



# **EPA's Green Cleanups & Standards Development Update**

***Returning formerly contaminated sites to long-term,  
sustainable, and productive use.***

- EPA 2006-11 Strategic Plan, Goal 3: Land Preservation and Restoration

**Deborah Goldblum, EPA Region 3  
DTSC Green Remediation Symposium  
Sacramento, California - February 4, 2009**

# Green Cleanup Basics

Maximize the net environmental benefit of a cleanup

- Use resources wisely
- Consider the big environmental picture
- Integrate cleanup with reuse

*Focus is currently on remedy implementation vs. remedy selection*

# Opportunities Across All Cleanup Programs

Exist throughout site investigation, design, construction, operation & monitoring





# Environmental Outcomes

- Minimize air emissions (e.g. CO2 emissions, particulates)
- Minimize total energy use and promote use of renewable energy
- Preserve and restore natural resources (e.g. water, ecosystems)
- Minimize raw material use & waste generation and maximize material recycling
- Maximize reuse options for land
- Minimize long-term stewardship obligations

# Green Cleanups Information & Feedback Channels

|                                                                                                                                         |
|-----------------------------------------------------------------------------------------------------------------------------------------|
| <b>Technology Innovation Program Green Remediation (GR) Effort</b>                                                                      |
| <b>Superfund GR Workgroup</b>                                                                                                           |
| <b>Technical Support Project (TSP) Green Committee</b>                                                                                  |
| <b>Green Remediation, Revitalization, and Reuse (GRRR) Team</b>                                                                         |
| <b>Climate Change and Contaminated Lands (CCCL) Workgroup</b>                                                                           |
| <b>Climate Change Coordinating Committee (C4)</b>                                                                                       |
| <b>ASTSWMO Greener Cleanups Task Force</b>                                                                                              |
| <b>ITRC Green and Sustainable Remediation (GSR) Project</b>                                                                             |
| <b>Federal Remediation Technologies Roundtable (FRTR) GR Focus</b>                                                                      |
| <b>EPA Partnerships with Other Federal Agencies</b><br>Department of Defense (USACE IAG & MOU)<br>Department of Energy (NREL IAG & MOU) |
| <b>State Initiatives ( Cal/EPA GR Team, Illinois Greener Cleanups, Wisconsin Initiative on Sustainable Cleanups (WISC)</b>              |
| <b>Brownfields Sustainability Pilots: Green Redevelopment</b>                                                                           |
| <b>Tribal Initiatives</b>                                                                                                               |
| <b>EPA Regional Initiatives:</b><br>Region 3 Pilot Project on Green Cleanup Standards<br>Region 9 Cleanup-Clean Air Initiative          |
| <b>Sustainable Remediation Forum (SuRF)</b>                                                                                             |

# Green Cleanup Activities

## Existing

- Green remediation primer, website, and profiles of projects
- Internet seminars, and archived discussions (clu.in.org)
- Tech support for Federal and State project managers
- Contracts toolkit for RACs
- Renewable energy fact sheets and website
- NARPM 8-hour training

## In the Pipeline

- MOU with NREL
- MOU with the USACE recognizing and fostering GR BMPs at Superfund cleanups
- Green Remediation Analyses and Development of Methodology (Region 9)
- Contracts toolkit for ERRS
- Remedy specific green remediation “cheat sheets”
- Site cleanup energy audit tool
- Who’s who in green remediation (EPA Intranet)
- ER3 for green remediation
- OSC 4-hour training
- Engineering forum “GR review and technical support” capability
- **Green cleanup voluntary standards project**



# Green Cleanup Standard Objectives

- Promote new thought process
- Foster practices through incentives
- Be applicable across all cleanup programs
- Work within the existing regulatory frameworks
- Show measurable results, such as:
  - # of certified green cleanups
  - CO<sub>2</sub> reduced through use of renewable energy
  - Pounds of material recycled during cleanup



# Opportunities for a Standard

- Growing interest in social responsibility
- Companies have internal goals to become greener
- New tools are being developed to evaluate impacts from cleanups
- Builds upon state and local government incentives currently being developed
- US Green Building Council has indicated interest in EPA developing green cleanup standard
- Initiates a constructive dialogue

# Standards Development

## National Technology Transfer and Advancement Act (NTTAA)

- Enacted February 1996
- Directs NIST to coordinate standards development & conformity assessment of federal, state & local gov't with private sector to reduce duplication



# Conceptual Development for Green Cleanups Standard

Standards Development

EPA initiates workgroup to develop Workplan for EPA management

EPA Workgroup partners with ASTSWMO to develop principles and incentives

EPA collaborates with Standard Developing Organization

SDO Develops Green Cleanup Standard through Consensus Process

**Green Cleanup Standard**

Conformity Assessment

EPA/States Evaluate Standard and Develop Recognition Program(s)

Self Declaration

Submit documentation to cleanup program

EPA/States Partners with Accrediting Organization(s)

Certifying Organization(s)

**Recognized Compliance with Green Cleanup Standard**



# Green Cleanup Standards Workgroup

- OSRTI (Superfund)
- OSW (RCRA)
- OBLR (Brownfields)
- FFRRO (Federal Facilities)
- OUST (Tanks)
- CPA (Cross program)
- OSRE (Enforcement)
- Regions 3 (lead), 2, 5, 6, 7, 8, 9
- Groundwater, Engineering and Federal Facilities Forums
- ASTSWMO (Illinois lead), MA, CA
- NIST (National Institute of Standards & Technology)
- EPA's Standards Executive



# Standards Development Completed Activities

- Posted 1-page proposal on Clu-In
- Conducted outreach to assess stakeholder interest
- Completed benchmark report
- Received technical/process input from NIST
- Coordinated with EPA's Standards Executive
- Initiated workgroup calls
- Conducted management briefings
- Established 5 teams
- Drafted a workplan

# Key Attributes

- **Voluntary** - Not mandating new cleanup evaluation
- **Transparent** - Consensus based standards development
- **Universal** - Easier for stakeholders to implement
- **Flexible** - Program or State-specific recognition options
- **Minimal Resources** - Independent 3<sup>rd</sup> party or self-certification (audits)
- **Market Driven** - Certifying Projects or Persons (promote technology innovation)



# Key Challenges

- Keeping it simple  
(given site specific nature of cleanups)
- Defining scope
- Balancing various stakeholders' needs
- Specifying incentives & conformity assessment prior to completion of standard
- Promoting green cleanups without sending a message that the current cleanups are not green
- Establishing baseline values to measure improvements against
- **Reducing energy needs while supporting active cleanups...**



# Balancing Energy Use vs. Active Cleanup Options for Considerations

Cleanup agency approval of selected remedy is a prerequisite

- Promote contaminant destruction
- Minimize need for long-term use restrictions
- Promote use of renewable energy for cleanup and beyond
- Maximize energy efficiency for cleanups

# Reduce our Environmental Footprint

