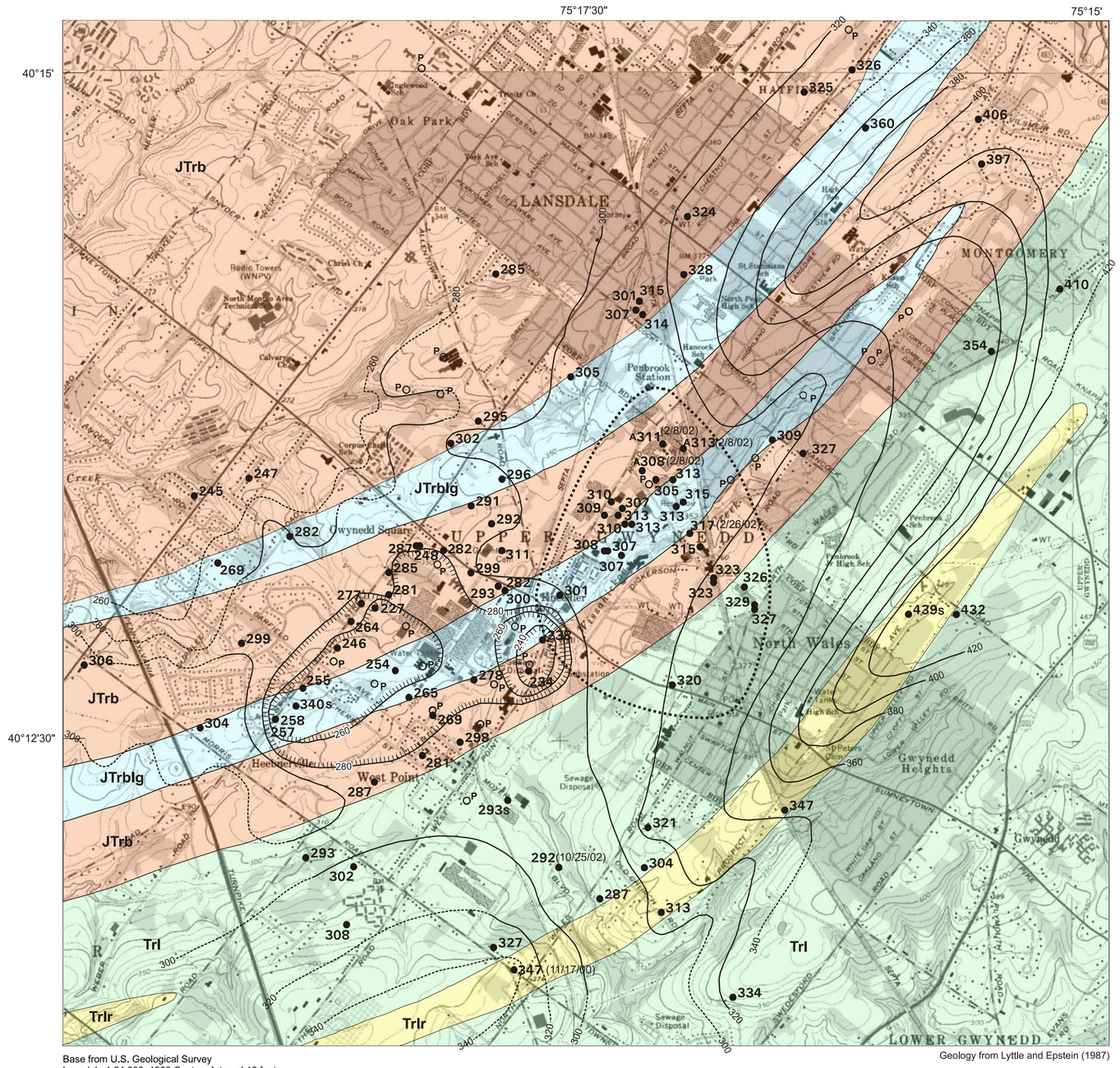

Base from U.S. Geological Survey
Lansdale 1:24,000, 1983 Contour Interval 10 feet
Ambler 1:24,000, 1983 Contour Interval 10 feet
Telford 1:24,000, 1980 Contour interval 20 feet
Doylestown 1:24,000, 1983 Contour interval 20 feet
1927 North American Datum

Geology from Lyttle and Epstein (1987)

EXPLANATION

Study area includes the National Prioritiy List North Penn Area 7 site and vicinity. The study area is underlain by Mesozoic sedimentary rocks of the Brunswick Group and Lockatong Formation (Longwill and Wood, 1965; Lyttle and Epstein, 1987). The rocks form a leaky layered-aquifer system recharged by precipitation in which layers have varying permeability, vertical gradients are common, and semi-confined to confined conditions prevail (Senior and Goode, 1999). In some areas, a shallow perched water table may be present.

GEOLOGIC CONTACT—Shows location of mapped contact between geologic units

JTrb -- Lower part of the Brunswick Group
JTrblg – Brunswick Group, gray shale and siltstone
Trl -- Lockatong Formation, undifferentiated
Trlr -- Lockatong Formation, interbedded sandy siltstone

420 WATER-LEVEL CONTOUR—Shows altitude of potentiometric surface as estimated for the bedrock ground-water system. Dashed where approximated. Hachured contour indicates depression in potentiometric surface. Shape and altitude inferred from water levels measured in 96 wells, topography, and elevation of streams. Altitudes of water levels in wells near streams may differ from altitude of water levels of streams because the ground-water system is not always well connected to the surface-water system. Losing reaches have been identified in some streams. Contour interval is 20 feet. Altitude is in feet above the National Geodetic Vertical Datum of 1929.

SITE BOUNDARY—Shows approximate location of North Penn Area 7 site boundary

WATER-LEVEL MEASUREMENT SITE—Symbol gives approximate location of site. Number is the altitude of a static water-level measurement in feet above the National Geodetic Vertical Datum of 1929. Water levels may reflect composite heads of multiple yielding zones. Water levels may differ in closely-spaced wells of different depths, especially in areas with nearby pumping. Wells ranged from about 16 to 500 ft in depth. Of 86 wells with reported depths, 4 wells were less than 50 ft in depth, 31 wells were 50 to 99 ft in depth, 31 wells were 100 to 199 ft in depth, 5 wells were 200 to 299 ft in depth, 10 wells were 300 to 399 ft in depth, and 5 wells were greater than 400 ft in depth.

● 410 Altitude of static water level measured in a drilled well completed in bedrock. Date of observation in parenthesis if measured for a date other than December 4-6, 2000.

● 340s Altitude of static water level measured in a shallow well less than 25 ft in depth.

● A311 Average altitude of static water level in a multiple-interval well nest.

○ P Well known to be pumping for public supply or industrial uses during period of water-level measurements.

REFERENCES CITED

Longwill, S.M., and Wood, C.R., 1965, Ground-water resources of the Brunswick Formation in Montgomery and Berks Counties, Pennsylvania: Pennsylvania Geological Survey, 4th Series, Bulletin W 22, 59 p.

Lyttle, P.T., and Epstein, J.B., 1987, Geologic map of the Newark 1° x 2° Quadrangle, New Jersey, Pennsylvania, and New York: U.S. Geological Survey Miscellaneous Investigation Series Map I-1715, 2 plates, scale 1:250,000.

Senior, L.A., and Goode, D.J., 1999, Ground-water system, estimation of aquifer hydraulic properties, and effects of pumping on ground-water flow in Triassic sedimentary rocks in and near Lansdale, Pennsylvania: U.S. Geological Survey Water-Resources Investigations Report 99-4228, 112 p.

SCALE 1:24,000

1 1/2 0 1 MILE

1,000 0 1,000 2,000 3,000 4,000 5,000 6,000 7,000 FEET

1 1/2 0 1 KILOMETER

NATIONAL GEODETIC VERTICAL DATUM OF 1929

MN GN
11½° 204 MILLS
0° 12' 4 MILS
UTM GRID AND 1983 MAGNETIC NORTH DECLINATION

ALTITUDE AND CONFIGURATION OF THE WATER-LEVEL SURFACE IN MESOZOIC SEDIMENTARY ROCKS AT AND NEAR THE NORTH PENN AREA 7 SUPERFUND SITE, UPPER GWYNEDD TOWNSHIP, MONTGOMERY COUNTY, PENNSYLVANIA, DECEMBER 4-6, 2000

By Lisa A. Senior and Allan J. Ruddy
2004