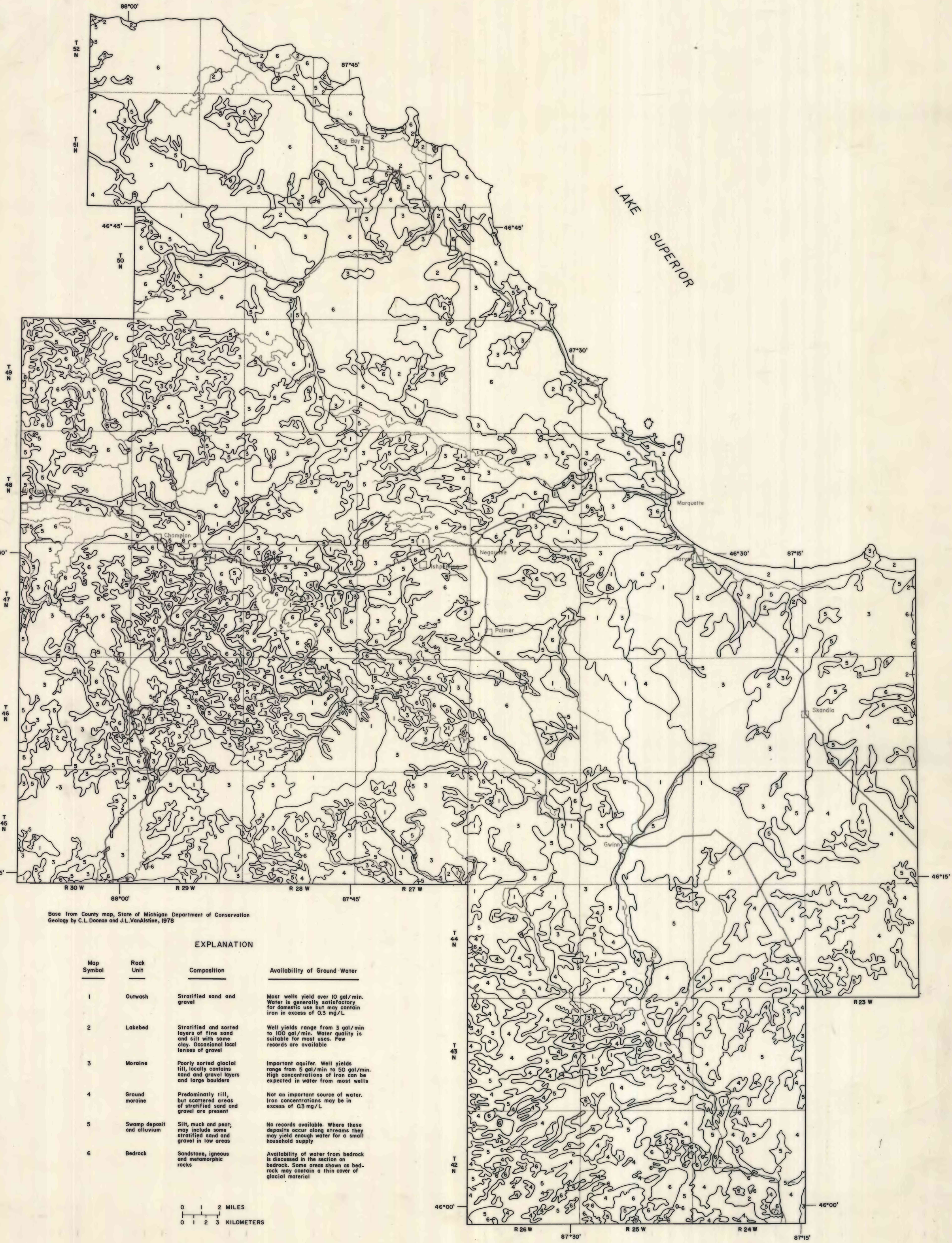
UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

PREPARED IN COOPERATION WITH THE
MICHIGAN DEPARTMENT OF NATURAL RESOURCES

OPEN-FILE REPORT 82-501
PLATE I



Base from County map, State of Michigan Department of Conservation
Geology by C.L. Doonan and J.L. VanAlstine, 1978

EXPLANATION

Map Symbol	Rock Unit	Composition	Availability of Ground Water
1	Outwash	Stratified sand and gravel	Most wells yield over 10 gal/min. Water is generally satisfactory for domestic use but may contain iron in excess of 0.3 mg/L
2	Lakebed	Stratified and sorted layers of fine sand and silt with some clay. Occasional local lenses of gravel	Well yields range from 3 gal/min to 100 gal/min. Water quality is suitable for most uses. Few records are available
3	Moraine	Poorly sorted glacial till, locally contains sand and gravel layers and large boulders	Important aquifer. Well yields range from 5 gal/min to 50 gal/min. High concentrations of iron can be expected in water from most wells
4	Ground moraine	Predominatly till, but scattered areas of stratified sand and gravel are present	Not an important source of water. Iron concentrations may be in excess of 0.3 mg/L
5	Swamp deposit and alluvium	Silt, muck and peat; may include some stratified sand and gravel in low areas	No records available. Where these deposits occur along streams they may yield enough water for a small household supply
6	Bedrock	Sandstone, igneous and metamorphic rocks	Availability of water from bedrock is discussed in the section on bedrock. Some areas shown as bedrock may contain a thin cover of glacial material

0 1 2 MILES
0 1 2 3 KILOMETERS

GEOLOGY AND AVAILABILITY OF GROUND WATER IN MARQUETTE COUNTY, MICHIGAN