



## Geo-Cleanse Remediation Summary Garfield, New Jersey Former Chemical Company Petroleum Hydrocarbons and LNAPL

### Overview:

For over 100 years, this Garfield, NJ site operated as a chemical manufacturing facility. The 2,025 ft<sup>2</sup> area of concern is covered by a concrete cap and the geology of the treatment area consists of fine to medium grained sand. Depth to groundwater is approximately 10 feet below ground surface (ft bgs). During site investigations, light non-aqueous phase liquid (LNAPL), toluene, 1,1'-biphenyl, and diphenyl ether were detected exceeding the applicable New Jersey Department of Environmental Protection soil and groundwater remediation standards. The goal of the in-situ chemical oxidation (ISCO) treatment program was to achieve source soil reductions and eliminate LNAPL, without negative impacts to the groundwater.

### Treatment Program Design:

Geo-Cleanse International, Inc. (Geo-Cleanse) was contracted to design and implement an ISCO field treatment program. Due to site-specific conditions, Geo-Cleanse determined that catalyzed hydrogen peroxide (CHP) would be the most appropriate oxidant to reach the site-specific goals. The field treatment area was approximately 45 ft x 45 ft, with vertical impacts from 6 to 12 ft bgs. A total of 11 permanent injection wells and 4 vent wells were installed utilizing direct push drilling technology. Soil borings were collected for visual soil characterization and to confirm the treatment interval depth. During soil boring collection and baseline sampling, LNAPL was present.

### Remediation Operations:

A total of approximately 29,150 gallons of 8% of CHP and a site-specific catalyst were injected over 14 days, which included active injection, mobilization, site setup and demobilization. Geo-Cleanse's routine process monitoring and sampling ensured a safe and efficient process.

### Treatment Results:

Groundwater data collected during active injection showed that conditions conducive to a CHP treatment were established. Off-gas monitoring data indicated that oxidation was occurring, resulting in elevated carbon dioxide levels. Following the treatment program, LNAPL was eliminated and the soil and groundwater goals were achieved. Based on the success of the treatment program, a No Further Action (NFA) letter for the soil is expected in the near future. Monitored natural attenuation of groundwater will be used to achieve final groundwater goals.

### Site During Active Injection



### NAPL in Soil Boring



*This summary sheet is intended to provide a general overview of the referenced site. For more detailed information, please contact us at (732) 970-6696 or [www.GeoCleanse.com](http://www.GeoCleanse.com).*