

Minnesota Pollution Control Agency
Hazardous Waste Division
Tanks and Spills Section

Leaksite: #2572
Date: September 1, 1992

*****HYDROGEOLOGIC SITE REVIEW*****

LEAKSITE NAME: Sinclair Service Station
LEAKSITE LOCATION: 7733 Portland Avenue South, Richfield, Minnesota
LEAK OR SPILL REPORTED DATE: May 22, 1990
CONSULTANT: EnecoTech Midwest, Inc.
REPORT NAME: Ground Water Monitoring Results
REPORT DATE: July 2, 1992

PROJECT MANAGER: Mark Koplitz
HYDROGEOLOGIST: Larry R. Quandt
VAX FILENAME: [QUANDT_L.HYDRO] 2572B.TXT

REPORT SUMMARY/BACKGROUND

A ground water monitoring and closure request report was submitted for the Sinclair service station located at 7733 Portland Avenue South in Richfield, Minnesota. An RI/CAD was conducted after petroleum contamination was discovered during the excavation of three gasoline UST, one fuel oil UST, and one used oil tank.

The depth to the static water table is approximately 36 feet. Ground water flows southeast with a hydraulic gradient of 0.001 ft/ft.

The monitoring wells were sampled on 12/2/91, 2/11/92, and 5/5/92. Petroleum contamination was not detected in MW-1, MW-2, and MW-4 upgradient, downgradient, and cross-gradient of the former tank basins. Ground water samples detected between 0.89 ug/l and 3.2 ug/l 1,2-dichloroethane in MW-3 cross-gradient of the former tank basins.

RECOMMENDATIONS/COMMENTS

The MPCA has reviewed the "Ground Water Monitoring Results" report dated July 2, 1992 for the above referenced site. The MPCA has determined that the cleanup performed in response to the petroleum tank release at this site has adequately addressed the petroleum contamination and no additional corrective action be required at this site.

On May 22, 1990 a petroleum release was reported to the MPCA. Since the discovery of the release, the following remedial investigations and corrective actions have been conducted in response to the petroleum release.

1. On May 15-17, 1990 two 4,000-gallon regular gasoline tanks, two 4,000-gallon unleaded gasoline tanks, one 6,000-gallon unleaded gasoline tank, a 1,000-gallon fuel oil tank, and a 560-gallon used oil tank were removed. The tanks were slightly corroded and contained no visible holes. Leaking dispenser pipelines were the apparent source of the release. The native soil is fine- to coarse-grained sand.
2. During excavation, soil was screened and removed based on appearance, odor,

and soil vapor headspace analysis with a photoionization detector (PID). Approximately 300 cubic yards of contaminated soil with PID readings as high as 357 ppm were removed from the tank basin. Excavation of contaminated soil was limited by the proximity of building foundations and buried utilities. Following excavation, field screening indicated that soil with PID readings as high as 357 ppm remains on the bottom and/or sidewalls of the excavation.

3. A total of seven soil samples were collected from the bottom of the completed excavation. Maximum concentrations detected were 1,100 ppm total hydrocarbons as gasoline and 1,900 ppm total hydrocarbons as fuel oil.
4. Ground water was not encountered during the excavation.
5. A remedial investigation was conducted between November 2, 1990 and March 8, 1991. Concentrations as high as 1,100 ppm total hydrocarbons as gasoline were left in the soil in a thin layer immediately beneath the former tank basin at a depth of 16 feet, because they were beyond the reach of the backhoe. The depth to the water table is approximately 36 feet.
6. Nine soil borings were advanced around the former tank basins, four of which were completed as monitoring wells. Screening soil samples with a PID detected readings as high as 1,250 ppm in the soil borings. Thirteen soil samples were collected from the soil borings. Maximum concentrations detected were 920 ppm total hydrocarbons as gasoline and 480 ppm total hydrocarbons as fuel oil.
7. Ground water monitoring was conducted in the monitoring wells. Maximum concentrations detected were 3.2 ppb 1,2-dichloroethane in MW-3 located cross-gradient and downgradient of the former tank basins and pump islands.
8. The high permeability of the soil and considerable depth to the water table eliminates the potential vapor risk to underground structures and utilities. The water table aquifer was not impacted above the Minnesota Department of Health Recommended Allowable Limits (RAL) for drinking water contaminants. The petroleum contamination remaining in the soil is unlikely to significantly impact the ground water table at 36 feet, because of the considerable vertical distance between the contaminated soil and the water table and the small fluctuations in the water table. In addition, the asphalt pavement on the site will prevent atmospheric water from leaching petroleum from the soil and further impacting the water table. The remaining contaminated soil and ground water does not represent a human health or environmental threat and should naturally biodegrade.
9. The monitoring wells should be abandoned according to the Minnesota Department of Health Water Well Code. Please submit a report documenting the proper abandonment of the monitoring wells.