

79°17'30" 15' 12'30" 10' 7'30" 79°05'

AQUIFER THICKNESS

By
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NOTE

The map shows the saturated thickness of water-bearing sand and gravel in wells or test holes presented in Crain (1966). In most places the wells penetrate only part of the valley fill, which may be as thick as 600 feet. The thickness lines in most areas represent only a part of the total aquifer section. Near the valley walls, sand and gravel of the alluvial fans crop out. The aquifer thickness there extends from the water table down to clay, fill, or bedrock. In the middle of the valley, outwash sand and gravel layers are confined under and interbedded with impermeable clay lake deposits. This is the confined aquifer enclosed by the dashed line on the map.

At the north end of Cassadaga valley, at Gerry, where valley-fill deposits are as much as 400 feet thick, net thickness of sand and gravel is from 10 to 140 feet. Toward the south end of the Cassadaga valley, at the Jamestown well field, the confined aquifer is 20 to 50 feet thick at more than 100 feet depth. In one well penetrating rock, an additional 100 feet of sand occurs below the 300-foot depth. Thus the contour map shows more than 100 feet of total aquifer thickness in the area. The deep zone is largely unexplored as a water supply.

Near Jamestown and Falconer, although water-bearing sand and gravel thins to less than 25 feet and eventually pinches out, the valley fill thins to about 200 feet. Up the Conewango valley, at Poland Center, a gravel aquifer 25 to 40 feet thick occurs under 40 feet of silt and clay. The gravel crops out just north of Poland Center and merges with a thick sand to the east. Silt and clay apparently separate this from the thinly saturated terrace gravels at Kennedy. Here the aquifer is generally less than 25 feet thick and perched above the river level.

REFERENCE CITED

Crain, L. J., 1966, Ground-water resources of the Jamestown area, New York, with emphasis on the hydrology of the major stream valley: New York State Water Resource Commission Bulletin 58, 167 p.

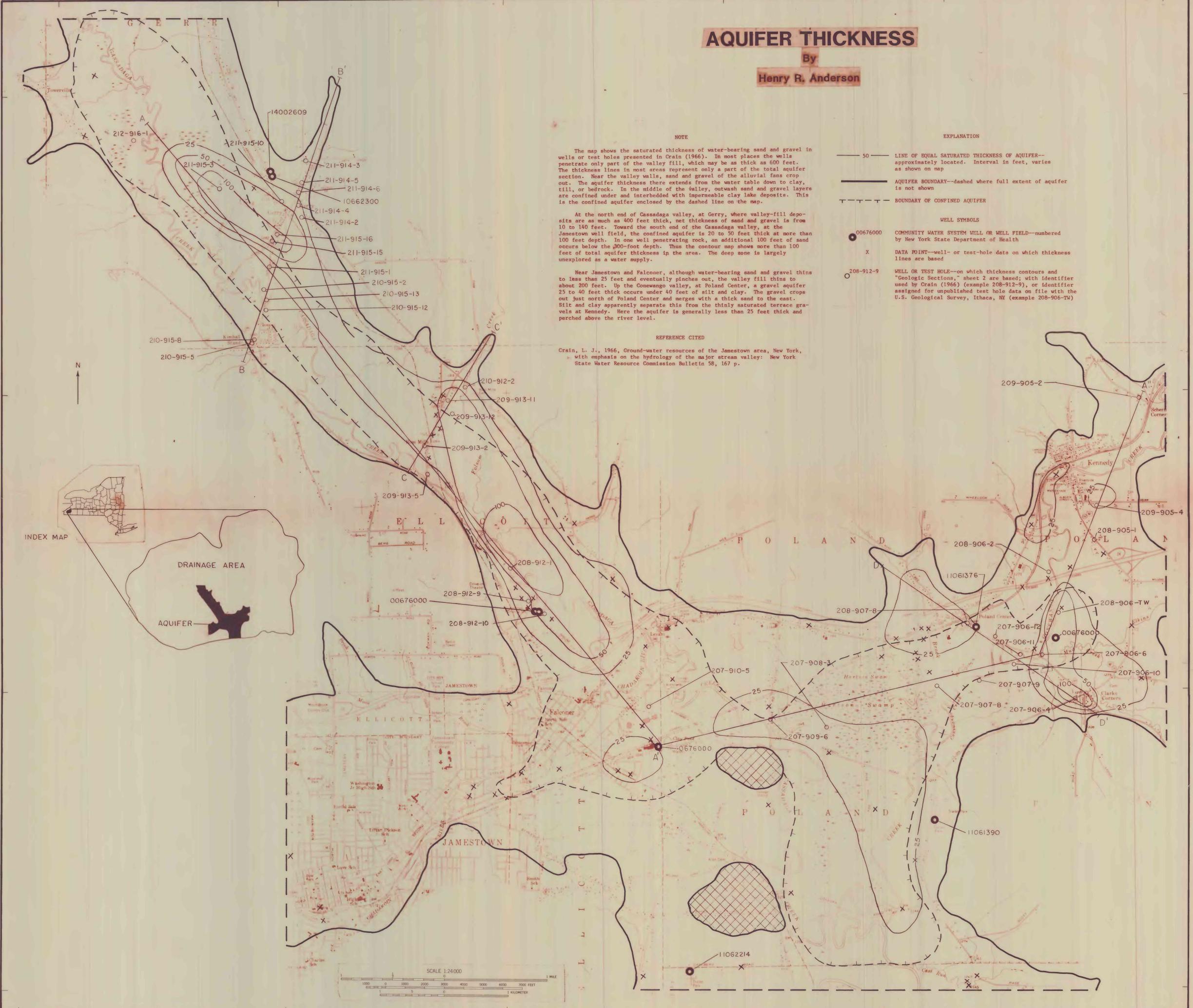
EXPLANATION

- 50 — LINE OF EQUAL SATURATED THICKNESS OF AQUIFER—approximately located. Interval in feet, varies as shown on map
- AQUIFER BOUNDARY—dashed where full extent of aquifer is not shown
- - - - - BOUNDARY OF CONFINED AQUIFER

WELL SYMBOLS

- 00676000 COMMUNITY WATER SYSTEM WELL OR WELL FIELD—numbered by New York State Department of Health
- X DATA POINT—well- or test-hole data on which thickness lines are based
- 208-912-9 WELL OR TEST HOLE—on which thickness contours and "Geologic Sections," sheet 2 are based; with identifier assigned for unpublished test hole data on file with the U.S. Geological Survey, Ithaca, NY (example 208-906-TW)

42°12'30"
10'
7'30"
42°05'



BASE FROM NEW YORK STATE DEPARTMENT OF TRANSPORTATION ELLERY CENTER, N.Y., 1978; GERRY, N.Y., 1978; IVORY, N.Y., 1978; JAMESTOWN, N.Y., 1978; AND KENNEDY, N.Y., 1978. 1:24,000

GEOHYDROLOGY OF THE VALLEY-FILL AQUIFER IN THE JAMESTOWN AREA, CHAUTAUQUA COUNTY, NEW YORK

HYDROLOGY MAPPED IN 1981