

Internet Seminar Sponsored by EPA's Office of Site Remediation
and Technology Innovation and Office of Solid Waste

EPA's Ground Water Task Force: Presentation of Two Option Papers Available for Public Input:

- Cleanup Goals Appropriate for DNAPL Source Zones, and
- Ground Water Use Value and Vulnerability as Factors in Setting Cleanup Goals

Speakers:

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Seminar Objectives

- ✓ Background on EPA Ground Water Task Force (GWTF)
- ✓ Summary of Two Option Papers
 - ◆ **Background**
 - ◆ **Problem Statements**
 - ◆ **Potential Solutions**
- ✓ Opportunity for Q&A, and Discussion

One Cleanup Program Initiative

- GWTF is part of the OSWER “One Cleanup Program” Initiative (OCP).
- Three task forces identified under OCP:
 - ◆ **Ground water**
 - ◆ **Site assessment**
 - ◆ **Long-term stewardship**
- See OCP web site
 - ◆ **Refer to “Links to Additional Resources”**

Purpose of GWTF

- ➔ Coordinate across EPA programs on technical and policy issues related to cleanup of ground water.
- ➔ Identify and prioritize issues of concern that will benefit multiple cleanup programs.
- ➔ For priority issues, make recommendations to EPA senior managers.

GWTF Participation

- ➔ EPA cleanup programs, HQ offices:
 - ◆ **Superfund, RCRA, UST, Federal Facilities, Brownfields.**
- ➔ Other EPA programs, HQ offices:
 - ◆ **ORD, OW, OECA, OAR, OPPTS.**
- ➔ EPA Regions:
 - ◆ **Lead Region for Superfund, Lead Region for RCRA, and EPA GW Forum.**
- ➔ State reps:
 - ◆ **Georgia, New York, Nebraska.**

GWTF Options Papers

➔ “Options papers” are intended to:

- ◆ Present a priority issue,
- ◆ Capture multiple points of view,
- ◆ List possible solutions,
- ◆ Focus GWTF discussion, and
- ◆ Request and focus stakeholder input.

GWTF Options Papers - 2

➔ Two papers completed:

- ◆ “Cleanup Goals Appropriate for DNAPL Source Zones,” and
- ◆ “Ground Water Use, Value and Vulnerability as Factors in Setting Cleanup Goals.”

GWTF Options Papers - 3

➔ Format for each paper:

- ◆ Introduction
- ◆ Background on issue (technical & policy)
- ◆ Problem statements
- ◆ Options with advantages and disadvantages
- ◆ References

GWTF Outreach Strategy

- ➔ Options papers available on GWTF web site
 - ◆ See “Links to Additional Resources.”
- ➔ Notify “stakeholders” of options papers and outreach meetings, via email.
- ➔ Stakeholder meetings and conference calls: Summer of 2004.
- ➔ Outreach at national meetings, where possible.

GWTF Outreach Strategy - 2

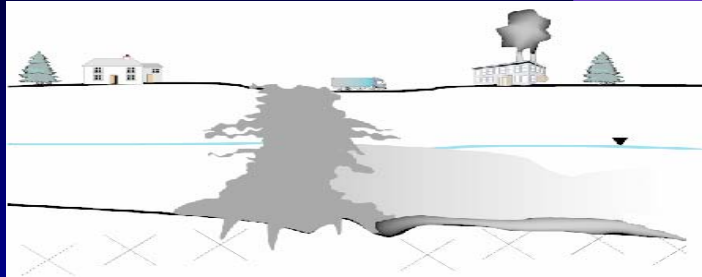
➔ Stakeholders include:

- ◆ Federal regulatory officials,
- ◆ State regulatory officials,
- ◆ Regulated community,
- ◆ Environmental groups,
- ◆ Public interest groups,
- ◆ Other groups (?).

GWTF - Next Steps

- ➔ Stakeholder input:
 - ◆ **Complete meetings and conference calls.**
 - ◆ **Compile comments received.**
- ➔ Recommendations to EPA senior managers:
 - ◆ **Develop draft recommendations.**
 - ◆ **Review by EPA programs.**
 - ◆ **Finalize recommendations.**
 - ◆ **Brief senior EPA managers.**

Summary: DNAPL Options Paper



**Title: “Cleanup Goals Appropriate for
DNAPL Source Zones.”**

DNAPL Paper

➔ Introduction:

- ◆ **Background on GWTF.**
- ◆ **Background and purpose of paper.**
- ◆ **Where to send comments:**
gwtf@emsus.com

DNAPL Paper

➔ Issue background:

◆ **DNAPLs as a source of contamination:**

- ✦ Define “DNAPL source zone.”
- ✦ Difficulties posed by DNAPLs.

◆ **EPA cleanup goals:**

- ✦ Restoration of plume to MCLs is typical goal.
- ✦ When is this not the goal?

◆ **Cleanup technologies:**

- ✦ Containment, extraction, or in situ treatment methods could be applied to source zone.

EPA Panel Report on DNAPLs

- Title: “The DNAPL Remediation Challenge: Is There A Case For Source Depletion?”
- Panel of experts:
 - Selected in Summer 2001 by EPA’s research laboratory in Ada, OK.
 - Internationally recognized authorities on DNAPL remediation.
 - Includes experts from industry, university research, and consulting communities.
- Report dated Dec 2003.
 - Available from “Links to Additional Resources.”

DNAPL Paper

➔ Issue Background - 2:

◆ Potential **benefits** of DNAPL mass reduction (2003 EPA panel report):

- ✦ Reduce DNAPL mobility,
- ✦ Reduce mass flux from source zone,
- ✦ Increase reliability of long-term containment,
- ✦ Reduce time of remediation,
- ✦ Reduce life-cycle costs,
- ✦ Minimize costs of long-term site management,
- ✦ Enhance efficiency of complimentary technologies used for groundwater remediation,
- ✦ Reduce environmental risks.

DNAPL Paper

➔ Issue Background - 3:

◆ Potential **impacts** of DNAPL mass reduction (2003 EPA panel report):

- ✦ Expansion of the DNAPL source zone due to mobilization of residual DNAPL,
- ✦ Undesirable changes in the DNAPL distribution,
- ✦ Undesirable changes in the physical, geochemical and microbial conditions,
- ✦ Adverse impacts on subsequent remediation technologies,
- ✦ Increase life-cycle costs of site cleanup.

DNAPL Paper

➔ Issue Background - 4:

◆ **Need for Alternative Cleanup Goals.** Two expert panel reports cited:

- ◆ 1994 NRC Report: "Alternatives for Ground Water Cleanup."
- ◆ 2003 EPA Panel Report.
- ◆ See "Links to Additional Resources."

DNAPL Paper

➔ Problem statements - examples:

- ◆ **Site owners say:** Cleanup to MCLs not a realistic goal for DNAPL zones, yet alternative goals are rarely used. (# 1)
- ◆ **Site managers say:** Alternative goals often can't be applied because DNAPL zone has not been distinguished from overall plume. (#3)
- ◆ **Site managers say:** Alternative goals have uncertain reliability and long-term costs. (# 4)
- ◆ **Site owners say:** Potential benefits of DNAPL mass removal outweighed by disadvantages. (# 6)

DNAPL Paper

→ Current or planned projects - examples:

- ◆ Review existing data from sites to assess the performance of DNAPL source depletion efforts.
- ◆ Develop and validate technologies for measurement of mass flux.
- ◆ Continue research and demonstration projects to develop, test, and validate the most promising technologies.

DNAPL Paper

➔ Potential options - examples:

- ◆ EPA fact sheet describing program flexibilities and alternative cleanup goals that may be applied to the DNAPL source zone. (# 2)
- ◆ Supplemental EPA guidance on technical impracticability (TI) which clarifies questions related to use of a TI waiver. (# 3)
- ◆ EPA guidance providing a qualitative approach for determining when source depletion technologies should or should not be implemented. (# 6)

**For additional information or questions
concerning the DNAPL Paper, please
call or e-mail:**

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Summary: Ground Water Use Paper



Title: "Ground Water Use, Value and Vulnerability as Factors in Setting Cleanup Goals"

Paper Outline

- ➔ Introduction
 - ◆ **Background on GWTF**
 - ◆ **Including overview of ground water UVV**
- ➔ Background
 - ◆ **Overview of key policies**
 - ◆ **Examples of Federal and State approaches**
- ➔ Problem Statements
- ➔ Options
 - ◆ **With advantages and disadvantages**

Introduction: Ground Water Use

- Current and reasonably expected uses/functions
- Examples
 - Drinking water
 - Ecological
 - Agricultural,
 - Industrial/commercial, and
 - Recreational

Introduction: Ground Water Value

- Value for current use
 - Depends on current need
 - Also considers costs associated with impacts to other media
- Value for future use
 - Corresponds to anticipated future needs
- Intrinsic value
 - Distinct from economic value
 - Corresponds to knowledge that clean ground water exists and is available for future generations

Introduction: Ground Water Vulnerability

- Relative ease in which contamination can impact ground water quality/quantity
- Depends on variety of factors
 - Hydrogeology
 - Contaminant properties
 - Size/Volume of release
 - Location of contaminant sources
- Shallow more vulnerable than deep
- Private wells more vulnerable than public

Background

➔ EPA's "Strategy for the 1990s" (7/91):

- ◆ Overall Goal: Prevent adverse effects to humans and environment, and protect the environmental integrity of nation's ground water resources
- ◆ Prioritize remediation activities:
 - ✦ Limit risks to humans first and then
 - ✦ Restore currently used and reasonably expected sources of drinking water and ground water closely hydraulically connected to surface waters, whenever such restorations are practicable and attainable.

Background

➔ Examples of Ground Water UVV considerations

- ◆ EPA Comprehensive State Ground Water Protection Programs (CSGWPPs)
- ◆ Source Water Assessment Programs
- ◆ Formal State classification systems
- ◆ Non-degradation policies
- ◆ Classification variations
- ◆ Urban use designations
- ◆ Ground water management zones

Problem Statements

- ➔ Lack of awareness of ground water UVV, impacts to public health, environmental quality
 - ◆ Including ground water interconnectivity
- ➔ Increasing reliance on exposure controls rather than cleanup
- ➔ Lack of agreement on determining ground water use
 - ◆ And influence on cleanup decisions
- ➔ Lack of clear prioritization to maximize benefits

Potential Options

- ➔ Education
- ➔ Assess Impacts on other developed nations
- ➔ Summaries/links to EPA and State approaches
- ➔ Policy on how EPA cleanup programs acknowledge State approaches
- ➔ Develop prioritization framework to influence cleanup decisions/timing
- ➔ Source Water Assessments to promote greater consistency in ground water protection/cleanup
- ➔ Regular meetings within States or Watersheds to improve consistency and coordination

**For additional information or questions
concerning the Ground Water Use
paper, please call or e-mail:**

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[Links to additional resources](#)