Federal Remediation Technologies Roundtable

Questionnaire to Senior Leaders of FRTR Member Agencies

Report out for FRTR Spring 2021 Webinar

Federal In Technologies Roundtable

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Common Themes in Responses

- What are the challenges?
- Technology needs and gaps?
 - Contaminant source and site characterization
 - Emerging contaminants
 - Remedy resilience under evolving climatic conditions



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You may share your thoughts on these questions using the Q&A live today.

* You may use the anonymous submission if preferred

You may also send your thoughts by email to FRTR@emsus.com by May 31, 2021.

1) Grand Challenges:

What are the grand challenges facing your agency regarding remediation over the next decade?

2) Technology Needs and Research Gaps:

Focusing on specific technology needs, the FRTR has identified these cross-cutting issues going

- > Contaminant source and site characterization
- Emerging contaminants
- > Remedy resilience under evolving climatic conditions

What are your agency's remediation technology needs or research gaps for these issues? Are there other key issues not captured above?

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Senior Leader Respondents



• DOE

• DOI

• EPA

NAVFAC

NIEHS

USACE

• USGS



United States Nuclear Regulatory Commission













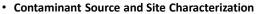
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Grand Challenges

- · Climate change and climate resiliency
 - Factor into long-term remedy decisions
- · Emerging contaminants
 - Characterization, cleanup, and risk assessment considerations
- Large, complex and difficult-to-remediate sites (low permeability, groundwater, recalcitrant contaminants)
- · Technology selection/use of flexible strategies
- · Limited resources
- · Limitations of current cleanup technology
- · Training new personnel, including RPMs



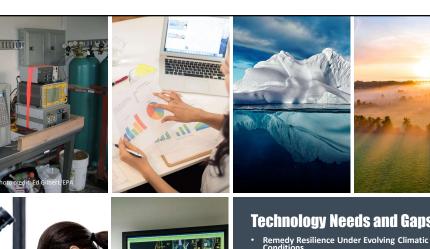
Technology Needs and Gaps



- Cost-effective characterization at an appropriate scale for large sites
- Dynamic conceptual site model (CSM) tools for remedy design
- Source reduction technology development
- Robotic sampling methods
- Improved inventory of resource extraction sites (abandoned mines) and features
- Improved understanding of the necessary balance between modeled assumptions and actual field data
- Improved sensors and real-time monitoring
- Improved subsurface characterization



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Technology Needs and Gaps

- - Treatment and containment strategies that can weather climate events
 - Integrated climate, topographic, geologic, geophysical, hydrologic and biologic models of watersheds for more accurate modeling of site cleanup impacts
 - Predicting future climate conditions in different U.S. regions
 - Better understanding of sea level rise on remedies near shorelines
 - Role of renewables on remediation

