

Case Studies of Fenton's Reagent ISCO at MGP and Chlorinated Solvent Sites

**Dan Bryant and Jim Wilson
Geo-Cleanse International, Inc.**

**In-Situ Treatment of Groundwater Contaminated with Non-
Aqueous Phase Liquids: Fundamentals and Case Studies**

December 10-12, 2002

1

Full Scale Chemical Oxidation of MGP Hydrocarbons In Soil and Groundwater Using Fenton's Reagent

Jim Lingle
Elizabeth Hellman



Mike Noel

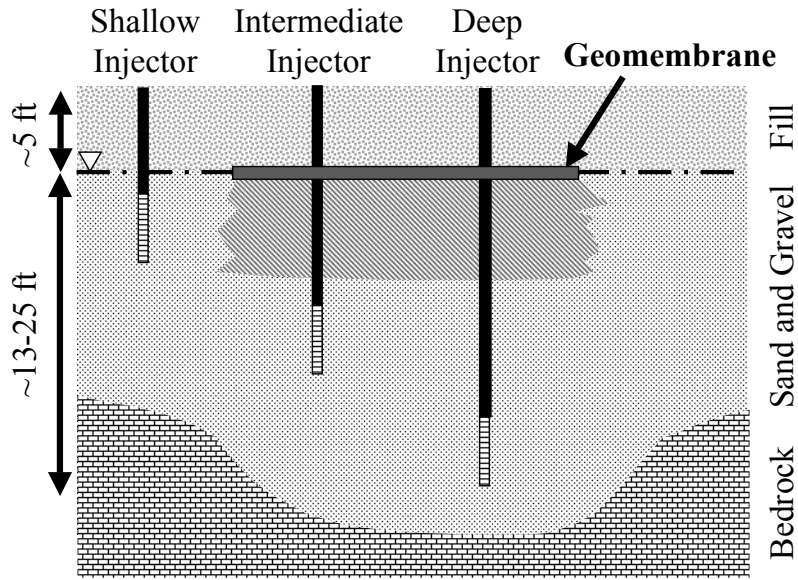


Jim Wilson

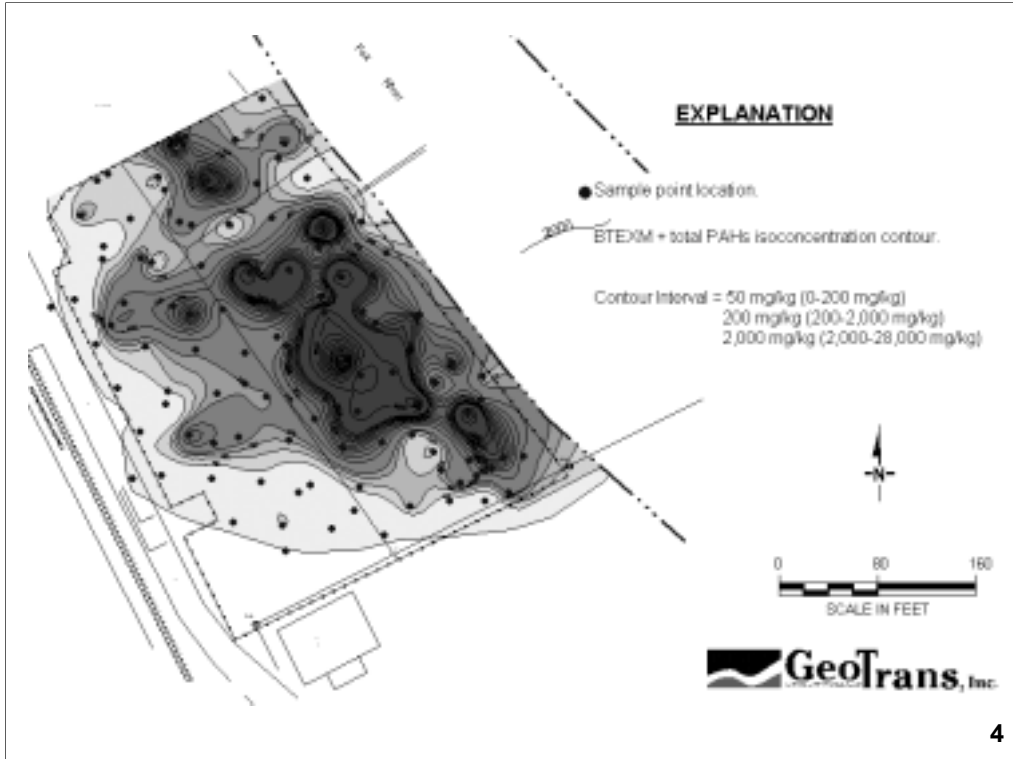


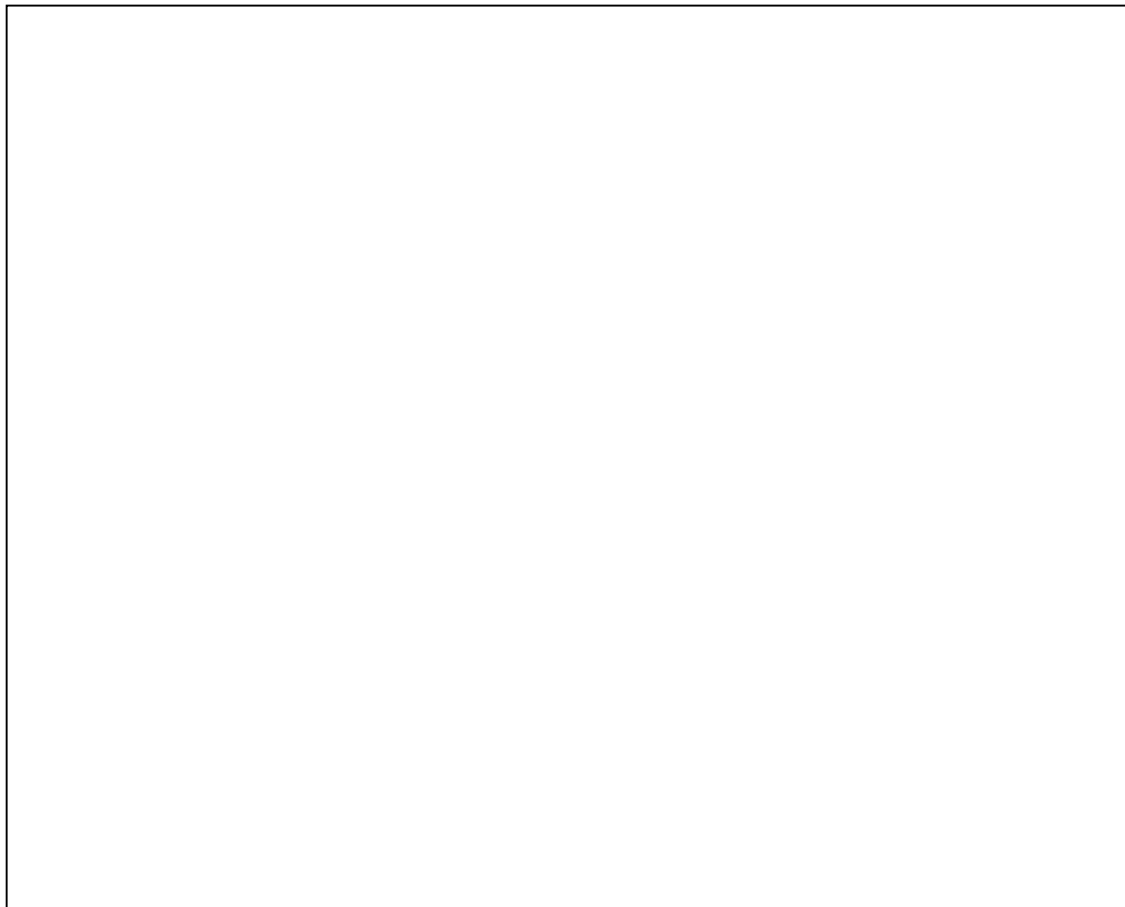
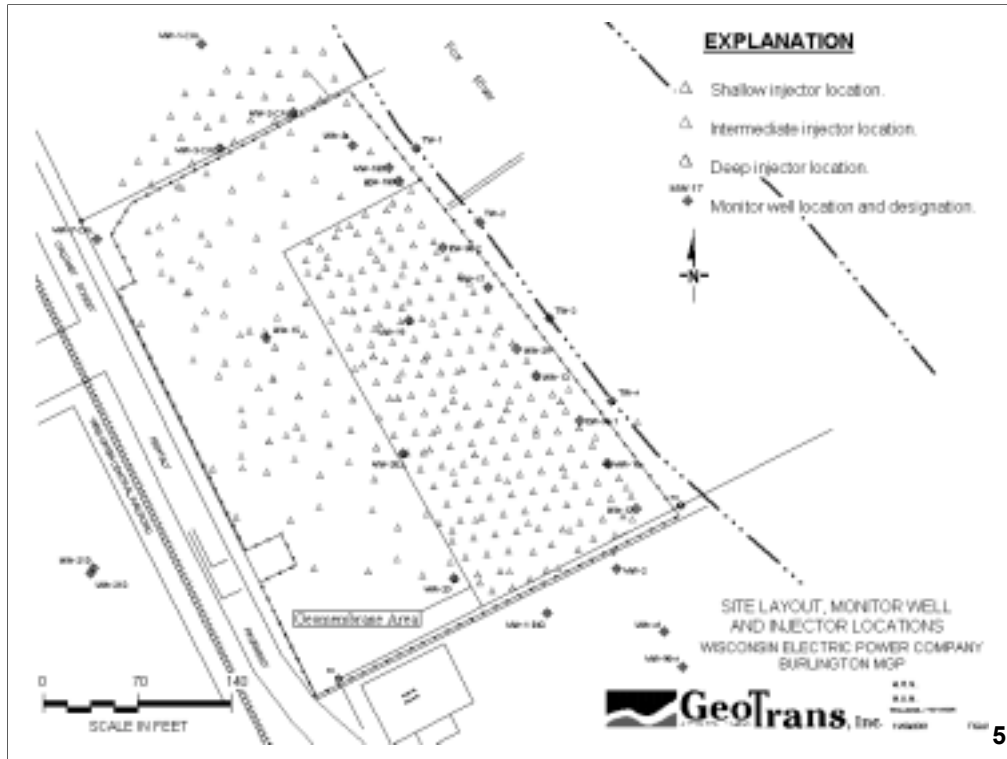
2

Burlington MGP Conceptual Cross Section



3





Laying Geomembrane



6



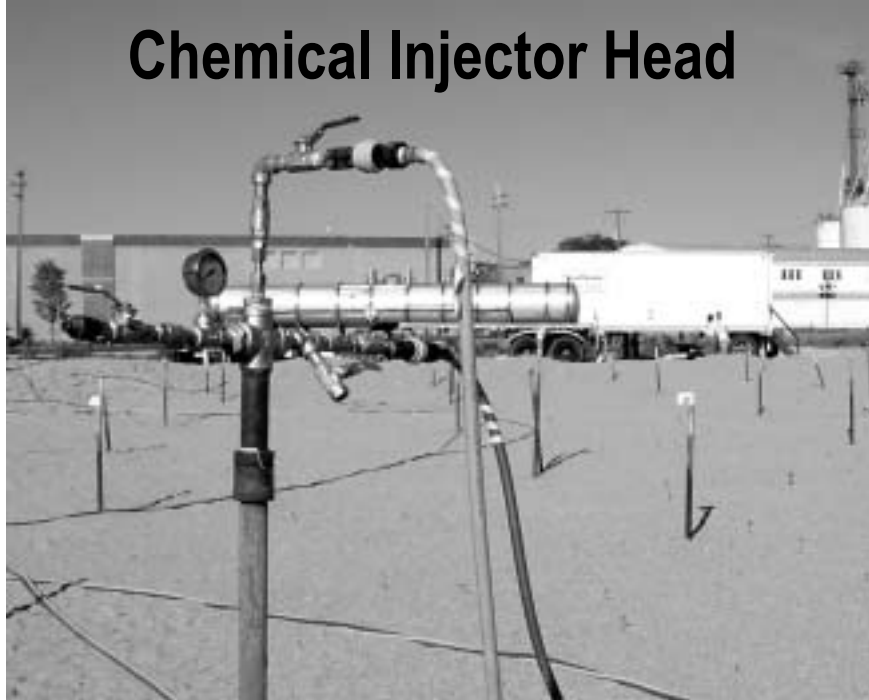
Injector Array



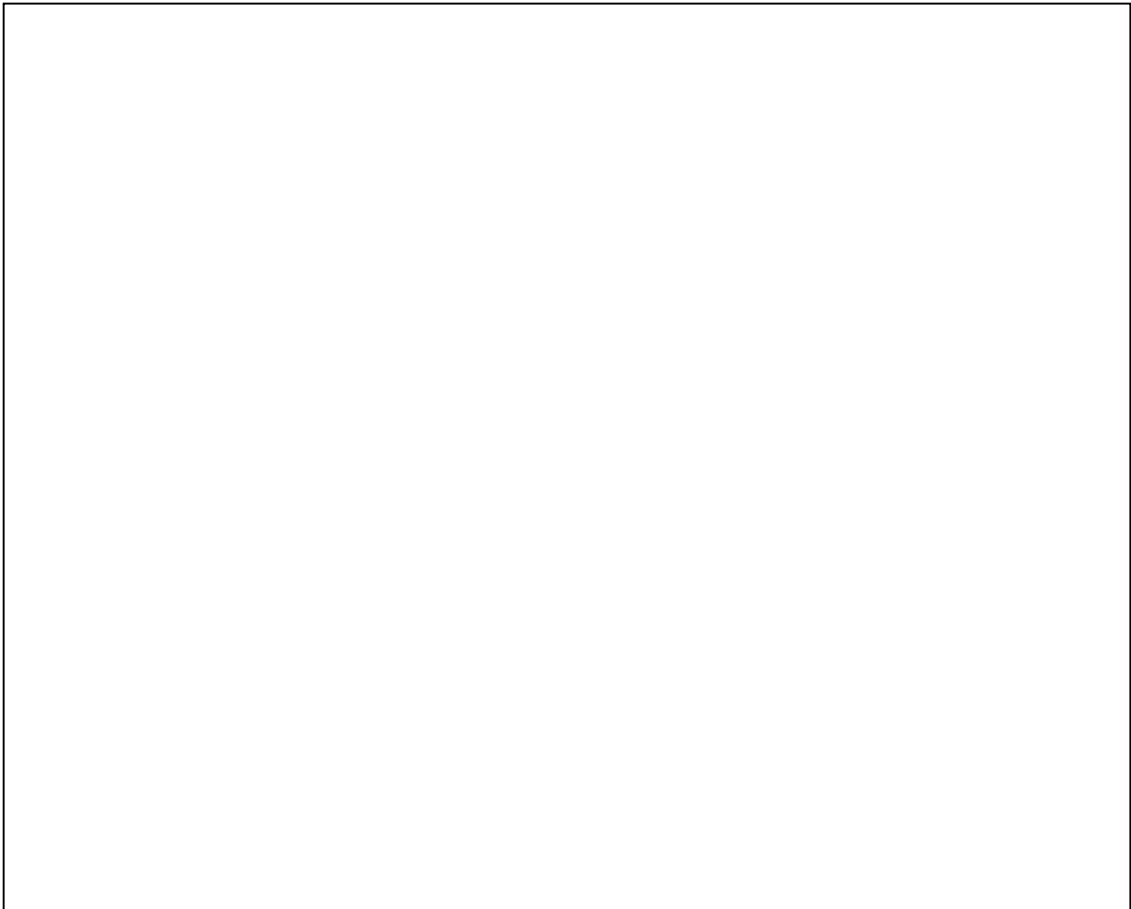
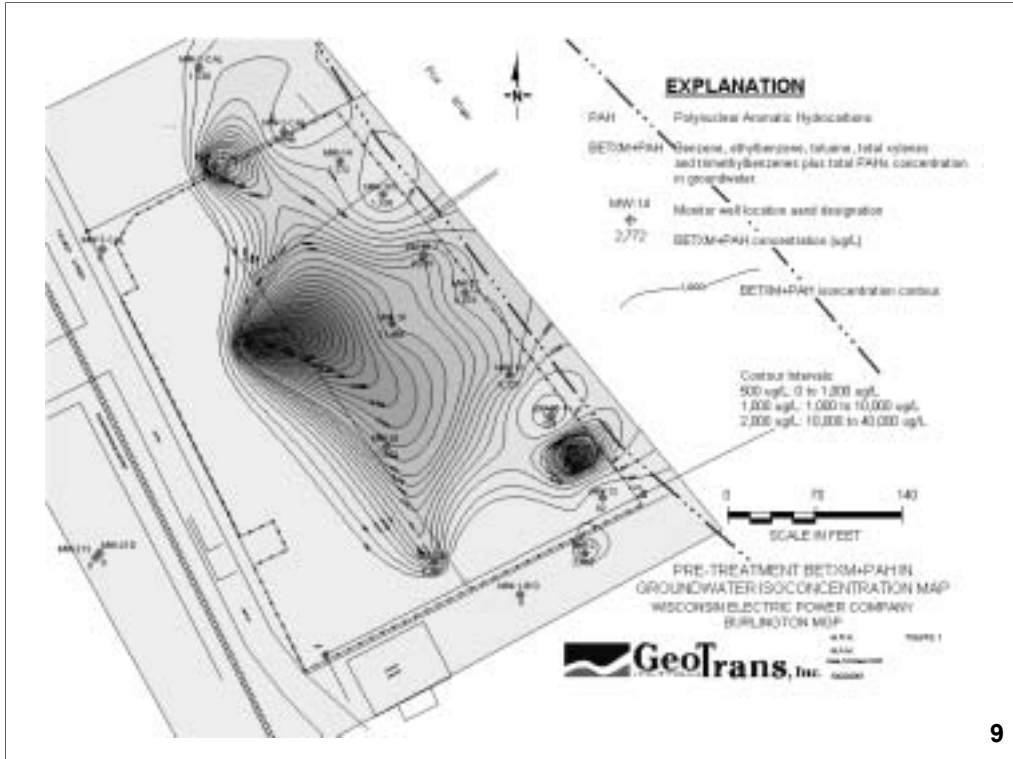
7

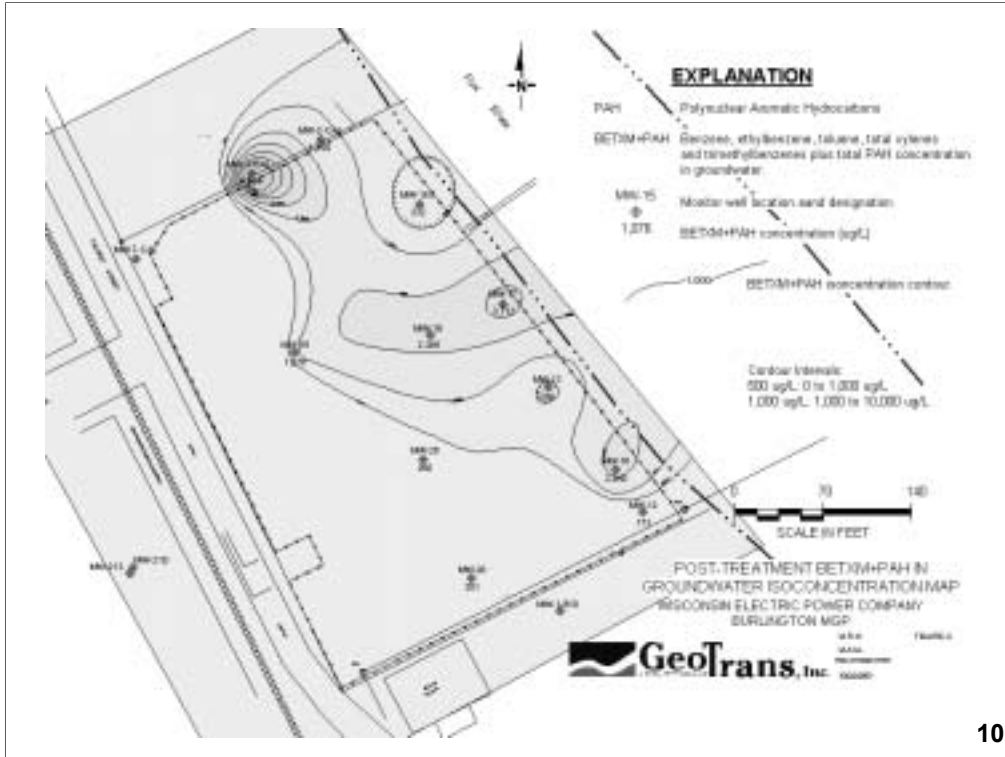


Chemical Injector Head



8





10

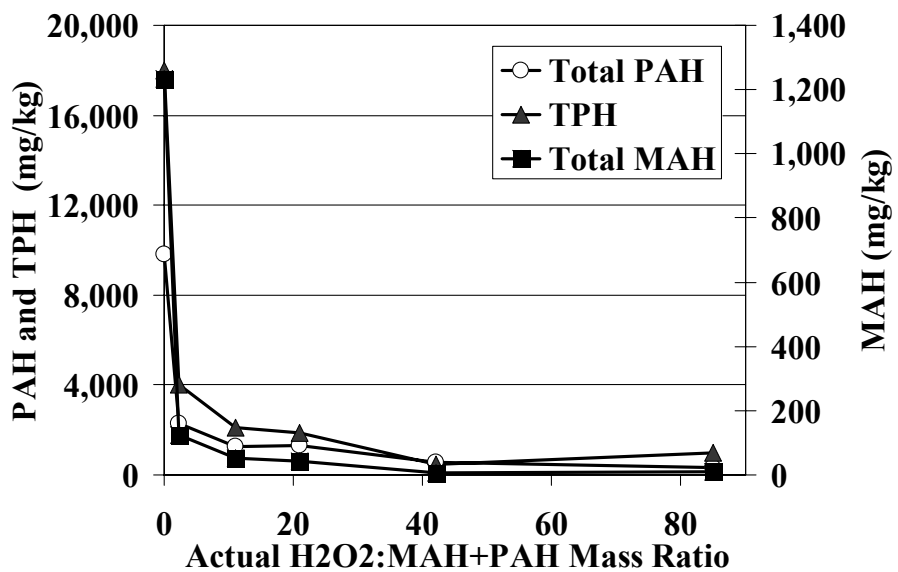


**BTEXM & PAH Removal
from Groundwater
(through 2001 construction season)**

- Sandy soil along road ➤ 97% removal
- Silty soil mid-site ➤ 80% removal
- Soil near river ➤ 93% removal
- **Overall site** ➤ **80% removal**

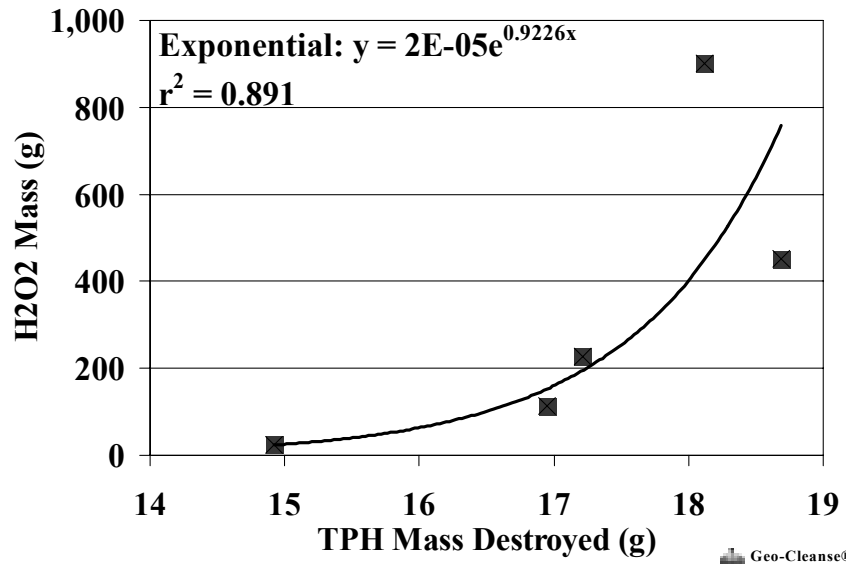
11

New Jersey MGP – Bench Test Analytical Results

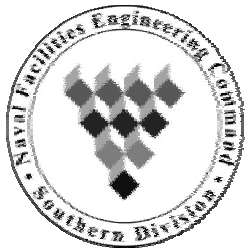


12

New Jersey MGP – Bench Test TPH Oxidant Demand



In-Situ Chemical Oxidation at Naval Submarine Base Kings Bay, Georgia

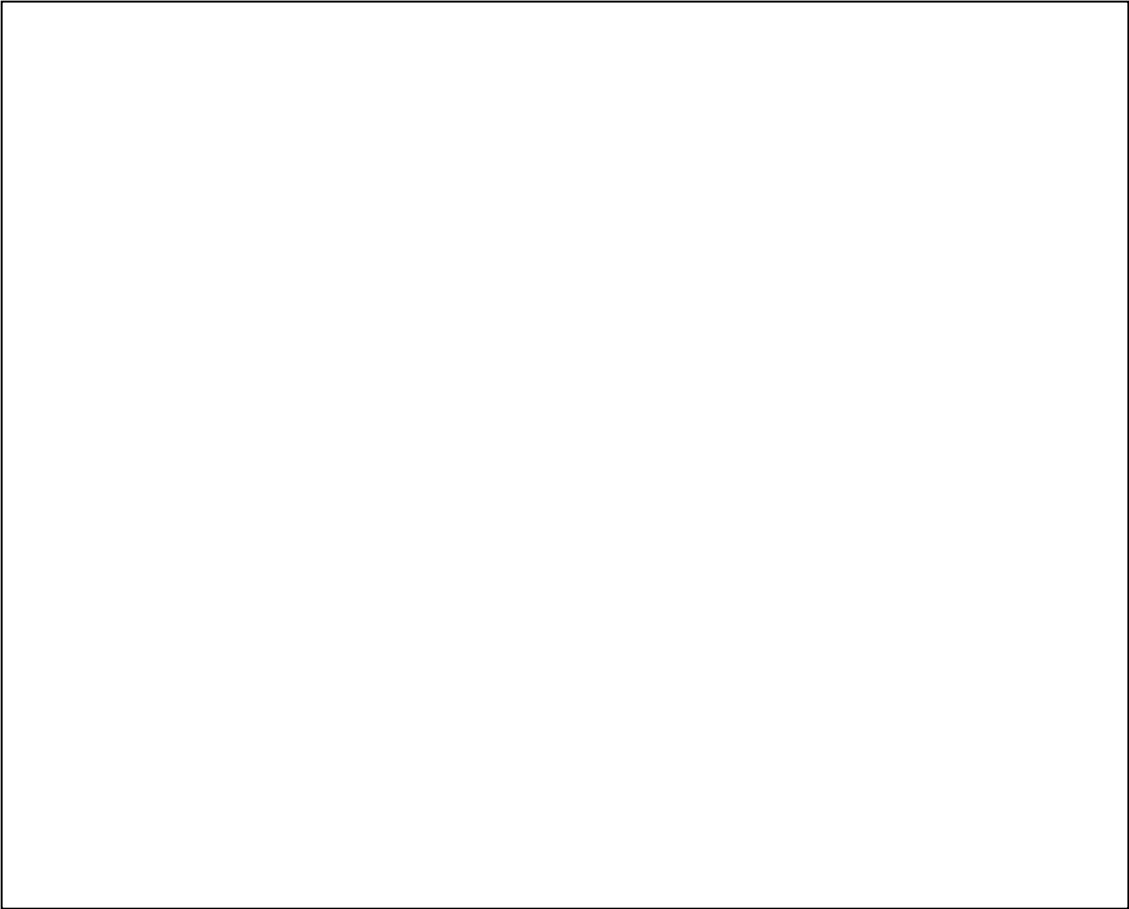


14

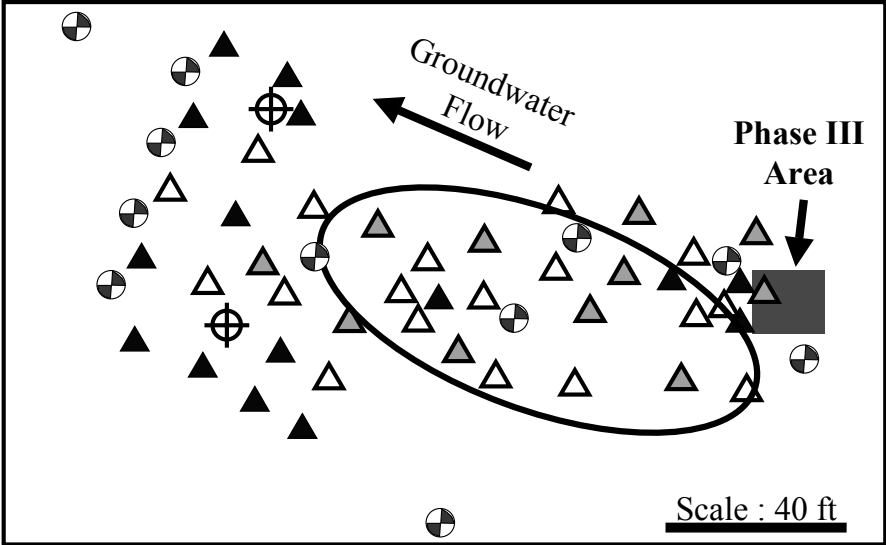
NSB Kings Bay, GA



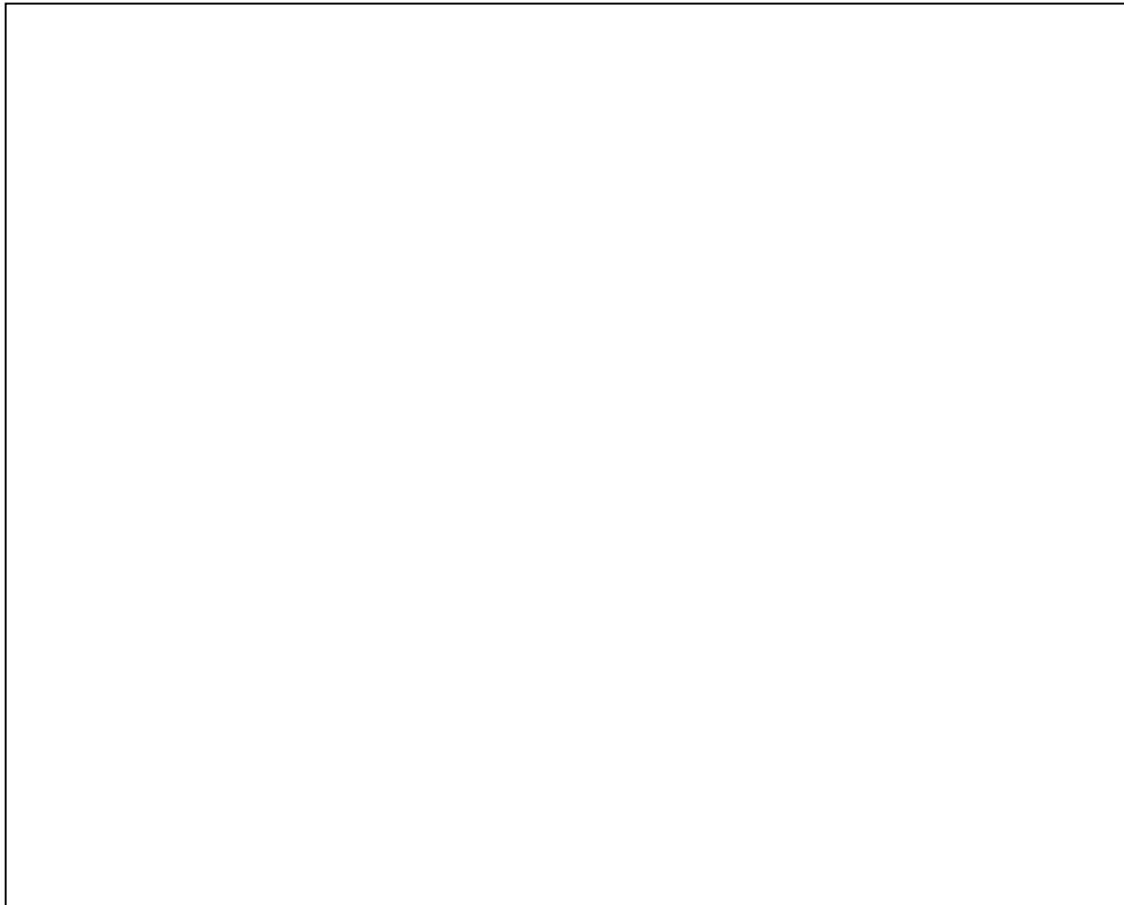
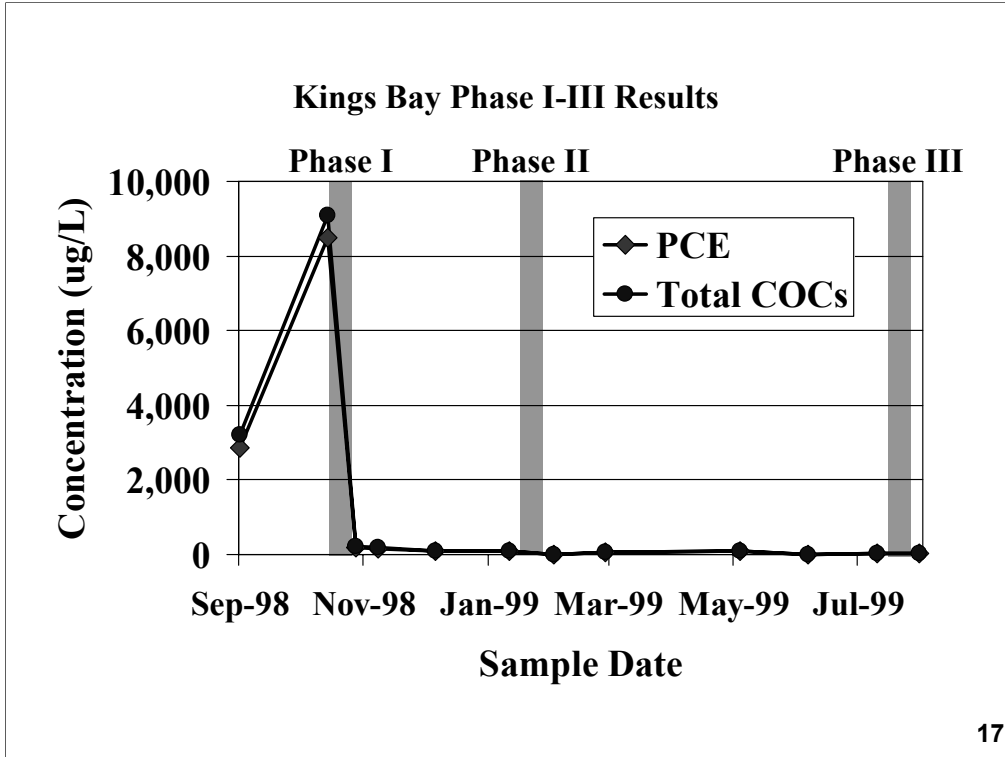
15

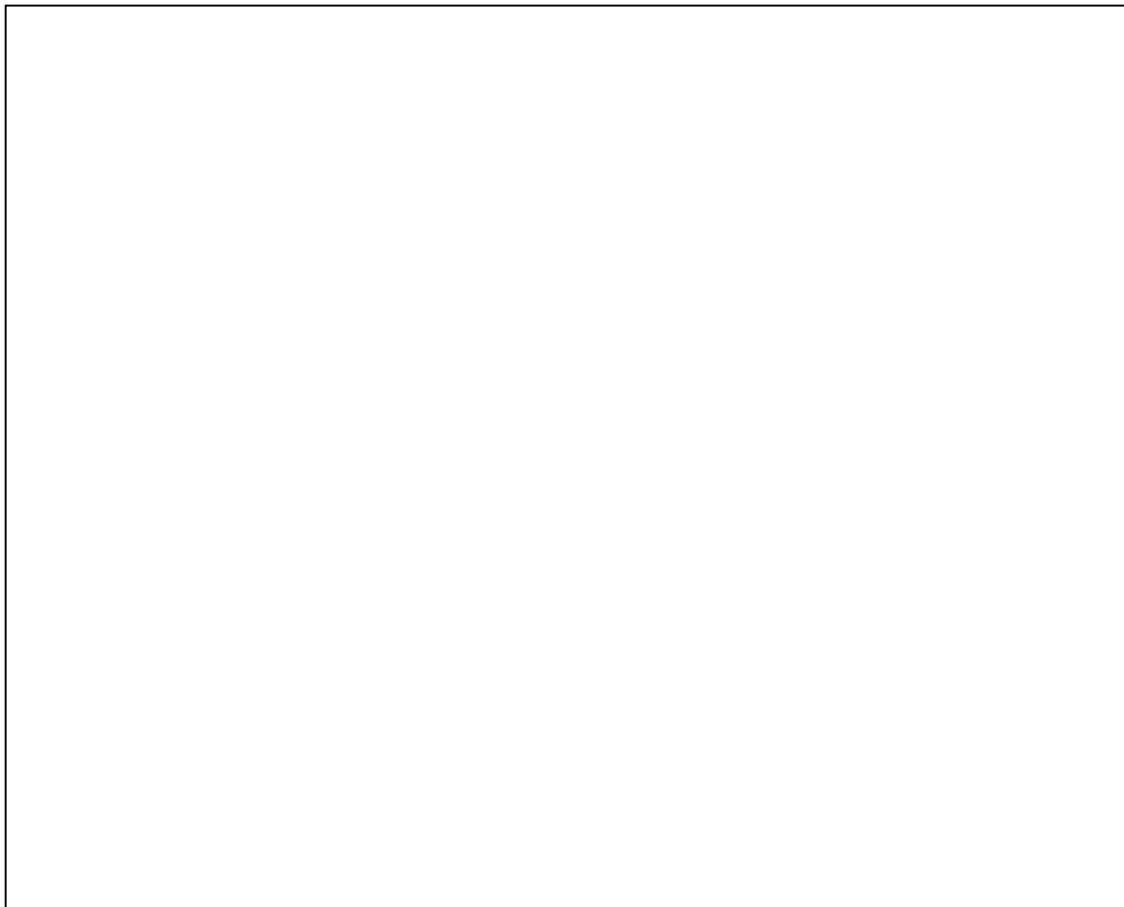
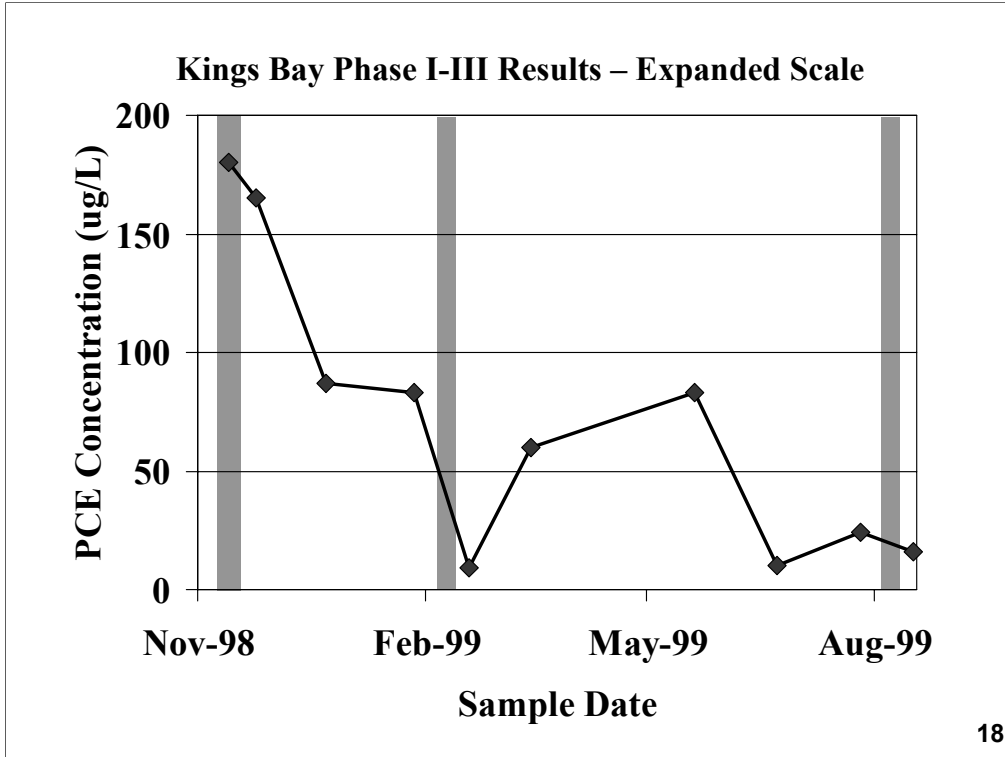


Kings Bay Site Map

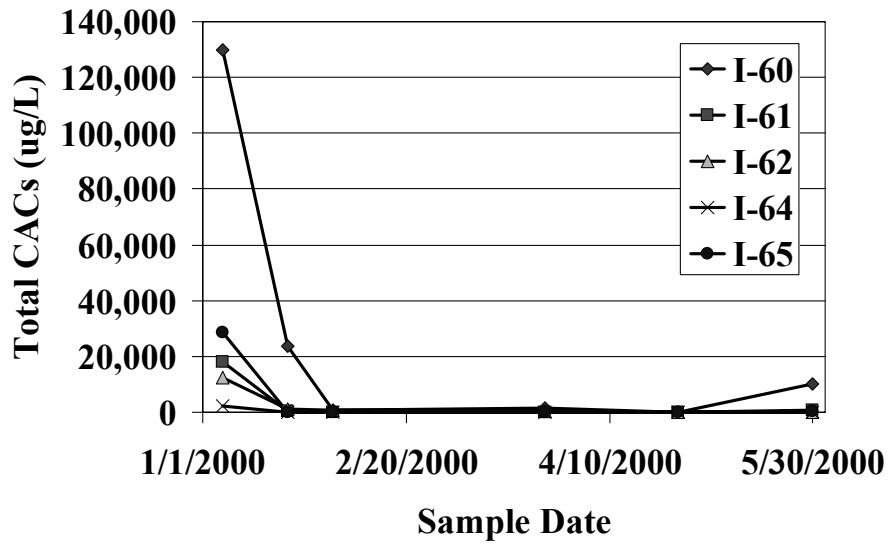


- Monitor Well
- ▲ Phase I (32')
- ▲ Phase II (35')
- ⊕ Recovery Well
- △ Phase I (42')
- △ Phase II (40')

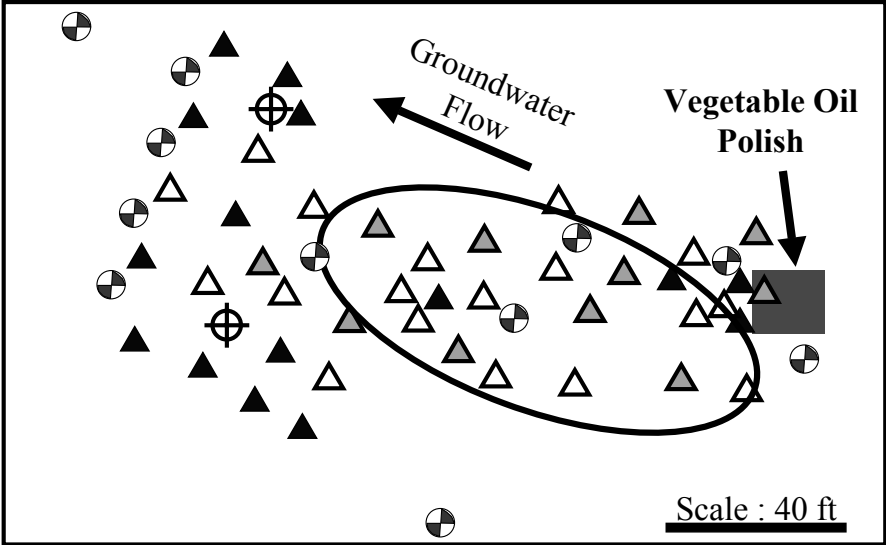




Kings Bay - Phase III Treatment Results



Kings Bay Site Map



- Monitor Well
- Recovery Well
- Phase I (32')
- Phase I (42')
- Phase II (35')
- Phase II (40')