



# USACE, MOBILE DISTRICT

SPACE LAUNCH COMPLEX 37 OZONE REMEDIATION – DESIGN/BUILD  
*Cape Canaveral Air Force Station, Florida*

## PROJECT HIGHLIGHTS

### CLIENT PROFILE

The U.S. Army Corps of Engineers (USACE) Mobile District manages a 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 military and other federal agencies such as 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 45<sup>th</sup> 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.

### PROJECT OVERVIEW

The firm provided remedial design, process optimization, and operation and maintenance (O&M) of two treatment systems designed to treat chlorinated volatile organic compounds (VOC) in soil and groundwater at Space Launch Complex (SLC) 37. The project consisted of extensive contamination assessment and complex oxidation and bioremediation design and construction.

### CHALLENGES

- Working at an active space launch complex
- Limited construction time on-site
- Security clearance required for site access

### THE MSE GROUP APPROACH

The project was completed in three phases—soil remediation, remediation of groundwater via ozone injection, and remediation of groundwater via emulsified vegetable oil (EVO) manufacture and injection. Extensive soil and groundwater assessment identified shallow-source and deep-subsurface dissolved phase plumes at multiple locations, so the team designed and constructed a one-of-a-kind ozone generation and delivery system at the site.

Design included a 50-lb/day generation and injection system with 116 injection wells in two source areas, closed-loop cooling system, ozone safety monitoring and shutdown system, and full automated telemetry controls. The bioremediation phase involved manufacture of over 50,000 gallons of EVO and injection via 14 distribution wells. The firm self-performed all aspects of design, permitting, construction, O&M, and decommissioning.

### ACCOMPLISHMENTS

- Achieved 80% mass reduction with ozone for the 2.5-acre primary plume
- Achieved 90% contaminant mass reduction with EVO for the smaller source areas

### AREAS OF EXPERTISE

- Environmental assessment and remediation
- Oxidation remediation
- Bioremediation
- Design/build

*“I would highly recommend them for other environmental restoration projects and will use them for my work whenever possible.”*

*– USACE Project Manager*

*“They have been an excellent contractor and have provided exceptional support for the 45<sup>th</sup> Space Wing Program.”*

*– USACE, Mobile District*