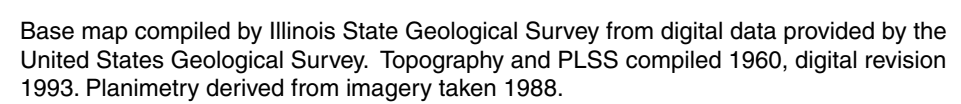


Department of Natural Resources
ILLINOIS STATE GEOLOGICAL SURVEY
William W. Shilts, Chief

Illinois Preliminary Geologic Map
IPGM Antioch-BT



SCALE 1:24 000

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 0.5 0 1 KILOMETER

Geology based on fieldwork and data compilation by A.B. Dixon-Warren and S.M. O'Malley, 2003.

This Illinois Preliminary Geologic Map (IPGM) is a lightly edited product, subject to less scientific and cartographic review than our Illinois Geological Quadrangle (IGQ) series. It will not necessarily correspond to the format of IGQ series maps, or to those of other IPGM series maps. Whether or when this map will be upgraded depends on the resources and priorities of the ISGS.

Recommended citation:
Dixon-Warren, A.B., and S.M. O'Malley, 2004, Bedrock Topography of Antioch Quadrangle, Lake County, Illinois and Kenosha County, Wisconsin: Illinois State Geological Survey, Illinois Preliminary Geologic Map Series, IPGM Antioch-BT, 1:24,000.








CENTRAL GREAT LAKES
MAPPING COALITION



1	2	3	ADJOINING QUADRANGLES 1 Silver Lake 2 Paddock Lake 3 Pleasant Prairie 4 Fox Lake 5 Wadsworth 6 Wauconda 7 Graylake 8 Libersville
4		5	
6	7	8	

2 ½°
TRUE NORTH
MAGNETIC NORTH
APPROXIMATE MEAN
DECLINATION, 2004

Primary highway, hard surface		Light duty road, hard or improved surface	
Secondary highway, hard surface		Unimproved road	
 Interstate Route	 U.S. Route	 State Route	

This map shows the mean elevation above sea level of bedrock for the Antioch Quadrangle. The bedrock is undifferentiated Silurian-age dolomite (Larsen, 1973; Willman, 1973) and is entirely covered by glacial drift. Previous mapping of the bedrock topography is limited and has only been completed at the county scale (Leetaru, in review).

Methodology

The location of each well was verified using tax records, plat books, and Internet-based location software. When required, wells were repositioned. The level of confidence in the final verified location was ranked from 1 (high accuracy) to 5 (low accuracy). The highest quality boreholes, with respect to both geologic information and location, are the ISGS GPS-surveyed stratigraphic borings, whereas the lowest quality data points are generally residential water wells. For this map, we initially used only the boreholes that combined high quality location data (ranks 1 and 2) with high quality geologic data, however, we added the data points of lower quality to maintain uniform data distribution. Of the 214 borings used to create this map, 202 are water wells, 8 are stratigraphic borings, and 4 are 'other' holes, which means either the type of well is unknown or its status is 'dry'.

The data were compiled within ArcGIS. The top of bedrock elevation was calculated by subtracting the depth to bedrock from the surface elevation, which was derived from a digital elevation model (DEM). To generate the bedrock surface, data points were interpolated using the spline with tension method and the resulting grid then was contoured at 20-ft intervals. Based on subsequent analysis, the contours in a few areas were modified to more realistically portray the bedrock topography. All data are on file at the Geological Records Unit of the Illinois State Geological Survey.

Acknowledgments

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References

Larsen, J.I., 1973, *Geology for Planning in Lake County, Illinois*: Illinois State Geological Survey, Circular 481, 43 p.

Leetaru, Hannes, E., Michael L. Sargent, Mathew H. Riggs, and Dennis R. Kolata, in review, 3D Visualization of Bedrock Resources in Lake County, Illinois: Illinois State Geological Survey Open-File Map, 2 sheets.

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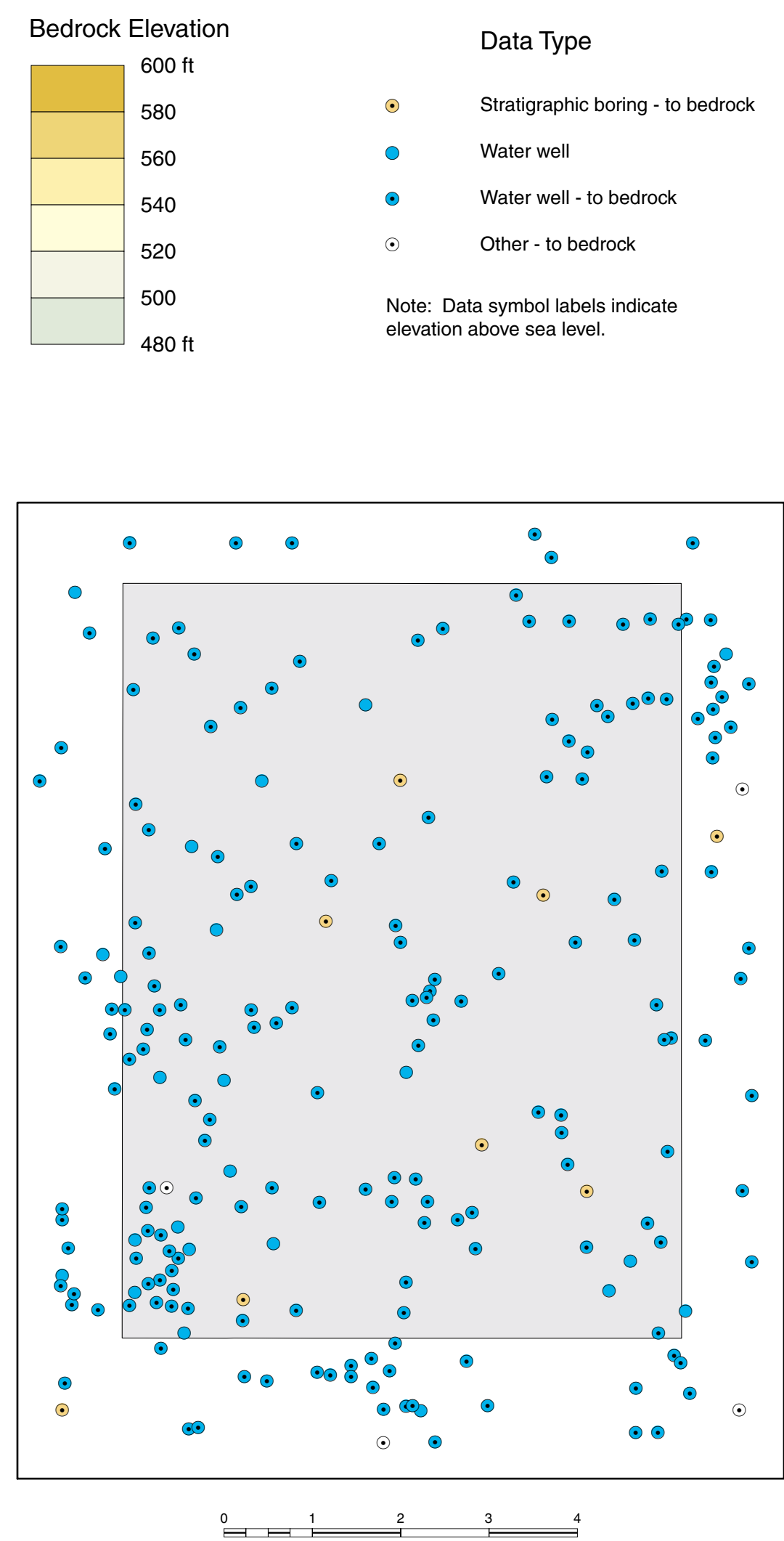


Figure 1 Map showing the location of borings used to model the bedrock topography. Borings are symbolized in blue for water wells, orange for stratigraphic borings and white for ‘other’ borings.