

Tenflow Application at Mill Creek Landfill Closure

PROJECT NAME:	Mill Creek Landfill
LOCATION:	Fort Polk, LA
PRODUCT:	Tenflow
APPLICATION:	Surface water drainage & gas venting
DATE:	2004
ENGINEER:	URS Corporation



The completion of the Installation Restoration Program at Fort Polk, LA, in September, brings the U.S. Army one step closer to meeting its goal of cleaning up 1,080 active installations by the end of fiscal year 2014. The landfill was used from 1950 to January 1986 for the disposal of hazardous and non-hazardous wastes. Soil erosion had exposed waste debris since construction of the original landfill cover in the 1980s. This led to numerous hazards to human health and the environment. The solution was to redevelop the base layer and install a corrective-action cap. Capping the Mill Creek Landfill was the most challenging project because of the size and level of effort.

Final cover design for Areas 25 and 26 of the Mill Creek Landfill at Fort Polk, Louisiana has been prepared by URS Corporation of Baton Rouge, Louisiana. The final cover surface area is approximately 30 acres. The final cover slope varies from 5 percent to 20 percent. The estimated waste thickness is 15 feet.

The final cover system components from the final cover surface to the top of

the existing waste surface (i.e., from the top, proceeding down):

1. 6-in. thick vegetative cover soil layer
2. 12-in. thick soil cover layer
3. Tenflow geocomposite drainage layer
4. 60 mil thick HDPE geomembrane
5. 24-in. thick low permeability soil layer (soil permeability = 1×10^{-7} cm/sec)
6. Tenflow geocomposite gas venting layer
7. 12-in. thick intermediate cover soil layer

Tenflow geonet provides the highest flow capacity among any HDPE geonet. The long-term in-soil transmissivity of Tenax Tenflow is in the order of 7×10^{-3} m²/s at a gradient of 0.1, and 4×10^{-3} m²/s at a gradient of 0.33. Long-term (30,000 hour) testing indicates that Tenflow maintains over 90% of its thickness when exposed to long-term compressive loads. This retained thickness maintains an open flow channel into which geotextiles are kept from intruding. This geocomposite allows for greater compatibility with cover soil permeability, higher amounts of gas, controls seepage forces and landfill gas pressure buildup, all critical to slope stability.