

TERRASHIELD MITIGATES VAPOR INTRUSION ON FORMER INDUSTRIAL SITE

CASE STUDY:

Protective Vapor Barrier
Installed to Make Way for
Federally Funded Public Site





The former industrial site required an effective vapor mitigation solution to move the federally funded project forward



The consultant determined TerraShield was the safest and most cost-effective vapor barrier system to install at this site

Overview

TerraShield Provides Safe, Cost-Effective Solution to Address VOC Vapors

A former industrial site located in Southern California was targeted for redevelopment and chosen to be developed into a federally funded public site. Historical operations left the original property contaminated with petroleum hydrocarbons and volatile organic compounds (VOCs). In addition to the presence of these contaminants, new buildings constructed in the area are required to feature a vapor intrusion mitigation system due to the presence of methane gas in the soil, which may eventually enter unprotected buildings on the surface. Because of these factors and the completed site's intended purpose for public use, an effective vapor mitigation system was necessary.

The environmental consultant sought out a safe and cost-effective solution to ensure maximum protection against VOC vapors. It was determined that the best course of action would be the installation of a passive slab-on-grade system that included a vapor barrier system proven effective against petroleum hydrocarbons and other contaminants at the site. Additionally, the federal site's expected frequent public use made safety a high priority. After considering other vapor mitigation options, the consultant determined TerraShield was the most appropriate system for this site due to the product's superior chemical resistance. This site is currently pending closure (NFA).



Why the Developer Chose TerraShield Over Alternative Vapor Intrusion Mitigation Systems



TerraShield is a high-performance barrier system that is a combination of a reinforced metallized film, nitrile spray-applied core, and reinforced geotextile layer. This multi-layer design contributes to TerraShield's high chemical resistance. TerraShield has demonstrated its ability to protect against a wide variety of contaminants and is a front-runner in the industry in terms of chemical resistance.



The component materials used in TerraShield include reinforced aluminum film. Similar to film used in Mylar balloons, this material effectively blocks the diffusion of helium in the Mylar balloons compared to the materials used in traditional balloons, which ultimately allow rapid gas diffusion. The use of the aluminized material offers orders of magnitude lower diffusion of volatile organics (VOCs) compared to high density polyethylene (HDPE).



Additionally, TerraShield incorporates a nitrile rubber, widely recognized for its chemical resistance and commonly used in PPE. This offers 10x the protection of traditional styrene butadiene (SB). Nitra-Core is a nitrile-modified spray-applied asphalt component serving as the core of TerraShield's composite system. It is also used to seal around pipes and electrical conduit penetrations that are among the most vulnerable areas for volatile organic contaminant diffusion.



16,000 Square Feet
Installed

MTN Inc., a Land Science certified applicator, installed a total of 16,000 square feet of TerraShield and performed smoke testing as part of the QC process to ensure the barrier was properly installed.

Application

MTN Inc.'s application engineer installed 16,000 square feet of TerraShield at the new construction site. TerraShield is easy to install and offers environmental professionals a safe and cost-competitive solution for sites where vapor intrusion levels exceed current regulatory standards. The application of the TerraShield vapor barrier system included Land Science Bond, Nitra-Core, TerraBase, and TerraVent.



The innovative use of the aluminum film combined within flexible polyethylene results in the TerraBase layer having up to 100X greater chemical resistance compared to HDPE (10mil). Nitrile is incorporated into the spray-applied core formulation, a material known for its superior chemical resistance. The resulting spray-applied core barrier offers an improvement of up to 10X in chemical resistivity compared to SBR-modified spray barriers.



Results

The installation of TerraShield was completed on schedule and the site is currently pending closure (NFA). As a result, the developer is able to move forward with the new construction of this federal site.

Technology

TerraShield is a significant step forward for vapor intrusion barriers. Employing an innovative dual metallized film technology, TerraShield provides excellent chemical resistance compared to many other vapor barriers available on the market. It is the ideal vapor mitigation solution for residential, industrial, and commercial developments with volatile contaminant impacts that represent significant health hazards and economic liabilities.

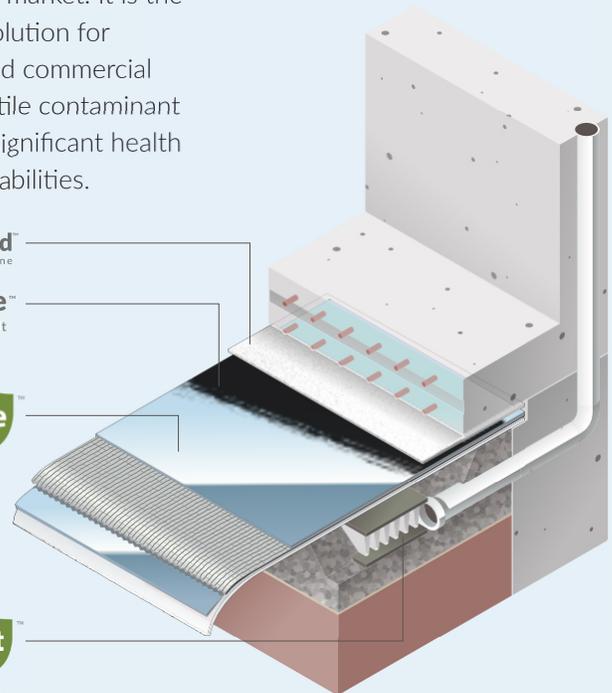


LandScienceBond
HDPE Composite Geomembrane

Nitra-Core
Nitrile-Modified Asphalt

Terra Base

Terra Vent
Low-Profile Venting System

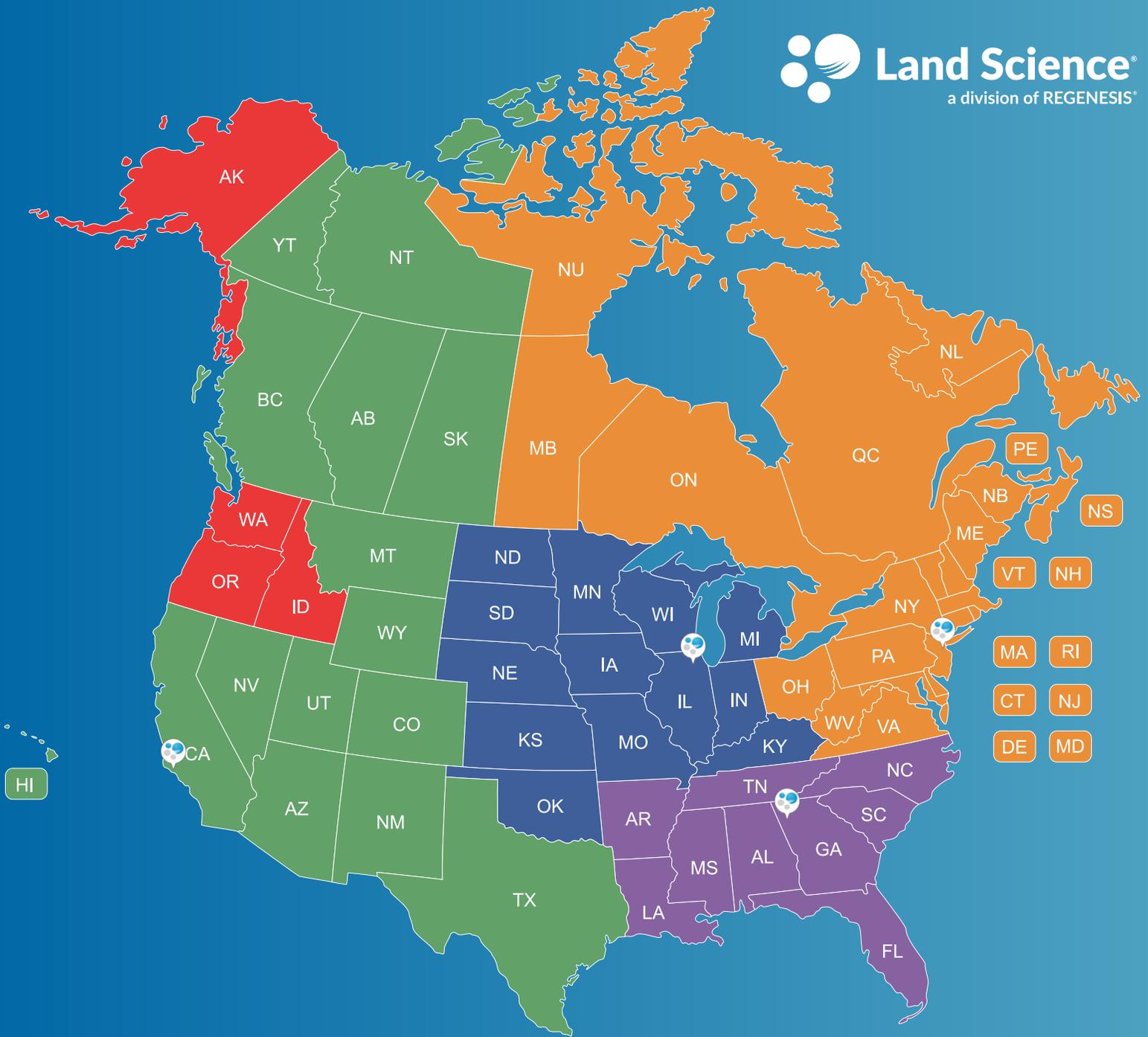




About the Land Science Certified Applicator



MTN Inc. is a full service contractor specializing in waterproofing, vapor mitigation and barrier systems, and explosive and VOC (Volatile Organic Compound) gas detection and monitoring systems. MTN Inc. has worked with union and non-union jurisdictions. The team at MTN Inc. prides themselves on getting the job done on-time and within budget without compromising quality, integrity and unparalleled craftsmanship.



We're Ready to Help You Find the Right Solution for Your Site

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Get Started Today

To receive a custom vapor intrusion solution, please call 949.481.8118 or e-mail info@landsciencetech.com. One of our Technical Solutions Managers will review your project details and provide you with a customized vapor intrusion solution designed to achieve your goals.



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