

INTRODUCTION

The aquifer in the Hornell area, in Steuben and Allegany Counties, N.Y., consists of stratified glacial drift and subordinate amounts of recent alluvium that partly fill the upper parts of the Canisteo River and Canadadea Creek valleys, which were cut by preglacial streams and subsequently eroded deeper and wider by glaciers. The aquifer typically consists of 20 to 40 ft. (feet) of saturated sand and gravel of glaciofluvial origin and subordinate amounts of alluvium. In most areas, the aquifer is underlain by a glacioclastic unit of fine sand and silt that is typically more than 150 ft. thick. Ground water in the aquifer generally is unconfined except in low-lying areas, where it is overlain by flood-plain deposits of fine sand and silt. In some areas, saturated sand and gravel deposits are buried beneath the glacioclastic confining unit. Neither the distribution of the buried deposits nor their hydraulic connection with the surficial aquifer could be determined because data were insufficient.

Farms, villages, cities, and industry have developed over the aquifer because the area is level, is suitable for building and farming, and generally provides an ample ground-water supply. Because the material overlying the aquifer is permeable, development makes the aquifer susceptible to contamination from sources such as road-deicing salt, septic-tank leachate, sludge and waste from industrial and commercial facilities, petroleum products leaking from storage tanks, and agricultural chemicals.

The U.S. Geological Survey, in cooperation with the New York State Department of Environmental Conservation and the New York State Department of Health, began an investigation of the geohydrology of major aquifers in New York in 1981. The study described herein was a continuation of that effort.

Purpose and Scope

This report presents the geohydrology of the glacial and alluvial aquifer in the Hornell area. It includes maps at a scale of 1:24,000 that depict locations of wells and test holes (sheet 1), surficial geology (sheet 2), potentiometric surface (sheet 3), saturated thickness (sheet 4), generalized soil permeability (sheet 5), land use (sheet 6), and estimated well yields (sheet 7).

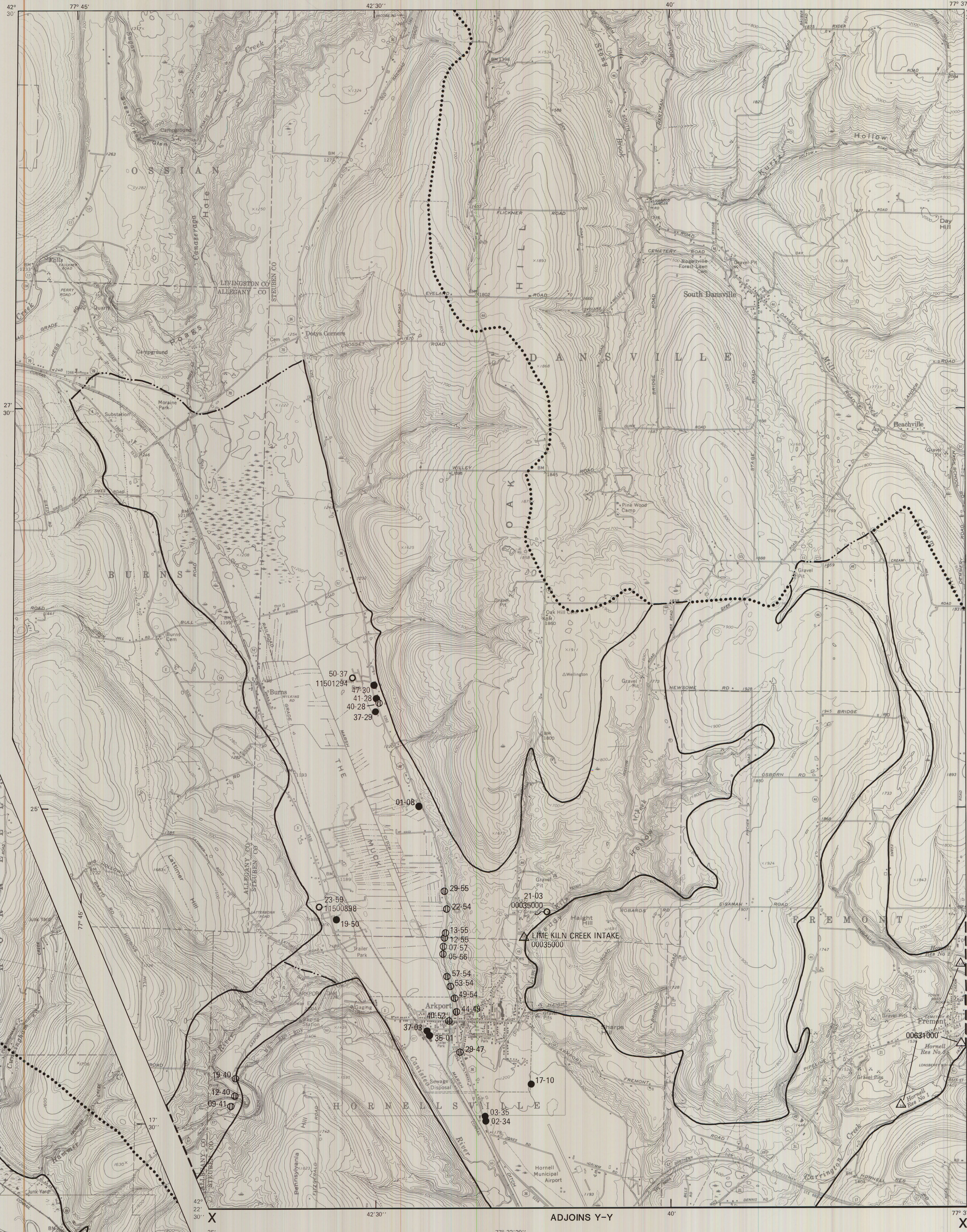
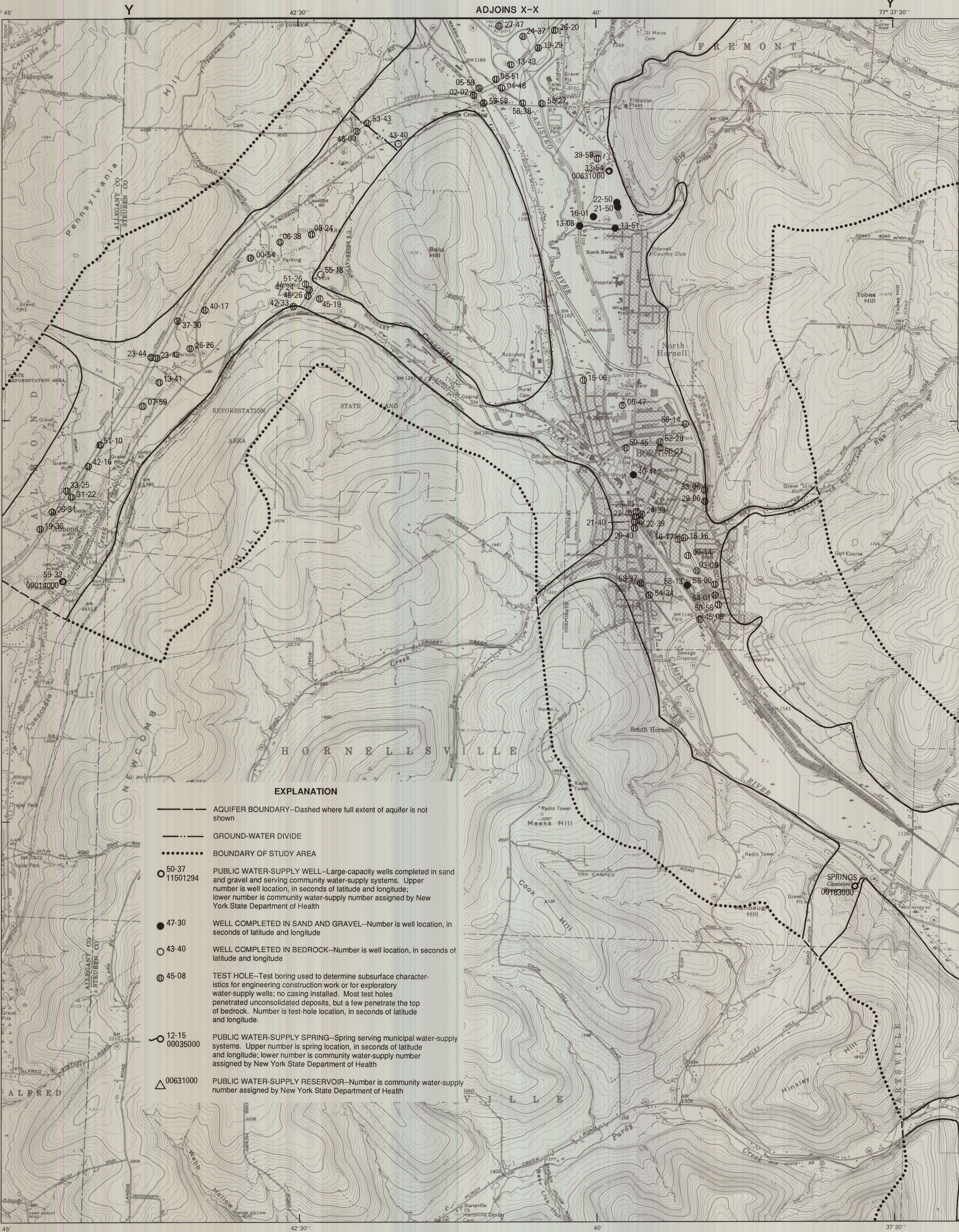
LOCATIONS OF WELLS AND TEST HOLES

This map shows the locations of wells, springs, and test holes at which geohydrologic data were collected. The data are on file at the U.S. Geological Survey office in Ithaca, N.Y.

Numbers assigned to the wells, springs, and test holes are shown as four digits corresponding to the seconds of latitude and longitude of the location. For example, a well with a latitude of 42°23'29"N and longitude of 77°41'47"E would have a well number of 29-47. In addition, public-supply wells and springs have an eight-digit number that is assigned by the New York State Department of Health.

REFERENCE

Randall, A. D., 1972, Records of wells and test borings in the Susquehanna River basin, New York: New York State Department of Environmental Conservation, Bulletin 69, 92 p.



GEOHYDROLOGY OF THE SURFICIAL AQUIFER IN THE HORNELL AREA, IN STEUBEN AND ALLEGANY COUNTIES, NEW YORK

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