U.S. Naval Facilities Engineering Systems Command



NAVFAC Capabilities and Directions to Advance Innovative Remediation Technologies

Gunarti Coghlan, P.E.
Environmental Engineer
Environmental Restoration Division
NAVFAC Headquarters

FRTR Spring 2021 Webinar and Meeting

May 26, 2021

1

U.S. Naval Facilities Engineering Systems Command

Overview of Capabilities and Direction in Advancing Technology Innovation

- ☐ Focus Areas:
 - ✓ Emerging chemicals/requirements
 - ✓ Complex sites
 - ✓ Low-risk sites
- ☐ Direction for Implementing Innovative Remediation:
 - ✓ Integrating efforts through Execution, RPMs, and Workgroups (Optimization and Technology Innovation and Emerging Chemicals)
 - √ Strategic program investment for portfolio-wide themes
 - ✓ Utilizing NESDI for DON-specific field-ready technology validation
 - ✓ Leveraging DoD, other Services RDT&E efforts, and Tri-Service Remediation Optimization Workgroup

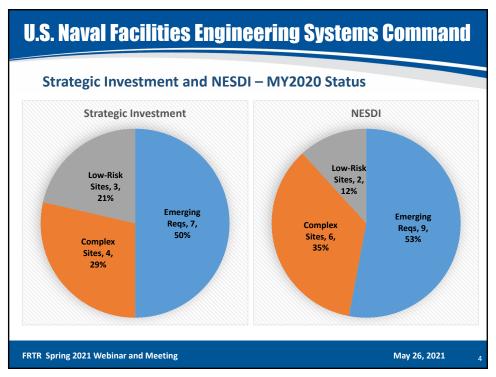
FRTR Spring 2021 Webinar and Meeting

May 26, 2021

2

U.S. Naval Facilities Engineering Systems Command Optimization and Technology Innovation Workgroup: □ Charter ✓ Promote innovative technologies/approaches and optimization opportunities ✓ All sites throughout all phases of remediation ✓ FEC focal points - balanced performance, sustainability, schedule, and cost toward goals > 5-Year Review & GSR to address potential climate change impacts > Conducted as part of the long-term efficiency evaluation of a Priorities √ Technology innovation ✓ Optimization implementation and tracking √ Knowledge transfer ✓ Collaboration with Emerging Chemicals Workgroup FRTR Spring 2021 Webinar and Meeting May 26, 2021

3



U.S. Naval Facilities Engineering Systems Command

Example of Strategic Investment: Low-risk Petroleum Sites

- ☐ Problem: Low-risk petroleum sites have not reached RC, even after decades of active remedies
- ☐ Findings: Navy petroleum sites fall into three categories
 - ✓ Type A: LNAPL thickness doesn't meet state criteria
 - ✓ Type B: LNAPL thickness meets state criteria, but TPH does not
 - ✓ Type C: LNAPL thickness and TPH meet state criteria, but dissolved plume constituents exceed state MCLs
- ☐ Recommendations:
 - ✓ Type A: Transition to semi-passive remedy (skimmers) or MNA
 - ✓ Type B: Use NSZD measurements and TPH with silica-gel cleanup to progress towards RC
 - ✓ Type C: Pursue RC

FRTR Spring 2021 Webinar and Meeting

May 26, 2021

5

5

U.S. Naval Facilities Engineering Systems Command

How NAVFAC overcomes barriers to innovation:

■ Improving pace of innovation

Program	Selection & Contracting	Project Execution
SERDP/ESTCP	17 – 19 months	3 – 4 years
NESDI	12 - 14 months	2 - 4 years
NAVFAC Strategic Investment	3 – 6 months	1 – 2 years

Area where FRTR can provide value:

- ☐ Technology Clearing House
 - √ Facilitate sharing data (performance, cost, success stories, lessons learned) on application of new approaches/technologies
 - ✓ Provide central data repository that is easily searchable by RPMs
 - ✓ Immediate need for repository of validated PFAS sampling and analysis methods and PFAS treatment technologies

FRTR Spring 2021 Webinar and Meeting

May 26, 2021

)21

U.S. Naval Facilities Engineering Systems Command FY21 Strategic Investments (FY22-23): ☐ Full-scale PFAS IDW water treatment; Willow Grove & Pt. Mugu ✓ Portable sorbent kit and recirculation pump from drums and trailer-mounted system for ✓ Outcome: Dispose treated water at local non-hazardous facility and implement technologies at PFAS sites. Potential PFAS Sample Interference in Wells Completed with Bentonite Pellets; JAX and Pensacola \checkmark Outcome: Determine what factors to consider when selecting the pellets for PFAS sites ☐ VI Mitigation Methods for Preferential Pathways in Navy's Non-Residential Buildings; Yorktown √ Implement methods: Check valves, P-Traps, sewer liners, sewer ventilation; cheaper than whole building mitigation such as ASD ✓ Outcome: Implemented the strategy with regulatory buy in at a site ☐ Roadmap to RC for the Navy's Petroleum Sites; SW and ML ✓ Outcome: Accelerate 2 sites each of Types A & B to RC using NSZD, transmissivity, silica-gel cleanup, and/or weathering analysis. Capture RC experience in guidance to other sites. ☐ Decision Tool to Determine Abiotic Degradation Contribution; SE ✓ Improve understanding in natural abiotic transformation to strengthen case for MNA. $\checkmark \mbox{ Outcome: Abiotic degradation as an accepted MNA line of evidence at a site.}$ FRTR Spring 2021 Webinar and Meeting May 26, 2021

7

U.S. Naval Facilities Engineering Systems Command

Questions?

FRTR Spring 2021 Webinar and Meeting

May 26, 2021