



Excavating a test pit at the location of a former tar lagoon at the Pitt Consol site

Client: DuPont

Services Provided:

- ✓ Innovative Technology Application
- ✓ High Resolution Site Characterization
- ✓ Conceptual Site Model Development
- ✓ LSRP

Project Objective

DuPont has retained Geosyntec to develop and implement a soil and groundwater remediation program to meet the goals and objectives specified in sale agreement for this 36 acre property. The site is a former coal tar manufacturing facility to produce road tars, phenols, cresol (methyl phenol), and cresylic acid. The objective is to complete shallow soil remediation by 2015. In addition to the soil remediation and design, Geosyntec will need to complete a long term groundwater remediation strategy for this site. This site is under New Jersey's new Licensed State Remediation Professional (LSRP) program, which provides qualified individuals the responsibility for oversight of environmental investigation and cleanup. Geosyntec are able to provide LSRP staff to support DuPont in the day-to-day remediation activities at the Pitt Consol site and improve efficiency in the delivery of the project within the mandatory remediation timeframes.

Geosyntec's Scope of Services

Recognizing the cost to excavate and treat coal tar saturated soils prompted Geosyntec to consider innovative in-situ technologies. Two pilot tests to evaluate the Self-Sustaining Treatment for Active Remediation (STAR) Technology have been completed at the Site to assess this technology as a means to treat the coal tar waste that is present at the site. The in-situ pilot test successfully demonstrated the use of STAR technology, where the self-sustained smoldering combustion was maintained below ground surface and below the water table, and resulted in the destruction of approximately 5,000 kilograms of coal tar (> 800 kg/day from a single well) in a two week treatment timeframe. In 2012, another pilot test will be conducted to develop larger-scale operational costs.

A detailed assessment of the site was completed and employed laser induced fluorescence profiling (TarGOST®) technology, sonic coring and subsampling, and test pits to quantify the volume and mass of DNAPL across the site. The final selection of the areas requiring treatment will be guided by a 3D DNAPL delineation model of the site. A Remedial Action Work Plan will be developed and in 2013 soil remediation will begin. It is anticipated that a portion of the most impacted soils will be treated with STAR and supplemental on-site treatment of soils will be used to reach remedial objectives. Concurrent evaluations to determine the extent of contamination in the shallow and deep groundwater will be conducted so that the selected soil remedy may improve groundwater quality to the maximum extent practicable.

Notable Accomplishments

Successful pilot scale demonstration of STAR technology that, if suitable for full-scale application this approach, may save millions of dollars in off-site disposal costs.

High resolution site characterization led to the development of a 3D conceptual model, which also incorporates significant historical soil characterization data, to visualize and quantify the extent of coal tar impacts across the Site. This effort has already reduced the overall estimated remedy costs by clearly defining areas not requiring treatment that previously were identified for off-site disposal.