



# USACE, SAVANNAH DISTRICT

## INFLOW AND INFILTRATION STUDY

*Robins Air Force Base, 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. Robins Air Force Base (RAFB), located 100 miles southeast of Atlanta, is a large base that consists of various major units including the Air Logistics Command, which manages aircraft, engines, missiles, software, and avionics worldwide.

### PROJECT OVERVIEW

To support RAFB Civil Engineer Group, the firm was retained by the Savannah District to conduct an inflow and infiltration (I&I) systematic investigation and analysis of the sanitary sewer and industrial wastewater collection systems in compliance with wastewater standards, rules, and regulations. The objective of the project was to identify collection system I&I issues, provide options for repair and maintenance, and develop a cost/benefit analysis of long-term solutions.

### CHALLENGES

- Inflow issues
- Infiltration issues
- Unknowns associated with subsurface utilities
- Safety issues associated with access to confined spaces
- Coordination with other contractors working on collection systems
- Traffic control associated with manhole access

### THE MSE GROUP APPROACH

The project team of engineers and field technicians developed a detailed assessment plan with extensive safety protocols and procedures to handle the unique project constraints. The team completed the analysis of existing flow data, installed flow monitoring equipment within the sewer systems, inspected 350 manholes and 16 lift stations, conducted 120,000 linear feet of smoke testing, performed 15,000 linear feet of closed circuit television (CCTV) sewer inspection/survey, compiled results into GIS, completed I&I evaluation reports for both systems, and developed sewer rehabilitation plans.

### ACCOMPLISHMENTS

- Identified cross connections between the sanitary and stormwater systems
- Created a 5-year repair plan for the base to decrease I&I
- Calculated cost-saving projects
- Developed weighted long-term cost/benefit solutions analysis

### AREAS OF EXPERTISE

- Stormwater engineering
- Structural engineering
- Data management
- I&I assessment and evaluation
- GIS mapping



*Field team performing smoke testing*



*CCTV image of interior pipe obstruction*