

# Ex-Situ Soil Mix Chlorinated Solvents

Former Industrial Plant – Fridley, MN

## Two Part Soil Mix

**Project Summary:** ORIN treated highly contaminated unsaturated soils using a combination of advanced oxidation treatment chemistry and bio-available absorbent media (BAM). The chemistries were applied separately and mixed into the soils with a modified excavator. Approximately 9,120 cubic yards of soil were treated ex-situ within contained treatment pits of 4-ft thickness. The treatment zone was excavated in 570 cubic yard batches. The Fenton's treatment chemistry, a catalyzed hydrogen peroxide solution, was applied to break apart the clays, oxidize VOCs, and better homogenize the mixing of the BAM particulate. The site specific clean-up goal targeted less than 1.3 mg/kg TCE (or sufficiently meet TCLP standards), so as to allow the re-emplacment of treated soils into the subsurface. Post treatment composite samples determined the contaminant level reduction and need for retreatment if necessary.

Reduced to 0.009 mg/L TCLP

### Site Conditions:

#### Soil Contaminants –

Trichloroethene (TCE)

Highest Untreated Batch Avg.

103 mg/kg VOC

Exceeding 1.54 mg/L TCLP

#### Impacted Matrix –

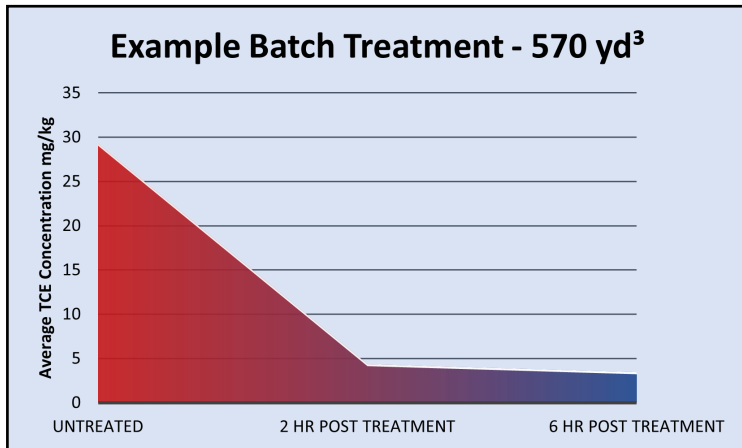
Silty Clay

9,120 cubic yards

#### Treatment Chemistry –

Fenton's w/ AO-Tech

BAM



### Project Results:

The TCE impacted soils were successfully treated to non-hazardous screening and re-emplacment back into the subsurface. Additional TCLP data was sampled from each batch to determine leachability. The combined average TCLP from all treated soils was 0.009 mg/L. Untreated excavated soils with samples in exceedance of 100 mg/kg TCE were treated for non-hazardous disposal. The site is now being developed as a multiple use commercial complex and parking lot.