USACE, MOBILE DISTRICT

LANDFILL CLOSURE – DESIGN/BUILD

Cape Canaveral Air Force Station, FL

PROJECT HIGHLIGHTS

CLIENT PROFILE

The U.S. Army Corps of Engineers (USACE) Mobile District manages of variety of programs in Alabama, Georgia, Florida, Mississippi, and Tennessee as well as Central and South America. The District's mission includes supporting all branches of the U.S. military, other federal agencies such as the U.S. EPA, and providing design and construction for civil works projects. Cape Canaveral Air Force Station (CCAFS) is an installation of the U.S. Air Force Space Command 45th Space Wing, which is headquartered at Patrick Air Force Base (PAFB) in Brevard County. CCAFS is the primary launch facility for the Command's Eastern Range and has supported America's space program since the 1950s.

The MSE Group's solid waste team designed and installed all liner.

PROJECT OVERVIEW

To support the District and the needs of the 45th Space Wing, the firm assembled a project team to provide final design, permitting, construction, long-term care planning, and regulatory coordination for three active solid waste landfill operation, construction and closure permits. Based on Air Force internal audit findings, landfill cover and drainage conditions did not meet minimum thickness and infiltrations permit requirements. The team evaluated permit conditions, assessed potential mitigation options and costs, and remedied the problem.

Our team's ability to provide panel design and installation further streamlined project schedules and costs.

CHALLENGES

- Clean Water Act, Clean Air Act, and Federal Aviation Administration regulations required significant evaluation and compliance.
- Construction activities were within restricted zone of an active runway.
- Work area involved the potential for radioactive materials.
- Options were limited for cover soil that could sustain vegetation growth.

THE MSE GROUP APPROACH

The project team used innovative landfill cover evaluation methods to reduce project resource needs and costs as well as sustainable construction methods to reduce off-site resource requirements (mixed on-site organic muck with inert sand). The project team completed an engineering survey, stability analysis, geophysical evaluation of cover soils in comparison to permit requirements, and landfill cover and drainage design as well as grading and cover maintenance. The firm self-performed all design and construction aspects of this project.

ACCOMPLISHMENTS

- Used geophysical modeling, saving over $50,000 in design costs.
- Developed strategic soil amendment and mixing program to facility vegetative growth without importing excess organic soil.
- Reused on-site vegetation for erosion control and dust mitigation.
- Worked off-hours and weekends at no additional cost to the government to prevent delays from construction during wet season.
- Received praise from regulators during final walk-through for high level of performance.

AREAS OF EXPERTISE

- Solid waste design and permitting
- Design/build