

North Shore at Mandalay Bay: Contaminated Soil Remediation

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- A major land redevelopment initiative is underway in Oxnard, CA, targeting the transformation of a former fuel site into a residential housing development. The initial scope centers on the remediation of contaminated soils, which will be stockpiled and treated onsite for future reuse in construction activities.
- The remediation strategy involves placing the impacted TCE and PCE soils within a geomembrane-lined treatment cell adding iron, and organics to facilitate an anerobic treatment process. To add the required moisture, we developed an irrigation drip system that allowed water in the cell, while maintaining an airtight seal. The process accelerates the breakdown of residual contaminants and ultimately will restore soil integrity.
- Upon successful treatment, the soils will be repurposed to support the broader residential development—advancing both environmental recovery and sustainable land use.

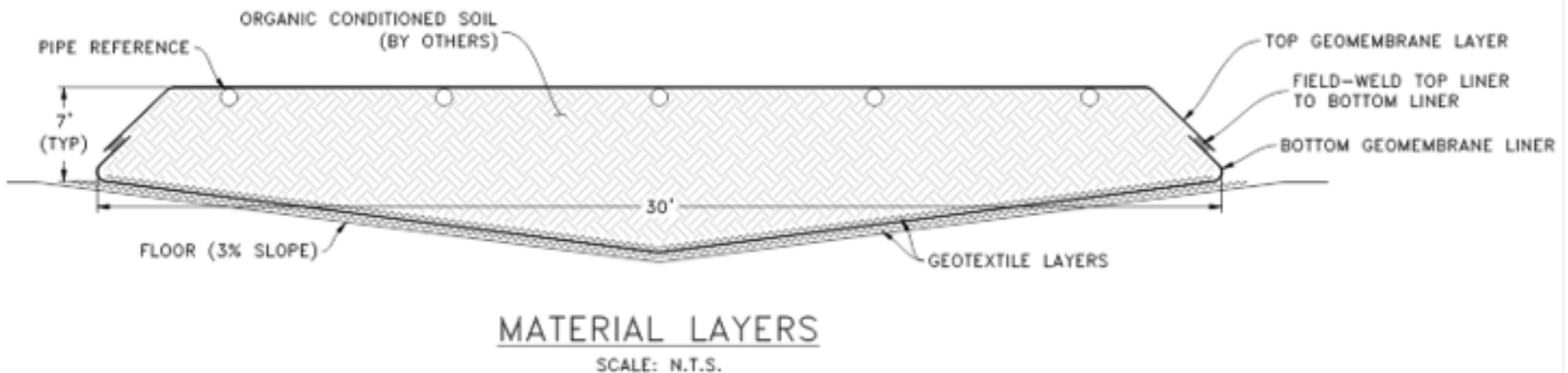
The Solution

Solution Delivered:

Layfield proposed a robust containment system using a 40-mil LLDPE geomembrane, engineered for chemical and UV resistance with exceptional durability for exposed applications.

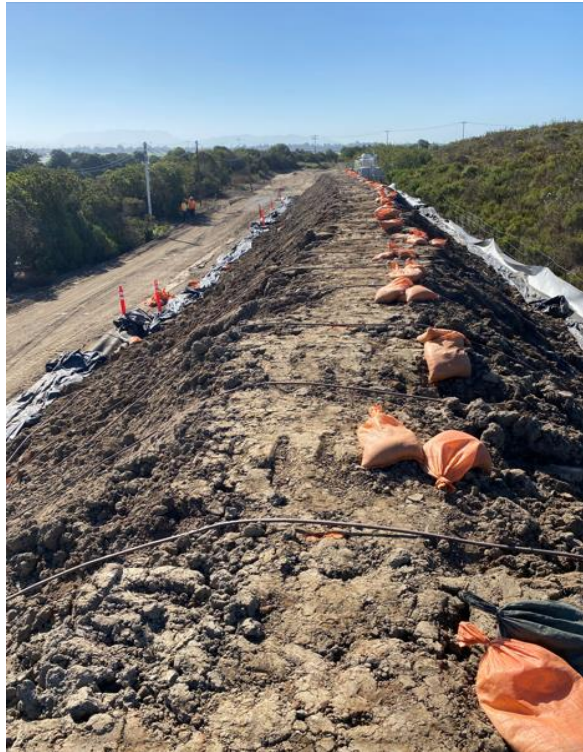
The design concept treatment cell included:

- LLDPE 40-mil custom prefabricated panels for capping liner and base liner- dimensions: (50' x 330')
- Field extrusion welding of cap to base liners- creating an airtight seal.
- 8 oz non-woven geotextile layers above and below the base liner for puncture protection and soil buffering.
- Integrated slope design (3%) to facilitate vapor extraction and drainage.
- Inspection/sample ports with caps installed using a pipe boot kit.





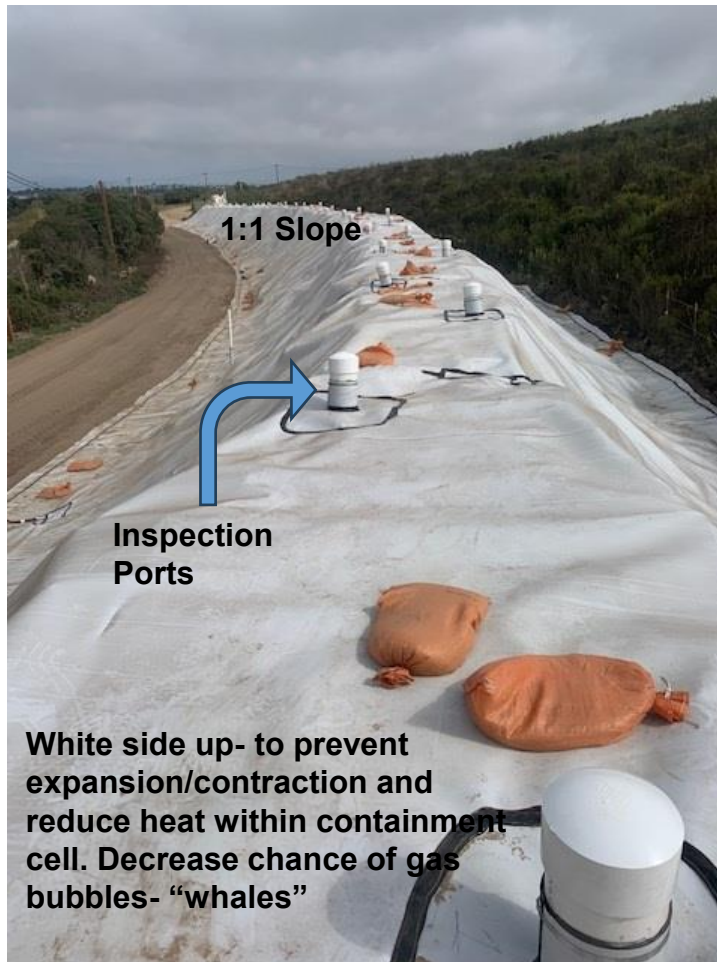
First layer of 40-Mil Blended LLDPE/HDPE



Contaminated soils placed overtop



Capping Blended LL/HD liner welded to base liner



Specific Project Considerations:

- Longevity- short term use, approx. 3 years
- Contaminants found in soils: TCE, PCE, Hydrocarbons, misc. fuel
- Treatment process: Add moisture, and organics to create anerobic breakdown of contaminants.
- Fabrication requirements: limited amount of space onsite

Geomembrane

- Fortified Blended Geomembrane
- Polyolefin Alloy – High quality, virgin, HDPE & LLDPE resins
- Advanced UV / AO Package
- 20, 30, 40, 50, 60, 80 mil
- Black / White
- Smooth and/or textured



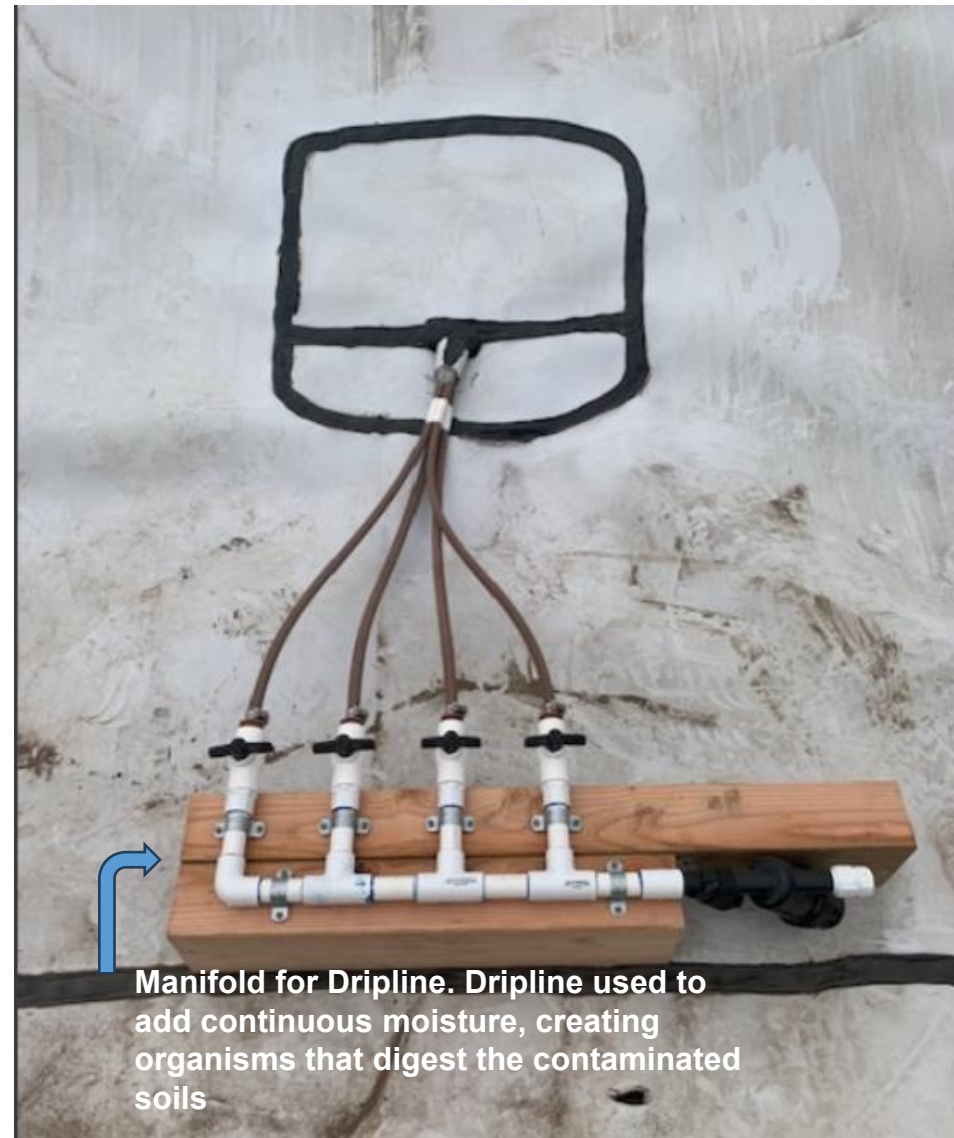
Very Chemical Resistant



Very UV Resistant



Very Flexible & Durable



Environmental remediation & geosynthetics



- Historically, remediation work has proven to be a very good market for flexible geomembranes.
- We have a tech note on our website that might be of further interest:
- <https://www.layfieldgroup.com/geosynthetics/resources/knowledge-center/geomembranes-for-environmental-remediation/>
- The tech note discusses the different types of remediation such as chemical remediation, bioremediation and physical remediation as well as the use of geomembranes in these types of applications.

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GEOMEMBRANES FOR ENVIRONMENTAL REMEDIATION

THANK YOU!



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