

# Fort Devens Superfund Site Shepley's Hill Landfill

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A Presentation to the Town of Ayer  
By Terrie Boguski  
Senior Technical Analyst

Technical Assistance Services for Communities  
(TASC) Program

# Agenda

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- Brief explanation of TASC
- Brief background of Shepley's Hill Landfill
- Information about Arsenic
- Army's "Explanation of Significant Differences" (ESD)
- Your Next Steps – Comment on the ESD
- Town Next Steps (responding to the ESD and future dialogue/meetings)
- Ayer Board of Health Institutional Controls

# Technical Assistance Services for Communities (TASC)

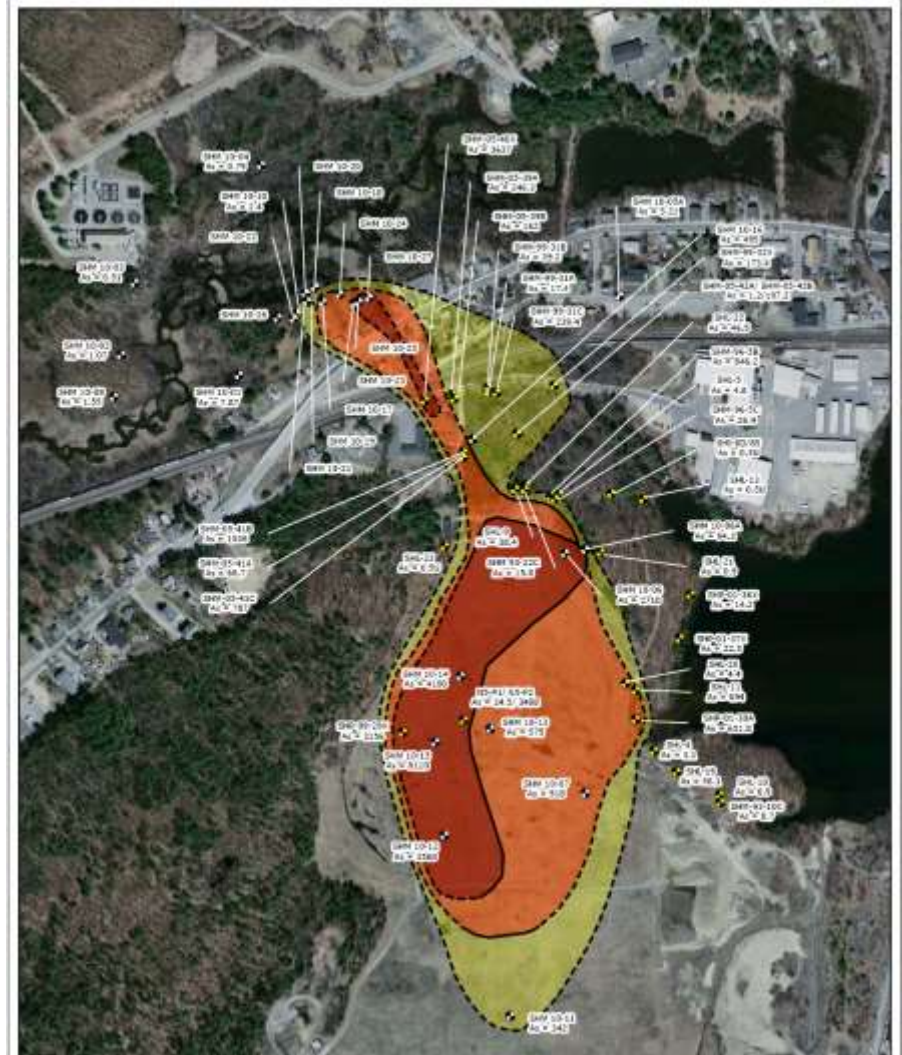
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- EPA-funded program; no cost to Ayer
- Independent services provided by contractor Skeo Solutions, including:
  - ▣ Information assistance
  - ▣ Community education
  - ▣ Technical expertise

# Background: Shepley's Hill Landfill

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- Part of former Fort Devens Superfund site
- About 84 acres in the northeast corner of the former Main Post
- Bedrock outcrop of Shepley's Hill on the west; Plow Shop Pond on the east
- Capped in four phases – 1986 to 1993
- Landfill contaminated ground water



# Affected Area

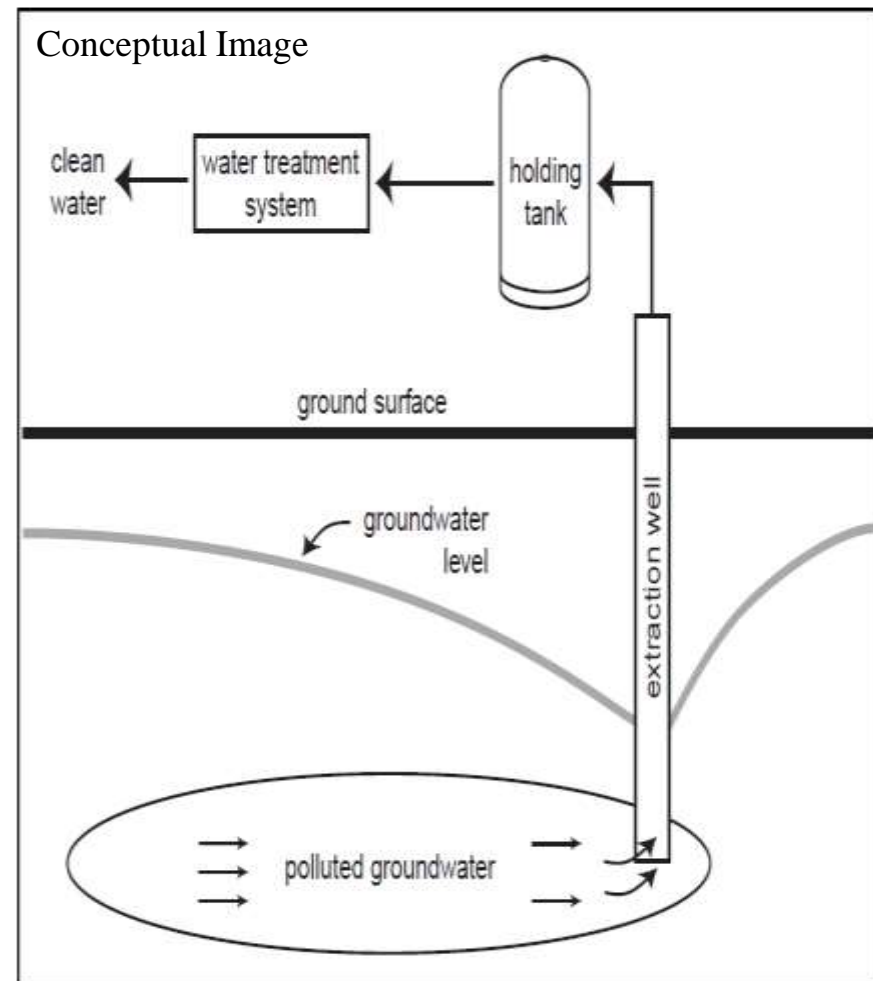
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# Background: Shepley's Hill Landfill

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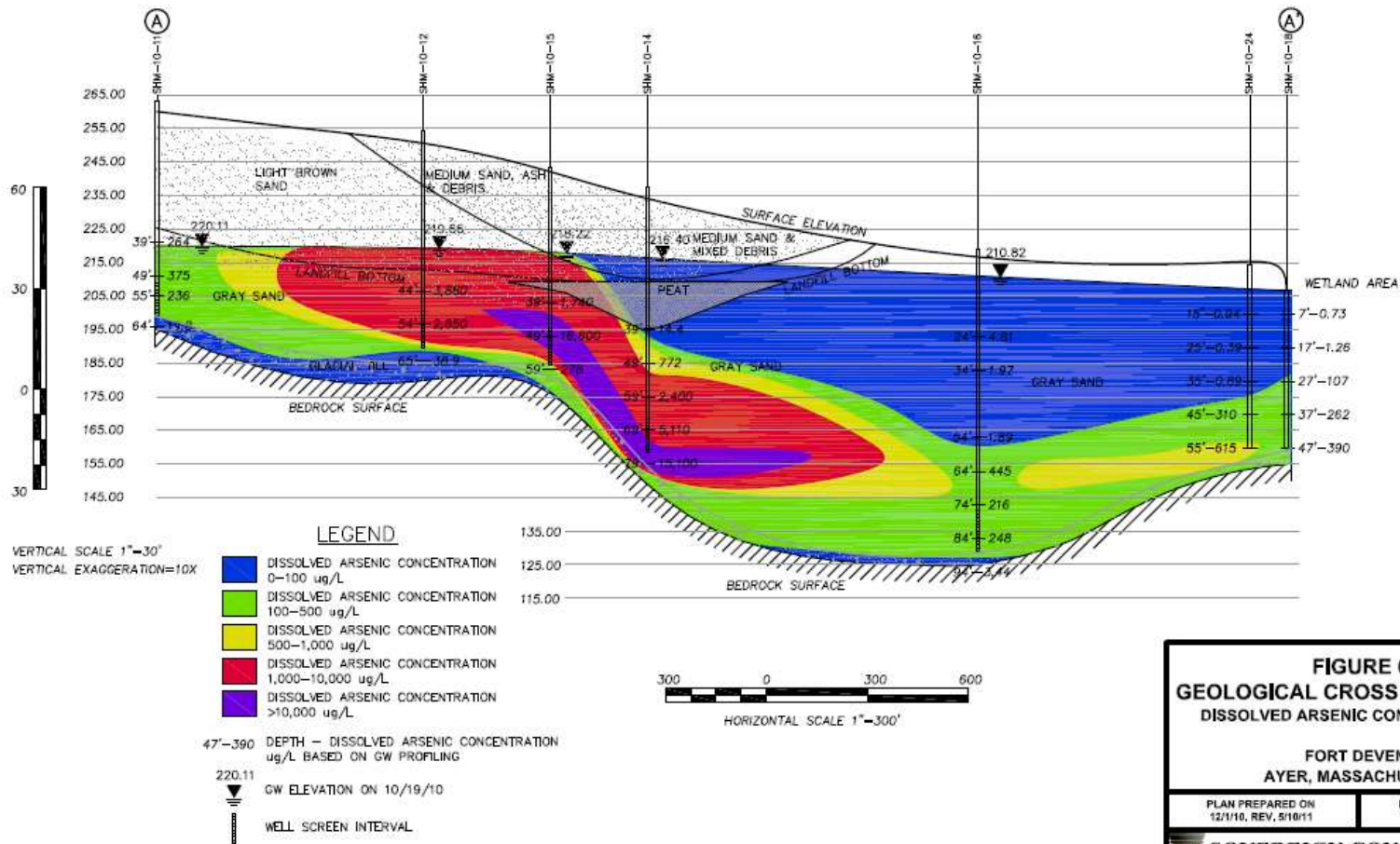
- 2000 – ground water north of landfill found contaminated with arsenic
- 2006 - ground water extraction and treatment system put in place to control ground water contamination from northern end of landfill
- 2009 to present – area beyond treatment zone requires attention





# Arsenic Ground Water Plume

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# What Is Arsenic?

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- Semi-metal element
  - Odorless and tasteless
  - Present in natural deposits
  - Used to make other metals, glass, electronic components and wood preservatives
  - Does not degrade into another substance

Los Alamos National Laboratory Chemistry Division

Periodic Table of the Elements

1A	1	2																	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
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e	Pr	Nd	Pm	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn	Fr	Ra	Ac	Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Mn	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr	Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe	Cs	Ba	La	Ce	Pr	Nd	Pm	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn	Fr	Ra	Ac	Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Mn	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr	Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe	Cs	Ba	La	Ce	Pr	Nd	Pm	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn	Fr	Ra	Ac	Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Mn	Co	Ni	Cu	Zn	Ga



# How Can I Be Exposed to Arsenic?

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## □ Water

### ▣ Drinking contaminated water

- Town water supply is safe

### ▣ Irrigating food crops

## □ Soil

### ▣ Accidentally eating contaminated soil

## □ Air

### ▣ Tobacco smoke contains traces of arsenic

### ▣ Arsenic in food or water **does not** evaporate into the air



# Possible Health Effects of Arsenic

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- ❑ Thickening and discoloration of the skin
- ❑ Stomach pain, nausea, vomiting
- ❑ Diarrhea
- ❑ Numbness in hands and feet
- ❑ Partial paralysis
- ❑ Blindness
- ❑ Linked to cancer of the bladder, lungs, skin, kidney, nasal passages, liver and prostate



# Risk of Exposure from the Site

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- Using contaminated ground water
  - ▣ Arsenic levels up to 400 times the drinking water standard in some locations
- Avoid exposure
  - ▣ Do not use ground water from the contaminated zone for any purpose

*Don't  
Drink the  
Water*



*Don't  
Irrigate*

# Contaminated Zone

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## Known Affected Area



## Future Affected Area

- May improve with time
- Monitoring will continue
- Affected property owners and tenants will continue to be surveyed and notified

# Town Water Is Safe

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- Water systems must comply with the EPA's drinking water standard
  - ▣ 0.010 mg/L (10 parts per billion) for arsenic
- Ayer public water meets this standard





# Explanation of Significant Differences (ESD)

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- October 2012 draft for public comment
- Comments due by April 5, 2013

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5	EXPLANATION OF SIGNIFICANT DIFFERENCES
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7	LAND USE CONTROLS TO RESTRICT USE OF GROUNDWATER
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9	For
10	
11	SHEPLEY'S HILL LANDFILL SUPERFUND SITE
12	FORMER FORT DEVENS, MA
13	
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15	
16	
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18	
19	Prepared for:
20	Department of the Army
21	Base Realignment and Closure Division
22	Fort Devens, Massachusetts
23	
24	
25	
26	
27	
28	October 2012
29	
30	
31	Prepared by:
32	
33	Sovereign Consulting Inc.
34	4 Open Square Way
35	Holyoke, MA 01040

# Why an “Explanation of Significant Differences”?

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- Required by Superfund
  - ▣ Investigation leads to a Record of Decision (ROD)
  - ▣ The EPA selects the site's remedy in the ROD
  - ▣ Shepley's Hill Landfill ROD was issued in 1995
  - ▣ Any significant change to the remedy in the ROD must be explained by the Army and approved by the EPA
  - ▣ The ESD is a step in completing the final remedy for Shepley's Hill Landfill

# What Is this ESD About?

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- Establishes framework for future land use controls to protect people from exposure to contaminated ground water

# Where Is the ESD Available?

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- Town of Ayer website ([www.ayer.ma.us](http://www.ayer.ma.us))
- Ayer Public Library
- Ayer's Department of Public Works
- Ayer Town Hall
  - Board of Health Office
  - Board of Selectman's Office
  - Town Clerk



# What are Land Use Controls?

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- Engineering and physical barriers
- Institutional controls (administrative and legal controls)



Physical Barrier



**Are you thinking of installing a water well in Ayer MA.** This article is geared towards understanding Ayer MA Board of Health Regulations. Understanding your town regulations can be instrumental in compiling total project costs when it comes to drilling a water well in Ayer, MA.

Legal Control



# Institutional Controls in the ESD

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- Ayer Board of Health well regulations
- Ayer zoning bylaws
- Massachusetts drinking water regulations

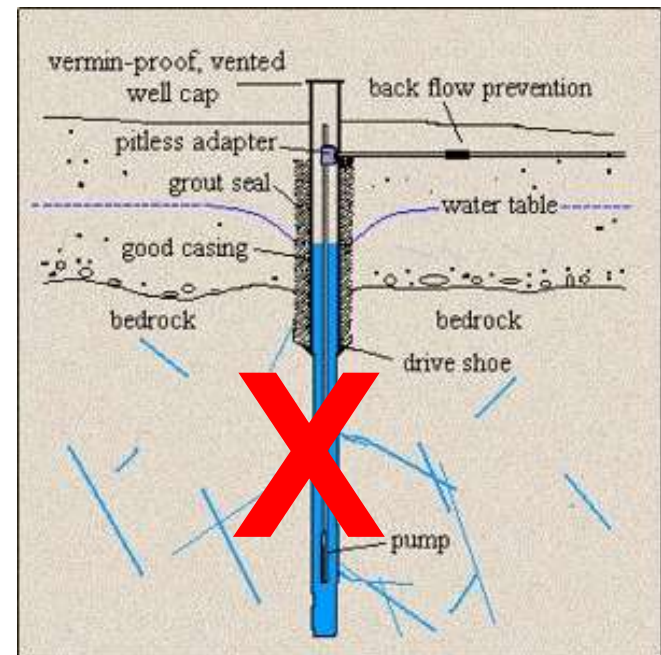
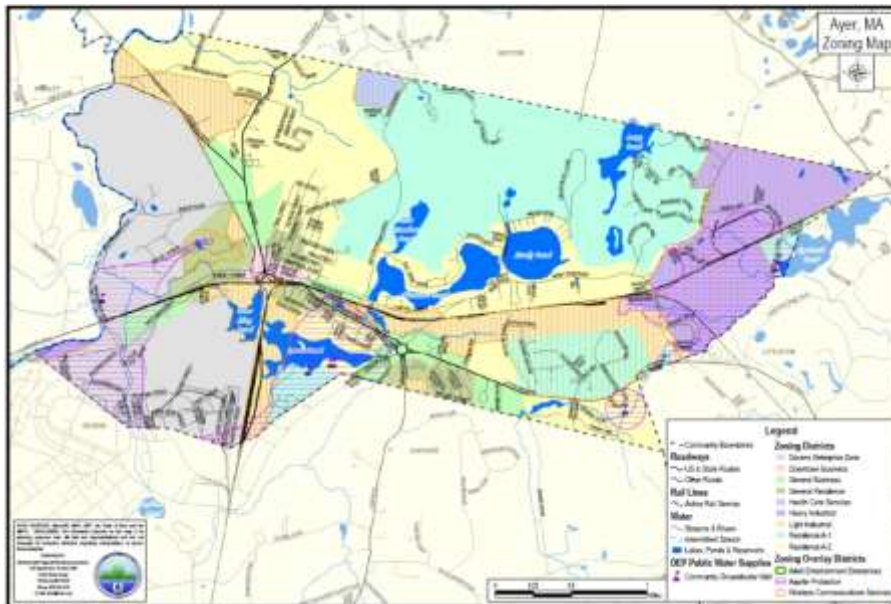
Also, the Army will:

- Provide public education and outreach
- Perform ground water use surveys
- Meet with the Ayer Board of Health
- Request that the Ayer Board of Health put additional water well controls in place

# Army Land Use Controls Rely on Actions by Ayer

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- Institutional controls must be enforceable
  - ▣ Revisions to Board of Health well regulations
    - Moratorium on private water wells in affected areas



# Army's Next Steps

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1. Finalize and sign the ESD (date to be determined)
2. Write a Land Use Control Implementation Plan
  - ▣ Describes land use controls
  - ▣ Explains how land use controls will be:
    - put in place
    - maintained
    - inspected
3. Collaborate with the Town of Ayer, the Massachusetts Department of Environmental Protection, and the EPA to accomplish the above activities

# Your Next Steps

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## 1. Send your written comments on the ESD to:

▣ Robert J. Simeone

Army BRAC Environmental Coordinator

30 Quebec Street (Unit 100)

Devens, MA 01434-4479

▣ Email:

[robert.j.simeone.civ@mail.mil](mailto:robert.j.simeone.civ@mail.mil)



**Send comments by April 5, 2013, at 5 p.m.**

# Your Next Steps

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2. If you have a water well in or near the affected area, include information about it with your comments or send the information separately to the Army and the Ayer Board of Health
  - ▣ The EPA has asked the Army to include a process for properly closing any existing water wells discovered in the contaminated zone





# Questions?

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