



NATIONAL PARKS SERVICE

HORN ISLAND ASBESTOS ASSESSMENT AND CORRECTIVE MEASURES

Horn Island, Mississippi

PROJECT HIGHLIGHTS

CLIENT PROFILE

The National Park Service (NPS) is an agency of the U.S. federal government that manages all national parks, many national monuments, and other conservation and historical properties. Horn Island, a barrier island, is part of the Gulf Coast National Seashore. This wilderness preserve is only accessible by boat, and the island is used primarily for camping and recreational purposes.

PROJECT OVERVIEW

Asbestos-containing materials (ACM) associated with former structures located on the island have been found near beach areas, resulting in NPS restricting access to the island. The objectives of this project were to evaluate current environmental conditions at the site, determine the vertical and horizontal limits of ACM in the vicinity of the former chimney and building foundations, remove the visible bulk ACM from the site, perform activity-based sampling (ABS) to evaluate human exposure risks, conduct human health and ecological risk assessments, and complete a corrective measures study to evaluate ACM remedial alternatives.

CHALLENGES

- The site is located on an uninhabited island with protected historical artifacts and species of animals.
- No federal or state cleanup levels were defined for asbestos in sand; site-specific models needed to be developed to correlate the asbestos concentrations in sand with OSHA-defined permissible exposure levels.
- Dynamic in nature due to its location, the site is characterized by intense storm events, tidal changes, and abrupt shifts in sea conditions.

THE MSE GROUP APPROACH

The project team assembled a team of engineers, ecologists, and industrial hygienists experienced in assessment, remediation, species identification, and human health exposure relative to ACM. The project team designed and implemented a site assessment plan that included collection of more than 200 soil samples and 20 ABS air samples. The ABS samples were collected under multiple exposure activities and scenarios designed to mimic the activities of recreational users so that actual exposure risks could be calculated.

ACCOMPLISHMENTS

- Realized over \$40,000 in project savings through parallel implementation of a corrective measure implementation for visible ACM removal during the assessment.
- Redirected funding to perform additional assessment to illustrate that the site posed minimal health risks relative to ACM in soil.
- Identified options for opening the site to the public while minimizing NPS liability.

AREAS OF EXPERTISE

- Environmental assessments and ACM removal
- Contamination assessment planning and reporting
- Ecological species evaluation
- Industrial hygiene
- Human health and ecological risk assessment



Remnants of the old building foundation when the island was used as a chemical warfare service quarantine station.

“3E Consultants (now MSE Group) assisted NPS with a complicated, unusual, and multi-stage site assessment on a site with high public visibility. The firm’s technical expertise, professionalism, and focus enabled us to make the right choices and arrive at a good decision point.”

–National Park Services



Due to years of weather and beach erosion, asbestos-containing building materials had scattered across the beach, resulting in asbestos fibers impacting beach sand.