

# Detailed Aquifer Mapping in Eastern Broome and Southeastern Chenango Counties, New York



## INTRODUCTION

Detailed mapping of stratified glacial deposits in eastern Broome and southeastern Chenango Counties, New York is a current study in the cooperative Detailed Aquifer Mapping Program between the US Geological Survey (USGS) and the New York State Department of Environmental Conservation (NYSDEC). The aim of the program is to map glacial aquifers in New York State at a scale of 1:24,000. This information is used by NYSDEC Division of Water and others for delineation of groundwater contributing areas, assessing potential threats to aquifers from both point and non-point sources, responding to contamination from spills or leaks from underground storage facilities, and providing information to assess the need to permit new or expanded public water supplies. Study areas are based on NYSDEC program needs. This area was chosen for study because of the likelihood of Marcellus Shale natural-gas resource development.

**Objective and Study Area** - The objective of this study is to delineate the extent of stratified glacial deposits and to characterize their hydrogeology in eastern Broome and southeastern Chenango Counties, New York. The majority of stratified glacial deposits coincide with Susquehanna River Valley. The study area extends from the Pennsylvania border (Broome County, NY) northward to Sidney, NY in Chenango County (figure 1).

**Approach** - An inventory of wells and groundwater use will be conducted. The depth to bedrock and character of the valley fill will be determined from well logs and from geophysical measurements. Maps will be prepared (as data allows) that depict the (1) aquifer extent, (2) locations of wells and test holes, (3) surficial geology, and (4) generalized groundwater-flow directions. A table will be compiled that presents construction and hydrogeologic information from the inventoried wells. Several geologic sections will depict the aquifer framework.

**Benefits** – This study will delineate and characterize stratified glacial deposits and indicate their favorability for water-resource development, summarize water-resource use, and discuss sources of water to wells. This information can be utilized by State and local governments, industry, and individuals for water-resource planning and protection.

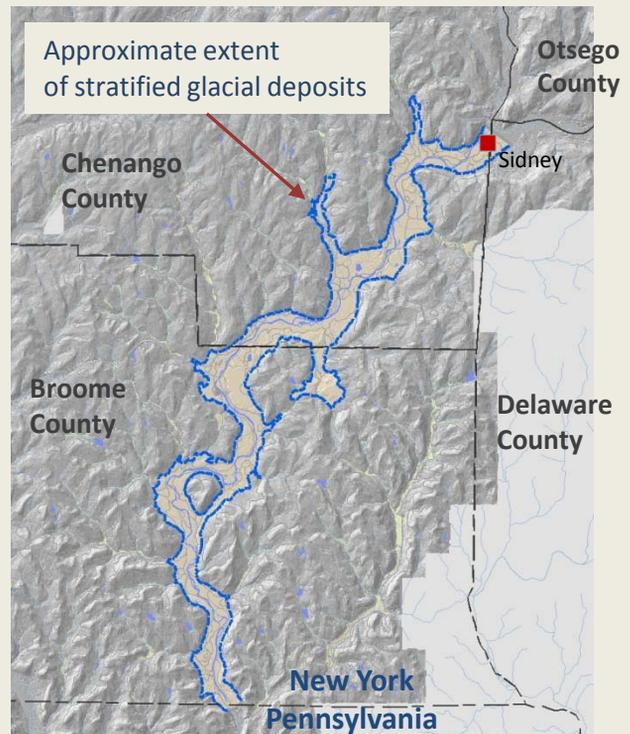


Figure 1. Broome and Chenango County, New York study area location.

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