Possibilities and Realities: Leveraging Innovative Technologies & Techniques to Meet Aggressive Remediation Timelines & Performance Goals

Greg Gervais
USEPA Office of Superfund Remediation & Technology Innovation
gervais.gregory@epa.gov

Partners in Environmental Technology

**Report Title:** Possibilities and Realities: Leveraging Innovative Technologies & Techniques to Meet Aggressive Remediation Timelines & Performance Goals

**Abstract:**
Department of Defense’s (DoD) ?90% Response Complete by 30 Sep 2018? can serve as a vision, a call to action, and a means to focus resources to achieve a radically new future. Will this Response Complete goal catalyze innovation, or will it bolster the ?tried and true?? Do the needed technologies and techniques already exist? If so, where are they? How can the remedial innovative technology community overcome barriers to adoption and effective implementation? What can other federal agencies with cleanup responsibilities learn from DoD and what can they offer DoD? This presentation will explore both the realities and possibilities associated with innovation as way to rapidly achieve Remedial Action Objectives at sites.

**Presentation Details:**
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POSSIBILITIES AND REALITIES IN LEVERAGING INNOVATIVE TECHNOLOGIES AND TECHNIQUES TO MEET AGGRESSIVE REMEDIATION TIMELINES AND PERFORMANCE GOALS

MR. GREGORY GERVAIS, P.E.
USEPA Office of Superfund Remediation and Technology Innovation
1200 Pen nsylvania Avenue NW
5203P
Washington, DC 20460
(703) 603-0690
gervais.gregory@epa.gov

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Presentation Outline

• We are Here

• The Path to Here

• The Challenges Ahead

• Are Innovative Technologies the Solution?
We Are Here

(Cleanup horizon: 2004 – 2033)

Total = $209 Billion

Total Sites = 294,000

The Path to Here
(2005 - 2008) 594 Decision Documents

- Treatment of Source or Groundwater (262) 44%
- No Action or No Further Action (with no other remedy) (103) 17%
- Other remedies (with no treatment, MNA, or containment) (98) 17%
- Containment (with no treatment or MNA) (87) 15%
- MNA (with no treatment) (44) 7%

The Path to Here: Trends in Superfund Groundwater Remedies (1986 - 2008) 1,727 Decision Documents

The Challenges Ahead

For DoD:

- Response Complete = no contaminants pose a threat to human health and the environment for current land use (DoD/Conger, 2011)
- DoD Goals Memo: 90% RC by 2018, 95% by 2021
- 1970s to 2011:
  - ~ 25,000 DoD Environmental Restoration Sites
  - ~ 80% are RIP or RC
  - ~ $2 billion/yr

80% → 90% in 6+ years, 80% → 95% in 9+ years, but...
Where Is All the Low-Hanging Fruit???
The Challenges Ahead

For the Broader Remediation Community:
• Many difficult GW sites
• Stagnant/shrinking budgets
• Long list of innovations...no magic bullet
• Length of R&D timeline
Are Innovative Technologies the Solution?

• Continue R&D for new technologies
• Better use of existing technologies
• Develop innovative techniques
• SMART exit strategies for sites
Market Analysis

Total = $209 Billion

- NPL: $32B
- RCRA-CA: $45B
- States & Private: $30B
- Civilian Agencies: $19B
- DOE: $35B
- UST: $16B
- DOD: $33B

Total Sites = 294,000

- NPL: 736
- RCRA-CA: 3,800
- States & Private: 150,000
- Civilian Agencies: 3,000
- DOE: 5,000
- DOD: 6,400
- UST: 125,000

In Summary

- 1,000s of sites, $10^{+9} $
- 2018 is only 82 months away
- Leverage existing technologies better
- Collaborate on SMART exit strategies
Shameless Plugs

• www.epa.gov/superfund
• www.cluin.org
  – Technology data
  – Focus areas
• www.cluin.org/studio
  – Internet seminar schedule and registration
  – Archived seminars
• www.itrcweb.org
• www.frtr.gov
Questions?

Greg Gervais
Office of Superfund Remediation and Technology Innovation
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