

DERP Forum

Strengthening Relationships with our Regulatory Partners

St. Louis, Missouri

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Summary and Lessons Learned from the Navy's Complex Remediation Sites

Mike Singletary, P.E.
NAVFAC Southeast



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Status of 2021 DERP Management Goals

- **183 sites are currently not projected to meet RC goal by 2021**
 - Estimated RC dates up to 2061
 - Phase 4 to 7 CTC estimated at approximately \$1B (RA Construction through LTM)

DERP Management Goals

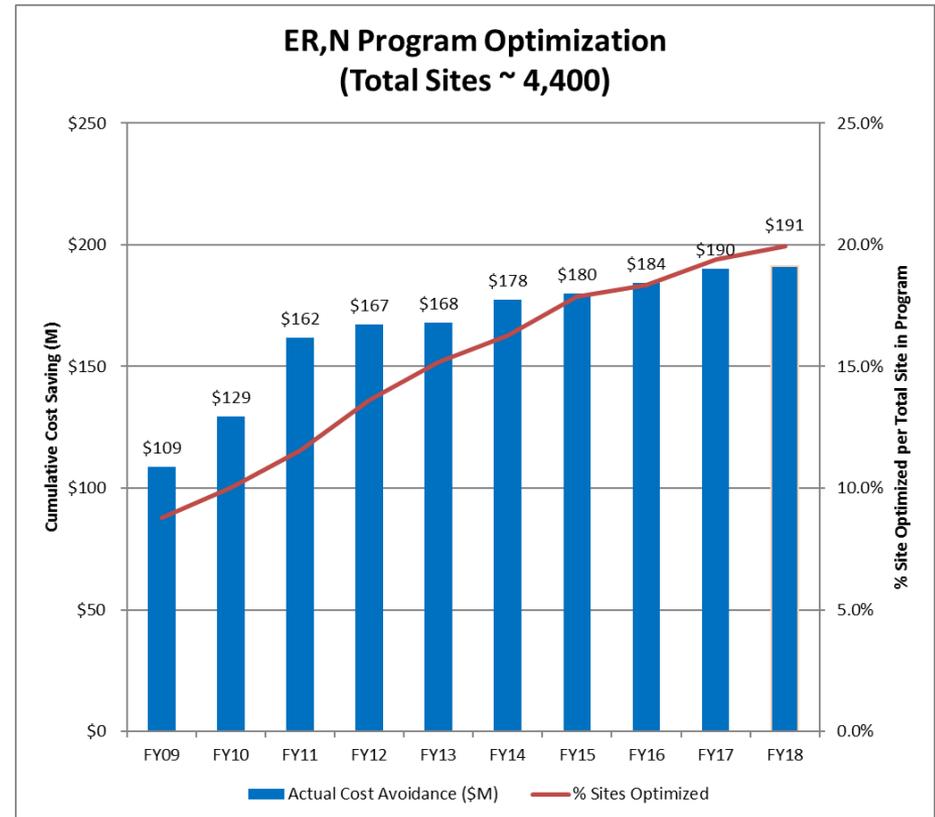
- *Achieve RIP or RC at 100% of sites by end of FY2014*
- *Achieve RC at 90% of sites by end of FY2018 and at 95% of sites by end of FY2021*

DERP – Defense Environmental Restoration Program
RIP – remedy in place
RC – response complete

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Navy Optimization Program Success

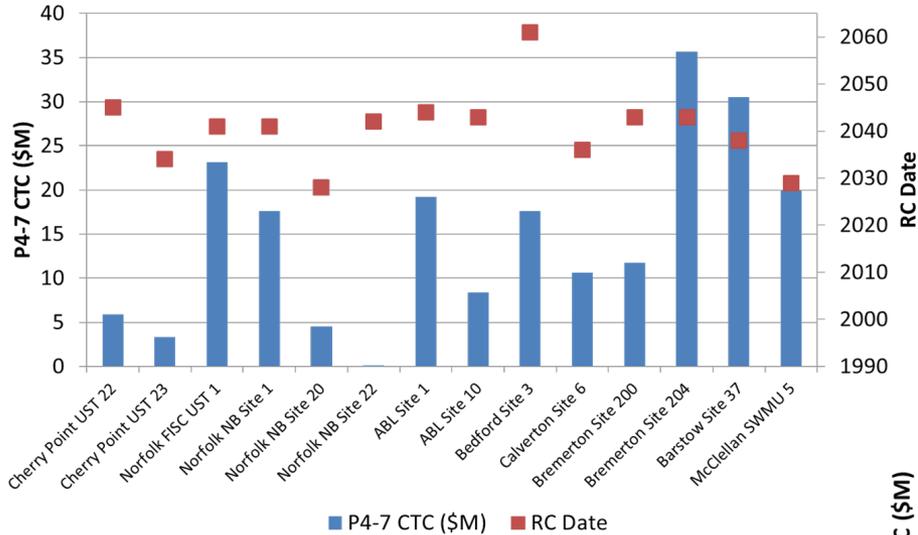
- Initial optimization focus on individual sites
- Significant cost avoidance through systematic optimization at multiple project phases
- Cost avoidance reaching point of diminishing returns
- Shifting optimization focus to portfolio analysis
 - Develop broader findings and recommendations
 - Better inform policy and guidance for future optimization efforts



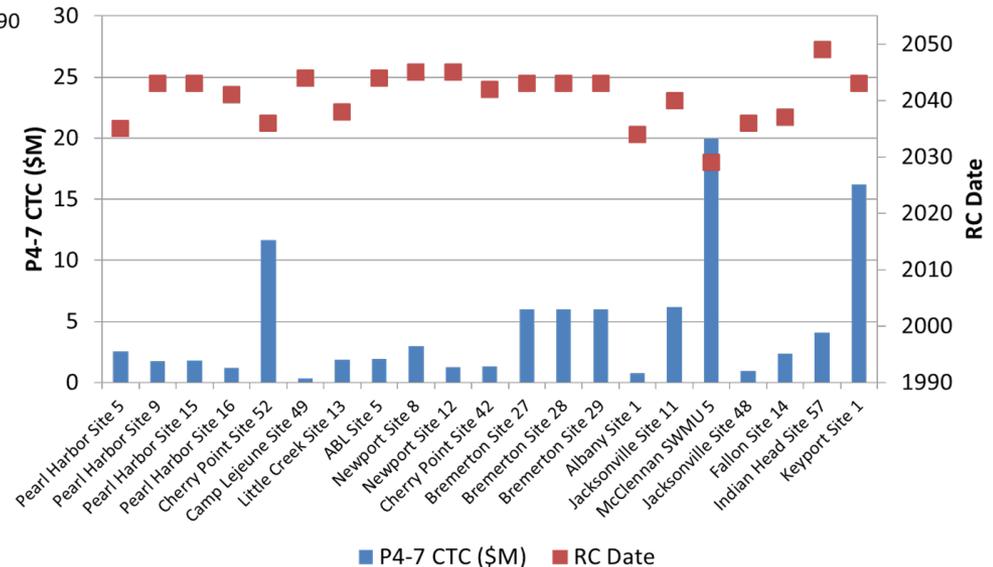
Source: G. Coghlan, NAVFAC HQ

Two Categories of Navy Complex Sites

Pump and treat containment systems

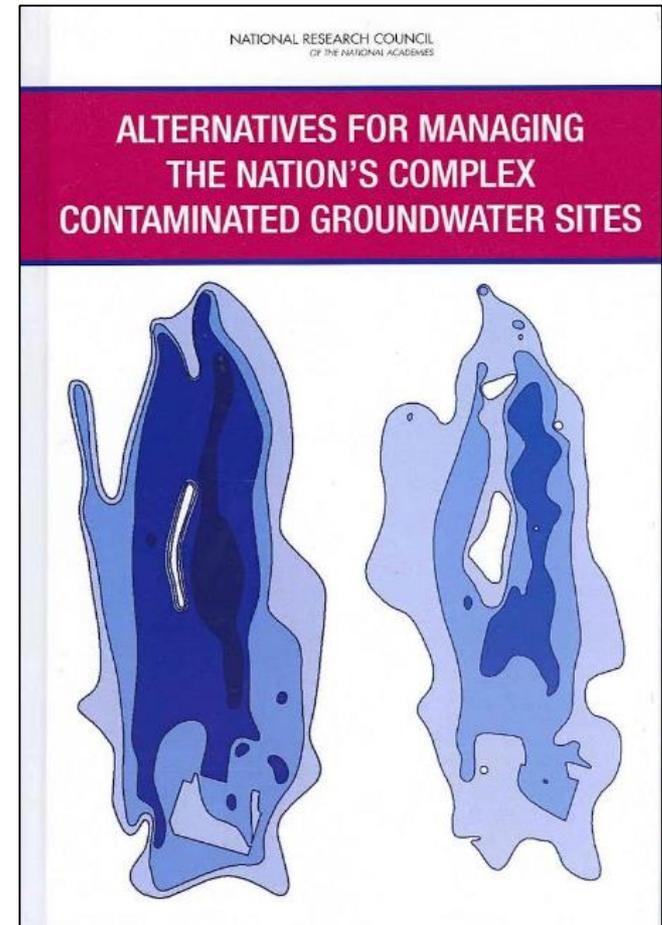


In situ treatment trains including extended MNA



Issues Common to Complex Sites

- Lack of consensus on CSM, RAOs, and site priorities
- Insufficient plan for managing site uncertainty
 - Traditional linear regulatory framework
 - Lack of flexibility in existing RODs and decision documents
- Contracting issues (FFP, PBR, CP)
- Remedy transitioning
 - Active to passive treatment
 - When does in situ treatment end and MNA begin?
 - “Points of diminishing returns”/asymptotic conditions
- Agreement on the role of MNA in long-term remedies
 - Reasonable timeframe
 - Risk management approach vs. “treatment technology”
 - Stand-alone remedy vs. part of a treatment train



Adaptive Site Management

- “Comprehensive, flexible, and iterative process that can be used to manage the remediation process”
- “Approach for dealing with difficult-to-remediate hazardous waste sites over the long term or where current technologies have proved to be ineffective”
- “Can be used to make decisions in response to remedy performance, while considering changes in site conditions, the conceptual site model, technology performance, and technological advances over time”

– Interstate Technology and Regulatory Council (ITRC), 2017



Adaptive Site Management Concepts

- **Conceptual site models**

- Living document changed/refined over time
- Changes in technical knowledge and understanding
- Changes in site conditions

- **Remedial action objectives**

- Ultimate expectation to protect human health and environment
- Meet regulatory requirements (ARARs)
- Potential use of ACLs, groundwater management zones, containment, groundwater re-classification on complex sites

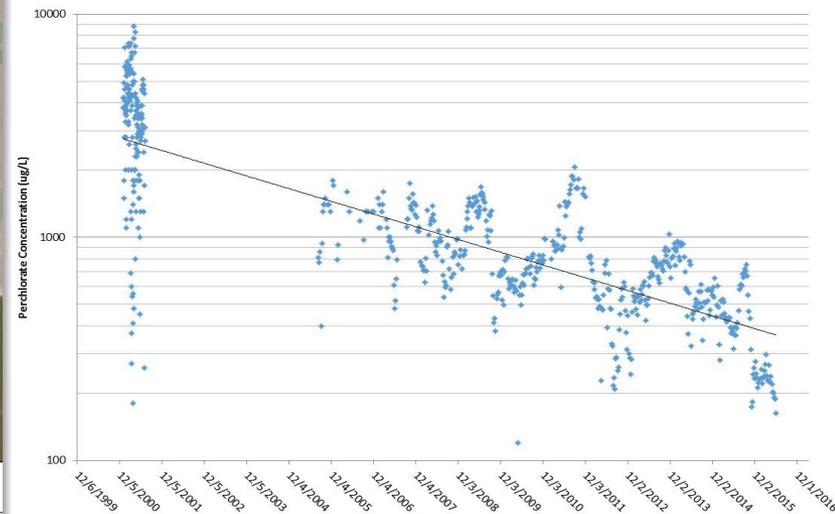
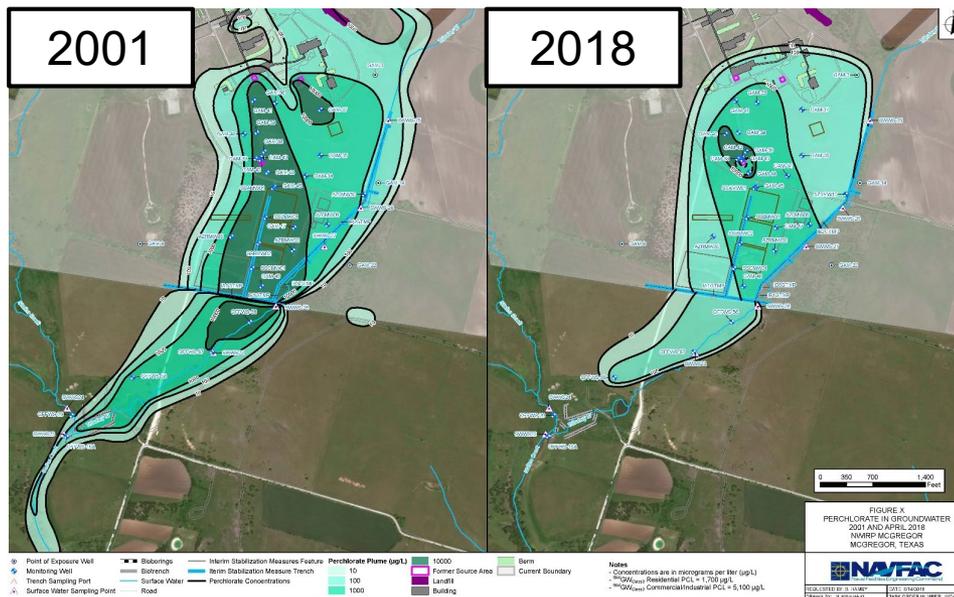
- **Performance objectives (interim objectives)**

- Intermediary goals to guide progress towards achieving RAOs
- Basis for performance model predictions, metrics
- Examples include mass flux or discharge reductions, target degradation rates, capping to prevent direct exposure, etc.

ASM Concepts (Cont.)

- **Remedy Transitions**

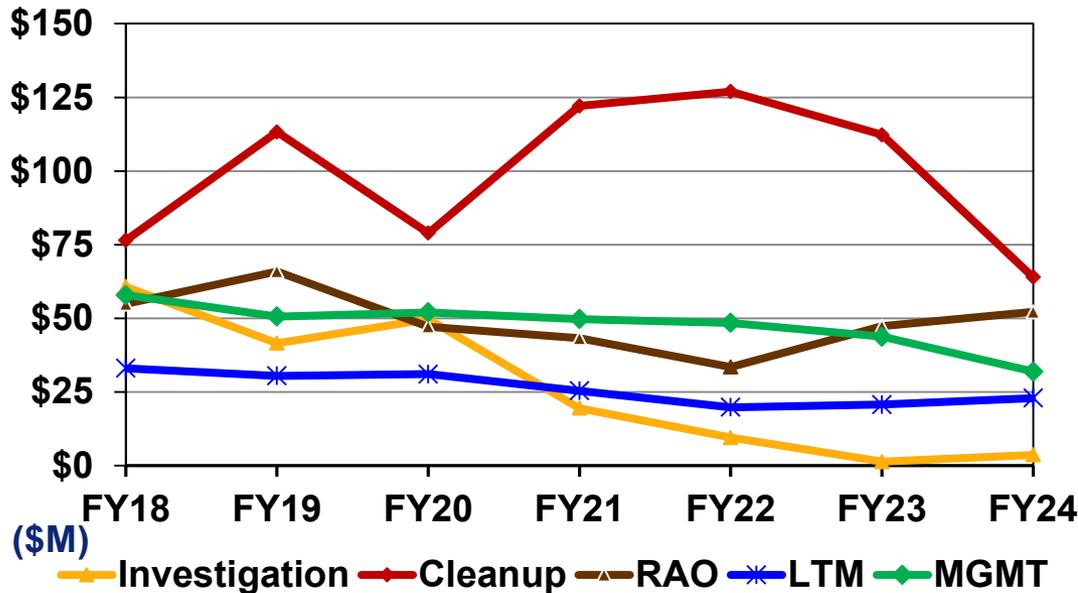
- Initiate when reaching limitations in technology effectiveness
- Determine whether new remedy component is warranted or whether transition to long-term management or MNA is appropriate
- Examples of transition assessments
 - Transitioning pump and treat system to in situ containment barrier or MNA
 - Active in situ source treatment to MNA



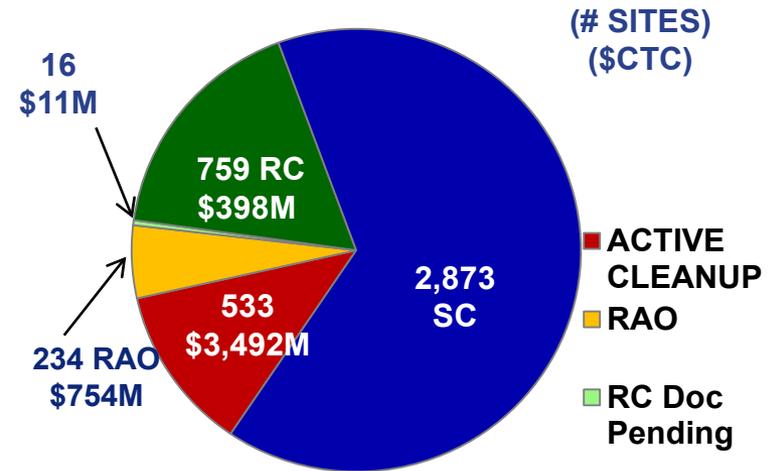
**Transition assessment for pump and treat system,
former NWIRP McGregor (NAVFAC SE, 2017)**

Backup Slides

Navy Environmental Restoration Progress



FY18 Snapshot of Navy Program



4,415 Sites (EOY17: 4,498 Sites)

RC: 3,632 (82.3%)

\$4,655M CTC = \$2,661M (IRP) + \$1,994M (MRP)

CTC – cost to complete
 FY – Fiscal year
 EOY – end of year
 RC – response complete
 RA-O – remedial action operation

IRP – Installation Restoration Program
 LTM – long-term monitoring
 MGMT – long-term management

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Navy Portfolio Optimization

Phase I

- Focus: 32 complex IRP sites with Total CTC ~ \$300M

Status:

- Working with FECs/RPMs on tailoring and implementing recommendations
- Continued engagement at stakeholder partnering meeting
 - NB Kitsap Bangor Site A and F, and Jackson Park –biweekly/monthly calls with RPMs & regulators
 - ABL Sites 1, 5 and 10 continue quarterly calls with project team

Challenges

- Majority of recommendations involved changing the path of the remedy (i.e., ROD amendment, ESD, and/or site reopening)
- Must obtain buy-in from both internal Navy and regulators – very difficult

Phase II

- Focus: 25 complex IRP sites and 15 lower risk sites with Total CTC ~ \$340M
- Sites with high CTC and RC > 2021 (complex sites)
- Sites with potential for accelerated closure (e.g. petroleum sites, dilute/stable groundwater plumes)

Status:

- Ongoing data review in collaboration with RPMs and Contractors
- Site 70 Seal Beach (1-mile long, 200-ft deep CVOC plume) – transitioning to passive approach & under negotiation with regulators
- Yuma (CVOC & 1,4-Dioxane plume) – working with team on alternative approach to P&T

Adaptive Site Management

