

**Title:** Environmental Investigation of the City of Two Rivers Landfills, Manitowoc County, Wisconsin (Study No. 27)

**Investigators:** Principal Investigator

Thomas P. Van Biersel, Hydrogeologist  
Hydro-Search  
(currently at Residuals Management Technology)

Project Manager

Michael R. Noel, Hydrogeologist  
Hydro-Search, Inc.

**Period of Contract:** January 30, 1986 through June 30, 1987

**Objectives:** To characterize the hydrogeologic setting surrounding the North and South Landfills in the City of Two Rivers and provide preliminary data on the extent of organic contamination.

**Background/Need:** The landfills under investigation accepted unknown quantities of hazardous waste while under operation by the City of Two Rivers. In the mid-1970s and early 1980s the landfills were closed with a final cover placed over them. The extent of resultant soil and groundwater contamination is unknown, though it is thought that it could affect drinking water supplies.

**Methods:** Test holes were drilled to determine the stratigraphy and physical properties of the soils. Shallow and deep groundwater monitoring wells and piezometers were installed. The organic vapor concentration of soil and groundwater samples was measured.

**Results/Conclusions:** The geology of the area consists primarily of a silty clayey till interbedded with sand units. Water table and potentiometric maps developed indicate that shallow and deep groundwater flows west toward the East Twin River. Organic vapors were detected during drilling and in soil and groundwater samples. Most detections occurred around the South Landfill.

**Availability of Report:** This report is available for viewing and loan at:

The Water Resources Center  
1975 Willow Drive  
Madison, WI 53706  
(608) 262-3069  
Publication 050859

**Key Words:** Landfill, hydrogeology, volatile organic compounds

**Funding:** The Wisconsin Department of Natural Resources provided funding for this project through the Groundwater Management Practice Monitoring Program which receives appropriations from the Groundwater Account.