

Project Summary

Site Closure: Drycleaner Investigation and Remediation

Client:

Strip Mall

Contact:

Robert Schlytter

Project Manager:

Mr. Ken Ebbott, PG, CGWP

Regulatory Status:

Closed with GIS listing, Cap Maintenance Plan, Active Subgrade Vent

Project Features

- Allowed renovation of dilapidated shopping mall into vibrant Christian Community Center
- Discovery of Contamination to Closure in 30 months
- Indoor Soil Excavation
- Groundwater Monitoring
- Off-Site Access and Notification
- Sub-slab Venting System
- Full DERF Reimbursement



Introduction and Value to Client

Alpha Terra Science worked with a property owner to eliminate historic drycleaning contamination from a strip mall. The underutilized retail strip mall has been renovated into a Community Center, with gymnasium, daycare, offices, and education facilities. Residual soil, groundwater, and vapor contamination was demonstrated by Alpha Terra Science to pose no significant risk to human health or the environment.

Synopsis

A former drycleaning establishment operated in an approximately 60,000 square foot retail strip mall at the corner of 76th Street and Good Hope Road in Milwaukee from 1976 to 2004. The drycleaning retail space occupied approximately 1,800 square feet, and incidental releases of tetrachloroethene (drycleaning solvent) occurred through the building floor.

Phased investigation activities, including the advancement of Geoprobe soil borings inside the building and the installation of ch. NR141 Wis. Adm. Code (NR 141) compliant groundwater monitoring wells, defined the extent of contamination. The geology consists of native silty clay soil to a depth of 40 feet with a few sand lenses encountered below 25 feet. Groundwater at the Property is present at a depth of approximately 11 to 13 feet beneath the building, with a low rate of groundwater flow to the north / northeast.

Alpha Terra successfully argued that an interim remedial action was necessary for this site. This approach prevented unnecessary bidding delays to the project that would have been required to satisfy DERF requirements. The plan was approved for implementation by the WDNR, and included indoor excavation within the 20 by 90 foot drycleaner portion of the building. A low clearance excavator was used to dig to depths of up to 13.5 feet below grade. The front entrance was widened slightly to allow access with a skid steer, and a total of 16.62 tons of "hot spot" soil and concrete was discarded as hazardous waste in Michigan, and another 111.65 tons of soil was excavated and transported to a licensed subtitle D landfill in Wisconsin for solid waste disposal. The majority of the contaminant mass was removed in the excavation.

Laboratory analysis of soil samples obtained from the excavation perimeter indicated clean conditions from the excavation floor and east wall. Residual impacts remained, however, on the west and south walls, and in the groundwater.

At the completion of the soil remedial action, the excavation was backfilled and a vapor mitigation piping system was installed. A low volume electric blower was installed to continuously withdraw subslab vapors from beneath the building.

A deed restriction was placed on the Property, and the site was included on the WDNR GIS registry. The deed restriction indicates the location of the remaining soil contamination. The restriction also requires the maintenance and annual inspection of the building floor as an engineered barrier, and operation of the fan. Based on geochemical monitoring, reductive dechlorination (breakdown) of the chlorinated VOCs in groundwater has occurred and should continue to address the remaining groundwater contamination.

The project is closed, with no further action required except maintenance of the fan and cap. The complete project cost less than \$100,000, with full reimbursement provided by the DERF fund.