



Current Challenges in Site Characterization, Future Needs, and Emerging Technology Areas

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Major Challenges for the DON ER



- Complex groundwater plumes
- Long-term site management
- Vapor intrusion
- Emerging contaminants

DERP Goals and Metrics



- Achieve RIP or RC at:
 - 100 percent of sites by end of FY2014
- Achieve RC Milestone at:
 - 90 percent of sites by end of FY2018
 - 95 percent of sites by end of FY2021

DERP Definitions



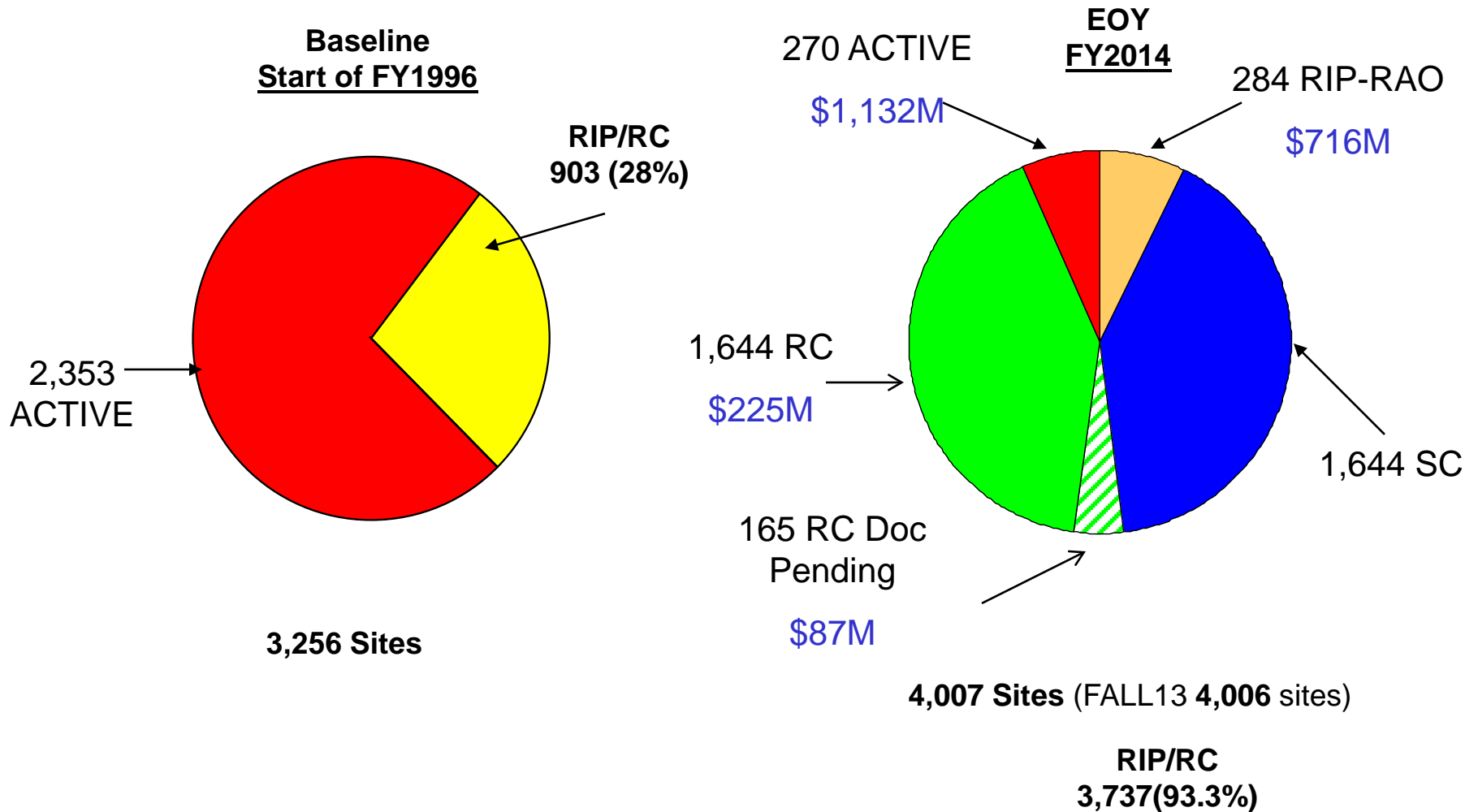
- Remedy-in-Place (RIP) – Designation that a final remedial action has been constructed, is functional, and is operating as planned in the Remedial Design and would be expected to meet the remedial action objectives detailed in the Decision Document.
 - Air sparging system installed and operating as designed
 - MNA program implemented (start of MNA monitoring)

DERP Definitions (Cont.)



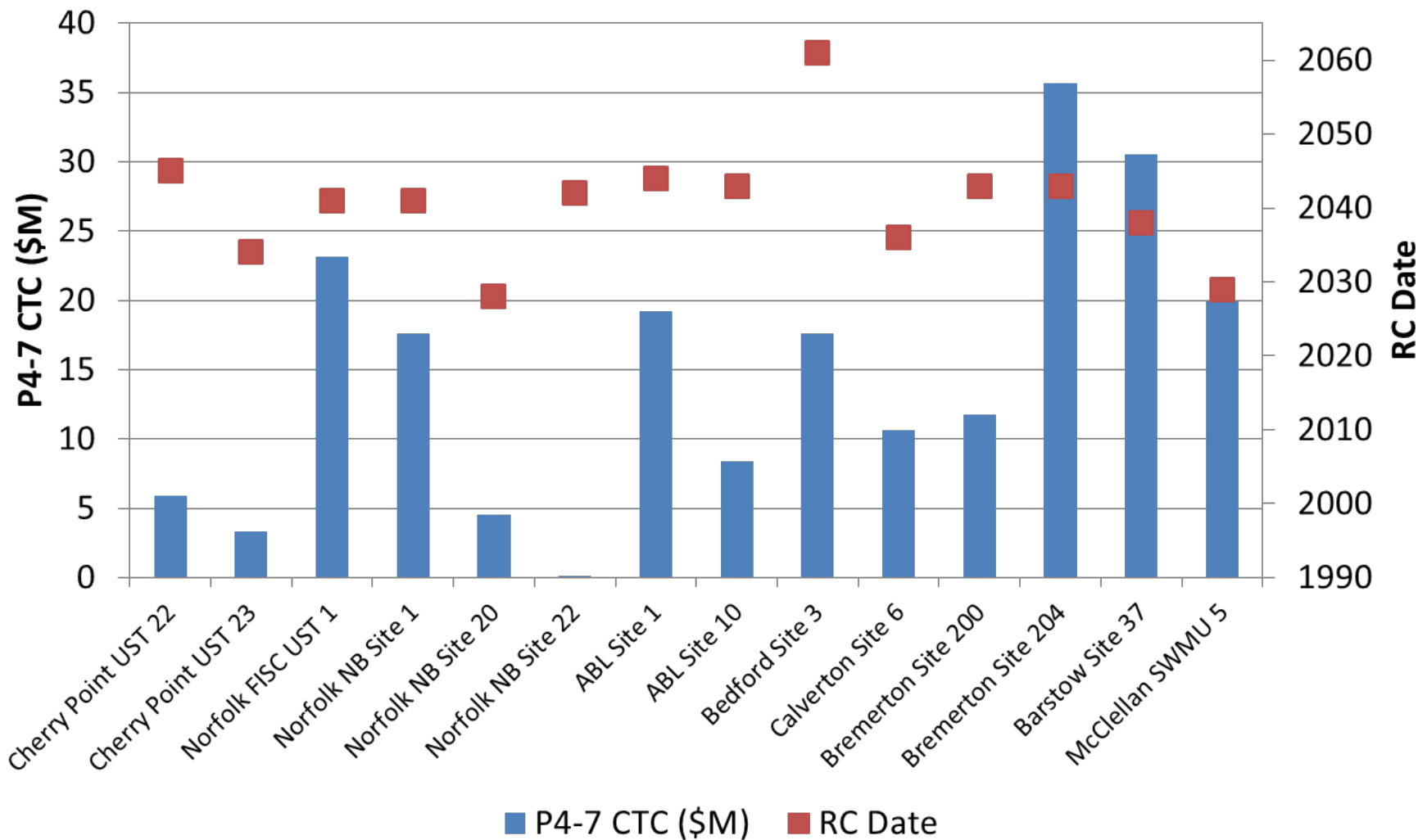
- Response Complete (RC) – Milestone signifying that DOD has met remedial action objectives and sought regulatory approval.
 - RA-O achieved remedial action objectives
 - Where there is no RA-O, RA-C achieved remedial action objectives
 - For groundwater sites, RC typically requires achieving MCLs throughout plume
 - LTM may occur after RC is achieved (e.g. landfills)

Snapshot of the ER,N IR Program

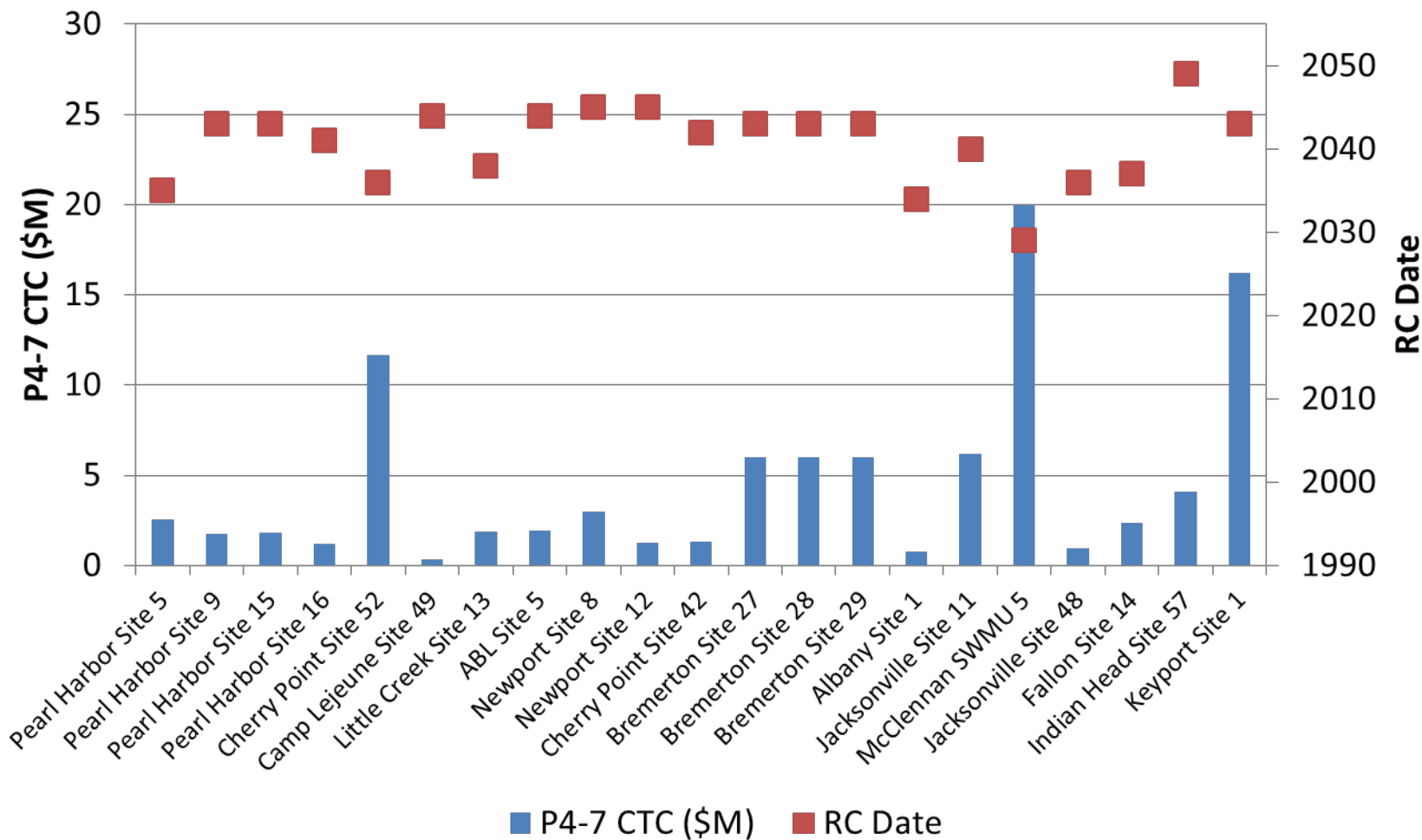


Projects Only

Complex Sites with Pump and Treat Containment



Complex Sites with In Situ Treatment Trains



Need for Improved Site Characterization Tools



Critical in the areas of:

- Plume and source area management
- Better understanding of MNA
- Extent, magnitude of risk, and mitigation of vapor intrusion
- Extent and magnitude of risk from emerging contaminants

Need for Improved Site Characterization Tools (Cont'd)



- Plume and Source Area Management and MNA:
 - Impacts of back diffusion on plume persistence
 - Degradation processes that can control migration of large dilute plumes (e.g. abiotic, aerobic cometabolism)
 - Estimating assimilative capacity of plumes
 - Transitions from active remediation to passive management
 - Understand the source areas architecture and dominant processes that affect it
 - Understand and predict better capabilities for natural attenuation processes (biotic and abiotic)

Need for Improved Site Characterization Tools (Cont'd)



- Vapor Intrusion

- Extent
- Magnitude of risk
- Mitigation
- Long-term requirements

- Emerging Contaminants

- Extent
- Magnitude of risk
- Mitigation