DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

PREPARED IN COOPERATION WITH
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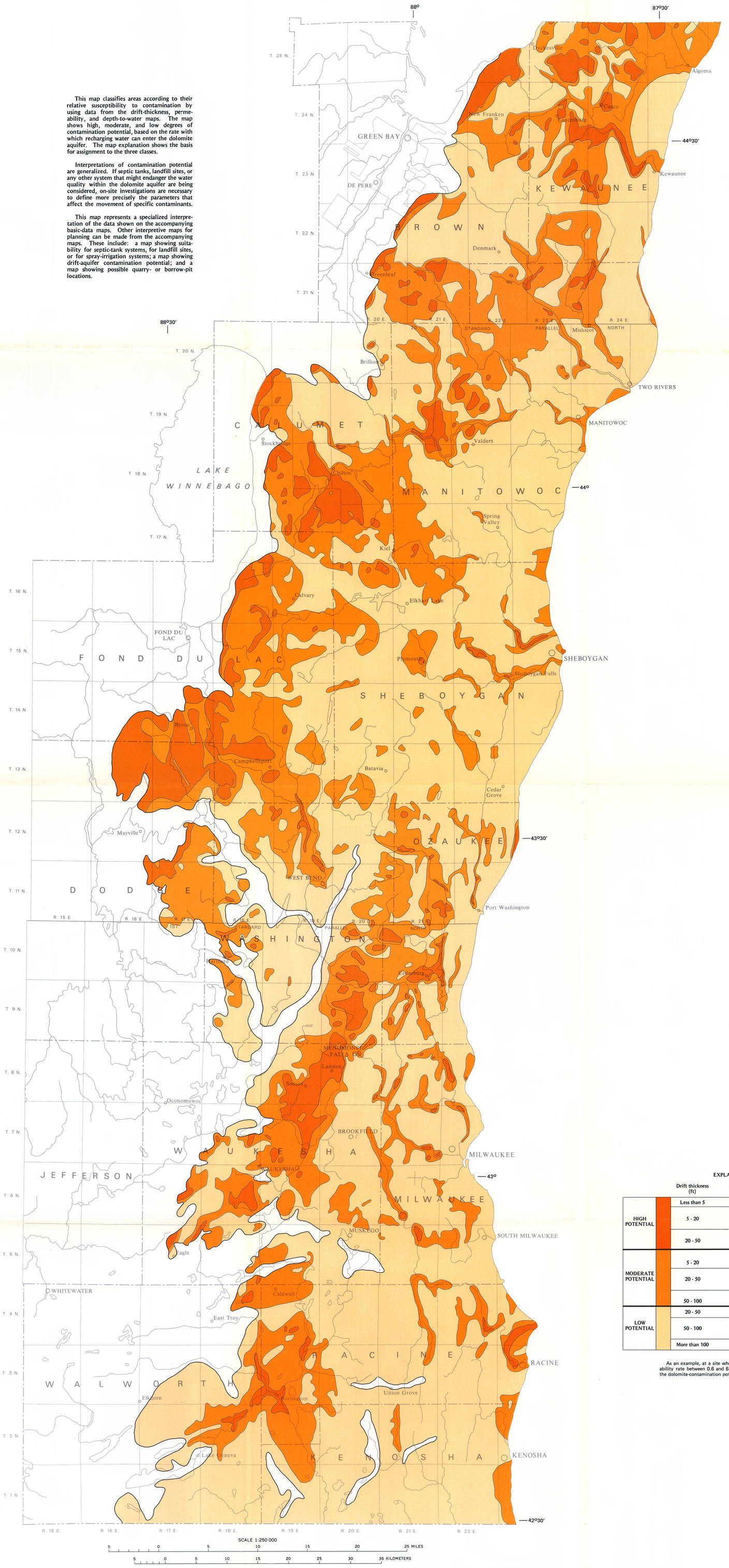
WATER RESOURCES INVESTIGATIONS
OPEN-FILE REPORT 78-108
(SHEET 2 OF 2)

CONTAMINATION POTENTIAL OF THE SILURIAN DOLOMITE AQUIFER

This map classifies areas according to their relative susceptibility to contamination by using data from the drift-thickness, permeability, and depth-to-water maps. The map shows high, moderate, and low degrees of contamination potential, based on the rate with which recharging water can enter the dolomite aquifer. The map explanation shows the basis for assignment to the three classes.

Interpretations of contamination potential are generalized. If septic tanks, landfill sites, or any other system that might endanger the water quality within the dolomite aquifer are being considered, on-site investigations are necessary to define more precisely the parameters that affect the movement of specific contaminants.

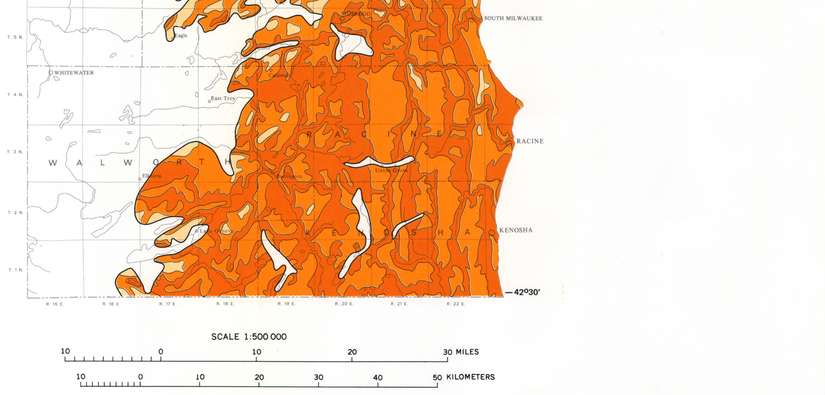
This map represents a specialized interpretation of the data shown on the accompanying basic-data maps. Other interpretive maps for planning can be made from the accompanying maps. These include: a map showing suitability for septic-tank systems, for landfill sites, or for spray-irrigation systems; a map showing drift-aquifer contamination potential; and a map showing possible quarry- or borrow-pit locations.



DEPTH TO WATER TABLE

Depth to water table is another important factor used in determining contamination potential. Contaminants in effluent from septic tanks and drain fields, landfills, and other systems may be partly or wholly assimilated in the unsaturated zone. Where the water table is less than 10 ft deep, aeration zones are restricted, as is the capacity for waste and leachate assimilation. Where the water table is 30 ft or more deep, aeration zones are relatively thick, and other conditions are favorable, the capacity for waste and leachate assimilation is good, although conservative materials such as chlorides and nitrates will pass through essentially undiminished.

The water-level data used to make this map were taken from many sources such as state and local ground-water studies, observation wells, and Soil Conservation Service soils mapping. Interpretation of the data constitutes an estimate of the long-term average altitude of the water table.



EXPLANATION

		Drift thickness (ft)	Permeability rate (in/hr)	Depth to water (ft)
HIGH POTENTIAL		Less than 5	All	All
		5 - 20	More than 6.0 0.6 - 6.0 Less than 0.6	All Less than 30 Less than 10
		20 - 50	More than 6.0 0.6 - 6.0	Less than 30 Less than 10
MODERATE POTENTIAL		5 - 20	0.6 - 6.0 More than 6.0	More than 30 More than 10
		20 - 50	More than 6.0 0.6 - 6.0 Less than 0.6	More than 30 More than 10 Less than 10
		50 - 100	More than 6.0 0.6 - 6.0	More than 30 Less than 10
LOW POTENTIAL		20 - 50	Less than 0.6	More than 10
		50 - 100	More than 6.0 0.6 - 6.0 Less than 0.6	More than 30 More than 30 More than 10
		More than 100	All	All

As an example, at a site where the drift is 30 ft thick, with permeability rate between 0.6 and 6.0 in/hr, and a depth to water of 15 ft, the dolomite-contamination potential is moderate.

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BASE FROM U. S. GEOLOGICAL SURVEY
STATE BASE MAP, 1968

INTERIOR-GEOLOGICAL SURVEY, MADISON, WI, 1979

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