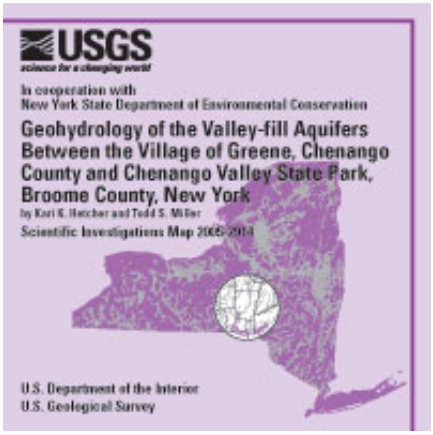
USGS
science for a changing world

Geohydrology of the valley-fill aquifers between the Village of Greene, Chenango County and Chenango Valley State Park, Broome County, New York



by Kari K. Hetcher-Aguila and Todd S. Miller

U.S. GEOLOGICAL SURVEY
Scientific Investigations Map 2005-2914

ABSTRACT

This set of maps and geohydrologic sections depict the geology and hydrology of valley-fill aquifers in the 14-mile reach of the Chenango River valley between the Village of Greene and the area south of Chenango Valley State Park, N.Y. This map report depicts the aquifers; locations of domestic, production, and test wells; surficial geology; water-table altitude; potentiometric-surface altitude; generalized saturated thickness of the unconfined (water-table) aquifer; generalized thickness of the confined aquifer; and includes three geohydrologic sections.

The valley fill in the Chenango River valley consists primarily of (1) glaciofluvial deposits comprised of stratified coarse-grained sediment (sand and gravel) that were deposited by meltwater streams flowing on, below, and in front of the glacier; (2) lacustrine sediments consisting of stratified fine-grained sediment (very fine sand, silt, and clay) that were deposited in proglacial lakes that formed at the front of a glacier; and (3) recent alluvium consisting of alluvial fan deposits (sand, silt, and gravel), floodplain sediments (fine-to-medium sand and silt), and channel deposits (sand and gravel).

The Chenango River valley contains an unconfined valley-fill aquifer throughout much of the study area, and a confined valley-fill aquifer in the area between the northern edge of the Chenango Valley State Park and the Village of Greene. The unconfined aquifer consists predominantly of alluvial and outwash sand and gravel. The water table was mapped using water-level measurements obtained from wells completed in the unconfined aquifer, and from altitudes of lakes, ponds, and streams as indicated on U.S. Geological Survey 1:24,000-scale topographic maps. The depth to the water table typically ranges from 5 to 15 feet below land surface, but can locally be as much as 100 feet, such as in the ice-contact deposits in the Chenango Valley State Park.

The confined aquifer is widely used by people living and working in the Chenango River valley. The confined aquifer consists of ice-contact sand and gravel, typically overlies bedrock, and underlies a confining unit consisting of lacustrine fine sand, silt, and clay. The confining unit is typically more than 100 feet thick in the central parts of the valley between Greene Landing Field and along the northern edge of the Chenango Valley State Park. The thickness of the confined aquifer is more than 40 feet near the Greene Landing Field.

Citation: Hetcher-Aguila, K.K. and Miller, T.S., 2005, Geohydrology of the valley-fill aquifers between the Village of Greene, Chenango County and Chenango Valley State Park, Broome County, New York: U.S. Geological Survey Scientific Investigations Map 2005-2914, 8 plates, 1:24,000 scale, online only.

README.TXT - Important CD-ROM end-user information


[Plate 1 - Introduction and location of study area, orig. size 20"x30", Acrobat PDF (736K)]


[Plate 2 - Location of selected wells and test holes, orig. size 36"x30", Acrobat PDF (8.5M)]


[Plate 3 - Surficial geology, orig. size 20"x30", Acrobat PDF (8.2M)]


[Plate 4 - Generalized water-table altitude, orig. size 20"x30", Acrobat PDF (7.9M)]


[Plate 5 - Generalized potentiometric-surface altitude in the confined aquifer, orig. size 20"x30", Acrobat PDF (7.9M)]


[Plate 6 - Generalized saturated thickness of the unconfined aquifer, orig. size 20"x30", Acrobat PDF (7.9M)]


[Plate 7 - Generalized thickness of the confined aquifer, orig. size 20"x30", Acrobat PDF (7.8M)]


[Plate 8 - Generalized geohydrologic sections, orig. size 30"x20", Acrobat PDF (1.4M)]

Adobe Acrobat's .pdf (portable document file) format can be viewed using the free Adobe Acrobat Reader available for DOS, Windows, Macintosh, and UNIX.

Users with visual disabilities can visit this site for conversion tools and information to help make PDF files accessible.

For more information, contact

U.S. Geological Survey
425 Jordan Rd
Troy, New York 12180
(518) 285-5602
E-mail

To order copies of printed reports, contact

U.S. Geological Survey
Information Services
Box 25286, Federal Center
Denver, CO 80225
1-888-ASK-USGS
E-mail

Return to the New York District Home Page

U.S. Department of the Interior, U.S. Geological Survey
Maintainer: New York District Publications
URL: http://ny.water.usgs.gov/pubs/sim/sim052914/index.html
Last update: 09:39:51 Tuesday 15 January 2013