ASTSWMO Brownfields and Superfund Symposium

August 20-22, 2018
Jacksonville FL

#BFSSymp
Preparing for Post Construction - Using Lessons Learned to Minimize Long Term Monitoring Costs

Moderator: Jeff Steers (VA), ASTSWMO CERCLA Post Construction Focus Group Chair

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Review of Lessons Learned from Adaptive Practices

- CERCLA Post Construction Focus Group reviewed adaptive management-type practices that have been used by PMs to respond to changing conditions and new site information.
- Determined the most direct path to closure often requires re-evaluation of course of action specified in original ROD requirements.
Who’s Who and What’s the Plan?

Moderator:
• Jeff Steers, VA DEQ, ASTSWMO CPC Focus Group Chair

EPA Region 7 and Nebraska will co-present a case study on the Cleburn NPL site.

Speakers:
• Lynn Juett, EPA Region 7
• Tom Buell, NE DEQ

Wisconsin will present Penta Wood NPL site Case study

Speaker:
• Judy Fassbender, WI DNR
Step 1: Develop Site List

Graphic - Map showing sites and indication of total number of Superfund Sites in the US

Open and closed?
Step 1: Develop Site List

- EPA Database Query
  - Fund Lead sites
  - Sites with ROD Amendments and ESDs
  - Past 15 years
View of EPAs spreadsheet
Step 1: Develop Site List

Graphic - Bar chart of # of EPA provided list sites by region
Step 2: Refine List

The ASTSWMO CPC Focus Group reviewed the list of Fund lead sites and added a few Potentially Responsible Party financed LTRA sites that have gone through:

- ROD amendments
- Explanation of Significant Differences
- And Optimization
Step 3: Review Sites on List

The ASTSWMO CPC Focus Group conducted an evaluation the LTRA sites

Goal was to identify efficient and effective adaptive-type O&M management practices.
Step 3: Review Sites on List

- Informal review of sites on list completed by Focus Group members.
- Goal was to identify efficient and effective adaptive O&M management practices.
- Showcase how to better respond to changing conditions while ensuring protectiveness of human health and the environment.
Step 3: Review Sites on List

- How many sites reviewed total
- Sites reviewed - breakdown by region
Step 4: Identify Triggers

- 7 trigger categories identified that resulted in ROD Amendment, ESD or change in remedy to meet ROD requirements
Common Triggers - Overview

Basic “Speed Bump” Categories along Closure Path

1. Incomplete Site Investigation
2. Removal action/IROD
3. Emerging contamination
4. Other Pathway
5. Technology
6. Optimization
7. Other
1. Incomplete Site Investigation

May include

- Incomplete characterization
- Incomplete pathway identification

Two subcategories

a. Physical controls
   - Structural impediments
   - Deeper contaminant plume
   - Additional media impacted not previously known

b. Risk driver - expedites process
   - Rush to protect drinking water
Trigger 2. Removal Action/IROD

- Completion of a Removal action or imposition of an interim ROD
  - Reduces or eliminates risk
  - Removes priority for action
  - Short circuits full site investigation
Trigger 3. Emerging Contaminants

- Common Contaminants -
  - PFAS
  - 1,4-dioxane
  - Lead
  - Arsenic (new Tox studies)
  - Hexavalent vs Dissolved Chromium
  - Perchlorate
  - Pharmaceuticals
Trigger 4. Pathway

- Migration and exposure pathways added
  - Vapor intrusion
  - Sediment
  - Surface water
Trigger 5. Technology

- Applicability of Technology (appropriateness)
- Better understanding of technology
- Reassess presumptive remedy
- Availability of better technology
Trigger 6. Optimization

- Optimization
Trigger 7. Other

Other
C. Graphical representation of issue and solution - NARPM Circle - Process improvement diagram

a Venn diagram or EPA’s graphic
Findings

Insert Graphs
“Speed Bump” Summary

- 1. Incomplete SI
- 2. Removal action/IROD
- 3. Emerging contamination
- 4. Other Pathway
- 5. Technology
- 6. Optimization
- 7. Other
Continuous Evaluation

- Protective
- Effective - Evaluate active remedies (and not active remedies)
- Cost Control
- Efficient
- Green and Sustainable
Catalyst for Further Assessment

- Financial drivers
  - Responsibility transfer
  - Technology changes - delays in funding
  - Delayed funding of different aspects of the project
  - Settlement funds
- Cleanup targets not met in a reasonable timeframe
- Impacted receptors
- Unusual/unsuccessful performance of a remedy - unknown/additional impacts
- Optimization review - Year 7 of LTRA
- Five Year Reviews
Site Categories

Two categories of Sites

1. Legacy sites - use experience to learn what actions support success
2. Newer sites going through the RI/FS and RD/RA process - Apply successful actions learned from Legacy sites

(in line EPAs continuous adaptive mgmt.)
Add EPA Adaptive Management overview

This is a part of EPAs
Summary

- Summarize how many sites were looked at and how many fell into which category - Review sites from several regions and provide data summary information based on the excel spreadsheet composites.
Recommendation

- Ensure State ARARs are written into the ROD
- Recommend language in the SSC that would allow state to negotiate within the process