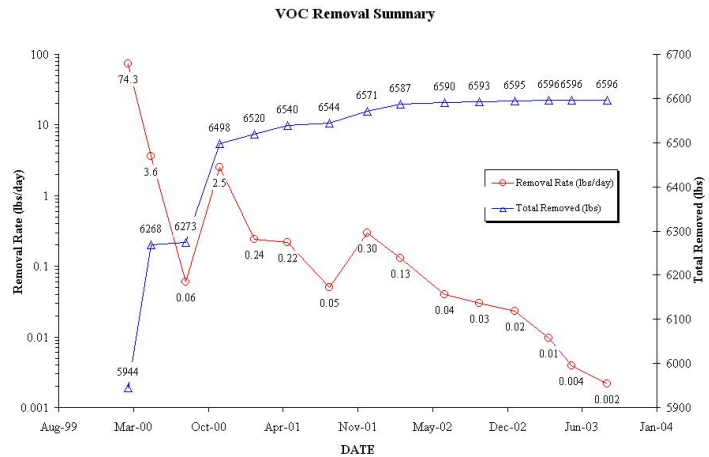


RCRA Facility Investigation and Corrective Action

Electrical Control Device Manufacturing Facility, Spartanburg, SC

Site Description

Two surface impoundments containing hazardous waste and several in-ground waste treatment tanks were closed under RCRA. A RCRA Facility Investigation (RFI) was conducted in multiple phases to determine the extent of hazardous constituents that were released. As part of the RFI, a thorough hydrogeological investigation was conducted. Corrective action measures included a groundwater recovery system, an air sparging/soil vacuum extraction system, and in-situ chemical oxidation.



Rogers & Callcott Services and Results

Conduct RFI – A total of 16 wells were installed during the RFI, including bedrock monitoring wells, cluster wells, and piezometers. An additional 30 borings wells were installed using Geoprobe® and cone penetrometer sampling techniques. Soil and groundwater samples were collected and analyzed at the Rogers & Callcott laboratory.

Design and Implement Corrective Action – After conducting an aquifer test and completing a groundwater flow model, a groundwater corrective action system consisting of four extraction wells (one in bedrock) was installed at the site to contain and recover impacted groundwater. The Client is permitted to discharge the recovered groundwater directly to the POTW without treatment.

Upon successful completion of a pilot study, an air sparging and soil vapor extraction system was also constructed to alleviate VOC concentrations in a “hot spot” source area. A total of 28 air sparging and 13 vapor extraction wells were installed. After running the system for approximately three years, the residual VOC concentrations had decreased to less than 0.1 ppm, down from the initial concentrations of more than 96 ppm.

As a “polishing” step to further reduce lingering VOC concentrations, the air sparging system was converted to an injection system to conduct In-Situ Chemical Oxidation (ISCO) in the source area. After obtaining the requisite permits, a total of approximately 20,000 gallons of 10% sodium permanganate solution was injected into the aquifer using 12 sparging wells. By creating an oxidizing environment, VOCs are chemically transformed to harmless breakdown products.

Post-closure Monitoring – Rogers & Callcott created a database and graphs of existing long term monitoring data. This close data review allowed for a realistic evaluation of the remediation system performance culminating in major modifications to the system. Statistical analyses resulted in significant reduction in scope of RFI and no-further-action status for the SWMUs, thereby reducing long term system operation schedule and cost.

Provide Regulatory Liaison – Rogers & Callcott has assisted the Client during the preparation of two Part B permit renewal packages. With the aid of the detailed database, the requirements for sampling, monitoring, and reporting are modified based on actual conditions resulting in a program that is focused and efficient.