

NFA Letter Received from the Alabama Department of Environmental Management after Geo-Seal Application

Project Highlights

- Geo-Seal[®] application helps obtain a No Further Action (NFA) letter from the Alabama Department of Environmental Management (ADEM)
- Vapor Intrusion barrier successfully reduces harmful contaminants left behind by former chemical plant operations
- Geo-Seal applied to over 3,455 ft²

Project Summary

A fuel production facility in Alabama inherited environmental subsurface contamination when the site was acquired. The site was a former chemical plant operating since the 1960's. The chemical plant functioned as a large quantity generator (LQG) of hazardous waste, manufacturing hydrocarbon, gum rosin, and tall oil-based resins for over 30 years. Site investigations revealed several contaminants from industrial sources, including chlorinated volatile organic compounds (cVOCs) and polycyclic aromatic hydrocarbons (PAHs) such as naphthalene. Dicyclopentadiene (DCPD) levels posed a particularly significant vapor intrusion threat, with sub-slab vapor samples reaching as high as 48,000 micrograms per cubic meter.

The environmental consultant was hired by the site owner to aid in navigating the ADEM's voluntary cleanup program. The concentration of DCPD at the site indicated an elevated concern for potential contaminant vapor intrusion at the fuel production facility. Three of the existing buildings—a maintenance shop, laboratory, and control room—were at the highest risk for vapor intrusion based on the sub-slab vapor data. Based on the analytical data collected at the site, ADEM required that engineering controls, including vapor mitigation measures, be implemented in order to receive the coveted NFA letter. As a result, the environmental consultant specified a Geo-Seal vapor intrusion barrier and installed it in the maintenance shop and control room in a retro-fitting capacity. This approach involved laying the barrier directly onto the existing concrete slab, with a new capping slab poured directly on top of the barrier. For the third building, due to the inability to shut down operations in the laboratory, the site owner opted for the installation of an active venting system. This system will require ongoing operation and maintenance to assure that it is functioning effectively.



Site Details

Site Type: Industrial Chemical Plant


Contaminant of Concern: BTEX, TPHg, TPHd, cVOCs, PAHs, and DCPD

Vapor Intrusion Solution: Vapor Intrusion Barrier

Treatment Area: 3,455 ft²

Technology Used: Geo-Seal

 **Geo-Seal**[®]
Vapor Intrusion Barrier



S&H Waterproofing, a Land Science-Certified Applicator, installed the Geo-Seal barrier under the environmental consultant's direction. During the installation, S&H conducted quality assurance/quality control (QA/QC), which included smoke testing to assure that the system functioned effectively. The environmental consultant's field staff performed the oversight and documentation of the installation. Staff members were certified by Land Science through the Land Science Inspector Training Program. 3,455 square feet of Geo-Seal was successfully installed and the site subsequently achieved NFA closure status.

Technology

Geo-Seal is a gas vapor management technology designed to eliminate vapor intrusion on environmentally-impaired sites, including sites designated as a brownfield. Geo-Seal is a chemically-resistant material placed between the foundation of the building and the soil pad to eliminate vapor intrusion and stop contaminant vapors from permeating through the slab.

By using Geo-Seal, developers can ensure a healthy indoor environment while reducing the cost of site remediation and expediting site construction.