

# **“Bioremediation” of Oil Fields in Pennsylvania**

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## **Outline**

- I. Natural Attenuation: The Passive Remedial Approachw
  - aerobic biodegradationw
  - anaerobic biodegradationw
  - dispersionw
  - volatilizationw
  - adsorptionw
  
- II. Natural Attenuation: The Aggressive Removal Approachw
  - solidificationw
  - aerobic biodegradationw
  - volatilizationw
  - organic loadw
  - compostingw
  
- III. Voodoo Versus Sciencew
  - Backgroundw
    - NW PA Major Oil Spill Project (1985-1987)w
    - Bar Room Brawls and Back Alley Debatesw
  - Practical Application of “Bioremediation” at Removal Response Actionsw
    - PIC #1-6-0006, McKean County, PAw
    - The Bryner Experiments, McKean County, PAw
    - Mayburg Mountain, Forest County, PAw
    - North Fork Minor Oil Spill, Allegheny National Forestw
    - Park & Hungiville OPA Site, McKean County, PAw
    - Allegro Oil & Gas Inc OPA Site, Potter County, PAw
    - Melvin Farm OPA Site, McKean County, PAw
    - Avery Farm OPA Site, McKean County, PAw
    - Hess Farm OPA Site, McKean County, PAw
    - Onofrio Estate OPA Site, McKean County, PAw
  - Also Worthy of Mentionw
    - w Czech Embassy Spill, Washington, DCw
    - High Rise Condo Spill, Washington, DCw
  
- IV. Future Removal Response Bioremedial Plan of Actionw
  - Site-Specific “Bio-Pod” Characterizationw
  - Identification of Hydrocarbon-Degrading Microbesw
  - Removal Response Application of Plant System Technologies??w