



# LANCHESTER LANDFILL

## MSW LANDFILL

### LOCATION

Navron, PA

### OWNER

Chester County Solid Waste Authority

### ENGINEER

ARM Group Inc.

### CONTRACTOR

ARM Group Inc.

### SIZE

11 Acres

### DATE COMPLETED

2014 – Phase I

2018 – Phase II

### PROJECT DESCRIPTION

The Lanchester Landfill, owned and operated by Chester County Solid Waste Authority (CCSWA), is located 50 miles east of Harrisburg and 40 miles west of Philadelphia. It provides service to 49 communities in the Chester County area. The site has reached capacity on three different occasions requiring on-going expansions. When the need arose to provide a cover for six and a half acres at full grade, CCSWA sought the assistance of the ARM Group to conduct a preliminary feasibility study of an exposed geomembrane cap (EGC) intended to reduce the capping construction and long-term maintenance costs.

Although merits of an EGC system existed, it was concluded that an EGC was not a suitable system for final cover at Lanchester. The ARM Group instead proposed the ClosureTurf® advanced engineered closure system. Based on research, ClosureTurf offered several advantages over a traditional EGC and over a traditional final cover system. Because there were no on-site soils available, ClosureTurf reduced projects costs associated with transporting the soil and eliminated truck traffic that would have otherwise been required to haul in final cover soil from off-site sources. ClosureTurf also reduced the risk of sliding slopes resulting from potential weather events such as rainstorms, hail, tornados and even seismic events.



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Environmental impacts also topped the list of important factors to consider. Located near the Conestoga River, storm water runoff quality was a concern with the landfill being at the head waters of receiving stream basins. The engineered turf fibers and sand infill of ClosureTurf effectively filter the runoff and because there is no soil, the risk of contaminated sediment is eliminated. The ARM Group performed an in-depth evaluation to ensure that the landfill's existing storm water management features (e.g., channels, terraces, detention basins, etc.) would still function properly after installation of ClosureTurf, which proved to be successful. Another environmental concern was that the final cap in place provided a safe habitat for many types of wildlife, including whitetail deer, turkeys, foxes, raccoons and hawks. ClosureTurf easily blends

into the environment and is wildlife neutral with no negative effects. Aesthetics also played a role in the selection of ClosureTurf. Because the landfill sits in a largely rural area, the peaks are highly visible in all directions. ClosureTurf provided a year-round green solution that was not an eyesore to the surrounding communities.

Although the system met the Subtitle D requirements, the state of Pennsylvania had not yet approved the system as an alternative. With solid technical data and a proven history in other states, the PADEP granted a Demonstration Facility Project Application, in which ClosureTurf would be approved as a permanent closure solution if it met the requirements of a 2-year evaluation.

ClosureTurf was able to save the county around \$60,000 per acre in construction cost compared to a traditional cover. In addition, they save an annual cost of \$4,540 per acre in post closure maintenance, due to the elimination of grass, soil cover and erosion potential.

In 2016, SWANA awarded the ARM Group and CCSWA the silver excellence award for Landfill Management. The PADEP also approved ClosureTurf as a final cover alternative. In addition, the Wildlife Habitat Council certified the Lanchester Landfill for its habitat and conservation efforts.

CCSWA capped an additional five acres in 2018 with ClosureTurf based on its successful performance onsite during the last four years.



ClosureTurf® was easily integrated into the existing storm water management features.