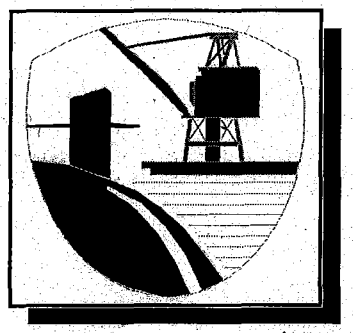
AGENDA AND PRESENTATION FOR RESTORATION ADVISORY BOARD MEETING HELD 21 SEPTEMBER 2000 NSY PORTSMOUTH ME

9/21/2000

PORTSMOUTH NAVAL SHIPYARD



PORTSMOUTH NAVAL SHIPYARD

RESTORATION ADVISORY BOARD

AGENDA

Date - September 21, 2000

Place - Courtyard Marriott, Portsmouth, NH

Time - 7 p.m. - 9 p.m.

Introductions

Status of Work

Regulator Updates

No Further Action Decision Documents for Sites 26 & 27

Cutoff Barriers Component of the draft final OU3 Feasibility Study Report

Other Issues as Required

OPERABLE UNIT 3 (OU3) FEASIBILITY STUDY (FS) COMPONENTS TO ADDRESS GROUNDWATER MIGRATION

Portsmouth Naval Shipyard

Restoration Advisory Board Meeting

September 21, 2000

Presentation Objectives

- Provide rationale for technology screening
  - Review Contaminants of Concern (COCs), Remedial Action Objective (RAO) and General Response Actions (GRAs)
- Present and screen technologies to address groundwater migration
- Develop alternatives to include retained technologies

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Brackish/Saline Groundwater COCs

- Offshore risks in the vicinity of OU3: Low
- Contaminant Fate and Transport Modeling indicated that surface water concentrations would not exceed AWQCs or SWQCs
- Available surface water data from Piscataqua River support modeling prediction
- Seep concentrations meet AWQCs or SWQCs with appropriate dilution (DDD exception at one Clark Cove location)
- DDD not present in groundwater at comparable levels
- COCs for brackish/saline groundwater are: Copper, Chromium, Lead, Nickel, Mercury, Zinc and PCBs

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Remedial Action Objective

"Ensure that offsite migration of groundwater contaminants do not adversely impact the offshore environment, that is, ensure that AWQC and SWQC are being met at all compliance points based on full mixing."

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General Response Actions to Address Groundwater Migration

- Control using vertical barrier (Slurry wall containment)
- Control using permeable reactive barrier
- Control using upgradient trench
- Monitoring

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Slurry Wall Containment- Circumferential

- Function: Controls groundwater migration entering/leaving the site and controls tidal intrusion

Advantages

1. Maximum containment
2. Minimal O&M compared to other technologies

Disadvantages

1. Short-term concerns during installation
2. Long-term effectiveness for saline/tidal water

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Slurry Wall Containment- Upgradient

- Function: Controls groundwater migration entering the site only

Advantages

1. Fewer short-term concerns during installation
2. Fewer long-term concerns
3. Fewer O&M concerns and lower cost than circumferential

Disadvantages

1. Limited containment (tidal intrusion)
2. Potential change in steady-state conditions

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Permeable Reactive Barriers

- Function: Removes contaminants before groundwater leaves the site

Advantages

1. Fewer O&M concerns compared to other technologies
2. Less potential for changes in steady-state conditions

Disadvantages

1. Limited demonstrated effectiveness for inorganics
2. Limited demonstrated effectiveness for saline/tidal
3. Short-term installation concerns
4. Cost effective only for containment of defined plumes

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Upgradient Trench

- Function: Diverts upgradient groundwater around the site

Advantages

1. Less short-term concerns during installation
2. Less long-term concerns
3. Less expensive than slurry walls

Disadvantages

1. Limited containment (tidal intrusion)
2. Preferential pathway for upgradient petroleum contamination
3. Potential change in steady-state conditions

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Monitoring

- Function: Provides a method to measure the effects of groundwater migration and/or to ensure a remedy is working effectively

Advantages

1. Minimal concerns during installation
2. No effects on steady-state conditions
3. Less expensive than active control and potential for greater saving

Disadvantage

1. Not an active control mechanism

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Technologies Retained to Address Groundwater Migration

- Circumferential slurry wall as vertical barrier:
  - Alternative 5 component
- Monitoring:
  - Alternatives 2, 3, 4 and 5 component

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Summary

- COCs, the RAO, and GRAs were discussed to identify and screen technologies to address groundwater migration
- Advantages and disadvantages of groundwater control technologies and monitoring were discussed
- Vertical Barriers and Monitoring were retained
  - Alternatives 2, 3 and 4 employ monitoring only
  - Alternative 5 employs circumferential slurry wall and monitoring

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