

# Greener Cleanups in EPA Region 5 and Nationally

**Presenter:**

**Brad Bradley**

***Region 5 Superfund Greener Cleanup  
Coordinator***

# EPA Guiding Principles for Green Remediation

- Minimize total energy use, Maximize renewable energy.
- Minimize air pollutants and greenhouse gas (GHG) emissions.
- Minimize water use and impact to water resources.
- Reduce, reuse, and recycle material and waste.
- Protect land and ecosystems.

# National Superfund Green Remediation Strategy

- Released October 1, 2010
- Renewable Energy Credits
- Key Action Items and Implementation
- [www.clu-in.org/greenremediation](http://www.clu-in.org/greenremediation)

# Region 5 Interim Greener Cleanup Policy

## Policy (as of 11/09)

- Use cleaner fuels, diesel emissions controls and retrofits, and emission reduction
- Divert at least 50% (weight) of uncontaminated construction and demolition (C&D) materials from landfill

# Interim GC Policy

## Continued

- Incorporate environmentally sustainable site design:
  - compost for erosion control / soil amendment
  - native plants during re-vegetation;
- Compost and foundry sand in manufactured soils

# Interim GC Policy Continued

- Utilize industrial materials
  - foundry sand, recycled asphalt shingles, recycled concrete aggregate and coal combustion products, and products with recycled content
- Utilize assessment tools and techniques that minimize energy consumption
  - geophysical methods, direct push sampling apparatus,

# Interim GC Policy Continued

- Methane recovery from landfills
- Signed by Land and Chemicals and Superfund Division Directors
- A comprehensive set of greener approaches to site cleanup may be found at

[www.clu-in.org/greenremediation](http://www.clu-in.org/greenremediation) and  
[www.epa.gov/region09/cleanup-clean-air](http://www.epa.gov/region09/cleanup-clean-air).

# Next Steps

- White Papers for Interim Policy Implementation
  - Need input from wide audience
- Work with other stakeholders
- Pilot studies - Fisher-Calo, IN and Mallard North Landfill
- Training





# Coordination with Other Groups/Organizations

- ASTM GASSAC
- ITRC
- ASTSWMO
- SuRF
- US EPA Engineering Forum
- EPA/State GC Workgroup
- EPA Headquarters Groups

# GC Activities- Continued

- Mallard North Landfill Project  
(Summer 2011)
- White Papers for Implementation of  
Interim GC Policy  
(early 2011)
- Fisher-Calo Pilot Study  
(mid-2011)

# Analysis of Brownfields Cleanup Alternatives (ABCA)

EVALUATION OF POTENTIAL SOIL REMEDIAL ALTERNATIVES  
 PROPOSED SENIOR APARTMENTS  
 FORMER MERCURY MARINE  
 OSHKOSH, WISCONSIN

Feasibility Criteria		Weight	No Action	Off-Site Landfilling	On-Site Reuse with Performance Barriers and Limited Off-Site Landfilling	Ex-Situ Thermal Treatment and Stabilization
Technical simplicity		5	3	3	3	2
Effectiveness in protecting human health and the environment		6	1	3	3	2
Affordability		6	3	1	2	1
Implementation time frame savings		7	3	3	2	1
Green Cleanup Evaluation	Minimizes Total Energy Use and Maximizes Use of Renewable Energy	1	3	1	2	1
	Minimizes Air Pollutants and Greenhouse Gas Emissions	1	3	1	3	2
	Minimizes Water Use and Impacts to Water Resources	1	3	1	2	1
	Reduces, Reuses and Recycles Material and Waste	1	0	1	3	1
	Optimizes Future Land Use and Enhances Ecosystems	1	0	0	2	1
	Optimizes Sustainable Management Practices During Stewardship	1	0	1	2	1
<b>TOTAL UNWEIGHTED SCORE</b>			19	15	24	13
<b>TOTAL WEIGHTED SCORE</b>			69	65	73	42

Scoring

- 1 = Low
- 2 = Medium
- 3 = High

SUMMARY OF SUSTAINABILITY METRICS  
 PROPOSED SENIOR APARTMENTS  
 FORMER MERCURY MARINE  
 OSHKOSH, WISCONSIN

Remedial Alternative	Atmospheric Carbon Dioxide Emissions (Tons)	Total Energy Consumption (Megajoules)
No Action	0	0
*Off-Site Landfilling	160	2,100,000
*On-Site Reuse with Performance Barriers and Limited Off-Site Landfilling	21	280,000
**Ex-Situ Thermal Treatment and Stabilization	853	1,688,000

# Questions?

Brad Bradley

[bradley.brad@epa.gov](mailto:bradley.brad@epa.gov)

312-886-4742