

# Remedial Investigation/Feasibility Study – Remedial Design / Remedial Action

Former Electronics Manufacturing Facility, Greenville, SC

## Project Description

Chlorinated solvents have been detected in soil and ground water at this former manufacturing facility in the Piedmont. The groundwater contamination is present in both the saprolite and bedrock aquifers, and NAPL has been observed during the field investigation. The investigation and remediation are being conducted under a state voluntary cleanup program administered by the state Superfund group following CERCLA protocol.



Rogers & Callcott completed a source characterization and an on-site and off-site plume definition in the vadose zone and the saprolite and bedrock aquifer. Interim remedies were implemented for source and hot spot removal and hydraulic containment. A Remedial Investigation, Risk Assessment and Feasibility Study were completed in preparation for a Remedial Design to address the entire plume.

**Site Investigation** – Soil and groundwater investigations have been conducted using a phased approach, which resulted in an efficient, focused, and cost-effective assessment process. The phased site investigations utilized various drilling and sampling methods, colorimetric field screening, DNAPL characterization, packer testing, pumping tests, geochemical characterization, diffusion profiling and surface water and sediment sampling. Chemical analyses were performed at our in-house laboratory benefiting from the high quality data generated by a fully-certified, fixed base laboratory while producing data within 24 hours as needed.

**Interim Remedy Selection and Design** – Interim Remedial actions, including soil excavation and soil vapor extraction, were implemented in conjunction with ongoing investigation. Numerous remedial options were evaluated in light of site-specific conditions. A pump-and-treat barrier system currently captures contaminated groundwater and mitigates offsite migration of the contaminant plume. Source contamination was addressed by In Situ Thermal Desorption (ISTD), the first remedy of its kind performed in the state. ISTD is the simultaneous application of heat by thermal conduction and vacuum to a target treatment zone.

**Waste Treatment** – Excavated soils that were classified as hazardous waste were rendered non-hazardous onsite using a mobile steam desorption unit, resulting in lower disposal costs for the client.

**ISTD Results** – Complete source removal within the target treatment zone was completed in 5 months. The ISTD significantly reduced the remediation time of the overall plume.

**Modeling** - REMChlor, a computer analytical model released by EPA, has been used to simulate the effects of source remediation at the site. This effort provided an analytical evaluation of the results of source removal on the longevity of the contaminant plume in groundwater.

**Risk Assessment** – Exposure pathways of the contaminants were evaluated for multiple media and populations to identify potential hazards, additional response action and remediation goals in soil surface water and sediment.

**Remedial Investigation/Feasibility Study** – Results of the earlier investigation, interim remediation, and risk assessment were used to finalize the Remedial Investigation. Consequently, several remediation approaches and technologies were evaluated in a complete Feasibility Study report in preparation for an upcoming final Remedial Design comprising of in-situ bioremediation, chemical reduction and limited soil excavation.