

## Soil and Groundwater Remediation Services

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## SERVICES OVERVIEW

- Remedial System Pilot Testing
- Groundwater Pumping Tests
- Soil Excavation and Disposal
- Remedial System Installation
- Short Term Remedial Events
- Injection of Chemicals for Insitu Chemical Oxidation
- Enhanced Natural Attenuation
  Practices Nutrient and
  Oxygen Injection
- Soil Washing / Surfactant Treatments
- Remedial System Repairs,
  Modifications, Optimization,
  and Operation

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## CGE's Soil and Groundwater Remediation Qualifications

CGE was formed with the mission of providing cost effective field services to Remediation Contractors, Engineering Firms and Industry. Using, dedication, value, and sustainability as a model, CGE is helping clients succeed in their respective markets in the Northeastern United States. CGE personnel have over 25 years of experience conducting soil and groundwater remediation projects and have completed 100's of Remedial Actions.

CGE has experience remediating many types of contaminants, including gasoline, diesel fuel, jet fuel, heating oil, chlorinated solvents, PCBs, metals, mold, and coal tar. No matter what your environmental problem may be, CGE can find the most comprehensive and cost effective solution based on the best available technology in the industry.

CGE's project experience spans a wide variety of sites. Remediation projects have been successfully completed at gasoline stations, superfund sites, dry cleaners, residences, commercial properties, police precincts, fire houses, airports, manufacturing facilities, hospitals, former manufactured gas plants, and more.

Remedial efforts have employed a wide range of technologies including soil excavation, LNAPL recovery, dewatering, soil vapor extraction, air sparging, ozone sparging, chemical oxidation, enhanced bioremediation, pump and treat technologies, steam injection, soil washing, and more.

All CGE field personnel are trained to safely perform remedial action work. They are taught to recognize hazards and deal with them. CGE personnel have 40 hour OSHA HAZWOPER, 8 hour Supervisor's, American Petroleum Institute (API) Safe Work, American Red Cross First Aid / CPR, and Smith System Driver Certifications.

## **Company Experience**

Contaminated Soil Excavation: Bronx, NY – CGE performed a soil excavation project at a former gasoline station in The Bronx, NY under contract to the New York City Department of Design and Construction. The project included sheeting and shoring to protect onsite utility structures and sidewalks. The excavation reached depths of 10 feet or until bedrock was encountered. Dewatering was conducted to facilitate access to the soil within the saturated zone. Approximately 1,500 cubic yards of soil were removed from the site. CGE's responsibilities included strict adherence to the community air monitoring plan as well as compliance with city building department regulations. The project also required permission to excavate from the Metropolitan Transportation Authority due to the proximity of the subway to the site.

Chemical Oxidation Injections: Various Sites in Manhattan and The Bronx, NY − CGE is currently in contract with a construction management firm under contract with the New York City Department of Design and Construction to inject RegenOx™ and ORC™ into the subsurface at NYC owned properties with petroleum contamination. Injections have been completed through existing wells and or through direct push methods. The slurry of product and water is mixed on site and injected under pressure with a grout pump. In some cases, a pulse valve known as the Hornet Tool is used to achieve greater distribution of the chemicals into the subsurface.

Air Sparge and Soil Vapor Extraction STRE: Brooklyn, NY – STRE stands for Short Term Remediation Event. In some cases, the installation of a permanent remediation system may not be feasible or practical. A site may have very limited space, or the contamination level in the subsurface may be only slightly above regulatory limits. In these cases, CGE has performed STREs to obtain site closures. This is achieved by setting up a field scale remediation system that can be mobilized to the site and operated for a period of one day to several days. The site in Brooklyn is a small property with no access to install a permanent system. Furthermore, the contamination migrated under the city sidewalk which would be very costly to manifold to a system. CGE performed Air Sparge and Soil Vapor Extraction STREs and successfully reduced the contaminant concentrations in groundwater to obtain a no further action letter from the NYSDEC.

**High Vacuum Extraction System: Staten Island, NY** –CGE personnel installed a High Vacuum Extraction system at a retail petroleum service station in Staten Island. The system was designed to remove both groundwater and vapor from the shallow aquifer. The system operated at 24 inches of Mercury vacuum. The system was installed in a trailer that was constructed by National Environmental Systems (NES). The system was connected to 5 recovery wells. Each well was fitted with a pitless adapter and a drop tube. Both the vapor and water were treated with granular activated carbon prior to discharge.