Superfund Task Force Listening Session Recommendation 6: Provide Clarification of Principles for Superfund Groundwater Remediation

Office of Superfund Remediation & Technology Innovation
Office of Land and Emergency Management
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Housekeeping

- Entire broadcast offered live via Adobe Connect
  - Listen and watch as the presenters advance through materials live
- Audio is available online by default
  - Please check your local volume settings to adjust audio
  - Use Q&A to privately report technical difficulties
- Live public remarks will be delivered by telephone
  - All lines will be globally muted
  - Press #6 to unmute ONLY when your name is called to remark
- Use the Q&A pod to privately submit remarks, questions and report technical problems

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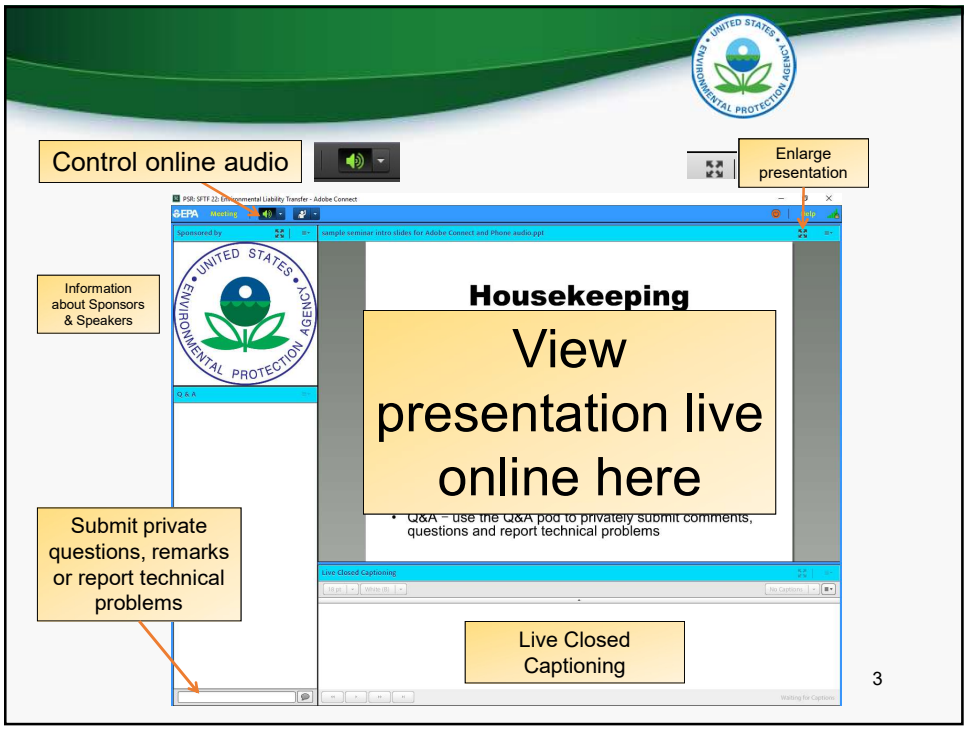

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Presenters

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Listening Session Agenda

- Introduction (5 minutes)
- Superfund Task Force Recommendation Six Policy/Guidance Presentation (20 minutes)
- Clarifying Questions about Presentation (5-10 minutes)
- Feedback & Remarks by Session Participants (30 minutes)

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Purpose of Listening Sessions

- To increase transparency and improve communication
- To share existing approaches for six major groundwater principles or flexibilities
- To solicit input from regulators and stakeholders on implementation

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Superfund Task Force

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Superfund Task Force Background

- EPA Administrator's May 2017 memo established Superfund Task Force to "streamline and improve the Superfund program"
- Task Force report released in July 2017 with 42 recommendations with many sub-tasks
- Scope ranged from site assessment to deletion, including enforcement
- This effort under Recommendation 6: Provide Clarification to the Principles for Superfund Groundwater Restoration

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Recommendation 6:
Provide Clarification to the Principles for Superfund Groundwater Remediation

- EPA tasked to develop summary of available groundwater policy flexibilities in existing EPA Superfund policy documents that can be used by regions, states, and potentially responsible parties in implementing groundwater cleanup actions
- Also tasked to re-evaluate groundwater beneficial use policy with a focus on beneficial use determinations.

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Groundwater Principles (Flexibilities)

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Six Major Groundwater Superfund Remediation Policies

- Groundwater Beneficial Use Designation
- Monitored Natural Attenuation (MNA)
- Remediation Timeframe
- Technical Impracticability (TI)
- Phased Approach
- Completion Strategy (Plan)

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Groundwater Beneficial Use Designation (Groundwater Classification)

40 CFR Section300.430(a)(1)(iii)(F)
"EPA expects to return usable ground waters to their beneficial uses wherever practicable, within a timeframe that is reasonable given the particular circumstances of the site. When restoration of ground water is not practicable, EPA expects to prevent further migration of the plume, prevent exposure to the contaminated ground water, and evaluate further risk reduction."

55 FR 8733 (March 8, 1990)
"To the degree that the state or local government have classified their ground water, EPA will consider these classifications and their applicability to the selection of an appropriate remedy."

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Groundwater Beneficial Use Designation Implementation

- EPA Guidelines for Ground-Water Classification Under the EPA Ground-Water Protection Strategy (1988)
- All groundwater is not classified the same, and remedial action objectives (RAOs) are set accordingly
- Groundwater Classes include: I, IIA, IIB and III
- 13 states with EPA-endorsed Comprehensive State Ground Water Protection Programs (CSGWPPs)
  - (CT, MA, NH, RI, VT, DE, AL, GA, IL, WI, OK, NV, WA)
- OSWER/OLEM 1997 Directive to Affirm Use of CSGWPPs in Remediation Programs (Role of CSGWPPs in EPA Remediation Programs)
- EPA can consider states classification systes that are more stringent than groundwater use designation indicated by 1988 EPA Guidance

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Question to Consider in Your Remarks about Groundwater Beneficial Use Designation

- How useful is the current Groundwater Beneficial Use Designation policy and could additional clarification be made?

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Monitored Natural Attenuation

- Superfund remedies may include both active and passive methods
- MNA is a passive method as it relies solely on natural processes, but should not be considered a “do-nothing” remedy
- Site-specific monitoring is required to document evidence of MNA remedial effectiveness
- Could be sole cleanup component or combined with active remedial approaches as a “polishing” step
- May present cost advantages or other flexibilities, but…
- Remedial timeframes for MNA should be acceptable given site specific conditions

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Monitored Natural Attenuation

- Site-specific selection of MNA requires:
  - Plume migration under control and exposures addressed
  - Ability to meet current or future groundwater needs
  - One or more lines-of-evidence (LOE) which support effectiveness/achievement of remedial action objectives via MNA
- Observations and analyses supported by most recent data (< 5 years)

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MNA Lines of Evidence

- Identification and quatification of MNA processes/ mechanisms, such as:
  - Biodegradation
  - Favorable redox conditions
  - Sorption
  - Volatilization
  - Dispersion
  - Radioactive decay
  - Chemical/biological stabilization
  - Transformation
- Demonstration of statistically significant contaminant decreases at site scale
- Areal and/or vertical extent of plume stable or shrinking

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Questions to Consider in Your Remarks Concerning MNA

- What lines-of-evidence for MNA are the most useful in making an MNA determination and are there possible new lines-of-evidence based on advances in science?
- How can current EPA MNA policy be clarified to better address ineffective remedies?

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Remediation Timeframe

- Flexibility exists for groundwater remedial timeframe based on site:
  - NCP Preamble 8732 *"The goal of EPA's Superfund approach is to return usable ground waters to their beneficial use within a timeframe that is reasonable given the particular circumstances of the site."*
- NCP Preamble also gives direction on preference for drinking water:
  - *"EPA's preference is for rapid restoration, when practicable, of Class I ground waters and contaminated ground waters that are currently, or likely in the near-term to be, the source of a drinking water supply."*
  - *"The most appropriate timeframe must, however, be determined through an analysis of alternatives."*

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Remediation Timeframe (cont'd)

- Remedial timeframe is the time needed to achieve RAOs
- Remedial timeframe must meet current or future groundwater needs
- Remedial timeframe does not alter groundwater cleanup level or point of compliance

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Question to Consider in Your Remarks Concerning Remedial Timeframe

- What are the most important factors to consider in determining an appropriate site-specific remedial timeframe?
- How are current and future groundwater use and other flexibilities factored into a remediation timeframe analysis?

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Technical Impracticability

- CERCLA and NCP recognize that it may not be possible to restore groundwater to ARARs in all cases
- Identify six ARAR waivers, including technical impracticability (TI)
- TI ARAR waiver contingent on demonstrating groundwater restoration to ARARs not practicable from engineering perspective based on:
  - contaminant properties,
  - subsurface geology behavior, and
  - remedial technology limitations

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Technical Impracticability (cont'd)

- EPA has preference to minimize the size of the TI waiver zone, important with increasing demand for groundwater as natural resource and for drinking water
- Cost is a secondary factor (not a primary factor)
- TI waiver zone should include only parts of aquifer which will not achieve ARARs
- TI waivers are only applicable to chemical-specific ARARs

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Question to Consider in Your Remarks Concerning TI Waivers

- What clarifications to existing technical impracticability (TI) guidance would be useful to evaluate the site for TI applicability?

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Phased Approach

- In a phased approach, site activities are implemented in a sequence of steps, or phases, such that information gained from earlier phases is used to refine subsequent investigations and actions
- At many Superfund sites, a phased approach to groundwater cleanup is a useful tool in the overall remedial strategy
- Most appropriate at large, complex groundwater sites, such as those with challenging and multiple contaminants/subsurface conditions, including dense and light nonaqueous phased liquids (DNAPL and LNAPL)
- Includes use of early or interim actions that can illuminate areas that need more or less characterization, and can lead to an addition or change to the final remedy
- Phased approaches are consistent with, and may be enhanced by coordination with adaptive management strategies

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Questions to Consider in Your Remarks Concerning Phased Approach

- Is clarification needed for the successful use of a phased approach in a groundwater remedy?
- Are the advantages of a phased approach to groundwater remediation clear and understandable, and how is phasing most effectively applied?

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Remedy Completion Strategy

- Documented planning and decision-making process for evaluating groundwater remedy operation and progress toward achieving groundwater remedial action objectives and associated cleanup levels
- Provides process and information necessary to determine remedial action completion for all or part of the plume
- Reviewed and updated as needed during remedy implementation
- Remedy Completion Strategies are consistent with, and may be enhanced by coordination with adaptive management strategies

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Strategy Elements

- Understand current site conditions
- Design site-specific remedy evaluations
- Develop performance metrics and collect monitoring data
- Conduct remedy evaluations using site-specific metrics
- Identifies opportunities for technology and monitoring optimization
- Make management decisions

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Questions to Consider in Your Remarks Concerning Completion Strategy

- In your experience, has the use of a completion strategy or plan been useful in facilitating a common understanding amongst all parties for steps and metrics needed for achieving completion goals?
- How has the use of a completion strategy or plan resulted in optimizing or changing the current groundwater remedy?

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Questions to Consider in Your Remarks Concerning All Six Groundwater Policy Flexibilities

- Of the six flexibilities identified and contained in existing EPA guidance, which do you find the most useful in selecting and implementing groundwater remedial strategies and remedies?
- What aspects of the six policy flexibilities would benefit from clarification?
- Can you identify any issues in the use of the six flexibilities?

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For More Information

- Superfund Task Force website:
  https://www.epa.gov/superfund/superfund-task-force
- Superfund groundwater website:
  https://www.epa.gov/superfund/superfund-groundwater-introduction

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Next Steps

EPA will consider all verbal and written remarks received as part of these listening sessions as part of an ongoing program review and continuous improvement effort

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Answer Clarifying Questions

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Verbal Remarks

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How to Share Remarks After Today's Broadcast

Interested parties may submit remarks in writing up until 30 days after the webinar to:

osrti-sftf6-listeningsession@epa.gov
with the subject: LS6

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