

**Title:** Hydrogeological Investigation of VOC Contaminated Private Wells Near Hudson, Wisconsin (Study No. 32)

**Investigators:** Principal Investigator

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**Objectives:** To determine source of volatile organic compound (VOC) contamination of private wells east of Hudson.

**Background/Need:** A VOC contamination plume exists in the vicinity of several possible pollution sources. The Junker Landfill appears to be the most likely source of contamination due to high concentrations of VOCs in wells south of the landfill. Other possibilities include spillage or dumping that may have occurred along the railroad tracks adjacent to the landfill or an abandoned landfill 0.9 miles east of Junker's. This project was undertaken to identify the sources of VOC contamination in the area.

**Methods:** Field work performed included reconnaissance, exploratory borings and survey work. Borings were made at four locations. Surveying work enabled comparison of elevation and local geology of individual wells.

**Results/Conclusion:** Survey results revealed wells in the area to be generally terminated at similar elevations. Contaminated wells are likely confined to the surficial aquifer and the Prairie du Chien Group; the wells didn't extend into the lower formations. Contamination of wells exist north and south of Junker Landfill, though regional groundwater flows to the west-northwest. Investigators felt there was insufficient hydrogeological information to determine the source of groundwater contamination.

**Recommendations/Implications:** Additional intensive hydrogeologic investigation of localized flow patterns is necessary in and around the Junker's Landfill proper to explain the spacial distribution of contaminants. The pollution originating from the railroad right-of-way and abandoned Town of Roberts Landfill should be determined; hydraulic conductivity rates can be determined to provide this information by introducing dyes into local wells and monitoring detection periods downgradient. Contaminated private wells should be replaced, along with additional wells bored to provide more accurate hydrogeologic data.

**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 050864

**Key Words:**

Hydrogeology, landfill, volatile organic compounds.

**Funding:**

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