SESSION 18

RCRA CORRECTIVE ACTION:

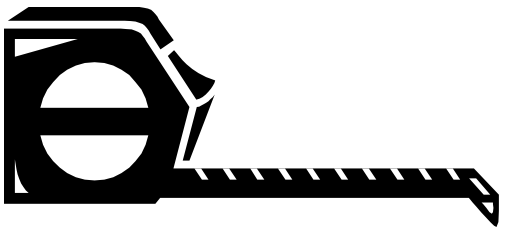
INTERIM MEASURES / STABILIZATION / ADVANCED NOTICE OF PROPOSED RULEMAKING / TECHNICAL IMPRACTICABILITY

Session 18 Agenda:
Interim Measures/Stabilization/Advanced Notice of Proposed Rulemaking/Technical Impracticability

- Interim Measures/Stabilization
- Advanced Notice of Proposed Rulemaking
- Technical Impracticability

Interim Measures

- Definition
  - Umbrella term for wide range of institutional and physical corrective action activities to achieve stabilization
- The goal of interim measures (IM) and stabilization is to control or abate imminent threats to human health and the environment from releases at RCRA facilities
- Interim measures can be implemented at any time during the corrective action process
- Intent of IM is to be implemented more quickly than traditional remedial measures



Factors to consider when determining the need for interim measures/stabilization

- Facility rank based on the National Corrective Action Prioritization System (NCAPs)
- Location of contamination
  - Isolated or can it be isolated?
- Significant exposure threats for human or ecological receptors
- Potential for situation to deteriorate (i.e., new release may occur due to storms, floods, and structural design failure)
- Time required to develop and implement final remedies under corrective action program
- Information regarding contaminant and site characteristics

Factors to consider when determining the need for interim measures/stabilization (continued)

- Presence of high levels of hazardous constituents in soil at or near the surface, and potential for release
- Risk of fire, explosion, or other accident
- Types of contaminants and volumes of releases
- Technical complexity of remediation
  - Technical practicability of implementing a stabilization measure. Refer to Guidance for Evaluating Technical Impracticability of Groundwater Restoration (September 1993)
  - Appropriate technologies to deal with known contaminants
- Media-specific characteristics, such as site hydrogeology or prevailing wind direction

Achieving Stabilization

- Stabilization can be achieved through
  - Source control
  - Media cleanup
  - Exposure control
- Examples of stabilization
  - Providing bottled water
  - Pump and treat system
  - Capping soil
  - Soil excavation

Advanced Notice of Proposed Rulemaking

- Published Corrective Action Advance Notice of Proposed Rulemaking (ANPR) 5/1/96 (61 FR 19432)

- Three primary purposes:
  - Strategy to improve corrective action program
  - Guidance for program implementation
  - Emphasize areas of available flexibility and innovative approaches

ANPR Content

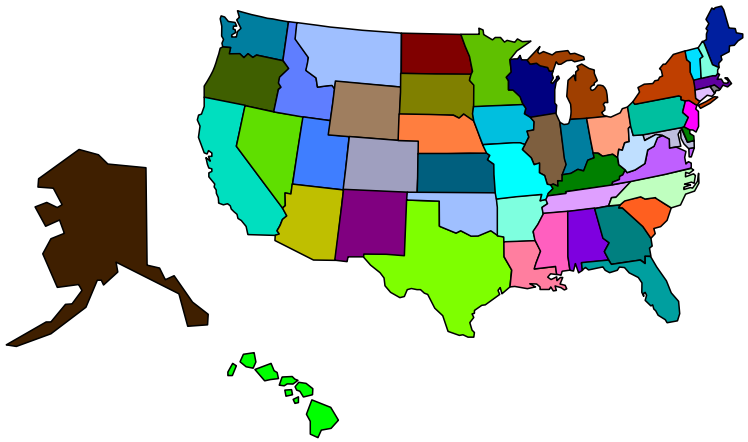
- Section I identifies regulatory basis
- Section II discusses major guidance and policy milestones since 1990 proposal
- Section III describes current expectations regarding program implementation
- Section IV outlines key goals and strategies
- Section V requests comment/data that will help identify improvements

ANPR Program Philosophy

- Corrective action should be based on risk
- Results driven rather than process driven
- Interim actions and stabilization should be used to reduce risk and prevent exposure
- Activities should be phased to focus resources on areas or pathways of greatest concern

Philosophy (continued)

- Should provide meaningful inclusion of all stakeholders
- Should be implemented using most appropriate authority, including state authorities and voluntary actions
- States will be the primary implementers



Examples of Flexibility Highlighted in ANPR

- Investigation tools and approaches
  - Conceptual site model
  - Data quality objectives
  - Innovative sampling and analytical techniques
- Action levels
  - Industrial-based action levels may be appropriate in some settings, especially for interim actions

Examples of Flexibility (continued)

- Delineation of contamination
  - Not always needed to background concentrations
- Future land use should be considered
  - Non-residential cleanups can be acceptable
- Formal evaluation of remedial alternatives not always needed
- Technical impracticability
- Natural attenuation
- Performance-based remedies

Presumptive Remedies Defined

- Presumptive remedies
  - Preferred technologies for common categories of sites
    - Based on historical patterns of remedy selection
    - Effective remedial technologies for specific contaminants
    - EPA's scientific and engineering evaluation of performance data on technology implementation
- Advantages
  - Ensures remedy selection/implementation consistency
  - Reduces cost and time required as remedial technology is already accepted
- Example
  - Soil Vapor Extraction for soil contaminated with VOCs

Technical Impracticability refers to:

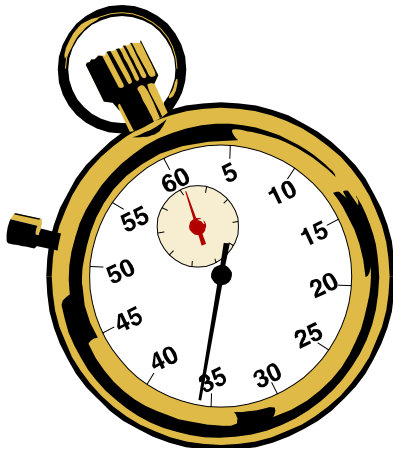
- A determination that restoration of an environmental medium or waste may not be achievable due to remediation technology limitations related to
  - Hydrogeologic factors
  - Contaminant-related factors
  - Waste-related factors
  - Site-related factors
  - Cost

Technical Impracticability (continued)

- For portions of the site that can be restored, a technical impracticability (TI) determination would not apply
- TI determinations are not a scaling back of efforts to achieve media cleanup goals
  - Require exposure control
  - Require source control
  - Require aqueous plume remediation

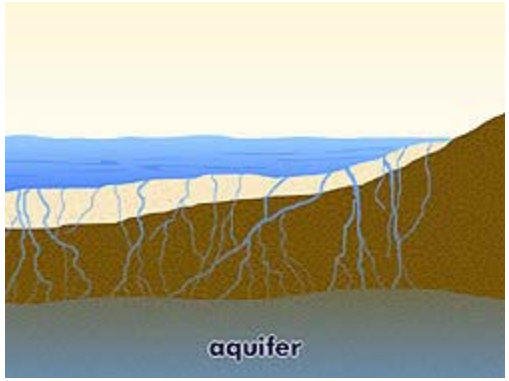
TI determinations are made:

- Early in the remediation process when possible
- At the time of statement of basis
- The possibility that certain remedies are technically impracticable should be considered throughout the remedial process



Technical Impracticability (continued)

- Major factors that inhibit groundwater restoration
  - Hydrogeologic
    - Complex sedimentary deposits
    - Aquifers of low permeability
    - Fractured bedrock
  - Contaminant
    - NAPLs (particularly DNAPLs)



- TI requires an evaluation
  - Prepared by facility
  - Adequate site characterization data
  - Presence of a constraint (DNAPL, low permeability aquifer) is not adequate justification
  - Based on site conceptual model and data collected during the RFI

Technical Impracticability evaluation components include:

- Specific media protection standards to which TI applies
- Spatial area over which TI is to apply
- Site conceptual model
- An evaluation of the restoration potential of the site
  - Demonstration that sources have been identified and will be removed or contained
  - An analysis of any ongoing corrective measures
  - Estimate of time frame to achieve the media protection standards using available technologies
  - Demonstration that technologies could not attain cleanup levels

TI evaluation components (continued)

- Estimate of costs for existing and proposed technologies
- Other information
  - groundwater flow modeling
  - contaminant fate and transport models

Technical Impracticability (continued)

- TI determinations always include selection of an alternative corrective measure that includes:
  - Exposure control via institutional controls
    - Restrictions on groundwater use
    - Deed notifications
  - Source control
    - Remove or treat source to the extent feasible
    - Isolate the source using a slurry wall or hydraulic containment system
- If a source cannot be contained, plume restoration may be technically impracticable. However, facility must implement:
  - Hydraulic containment of leading edge of aqueous plume
    - pump and treat
  - Hydraulic containment of the source area to the extent possible

The following guidance provides additional information:

- U.S. Environmental Protection Agency. 2001. Handbook of Groundwater Protection and Cleanup Policies for RCRA Corrective Action. October 2001. (EPA 530-F-01-021)
- www.epa.gov/compliance/resources/policies/cleanup/rcra/index.html
- www.epa.gov/correctiveaction