



The Liner Company

# SOLUTIONS

ENVIRONMENTAL PROTECTION, INC.

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## Covered With Confidence

**Problem:** The Antrim/Kalkaska County Landfill in northern Michigan was required to close. The combination of a sandy subgrade and climate extremes required a creative solution from the engineer. The landfill had to be sealed with a durable, weather resistant and impermeable cap. Cost and installation time were also factors in specifying an appropriate system.

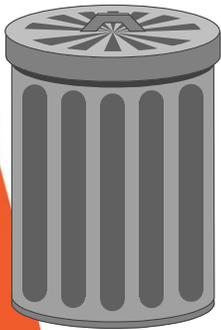
**Solution:** 20 mil PVC geomembrane, custom fabricated and installed by EPI. The lack of availability of clay in the area made the cost of importing that material prohibitive in comparison to a geomembrane. The choice of geomembrane material was logical. PVC, by its physical nature, outperforms polyethylene under the stresses of temperature extremes and the settlement in landfills. And, because there are fewer field seams, overall labor costs are lower.

PVC is not subject to stress cracking which is inherent in all polyethylene. Noted for its excellent puncture, abrasion and tear resistance properties, PVC also retains its flexibility when temperatures typical to northern Michigan dip far below zero (°F) or soar above one hundred degrees

And, unlike the rigid characteristics of polyethylene, PVC's high elongation factor (300% minimum) ensures its ability to easily conform to the subgrade as the landfill settles over time.

Installation labor was cut to a minimum because Environmental Protection, Inc. has the ability to fabricate panels as large as 30,000 square feet. 94% of all seam welding was done in the factory under controlled conditions. This PVC cap required only 6400 lineal feet of field welding compared to the 27,000 lineal feet which would have been required with polyethylene. The 608,850 square feet of 20 mil PVC was deployed, field welded and tested by trained EPI installers in just four days.

Presently, the Antrim/Kalkaska Landfill appears as a large grassy meadow, surrounded by the beautiful hardwoods of northern Michigan. An abundant wildlife community has settled into the site and residents nearby are confident that the PVC liner which covers their landfill will serve its purpose to prevent leakage in the future. For more information, call us today or visit us on the Internet



*Preserving water resources for future generations*