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

SERDP DOD • EPA • DOE ESTCP

Partners in Environmental Technology

Technical Symposium & Workshop **– Washington, DC – November 30, 2011**

Report Documentation Page

Form Approved
OMB No. 0704-0188

1. REPORT DATE	2. REPORT TYPE	3. DATES COVERED
NOV 2011		**00-00-2011 to 00-00-2011**

4. TITLE AND SUBTITLE	5a. CONTRACT NUMBER
Possibilities and Realities: Leveraging Innovative Technologies & Techniques to Meet Aggressive Remediation Timelines & Performance Goals	5b. GRANT NUMBER
	5c. PROGRAM ELEMENT NUMBER
6. AUTHOR(S)	5d. PROJECT NUMBER
	5e. TASK NUMBER
	5f. WORK UNIT NUMBER
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) **U.S. Environmental Protection Agency,Office of Superfund Remediation and Technology Innovation,1200 Pennsylvania Avenue NW,Washington,DC,20460**	8. PERFORMING ORGANIZATION REPORT NUMBER
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)	10. SPONSOR/MONITOR'S ACRONYM(S)
	11. SPONSOR/MONITOR'S REPORT NUMBER(S)

12. DISTRIBUTION/AVAILABILITY STATEMENT
Approved for public release; distribution unlimited

13. SUPPLEMENTARY NOTES
Presented at the Partners in Environmental Technology Technical Symposium & Workshop, 29 Nov ? 1 Dec 2011, Washington, DC. Sponsored by SERDP and ESTCP

14. ABSTRACT
Department of Defense?s (DoD?s) ?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.

15. SUBJECT TERMS

16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT	b. ABSTRACT	c. THIS PAGE			
unclassified	**unclassified**	**unclassified**	**Same as Report (SAR)**	**15**	

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 Pennsylvania Avenue NW
5203P
Washington, DC 20460
(703) 603-0690
gervais.gregory@epa.gov

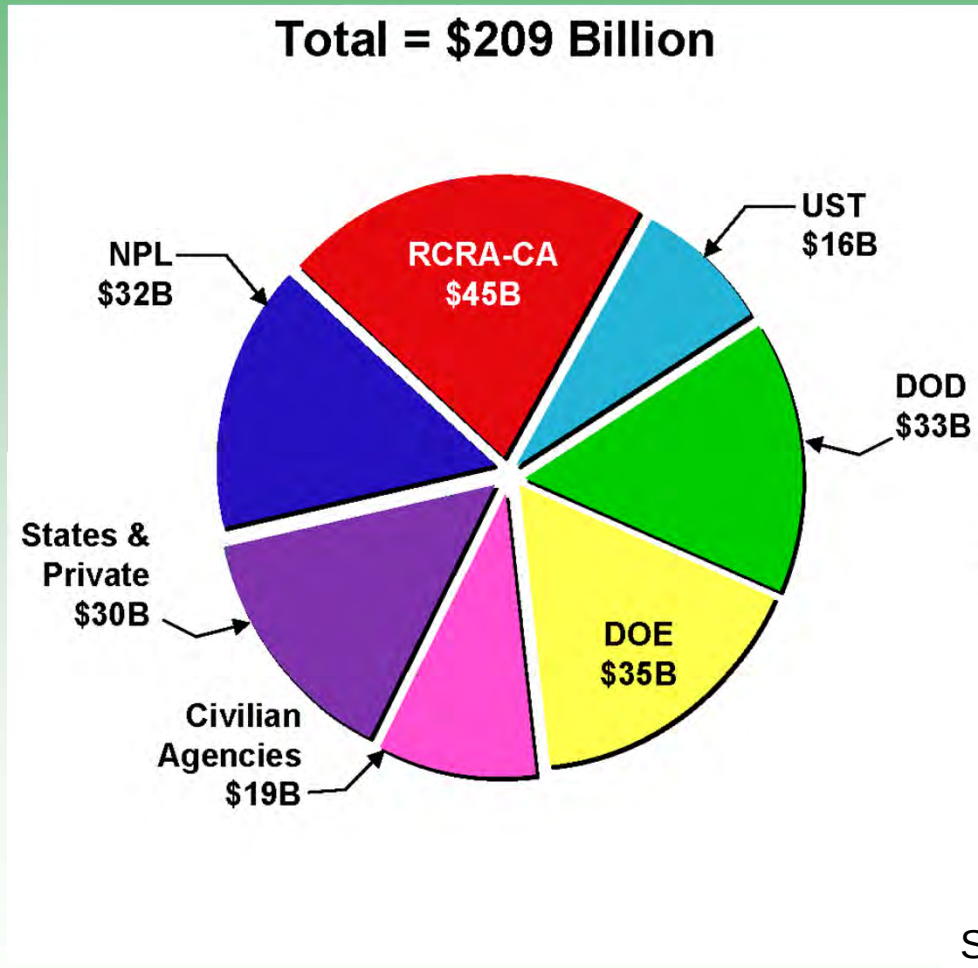
Department of Defense's (DoD's) "90% Response Complete by 30 Sep 2018" can serve as a vision, a call to action, and a means to focus resources to achieve a radically new future. Will this Response Complete goal catalyze innovation, or will it bolster the "tried and true?" Do the needed technologies and 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.

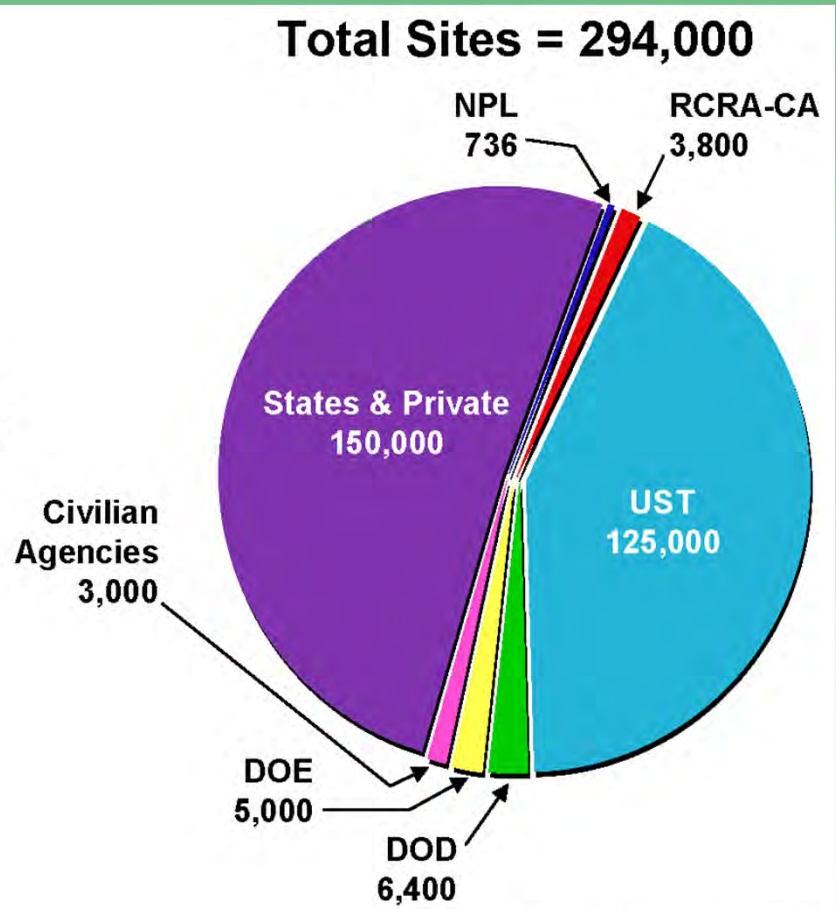
Presentation Outline

- We are Here
- The Path to Here
- The Challenges Ahead
- Are Innovative Technologies the Solution?

We Are Here

(Cleanup horizon: 2004 – 2033)

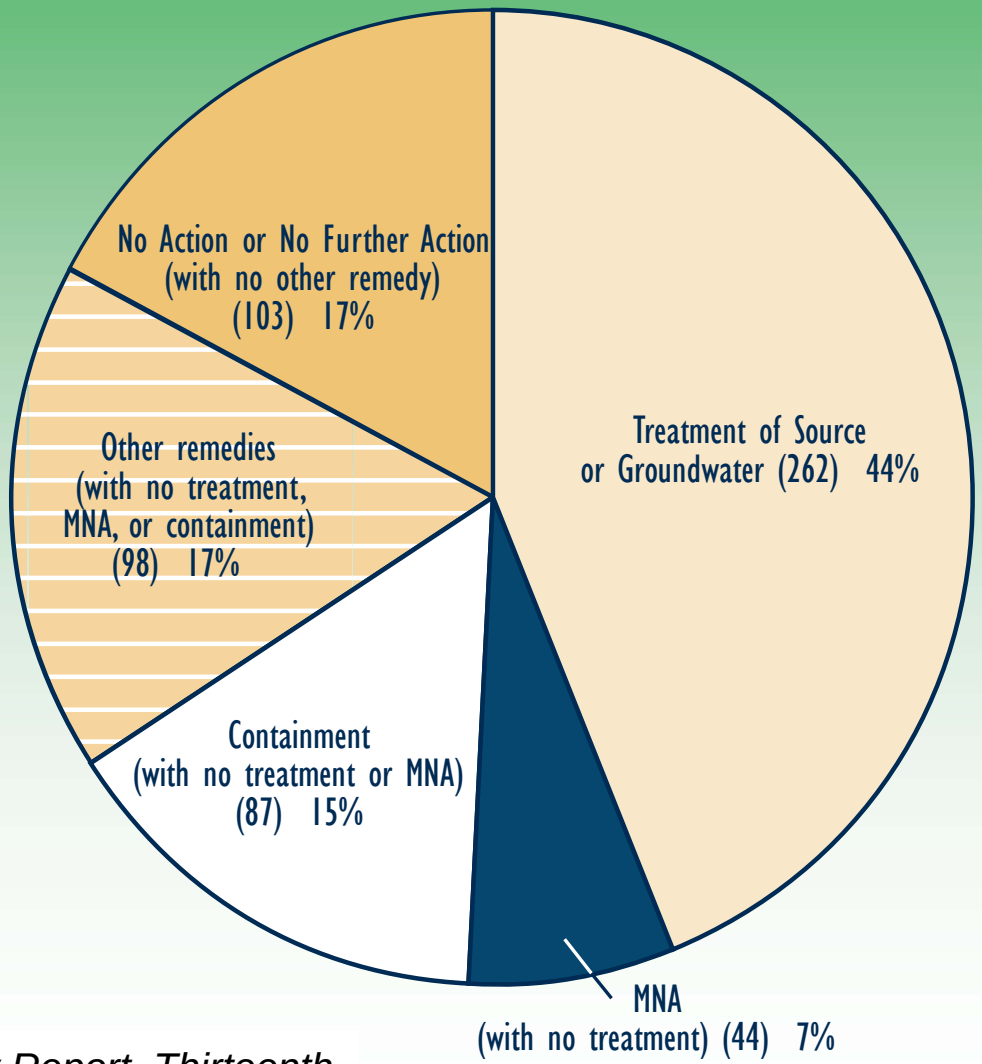




Source: *Cleaning Up the Nation's Waste Sites: Markets and Technology Trends, 2004 Edition*, EPA 542-R-04-015

The Path to Here

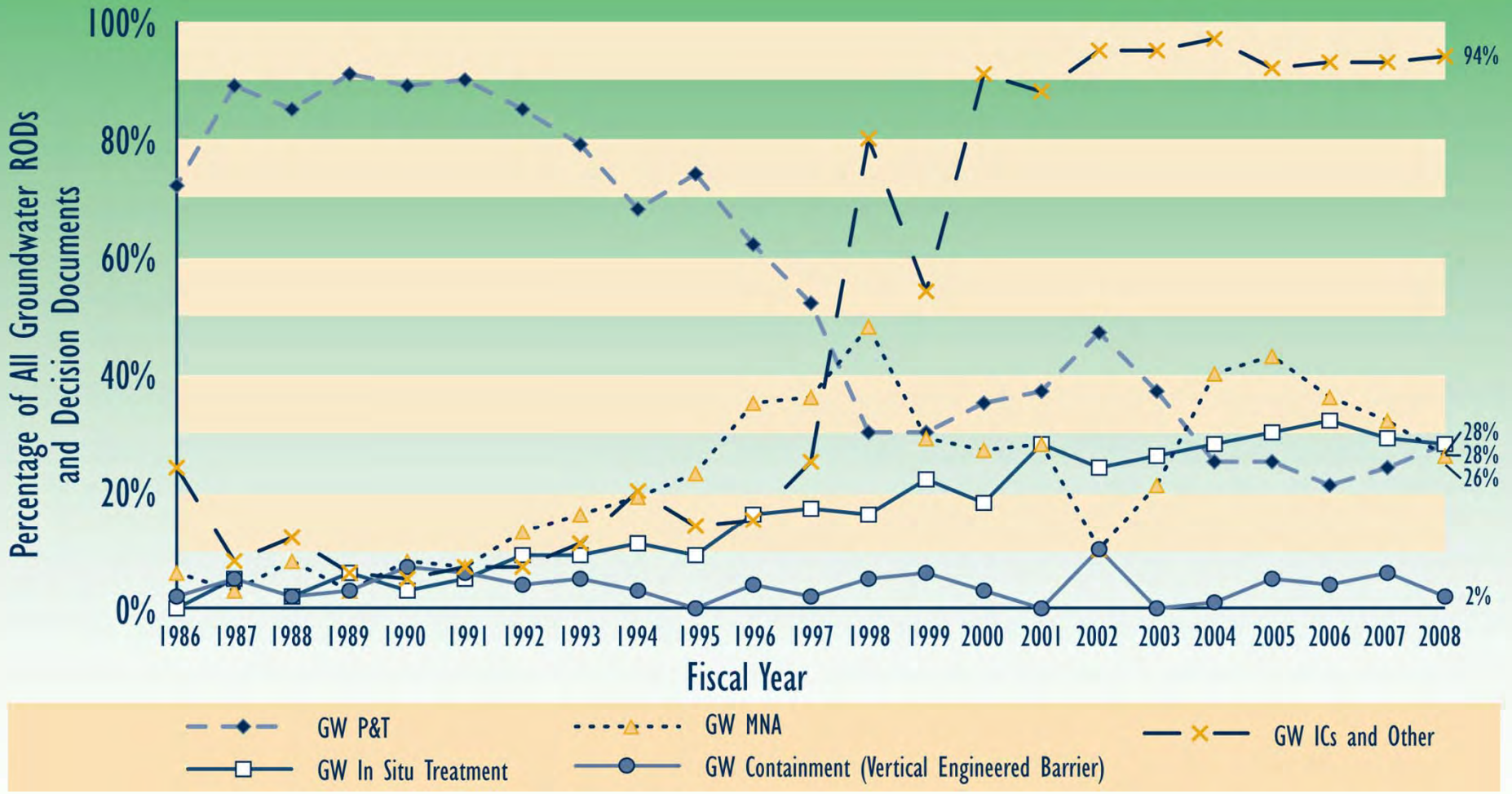
(2005 - 2008) 594 Decision Documents



Source: *Superfund Remedy Report, Thirteenth Edition*, EPA-542-R-10-004

The Path to Here: Trends in Superfund Groundwater Remedies

(1986 - 2008) 1,727 Decision Documents



Source: *Superfund Remedy Report, Thirteenth Edition*, EPA-542-R-10-004

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:

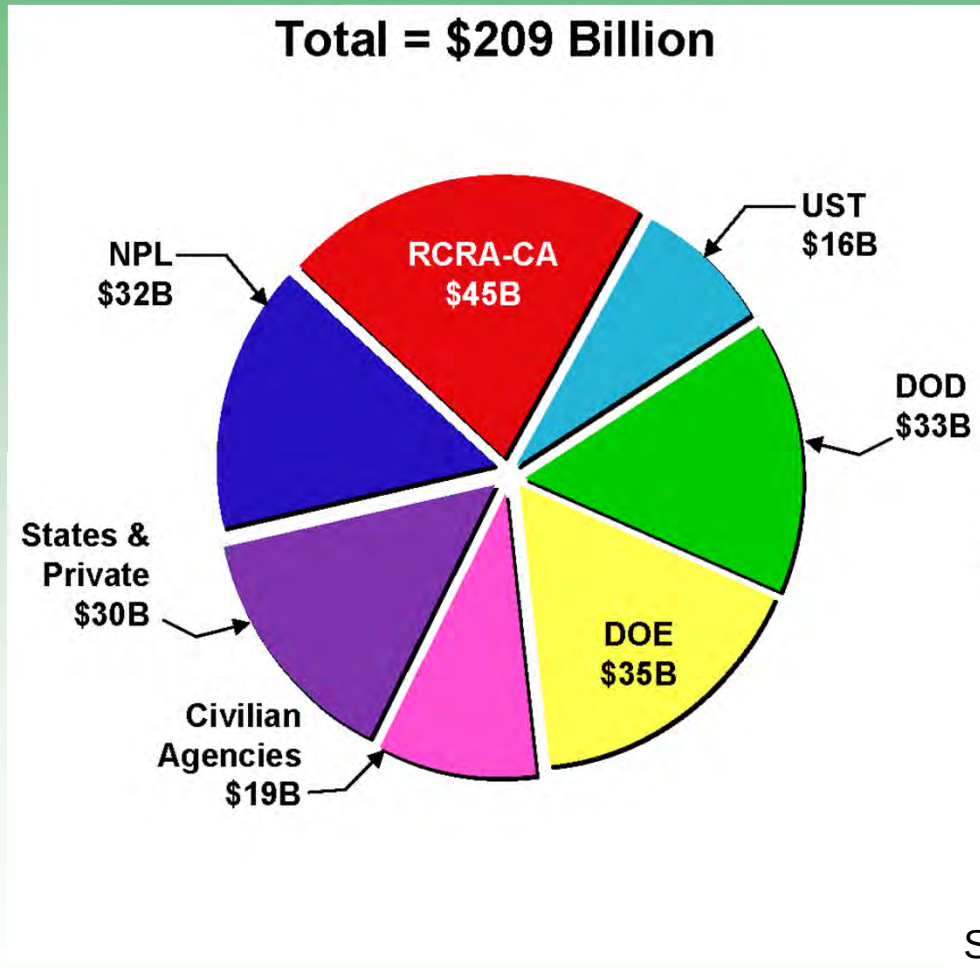
- Many difficult GW sites
- Stagnant/shrinking budgets
- Long list of innovations…no magic bullet
- Length of R&D timeline

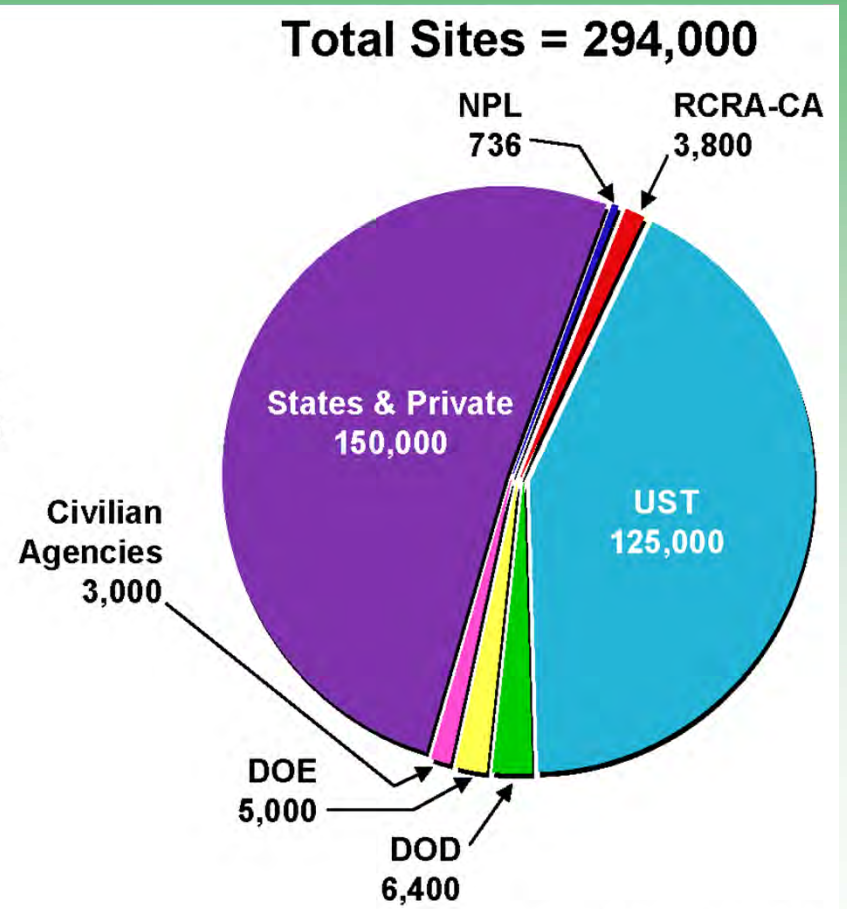
DC Properties™

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





Source: *Cleaning Up the Nation's Waste Sites: Markets and Technology Trends, 2004 Edition*, EPA 542-R-04-015

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
gervais.gregory@epa.gov