



USACE, SAVANNAH DISTRICT

3RD AVENUE LANDFILL CLOSURE – DESIGN/BUILD

Fort Gordon, Georgia

PROJECT HIGHLIGHTS

CLIENT PROFILE

The U.S. Army Corps of Engineers (USACE) Savannah District oversees various programs at 11 military installations in Georgia and North Carolina and manages the water resources of the Coastal Georgia region. The District provides expertise and management for a broad variety of disciplines including engineering, architecture, design, construction, master planning, subsurface exploration, hydropower, and environmental stewardship.

PROJECT OVERVIEW

The firm completed the design and construction of an inert landfill cap and surface water control upgrades for the District at the 3rd Avenue Landfill at Fort Gordon. The project site is located in an area characterized by significant elevation variances where uncontrolled stormwater had eroded the majority of the landfill cover.

The 3rd Avenue Landfill was required to comply with the permit-by-rule (PBR) conditions for inert landfill closures, which requires a uniform compacted soil layer of final cover, not less than 2 feet in depth, and vegetative cover placed over the landfill. In addition, a stormwater conveyance system was required to allow surface water to travel through the landfill for discharge into state waters without affecting the integrity of the landfill closure systems.

CHALLENGES

- Presence of significant quantities of surface debris, deposited to minimize erosion, complicated design parameters and constructability.
- Dimensions of project area (over 1-mile long and less than 300 feet wide) greatly affected constructability relative to stormwater control.
- Groundwater seepage complicated cap and drainage system design and construction.
- Steep slopes required significant energy dissipation systems to meet water discharge requirements and protect installed system components from damage during rain events.

THE MSE GROUP APPROACH

The 3rd Avenue Landfill project consisted of two phases. The first phase involved design services including geotechnical engineering with waste limit investigations, stormwater modeling, structural design of stormwater conveyance systems, and permitting. Turnkey construction comprised the second phase and included surface debris relocation, borrow pit operations, placement of 2-foot cover system, construction of a large stormwater retention pond, installation of 60-inch reinforced concrete pipe and 108-inch concrete energy dissipator, riprap channel installation, and vegetative cover placement.

ACCOMPLISHMENTS

- Surface debris was incorporated into the fill plan to eliminate off-site disposal costs.
- Under-drains were redesigned in the field to account for seepage conditions discovered during construction.
- The multi-year, multimillion-dollar project won several awards for safety and technical achievement.

AREA OF EXPERTISE

- Solid waste engineering and construction

This large design/build project won multiple awards for safety and technical performance.

