Combined Technologies Treat High Vapor and TCE Levels at Former Michigan Manufacturing Facility

Project Highlights

- Redeveloped facility delivers jobs to Michigan community
- Simultaneous use of Retro-Coat™ and Vapor-Vent™ reduced number of SSD points
- Approximately 30,000 square feet of Retro-Coat successfully applied
- Retro-Coat provided a durable finish for vehicle traffic and heavy equipment in a manufacturing setting

Site Details

Site Type: Manufacturing facility

Contaminant of Concern: TCE

Vapor Intrusion Solution: Vapor intrusion barrier

Treatment Area: 30,000 ft²

Technology Used:

Retro-Coat™ Vapor Intrusion Coating

Vapor-Vent™ Vapor Collection System

Project Summary

St. Johns-based F.C. Mason company was provided a $1 million Clean Michigan Initiative Brownfields grant from the Michigan Department of Environmental Quality (MDEQ) to move its operations to the former Federal Mogul manufacturing facility which was vacated in 2008. F.C. Mason Company was founded in 1898 and specializes in manufacturing parts for agricultural, construction and industrial equipment. The acquisition of the 265,000-square-foot facility allows F.C. Mason to expand operations and bring back valuable jobs to Clinton County. Michigan-based Soil and Materials Engineers, Inc. (SME) was consulted to address the suspected environmental and vapor intrusion concerns resulting from years of manufacturing activities at the site.

Trichloroethylene (TCE) contaminated areas were present in one section of the building. In 2009, *in situ* chemical treatment of the "hot spot" areas was conducted employing RegenOx® technology (REGENESIS®, San Clemente, CA). However, a vapor intrusion condition was later identified and mitigation was needed. Retro-Coat was selected to be used in conjunction with an active sub-slab depressurization (SSD) system. By simultaneously utilizing the two mitigation approaches, SME was able to reduce the number of SSD points in the design and the total area requiring the vapor intrusion barrier coating. MDEQ approved of the plan. A certified Retro-Coat applicator installed 6 mils of red Retro-Coat Primer and 20 mils of grey Retro-Coat along with a broadcasted aggregate to provide a non-slip surface. The contrast in color between Primer and Retro-Coat allows the clear identification of wear over time, prompting repair if needed, and ensuring long-term protection from vapor intrusion.

Technology Description

Retro-Coat Vapor Intrusion Coating System is a complete product line that consists of chemically resistant materials to protect existing structures from the threat of contaminant vapor intrusion without the need for additional concrete protection. The Retro-Coat system has been subjected to rigorous testing procedures to prove its ability to combat the most aggressive chemical vapors. The system is rated for industrial use providing a durable finished surface suitable for vehicular traffic. Retro-Coat coating technology was specifically developed for vapor intrusion.

Vapor-Vent is a low profile vent system that can be used in lieu of slotted PVC pipe. The speed of installation and the proximity of the vent to the barrier provide cost savings and performance benefits compared to other technologies.

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