The Waverly-Sayre area is located in Tioga County, Pennsylvania, and the saturated thickness of the surficial aquifer is depicted on this map. The aquifer is underlain by large thicknesses of ice-contact sand and gravel and consists of a highly permeable basal sand and gravel layer capped by less permeable silty sand and silt. The outwash is underlain by large thicknesses of ice-contact sand and gravel, and the outwash valley represents areas where the surficial sand and gravel is unsaturated, either because the ground-water table is below the land surface or because the aquifer is not recharged by rainfall. The greatest saturated thicknesses are in areas where the surficial sand and gravel is saturated, and the storage coefficient is a measure of how much water is released from storage in response to a change in water level. Aquifer properties estimated for selected wells in the Waverly, N.Y. - Sayre, Pa. area include transmissivity, specific capacity, and storage coefficient. Thermo bathymetric surveys were conducted to measure temperature profiles in several observation wells, and a USGS pumping test at the Waverly Water Department's Ithaca Street well found that the aquifer there consists of a highly permeable basal sand and gravel layer capped by less permeable silty sand and silt. The temperature profiles, taken at several times of the year, indicate that, under no-flow conditions, the aquifer behaves as an aquifer with a high hydraulic conductivity. During this study, Randall also measured temperature profiles in several observation wells and found that the transmissivity and storage coefficient are usually determined through aquifer tests, or from published well and test-boring logs. The storage coefficient is typically in the range of 0.11 to 0.57, which is clearly in the artesian range.