Risk in Remediation – National RCRA Corrective Action Program Perspective

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Hope to accomplish..

1. Describe role of risk from HQ RCRA cleanup perspective, and raise concept of “uncertainty management”
2. Describe how R6’s Corrective Action Strategy Pilot fits with national framework
3. Provide HQ update, including status of One Cleanup Program Initiative
Risk

“A measure of the probability that damage to life, health, property, and/or the environment will occur as a result of a given hazard.”

From Terms of the Environment (http://www.epa.gov/OCEPAterms/rterms.html)
Risk-Based Decision Making

“… should be used to ensure that corrective action activities are fully protective given reasonable exposure assumptions and consistent with the degree of threat to human health and the environment at a given facility.”

From 1996 Advance Notice of Proposed Rulemaking (61FR19411) available at www.epa.gov/correctiveaction
Risk in the “Reformed” Corrective Action Program?

- Primary focus on defining, prioritizing and solving “problems,” rather than fulfilling perceived steps and processes!
- Use approach that gets results most efficiently
- Short-term focus on two “Environmental Indicators”
  - Current Human Exposures Under Control
  - Migration of Contaminated Groundwater Under Control
**Short-Term Goals (EIs)**
control risks to humans, stop groundwater problems from getting bigger, focus resources, help give clearer picture of challenges ahead

**Intermediate Goals**
establish achievable milestones when moving directly from short-term to final goals is particularly challenging

**Final Cleanup Goals**
define what it takes to implement a successful final remedy

**RCRA Corrective Action Results**
Comes down to managing lots of uncertainties...
But not all uncertainties are created equal…

Uncertainties that matter right now

Uncertainties that may matter later in the project

Uncertainties that do not matter
### Summary Exposure Pathway Evaluation Table (CA725 Question 3, Page 3)

**Potential Human Receptors (Under Current Conditions)**

<table>
<thead>
<tr>
<th>“Contaminated” Media</th>
<th>Residents</th>
<th>Workers</th>
<th>Day-Care</th>
<th>Construction</th>
<th>Trespassers</th>
<th>Recreation</th>
<th>Food</th>
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<td>Groundwater</td>
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Risk- and Results-Based Approach to Data Collection

Focus on “necessary and sufficient” data type, quality and quantity to answer questions relevant to a particular problem.
Develop and USE Conceptual Site Model from Start to Finish!

Vapors

Wind-Blown Particles

Contaminated Soil from Run-off

Worker

Fenceline

Resident

Hazardous Waste Lagoon

Leaching

What about subsurface vapors?

Groundwater

Contaminated Groundwater
HQ perspective on R6 Corrective Action Strategy Pilot

- Reviewed several drafts
- Support emphasis on risk-based prioritization and cleanups
- Support data quality objectives approach emphasis
- Support Appendices on key policy considerations, innovative characterization approaches, CSMs, etc.
- Consistent with flexible, results-based approaches we’ve been promoting in guidance and training!
- Support Pilots of CAS approach
HQ questions on CAS Implementation

- Short-term EI goals
- Groundwater use designation issues, plume migration zone concept, and cleanup goals
- Risk screen – actual exposures between $10^{-4}$ and $10^{-6}$ (and applicability to final remedies)
- Experiences with balancing between treatment, engineering controls, and institutional controls
- Technical impracticability
- Public involvement early and often
- Lessons learned thus far
National Issues

- Continued emphasis on 2005 short-term EI goals for 1,714 priority baseline facilities
Status toward year 2005 goals
(as of 10/31/02)

**Human El - Cumulative Goals & Progress to Date**

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**Groundwater El - Cumulative Goals & Progress to Date**

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National Issues – Continued

• Shifting more attention to final goals and “completion”
  ➢ Significant focus on redevelopment/revitalization
  ➢ New completion guidance
  ➢ New cleanup measures

• Groundwater Issues
  ➢ RCRA Handbook, use/value/goals, optimization, NAPLs, etc.

• Kicking-off “One cleanup Program Initiative”
Summary

“EPA is committed to full and meaningful state involvement in development of implementation strategies, policy, guidance and regulations.”

From 1996 Advance Notice of Proposed Rulemaking (61FR19411) available at www.epa.gov/correctiveaction

Looking forward to continued and even greater coordination between EPA and ITRC.

www.epa.gov/correctiveaction