

FACT SHEET 2 FORT DEVENS, MASSACHUSETTS ENVIRONMENTAL RESTORATION PROGRAM

Shepley's Hill Landfill Proposed Plan

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This fact sheet is one in a series informing interested citizens about the environmental restoration program at Fort Devens, MA. This fact sheet provides an overview of the proposed plan for cleanup of contaminated groundwater at Shepley's Hill Landfill. Other fact sheets will be prepared at program milestones and in response to other items of public interest. Distribution is coordinated through the BRAC Environmental Office, (508) 796-3114.

Army Announces Proposed Plan For Cleanup Of Shepley's Hill Landfill Groundwater

INTRODUCTION

The Army has prepared this fact sheet to provide interested citizens a brief explanation of the Army's preferred remedy for cleanup of groundwater at the Fort Devens Shepley's Hill Landfill. This fact sheet contains important information to help individuals understand and participate in the Army's cleanup plans and to participate in the remedy selection process. This fact sheet briefly summarizes the information contained in the proposed plan for Shepley's Hill Landfill.

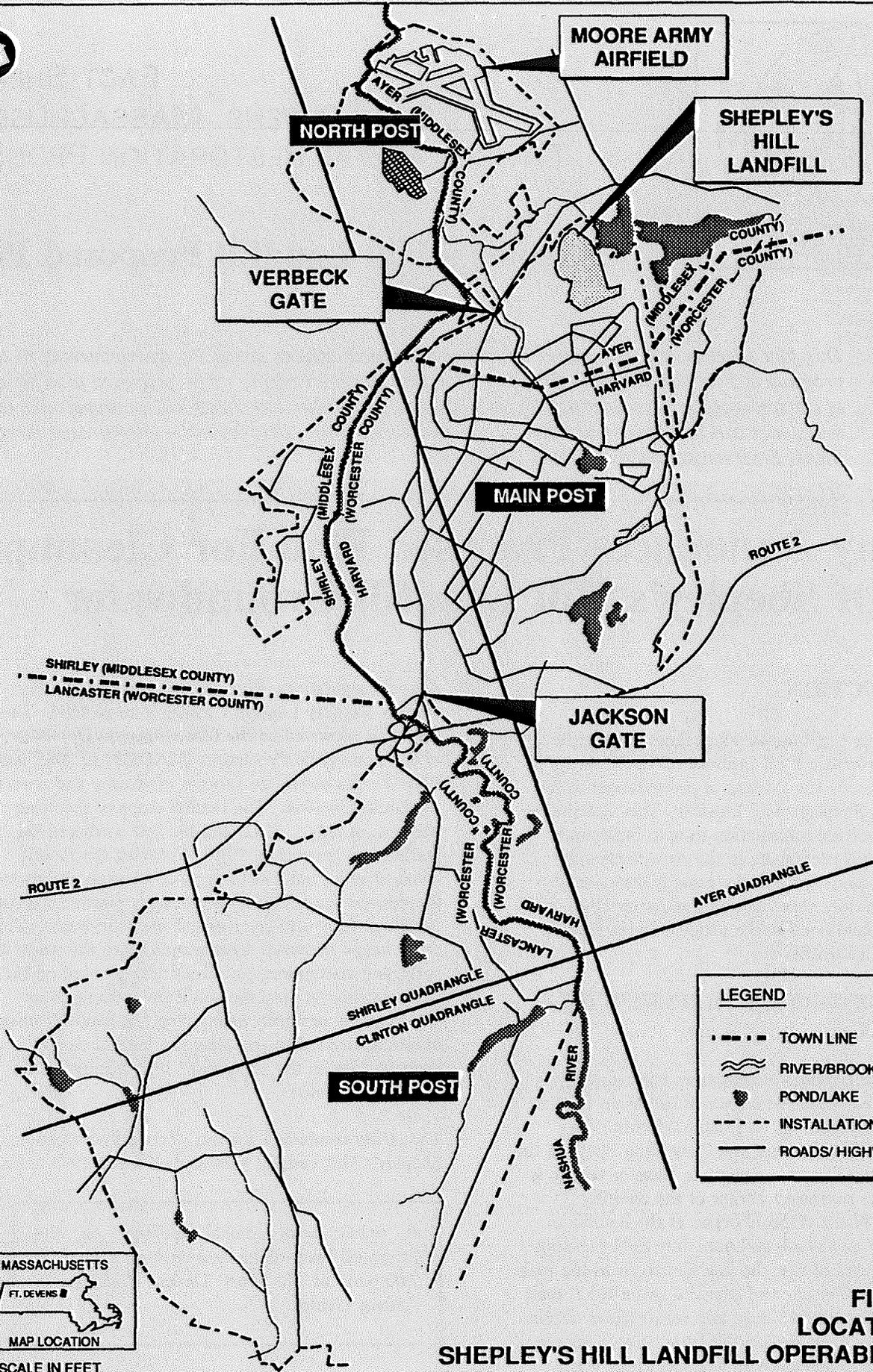
BRIEF HISTORY OF SHEPLEY'S HILL LANDFILL

Shepley's Hill Landfill encompasses approximately 84 acres in the northeast corner of the Main Post at Fort Devens (Figure 1). It is situated between Shepley's Hill on the west and Plow Shop Pond on the east. The Fort Devens solid waste transfer station is located at the southwest corner of the landfill (Figure 2). Waste disposal began at the landfill as early as 1917 and continued until July 1992. During its last few years of use, the landfill served as the main landfill at Fort Devens and received about 6,500 tons per year of household refuse and construction debris. In an effort to keep the landfill from being a source of pollution and to comply with Massachusetts waste

disposal regulations, Fort Devens initiated the Fort Devens Sanitary Landfill Closure Plan in 1984. The plan was approved by the Massachusetts Department of Environmental Protection (MADEP) in 1985, and Fort Devens began the process of closing and covering the landfill in 1986. The landfill stopped receiving waste as of July 1, 1992, and the last corner of the landfill was covered in 1993. Covering the landfill involved using bulldozers to push waste materials into the desired shape and then putting a plastic (polyvinyl chloride) sheet and layer of soil over the waste. This cover keeps rainwater from seeping into the waste and spreading contamination. Grass was planted on the cover surface to keep the soil from washing away. The Army is presently assembling the administrative materials needed to complete the landfill closure process prior to the September 1995 signing of the record of decision.

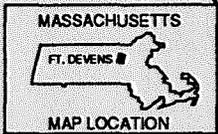
The Army conducted a series of field investigations at Shepley's Hill Landfill between 1991 and 1993 to find

A public informational meeting on the Proposed Plan will be held on June 6, 1995, at 7:00 p.m. at the Fort Devens Community Activity Center.

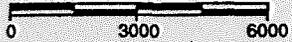


LEGEND

- - - TOWN LINE
- ~ RIVER/BROOK
- ◼ POND/LAKE
- - - INSTALLATION BOUNDARY
- ROADS/HIGHWAY



SCALE IN FEET



**FIGURE 1
LOCATION OF
SHEPLEY'S HILL LANDFILL OPERABLE UNIT
FORT DEVENS, MA**

ABB Environmental Services, Inc.



NONACOICUS BROOK

RESERVATION
BOUNDARY

TANNERY

PHLOW SHOP POND

GROVE POND

SHEPLEY'S HILL

PHASE I
1986
(SHEPLEY'S HILL LANDFILL)

PHASE
IV-A
1991

PHASE III
1989

PHASE II
1987

PHASE
IV-B
1992

GROVE POND

COOK STREET

ANTIETAM ST.

CAREY STREET

BOSTON & MAINE RAILROAD

G3M-92-05X

LEGEND

- ◆ MONITORING WELL
- - - RESERVATION BOUNDARY
- ▭ CULVERT
- - - DRAINAGE COURSE
- +—+—+— RAILROAD TRACKS
- × × × FENCE
- ▭ EDGE OF MEMBRANE CAP

0 500 1000 FEET

SCALE: 1"=500'

FIGURE 2
SHEPLEY'S HILL LANDFILL SITE MAP
FORT DEVENS, MA

ABB Environmental Services, Inc.

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out if potential threats to human health or the environment exist and to evaluate whether cleanup of the site is needed in addition to covering the waste. Investigation reports written in 1993 and 1994 describe the investigations, the nature and extent of contamination found at and adjacent to the landfill, and the health risks associated with the site. The investigations performed at Shepley's Hill Landfill meet the requirements of the U.S. Environmental Agency (USEPA) for defining the nature and extent of contamination at the site.

NATURE OF CONTAMINATION

The investigations indicated that groundwater moving away from the landfill contained several chemicals that would present a human health risk if the groundwater were used for drinking. However, there are no current users of the groundwater. The chemical of greatest concern in groundwater was arsenic which presented potential cancer risks exceeding USEPA's target risk range. The risk assessment also indicated that direct contact with Plow Shop Pond sediments containing arsenic presents risks to human health. Eating fish caught in Plow Shop Pond and contaminated with mercury was considered to present noncancer risks exceeding target levels. To a lesser degree, arsenic in fish also presented potential risk.

The findings of the ecological risk assessment suggested that contaminants in Plow Shop Pond surface water may be posing a risk to aquatic plants and animals and that contaminants in sediments may be posing a risk to aquatic and semi-aquatic plants and animals. The primary contributors to ecological risk include arsenic, chromium, lead, manganese, and mercury.

THE ARMY'S PREFERRED ALTERNATIVE FOR CLEANUP OF GROUNDWATER AT SHEPLEY'S HILL LANDFILL

The Army's preferred alternative, presented as Alternative SHL-2 in the proposed plan, consists of maintaining the existing landfill cover in accordance with Massachusetts regulations, investigating potential ways to improve its performance, long-term monitoring of groundwater to find out if the cover is working as intended, and placing restrictions on property sold or released by the Army at Shepley's Hill Landfill to prevent the future use of groundwater for drinking. Monitoring data and maintenance activity reports will be reviewed at least every five years by Army, USEPA, and MADEP representatives

to assess whether the preferred alternative is protective of human health and the environment and whether additional action is appropriate.

Because of the possibility that groundwater flow will behave differently than predicted by computer models, and that Alternative SHL-2 will not be successful, the Army has identified a contingent remedy: Alternative SHL-9. The Army believes that Alternative SHL-9, which consists of Alternative SHL-2 with the additional component of groundwater extraction and discharge, will best meet the Superfund evaluation criteria if Alternative SHL-2 does not prove to be successful. To facilitate the potential implementation of this contingency action, the Army will conduct the necessary pre-design hydrogeologic studies and prepare a 60 percent complete engineering design for groundwater extraction as part of Alternative SHL-2. USEPA New England and MADEP have approved pumping contaminated groundwater from beneath the landfill and discharging it to the Town of Ayer wastewater treatment facility for treatment and disposal.

The cleanup of groundwater is estimated to take 10 to 14 years. The estimated capital cost of Alternative SHL-2 is \$928,000. Annual operation and maintenance costs are estimated to be \$84,000. The estimated total present worth of capital and operation and maintenance costs for a 30-year period is \$2,219,000.

OTHER ALTERNATIVES EVALUATED BY THE ARMY

Four other alternatives were evaluated in detail in the feasibility study report and are described briefly in this fact sheet. The public is invited to comment on all the candidate cleanup remedies as part of the public comment process.

Alternative SHL-1: No Action. The No Action alternative does not contain any remedial action components to reduce or control potential risks. Alternative SHL-1 was developed to provide a baseline for comparison with the other remedial alternatives.

Alternative SHL-5: Collection/Ion Exchange Treatment/Surface Water Discharge. Alternative SHL-5 consists of components that, in conjunction with the components of Alternative SHL-2, would provide additional controls to prevent off-site migration of contaminated groundwater. Alternative SHL-5 consists of constructing a groundwater

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extraction system, constructing an on-site groundwater treatment facility, installing an effluent pipeline for discharging treated groundwater to Nonacoicus Brook, and pumping and treating groundwater to remove groundwater contaminants. The estimated present worth of Alternative SHL-5 is \$9,126,000.

Alternative SHL-9: Collection/Discharge to POTW.

Alternative SHL-9, similar to Alternative SHL-5, consists of components that, compared to Alternative SHL-2, provide additional controls to prevent off-site migration of contaminated groundwater. Alternative SHL-9 consists of constructing a groundwater extraction system, installing a discharge pipeline to connect to the Town of Ayer sanitary sewer system, and pumping and discharging groundwater to the Town of Ayer wastewater treatment facility for treatment. The estimated present worth of Alternative SHL-9 is \$3,874,000.

Alternative SHL-10: Installation of RCRA Cap.

Alternative SHL-10 consists of building a new landfill cover system on top of the existing cover system at Shepley's Hill Landfill. The new cover system would be designed to meet USEPA Resource Conservation and Recovery Act (RCRA) performance criteria and design guidance for hazardous waste landfills. Maintenance activities, monitoring and reporting requirements, and institutional controls would be similar to those of Alternative SHL-2. The estimated present worth of Alternative SHL-10 is \$20,936,000.

EVALUATION OF THE ALTERNATIVES

A feasibility study report prepared in 1995 evaluates various alternatives for the cleanup of contaminated groundwater at Shepley's Hill Landfill. This report, entitled *Final Feasibility Study, Shepley's Hill Landfill Operable Unit*, evaluates each candidate alternative using seven of nine criteria developed by USEPA for use in the Superfund cleanup process. These criteria provide a means to select the best alternative to protect human health and the environment at the site. The criteria are listed below:

1. Overall protection of human health and the environment;
2. Compliance with applicable or relevant and appropriate regulations;
3. Long-term effectiveness and permanence;
4. Reduction of toxicity, mobility or volume through treatment;
5. Short-term effectiveness;
6. Implementability;
7. Cost;

8. State acceptance; and
9. Community acceptance.

The Army believes the preferred alternative would achieve the best balance among the first seven criteria, subject to monitoring and field verification. The preferred alternative would provide short- and long-term protection of human health and the environment, and would attain federal and state applicable or relevant and appropriate requirements. Although the preferred alternative does not utilize treatment to reduce the toxicity, mobility, or volume of contaminants, the existing cover system will reduce the mobility of the contaminants in groundwater by reducing infiltration of precipitation. The preferred alternative is readily implementable at a relatively low cost.

The USEPA and MEDEP have indicated their concurrence with the Army's preferred alternative.

Now, through the public hearing and comment process, the Army is asking the public to provide comments on the preferred alternative and the other four alternatives evaluated in detail in the feasibility study. The Army will consider all comments from the public in making its final selection of a cleanup approach for groundwater at Shepley's Hill Landfill.

The preferred alternative addresses only the cleanup of contaminated groundwater. The Army is still evaluating the extent of cleanup that will be needed in Plow Shop Pond and will be assessing approaches for achieving that cleanup. An engineering report that evaluates potential actions to clean up pond sediments is anticipated to be issued in September 1996.

PUBLIC INFORMATIONAL MEETING AND PUBLIC HEARING ON SHEPLEY'S HILL LANDFILL PROPOSED PLAN

Beginning on June 1, 1995, and extending through June 30, 1995, the Army will hold a 30-day public comment period during which people are encouraged to comment on the proposed cleanup plan. Written comments may be submitted to the Army at any time during the comment period and should be mailed to Jim Chambers, Base Realignment and Closure (BRAC) Environmental Coordinator at the address given later in this fact sheet.

The Army invites the public to attend a public informational meeting on June 6, 1995 at 7:00 p.m. at the Fort Devens Community Activity Center to find

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out about the Army's proposed plan for cleanup of groundwater at Shepley's Hill Landfill. The meeting will be an informal question and answer session about the proposed plan.

A informal public hearing will be held on June 27, 1995, at 7:00 p.m. at the Fort Devens Community Activity Center, followed by an informal question and answer period. The public hearing on the Shepley's Hill Landfill proposed plan is an additional opportunity to comment on the Army's selection of a cleanup approach. During the public hearing, individuals can provide oral or written comments on the Shepley's Hill Landfill proposed plan.

FOR MORE INFORMATION

The Army's proposed plan and investigation and feasibility study reports are available for public review at the information repositories at the libraries in Ayer, Shirley, Lancaster, and Harvard, and at the Fort Devens BRAC Environmental Office.

The Administrative Record, which comprises all documents that form the basis for the Army's selection of a cleanup approach for groundwater at Shepley's Hill Landfill, including the proposed plan, investigation and feasibility study reports, correspondence pertaining to the site, the community relations plan, and other relevant documents, is available for public review at the following locations:

BRAC Environmental Office
Building P-12, Buena Vista Street
Fort Devens, MA 01433-5010
(508) 796-3114, ext 311 (Jim Chambers)
Hours: Monday-Friday: 9:00 a.m. - 4:00 p.m.

Ayer Town Hall
Main Street
Ayer, MA 01432
(508) 772-8220 (Tim Higgins)
Hours: Monday-Friday: 9:00 a.m. - 4:00 p.m.

If you have questions about the site, or would like a copy of the proposed plan, you may call or write to:

Jim Chambers
BRAC Environmental Coordinator
AFZD-BEC
P.O. Box 1
Fort Devens, MA 01433-5010
(508) 796-3114, ext 311

Mailing List Additions/Deletions/Changes

If you, or someone you know, would like to be added to (or deleted from) the Fort Devens mailing list, please fill out and mail this form to:

Jim Chambers
BRAC Environmental Coordinator
AFZD-BEC
P.O. Box 1
Fort Devens, MA 01433-5010

Name: _____

Address: _____

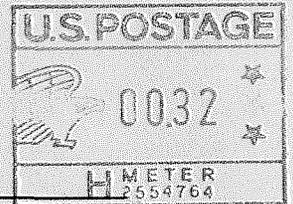
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