DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

PREPARED IN COOPERATION WITH THE
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

WATER-RESOURCES INVESTIGATIONS REPORT 89-4053
SHEET 1 OF 7--LOCATIONS OF WELLS AND TEST HOLES

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 Canacadea 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 glaciolacustrine 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 glaciolacustrine 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.

ADJOINS X-X

ADJOINS Y-Y

EXPLANATION

- AQUIFER BOUNDARY--Dashed where full extent of aquifer is not shown
- GROUND-WATER DIVIDE
- BOUNDARY OF STUDY AREA
- 50-37 / 11501294 — PUBLIC WATER-SUPPLY WELL--Large-capacity wells completed in sand and gravel and serving community water-supply systems. Upper number is well location, in seconds of latitude and longitude; lower number is community water-supply number assigned by New York State Department of Health
- 47-30 — WELL COMPLETED IN SAND AND GRAVEL--Number is well location, in seconds of latitude and longitude
- 43-40 — WELL COMPLETED IN BEDROCK--Number is well location, in seconds of latitude and longitude
- 45-08 — TEST HOLE--Test boring used to determine subsurface characteristics for engineering construction work or for exploratory water-supply wells; no casing installed. Most test holes penetrated unconsolidated deposits, but a few penetrate the top of bedrock. Number is test-hole location, in seconds of latitude and longitude.
- 12-15 / 00035000 — PUBLIC WATER-SUPPLY SPRING--Spring serving municipal water-supply systems. Upper number is spring location, in seconds of latitude and longitude; lower number is community water-supply number assigned by New York State Department of Health
- 00631000 — PUBLIC WATER-SUPPLY RESERVOIR--Number is community water-supply number assigned by New York State Department of Health

Base from New York State Department of Transportation, Arkport, NY, 1978; Canaseraga, NY, 1976; Canisteo, NY, 1978; and Hornell, NY, 1978

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

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