Closed Plant
In-Situ Chemical Oxidation
Atlanta, Georgia

PROJECT MANAGER
Dale Carpenter, CHMM

PERFORMANCE PERIOD
December 2009 – April 2010

SITUATION

Our company was approached to chemically oxidize phase-separated hydrocarbon contaminants in soil and groundwater at this closed manufacturing facility in Atlanta, Georgia.

PROJECT APPROACH

The project involved excavation of approximately 25 feet of clean overburden down to groundwater at two locations at the site, then mechanically mixing an oxidizing chemical into the vadose zone an additional 15 feet in depth. In addition to the oxidizer, we mixed Portland cement as an additive to provide a more stable subgrade for future construction at the site.

Two "hot spot" areas were identified as needing remedial efforts. These areas had a base footprint of roughly 100' x 175' and 100' x 100'. Additional overburden was removed to allow for a sloped excavation such that shoring/sheeting was not required for slope stabilization. More than 31,000 cubic yards of clean overburden was excavated and stockpiled on site for future re-use as backfill material. Once the overburden was removed, the treatment areas were gridded off to delineate a known volume for calculation of the correct percentage of admixture addition. Prior to initiating treatment, a sump was constructed into groundwater to assist in dewatering the work area. Water was pumped to adjacent frac tanks for future treatment and discharge.

Utilizing a 300-size excavator, A&D crews added and mixed the oxidizer (Sodium Persulfate) and

Portland cement in dosage rates specified by the consultant and mixed the soil/admixtures in-situ. Each treatment cell was mixed for a specified amount of time, and then left to cure.

Upon completion of all mixing and of the consultant obtaining treatment verification sample results, A&D backfilled and compacted each of the treatment areas. Soil was loaded and hauled from the clean overburden stockpiles and placed back in the excavations, where it was compacted following project specifications.
The consultant will continue with long term monitoring and evaluation of the groundwater to ascertain the effectiveness of the remedial effort. Preliminary results of groundwater analysis from adjacent monitoring wells have shown significant reductions in all contaminates of concern.