

# **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**

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

Jim Lingle  
Elizabeth Hellman



Mike Noel

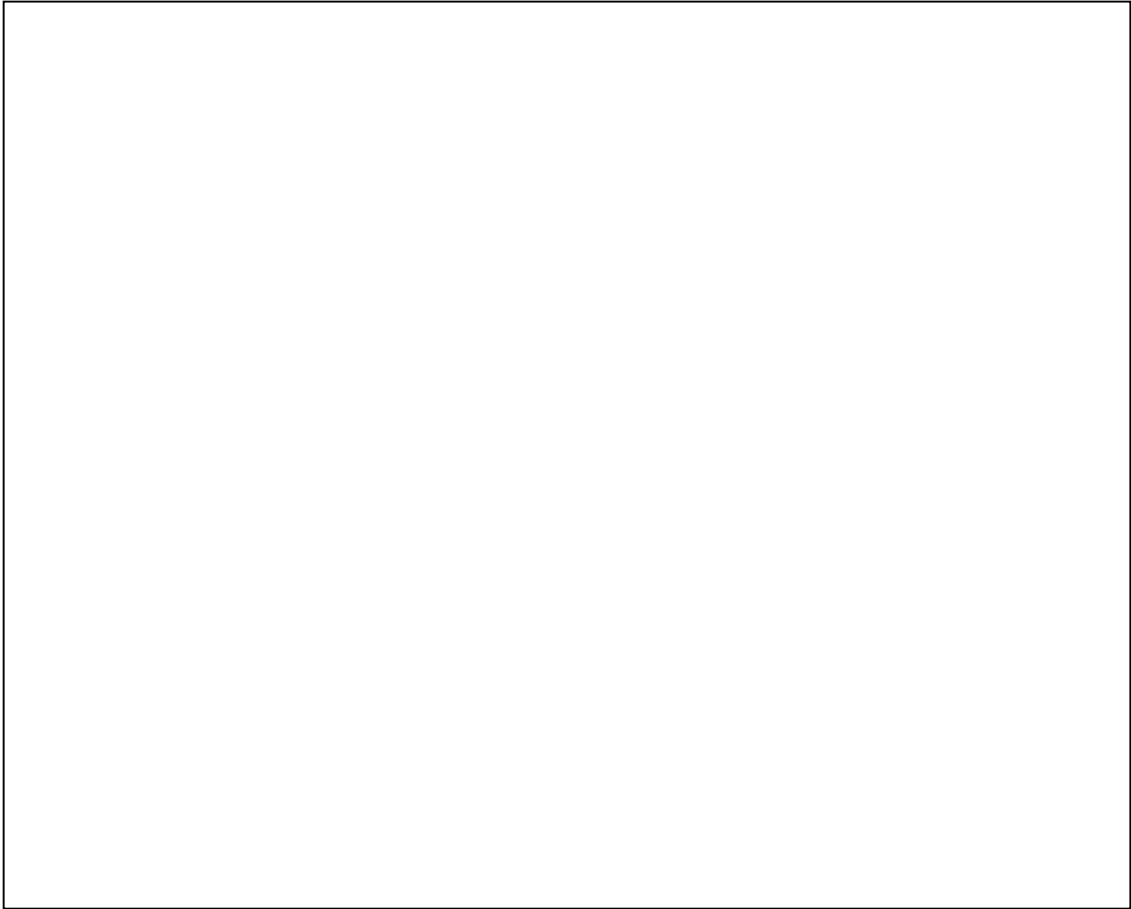
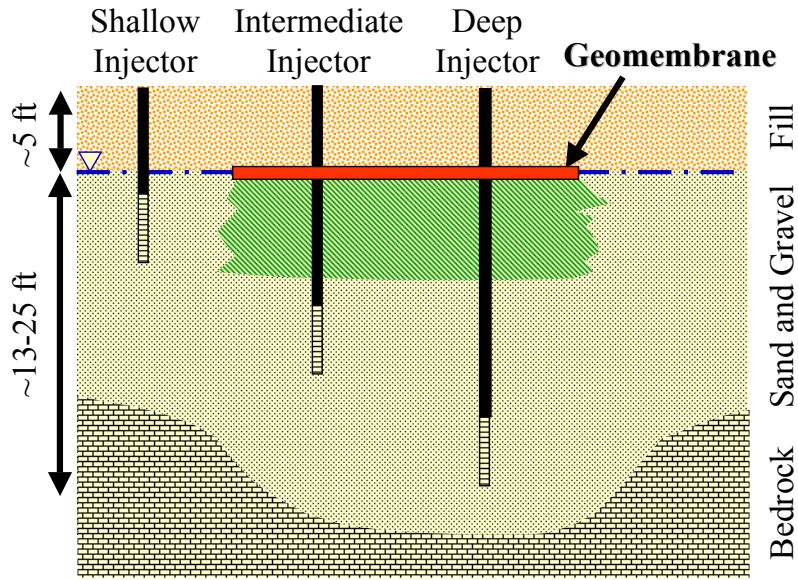


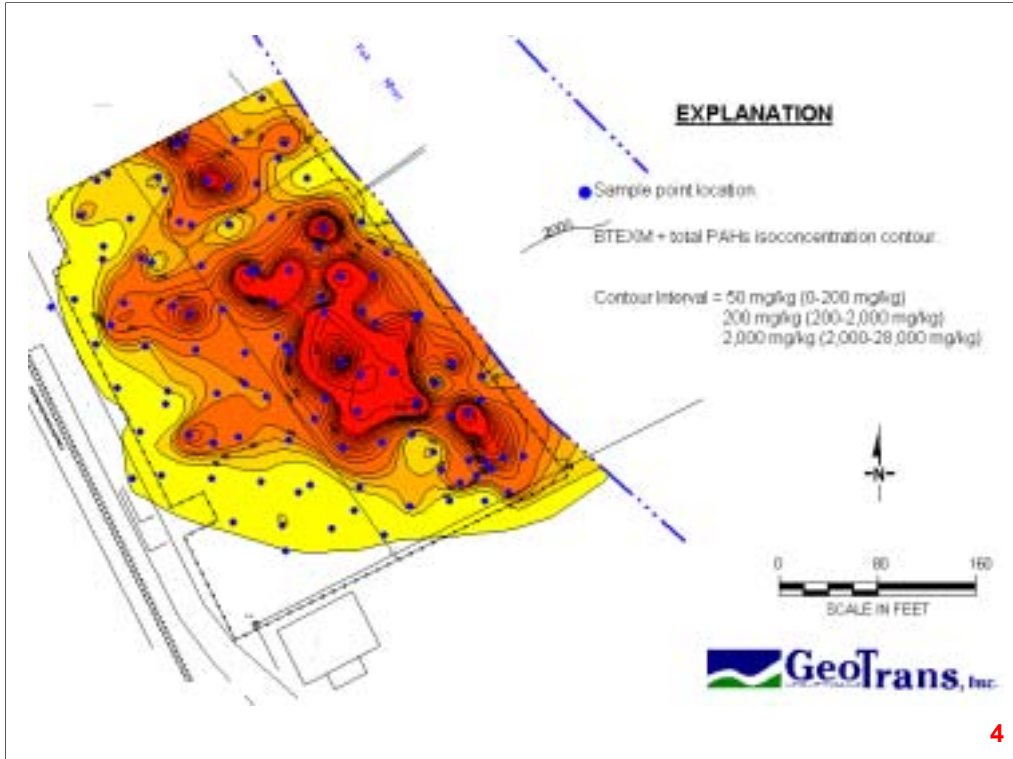
Jim Wilson



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# Burlington MGP Conceptual Cross Section







# Laying Geomembrane



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# Injector Array



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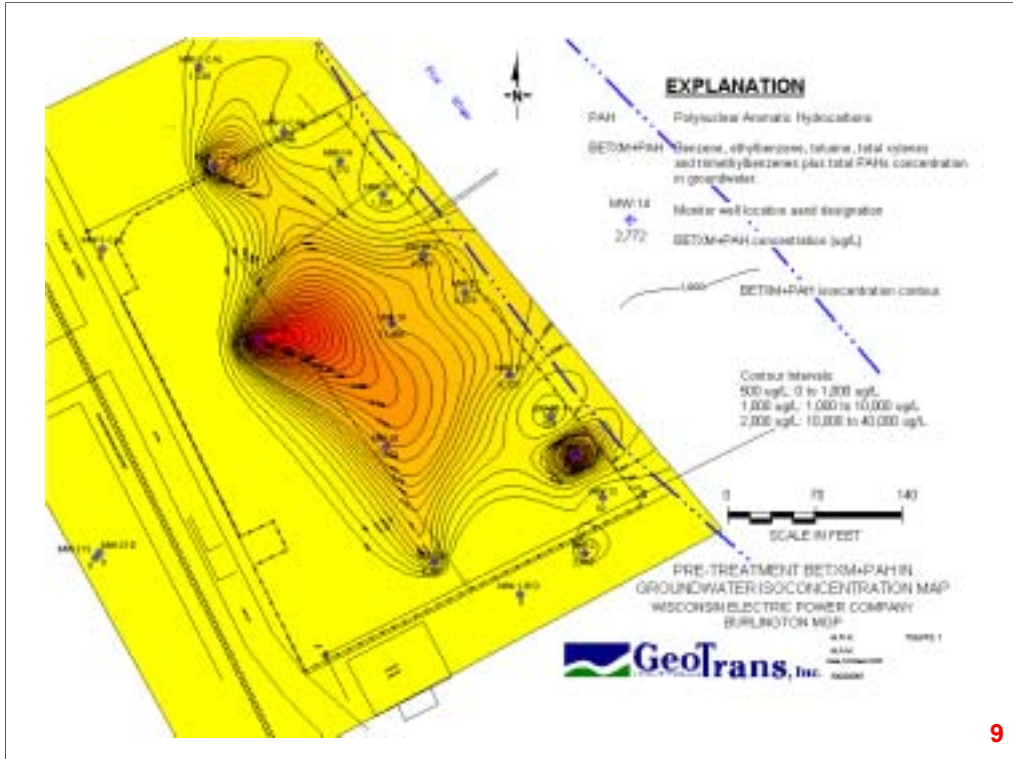


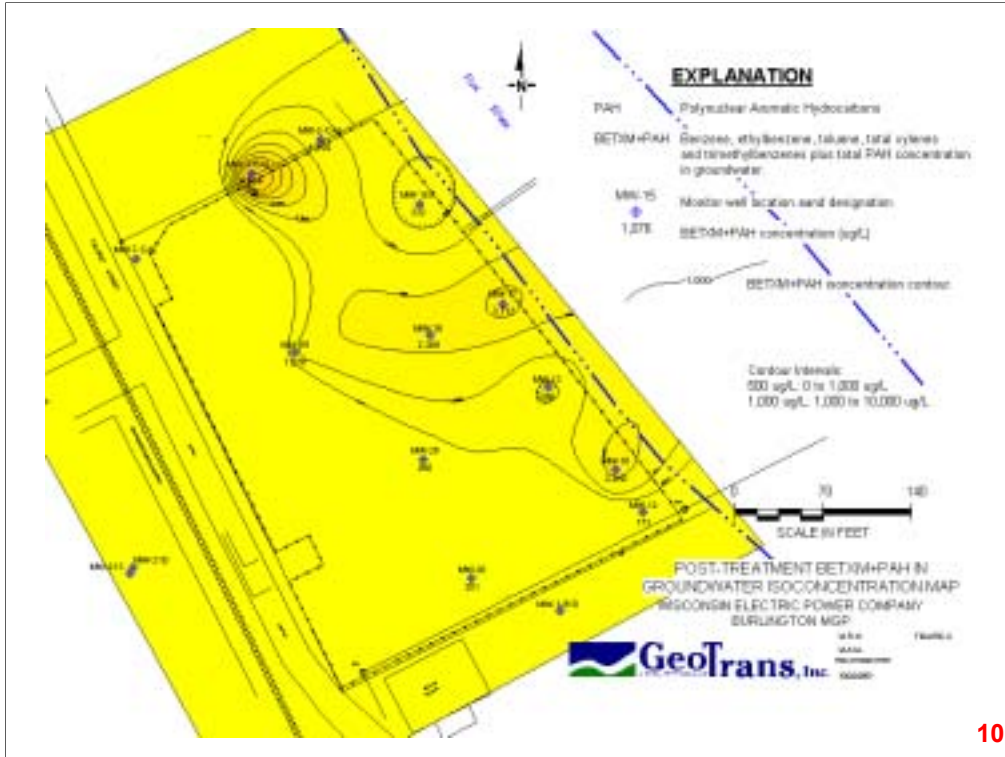
# Chemical Injector Head



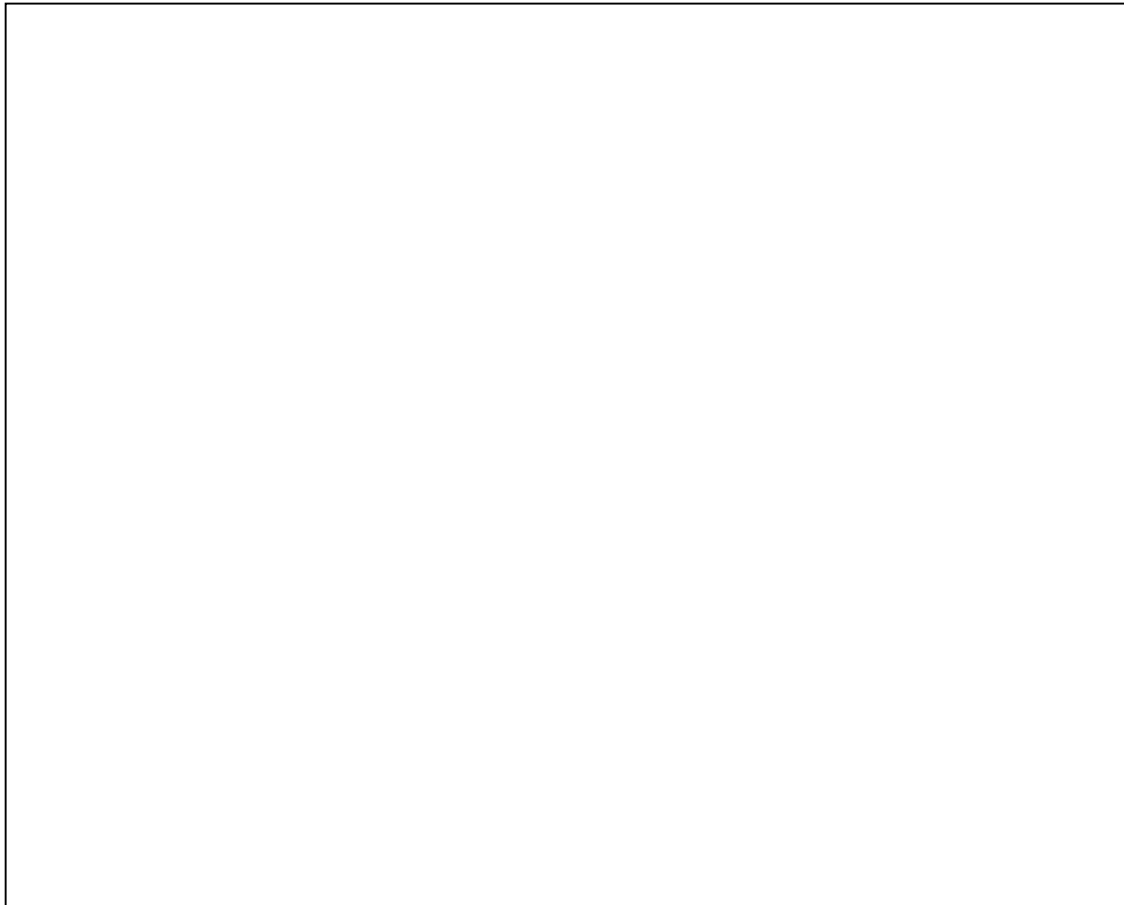
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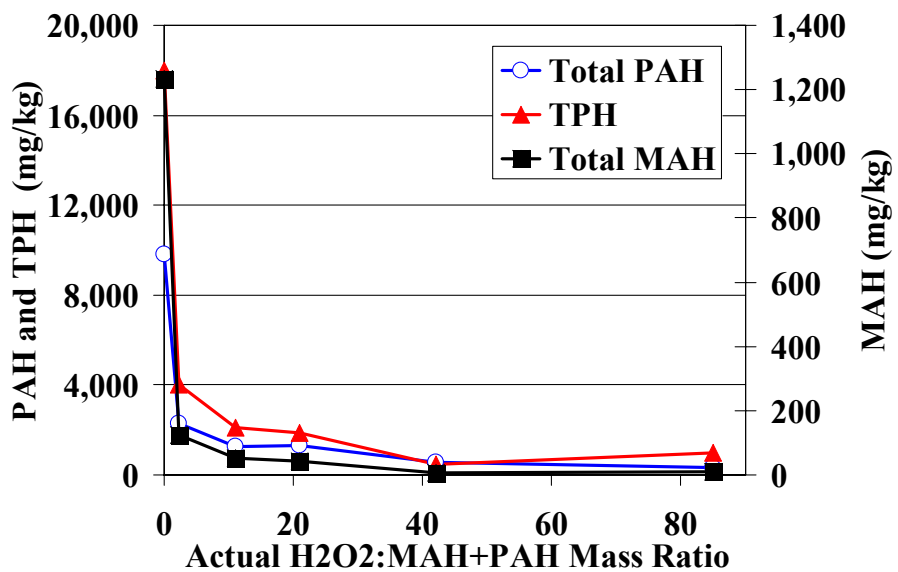


**BTEXM & PAH Removal  
from Groundwater  
(through 2001 construction season)**

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

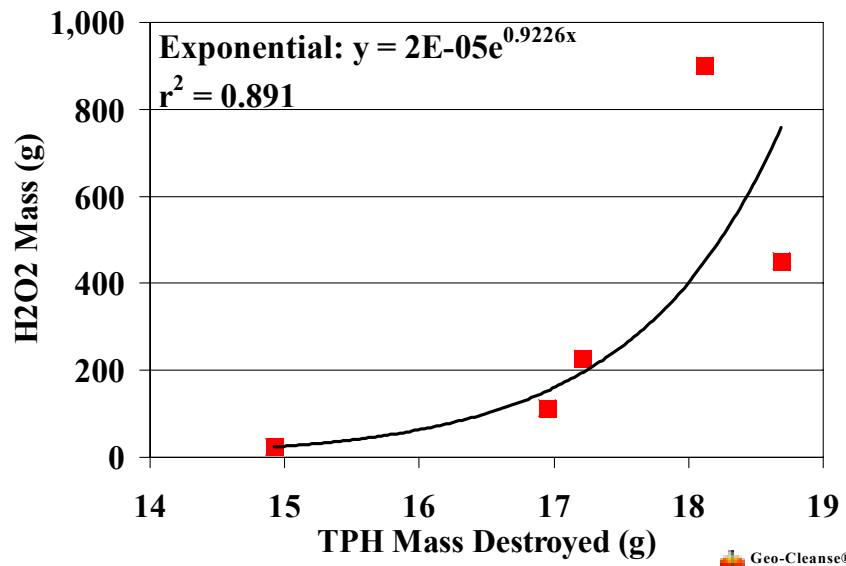
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### New Jersey MGP – Bench Test Analytical Results



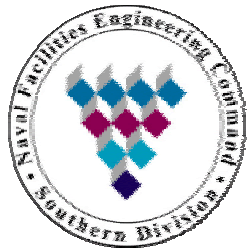
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### New Jersey MGP – Bench Test TPH Oxidant Demand



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

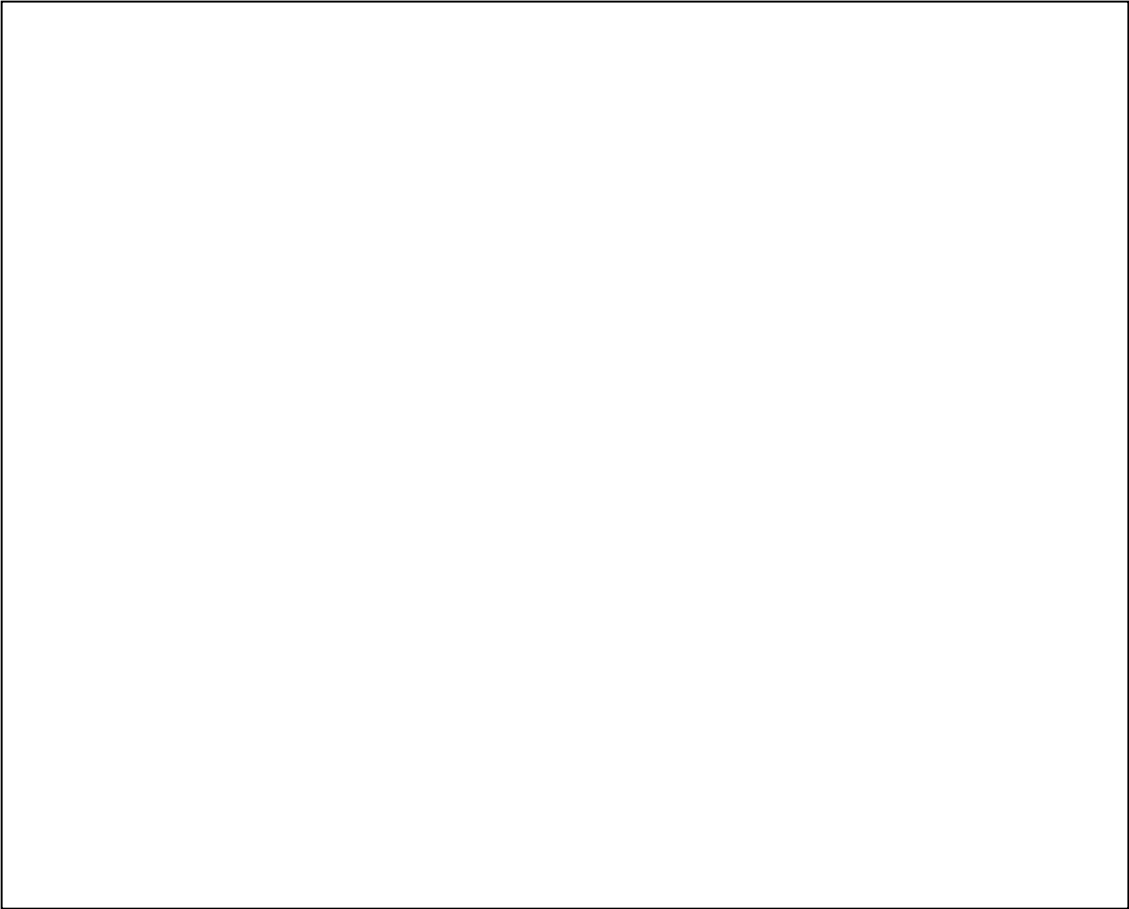


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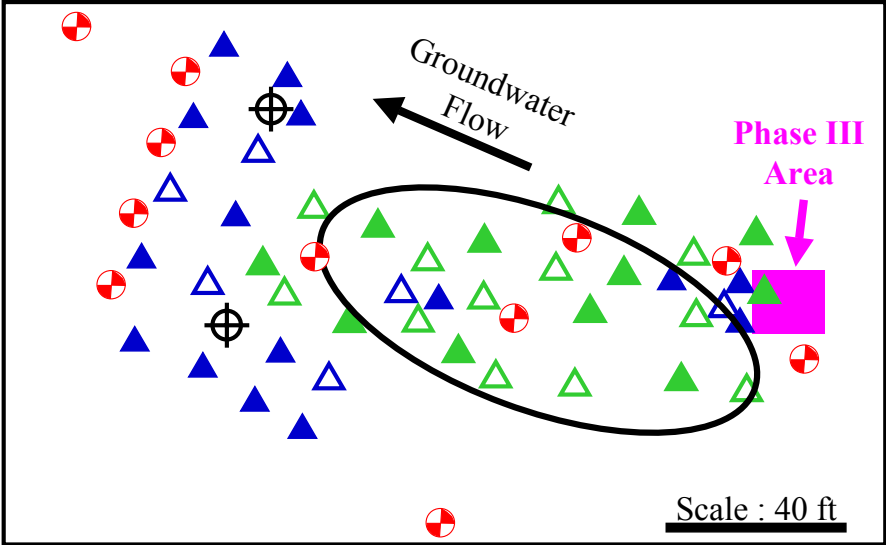
**NSB Kings Bay, GA**



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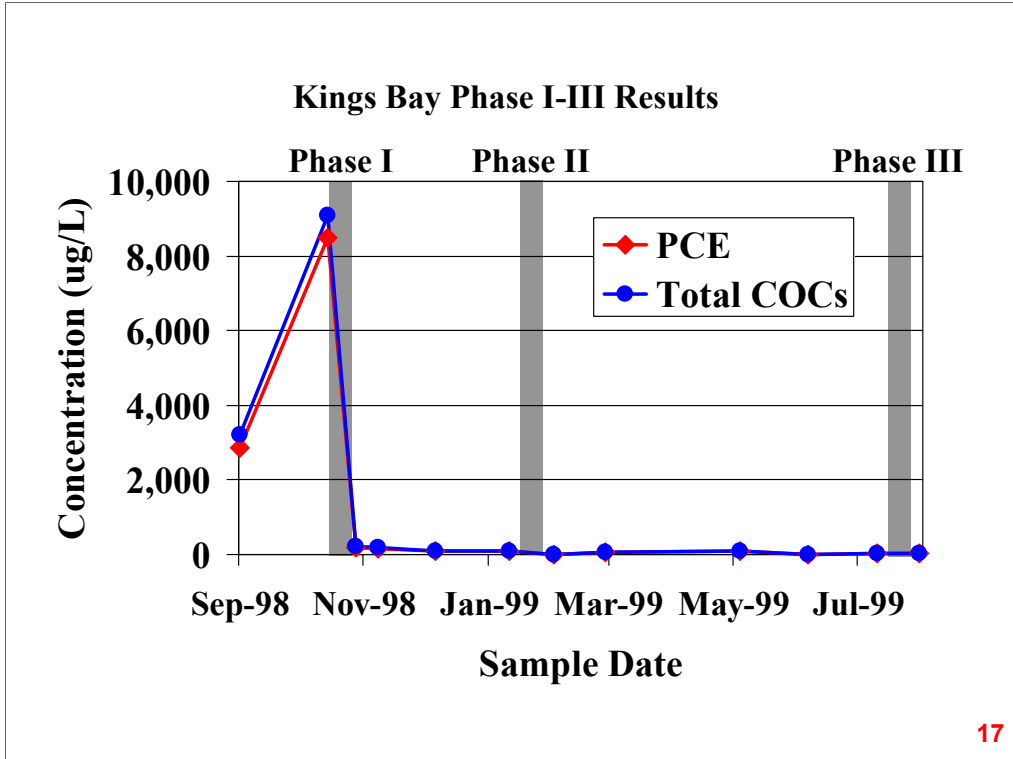


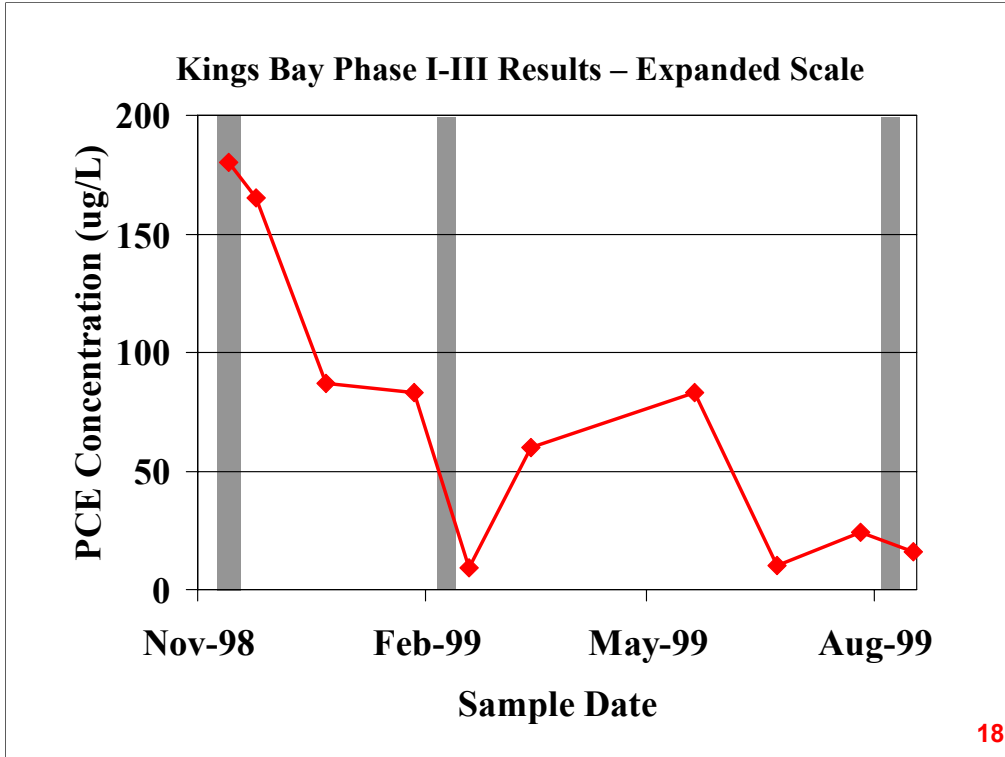
### Kings Bay Site Map



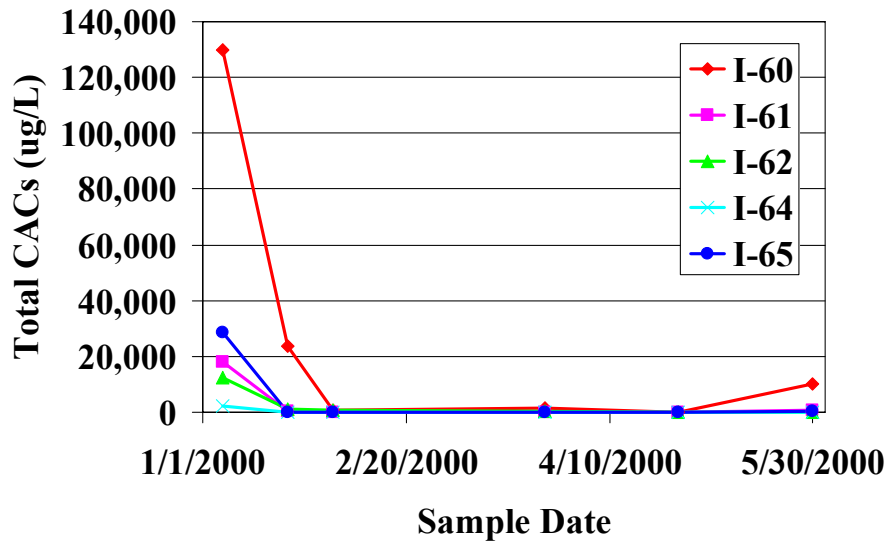
- Monitor Well
- Recovery Well
- Phase I (32')
- Phase I (42')
- Phase II (35')
- Phase II (40')





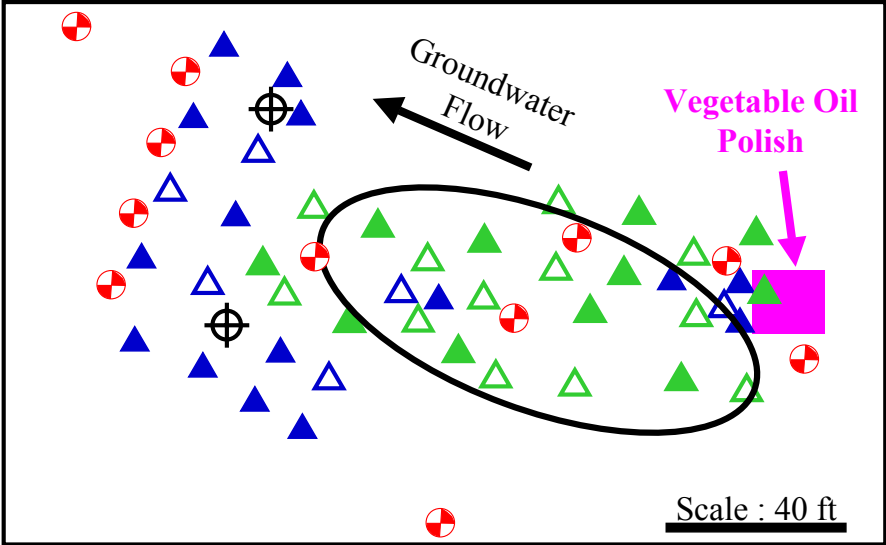


### Kings Bay - Phase III Treatment Results



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**Kings Bay Site Map**



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