115	<0.4	<20	<2
APR										
04...	1145	46 E	440	7.8	10.5	12.1	110	E1.9	130	33
MAY										
22...	1215	26 E	430	8.2	17.5	10.4	109	<0.9	40	33
JUL										
10...	1230	14 E	280	8.2	24.0	9.2	110	E1.4	130	350
AUG										
02...	1300	5.6E	200	7.9	20.0	10.5	116	<0.7	50	>2400

DATE	HARDNESS TOTAL (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
OCT 1988									
11...	69	16	7.0	18	2.0	50	23	16	0.1
FEB 1989									
08...	51	12	5.1	59	1.9	27	42	77	0.1
APR									
04...	46	11	4.6	76	1.9	23	48	100	0.1
MAY									
22...	51	12	5.1	55	2.1	28	38	69	0.1
JUL									
10...	43	10	4.4	27	2.2	36	25	21	0.1
AUG									
02...	54	13	5.3	16	2.1	38	21	13	0.1

DATE	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	PHOSPHORUS TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
OCT 1988									
11...	11	123	0.005	2.70	<0.05	0.05	2.8	<0.02	1.3
FEB 1989									
08...	10	223	0.006	1.79	<0.05	0.19	2.0	0.05	1.9
APR									
04...	10	265	0.005	1.48	0.06	0.27	1.7	0.05	2.9
MAY									
22...	12	210	0.012	2.40	<0.05	0.15	2.6	0.06	1.9
JUL									
10...	14	125	0.007	2.49	<0.05	0.24	2.7	0.08	3.0
AUG									
02...	13	106	0.018	2.43	0.09	0.15	2.6	0.07	2.6

01461300 WICKECHEOKE CREEK AT STOCKTON, NJ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE)	BORON, TOTAL RECOVERABLE (UG/L AS B)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)
MAY 1989 22...	1215	20	<1	<10	40	<1	1	3

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)	SELENIUM, TOTAL (UG/L AS SE)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	PHENOLS TOTAL (UG/L)
MAY 1989 22...	60	1	<10	<0.10	1	<1	<10	2

01462500 DELAWARE RIVER AT WASHINGTON CROSSING, NJ

LOCATION.--Lat 40°17'20", long 74°52'08", Mercer County, Hydrologic Unit 02040105, at bridge at Washington Crossing, 1.4 mi upstream of Jacobs Creek.

DRAINAGE AREA.--6,735 mi^2.

PERIOD OF RECORD.--Water years 1976 to current year.

COOPERATION.--Field data and samples for laboratory analyses provided by New Jersey Department of Environmental Protection, Division of Water Resources. Analyses of fecal coliform and fecal streptococci by the MPN method, and water-phase nutrients were performed by the New Jersey Department of Health, Division of Laboratories and Epidemiology.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, EC BROTH (MPN)	STREP-TOCOCCI FECAL (MPN)
OCT 1988										
11...	1330	3150E	234	8.1	15.0	11.8	119	<0.5	20	2
FEB 1989										
08...	1330	5350E	220	8.3	3.0	15.0	111	E1.6	20	2
APR										
04...	1330	16700E	125	7.7	9.0	12.9	112	2.3	50	7
MAY										
22...	1330	23500E	160	7.6	18.5	9.4	101	E2.1	20	46
JUL										
10...	1400	9300E	200	7.9	25.0	9.5	115	E2.2	490	34
AUG										
02...	1415	5550E	241	7.7	23.0	9.1	106	<0.9	40	70

DATE	HARD-NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
OCT 1988									
11...	85	21	8.0	12	1.9	57	26	16	0.1
FEB 1989									
08...	74	19	6.5	12	1.6	48	24	19	0.1
APR									
04...	44	12	3.3	7.2	1.1	23	18	11	<0.1
MAY									
22...	45	12	3.7	6.6	1.1	27	16	9.9	0.1
JUL									
10...	63	16	5.5	7.4	1.4	42	16	11	0.1
AUG									
02...	89	22	8.2	10	1.7	58	24	14	0.1

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
OCT 1988									
11...	1.6	121	0.014	1.01	<0.05	0.36	1.4	0.04	2.8
FEB 1989									
08...	1.7	113	0.026	1.23	0.29	0.61	1.8	0.09	2.7
APR									
04...	3.8	70	0.013	0.91	0.09	0.46	1.4	0.07	3.3
MAY									
22...	4.2	70	0.017	0.74	0.06	0.45	1.2	0.08	4.3
JUL									
10...	4.2	87	0.038	1.13	<0.05	0.41	1.5	0.06	3.6
AUG									
02...	4.6	119	0.065	1.66	0.07	0.32	2.0	0.10	3.1

01462500 DELAWARE RIVER AT WASHINGTON CROSSING, NJ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SULFIDE TOTAL (MG/L AS S)	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE)	BORON, TOTAL RECOVERABLE (UG/L AS B)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)
OCT 1988 11...	1330	<0.5	30	1	<10	40	<1	2	3
MAY 1989 22...	1330	--	40	<1	<10	<10	<1	2	3

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)	SELENIUM, TOTAL (UG/L AS SE)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	PHENOLS TOTAL (UG/L)
OCT 1988 11...	250	<5	<10	<0.10	<1	<1	10	<1
MAY 1989 22...	550	58	80	<0.10	4	<1	30	4

01463500 DELAWARE RIVER AT TRENTON, NJ
(National stream quality accounting network and Radiochemical program station)

LOCATION.--Lat 40°13'18", long 74°46'42", Mercer County, Hydrologic Unit 02040105, on left bank 450 ft upstream from Calhoun Street Bridge at Trenton, 0.5 mi upstream from Assunpink Creek, and at mile 134.5.

DRAINAGE AREA.--6,780 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1913 to current year. October 1912 to February 1913 monthly discharge only, published in WSP 1302. Gage-height records collected in this vicinity since 1904 are contained in reports of the National Weather Service.

REVISED RECORDS.--WSP 951: Drainage area. WSP 1302: 1913-20. WSP 1382: 1924, 1928.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to Sept. 30, 1965, at datum 7.77 ft higher. Feb. 24, 1913 to Oct. 2, 1928, nonrecording gage on downstream side of highway bridge at site 500 ft downstream.

REMARKS.--Records excellent except for period of ice effect, Dec. 13-14, which are good. Diurnal fluctuations at medium and low flow caused by powerplants on tributary streams. Flow regulated by Lakes Wallenpaupack and Hopatcong, and by Pepacton, Cannonsville, Swinging Bridge, Toronto, Cliff Lake, Neversink, Wild Creek, and Merrill Creek Reservoirs (see Delaware River basin, reservoirs in) and smaller reservoirs. Diversion from Pepacton, Cannonsville, and Neversink Reservoirs. Diversion to Bradshaw Reservoir and to Delaware and Raritan Canal (see Delaware River basin, diversions). Water diverted just above station by borough of Morrisville, PA, and city of Trenton for municipal supply (see Delaware River basin, diversions). Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Oct. 11, 1903, reached an elevation of about 28.5 ft above National Geodetic Vertical Datum of 1929, discharge estimated, 295,000 ft^3/s. Maximum elevation since 1903, 30.6 ft above National Geodetic Vertical Datum of 1929, Mar. 8, 1904, from floodmark (ice jam).

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989, MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3400	3350	10900	5370	5570	7400	25400	5710	11900	13300	4760	3930
2	3550	3660	9860	4830	5620	7060	23500	9390	11200	10800	5050	4180
3	4260	3690	9350	4790	5470	6630	19800	15700	11300	9240	5120	3680
4	3670	3710	8630	4790	5680	6070	17200	23500	10700	8260	4920	3460
5	3460	3540	7470	4700	5610	5820	16400	18100	9300	9900	5020	3360
6	3350	5180	7030	3630	4590	5930	17200	35800	8740	11100	5170	3310
7	3180	5880	7590	4730	4210	6190	18600	74900	10800	13200	5070	3330
8	3240	9340	6990	4160	4810	6150	18700	65700	14400	13000	4700	3350
9	3190	9710	6690	4890	4540	5840	17100	49500	14500	11500	4880	3260
10	3140	7950	6320	4950	3770	6010	15500	45100	20900	9470	5030	3340
11	3130	6770	6240	4870	3590	5600	14100	49200	17800	8280	4540	3340
12	3090	6030	5260	5270	3700	5930	12700	58100	15700	8530	5010	3310
13	3300	5510	e4010	6020	3640	5620	11500	47300	14600	8300	6910	3870
14	3330	5940	e4680	5930	3510	5130	10700	36900	13600	7930	10600	3920
15	3290	6120	5060	6740	4040	5340	10500	31000	13500	7060	10100	3820
16	3360	7370	5460	7750	5300	5290	12300	29500	19600	6810	8470	3560
17	3670	8790	4490	6770	5240	5350	11700	41800	30200	7220	6560	4000
18	3430	8300	4480	6040	5320	5670	11900	53700	27100	6870	5850	5560
19	3330	7620	4450	6140	4910	7180	11400	43900	24400	6420	5280	6040
20	3360	13300	4430	5710	4350	6510	10400	34000	20600	6740	4810	31900
21	3490	26900	4720	5210	5680	7060	9540	28300	18600	9060	4670	36600
22	4630	29400	4970	4470	12000	8370	8790	24400	20600	7360	4870	25400
23	5670	25000	4620	4060	18000	7690	8330	21900	22200	7620	5170	20200
24	5270	19200	4770	4240	15800	7320	7730	23000	26200	7140	5230	17600
25	5240	15100	5290	4360	11700	13000	7320	23100	23800	6670	5140	14100
26	5400	12900	5720	4690	9850	16300	7100	20700	23800	7360	4590	13400
27	4700	11400	6130	4700	7970	19600	6760	18000	22100	7070	4090	15400
28	4440	16300	5980	4900	7610	17900	6270	15900	19000	6640	3940	14100
29	3840	13500	6370	5220	---	15900	5920	14200	17300	6320	3880	11700
30	3310	11900	5580	5070	---	15700	5800	12400	15200	5840	3920	10000
31	3110	---	5450	5180	---	22500	---	11700	---	5260	3980	---
MEAN	3769	10450	6096	5167	6503	8776	12670	31690	17650	8396	5398	9434
MAX	5670	29400	10900	7750	18000	22500	25400	74900	30200	13300	10600	36600
MIN	3090	3350	4010	3630	3510	5130	5800	5710	8740	5260	3880	3260

STATISTICS OF MONTHLY FLOW DATA FOR PERIOD OF RECORD, BY WATER YEAR (WY)

MEAN	6698	10370	12380	12160	12790	20800	22370	14260	9153	7149	5963	5858
MAX	28710	27340	31070	34950	27550	60840	52680	31690	33460	25720	30290	22490
(WY)	1956	1928	1974	1979	1951	1936	1940	1989	1972	1928	1955	1933
MIN	1632	1868	2037	2539	3500	7715	6828	5209	2572	1548	1808	1762
(WY)	1942	1915	1923	1981	1920	1981	1985	1965	1965	1965	1965	1932

01463500 DELAWARE RIVER AT TRENTON, NJ--Continued

WATER-DISCHARGE RECORDS--Continued

SUMMARY STATISTICS	FOR 1989 WATER YEAR		FOR PERIOD OF RECORD	
AVERAGE FLOW	10510		11650	Unadjusted
HIGHEST ANNUAL MEAN			19810	1928
LOWEST ANNUAL MEAN			4708	1965
HIGHEST DAILY MEAN	74900	May 7	279000	Aug 20 1955
LOWEST DAILY MEAN	3090	Oct 12	1240	Oct 31 1914
INSTANTANEOUS PEAK FLOW	83300	May 7	329000a	Aug 20 1955
INSTANTANEOUS PEAK STAGE	16.95	May 7	28.60b	Aug 20 1955
INSTANTANEOUS LOW FLOW	3020	Oct 6	1180	Oct 31 1963
10 PERCENTILE	22000		24600	
50 PERCENTILE	6520		7860	
95 PERCENTILE	3320		2310	

a From rating curve extended above 230,000 ft^3/s
b From high-water mark in gage house
e Estimated

01463500 DELAWARE RIVER AT TRENTON, NJ--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1945 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: June 1968 to September 1978, May 1979 to current year.
pH: June 1968 to September 1978, May to September 1979, February 1980 to August 1982, April 1983 to current year.
WATER TEMPERATURE: October 1944 to September 1978, May 1979 to current year.
DISSOLVED OXYGEN: October 1962 to September 1978, May 1979 to current year.
SUSPENDED-SEDIMENT DISCHARGE: Water years 1949 to 1981.

INSTRUMENTATION.--Temperature recorder since October 1944, water-quality monitor since October 1962. Monitor probes are located within raw water intake of Trenton Filtration Plant.

REMARKS.--Missing continuous water-quality records are the result of malfunctions of the instrument. Unpublished records of suspended sediment discharge for the period October 1, 1981 to March 31, 1982 are available in files of the district office.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 400 microsiemens, Jan. 24, 1959; minimum, 50 microsiemens, Mar. 19, 1945.
pH: Maximum, 10.3, August 9, 10, 1983; minimum, 5.3, June 22, 1972.
WATER TEMPERATURE: Maximum, 34.0°C, Aug. 6; minimum, 0.0°C on many days during the winter months.
DISSOLVED OXYGEN: Maximum, 20.0 mg/L, Feb. 11, 1989; minimum, 4.0 mg/L, Nov. 9, 1972.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 262 microsiemens, Jan. 11; minimum, 86 microsiemens, May 8.
WATER TEMPERATURE: Maximum, 30.5°C, Aug. 6; minimum, 0.0°C on many days during the winter months.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS TOTAL (MG/L AS CACO3)
NOV 1988												
15...	1320	6070	186	7.9	10.0	4.1	12.3	108	2.1	30	16	64
MAR 1989												
03...	1300	6880	180	8.1	4.5	0.60	14.2	109	2.6	--	--	62
MAY												
03...	1200	13700	206	7.7	15.5	15	8.9	89	--	K650	830	72
SEP												
12...	1115	3300	245	8.2	25.5	0.30	8.2	100	1.3	K8	11	86

DATE	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE IT-FLD (MG/L AS HCO3)	ALKA-LINITY, CARBON-ATE IT-FLD (MG/L - CACO3)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
NOV 1988												
15...	16	5.9	10	1.6	46	38	39	34	12	0.1	3.4	111
MAR 1989												
03...	16	5.3	11	1.4	50	41	41	21	16	0.1	2.9	103
MAY												
03...	18	6.5	10	1.7	55	45	45	23	15	0.1	3.6	111
SEP												
12...	21	8.2	12	1.9	77	63	61	24	16	0.1	2.7	128

DATE	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHOROUS TOTAL (MG/L AS P)	PHOS-PHOROUS DIS-SOLVED (MG/L AS P)	PHOS-PHOROUS ORTHO, DIS-SOLVED (MG/L AS P)
NOV 1988											
15...	7	115	63	0.020	1.10	0.010	0.020	0.40	0.070	0.070	0.050
MAR 1989											
03...	33	613	24	0.020	0.910	0.060	0.040	0.30	0.050	0.040	0.030
MAY											
03...	51	1890	93	0.050	1.20	0.160	0.170	1.0	0.130	0.080	0.050
SEP											
12...	3	27	100	0.020	0.900	0.030	0.020	0.40	0.110	0.080	0.070

01463500 DELAWARE RIVER AT TRENTON, NJ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	BERYLLIUM, DISSOLVED (UG/L AS BE)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, DISSOLVED (UG/L AS CO)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)
NOV 1988 15...	1320	30	1	27	<0.5	<1	<1	<3	3	30
MAR 1989 03...	1300	30	<1	26	<0.5	<1	9	<3	3	24
MAY 03...	1200	20	1	30	<0.5	<1	<1	<3	3	31
SEP 12...	1115	20	<1	28	<0.5	<1	<1	<3	2	8

DATE	LEAD, DISSOLVED (UG/L AS PB)	LITHIUM DISSOLVED (UG/L AS LI)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	STRONTIUM, DISSOLVED (UG/L AS SR)	VANADIUM, DISSOLVED (UG/L AS V)
NOV 1988 15...	<5	<4	12	<0.1	<10	3	<1	<1.0	67	<6
MAR 1989 03...	<5	<4	29	<0.1	<10	3	<1	1.0	70	<6
MAY 03...	<5	<4	14	<0.1	<10	<1	<1	<1.0	77	<6
SEP 12...	<1	<4	5	<0.1	<10	<1	<1	<1.0	93	<6

DATE	ZINC, DISSOLVED (UG/L AS ZN)	GROSS ALPHA, DISSOLVED (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS BETA, DISSOLVED (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	GROSS BETA, DISSOLVED (PCI/L AS SR/YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90)	RADIUM 226, DISSOLVED, RADON METHOD (PCI/L)	URANIUM NATURAL DISSOLVED (UG/L AS U)
NOV 1988 15...	17	<0.4	<0.4	2.4	<0.4	2.0	<0.4	0.04	0.08
MAR 1989 03...	12	--	--	--	--	--	--	--	--
MAY 03...	11	<0.4	1.6	0.9	1.6	0.8	1.2	0.11	0.04
SEP 12...	11	--	--	--	--	--	--	--	--

01463500 DELAWARE RIVER AT TRENTON, NJ--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	244	235	240	224	185	210	161	159	160	194	186	191
2	248	230	244	229	225	226	165	159	162	186	181	183
3	242	236	239	225	224	224	172	165	168	197	181	190
4	246	241	244	224	220	222	175	168	171	199	196	197
5	244	220	231	227	214	223	180	171	174	206	199	202
6	222	215	218	231	216	220	187	180	183	209	205	207
7	227	220	222	231	217	223	191	187	188	216	204	210
8	242	227	236	215	179	201	189	181	184	237	211	220
9	242	239	241	177	147	157	192	185	187	241	231	236
10	240	235	237	148	144	146	193	189	192	253	242	246
11	237	232	235	152	148	149	196	192	194	262	246	257
12	234	230	232	154	150	151	195	188	192	248	234	241
13	231	227	229	168	155	160	192	182	187	242	217	228
14	228	226	227	174	166	169	204	191	196	230	218	226
15	231	223	226	176	174	175	219	198	210	251	212	233
16	234	230	232	175	163	169	216	208	212	228	210	221
17	230	222	226	161	150	154	207	199	205	232	229	231
18	234	221	228	166	158	162	208	202	204	230	224	226
19	234	211	224	171	167	169	210	205	208	227	221	224
20	210	204	206	169	135	156	208	200	203	230	221	225
21	210	163	202	157	143	151	208	206	207	227	223	225
22	211	168	196	149	118	135	205	199	204	235	227	231
23	236	210	220	120	115	118	205	199	201	240	231	235
24	237	215	230	124	118	120	209	200	204	243	235	238
25	214	190	200	128	122	124	206	198	203	245	240	242
26	197	190	194	135	128	132	216	203	210	244	233	240
27	195	184	189	136	134	135	212	195	205	232	222	226
28	189	184	186	146	119	133	195	176	185	227	222	223
29	194	189	191	157	142	149	177	174	176	230	223	228
30	201	194	197	164	155	159	179	174	176	221	208	216
31	211	202	207	---	---	---	191	180	187	216	206	210
MONTH	248	163	220	231	115	167	219	159	192	262	181	223

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	217	212	214	187	180	183	135	125	131	---	---	---
2	215	206	210	187	183	185	124	118	120	202	126	166
3	211	207	209	188	183	185	124	119	120	210	146	187
4	218	212	216	192	187	189	130	124	126	174	122	136
5	219	207	213	198	193	195	135	130	132	128	121	123
6	212	204	208	200	196	198	138	135	137	141	128	133
7	219	206	212	210	200	204	140	136	138	124	89	102
8	229	220	223	218	210	213	139	133	136	92	86	89
9	231	217	225	222	211	216	139	132	135	96	89	93
10	224	217	220	224	213	219	141	138	140	107	96	100
11	229	217	222	225	217	221	143	140	142	114	108	111
12	239	226	231	226	221	224	147	142	144	109	99	103
13	240	230	235	225	219	222	152	147	150	104	99	101
14	251	240	244	226	221	223	156	152	155	111	104	108
15	254	244	248	230	223	226	166	156	160	119	111	115
16	258	235	247	231	225	227	165	157	160	127	118	121
17	237	228	233	234	227	231	170	163	167	132	121	127
18	228	225	226	249	229	234	166	148	158	121	103	111
19	228	209	219	239	221	229	153	148	151	115	103	109
20	212	207	209	224	209	217	152	149	151	124	115	120
21	208	164	195	220	211	215	158	150	154	131	125	128
22	214	170	185	211	196	202	162	158	160	137	130	133
23	216	168	199	206	199	203	164	161	163	141	136	139
24	168	162	165	210	194	205	---	---	---	146	139	142
25	161	158	161	202	179	192	---	---	---	151	146	149
26	171	160	165	201	175	192	---	---	---	151	146	148
27	182	170	173	173	148	157	---	---	---	158	151	153
28	187	182	185	151	149	150	---	---	---	161	155	157
29	---	---	---	150	147	148	---	---	---	162	160	161
30	---	---	---	148	146	147	---	---	---	169	161	166
31	---	---	---	147	132	139	---	---	---	174	169	172
MONTH	258	158	210	249	132	200	---	---	---	210	86	130

01463500 DELAWARE RIVER AT TRENTON, NJ--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	176	172	175	161	154	159	228	209	218	242	238	240
2	184	172	179	167	159	164	239	228	235	244	241	243
3	185	179	182	184	168	177	237	226	235	240	230	233
4	179	171	176	191	184	187	236	225	231	238	232	235
5	183	173	178	191	148	177	238	230	234	242	239	240
6	190	180	184	192	181	186	233	224	230	242	240	241
7	192	129	175	197	177	193	229	220	225	241	238	239
8	186	139	166	174	161	165	225	220	222	240	238	239
9	189	138	174	171	165	169	232	224	228	247	240	242
10	178	119	150	181	169	174	232	227	230	253	247	250
11	179	172	177	188	181	183	227	217	222	254	248	251
12	171	164	167	197	188	192	216	206	212	248	241	245
13	167	159	163	193	179	188	219	212	215	244	241	243
14	175	160	170	203	186	191	219	194	208	241	209	227
15	180	175	177	207	202	205	220	126	192	224	210	214
16	179	161	174	210	184	203	205	137	180	229	220	225
17	158	127	139	208	199	205	212	206	210	229	221	224
18	128	122	125	231	209	222	218	212	215	253	231	238
19	129	122	125	230	220	224	224	218	222	256	132	194
20	133	125	128	226	206	217	227	217	222	---	---	---
21	135	132	133	216	186	199	244	228	235	---	---	---
22	148	134	140	224	202	213	249	242	245	---	---	---
23	147	138	142	213	206	211	244	231	236	---	---	---
24	142	127	135	211	200	204	234	231	232	---	---	---
25	148	143	145	208	202	205	233	219	228	---	---	---
26	143	133	137	209	204	207	219	215	217	---	---	---
27	137	134	135	212	203	207	226	212	217	---	---	---
28	141	134	136	209	198	203	239	226	233	---	---	---
29	151	141	146	209	202	206	242	237	239	---	---	---
30	154	150	151	210	205	207	243	239	242	---	---	---
31	---	---	---	212	205	209	243	239	240	---	---	---
MONTH	192	119	156	231	148	195	249	126	224	---	---	---

PH (STANDARD UNITS), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	---	---	---	8.0	7.6	7.8	8.0	7.8	7.9	8.2	7.5	7.9
2	---	---	---	8.3	7.6	7.9	8.0	7.9	7.9	8.6	7.7	8.0
3	---	---	---	8.5	7.7	8.0	8.1	7.9	8.0	8.8	7.7	8.2
4	---	---	---	8.6	7.7	8.0	8.1	7.9	8.0	8.8	7.9	8.3
5	---	---	---	8.0	7.5	7.8	8.1	8.0	8.0	8.8	7.9	8.3
6	---	---	---	8.1	7.5	7.7	8.2	7.9	8.0	8.3	7.8	8.0
7	---	---	---	7.9	7.5	7.7	8.1	8.0	8.0	8.4	7.8	8.0
8	---	---	---	7.6	7.4	7.5	8.2	7.9	8.0	7.9	7.3	7.6
9	---	---	---	7.7	7.3	7.5	8.1	7.9	8.0	8.1	7.4	7.7
10	---	---	---	7.6	7.3	7.4	8.2	8.0	8.1	8.6	7.5	8.0
11	---	---	---	7.7	7.3	7.5	8.3	8.0	8.1	8.8	7.6	8.1
12	---	---	---	7.9	7.3	7.5	8.3	8.1	8.2	8.0	7.5	7.8
13	---	---	---	7.6	7.4	7.5	8.3	8.0	8.1	8.2	7.4	7.6
14	---	---	---	8.0	7.4	7.6	8.2	8.0	8.1	8.6	7.5	7.9
15	---	---	---	8.4	7.4	7.8	8.2	7.9	8.0	8.0	7.4	7.6
16	---	---	---	8.0	7.7	7.8	8.2	7.9	8.0	8.2	7.4	7.7
17	---	---	---	7.7	7.5	7.6	8.2	7.9	8.0	8.8	7.6	8.1
18	---	---	---	7.8	7.5	7.7	8.2	7.9	8.0	9.1	7.9	8.4
19	8.5	7.6	8.0	8.0	7.7	7.8	8.1	7.6	7.9	9.2	8.0	8.5
20	8.7	7.7	8.1	7.7	7.4	7.6	8.0	7.6	7.7	9.2	7.9	8.5
21	8.1	7.4	7.9	7.6	7.4	7.5	7.8	7.3	7.6	9.3	7.9	8.6
22	7.8	7.4	7.5	7.7	7.5	7.6	7.6	7.3	7.4	9.4	8.1	8.7
23	7.9	7.5	7.6	7.6	7.5	7.5	7.3	7.2	7.3	9.4	8.0	8.7
24	8.0	7.6	7.7	7.6	7.5	7.6	7.4	7.2	7.3	9.5	8.0	8.8
25	8.1	7.5	7.8	7.7	7.6	7.6	7.6	7.2	7.4	9.5	8.1	8.8
26	8.0	7.5	7.7	7.8	7.7	7.7	7.8	7.3	7.5	9.1	8.0	8.5
27	8.3	7.5	7.8	7.7	7.6	7.7	7.8	7.5	7.6	9.4	7.8	8.5
28	8.0	7.6	7.7	7.6	7.4	7.5	7.7	7.3	7.5	9.5	8.0	8.8
29	8.3	7.5	7.8	7.7	7.5	7.6	7.8	7.3	7.5	9.5	8.2	8.9
30	8.5	7.6	8.0	7.9	7.7	7.8	7.9	7.4	7.6	9.2	8.0	8.5
31	8.6	7.7	8.1	---	---	---	8.1	7.4	7.7	9.5	7.8	8.6
MONTH	---	---	---	8.6	7.3	7.7	8.3	7.2	7.8	9.5	7.3	8.2

01463500 DELAWARE RIVER AT TRENTON, NJ--Continued

PH (STANDARD UNITS), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	9.4	8.1	8.7	---	---	---	7.5	7.4	7.5	---	---	---
2	9.2	7.9	8.5	---	---	---	7.6	7.4	7.5	---	---	---
3	8.6	7.6	7.9	---	---	---	7.7	7.5	7.6	---	---	---
4	9.2	7.5	8.3	---	---	---	7.9	7.6	7.7	---	---	---
5	9.2	7.8	8.5	---	---	---	7.8	7.6	7.7	---	---	---
6	9.4	7.6	8.5	---	---	---	7.7	7.6	7.6	---	---	---
7	9.4	7.7	8.6	---	---	---	7.9	7.7	7.8	---	---	---
8	9.4	7.9	8.7	---	---	---	8.0	7.7	7.9	---	---	---
9	9.4	8.0	8.8	---	---	---	7.9	7.7	7.8	---	---	---
10	9.5	8.3	8.9	---	---	---	8.2	7.7	7.9	---	---	---
11	9.6	8.3	8.9	---	---	---	8.6	7.9	8.2	---	---	---
12	9.5	8.1	8.9	---	---	---	8.6	7.9	8.2	---	---	---
13	9.4	8.1	8.8	---	---	---	8.8	7.9	8.3	---	---	---
14	9.5	7.8	8.6	---	---	---	9.1	8.0	8.5	---	---	---
15	8.9	7.7	8.2	---	---	---	8.5	7.2	8.1	---	---	---
16	9.1	7.5	8.1	---	---	---	8.0	7.2	7.6	---	---	---
17	9.3	7.6	8.5	---	---	---	8.7	7.9	8.3	---	---	---
18	9.4	7.9	8.7	---	---	---	8.8	8.0	8.3	---	---	---
19	9.6	7.9	8.8	---	---	---	9.0	7.5	8.3	---	---	---
20	9.6	7.9	8.8	---	---	---	9.1	7.9	8.6	---	---	---
21	8.5	7.2	7.7	---	---	---	9.0	8.1	8.6	---	---	---
22	7.3	7.2	7.3	---	---	---	9.3	7.8	8.7	---	---	---
23	7.3	6.6	7.1	---	---	---	9.4	8.7	9.0	---	---	---
24	7.2	7.1	7.2	---	---	---	---	---	---	---	---	---
25	7.2	7.1	7.2	---	---	---	---	---	---	---	---	---
26	7.2	7.1	7.2	---	---	---	---	---	---	---	---	---
27	7.4	7.1	7.2	---	---	---	---	---	---	---	---	---
28	7.6	7.1	7.3	---	---	---	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	---	---	---	---
30	---	---	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	9.6	6.6	8.2	---	---	---	---	---	---	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	---	7.8	7.6	7.7	7.8	7.4	7.5	---	---	---
2	---	---	---	8.1	7.6	7.8	7.8	7.4	7.6	---	---	---
3	---	---	---	8.3	7.7	8.0	7.7	7.3	7.5	---	---	---
4	---	---	---	8.4	7.9	8.1	---	---	---	---	---	---
5	---	---	---	7.9	7.5	7.7	---	---	---	---	---	---
6	---	---	---	7.7	7.6	7.7	---	---	---	---	---	---
7	---	---	---	7.8	7.7	7.7	---	---	---	---	---	---
8	---	---	---	7.9	7.6	7.7	---	---	---	---	---	---
9	---	---	---	7.8	7.4	7.6	---	---	---	---	---	---
10	---	---	---	8.0	7.6	7.8	---	---	---	---	---	---
11	---	---	---	8.3	7.6	7.9	---	---	---	---	---	---
12	---	---	---	8.2	7.7	7.9	---	---	---	---	---	---
13	---	---	---	7.8	7.6	7.7	---	---	---	---	---	---
14	---	---	---	8.2	7.5	7.8	---	---	---	---	---	---
15	---	---	---	8.4	7.7	8.0	---	---	---	---	---	---
16	---	---	---	7.8	7.4	7.6	---	---	---	---	---	---
17	7.6	7.5	7.5	8.0	7.4	7.6	---	---	---	---	---	---
18	7.6	7.5	7.5	8.2	7.6	7.8	7.8	7.5	7.6	---	---	---
19	7.6	7.4	7.5	8.3	7.7	8.0	7.7	7.5	7.6	---	---	---
20	7.7	7.5	7.6	7.9	7.5	7.7	7.8	7.5	7.6	---	---	---
21	7.7	7.5	7.6	7.7	7.5	7.6	7.9	7.4	7.6	---	---	---
22	7.6	7.5	7.5	7.8	7.5	7.6	8.0	7.6	7.8	---	---	---
23	7.6	7.4	7.4	7.9	7.5	7.7	7.9	7.5	7.7	---	---	---
24	7.4	7.3	7.3	8.0	7.5	7.7	7.8	7.4	7.5	---	---	---
25	7.5	7.4	7.4	---	---	---	7.8	7.4	7.6	---	---	---
26	7.6	7.3	7.4	---	---	---	7.8	7.3	7.6	---	---	---
27	7.5	7.3	7.4	---	---	---	7.9	7.4	7.6	---	---	---
28	7.4	7.3	7.4	---	---	---	---	---	---	---	---	---
29	7.4	7.2	7.3	---	---	---	---	---	---	---	---	---
30	7.7	7.2	7.4	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	8.4	7.4	7.8	---	---	---	---	---	---

01463500 DELAWARE RIVER AT TRENTON, NJ--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	21.5	18.0	19.5	8.5	8.0	8.0	6.0	5.5	6.0	2.0	2.0	2.0
2	21.5	19.0	20.0	8.5	7.0	7.5	5.5	4.5	5.0	3.0	2.0	2.5
3	20.5	19.0	20.0	9.5	6.5	8.0	5.5	4.0	5.0	3.0	2.0	2.5
4	19.0	17.5	18.5	10.0	7.5	8.5	5.0	4.0	4.5	2.5	.0	1.5
5	19.0	16.5	17.5	11.5	9.0	10.0	4.0	3.5	4.0	.0	.0	.0
6	18.0	15.5	16.5	12.5	10.0	11.0	4.5	3.5	4.0	.0	.0	.0
7	16.0	14.5	15.5	11.0	10.0	10.5	4.5	3.5	4.0	.5	.0	.0
8	14.5	13.0	14.0	10.5	9.5	10.0	5.0	3.5	4.5	1.5	.5	1.0
9	15.5	12.0	13.5	10.0	9.0	9.5	3.5	3.0	3.5	1.5	1.5	1.5
10	16.0	12.5	14.0	9.5	8.5	9.0	3.5	2.5	3.0	2.5	1.5	2.0
11	15.5	13.5	14.0	10.0	8.5	9.0	2.5	1.0	2.0	3.5	1.5	2.5
12	13.5	12.0	13.0	9.5	8.0	8.5	1.0	.0	.5	2.5	2.0	2.5
13	13.0	10.5	11.5	9.0	7.5	8.5	.0	.0	.0	3.0	2.0	2.5
14	13.0	9.5	11.5	9.5	7.5	8.5	.5	.0	.0	2.5	1.5	2.0
15	14.0	10.5	12.0	10.0	8.5	9.0	1.5	.0	.5	3.5	2.0	2.5
16	15.5	12.0	13.5	9.5	8.5	9.0	1.0	.0	.5	3.5	2.5	3.0
17	16.0	13.0	14.5	10.0	8.5	9.0	.5	.0	.5	3.5	2.0	2.5
18	15.0	13.5	14.5	9.0	8.0	8.5	.0	.0	.0	3.5	2.0	3.0
19	14.5	12.5	13.5	8.0	7.5	7.5	1.5	.0	.5	4.5	3.0	3.5
20	15.0	11.5	13.0	8.5	7.5	8.0	2.5	.5	1.5	4.0	2.5	3.5
21	12.5	11.5	12.0	9.0	7.5	8.5	3.0	2.0	2.5	2.5	.5	1.5
22	11.5	10.5	11.0	7.5	6.5	7.0	3.5	2.0	2.5	2.0	.0	1.0
23	11.5	10.0	10.5	6.5	6.0	6.5	2.5	2.0	2.5	2.5	.5	1.5
24	12.5	10.5	11.0	6.0	5.5	6.0	3.5	2.5	2.5	3.5	1.0	2.0
25	11.5	10.0	10.5	5.5	5.0	5.5	4.0	2.5	3.0	4.0	2.5	3.0
26	10.5	9.0	10.0	6.0	5.0	5.5	3.0	2.0	2.5	4.0	3.5	3.5
27	10.0	8.0	9.0	6.5	5.5	6.0	3.0	2.0	2.5	5.0	3.5	4.0
28	9.5	8.0	9.0	9.0	7.0	8.0	4.0	2.5	3.0	5.0	3.0	3.5
29	10.5	8.0	9.0	7.5	6.5	7.0	3.5	2.0	3.0	4.5	3.0	4.0
30	10.5	8.0	9.0	7.0	6.0	6.5	2.5	2.0	2.0	4.5	4.0	4.5
31	10.0	7.0	8.5	---	---	---	3.0	1.5	2.0	5.0	3.5	4.5
MONTH	21.5	7.0	13.0	12.5	5.0	8.0	6.0	.0	2.5	5.0	.0	2.5

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	6.0	4.0	5.0	4.0	2.0	3.0	9.5	8.5	8.5	---	---	---
2	6.0	5.0	5.5	4.5	3.0	3.5	8.5	7.5	8.0	15.0	13.5	14.5
3	5.5	4.5	5.5	4.5	3.5	4.0	8.5	7.5	8.0	15.0	13.5	14.5
4	5.0	3.0	4.0	4.0	4.0	4.0	10.5	7.5	8.5	14.5	13.0	14.0
5	3.5	3.0	3.5	4.5	4.0	4.0	10.5	9.5	10.0	14.0	13.0	13.0
6	4.0	2.5	3.0	4.5	2.0	3.5	10.0	9.0	9.5	14.0	13.0	13.5
7	3.5	2.5	3.0	3.0	1.5	2.0	9.0	8.5	9.0	13.0	12.0	13.0
8	3.5	2.0	2.5	3.5	1.5	2.5	10.0	8.5	9.0	11.5	10.5	11.0
9	2.0	.5	1.0	4.5	2.0	3.0	9.5	9.0	9.5	11.0	10.0	10.5
10	2.0	.0	.5	5.5	2.5	4.0	10.0	8.5	9.5	11.0	10.5	10.5
11	3.0	.0	1.5	6.5	3.5	4.5	10.5	8.5	9.5	10.5	10.0	10.5
12	3.5	1.0	2.0	6.0	4.5	5.0	10.0	8.5	9.5	10.5	10.0	10.0
13	2.5	1.0	1.5	6.5	4.0	5.0	10.0	8.5	9.5	11.0	10.0	10.5
14	4.5	2.0	3.5	6.5	4.5	5.5	11.5	9.0	10.0	12.0	11.0	11.5
15	4.5	4.0	4.5	9.0	6.5	7.5	10.5	9.5	10.0	12.5	11.5	12.0
16	5.0	4.0	4.5	11.0	8.0	9.5	10.0	9.5	9.5	13.0	12.5	12.5
17	4.0	2.5	3.5	11.5	8.0	9.5	11.5	9.0	9.5	14.0	13.0	13.5
18	4.0	2.0	2.5	13.5	10.0	11.5	13.0	9.5	11.5	15.0	13.5	14.0
19	4.5	2.0	3.0	11.0	9.0	10.0	14.5	12.5	13.0	16.5	14.5	15.5
20	5.0	3.0	3.5	9.0	7.5	8.5	14.5	12.5	13.5	17.5	16.0	17.0
21	6.0	4.0	5.0	8.0	7.0	7.5	14.0	13.5	13.5	19.0	17.0	18.0
22	5.0	4.5	5.0	8.0	6.0	7.0	14.0	12.5	13.5	19.0	17.5	18.5
23	5.0	3.5	4.5	8.0	6.0	7.0	13.5	11.5	12.5	18.5	17.5	18.0
24	3.5	2.0	2.5	7.0	5.5	6.5	---	---	---	17.5	16.0	16.5
25	2.0	.5	1.5	8.0	5.5	6.5	---	---	---	17.5	15.5	16.5
26	1.5	1.5	1.5	9.0	7.5	8.0	---	---	---	18.0	16.5	17.5
27	3.0	1.0	2.0	9.5	8.0	8.5	---	---	---	18.5	17.5	18.0
28	2.5	2.0	2.5	11.0	8.5	9.5	---	---	---	18.5	17.0	17.5
29	---	---	---	12.0	10.5	11.5	---	---	---	19.0	17.0	18.0
30	---	---	---	12.0	11.0	11.5	---	---	---	19.0	18.0	18.5
31	---	---	---	11.0	9.5	10.0	---	---	---	20.0	18.5	19.5
MONTH	6.0	.0	3.0	13.5	1.5	6.5	---	---	---	20.0	10.0	14.5

01463500 DELAWARE RIVER AT TRENTON, NJ--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	22.0	19.5	21.0	24.0	22.0	23.0	23.5	22.0	23.0	26.5	23.5	25.0
2	23.5	21.5	22.5	24.5	22.5	23.5	25.0	22.0	23.5	26.5	24.0	25.0
3	24.0	22.0	23.0	25.0	23.5	24.5	26.5	23.0	25.0	26.0	22.0	24.0
4	24.5	22.5	23.5	25.5	24.0	24.5	28.5	24.5	26.5	24.0	21.5	23.0
5	24.0	22.5	23.5	24.0	22.5	23.5	29.5	26.0	27.5	22.5	20.5	21.5
6	22.5	22.0	22.5	23.0	22.5	22.5	30.5	27.5	29.0	23.5	20.5	22.0
7	22.0	19.5	21.0	24.5	22.5	23.5	28.5	26.0	27.5	25.0	20.5	22.5
8	20.5	19.0	20.0	25.5	24.0	24.5	26.0	23.5	25.0	25.5	21.5	23.5
9	20.5	19.0	19.5	25.5	23.5	24.5	26.0	22.5	24.5	26.0	22.5	24.0
10	20.0	18.5	19.5	26.5	24.5	25.5	24.5	23.0	24.0	27.5	23.5	25.5
11	20.5	19.0	20.0	27.5	25.5	26.5	23.5	22.0	22.5	28.5	25.0	26.5
12	21.0	19.0	20.0	26.5	24.5	25.5	22.0	21.5	21.5	26.5	25.0	25.5
13	20.5	20.0	20.5	24.5	23.0	24.0	24.0	21.5	23.0	26.0	24.0	25.0
14	20.0	18.5	19.5	25.0	22.5	23.5	23.0	22.5	23.0	26.0	24.0	24.5
15	19.0	18.5	18.5	25.5	23.0	24.0	23.5	22.0	23.0	26.0	24.0	25.0
16	19.5	18.0	18.5	24.0	21.5	23.0	25.0	22.0	23.5	24.0	22.0	23.0
17	19.0	18.0	18.5	24.0	21.0	22.0	26.5	24.0	25.0	23.0	21.5	22.0
18	20.0	18.0	19.0	25.0	22.0	23.0	25.0	23.5	24.5	22.0	21.0	21.5
19	20.5	19.0	20.0	25.0	22.5	23.5	23.5	22.5	23.0	21.0	19.0	20.0
20	21.5	20.0	20.5	24.5	23.0	23.5	25.0	22.5	23.5	---	---	---
21	22.5	21.0	21.5	23.5	22.5	23.0	26.0	23.5	24.5	---	---	---
22	22.5	21.5	22.0	23.5	22.0	22.5	27.0	24.0	25.5	---	---	---
23	22.0	21.5	22.0	25.5	22.5	24.0	28.0	25.0	26.0	---	---	---
24	22.0	21.0	21.5	27.0	24.0	25.5	28.0	25.0	26.5	---	---	---
25	23.0	21.5	22.0	27.0	25.0	26.0	27.0	24.0	25.5	---	---	---
26	23.5	22.0	23.0	28.5	25.5	26.5	27.0	23.5	25.0	---	---	---
27	24.5	23.0	23.5	29.0	26.5	28.0	26.5	23.0	24.5	---	---	---
28	24.5	23.0	23.5	29.5	27.0	28.0	26.0	23.5	24.5	---	---	---
29	23.5	22.5	23.0	28.0	25.5	27.0	24.5	24.0	24.5	---	---	---
30	23.5	21.5	22.5	26.0	24.5	25.5	26.5	23.5	25.0	---	---	---
31	---	---	---	24.5	23.0	23.5	27.0	23.5	25.0	---	---	---
MONTH	24.5	18.0	21.0	29.5	21.0	24.5	30.5	21.5	24.5	---	---	---

OXYGEN, DISSOLVED (DO), MG/L, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	---	---	---	11.7	10.7	11.1	12.3	11.6	11.9	15.1	14.1	14.5
2	---	---	---	12.0	10.2	11.1	12.5	11.9	12.2	15.9	14.0	14.7
3	---	---	---	12.7	10.7	11.5	12.8	12.1	12.4	16.0	14.1	14.8
4	10.1	7.9	8.8	12.8	10.8	11.5	12.9	12.2	12.5	15.9	13.9	14.7
5	10.7	8.2	9.2	11.2	9.3	10.6	13.2	12.5	12.8	16.2	14.7	15.3
6	10.9	8.7	9.6	11.1	9.0	9.9	13.3	12.7	12.9	15.8	14.6	15.1
7	10.8	9.0	9.7	10.5	9.6	9.9	13.2	12.6	12.8	16.0	14.5	15.1
8	11.0	8.9	9.8	10.6	9.2	9.9	13.2	12.5	12.8	15.1	14.0	14.6
9	11.8	9.5	10.5	10.8	9.4	10.0	13.3	12.8	13.0	15.6	13.7	14.4
10	12.1	9.9	10.8	11.1	10.3	10.6	13.7	12.9	13.2	16.6	13.9	15.0
11	11.5	9.9	10.6	11.4	10.2	10.6	13.8	13.1	13.4	17.0	14.1	15.3
12	12.0	10.0	10.8	11.9	10.3	11.0	14.6	13.5	14.1	15.0	13.7	14.4
13	12.2	10.5	11.3	11.4	10.3	10.8	15.0	14.3	14.6	15.4	13.4	14.1
14	12.6	10.9	11.6	12.1	10.2	11.0	15.0	14.3	14.6	16.6	13.9	15.0
15	12.7	11.0	11.7	12.3	10.6	11.3	14.7	14.0	14.3	15.1	13.8	14.3
16	12.7	10.8	11.5	11.5	10.5	10.9	14.6	13.9	14.2	15.2	13.7	14.2
17	12.4	10.6	11.3	10.5	9.9	10.2	14.4	13.7	14.0	15.5	13.6	14.3
18	11.7	9.9	10.8	11.1	9.9	10.5	14.3	13.7	14.0	15.9	13.2	14.3
19	12.1	9.6	10.6	11.5	10.7	11.0	14.4	13.7	14.0	15.9	13.0	14.1
20	12.6	10.3	11.2	10.7	10.4	10.6	14.5	13.6	13.9	15.9	12.7	14.1
21	11.6	10.5	10.9	10.5	10.3	10.4	13.8	13.0	13.5	16.5	13.1	14.5
22	11.0	10.0	10.4	11.2	10.6	10.9	14.2	12.9	13.4	17.7	13.9	15.4
23	11.5	9.9	10.6	11.4	11.2	11.3	13.7	13.2	13.5	18.0	14.0	15.6
24	12.1	10.3	11.0	11.6	11.4	11.5	13.6	13.1	13.3	18.5	14.0	15.8
25	12.1	10.4	11.0	12.0	11.5	11.8	14.1	13.0	13.4	18.6	13.6	15.6
26	11.8	10.1	10.8	12.1	11.7	11.9	14.5	13.2	13.8	16.0	13.3	14.3
27	12.4	10.6	11.4	11.9	11.5	11.8	14.7	13.7	14.1	16.9	12.6	14.5
28	12.0	10.9	11.4	11.4	10.7	10.9	14.5	13.4	13.8	18.5	13.4	15.5
29	12.8	10.7	11.6	11.5	11.0	11.3	14.5	13.3	13.8	18.3	13.8	15.5
30	13.0	11.2	12.0	12.0	11.5	11.7	15.1	13.8	14.3	16.3	13.2	14.4
31	13.0	11.5	12.2	---	---	---	15.3	14.0	14.5	17.8	12.9	15.0
MONTH	13.0	7.9	10.8	12.8	9.0	10.9	15.3	11.6	13.5	18.6	12.6	14.8

01463500 DELAWARE RIVER AT TRENTON, NJ--Continued

OXYGEN, DISSOLVED (DO), MG/L, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	18.2	13.4	15.3	---	---	---	---	---	---	---	---	---
2	16.5	12.5	14.0	---	---	---	---	---	---	---	---	---
3	14.2	12.0	12.9	---	---	---	---	---	---	---	---	---
4	17.5	12.0	14.4	---	---	---	---	---	---	---	---	---
5	17.4	13.2	14.8	---	---	---	---	---	---	---	---	---
6	18.5	13.1	15.2	---	---	---	---	---	---	---	---	---
7	18.6	13.3	15.3	---	---	---	---	---	---	---	---	---
8	19.0	13.4	15.8	---	---	---	---	---	---	---	---	---
9	18.2	13.7	15.7	---	---	---	---	---	---	---	---	---
10	19.2	14.3	16.4	---	---	---	---	---	---	---	---	---
11	20.0	14.5	16.8	---	---	---	---	---	---	---	---	---
12	19.2	13.9	16.2	---	---	---	---	---	---	---	---	---
13	19.3	13.7	15.9	---	---	---	---	---	---	---	---	---
14	19.8	13.0	15.5	---	---	---	---	---	---	---	---	---
15	15.7	12.2	13.6	---	---	---	---	---	---	---	---	---
16	16.9	11.6	13.7	---	---	---	---	---	---	9.6	8.9	9.1
17	18.5	12.5	15.1	---	---	---	---	---	---	9.1	9.0	9.1
18	18.9	13.5	15.8	---	---	---	---	---	---	9.0	8.9	9.0
19	19.5	13.4	16.1	---	---	---	---	---	---	8.9	8.5	8.7
20	19.8	13.2	15.8	---	---	---	---	---	---	8.6	8.4	8.5
21	13.9	11.6	12.7	---	---	---	---	---	---	8.4	8.2	8.3
22	12.1	11.5	11.8	---	---	---	---	---	---	8.4	8.1	8.2
23	12.6	11.5	12.0	---	---	---	---	---	---	8.3	8.0	8.2
24	13.3	12.7	13.0	---	---	---	---	---	---	8.5	8.2	8.3
25	13.7	13.0	13.4	---	---	---	---	---	---	8.7	8.5	8.6
26	13.8	13.3	13.5	---	---	---	---	---	---	8.6	8.5	8.5
27	14.7	13.2	13.8	---	---	---	---	---	---	8.5	8.2	8.4
28	14.6	13.2	13.8	---	---	---	---	---	---	8.6	8.3	8.4
29	---	---	---	---	---	---	---	---	---	8.7	8.3	8.5
30	---	---	---	---	---	---	---	---	---	8.9	8.4	8.6
31	---	---	---	---	---	---	---	---	---	8.7	8.3	8.5
MONTH	20.0	11.5	14.6	---	---	---	---	---	---	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	8.7	8.0	8.3	8.2	7.5	7.8	8.6	7.1	7.8	9.0	7.2	8.0
2	8.4	7.7	8.1	8.5	7.5	7.9	8.7	7.2	7.9	8.9	6.9	7.9
3	8.6	7.6	8.1	8.8	7.5	8.1	8.8	7.1	7.9	9.1	7.2	8.1
4	8.7	7.4	8.1	8.8	7.5	8.1	8.9	7.0	7.9	9.4	7.4	8.4
5	9.3	7.8	8.6	7.8	7.5	7.6	8.7	6.7	7.6	9.8	7.7	8.6
6	8.6	7.9	8.2	7.6	7.4	7.5	8.5	6.4	7.4	10.0	7.9	8.8
7	8.2	7.6	7.9	8.0	7.4	7.7	7.5	6.4	7.0	10.1	7.8	8.8
8	8.0	7.7	7.8	8.3	7.4	7.8	8.4	6.6	7.5	10.0	7.6	8.6
9	8.1	7.8	8.0	8.2	6.9	7.5	8.7	7.3	8.0	10.1	7.4	8.5
10	8.1	7.9	8.0	8.8	7.3	8.0	8.9	7.5	8.2	9.9	7.1	8.3
11	8.1	7.8	7.9	9.6	7.3	8.3	8.3	7.4	7.8	10.1	6.8	8.1
12	8.4	7.9	8.1	9.1	7.4	8.2	8.3	7.4	7.8	9.6	6.7	8.1
13	8.1	7.8	8.0	8.2	7.4	7.7	8.2	7.4	7.8	9.8	6.8	8.0
14	7.9	7.8	7.8	9.0	7.4	8.2	7.5	7.1	7.2	9.5	6.4	7.6
15	8.2	7.9	8.0	9.5	7.6	8.5	7.6	7.3	7.4	9.3	6.3	7.5
16	8.2	8.1	8.1	8.3	7.5	7.8	7.5	7.1	7.3	8.5	6.7	7.3
17	8.3	8.1	8.2	8.9	7.4	8.1	8.2	7.1	7.6	9.4	6.9	7.9
18	8.3	8.0	8.2	9.3	7.7	8.4	8.0	7.2	7.6	8.7	7.1	7.8
19	8.2	7.9	8.0	9.5	7.7	8.5	8.2	7.3	7.6	8.3	7.3	7.8
20	8.1	7.8	7.9	8.6	7.5	7.9	8.5	7.4	7.8	---	---	---
21	8.1	7.7	7.9	7.8	7.2	7.5	8.3	7.3	7.8	---	---	---
22	7.9	7.4	7.7	8.0	6.9	7.4	8.6	7.1	7.8	---	---	---
23	7.7	7.5	7.6	8.6	7.1	7.8	8.5	7.1	7.7	---	---	---
24	7.6	7.4	7.5	9.1	7.3	8.1	8.7	7.0	7.8	---	---	---
25	7.7	7.5	7.6	8.8	7.2	7.9	8.9	7.1	7.9	---	---	---
26	7.7	7.4	7.5	8.5	6.8	7.5	9.0	7.3	8.1	---	---	---
27	7.6	7.3	7.5	8.3	6.4	7.3	9.2	7.4	8.2	---	---	---
28	7.5	7.2	7.3	9.0	6.4	7.6	9.4	7.4	8.2	---	---	---
29	7.9	7.2	7.5	9.7	6.6	8.0	8.6	7.3	7.9	---	---	---
30	8.1	7.4	7.7	8.4	6.9	7.6	9.1	7.1	8.0	---	---	---
31	---	---	---	8.0	6.7	7.3	9.2	7.2	8.1	---	---	---
MONTH	9.3	7.2	7.9	9.7	6.4	7.9	9.4	6.4	7.8	---	---	---

01463620 ASSUNPINK CREEK NEAR CLARKSVILLE, NJ

LOCATION.--Lat 40°16'11", long 74°40'20", Mercer County, Hydrologic Unit 02040105, on left bank 200 ft upstream from bridge on Quaker Bridge Road, 1.9 south of Clarksville, 2.0 mi upstream from Shipetaukin Creek, and 7.6 mi upstream of mouth.

drainage area.--34.3 mi^2.

PERIOD OF RECORD.--Water years 1963, 1965, 1967, and 1979 to current year.

COOPERATION.--Field data and samples for laboratory analyses provided by New Jersey Department of Environmental Protection, Water Resources Division. Analyses of fecal coliform and fecal streptococci by the MPN method, and water-phase nutrients were performed by the New Jersey Department of Health, Division of Laboratories and Epidemiology.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)	COLIFORM, FECAL, EC BROTH (MPN)	STREPTOCOCCI FECAL (MPN)
OCT 1988										
21...	1055	E 8.8	136	5.9	10.0	9.1	80	E2.1	20	33
FEB 1989										
27...	1400	E104	160	6.8	2.5	13.0	95	E1.8	20	34
APR										
18...	1415	E102	120	7.4	13.5	11.8	114	3.6	<20	<2
MAY										
24...	1030	E270	118	6.5	15.5	8.7	89	4.2	50	350
JUL										
27...	1045	E 56	130	7.0	25.0	8.2	100	2.8	<20	63
AUG										
03...	1400	E 38	120	6.9	20.5	9.0	100	4.9	50	170

DATE	HARDNESS TOTAL (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
OCT 1988									
21...	44	9.1	5.1	6.6	3.1	19	21	13	0.1
FEB 1989									
27...	42	9.1	4.6	8.2	2.7	7.0	29	17	0.1
APR									
18...	40	8.8	4.4	8.0	2.4	7.0	25	15	0.1
MAY									
24...	32	7.2	3.3	5.1	2.6	12	18	10	0.2
JUL									
27...	28	6.4	2.9	3.9	2.9	13	12	9.0	0.1
AUG									
03...	30	6.7	3.2	4.0	2.8	19	11	9.4	0.2

DATE	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	PHOSPHORUS TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
OCT 1988									
21...	2.1	71	0.010	0.41	0.06	0.75	1.2	--	5.7
FEB 1989									
27...	6.8	82	0.014	1.50	0.19	0.60	2.1	0.17	4.5
APR									
18...	4.5	72	0.015	1.00	0.06	0.60	1.6	0.06	4.5
MAY									
24...	4.0	58	0.018	0.75	0.14	1.3	2.0	--	6.7
JUL									
27...	5.7	51	0.014	0.34	<0.05	0.84	1.2	0.07	8.9
AUG									
03...	6.0	55	0.031	0.42	0.12	1.8	2.2	0.54	8.9

01463620 ASSUNPINK CREEK NEAR CLARKSVILLE, NJ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SULFIDE TOTAL (MG/L AS S)	NITRO-GEN,NH4 + ORG. TOT IN BOT MAT (MG/KG AS N)	CARBON, INOR-GANIC, TOT IN BOT MAT (G/KG AS C)	CARBON, INORG + ORGANIC TOT. IN BOT MAT (GM/KG AS C)	ALUM-INUM, DIS-SOLVED (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC TOTAL IN BOT-TOM MA-TERIAL (UG/G AS AS)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE)	BORON, TOTAL RECOV-ERABLE (UG/L AS B)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CADMIUM RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CD)
OCT 1988 21...	1055	--	160	<0.1	1.0	--	--	1	--	--	--	<10
MAY 1989 24...	1030	<0.5	--	--	--	90	1	--	<10	40	<1	--

DATE	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	CHRO-MIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G)	COBALT, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CO)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	COPPER, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	LEAD, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS PB)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MANGA-NESE, RECOV. FM BOT-TOM MA-TERIAL (UG/G)
OCT 1988 21...	--	4	<50	--	1	--	1600	--	<100	--	45
MAY 1989 24...	2	--	--	3	--	1200	--	3	--	90	--

DATE	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	MERCURY RECOV. FM BOT-TOM MA-TERIAL (UG/G AS HG)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)	NICKEL, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS NI)	SELE-NIUM, TOTAL (UG/L AS SE)	SELE-NIUM, TOTAL IN BOT-TOM MA-TERIAL (UG/G)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	ZINC, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS ZN)	PHENOLS TOTAL (UG/L)	PCB, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	PCN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)
OCT 1988 21...	--	<0.01	--	<100	--	<1	--	<10	--	<1	<1.0
MAY 1989 24...	<0.10	--	3	--	<1	--	200	--	3	--	--

DATE	ALDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	CHLOR-DANE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	DDD, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	DDE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	DDT, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	DI-AZINON, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	DI-ELDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	ENDO-SULFAN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	ENDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	ETHION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	HEPTA-CHLOR, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)
OCT 1988 21...	<0.1	<1.0	0.3	0.4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
MAY 1989 24...	--	--	--	--	--	--	--	--	--	--	--

DATE	HEPTA-CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG)	LINDANE TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	MALA-THION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	METH-OXY-CHLOR, TOT. IN BOTTOM MATL. (UG/KG)	METHYL PARA-THION, TOT. IN BOTTOM MATL. (UG/KG)	METHYL TRI-THION, TOT. IN BOTTOM MATL. (UG/KG)	MIREX, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	PARA-THION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	PER-THANE IN BOT-TOM MA-TERIAL (UG/KG)	TOXA-PHENE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	TRI-THION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)
OCT 1988 21...	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.00	<10	<0.1
MAY 1989 24...	--	--	--	--	--	--	--	--	--	--	--

01464000 ASSUNPINK CREEK AT TRENTON, NJ

LOCATION.--Lat 40°13'27", long 74°44'58", Mercer County, Hydrologic Unit 02040105, on left bank 20 ft upstream from bridge on Chambers Street (Lincoln Avenue) in Trenton, and 1.5 mi upstream from mouth.

DRAINAGE AREA.--90.6 mi^2.

PERIOD OF RECORD.--August 1923 to current year.

REVISED RECORDS.--WDR NJ-82-2: Drainage area.

GAGE.--Water-stage recorder. Concrete control since July 10, 1932. Datum of gage is 24.76 ft above National Geodetic Vertical Datum of 1929 (levels from New Jersey Geological Survey bench mark).

REMARKS.--Records good except for estimatedi daily discharges, which are fair. Records include water diverted from outside the basin since February 1954 for municipal supply which returns to Assunpink Creek through Ewing-Lawrence Sewerage Authority Treatment Plant, 2.4 mi above station (records given herein). In addition there is an average inflow of about 2.0 ft^3/s from industrial use of water that originates outside the basin. Some diversion for irrigation in headwater area during summer months. Flow regulated by several flood-control reservoirs upstream of gage since mid-1970's. Several measurements of water temperature were made during the year. National Weather Service gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989, MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34	133	244	69	92	161	314	115	120	94	109	61
2	54	91	187	68	88	143	250	422	111	84	98	60
3	77	69	150	60	118	133	242	255	99	78	99	55
4	42	60	125	57	102	124	222	209	165	73	89	52
5	37	81	109	56	82	118	171	220	105	1040	82	52
6	35	79	100	75	81	223	342	751	204	945	76	52
7	34	64	91	130	78	195	346	426	498	628	87	51
8	38	56	83	102	74	168	381	260	502	569	87	50
9	34	52	79	89	67	157	300	196	660	411	82	48
10	34	50	76	105	64	157	242	722	1370	339	78	46
11	33	49	71	241	61	165	194	631	585	251	131	47
12	32	47	68	155	58	184	170	470	427	207	219	46
13	32	106	64	288	56	175	155	350	321	316	168	46
14	32	77	63	251	131	161	146	281	220	150	155	107
15	32	58	64	189	184	152	233	232	187	101	144	95
16	31	54	60	153	274	140	414	546	215	247	122	99
17	32	300	58	136	177	127	260	609	174	e549	114	125
18	32	174	55	121	135	190	215	508	150	e350	108	71
19	31	115	56	105	114	199	203	423	137	e284	102	694
20	32	615	56	89	109	137	165	348	126	509	93	1150
21	164	519	69	e79	599	233	145	271	195	450	90	e779
22	320	296	73	e73	620	173	135	201	265	312	83	e437
23	58	196	85	e72	422	164	121	257	230	266	117	e251
24	46	149	112	70	340	427	113	495	192	223	88	e186
25	40	119	120	67	269	481	105	292	145	177	78	e171
26	36	100	93	68	237	332	108	217	130	153	72	e308
27	34	128	83	72	220	258	108	210	118	132	68	e261
28	31	703	101	68	187	215	105	178	108	125	66	e173
29	29	414	84	66	---	190	104	160	147	105	67	e162
30	29	318	74	124	---	195	116	144	104	96	70	e135
31	28	---	70	110	---	391	---	131	---	149	64	---
MEAN	50.1	176	91.1	110	180	202	204	340	267	304	100	196
MAX	320	703	244	288	620	481	414	751	1370	1040	219	1150
MIN	28	47	55	56	56	118	104	115	99	73	64	46
(†)	12.4	14.9	13.9	13.6	16.0	17.7	18.3	22.7	21.2	18.9	14.8	16.9

STATISTICS OF MONTHLY FLOW DATA FOR PERIOD OF RECORD, BY WATER YEAR (WY)

MEAN	75.8	114	142	159	186	204	178	130	95.0	99.9	88.3	90.0
MAX	257	331	386	498	395	426	494	340	267	545	355	327
(WY)	1928	1973	1984	1979	1939	1936	1983	1989	1989	1975	1971	1938
MIN	19.1	27.6	42.1	44.2	52.0	76.7	65.2	40.0	25.9	17.2	17.3	15.8
(WY)	1931	1932	1944	1981	1934	1985	1963	1941	1942	1955	1966	1943

SUMMARY STATISTICS	FOR 1989 WATER YEAR		FOR PERIOD OF RECORD	
AVERAGE FLOW	185		130	
(†)	16.8		---	
HIGHEST ANNUAL MEAN			233	1984
LOWEST ANNUAL MEAN			69.2	1931
HIGHEST DAILY MEAN	1370	Jun 10	4050	Jul 21 1975
LOWEST DAILY MEAN	28	Oct 31	4.0	Jul 21 1929
INSTANTANEOUS PEAK FLOW	2500	Sep 21	5450	Jul 21 1975
INSTANTANEOUS PEAK STAGE	10.00	Sep 21	14.61a	Jul 21 1975
INSTANTANEOUS LOW FLOW	10	Oct 31	1.0	Aug 21 1931
10 PERCENTILE	413		269	
50 PERCENTILE	127		86	
95 PERCENTILE	35		25	

a From high-water mark in gage house
e Estimated
† Inflow from outside basin, equivalent in cubic feet per second, 2.4 mi upstream of station through plant of Ewing-Lawrence Sewerage Authority.

01464500 CROSSWICKS CREEK AT EXTONVILLE, NJ

LOCATION.--Lat 40°08'15", long 74°36'02", Mercer County, Hydrologic Unit 02040201, on right bank upstream from highway bridge in Extonville, 0.5 mi upstream from Pleasant Run, and 0.7 mi downstream from Mercer-Monmouth County line.

DRAINAGE AREA.--81.5 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1940 to October 1951, October 1952 to current year.

REVISED RECORDS.--WDR NJ-79-2: 1971(M). WDR NJ-82-2: Drainage area.

GAGE.--Water-stage recorder, crest-stage gage, and concrete control. Datum of gage is 24.94 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good below 300 ft^3/s, and fair above. Flow regulated occasionally by lakes above station. Several measurements of water temperature, other than those published, were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989, MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26	60	146	66	86	113	200	110	91	72	96	52
2	27	183	119	66	76	101	160	188	119	67	88	50
3	31	93	104	66	74	94	133	272	110	62	85	47
4	35	66	94	60	89	91	129	168	94	58	81	44
5	32	66	87	58	82	90	125	136	85	e1200	74	42
6	30	74	85	60	76	129	177	270	169	e3350	68	44
7	29	65	82	62	77	183	196	373	198	848	73	43
8	37	58	80	71	72	136	273	239	220	365	93	44
9	44	49	78	128	66	113	276	160	172	193	73	42
10	34	52	74	100	62	114	181	247	302	150	63	42
11	32	51	73	86	58	130	144	647	287	97	81	42
12	29	49	67	89	57	135	121	620	155	55	169	45
13	28	48	67	142	55	125	110	330	129	244	239	44
14	28	77	63	110	65	114	103	212	120	657	229	45
15	28	65	66	137	100	108	101	163	111	322	154	94
16	29	55	67	183	136	103	249	e510	265	207	149	71
17	34	80	71	123	121	95	219	e1090	399	715	121	146
18	30	154	71	101	95	90	154	e570	477	517	91	116
19	29	90	65	92	86	160	139	286	224	232	85	209
20	29	143	61	84	78	126	136	178	136	245	88	492
21	33	297	66	76	167	140	117	147	169	899	79	514
22	187	176	83	66	463	156	107	126	269	434	72	433
23	144	117	76	67	422	121	98	124	173	218	76	218
24	71	95	88	67	205	139	92	271	246	157	71	122
25	59	84	108	67	146	359	89	256	157	129	65	116
26	50	76	93	66	127	293	89	167	130	113	58	217
27	45	75	78	73	130	165	87	176	109	100	54	307
28	39	339	81	68	127	140	84	188	93	108	53	202
29	40	466	93	65	---	124	80	130	90	94	53	153
30	37	194	80	72	---	115	113	106	80	83	66	125
31	35	---	70	104	---	160	---	97	---	90	61	---
MEAN	43.9	117	81.8	86.3	121	137	143	276	179	390	93.8	139
MAX	187	466	146	183	463	359	276	1090	477	3350	239	514
MIN	26	48	61	58	55	90	80	97	80	55	53	42
IN.	.62	1.60	1.16	1.22	1.55	1.95	1.95	3.91	2.46	5.51	1.33	1.90

STATISTICS OF MONTHLY FLOW DATA FOR PERIOD OF RECORD, BY WATER YEAR (WY)

MEAN	87.5	132	160	168	183	197	175	135	99.0	106	91.8	88.7
MAX	207	406	355	452	416	369	388	319	251	390	299	284
(WY)	1972	1973	1973	1978	1979	1958	1983	1984	1968	1989	1971	1971
MIN	32.9	36.7	46.2	62.1	86.6	86.1	68.3	60.8	39.8	25.8	25.4	31.7
(WY)	1966	1966	1966	1981	1954	1985	1985	1955	1965	1955	1966	1941

SUMMARY STATISTICS	FOR 1989 WATER YEAR		FOR PERIOD OF RECORD	
AVERAGE FLOW	151		135	
HIGHEST ANNUAL MEAN			225	1978
LOWEST ANNUAL MEAN			76.9	1966
HIGHEST DAILY MEAN	3350	Jul 6	3930	Aug 28 1971
LOWEST DAILY MEAN	26	Oct 1	16	Aug 30 1966
INSTANTANEOUS PEAK FLOW	4070	Jul 6	4860	Sep 1 1978
INSTANTANEOUS PEAK STAGE	13.22	Jul 6	14.18	Sep 1 1978
INSTANTANEOUS LOW FLOW	26	Oct 1	13.1a	Feb 14 1942
ANNUAL RUNOFF (INCHES)	25.16		22.49	
10 PERCENTILE	275		252	
50 PERCENTILE	99		94	
95 PERCENTILE	36		35	

a Result of freezeup
e Estimated

01464500 CROSSWICKS CREEK AT EXTONVILLE, NJ--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1965 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: October 1966 to June 1970.
SUSPENDED-SEDIMENT DISCHARGE: February 1965 to June 1970.

COOPERATION.--Analyses of fecal coliform and fecal streptococci by the MPN method, and water-phase nutrients were performed by the New Jersey Department of Health, Division of Laboratories and Epidemiology.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)	COLIFORM, FECAL, EC BROTH (MPN)	STREPTOCOCCI FECAL (MPN)
OCT 1988										
04...	1030	35	242	6.8	16.5	6.9	71	5.7	330	1700
JAN 1989										
23...	1300	65	188	7.5	1.0	13.1	92	8.4	17	11
MAR										
30...	1300	111	157	7.4	12.5	8.8	83	4.5	20	460
JUN										
01...	1200	91	170	7.2	21.0	7.1	80	2.4	1300	2400
JUL										
17...	1330	785	114	7.1	19.0	6.4	70	3.9	9200	>24000
AUG										
15...	1200	150	130	7.3	22.5	7.5	87	1.1	800	1300

DATE	HARDNESS TOTAL (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
OCT 1988									
04...	69	22	3.4	16	4.6	34	29	24	0.3
JAN 1989									
23...	56	17	3.2	10	3.1	20	34	17	0.2
MAR									
30...	49	15	2.9	8.0	2.6	15	31	13	0.2
JUN									
01...	50	15	3.1	7.5	2.4	18	25	14	0.2
JUL									
17...	34	10	2.2	4.6	3.5	15	14	9.1	0.2
AUG									
15...	39	12	2.2	6.0	2.6	15	18	12	0.2

DATE	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	PHOSPHORUS TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
OCT 1988									
04...	8.7	128	0.079	1.85	0.21	0.98	2.8	0.11	4.5
JAN 1989									
23...	11	107	0.016	0.93	0.63	1.1	2.0	0.19	4.1
MAR									
30...	9.1	91	0.027	0.97	0.24	0.69	1.7	0.27	5.5
JUN									
01...	10	88	0.067	1.27	0.18	0.80	2.1	0.23	6.3
JUL									
17...	7.2	60	0.050	0.66	0.33	1.0	1.7	0.34	9.2
AUG									
15...	9.0	71	0.031	0.74	0.10	0.65	1.4	0.27	11

01464500 CROSSWICKS CREEK AT EXTONVILLE, NJ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SULFIDE TOTAL (MG/L AS S)	NITROGEN, NH4 + ORG. TOT IN BOT MAT (MG/KG AS N)	CARBON, INORGANIC, TOT IN BOT MAT (G/KG AS C)	CARBON, INORG + ORGANIC TOT. IN BOT MAT (GM/KG AS C)	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC TOTAL IN BOTTOM MATERIAL (UG/G AS AS)	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE)	BORON, TOTAL RECOVERABLE (UG/L AS B)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CADMIUM RECOV. FM BOTTOM MATERIAL (UG/G AS CD)
OCT 1988												
04...	1030	<0.5	--	--	--	10	1	--	<10	60	<1	--
04...	1030	--	340	<0.1	2.2	--	--	23	--	--	--	<1

DATE	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	CHROMIUM, RECOV. FM BOTTOM MATERIAL (UG/G)	COBALT, RECOV. FM BOTTOM MATERIAL (UG/G AS CO)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	COPPER, RECOV. FM BOTTOM MATERIAL (UG/G AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, RECOV. FM BOTTOM MATERIAL (UG/G AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	LEAD, RECOV. FM BOTTOM MATERIAL (UG/G AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, RECOV. FM BOTTOM MATERIAL (UG/G)
OCT 1988											
04...	<1	--	--	2	--	910	--	<5	--	90	--
04...	--	20	250	--	6	--	23000	--	<10	--	80

DATE	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	MERCURY RECOV. FM BOTTOM MATERIAL (UG/G AS HG)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)	NICKEL, RECOV. FM BOTTOM MATERIAL (UG/G AS NI)	SELENIUM, TOTAL (UG/L AS SE)	SELENIUM, TOTAL IN BOTTOM MATERIAL (UG/G)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	ZINC, RECOV. FM BOTTOM MATERIAL (UG/G AS ZN)	PHENOLS TOTAL (UG/L)	PCB, TOTAL IN BOTTOM MATERIAL (UG/KG)	PCN, TOTAL IN BOTTOM MATERIAL (UG/KG)
OCT 1988											
04...	0.20	--	3	--	<1	--	10	--	5	--	--
04...	--	0.03	--	10	--	<1	--	120	--	<1	<1.0

DATE	ALDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG)	CHLORDANE, TOTAL IN BOTTOM MATERIAL (UG/KG)	DDD, TOTAL IN BOTTOM MATERIAL (UG/KG)	DDE, TOTAL IN BOTTOM MATERIAL (UG/KG)	DDT, TOTAL IN BOTTOM MATERIAL (UG/KG)	DIAZINON, TOTAL IN BOTTOM MATERIAL (UG/KG)	DIELDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG)	ENDOSULFAN, TOTAL IN BOTTOM MATERIAL (UG/KG)	ENDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG)	ETHION, TOTAL IN BOTTOM MATERIAL (UG/KG)	HEPTACHLOR, TOTAL IN BOTTOM MATERIAL (UG/KG)
OCT 1988											
04...	--	--	--	--	--	--	--	--	--	--	--
04...	<0.1	2.0	<1.0	1.0	0.1	0.1	0.3	<0.1	<0.1	<0.1	<0.1

DATE	HEPTACHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG)	LINDANE TOTAL IN BOTTOM MATERIAL (UG/KG)	MALATHION, TOTAL IN BOTTOM MATERIAL (UG/KG)	METHOXYCHLOR, TOT. IN BOTTOM MATL. (UG/KG)	METHYL PARATHION, TOT. IN BOTTOM MATL. (UG/KG)	METHYL TRITHION, TOT. IN BOTTOM MATL. (UG/KG)	MIREX, TOTAL IN BOTTOM MATERIAL (UG/KG)	PARATHION, TOTAL IN BOTTOM MATERIAL (UG/KG)	PERTHANE IN BOTTOM MATERIAL (UG/KG)	TOXAPHENE, TOTAL IN BOTTOM MATERIAL (UG/KG)	TRITHION, TOTAL IN BOTTOM MATERIAL (UG/KG)
OCT 1988											
04...	--	--	--	--	--	--	--	--	--	--	--
04...	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.00	<10	<0.1

01464515 DOCTORS CREEK AT ALLENTOWN, NJ

LOCATION.--Lat 40°10'37", long 74°35'57", Monmouth County, Hydrologic Unit 02040201, at bridge on Breza Road in Allentown, and 0.8 mi downstream from Conines Millpond dam.

DRAINAGE AREA.--17.4 mi^2.

PERIOD OF RECORD.--Water years 1976 to current year.

COOPERATION.--Analyses of fecal coliform and fecal streptococci by the MPN method, and water-phase nutrients were performed by the New Jersey Department of Health, Division of Laboratories and Epidemiology.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, EC BROTH (MPN)	STREP-TOCOCCI FECAL (MPN)
OCT 1988										
06...	1215	2.6E	201	6.8	14.5	6.3	62	9.6	790	220
JAN 1989										
26...	1330	13 E	183	7.5	3.5	12.8	97	6.0	350	49
MAR										
28...	1130	62 E	185	7.3	15.0	9.7	97	--	20	20
JUN										
06...	1215	30 E	150	7.8	22.5	8.2	96	2.7	3500	1300
JUL										
17...	1045	165 E	112	7.2	19.0	8.3	90	3.3	9200	>24000
AUG										
22...	1200	26 E	166	7.2	23.5	7.6	90	2.7	490	230

DATE	HARD-NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
OCT 1988									
06...	63	16	5.7	9.6	4.5	27	28	19	0.3
JAN 1989									
26...	53	13	5.1	7.9	3.8	16	27	20	0.2
MAR									
28...	50	12	4.8	10	3.4	14	27	22	0.2
JUN									
06...	51	12	5.0	6.3	2.8	21	19	14	0.2
JUL									
17...	37	8.6	3.7	3.8	4.1	--	15	9.5	0.2
AUG									
22...	54	13	5.2	6.5	3.5	26	15	15	0.2

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
OCT 1988									
06...	7.8	107	0.110	1.17	1.03	1.6	2.8	0.40	5.2
JAN 1989									
26...	8.7	95	0.017	1.24	0.42	0.83	2.1	0.14	2.7
MAR									
28...	6.0	94	0.019	1.25	0.54	0.99	2.2	0.18	5.7
JUN									
06...	6.3	78	0.024	0.88	0.21	0.78	1.7	0.12	4.6
JUL									
17...	7.0	--	0.042	0.84	0.14	0.76	1.6	0.30	8.7
AUG									
22...	9.3	83	0.015	0.97	0.09	0.49	1.5	0.15	3.7

01464515 DOCTORS CREEK AT ALLENTOWN, NJ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SULFIDE TOTAL (MG/L AS S)	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE)	BORON, TOTAL RECOVERABLE (UG/L AS B)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)
OCT 1988 06...	1215	<0.5	30	1	<10	140	<1	2	4

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)	SELENIUM, TOTAL (UG/L AS SE)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	PHENOLS TOTAL (UG/L)
OCT 1988 06...	840	10	100	0.10	1	<1	20	1

01464598 DELAWARE RIVER AT BURLINGTON, NJ

LOCATION.--Lat 40°04'42", long 74°52'28", Burlington County, Hydrologic Unit 02040201, on left bank at the intake canal of the Public Service Electric and Gas Company, 0.3 mi downstream from Burlington-Bristol Bridge, 1.4 mi downstream from Assiscunk Creek, and at river mile 117.54.

DRAINAGE AREA.--7,160 mi^2.

PERIOD OF RECORD.--July 1964 to current year. March 1921 to July 1926, January 1931 to November 1939, August 1951 to June 1954, July 1957 to June 1964, in files of Philadelphia District Corps of Engineers.

REVISED RECORDS.--WDR NJ-76-1: 1973(m).

GAGE.--Water-stage recorder. Datum of gage is -12.90 ft below National Geodetic Vertical Datum of 1929. Prior to May 20, 1971, water-stage recorder at site 0.7 mi upstream at same datum. Gage-height record converted to elevation above or below (-) National Geodetic Vertical Datum of 1929 for publication.

REMARKS.--No gage-height or doubtful record: Oct. 8, 18, 21, 28, Nov. 4-6, 19-20, 27-28, Dec. 18-31, Jan. 12-31, Apr. 26 to May 2, and June 1-4. Summaries for months with short periods of no gage-height record have been estimated with little or no loss of accuracy unless otherwise noted. Some periods cannot be estimated and are noted by dash (--) lines.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 8.74 ft, Oct. 25, 1980; minimum, -6.60 ft, Feb. 26, 1967.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum elevation known, 10.8 ft, Aug. 20, 1955, from high-water mark at site 1.4 mi upstream; minimum, -9.1 ft, Dec. 31, 1962, at present site.

EXTREMES FOR CURRENT YEAR.--Maximum elevation recorded, 7.91 ft, May 7; minimum recorded, -4.65 ft, Feb. 10.

Summaries of tide elevations during current year are as follows:

TIDE ELEVATIONS, IN FEET, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

		OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
Maximum	Elevation	6.04	6.21	5.58	e6.9	5.79	5.82	6.07	7.91	6.49	6.84	6.29	7.34
high tide	Date	25	20	14	8	3	11	9	7	24	18	17	20
Minimum	Elevation	-3.64	-3.59	-4.30	e-4.6	-4.65	-3.60	-3.43	e-3.3	-2.96	-2.85	-2.82	-3.79
low tide	Date	13	3	4	21	10	19	11	28	29	26	22	24
Mean high tide		4.57	--	--	--	4.37	4.66	4.99	--	5.65	5.52	5.37	5.18
Mean water level		1.17	--	--	--	.98	1.29	1.41	--	2.00	1.77	1.64	1.55
Mean low tide		-2.51	-2.4	--	--	-2.65	-2.27	-2.33	--	-2.96	-2.15	-2.21	-2.16

e Estimated

01465850 SOUTH BRANCH RANCOCAS CREEK AT VINCENTOWN, NJ

LOCATION.--Lat 39°56'22", long 74°45'50", Burlington County, Hydrologic Unit 02040202, at bridge on Lumberton-Vincentown Road at Vincentown, 2.9 mi southeast of Lumberton, and 3.1 mi upstream from Southwest Branch.

DRAINAGE AREA.--64.5 mi^2.

PERIOD OF RECORD.--Water years 1925, 1959-62, 1975 to current year.

COOPERATION.--Analyses of fecal coliform and fecal streptococci by the MPN method, and water-phase nutrients were performed by the New Jersey Department of Health, Division of Laboratories and Epidemiology.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)	COLIFORM, FECAL, EC BROTH (MPN)	STREPTOCOCCI FECAL (MPN)
OCT 1988										
25...	1115	72E	106	5.4	10.5	7.9	71	1.6	170	330
JAN 1989										
19...	1100	84E	163	5.8	4.5	11.9	92	2.4	240	11
MAR										
20...	1100	83E	108	6.3	9.0	11.0	94	1.0	170	5
MAY										
23...	1100	82E	78	6.1	19.0	10.1	110	2.6	1600	49
JUL										
20...	0900	140E	66	5.5	22.0	6.4	73	--	70	1600
AUG										
17...	1415	105E	93	5.9	24.0	6.3	75	1.3	790	1700

DATE	HARDNESS TOTAL (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
OCT 1988									
25...	24	6.1	2.1	5.1	2.7	2.0	27	9.2	0.1
JAN 1989									
19...	28	7.4	2.2	5.2	1.8	3.0	24	9.3	0.1
MAR									
20...	31	8.2	2.6	6.6	1.6	2.0	24	10	0.1
MAY									
23...	21	6.0	1.4	4.1	1.4	4.0	14	8.0	0.1
JUL									
20...	--	--	--	--	--	4.0	11	9.3	0.1
AUG									
17...	17	4.8	1.3	4.3	1.3	4.0	10	8.4	0.1

DATE	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	PHOSPHORUS TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
OCT 1988									
25...	5.5	59	0.010	0.26	<0.05	0.68	0.94	0.09	6.8
JAN 1989									
19...	6.4	58	0.007	0.66	<0.05	0.53	1.2	0.06	8.6
MAR									
20...	4.7	59	0.017	0.65	0.11	0.53	1.2	0.07	8.3
MAY									
23...	4.5	42	0.016	0.48	0.19	1.0	1.5	0.18	18
JUL									
20...	--	--	0.008	0.39	0.06	0.79	1.2	0.13	--
AUG									
17...	6.8	39	0.014	0.27	0.09	0.86	1.1	0.13	19

01465850 SOUTH BRANCH RANCOCAS CREEK AT VINCENTOWN, NJ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	NITROGEN,NH4 + ORG. TOT IN BOT MAT (MG/KG AS N)	CARBON, INORGANIC, TOT IN BOT MAT (G/KG AS C)	CARBON, INORG + ORGANIC TOT. IN BOT MAT (GM/KG AS C)	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC TOTAL IN BOTTOM MATERIAL (UG/G AS AS)	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE)	BORON, TOTAL RECOVERABLE (UG/L AS B)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CADMIUM RECOV. FM BOTTOM MATERIAL (UG/G AS CD)
OCT 1988 25...	1115	380	<0.1	3.5	--	--	2	--	--	--	<10
MAY 1989 23...	1100	--	--	--	270	1	--	<10	30	<1	--

DATE	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	CHROMIUM, RECOV. FM BOTTOM MATERIAL (UG/G)	COBALT, RECOV. FM BOTTOM MATERIAL (UG/G AS CO)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	COPPER, RECOV. FM BOTTOM MATERIAL (UG/G AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, RECOV. FM BOTTOM MATERIAL (UG/G AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	LEAD, RECOV. FM BOTTOM MATERIAL (UG/G AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, RECOV. FM BOTTOM MATERIAL (UG/G)
OCT 1988 25...	--	7	<50	--	2	--	5300	--	<10	--	<10
MAY 1989 23...	2	--	--	3	--	2100	--	6	--	40	--

DATE	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	MERCURY RECOV. FM BOTTOM MATERIAL (UG/G AS HG)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)	NICKEL, RECOV. FM BOTTOM MATERIAL (UG/G AS NI)	SELENIUM, TOTAL (UG/L AS SE)	SELENIUM, TOTAL IN BOTTOM MATERIAL (UG/G)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	ZINC, RECOV. FM BOTTOM MATERIAL (UG/G AS ZN)	PHENOLS TOTAL (UG/L)	PCB, TOTAL IN BOTTOM MATERIAL (UG/KG)	PCN, TOTAL IN BOTTOM MATERIAL (UG/KG)
OCT 1988 25...	--	0.02	--	<100	--	<1	--	20	--	27	<1.0
MAY 1989 23...	<0.10	--	5	--	<1	--	30	--	4	--	--

DATE	ALDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG)	CHLORDANE, TOTAL IN BOTTOM MATERIAL (UG/KG)	DDD, TOTAL IN BOTTOM MATERIAL (UG/KG)	DDE, TOTAL IN BOTTOM MATERIAL (UG/KG)	DDT, TOTAL IN BOTTOM MATERIAL (UG/KG)	DIAZINON, TOTAL IN BOTTOM MATERIAL (UG/KG)	DIELDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG)	ENDOSULFAN, TOTAL IN BOTTOM MATERIAL (UG/KG)	ENDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG)	ETHION, TOTAL IN BOTTOM MATERIAL (UG/KG)	HEPTACHLOR, TOTAL IN BOTTOM MATERIAL (UG/KG)
OCT 1988 25...	<0.1	7.0	8.0	<10	<10	0.3	0.5	<0.1	<0.1	<0.1	<0.1
MAY 1989 23...	--	--	--	--	--	--	--	--	--	--	--

DATE	HEPTACHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG)	LINDANE TOTAL IN BOTTOM MATERIAL (UG/KG)	MALATHION, TOTAL IN BOTTOM MATERIAL (UG/KG)	METHOXYCHLOR, TOT. IN BOTTOM MATL. (UG/KG)	METHYL PARATHION, TOT. IN BOTTOM MATL. (UG/KG)	METHYL TRITHION, TOT. IN BOTTOM MATL. (UG/KG)	MIREX, TOTAL IN BOTTOM MATERIAL (UG/KG)	PARATHION, TOTAL IN BOTTOM MATERIAL (UG/KG)	PERTHANE IN BOTTOM MATERIAL (UG/KG)	TOXAPHENE, TOTAL IN BOTTOM MATERIAL (UG/KG)	TRITHION, TOTAL IN BOTTOM MATERIAL (UG/KG)
OCT 1988 25...	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.00	<10	<0.1
MAY 1989 23...	--	--	--	--	--	--	--	--	--	--	--

01465970 NORTH BRANCH RANCOCAS CREEK AT BROWNS MILLS, NJ

LOCATION.--Lat 39°58'04", long 74°34'48", Burlington County, Hydrologic Unit 02040202, at bridge on Lakehurst Road at outflow of Mirror Lake in Browns Mills, 1.5 mi north of Browns Mills Junction, and 2.0 mi northwest of outflow of Country Lake.

DRAINAGE AREA.--27.4 mi^2.

PERIOD OF RECORD.--Water years 1975 to current year.

COOPERATION.--Analyses of fecal coliform and fecal streptococci by the MPN method, and water-phase nutrients were performed by the New Jersey Department of Health, Division of Laboratories and Epidemiology.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)	COLIFORM, FECAL, EC BROTH (MPN)	STREPTOCOCCI FECAL (MPN)
OCT 1988										
12...	1130	17.5E	53	6.3	11.5	9.4	86	1.6	350	9
JAN 1989										
25...	1100	8.1E	71	4.7	4.5	12.9	99	0.9	<2	<2
MAR										
27...	1100	76 E	67	4.1	10.0	11.6	102	0.9	<2	5
MAY										
31...	1130	64 E	52	5.2	21.0	8.0	90	1.4	5	13
JUL										
26...	1000	48 E	39	4.7	24.5	7.7	92	1.6	79	350
AUG										
22...	1230	11 E	70	5.7	24.0	7.9	94	0.7	2	29

DATE	HARDNESS TOTAL (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
OCT 1988									
12...	12	2.7	1.3	3.6	1.3	3.0	10	6.1	<0.1
JAN 1989									
25...	15	3.5	1.6	3.9	1.2	1.0	20	5.8	0.1
MAR									
27...	13	2.9	1.3	3.9	1.0	<1.0	17	6.1	0.1
MAY									
31...	8	1.9	0.83	3.2	0.7	<1.0	9.0	5.3	0.1
JUL									
26...	7	1.8	0.54	2.5	0.6	2.0	5.0	5.0	<0.1
AUG									
22...	9	2.2	0.94	3.1	0.8	<1.0	6.0	6.0	<0.1

DATE	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	PHOSPHOROUS TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
OCT 1988									
12...	5.6	32	0.007	0.05	0.14	0.73	0.78	0.05	5.1
JAN 1989									
25...	5.9	43	0.005	0.14	0.07	0.27	0.41	0.02	3.6
MAR									
27...	3.8	--	<0.003	0.14	<0.05	0.22	0.36	<0.02	4.5
MAY									
31...	3.1	--	0.004	0.11	0.14	0.70	0.81	0.03	9.1
JUL									
26...	3.7	20	0.014	0.10	<0.05	0.58	0.68	0.05	14
AUG									
22...	4.2	--	<0.003	0.08	<0.05	0.52	0.60	0.06	10

01465970 NORTH BRANCH RANCOCAS CREEK AT BROWNS MILLS, NJ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SULFIDE TOTAL (MG/L AS S)	NITRO-GEN,NH4 + ORG. TOT IN BOT MAT (MG/KG AS N)	CARBON, INOR-GANIC, TOT IN BOT MAT (G/KG AS C)	CARBON, INORG + ORGANIC TOT. IN BOT MAT (GM/KG AS C)	ALUM-INUM, DIS-SOLVED (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC TOTAL IN BOT-TOM MA-TERIAL (UG/G AS AS)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE)	BORON, TOTAL RECOV-ERABLE (UG/L AS B)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CADMIUM RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CD)
OCT 1988												
12...	1130	<0.5	--	--	--	20	1	--	<10	<10	<1	--
12...	1130	--	170	0.1	2.6	--	--	2	--	--	--	<10
MAY 1989												
31...	1130	<0.5	--	--	--	190	<1	--	<10	<10	<1	--

DATE	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	CHRO-MIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G)	COBALT, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CO)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	COPPER, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	LEAD, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS PB)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MANGA-NESE, RECOV. FM BOT-TOM MA-TERIAL (UG/G)
OCT 1988											
12...	2	--	--	9	--	2100	--	15	--	60	--
12...	--	2	<50	--	3	--	840	--	20	--	4
MAY 1989											
31...	2	--	--	10	--	2000	--	18	--	50	--

DATE	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	MERCURY RECOV. FM BOT-TOM MA-TERIAL (UG/G AS HG)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)	NICKEL, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS NI)	SELE-NIUM, TOTAL (UG/L AS SE)	SELE-NIUM, TOTAL IN BOT-TOM MA-TERIAL (UG/G)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	ZINC, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS ZN)	PHENOLS TOTAL (UG/L)	PCB, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	PCN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)
OCT 1988											
12...	<0.10	--	<1	--	<1	--	10	--	3	--	--
12...	--	0.01	--	<100	--	<1	--	<10	--	12	<1.0
MAY 1989											
31...	<0.10	--	3	--	<1	--	30	--	2	--	--

DATE	ALDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	CHLOR-DANE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	DDD, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	DDE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	DDT, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	DI-AZINON, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	DI-ELDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	ENDO-SULFAN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	ENDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	ETHION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	HEPTA-CHLOR, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)
OCT 1988											
12...	--	--	--	--	--	--	--	--	--	--	--
12...	<0.1	3.0	8.0	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
MAY 1989											
31...	--	--	--	--	--	--	--	--	--	--	--

DATE	HEPTA-CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG)	LINDANE TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	MALA-THION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	METH-OXY-CHLOR, TOT. IN BOTTOM MATL. (UG/KG)	METHYL PARA-THION, TOT. IN BOTTOM MATL. (UG/KG)	METHYL TRI-THION, TOT. IN BOTTOM MATL. (UG/KG)	MIREX, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	PARA-THION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	PER-THANE IN BOT-TOM MA-TERIAL (UG/KG)	TOXA-PHENE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	TRI-THION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)
OCT 1988											
12...	--	--	--	--	--	--	--	--	--	--	--
12...	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.00	<10	<0.1
MAY 1989											
31...	--	--	--	--	--	--	--	--	--	--	--

01466500 MCDONALDS BRANCH IN LEBANON STATE FOREST, NJ
(Hydrologic bench-mark station)

LOCATION.--Lat 39°53'05", long 74°30'20", Burlington County, Hydrologic Unit 02040202, on right bank in Lebanon State Forest, 25 ft upstream from Butterworth Road Bridge, 3.4 mi upstream from confluence with Cooper Branch, and 7.0 mi southeast of Browns Mills.

DRAINAGE AREA.--2.35 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1953 to current year. Prior to October 1962, published as "McDonald Branch in Lebanon State Forest".

REVISED RECORDS.--WDR NJ-82-2: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 117.73 ft above National Geodetic Vertical Datum of 1929 (levels from New Jersey Geological Survey bench mark).

REMARKS.--Records good above 1.0 ft^3/s and fair below. Gage-height record is collected above concrete control and discharge record, which includes leakage around control, is at site 785 ft downstream. Several measurements of water temperature, other than those published, were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989, MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.84	1.0	1.1	1.0	1.0	e1.3	1.8	2.0	2.5	2.0	2.4	1.5
2	.85	1.0	1.1	1.0	1.0	e1.2	1.7	3.4	2.4	1.9	2.2	1.5
3	.93	.95	1.1	1.0	1.0	1.3	1.7	4.6	2.4	1.9	2.2	1.4
4	.91	.93	1.1	.99	1.0	1.3	1.7	3.4	2.3	1.8	2.1	1.4
5	.88	.94	1.1	.97	1.0	1.3	1.6	2.8	2.3	4.9	2.0	1.4
6	.85	.94	1.1	.98	1.0	1.5	1.8	3.5	2.7	5.3	1.9	1.4
7	.84	.92	1.1	.99	1.0	1.4	1.7	3.9	3.0	3.9	1.9	1.4
8	.89	.91	1.1	1.0	.99	1.3	2.4	3.2	2.7	3.1	1.9	1.4
9	.87	.90	1.1	1.0	.99	1.3	2.8	2.7	2.7	2.7	1.8	1.4
10	.85	.90	1.0	1.0	.99	1.3	2.4	5.0	2.7	2.4	1.8	1.4
11	.84	.91	1.0	.99	.99	1.3	2.0	9.3	2.4	2.3	2.5	1.4
12	.83	.90	1.0	1.0	.99	1.3	1.8	5.8	2.2	2.2	4.4	1.4
13	.83	.92	1.0	1.0	.99	1.3	1.7	4.2	2.2	3.0	6.1	1.4
14	.84	.91	1.0	1.0	1.0	1.4	1.7	3.6	2.2	3.3	4.5	1.4
15	.83	.90	1.0	1.1	1.0	1.4	1.8	3.3	2.3	2.7	3.5	1.7
16	.83	.90	1.0	1.1	1.1	1.4	2.2	3.8	2.8	2.9	3.0	1.7
17	.82	1.0	1.0	1.0	1.0	1.4	2.0	4.7	2.6	4.9	2.6	2.1
18	.83	.99	1.0	1.0	1.0	1.4	2.1	4.8	2.7	4.3	2.4	1.8
19	.82	.94	1.0	1.0	1.0	1.4	2.1	4.0	2.4	3.0	2.3	8.4
20	.82	1.1	1.0	1.0	1.0	1.4	1.9	3.4	2.2	3.4	2.2	13
21	.91	1.1	1.0	1.0	e1.3	1.5	1.8	3.2	2.1	5.8	2.1	5.7
22	1.1	1.0	1.0	1.0	e1.7	1.5	1.7	2.9	2.6	4.6	2.0	4.0
23	.95	1.0	1.0	1.0	e1.7	1.4	1.7	3.0	3.3	3.4	1.9	3.3
24	.91	1.0	1.1	1.0	e1.5	1.7	1.7	3.6	3.9	2.8	1.8	2.8
25	.89	.99	1.1	1.0	e1.3	1.9	1.7	3.4	3.5	2.4	1.7	2.6
26	.88	.99	1.0	1.0	e1.3	2.4	1.6	3.4	2.8	2.3	1.6	4.7
27	.87	.99	1.0	1.0	e1.3	2.1	1.6	3.2	2.5	2.2	1.6	5.3
28	.86	1.5	1.0	1.0	e1.4	1.8	1.6	2.9	2.3	3.3	1.6	3.7
29	.87	1.2	1.0	1.0	---	1.6	1.6	2.7	2.2	3.2	1.6	3.1
30	.87	1.2	1.0	1.0	---	1.6	2.1	2.6	2.1	2.7	1.6	2.8
31	.86	---	1.0	1.0	---	1.8	---	2.5	---	2.5	1.6	---
MEAN	.87	.99	1.04	1.00	1.13	1.49	1.87	3.70	2.57	3.13	2.35	2.88
MAX	1.1	1.5	1.1	1.1	1.7	2.4	2.8	9.3	3.9	5.8	6.1	13
MIN	.82	.90	1.0	.97	.99	1.2	1.6	2.0	2.1	1.8	1.6	1.4
IN.	.43	.47	.51	.49	.50	.73	.89	1.82	1.22	1.54	1.15	1.37

STATISTICS OF MONTHLY FLOW DATA FOR PERIOD OF RECORD, BY WATER YEAR (WY)

MEAN	1.60	1.80	2.13	2.35	2.50	2.92	2.99	2.71	2.29	1.95	1.87	1.73
MAX	4.45	4.82	5.75	4.78	5.69	5.67	5.74	5.65	5.35	4.15	5.65	4.31
(WY)	1959	1973	1973	1973	1973	1979	1984	1958	1979	1958	1958	1958
MIN	.87	.95	1.00	.98	1.13	1.25	1.24	1.24	1.19	1.00	.91	.89
(WY)	1989	1986	1966	1981	1977	1966	1985	1985	1985	1977	1985	1988

SUMMARY STATISTICS	FOR 1989 WATER YEAR		FOR PERIOD OF RECORD	
AVERAGE FLOW	1.92		2.23	
HIGHEST ANNUAL MEAN			3.85	1973
LOWEST ANNUAL MEAN			1.19	1966
HIGHEST DAILY MEAN	13	Sep 20	20	Feb 28 1958
LOWEST DAILY MEAN	.82	Oct 17	.71	Sep 21 1985
INSTANTANEOUS PEAK FLOW	23	Sep 19	35	Aug 25 1958
INSTANTANEOUS PEAK STAGE	2.16	Sep 19	2.33	Aug 25 1958
INSTANTANEOUS LOW FLOW	.82	Oct 17	---	
ANNUAL RUNOFF (INCHES)	11.09		12.90	
10 PERCENTILE	3.3		3.7	
50 PERCENTILE	1.5		1.9	
95 PERCENTILE	.82		1.0	

e Estimated

01466500 MCDONALDS BRANCH IN LEBANON STATE FOREST, NJ--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1963 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1968 to current year.
PH: October 1984 to current year.
WATER TEMPERATURE: October 1960 to current year.
DISSOLVED OXYGEN: October 1984 to current year.

INSTRUMENTATION.--Temperature recorder since October 1960, water-quality monitor since October 1968.

REMARKS.--Water-quality samples were collected at the weir. Interruptions in the daily record were due to malfunctions of the instrument. Water quality monitor records of pH and dissolved oxygen for the 1987 water year appear after the current year's monitor records.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 182 microsiemens, June 16, 1969; minimum, 19 microsiemens, Aug. 25, 1979, Nov. 14, 1985.
PH: Maximum 5.4, Nov. 1, 1985; minimum, 3.6, on several days in water years 1987 and 1988.
WATER TEMPERATURE: Maximum, 22.0°C, Aug. 1, 1970; minimum, 0.0°C on many days during winter months.
DISSOLVED OXYGEN: Maximum, 9.8 mg/L, Mar. 2, 1987; minimum, 1.1 mg/L, May 11, 20, 1985.

EXTREMES FOR CURRENT YEAR.--
PH: Maximum, 4.5, Oct. 16; minimum, 3.7, Mar. 28, 29, May 2-4.
WATER TEMPERATURE: Maximum, 20.5°C, Jul. 28; minimum, 4.0°C, Dec. 12, 13, 18.
DISSOLVED OXYGEN: Maximum, 7.4 mg/L, Mar. 26; minimum, 1.4 mg/L, on several days during June and July.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 1988											
25...	1000	0.92	36	4.0	9.5	0.80	2.9	26	0.6	K1	46
NOV											
29...	0900	1.2	67	4.1	9.0	1.0	4.3	37	0.6	5	75
DEC											
28...	1030	1.0	41	4.3	7.0	0.40	5.5	46	0.3	<1	22
JAN 1989											
31...	1030	1.0	38	4.4	7.0	2.0	4.8	40	--	K1	100
MAR											
01...	1030	E1.3	60	4.0	5.0	0.30	7.6	59	0.3	<1	K8
28...	0730	1.9	91	3.9	7.0	0.30	6.9	57	1.3	<1	22
APR											
25...	1200	1.7	70	3.9	8.5	0.30	5.4	46	0.3	<1	39
MAY											
30...	0930	2.6	64	3.9	13.5	0.20	2.7	26	0.4	<1	46
JUN											
27...	1230	2.5	55	3.9	19.0	0.50	2.5	27	0.5	K3	43
JUL											
25...	0830	2.5	48	3.9	18.0	0.40	2.2	23	0.3	5	--
AUG											
30...	1400	1.7	40	4.1	17.0	0.60	2.9	30	0.4	K1	77
SEP											
26...	1400	5.7	50	3.9	14.5	0.70	3.6	36	0.4	--	240

DATE	HARDNESS TOTAL (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SEDIMENT, SUSPENDED (MG/L)
OCT 1988											
25...	3	0.32	0.44	1.9	0.4	<1	6.3	3.5	<0.1	4.3	<1
NOV											
29...	8	1.4	1.1	3.0	0.5	<1	14	3.7	0.1	4.4	3
DEC											
28...	3	0.46	0.51	1.9	0.4	<1	6.5	3.1	<0.1	4.4	2
JAN 1989											
31...	3	0.46	0.47	1.9	0.5	<1	7.0	3.1	<0.1	4.4	3
MAR											
01...	7	1.0	1.1	2.3	0.5	<1	12	3.6	0.1	4.4	5
28...	9	1.5	1.2	2.5	0.5	<1	15	4.2	0.1	3.9	9
APR											
25...	5	0.84	0.64	1.9	0.3	<1	8.2	3.3	0.1	3.4	6
MAY											
30...	3	0.68	0.41	2.4	0.2	<1	7.0	3.5	0.1	2.0	4
JUN											
27...	2	0.47	0.32	1.6	0.1	<1	4.0	3.7	0.1	3.6	5
JUL											
25...	2	0.47	0.27	1.6	<0.1	<1	3.0	4.0	0.1	3.4	6
AUG											
30...	2	0.38	0.31	1.7	0.1	<1	2.0	3.8	<0.1	4.0	6
SEP											
26...	--	--	--	--	--	<1	<1.0	4.0	0.3	--	4

01466500 MCDONALDS BRANCH IN LEBANON STATE FOREST, NJ--Continued

WATER-QUALITY RECORDS

DATE	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	NITROGEN, NITRITE DISSOLVED (MG/L AS N)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHOROUS TOTAL (MG/L AS P)	PHOSPHOROUS DISSOLVED (MG/L AS P)	PHOSPHOROUS ORTHO, DISSOLVED (MG/L AS P)	CARBON, ORGANIC DISSOLVED (MG/L AS C)
OCT 1988											
25...	--	100	<0.010	<0.100	0.020	<0.010	<0.20	0.010	<0.010	<0.010	2.3
NOV											
29...	0.01	92	<0.010	<0.100	0.050	0.050	0.30	<0.010	<0.010	<0.010	4.4
DEC											
28...	0.01	75	<0.010	<0.100	0.010	<0.010	<0.20	<0.010	<0.010	<0.010	2.0
JAN 1989											
31...	0.01	50	<0.010	<0.100	0.050	0.040	0.30	<0.010	<0.010	<0.010	2.2
MAR											
01...	--	75	<0.010	<0.100	0.020	0.030	<0.20	<0.010	<0.010	0.010	3.6
28...	0.05	82	<0.010	<0.100	<0.010	0.020	0.20	<0.010	<0.010	0.010	8.4
APR											
25...	0.03	71	<0.010	<0.100	0.030	0.020	0.60	0.010	<0.010	<0.010	6.7
MAY											
30...	0.03	73	<0.010	<0.100	0.030	0.040	0.20	<0.010	<0.010	<0.010	9.6
JUN											
27...	0.03	67	<0.010	<0.100	0.030	0.030	0.50	0.020	0.020	0.010	15
JUL											
25...	0.04	71	<0.010	<0.100	0.030	0.030	0.90	<0.010	<0.010	<0.010	15
AUG											
30...	0.03	63	<0.010	<0.100	0.010	0.020	<0.20	<0.010	<0.010	0.010	9.5
SEP											
26...	0.06	80	<0.010	<0.100	0.010	0.020	0.30	0.020	<0.010	0.010	16

01466500 MCDONALDS BRANCH IN LEBANON STATE FOREST, NJ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	BERYLLIUM, DISSOLVED (UG/L AS BE)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, DISSOLVED (UG/L AS CO)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)
OCT 1988										
25...	1000	60	<1	8	<0.5	<1	1	<3	<1	110
NOV										
29...	0900	230	--	--	--	--	--	--	--	140
DEC										
28...	1030	80	--	--	--	--	--	--	--	52
JAN 1989										
31...	1030	70	<1	11	<0.5	<1	<1	<3	7	55
MAR										
01...	1030	210	--	--	--	--	--	--	--	70
28...	0730	520	--	--	--	--	--	--	--	160
APR										
25...	1200	310	<1	19	<0.5	<1	2	<3	3	120
MAY										
30...	0930	310	--	--	--	--	--	--	--	260
JUN										
27...	1230	350	--	--	--	--	--	--	--	490
JUL										
25...	0830	360	<1	30	--	--	1	--	2	690
AUG										
30...	1400	220	--	--	--	--	--	--	--	550

DATE	LEAD, DISSOLVED (UG/L AS PB)	LITHIUM DISSOLVED (UG/L AS LI)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	STRONTIUM, DISSOLVED (UG/L AS SR)	VANADIUM, DISSOLVED (UG/L AS V)
OCT 1988										
25...	<5	<4	12	--	<10	<1	<1	<1.0	4	<6
NOV										
29...	--	--	--	--	--	--	--	--	--	--
DEC										
28...	--	--	--	--	--	--	--	--	--	--
JAN 1989										
31...	6	<4	9	--	<10	2	<1	<1.0	6	<6
MAR										
01...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
APR										
25...	<5	<4	21	<0.1	<10	<1	<1	<1.0	11	<6
MAY										
30...	--	--	--	--	--	--	--	--	--	--
JUN										
27...	--	--	--	--	--	--	--	--	--	--
JUL										
25...	3	--	31	<0.1	--	1	<1	<1.0	4	--
AUG										
30...	--	--	--	--	--	--	--	--	--	--

DATE	ZINC, DISSOLVED (UG/L AS ZN)	GROSS ALPHA, DISSOLVED (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS BETA, DISSOLVED (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	GROSS BETA, DISSOLVED (PCI/L AS SR/YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90)	RADIUM 226, DISSOLVED, RADON METHOD (PCI/L)	URANIUM NATURAL DISSOLVED (UG/L AS U)
OCT 1988									
25...	8	--	--	--	--	--	--	--	--
NOV									
29...	--	--	--	--	--	--	--	--	--
DEC									
28...	--	--	--	--	--	--	--	--	--
JAN 1989									
31...	14	--	--	--	--	--	--	--	--
MAR									
01...	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--
APR									
25...	20	--	--	--	--	--	--	--	--
MAY									
30...	--	--	--	--	--	--	--	--	--
JUN									
27...	--	--	--	--	--	--	--	--	--
JUL									
25...	34	1.6	<0.4	2.1	<0.4	1.8	<0.4	0.23	0.11
AUG									
30...	--	--	--	--	--	--	--	--	--

01466500 MCDONALDS BRANCH IN LEBANON STATE FOREST, NJ--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	33	32	32	49	33	40	66	63	64	44	43	44
2	34	31	32	48	44	46	63	61	62	44	43	44
3	34	33	34	44	41	43	61	57	59	44	43	43
4	35	33	34	41	39	40	58	55	57	43	42	43
5	35	33	34	40	38	39	56	53	55	43	42	42
6	35	33	34	40	38	39	54	52	53	43	41	42
7	35	33	34	39	37	38	52	50	51	42	41	42
8	34	33	34	39	37	38	51	49	50	44	42	43
9	34	32	33	38	36	37	50	47	48	44	43	43
10	34	32	33	38	36	37	47	46	46	44	42	43
11	34	32	32	37	35	36	46	44	45	43	42	43
12	33	32	33	36	34	35	46	43	45	44	42	43
13	33	32	33	37	34	35	46	44	45	45	44	44
14	34	32	33	36	35	36	44	43	43	44	43	44
15	33	29	31	36	34	35	44	42	43	49	44	47
16	32	29	31	36	34	35	43	41	42	49	48	48
17	32	30	31	45	35	40	42	41	41	49	48	48
18	32	31	31	45	43	44	42	41	41	48	47	48
19	32	30	31	44	40	42	42	41	42	48	47	48
20	32	29	30	52	35	46	42	41	41	48	47	47
21	43	30	32	53	50	52	42	40	41	47	46	47
22	56	48	53	50	47	49	41	40	41	47	44	46
23	50	43	47	48	47	48	42	40	41	46	43	45
24	44	39	41	48	47	48	44	41	42	45	44	44
25	41	38	39	48	46	47	45	43	44	44	42	43
26	40	38	39	47	46	46	45	44	44	43	41	42
27	39	37	38	47	45	46	45	44	44	42	40	41
28	38	35	37	64	47	58	45	43	44	41	39	40
29	38	36	37	67	64	65	45	44	45	43	39	41
30	37	35	36	68	65	66	45	44	44	42	39	41
31	36	34	35	---	---	---	45	44	44	46	41	44
MONTH	56	29	35	68	33	44	66	40	47	49	39	44

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	46	45	46	---	---	---	88	85	87	76	73	74
2	46	45	46	---	---	---	86	84	85	90	77	83
3	47	45	46	59	57	58	---	---	---	94	90	93
4	46	45	46	58	57	58	---	---	---	92	87	89
5	46	45	45	58	56	57	---	---	---	87	84	85
6	46	44	45	61	57	59	---	---	---	89	85	87
7	46	45	45	61	60	60	---	---	---	90	88	89
8	46	45	45	60	58	59	---	---	---	88	83	85
9	45	44	45	59	57	58	---	---	---	83	79	81
10	45	44	44	57	55	56	---	---	---	83	79	80
11	---	---	---	55	53	54	---	---	---	86	82	84
12	---	---	---	54	53	54	---	---	---	83	79	81
13	---	---	---	54	52	53	---	---	---	80	78	79
14	---	---	---	54	52	52	---	---	---	78	77	78
15	---	---	---	57	54	55	---	---	---	78	77	78
16	---	---	---	58	57	57	---	---	---	80	77	78
17	---	---	---	57	56	57	---	---	---	81	78	79
18	---	---	---	60	57	58	---	---	---	83	80	81
19	---	---	---	60	58	59	---	---	---	82	80	81
20	---	---	---	58	57	57	---	---	---	81	79	80
21	---	---	---	61	57	60	---	---	---	80	75	78
22	---	---	---	61	59	60	---	---	---	79	77	78
23	---	---	---	60	57	59	---	---	---	78	76	77
24	---	---	---	75	57	64	---	---	---	79	76	78
25	---	---	---	91	76	83	---	---	---	78	77	77
26	---	---	---	108	93	103	69	67	68	78	76	77
27	---	---	---	107	101	104	68	66	67	78	76	77
28	---	---	---	101	94	97	67	65	66	77	75	76
29	---	---	---	94	88	91	66	64	65	76	73	75
30	---	---	---	89	83	86	74	66	71	---	---	---
31	---	---	---	88	85	86	---	---	---	---	---	---
MONTH	---	---	---	108	52	66	---	---	---	94	73	81

01466500 MCDONALDS BRANCH IN LEBANON STATE FOREST, NJ--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	---	53	50	52	50	48	49	---	---	---
2	---	---	---	50	49	50	48	46	48	---	---	---
3	---	---	---	50	48	49	48	48	48	---	---	---
4	---	---	---	49	47	48	48	45	46	---	---	---
5	---	---	---	65	47	56	45	43	45	---	---	---
6	---	---	---	63	62	63	45	43	43	---	---	---
7	---	---	---	62	59	60	44	43	43	---	---	---
8	---	---	---	59	56	57	---	---	---	---	---	---
9	---	---	---	56	54	55	---	---	---	---	---	---
10	---	---	---	54	51	52	---	---	---	---	---	---
11	---	---	---	51	49	50	---	---	---	---	---	---
12	---	---	---	50	48	49	---	---	---	---	---	---
13	---	---	---	57	48	52	---	---	---	---	---	---
14	---	---	---	58	55	56	---	---	---	---	---	---
15	---	---	---	55	53	54	---	---	---	---	---	---
16	---	---	---	58	52	53	---	---	---	---	---	---
17	---	---	---	61	57	59	---	---	---	---	---	---
18	---	---	---	61	56	59	---	---	---	---	---	---
19	---	---	---	56	54	55	---	---	---	---	---	---
20	---	---	---	56	53	54	---	---	---	---	---	---
21	---	---	---	60	55	58	---	---	---	---	---	---
22	---	---	---	59	55	57	---	---	---	---	---	---
23	---	---	---	57	53	55	---	---	---	---	---	---
24	---	---	---	55	51	53	---	---	---	---	---	---
25	---	---	---	53	51	51	---	---	---	---	---	---
26	---	---	---	51	48	49	---	---	---	---	---	---
27	---	---	---	48	46	48	---	---	---	---	---	---
28	57	55	56	56	48	54	---	---	---	---	---	---
29	56	54	55	54	52	53	---	---	---	---	---	---
30	54	52	53	52	50	51	---	---	---	---	---	---
31	---	---	---	50	50	50	---	---	---	---	---	---
MONTH	---	---	---	65	46	54	---	---	---	---	---	---

PH (STANDARD UNITS), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	4.2	4.2	4.2	4.2	3.9	4.0	4.1	3.9	4.0	4.3	4.2	4.3
2	4.3	4.2	4.2	4.0	3.9	3.9	4.1	4.0	4.0	4.3	4.2	4.3
3	4.2	4.2	4.2	4.0	4.0	4.0	4.1	4.0	4.1	4.3	4.2	4.3
4	4.2	4.2	4.2	4.1	3.9	4.0	4.1	4.1	4.1	4.3	4.3	4.3
5	4.2	4.2	4.2	4.0	3.9	4.0	4.3	4.1	4.2	4.3	4.3	4.3
6	4.2	4.2	4.2	4.0	3.9	3.9	4.2	4.1	4.2	4.3	4.3	4.3
7	4.2	4.2	4.2	4.0	3.9	4.0	4.2	4.1	4.2	4.3	4.3	4.3
8	4.2	4.1	4.2	4.0	3.9	4.0	4.2	4.2	4.2	4.3	4.3	4.3
9	4.2	4.1	4.2	4.0	4.0	4.0	4.3	4.2	4.2	4.3	4.3	4.3
10	4.1	4.1	4.1	4.0	4.0	4.0	4.3	4.3	4.3	4.3	4.3	4.3
11	4.1	4.0	4.1	4.0	4.0	4.0	4.3	4.3	4.3	4.3	4.3	4.3
12	4.2	4.1	4.1	4.1	4.0	4.0	4.3	4.3	4.3	4.3	4.3	4.3
13	4.2	4.1	4.1	4.1	4.0	4.1	4.3	4.3	4.3	4.3	4.3	4.3
14	4.2	4.1	4.2	4.1	4.0	4.1	4.3	4.3	4.3	4.3	4.3	4.3
15	4.4	4.2	4.2	4.1	4.1	4.1	4.3	4.3	4.3	4.3	4.2	4.3
16	4.5	4.2	4.3	4.2	4.1	4.1	4.3	4.3	4.3	4.2	4.2	4.2
17	4.3	4.2	4.3	4.1	4.0	4.1	4.3	4.3	4.3	4.3	4.2	4.3
18	4.3	4.2	4.3	4.3	4.0	4.2	4.3	4.3	4.3	4.3	4.2	4.3
19	4.3	4.3	4.3	4.2	4.2	4.2	4.3	4.3	4.3	4.3	4.3	4.3
20	4.3	4.2	4.2	4.3	4.0	4.1	4.3	4.3	4.3	4.3	4.3	4.3
21	4.2	4.1	4.2	4.0	3.9	4.0	4.3	4.3	4.3	4.3	4.3	4.3
22	4.1	3.9	3.9	4.1	4.0	4.1	4.3	4.3	4.3	---	---	---
23	4.0	3.9	4.0	4.1	4.0	4.1	4.3	4.3	4.3	---	---	---
24	4.0	4.0	4.0	4.0	4.0	4.0	4.3	4.3	4.3	---	---	---
25	4.1	3.9	4.0	4.1	4.0	4.0	4.3	4.3	4.3	---	---	---
26	4.0	3.9	3.9	4.1	4.0	4.0	4.3	4.3	4.3	---	---	---
27	4.0	3.9	3.9	4.2	4.0	4.1	4.3	4.3	4.3	---	---	---
28	4.0	3.9	4.0	4.0	3.8	3.9	4.3	4.2	4.3	---	---	---
29	4.0	3.9	4.0	4.0	3.9	3.9	4.2	4.2	4.2	---	---	---
30	4.0	4.0	4.0	4.0	3.9	4.0	4.2	4.2	4.2	---	---	---
31	4.0	4.0	4.0	---	---	---	4.2	4.2	4.2	---	---	---
MONTH	4.5	3.9	4.1	4.3	3.8	4.0	4.3	3.9	4.2	---	---	---

01466500 MCDONALDS BRANCH IN LEBANON STATE FOREST, NJ--Continued

PH (STANDARD UNITS), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	3.8	3.8	3.8	4.0	3.9	3.9
2	---	---	---	---	---	---	3.8	3.8	3.8	3.8	3.7	3.8
3	---	---	---	4.1	4.1	4.1	---	---	---	3.7	3.7	3.7
4	---	---	---	4.1	4.1	4.1	---	---	---	3.8	3.7	3.8
5	---	---	---	4.1	4.1	4.1	---	---	---	3.8	3.8	3.8
6	---	---	---	4.1	4.0	4.1	---	---	---	3.8	3.8	3.8
7	---	---	---	4.1	4.0	4.1	---	---	---	3.8	3.8	3.8
8	---	---	---	4.1	4.1	4.1	---	---	---	3.8	3.8	3.8
9	---	---	---	4.1	4.1	4.1	---	---	---	3.9	3.8	3.9
10	---	---	---	4.1	4.1	4.1	---	---	---	3.9	3.8	3.9
11	---	---	---	4.1	4.1	4.1	---	---	---	3.8	3.8	3.8
12	---	---	---	4.1	4.1	4.1	---	---	---	3.9	3.8	3.9
13	---	---	---	4.1	4.1	4.1	---	---	---	3.8	3.8	3.8
14	---	---	---	4.1	4.1	4.1	---	---	---	3.8	3.8	3.8
15	---	---	---	4.1	4.0	4.0	---	---	---	3.8	3.8	3.8
16	---	---	---	4.0	4.0	4.0	---	---	---	3.8	3.8	3.8
17	---	---	---	4.0	4.0	4.0	---	---	---	3.8	3.8	3.8
18	---	---	---	4.0	4.0	4.0	---	---	---	3.8	3.8	3.8
19	---	---	---	4.0	4.0	4.0	---	---	---	3.8	3.8	3.8
20	---	---	---	4.0	4.0	4.0	---	---	---	3.8	3.8	3.8
21	---	---	---	4.0	4.0	4.0	---	---	---	3.9	3.8	3.9
22	---	---	---	4.0	4.0	4.0	---	---	---	3.9	3.9	3.9
23	---	---	---	4.0	4.0	4.0	---	---	---	3.9	3.9	3.9
24	---	---	---	4.1	3.9	4.0	---	---	---	3.9	3.8	3.8
25	---	---	---	3.9	3.8	3.9	---	---	---	3.8	3.8	3.8
26	---	---	---	3.8	3.8	3.8	4.0	4.0	4.0	3.8	3.8	3.8
27	---	---	---	3.8	3.8	3.8	4.0	4.0	4.0	3.8	3.8	3.8
28	---	---	---	3.8	3.7	3.7	4.0	4.0	4.0	3.8	3.8	3.8
29	---	---	---	3.8	3.7	3.7	4.1	4.0	4.0	3.9	3.8	3.9
30	---	---	---	3.8	3.8	3.8	4.0	4.0	4.0	3.9	3.8	3.8
31	---	---	---	3.8	3.8	3.8	---	---	---	3.8	3.8	3.8
MONTH	---	---	---	4.1	3.7	4.0	---	---	---	4.0	3.7	3.8

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	3.8	3.8	3.8	4.1	4.0	4.1	4.2	4.2	4.2	---	---	---
2	3.9	3.8	3.8	4.1	4.1	4.1	4.2	4.2	4.2	4.3	4.2	4.3
3	3.9	3.8	3.9	4.1	4.1	4.1	4.2	4.2	4.2	4.3	4.3	4.3
4	3.9	3.9	3.9	4.1	4.1	4.1	4.2	4.2	4.2	4.3	4.3	4.3
5	3.9	3.9	3.9	4.1	3.9	4.0	4.2	4.2	4.2	4.3	4.3	4.3
6	3.9	3.9	3.9	3.9	3.9	3.9	4.2	4.2	4.2	4.3	4.3	4.3
7	3.9	3.8	3.8	4.0	3.9	4.0	4.3	4.2	4.2	4.4	4.3	4.3
8	3.9	3.8	3.9	4.0	4.0	4.0	4.3	4.1	4.2	4.4	4.3	4.4
9	3.9	3.9	3.9	4.1	4.0	4.1	4.3	4.2	4.3	4.4	4.4	4.4
10	3.9	3.9	3.9	4.1	4.1	4.1	4.3	4.3	4.3	4.4	4.4	4.4
11	3.9	3.9	3.9	4.1	4.1	4.1	4.3	4.1	4.2	4.4	4.4	4.4
12	3.9	3.9	3.9	4.1	4.1	4.1	4.1	4.0	4.0	4.4	4.4	4.4
13	4.0	3.9	4.0	4.1	4.0	4.1	4.0	3.9	4.0	4.4	4.4	4.4
14	4.0	3.9	4.0	4.1	4.0	4.0	4.0	4.0	4.0	4.4	4.3	4.4
15	4.0	3.9	4.0	4.1	4.0	4.1	4.0	4.0	4.0	4.3	4.3	4.3
16	3.9	3.9	3.9	4.1	4.0	4.1	4.1	4.0	4.1	4.3	4.3	4.3
17	4.0	3.9	3.9	4.0	3.9	4.0	4.1	4.1	4.1	4.3	4.2	4.2
18	4.0	3.9	3.9	4.0	3.9	4.0	4.1	4.1	4.1	4.3	4.3	4.3
19	4.0	4.0	4.0	4.1	4.0	4.0	4.2	4.1	4.2	4.3	3.9	4.2
20	4.0	4.0	4.0	4.1	4.0	4.1	4.2	4.1	4.1	4.0	3.9	3.9
21	4.0	4.0	4.0	4.0	3.9	4.0	4.1	4.1	4.1	4.0	3.9	4.0
22	4.0	3.9	4.0	4.0	4.0	4.0	4.1	4.1	4.1	4.0	4.0	4.0
23	3.9	3.9	3.9	4.1	4.0	4.0	4.2	4.1	4.1	4.1	4.0	4.1
24	3.9	3.9	3.9	4.1	4.1	4.1	4.2	4.2	4.2	4.1	4.1	4.1
25	3.9	3.9	3.9	4.1	4.1	4.1	4.2	4.2	4.2	4.2	4.1	4.2
26	4.0	3.9	4.0	4.2	4.1	4.1	4.3	4.2	4.2	4.2	4.0	4.1
27	4.0	3.9	4.0	4.2	4.1	4.2	4.3	4.2	4.2	4.1	4.0	4.0
28	4.0	3.9	4.0	4.2	4.1	4.1	4.2	4.2	4.2	4.1	4.1	4.1
29	4.0	4.0	4.0	4.1	4.1	4.1	4.2	4.2	4.2	4.1	4.1	4.1
30	4.0	4.0	4.0	4.1	4.1	4.1	4.2	4.2	4.2	4.2	4.1	4.2
31	---	---	---	4.2	4.1	4.2	---	---	---	---	---	---
MONTH	4.0	3.8	3.9	4.2	3.9	4.1	4.3	3.9	4.2	4.4	3.9	4.2

01466500 MCDONALDS BRANCH IN LEBANON STATE FOREST, NJ--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	8.0	7.0	7.5	---	---	---	8.5	8.0	8.5	10.5	10.0	10.5
2	7.5	7.0	7.5	---	---	---	8.5	7.5	8.0	11.0	10.0	10.5
3	7.5	7.0	7.5	5.5	5.0	5.5	---	---	---	11.0	10.0	10.5
4	6.5	6.5	6.5	5.5	5.5	5.5	---	---	---	10.5	9.5	10.0
5	6.5	6.0	6.5	6.0	5.5	6.0	---	---	---	11.0	10.5	10.5
6	6.5	6.0	6.5	6.0	4.5	5.5	---	---	---	12.0	11.0	11.5
7	6.0	5.5	6.0	5.0	4.5	5.0	---	---	---	12.0	11.0	11.5
8	6.0	5.5	6.0	5.0	4.5	4.5	---	---	---	10.5	10.0	10.5
9	5.5	5.0	5.5	5.5	5.0	5.0	---	---	---	10.5	10.0	10.5
10	5.0	4.5	5.0	5.5	4.5	5.0	---	---	---	10.5	10.0	10.0
11	---	---	---	5.5	4.5	5.0	---	---	---	10.0	9.5	10.0
12	---	---	---	5.5	5.0	5.5	---	---	---	10.5	10.0	10.0
13	---	---	---	6.0	5.0	5.5	---	---	---	10.5	10.0	10.5
14	---	---	---	6.0	5.5	6.0	---	---	---	11.0	10.0	10.5
15	---	---	---	7.0	6.0	6.5	---	---	---	12.0	11.0	11.5
16	---	---	---	7.5	6.5	7.0	---	---	---	12.0	12.0	12.0
17	---	---	---	7.5	6.5	7.0	---	---	---	12.5	11.5	12.0
18	---	---	---	9.0	7.5	8.5	---	---	---	13.5	12.0	12.5
19	---	---	---	8.0	7.0	7.5	---	---	---	13.5	12.5	13.0
20	---	---	---	7.5	6.5	7.0	---	---	---	14.0	12.5	13.5
21	---	---	---	7.5	7.0	7.0	---	---	---	14.5	13.5	14.0
22	---	---	---	7.0	6.0	6.5	---	---	---	14.5	13.5	14.0
23	---	---	---	6.5	6.0	6.5	---	---	---	14.0	13.5	14.0
24	---	---	---	6.5	6.0	6.5	---	---	---	14.0	14.0	14.0
25	---	---	---	6.5	6.0	6.5	---	---	---	14.5	13.5	14.0
26	---	---	---	6.5	6.0	6.5	9.5	8.5	9.0	15.0	14.0	14.5
27	---	---	---	7.0	6.0	6.5	9.5	8.5	9.0	15.0	15.0	15.0
28	---	---	---	9.0	7.0	8.0	10.0	9.0	9.5	15.0	14.0	14.5
29	---	---	---	9.5	9.0	9.5	10.0	9.5	10.0	14.0	13.0	13.5
30	---	---	---	9.5	9.0	9.5	10.5	10.0	10.0	14.0	13.5	14.0
31	---	---	---	9.0	8.5	9.0	---	---	---	15.0	14.0	14.5
MONTH	---	---	---	9.5	4.5	6.5	---	---	---	15.0	9.5	12.0

01466500 MCDONALDS BRANCH IN LEBANON STATE FOREST, NJ--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	16.0	15.0	15.5	17.0	16.5	16.5	17.5	17.5	17.5	---	---	---
2	16.5	15.5	16.0	17.0	16.0	16.5	17.5	17.0	17.0	16.5	16.0	16.5
3	16.0	15.5	16.0	17.0	16.5	16.5	17.5	17.0	17.5	16.0	15.5	16.0
4	16.5	16.0	16.0	17.0	16.5	16.5	18.0	17.5	18.0	15.0	14.5	15.0
5	16.0	15.5	16.0	19.0	16.5	18.0	18.5	18.0	18.5	14.5	14.0	14.5
6	16.0	15.5	16.0	19.0	19.0	19.0	18.5	18.0	18.5	14.5	14.0	14.5
7	16.5	16.0	16.0	20.0	19.0	19.5	18.5	18.0	18.0	14.5	14.0	14.0
8	16.5	16.0	16.5	19.5	19.0	19.5	18.0	17.0	17.5	14.5	13.5	14.0
9	16.5	16.5	16.5	19.0	18.0	18.5	16.5	16.0	16.5	14.5	14.0	14.0
10	17.0	16.5	16.5	18.5	18.0	18.5	16.0	15.5	16.0	15.0	14.5	14.5
11	16.5	16.0	16.5	19.0	18.5	18.5	17.0	15.5	16.5	15.5	15.0	15.0
12	15.5	15.0	15.5	18.5	18.0	18.0	18.0	17.0	17.5	15.5	15.5	15.5
13	16.0	15.5	15.5	17.5	17.5	17.5	19.0	18.0	18.5	15.5	15.0	15.5
14	15.5	15.0	15.5	18.0	17.5	17.5	19.0	19.0	19.0	16.0	15.0	15.5
15	15.5	15.0	15.5	17.5	17.0	17.5	19.0	19.0	19.0	16.5	16.0	16.5
16	16.5	15.5	16.5	17.5	17.0	17.0	19.5	19.0	19.0	16.5	16.0	16.5
17	17.0	16.5	16.5	18.0	17.5	17.5	19.0	18.5	19.0	17.0	16.5	17.0
18	17.0	16.5	17.0	18.0	17.0	17.5	18.5	18.0	18.5	16.5	16.0	16.0
19	16.5	16.0	16.5	17.5	17.0	17.0	18.0	18.0	18.0	18.0	16.0	17.0
20	16.5	16.0	16.5	18.5	17.0	17.5	18.5	18.0	18.0	19.5	18.0	19.0
21	17.0	16.5	16.5	19.0	19.0	19.0	18.5	18.0	18.0	20.0	19.0	19.5
22	17.5	16.5	17.0	19.5	19.0	19.0	18.5	18.0	18.0	20.0	19.5	20.0
23	18.0	17.5	17.5	20.0	19.0	19.5	18.5	18.0	18.0	20.0	18.0	19.5
24	18.5	18.0	18.5	19.5	19.0	19.5	18.0	17.5	18.0	18.0	15.0	16.5
25	18.5	18.0	18.0	19.0	18.5	19.0	17.5	16.5	17.0	14.5	13.5	14.0
26	18.5	18.0	18.0	19.5	19.0	19.0	16.5	16.0	16.0	15.0	14.0	15.0
27	19.0	18.0	18.5	19.5	19.0	19.0	16.0	15.5	16.0	15.0	12.5	13.5
28	19.0	18.5	18.5	20.5	19.0	20.0	16.0	15.5	16.0	12.5	11.0	12.0
29	18.5	17.5	18.0	20.0	19.0	19.5	16.5	16.0	16.0	13.0	12.0	12.5
30	17.5	17.0	17.0	18.5	18.0	18.0	17.0	16.5	16.5	13.0	12.5	13.0
31	---	---	---	18.0	17.5	17.5	---	---	---	---	---	---
MONTH	19.0	15.0	16.5	20.5	16.0	18.0	19.5	15.5	17.5	20.0	11.0	15.5

OXYGEN, DISSOLVED (DO), MG/L, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	3.9	2.1	2.6	5.7	2.6	3.7	4.8	4.4	4.6	5.2	4.5	4.8
2	3.3	2.0	2.5	4.1	3.3	3.7	5.0	4.6	4.7	5.1	4.6	4.9
3	3.9	3.2	3.4	3.7	3.1	3.3	4.8	4.5	4.7	5.0	4.5	4.7
4	3.7	2.6	3.2	3.7	2.8	3.2	4.9	4.5	4.7	5.4	4.9	5.1
5	3.7	2.5	2.9	3.4	2.5	2.9	5.0	4.7	4.8	5.4	4.9	5.1
6	3.5	2.4	2.8	3.2	2.5	2.8	5.0	4.7	4.8	5.8	4.9	5.5
7	3.4	2.5	2.9	2.9	2.3	2.6	4.9	4.6	4.7	5.6	5.3	5.5
8	4.2	3.3	3.8	3.1	2.4	2.6	4.9	4.6	4.7	5.5	5.2	5.3
9	4.2	2.8	3.5	3.0	2.2	2.5	5.4	4.8	5.0	5.5	5.1	5.3
10	3.8	2.7	3.0	3.1	2.4	2.7	5.4	5.1	5.2	5.6	5.0	5.2
11	3.6	2.4	2.8	3.2	2.6	2.9	5.5	5.1	5.3	5.3	4.9	5.1
12	3.4	2.4	2.8	3.3	2.6	2.9	5.7	5.3	5.6	5.6	4.9	5.2
13	3.9	2.6	3.1	3.4	2.4	2.9	5.8	5.4	5.6	5.6	5.2	5.3
14	4.0	2.8	3.2	3.4	2.7	3.1	5.7	5.3	5.5	5.7	5.1	5.4
15	4.2	2.6	3.1	3.0	2.5	2.7	5.7	5.3	5.4	6.1	5.3	5.8
16	3.7	2.2	2.7	3.1	2.3	2.6	5.7	5.3	5.5	5.9	5.5	5.6
17	3.2	2.0	2.4	3.9	2.1	3.2	6.3	5.4	5.8	5.6	5.4	5.5
18	2.8	2.0	2.3	4.1	3.5	3.7	6.3	5.7	5.9	5.6	5.2	5.4
19	3.1	1.9	2.3	3.9	3.3	3.6	6.0	5.7	5.8	5.5	5.2	5.3
20	3.5	2.1	2.7	5.1	3.9	4.3	5.9	5.4	5.6	5.5	5.1	5.2
21	4.4	2.1	2.8	4.0	3.6	3.8	5.7	5.2	5.5	5.7	5.2	5.4
22	4.3	2.9	3.6	4.1	3.6	3.8	5.8	5.4	5.6	5.9	5.4	5.6
23	3.4	2.6	2.9	4.2	3.8	4.0	5.9	5.3	5.6	5.9	5.3	5.5
24	3.4	2.3	2.7	4.4	3.9	4.1	6.1	5.7	5.8	5.7	5.2	5.4
25	3.1	2.3	2.6	4.4	4.0	4.2	5.9	5.4	5.6	5.8	5.1	5.4
26	3.0	2.2	2.5	4.5	4.0	4.2	5.6	5.3	5.4	5.6	5.0	5.2
27	3.2	2.4	2.7	4.3	3.8	4.0	5.8	5.2	5.5	5.8	5.0	5.3
28	2.8	2.4	2.5	5.5	4.3	4.8	5.3	4.8	5.1	5.6	5.0	5.2
29	2.9	2.3	2.5	4.7	4.3	4.5	5.0	4.6	4.8	5.7	4.7	5.1
30	3.1	2.4	2.7	4.9	4.5	4.7	5.1	4.5	4.7	5.5	4.6	5.0
31	3.2	2.7	2.9	---	---	---	4.8	4.4	4.6	5.5	4.8	5.0
MONTH	4.4	1.9	2.9	5.7	2.1	3.5	6.3	4.4	5.2	6.1	4.5	5.3

01466500 MCDONALDS BRANCH IN LEBANON STATE FOREST, NJ--Continued

OXYGEN, DISSOLVED (DO), MG/L, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	5.1	4.6	4.8	---	---	---	5.2	4.7	4.9	4.1	3.7	3.9
2	5.1	4.5	4.6	---	---	---	5.5	4.9	5.1	4.8	3.8	4.4
3	5.2	4.4	4.9	6.7	6.2	6.4	---	---	---	4.5	3.7	4.1
4	5.6	5.1	5.3	6.5	6.1	6.3	---	---	---	4.5	3.7	4.0
5	6.0	5.0	5.4	6.4	5.9	6.1	---	---	---	4.0	3.6	3.8
6	---	---	---	6.8	5.9	6.5	---	---	---	4.2	3.2	3.8
7	---	---	---	7.2	6.6	6.8	---	---	---	4.0	3.1	3.6
8	---	---	---	7.1	6.6	6.8	---	---	---	4.0	3.4	3.7
9	---	---	---	7.2	6.5	6.7	---	---	---	4.2	3.5	3.8
10	---	---	---	6.9	6.4	6.5	---	---	---	5.6	3.5	4.7
11	---	---	---	6.7	6.2	6.4	---	---	---	5.5	4.4	5.1
12	---	---	---	6.7	6.1	6.3	---	---	---	4.4	3.8	4.2
13	---	---	---	6.8	6.1	6.4	---	---	---	4.1	3.5	3.8
14	---	---	---	6.7	6.1	6.3	---	---	---	4.1	3.2	3.6
15	---	---	---	6.7	6.0	6.3	---	---	---	3.7	2.9	3.3
16	---	---	---	6.5	5.9	6.2	---	---	---	3.7	2.8	3.3
17	---	---	---	6.4	5.6	6.0	---	---	---	4.1	3.1	3.6
18	---	---	---	6.1	5.4	5.6	---	---	---	3.8	2.7	3.3
19	---	---	---	6.2	5.5	5.7	---	---	---	3.4	2.4	2.8
20	---	---	---	6.2	5.6	5.8	---	---	---	3.2	2.3	2.7
21	---	---	---	6.3	5.7	5.9	---	---	---	2.8	2.1	2.4
22	---	---	---	6.3	5.8	6.0	---	---	---	2.9	2.1	2.4
23	---	---	---	6.5	5.9	6.1	---	---	---	2.8	2.2	2.5
24	---	---	---	6.7	5.9	6.3	---	---	---	2.7	2.4	2.6
25	---	---	---	7.0	6.6	6.8	---	---	---	3.1	2.3	2.6
26	---	---	---	7.4	6.8	7.1	4.8	3.9	4.3	2.9	2.0	2.4
27	---	---	---	6.9	6.2	6.7	4.8	3.7	4.2	2.6	2.0	2.2
28	---	---	---	6.1	5.1	5.8	4.4	3.5	3.9	2.9	2.1	2.4
29	---	---	---	5.1	4.3	4.8	4.1	3.5	3.7	3.2	2.4	2.7
30	---	---	---	4.5	4.3	4.4	4.9	3.8	4.3	2.9	2.1	2.5
31	---	---	---	4.8	4.5	4.7	---	---	---	2.7	1.9	2.2
MONTH	---	---	---	7.4	4.3	6.1	---	---	---	5.6	1.9	3.3

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	2.6	1.8	2.1	2.6	1.8	2.1	2.4	1.9	2.1	---	---	---
2	2.5	1.8	2.0	2.7	1.9	2.1	2.6	1.9	2.2	2.6	2.1	2.3
3	2.5	1.8	2.0	2.8	1.9	2.2	2.7	1.8	2.2	2.8	2.2	2.5
4	2.4	1.8	2.0	2.7	1.9	2.2	2.6	1.7	2.0	2.9	2.5	2.6
5	2.6	1.8	2.1	4.2	1.4	2.4	2.3	1.7	1.9	3.1	2.6	2.8
6	2.5	2.0	2.2	1.9	1.4	1.6	2.4	1.7	1.9	3.1	2.6	2.8
7	2.5	1.9	2.2	2.2	1.4	1.7	2.1	1.8	1.9	3.2	2.7	2.9
8	2.5	1.8	2.1	2.1	1.4	1.7	2.4	1.9	2.1	3.2	2.7	2.9
9	2.2	1.8	2.0	2.3	1.5	1.8	2.5	1.9	2.1	3.3	2.7	2.9
10	2.7	1.8	2.1	2.4	1.5	1.8	2.4	2.0	2.2	3.2	2.6	2.8
11	2.7	1.8	2.1	2.2	1.5	1.7	2.9	2.1	2.4	3.1	2.6	2.7
12	2.8	2.0	2.3	2.2	1.6	1.8	3.1	2.0	2.4	3.0	2.6	2.7
13	2.7	2.0	2.2	3.0	1.7	2.1	2.6	1.7	2.1	3.1	2.6	2.7
14	2.3	2.0	2.1	2.6	1.9	2.1	2.1	1.7	1.8	3.0	2.6	2.7
15	2.9	2.1	2.4	2.7	1.9	2.1	2.0	1.7	1.8	2.8	2.4	2.5
16	2.9	2.0	2.4	3.4	1.9	2.2	2.2	1.6	1.8	2.9	2.3	2.5
17	2.6	1.9	2.2	2.6	2.1	2.3	2.3	1.6	1.8	2.7	2.3	2.5
18	2.9	1.9	2.3	2.8	2.0	2.2	2.0	1.7	1.8	2.7	2.3	2.5
19	2.9	1.9	2.2	2.8	1.9	2.3	2.1	1.7	1.9	6.3	2.4	3.8
20	2.6	1.9	2.2	3.8	1.9	2.4	2.3	1.7	1.9	3.3	1.8	2.8
21	2.6	1.9	2.1	2.3	1.8	2.0	2.1	1.7	1.8	2.1	1.7	1.8
22	3.7	1.8	2.2	2.5	1.7	2.0	2.2	1.7	1.8	1.9	1.6	1.7
23	2.4	1.9	2.1	2.5	1.6	1.9	2.2	1.7	1.9	1.9	1.6	1.7
24	2.8	1.8	2.1	2.3	1.6	1.8	2.2	1.7	1.9	2.5	1.9	2.3
25	2.6	1.8	2.1	2.3	1.6	1.8	2.3	1.9	2.0	3.1	2.5	2.8
26	2.6	1.7	2.0	2.3	1.6	1.8	2.5	2.0	2.2	4.5	2.8	3.5
27	2.4	1.4	1.9	2.4	1.6	1.8	2.6	2.1	2.3	3.8	3.0	3.5
28	1.8	1.4	1.6	2.8	1.6	2.0	2.7	2.2	2.3	4.3	3.7	4.0
29	2.3	1.5	1.8	2.5	1.6	2.0	2.4	2.2	2.2	3.9	3.2	3.6
30	2.5	1.7	2.0	2.5	1.8	2.0	2.5	2.1	2.2	3.5	3.0	3.2
31	---	---	---	2.2	1.9	2.0	---	---	---	---	---	---
MONTH	3.7	1.4	2.1	4.2	1.4	2.0	3.1	1.6	2.0	6.3	1.6	2.8

01466500 MCDONALDS BRANCH IN LEBANON STATE FOREST, NJ--Continued

PH (STANDARD UNITS), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	4.3	4.3	4.3	4.3	4.3	4.3	4.0	4.0	4.0	---	---	---
2	4.3	4.3	4.3	4.4	4.3	4.3	4.0	4.0	4.0	---	---	---
3	4.3	4.3	4.3	4.3	4.3	4.3	4.0	3.9	4.0	---	---	---
4	4.4	4.3	4.4	4.3	4.3	4.3	3.9	3.8	3.9	---	---	---
5	4.4	4.3	4.4	4.5	4.3	4.3	3.8	3.8	3.8	---	---	---
6	4.3	4.3	4.3	4.3	4.2	4.2	3.8	3.8	3.8	3.6	3.6	3.6
7	4.3	4.3	4.3	4.3	4.2	4.3	3.8	3.8	3.8	3.7	3.7	3.7
8	4.3	4.3	4.3	4.3	4.2	4.3	3.9	3.8	3.9	3.7	3.7	3.7
9	4.4	4.3	4.3	4.3	4.2	4.3	3.9	3.9	3.9	3.7	3.7	3.7
10	4.3	4.2	4.3	4.3	4.2	4.2	3.9	3.9	3.9	3.7	3.7	3.7
11	4.3	4.2	4.3	4.3	4.2	4.2	3.8	3.8	3.8	3.7	3.7	3.7
12	4.3	4.3	4.3	4.2	4.2	4.2	3.8	3.8	3.8	3.7	3.7	3.7
13	---	---	---	4.3	4.2	4.2	3.8	3.8	3.8	3.7	3.7	3.7
14	---	---	---	4.2	4.2	4.2	3.8	3.8	3.8	3.8	3.7	3.7
15	---	---	---	4.2	4.2	4.2	3.8	3.8	3.8	3.8	3.8	3.8
16	---	---	---	4.2	4.2	4.2	3.8	3.8	3.8	3.8	3.8	3.8
17	---	---	---	4.2	4.2	4.2	3.8	3.8	3.8	3.8	3.7	3.8
18	---	---	---	4.2	4.1	4.2	3.9	3.8	3.8	3.8	3.7	3.7
19	---	---	---	4.1	4.1	4.1	3.8	3.8	3.8	3.7	3.7	3.7
20	---	---	---	4.1	4.1	4.1	3.8	3.8	3.8	---	---	---
21	---	---	---	4.1	4.1	4.1	3.8	3.8	3.8	---	---	---
22	---	---	---	4.1	4.1	4.1	3.8	3.8	3.8	---	---	---
23	---	---	---	4.1	4.1	4.1	3.8	3.8	3.8	---	---	---
24	---	---	---	4.1	4.1	4.1	3.8	3.8	3.8	---	---	---
25	---	---	---	4.1	4.1	4.1	3.8	3.8	3.8	---	---	---
26	---	---	---	4.1	4.1	4.1	3.8	3.8	3.8	---	---	---
27	---	---	---	4.1	4.0	4.0	3.8	3.8	3.8	---	---	---
28	---	---	---	4.0	4.0	4.0	3.8	3.8	3.8	---	---	---
29	4.3	4.3	4.3	4.0	4.0	4.0	3.8	3.8	3.8	---	---	---
30	4.4	4.3	4.3	4.0	4.0	4.0	---	---	---	---	---	---
31	4.3	4.3	4.3	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	4.5	4.0	4.2	4.0	3.8	3.8	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	4.0	3.9	4.0	3.8	3.7	3.8	3.9	3.9	3.9
2	---	---	---	3.9	3.8	3.9	3.8	3.7	3.8	4.0	3.9	3.9
3	---	---	---	3.9	3.9	3.9	3.8	3.8	3.8	4.0	4.0	4.0
4	---	---	---	3.9	3.9	3.9	3.8	3.8	3.8	4.0	3.9	3.9
5	---	---	---	3.9	3.9	3.9	3.8	3.8	3.8	3.9	3.9	3.9
6	---	---	---	3.9	3.9	3.9	3.8	3.7	3.8	3.9	3.9	3.9
7	---	---	---	3.9	3.9	3.9	3.8	3.8	3.8	3.9	3.8	3.9
8	---	---	---	3.9	3.9	3.9	3.8	3.8	3.8	3.9	3.8	3.8
9	---	---	---	4.0	3.9	3.9	3.8	3.8	3.8	3.8	3.8	3.8
10	---	---	---	3.9	3.9	3.9	3.8	3.8	3.8	3.8	3.8	3.8
11	---	---	---	3.9	3.9	3.9	3.9	3.8	3.8	3.9	3.8	3.8
12	---	---	---	3.9	3.9	3.9	3.9	3.8	3.9	3.9	3.8	3.9
13	---	---	---	3.9	3.9	3.9	3.9	3.8	3.8	3.9	3.8	3.8
14	---	---	---	3.9	3.9	3.9	3.9	3.8	3.8	3.9	3.8	3.8
15	---	---	---	3.9	3.9	3.9	3.8	3.8	3.8	3.9	3.8	3.9
16	---	---	---	3.9	3.9	3.9	3.8	3.8	3.8	3.9	3.9	3.9
17	---	---	---	3.9	3.9	3.9	3.8	3.8	3.8	3.9	3.9	3.9
18	---	---	---	3.9	3.9	3.9	3.9	3.8	3.9	4.0	3.9	3.9
19	---	---	---	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
20	---	---	---	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
21	---	---	---	3.9	3.9	3.9	3.9	3.9	3.9	4.0	3.9	4.0
22	---	---	---	3.9	3.9	3.9	3.9	3.9	3.9	4.0	3.9	4.0
23	---	---	---	3.9	3.9	3.9	3.9	3.9	3.9	4.0	4.0	4.0
24	---	---	---	3.9	3.9	3.9	3.9	3.9	3.9	4.0	4.0	4.0
25	4.0	4.0	4.0	3.9	3.9	3.9	3.9	3.9	3.9	4.0	4.0	4.0
26	4.0	4.0	4.0	3.9	3.9	3.9	3.9	3.9	3.9	4.1	3.9	4.0
27	4.0	4.0	4.0	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
28	4.0	4.0	4.0	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
29	---	---	---	3.9	3.9	3.9	4.0	3.9	4.0	3.9	3.9	3.9
30	---	---	---	3.9	3.9	3.9	4.0	4.0	4.0	4.0	3.9	3.9
31	---	---	---	4.0	3.9	3.9	---	---	---	4.0	4.0	4.0
MONTH	---	---	---	4.0	3.8	3.9	4.0	3.7	3.9	4.1	3.8	3.9

01466500 MCDONALDS BRANCH IN LEBANON STATE FOREST, NJ--Continued

PH (STANDARD UNITS), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	4.0	4.0	4.0	4.3	4.3	4.3	4.0	4.0	4.0	4.1	4.0	4.0
2	4.0	4.0	4.0	4.3	4.2	4.3	4.0	4.0	4.0	4.1	4.0	4.0
3	4.0	4.0	4.0	4.2	4.2	4.2	4.0	4.0	4.0	4.0	3.9	4.0
4	4.0	3.9	4.0	4.2	4.2	4.2	4.0	4.0	4.0	4.0	3.9	3.9
5	4.0	3.9	4.0	4.2	4.1	4.1	4.0	4.0	4.0	3.9	3.9	3.9
6	4.0	3.9	4.0	4.1	4.1	4.1	4.0	4.0	4.0	4.0	3.9	3.9
7	4.0	3.9	4.0	---	---	---	4.0	4.0	4.0	4.0	4.0	4.0
8	4.0	4.0	4.0	---	---	---	4.0	4.0	4.0	4.0	4.0	4.0
9	4.0	4.0	4.0	---	---	---	4.1	4.0	4.0	4.0	4.0	4.0
10	4.0	4.0	4.0	---	---	---	4.1	4.0	4.1	4.0	4.0	4.0
11	4.0	4.0	4.0	---	---	---	4.0	4.0	4.0	4.0	3.9	4.0
12	4.0	4.0	4.0	---	---	---	4.0	4.0	4.0	4.0	4.0	4.0
13	4.0	4.0	4.0	---	---	---	4.0	3.9	4.0	4.1	4.0	4.0
14	4.0	4.0	4.0	---	---	---	4.0	3.9	4.0	4.0	4.0	4.0
15	4.1	4.0	4.0	---	---	---	4.0	4.0	4.0	4.0	4.0	4.0
16	4.1	4.0	4.1	---	---	---	4.0	4.0	4.0	4.1	4.0	4.0
17	4.1	4.0	4.1	---	---	---	4.0	4.0	4.0	4.1	4.1	4.1
18	4.1	4.1	4.1	---	---	---	4.0	4.0	4.0	4.2	4.1	4.2
19	4.1	4.1	4.1	---	---	---	4.1	4.0	4.0	4.2	4.1	4.2
20	4.1	4.1	4.1	---	---	---	4.0	4.0	4.0	4.2	4.1	4.2
21	4.1	4.1	4.1	---	---	---	4.0	4.0	4.0	4.2	4.2	4.2
22	4.1	4.1	4.1	---	---	---	4.1	4.0	4.0	4.2	4.2	4.2
23	4.1	4.1	4.1	---	---	---	4.1	4.0	4.1	4.2	4.1	4.2
24	4.1	4.1	4.1	---	---	---	4.0	4.0	4.0	4.2	4.2	4.2
25	4.1	4.1	4.1	---	---	---	4.1	4.0	4.0	4.2	4.1	4.1
26	4.1	4.1	4.1	---	---	---	4.0	4.0	4.0	4.1	4.1	4.1
27	4.1	4.1	4.1	---	---	---	4.0	4.0	4.0	4.1	4.1	4.1
28	4.1	4.1	4.1	---	---	---	4.0	4.0	4.0	4.1	4.1	4.1
29	4.1	4.1	4.1	4.1	4.0	4.1	4.1	4.0	4.0	4.2	4.1	4.1
30	4.3	4.1	4.2	4.1	4.0	4.0	4.0	4.0	4.0	4.2	4.2	4.2
31	---	---	---	4.0	4.0	4.0	4.0	4.0	4.0	---	---	---
MONTH	4.3	3.9	4.1	---	---	---	4.1	3.9	4.0	4.2	3.9	4.1

OXYGEN, DISSOLVED (DO), MG/L, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	3.2	1.5	2.0	2.8	2.1	2.4	5.0	4.6	4.8	---	---	---
2	3.4	1.8	2.5	3.6	2.4	3.0	5.9	4.6	5.0	---	---	---
3	2.3	1.6	2.0	3.5	3.0	3.2	5.8	4.8	5.3	---	---	---
4	3.3	1.7	2.3	3.6	2.7	3.1	5.9	4.7	5.1	---	---	---
5	3.3	1.6	2.1	5.7	3.0	3.9	6.1	5.9	6.0	---	---	---
6	3.3	1.7	2.3	4.4	3.6	3.9	6.4	6.0	6.2	8.8	8.5	8.7
7	3.2	2.3	2.6	4.0	3.4	3.7	6.6	6.2	6.4	8.5	8.1	8.4
8	3.3	2.3	2.7	3.7	2.9	3.5	6.4	6.1	6.2	8.3	8.1	8.2
9	3.1	2.0	2.5	2.9	2.7	2.8	6.9	6.1	6.5	8.2	8.0	8.1
10	3.6	1.8	2.5	3.8	2.3	3.0	6.5	5.9	6.2	8.1	7.9	8.0
11	3.3	2.3	2.7	7.4	2.7	3.7	7.4	6.1	6.9	7.9	7.6	7.8
12	2.9	2.0	2.3	4.6	3.4	4.0	7.3	7.0	7.2	7.8	7.5	7.7
13	2.7	1.8	2.1	5.1	3.7	4.3	7.4	7.0	7.1	7.7	7.5	7.6
14	3.7	2.8	3.2	4.8	4.1	4.5	7.7	7.4	7.6	7.8	7.5	7.7
15	3.9	2.6	3.0	5.1	4.0	4.4	7.8	7.6	7.7	7.6	7.1	7.4
16	3.6	2.6	3.0	4.5	3.9	4.2	7.7	7.4	7.6	7.3	7.0	7.1
17	3.5	2.7	3.0	4.1	3.4	3.6	7.6	7.2	7.4	7.2	7.0	7.1
18	3.3	2.4	2.8	5.1	3.1	3.6	7.8	7.1	7.4	8.2	7.1	7.7
19	3.5	2.9	3.1	4.7	4.4	4.6	7.8	7.6	7.7	9.2	8.1	8.6
20	3.6	2.8	3.0	4.9	4.3	4.6	8.6	7.6	8.2	---	---	---
21	3.8	2.8	3.1	4.8	4.4	4.6	8.4	8.1	8.3	---	---	---
22	3.4	2.5	2.8	4.7	4.3	4.5	8.3	8.0	8.1	---	---	---
23	3.2	2.3	2.7	5.0	4.3	4.6	8.1	7.8	8.0	---	---	---
24	3.5	2.3	2.6	4.8	4.2	4.5	8.1	7.6	7.8	---	---	---
25	3.7	2.5	2.8	4.9	4.4	4.6	8.3	7.8	8.1	---	---	---
26	3.8	3.1	3.4	4.9	4.5	4.6	8.5	7.7	8.1	---	---	---
27	3.5	3.0	3.2	4.6	4.3	4.4	8.6	8.2	8.4	---	---	---
28	3.5	2.2	2.7	4.7	4.3	4.5	8.3	8.0	8.2	---	---	---
29	2.9	2.2	2.5	4.7	4.4	4.4	8.0	7.8	7.9	---	---	---
30	2.8	1.9	2.2	4.8	4.5	4.6	---	---	---	---	---	---
31	2.9	2.0	2.4	---	---	---	---	---	---	---	---	---
MONTH	3.9	1.5	2.6	7.4	2.1	4.0	8.6	4.6	7.1	---	---	---

01466500 MCDONALDS BRANCH IN LEBANON STATE FOREST, NJ--Continued

OXYGEN, DISSOLVED (DO), MG/L, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	8.7	7.6	8.2	6.0	4.7	5.4	4.4	3.6	3.9
2	---	---	---	9.8	8.7	9.3	6.3	5.6	5.9	4.1	3.5	3.8
3	---	---	---	9.7	9.3	9.6	5.9	5.3	5.6	4.3	3.5	3.8
4	---	---	---	9.4	9.0	9.2	7.1	5.9	6.4	4.8	3.8	4.3
5	---	---	---	9.2	8.8	9.0	6.6	6.1	6.4	5.1	4.4	4.7
6	---	---	---	8.9	8.6	8.8	6.7	6.1	6.5	5.0	3.6	4.5
7	---	---	---	8.6	8.3	8.5	6.4	5.7	6.1	3.9	2.8	3.5
8	---	---	---	8.3	7.8	8.2	5.7	5.1	5.5	3.3	2.6	2.9
9	---	---	---	7.8	7.3	7.6	5.5	4.9	5.1	3.4	2.5	2.9
10	---	---	---	7.6	7.2	7.4	5.3	4.6	4.9	3.0	2.2	2.6
11	---	---	---	7.9	7.5	7.7	4.9	4.1	4.6	2.8	2.0	2.3
12	---	---	---	7.9	7.6	7.8	4.5	3.8	4.1	2.7	2.0	2.2
13	---	---	---	8.1	7.8	7.9	4.0	3.7	3.8	2.8	2.0	2.3
14	---	---	---	8.2	7.9	8.0	4.6	3.8	4.1	3.2	2.2	2.6
15	---	---	---	8.0	7.7	7.9	4.5	4.0	4.2	2.6	2.2	2.3
16	---	---	---	8.0	7.6	7.8	4.3	4.0	4.2	2.9	2.2	2.5
17	---	---	---	7.9	7.5	7.7	5.4	4.2	4.8	3.0	2.1	2.5
18	---	---	---	7.8	7.4	7.6	4.9	4.2	4.6	2.8	2.0	2.3
19	---	---	---	7.6	7.2	7.4	4.4	3.6	4.1	2.4	2.0	2.2
20	---	---	---	7.5	7.0	7.2	3.8	3.1	3.5	3.0	2.4	2.7
21	---	---	---	7.3	6.9	7.0	3.5	2.8	3.1	3.8	2.7	3.2
22	---	---	---	7.1	6.8	6.9	3.4	2.7	3.0	3.2	2.3	2.7
23	---	---	---	7.0	6.5	6.8	3.4	2.9	3.1	2.8	2.1	2.4
24	---	---	---	6.8	6.3	6.5	3.4	3.0	3.2	2.9	2.1	2.4
25	8.0	7.7	7.8	6.6	6.0	6.3	4.4	3.4	3.8	3.0	2.1	2.5
26	7.9	7.6	7.7	6.2	5.5	5.9	4.3	3.6	3.9	2.7	2.3	2.4
27	8.0	7.5	7.7	5.9	5.2	5.6	4.5	3.7	4.0	2.8	2.3	2.5
28	7.9	7.5	7.7	5.9	5.2	5.5	4.4	3.9	4.1	3.2	2.1	2.6
29	---	---	---	5.7	4.9	5.3	4.9	4.0	4.4	2.8	1.9	2.3
30	---	---	---	5.1	4.7	4.8	4.3	3.7	4.0	2.7	1.8	2.2
31	---	---	---	5.5	4.8	5.1	---	---	---	2.6	1.8	2.1
MONTH	---	---	---	9.8	4.7	7.4	7.1	2.7	4.5	5.1	1.8	2.8

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	2.6	1.7	2.0	2.5	1.6	1.9	2.3	1.6	1.9	2.9	2.2	2.6
2	2.6	1.7	2.0	3.1	1.6	2.1	2.6	1.6	1.9	2.7	2.1	2.3
3	2.3	1.8	2.0	2.3	1.5	1.7	2.6	1.6	1.9	2.7	2.1	2.3
4	2.6	1.9	2.1	2.2	1.4	1.7	2.6	1.6	1.9	2.9	2.1	2.4
5	2.9	2.0	2.3	2.3	1.4	1.8	2.7	1.6	1.9	2.9	2.2	2.4
6	2.9	2.0	2.3	2.4	1.4	1.8	2.6	1.8	2.0	2.6	2.1	2.3
7	2.9	2.0	2.3	---	---	---	2.8	1.8	2.1	2.6	2.0	2.2
8	2.9	1.9	2.3	---	---	---	2.9	1.7	2.2	2.3	2.0	2.1
9	2.5	1.8	2.1	---	---	---	3.2	1.7	2.3	2.5	1.9	2.1
10	2.8	1.9	2.2	---	---	---	5.0	1.5	2.2	2.6	1.9	2.1
11	3.0	2.0	2.4	---	---	---	1.7	1.2	1.5	2.6	1.9	2.2
12	2.7	2.0	2.3	---	---	---	2.0	1.3	1.5	2.2	1.9	2.0
13	2.9	2.0	2.4	---	---	---	2.1	1.5	1.8	2.5	1.9	2.2
14	3.1	2.1	2.4	---	---	---	2.4	1.7	1.9	2.5	2.0	2.2
15	3.2	2.2	2.5	---	---	---	2.3	1.6	1.9	2.7	2.0	2.2
16	3.5	2.2	2.7	---	---	---	2.3	1.6	1.8	2.8	2.1	2.3
17	---	---	---	---	---	---	2.3	1.6	1.8	2.4	2.1	2.2
18	---	---	---	---	---	---	2.3	1.6	1.8	2.8	2.1	2.4
19	---	---	---	---	---	---	2.3	1.6	1.9	2.6	2.3	2.4
20	---	---	---	---	---	---	2.4	1.7	1.9	2.6	2.4	2.5
21	---	---	---	---	---	---	2.5	1.8	2.0	2.9	2.4	2.6
22	---	---	---	---	---	---	2.5	1.9	2.1	2.9	2.4	2.6
23	---	---	---	---	---	---	2.5	1.8	2.1	3.1	2.5	2.7
24	---	---	---	---	---	---	2.7	2.0	2.2	2.9	2.3	2.6
25	---	---	---	---	---	---	3.0	2.2	2.5	2.9	2.4	2.5
26	---	---	---	---	---	---	3.0	2.2	2.5	3.0	2.4	2.6
27	---	---	---	---	---	---	2.9	2.2	2.5	3.0	2.4	2.6
28	---	---	---	---	---	---	2.9	2.1	2.4	3.0	2.3	2.6
29	---	---	---	2.5	1.5	1.9	2.7	2.1	2.3	2.6	1.9	2.3
30	---	---	---	3.2	1.6	2.2	2.7	2.1	2.3	2.7	1.9	2.3
31	---	---	---	2.3	1.6	2.0	2.9	2.1	2.4	---	---	---
MONTH	---	---	---	---	---	---	5.0	1.2	2.0	3.1	1.9	2.4

01467000 NORTH BRANCH RANCOCAS CREEK AT PEMBERTON, NJ

LOCATION.--Lat 39°58'10", long 74°41'05", Burlington County, Hydrologic Unit 02040202, on right bank at downstream side of bridge on Hanover Street in Pemberton, 12 mi upstream from confluence with South Branch Rancocas Creek.

DRAINAGE AREA.--118 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1921 to current year.

REVISED RECORDS.--WSP 1302: 1922-23. WSP 1382: 1933. WDR NJ-82-2: Drainage area.

GAGE.--Water-stage recorder above concrete dams. Datum of gage is 31.19 ft above National Geodetic Vertical Datum of 1929. Prior to June 9, 1923, nonrecording gage and June 9, 1923 to Aug. 9, 1951, water-stage recorder at site 600 ft downstream at datum 6.54 ft lower.

REMARKS.--Records good except for estimated daily discharges, which are fair. Flow regulated occasionally by cranberry bogs and ponds above station. Water diverted for water supply at Fort Dix army base upstream at gage. Several measurements of water temperature, other than those published, were made during the year. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989, MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	63	76	218	80	68	161	285	147	166	112	135	90
2	60	113	181	80	67	149	270	217	166	106	132	87
3	61	102	140	79	70	142	241	287	163	99	127	83
4	64	88	116	75	84	136	204	320	159	93	122	80
5	65	77	119	68	95	130	187	302	150	416	113	78
6	44	77	113	70	95	152	213	416	180	766	106	78
7	40	73	107	75	96	175	222	491	208	698	105	77
8	44	78	103	85	95	173	288	449	251	438	111	77
9	46	75	116	101	89	165	302	361	263	322	106	76
10	46	67	101	96	85	155	297	449	285	246	99	73
11	45	67	92	101	81	152	266	650	178	197	114	73
12	43	62	84	104	80	154	238	762	178	167	169	73
13	41	65	79	115	77	153	223	634	164	247	229	72
14	39	70	77	105	90	148	199	489	149	314	305	79
15	37	72	76	129	105	147	186	398	156	354	314	91
16	38	68	76	141	128	141	234	390	191	311	279	97
17	39	86	73	130	128	133	250	438	202	402	203	133
18	38	109	72	120	121	129	247	487	226	439	205	131
19	38	98	70	111	114	143	237	446	219	386	211	340
20	37	133	71	78	109	145	229	382	193	410	178	864
21	47	154	75	70	174	161	226	327	164	425	155	905
22	111	154	80	65	289	160	215	295	154	423	127	713
23	104	141	82	63	294	154	171	281	161	366	100	569
24	80	111	94	63	262	e197	149	266	177	293	104	437
25	64	96	103	70	215	e283	140	230	203	189	102	316
26	55	89	98	71	189	e325	132	265	202	179	96	237
27	50	98	92	67	181	e295	128	256	181	158	91	300
28	49	221	91	64	172	e265	112	239	161	146	89	388
29	49	267	89	61	---	e238	93	215	138	137	88	304
30	49	256	85	67	---	e215	129	198	109	128	94	236
31	52	---	83	71	---	e243	---	186	---	129	93	---
MEAN	52.8	108	98.6	86.3	130	178	210	364	183	293	145	239
MAX	111	267	218	141	294	325	302	762	285	766	314	905
MIN	37	62	70	61	67	129	93	147	109	93	88	72
IN.	.52	1.02	.96	.84	1.15	1.74	1.99	3.55	1.73	2.87	1.42	2.26

STATISTICS OF MONTHLY FLOW DATA FOR PERIOD OF RECORD, BY WATER YEAR (WY)

MEAN	117	152	172	197	217	245	237	198	145	125	129	118
MAX	365	430	434	479	445	469	475	397	297	401	426	341
(WY)	1928	1973	1973	1979	1939	1958	1984	1958	1968	1938	1958	1971
MIN	38.7	45.7	54.4	62.1	92.2	105	85.4	89.8	54.8	44.1	41.4	40.1
(WY)	1923	1923	1966	1981	1931	1985	1985	1985	1942	1957	1957	1957

SUMMARY STATISTICS	FOR 1989 WATER YEAR		FOR PERIOD OF RECORD	
AVERAGE FLOW	174		171	
HIGHEST ANNUAL MEAN			286	1978
LOWEST ANNUAL MEAN			92.7	1985
HIGHEST DAILY MEAN	905	Sep 21	1690	Aug 21 1939
LOWEST DAILY MEAN	37	Oct 15	9.0	Sep 29 1932
INSTANTANEOUS PEAK FLOW	1010	Sep 20	1730	Aug 21 1939
INSTANTANEOUS PEAK STAGE	3.01	Sep 20	10.77a	Aug 21 1939
INSTANTANEOUS LOW FLOW	36	Oct 15	9.0	Sep 29 1932
ANNUAL RUNOFF (INCHES)	20.06		19.65	
10 PERCENTILE	327		313	
50 PERCENTILE	135		142	
95 PERCENTILE	51		52	

e Estimated
a From high-water mark, site and datum then in use.

01467000 NORTH BRANCH RANCOCAS CREEK AT PEMBERTON, NJ--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1923-24, 1958, 1962-69, 1975 to current year.

COOPERATION.--Analyses of fecal coliform and fecal streptococci by the MPN method, and water-phase nutrients were performed by the New Jersey Department of Health, Division of Laboratories and Epidemiology.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, EC BROTH (MPN)	STREP-TOCOCCI FECAL (MPN)
OCT 1988										
25...	1300	64	66	5.0	11.0	8.5	78	1.0	33	350
JAN 1989										
23...	1100	61	67	5.2	1.5	13.0	92	1.4	<2	<2
MAR										
23...	1130	154	67	4.1	7.5	11.1	91	1.0	--	--
MAY										
24...	1030	291	58	4.4	22.0	9.8	114	0.4	240	920
JUL										
20...	1015	378	44	5.0	21.0	6.0	68	--	49	540
AUG										
17...	1100	202	49	4.5	23.0	6.5	76	1.7	80	460

DATE	HARD-NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
OCT 1988									
25...	13	2.8	1.4	4.0	1.4	2.0	17	6.7	<0.1
JAN 1989									
23...	11	2.5	1.2	4.1	1.1	<1.0	16	6.3	<0.1
MAR									
23...	10	2.3	1.1	3.9	0.9	<1.0	17	6.2	0.1
MAY									
24...	8	1.9	0.73	3.0	0.7	<1.0	9.0	5.6	0.1
JUL									
20...	6	1.4	0.67	2.6	0.5	<1.0	5.0	5.6	<0.1
AUG									
17...	6	1.3	0.55	3.2	0.6	<1.0	5.0	5.9	<0.1

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	PHOS-PHOROUS TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
OCT 1988									
25...	5.5	40	0.007	0.07	<0.05	0.44	0.51	<0.02	5.2
JAN 1989									
23...	6.2	--	<0.003	0.17	<0.05	0.36	0.53	0.02	4.3
MAR									
23...	4.2	--	<0.001	0.084	0.023	0.30	0.38	0.01	5.5
MAY									
24...	3.4	--	0.011	0.11	0.07	0.51	0.62	0.05	12
JUL									
20...	4.2	--	0.015	0.15	<0.05	0.59	0.74	0.06	15
AUG									
17...	4.7	--	0.011	0.06	<0.05	0.56	0.62	0.05	16

01467000 NORTH BRANCH RANCOCAS CREEK AT PEMBERTON, NJ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SULFIDE TOTAL (MG/L AS S)	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE)	BORON, TOTAL RECOVERABLE (UG/L AS B)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)
MAY 1989 24...	1030	<0.5	320	<1	<10	<10	<1	<1	4

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)	SELENIUM, TOTAL (UG/L AS SE)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	PHENOLS TOTAL (UG/L)
MAY 1989 24...	1700	14	30	<0.10	<1	<1	30	3

01467060 DELAWARE RIVER AT PALMYRA, NJ

LOCATION.--Lat 40°01'05", long 75°02'16", Philadelphia County, PA, Hydrologic Unit 02040202, on right bank opposite Palmyra, 0.5 mi upstream from Tacony-Palmyra Bridge, 3.5 mi downstream from Rancocas Creek, and at river mile 107.55.

DRAINAGE AREA.--7,850 mi^2.

PERIOD OF RECORD.--December 1962 to current year. Tidal volumes published from December 1962 to September 1970.

GAGE.--Water-stage recorder. Datum of gage is -10.00 ft below National Geodetic Vertical Datum of 1929. Gage-height record converted to elevation above or below (-) National Geodetic Vertical Datum of 1929 for publication.

REMARKS.--No gage-height or doubtful record: Dec. 12-14, Feb. 4, Mar. 7-8, and July 28-31. Some periods of low tide are affected by sluggish or plugged intake and the record is estimated with negligible loss in accuracy. Some periods cannot be estimated and are noted by dash (--) lines.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 8.23 ft, Oct. 25, 1980; minimum, -8.6 ft, Dec. 31, 1962.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum elevation known since 1899, 8.9 ft, Aug. 24, 1933, from profile furnished by Corps of Engineers, U.S. Army.

EXTREMES FOR CURRENT YEAR.--Maximum elevation recorded, 7.16 ft, May 7; minimum recorded, -3.96 ft, Jan. 21 (bottom of stilling well at 4.0 ft).

Summaries of tide elevations during current year are as follows:

TIDE ELEVATIONS, IN FEET, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

		OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
Maximum	Elevation	5.65	5.77	5.19	6.16	5.34	5.54	5.66	7.16	5.85	6.16	5.58	6.82
high tide	Date	21	20	14	8	3	31	9	7	14	18	17	20
Minimum	Elevation	-3.29	-3.37	-3.67	-3.96	-3.92	-3.19	-3.02	-2.98	-2.80	-2.77	-2.76	-3.24
low tide	Date	13	22	4	21	10	19	11	28	29	26	22	24
Mean high tide		4.23	4.16	3.79	3.79	3.81	4.30	4.56	5.25	5.10	4.85	4.68	4.63
Mean water level		1.20	1.15	.72	.82	.89	1.33	1.42	2.01	1.79	1.60	1.46	1.58
Mean low tide		-2.21	-2.17	-2.60	-2.45	-2.34	-1.89	-2.04	-1.47	-1.86	-2.03	-2.16	-3.24

01467069 NORTH BRANCH PENNSAUKEN CREEK NEAR MOORESTOWN, NJ

LOCATION.--Lat 39°57'07", long 74°58'10", Burlington County, Hydrologic Unit 02040202, at bridge on Kings Highway, 200 ft downstream from outlet of Strawbridge Lake, 0.6 mi northwest of Moorestown Mall, 0.8 mi southeast of Lenola, and 1.8 mi southwest of Moorestown.

DRAINAGE AREA.--12.8 mi^2.

PERIOD OF RECORD.--Water years 1976 to current year.

COOPERATION.--Analyses of fecal coliform and fecal streptococci by the MPN method, and water-phase nutrients wre performed by the New Jersey Department of Health, Division of Laboratories and Epidemiology.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)	COLIFORM, FECAL, EC BROTH (MPN)	STREPTOCOCCI FECAL (MPN)
OCT 1988										
24...	0900	3.3E	230	6.8	11.0	7.9	72	4.9	7000	1700
JAN 1989										
26...	1100	3.0E	348	6.4	4.5	11.8	91	3.3	20	130
MAR										
29...	1100	7.0E	295	6.1	16.0	8.1	82	2.1	110	80
MAY										
18...	1200	12 E	179	6.9	20.5	10.1	112	1.8	16000	5400
JUL										
19...	0900	9.8E	187	6.7	22.0	6.5	75	2.4	790	2100
AUG										
28...	1030	3.5E	278	7.3	25.0	8.3	100	3.4	340	490

DATE	HARDNESS TOTAL (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
OCT 1988									
24...	66	18	5.2	11	5.2	15	46	21	0.2
JAN 1989									
26...	92	25	7.2	21	5.0	12	68	44	0.2
MAR									
29...	80	22	6.1	18	4.3	11	61	35	0.2
MAY									
18...	54	15	4.0	8.6	3.5	13	34	14	0.2
JUL									
19...	57	16	4.2	8.5	4.3	16	36	14	0.2
AUG									
28...	88	24	6.9	15	5.4	17	60	30	0.2

DATE	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	PHOSPHORUS TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
OCT 1988									
24...	6.8	122	0.025	0.61	0.18	0.97	1.6	0.32	6.7
JAN 1989									
26...	12	190	0.009	0.76	0.41	0.48	1.2	0.03	1.9
MAR									
29...	10	163	0.009	0.62	0.18	0.71	1.3	0.23	5.2
MAY									
18...	8.0	95	0.030	0.50	0.11	0.39	0.89	0.26	8.2
JUL									
19...	9.9	103	0.026	0.41	0.21	0.91	1.3	0.33	10
AUG									
28...	10	162	0.019	0.41	<0.05	1.0	1.4	0.31	7.2

01467069 NORTH BRANCH PENNSAUKEN CREEK NEAR MOORESTOWN, NJ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SULFIDE TOTAL (MG/L AS S)	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE)	BORON, TOTAL RECOVERABLE (UG/L AS B)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)
OCT 1988 24...	0900	<0.5	<10	2	<10	50	<1	4	5

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)	SELENIUM, TOTAL (UG/L AS SE)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	PHENOLS TOTAL (UG/L)
OCT 1988 24...	5700	<5	140	<0.10	3	<1	30	2

01467081 SOUTH BRANCH PENNSAUKEN CREEK AT CHERRY HILL, NJ

LOCATION.--Lat 39°56'30", long 75°00'05", Camden County, Hydrologic Unit 02040202, on left bank on downstream wingwall of bridge on Mill Road in Cherry Hill, 1.1 mi south of Maple Shade and 3.8 mi upstream from confluence with the North Branch Pennsauken Creek.

DRAINAGE AREA.--8.98 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1967 to September 1976, October 1977 to current year.

REVISED RECORDS.--WDR NJ-82-2: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 8.12 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records fair. Diurnal fluctuations from unknown source. Several measurements of water temperature, other than those published, were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989, MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.9	72	11	9.1	9.5	12	38	26	12	9.3	11	7.7
2	8.4	18	9.8	9.8	9.5	11	18	149	12	8.9	10	7.3
3	14	8.7	9.4	8.7	26	11	24	24	12	8.8	9.7	6.6
4	9.5	7.8	9.0	8.4	22	10	19	17	10	8.9	9.2	6.5
5	7.9	12	9.1	7.5	11	11	32	27	10	551	9.0	6.7
6	7.0	13	9.0	8.2	11	51	82	162	63	146	8.5	6.8
7	7.7	7.8	8.7	8.5	10	18	30	33	27	24	15	6.5
8	7.5	7.8	8.6	46	9.1	14	68	19	15	16	11	6.7
9	6.4	7.8	8.5	20	8.6	17	22	16	129	13	7.9	6.8
10	6.3	8.2	8.5	11	8.4	18	16	286	230	12	7.8	6.6
11	6.5	9.6	8.4	9.9	9.0	16	14	98	20	11	17	7.7
12	6.5	8.5	7.7	53	9.0	15	13	27	15	11	77	7.1
13	6.1	22	7.7	20	8.1	13	13	21	13	123	20	6.6
14	6.1	11	7.7	11	33	12	12	20	12	29	11	25
15	6.2	7.4	7.9	86	36	12	43	17	29	14	21	28
16	6.2	7.0	7.8	17	32	11	50	86	51	52	21	31
17	6.3	83	7.7	12	12	11	16	39	52	59	9.9	47
18	6.3	15	7.5	11	10	24	14	20	55	16	8.6	10
19	6.3	9.2	7.6	10	10	21	23	16	15	14	18	222
20	6.6	114	7.8	12	9.7	13	15	14	12	91	11	218
21	41	35	13	9.5	171	36	13	13	40	62	12	19
22	88	12	11	8.8	88	15	12	13	45	18	9.5	14
23	12	9.8	15	9.1	22	13	11	66	23	14	8.7	14
24	9.0	9.1	22	8.8	14	134	11	102	20	12	11	13
25	7.6	8.3	18	8.8	12	85	11	22	23	36	7.7	10
26	6.9	7.9	9.5	9.4	16	21	11	17	13	17	7.4	89
27	6.9	27	8.8	9.7	17	17	11	48	12	15	7.4	18
28	7.0	218	11	8.5	13	15	9.7	19	11	14	7.3	11
29	7.1	21	12	8.3	---	14	15	14	11	10	13	10
30	7.2	13	8.8	24	---	23	41	13	9.9	9.6	29	9.7
31	7.8	---	8.6	12	---	113	---	13	---	17	8.6	---
MEAN	11.1	27.0	9.91	16.0	23.1	26.0	23.6	47.0	33.4	46.5	14.0	29.3
MAX	88	218	22	86	171	134	82	286	230	551	77	222
MIN	5.9	7.0	7.5	7.5	8.1	10	9.7	13	9.9	8.8	7.3	6.5
IN.	1.43	3.36	1.27	2.05	2.68	3.34	2.93	6.04	4.15	5.98	1.80	3.64

STATISTICS OF MONTHLY FLOW DATA FOR PERIOD OF RECORD, BY WATER YEAR (WY)

MEAN	12.9	18.1	22.3	21.5	20.9	22.3	22.7	20.8	15.9	17.5	15.7	14.0
MAX	23.2	48.8	40.8	50.5	44.7	41.0	49.8	47.0	33.4	46.5	58.2	38.8
(WY)	1973	1973	1978	1979	1979	1984	1983	1989	1989	1989	1978	1975
MIN	6.08	6.99	7.05	6.55	9.19	9.29	8.08	8.57	6.65	6.92	6.22	4.71
(WY)	1969	1977	1981	1981	1968	1985	1985	1969	1971	1982	1968	1968

SUMMARY STATISTICS	FOR 1989 WATER YEAR		FOR PERIOD OF RECORD	
AVERAGE FLOW	25.6		18.8	
HIGHEST ANNUAL MEAN			27.3	1978
LOWEST ANNUAL MEAN			12.2	1981
HIGHEST DAILY MEAN	551	Jul 5	551	Jul 5 1989
LOWEST DAILY MEAN	5.9	Oct 1	2.9	Sep 19 1982
INSTANTANEOUS PEAK FLOW	975	Jul 5	868	Aug 28 1978
INSTANTANEOUS PEAK STAGE	10.53	Jul 5	11.34	Aug 28 1971
INSTANTANEOUS LOW FLOW	4.9	Oct 1	2.6	Oct 6 1970
ANNUAL RUNOFF (INCHES)	38.71		28.47	
10 PERCENTILE	52		36	
50 PERCENTILE	13		10	
95 PERCENTILE	6.6		4.6	

01467081 SOUTH BRANCH PENNSAUKEN CREEK AT CHERRY HILL, NJ--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1970-73, 1975 to current year.

COOPERATION.--Analyses of fecal coliform and fecal streptococci by the MPN method, and water-phase nutrients were performed by the New Jersey Department of Health, Division of Laboratories and Epidemiology.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, EC BROTH (MPN)	STREP-TOCOCCI FECAL (MPN)
OCT 1988										
24...	1215	10	300	6.8	13.5	6.9	67	8.3	11000	7900
JAN 1989										
30...	1100	35	254	6.8	8.5	9.0	78	11	330	13
MAR										
30...	1330	17	385	6.8	11.5	7.8	72	3.7	1700	1300
JUN										
01...	1130	12	365	6.8	22.0	4.4	51	5.2	4900	1400
JUL										
19...	1000	13	320	6.8	20.0	5.4	60	--	7000	2300
AUG										
21...	1245	9.1	320	7.4	23.0	4.2	49	5.7	490	330

DATE	HARD-NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
OCT 1988									
24...	73	20	5.7	18	7.1	34	43	22	0.1
JAN 1989									
30...	58	16	4.5	17	5.2	34	39	22	0.2
MAR									
30...	93	25	7.5	29	7.7	42	56	46	0.2
JUN									
01...	94	25	7.7	24	8.2	34	51	32	0.2
JUL									
19...	85	23	6.6	19	6.6	36	47	26	0.2
AUG									
21...	84	23	6.5	24	8.9	45	42	28	0.2

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	PHOS-PHOROUS TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
OCT 1988									
24...	9.5	146	0.143	1.29	2.10	2.8	4.1	0.65	9.4
JAN 1989									
30...	7.6	132	0.102	1.42	1.90	3.7	5.1	1.57	15
MAR									
30...	12	209	0.056	1.73	2.20	3.0	4.7	0.46	7.3
JUN									
01...	13	182	0.365	1.91	2.25	3.2	5.1	0.48	6.3
JUL									
19...	13	163	0.310	1.49	1.43	2.0	3.4	0.26	5.6
AUG									
21...	12	172	0.255	1.18	1.83	2.8	4.0	0.33	6.0

01467081 SOUTH BRANCH PENNSAUKEN CREEK AT CHERRY HILL, NJ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SULFIDE TOTAL (MG/L AS S)	NITROGEN,NH4 + ORG. TOT IN BOT MAT (MG/KG AS N)	CARBON, INORGANIC, TOT IN BOT MAT (G/KG AS C)	CARBON, INORG + ORGANIC TOT. IN BOT MAT (GM/KG AS C)	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC TOTAL IN BOTTOM MATERIAL (UG/G AS AS)	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE)	BORON, TOTAL RECOVERABLE (UG/L AS B)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CADMIUM RECOV. FM BOTTOM MATERIAL (UG/G AS CD)
OCT 1988												
24...	1215	<0.5	--	--	--	<10	2	--	<10	140	1	--
24...	1215	--	330	<0.1	3.3	--	--	6	--	--	--	<10
JUN 1989												
01...	1130	<0.5	--	--	--	30	1	--	<10	100	<1	--

DATE	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	CHROMIUM, RECOV. FM BOTTOM MATERIAL (UG/G)	COBALT, RECOV. FM BOTTOM MATERIAL (UG/G AS CO)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	COPPER, RECOV. FM BOTTOM MATERIAL (UG/G AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, RECOV. FM BOTTOM MATERIAL (UG/G AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	LEAD, RECOV. FM BOTTOM MATERIAL (UG/G AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, RECOV. FM BOTTOM MATERIAL (UG/G)
OCT 1988											
24...	3	--	--	13	--	2300	--	<5	--	100	--
24...	--	9	<50	--	9	--	6400	--	10	--	22
JUN 1989											
01...	2	--	--	7	--	2900	--	3	--	160	--

DATE	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	MERCURY RECOV. FM BOTTOM MATERIAL (UG/G AS HG)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)	NICKEL, RECOV. FM BOTTOM MATERIAL (UG/G AS NI)	SELENIUM, TOTAL (UG/L AS SE)	SELENIUM, TOTAL IN BOTTOM MATERIAL (UG/G)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	ZINC, RECOV. FM BOTTOM MATERIAL (UG/G AS ZN)	PHENOLS TOTAL (UG/L)	PCB, TOTAL IN BOTTOM MATERIAL (UG/KG)	PCN, TOTAL IN BOTTOM MATERIAL (UG/KG)
OCT 1988											
24...	<0.10	--	6	--	<1	--	50	--	4	--	--
24...	--	0.02	--	<100	--	<1	--	40	--	<1	<1.0
JUN 1989											
01...	<0.10	--	7	--	<1	--	30	--	1	--	--

DATE	ALDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG)	CHLORDANE, TOTAL IN BOTTOM MATERIAL (UG/KG)	DDD, TOTAL IN BOTTOM MATERIAL (UG/KG)	DDE, TOTAL IN BOTTOM MATERIAL (UG/KG)	DDT, TOTAL IN BOTTOM MATERIAL (UG/KG)	DIAZINON, TOTAL IN BOTTOM MATERIAL (UG/KG)	DIELDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG)	ENDOSULFAN, TOTAL IN BOTTOM MATERIAL (UG/KG)	ENDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG)	ETHION, TOTAL IN BOTTOM MATERIAL (UG/KG)	HEPTACHLOR, TOTAL IN BOTTOM MATERIAL (UG/KG)
OCT 1988											
24...	--	--	--	--	--	--	--	--	--	--	--
24...	<0.1	30	13	<0.1	<0.1	0.8	2.3	0.6	<0.1	<0.1	<0.1
JUN 1989											
01...	--	--	--	--	--	--	--	--	--	--	--

DATE	HEPTACHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG)	LINDANE TOTAL IN BOTTOM MATERIAL (UG/KG)	MALATHION, TOTAL IN BOTTOM MATERIAL (UG/KG)	METHOXYCHLOR, TOT. IN BOTTOM MATL. (UG/KG)	METHYL PARATHION, TOT. IN BOTTOM MATL. (UG/KG)	METHYL TRITHION, TOT. IN BOTTOM MATL. (UG/KG)	MIREX, TOTAL IN BOTTOM MATERIAL (UG/KG)	PARATHION, TOTAL IN BOTTOM MATERIAL (UG/KG)	PERTHANE IN BOTTOM MATERIAL (UG/KG)	TOXAPHENE, TOTAL IN BOTTOM MATERIAL (UG/KG)	TRITHION, TOTAL IN BOTTOM MATERIAL (UG/KG)
OCT 1988											
24...	--	--	--	--	--	--	--	--	--	--	--
24...	0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.00	<10	<0.1
JUN 1989											
01...	--	--	--	--	--	--	--	--	--	--	--

01467120 COOPER RIVER AT NORCROSS ROAD AT LINDENWOLD, NJ

LOCATION.--Lat 39°49'43", long 74°58'55", Camden County, Hydrologic Unit 02040202, at bridge on Norcross Road in Lindenwold, 50 ft downstream from outflow of Linden Lake, 1.1 mi southwest of Gibbstown, and 1.7 mi south of Glendale.

DRAINAGE AREA.--1.13 mi^2.

PERIOD OF RECORD.--Water years 1976 to current year.

COOPERATION.--Analyses of fecal coliform and fecal streptococci by the MPN method, and water-phase nutrients were performed by the New Jersey Department of Health, Division of Laboratories and Epidemiology.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, EC BROTH (MPN)	STREP-TOCOCCI FECAL (MPN)
OCT 1988										
04...	0930	0.2E	79	6.9	18.0	6.4	68	3.6	50	20
FEB 1989										
02...	1100	0.7E	91	6.9	8.0	12.5	106	0.7	--	--
APR										
04...	1100	2.0E	94	6.4	14.5	9.8	97	4.5	33	2
JUN										
06...	1130	1.4E	83	6.9	24.0	6.9	83	3.6	>2400	1600
JUL										
18...	1115	4.6E	73	6.5	22.0	7.8	89	1.6	350	920
AUG										
31...	1330	0.8E	82	6.9	26.0	6.5	80	0.8	46	110

DATE	HARD-NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
OCT 1988									
04...	23	7.2	1.2	4.7	1.5	13	14	8.2	0.1
FEB 1989									
02...	24	7.6	1.2	6.1	1.3	12	14	11	0.1
APR									
04...	23	7.1	1.2	7.3	1.4	11	14	11	0.1
JUN									
06...	21	6.6	1.1	5.7	1.1	13	8.0	10	0.1
JUL									
18...	20	6.1	1.1	4.7	1.1	11	7.0	8.5	0.1
AUG									
31...	20	6.3	1.1	6.3	1.4	13	5.0	9.6	0.1

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	PHOS-PHOROUS TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
OCT 1988									
04...	0.38	45	<0.003	<0.05	0.09	0.67	--	0.05	5.9
FEB 1989									
02...	2.5	51	<0.003	<0.05	<0.05	0.28	--	0.03	3.5
APR									
04...	3.6	52	0.003	0.09	0.05	0.38	0.47	0.05	6.1
JUN									
06...	1.3	42	0.007	0.17	<0.05	0.50	0.67	0.06	8.6
JUL									
18...	2.8	38	0.005	0.09	0.05	0.47	0.56	0.04	14
AUG									
31...	2.5	40	0.003	<0.05	0.07	0.74	--	0.07	4.5

01467120 COOPER RIVER AT NORCROSS ROAD AT LINDENWOLD, NJ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SULFIDE TOTAL (MG/L AS S)	ALUM-INUM, DIS-SOLVED (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE)	BORON, TOTAL RECOV-ERABLE (UG/L AS B)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)
OCT 1988									
04...	0930	<0.5	20	1	<10	40	<1	<1	3
JUN 1989									
06...	1130	--	60	<1	<10	40	<1	<1	3

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)	SELE-NIUM, TOTAL (UG/L AS SE)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	PHENOLS TOTAL (UG/L)
OCT 1988								
04...	1200	<5	80	<0.10	2	<1	<10	2
JUN 1989								
06...	2000	4	80	<0.10	2	<1	10	2

01467140 COOPER RIVER AT LAWNSIDE, NJ

LOCATION.--Lat 39°52'14", long 75°00'59", Camden County, Hydrologic Unit 02040202, at bridge on Woodcrest Road in Lawnside, 0.2 mi upstream from the New Jersey Turnpike, and 1.7 mi upstream from Tindale Run.

DRAINAGE AREA.--12.7 mi^2.

PERIOD OF RECORD.--Water years 1964-65, 1976 to current year.

COOPERATION.--Analyses of fecal coliform and fecal streptococci by the MPN method, and water-phase nutrients were performed by the New Jersey Department of Health, Division of Laboratories and Epidemiology.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)	COLIFORM, FECAL, EC BROTH (MPN)	STREPTOCOCCI FECAL (MPN)
OCT 1988										
04...	1015	12 E	152	7.2	16.0	8.1	82	6.0	790	9200
FEB 1989										
01...	1100	10 E	192	6.7	8.0	11.3	96	--	80	110
APR										
03...	1100	23 E	188	6.6	10.5	9.8	88	4.8	16000	460
JUN										
05...	1200	8.9E	183	7.0	20.0	8.0	88	5.7	1700	490
JUL										
26...	1200	15 E	178	6.6	27.0	7.5	94	1.8	3500	3500
AUG										
31...	1120	7.4E	175	7.4	20.5	9.3	104	1.0	1300	700

DATE	HARDNESS TOTAL (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
OCT 1988									
04...	51	15	3.4	8.3	3.5	27	28	13	0.2
FEB 1989									
01...	54	16	3.4	11	3.0	23	30	17	0.2
APR									
03...	51	15	3.3	13	2.9	24	26	19	0.1
JUN									
05...	58	17	3.8	11	3.6	29	23	17	0.2
JUL									
26...	52	15	3.5	8.3	3.6	29	20	14	0.2
AUG									
31...	52	15	3.5	9.9	3.7	30	21	16	0.2

DATE	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	PHOSPHOROUS TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
OCT 1988									
04...	9.9	97	0.010	0.23	0.15	1.3	1.5	0.32	5.9
FEB 1989									
01...	11	105	0.006	0.30	0.06	0.33	0.63	0.15	2.9
APR									
03...	7.6	101	0.020	0.56	0.18	0.86	1.4	0.28	7.3
JUN									
05...	13	106	0.014	0.34	0.07	0.61	0.95	0.33	6.0
JUL									
26...	12	94	0.012	0.39	<0.05	0.66	1.0	0.32	7.7
AUG									
31...	11	98	0.008	0.33	0.06	0.53	0.86	0.25	7.4

01467140 COOPER RIVER AT LAWNSIDE, NJ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SULFIDE TOTAL (MG/L AS S)	NITRO-GEN,NH4 + ORG. TOT IN BOT MAT (MG/KG AS N)	CARBON, INOR-GANIC, TOT IN BOT MAT (G/KG AS C)	CARBON, INORG + ORGANIC TOT. IN BOT MAT (GM/KG AS C)	ALUM-INUM, DIS-SOLVED (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC TOTAL IN BOT-TOM MA-TERIAL (UG/G AS AS)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE)	BORON, TOTAL RECOV-ERABLE (UG/L AS B)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CADMIUM RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CD)
OCT 1988												
04...	1015	<0.5	--	--	--	<10	<1	--	<10	30	<1	--
04...	1015	--	250	0.1	1.9	--	--	7	--	--	--	<10

DATE	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	CHRO-MIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G)	COBALT, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CO)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	COPPER, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	LEAD, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS PB)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MANGA-NESE, RECOV. FM BOT-TOM MA-TERIAL (UG/G)
OCT 1988											
04...	2	--	--	2	--	3600	--	<5	--	90	--
04...	--	10	<50	--	7	--	8100	--	20	--	15

DATE	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	MERCURY RECOV. FM BOT-TOM MA-TERIAL (UG/G AS HG)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)	NICKEL, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS NI)	SELE-NIUM, TOTAL (UG/L AS SE)	SELE-NIUM, TOTAL IN BOT-TOM MA-TERIAL (UG/G)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	ZINC, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS ZN)	PHENOLS TOTAL (UG/L)	PCB, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	PCN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)
OCT 1988											
04...	<0.10	--	4	--	<1	--	30	--	7	--	--
04...	--	0.03	--	<10	--	<1	--	70	--	<1	<1.0

DATE	ALDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	CHLOR-DANE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	DDD, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	DDE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	DDT, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	DI-AZINON, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	DI-ELDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	ENDO-SULFAN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	ENDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	ETHION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	HEPTA-CHLOR, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)
OCT 1988											
04...	--	--	--	--	--	--	--	--	--	--	--
04...	<0.1	10	4.5	1.3	0.4	0.7	0.4	<0.1	<0.1	<2.0	<0.1

DATE	HEPTA-CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG)	LINDANE TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	MALA-THION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	METH-OXY-CHLOR, TOT. IN BOTTOM MATL. (UG/KG)	METHYL PARA-THION, TOT. IN BOTTOM MATL. (UG/KG)	METHYL TRI-THION, TOT. IN BOTTOM MATL. (UG/KG)	MIREX, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	PARA-THION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	PER-THANE IN BOT-TOM MA-TERIAL (UG/KG)	TOXA-PHENE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	TRI-THION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)
OCT 1988											
04...	--	--	--	--	--	--	--	--	--	--	--
04...	0.1	<0.1	<2.0	<0.1	<2.0	<2.0	<0.1	<2.0	<1.00	<10	<2.0

01467150 COOPER RIVER AT HADDONFIELD, NJ

LOCATION.--Lat 39°54'11", long 75°01'19", Camden County, Hydrologic Unit 02040202, on right bank of Wallworth Lake in Pennypacker Park, 200 ft upstream from bridge on State Highway 41 (Kings Highway) in Haddonfield, 0.6 mi upstream from North Branch Cooper River, and 7.7 mi upstream from mouth.

DRAINAGE AREA.--17.0 mi^2.

PERIOD OF RECORD.--October 1963 to current year.

REVISED RECORDS.--WRD-NJ 1969: 1967(M). WDR NJ-82-2: Drainage area.

GAGE.--Water-stage recorder above concrete dam. Datum of gage is 9.29 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except for estimated daily discharges, which are fair. Bypass gates were installed on both ends of the dam in August 1987. Gates were open Nov. 30 to Mar. 3. Occasional regulation at low flow from Kirkwood Lake, other small lakes and wastewater treatment plants. Regulation from unknown source on July 7 and Sept. 25-26. Several measurements of water temperature were made during the year. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989, MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	70	e18	e15	14	e24	46	37	17	14	20	9.7
2	12	34	e15	e16	13	e20	24	196	15	14	19	9.3
3	25	16	e13	e15	28	e18	28	46	14	15	18	8.9
4	17	13	e13	e14	e30	16	26	26	13	16	18	8.7
5	14	16	e15	e13	e16	17	33	40	12	774	15	9.3
6	12	17	e13	e14	e15	68	106	226	118	186	14	9.8
7	12	13	e13	e14	14	36	49	58	51	37	18	9.6
8	12	12	e13	e51	13	21	99	30	28	32	15	9.5
9	12	12	e13	24	12	27	37	26	149	25	13	9.2
10	12	12	e12	17	16	29	27	362	225	21	12	8.8
11	11	13	e12	14	e15	27	22	159	31	19	23	8.9
12	11	11	e12	e48	e15	26	20	45	21	16	105	9.0
13	11	25	e12	26	e13	22	20	33	19	101	35	8.8
14	9.9	19	e12	e16	e41	19	23	29	18	40	25	42
15	9.9	14	e13	e109	e48	18	47	27	30	26	83	48
16	10	13	e12	e32	e47	17	66	80	74	59	64	41
17	11	85	e12	22	e22	16	29	52	111	79	23	77
18	11	37	e12	20	e17	32	23	32	52	30	17	21
19	11	22	e12	17	e17	31	33	24	26	23	32	251
20	11	109	e13	14	e16	18	23	21	19	125	21	293
21	26	50	e18	e12	e216	52	19	19	28	51	27	43
22	110	25	e17	e12	e142	26	19	18	120	31	18	25
23	25	20	e20	12	e43	18	18	70	49	25	15	25
24	17	18	e31	12	20	160	17	123	45	20	14	19
25	14	17	e27	13	e20	114	18	39	36	32	12	8.3
26	13	16	e15	12	e26	31	18	28	25	47	12	102
27	13	30	e13	13	31	23	17	55	19	82	11	30
28	13	247	e18	e12	29	20	17	32	18	25	12	20
29	12	49	e19	e12	---	20	22	21	18	18	12	18
30	12	e20	e15	e26	---	26	55	18	15	16	12	16
31	11	---	e14	e18	---	76	---	17	---	25	10	---
MEAN	16.5	35.2	15.1	21.5	33.9	34.5	33.4	64.2	47.2	65.3	24.0	40.0
MAX	110	247	31	109	216	160	106	362	225	774	105	293
MIN	9.9	11	12	12	12	16	17	17	12	14	10	8.3
IN.	1.12	2.31	1.02	1.46	2.08	2.34	2.19	4.35	3.10	4.43	1.63	2.62

STATISTICS OF MONTHLY FLOW DATA FOR PERIOD OF RECORD, BY WATER YEAR (WY)

MEAN	28.1	34.4	39.5	39.4	39.7	42.1	43.1	39.3	31.1	32.8	30.9	27.7
MAX	46.8	79.6	74.6	97.8	76.1	78.9	99.4	66.7	54.9	66.8	97.6	65.8
(WY)	1976	1973	1973	1978	1979	1984	1983	1983	1972	1975	1971	1975
MIN	9.26	11.8	14.3	16.1	22.5	23.2	20.2	14.2	10.9	14.6	7.79	13.0
(WY)	1966	1966	1966	1966	1968	1981	1965	1965	1988	1966	1966	1965

SUMMARY STATISTICS	FOR 1989 WATER YEAR		FOR PERIOD OF RECORD	
AVERAGE FLOW	35.9		35.7	
HIGHEST ANNUAL MEAN			50.6	1973
LOWEST ANNUAL MEAN			20.3	1965
HIGHEST DAILY MEAN	774	Jul 5	1510	Aug 28 1971
LOWEST DAILY MEAN	8.3	Sep 25	1.2	Jun 27 1964
INSTANTANEOUS PEAK FLOW	1710	Jul 5	3300	Aug 28 1971
INSTANTANEOUS PEAK STAGE	4.18	Jul 5	5.46	Aug 28 1971
ANNUAL RUNOFF (INCHES)	28.67		28.49	
10 PERCENTILE	72		59	
50 PERCENTILE	20		25	
95 PERCENTILE	10		12	

e Estimated

01467329 SOUTH BRANCH BIG TIMBER CREEK AT BLACKWOOD TERRACE, NJ

LOCATION.--Lat 39°48'05", long 75°04'27", Gloucester County, Hydrologic Unit 02040202, at bridge on Blackwood-Clementon Road at Blackwood Terrace, 1,000 ft upstream from Bull Run, and 2.0 mi northeast of Fairview.

DRAINAGE AREA.--19.1 mi^2.

PERIOD OF RECORD.--Water years 1976 to current year.

COOPERATION.--Analyses of fecal coliform and fecal streptococci by the MPN method, and water-phase nutrients were performed by the New Jersey Department of Health, Division of Laboratories and Epidemiology.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)	COLIFORM, FECAL, EC BROTH (MPN)	STREPTOCOCCI FECAL (MPN)
OCT 1988										
04...	0900	E17	144	7.3	17.0	7.8	81	4.2	500	400
FEB 1989										
09...	1100	E22	168	7.0	3.0	13.7	101	3.9	490	130
APR										
05...	1330	E34	165	7.2	18.5	10.3	110	1.8	80	110
JUN										
07...	1130	E43	136	7.2	22.5	8.0	93	5.4	9200	>24000
JUL										
18...	0900	E40	134	6.9	21.0	7.6	85	1.8	1100	790
AUG										
30...	1200	E28	146	7.6	25.5	9.0	111	2.4	500	800

DATE	HARDNESS TOTAL (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
OCT 1988									
04...	40	11	3.0	10	3.0	25	15	14	0.1
FEB 1989									
09...	44	13	2.9	11	2.8	25	19	17	0.1
APR									
05...	44	13	2.9	11	2.7	25	18	17	0.1
JUN									
07...	39	11	2.7	8.5	2.8	22	13	12	0.1
JUL									
18...	35	9.9	2.5	8.7	2.7	22	11	12	0.1
AUG									
30...	39	11	2.9	9.8	2.8	23	11	14	0.1

DATE	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	PHOSPHORUS TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
OCT 1988									
04...	4.7	76	0.030	1.13	0.10	0.66	1.8	0.09	4.1
FEB 1989									
09...	5.9	87	0.011	1.45	0.37	0.75	2.2	0.08	3.2
APR									
05...	4.7	84	0.029	1.19	0.18	0.66	1.8	0.15	4.7
JUN									
07...	4.5	68	0.057	0.86	0.34	1.0	1.9	0.15	8.5
JUL									
18...	5.5	66	0.066	0.93	0.22	0.79	1.7	0.13	8.0
AUG									
30...	6.4	72	0.048	1.39	0.05	0.63	2.0	0.12	4.8

01467329 SOUTH BRANCH BIG TIMBER CREEK AT BLACKWOOD TERRACE, NJ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SULFIDE TOTAL (MG/L AS S)	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE)	BORON, TOTAL RECOVERABLE (UG/L AS B)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)
JUN 1989 07...	1130	<0.5	40	1	<10	110	<1	2	4

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)	SELENIUM, TOTAL (UG/L AS SE)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	PHENOLS TOTAL (UG/L)
JUN 1989 07...	2000	7	70	<0.10	4	<1	10	2

01474500 SCHUYLKILL RIVER AT PHILADELPHIA, PA

(National stream-quality accounting network station)

LOCATION.--Lat 39°58'00", long 75°11'20", Philadelphia County, PA, Hydrologic Unit 02040203, on right bank 150 ft upstream from Fairmount Dam, 1,500 ft upstream from Spring Garden Street Bridge, in Philadelphia, and 8.7 mi upstream from mouth. Water-quality sampling site 1.6 mi upstream. Water-quality monitor intake at gage.

DRAINAGE AREA.--1,893 mi^2.

PERIOD OF RECORD.--September 1931 to current year. Records for January 1898 to December 1912, published in WSP 35, 48, 65, 82, 97, 125, 166, 202, 214, 261, 301, 381 have been found to be unreliable and should not be used.

REVISED RECORDS.--WSP 756: Drainage area. WSP 1302: 1936(M). WSP 1432: 1945. See also PERIOD OF RECORD.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 5.74 ft above National Geodetic Vertical Datum of 1929. Prior to Nov. 25, 1956, water-stage recorder at site on right bank just upstream from Fairmount Dam at same datum. Nov. 26, 1956, to Oct. 6, 1966, water-stage recorder at site on left bank 40 ft upstream from Fairmount Dam at same datum.

REMARKS.--Records good. Flow regulated by Still Creek Reservoir (station 01469200) since February 1933, Blue Marsh Reservoir (station 01470870) since April 1979, Green Lane Reservoir (station 01472200) since December 1956, and to some extent by Lake Ontelaunee, capacity 518,600,000. Records of discharge do not include diversion above station by City of Philadelphia for municipal water supply.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Oct. 4, 1869, reached a stage of 17.0 ft, discharge, 135,000 ft^3/s, from rating extended above 46,000 ft^3/s. Flood of Mar. 1, 1902, reached a stage of 14.8 ft, discharge, 98,000 ft^3/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989, MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	744	1000	2320	1150	1460	2820	7060	1600	3100	3400	2990	1110
2	860	1030	2130	1140	1330	2370	4410	4310	2970	2990	2630	1130
3	1050	843	1960	1100	1310	2120	3770	5920	2580	2690	2220	1070
4	993	788	1780	1090	1350	2010	3700	4000	2820	2450	1920	1020
5	877	882	1690	975	1380	1910	4070	3300	2670	6050	1750	1030
6	916	1390	1560	904	1340	2520	5300	20500	2890	7630	1720	1000
7	833	1640	e1400	808	1290	3020	4950	28700	5290	5110	1690	967
8	806	1230	e1300	1150	1230	2430	3830	15600	6740	3640	1650	955
9	808	1180	e1200	1860	1130	1980	3390	11700	5130	2970	1660	989
10	793	1030	e1100	1960	973	1990	3140	14900	14000	2720	1440	975
11	846	924	e1050	1670	e900	2220	2830	18300	6030	2380	1470	1010
12	748	902	e1000	1730	e880	2800	2580	11800	4330	2110	2690	931
13	774	1050	e900	2810	e940	3040	2460	9030	4420	9260	7270	931
14	740	1340	e980	2460	1190	2790	2370	7370	4560	8360	4840	920
15	748	1540	1140	4340	1660	2650	2460	6740	3650	4500	2940	913
16	666	1320	1080	4050	2650	2730	3920	12200	7080	3890	6210	1030
17	645	2390	1020	3080	2090	2490	3050	26700	8770	6560	2470	1310
18	628	2800	994	2740	1650	2660	2470	19700	6420	7090	1760	1360
19	594	1730	1020	2570	1320	3250	2310	13600	4890	5250	1650	1920
20	561	6720	925	2130	1360	2760	2150	9840	4040	5430	1760	14500
21	712	14400	1020	1880	2430	3570	1960	7630	3690	5260	1690	13300
22	3040	7080	1100	1600	9590	3980	1860	6150	5990	4310	1590	4430
23	2710	4930	1090	1500	7490	3110	1860	5470	6460	3710	1470	3670
24	1660	3550	1230	1520	5280	3950	1750	9330	7700	3390	1450	4220
25	1490	2700	1810	1430	4000	9240	1680	8120	6670	2900	1290	2220
26	1440	2340	1770	1410	3380	6170	1670	5580	7130	3640	1240	2890
27	1220	2090	1380	1420	3310	5190	1730	4840	5230	4150	1190	3360
28	1040	7880	1300	1620	3110	4680	1590	4500	4490	3200	1200	2330
29	935	4320	1590	1540	---	4020	1630	3910	4590	2840	1130	1910
30	872	2820	1390	1600	---	3920	1630	3590	4200	2510	1240	1640
31	861	---	1200	1790	---	6640	---	3310	---	2660	1180	---
MEAN	1020	2795	1336	1840	2358	3388	2919	9943	5284	4292	2174	2501
MAX	3040	14400	2320	4340	9590	9240	7060	28700	14000	9260	7270	14500
MIN	561	788	900	808	880	1910	1590	1600	2580	2110	1130	913
(†)	235	231	234	245	241	235	199	226	283	284	283	277

STATISTICS OF MONTHLY FLOW DATA FOR PERIOD OF RECORD, BY WATER YEAR (WY)

MEAN	1270	2276	3063	3230	3684	4737	4241	3159	2125	1659	1392	1422
MAX	4771	6272	9569	11400	8136	13320	11620	9943	11640	6435	7980	4863
(WY)	1956	1973	1984	1979	1939	1936	1983	1989	1972	1984	1933	1960
MIN	89.4	223	444	340	647	1552	1237	693	261	116	140	117
(WY)	1942	1932	1981	1981	1934	1981	1985	1965	1965	1966	1966	1932

SUMMARY STATISTICS	FOR 1989 WATER YEAR		FOR PERIOD OF RECORD	
AVERAGE FLOW	3328		2682	Unadjusted
HIGHEST ANNUAL MEAN			4791	1984
LOWEST ANNUAL MEAN			1014	1965
HIGHEST DAILY MEAN	28700	May 7	93400	Jun 23 1972
LOWEST DAILY MEAN	561	Oct 20	.60	Sep 2 1966
INSTANTANEOUS PEAK FLOW	34700	May 7	103000	Jun 23 1972
INSTANTANEOUS PEAK STAGE	10.18	May 7	14.65	Jun 23 1972
INSTANTANEOUS LOW FLOW	---		.00	At times

† Diversion, equivalent in cubic feet per second, for municipal supply, provided by City of Philadelphia
e Estimated

01477120 RACCOON CREEK NEAR SWEDESBORO, NJ

LOCATION.--Lat 39°44'28", long 75°15'33", Gloucester County, Hydrologic Unit 02040202, on right bank 25 ft downstream from County Bridge No. 5-F-3 on Harrisonville-Gibbstown Road, 1.8 mi west of Mullica Hill, and 2.8 mi east of Swedesboro.

DRAINAGE AREA.--26.9 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1966 to current year.

REVISED RECORDS.--WDR NJ-82-2: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to July 28, 1969, at datum 7.96 ft higher. July 28, 1969 to Sept. 30, 1969, at datum 5.96 ft higher.

REMARKS.--No estimated daily discharges. Records fair. Several measurements of water temperature, other than those published, were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989, MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	31	33	24	25	35	70	39	30	31	41	28
2	13	33	29	28	24	33	53	279	29	29	38	27
3	18	21	28	25	30	32	50	107	28	28	35	26
4	15	18	26	24	40	31	48	53	26	29	33	26
5	14	18	25	22	30	32	48	52	26	649	32	25
6	14	20	25	23	27	53	95	172	99	278	30	26
7	14	18	24	24	26	55	68	104	80	94	30	26
8	14	16	24	34	25	37	138	57	62	57	29	26
9	13	16	24	39	23	35	70	47	104	46	27	26
10	13	16	23	30	22	40	52	213	239	41	27	25
11	13	17	23	27	22	42	45	193	58	38	33	25
12	13	16	21	39	22	42	42	74	41	35	125	25
13	13	18	22	43	22	39	40	56	38	58	135	25
14	14	21	21	31	34	36	39	49	37	72	50	31
15	13	18	23	79	38	35	46	46	38	41	50	34
16	13	17	23	53	42	33	70	54	68	105	75	62
17	13	47	21	34	32	31	50	53	144	215	43	183
18	14	37	21	29	28	34	44	44	54	61	36	43
19	14	25	21	27	27	39	49	38	39	44	158	270
20	14	58	22	26	26	34	46	36	35	295	99	355
21	20	67	24	24	159	52	41	35	39	219	51	85
22	57	38	25	22	196	44	39	32	131	73	47	57
23	26	29	26	23	86	37	37	47	235	54	42	48
24	19	26	31	23	49	105	36	83	229	45	37	38
25	16	25	32	23	39	158	36	50	126	40	34	37
26	14	24	26	23	38	61	36	39	56	43	32	143
27	14	27	24	25	42	47	35	49	44	125	32	79
28	14	186	24	23	39	42	33	49	41	92	31	47
29	14	76	26	23	---	40	36	36	39	50	31	42
30	14	40	24	26	---	43	58	33	34	38	32	39
31	14	---	23	28	---	51	---	32	---	42	30	---
MEAN	16.0	34.0	24.6	29.8	43.3	46.1	51.7	72.6	75.0	98.9	49.2	64.3
MAX	57	186	33	79	196	158	138	279	239	649	158	355
MIN	13	16	21	22	22	31	33	32	26	28	27	25
IN.	.69	1.41	1.06	1.28	1.68	1.97	2.14	3.11	3.11	4.24	2.11	2.67

STATISTICS OF MONTHLY FLOW DATA FOR PERIOD OF RECORD, BY WATER YEAR (WY)

MEAN	28.0	36.0	45.5	50.3	51.3	52.1	52.9	43.8	36.9	34.2	31.2	26.7
MAX	62.6	93.9	107	123	115	88.5	134	72.6	77.7	112	121	71.9
(WY)	1972	1973	1973	1978	1979	1984	1983	1989	1975	1975	1967	1971
MIN	15.9	18.0	18.8	20.7	25.9	22.7	21.3	15.9	10.7	6.01	5.89	11.7
(WY)	1969	1975	1981	1981	1981	1981	1985	1977	1966	1966	1966	1968

SUMMARY STATISTICS	FOR 1989 WATER YEAR		FOR PERIOD OF RECORD	
AVERAGE FLOW	50.5		41.0	
HIGHEST ANNUAL MEAN			64.7	1973
LOWEST ANNUAL MEAN			22.5	1981
HIGHEST DAILY MEAN	649	Jul 5	1260	Aug 28 1971
LOWEST DAILY MEAN	13	Oct 1	2.9	Jul 14 1966
INSTANTANEOUS PEAK FLOW	1670	Jul 5	3530	Aug 10 1967
INSTANTANEOUS PEAK STAGE	15.04	Jul 5	17.44a	Aug 10 1967
INSTANTANEOUS LOW FLOW	13	Oct 1	---	
ANNUAL RUNOFF (INCHES)	25.49		20.70	
10 PERCENTILE	91		68	
50 PERCENTILE	36		30	
95 PERCENTILE	15		13	

a Present datum

01477120 RACCOON CREEK NEAR SWEDESBORO, NJ--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1965 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: May 1966 to September 1973.
SUSPENDED-SEDIMENT DISCHARGE: June 1966 to September 1969.

COOPERATION.--Field data and samples for laboratory analyses provided by New Jersey Department of Environmental Protection, Division of Water Resources. Analyses of fecal coliform and fecal streptococci by the MPN method, and selected water-phase nutrients were performed by the New Jersey Department of Health, Division of Laboratories and Epidemiology.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)	COLIFORM, FECAL, EC BROTH (MPN)	STREPTOCOCCI FECAL (MPN)
OCT 1988										
27...	1245	14	217	7.2	6.5	9.4	77	2.4	80	920
JAN 1989										
25...	1330	23	204	5.9	3.5	12.4	94	<1.0	340	170
MAR										
27...	1030	47	172	6.7	9.0	10.8	92	E1.3	20	240
MAY										
22...	1300	33	192	6.5	16.5	8.6	88	E1.7	490	130
JUL										
11...	1300	39	188	6.5	22.5	8.9	103	E1.4	490	920
AUG										
01...	1130	42	194	6.6	19.0	8.2	89	E1.5	490	540

DATE	HARDNESS TOTAL (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
OCT 1988									
27...	74	22	4.6	8.2	4.6	38	29	16	0.2
JAN 1989									
25...	66	19	4.6	6.8	3.7	25	30	16	0.2
MAR									
27...	61	15	5.8	5.7	4.0	14	26	16	0.1
MAY									
22...	60	18	3.7	6.3	3.2	25	27	12	0.2
JUL									
11...	59	16	4.7	7.0	4.2	22	23	14	0.2
AUG									
01...	64	15	6.4	8.5	4.9	21	21	20	0.1

DATE	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	PHOSPHORUS TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
OCT 1988									
27...	12	119	0.013	1.83	<0.05	0.36	2.2	--	2.9
JAN 1989									
25...	10	105	0.016	2.98	<0.05	0.23	3.2	0.11	2.2
MAR									
27...	7.6	89	0.010	3.87	<0.05	0.30	4.2	0.06	2.4
MAY									
22...	9.4	95	0.019	1.69	0.05	0.47	2.2	0.18	4.0
JUL									
11...	9.7	92	0.034	2.53	0.09	0.72	3.3	0.23	5.9
AUG									
01...	8.9	97	0.045	3.83	0.11	0.53	4.4	0.13	4.0

01477120 RACCOON CREEK NEAR SWEDESBORO, NJ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	NITRO-GEN,NH4 + ORG. TOT IN BOT MAT (MG/KG AS N)	CARBON, INOR-GANIC, TOT IN BOT MAT (G/KG AS C)	CARBON, INORG + ORGANIC TOT. IN BOT MAT (GM/KG AS C)	ALUM-INUM, DIS-SOLVED (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC TOTAL IN BOT-TOM MA-TERIAL (UG/G AS AS)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE)	BORON, TOTAL RECOV-ERABLE (UG/L AS B)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CADMIUM RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CD)
OCT 1988 27...	1245	120	0.1	2.5	--	--	7	--	--	--	<10
MAY 1989 22...	1300	--	--	--	30	1	--	<10	50	<1	--

DATE	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	CHRO-MIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G)	COBALT, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CO)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	COPPER, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	LEAD, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS PB)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MANGA-NESE, RECOV. FM BOT-TOM MA-TERIAL (UG/G)
OCT 1988 27...	--	5	<50	--	1	--	4000	--	<100	--	48
MAY 1989 22...	2	--	--	2	--	1600	--	1	--	50	--

DATE	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	MERCURY RECOV. FM BOT-TOM MA-TERIAL (UG/G AS HG)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)	NICKEL, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS NI)	SELE-NIUM, TOTAL (UG/L AS SE)	SELE-NIUM, TOTAL IN BOT-TOM MA-TERIAL (UG/G)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	ZINC, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS ZN)	PHENOLS TOTAL (UG/L)	PCB, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	PCN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)
OCT 1988 27...	--	<0.01	--	<100	--	<1	--	20	--	<1	<1.0
MAY 1989 22...	<0.10	--	3	--	<1	--	<10	--	2	--	--

DATE	ALDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	CHLOR-DANE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	DDD, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	DDE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	DDT, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	DI-AZINON, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	DI-ELDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	ENDO-SULFAN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	ENDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	ETHION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	HEPTA-CHLOR, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)
OCT 1988 27...	<0.1	<1.0	1.1	2.5	1.2	<0.1	0.4	0.2	<0.1	<0.1	<0.1
MAY 1989 22...	--	--	--	--	--	--	--	--	--	--	--

DATE	HEPTA-CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG)	LINDANE TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	MALA-THION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	METH-OXY-CHLOR, TOT. IN BOTTOM MATL. (UG/KG)	METHYL PARA-THION, TOT. IN BOTTOM MATL. (UG/KG)	METHYL TRI-THION, TOT. IN BOTTOM MATL. (UG/KG)	MIREX, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	PARA-THION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	PER-THANE IN BOT-TOM MA-TERIAL (UG/KG)	TOXA-PHENE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	TRI-THION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)
OCT 1988 27...	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.00	<10	<0.1
MAY 1989 22...	--	--	--	--	--	--	--	--	--	--	--

01477510 OLDMANS CREEK AT PORCHES MILL, NJ

LOCATION.--Lat 39°41'57", long 75°20'01", Salem County, Hydrologic Unit 02040206, at bridge on Kings Highway in Porches Mill, 150 ft downstream of tributary from outflow of lake at Porches Mill, 1.0 mi north of Seven Stars, and 2.1 mi southeast of Auburn.

DRAINAGE AREA.--21.0 mi^2.

PERIOD OF RECORD.--Water years 1975 to current year.

COOPERATION.--Field data and samples for laboratory analyses provided by New Jersey Department of Environmental Protection, Division of Water Resources. Analyses of fecal coliform and fecal streptococci by the MPN method, and water-phase nutrients were performed by the New Jersey Department of Health, Division of Laboratories and Epidemiology.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)	COLIFORM, FECAL, EC BROTH (MPN)	STREPTOCOCCI FECAL (MPN)
OCT 1988										
27...	1030	9.2E	190	6.8	7.5	9.0	75	2.7	230	540
JAN 1989										
25...	1100	17 E	129	5.3	3.5	10.0	75	E2.1	<20	4
MAR										
27...	1330	41 E	198	6.9	11.0	8.8	79	E1.2	210	49
MAY										
22...	1030	26 E	124	6.7	17.0	7.2	75	3.3	170	46
JUL										
11...	1030	32 E	200	6.7	24.0	8.4	100	E2.0	80	540
AUG										
01...	1300	35 E	220	6.8	22.0	7.8	90	E2.2	50	920

DATE	HARDNESS TOTAL (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
OCT 1988									
27...	66	19	4.5	4.8	3.9	33	25	15	0.2
JAN 1989									
25...	38	10	3.1	5.0	3.6	16	16	14	0.2
MAR									
27...	57	16	4.2	5.0	3.5	14	31	14	0.2
MAY									
22...	37	9.6	3.1	4.1	3.6	16	11	11	0.1
JUL									
11...	57	16	4.1	4.5	4.1	22	21	12	0.2
AUG									
01...	38	10	3.2	4.4	4.0	21	10	12	0.2

DATE	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	PHOSPHOROUS TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
OCT 1988									
27...	9.2	101	0.019	1.14	0.15	0.66	1.8	0.04	3.0
JAN 1989									
25...	9.2	71	0.024	1.99	0.11	0.41	2.4	0.10	2.8
MAR									
27...	7.9	90	0.013	2.19	<0.05	0.42	2.6	0.08	4.8
MAY									
22...	8.8	61	0.030	1.66	E0.05	0.79	2.5	0.27	3.2
JUL									
11...	10	85	0.029	1.56	0.07	0.90	2.5	0.16	6.6
AUG									
01...	8.7	65	0.040	1.35	0.11	0.48	1.8	0.10	4.2

01477510 OLDMANS CREEK AT PORCHES MILL, NJ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SULFIDE TOTAL (MG/L AS S)	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE)	BORON, TOTAL RECOVERABLE (UG/L AS B)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)
OCT 1988 27...	1030	<0.5	<10	1	<10	60	1	1	5

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)	SELENIUM, TOTAL (UG/L AS SE)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	PHENOLS TOTAL (UG/L)
OCT 1988 27...	1000	<5	80	9.0	14	<1	40	2

01481602 DELAWARE RIVER BELOW CHRISTINA RIVER, AT WILMINGTON, DE

LOCATION.--Lat 39°43'00", long 75°31'03", New Castle County, DE, Hydrologic Unit 02040206, on right bank, 1,000 ft from mouth of Christina River at the Wilmington Marine Terminal at Wilmington, 2.0 mi upstream of Delaware Memorial Bridge, and at river mile 69.70.

DRAINAGE AREA.--11,030 mi^2.

PERIOD OF RECORD.--December 1982 to current year. July 1967 to May 1983 published as "Delaware River at Delaware Memorial Bridge, at Wilmington, DE" (station 01482100). Tidal volumes published from July 1967 to September 1973.

GAGE.--Water-stage recorder. Datum of gage is -18.05 ft below National Geodetic Vertical Datum of 1929. Prior to Dec. 1982, water-stage recorder at Delaware River at Delaware Memorial Bridge 2.0 mi downstream at datum 8.05 ft higher. Gage-height record converted to elevation above or below (-) National Geodetic Vertical Datum 1929 for publication.

REMARKS.--No gage-height or doubtful record: Oct. 1-5, Nov. 4, 20.27, Dec. 7 to Jan. 4, Mar. 8, May 11 to June 16. Summaries for months with short periods of no gage-height record have been estimated with negligible or no loss of accuracy unless otherwise noted. Some periods cannot be estimated and are noted by dash (--) lines.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 7.88 ft, Oct. 25, 1980; minimum, -5.86 ft, Apr. 4, 1975.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum elevation known, 8.4 ft, Nov. 23, 1950, furnished by Corps of Engineers, U.S. Army; minimum, -9.1 ft, Dec. 31, 1962.

EXTREMES FOR CURRENT YEAR.--Maximum elevation recorded, 5.69 ft, Sept. 22; minimum recorded, -4.21 ft, Jan. 21.

Summaries of tide elevations during current year are as follows:

TIDE ELEVATIONS, IN FEET, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

		OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
Maximum	Elevation	5.20	e4.8	e4.6	5.07	4.63	4.56	4.59	5.66	e4.7	5.42	5.06	5.69
high tide	Date	21	20	14	8	3	11	9	6	14	17	19	22
Minimum	Elevation	-2.71	-2.91	-3.59	-4.21	-4.04	-2.89	-2.95	e-2.9	-2.53	-2.23	-2.14	-3.25
low tide	Date	13	21	4	21	9	19	10	28	29	26	22	24
Mean high tide		3.43	3.10	--	2.96	3.07	3.33	3.52	--	--	4.07	4.01	4.00
Mean water level		1.20	--	--	.55	.62	.92	.92	--	--	1.31	1.35	1.42
Mean low tide		-1.69	--	--	-2.03	-1.99	-1.67	-1.89	--	--	-1.64	-1.54	-1.38

e Estimated

01482500 SALEM RIVER AT WOODSTOWN, NJ

LOCATION.--Lat 39°38'36", long 75°19'52", Salem County, Hydrologic Unit 02040206, on right end of Memorial Lake Dam at Woodstown, 0.2 mi upstream from small brook, and 0.3 mi downstream from Pennsylvania-Reading Seashore Lines bridge.

DRAINAGE AREA.--14.6 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March to September 1940, December 1941 to January 1985, June to December 1989 (discontinued). Prior to October 1952, published as "Salem Creek at Woodstown".

GAGE.--Water-stage recorder above concrete dam. Datum of gage is 19.49 ft National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1977 at datum 10.00 ft higher.

REMARKS.--No estimated daily discharges. Records fair except those below 5 ft^3/s, which are poor.

DISCHARGE, IN CUBIC FEET PER SECOND, PERIOD JUNE 1989 TO DECEMBER 1989, MEAN DAILY VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	---	---	---	---	---	---	14	14	8.7	14	22	16
2	---	---	---	---	---	---	14	14	8.6	58	19	16
3	---	---	---	---	---	---	14	12	8.6	55	22	15
4	---	---	---	---	---	---	15	12	7.5	24	22	14
5	---	---	---	---	---	---	382	11	7.2	19	20	14
6	---	---	---	---	---	68	77	10	8.6	18	21	16
7	---	---	---	---	---	75	36	10	10	18	21	16
8	---	---	---	---	---	39	19	9.9	10	16	27	15
9	---	---	---	---	---	100	14	8.6	10	16	70	16
10	---	---	---	---	---	114	12	8.6	10	16	43	16
11	---	---	---	---	---	26	11	11	9.2	16	24	16
12	---	---	---	---	---	19	10	95	8.6	16	19	16
13	---	---	---	---	---	18	34	98	8.6	16	18	18
14	---	---	---	---	---	17	41	23	12	16	18	17
15	---	---	---	---	---	22	16	16	16	16	18	16
16	---	---	---	---	---	79	54	17	30	16	21	16
17	---	---	---	---	---	115	116	14	83	37	20	15
18	---	---	---	---	---	28	25	12	18	42	17	14
19	---	---	---	---	---	20	17	75	133	85	16	14
20	---	---	---	---	---	19	254	45	163	186	16	14
21	---	---	---	---	---	24	55	20	36	72	15	14
22	---	---	---	---	---	72	37	15	20	26	14	12
23	---	---	---	---	---	125	24	11	15	18	18	12
24	---	---	---	---	---	82	17	9.7	13	16	17	12
25	---	---	---	---	---	60	14	8.6	12	16	17	12
26	---	---	---	---	---	28	14	8.6	98	14	22	13
27	---	---	---	---	---	22	15	8.6	36	15	23	14
28	---	---	---	---	---	20	24	8.6	19	16	21	14
29	---	---	---	---	---	18	13	8.6	16	16	19	14
30	---	---	---	---	---	15	12	11	15	17	16	15
31	---	---	---	---	---	---	13	11	---	20	---	20
MEAN	---	---	---	---	---	---	45.6	20.5	28.4	30.5	21.9	14.9
MAX	---	---	---	---	---	---	382	98	163	186	70	20
MIN	---	---	---	---	---	---	10	8.6	7.2	14	14	12

STATISTICS OF MONTHLY FLOW DATA FOR PERIOD OF RECORD, BY WATER YEAR (WY)

MEAN	25.3	27.0	29.2	24.9	17.3	14.6	14.4	13.6	15.6	12.0	18.7	23.1
MAX	82.7	55.7	51.9	65.7	38.5	45.6	66.1	47.5	172	34.6	50.9	52.6
(WY)	1978	1971	1958	1983	1983	1983	1984	1958	1940	1980	1973	1973
MIN	5.22	11.5	9.33	7.67	4.99	2.75	.98	.55	2.66	3.11	3.91	4.99
(WY)	1966	1980	1966	1966	1955	1954	1955	1966	1964	1966	1966	1966

SUMMARY STATISTICS	FOR 1989 PERIOD		FOR PERIOD OF RECORD	
AVERAGE FLOW	30.8		19.3	
HIGHEST ANNUAL MEAN			30.8	1984
LOWEST ANNUAL MEAN			5.71	1966
HIGHEST DAILY MEAN	382	Apr 5	4460	Sep 1 1940
LOWEST DAILY MEAN	3.2	Oct 10	.00	Jul 21 1949
INSTANTANEOUS PEAK FLOW	1060	Jul 5	22000a	Sep 1 1940
INSTANTANEOUS PEAK STAGE	12.45	Jul 5	17.98b	Sep 1 1940
INSTANTANEOUS LOW FLOW	7.2	Sep 5	.00	For short time
ANNUAL RUNOFF (INCHES)	28.64		17.92	
10 PERCENTILE	68		36	
50 PERCENTILE	20		13	
95 PERCENTILE	6.4		2.7	

a From rating curve extended above 220 ft^3/s on basis of slope-area measurement of peak flow at site 0.5 mi downstream
b From floodmark

01482500 SALEM RIVER AT WOODSTOWN, NJ--Continued

PERIOD OF RECORD.--Water years 1973 to current year.

COOPERATION.--Field data and samples for laboratory analyses provided by New Jersey Department of Environmental Protection, Division of Water Resources. Analyses of fecal coliform and fecal streptococci by the MPN method, and water-phase nutrients were performed by the New Jersey Department of Health, Division of Laboratories and Epidemiology.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)	COLIFORM, FECAL, EC BROTH (MPN)	STREPTOCOCCI FECAL (MPN)
OCT 1988										
18...	1300	12E	215	6.6	15.5	9.0	91	4.3	20	280
FEB 1989										
28...	1215	16E	150	7.1	4.0	12.7	97	<1.2	90	41
MAR										
22...	1300	26E	255	7.0	9.0	10.0	86	3.5	330	1600
JUN										
13...	1215	18E	226	7.6	23.0	5.4	64	E1.5	1300	920
JUL										
18...	1200	23E	205	7.0	25.0	5.6	68	4.5	>24000	>2400
AUG										
03...	1230	12E	218	7.7	26.0	7.4	92	2.9	230	>2400

DATE	HARDNESS TOTAL (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
OCT 1988									
18...	88	19	9.9	7.9	5.4	40	37	21	0.1
FEB 1989									
28...	74	16	8.3	7.4	4.9	19	40	18	0.1
MAR									
22...	83	19	8.7	8.8	4.3	26	41	23	0.2
JUN									
13...	70	17	6.8	5.4	6.9	36	24	13	0.2
JUL									
18...	57	13	5.9	4.5	5.9	24	20	12	0.2
AUG									
03...	79	18	8.3	6.7	6.9	35	30	20	0.2

DATE	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	PHOSPHORUS TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
OCT 1988									
18...	1.5	126	0.054	1.10	0.07	1.2	2.3	0.07	6.6
FEB 1989									
28...	9.1	115	0.027	3.22	0.26	1.0	4.2	0.16	7.2
MAR									
22...	8.2	129	0.036	3.99	0.45	1.7	5.7	0.42	8.0
JUN									
13...	8.5	104	0.074	2.04	0.39	1.8	3.9	0.29	11
JUL									
18...	6.7	83	0.063	1.97	0.27	2.3	4.2	0.27	15
AUG									
03...	6.9	118	0.071	2.54	0.15	1.2	3.8	0.18	9.0

01482500 SALEM RIVER AT WOODSTOWN, NJ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SULFIDE TOTAL (MG/L AS S)	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE)	BORON, TOTAL RECOVERABLE (UG/L AS B)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)
JUN 1989 13...	1215	<0.5	130	2	<10	40	<1	<1	5

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)	SELENIUM, TOTAL (UG/L AS SE)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	PHENOLS TOTAL (UG/L)
JUN 1989 13...	3100	6	170	0.10	6	<1	20	6

RESERVOIRS IN DELAWARE RIVER BASIN

01416900 PEPACTON RESERVOIR.--Lat 42°04'38", long 74°58'04", Delaware County, NY, Hydrologic Unit 02040102, near release chamber at Downsville Dam on East Branch Delaware River, and 1.6 mi east of Downsville, NY. DRAINAGE AREA, 371 mi^2. PERIOD OF RECORD, September 1954 to current year. GAGE, water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Board of Water Supply, City of New York).
REMARKS.--Reservoir is formed by an earthfill rockfaced dam. Storage began Sept. 15, 1954. Usable capacity 140,190 mil gal between minimum operating level, elevation, 1,152.0 ft, and crest of spillway, elevation, 1,280.0 ft. Capacity, at crest of spillway 149,700 mil gal; at minimum operating level, 9,609 mil gal; at still of diversion tunnel, elevation, 1,143.0 ft, 6,098 mil gal; in dead storage below release outlet, elevation, 1,126.50 ft, 1,898 mil gal. Figures given herein represent total contents. Reservoir impounds water for diversion through East Delaware Tunnel to Rondout Reservoir on Rondout Creek, in Hudson River basin (see Delaware River Basin, diversions), for water supply to City of New York; for release during periods of low flow in the lower Delaware River basin, as directed by the Delaware River Master; and for conservation release. No diversion prior to Jan. 6, 1955.
COOPERATION.--Records provided by Bureau of Water Resources Development and Department of Environmental Protection, City of New York.
EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 154,027 mil gal, Apr. 5, 1960, elevation, 1,282.27 ft; minimum observed (after first filling), 9,575 mil gal, Dec. 26, 1964, elevation, 1,151.92 ft.
EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 149,929 mil gal, June 26, 28, 29, elevation, 1,280.07 ft; minimum observed, 74,543 mil gal, Feb. 5, elevation, 1,230.87 ft.

01424997 CANNONSVILLE RESERVOIR.--Lat 42°03'46", long 75°22'29", Delaware County, NY, Hydrologic Unit 02040101, in emergency gate tower at Cannonsville Dam on West Branch Delaware River, and 1.8 mi southeast of Stilesville, NY. DRAINAGE AREA, 454 mi^2. PERIOD OF RECORD, October 1963 to current year. REVISED RECORDS, WRD-NY 1972: 1966. GAGE, water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Board of Water Supply, City of New York).
REMARKS.--Reservoir is formed by an earthfill rockfaced dam; storage began Sept. 30, 1963, usable capacity 95,706 mil gal between minimum operating level, elevation, 1,040.0 ft and crest of spillway, elevation, 1,150.0 ft. Capacity, at crest of spillway, 98,618 mil gal; at minimum operating level, 2,912 mil gal; at mouth of inlet channel to diversion tunnel, elevation, 1,035.0 ft, 1,892 mil gal; in dead storage below release outlet elevation, 1,020.5 ft, 328 mil gal. Figures given herein represent total contents. Impounded water is diverted for New York City water supply via West Delaware Tunnel to Rondout Reservoir in Hudson River basin (see Delaware River Basin, diversion); is released in Delaware River for downstream low flow augmentation as directed by Delaware River Master; and is released for conservation flow in the Delaware River. No diversion prior to Jan. 29. 1964.
COOPERATION.--Records provided by Bureau of Water Resources Development, City of New York.
EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 108,116 mil gal, Mar. 15, 1977, elevation, 1,155.85 ft; minimum observed (after first filling), 11,901 mil gal, Nov. 7, 1968, elevation, 1,066.24 ft.
EXTREMES FOR CURRENT YEAR.--Maximum contents, 100,452 mil gal, June 18, 19, elevation, 1,151.14 ft; minimum observed, 27,921 mil gal, Oct. 24, elevation, 1,090.74 ft.

01428900 PROMPTON RESERVOIR.--Lat 41°35'18", long 75°19'39", Wayne County, PA, Hydrologic Unit 02040103, at dam on West Branch Lackawaxen River, 0.3 mi north of Prompton, PA, 0.4 mi upstream from highway bridge and 0.5 mi upstream from Van Auken Creek. DRAINAGE AREA, 59.6 mi^2. PERIOD OF RECORD, December 1960 to current year. GAGE, water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers).
REMARKS.--Reservoir formed by an earth and rockfill dam with ungaged bedrock spillway at elevation 1,205.00 ft; storage began July 1960. Capacity at elevation 1,205.00 ft is 51,700 acre-ft. Ordinary minimum (conservation) pool elevation, 1,125.00 ft capacity, 3,420 acre-ft. Reservoir is used for flood control and recreation. Figures given herein represent total contents. Regulation is accomplished by discharge through an ungated tunnel.
COOPERATION.--Records provided by U.S. Army Corps of Engineers.
EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 8,170 acre-ft, June 29, 1973, elevation, 1,138.40 ft; minimum (after first filling), 2,920 acre-ft, Sept. 27, 1964, elevation, 1,123.20 ft.
EXTREMES FOR CURRENT YEAR.--Maximum content, 5,670 acre-ft, May 7, elevation, 1,131.83 ft; minimum, 2,940 acre-ft, Oct. 12,13, elevation, 1,123.00 ft.

01429400 GENERAL EDGAR JADWIN RESERVOIR.--Lat 41°36'44", long 75°15,55", Wayne County, PA, Hydrologic Unit 02040103, at dam on Dyberry Creek, 0.45 mi upstream from unnamed tributary, 2.4 mi north of Honesdale, PA, and 2.9 mi upstream from mouth. DRAINAGE AREA, 64.5 mi^2. PERIOD OF RECORD, October 1959 to current year. GAGE, water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers).
REMARKS.--Reservoir formed by an earth and rockfill dam with ungated, concrete spillway at elevation, 1,053.00 ft; storage began in October 1959. Capacity at elevation 1,053.00 ft is 24,500 acre-ft. Reservoir is used for flood control. Figures given herein represent total contents. Regulation is accomplished by discharge through an ungated tunnel.
COOPERATION.--Records provided by U.S. Army Corps of Engineers.
EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 6,520 acre-ft, June 19, 1973, elevation 1,017.40 ft; no storage many times.
EXTREMES FOR CURRENT YEAR.--Maximum contents, 800 acre-ft, May 6, elevation, 992.04 ft; no storage many days.

01431700 LAKE WALLENPAUPACK.--Lat 41°27'35", long 75°11'10", Wayne County, PA, Hydrologic Unit 02040103, at dam on Wallenpaupack Creek at Wilsonville, PA, 1.2 mi south of and 1.5 mi upstream from mouth. DRAINAGE AREA, 228 mi^2. PERIOD OF RECORD, January 1926 to current year. GAGE, vertical staff. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Pennsylvania Power and Light Co.).
REMARKS.--Reservoir formed by concrete gravity-type and earthfill dam with concrete spillway at elevation 1,176.00 ft in two sections. Spillway equipped with roller gate, 14 ft high on each section. Storage began Nov. 3, 1925; water in reservoir first reached minimum pool elevation in January 1926. Total capacity at elevation 1,190.00 ft, top of gates, is 209,300 acre-ft of which 157,800 acre-ft is controlled storage above elevation 1,160.00 ft, minimum pool. Reservoir is used for generation of hydrolelectric power. Figures given herein represent usable contents.
COOPERATION.--Records provided by Pennsylvania Power and Light Co.
EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 178,200 acre-ft, Aug. 19-21, 1955, elevation, 1,193.45 ft; minimum (after first filling), 12,280 acre-ft, Mar. 28, 1958, elevation, 1,162.60 ft.
EXTREMES FOR CURRENT YEAR.--Maximum contents, 96,160 acre-ft, May 12,17,18, elevation, 1,187.8 ft; minimum, 33,850 acre-ft, Mar. 10, 11, elevation, 1,176.5 ft.

RESERVOIRS IN DELAWARE RIVER BASIN--Continued

01433000 SWINGING BRIDGE RESERVOIR.--Lat 41°34'25", long 74°47'00", Sullivan County, NY, Hydrologic Unit 02040104, at dam on Mongaup River, and 1.8 mi northwest of Fowlersville, NY. DRAINAGE AREA, 118 mi^2 excluding Cliff Lake, Lebanon Lake, and Toronto Reservoir. PERIOD OF RECORD, January 1930 to current year. REVISED RECORDS, WSP 1552: 1951-54. WDR NJ-86-2: 1985. GAGE, water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Orange and Rockland Utilities, Inc.). All capacity figures given herein are based on zero storage at minimum operating pool level, 1,010 ft.

REMARKS.--Reservoir is formed by an earthfill dam. Storage began Jan. 19, 1930. Usable capacity, 1,436.6 mil ft^3 between elevations 1,010.0 ft, minimum operating pool, and 1,071.2 ft, top of flashboards. Capacity below elevation 1,010.0 ft, minimum operating pool, about 212.7 mil ft^3. Reservoir is used for storage of water for power. Figures given herein represent contents above 1,010.0 ft. Water is received from Cliff Lake, Lebanon Lake, and Toronto Reservoir.

COOPERATION.--Records provided by Orange and Rockland Utilities, Inc.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,461.6 mil ft^3, Mar. 14, 1977, elevation, 1,071.8 ft; minimum (after first filling), -141.4 mil ft^3, Dec. 2, 1938, elevation, 987.5 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 1,375.2 mil ft^3, May 23, elevation, 1,069.7 ft; minimum, 1,059.5 mil ft^3, Aug. 23, elevation, 1,061.4 ft.

01433100 TORONTO RESERVOIR.--Lat 41°37'15", long 74°49'55", Sullivan County, NY, Hydrologic Unit 02040104, at dam on Black Lake Creek, and 2.5 mi southeast of village of Black Lake, NY. DRAINAGE AREA, 23.2 mi^2. PERIOD OF RECORD, January 1926 to current year. REVISED RECORDS, WSP 1552: 1951-54. WSP 1702: 1959(M). WDR NJ-85-2: 1984. WDR NJ-86-2: 1985. Nonrecording gage. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Orange and Rockland Utilities, Inc.). All capacity figures given herein are based on zero storage at minimum operating pool level, 1,165.0 ft.

REMARKS.--Reservoir is formed by an earthfill dam completed July 24, 1926. Storage began Jan. 13, 1926. Usable capacity, 1,098.2 mil ft^3 between elevations 1,165.0 ft, minimum operating pool, and operating pool, about 26.8 mil ft^3. Reservoir is used for storage of water for power. Figures given herein represent contents above 1,165.0 ft.

COOPERATION.--Records provided by Orange and Rockland Utilities, Inc.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 1,171.2 mil ft^3, July 20, 1945, elevation, 1,222.0 ft. minimum observed (after first filling), -26.8 mil ft^3, Nov. 15, 1928, elevation, 1,144.5 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 628.7 mil ft^3, July 7, elevation, 1,204.4 ft; minimum observed, 21.2 mil ft^3, Oct. 31, elevation, 1,169.5 ft.

01433200 CLIFF LAKE.--Lat 41°35'00", long 74°47'40", Sullivan County, NY, Hydrologic Unit 02040104, at dam on Black Lake Creek, and 2.5 mi northwest of Fowlersville, NY. DRAINAGE AREA, 6.46 mi^2 excluding area above Toronto Reservoir. PERIOD OF RECORD, January 1939 to current year. REVISED RECORDS, WSP 1552: 1951-54. WRD NY-75-1: 1974(m). WDR NJ-86-2: 1985. Nonrecording gage. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Orange and Rockland Utilities, Inc.). All capacity figures given herein are based on zero storage at minimum operating pool level, 1,043.3 ft.

REMARKS.--Reservoir is formed by a concrete gravity-type dam. Storage began Jan. 6, 1939. Usable capacity, 136.06 mil ft^3 between elevations 1,043.3 ft, minimum operating pool, and 1,072.0 ft, top of permanent flashboards. Capacity below elevation 1,043.3 ft, minimum operating pool, about 6.54 mil ft^3. Reservoir is used for storage of water for power. Water is received from Toronto and Lebanon Lake reservoirs and is discharged through a tunnel into Swinging Bridge Reservoir. Figures given herein represent contents above 1,043.3 ft.

COOPERATION.--Records provided by Orange and Rockland Utilities, Inc.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 145.44 mil ft^3, July 30, 31, 1945, elevation, 1,073.1 ft; minimum observed (after first filling), about -6.54 mil ft^3, Mar. 16, 1963, elevation, 1,038.0 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 122.09 mil ft^3, May 17, elevation, 1,070.3 ft; minimum observed, 63.35 mil ft^3, Dec. 23, elevation, 1,061.7 ft.

01435900 NEVERSINK RESERVOIR.--Lat 41°49'40", long 74°38'21", Sullivan County, NY, Hydrologic Unit 02040104, at a gate-house at Neversink Dam on Neversink River, and 2 mi southwest of Neversink, NY. DRAINAGE AREA, 91.8 mi^2. PERIOD OF RECORD, June 1953 to current year. Nonrecording gage read daily at 0900. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Board of Water Supply, City of New York).

REMARKS.--Reservoir is formed by an earthfill rockfaced dam. Storage began June 2, 1953. Usable capacity 34,941 mil gal between minimum operating level, elevation, 1,319.0 ft and crest of spillway, elevation, 1,440.0 ft. Capacity at crest of spillway, 37,146 mil gal; at minimum operating level, 2,205 mil gal; dead storage belowand outlet sill at elevation 1,314.0 ft, 1,680 mil gal. Figures given herein represent total contents. Reservoir impounds water for diversion through Neversink-Grahamsville Tunnel to Rondout Reservoir on Rondout Creek, in Hudson River basin, for water supply of City of New York (see Delaware River basin, diversions); for release during periods of low flow in the lower Delaware River basin, as directed by the Delaware River Master; and for conservation release. No diversion prior to Dec. 3, 1953.

COOPERATION.--Records provided by Bureau of Water Resources Development and Department of Environmental Protection, City of New York.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 37,978 mil gal, Apr. 25, 1961, elevation, 1,441.67 ft; minimum observed (after first filling), 1,985 mil gal, Nov. 25, 1964, elevation, 1,316.98 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 37,385 mil gal, May 18, elevation, 1,440.48 ft; minimum observed, 10,378 mil gal, Dec. 24, elevation, 1,365.96 ft.

01447780 FRANCIS E. WALTER RESERVOIR (formerly published as Bear Creek Reservoir).--Lat 41°06'45", long 75°43'15", Luzerne County, PA, Hydrologic Unit 02040106, at dam on Lehigh River, 2,200 ft downstream from Bear Creek and 5 mi northwest of White Haven, PA. DRAINAGE AREA, 289 mi^2. PERIOD OF RECORD, February 1961 to current year. GAGE, water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers).

REMARKS.--Reservoir formed by an earthfill embankment covered with a rock shell, with concrete spillway at elevation 1,450.0 ft; storage began Feb. 17, 1961; water in reservoir first reached conservation pool elevation in June 1961. Total capacity at elevation 1,450.0 ft is 110,700 acre-ft of which 108,700 acre-ft is controlled storage above elevation 1,300.0 ft or (conservation pool). Dead storage is 2,000 acre-ft. Reservoir is used for flood control and recreation. Figures given herein represent total contents. Flow regulated by three gates and low flow by-pass system.

COOPERATION.--Records provided by U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 62,100 acre-ft, Sept. 28, 1985, elevation, 1,417.08 ft; minimum (after establishment of conservation pool), 981 acre-ft, July 6, 1982, elevation, 1,287.70 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 25,120 acre-ft, May 7, elevation, 1,375.93 ft; minimum, 1,440 acre-ft, Nov. 13, elevation, 1,294.28 ft.

RESERVOIRS IN DELAWARE RIVER BASIN--Continued

01449400 PENN FOREST RESERVOIR.--Lat 40°55'45", long 75°33'45", Carbon County, PA, Hydrologic Unit 02040106, at dam on Wild Creek near Hatchery, PA, 0.7 mi upstream from Hatchery, 2.6 mi upstream from Wild Creek Dam, 4.4 mi upstream from mouth, and 10 mi northeast of Palmerton, PA. DRAINAGE AREA, 16.5 mi^2. PERIOD OF RECORD, October 1958 to current year. GAGE, water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by city of Bethlehem).
REMARKS.--Reservoir formed by an earthfill dam, with ungated concrete spillway at elevation 1,000.00 ft; storage began in October 1958. Capacity at elevation 1,000.00 ft is 19,980 acre-ft. Reservoir is used for municipal water supply. Figures given herein represent total contents. Regulation is done by valves on pipe through dam. Figures given herein include diversion, since October 1969, from Tunkhannock Creek basin into Wild Creek basin.
COOPERATION.--Records provided by city of Bethlehem.
EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 20,560 acre-ft, Apr. 6, 1984, elevation, 1,001.19 ft; minimum, 176 acre-ft, Oct. 6, 1965, elevation, 902.40 ft.
EXTREMES FOR CURRENT YEAR.--Maximum contents, 20,370 acre-ft, May 19, elevation, 1,000.67 ft; minimum, 12,830 acre-ft, Mar. 23, elevation, 982.48 ft.

01449700 WILD CREEK RESERVOIR.--Lat 40°53'50", long 75°33'50", Carbon County, PA, Hydrologic Unit 02040106, at dam on Wild Creek near Hatchery, PA, 1.6 mi upstream from mouth, 2.4 mi south of Hatchery, and 7.5 mi northeast of Palmerton, PA. DRAINAGE AREA, 22.2 mi^2. PERIOD OF RECORD, January 1941 to current year. Nonrecording gage. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by city of Bethlehem).
REMARKS.--Reservoir formed by earthfill dam, with concrete ungated spillway at elevation 820.00 ft; storage began January 27, 1941; water in reservoir first reached minimum pool elevation in February 1941. Total capacity at elevation 820.00 ft is 12,500 acre-ft of which 12,000 acre-ft is controlled storage. Reservoir is used for municipal water supply. Figures given herein represent usable contents. Regulation is accomplished by valves on pipe through dam. Since October 1969 the basin upstream has received diversion from Tunkhannock Creek basin.
COOPERATION.--Records provided by City of Bethlehem.
EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 12,880 acre-ft, May 23, 1942, elevation, 822.93 ft; minimum (after first filling), 2,680 acre-ft, Nov. 15, 1966, elevation, 774.10 ft.
EXTREMES FOR CURRENT YEAR.--Maximum contents, 12,200 acre-ft, May 19, elevation, 820.67 ft; minimum, 10,740 acre-ft, Mar. 6, elevation, 815.15 ft.

01449790 BELTZVILLE LAKE.--Lat 40°50'56", long 75°38'19", Carbon County, PA, Hydrologic Unit 02040106, at dam on Pohopoco Creek, 0.45 mi upstream from gaging station on Pohopoco Creek, 0.55 mi upstream from Sawmill Run and 2.3 mi northeast of Parryville, PA. DRAINAGE AREA, 96.3 mi^2. PERIOD OF RECORD, February 1971 to current year. GAGE, water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers).
REMARKS.--Reservoir formed by an earth and rockfill dam with ungated, partially lined spillway at elevation 651.00 ft; storage began Feb. 8, 1971. Capacity at elevation 651.00 ft is 68,300 acre-ft. Ordinary minimum (conservation) pool elevation, 628.00 ft, capacity, 41,250 acre-ft. Dead storage is 1,390 acre-ft. Reservoir is used for recreation, flood control, low flow augmentation and water supply. Figures given herein represent total contents. Regulation is accomplished by a multi-level water-quality outlet system and two flood-control gates.
COOPERATION.--Records provided by Corps of Engineers.
EXTREMES FOR PERIOD OF RECORD.--Maximum contents 49,730 acre-ft, Jan. 29, 1976, elevation, 636.30 ft; minimum, 15,110 acre-ft, March 31, 1983 elevation, 588.79
EXTREMES FOR CURRENT YEAR.--Maximum contents 45,450 acre-ft, May 7, elevation, 632.25 ft; minimum, 40,800 acre-ft, Sept. 16, elevation, 627.53 ft.

01455221 MERRILL CREEK RESERVOIR.--Lat 40°43'42", long 75°06'11", Warren County, Hydrologic Unit 02040105, at dam on Merrill Creek in Harmony Township, 4.5 mi northeast of Phillipsburg, and 2.8 mi upstream from mouth. DRAINAGE AREA, 3,13 mi^2. PERIOD OF RECORD, March 1988 to current year. GAGE, measurement from reference point. Datum of gage is National Geodetic Vertical Datum of 1929.
REMARKS.--Reservoir formed by zoned, compacted, earth-rockfill dam constructed in November 1987. Storage began March 1988. Total capacity at spillway elevation, 16,617,000,000 gal, elevation 929.0 ft. Useable capacity, 15,6654,000,000 gal. Reservoir used for storage of water pumped from the Delaware River through a 57-inch diameter pipe 17,000 ft long. Releases are made into the Delaware River through the same pipe. Reservoir is used to augment low flow in the Delaware River. Conservation release of 3 ft^3/s made to Merrill Creek.
COOPERATION.--Records provided by the Merrill Creek Reservoir Project.
EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 16,469,000,000 gal, Sept. 30, 1989, elevation, 922.3 ft; minimum (after first filling), 15,076,000,000 gal, March 17, 1989, elevation 920.2 ft.
EXTREMES FOR CURRENT YEAR.--Maximum contents, 16,469,000,000 gal, Sept. 30, elevation 922.3 ft; minimum (after first filling), 15,076,000,000 gal, Mar. 17, elevation 920.2 ft.

01455400 LAKE HOPATCONG.--Lat 40°55'00", long 74°39'50", Morris County, Hydrologic Unit 02040105, in gatehouse of Lake Hopatcong Dam on Musconetcong River at Landing. DRAINAGE AREA, 25.3 mi^2. PERIOD OF RECORD, February 1887 to current year. Monthend contents only prior to October 1950, published in WSP 1302. REVISED RECORDS, WDR NJ-82-2: Drainage area; WDR NJ-83-2: Corrections 1981 (m/m). GAGE, max-mim recorder and staff gage. Prior to June 24, 1928, daily readings obtained by measuring from high-water mark to water surface converted to gage height, present datum. Datum of gage is 914.57 ft National Geodetic Vertical Datum of 1929.
REMARKS.--Lake is formed by concrete spillway and earthfill dam completed about 1828. Crest of spillway was lowered 0.11 ft in 1925. Usable capacity, 7,459,000,000 gal between (gage height -2.6 ft, sills of gates and 9.00 ft, crest of spillway). Flow regulated by four gates (3 by 5 ft, also by one 24-inch pipe with gate valve to recreation fountain 250 ft downstream from dam. Dead storage, about 8,117,000,000 gal. Figures given herein represent usable capacity. Lake used for recreation. CORRECTIONS.--Once-daily staff readings furnished by New Jersey Department of Environmental Protection.
COOPERATION.--Records provided by New Jersey Department of Environmental Protection.
EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 8,777,000,000 gal, August 19, 1955 correction, gage height, 10.55 ft; minimum, 1,525,000,000 gal, Dec. 29, 1960, gage height, 0.65 ft.
EXTREMES FOR CURRENT YEAR.--Maximum contents, 8,390,000,000 gal, May 18, gage height, 10.10 ft; minimum, 5,443,000,000 gal, Dec. 21, 22, 23, gage height, 6.50 ft.

01459350 LAKE NOCKAMIXON.--Lat 40°28'13", long 75°11'10", Bucks County, PA, Hydrologic Unit 02040105, at dam on Tohickon Creek, 6.2 mi upstream from gaging station on Tohickon Creek, 2.9 mi upstream from Mink Run and 1.3 mi east of Ottsville. DRAINAGE AREA, 73.3 mi^2. PERIOD OF RECORD, December 1973 to current year. GAGE, water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Pennsylvania Department of Environmental Resources).
REMARKS.--Reservoir formed by earthfill dam with concrete spillway at elevation 395.0 ft. Storage began Decmeber 1973. Total capacity 66,500 acre-ft at elevation 410 ft. Reservoir is used primarily for recreation, but can be used for water supply and flood control.
COOPERATION.--Records provided by Pennsylvania Department of Environmental Resources.
EXTRMES FOR PERIOD OF RECORD.--Maximum contents, 44,380 acre-ft, Jan. 20, 1979, elevation 397.85 ft; minimum (after first filling) 15,900 acre-ft, around Dec. 31, 1975, elevation 372.78 ft.
EXTREMES FOR CURRENT YEAR.--Maximum contents, 43,550 acre-ft, Sept. 21, elevation 397.30 ft; minimum, 39,150 acre-ft, Nov. 6, elevation 394.25 ft.

RESERVOIRS IN DELAWARE RIVER BASIN--Continued

01469200 STILL CREEK RESERVOIR.--Lat 40°51'25", long 75°59'30". Schuylkill County, PA, Hydrologic Unit 02040106, at dam on Still Creek, 1 mi upstream from mouth and 2.3 mi north of Hometown, PA. DRAINAGE AREA, 8.5 mi^2. PERIOD OF RECORD, January 1933 to current year. Nonrecording gage. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Panther Valley Water Co.).

REMARKS.--Reservoir formed by earth fill dam, with ungated concrete spillway at elevation 1,182.00 ft; storage began in February 1933. Capacity at elevation, 1,182.00 ft is 8,290 acre-ft. Reservoir is used for municipal water supply. Figures given herein represent total contents. Regulation is accomplished by valves on pipe through dam.

COOPERATION.--Records provided by Panther Valley Water Co.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 8,570 acre-ft, Oct. 15, 1955, elevation, 1,182.92 ft, but may have been greater during 1950 and 1951 water years; minimum (after initial filling), 588 acre-ft, Dec. 8, 1944, elevation, 1,136.70 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 8,500 acre-ft, May 17, elevation, 1,182.7 ft; minimum, 5,410 acre-ft, Nov. 11, elevation, 1,171.7 ft.

01470870 BLUE MARSH LAKE.--Lat 40°22'45", long 76°01'59", Berks County, PA, Hydrologic Unit 02040203, at dam on Tulpehocken Creek, 0.8 mi upstream from gaging station on Tulpehocken Creek, 1.0 mi northeast of Blue Marsh, PA, 1.9 mi upstream from Reber's Bridge, and 5.1 mi southeast of Bernville, PA. DRAINAGE AREA, 175 mi^2. PERIOD OF RECORD, April 1979 to current year. GAGE, water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers).

REMARKS.--Reservoir formed by earthfill dam, with concrete ungated spillway at elevation 307.00 ft. Storage began April 23, 1979. Capacity at elevation, 307.00 ft is 50,000 acre-ft. Dead storage is 3,000 acre-ft. Reservoir is used for flood control, water supply, and recreation. Figures herein represent total contents.

COOPERATION.--Records provided by U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 39,480 acre-ft, Apr. 17, 1983, elevation, 301.65 ft; minimum, 17,440 acre-ft, Nov. 28, 1983 elevation, 284.49 ft.

EXTREMES FOR CURRENT YEAR: Maximum contents, 34,400 acre-ft, May 7, elevation, 298.59 ft; minimum, 17,130 acre-ft, Sept. 25, 26, elevation, 284.48 ft.

01472200 GREEN LANE RESERVOIR.--Lat 40°20'30", long 75°28'45", Montgomery County, PA, Hydrologic Unit 02040203, at dam on Perkiomen Creek at Green Lane, PA, 0.4 mi west of Green Lane and 2.1 mi upstream from Unami Creek. DRAINAGE AREA, 70.9 mi^2. PERIOD OF RECORD, December 1956 to current year. GAGE, water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Philadelphia Suburban Water Co.).

REMARKS.--Reservoir formed by concrete, gravity-type dam, with ungated spillway at elevation 286.00 ft; storage began December 21, 1956. Capacity at spillway level, elevation 286.00 ft, 13,430 acre-ft. Reservoir is used for municipal water supply. Figures given herein represent total contents. Regulation is accomplished by valves on pipe through dam.

COOPERATION.--Records provided by Philadelphia Suburban Water Co.

EXTREMES FOR PERIOD OF RECORD: Maximum contents, 17,030 acre-ft, June 23, 1972, elevation, 290.05 ft; minimum (after first filling), 1,270 acre-ft, Aug. 25, 1957, elevation, 251.60 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 13,990 acre-ft, May 7, elevation, 286.63 ft; minimum, 10,310 acre-ft, Sept. 26, elevation, 281.90 ft.

MONTHEND ELEVATION AND CONTENTS, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

Date	Elevation (feet)*	Contents (million gallons)	Change in contents (equivalent in ft^3/s)	Elevation (feet)*	Contents (million gallons)	Change in contents (equivalent in ft^3/s)	Elevation (feet)†	Contents (acre-feet)	Change in contents (equivalent in ft^3/s)
	01416900 PEPACTON RESERVOIR			01424997 CANNONSVILLE RESERVOIR			01428900 PROMPTON RESERVOIR		
Sept. 30...	1,253.12	104,785		1,103.68	39,827		1,123.21	3,000	
Oct. 31...	1,240.06	86,245	-925	1,091.52	28,585	-561	1,123.35	3,040	+0.7
Nov. 30...	1,242.54	89,596	+173	1,114.29	51,160	+1,164	1,125.27	3,580	+9.1
Dec. 31...	1,236.44	81,501	-404	1,119.13	56,768	+280	1,124.80	3,440	-2.3
CAL YR 1988			-149			-178			-.2
Jan. 31...	1,231.29	75,054	-322	1,115.39	52,404	-218	1,125.17	3,550	+1.8
Feb. 28...	1,235.19	79,903	+268	1,113.04	49,770	-146	1,125.10	3,530	-.4
Mar. 31...	1,240.85	87,304	+369	1,117.90	55,332	+278	1,125.89	3,750	+3.6
Apr. 30...	1,251.20	101,917	+754	1,129.04	69,033	+707	1,124.61	3,390	-6.0
May 31...	1,272.65	136,597	+1,731	1,150.23	98,988	+1,495	1,124.90	3,470	+1.3
June 30...	1,279.85	149,523	+667	1,150.09	98,763	-11.6	1,125.93	3,760	+4.9
July 31...	1,276.79	143,945	-278	1,145.21	91,331	-371	1,125.20	3,560	-3.3
Aug. 31...	1,269.55	131,235	-634	1,138.81	82,143	-459	1,123.80	3,160	-6.5
Sept. 30...	1,263.52	121,139	-521	1,131.24	71,899	-528	1,124.67	3,410	+4.2
WTR YR 1989			+69.3			+136			+.6

RESERVOIRS IN DELAWARE RIVER BASIN--Continued

MONTHEND ELEVATION AND CONTENTS, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

Date	Elevation (feet)†	Contents (acre-feet)	Change in contents (equivalent in ft³/s)	Elevation (feet)†	Contents (acre-feet)	Change in contents (equivalent in ft³/s)	Elevation (feet)†	Contents (million ft³)	Change in contents (equivalent in ft³/s)
	01429400 GENERAL EDGAR JADWIN RESERVOIR			01431700 LAKE WALLENPAUPACK			01433000 SWINGING BRIDGE RESERVOIR		
Sept. 30...	962.36	0		1,179.1	47,840		1,064.7	1,180	
Oct. 31...	965.50	0	0	1,179.3	48,920	+17.6	1,065.4	1,206	+9.7
Nov. 30...	966.88	0	0	1,182.9	68,550	+330	1,065.5	1,210	+1.5
Dec. 31...	967.68	0	0	1,181.4	60,300	-134	1,062.9	1,114	-35.8
CAL YR 1988			0			+26.8			-1.4
Jan. 31...	965.89	0	0	1,179.1	47,840	-203	1,066.0	1,229	+42.9
Feb. 28...	967.63	0	0	1,177.6	39,740	-146	1,067.5	1,288	+24.4
Mar. 31...	974.19	0	0	1,179.0	47,300	+123	1,067.8	1,299	+4.1
Apr. 30...	967.44	0	0	1,183.4	71,340	+404	1,065.7	1,218	-31.2
May 31...	968.63	0	0	1,185.5	83,100	+191	1,068.1	1,311	+34.7
June 30...	968.60	0	0	1,185.9	85,340	+37.7	1,066.8	1,260	-19.7
July 31...	965.66	0	0	1,182.0	63,600	-353	1,063.3	1,128	-49.3
Aug. 31...	965.59	0	0	1,180.9	57,560	-98.2	1,063.2	1,124	-1.5
Sept. 30...	965.83	0	0	1,178.4	44,060	-227	1,065.7	1,218	+36.3
WTR YR 1989			0			-5.2			+1.2

Date	Elevation (feet)†	Contents (million ft³)	Change in contents (equivalent in ft³/s)	Elevation (feet)†	Contents (million ft³)	Change in contents (equivalent in ft³/s)	Elevation (feet)*	Contents (million gallons)	Change in contents (equivalent in ft³/s)
	01433100 TORONTO RESERVOIR			01433200 CLIFF LAKE			01435900 NEVERSINK RESERVOIR		
Sept. 30...	1,170.4	27		1,064.5	80.5		1,406.68	22,764	
Oct. 31...	1,169.5	21	-2.2	1,065.4	86.3	+2.2	1,375.81	12,883	-493
Nov. 30...	1,175.0	69	+18.5	1,065.5	87.0	+0.3	1,369.59	11,267	-83.3
Dec. 31...	1,175.0	69	0	1,062.7	69.3	-6.6	1,367.63	10,782	-24.2
CAL YR 1988			-11.7			-0.5			-71.7
Jan. 31...	1,175.3	72	+1.1	1,065.8	88.9	+7.3	1,373.20	12,190	+70.3
Feb. 28...	1,177.6	100	+11.6	1,067.8	102.9	+5.8	1,381.39	14,423	+123
Mar. 31...	1,180.5	141	+15.3	1,067.6	101.5	-0.5	1,398.89	19,955	+276
Apr. 30...	1,186.7	240	+38.2	1,065.8	88.9	-4.9	1,414.29	25,706	+297
May 31...	1,199.2	497	+96.0	1,068.5	108.1	+7.2	1,437.79	36,063	+517
June 30...	1,204.1	621	+47.8	1,066.9	96.5	-4.5	1,436.85	35,608	-23.5
July 31...	1,202.0	566	-20.5	1,066.0	90.3	-2.3	1,432.89	33,732	-93.6
Aug. 31...	1,190.6	310	-95.6	1,063.5	74.2	-6.0	1,410.77	24,321	-470
Sept. 30...	1,190.8	314	+1.5	1,065.1	84.3	+3.9	1,399.40	20,133	-216.0
WTR YR 1989			+9.1			+0.1			-11.2

Date	Elevation (feet)*	Contents (acre-feet)	Change in contents (equivalent in ft³/s)	Elevation (feet)†	Contents (acre-feet)	Change in contents (equivalent in ft³/s)	Elevation (feet)†	Contents (acre-feet)	Change in contents (equivalent in ft³/s)
	01447780 FRANCIS E. WALTER LAKE			01449400 PENN FOREST RESERVOIR			01449700 WILD CREEK RESERVOIR		
Sept. 30...	1,304.89	2,500		994.38	17,470		817.09	11,280	
Oct. 31...	1,301.70	2,170	-5.4	990.63	15,900	-25.5	816.96	11,240	-0.7
Nov. 30...	1,301.50	2,150	-.3	989.60	15,490	-6.9	817.25	11,320	+1.3
Dec. 31...	1,299.47	1,940	-3.4	987.67	14,740	-12.2	817.13	11,290	-.5
CAL YR 1988			0			-7.3			-1.0
Jan. 31...	1,300.64	2,060	+2.0	985.32	13,840	-14.6	816.78	11,190	-1.6
Feb. 28...	1,301.11	2,110	+.9	984.00	13,370	-8.5	816.04	10,990	-3.6
Mar. 31...	1,302.37	2,240	+2.1	984.00	13,370	0	817.42	11,370	+6.2
Apr. 30...	1,300.65	2,060	-3.0	987.02	14,490	+18.8	817.02	11,260	-1.8
May 31...	1,308.09	2,850	+12.9	1,000.27	20,140	+91.8	820.21	12,060	+13.0
June 30...	1,299.71	1,970	-14.8	1,000.30	20,150	+.2	820.26	12,080	+.3
July 31...	1,301.47	2,150	+2.9	1,000.06	20,010	-2.3	818.48	11,660	-6.8
Aug. 31...	1,300.35	2,040	-1.8	996.34	18,330	-27.3	819.09	11,820	+2.6
Sept. 30...	1,307.41	2,780	+12.4	993.63	17,160	-19.7	817.54	11,400	-7.1
WTR YR 1989			+.4			-.4			+.2

RESERVOIRS IN DELAWARE RIVER BASIN--Continued

MONTHEND ELEVATION AND CONTENTS, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

Date	Elevation (feet)†	Contents (acre-feet)	Change in contents (equivalent in ft³/s)	Elevation (feet)†	Contents (million gallons)	Change in contents (equivalent in ft³/s)	Elevation (feet)†	Contents (million gallons)	Change in contents (equivalent in ft³/s)
	01449790 BELTZVILLE LAKE			01455221 MERRILL CREEK RESERVOIR			01455400 LAKE HOPATCONG		
Sept. 30...	628.05	41,300		917.4	16,056		7.64	6,344	
Oct. 31...	628.06	41,310	+0.2	921.0	16,196	+7.0	7.60	6,312	-1.6
Nov. 30...	628.05	41,300	-.2	921.0	16,196	0	8.22	6,815	+25.9
Dec. 31...	627.99	41,240	-1.0	920.6	16,112	-4.2	6.66	5,568	-62.2
CAL YR 1988			+.2			+68.1			+8.3
Jan. 31...	627.99	41,240	0	920.5	16,091	-1.0	6.56	5,490	-3.9
Feb. 28...	628.07	41,320	+1.4	920.4	16,070	-1.2	6.96	5,803	+17.3
Mar. 31...	627.99	41,240	-1.3	920.3	16,049	-1.0	8.04	6,669	+43.2
Apr. 30...	628.02	41,270	+.5	920.3	16,049	0	9.12	7,560	+45.9
May 31...	628.03	41,280	+.2	921.4	16,280	+11.5	9.40	7,795	+11.7
June 30...	628.00	41,250	-.5	921.8	16,364	+4.3	9.26	7,677	-6.1
July 31...	627.98	41,230	-.3	921.8	16,364	0	8.96	7,426	-12.5
Aug. 31...	627.87	41,130	-1.6	921.7	16,343	-1.0	8.88	7,359	-3.3
Sept. 30...	628.06	41,310	+3.0	922.3	16,469	+6.5	9.26	7,677	+16.4
WTR YR 1989			0			+1.8			+5.6

Date	Elevation (feet)†	Contents (acre-feet)	Change in contents (equivalent in ft³/s)	Elevation (feet)†	Contents (acre-feet)	Change in contents (equivalent in ft³/s)	Elevation (feet)†	Contents (acre-feet)	Change in contents (equivalent in ft³/s)
	01459350 LAKE NOCKAMIXON			01469200 STILL CREEK RESERVOIR			01470870 BLUE MARSH LAKE		
Sept. 30...	394.80	39,920		1,174.2	6,100		289.92	22,810	
Oct. 31...	394.95	40,130	+3.4	1,172.0	5,490	-9.9	285.14	17,760	-82.1
Nov. 30...	395.50	40,900	+12.9	1,172.6	5,660	+2.9	285.07	17,690	-1.2
Dec. 31...	395.20	40,480	-6.8	1,173.9	6,020	+5.9	285.17	17,790	+1.6
CAL YR 1988			+.3			-3.1			+.2
Jan. 31...	395.30	40,620	+2.3	1,173.0	5,770	-4.1	284.97	17,590	-3.3
Feb. 28...	395.20	40,480	-2.5	1,173.3	5,850	+1.4	285.19	17,810	+4.0
Mar. 31...	395.75	41,250	+12.5	1,174.9	6,290	+7.2	285.41	18,030	+3.6
Apr. 30...	395.10	40,340	-15.3	1,175.9	6,570	+4.7	290.08	22,990	+83.3
May 31...	395.20	40,480	+2.3	1,182.1	8,320	+28.5	290.01	22,910	-1.3
June 30...	395.25	40,550	+1.2	1,182.0	8,290	-.5	290.09	23,000	+1.5
July 31...	395.10	40,340	-3.4	1,181.11	8,030	-4.2	290.29	23,240	+3.9
Aug. 31...	395.00	40,200	-2.3	1,180.6	7,880	-2.4	290.01	22,910	-5.4
Sept. 30...	395.60	41,040	+14.1	1,178.0	7,150	-12.3	285.06	17,680	-87.8
WTR YR 1989			+1.5			+1.4			-14.1

Date	Elevation (feet)†	Contents (acre-feet)	Change in contents (equivalent in ft³/s)
	01472200 GREEN LANE RESERVOIR		
Sept. 30...	285.33	12,840	
Oct. 31...	285.08	12,610	-3.7
Nov. 30...	286.04	13,470	+14.4
Dec. 31...	285.84	13,290	-2.9
CAL YR 1988			-.1
Jan. 31...	286.01	13,440	+2.4
Feb. 28...	286.00	13,430	-.2
Mar. 31...	286.40	13,780	+5.7
Apr. 30...	285.96	13,400	-6.4
May 31...	286.03	13,460	+1.0
June 30...	286.03	13,460	0
July 31...	286.00	13,430	-.5
Aug. 31...	285.90	13,340	-1.5
Sept. 30...	285.90	13,390	+.8
WTR YR 1989			+.8

* Elevation at 0900 hours on first day of following month.
† Elevation or gage height at 2400 hours.

DIVERSIONS AND WITHDRAWALS

WITHDRAWALS FROM THE DELAWARE RIVER BASIN

01415200 Diversion from Pepacton Reservoir, NY, on East Branch Delaware River to Rondout Reservoir on Rondout Creek, in Hudson River basin, for municipal supply of City of New York. No diversion prior to Jan. 6, 1955. Records provided by Bureau of Water Resources Development and Department of Environmental Protection, City of New York.
REVISED RECORDS.--WRD NY-71: 1970. WRD NJ-72: 1970. WRD NJ-82-2: 1980. WRD NY-81-1: 1980.

01423900 Diversion from Cannonsville Reservoir, NY, on West Branch Delaware River to Rondout Reservoir on Rondout Creek, in Hudson River basin, for municipal supply of city of New York. No diversion prior to Jan. 29, 1964. Records provided by Board of Water Supply, City of New York.
REVISED RECORDS.--WDR NJ-82-2: 1980. WDR NY-81-1: 1980.

01435800 Diversion from Neversink Reservoir, NY, on Neversink River to Rondout Reservoir on Rondout Creek, in Hudson River basin, for municipal supply of City of New York. No diversion prior to Dec. 3, 1953. Records furnished by Board of Water Supply and Department of Water Resources, city of New York.
REVISED RECORDS.--WDR NJ-82-2: 1976, 1977. WDR NY-82-1: 1976, 1977.

01436520 Village of Woodridge, NY, diverts water from East Pond Reservoir, tributary to Neversink River, for municipal supply outside of basin. Village of Woodridge has estimated that this year virtually all the withdrawal from East Pond Reservoir was returned to the Neversink River.

01437360 Diversion from Bear Swamp Reservoir, NY, tributary to Neversink River, by the New York State Training School, Otisville, NY, for water supply outside of basin. Records provided by Delaware River Basin Commission.

01447750 Diversion from Bear Creek, PA, tributary to Lehigh River, by Bear Creek Gas and Water Company for water supply outside of basin. Records provided by Delaware River Basin Commission. Data for this year is not available but, from past records, monthly withdrawal is approximately 0.5 ft^3/s.

01448830 Diversion from Hazle Creek Watershed by Hazelton Joint Sewerage Authority for municipal water supply. Waste effluent from the municipal water system is released to the Susquehanna River. Records provided by Delaware River Basin Commission.

01460500 Diversion by Delaware and Raritan Canal from Delaware River at Raven Rock, for municipal and industrial use. Water is discharged into the Raritan River at New Brunswick. Records of discharge are collected on the Delaware and Raritan Canal at Kingston, (see station 01460500).
REVISED RECORDS.--WDR NJ-82-2: 1981.

WITHDRAWALS BY CITY OF NEW YORK

DIVERSION, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

Month	01415200 PEPACTON RESERVOIR	01423900 CANNONSVILLE RESERVOIR	01435800 NEVERSINK RESERVOIR
October	680	0	516
November	622	0	441
December	685	9.6	124
CAL YR 1988	572	30.1	217
January	545	530	1.8
February	157	709	0
March	301	560	3.8
April	240	564	0
May	62.3	245	138
June	128	606	200
July	578	354	133
August	678	3.3	468
September	701	133	350
WTR YR 1989	451	306	199

MISCELLANEOUS WITHDRAWALS FROM BASIN, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

MONTH	01447750 BEAR CREEK	01448830 HAZLE CREEK*	01460500 DELAWARE & RARITAN CANAL
October	0	3.1	134
November	0	3.1	135
December	0	3.1	139
CAL YR 1988	0	3.1	130
January	0	3.1	126
February	0	3.1	105
March	0	3.1	101
April	0	3.1	99.9
May	0	3.1	25.0
June	0	3.1	58.9
July	0	3.1	112
August	0	3.1	109
September	0	3.1	124
WTR YR 1989	0	3.1	106

DIVERSIONS WITHIN THE DELAWARE RIVER BASIN

01446572 Diversion from Delaware River at Brainards to Merrill Creek Reservoir for storage to augment low flow in the Delaware River. A conservation release of 3 ft^3/s to Lower Merrill Creek, which eventually reaches the Delaware River, is made. Records provided by Merrill Creek Reservoir Project.

01459005 Diversion from the Delaware River at Point Pleasant, PA by Philadelphia Electric Company to Bradshaw Reservoir on the East Branch Perkiomen Creek, tributary to Schuylkill River, to supplement flow to Limerick Power Station. Diversion began August 1989. Records provided by the Delaware River Basin Commission.

01463480 Diversion from the Delaware River at the Morrisville Filtration Plant, by the Borough of Morrisville, PA for municipal supply. The water withdrawn at this site is returned to the basin after treatment, only slightly diminished by consumptive uses and losses in transmission. Records provided by the Borough of Morrisville, PA.

01463490 Diversion from the Delaware River just above the Trenton gaging station by the city of Trenton, NJ for municipal supply. The water being withdrawn is returned to the basin after treatment only slightly diminished by consumptive uses and losses in transmission. Records provided by the City of Trenton.
REVISED RECORDS.--WDR NJ-82-2: Station number.

01467030 Diversion from the Delaware River at the Torresdale Intake, by the City of Philadelphia, PA for municipal supply. The water being withdrawn at this intake is returned to the basin after treatment only slightly diminished by consumptive uses and losses in transmission. Records provided by the Delaware River Basin Commission.

01474500 Diversion from the Schuylkill River at the Belmont and Queen Lanes Intakes, by the City of Philadelphia, PA for municipal supply. The water being withdrawn at these intakes is returned after treatment within the Delaware River basin only slightly diminished by consumptive uses and losses in transmission. Records provided by the Delaware River Basin Commission.

WITHDRAWALS, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

Month	01446572 MERRILL CREEK RESERVOIR	01459005 POINT PLEASANT	01463480 BOROUGH OF MORRISVILLE	01463490 CITY OF TRENTON
October	7.0		4.25	48.6
November	0		3.96	46.7
December	0		4.42	46.5
CAL YR 1988	.02	--	3.58	48.4
January	0		4.83	45.8
February	0		4.10	45.4
March	0		3.77	45.6
April	0		3.94	45.4
May	0		4.00	46.1
June	0		3.98	48.2
July	0		3.90	50.5
August	0	9.2	3.91	50.9
September	0	3.1	3.92	51.7
WTR YR 1989	.02	1.0	4.08	47.6

WITHDRAWALS, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989--Continued

Month	CITY OF PHILADELPHIA		
	01467030 DELAWARE RIVER TORRESDALE	01474500 SCHUYLKILL RIVER BELMONT	QUEEN LANE
October	344	92.0	143
November	329	102	128
December	338	93.3	140
CAL YR 1988	335	104	157
January	325	89.4	155
February	317	88.8	152
March	318	89.1	146
April	331	77.2	122
May	315	92.4	134
June	305	101	182
July	327	105	179
August	329	104	179
September	309	101	176
WTR YR 1989	324	94.6	153

DIVERSIONS AND WITHDRAWALS--Continued

DIVERSIONS IMPORTED INTO BASIN

01367630 Water diverted from Morris Lake, tributary to the Wallkill River (Hudson River basin), by the Newton Water and Sewer Authority for municipal use. After use the water is released into the Paulins Kill (Delaware River basin). Records provided by the Delaware River Basin Commission.

01578420 Water diverted from West Branch Octoraro Creek (Susquehanna River basin) at the McCray Plant of the Coatesville Water Authority (formerly Octoraro Water Co.) for municipal use. After use the water is released into the Delaware River basin. Records provided by the Delaware River Basin Commission.

01578450 Water divered from Octoraro Lake (Susquehanna River basin) by Chester Water Authority for municipal use. After use the water is released into the Delaware River basin. Records provided by the Delaware River Basin Commission.

DIVERSIONS IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

		OCTORARO CREEK	
MONTH	01367630 MORRIS LAKE	01578420 COATSVILLE WATER AUTHORITY	01578450 CHESTER WATER AUTHORITY
October	1.34	1.23	46.9
November	1.38	1.00	43.1
December	1.37	1.37	46.7
CAL YR 1988	1.48	1.34	47.7
January	1.54	1.19	48.7
February	1.57	1.35	47.5
March	1.51	1.24	48.1
April	1.31	1.21	44.5
May	1.52	1.17	46.3
June	1.54	1.30	49.2
July	1.60	1.29	48.4
August	1.61	1.32	48.4
September	1.67	1.30	48.8
WTR YR 1989	1.50	1.25	47.2

As the number of streams on which streamflow information is likely to be desired far exceeds the number of stream-gaging stations feasible to operate at one time, the Geological Survey collects limited streamflow data at sites other than stream-gaging stations. When limited streamflow data are collected on a systematic basis over a period of years for use in hydrologic analyses, the site at which the data are collected is called a partial-record station. Data collected at these partial-record stations are usable in low-flow or floodflow analyses, depending on the type of data collected. In addition, discharge measurements are made at other sites not included in the partial-record program. These measurements are generally made in times of drought or flood to give better areal coverage to those events. Those measurements and others collected for some special reason are called measurements at miscellaneous sites.

Records collected at partial-record stations are presented in two tables. The first is a table of annual maximum stage and discharge at crest-stage stations, and the second is a table of discharge measurements at low-flow partial record stations.

Crest-stage partial-record stations

The following table contains annual maximum discharges for crest-stage stations. A crest-stage gage is a device which will register the peak stage occurring between inspections of the gage. A stage-discharge relation for each gage is developed from discharge measurements made by indirect measurements of peak flow or by current meter. The date of the maximum discharge is not always certain but is usually determined by comparison with nearby continuous-record stations, weather records, or local inquiry. Only the maximum discharge for each water year is given. Information on some lower stages may have been obtained, and discharge measurements may have been made for purposes of establishing the stage-discharge relation, but these are not published herein. The years given in the period of record represent water years for which the annual maximum has been determined. The gage heights are heights on the upstream side of the bridge, above the dam or at the discontinued continuous-record gaging station unless otherwise noted.

Annual maximum discharge at crest-stage partial-record stations during water year 1989

Station No.	Station name	Location	Drainage area (mi^2)	Period of record	Annual Maximum		
					Date	Gage height (ft)	Discharge (ft^3/s)
		Maurice River basin					
01412000	Menantico Creek near Millville, NJ	Lat 39°25'12", long 74°58'00", Cumberland county, Hydrologic Unit 02040206, on left bank at upstream side of Mays Landing Road (State Route 552), 0.9 mi downstream of Menantico Lake, 4.0 mi northeast of Millville, and 7.0 mi upstream from mouth. Datum of gage is 36.63 ft above National Geodetic Vertical Datum of 1929.	23.2	1931-57†, 1978-84†, 1985-89	9-20-89	3.17	196
		Cohansey River basin					
01412500	West Branch Cohansey River at Seeley, NJ	Lat 39°29'06, long 75°15'33", Cumberland County, Hydrologic Unit 02040206, on right bank 15 ft upstream from county bridge, Highway 31, at Seeley, 450 ft upstream from mouth, and 4.1 mi northwest of Bridgeton. Datum of gage is 42.23 ft above National Geodetic Vertical Datum of 1929.	2.58	1952-67†, 1968-89	7-5-89	3.40	135
01412800	Cohansey River at Seeley, NJ	Lat 39°28'21", long 75°15'21", Cumberland County, Hydrologic Unit 02040206, on right bank just downstream from bridge on Silver Lake Road, 0.6 mi south of Seeley, 2.6 mi east of Shiloh, 4.1 mi north of Bridgeton, and 22.5 mi upstream from mouth. Datum of gage is 26.9 ft above National Geodetic Vertical Datum of 1929.	28.0	1978-88†, 1989	7-05-89	5.65	543
		Delaware River basin					
*01445000	Pequest River at Huntsville, NJ	Lat 40°58'52", long 74°46'36", Sussex County, Hydrologic Unit 02040105, on right bank, 20 ft upstream from highway bridge in Huntsville, and 0.4 mi downstream from East Branch. Datum of gage is 553.81 ft above National Geodetic Vertical Datum of 1929.	31.0	1940-62†, 1963-89	9-21-89	4.74	498
01445430	Pequest River at Townsbury, NJ	Lat 40°51'06", long 74°56'02", Warren County, Hydrologic Unit 02040105, upstream of highway bridge in Townsbury, 2.8 mi northeast of Pequest, and 8.7 mi west of Hackettstown. Altitude of gage is 480 ft, from topographic map.	92.5	1977-80†, 1981-89	9-21-89	4.56	1,880

Annual maximum discharge at crest-stage partial-record stations during water year 1989--Continued

Station No.	Station name	Location	Drainage area (mi^2)	Period of record	Annual Maximum Date	Annual Maximum Gage height (ft)	Annual Maximum Discharge (ft^3/s)
		Delaware River basin--Continued					
*01446000	Beaver Brook near Belvidere, NJ	Lat 40°50'40", long 75°02'48, Warren County, Hydrologic Unit 02040105, on right bank, 2,000 ft upstream from mouth, and 2 mi east Belvidere. Datum of gage is 303.36 ft National Geodetic Vertical Datum of 1929.	36.7	1922-61†, 1963-89	9-21-89	3.92	569
*01455200	Pohatcong Creek at New Village, NJ	Lat 40°42'57", long 75°04'20", Warren County, Hydrologic Unit 02040105, at bridge on Edison Road, 0.4 mi southeast of New Village, and 4.3 mi upstream from Merrill Creek. Datum of gage is 308.32 ft above National Geodetic Vertical Datum of 1929.	33.3	1960-69†, 1970-89	9-21-89	7.18	2,450
01455500	Musconetcong River at outlet of Lake Hopatcong, NJ	Lat 40°55'00", long 74°39'55", Morris County, Hydrologic Unit 02040105, on left bank just upstream of highway bridge 300 ft downstream from Lake Hopatcong Dam in Landing. Datum of gage is 904.99 ft above National Geodetic Vertical Datum of 1929.	25.3	1929-75†, 1976-89	5-19-89	3.94	309
01456000	Musconetcong River near Hackettstown, NJ	Lat 40°53'17", long 74°47'53", Warren County, Hydrologic Unit 02040105, on right bank 75 ft upstream from Saxton Falls Dam, 0.5 mi upstream from Erie-Lackawanna Railway bridge, and 3.0 mi northeast of Hackettstown. Datum of gage is 630.93 ft above National Geodetic Vertical Datum of 1929.	68.9	1921-73†, 1974-89	9-20-89	2.83	1,040
01457500	Delaware River at Riegelsville, NJ	Lat 40°35'36", long 75°11'17", Warren County, Hydrologic Unit 02040105, just upstream of suspension bridge at Riegelsville, 600 ft upstream from Musconetcong River (flow of which is included in the records for this station since Oct. 1, 1931). Datum of gage is 125.12 ft National Geodetic Vertical Datum of 1929.	6,328	1906-71†, 1972-89	5-07-89	18.72	87,000
01464400	Crosswicks Creek at New Egypt, NJ	Lat 40°04'03", long 74°31'57", Ocean County, Hydrologic Unit 020401201, at upstream side of bridge on State Route 528 in New Egypt, and 300 ft downstream from Oakford Lake Dam. Datum of gage is 43.46 ft above National Geodetic Vertical Datum of 1929.	41.2	1968-89	7-06-89	26.2	1,920
01464515	Doctors Creek at Allentown, NJ	Lat 40°10'37", long 74°35'57", Monmouth County, Hydrologic Unit 02040201, at bridge on Breza Road in Allentown, and 0.8 mi downstream from Conines Millpond dam. Datum of gage is 50.98 ft above National Geodetic Vertical Datum of 1929.	17.4	1968-89	9-22-89 1-21-88	b4.29 b4.13	385 f365
01464530	Blacks Creek at Mansfield Square, NJ	Lat 40°07'02", long 74°41'58", Burlington County, Hydrologic Unit 02040202, at bridge on Mansfield Square-Crosswicks Road, 0.4 mi east of Mansfield Square, and 3.4 mi upstream from mouth. Datum of gage is 12.44 ft above National Geodetic Vertical Datum of 1929.	19.7	1978-89	7-06-89	b8.74	940

Annual maximum discharge at crest-stage partial-record stations during water year 1989--Continued

Station No.	Station name	Location	Drainage area (mi^2)	Period of record	Annual Maximum Date	Annual Maximum Gage height (ft)	Annual Maximum Discharge (ft^3/s)
		Delaware River basin--Continued					
01464538	Crafts Creek at Columbus, NJ	Lat 40°04'44", long 74°43'07", Burlington County, Hydrologic Unit 02040202, at bridge on Columbus-Mansfield road, 0.4 mi north of Columbus, and 6.0 mi northeast of Mount Holly. Datum of gage is 33.71 ft above National Geodetic Vertical Datum of 1929.	5.38	1978-89	7-06-89	b10.25	880
01464582	Assiscunk Creek near Columbus, NJ	Lat 40°03'13", long 74°44'34", Burlington County, Hydrologic Unit 02040202, at bridge on Petticoat Bridge Road, 1.7 mi southwest of Columbus, 4.0 mi northeast of Mount Holly, and 0.1 mi downstream from Assiscunk Branch.	10.9	1978-89	7-06-89	b8.34	700
01465850	South Branch Rancocas Creek at Vincentown, NJ	Lat 39°56'22", long 74°45'50", Burlington County, Hydrologic Unit 02040202, on left bank 150 ft downstream from highway bridge on Lumberton-Vincentown road, 0.8 mi west of Vincentown, 2.9 mi southeast of Lumberton, and 3.1 mi upstream from Southwest Branch. Datum of gage is 13.17 ft above National Geodetic Vertical Datum of 1929.	64.5	1962-75†, 1976-89	5-12-89	6.64	770
*01465880	Southwest Branch Rancocas Creek at Medford, NJ	Lat 39°53'43", long 74°49'26", Burlington County, Hydrologic Unit 02040202, at bridge on Argonne Highway (State Route 541), 0.6 mi south of intersection of Argonne Highway and State Highway 70 at Medford, and 5.3 mi upstream from mouth.	47.2	1983-89	7-05-89	15.3	3,300
*01467305	Newton Creek at Collingswood, NJ	Lat 39°54'30", long 75°03'13", Camden County, Hydrologic Unit 02040202, at bridge on Park Avenue in Collingswood, 0.3 mi east of Cuthbert Avenue. Datum of gage is 18.74 ft above National Geodetic Vertical Datum of 1929.	1.33	1964-89	7-05-89	4.62	223
01467317	South Branch Newton Creek at Haddon Heights, NJ	Lat 39°52'45", long 75°04'26", Camden County, Hydrologic Unit 02040202, at bridge on Haddon Heights Park in Haddon Heights, and 2.6 mi south of Collingswood. Datum of gage is 23.34 ft above National Geodetic Vertical Datum of 1929.	.63	1964-89	7-05-89	4.55	185
01475000	Mantua Creek at Pitman, NJ	Lat 39°44'14", long 75°06'53", Gloucester County, Hydrologic Unit 02040202, on left abutment of Wadsworth Dam, 0.9 mi east of Pitman, and 2.0 mi upstream from Porch Branch. Datum of gage is 68.51 ft above National Geodetic Vertical Datum of 1929.	6.05	1940-76†, 1977-89	7-05-89	2.01	199
01477110	Raccoon Creek at Mullica Hill, NJ	Lat 39°44'10", long 75°13'30", Gloucester County, Hydrologic Unit 02040202, at bridge on State Routes 45 and 77 in Mullica Hill, 1,200 ft downstream of Mullica Hill Pond, and 5.5 mi west of Pitman. Datum of gage is 21.91 ft above National Geodetic Vertical Datum of 1929.	15.6	1978-89	7-05-89	5.53	1,635

Annual maximum discharge at crest-stage partial-record stations during water year 1989--Continued

Station No.	Station name	Location	Drainage area (mi^2)	Period of record	Annual Maximum		
					Date	Gage height (ft)	Discharge (ft^3/s)
		Delaware River basin--Continued					
01477480	Oldmans Creek near Harrisonville, NJ	Lat 39°41'20", long 75°18'38", Salem County, Hydrologic Unit 02040206, at bridge on Harrisonville Station Road, 2.4 mi west of Harrisonville, and 2.8 mi north of Woodstown. Datum of gage is 16.58 ft above National Geodetic Vertical Datum of 1929.	13.8	1975-89	5-02-89	5.05	278
01482500	Salem River at Woodstown, NJ	Lat 39°38'36", long 75°19'52", Salem County, Hydrologic Unit 02040206, on right side of Memorial Lake Dam at Woodstown, 0.2 mi upstream from small brook, and 0.3 mi downstream from Pennsylvania-Reading Seashore Lines bridge. Datum of gage is 29.49 ft above National Geodetic Vertical Datum of 1929.	14.6	1940†, 1942-84†, 1985-88, 1989†	7-05-89	12.45	1,060

* Also a low-flow partial-record station.
† Operated as a continuous-record gaging station.
b Downstream side of bridge.
f Revised.

Low-flow partial-record stations

Measurements of streamflow in New Jersey made at low-flow partial-record stations are given in the following table. Most of these measurements were made during periods of base flow when streamflow is primarily from groundwater storage. These measurements, when correlated with the simultaneous discharge of a nearby stream where continuous records are available, will give a picture of the low-flow potentiality of a stream. The column headed "Period of record" shows the water years in which measurements were made at the same, or practically the same, site.

Discharge measurements made at low-flow partial-record stations during water year 1989

Station No.	Station Name	Location	Drainage area (mi^2)	Period of record	Measurements	
					Date	Discharge (ft^3/s)
		Maurice River basin				
01411450	Still Run at Aura, NJ	Lat 39°40'23", long 75°07'50", Gloucester County, Hydrologic Unit 02040206, at bridge on Aura-Glassboro Road, 0.4 mi east of Aura, 1.0 mi upstream of Silver Lake, and 2.6 mi southeast of Glassboro.	3.21	1966, 1976-84, 1987-89	6-21-89 9-11-89	4.1 3.9
01411462	Scotland Run at Franklinville, NJ	Lat 39°37'05", long 75°03'36", Gloucester County, Hydrologic Unit 02040206, at bridge on State Route 538, 0.9 mi east of Franklinville, 2.7 mi upstream of Malaga Lake, and 2.8 mi southeast of Clayton.	14.8	1976-84, 1987-89	9-11-89	16
01411880	Maurice River at Sharp Street, at Millville, NJ	Lat 39°24'01", long 75°05'15", Cumberland County, Hydrologic Unit 02040206, at bridge on Sharp Street, 200 ft downstream from Union Lake, and 0.9 mi northwest of Millville.	218	1973-76, 1988	6-21-89 9-12-89	408 293
01411950	Buckshutem Creek near Laurel Lake, NJ	Lat 39°20'51", long 75°03'47", Cumberland County, at bridge on State Route 555 (Dividing Creek Road), 1.3 mi upstream of Gravelly Run, 1.8 mi west of Laurel Lake, and 3.6 mi southwest of Millville.	12.9	1976-77 1980-84	b9-11-79	4.6
		Delaware River basin				
01443475	Trout Brook near Middleville, NJ	Lat 41°03'03", long 74°51'23", Sussex County, Hydrologic Unit 02040105, at bridge on County Highway 612, 0.4 mi upstream from mouth, 0.5 mi southeast of Middleville, and 5.1 mi west of Newton.	24.0	1979-89	6-21-89	74
01443510	Blairs Creek at Blairstown, NJ	Lat 40°59'12", long 74°57'35", Warren County, Hydrologic Unit 02040105, at bridge on Mill Brook Road, at Blairstown, 300 ft upstream from Blair Lake, 0.4 mi upstream of mouth, and 1.2 mi east of Jacksonburg.	13.1	1989	6-21-89 9-11-89	33 2.9
01445200	Bear Creek near Johnsonburg, NJ	Lat 40°56'35", long 74°52'31", Warren County, Hydrologic Unit 02040105, at bridge on Bear Creek Road, 1.8 mi upstream of Trout Brook, and 1.5 mi south of Johnsonburg.	12.9	1940-42, 1987-89	6-21-89 9-11-89	41 4.1
01445800	Honey Run near Ramseyburg, NJ	Lat 40°53'44", long 75°01'04", Warren County, Hydrologic Unit 02040105, at bridge on Hope-Delaware Road, 2.3 mi northeast of Ramseyburg, 2.8 mi southwest of Hope, and 3.1 mi upstream from mouth.	2.21	1981-89	6-21-89 9-11-89	5.7 .44
*01455200	Pohatcong Creek at New Village, NJ	Lat 40°42'57, long 75°04'20", Warren County, Hydrologic Unit 02040105, at bridge on Edison Road, 0.4 mi southeast of New Village, and 4.3 mi upstream from Merrill Creek.	33.3	1960-69a, 1970-89	7-26-89	28
01455230	Merrill Creek at Coopersville, NJ	Lat 40°42'25", long 75°06'54", Warren County, Hydrologic Unit 02040105, at bridge on Lows Hollow Road at Coopersville, 0.9 mi north of Stewartsville, 2.1 mi upstream from mouth, and 3.3 mi east of Phillipsburg.	3.85	1981-89	6-21-89 9-11-89	2.9 2.9

Discharge measurements made at low-flow partial-record stations during water year 1989--Continued

Station No.	Station Name	Location	Drainage area (mi^2)	Period of record	Measurements	
					Date	Discharge (ft^3/s)
		Delaware River basin--Continued				
01455780	Lubbers Run at Lockwood, NJ	Lat 40°55'36", long 74°43'09", Sussex County, Hydrologic Unit 02040105, at bridge on U.S. Route 206 at Lockwood, 1.0 mi upstream from mouth, and 1.5 mi northwest of Stanhope.	16.3	1982-89	9-11-89	1.5
01461300	Wickecheoke Creek at Stockton, NJ	Lat 40°24'41", long 74°59'13", Hunterdon County, Hydrologic Unit 02040105, at bridge on State Highway 29, at Prallsville, 0.2 mi upstream of mouth, and 0.6 mi northwest of Stockton.	26.6	1958-62, 1964, 1977-83, 1987-89	7-27-89	7.5
01465884	Sharps Run at Route 541, at Medford, NJ	Lat 39°54'18", long 74°49'30", Burlington County, Hydrologic Unit 02040202, at bridge on State Route 541 (Argonne Highway) in Medford, 0.7 mi upstream from mouth, 1.2 mi northeast of Oliphants Mills, and 2.6 mi northwest of Medford Lakes.	4.41	1982-89	6-21-89 9-11-89	2.6 .45
01465898	Little Creek near Lumberton, NJ	Lat 39°56'16", long 74°47'38", Burlington County, Hydrologic Unit 02040202, at bridge on Eayrestown Road, 0.6 mi upstream from mouth, 1.9 mi southeast of Lumberton, and 3.0 mi northeast of Medford.	19.2	1982-89	6-21-89 9-11-89	14 3.1
01467130	Cooper River at Kirkwood, NJ	Lat 39°50'11", long 75°00'06", Camden County, Hydrologic Unit 02040202, at outlet of Kirkwood Lake in Kirkwood, 100 ft east of tracks of Pennsylvania-Reading Seashore Lines, and 1.0 mi north of Laurel Springs.	5.18	1964-72, 1988-89	6-21-89 9-07-89	6.0 2.8
01467140	Cooper River at Lawnside, NJ	Lat 39°52'14", long 75°00'59", Camden County, Hydrologic Unit 02040202, on right bank at Lawnside, 300 ft downstream of Lawnside sewage treatment plant and 0.2 mi upstream of New Jersey Turnpike.	12.7	1964-72, 1988-89	6-21-89 9-07-89	13 7.3
01467160	North Branch Cooper River near Marlton, NJ	Lat 39°53'20", long 74°58'08", Burlington County, Hydrologic Unit 02040202, at bridge on Springdale Road, 2.5 mi west of Marlton, and 5.7 mi southwest of Moorestown.	5.34	1965-69, 1971, 1988-89	6-21-89 9-07-89	7.8 5.7
01467180	North Branch Cooper River at Ellisburg, NJ	Lat 39°54'27", long 75°00'42", Camden County, Hydrologic Unit 02040202, on Brace Road, 0.4 mi south of Ellisburg, and 0.9 mi upstream from confluence with Cooper River.	10.5	1964-69, 1971-72, 1977, 1988-89	6-21-89 9-07-89	14 10

* Also a crest-stage partial-record station.
a Operated as continous-record gaging station.
b Not previously published.

Discharge measurements at miscellaneous sites

Measurements of streamflow at points other than gaging stations are given in the following table. Those that are measurements of base flow are designated by an asterisk (*).

Discharge measurements made at miscellaneous sites during water year 1989

Stream	Tributary to	Location	Drainage area (mi^2)	Measured previously (water years)	Measurements	
					Date	Discharge (ft^3/s)
		Delaware River basin				
01443440 Paulins Kill	Delaware River	Lat 40°06'20", long 74°45'19", Sussex County, Hydrologic unit 02040105, at bridge in Balesville, 2.3 mi upstream from Paulins Kill Lake, and 3.0 mi north of Newton.	67.1	1979-82, 1985, 1988	7-24-89	46
01446400 Pequest River	Delaware River	Lat 40°49'45", long 75°04'44", Warren County, Hydrologic Unit 02040105, at bridge on State Route 519, in Belvidere, and 1,400 ft upstream of mouth.	157	1950,53, 1977-82, 1984-88	2-28-89 8-18-89 7-26-89	180 123 31
01455801 Musconetcong River	Delaware River	Lat 40°55'10", long 74°44'07", Sussex County, Hydrologic Unit 02040105, at bridge on unnamed road at Lockwood, 0.2 mi downstream from Lubbers Run, and 1.5 mi northwest of Stanhope.	60.1	1979-83, 1985-88	7-26-89	31
01456200 Musconetcong River	Delaware River	Lat 40°48'48", long 74°50'32", Warren County, Hydrologic Unit 02040105, at bridge on Kings Highway at Beattystown, 1.6 mi upstream from Hances Brook and 1.8 mi west of Schooleys Mountain.	90.3	1973, 1979-81, 1983, 1985-88	7-26-89	70
01457400 Musconetcong River	Delaware River	Lat 40°35'32", long 75°11'11", Warren County, Hydrologic Unit 02040105, at bridge on County Route 627, at Riegelsville 0.2 mi north of Mount Joy, and 0.2 mi upstream from mouth.	156	1940-55, 1973, 1977, 1987-88	7-26-89	171
01460440 Delaware and Raritan Canal	Raritan River	Lat 40°18'17", long 74°41'06", Mercer County, Hydrologic Unit 02040105, at bridge on State Route 533 at Port Mercer, 2.5 mi east of Lawrenceville and 3.0 mi south of Princeton.	--	1923, 1936-38, 1942-43, 1945, 1981	12-08-88 1-19-89 1-24-89 2-10-89 2-13-89 2-23-89 3-07-89 4-04-89 @ 1045 4-04-89 @ 1255 4-04-89 @ 1420 4-13-89 4-28-89 5-19-89 6-01-89 6-20-89 7-07-89 8-15-89 8-29-89 9-25-89	148 117 96 117 109 117 104 28 25 32 99 112 72 88 84 135 62 114 128
01462198 Moore Creek tributary	Delaware River	Lat 40°20'09", long 74°54'59", Mercer County, Hydrologic Unit 02040105, at the Valley Road picnic area near Belle Mountain ski slope, 0.1 mi downstream of Valley Road, and 0.6 mi upstream of mouth.	.98	--	8-15-89	a1550
01465970 North Branch Rancocas Creek	Rancocas Creek	Lat 39°58'04", long 74°34'48", Burlington County, Hydrologic Unit 02040202, at bridge on Lakehurst Road in Browns Mills, at outflow of Mirror Lake, and 5.0 mi east of Pemberton.	27.4	1979-81, 1985-88	9-12-89	21
01467120 Cooper River	Delaware River	Lat 39°49'43", long 74°58'55", Camden County, Hydrologic Unit 02040202, at bridge on Norcross Road, at downstream end of Linden Lake at Lindenwold, and 0.4 mi upstream from Nicholson Branch.	1.13	1971, 1979-81, 1985-88	b8-10-89	0

Discharge measurements made at miscellaneous sites during water year 1989--Continued

Stream	Tributary to	Location	Drainage area (mi^2)	Measured previously (water years)	Measurements	
					Date	Discharge (ft^3/s)
		Delaware River basin--Continued				
01467329 South Branch Big Timber Creek	Big Timber Creek	Lat 39°48'05", long 75°04'27", Gloucester County, Hydrologic Unit 02040202, just upstream from Bull Run, 1,000 ft downstream of Blackwood Avenue, and 0.5 mi southeast of Blackwood Terrace.	19.1	1979-81, 1985-88	8-10-89	30
01477510 Oldmans Creek	Delaware River	Lat 39°41'57", long 75°20'01", Salem County, Hydrologic Unit 02040206, at bridge on Kings Highway in Porches Mill, 1.0 mi north of Seven Stars, and 3.1 mi north of Woodstown.	21.0	1979-83, 1987-88	9-30-88	23

a Peak discharge.
b Temporary regulation, Linden Lake refilling.

The following table contains annual maximum elevations for tidal crest-stage stations. The information is obtained from a crest-stage gage or a water-stage recorder located at each site. A crest-stage gage is a device which will register the peak stage occurring between inspections of the gage. All stages are converted to elevations above National Geodetic Vertical Datum of 1929 unless otherwise noted. Only the maximum elevation is given. Information on some other high stages may have been obtained but is not published herein. The years given in the period of record represent water years for which the annual maximum has been determined.

Annual maximum elevation at tidal crest-stage partial-record stations during water year 1989

Station No.	Station name	Location	Period of record	Annual Maximum	
				Date	Elevation NGVD* (ft)
01413038	Cohansey River at Greenwich, NJ	Lat 39°23"02", long 75°20'58", Cumberland County, Hydrologic Unit 02040206, at Greenwich Pier, 0.7 mi southwest of Greenwich, and 5.8 mi southwest of Shiloh.	1979-89	9-22-89	5.72
01464040	Delaware River at Marine Terminal, Trenton, NJ	Lat 40°11'21", long 74°45'22", Mercer County, Hydrologic Unit 02040202, on left bank at downstream end of wharf at Marine Terminal, Trenton, 1.6 mi downstream from toll bridge on U.S. Route 1, 2.0 mi downstream from Assunpink Creek, and at mile 131.80.	1921-46†, 1951-54†, 1957-89†a	5-31-89	8.54

* National Geodetic Vertical Datum of 1929.
† Operated as a continuous-record gaging station.
a Operated by National Ocean Service since March 1975.

BURLINGTON COUNTY

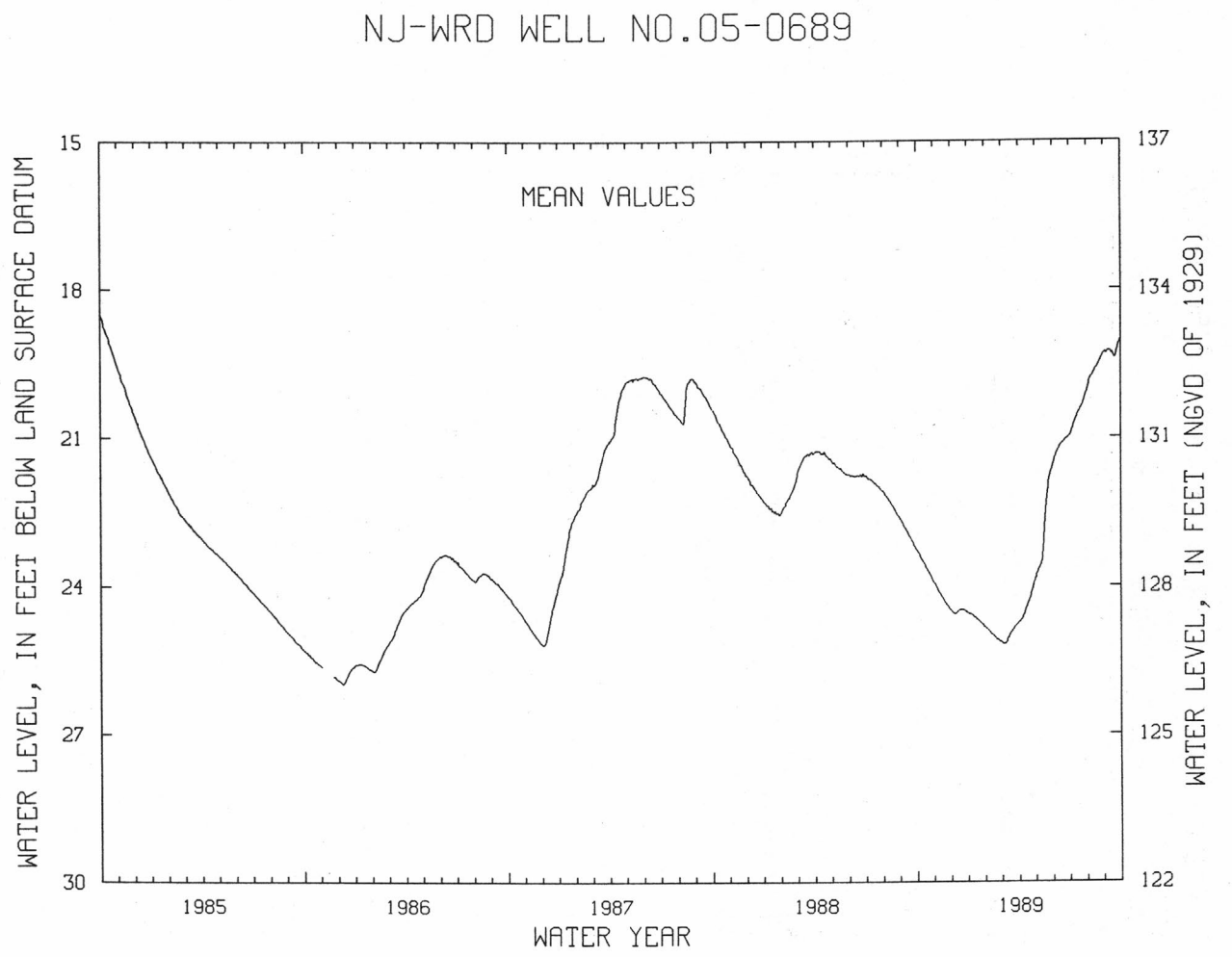
395150074284201. Local I.D., Lebanon State Forest 23-D Obs. NJ-WRD Well Number, 05-0689.
LOCATION.--Lat 39°51'52", long 74°28'48", Hydrologic Unit 02040202, in Lebanon State Forest, Woodland Township.
Owner: U.S. Geological Survey.
AQUIFER.--Kirkwood-Cohansey aquifer system of Miocene age.
WELL CHARACTERISTICS.--Drilled water-table observation well, diameter 8 in, depth 33 ft, open-end cement casing.
INSTRUMENTATION.--Digital water-level recorder--60-minute punch.
DATUM.--Land-surface datum is 152.02 ft above National Geodetic Vertical Datum of 1929.
Measuring point: Top of 8 inch casing, 0.70 ft above land-surface datum.
PERIOD OF RECORD.--September 1955 to April 1975, January 1979 to current year. Records for 1955 to 1975 are unpublished and are available in files of New Jersey District Office.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 14.37 ft below land-surface datum, Sept. 11, 1958; lowest, 25.97 ft below land-surface datum, Dec. 8-10, 1985.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	23.37	24.03	24.55	24.58	24.90	25.16	24.68	23.69	21.38	20.85	19.85	19.30
10	23.48	24.14	24.54	24.62	24.96	25.11	24.54	23.55	21.24	20.66	19.75	19.24
15	23.59	24.25	24.49	24.66	25.01	24.98	24.39	23.06	21.15	20.54	19.63	19.29
20	23.70	24.33	24.48	24.71	25.07	24.89	24.23	22.20	21.09	20.41	19.55	19.37
25	23.80	24.42	24.49	24.78	25.11	24.81	24.04	21.80	21.03	20.30	19.44	19.20
EOM	23.94	24.49	24.54	24.83	25.13	24.74	23.85	21.54	20.99	20.07	19.31	19.03
MEAN	23.61	24.24	24.52	24.68	25.00	24.97	24.35	22.76	21.18	20.52	19.63	19.26

WTR YR 1989 MEAN 22.88 HIGH 19.03 SEP 29,30 LOW 25.16 MAR 4-8



BURLINGTON COUNTY

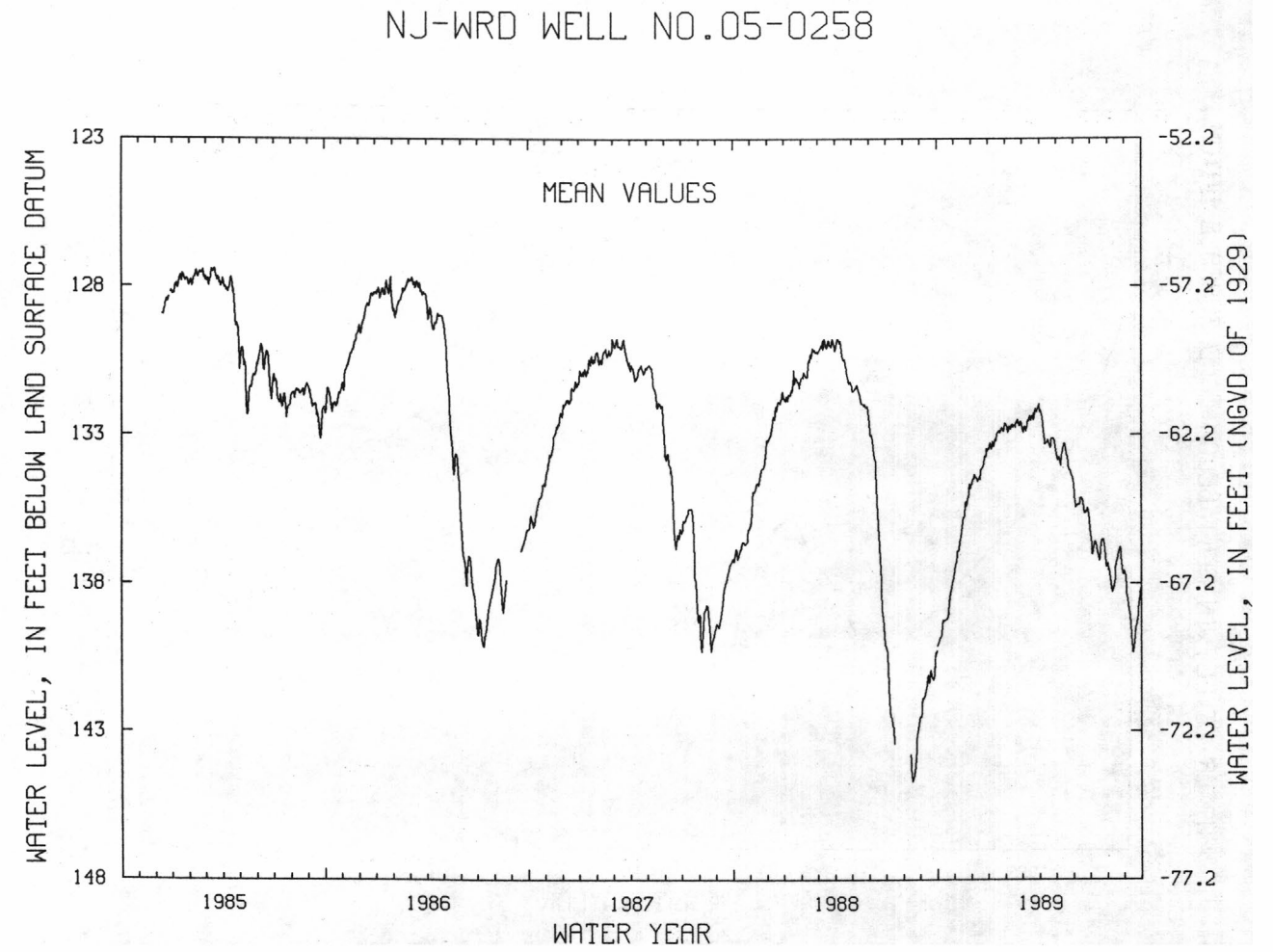
395524074502501. Local I.D., Medford 1 Obs. NJ-WRD Well Number, 05-0258.
LOCATION.--Lat 39°55'24", long 74°50'25", Hydrologic Unit 02040202, at Medford Public Shooting Grounds, Medford Township.
Owner: U.S. Geological Survey.
AQUIFER.--Upper aquifer, Potomac-Raritan-Magothy aquifer system of Cretaceous age.
WELL CHARACTERISTICS.--Drilled artesian observation well, diameter 6 in, depth 410 ft, screened 400 to 410 ft.
INSTRUMENTATION.--Digital water-level recorder--60-minute punch. Water-level extremes recorder, February 1977 to December 1984.
DATUM.--Land-surface datum is 70.77 ft above National Geodetic Vertical Datum of 1929.
Measuring point: Top of coupling, 2.70 ft above land-surface datum.
PERIOD OF RECORD.--October 1963 to August 1975, February 1977 to current year. Records for 1963 to 1975 are unpublished and are available in files of New Jersey District Office.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 85.22 ft below land-surface datum, Feb. 16-19, 1964; lowest, 144.81 ft below land-surface datum, Aug. 17,18, 1988.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	139.83	137.01	134.45	133.48	132.83	132.79	132.33	133.90	135.43	137.02	137.66	138.45
10	139.42	136.60	134.43	133.39	132.76	132.68	133.21	133.70	135.35	136.56	138.25	139.12
15	139.23	136.06	134.41	132.96	132.66	132.35	133.24	133.33	135.12	137.02	137.53	140.34
20	139.18	135.32	134.18	132.85	132.60	132.44	133.43	133.69	135.62	136.65	136.96	139.51
25	138.23	135.08	133.70	132.83	132.69	132.11	133.13	134.18	135.57	136.61	137.13	138.91
EOM	137.85	134.76	133.45	132.60	132.63	131.96	133.53	134.56	136.14	137.42	137.59	138.16
MEAN	139.08	136.03	134.18	133.06	132.68	132.48	133.02	133.84	135.39	136.83	137.52	139.07

WTR YR 1989 MEAN 135.28 HIGH 131.88 MAR 31 LOW 140.50 SEP 16



BURLINGTON COUNTY

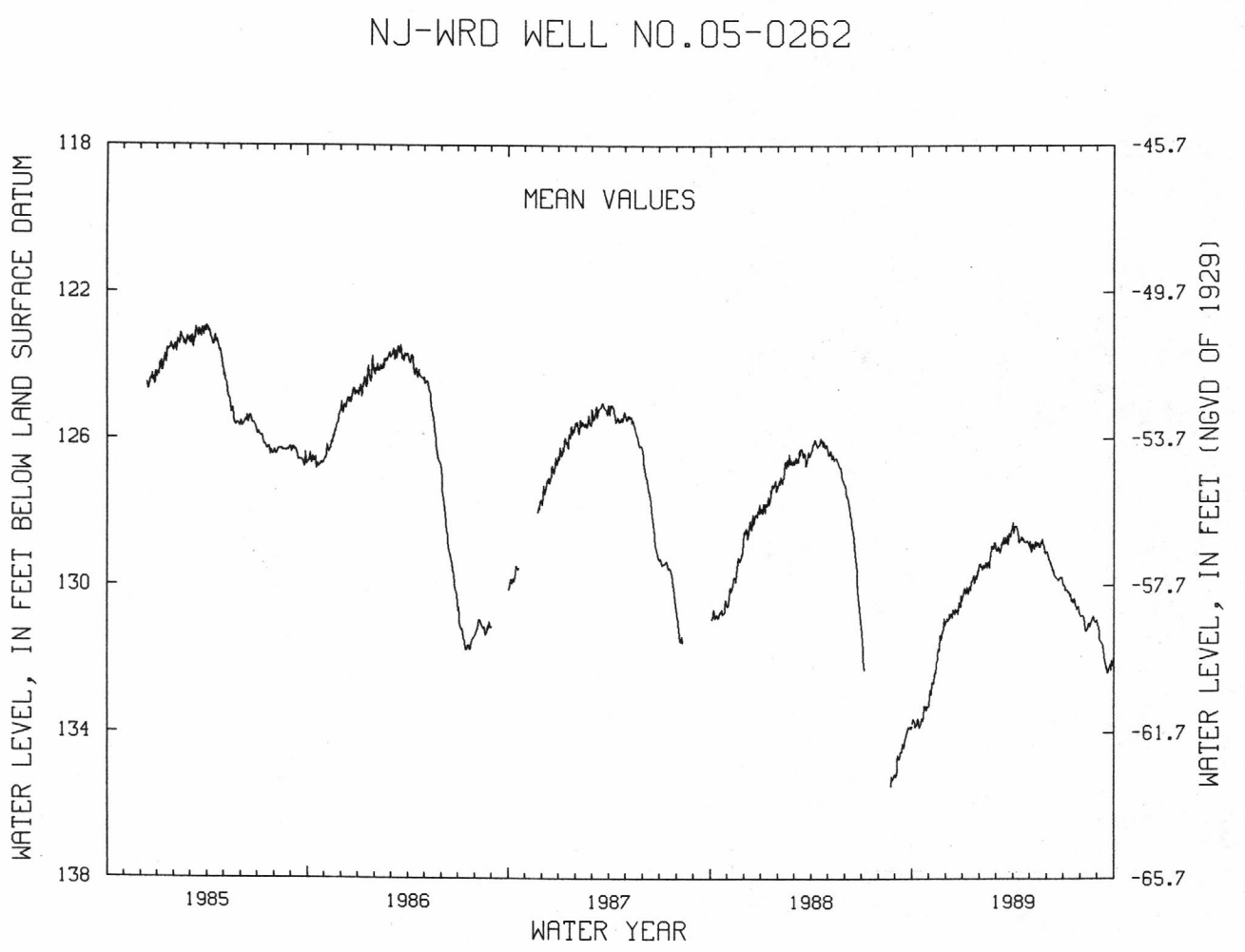
395525074502601. Local I.D., Medford 4 Obs. NJ-WRD Well Number, 05-0262.
LOCATION.--Lat 39°55'24", long 74°50'25", Hydrologic Unit 02040202, at Medford Public Shooting Grounds, Medford Township.
Owner: U.S. Geological Survey.
AQUIFER.--Lower aquifer, Potomac-Raritan-Magothy aquifer system of Cretaceous age.
WELL CHARACTERISTICS.--Drilled artesian observation well, diameter 6 in, depth 1,145 ft, screened 1,125 to 1,145 ft.
INSTRUMENTATION.--Digital water-level recorder--60-minute punch. Water-level extremes recorder, February 1977 to December 1984.
DATUM.--Land-surface datum is 72.32 ft above National Geodetic Vertical Datum of 1929.
Measuring point: Top edge of recorder shelf, 2.40 ft above land-surface datum.
PERIOD OF RECORD.--January 1968 to July 1975, February 1977 to current year. Records for 1968 to 1975 are unpublished and are available in files of New Jersey District Office.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 94.24 ft below land-surface datum, Mar. 13, 1968; lowest, 135.51 ft below land-surface datum, Aug. 23, 1988.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	133.74	132.66	130.93	130.21	129.53	128.95	128.41	129.03	129.30	130.10	130.78	131.49
10	133.69	132.40	130.75	130.21	129.46	128.99	128.71	128.86	129.42	130.17	131.24	131.65
15	133.80	132.01	130.66	129.88	129.35	128.69	128.73	128.93	129.73	130.42	131.09	132.12
20	133.69	131.35	130.68	129.72	129.20	128.83	128.82	128.88	129.84	130.35	130.97	132.29
25	133.28	131.24	130.45	129.81	128.98	128.56	128.81	128.87	129.80	130.65	130.94	132.27
EOM	133.27	131.01	130.28	129.44	128.94	128.28	128.92	129.09	129.98	130.81	131.06	132.01
MEAN	133.59	131.95	130.69	129.92	129.29	128.80	128.69	128.93	129.61	130.37	130.98	131.91

WTR YR 1989 MEAN 130.40 HIGH 128.19 MAR 31 LOW 133.93 OCT 14



BURLINGTON COUNTY

395525074502505. Local I.D., Medford 5 Obs. NJ-WRD Well Number, 05-0261.
LOCATION.--Lat 39°55'25", long 74°50'25", Hydrologic Unit 02040202, at Medford Public Shooting Grounds, Medford Township.
Owner: U.S. Geological Survey.
AQUIFER.--Middle aquifer, Potomac-Raritan-Magothy aquifer system of Cretaceous age.
WELL CHARACTERISTICS.--Drilled artesian observation well, diameter 6 in, depth 750 ft, screened 740 to 750 ft.
INSTRUMENTATION.--Digital water-level recorder--60-minute punch.
DATUM.--Land-surface datum is 72.60 ft above National Geodetic Vertical Datum of 1929.
Measuring point: Top edge of recorder shelf, 3.60 ft above land-surface datum.
PERIOD OF RECORD.--January 1968 to March 1975, March 1977 to current year. Records for 1968 to 1977 are unpublished and are available in files of New Jersey District Office.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 94.46 ft below land-surface datum, Mar. 1, 1968; lowest, 136.57 ft below land-surface datum, Aug. 23, 1988.

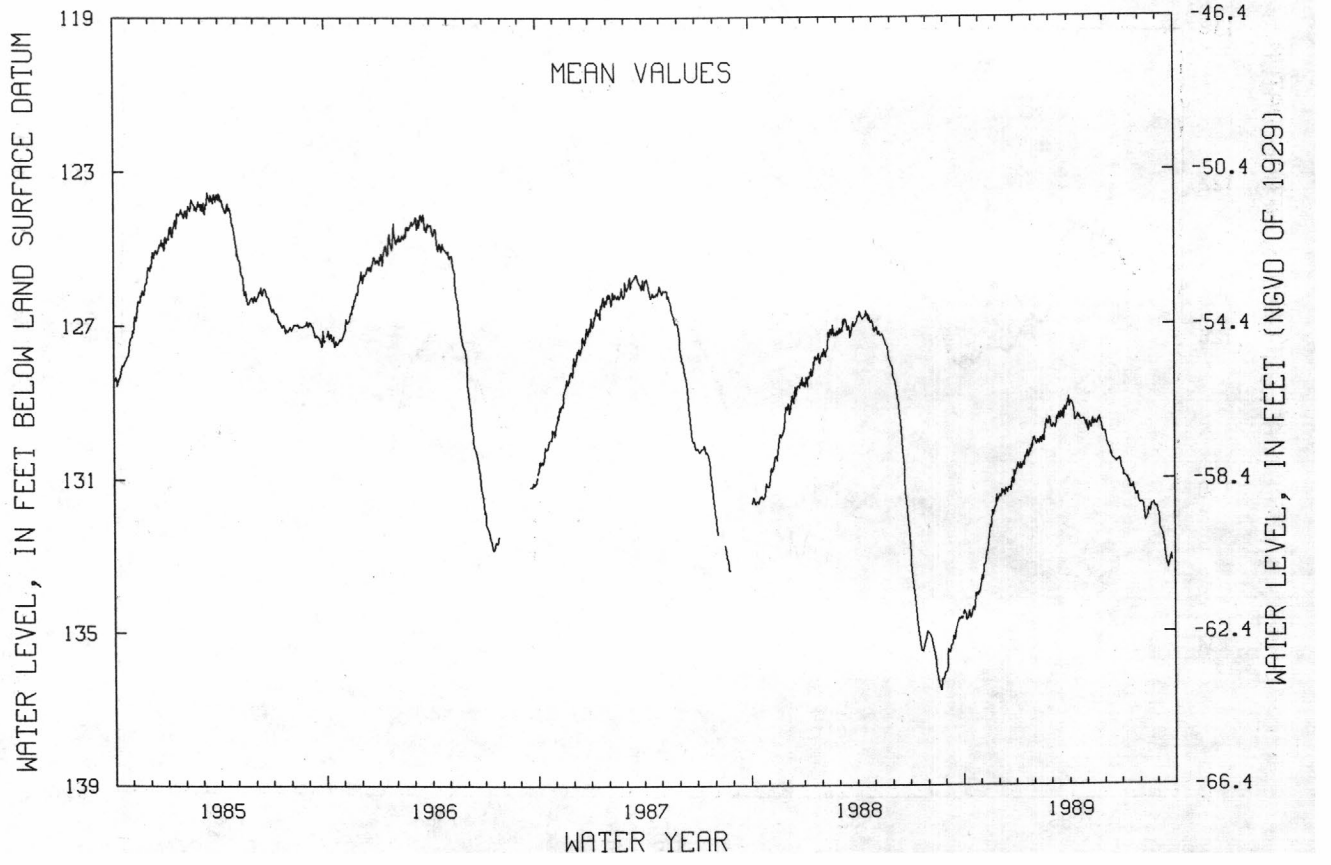
WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	134.56	133.31	131.43	130.74	130.07	129.57	129.03	129.71	130.03	130.90	131.59	132.33
10	134.51	132.92	131.28	130.74	130.04	129.55	129.38	129.52	130.18	130.96	132.10	132.56
15	134.54	132.49	131.25	130.41	129.88	129.28	129.38	129.57	130.45	131.22	131.88	133.13
20	134.43	131.82	131.25	130.25	129.75	129.40	129.47	129.48	130.54	131.14	131.71	133.20
25	133.96	131.75	130.97	130.30	129.55	129.14	129.45	129.52	130.51	131.44	131.67	133.09
EOM	133.93	131.53	130.79	129.96	129.52	128.86	129.60	129.76	130.73	131.63	131.87	---
MEAN	134.34	132.49	131.22	130.44	129.84	129.39	129.33	129.58	130.33	131.16	131.78	132.78

WTR YR 1989 MEAN 131.04 HIGH 128.77 MAR 31 LOW 134.72 OCT 7

NJ-WRD WELL NO.05-0261



BURLINGTON COUNTY

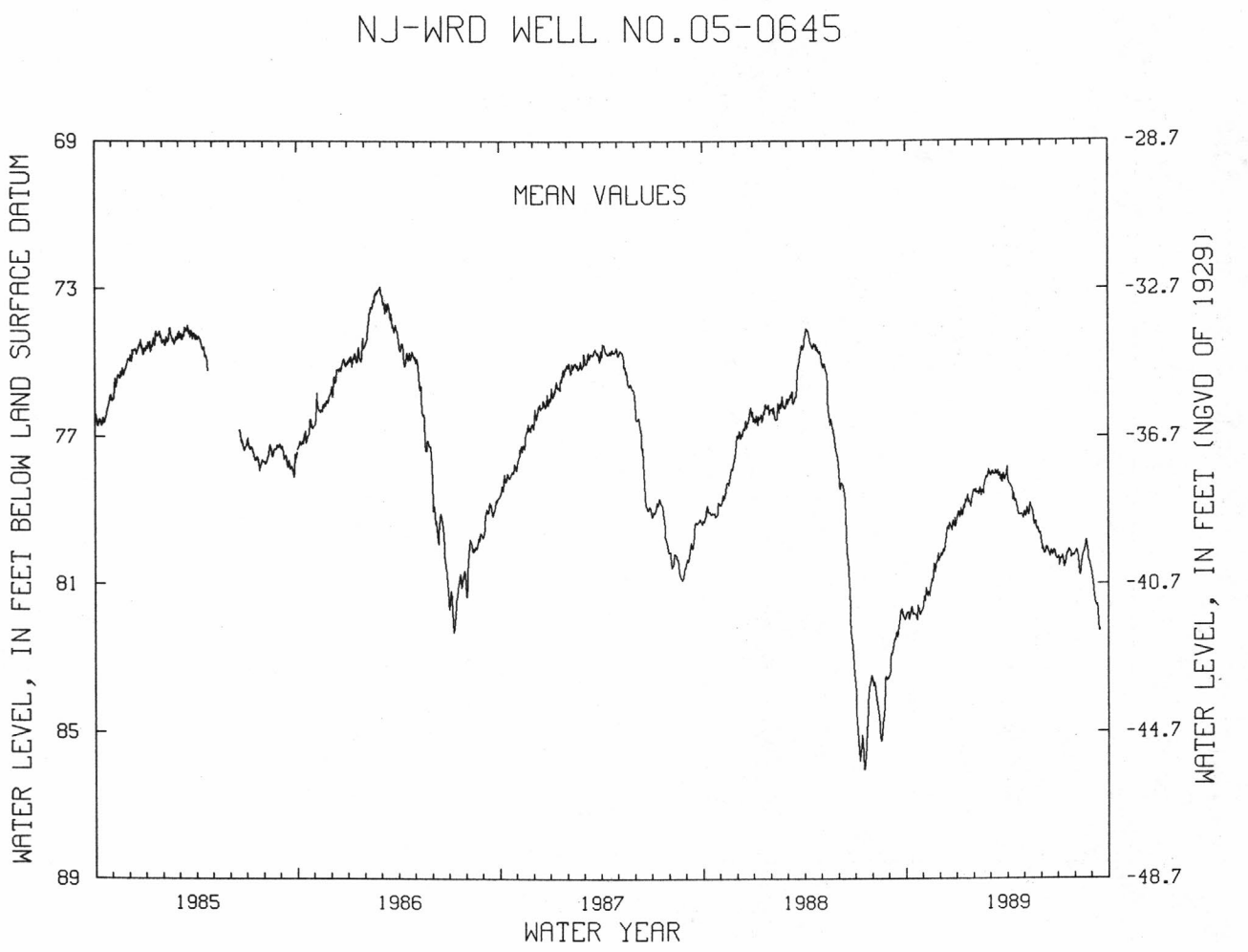
400010074521601. Local I.D., Willingboro 2 Obs. NJ-WRD Well Number, 05-0645.
LOCATION.--Lat 40°00'10", long 74°52'16", Hydrologic Unit 02040202, near intersection of Bridge Street and Tiffany Lane, Willingboro Township.
Owner: Willingboro Municipal Utilities Authority.
AQUIFER.--Lower aquifer, Potomac-Raritan-Magothy aquifer system of Cretaceous age.
WELL CHARACTERISTICS.--Drilled artesian observation well, diameter 6 in, depth 441 ft, screened 431 to 441 ft.
INSTRUMENTATION.--Digital water-level recorder--60-minute punch.
DATUM.--Land-surface datum is 40.30 ft above National Geodetic Vertical Datum of 1929.
Measuring point: Top edge of recorder shelf, 2.00 ft below land-surface datum.
REMARKS.--Water level affected by tidal fluctuation and nearby pumping.
PERIOD OF RECORD.--March 1966 to September 1975, March 1977 to current year. Records for 1966 to 1975 are unpublished and are available in files of New Jersey District Office.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 49.79 ft below land-surface datum, June 21, 1967; lowest, 86.22 ft below land-surface datum, July 18, 1988.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	81.77	81.16	80.15	79.20	78.51	77.93	78.32	79.12	80.10	80.41	80.13	81.29
10	81.70	81.20	79.99	79.15	78.50	77.98	78.62	78.98	79.98	80.25	80.76	81.56
15	81.80	81.05	79.43	78.73	78.46	77.91	78.73	78.95	80.15	80.47	80.26	82.24
20	81.91	80.45	79.44	78.58	78.32	78.16	79.12	79.34	80.17	80.09	79.88	---
25	81.81	80.42	79.28	78.92	78.04	78.00	79.14	79.54	80.09	80.30	80.32	---
EOM	81.68	80.29	79.25	78.49	77.99	77.81	79.27	79.79	80.36	80.20	80.77	---
MEAN	81.80	80.90	79.66	78.87	78.36	78.04	78.75	79.23	80.13	80.28	80.29	81.58

WTR YR 1989 MEAN 79.76 HIGH 77.68 MAR 31 LOW 82.45 SEP 13

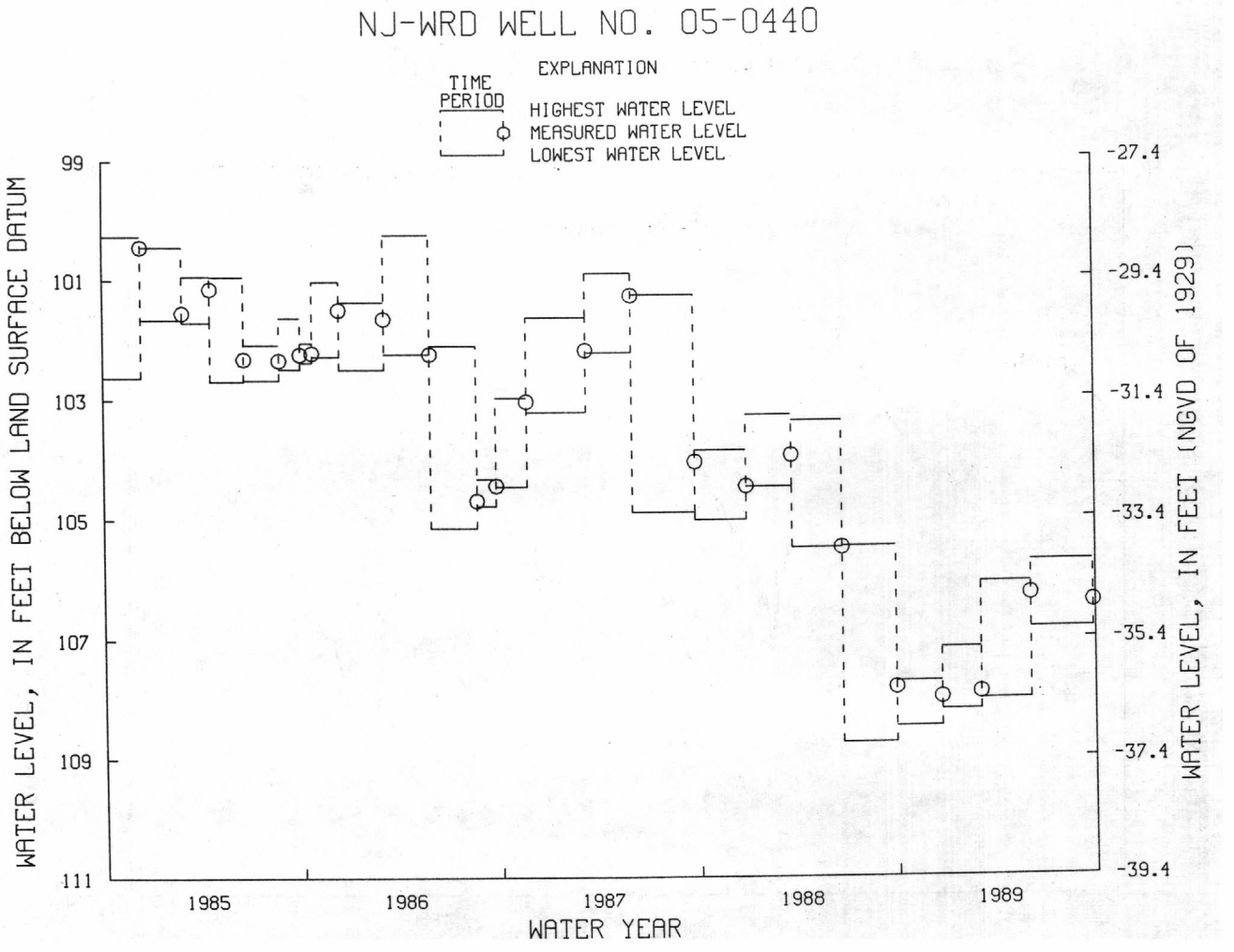


BURLINGTON COUNTY

400242074422301. Local I.D., Rhodia Corp. 1 Obs. NJ-WRD Well Number, 05-0440.
LOCATION.--Lat 40°02'42", long 74°42'23", Hydrologic Unit 02040201, on the lands of Rhodia Corporation near Jobstown.
Owner: Rhodia Corporation.
AQUIFER.--Middle aquifer, Potomac-Raritan-Magothy aquifer system of Cretaceous age.
WELL CHARACTERISTICS.--Drilled artesian observation well, diameter 8 in, depth 615 ft, screened 603 to 613 ft.
INSTRUMENTATION.--Water-level extremes recorder, April 1977 to current year. Water-level recorder, December 1968 to March 1975.
DATUM.--Land-surface datum is 71.65 ft above National Geodetic Vertical Datum of 1929.
Measuring point: Front edge of cutout in recorder housing, 2.22 ft above land-surface datum.
PERIOD OF RECORD.--December 1968 to March 1975, April 1977 to current year. Records for 1968 to 1975 are unpublished and are available in files of New Jersey District Office.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 86.55 ft below land-surface datum, Dec. 31, 1969; lowest, 108.74 ft below land-surface datum, between Jun. 21 and Sep. 28, 1988.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

WATER-LEVEL EXTREMES			MEASURED WATER LEVEL	
PERIOD	HIGHEST WATER LEVEL	LOWEST WATER LEVEL	DATE	WATER LEVEL
SEPT. 28, 1988 TO DEC. 21, 1988	107.71	108.47	DEC. 21, 1988	107.98
DEC. 21, 1988 TO MAR. 2, 1989	107.15	108.19	MAR. 2, 1989	107.90
MAR. 2, 1989 TO JUNE 2, 1989	106.07	108.01	JUNE 2, 1989	106.27
JUNE 2, 1989 TO SEPT. 26, 1989	105.72	106.83	SEPT. 26, 1989	106.40



CAMDEN COUNTY

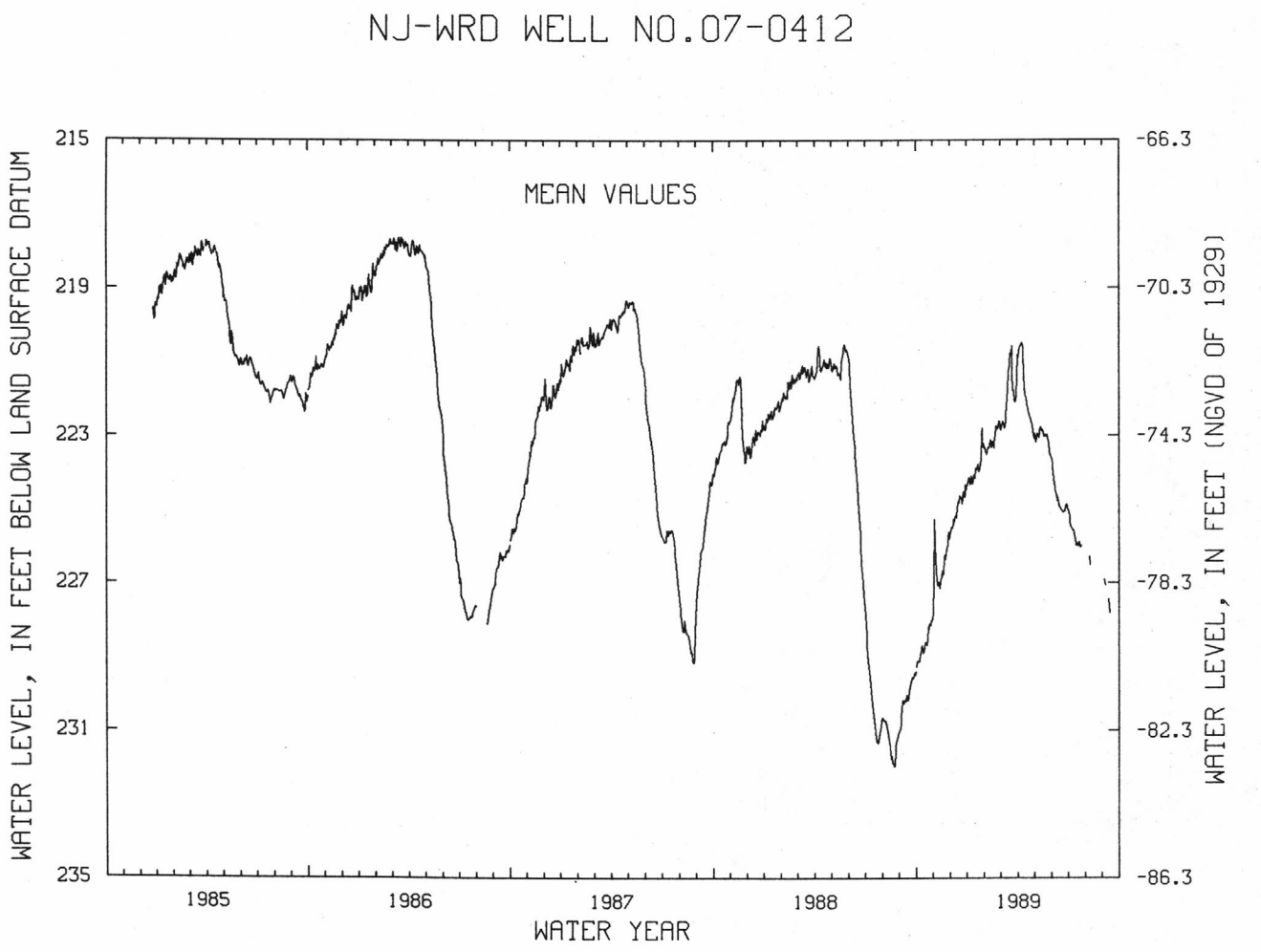
394922074563301. Local I.D., Elm Tree Farm 2 Obs. NJ-WRD Well Number, 07-0412.
LOCATION.--Lat 39°49'22", long 74°56'30", Hydrologic Unit 02040202, about 200 ft northeast of Thomas Road and about 2 mi northwest of Berlin.
Owner: New Jersey - American Water Company.
AQUIFER.--Lower aquifer, Potomac-Raritan-Magothy aquifer system of Cretaceous age.
WELL CHARACTERISTICS.--Drilled artesian observation well, diameter 6 in, depth 1,092 ft, screened 1,082 to 1,092 ft.
INSTRUMENTATION.--Digital water-level recorder--60-minute punch. Water-level extremes recorder, February 1977 to December 1984.
DATUM.--Land-surface datum is 148.68 ft above National Geodetic Vertical Datum of 1929.
Measuring point: Top edge of recorder shelf, 2.80 ft above land-surface datum.
REMARKS.--Well was originally screened 1,217 to 1,227 ft; rehabilitated August 1969. Missing record from August 11 to September 2 and from September 16-30 was due to recorder malfunction.
PERIOD OF RECORD.--January 1963 to June 1975, February 1977 to current year. Records for 1963 to 1975 are unpublished and are available in files of New Jersey District Office.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 166.06 ft below land-surface datum, July 21, 1965; lowest, 232.01 ft below land-surface datum, Aug. 22, 1988.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	229.12	226.53	225.46	224.34	223.42	222.61	220.63	223.09	224.21	225.43	---	227.02
10	228.79	226.98	225.18	224.31	223.26	222.62	220.63	222.89	224.63	225.57	226.66	227.29
15	228.79	226.91	224.78	223.89	223.16	221.25	221.95	222.85	224.92	225.98	---	227.99
20	228.70	226.31	224.71	223.76	223.01	220.77	222.40	222.96	225.03	225.88	---	---
25	228.13	226.02	224.52	223.64	222.77	221.82	222.61	223.09	225.05	226.02	---	---
EOM	227.81	225.73	224.34	223.33	222.74	220.85	223.07	223.57	225.02	226.09	---	---
MEAN	228.63	226.47	224.93	223.88	223.11	221.92	221.73	223.04	224.70	225.71	---	---

WTR YR 1989 MEAN 224.48 HIGH 220.44 APR 8 LOW 229.34 OCT 1



CAMDEN COUNTY

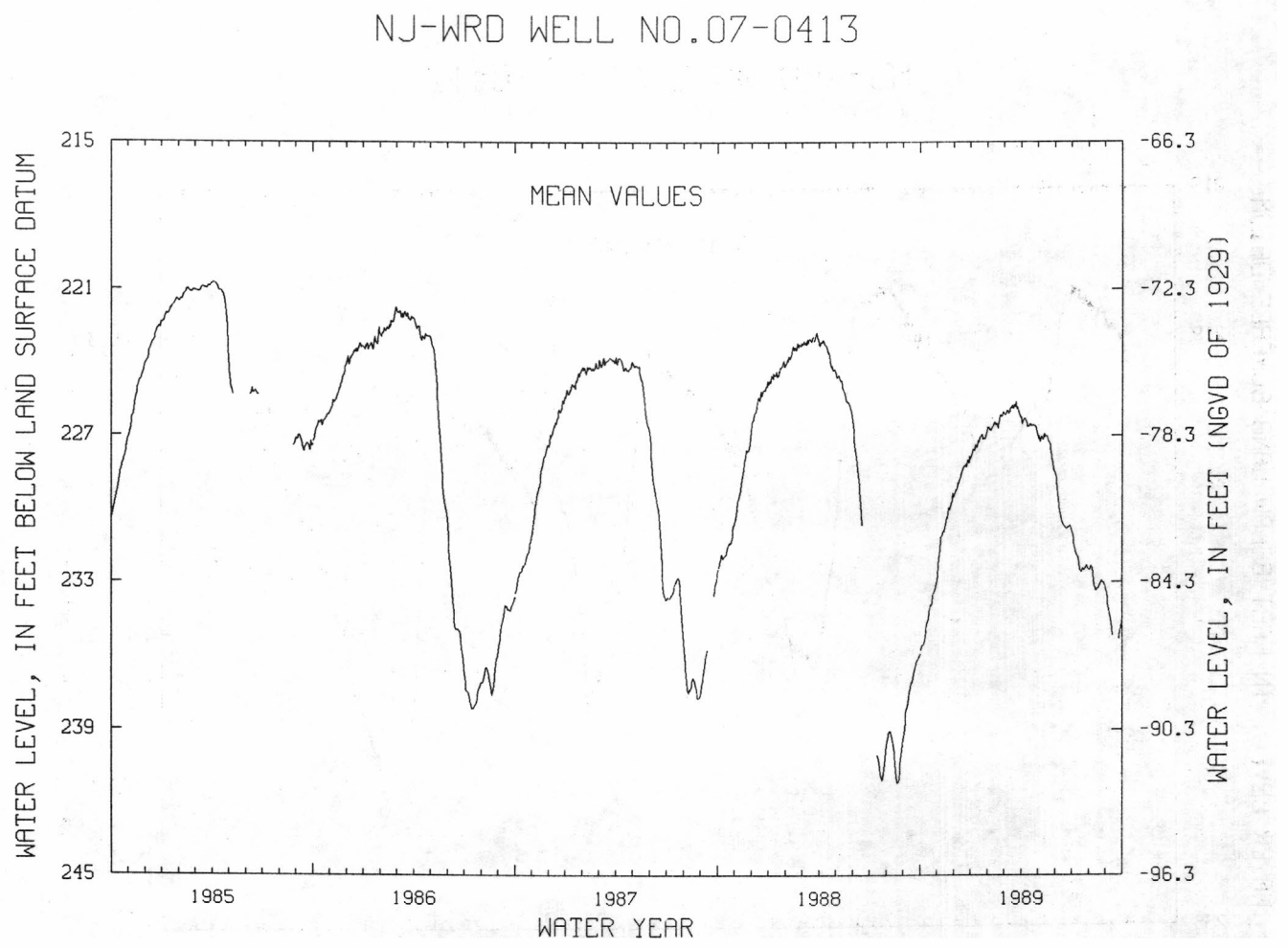
394922074563302. Local I.D., Elm Tree Farm 3 Obs. NJ-WRD Well Number, 07-0413.
LOCATION.--Lat 39°49'22", long 74°56'30", Hydrologic Unit 02040202, about 200 ft northeast of Thomas Road and about 2 miles northwest of Berlin.
Owner: New Jersey - American Water Company.
AQUIFER.--Middle aquifer, Potomac-Raritan-Magothy aquifer system of Cretaceous age.
WELL CHARACTERISTICS.--Drilled artesian observation well, diameter 6 in, depth 717 ft, screened 706 to 717 ft.
INSTRUMENTATION.--Digital water-level recorder--60-minute punch.
DATUM.--Land-surface datum is 148.73 ft above National Geodetic Vertical Datum of 1929.
Measuring point: Top edge of recorder shelf, 0.60 ft above land-surface datum.
PERIOD OF RECORD.--December 1963 to April 1975, March 1977 to current year. Records for 1963 to 1977 are unpublished and are available in files of New Jersey District Office.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 174.21 ft below land-surface datum, Feb. 6, 1964; lowest, 241.24 ft below land-surface datum, Aug. 20, 1988.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	235.53	231.30	229.15	227.63	226.76	225.99	226.34	227.20	229.44	231.53	232.34	234.01
10	234.95	230.94	228.81	227.50	226.55	226.01	226.56	227.02	230.30	231.92	233.15	234.67
15	234.27	230.65	228.41	227.07	226.50	225.75	226.59	227.04	230.68	232.49	233.36	---
20	233.94	230.00	228.24	226.96	226.45	225.79	226.61	227.25	230.82	232.46	233.14	---
25	233.38	229.77	228.01	227.13	226.18	225.79	226.59	227.90	230.75	232.44	232.99	235.23
EOM	232.74	229.45	227.84	226.67	226.09	226.25	227.05	228.58	230.96	232.50	233.31	234.55
MEAN	234.31	230.58	228.52	227.21	226.47	225.96	226.57	227.42	230.32	232.13	232.97	234.51

WTR YR 1989 MEAN 229.63 HIGH 225.55 MAR 21 LOW 235.82 OCT 1



CAMDEN COUNTY

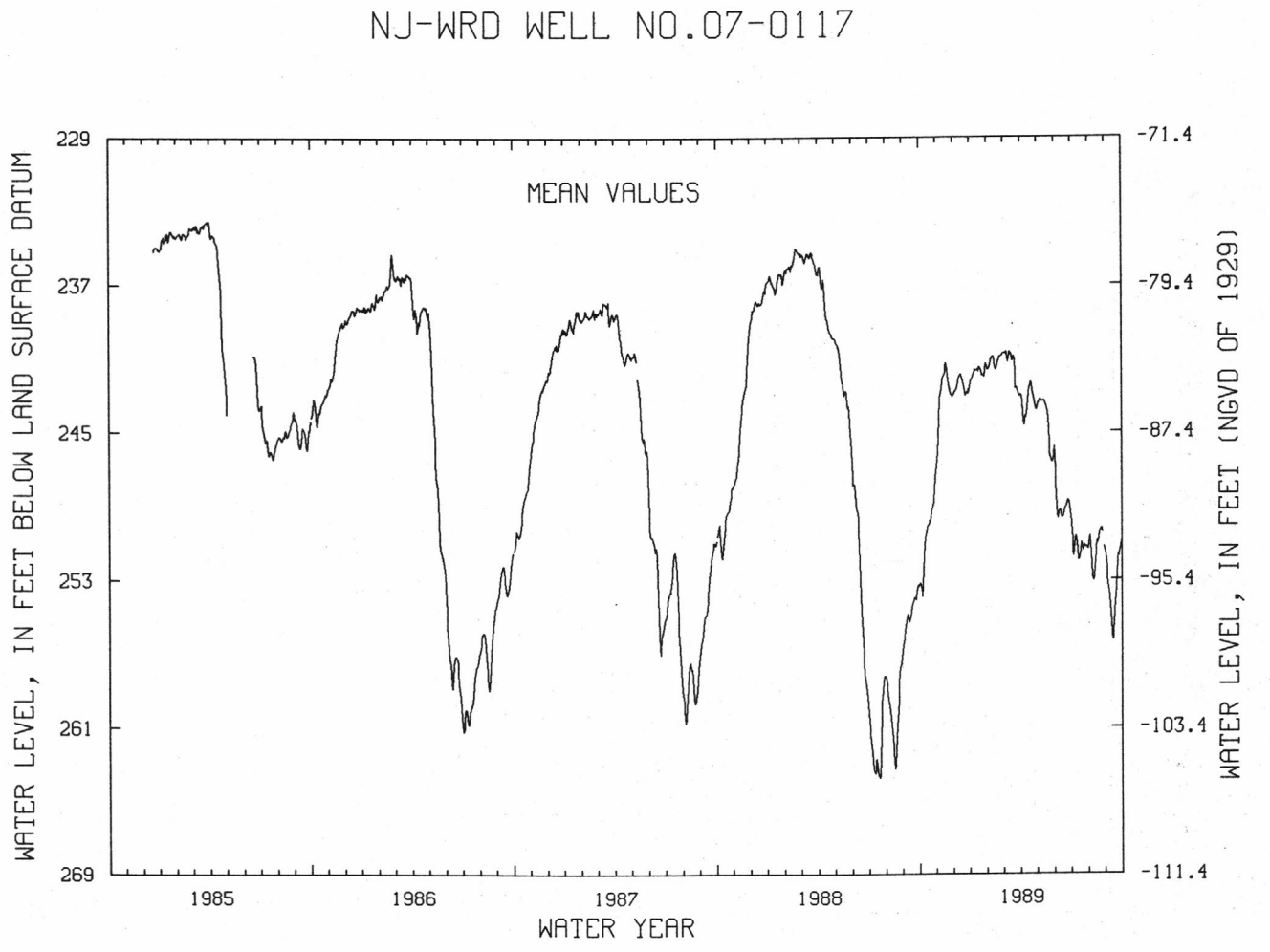
395229074571201. Local I.D., Hutton Hill 1 Obs. NJ-WRD Well Number, 07-0117.
LOCATION.--Lat 39°52'29", long 74°57'12", Hydrologic Unit 02040202, about 800 ft northeast of intersection of Kresson and Cropwell Roads, Cherry Hill Township.
Owner: New Jersey - American Water Company.
AQUIFER.--Upper aquifer, Potomac-Raritan-Magothy aquifer system of Cretaceous age.
WELL CHARACTERISTICS.--Drilled artesian observation well, diameter 6 in, depth 562 ft, screened 552 to 562 ft.
INSTRUMENTATION.--Digital water-level recorder--60-minute punch. Water-level extremes recorder, February 1977 to December 1984.
DATUM.--Land-surface datum is 157.61 ft above National Geodetic Vertical Datum of 1929.
Measuring point: Top edge of recorder shelf, 1.60 ft above land-surface datum.
PERIOD OF RECORD.--August 1967 to April 1975, February 1977 to current year. Records for 1967 to 1975 are unpublished and are available in files of New Jersey District Office.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 200.77 ft below land-surface datum, Mar. 23, 1968; lowest, 263.74 ft below land-surface datum, July 20, 1988.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	253.74	243.40	242.84	241.97	241.16	240.63	244.01	243.38	249.11	251.72	251.13	253.26
10	251.14	242.31	242.08	241.66	240.90	240.80	244.12	243.37	249.27	250.68	253.06	254.82
15	250.07	241.72	242.02	241.49	241.60	240.84	242.89	243.45	249.67	251.94	251.34	255.76
20	249.79	241.94	242.59	241.67	241.13	241.09	242.47	244.29	249.12	250.95	250.52	253.44
25	248.96	242.94	242.84	242.00	240.88	242.57	243.29	246.45	248.73	251.21	250.23	251.72
EOM	246.89	243.03	242.33	241.61	240.72	242.95	243.73	245.79	249.65	251.35	251.44	250.94
MEAN	250.48	242.83	242.55	241.72	241.16	241.51	243.40	244.44	249.03	251.24	251.30	253.32

WTR YR 1989 MEAN 246.08 HIGH 240.55 MAR 5 LOW 256.32 SEP 13

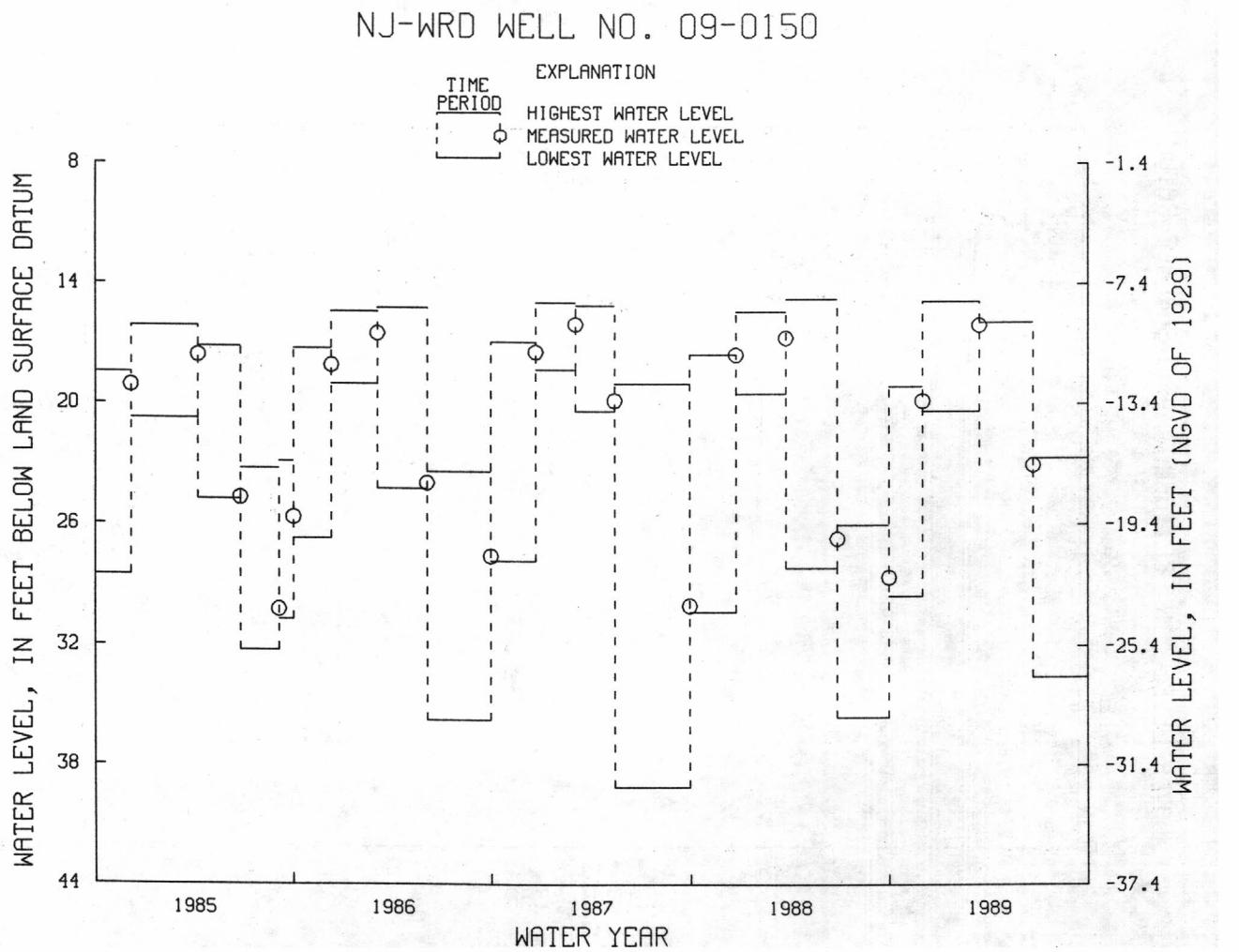


CAPE MAY COUNTY

385607074555201. Local I.D., West Cape May 1 Obs. NJ-WRD Well Number, 09-0150.
LOCATION.--Lat 38°56'07", long 74°55'56", Hydrologic Unit 02040206, on the north side of Sunset Boulevard, West Cape May Borough.
Owner: U.S. Geological Survey.
AQUIFER.--Cohansey Sand of Miocene age.
WELL CHARACTERISTICS.--Drilled artesian observation well, diameter 6 in, depth 293 ft, screened 283 to 293 ft.
INSTRUMENTATION.--Water-level extremes recorder, May 1977 to current year. Water-level recorder, July 1957 to December 1972.
DATUM.--Land-surface datum is 6.60 ft above National Geodetic Vertical Datum of 1929.
Measuring point: Front edge of cutout in recorder housing, 2.88 ft above land-surface datum.
REMARKS.--Water level affected by tidal fluctuation and nearby pumping.
PERIOD OF RECORD.--July 1957 to December 1972, May 1977 to current year. Periodic manual measurements, February 1973 to September 1976. Records for 1957 to 1982 are unpublished and are available in files of New Jersey District Office.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 14.38 ft below land-surface datum, between Jan. 10 and Apr. 10, 1984; lowest, 41.30 ft below land-surface datum, Sept. 3, 1963.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

WATER-LEVEL EXTREMES			MEASURED WATER LEVEL	
PERIOD	HIGHEST WATER LEVEL	LOWEST WATER LEVEL	DATE	WATER LEVEL
SEPT. 30, 1988 TO DEC. 1, 1988	19.13	29.53	DEC. 1, 1988	19.85
DEC. 1, 1988 TO MAR. 14, 1989	14.88	20.36	MAR. 14, 1989	16.06
MAR. 14, 1989 TO JUNE 21, 1989	15.91	---	JUNE 21, 1989	23.05
JUNE 21, 1989 TO OCT. 3, 1989	22.70	33.55	OCT. 3, 1989	25.90

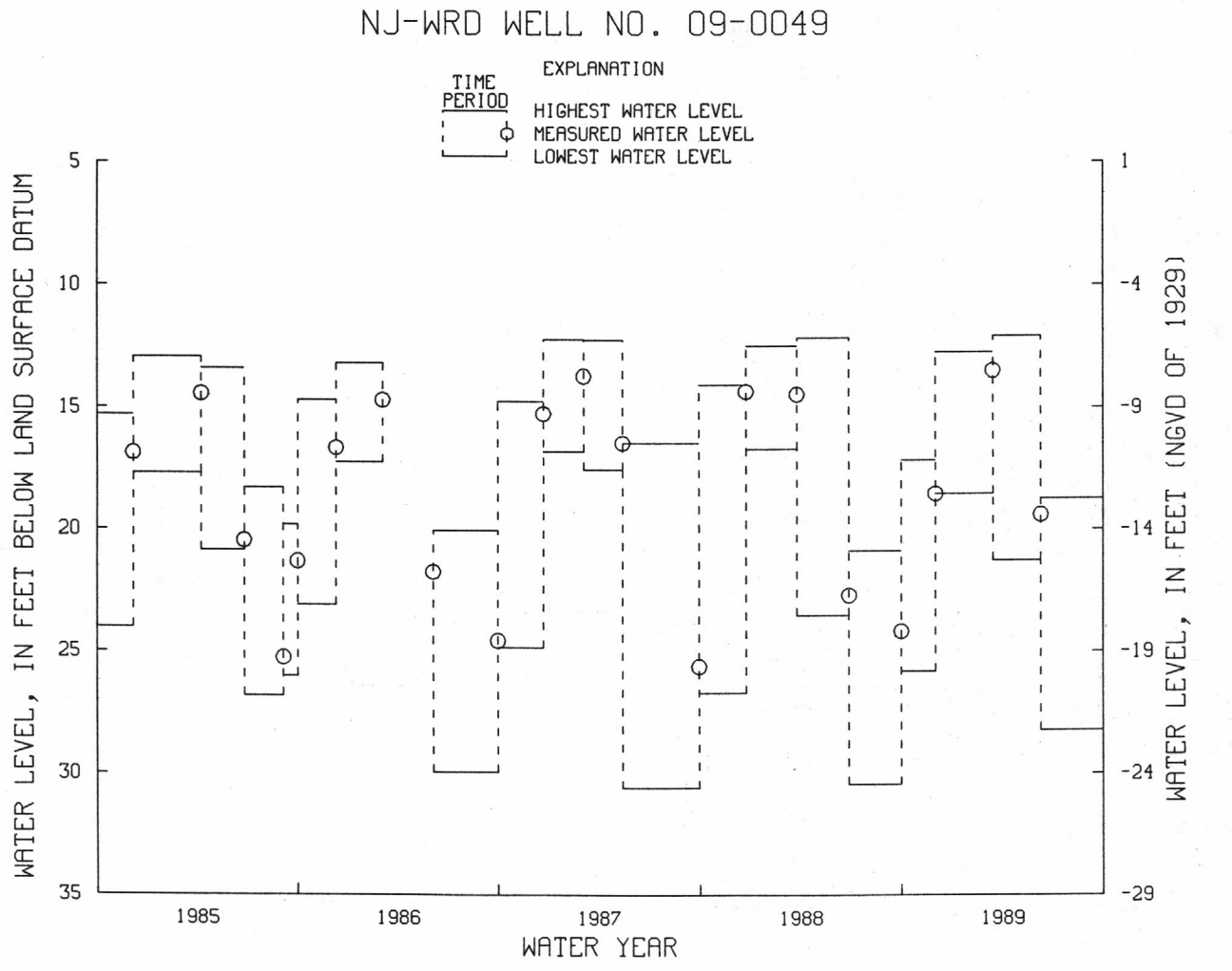


CAPE MAY COUNTY

385804074574201. Local I.D., Higbee Beach 3 Obs. NJ-WRD Well Number, 09-0049.
LOCATION.--Lat 38°58'04", long 74°57'42", Hydrologic Unit 02040206, on the north bank of the west end of the Cape May Canal, Lower Township.
OWNER: U.S. Geological Survey.
AQUIFER.--Cohansey Sand of Miocene age.
WELL CHARACTERISTICS.--Drilled artesian observation well, diameter 6 in, depth 250 ft, screened 241 to 250 ft.
INSTRUMENTATION.--Water-level extremes recorder, May 1977 to current year. Water-level recorder, June 1965 to September 1975.
DATUM.--Land-surface datum is 6.00 ft above National Geodetic Vertical Datum of 1929.
Measuring Point: Front edge of cutout in recorder housing, 2.93 ft above land-surface datum.
REMARKS.--Water level affected by tidal fluctuation and nearby pumping.
PERIOD OF RECORD.--June 1965 to September 1975, May 1977 to current year. Records for 1975 to 1980 are unpublished and are available in files of New Jersey District Office.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 12.10 ft below land-surface datum, between Mar. 14 and Jun. 9, 1989; lowest, 34.22 ft below land-surface datum, July 31, 1974.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

WATER-LEVEL EXTREMES			MEASURED WATER LEVEL	
PERIOD	HIGHEST WATER LEVEL	LOWEST WATER LEVEL	DATE	WATER LEVEL
SEPT. 30, 1988 TO DEC. 1, 1988	17.18	25.83	DEC. 1, 1988	18.56
DEC. 1, 1988 TO MAR. 14, 1989	12.75	18.56	MAR. 14, 1989	13.51
MAR. 14, 1989 TO JUNE 9, 1989	12.10	21.27	JUNE 9, 1989	19.42
JUNE 9, 1989 TO OCT. 3, 1989	18.75	28.23	OCT. 3, 1989	21.95

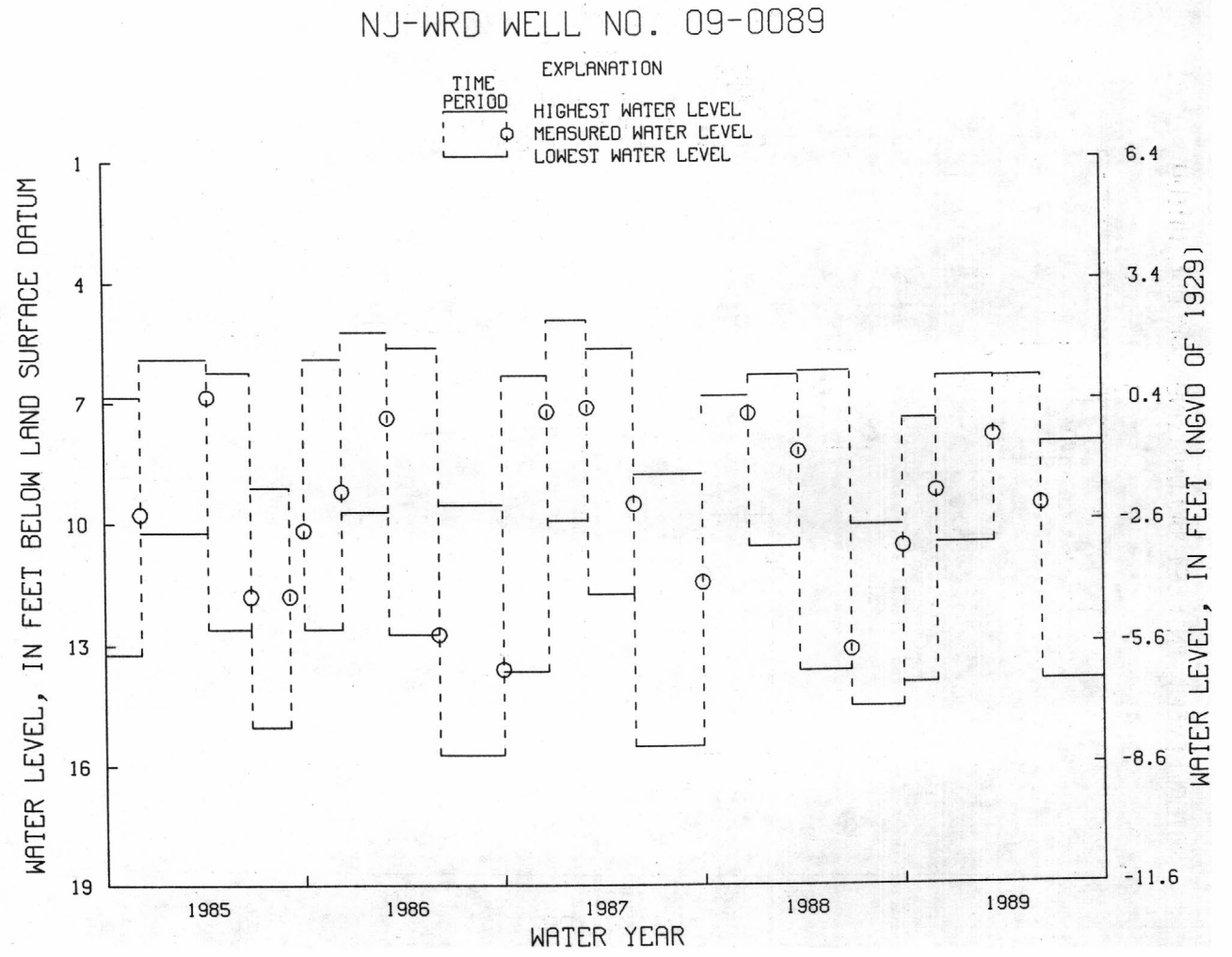


CAPE MAY COUNTY

390425074544601. Local I.D., Oyster Lab 4 Obs. NJ-WRD Well Number, 09-0089.
LOCATION.--Lat 39°04'25", long 74°54'46", Hydrologic Unit 02040206, at the Rutgers Oyster Laboratory near Green Creek, Middle Township.
Owner: U.S. Geological Survey.
AQUIFER.--Cohansey Sand of Miocene age.
WELL CHARACTERISTICS.--Drilled artesian observation well, diameter 6 in, depth 210 ft, screened 195 to 210 ft.
INSTRUMENTATION.--Water-level extremes recorder, May 1977 to current year. Water-level recorder, August 1957 to August 1975.
DATUM.--Land-surface datum is 7.37 ft above National Geodetic Vertical Datum of 1929.
Measuring point: Front edge of cutout in recorder housing, 3.90 ft above land-surface datum.
REMARKS.--Water level affected by tidal fluctuation and nearby pumping.
PERIOD OF RECORD.--August 1957 to August 1975, May 1977 to current year. Periodic manual measurements, September 1975 to April 1977. Records for 1957 to 1982 are unpublished and are available in files of New Jersey District Office.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 2.07 ft below land-surface datum, Apr. 3, 1958; lowest, 15.71 ft below land-surface datum, between June 4 and Sept. 30, 1986.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

WATER-LEVEL EXTREMES			MEASURED WATER LEVEL	
PERIOD	HIGHEST WATER LEVEL	LOWEST WATER LEVEL	DATE	WATER LEVEL
SEPT. 30, 1988 TO DEC. 1, 1988	7.44	13.96	DEC. 1, 1988	9.25
DEC. 1, 1988 TO MAR. 14, 1989	6.38	10.53	MAR. 14, 1989	7.87
MAR. 14, 1989 TO JUNE 9, 1989	6.40	---	JUNE 9, 1989	9.60
JUNE 9, 1989 TO OCT. 3, 1989	8.06	13.91	OCT. 3, 1989	8.32



CAPE MAY COUNTY

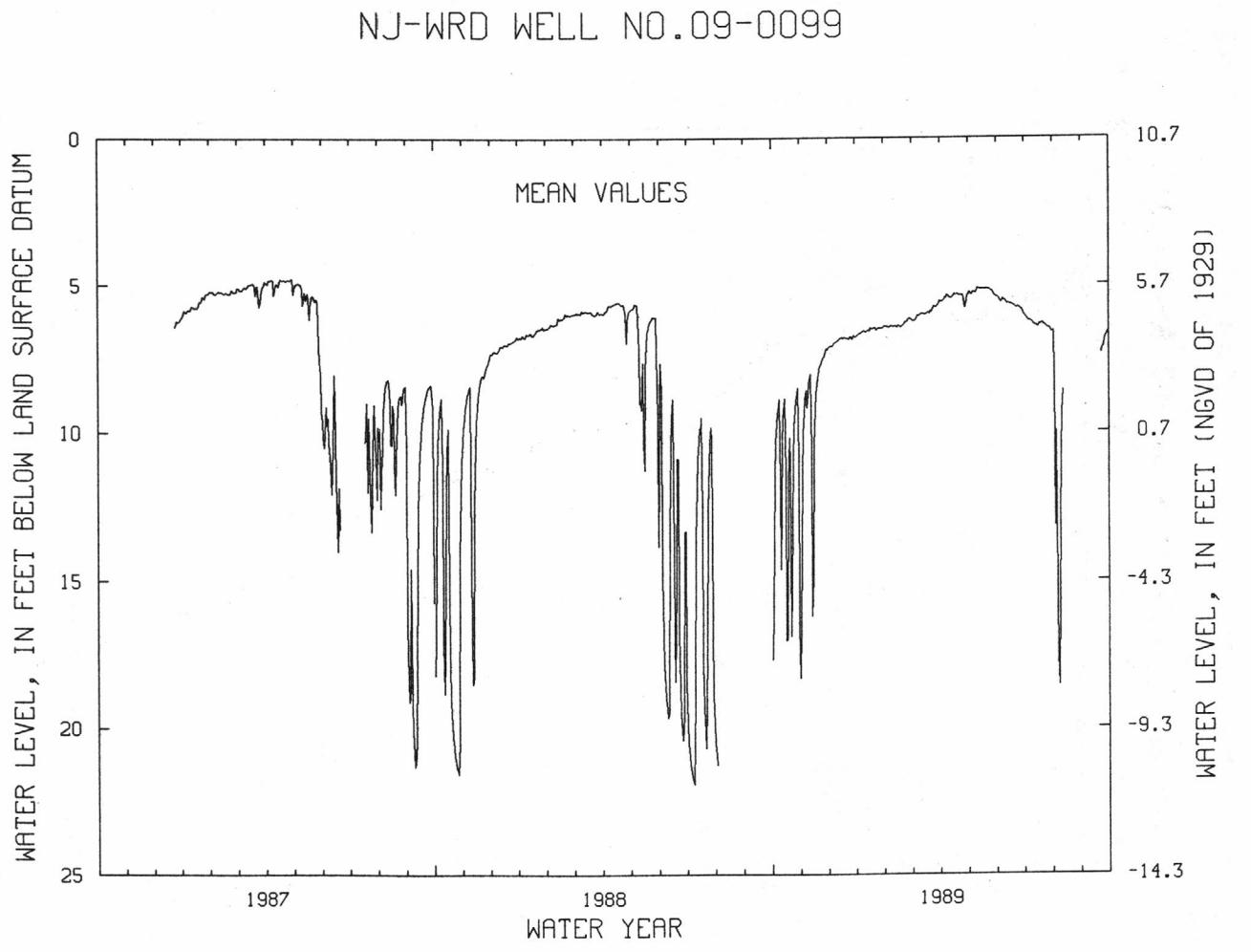
390608074483801. Local I.D., Cape May County Park T8 Obs. NJ-WRD Well Number, 09-0099.
LOCATION.--Lat 39°06'11", long 74°48'38", Hydrologic Unit 02040206, at the Cape May County Park on Rt. 9, Middle Township.
Owner: U.S. Geological Survey.
AQUIFER.--Cohansey Sand of Miocene age.
WELL CHARACTERISTICS.--Drilled artesian observation well, diameter 6 in, depth 230 ft, screened 215 to 230 ft.
INSTRUMENTATION.--Digital water-level recorder--60-minute punch.
DATUM.--Land-surface datum is 10.73 ft above National Geodetic Vertical Datum of 1929.
Measuring point: Top edge of recorder shelf, 2.20 ft above land-surface datum.
REMARKS.--Water level affected by tidal fluctuation and nearby pumping. Missing record from August 13 to September 21 was due to recorder malfunction.
PERIOD OF RECORD.--October 1957 to current year. Periodic manual measurements, January 1959 to December 1960 and from November 1968 to November 1986. Records from 1957 to 1987 are unpublished and are available in files of the New Jersey District Office.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 3.73 ft below land-surface datum, April 5, 1958; lowest, 22.01 ft below land-surface datum, July 9, 1988.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	9.73	8.87	7.11	6.71	6.46	6.22	5.52	5.33	5.60	6.24	15.56	---
10	14.62	8.15	6.92	6.64	6.44	6.05	5.44	5.17	5.57	6.34	9.38	---
15	11.49	10.46	6.82	6.51	6.41	6.04	5.40	5.17	5.66	6.48	---	---
20	11.12	7.91	6.84	6.48	6.41	6.00	5.36	5.14	5.76	6.34	---	---
25	9.27	7.50	6.80	6.53	6.21	5.75	5.38	5.21	5.82	6.48	---	7.06
EOM	18.32	7.17	6.77	6.44	6.20	5.57	5.37	5.41	6.04	6.60	---	6.62
MEAN	11.92	9.23	6.90	6.57	6.38	5.98	5.46	5.23	5.69	6.38	---	---

WTR YR 1989 MEAN 7.16 HIGH 5.09 MAY 11 LOW 19.16 OCT 2



CUMBERLAND COUNTY

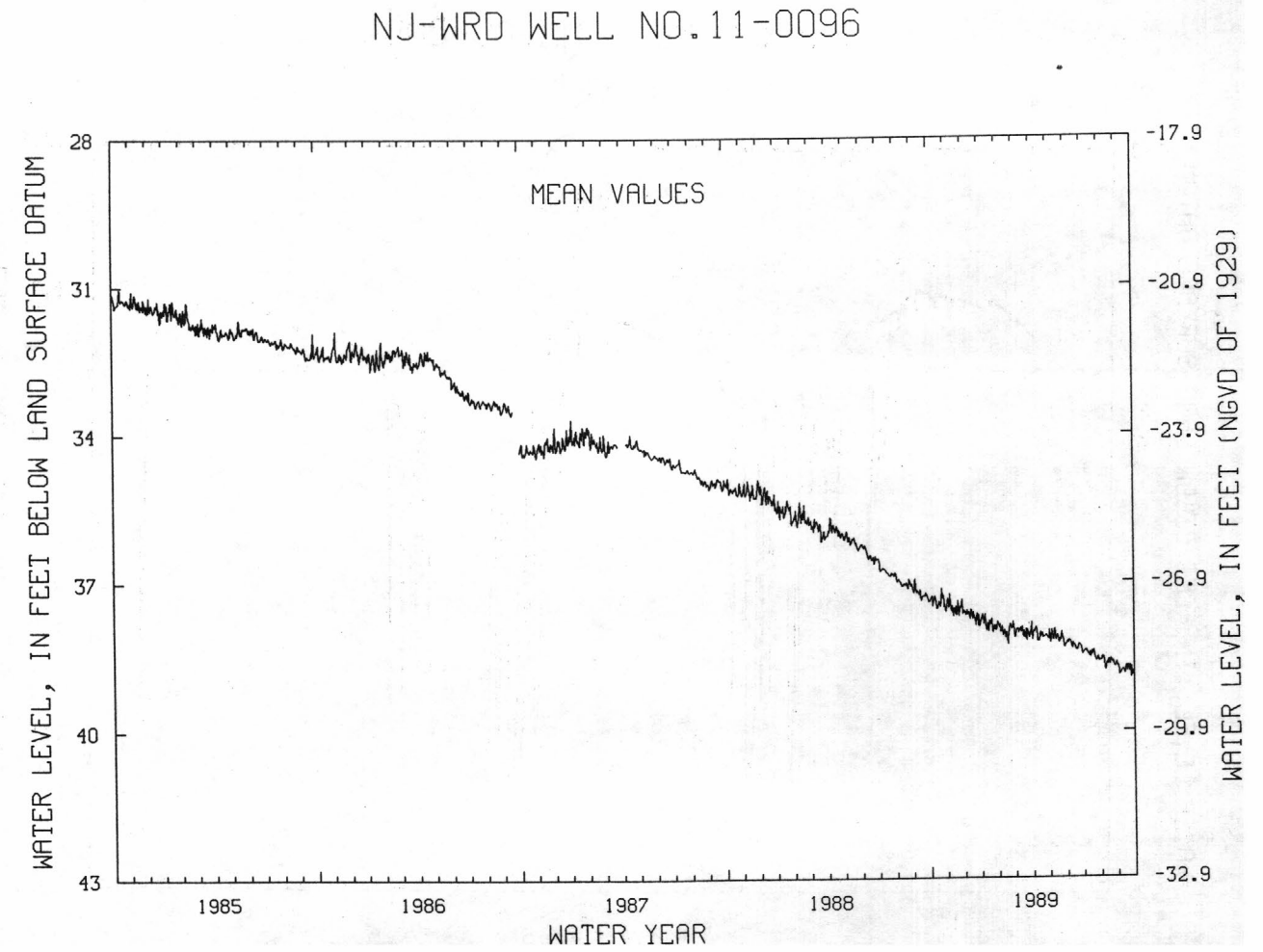
391828075120902. Local I.D., Jones Island 2 Obs. NJ-WRD Well Number, 11-0096.
LOCATION.--Lat 39°18'29", long 75°12'08", Hydrologic Unit 02040206, in Nantuxent Wildlife Management Area, about 1.7 mi south of Cedarville, Lawrence Township.
Owner: Cumberland County.
AQUIFER.--Piney Point aquifer of Eocene age.
WELL CHARACTERISTICS.--Drilled artesian observation well, diameter 4 in, depth 375 ft, screened 365 to 375 ft.
INSTRUMENTATION.--Digital water-level recorder--60-minute punch.
DATUM.--Land-surface datum is 10.10 ft above National Geodetic Vertical Datum of 1929.
Measuring point: Top edge of recorder shelf, 1.90 ft above land-surface datum.
REMARKS.--Water level affected by tidal fluctuation. Well was pumped on Sept. 22, 1986. After pumping, the water level did not recover to its previous level. The screen may have been partially clogged.
PERIOD OF RECORD.--March 1977 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 19.99 ft below land-surface datum, Mar. 22, 1977; lowest, 39.00 ft below land-surface datum, Sept. 24, 1989.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	37.29	37.24	37.67	37.84	37.97	37.95	38.01	38.14	38.24	38.39	38.51	38.87
10	37.28	37.47	37.60	37.95	38.04	37.98	38.13	37.99	38.21	38.44	38.79	38.77
15	37.51	37.64	37.57	37.78	38.04	37.90	38.07	38.15	38.27	38.53	38.63	38.77
20	37.49	37.37	37.72	37.74	38.04	38.09	38.12	38.17	38.38	38.39	38.59	38.72
25	37.29	37.52	37.68	37.96	37.92	37.96	38.11	38.12	38.28	38.63	38.68	38.92
EOM	37.60	37.57	37.79	37.83	37.95	37.81	38.15	38.28	38.46	38.59	38.71	38.90
MEAN	37.40	37.50	37.68	37.84	37.98	38.01	38.08	38.14	38.29	38.48	38.63	38.80

WTR YR 1989 MEAN 38.07 HIGH 37.00 OCT 21 LOW 39.00 SEP 24



CUMBERLAND COUNTY

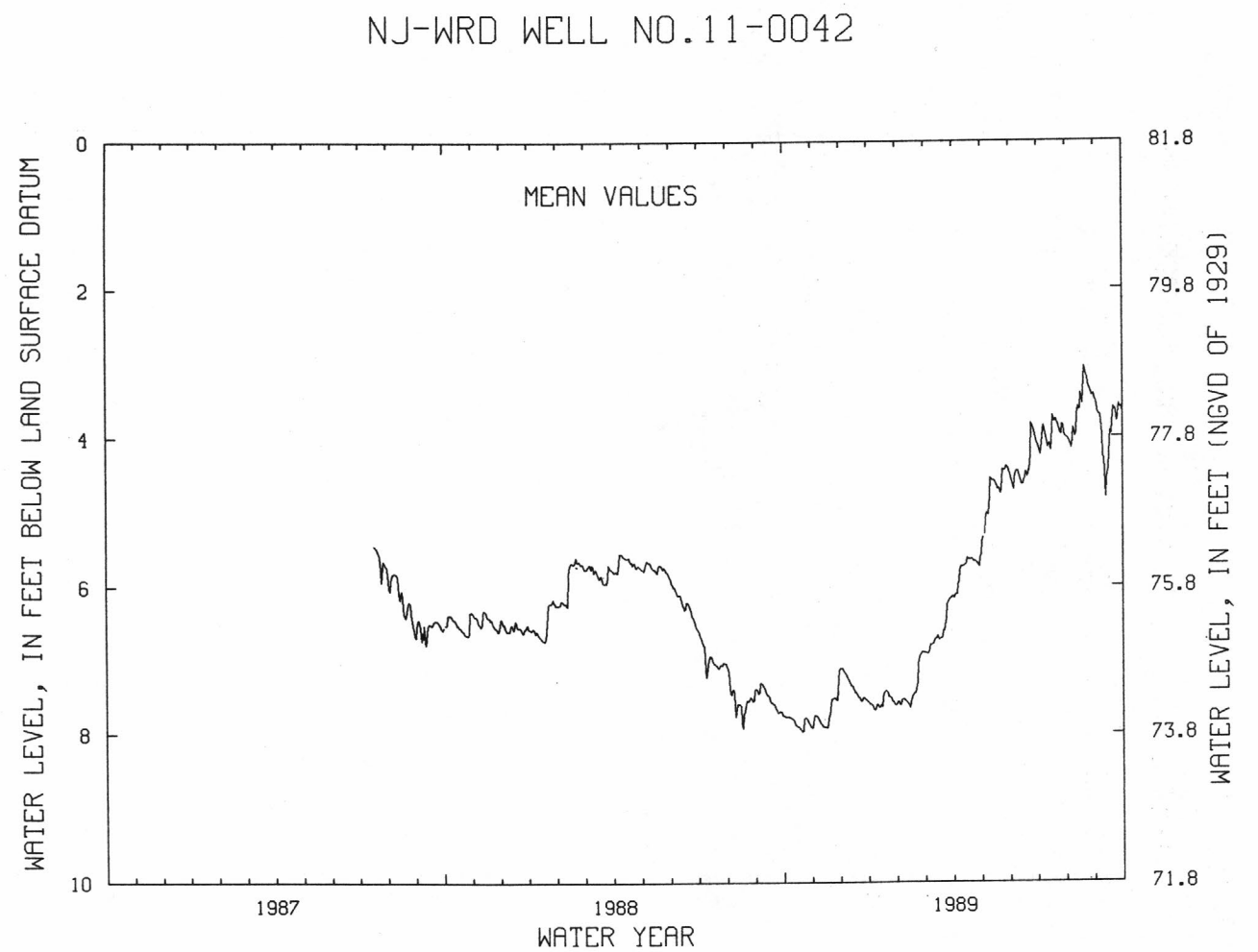
392731075092401. Local I.D., Vocational School 2 Obs. NJ-WRD Well Number, 11-0042.
LOCATION.--Lat 39°27'32", long 75°09'29", Hydrologic Unit 02040206, next to the Cumberland County Vocational and Technical School on Bridgeton Avenue, Deerfield Township.
Owner: Cumberland County.
AQUIFER.--Kirkwood-Cohansey aquifer system of Miocene age.
WELL CHARACTERISTICS.--Drilled water-table observation well, diameter 4 in, depth 47 ft, screened 42 to 47 ft.
INSTRUMENTATION.--Digital water-level recorder--60-minute punch.
DATUM.--Land-surface datum is 81.77 ft above National Geodetic Vertical Datum of 1929.
Measuring point: Top edge of recorder shelf, 2.92 ft above land-surface datum.
PERIOD OF RECORD.--March 1972 to current year. Periodic manual measurements, March 1972 to June 1987. Records from 1972 to 1987 are unpublished and are available in files of the New Jersey District Office.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 2.40 ft below land-surface datum, April 21, 1972; lowest, 8.12 ft below land-surface datum, Aug. 17, 1988.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	7.77	7.76	7.17	7.67	7.53	6.91	6.11	5.30	4.71	4.09	4.11	3.71
10	7.80	7.87	7.28	7.63	7.58	6.78	5.73	4.80	4.46	4.02	4.00	4.31
15	7.90	7.91	7.41	7.51	7.51	6.67	5.69	4.58	4.63	4.18	3.63	4.43
20	7.97	7.59	7.51	7.44	7.45	6.69	5.63	4.68	4.53	3.77	3.07	3.61
25	7.80	7.52	7.51	7.56	6.92	6.24	5.67	4.44	3.83	3.96	3.35	3.80
EOM	7.92	7.12	7.58	7.57	6.90	6.13	5.61	4.46	4.08	4.01	3.51	3.68
MEAN	7.84	7.69	7.39	7.57	7.38	6.62	5.77	4.74	4.39	3.98	3.63	3.89

WTR YR 1989 MEAN 5.90 HIGH 3.04 AUG 19,20 LOW 7.98 OCT 20,21



GLOUCESTER COUNTY

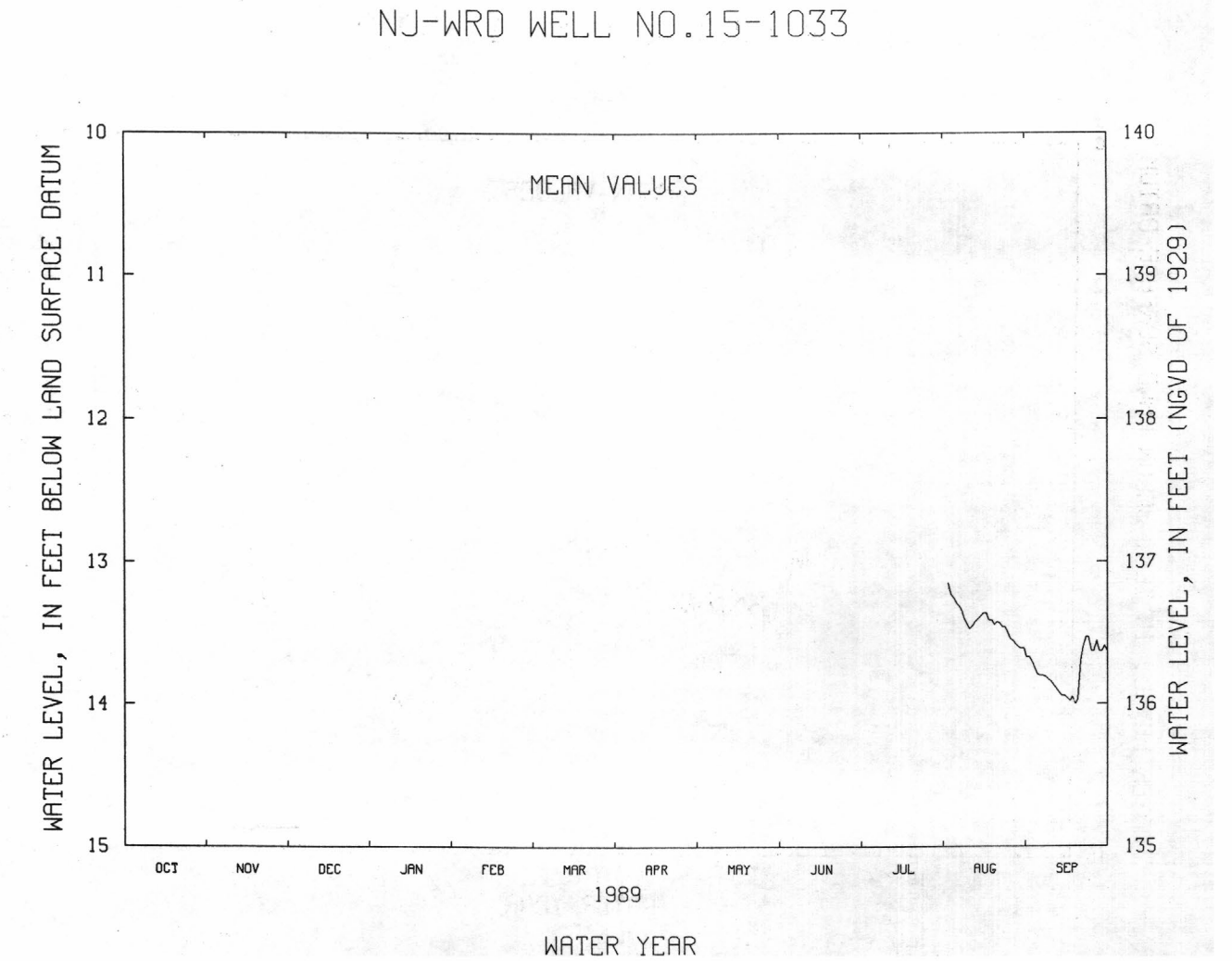
394354075025901. Local I.D., WTMUA Monitoring 1 Obs. NJ-WRD Well Number, 15-1033.
LOCATION.--Lat 39°43'54", long 75°02'59", Hydrologic Unit 02040202, next to the Washington Township MUA Water Tank at the intersection of White Birches Rd. and Rt. 555 (Fries Mill Rd.), Washington Township.
Owner: Washington Township Municipal Utilities Authority.
AQUIFER.--Kirkwood-Cohansey aquifer system of Miocene age.
WELL CHARACTERISTICS.--Drilled water-table observation well, diameter 4 in, depth 54 ft, screened 44 to 54 ft.
INSTRUMENTATION.--R-200 Data Logger and pressure transducer.
DATUM.--Land-surface datum is 150 ft above National Geodetic Vertical Datum of 1929, from topographic map.
Measuring point: Top edge of steel outer casing 2.50 ft above land-surface datum.
PERIOD OF RECORD.--August 1989 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 13.14 ft below land-surface datum, Aug. 2, 1989; lowest, 14.02 ft below land-surface datum, Sep. 19, 1989.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	---	---	---	---	---	---	---	---	---	---	13.29	13.80
10	---	---	---	---	---	---	---	---	---	---	13.47	13.87
15	---	---	---	---	---	---	---	---	---	---	13.36	13.96
20	---	---	---	---	---	---	---	---	---	---	13.42	13.70
25	---	---	---	---	---	---	---	---	---	---	13.54	13.63
EOM	---	---	---	---	---	---	---	---	---	---	13.67	13.63
MEAN	---	---	---	---	---	---	---	---	---	---	13.43	13.77

WTR YR 1989 HIGH 13.14 AUG 2 LOW 14.02 SEP 19



GLOUCESTER COUNTY

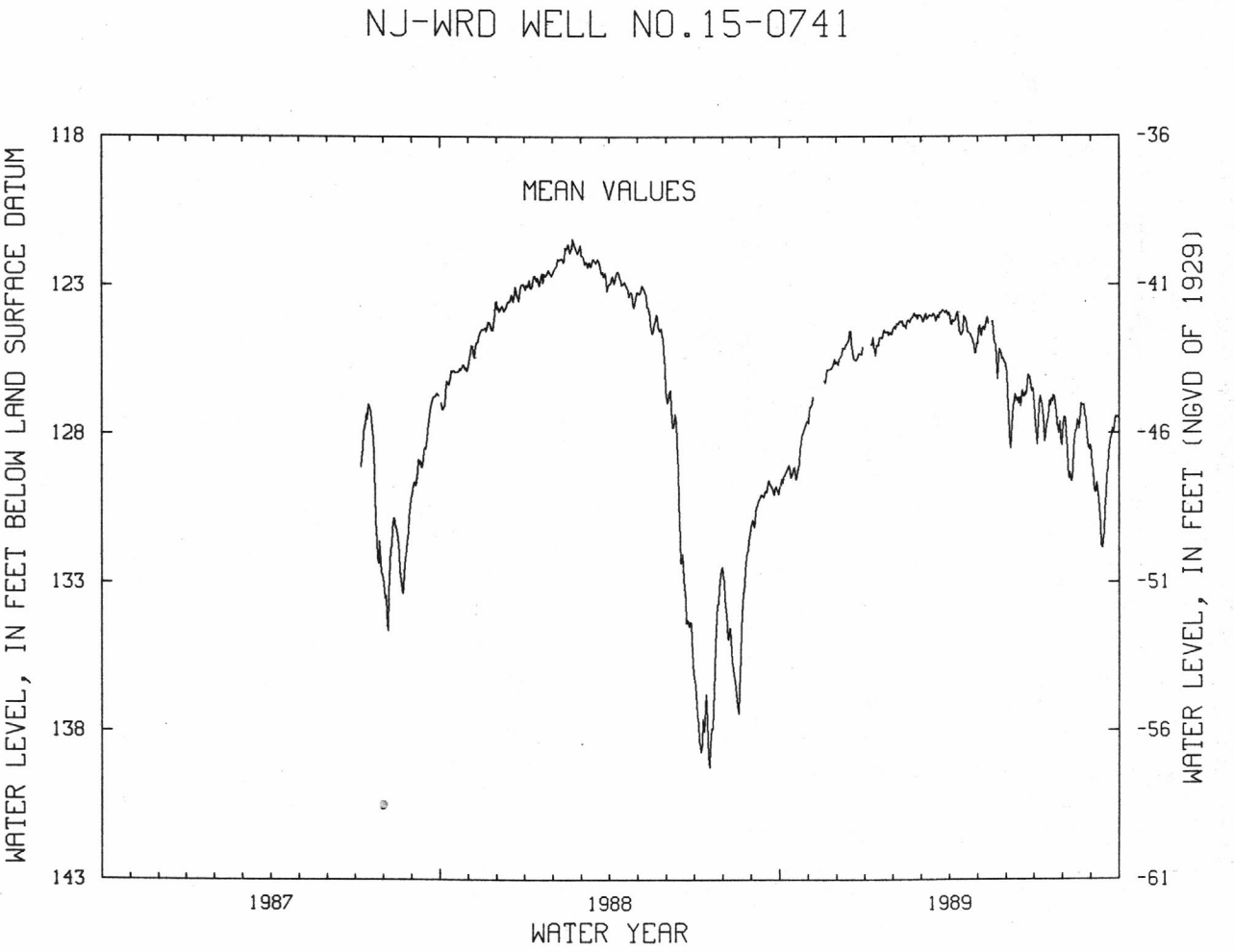
394652075100401. Local I.D., Mantua Shallow Obs. NJ-WRD Well Number, 15-0741.
LOCATION.--Lat 39°46'52", long 75°10'04", Hydrologic Unit 02040202, at the Township of Mantua Road Dept. off Main Street, Mantua Township.
Owner: U.S. Geological Survey.
AQUIFER.--Upper aquifer, Potomac-Raritan-Magothy aquifer system of Cretaceous age.
WELL CHARACTERISTICS.--Drilled artesian observation well, diameter 4 in, depth 313 ft, screened 293 to 313 ft.
INSTRUMENTATION.--Digital water-level recorder--60-minute punch.
DATUM.--Land-surface datum is 82 ft above National Geodetic Vertical Datum of 1929, from topographic map.
Measuring point: Top edge of recorder shelf, 4.00 ft above land-surface datum.
REMARKS.--Water level affected by nearby pumping.
PERIOD OF RECORD.--July 1987 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 121.20 ft below land-surface datum, Feb. 20, 1988; lowest, 139.61 ft below land-surface datum, July 17, 1988.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	129.37	126.74	125.42	---	124.32	124.04	124.23	124.70	128.51	127.62	128.52	129.98
10	129.04	---	124.99	125.16	124.37	124.00	124.11	124.17	126.67	127.26	129.61	131.11
15	129.12	---	124.55	124.77	124.17	124.01	124.53	---	126.77	127.72	127.87	130.56
20	129.15	125.83	125.51	124.50	124.09	124.11	124.56	125.03	126.76	126.91	127.00	128.30
25	128.04	125.81	125.31	124.68	124.15	123.81	124.79	125.23	126.09	127.68	127.48	127.77
EOM	127.65	125.58	---	124.42	124.03	123.91	124.96	125.72	126.72	127.97	128.65	127.44
MEAN	128.86	126.16	125.25	124.77	124.20	124.01	124.48	124.87	126.83	127.48	128.11	129.31

WTR YR 1989 MEAN 126.24 HIGH 123.31 MAR 25 LOW 132.26 SEP 11



GLOUCESTER COUNTY

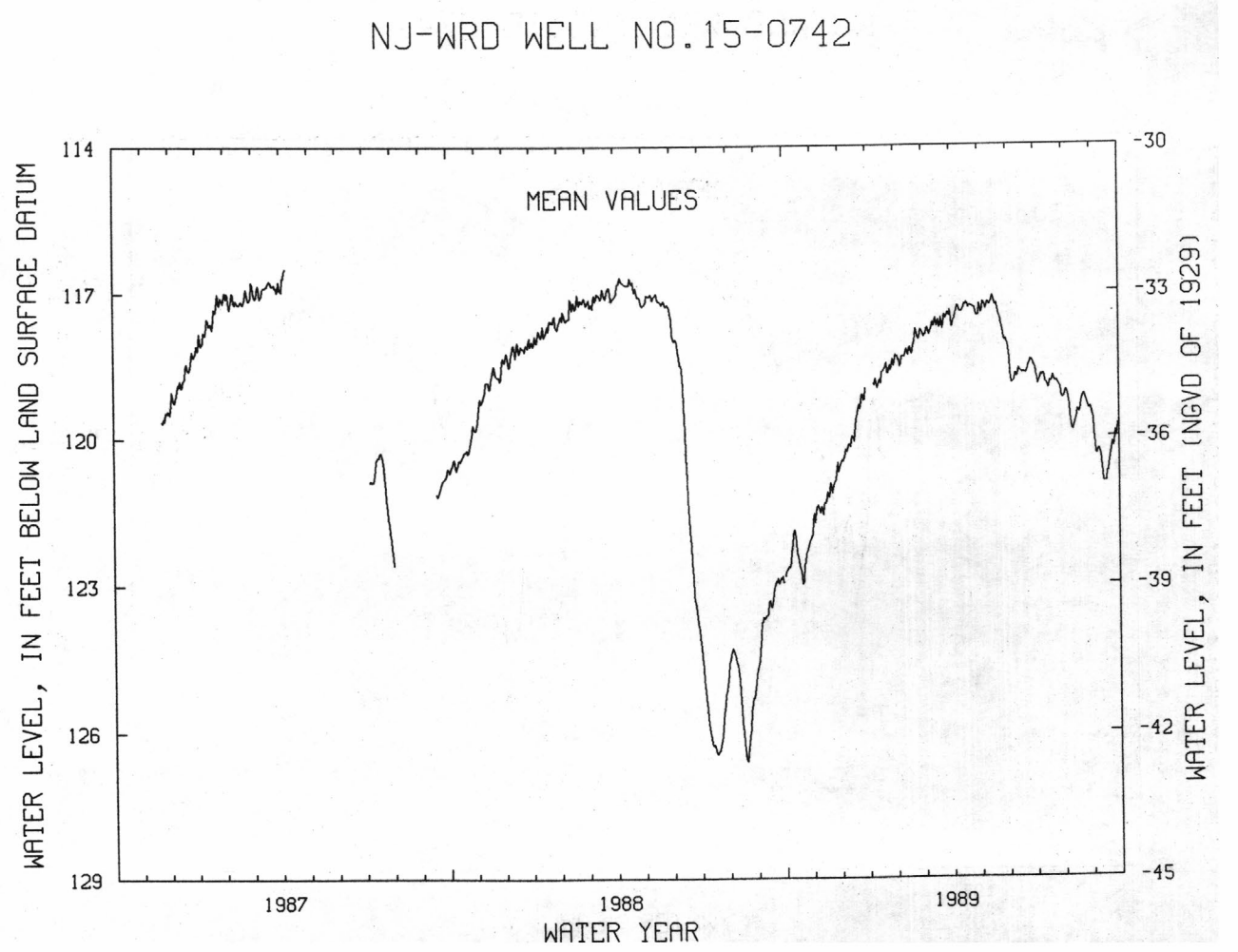
394652075100402. Local I.D., Mantua Deep Obs. NJ-WRD Well Number, 15-0742.
LOCATION.--Lat 39°46'52", long 75°10'04", Hydrologic Unit 02040202, at the Township of Mantua Road Dept. off Main Street, Mantua Township.
Owner: U.S. Geological Survey.
AQUIFER.--Lower aquifer, Potomac-Raritan-Magothy aquifer system of Cretaceous age.
WELL CHARACTERISTICS.--Drilled artesian observation well, diameter 4 in, depth 777 ft, screened 757 to 777 ft.
INSTRUMENTATION.--Digital water-level recorder--60-minute punch.
DATUM.--Land-surface datum is 84 ft above National Geodetic Vertical Datum of 1929, from topographic map.
Measuring point: Top edge of recorder shelf, 4.20 ft above land-surface datum.
REMARKS.--Water level affected by nearby pumping.
PERIOD OF RECORD.--November 1986 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 116.47 ft below land-surface datum, April 7, 1987; lowest, 126.62 ft below land-surface datum, Aug. 19, 1988.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	122.63	121.44	120.42	---	118.46	117.77	117.55	117.36	118.88	118.84	119.12	120.35
10	121.98	121.41	120.14	118.97	118.27	117.78	117.37	117.26	118.67	118.69	119.85	120.38
15	122.42	121.34	119.99	118.64	118.14	117.54	117.33	117.19	118.61	119.00	119.58	120.92
20	122.99	120.92	119.41	118.45	118.02	117.71	117.32	117.24	118.66	118.73	119.30	120.42
25	122.33	120.91	119.11	118.60	117.94	117.47	117.31	117.62	118.46	118.87	119.25	120.15
EOM	121.97	120.61	---	118.32	117.83	117.38	117.49	118.02	118.54	119.21	119.50	119.75
MEAN	122.42	121.21	119.86	118.64	118.15	117.67	117.39	117.42	118.59	118.86	119.40	120.30

WTR YR 1989 MEAN 119.17 HIGH 117.04 MAY 16 LOW 123.05 OCT 21



GLOUCESTER COUNTY

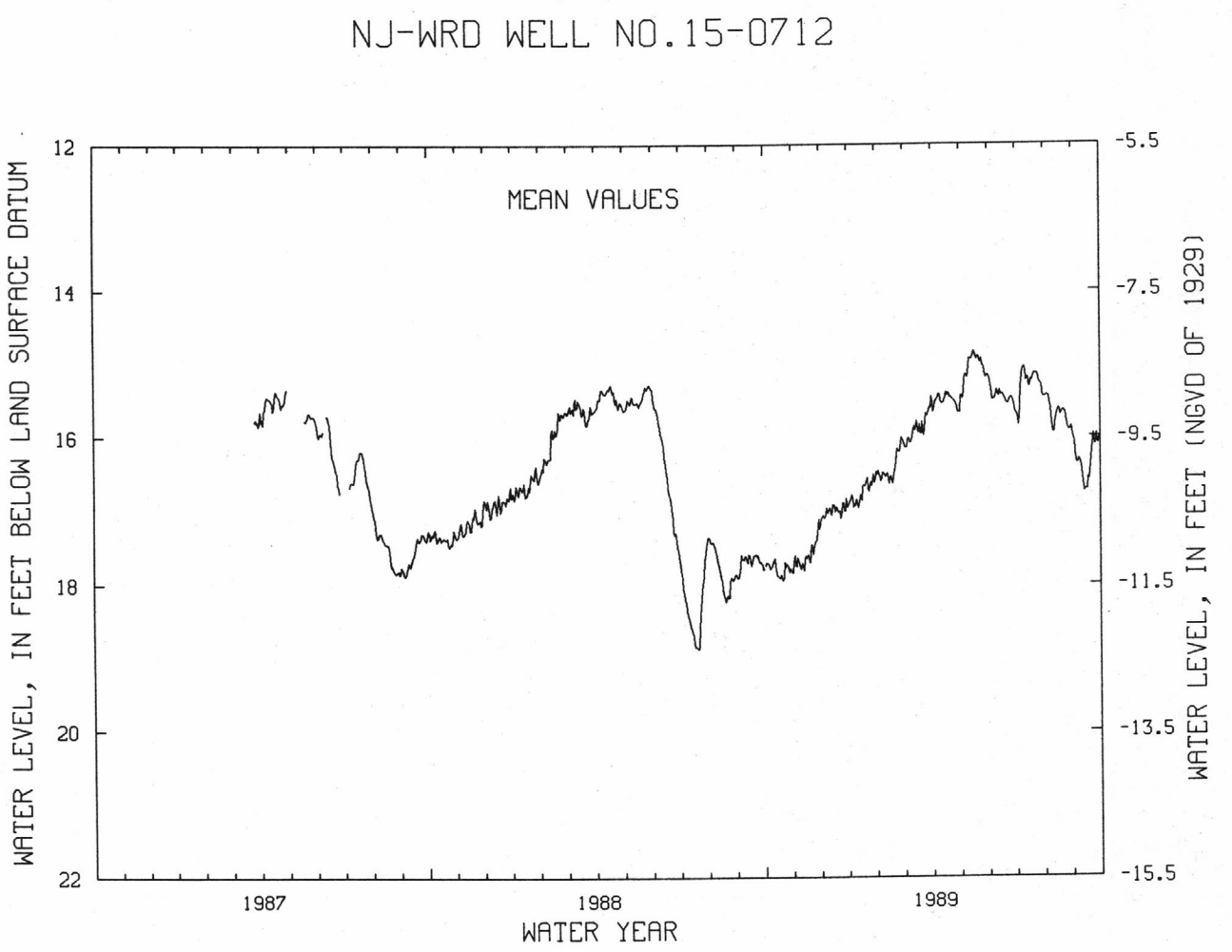
394808075172401. Local I.D., Stefka 1 Obs. NJ-WRD Well Number, 15-0712.
LOCATION.--Lat 39°48'08", long 75°17'24", Hydrologic Unit 02040202, near the intersection of Swedesboro and Tomlin Station roads, next to Pargey Creek, on land owned by Mr. William Stefka, Greenwich Township.
Owner: U.S. Geological Survey.
AQUIFER.--Lower aquifer, Potomac-Raritan-Magothy aquifer system of Cretaceous age.
WELL CHARACTERISTICS.--Drilled artesian observation well, diameter 4 in, depth 290 ft, screened 275 to 290 ft.
INSTRUMENTATION.--Digital water-level recorder--60-minute punch.
DATUM.--Land-surface datum is 6.50 ft above National Geodetic Vertical Datum of 1929.
Measuring point: Top edge of recorder shelf, 2.20 ft above land-surface datum.
PERIOD OF RECORD.--March 1987 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 14.80 ft below land-surface datum, May 16, 1989; lowest, 18.88 ft below land-surface datum, July 20,21, 1988.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	17.73	17.63	17.09	16.95	16.56	16.05	15.52	15.40	15.49	15.60	15.46	16.37
10	17.67	17.71	16.96	16.96	16.54	16.01	15.51	15.05	15.37	15.05	15.94	16.45
15	17.87	17.64	16.93	16.67	16.53	15.78	15.46	14.90	15.43	15.32	15.64	16.71
20	17.95	17.46	17.01	16.55	16.42	15.96	15.47	14.90	15.53	15.14	15.66	16.30
25	17.74	17.42	16.89	16.66	16.15	15.68	15.52	15.01	15.48	15.22	15.84	16.11
EOM	17.84	17.17	16.89	16.51	16.07	15.45	15.66	15.16	15.66	15.46	15.98	16.04
MEAN	17.79	17.57	16.99	16.73	16.41	15.89	15.51	15.09	15.45	15.30	15.71	16.32

WTR YR 1989 MEAN 16.23 HIGH 14.80 MAY 16 LOW 17.99 OCT 20,21



GLOUCESTER COUNTY

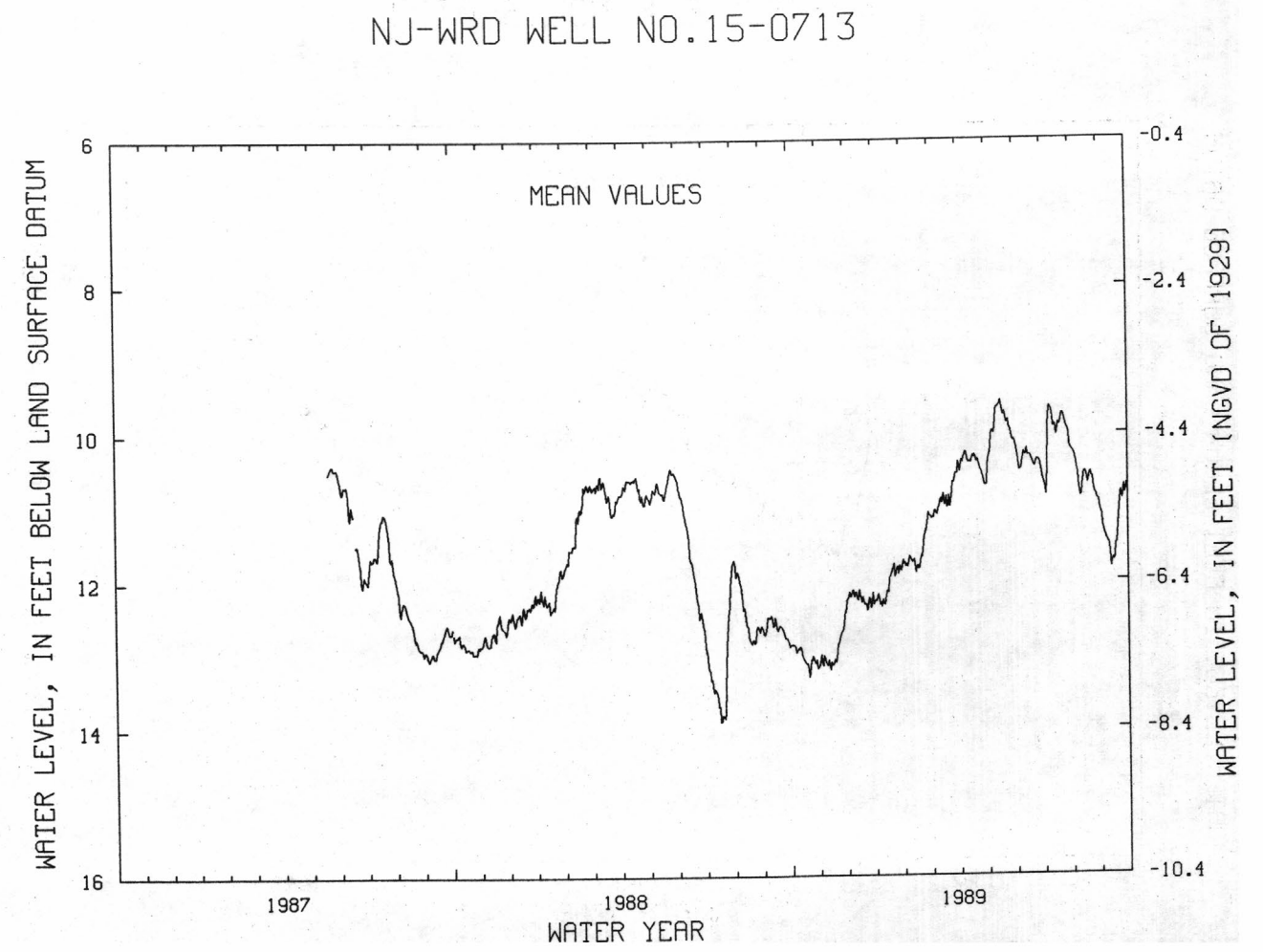
394808075172402. Local I.D., Stefka 2 Obs. NJ-WRD Well Number, 15-0713.
LOCATION.--Lat 39°48'08", long 75°17'24", Hydrologic Unit 02040202, near the intersection of Swedesboro and Tomlin Station roads, next to Pargey Creek, on land owned by Mr. William Stefka, Greenwich Township.
Owner: U.S. Geological Survey.
AQUIFER.--Middle aquifer, Potomac-Raritan-Magothy aquifer system of Cretaceous age.
WELL CHARACTERISTICS.--Drilled artesian observation well, diameter 8 in, depth 155 ft, screened 125 to 155 ft.
INSTRUMENTATION.--Digital water-level recorder--60-minute punch.
DATUM.--Land-surface datum is 5.64 ft above National Geodetic Vertical Datum of 1929.
Measuring point: Top edge of recorder shelf, 3.00 ft above land-surface datum.
PERIOD OF RECORD.--May 1987 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 9.53 ft below land-surface datum, May 16, 1989; lowest, 13.96 ft below land-surface datum, July 17, 1988.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	12.90	13.00	12.18	12.32	11.73	11.05	10.39	10.20	10.50	10.50	10.41	11.37
10	12.88	13.06	12.14	12.31	11.72	10.99	10.35	9.83	10.26	9.70	10.87	11.53
15	13.05	13.13	12.21	11.95	11.78	10.82	10.34	9.62	10.30	10.03	10.53	11.74
20	13.29	12.85	12.30	11.76	11.67	10.98	10.38	9.71	10.42	9.78	10.57	11.16
25	13.06	12.68	12.25	11.90	11.22	10.66	10.51	9.91	10.38	9.90	10.80	10.87
EOM	13.14	12.27	12.25	11.76	11.12	10.38	10.70	10.11	10.60	10.23	11.06	10.78
MEAN	13.03	12.92	12.23	12.02	11.61	10.89	10.42	9.93	10.37	10.01	10.64	11.26

WTR YR 1989 MEAN 11.28 HIGH 9.53 MAY 16 LOW 13.32 OCT 20



GLOUCESTER COUNTY

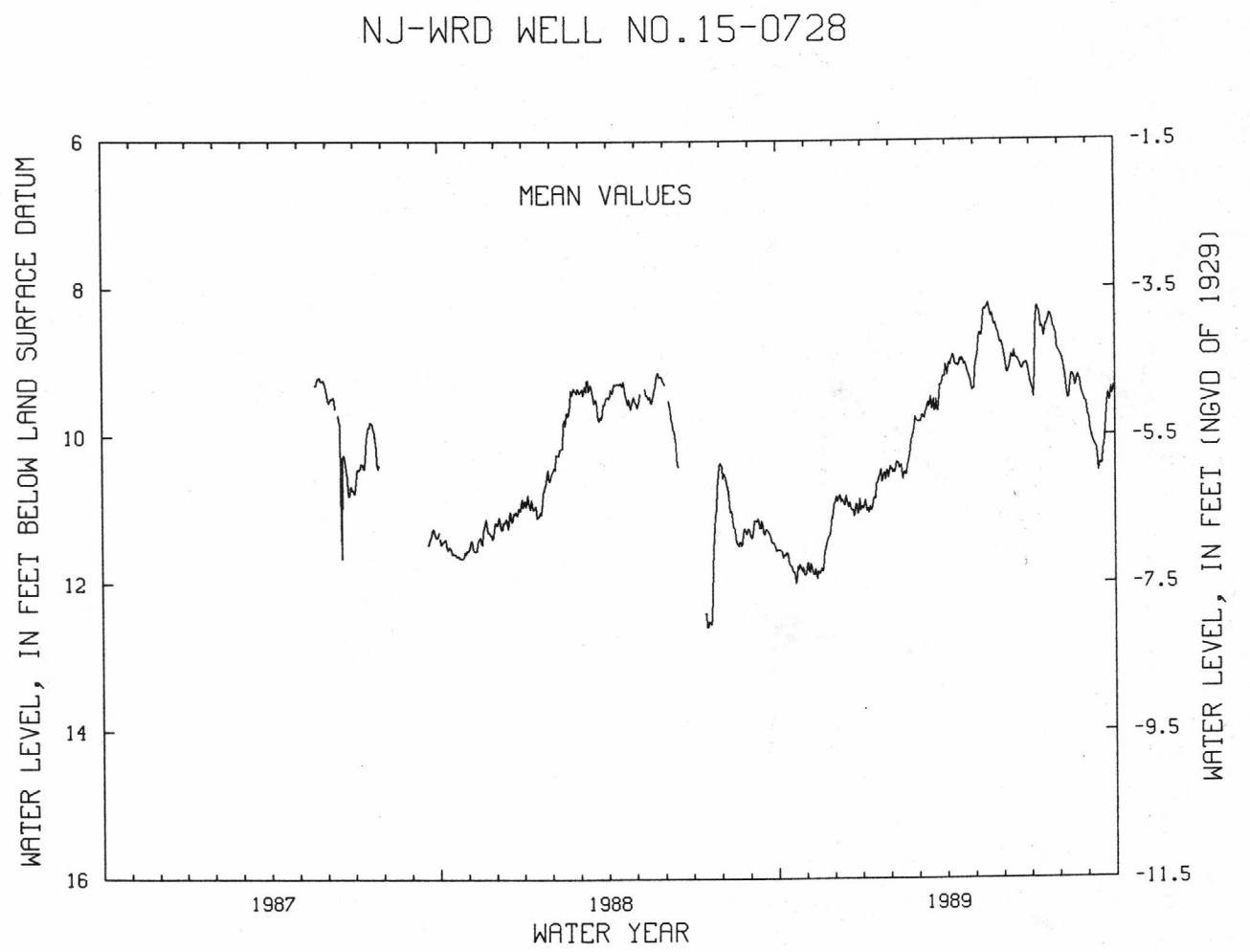
394808075172404. Local I.D., Stefka 4 Obs. NJ-WRD Well Number, 15-0728.
LOCATION.--Lat 39°48'08", long 75°17'24", Hydrologic Unit 02040202, near the intersection of Swedesboro and Tomlin Station roads, next to Pargey Creek, on land owned by Mr. William Stefka, Greenwich Township.
Owner: U.S. Geological Survey.
AQUIFER.--Upper aquifer, Potomac-Raritan-Magothy aquifer system of Cretaceous age.
WELL CHARACTERISTICS.--Drilled artesian observation well, diameter 4 in, depth 56 ft, screened 46 to 56 ft.
INSTRUMENTATION.--Digital water-level recorder--60-minute punch.
DATUM.--Land-surface datum is 4.46 ft above National Geodetic Vertical Datum of 1929.
Measuring point: Top edge of recorder shelf, 3.42 ft above land-surface datum.
PERIOD OF RECORD.--May 1987 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 8.17 ft below land-surface datum, May 16, 1989; lowest, 12.64 ft below land-surface datum, July 17, 1988.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	11.59	11.73	10.85	11.02	10.42	9.73	9.05	8.86	9.16	9.15	9.05	10.03
10	11.58	11.80	10.84	11.00	10.41	9.66	9.01	8.48	8.91	8.32	9.51	10.19
15	11.77	11.87	10.91	10.64	10.48	9.47	9.01	8.26	8.95	8.67	9.18	10.40
20	12.00	11.57	11.00	10.45	10.36	9.64	9.04	8.35	9.07	8.42	9.23	9.81
25	11.78	11.37	10.95	10.59	9.89	9.32	9.18	8.56	9.04	8.53	9.43	9.50
EOM	11.87	10.96	10.95	10.45	9.80	9.04	9.37	8.77	9.26	8.87	9.71	9.41
MEAN	11.74	11.64	10.92	10.72	10.29	9.56	9.08	8.58	9.03	8.65	9.29	9.91

WTR YR 1989 MEAN 9.95 HIGH 8.17 MAY 16 LOW 12.03 OCT 20



GLOUCESTER COUNTY

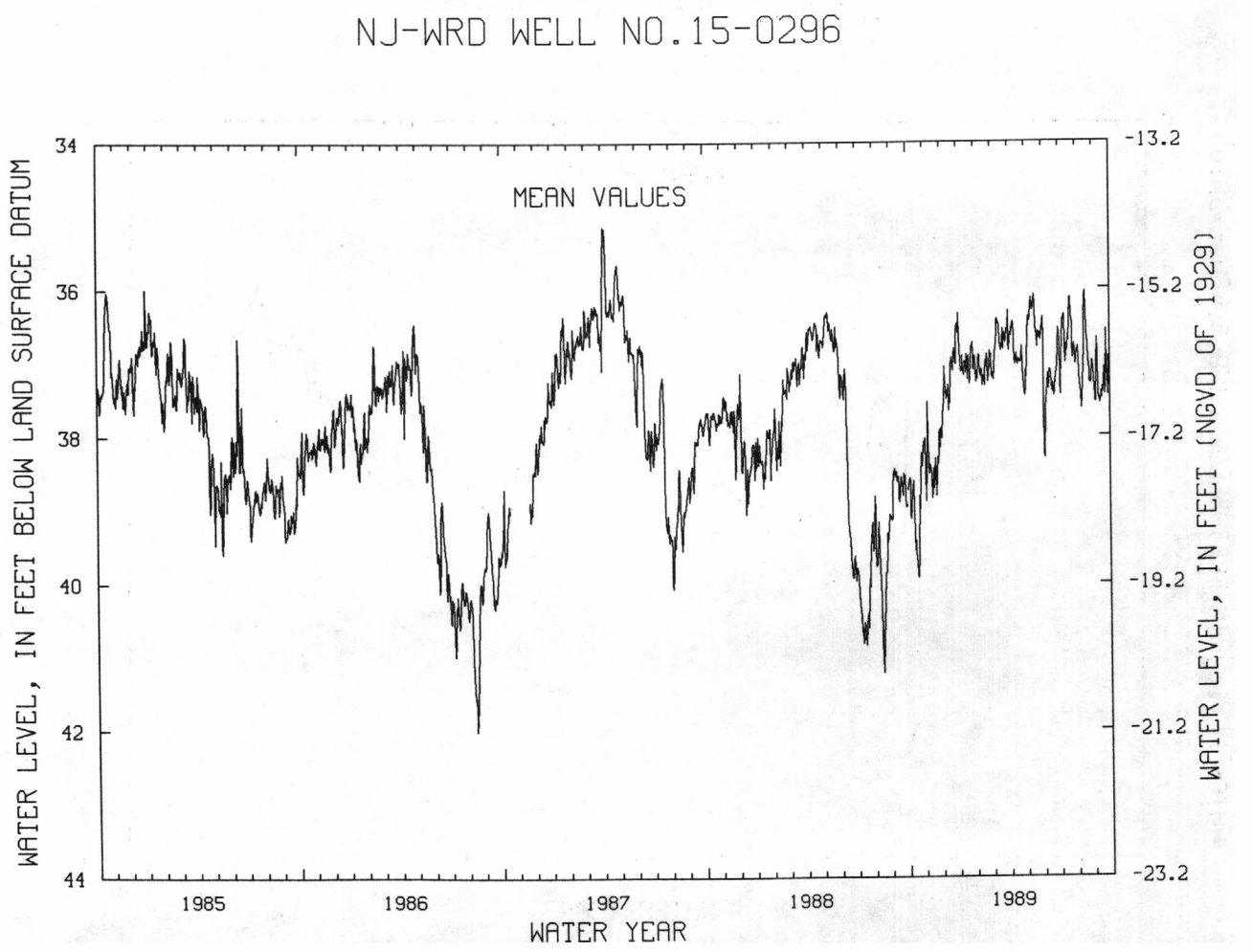
394942075131701. Local I.D., Shell Chemical 5 Obs. NJ-WRD Well Number, 15-0296.
LOCATION.--Lat 39°49'42", long 75°13'17", Hydrologic Unit 02040202, near the intersection of Mantua Grove Road and Route 295, West Deptford Township.
Owner: Huntsman Polypropylene Corp.
AQUIFER.--Lower aquifer, Potomac-Raritan-Magothy aquifer system of Cretaceous age.
WELL CHARACTERISTICS.--Drilled artesian observation well, diameter 6 in, depth 327 ft, screened 321 to 326 ft.
INSTRUMENTATION.--Digital water-level recorder--60-minute punch.
DATUM.--Land-surface datum is 20.76 ft above National Geodetic Vertical Datum of 1929.
Measuring point: Top edge of recorder shelf, 2.90 ft above land-surface datum.
REMARKS.--Water level affected by tidal fluctuation and nearby pumping.
PERIOD OF RECORD.-June 1962 to current year. Records for 1962 to 1977 are unpublished and are available in files of New Jersey District Office.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 27.75 ft below land-surface datum, Dec. 6, 1962; lowest, 42.50 ft below land-surface datum, Aug. 15, 1986.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	38.62	38.01	37.51	37.13	37.00	37.24	36.65	36.66	38.30	36.96	36.97	37.54
10	38.71	38.38	37.50	37.15	37.18	36.59	36.67	36.24	37.17	36.37	37.63	37.44
15	39.42	38.86	37.44	36.90	37.18	36.50	36.89	36.31	37.12	36.87	36.44	37.40
20	39.92	38.30	36.94	37.00	37.06	36.73	37.01	36.58	37.39	36.15	36.70	37.08
25	38.23	38.37	36.82	36.82	37.07	36.61	36.79	36.68	37.19	36.77	37.28	37.12
EOM	38.09	37.92	36.61	36.97	36.90	36.31	37.45	36.58	36.54	36.96	37.11	37.45
MEAN	38.91	38.38	37.20	36.99	37.10	36.74	36.91	36.56	37.25	36.73	36.97	37.28

WTR YR 1989 MEAN 37.25 HIGH 35.66 AUG 17 LOW 40.15 OCT 20



GLOUCESTER COUNTY

394957075053001. Local I.D., Deptford Deep Obs. NJ-WRD Well Number, 15-0671.
LOCATION.--Lat 39°49'57", Long 75°05'30", Hydrologic Unit 02040202, at N.J. Dept. of Transportation facility off N.J. Route 41 south, Deptford Township.
Owner: U.S. Geological Survey.
AQUIFER.--Lower aquifer, Potomac-Raritan-Magothy aquifer system of Cretaceous age.
WELL CHARACTERISTICS.--Drilled artesian observation well, diameter 4 in, depth 670 ft, screened 650 to 670 ft.
INSTRUMENTATION.--Digital water-level recorder--60-minute punch.
DATUM.--Land-surface datum is 35 ft above National Geodedic Vertical Datum of 1929, from topographic map.
Measuring point: Top edge of recorder shelf, 3.55 ft above land-surface datum.
REMARKS.--Water level affected by tidal fluctuation and nearby pumping.
PERIOD OF RECORD.--June 1986 to current year. Records for 1986 are unpublished and are available in files of New Jersey District Office.
EXTREMES FOR PERIOD OF RECORD.--Highest water level 97.10 ft below land surface datum, Jan. 22, 1987; lowest 115.36 ft below land surface datum, July 19, 1988.

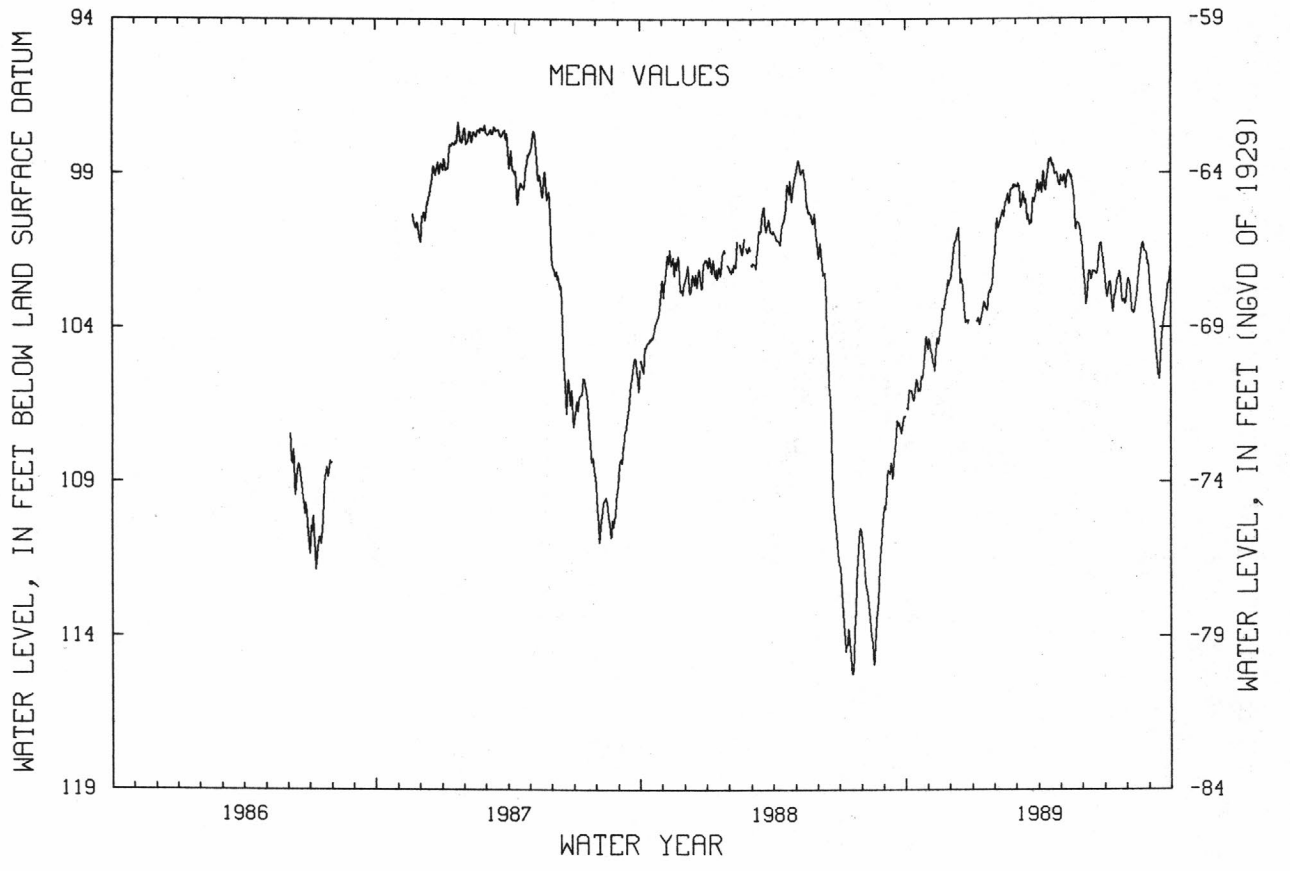
WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	106.02	104.80	101.67	---	100.78	99.29	99.51	99.21	103.24	102.88	102.78	103.64
10	106.32	105.13	100.98	103.91	100.30	99.89	99.47	99.17	102.15	102.78	103.55	104.74
15	105.69	104.55	102.54	103.38	99.96	99.86	98.76	99.12	102.14	102.98	102.75	105.35
20	106.07	103.37	103.38	103.36	99.97	100.66	98.74	99.86	102.24	102.35	101.51	103.70
25	105.17	102.95	103.88	102.86	99.47	99.80	99.00	100.59	101.27	103.08	101.52	102.93
EOM	104.70	102.47	---	101.56	99.38	99.23	99.33	101.24	102.02	102.92	102.07	102.04
MEAN	105.77	103.99	102.35	103.16	100.09	99.88	99.08	99.76	102.15	102.79	102.35	103.78

WTR YR 1989 MEAN 102.09 HIGH 98.34 APR 18,19 LOW 106.85 OCT 1

NJ-WRD WELL NO.15-0671



GLOUCESTER COUNTY

395232075094201. Local I.D., Eagle Point 3 Obs. NJ-WRD Well Number, 15-0323.
LOCATION.--Lat 39°52'35", long 75°09'50", Hydrologic Unit 02040202, at the Coastal Eagle Point Oil Company, West Deptford Township.
Owner: Coastal Eagle Point Oil Company.
AQUIFER.--Lower aquifer, Potomac-Raritan-Magothy aquifer system of Cretaceous age.
WELL CHARACTERISTICS.--Drilled artesian observation well, diameter 8 in, depth 276 ft, screened 255 to 275 ft.
INSTRUMENTATION.--Digital water-level recorder--60-minute punch. Water-level extremes recorder, April 1981 to December 1984.
DATUM.--Land-surface datum is 20.96 ft above National Geodetic Vertical Datum of 1929.
Measuring point: Top of casing, 3.00 ft above land-surface datum.
REMARKS.--Water level affected by tidal fluctuation and nearby pumping.
PERIOD OF RECORD.--November 1949 to July 1975, April 1981 to current year. Periodic manual measurements, October 1976 to March 1981. Records for 1975 to 1981 are unpublished and are available in files of New Jersey District Office.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 37.70 ft below land-surface datum, Nov. 25, 1950; lowest, 87.30 ft below land-surface datum, June 28, 1963.

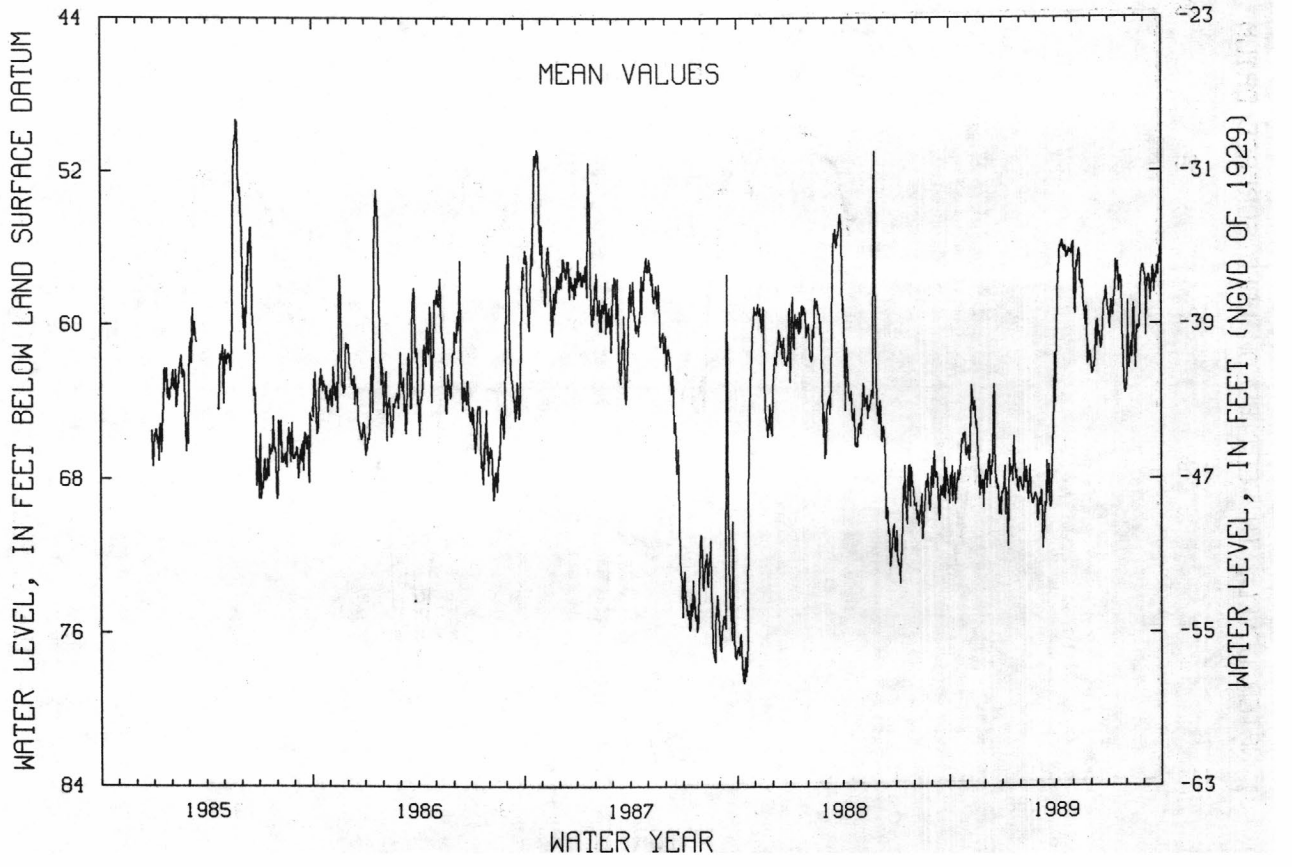
WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	67.34	66.32	67.73	69.85	68.32	68.99	57.25	59.45	62.45	59.45	61.26	58.55
10	67.71	63.92	68.29	71.49	67.40	71.61	55.91	56.27	59.91	58.76	61.74	57.79
15	67.86	65.23	64.21	67.40	67.69	69.47	56.04	57.84	60.51	57.29	60.53	57.20
20	66.86	66.98	68.23	65.80	69.21	67.27	56.27	59.24	60.74	57.52	60.10	57.43
25	65.81	68.16	69.82	68.44	68.73	69.04	56.27	59.49	58.77	60.18	58.25	57.12
EOM	66.83	68.18	68.78	67.95	69.14	64.05	55.95	61.72	59.29	63.43	57.33	55.56
MEAN	67.45	66.34	67.65	68.15	68.46	68.42	56.88	58.68	60.49	59.30	59.98	57.52

WTR YR 1989 MEAN 63.27 HIGH 53.51 SEP 30 LOW 73.21 JAN 10

NJ-WRD WELL NO.15-0323



GLOUCESTER COUNTY

NJ-WRD WELL NUMBER	SITE OWNER	LOCAL IDENTIFIER	LATITUDE	LONGITUDE	DEPTH OF WELL (FT.)	ELEV.** OF LAND SURFACE DATUM (FT.NGVD)	DATE OF MEASURMENT	WATER LEVEL (FT.)*
15-039	CIFALOGLIO, S	1	393148	745822	123	110	11/18/1988	10.80
							5/ 2/1989	6.64
15-198	LESHAY BROS	1965 WELL	393944	745934	141	130	11/17/1988	11.21
							5/ 3/1989	8.17
15-568	RALPH SMITH FARM	1	394305	750307	97	140	11/17/1988	21.12
							5/ 3/1989	***
15-726	SMITH, JOHN	AURA ORCHARDS	394130	750921	62	140	11/18/1988	14.33
							5/ 2/1989	9.37
15-734	DASE, DENNIS	DASE 1	393523	745912	110	138	11/18/1988	20.90
							5/ 2/1989	19.32
15-745	FRANKLIN TWP SANITARY LANDFILL	DUMP NORTH	393608	750257	35	124	11/29/1988	25.79
							5/11/1989	22.61
15-754	DEAN, GEORGE	DEAN 1	393934	751033	58	143	11/18/1988	15.92
							5/ 2/1989	9.54
15-759	MESIANO, JIM	MESIANO 1	394232	750126	135	159	11/17/1988	39.49
							5/ 3/1989	38.77
15-760	WILLIAMS, RONALD	RW 1	394020	745611	30	115	11/17/1988	17.72
							5/ 3/1989	14.12
15-761	LUCAS, HARRY	LUCAS IRR 1	394142	745818	38	130	11/17/1988	14.27
							5/ 3/1989	11.35
15-763	MOORE, EAYRE	MOORE 2	393525	750521	60	109	11/18/1988	21.35
							5/ 2/1989	18.89
15-764	SCAFONIS, FELIX	SCAFONIS D	393708	750143	49	130	10/17/1988	21.82
							5/ 2/1989	19.20
15-792	THE PLANT PLACE INC	PP 1	393928	750434	75	110	11/17/1988	13.19
							5/ 3/1989	10.42
15-793	FERRUCCI, MARY	FERRUCCI 10	393448	745606	150	110	11/18/1988	12.75
							5/ 3/1989	10.17
15-795	SMITH, FRED	FRED SMITH-1965	394140	750312	100	150	11/17/1988	16.20
							5/ 3/1989	13.22
15-796	SMITH, FRED	SMITH 5	394238	750308	90	160	11/17/1988	20.62
							5/ 3/1989	16.98
15-801	CHILLARI, JOE	CHILLARI 1	394227	750522	85	144	11/17/1988	16.72
							5/ 3/1989	12.95
15-804	FRANKLIN TWP BOARD OF EDUCATION	MALAGA 1	393428	750244	100	110	11/17/1988	31.53
							5/ 2/1989	29.71
15-808	GLASSBORO WATER DEPT	GLASS OBS 1	394319	750725	60	122	11/17/1988	28.46
							5/ 3/1989	28.68
15-810	ELK TWP MUA	ELK 1	394021	750827	63	144	11/18/1988	16.43
							5/ 2/1989	12.82
15-811	SHOEMAKER, G	SHOEMAKER 1	394055	751412	32	140	11/18/1988	20.64
							5/ 2/1989	18.44
15-812	CORONA PUMPS	CORONA 1	393805	745554	100	123	11/17/1988	29.74
							5/ 3/1989	26.67
15-840	DEVAULT, HARRY	DEVAULT 1	393744	750735	34	110	11/18/1988	4.87
							5/ 2/1989	3.83
15-846	U S GEOL SURVEY	CARPENTER 126	394053	750453	10	126	11/17/1988	7.56
							5/ 3/1989	3.23
15-1016	DUFFIELD, CLAUDE	DUFFIELD 2	393633	750630	60	129	11/18/1988	26.35
							5/ 2/1989	23.71
15-1037	DILLNER, PETER	FRIMAIR IRR	394303	750303	77	150	5/11/1989	14.55

* - Water level in feet below land surface datum

** - Elevations are from USGS topographic maps

***- Well covered over by new construction- replaced in network by 15-1037 (FRIMAIR IRR)

Aquifer unit: 121CKKD - Kirkwood-Cohansey aquifer system

HUNTERDON COUNTY

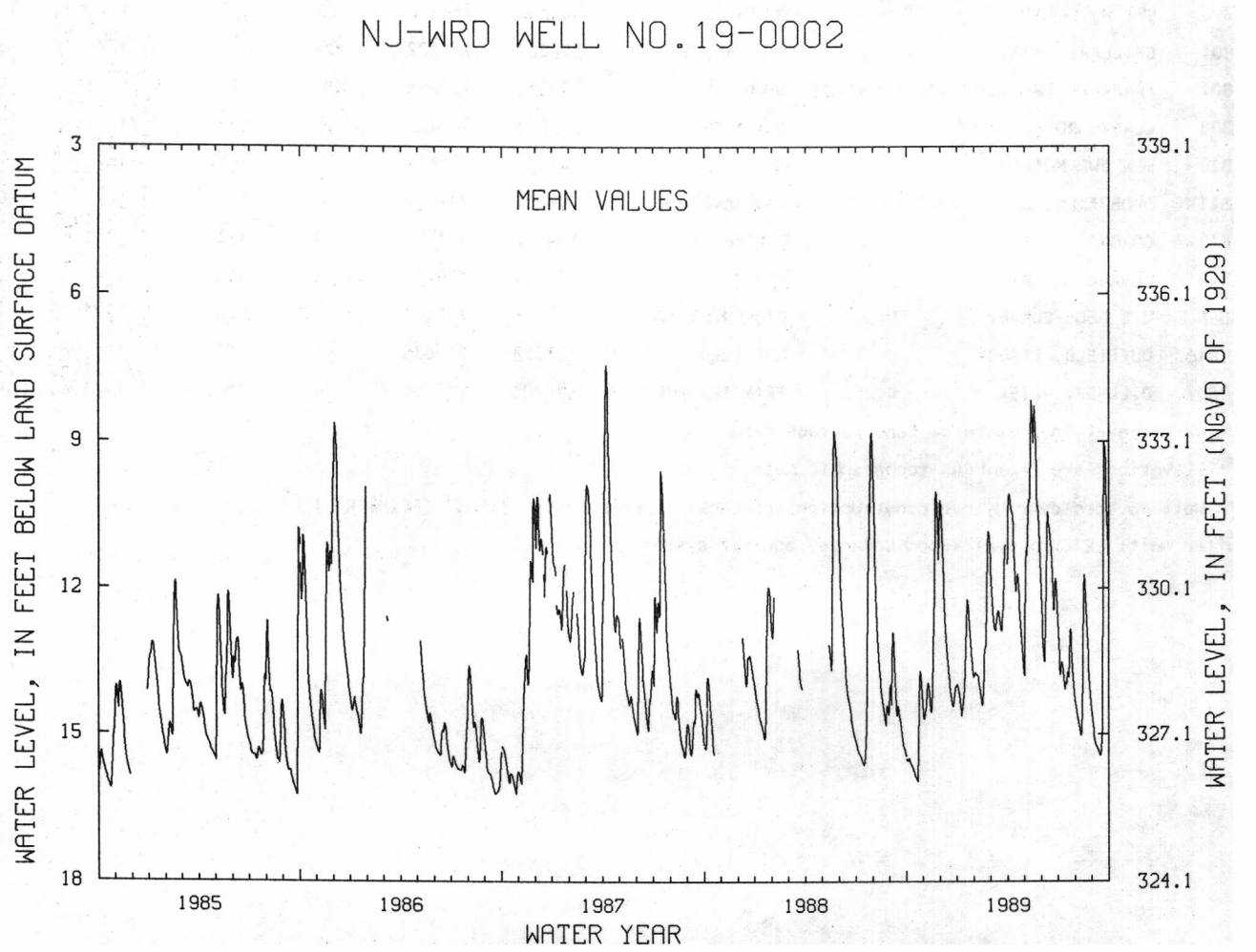
402644074563601. Local I.D., Bird Obs. NJ-WRD Well Number, 19-0002.
LOCATION.--Lat 40°26'44", long 74°56'36", Hydrologic Unit 02040105, near U.S. Post Office, Sergeantsville, Delaware Township
Owner: Phillip Fleming.
AQUIFER.--Stockton Formation of Triassic age.
WELL CHARACTERISTICS.--Dug water-table observation well, diameter 3 ft, depth 21 ft, lined with stone.
INSTRUMENTATION.--Digital water-level recorder--60-minute punch.
DATUM.--Land-surface datum is 342.08 ft above National Geodetic Vertical Datum of 1929.
Measuring point: Top edge of recorder shelf, 1.50 ft above land-surface datum.
PERIOD OF RECORD.--June 1965 to July 1970, May 1977 to current year. Periodic manual measurements, September 1970 to September 1976. Records for 1965 to 1976 are unpublished and are available in files of New Jersey District Office.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 6.37 ft below land-surface datum, Apr. 18, 1983; lowest, 17.04 ft below land-surface datum, Jan. 26-28, 1981.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	15.50	14.50	11.52	14.31	13.78	12.47	10.24	11.33	13.34	13.77	14.63	15.11
10	15.65	14.02	12.84	14.47	14.04	12.86	10.75	10.11	10.85	13.70	14.98	15.30
15	15.79	14.45	13.67	13.26	14.35	12.46	12.06	8.68	10.81	13.93	13.41	15.44
20	15.94	12.10	14.19	12.38	13.24	12.87	12.00	8.74	11.73	13.83	12.43	11.18
25	13.70	10.72	14.30	13.31	10.85	11.65	12.91	10.31	11.93	13.23	13.62	9.92
EOM	14.58	10.20	13.98	13.84	11.42	11.33	13.72	12.09	12.66	14.29	14.59	11.51
MEAN	15.21	12.91	13.20	13.60	13.19	12.34	11.67	10.18	11.95	13.63	13.87	13.36

WTR YR 1989 MEAN 12.93 HIGH 8.13 MAY 13 LOW 15.97 OCT 21

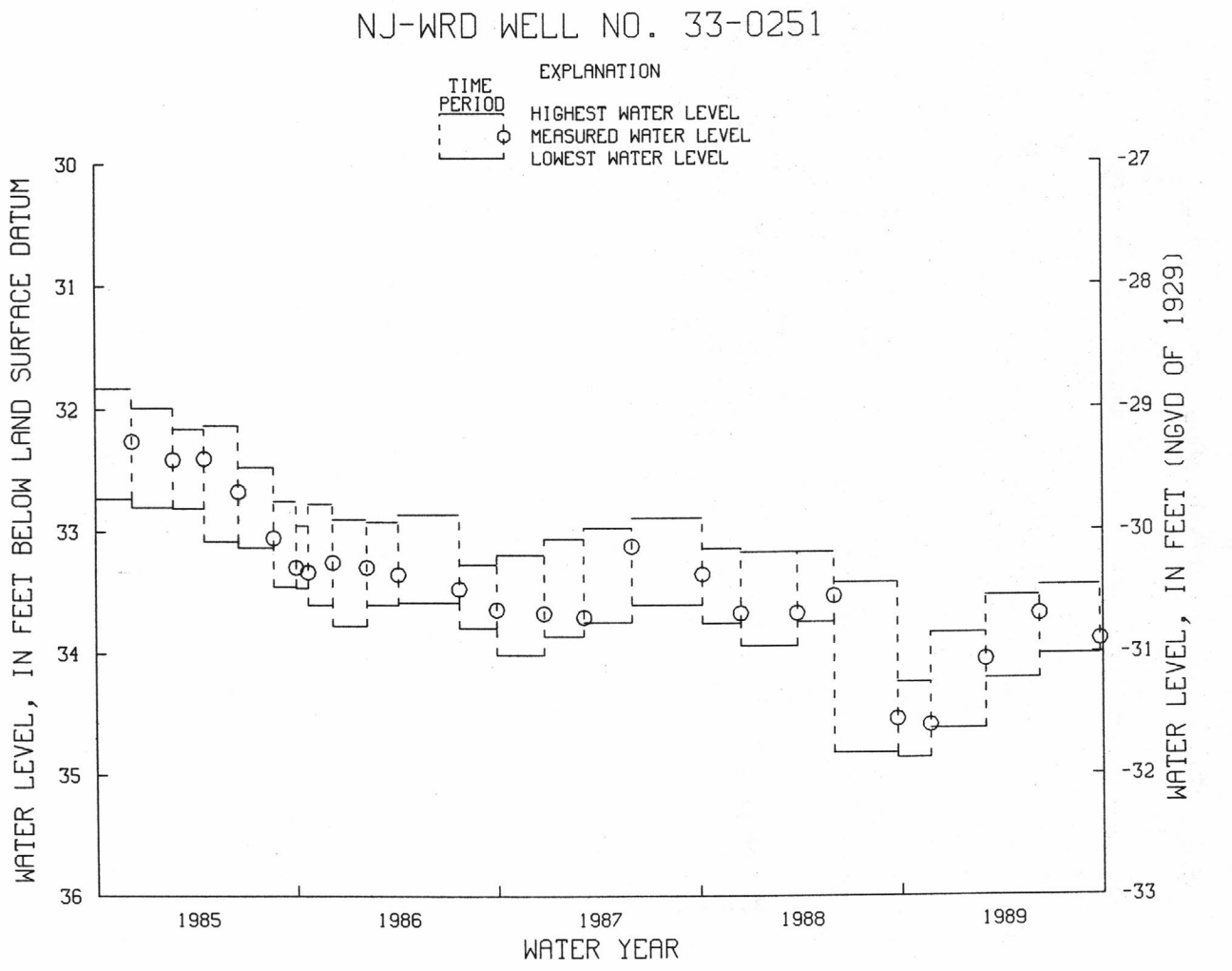


SALEM COUNTY

393348075275701. Local I.D., Salem 1 Obs. NJ-WRD Well Number, 33-0251.
LOCATION.--Lat 39°33'48", long 75°27'55", Hydrologic Unit 02040206, about 300 ft south of the intersection of Elm and Magnolia Streets, Salem City.
Owner: U.S. Geological Survey.
AQUIFER.--Middle aquifer, Potomac-Raritan-Magothy aquifer system of Cretaceous age.
WELL CHARACTERISTICS.--Drilled artesian observation well, diameter 6 in, depth 709 ft, screened 699 to 709 ft.
INSTRUMENTATION.--Water-level extremes recorder, May 1977 to current year. Water-level recorder, December 1965 to August 1975.
DATUM.--Land-surface datum is 3.00 ft above National Geodetic Vertical Datum of 1929.
Measuring point: Front edge of cutout in recorder housing, 2.87 ft above land-surface datum.
PERIOD OF RECORD.--December 1965 to August 1975, May 1977 to current year. Records for 1965 to 1980 are unpublished and are available in files of New Jersey District Office.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 14.97 ft below land-surface datum, Dec. 13, 1965; lowest, 34.86 ft below land-surface datum, between Sept. 23 and Nov. 22, 1988.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

WATER-LEVEL EXTREMES			MEASURED WATER LEVEL	
PERIOD	HIGHEST WATER LEVEL	LOWEST WATER LEVEL	DATE	WATER LEVEL
SEPT. 23, 1988 TO NOV. 22, 1988	34.24	34.86	NOV. 22, 1988	34.59
NOV. 22, 1988 TO MAR. 1, 1989	33.83	34.62	MAR. 1, 1989	34.05
MAR. 1, 1989 TO JUNE 7, 1989	33.53	34.21	JUNE 7, 1989	33.68
JUNE 7, 1989 TO SEPT. 25, 1989	33.45	34.01	SEPT. 25, 1989	33.89

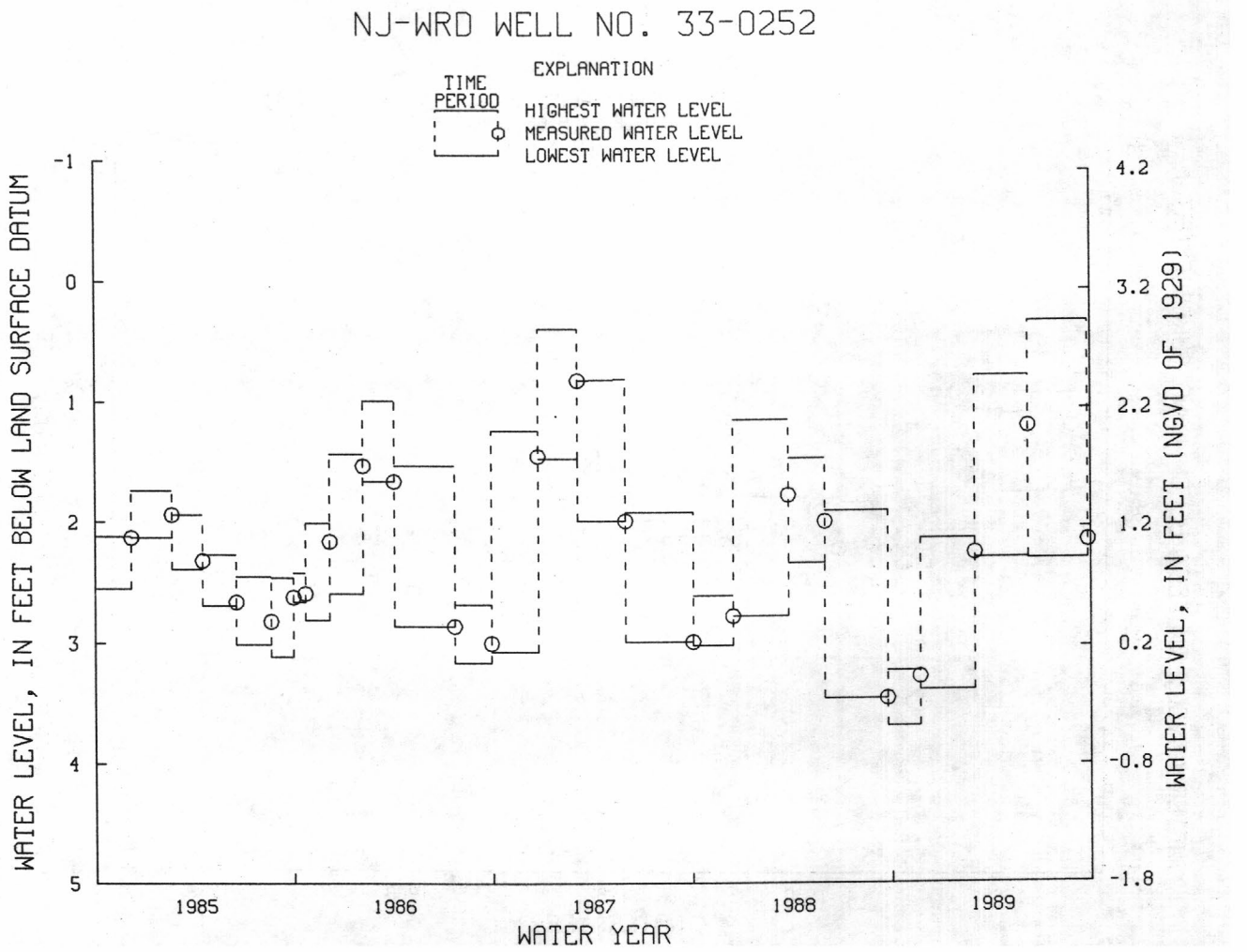


SALEM COUNTY

393348075275702. Local I.D., Salem 2 Obs. NJ-WRD Well Number, 33-0252.
LOCATION.--Lat 39°33'48", long 75°27'55", Hydrologic Unit 02040206, about 300 ft south of the intersection of Elm and Magnolia Streets, Salem City.
Owner: U.S. Geological Survey.
AQUIFER.--Wenonah-Mount Laurel aquifer of Cretaceous age.
WELL CHARACTERISTICS.--Drilled artesian observation well, diameter 4 in, depth 96 ft, screened 91 to 96 ft.
INSTRUMENTATION.--Water-level extremes recorder, May 1977 to current year. Water-level recorder, November 1965 to July 1975.
DATUM.--Land-surface datum is 3.25 ft above National Geodetic Vertical Datum of 1929.
Measuring point: Front edge of cutout in recorder housing, 2.77 ft above land-surface datum.
PERIOD OF RECORD.--November 1965 to July 1975, May 1977 to current year. Records for 1965 to 1981 are unpublished and are available in files of New Jersey District Office.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 0.51 ft above land-surface datum, between Jan. 12 and Apr. 27, 1983; lowest, 6.45 ft below land-surface datum, Sept. 9, 1966.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

WATER-LEVEL EXTREMES		MEASURED WATER LEVEL	
PERIOD	HIGHEST WATER LEVEL / LOWEST WATER LEVEL	DATE	WATER LEVEL
SEPT. 23, 1988 TO NOV. 22, 1988	3.23 / 3.69	NOV. 22, 1988	3.28
NOV. 22, 1988 TO MAR. 1, 1989	2.14 / 3.39	MAR. 1, 1989	2.26
MAR. 1, 1989 TO JUNE 7, 1989	0.79 / 2.30	JUNE 7, 1989	1.21
JUNE 7, 1989 TO SEPT. 25, 1989	0.34 / 2.31	SEPT. 25, 1989	2.16

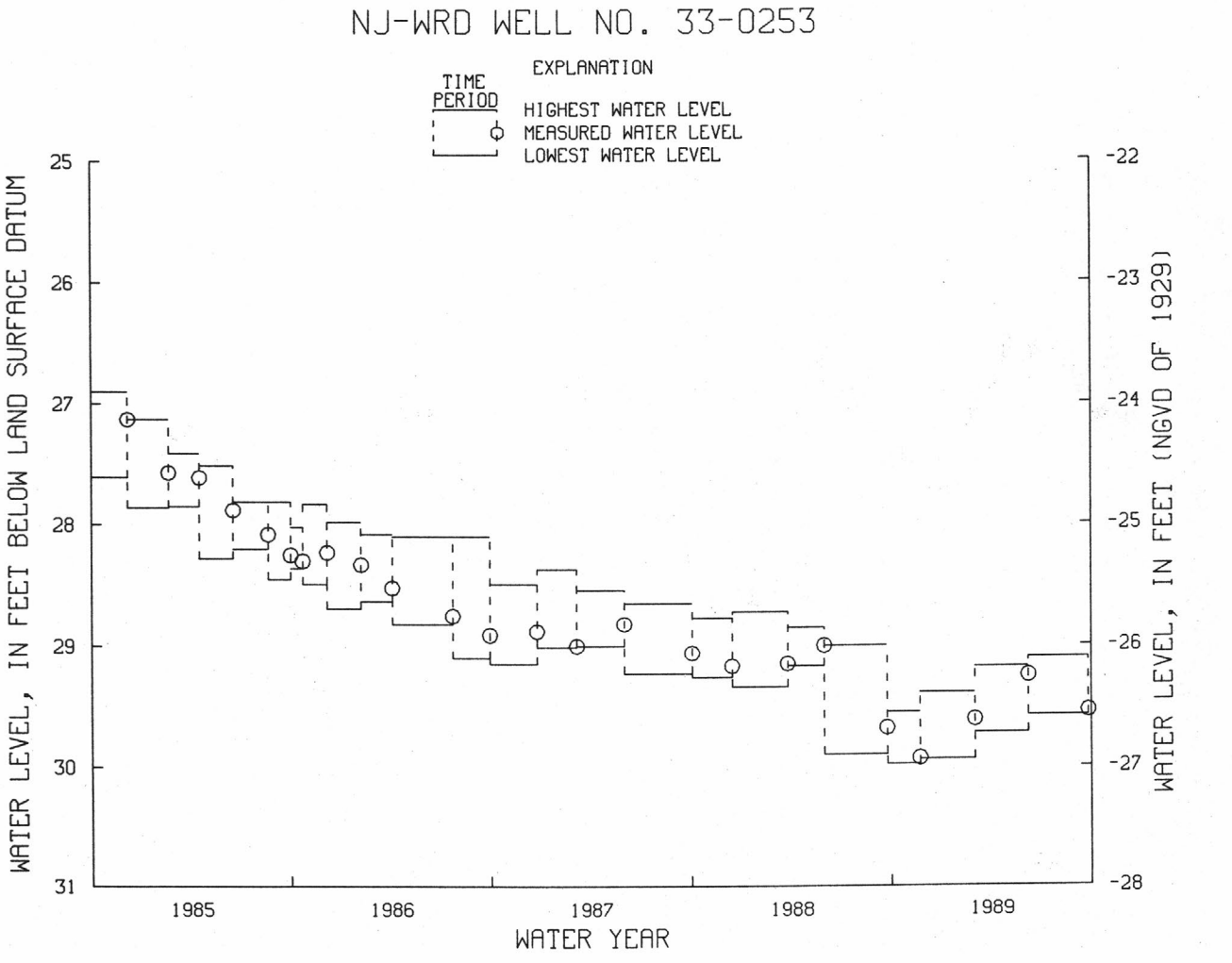


SALEM COUNTY

393348075275703. Local I.D., Salem 3 Obs. NJ-WRD Well Number, 33-0253.
LOCATION.--Lat 39°33'48", long 75°27'55", Hydrologic Unit 02040206, about 300 ft south of the intersection of Elm and Magnolia Streets, Salem City.
Owner: U.S. Geological Survey.
AQUIFER.--Upper aquifer, Potomac-Raritan-Magothy aquifer system of Cretaceous age.
WELL CHARACTERISTICS.--Drilled artesian observation well, diameter 6 in, depth 340 ft, screened 335 to 340 ft.
INSTRUMENTATION.--Water-level extremes recorder, May 1977 to current year. Water-level recorder, November 1965 to August 1975.
DATUM.--Land-surface datum is 3.00 ft above National Geodetic Vertical Datum of 1929.
Measuring point: Front edge of cutout in recorder housing, 2.30 ft above land-surface datum.
PERIOD OF RECORD.--November 1965 to August 1975, May 1977 to current year. Records for 1965 to 1981 are unpublished and are available in files of New Jersey District Office.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 12.28 ft below land-surface datum, Feb. 13, 1966; lowest, 29.98 ft below land-surface datum, between Sept. 23 and Nov. 22, 1988.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

WATER-LEVEL EXTREMES			MEASURED WATER LEVEL	
PERIOD	HIGHEST WATER LEVEL	LOWEST WATER LEVEL	DATE	WATER LEVEL
SEPT. 23, 1988 TO NOV. 22, 1988	29.55	29.98	NOV. 22, 1988	29.93
NOV. 22, 1988 TO MAR. 1, 1989	29.39	29.94	MAR. 1, 1989	29.61
MAR. 1, 1989 TO JUNE 7, 1989	29.18	29.72	JUNE 7, 1989	29.25
JUNE 7, 1989 TO SEPT. 25, 1989	29.10	29.58	SEPT. 25, 1989	29.54



SALEM COUNTY

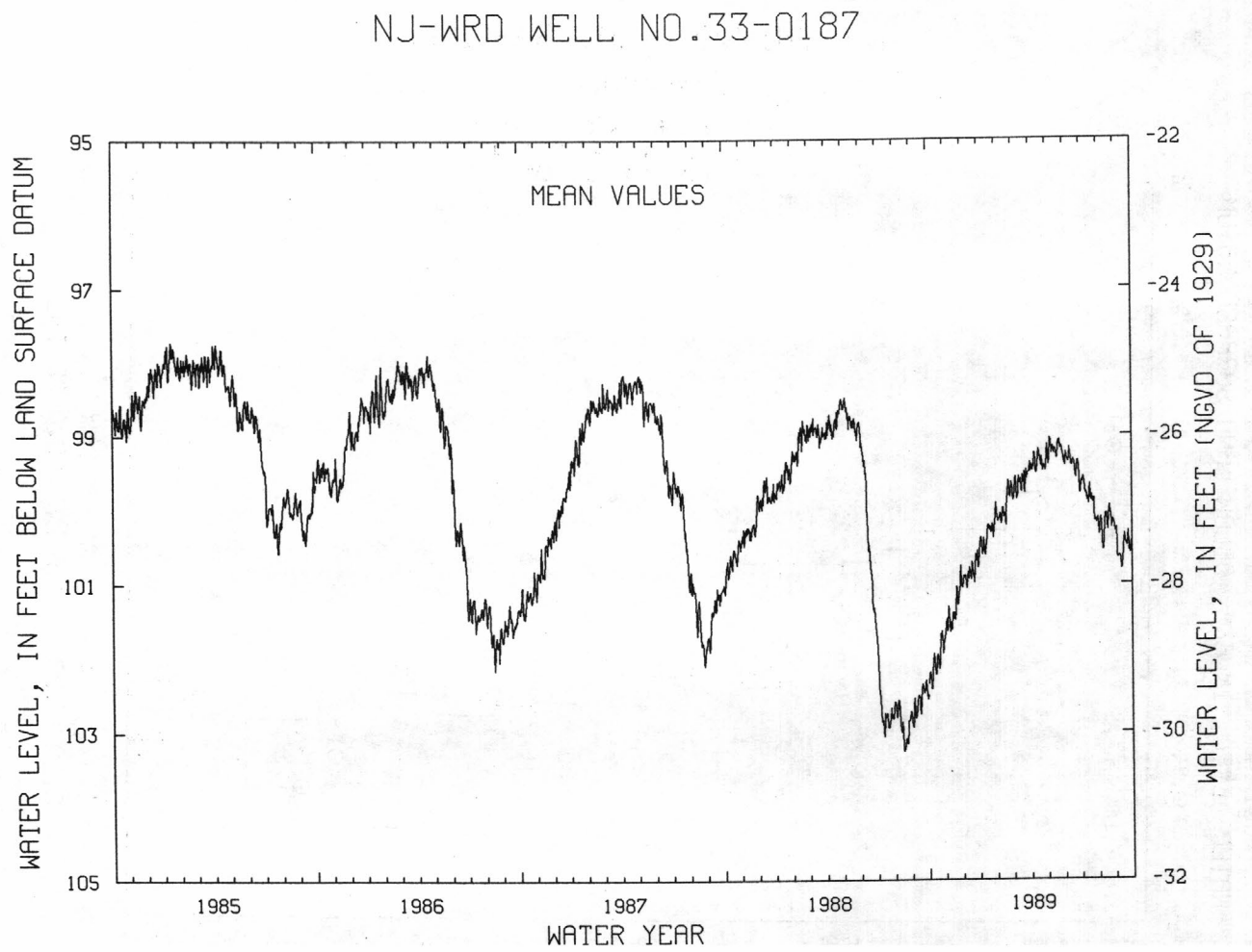
394037075191501. Local I.D., Point Airy Obs. NJ-WRD Well Number, 33-0187.
LOCATION.--Lat 39°40'37", long 75°19'14", Hydrologic Unit 02040206, at intersection of Point Airy and Woodstown-Swedesboro Roads, 1 mi. north of Woodstown Borough boundary, Pilesgrove Township.
Owner: U.S. Geological Survey.
AQUIFER.--Lower aquifer, Potomac-Raritan-Magothy aquifer system of Cretaceous age.
WELL CHARACTERISTICS.--Drilled artesian observation well, diameter 6 in, depth 672 ft, screened 664 to 672 ft.
INSTRUMENTATION.--Digital water-level recorder--60-minute punch.
DATUM.--Land-surface datum is 72.97 ft above National Geodetic Vertical Datum of 1929.
Measuring point: Top of 6 inch casing, 1.80 ft above land-surface datum.
PERIOD OF RECORD.--February 1959 to August 1975, March 1977 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 78.55 ft below land-surface datum, Mar. 6, 1959; lowest, 103.37 ft below land-surface datum, Aug. 17, 1988.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	102.34	101.30	100.88	100.61	100.12	99.62	99.48	99.33	99.30	99.57	100.15	100.66
10	101.93	101.52	100.92	100.58	100.15	99.80	99.37	99.17	99.17	99.78	100.55	100.69
15	102.05	101.47	100.84	100.22	100.06	99.59	99.29	99.18	99.42	99.93	100.09	100.50
20	102.14	101.03	100.88	100.24	99.82	99.64	99.42	99.14	99.47	99.82	100.01	100.45
25	101.74	101.07	100.59	100.38	99.77	99.47	99.42	99.18	99.37	100.03	100.26	100.57
EOM	101.73	101.01	100.57	100.06	99.75	99.37	99.27	99.36	99.77	100.12	100.31	100.40
MEAN	102.02	101.32	100.83	100.34	99.98	99.65	99.39	99.20	99.41	99.86	100.21	100.53

WTR YR 1989 MEAN 100.23 HIGH 98.94 MAY 6 LOW 102.48 OCT 6,7



SUSSEX COUNTY

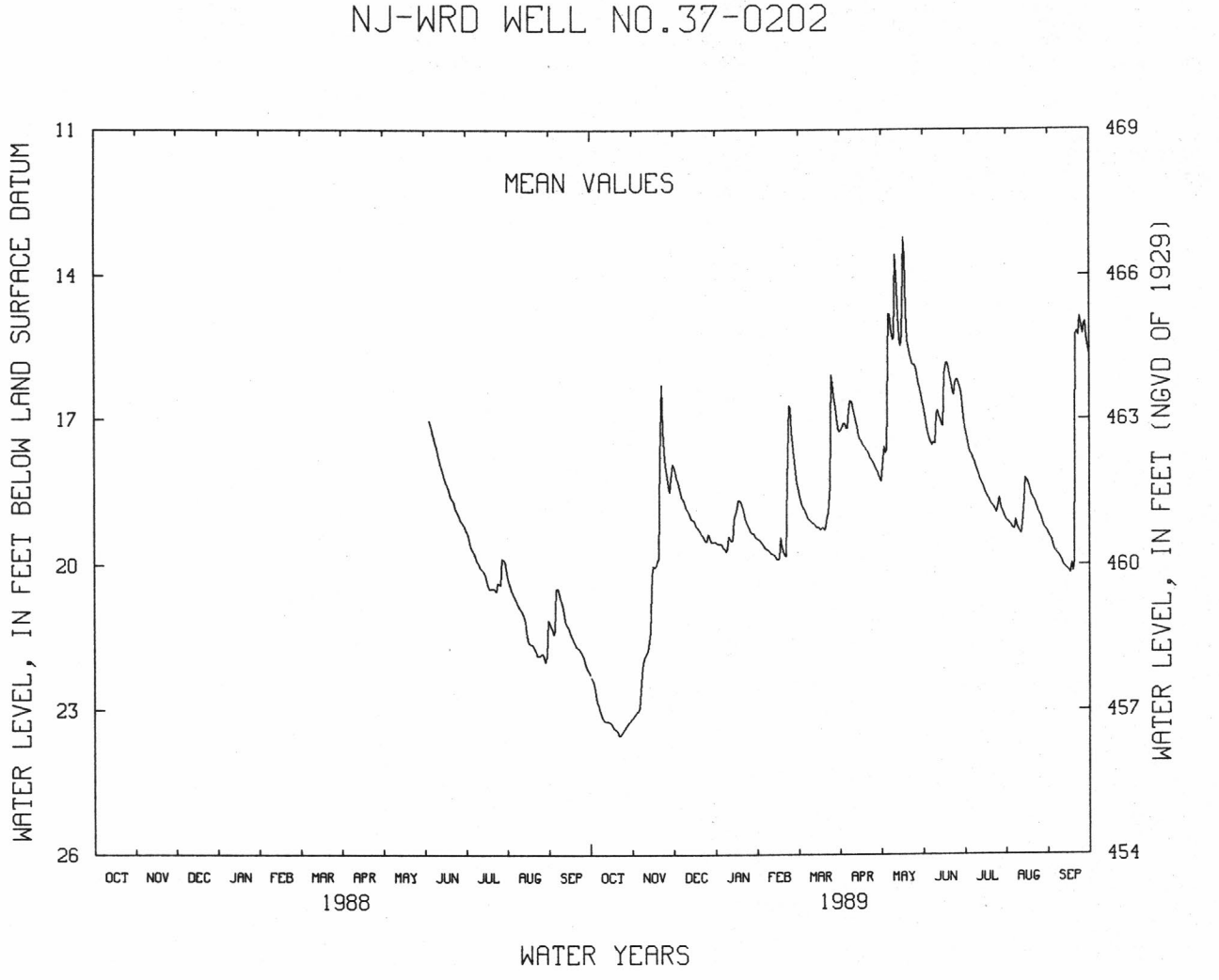
410914074540401. Local I.D., Taylor House Obs. NJ-WRD Well Number, 37-0202.
LOCATION.--Lat 41°09'14", long 74°54'04", Hydrologic Unit 02040104, near Walpack Center, Delaware Water Gap National Recreation Area, Wallpack Township.
Owner: National Park Service.
AQUIFER.--Devonian Limestone
WELL CHARACTERISTICS.--Drilled observation well, diameter 6 in, depth 95 ft, open hole 42 to 95 ft.
INSTRUMENTATION.--Digital water-level recorder--60-minute punch.
DATUM.--Land-surface datum is 480 ft above National Geodetic Vertical Datum of 1929, from topographic map.
Measuring point: Top edge of recorder shelf, 3.00 ft above land-surface datum.
PERIOD OF RECORD.--June 1988 to current year. Records for 1988 are unpublished and are available in files of New Jersey District Office.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 12.70 ft below land-surface datum, May 17, 1989; lowest, 23.55 ft below land-surface datum, Oct. 21,22, 1988.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	22.82	22.95	18.54	19.65	19.66	18.85	17.19	17.64	17.42	17.70	19.25	19.72
10	23.21	21.81	18.88	19.47	19.78	19.10	16.78	15.33	16.91	18.07	19.32	19.95
15	23.26	20.01	19.13	18.84	19.85	19.22	17.41	15.49	17.15	18.45	18.24	20.12
20	23.44	17.79	19.37	18.90	19.83	19.27	17.65	15.37	16.09	18.75	18.65	15.26
25	23.37	18.20	19.36	19.31	17.65	16.09	17.91	15.88	16.18	18.77	18.99	15.24
EOM	23.15	17.99	19.53	19.47	18.32	17.26	18.23	16.65	16.96	19.07	19.37	15.70
MEAN	23.16	20.21	19.08	19.29	19.12	18.49	17.43	15.70	16.72	18.36	18.96	18.17

WTR YR 1989 MEAN 18.73 HIGH 12.70 MAY 17 LOW 23.55 OCT 21,22



GROUND-WATER LEVELS - SECONDARY OBSERVATION WELLS
OTHER SITES FOR WHICH DATA ARE AVAILABLE

NJ-WRD WELL NUMBER	SITE OWNER	LOCAL IDENTIFIER	LATITUDE	LONGITUDE	AQUIFER UNIT	WC	PERIOD OF RECORD
05-063	WILLINGBORO MUA	WMUA 1-OBS	400213	745108	211MRPAM	A	1966-P
05-259	US GEOL SURVEY	MEDFORD 2 OBS	395524	745025	211EGLS	A	1963-P
05-274	CAMPBELL SOUP	CAMPBELL 1	395841	745905	211MRPAM	A	1972-P
05-648	WILLINGBORO MUA	WMUA 3-OBS	400103	745409	211MRPAL	A	1966-1986
05-690	US GEOL SURVEY	LEBANON SF 2	395211	743103	121CKKD	W	1964-1986
07-030	SO JRSY PORT CM	NY SHIP 5A	395447	750711	211MRPAU	W	1950-1986
07-118	NJ WATER CO	HUTTON HILL 2	395229	745712	211MLRW	A	1967-P
07-283	NJ WATER CO	EGBERT	395246	750434	211MRPAL	A	1963-P
07-322	NJ WATER CO	OAKLYN TEST	395359	750445	211MRPAU	U	1963-1986
07-354	GENERAL FOODS	PETTY IS OBS	395811	750556	211MRPAL	W	1950-P
09-020	US GEOL SURVEY	TRAFFIC CIRCLE	385616	745800	112CPMY	W	1967-P
09-060	US GEOL SURVEY	AIRPORT T7	390056	745426	121CNSY	A	1963-P
09-097	US GEOL SURVEY	BDWLL DCH 31ES	390527	745024	112ESRNS	A	1968-1984
09-098	US GEOL SURVEY	BDWLL DCH 31HB	390527	745024	112HLBC	W	1968-1984
11-043	CUMBERLAND CO	VOCAT SCH 1	392732	750929	121CKKD	W	1972-P
11-044	CUMBERLAND CO	VOCAT SCH 3	392732	750929	124PNPN	A	1972-P
11-073	CUMBERLAND CO	SHEPPARDS 2	392508	751846	121CKKD	W	1973-P
*11-097	CUMBERLAND CO	JONES ISLAND 1	391829	751208	121CKKD	U	1972-P
11-118	CUMBERLAND CO	HEISLERVILLE 1	391350	750018	112CKKD	W	1972-P
11-119	CUMBERLAND CO	HEISLERVILLE 2	391350	750018	121CKKD	W	1972-P
11-141	MILLVILLE WD	ORANGE ST	392219	750113	121CKKD	W	1962-1986
11-161	CUMBERLAND CO	FAIR GROUNDS 1	392526	750643	121CKKD	W	1972-1986
11-162	CUMBERLAND CO	FAIR GROUNDS 2	392526	750643	121CKKD	W	1972-1986
11-163	CUMBERLAND CO	FAIR GROUNDS 3	392526	750643	124PNPN	A	1973-P
11-188	CUMBERLAND CO	BOSTWICK LK 1	393141	751601	121CKKD	W	1972-1986
11-237	CUMBERLAND CO	NATURAL AREA 1	392920	745700	121CKKD	W	1972-P
15-097	HERCULES CHEM	GIBBSTOWN TH 8	395000	751636	211MRPAM	W	1953-P
15-279	HUNTSMAN CORP	SHELL OBS 7	394857	751250	211MRPAL	A	1962-1986
15-297	HUNTSMAN CORP	SHELL OBS 6	394942	751317	211MRPAU	A	1970-P
21-028	STATE OF NJ	CIVIL DEFENSE	401553	745012	231SCKN	W	1964-P
33-020	HORNER,EPHRAIM	HORNER	393534	751752	211MLRW	A	1959-P
33-279	GARRISON,HENRY	GARRISON	393622	751531	211MLRW	A	1959-1986
33-342	NJ WATER POLICY	PENNS GROVE 24	394236	752724	211MRPAU	A	1942-1987
33-348	NJ WATER POLICY	PENNS GROVE 14	394317	752619	112CPMY	W	1959-P
41-013	HOFFMAN-LAROCHE	HOF LAR 4	405050	750332	112SFDF	U	1960-1985

See figure 13 for well locations.
P - present
Aquifer unit: see definition of terms
WC - (Water Condition): A-Artesian, W-Water table, U-Undetermined
Data available in the files of the New Jersey District Office.
* - Water-quality data for 1989 is published elsewhere in this report.

QUALITY OF GROUND WATER - SALTWATER MONITORING NETWORK
WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
CAPE MAY COUNTY

NJ-WRD WELL NUMBER	SITE OWNER	LOCAL IDENTIFIER	LATITUDE	LONGITUDE	ELEV. LAND SURF. (FT. NGVD)	SCREENED INTERVAL (FT.)	AQUIFER UNIT
09-027	CAPE MAY CITY WD	CMCWD 3	385643	745533	7	277 - 306	121CNSY
09-036	CAPE MAY CITY WD	CMCWD 2	385701	745528	10	174 - 282	121CNSY
09-043	CAPE MAY CITY WD	CMCWD 5	385724	745521	15	276*	121CNSY
09-052	LOWER TWP MUA	LTMUA 1	385851	745715	18	241 - 262	121CNSY
09-054	LOWER TWP MUA	LTMUA 2	385905	745625	14	212 - 247	121CNSY
09-057	LOWER TWP MUA	LTMUA 3	385919	745518	20	263 - 303	121CNSY
09-067	WILDWOOD WD	RIO GRANDE 38	390135	745352	10	461 - 590	122KRKDU
09-072	WILDWOOD WD	RIO GRANDE 31	390138	745350	10	108 - 135	112ESRNS
09-074	WILDWOOD WD	RIO GRANDE 29	390139	745349	8	191 - 231	121CNSY

NJ-WRD WELL NUMBER	SITE OWNER	LOCAL IDENTIFIER	DATE OF SAMPLE	TEMPER-ATURE (DEG C)	SPE-CIFIC CONDUCT-ANCE (µs/cm)	PH (UNITS)	SODIUM DIS-SOLVED (MG/L AS NA)	CHLORIDE DIS-SOLVED (MG/L AS CL)
09-027	CAPE MAY CITY WD	CMCWD 3	8/23/1989	16.0	567	7.6	---	87
09-036	CAPE MAY CITY WD	CMCWD 2	8/23/1989	15.5	738	7.6	---	140
09-043	CAPE MAY CITY WD	CMCWD 5	8/23/1989	15.5	292	7.7	---	16
09-052	LOWER TWP MUA	LTMUA 1	8/23/1989	15.5	254	7.9	---	11
09-054	LOWER TWP MUA	LTMUA 2	8/23/1989	15.0	252	7.9	---	13
09-057	LOWER TWP MUA	LTMUA 3	8/23/1989	15.5	194	7.7	---	7.7
09-067	WILDWOOD WD	RIO GRANDE 38	9/ 1/1989	16.5	522	8.1	74	75
09-072	WILDWOOD WD	RIO GRANDE 31	9/ 1/1989	13.5	194	7.8	---	11
09-074	WILDWOOD WD	RIO GRANDE 29	9/ 1/1989	14.5	227	7.5	---	27

* Total depth of well.

Aquifer unit:

112ESRNS - Cape May Formation, estuarine sand facies
121CNSY - Cohansey Sand
122KRKDU - Rio Grande water-bearing zone of the Kirkwood Formation

QUALITY OF GROUND WATER - SALTWATER MONITORING NETWORK
WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
CUMBERLAND COUNTY

NJ-WRD WELL NUMBER	SITE OWNER	LOCAL IDENTIFIER	LATITUDE	LONGITUDE	ELEV. LAND SURF. (FT. NGVD)	SCREENED INTERVAL (FT.)	AQUIFER UNIT
11-054	GANDYS BEACH WC	GANDYS BEACH	391618	751354	5	378 - 402	124PNPN
11-327	MYERS, H	1	391619	751357	5	399 - 409	124PNPN
11-336	ROSSI, EDWARD	1	391620	751406	5	400*	124PNPN
11-337	COVE RD WATER ASSOC	1	391622	751414	5	373 - 393	124PNPN
11-097	CUMBERLAND COUNTY	JONES ISLAND 1	391829	751208	10	166 - 171	121CKKD
11-061	GRIFFITH, MAE	SEA BREEZE	391926	751921	4	281 - 354	124PNPN
11-370	SOBUSIAK, WALTER	SOBUSIAK 1	391938	751923	5	350*	124PNPN
11-002	BRIDGETON WD	BWD 2 REP	392432	751312	30	72 - 98	121CKKD

NJ-WRD WELL NUMBER	SITE OWNER	LOCAL IDENTIFIER	DATE OF SAMPLE	TEMPER-ATURE (DEG C)	SPE-CIFIC CONDUCT-ANCE (µs/cm)	PH (UNITS)	SODIUM DIS-SOLVED (MG/L AS NA)	CHLORIDE DIS-SOLVED (MG/L AS CL)
11-054	GANDYS BEACH WC	GANDYS BEACH	8/28/1989	14.0	3300	--	---	890
11-327	MYERS, H	1	8/28/1989	---	1200	--	---	220
11-336	ROSSI, EDWARD	1	8/28/1989	---	600	7.6	---	51
11-337	COVE RD WATER ASSOC	1	8/28/1989	---	620	7.8	---	51
11-097	CUMBERLAND COUNTY	JONES ISLAND 1	11/16/1988	13.5	183	7.8	2.4	2.6
11-061	GRIFFITH, MAE	SEA BREEZE	8/28/1989	---	720	7.8	---	66
11-370	SOBUSIAK, WALTER	SOBUSIAK 1	8/28/1989	14.0	970	--	---	150
11-002	BRIDGETON WD	BWD 2 REP	12/ 8/1988	13.0	109	5.2	10	10

* Total depth of well.

Aquifer unit:

121CKKD - Kirkwood-Cohansey aquifer system
124PNPN - Piney Point aquifer

QUALITY OF GROUND WATER - SALTWATER MONITORING NETWORK
WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
GLOUCESTER COUNTY

NJ-WRD WELL NUMBER	SITE OWNER	LOCAL IDENTIFIER	LATITUDE	LONGITUDE	ELEV. LAND SURF. (FT. NGVD)	SCREENED INTERVAL (FT.)	AQUIFER UNIT
15-001	CLAYTON WD	CWD 3	393913	750517	133	746 - 800	211MRPAU
15-361	GLASSBORO WD	GWD 5	394141	750710	140	610 - 657	211MRPAU
15-385	PITMAN WD	PWD P4	394345	750804	125	520*	211MRPAU
15-130	SOUTH JERSEY WC	SJWC 3	394408	751330	35	234 - 265	211MRPAU
15-236	SWEDESBORO WD	SBWD 3	394434	751843	75	241 - 312	211MRPAM
15-569	PURELAND WC	PWC 3	394529	752045	32	161 - 201	211MRPAM
15-137	PURELAND WC	PURE 2(3-1973)	394535	752054	29	158 - 208	211MRPAM
15-144	PURELAND WC	1-1973	394613	752129	8	81 - 136	211MRPAM
15-191	MANTUA TWP MUA	MTMUA 2	394629	750859	72	336 - 368	211MRPAU
15-192	MANTUA TWP MUA	MTMUA 5	394635	751116	80	315 - 337	211MRPAU
15-194	MANTUA TWP MUA	MTMUA 4	394732	751037	10	233 - 265	211MRPAU
15-283	HUNTSMAN CORP	SHELL 3	394919	751256	30	358 - 383	211MRPAL
15-284	HUNTSMAN CORP	SHELL 4	394919	751256	30	127 - 157	211MRPAU
15-210	PAULSBORO WD	6-1973	394921	751417	15	185 - 227	211MRPAM

NJ-WRD WELL NUMBER	SITE OWNER	LOCAL IDENTIFIER	DATE OF SAMPLE	TEMPER-ATURE (DEG C)	SPE-CIFIC CONDUCT-ANCE (µs/cm)	PH (UNITS)	CHLORIDE DIS-SOLVED (MG/L AS CL)
15-001	CLAYTON WD	CWD 3	8/23/1989	21.0	1020	8.3	150
15-361	GLASSBORO WD	GWD 5	8/23/1989	19.5	710	8.7	67
15-385	PITMAN WD	PWD P4	8/23/1989	17.5	600	8.1	45
15-130	SOUTH JERSEY WC	SJWC 3	8/25/1989	15.5	1100	8.0	170
15-236	SWEDESBORO WD	SBWD 3	8/25/1989	15.0	370	7.1	34
15-569	PURELAND WC	PWC 3	8/25/1989	14.0	243	6.7	18
15-137	PURELAND WC	PURE 2(3-1973)	8/25/1989	14.0	225	6.6	20
15-144	PURELAND WC	1-1973	8/25/1989	13.5	180	5.9	32
15-191	MANTUA TWP MUA	MTMUA 2	8/28/1989	15.0	425	7.9	28
15-192	MANTUA TWP MUA	MTMUA 5	8/28/1989	15.0	550	7.8	48
15-194	MANTUA TWP MUA	MTMUA 4	8/28/1989	15.0	450	7.8	34
15-283	HUNTSMAN CORP	SHELL 3	8/28/1989	15.0	800	7.6	150
15-284	HUNTSMAN CORP	SHELL 4	8/28/1989	15.0	360	7.2	13
15-210	PAULSBORO WD	6-1973	8/28/1989	15.0	255	---	28

* Total depth of well.

Aquifer unit:

211MRPAU - Upper aquifer, Potomac-Raritan-Magothy aquifer system
211MRPAM - Middle aquifer, Potomac-Raritan-Magothy aquifer system
211MRPAL - Lower aquifer, Potomac-Raritan-Magothy aquifer system

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

MORRIS COUNTY

NJ-WRD WELL NUMBER	SITE OWNER	LOCAL IDENTIFIER	LATITUDE	LONGITUDE	ELEV. LAND SURF. (FT. NGVD)	OPEN OR SCREENED INTERVAL (FT.)	AQUIFER UNIT
271136	JEFFERSON TWP MUA	JEFFERSON TWP WELDON RD	405909	0743511	990	55-232	400PCMB
271148	WASHINGTON TWP MUA	SCHOOLEY MOUNTAIN 10	404915	0744742	1050	58-291	400PCMB
271189	MORRIS COUNTY MUA	MCMUA TW3 CAMP PULASKI	405348	0744415	980	52-470	400PCMB

NJ-WRD WELL NUMBER	DATE	TEMPERATURE WATER (DEG C)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	HARDNESS TOTAL (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE IT-FLD (MG/L AS HCO3)	CARBONATE IT-FLD (MG/L AS CO3)
271136	08-28-89	15.0	134	6.6	51	14	4.0	6.8	0.80	59	<0.1
271148	11-16-88	12.0	181	6.4	68	17	6.2	7.8	1.1	65	<0.1
271189	04-05-89	11.5	190	6.4	77	20	6.6	6.2	0.90	76	<0.1

NJ-WRD WELL NUMBER	DATE	ALKALINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NITRITE DISSOLVED (MG/L AS N)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)
271136	08-28-89	48	8.0	10	0.1	12	85	<0.010	<0.100	0.021	0.30
271148	11-16-88	53	12	16	0.2	22	121	<0.010	1.50	0.020	<0.20
271189	04-05-89	64	24	1.9	0.1	19	121	<0.010	1.10	0.010	<0.20

NJ-WRD WELL NUMBER	DATE	PHOSPHOROUS DISSOLVED (MG/L AS P)	PHOSPHOROUS ORTHO, DISSOLVED (MG/L AS P)	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC DISSOLVED (UG/L AS AS)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)
271136	08-28-89	<0.010	<0.010	<10	<1	<1	<1	3	42	<1	100
271148	11-16-88	0.010	<0.010	<10	<1	<1	<1	1	66	<5	50
271189	04-05-89	0.020	0.020	<10	<1	<1	<1	3	7	<5	4

NJ-WRD WELL NUMBER	DATE	MERCURY DISSOLVED (UG/L AS HG)	ZINC, DISSOLVED (UG/L AS ZN)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	PHENOLS TOTAL (UG/L)	DI-CHLOROBROMOMETHANE TOTAL (UG/L)	CARBONTETRACHLORIDE TOTAL (UG/L)	1,2-DICHLOROETHANE TOTAL (UG/L)	BROMOFORM TOTAL (UG/L)	CHLORODIBROMOMETHANE TOTAL (UG/L)	CHLOROFORM TOTAL (UG/L)
271136	08-28-89	0.3	24	1.5	--	--	--	--	--	--	--
271148	11-16-88	<0.1	22	4.0	2	--	--	--	--	--	--
271189	04-05-89	0.1	26	2.3	<1	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

NJ-WRD WELL NUMBER	DATE	TOLUENE TOTAL (UG/L)	BENZENE TOTAL (UG/L)	CHLOROBENZENE TOTAL (UG/L)	CHLOROETHANE TOTAL (UG/L)	ETHYLBENZENE TOTAL (UG/L)	METHYLBROMIDE TOTAL (UG/L)	METHYLCHLORIDE TOTAL (UG/L)	METHYLENE CHLORIDE TOTAL (UG/L)	TETRACHLOROETHYLENE TOTAL (UG/L)	TRICHLOROFLUOROMETHANE TOTAL (UG/L)
271136	08-28-89	--	--	--	--	--	--	--	--	--	--
271148	11-16-88	--	--	--	--	--	--	--	--	--	--
271189	04-05-89	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

NJ-WRD WELL NUMBER	DATE	1,1-DICHLOROETHANE TOTAL (UG/L)	1,1-DICHLOROETHYLENE TOTAL (UG/L)	1,1,1-TRICHLOROETHANE TOTAL (UG/L)	1,1,2-TRICHLOROETHANE TOTAL (UG/L)	1,1,2,2 TETRACHLOROETHANE TOTAL (UG/L)	1,2-DICHLOROBENZENE TOTAL (UG/L)	1,2-DICHLOROPROPANE TOTAL (UG/L)	1,2-TRANSDICHLOROETHENE TOTAL (UG/L)	1,3-DICHLOROPROPENE TOTAL (UG/L)	1,3-DICHLOROBENZENE TOTAL (UG/L)
271136	08-28-89	--	--	--	--	--	--	--	--	--	--
271148	11-16-88	--	--	--	--	--	--	--	--	--	--
271189	04-05-89	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

MORRIS COUNTY

NJ-WRD WELL NUMBER	DATE	1,4-DI-CHLORO-BENZENE TOTAL (UG/L)	2-CHLORO-ETHYL-VINYL-ETHER TOTAL (UG/L)	DI-CHLORO-DI-FLUORO-METHANE TOTAL (UG/L)	TRANS-1,3-DI-CHLORO-PROPENE TOTAL (UG/L)	CIS 1,3-DI-CHLORO-PROPENE TOTAL (UG/L)	VINYL CHLO-RIDE TOTAL (UG/L)	TRI-CHLORO-ETHYL-ENE TOTAL (UG/L)	STYRENE TOTAL (UG/L)	XYLENE TOTAL WATER WHOLE TOT REC (UG/L)
271136	08-28-89	--	--	--	--	--	--	--	--	--
271148	11-16-88	--	--	--	--	--	--	--	--	--
271189	04-05-89	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.2	<0.2	<0.2

Aquifer Unit:
400PCMB - Precambrian Erathem

QUALITY OF GROUND WATER - SALTWATER MONITORING NETWORK
WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
SALEM COUNTY

NJ-WRD WELL NUMBER	SITE OWNER	LOCAL IDENTIFIER	LATITUDE	LONGITUDE	ELEV. LAND SURF. (FT. NGVD)	SCREENED INTERVAL (FT.)	AQUIFER UNIT
33-032	PUBLIC SERV E-G	PW 3	392740	753201	12	242 - 293	211MLRW
33-035	PUBLIC SERV E-G	PW 2	392744	753206	9	230 - 281	211MLRW
33-457	PUBLIC SERV E-G	PSEG 6	392751	753207	20	1115 - 1135	211MRPAM
33-108	US ARMY	FINNS POINT	393641	753322	7	290 - 319	211MRPAM
33-112	PENNSVILLE TWP WD	PTWD 4	393754	753147	10	117 - 137	211MRPAU
33-354	WOODSTOWN W D	WWD 2	393904	751946	45	670 - 705	211MRPAM
33-362	WOODSTOWN W D	WWD 3	393926	751927	60	692 - 712	211MRPAM
33-459	RICHMAN ICE CRM	1A	393928	752147	25	414 - 457	211MRPAM
33-118	PENNSVILLE TWP WD	PTWD 1	393958	753045	8	213 - 238	211MRPAM
33-122	ATL CITY ELEC	DEEPWATER 3R	394045	753018	10	165 - 235	211MRPAM
33-141	E I DUPONT	CHAMBERS OBS-3	394131	753009	5	197 - 207	211MRPAM
33-460	PENNS GROVE WSC	PGWSC 1A	394247	752714	19	41 - 61	211MRPAU
33-346	PENNS GROVE WSC	LAYNE 1	394256	752718	19	317 - 357	211MRPAL
33-083	B F GOODRICH CO	#9 (PW-1)	394547	752535	10	93 - 133	211MRPAM
33-085	B F GOODRICH CO	#6 (PW-2)	394556	752530	10	109 - 129	211MRPAM
33-086	B F GOODRICH CO	#4 (PW-3)	394557	752523	13	169 - 189	211MRPAL

NJ-WRD WELL NUMBER	SITE OWNER	LOCAL IDENTIFIER	DATE OF SAMPLE	TEMPERATURE (DEG C)	SPECIFIC CONDUCTANCE (µs/cm)	PH (UNITS)	CHLORIDE DISSOLVED (MG/L AS CL)
33-032	PUBLIC SERV E-G	PW 3	8/22/1989	18.0	485	8.2	41
33-035	PUBLIC SERV E-G	PW 2	8/22/1989	15.5	2380	7.4	390
33-457	PUBLIC SERV E-G	PSEG 6	8/22/1989	20.0	920	7.8	190
33-108	US ARMY	FINNS POINT	8/15/1989	---	570	7.4	100
33-112	PENNSVILLE TWP WD	PTWD 4	8/15/1989	14.0	---	6.8	11
33-354	WOODSTOWN W D	WWD 2	8/15/1989	17.0	960	8.1	180
33-362	WOODSTOWN W D	WWD 3	8/15/1989	17.0	900	8.1	150
33-459	RICHMAN ICE CRM	1A	8/15/1989	14.0	420	8.1	16
33-118	PENNSVILLE TWP WD	PTWD 1	8/15/1989	14.5	410	7.1	60
33-122	ATL CITY ELEC	DEEPWATER 3R	8/15/1989	14.0	415	6.9	61
33-141	E I DUPONT	CHAMBERS OBS-3	8/15/1989	14.0	720	7.4	150
33-460	PENNS GROVE WSC	PGWSC 1A	8/22/1989	14.0	180	5.5	12
33-346	PENNS GROVE WSC	LAYNE 1	8/22/1989	15.0	1010	7.5	220
33-083	B F GOODRICH CO	#9 (PW-1)	8/16/1989	14.0	245	6.2	34
33-085	B F GOODRICH CO	#6 (PW-2)	8/16/1989	14.0	227	5.8	34
33-086	B F GOODRICH CO	#4 (PW-3)	8/16/1989	14.0	1150	7.0	280

Aquifer unit:

211MLRW - Wenonah-Mount Laurel aquifer
211MRPAU - Upper aquifer, Potomac-Raritan-Magothy aquifer system
211MRPAM - Middle aquifer, Potomac-Raritan-Magothy aquifer system
211MRPAL - Lower aquifer, Potomac-Raritan-Magothy aquifer system

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FACTORS FOR CONVERTING INCH-POUND UNITS TO INTERNATIONAL SYSTEM UNITS (SI)

The following factors may be used to convert the inch-pound units published herein to the International System of Units (SI).

Multiply inch-pound units	By	To obtain SI units
	Length	
inches (in)	2.54×10^{1}	millimeters (mm)
	2.54×10^{-2}	meters (m)
feet (ft)	3.048×10^{-1}	meters (m)
miles (mi)	1.609×10^{0}	kilometers (km)
	Area	
acres	4.047×10^{3}	square meters (m^2)
	4.047×10^{-1}	square hectometers (hm^2)
	4.047×10^{-3}	square kilometers (km^2)
square miles (mi^2)	2.590×10^{0}	square kilometers (km^2)
	Volume	
gallons (gal)	3.785×10^{0}	liters (L)
	3.785×10^{0}	cubic decimeters (dm^3)
	3.785×10^{-3}	cubic meters (m^3)
million gallons	3.785×10^{3}	cubic meters (m^3)
	3.785×10^{-3}	cubic hectometers (hm^3)
cubic feet (ft^3)	2.832×10^{1}	cubic decimeters (dm^3)
	2.832×10^{-2}	cubic meters (m^3)
cfs-days	2.447×10^{3}	cubic meters (m^3)
	2.447×10^{-3}	cubic hectometers (hm^3)
acre-feet (acre-ft)	1.233×10^{3}	cubic meters (m^3)
	1.233×10^{-3}	cubic hectometers (hm^3)
	1.233×10^{-6}	cubic kilometers (km^3)
	Flow	
cubic feet per second (ft^3/s)	2.832×10^{1}	liters per second (L/s)
	2.832×10^{1}	cubic decimeters per second (dm^3/s)
	2.832×10^{-2}	cubic meters per second (m^3/s)
gallons per minute (gal/min)	6.309×10^{-2}	liters per second (L/s)
	6.309×10^{-2}	cubic decimeters per second (dm^3/s)
	6.309×10^{-5}	cubic meters per second (m^3/s)
million gallons per day	4.381×10^{1}	cubic decimeters per second (dm^3/s)
	4.381×10^{-2}	cubic meters per second (m^3/s)
	Mass	
tons (short)	9.072×10^{-1}	megagrams (Mg) or metric tons

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