

**Title:** Volatile Organic Compound Contamination of Private Water Supplies Adjacent to Abandoned Landfills in Marathon County (Study No. 38)

**Investigators:** Principal Investigator

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Marathon County, Environmental Health Division

**Objectives:** To identify populations at risk of volatile organic compounds (VOCs) contamination in the vicinity of abandoned landfills in Marathon County.

**Background/Need:** VOCs have been found above health advisory levels, preventive action limits and enforcement levels in Marathon County since 1980. Several sources of VOCs and pesticides have been identified as groundwater contaminants in wellhead and other critical groundwater areas.

**Methods:** A Health Hazard Risk Assessment (HHRA) document was created, which is a landfill priority testing system for abandoned landfills outside of the Department of Natural Resources high priority list. 69 private water supplies near 23 abandoned landfills in Marathon County were selected for sampling based on this priority system. Water was analyzed for VOCs as well as bacteria, nitrates, fluorides, iron, copper, magnesium, hardness, alkalinity and pH.

**Results:** There were six initial VOC detections of the private water supplies sampled, though only one was confirmed. All detections found were within the five highest priority landfill sites according to the HHRA, with one exception.

**Conclusions/Recommendations:** Investigator recommends annual testing of VOCs for any water supply noted in this project as having a detected, unconfirmed, VOC detection. The application of the HHRA document proved to be a cost effective tool in the implementation of the abandoned landfill sampling program by identifying landfills with a greater risk of VOC contamination.

**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 050870

**Key Words:** Landfill, Marathon County, volatile organic compounds

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