

INTRODUCTION

Water-resources data for the 2003 water year for New York consist of records of stage, discharge, and water quality of streams; stage, contents, and water quality of lakes and reservoirs; stage and water quality of estuaries; and water levels and water quality of ground-water wells. This volume contains records for water discharge at 15 gaging stations; lake stage at 7 gaging stations; tide stage at 6 gaging stations; and water levels at 478 observation wells. Also included are data for 10 low-flow partial record stations. Locations of these sites are shown on pages 47-55. Additional water data were collected at various sites not involved in the systematic data collection program, and are published as miscellaneous measurements and analyses. Surface-water, ground-water, and water-quality data at all New York District sites are listed in Eastern Standard Time (EST); adjacent District's data are listed in local standard time. These data together with the data in Volumes 1 and 3 represent that part of the National Water Data System operated by the U.S. Geological Survey and cooperating State, local, and Federal agencies in New York.

Records of discharge and stage of streams, and contents or stage of lakes and reservoirs were first published in a series of U.S. Geological Survey water-supply papers entitled "Surface Water Supply of the United States." Through September 30, 1960, these water-supply papers were in an annual series and then in a 5-year series for 1961-65, and 1966-70. Records of chemical quality, water temperatures, and suspended sediment were published from 1941 to 1970 in an annual series of water-supply papers entitled "Quality of Surface Waters of the United States." Records of ground-water levels were published from 1935 to 1974 in a series of water-supply papers entitled "Ground-Water Levels in the United States." Water-supply papers may be consulted in the libraries of the principal cities in the United States or may be purchased from the U.S. Geological Survey, Branch of Information Services, Box 25286, Denver, Colorado 80225-0286.

Since the 1961 water year, streamflow data and since the 1964 water year, water-quality data have been released by the Geological Survey in annual reports on a State-boundary basis. These reports provided rapid release of water data in each state shortly after the end of the water year. Through 1970 the data were also released in the water-supply paper series mentioned above.

Streamflow and water-quality data beginning with the 1971 water year, and ground-water data beginning with the 1975 water year are published only in reports on a State-boundary basis. Beginning with the 1975 water year, these Survey reports carry 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 NY-03-2." 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. Beginning with the 1990 water year through the 1994 water year, all water-data reports will also be available on Compact Disc - Read Only Memory (CD-ROM).

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 (518) 285-5600. A limited number of CD-ROM discs for water years 1990-94 will be available for sale by the U.S. Geological Survey, Branch of Information Services, Box 25286, Denver, Colorado 80225-0286.

COOPERATION

The U.S. Geological Survey and organizations of the State of New York and other agencies have had cooperative programs for the systematic collection of water records since 1900. Organizations that assisted in collecting the data included in Volume 2 through cooperative agreements with the U.S. Geological Survey are:

County of Suffolk, Department of Health Services, Clare B. Bradley, M.D., MPH, Acting Commissioner
New York City Department of Environmental Protection, Christopher O. Ward, Commissioner
New York State Department of Environmental Conservation, Erin M. Crotty, Commissioner
New York State Office of Parks, Recreation, and Historic Preservation, Bernadette Castro, Commissioner
Port Washington Water District, Italo J. Vacchio, Superintendent
Suffolk County Water Authority, Stephen Jones, Chief Executive Officer
Town of East Hampton, Department of Natural Resources & Environmental Protection, Laurence Penny, Director
Town of North Hempstead, Jon Kaiman, Supervisor
Town of Hempstead, Department of Conservation & Waterways, Ronald W. Masters, Commissioner.
Town of Shelter Island, Arthur R. Williams, Supervisor
Town of Southampton, Department of Land Management, Jefferson V. Murphree, Town Planning and Development Administrator
Village of Freeport, Richard E. Holdener, Director of Emergency Management

The following organizations aided in collecting records:

Nassau County Department of Health, Nassau County Department of Public Works, Suffolk County Department of Health Services, and Suffolk County Water Authority.

SUMMARY OF HYDROLOGIC CONDITIONS

Streamflow and ground-water levels on Long Island were near or slightly below normal at the beginning of the 2003 water year (October), then gradually increased to above normal in June and then declined to normal at the end of the year (September)(figs. 1-4).

Most maximum peak discharges for the 2003 water year occurred on June 13 or 21, although some occurred in southwest Nassau and eastern Queens Counties on April 26. Average runoff for the water year was about normal. The maximum monthly mean discharge for the 2003 water year at most stations occurred in June, and most minimum monthly mean discharges occurred in October or September. Precipitation for the 2003 water year at Brookhaven National Laboratory was 68.67 in., 27.20 in. above normal.

Water levels in most wells screened in the upper glacial, Magothy, and Lloyd aquifers on Long Island were near to slightly below normal at the beginning of the water year and began to rise until June or July and remained high or declined slightly for the remainder of the water year. Record-low water levels were measured in 20 wells throughout all four counties on Long Island; record-high water levels were measured in 50 wells throughout the four counties on Long Island.

The maximum water level for the 2003 water year at the lake-stage gage on Long Pond near Sag Harbor was recorded on August 8, and the maximum water level at the station on Georgica Pond at Midhampton was recorded on June 21. Minimum water levels at the station on Long Pond were recorded on October 10,11, and the minimum water level at Georgica Pond was recorded on November 23. The maximum monthly mean water level at Long Pond occurred in August, and the maximum monthly mean water level at Georgica Pond occurred in June. The minimum monthly mean water level at Long Pond occurred in October, and the minimum monthly mean water level at Georgica Pond occurred in April.

The maximum water levels for the 2003 water year at tide-stage gages in southern Kings and southwestern Nassau and Suffolk Counties were recorded on December 25, whereas those at tide-stage gages in the central part of southern Nassau County were recorded on January 3. Almost all minimum water levels at tide-stage gages in these areas were recorded on January 22, although at the tide-stage gage on Great South Bay at Lindenhurst they were recorded on November 24 and January 23. Maximum monthly mean water levels for the 2003 water year at all stations occurred in September, and minimum monthly mean water levels occurred in February.

Five synoptic samplings of ground-water quality were conducted during the 2003 water year. The first was done under the New York State pesticide-monitoring program. One well was sampled twice for 123 pesticides and analyzed by a method with detection limits ranging from 0.001 to 0.2 micrograms per liter. This well is part of a statewide long-term monitoring network of wells with known contamination. The second sampling entailed an analysis of water from six ponds in the Towns of East Hampton and Southampton for 167 compounds, including nutrients, volatile organic compounds (VOCs), pesticides, and wastewater compounds. Each pond was sampled twice. Few VOCs, pesticides, and wastewater compounds were detected. High pH and high concentrations of total phosphorus, and low concentrations of dissolved oxygen, were present in some ponds. The third sampling was done as part of the Brooklyn-Queens aquifer study and included 50 wells representing four aquifers and three streams in Kings and Queen Counties. The samples were analyzed for 275 organic and inorganic constituents to assess the ground water as a potable supply. The most frequently detected contaminant was MTBE (76 percent of samples). The fourth sampling was done as part of the Manhasset Neck Peninsula aquifer study; five wells were sampled to monitor saltwater intrusion on the peninsula. The fifth sampling was done as part of a reconnaissance of wastewater compounds in ground water in Suffolk County; twenty wells were sampled for 68 compounds. Nine compounds were detected below the reporting limit of 0.5 micrograms per liter.

Twenty-seven grab surface water samples were collected from bays, lakes, and streams in Suffolk County and analyzed for adulticides and larvacides that were sprayed to control mosquitoes. All samples were collected within an hour of the pesticide application and were filtered before analysis for methoprene, malathion, sumithrin, resmethrin, and piperonyl butoxide. Grab sample analyses have reporting limits in the parts-per-trillion range. The most frequently detected compound was piperonyl butoxide (44% of samples); its maximum concentration was 7.7 micrograms per liter.

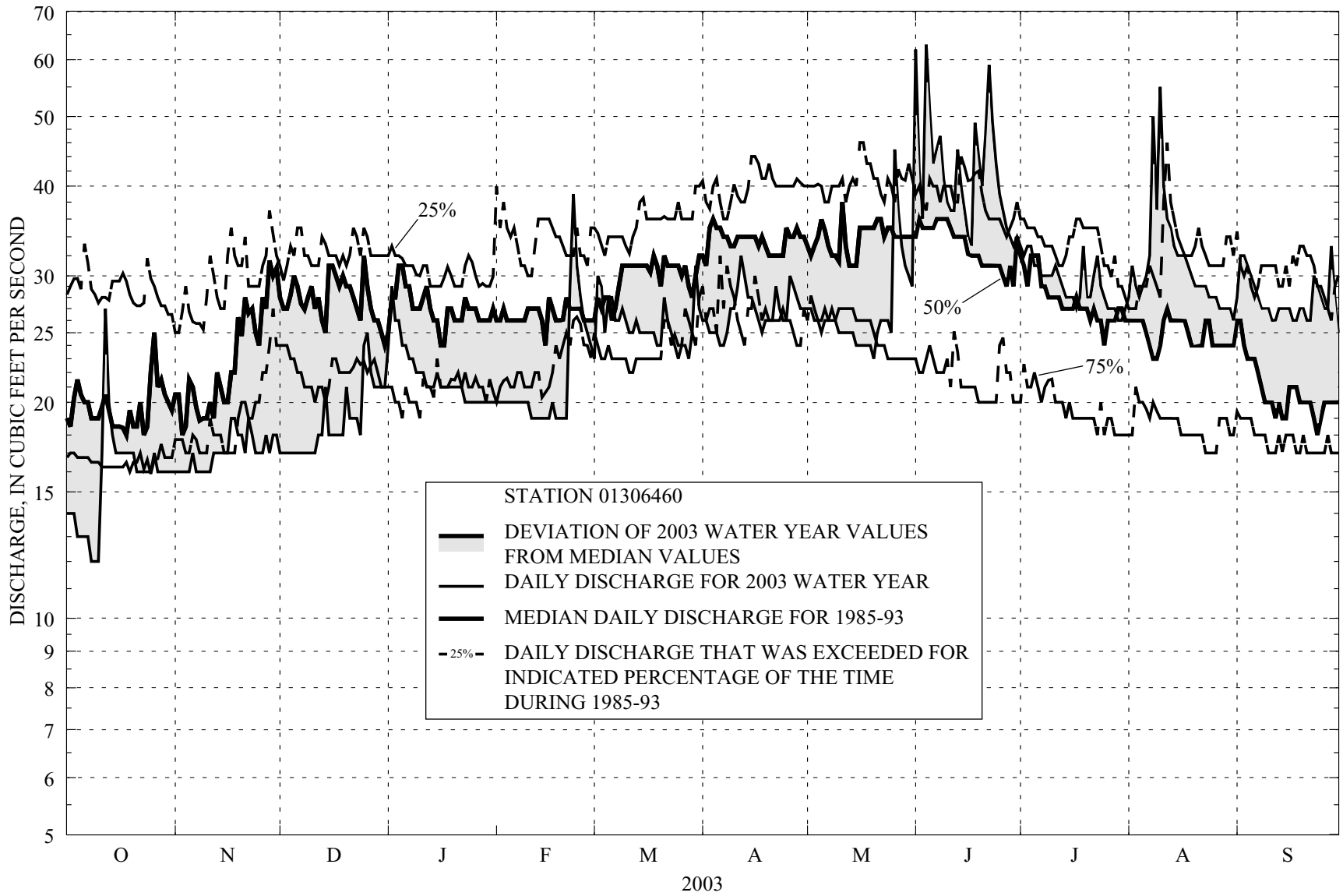


Figure 1.--Discharge data, Connetquot Brook near Central Islip, Water year 2003.

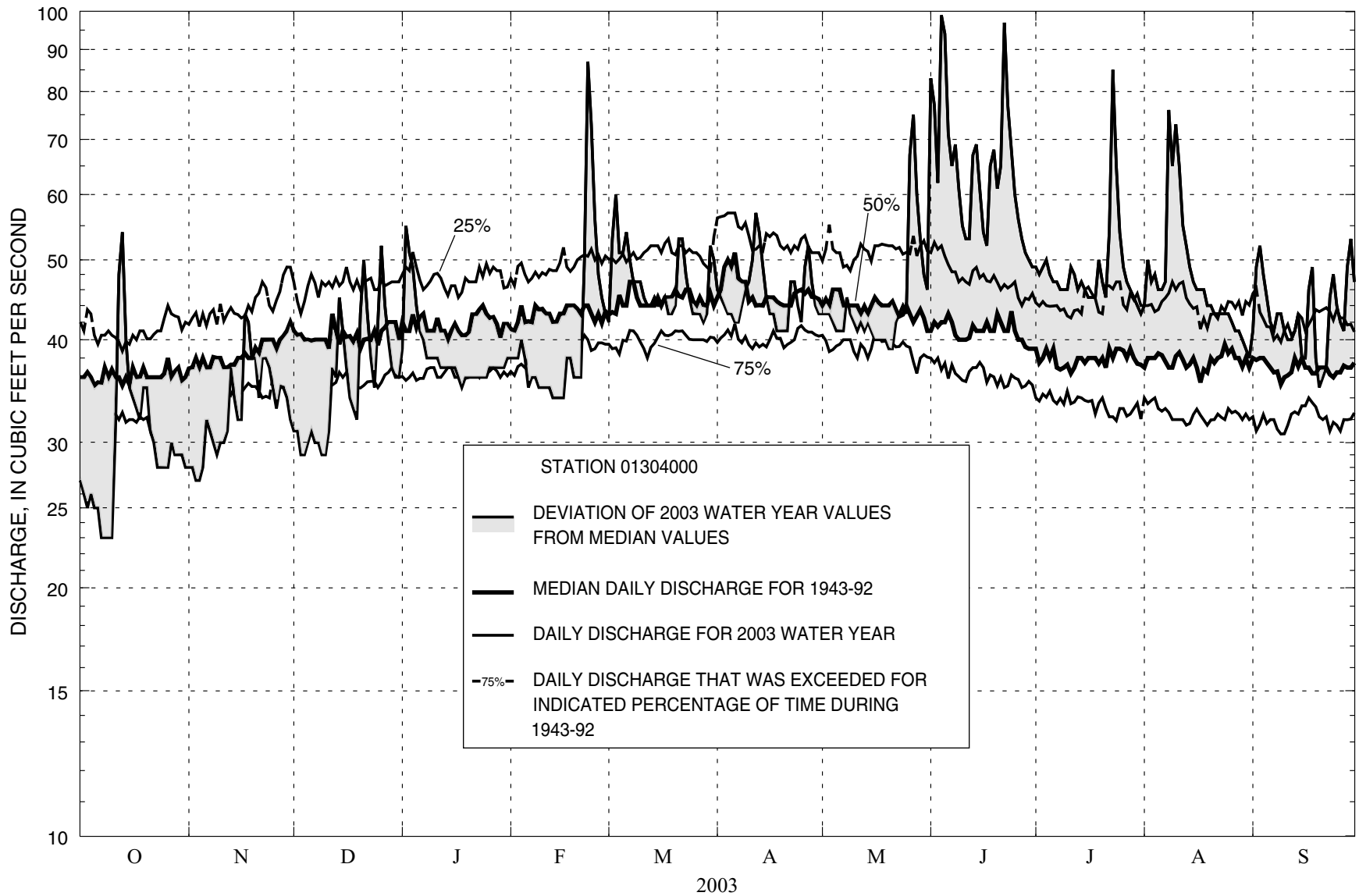


Figure 2.--Discharge data, Nissequog River near Smithtown, Water year 2003.



WATER RESOURCES DATA - NEW YORK, 2003

Figure 3.--Hydrograph of water-table observation well S4271 at Riverhead, N.Y., 1950-2003

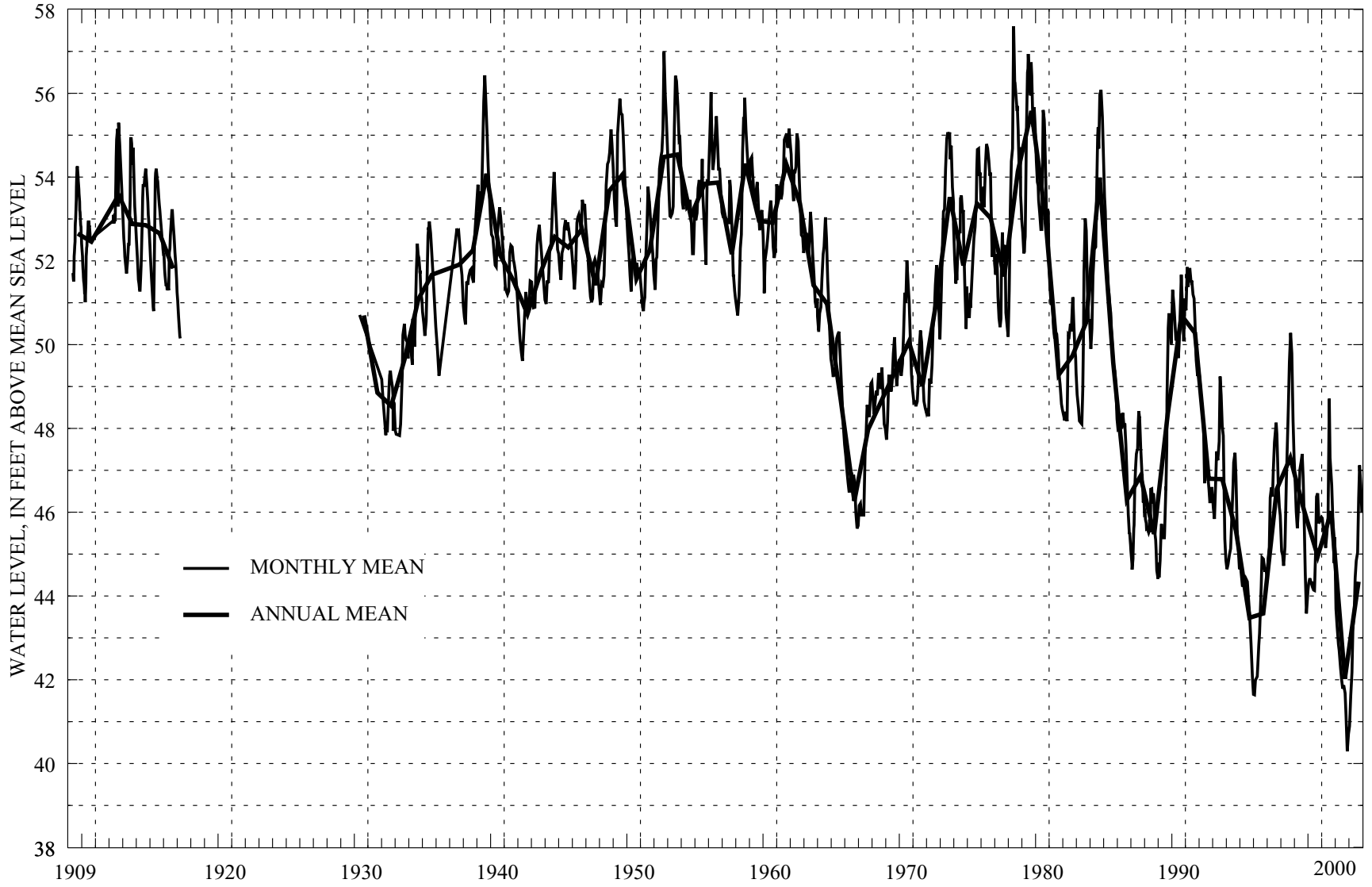


Figure 4.--Hydrograph of water-table observation well N1259 at Plainedge, N.Y., 1909-2003.