Remediation Performance Optimization in the Age of Performance Contracts

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Overview

- Background
- Evolution of Optimization Concepts
- Evolution of Contract Strategies
- Current Role of Optimization and Surveillance
Background

Then
- DoD remediation liability estimate (1987)
  - $14B and 13 years
- Limited technical & programmatic experience
  - Led to great uncertainties
- Development of process-intensive regulatory models

‘Recently’
- DoD remediation liability estimates (2004)
  - $50B and beyond 2014
- 20 years of experience, knowledge & innovation
  - Led to methodology to address uncertainties
- Optimization
  - Focus on results not simply the process
What Happened?

- Initial environmental restoration efforts focused on investigation…
  …and never seemed to end

- Interim remedies were originally thought to clean up a site within a few years…
  …which didn’t happen

Optimization became a means of changing activities in the hope that performance would be improved
Optimization – First Steps

- Optimization focused on system and site specific data
  - Improve system operation
    - Add / remove / modify wells and other equipment
    - Established performance goals
  - Adjust monitoring for performance tracking
    - Largely investigation related monitoring networks
    - Select the appropriate subset of wells to evaluate remedy performance
  - Adjust site-wide and installation-wide Long Term Monitoring
    - Identify specific endpoints for monitoring

But we've always done it this way...
Optimization Concepts Evolved

- GSR 2009
- Environmental Restoration Program Optimization - 2009
- Performance Based Management - 2004
- Conceptual Site Model - 2004
- Exit Strategy - 2003
- Streamlined Investigation - 2003
- Remedial Process Optimization - 1999
- Long-Term Monitoring Optimization - 1997

Sustainability
Multi-site / Installation-wide
Site Specific
Optimization – Second Step

- Performance Based Management
  - First holistic approach for environmental restoration programs
  - Emphasis on achieving site closure and/or returning land to beneficial use
Optimization – Next Steps

- Focus on Remedy in Place by 2012
- Optimization concepts applied to the restoration program… ERP-O
  - Sites were evaluated for meeting the RIP goals
  - Recommendations developed to facilitate RIP achievement
  - Installations responsible for implementing recommendations
- Surveillance
  - Periodic review of ERP-O recommendations
  - Funding for recommended actions
  - PBR contract site status reviewed 1 yr before end of PoP
ERP-O Experience

Original intent was to hold off on independent ERP-O review until the end of a PBR
  - Avoid ‘interference’ with PBR contractor

Case Studies:
1. Conducted review of 13 sites at one installation which were to have progressed from RI to ROD
   - RIs were deficient, all funding expensed
   - Caused 2 year delay
2. Conducted review of 7 sites at one installation with site closure goals
   - Inadequate preparation for remedy execution
   - Lacked progress towards goals
   - Expended approximately 85% of the budget
Case Study 1

What Happened?

- Work Plans lacked detail
  - “We’ll figure out what needs to be done in the field”
  - Default decision logic cycled back to “get more funding”
- Poor document trail for changes
  - Significant inconsistencies between WP and reports
- Significant data gaps remained
  - Poor presentation of data (maps & text)

Hindsight

- There were missed opportunities to catch and correct the execution problems
Case Study 2

What Happened?
- PBC was awarded to the contractor who promised the most sites closed
- Execution lacked critical data collection
  - No aquifer response test
  - No evaluation of data gaps
    - Source zones within aquifer
- Poor progress towards closure
  - Concentration trends generally stable, some increasing/decreasing

Hindsight
- ERP-O evaluation had been requested 1 year earlier
- Technical review of performance goes beyond the ‘words’ in the report.
Focus on Site Closure

- February 24, 2011 Policy for Refocusing the Air Force Environmental Restoration Program from the Assistant Secretary (Installations, Environment, and Logistics)
  - Cleanup objectives to focus on fence-to-fence accelerated SC
  - SC is... no further investments of time or money
    - Unrestricted Use and Unlimited Exposure (UU/UE)
  - Primary contracting mechanism – Performance-based
Reinforced Drive for PBR

- PBR emphasizes contractor’s responsibility for making appropriate decisions
  - Contractors implement RPO and LTM-O
  - Technically feasible optimization
  - Regulatory acceptable optimization
  - Optimization for site closure
    - May result in increased frequency of sampling
    - Additional sampling points may be needed for verification

- Air Force evaluations and recommendations can only be for information and not direction of remediation
Pre-PBR Contribution
- Provide programmatic evaluation to support fence-to-fence PBRs
- Highlight potential performance metrics

During PBR – Surveillance
- Support execution of the Surveillance Plan
- Evaluate progress against performance metrics and milestones

Post PBR – Evaluation and preparation for next PBR
- Insight into progress made towards meeting remediation goals
- Identification of next set of goals
Surveillance of PBRs

- Contractor develops the Project Management Plan and Integrated Master Schedule
  - Milestones
  - Performance Goals
- Air Force develops the Surveillance Plan
  - Documents surveillance activities and points to verify the contractors progress
Potential Surveillance Process

Integrity - Service - Excellence
QUESTIONS?
RPO Resources

- ASTM: http://www.astm.org/DATABASE.CART/WORKITEMS/WK23495.htm
- ITRC RPO: http://www.itrcweb.org/teampublic_RPO.asp
- ITRC RRM: http://www.itrcweb.org/teampublic_RRM.asp
### Objectives and Targets

#### Accelerated Completion Objectives

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<th>Target 1</th>
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<td><strong>BRAC Sites</strong></td>
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<td>Accelerated completion</td>
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<td>90% of all Sites by 2015</td>
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<td><strong>Non-BRAC Sites</strong></td>
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<tr>
<td>Accelerated completion</td>
<td>50% of all Sites by 2012</td>
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Objectives and Targets

For Sites not yet Completed, ensure:

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