UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

PREPARED IN COOPERATION WITH
NASSAU COUNTY DEPARTMENT OF PUBLIC WORKS
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SUFFOLK COUNTY DEPARTMENT OF HEALTH SERVICES
SUFFOLK COUNTY WATER AUTHORITY

OPEN-FILE REPORT 82-100
PLATE 1A WEST

POTENTIOMETRIC SURFACE OF THE MAGOTHY AQUIFER,

LONG ISLAND, NEW YORK, IN MARCH 1979

by

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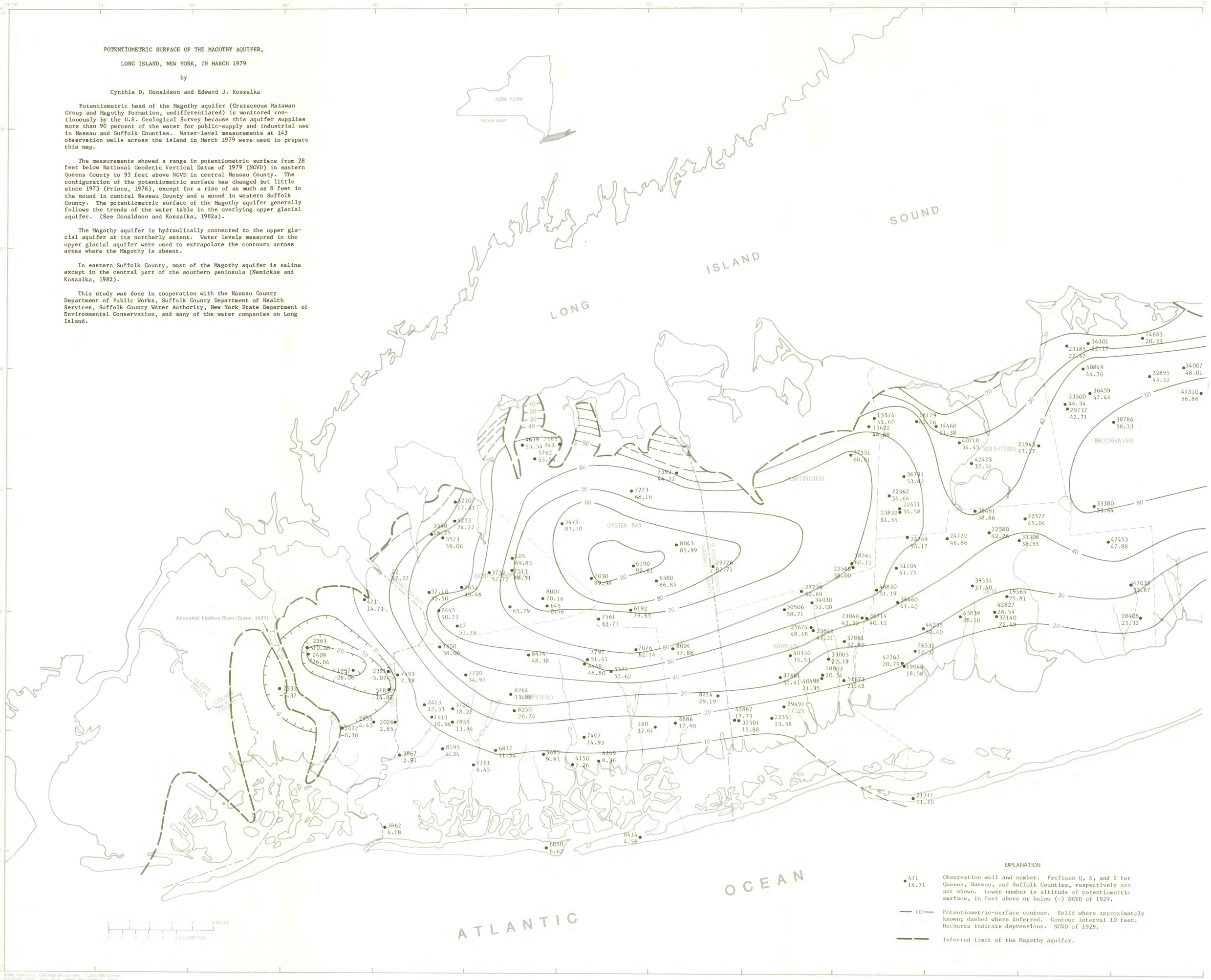
Potentiometric head of the Magothy aquifer (Cretaceous Matawan Group and Magothy Formation, undifferentiated) is monitored continuously by the U.S. Geological Survey because this aquifer supplies more than 90 percent of the water for public-supply and industrial use in Nassau and Suffolk Counties. Water-level measurements at 143 observation wells across the island in March 1979 were used to prepare this map.

The measurements showed a range in potentiometric surface from 28 feet below National Geodetic Vertical Datum of 1979 (NGVD) in eastern Queens County to 93 feet above NGVD in central Nassau County. The configuration of the potentiometric surface has changed but little since 1975 (Prince, 1976), except for a rise of as much as 8 feet in the mound in central Nassau County and a mound in western Suffolk County. The potentiometric surface of the Magothy aquifer generally follows the trends of the water table in the overlying upper glacial aquifer. (See Donaldson and Koszalka, 1982a).

The Magothy aquifer is hydraulically connected to the upper glacial aquifer at its northerly extent. Water levels measured in the upper glacial aquifer were used to extrapolate the contours across areas where the Magothy is absent.

In eastern Suffolk County, most of the Magothy aquifer is saline except in the central part of the southern peninsula (Nemickas and Koszalka, 1982).

This study was done in cooperation with the Nassau County Department of Public Works, Suffolk County Department of Health Services, Suffolk County Water Authority, New York State Department of Environmental Conservation, and many of the water companies on Long Island.



Base from U.S. Geological Survey, 1:250,000 scale
Hartford, 1975; New York, 1969; Providence, 1969

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