

IAGI Member Monthly Project Profile

November 2025



- **Project Name - Ashburton Underground Drinking Water Storage Tanks**
- **Owner – Municipal District of Baltimore, Maryland**
- **Geomembrane Installer – Hallaton Environmental Linings**

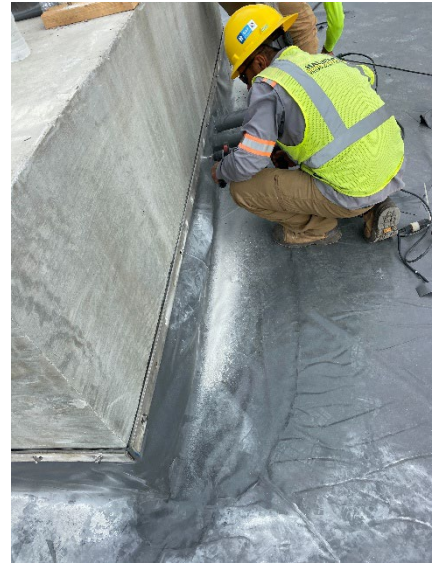
Project Summary

This project involved two large 434 feet (133.3meter) diameter below grade concrete tanks designed to store up to 50 million gallons (189 million liters) of drinking water for the city of Baltimore, Maryland. These two tanks were part of a broader initiative that included work at Druid Hill Reservoir, Montebello Water Filtration Plant, and Gilford Reservoir. The scope of work included Hallaton Environmental Lining installing prefabricated 40 mil (1.0 mm) PVC liners to the top of each concrete tank to ensure they are sealed and waterproof. This was a requirement to help prevents contamination and leaching of trash, chemicals, parasites, and other pollutants into the drinking water. Druid Hill Park was created in 1860 is owned and operated by the City of Baltimore, Maryland. The park is 745 acres in size and is home to the 55-acre Druid Hill Reservoir which provides drinking water to the City of Baltimore and surrounding counties.



Project Details

A 40 mil (1.00 mm) PVC liner was installed over the finished concrete roof of each tank. The large custom size fabricated PVC panels were thermally wedge welded on site with all T- seams and surface patches performed by hot air Liester welding equipment. The PVC liner was mechanically attached using predrilled stainless steel bar and rubber gasket to the ring wall around the full perimeter at the top of both tanks. A geonet composite was then installed on top of the PVC liner to support a soil reinforced subbase as part of construction of a future sports field and additional commercial infrastructure which is planned as part of repurposing the land above the tanks for public use. One key reason for lining the Ashburton Lake tank reservoirs was the detection of low levels of cryptosporidium—a parasite that poses health risks, particularly to immunocompromised individuals. With the new lining system in place, the tanks can now be regularly tested to meet EPA standards.

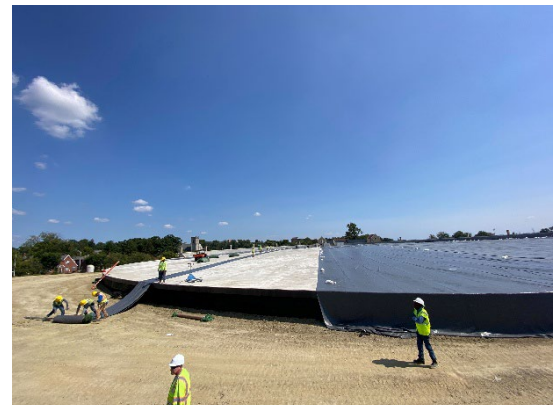


Mechanical connection of PVC Liner to concrete tank top perimeter

These upgrades reflect Baltimore City's investment in public health and its commitment to maintaining a safe residential water supply.

Project Materials

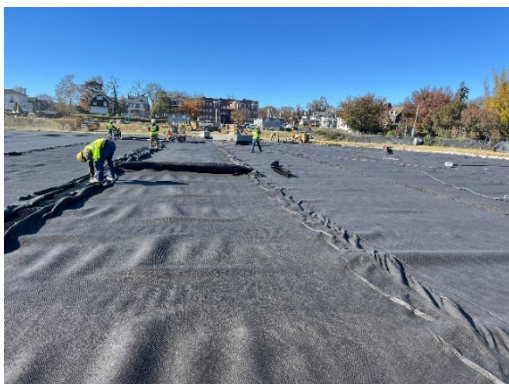
- 328,000 sq ft (10,000m²) – 40 mil PVC
- 324,800 sq ft – 8 oz NW Geotextile
- 324,800 sq ft – Single-sided 6 oz Geocomposite



Installing prefabricated 40 mil PVC panels

Challenges & Results

The installation was complicated by the high vertical tank wall elevation and lack of site access place requiring special lifting equipment to hoist materials approximately 30 feet (9.1m) above grade. Custom factory fabricated 40 mil PVC



Installing geocomposite above PVC panels

panels using a staggered panel length configuration were chosen versus HDPE to address the tight space constraints, tank roof radius configuration and to support with quicker material deployment. The modular fabricated PVC panel system helped to streamlined installation and reduced the amount of field welding and construction time. Stainless steel batten bars with anchor bolts were used to mechanically attached the PVC geomembrane to the concrete wall structure.

This project highlights how infrastructure with the use of geosynthetics can be integrated into public spaces within large busy cities. The recreational field above the tanks exemplifies creative land use, benefiting both the site owners and the community.

About Hallaton Environmental Linings

Hallaton Environmental Linings is based in Sparks, Maryland and has been servicing the geomembrane installation industry for over 30 years. Hallaton are a long time member of IAGI and both an IAGI Approved Installation Contractor (AIC) and with numerous employee Certified Welding Technicians (CWT). Hallaton install a wide range of geosynthetic materials providing high quality environmental containment.

Related to this project profile, in 2018, Hallaton Environmental also installed a 120,000 ft² (11,150 m²) reinforced PVC EIA geomembrane on one side of a rock cofferdam to drain one-half of Druid Hill Reservoir while maintaining water in the other side of the temporary stone cofferdam. See the project link below.

<https://hallaton.com/profile/druid-hill-reservoir>



Concrete tanks before installation of PVC Liner cap



Completed PVC lined tank tops with footings for sports field