



# PROPOSED PLAN

Superfund Program  
April 1999

AOC 69W (Former Fort Devens Elementary School)  
U.S. Army Reserve Forces Training Area  
Devens, Massachusetts

## Introduction

In accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (Section 117), the law that established the Superfund Program, this document summarizes the Army's proposed plan for Limited Action at Area of Contamination (AOC) 69W. This Limited Action includes long-term groundwater monitoring and the implementation of institutional controls to protect human health and the environment under both existing and future site conditions. The purpose of this plan is to help the public understand and comment on the Army's proposal. The Army developed the proposed plan with support from the U.S. Environmental Protection Agency (USEPA) and Massachusetts Department of Environmental Protection (MADEP). The Final Remedial Investigation Report for AOC 69W contains detailed information on the site, and is available for review at the public information repositories at the Ayer Public Library, the Hazen Memorial Library in Shirley, the Harvard Public Library, and the Lancaster Public Library. The U.S. Environmental Protection Agency (USEPA) and the Massachusetts Department of Environmental Protection (MADEP) concur with this proposed plan.

## Site Description and History

AOC 69W is located near the intersection of MacArthur Avenue and Antietam Street on the northern portion of what was formerly the Main Post at Fort Devens (Figure 1). AOC 69W is comprised of the former Fort Devens Elementary School (Building 215) and the associated parking lot and adjacent lawn extending approximately 300 feet northwest to Willow Brook. Contamination at AOC 69W is attributed to heating oil which leaked from underground piping in two separate incidences; once in 1972 and again in 1978. It is estimated that approximately 7,000 to 8,000 gallons of fuel oil were released into soil from each spill. At a minimum, several thousand gallons of fuel oil were recovered by installing an oil recovery system in late 1972 or 1973. AOC 69W is included in a land parcel that the Army plans to transfer to MassDevelopment. The existing school building may be reopened in the future.

The following items summarize the history of AOC 69W.

- 1951. Fort Devens Elementary School was built and was comprised of the east/southeast half of the present school. The school was heated by an oil-fired boiler, and the heating oil was stored

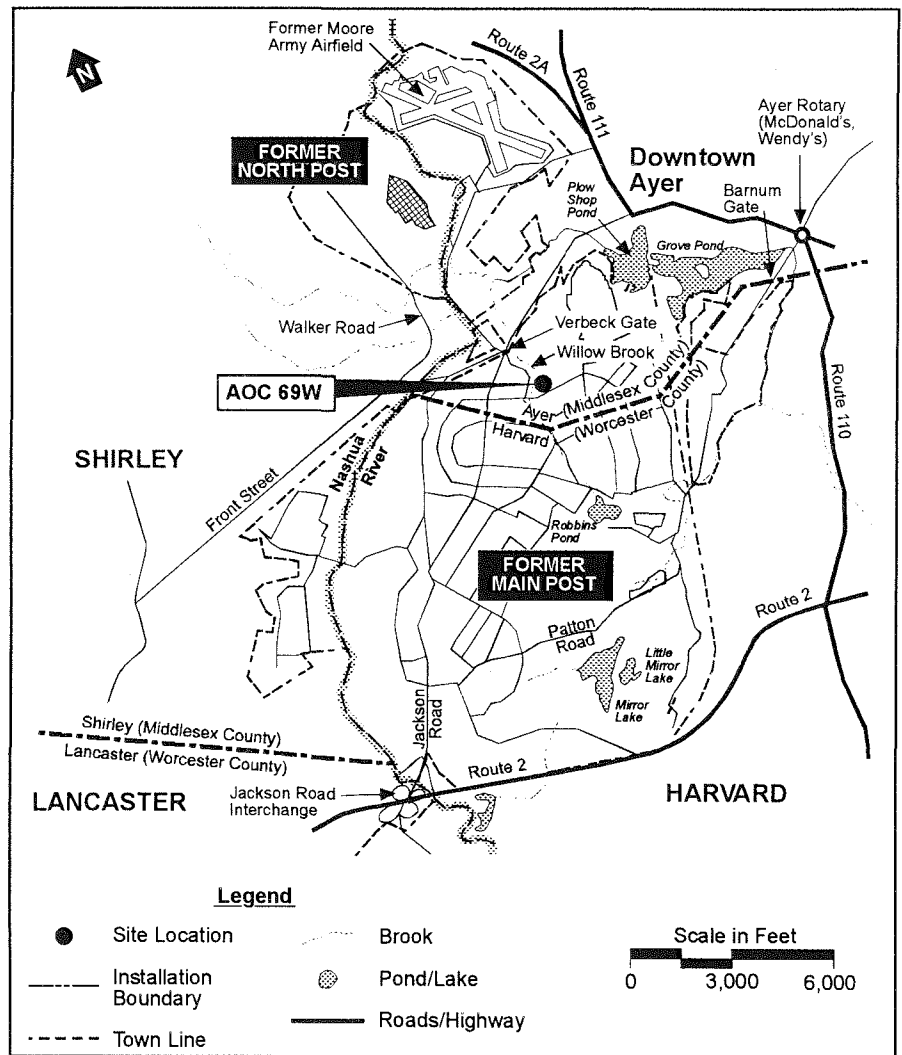


Figure 1: Location of AOC 69W at U.S. Army RFTA.

Contents:	Page
Characterization of Potential Risks .....	3
How Does the Army Choose the Final Plan .....	3
Comparison of Alternatives .....	4
Why Does the Army Recommend Limited Action .....	4
Learn More About AOC 69W and the Army's Proposed Plan .....	4
What Do You Think? .....	5
Why Submit a Formal Comment? .....	5
Next Steps .....	5

in a 10,000-gallon underground storage tank (UST) located in what is currently the school courtyard.

- **1972.** An addition to the school was built. Although a new boiler room was constructed, the old boiler room remained operational. The original 10,000-gallon UST was removed and a new 10,000-gallon UST was installed north of the school in the middle of the current parking lot. During the UST installation, the underground fuel line leading to the new boiler room was accidentally crimped, causing the pipe to split and leak approximately 7,000 to 8,000 gallons of fuel to the ground within a few weeks before discovery and pipe repair.
- **1972-1973.** As a result of the fuel release, an oil recovery system was installed in the vicinity of the 10,000-gallon UST to collect the oil released from the piping. Reportedly, the system consisted of underground piping connected to a buried 250-gallon concrete vault that acted as an oil/water separator. The vault collected oily water and was pumped out approximately every three months. Sometime after 1986, the 250-gallon vault was filled with crushed rock.
- **1978.** Underground fuel piping near the old boiler room failed at a pipe joint. Approximately 7,000 to 8,000 gallons of oil were released into the soil during the incident. Soil was excavated to locate the source of the release. The excavation was used to collect the residual oil for one month before the damaged piping was found and replaced. Shortly after the incident, an oily sheen was noted in Willow Brook north of the school and approximately 2,600-gallons of residual oil were pumped from the oil recovery system.

- **1993.** The Army designated the elementary school as Area Requiring Environmental Evaluation (AREE) 69W, as part of their basewide evaluation of past spill sites (AREE 69). Based on document reviews and site visits, the evaluation concluded that residual fuel oil contamination may be present in the soil and groundwater at the site.
- **1994.** The Army performed a field investigation which revealed the presence of fuel-related contaminants in both soil and groundwater between the school and the existing fuel UST, and in an area extending northwest from the existing fuel UST to near Willow Brook. The Army redesignated the site as Area of Contamination (AOC) 69W and proposed that a remedial investigation be performed.
- **1995-1997.** A remedial investigation was conducted to define the distribution of contaminants previously detected in the soil and groundwater during the AREE site investigations, and to determine whether remediation is warranted. Investigation activities included historical record search and personnel interviews; a geophysical survey and test pitting; sediment and toxicity sampling in Willow Brook; surface and subsurface soil sampling; groundwater monitoring well installations, groundwater sampling and groundwater level measurements; aquifer testing; ecological survey and wetland investigations; air quality sampling within the elementary school; and human health and ecological risk assessments. Based upon remedial investigation results, detected soil contaminants were primarily total petroleum hydrocarbons (TPHC) and semivolatile organic compounds (SVOCs) and extended from the new boiler room to approximately 300 feet northwest. Fuel-related volatile organic com-

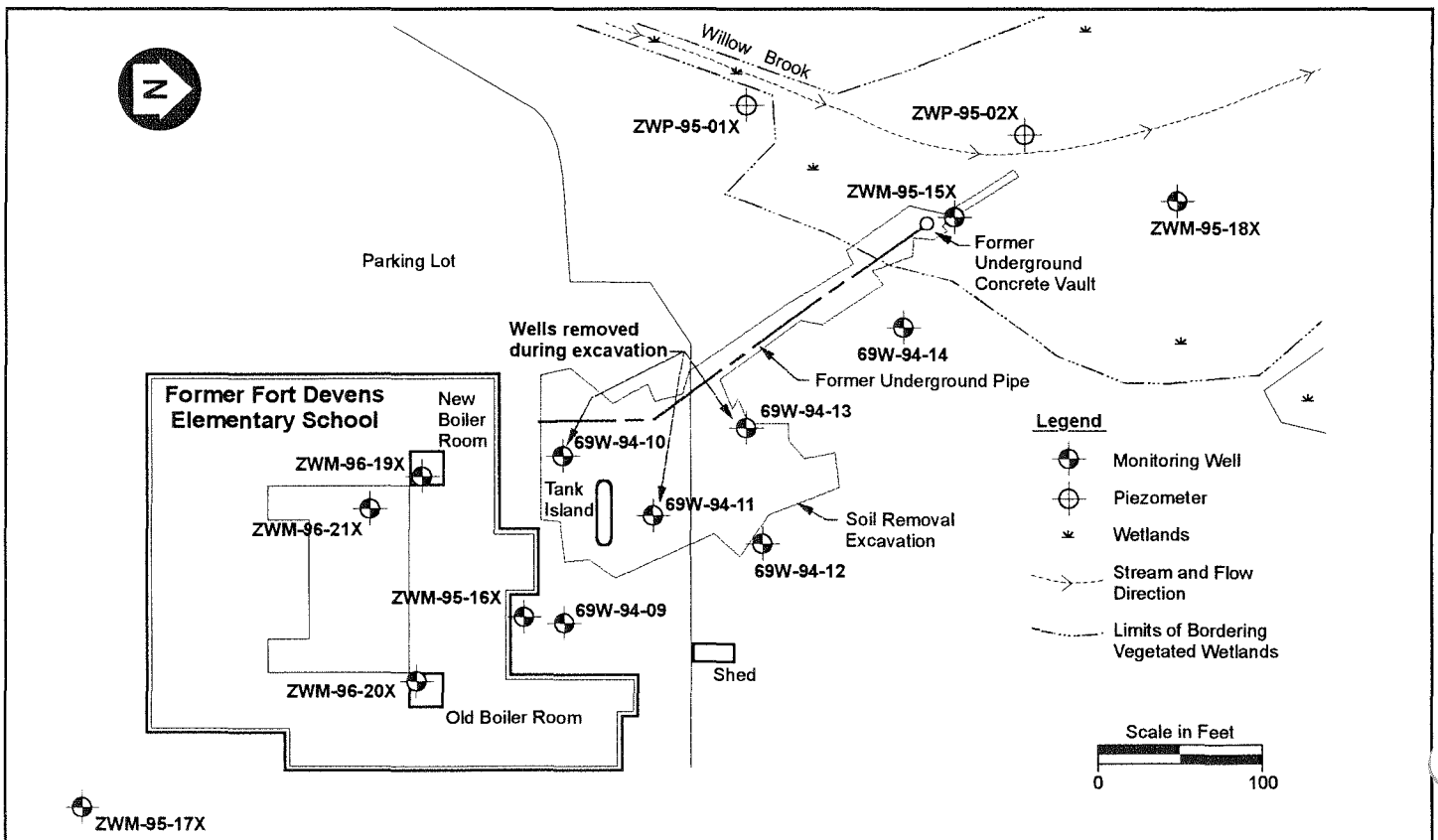


Figure 2: AOC 69W.

pounds (VOCs), SVOCs, TPHC, and inorganics comprised the observed groundwater contaminants. Contamination was largely a result of the 1972 release. The underground oil recovery system apparently had acted as a conduit for contaminant migration in soil and groundwater. Observed contamination from the 1978 release did not appear to be migrating downgradient and further migration is unlikely considering the age of the release and the paved parking lot that inhibits precipitation infiltration.

- **1997-1998.** Based on a review of the soil and groundwater contaminant data, the Army performed a removal action and excavated approximately 3,500 cubic yards of petroleum-contaminated soil associated with the 1972 fuel oil leak. The 10,000 gallon fuel oil UST and the oil recovery system's 250-gallon vault and associated piping were also removed. The 10,000-gallon fuel oil UST was confirmed to be intact (i.e., no holes or leaks were observed.). Confirmatory soil sampling in excavated areas indicated that extractable petroleum hydrocarbons (EPH) and volatile petroleum hydrocarbon (VPH) concentrations immediately adjacent to the school still exceeded the Massachusetts Contingency Plan (MCP) Method 1 S-1/GW-1 soil standards after the removal action. Due to the proximity of the school, this soil could not be excavated without potential structural damage to the building. Because the area is paved, there is minimal potential for further migration of contaminants and future exposure.

### Characterization of Potential Risks

**Human Health:** As part of the remedial investigation, the Army evaluated potential human health risks associated with exposure to site contaminants in soil and groundwater and indoor air. Since the former elementary school at AOC 69W is presently closed, exposure and risks for current site use were evaluated for a site maintenance worker (possible exposure to surface soil), and a child trespasser (possible exposure to sediment and groundwater discharge to surface water). The possible health risks associated with future site use were also evaluated. This assessment assumed that the school will be re-opened and included evaluation of a pupil (possible exposure to surface soil, sediment, groundwater discharge to surface water, and indoor air), and an excavation worker (possible exposure to surface soil and subsurface soil). Results of the risk assessment revealed that the estimated cancer and non-cancer risks associated with the possible current and future exposures to surface soil, subsurface soil, sediment, groundwater discharge to surface water, and indoor air were all within acceptable levels established by the USEPA.

Future use of the on-site groundwater as a potable water source was also evaluated. Estimated cancer and non-cancer risks associated with hypothetical exposures to AOC 69W groundwater used as a residential drinking water source exceeded levels considered acceptable by USEPA. Since groundwater beneath AOC 69W is not presently used as a source of drinking or industrial water, evaluation of potable use represents a hypothetical worst-case evaluation of potential risks. Also, these risks are primarily due to the elevated concentration of arsenic in groundwater which is not interpreted to be introduced from the release of fuel-oil at AOC 69W. Rather, the elevated concentration of arsenic is attributed to the mobilization of naturally occurring arsenic brought on by the aero-

bic degradation of fuel related contaminants in groundwater. The 1997/1998 removal described in the previous section will act to lessen the conditions that are mobilizing the arsenic.

**Ecological:** As part of the remedial investigation, the Army evaluated potential risks for ecological receptors from exposure to site contaminants in surface soil, sediment and groundwater at AOC 69W. The exposure pathways that were evaluated included: small mammal and bird, predatory mammal, terrestrial plant, and soil invertebrate exposures to surface soil; small mammal and bird, predatory mammal, and aquatic receptor exposures to sediment in Willow Brook; and aquatic receptor exposures to groundwater that seasonally discharges to Willow Brook. Results of the risk assessment revealed that there are no unacceptable ecological risks associated with site-related fuel oil contamination at AOC 69W.

Actual or threatened releases of hazardous substances from this site, if not addressed by the preferred alternative may present a potential threat to public health, welfare, or the environment.

### How Does the Army Choose the Final Cleanup Plan?

The Army uses USEPA's nine criteria to balance the pros and cons of cleanup alternatives. The following list of the nine criteria highlights questions the Army will consider in selecting a cleanup plan. Public comments that focus on these criteria help the Army better evaluate all aspects of the alternatives.

1. **Overall protection of human health and the environment:** Will it protect you and the plant and animal life on and near the site? The Army will choose a plan that considers this basic criterion.
2. **Compliance with Applicable or Relevant and Appropriate Requirement (ARARs):** Does the alternative meet federal and state environmental statutes, regulations and requirements?
3. **Long-term effectiveness and permanence:** Will the effects of the cleanup plan last or could contamination present a risk again over time?
4. **Reduction of toxicity, mobility or volume through treatment:** Does the alternative reduce the harmful effects of the contaminants, their ability to spread, and the amount of contaminated material present?
5. **Short-term effectiveness:** How soon will site risks be adequately reduced? Are there short-term hazards to workers, residents or the environment that could occur during the cleanup operation?
6. **Implementability:** Is the alternative technically feasible? Are the goods and services (i.e., treatment machinery, space at an approved disposal facility) necessary to implement the plan readily available?
7. **Cost:** What is the total cost of an alternative over time in today's dollars? The Army must find a plan that gives necessary protection for a reasonable cost.
8. **State acceptance:** Do state environmental agencies agree with the Army's recommendations?
9. **Community acceptance:** What objections, suggestions, or modifications does the public offer during the comment period?

### Comparison of Alternatives

Figure 3 summarizes the comparison of No Further Action and Limited Action with respect to the Nine Criteria

**Figure 3. Evaluation Criteria vs. Alternatives**

Nine Criteria	No Action	Limited Action* with Institutional Controls
Protects human health and environment	●	●
Meets Federal and State requirements	○	●
Provides long-term protection	○	●
Reduces mobility, toxicity or volume	○	○
Provides short-term protection	●	●
Can be implemented	●	●
Cost	\$0	\$195,300
State Agency Acceptance	The State Letter of Concurrence will be provided after the public comment period	
Community Acceptance	To be determined after the public comment period	

- Does not meet criteria
- Meets or exceeds criteria
- ◐ Partially meets criteria
- \* Preferred alternative

The proposed plan, in conjunction with the soil removal that has already been performed, will help to ensure that federal and State requirements are addressed. The regulations and standards that are applicable or relevant and appropriate for AOC 69W are:

- Safe Drinking Water Act (SDWA) - Maximum Contaminant Levels (MCLs); 40 CFR 141.11-141.16 and 141.50-141.53
- Massachusetts Hazardous Waste Management Rules Groundwater Protection; 310 CMR 30.660-30.679
- Massachusetts Groundwater Quality Standards; 310 CMR 6.00
- Massachusetts Drinking Water Standards; 310 CMR 22.0

### Why Does the Army Recommend Limited Action?

The Army proposes a Limited Action at AOC 69W because under current conditions the site poses no unacceptable risks to human health or the environment. Furthermore, the removal action performed by the Army in 1997-1998 has eliminated the USTs and oil recovery system as well as the majority of the petroleum contaminated soils which would otherwise be a continuing source of contamination for groundwater and downgradient surface water. The contaminated soil adjacent to and underneath the school that exceeds the MCP Method 1 S-1/GW-1 soil standards is below a paved area which minimizes any further migration of contaminants and future exposure. Because the soil removal eliminated the majority of source area contaminants, estimated risks and interpretations represent worst-case estimates that are unlikely to be exceeded under future land use conditions. This Limited Action includes long-term groundwater monitoring and the implementation of institutional controls to protect human health and the envi-

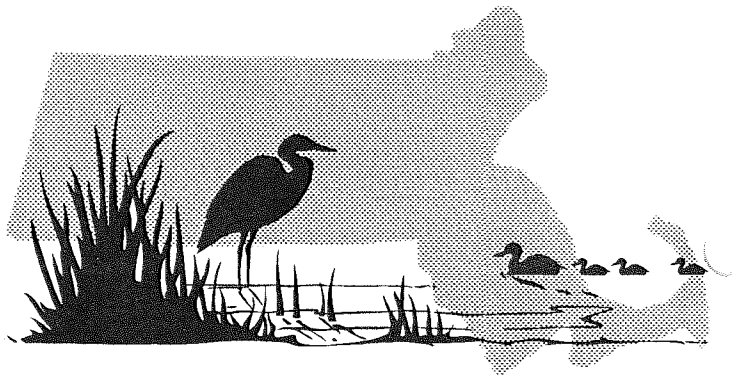
ronment under both existing and future site conditions.

Risks associated with hypothetical future potable use (worst-case) exposure to AOC 69W groundwater exceed levels considered acceptable by USEPA due largely to elevated concentrations of arsenic. The soil removal will act to lessen reducing conditions in the groundwater and therefore arsenic concentrations are expected to eventually decrease over time. The Army proposes to monitor the groundwater for site contaminants and observe groundwater conditions over time. A long-term groundwater monitoring plan will be prepared after the Record of Decision for this site has been signed. This plan will include the identification and location of the new groundwater monitoring wells and existing monitoring wells to be sampled. The sampling frequency and analytical parameters to be evaluated will also be identified within this plan. The objective of the monitoring will be to verify that elevated arsenic concentrations will decrease over time and not migrate further downgradient. Monitoring will be performed for five years after which the sampling frequency will be reassessed pending the results of the five-year site review.

Institutional Controls will also be implemented at AOC 69W to limit the potential exposure to the contaminated soil and groundwater under both existing and future site conditions. These Institutional Controls will ensure that exposure to remaining contaminated soils beneath and adjacent to the building are controlled and the extraction of groundwater from the site for industrial and/or potable water supply would not be permitted. These Institutional Controls will be prepared as part of the Record of Decision (ROD) for AOC 69W and incorporated either in full or by reference into all deeds, easements, mortgages, leases or any other instruments of transfer prior to the transfer of the property to MassDevelopment.

As part of the five-year ROD review process, existing land use will be evaluated to ensure that the Institutional Control requirements are still being met. If the future proposed land use at AOC 69W is inconsistent with these institutional controls, then the site exposure scenarios to human health and the environment will be re-evaluated to ensure that this response action is appropriate.

The cost estimate for this Limited Action included the capital cost for the preparation of the long-term groundwater monitoring plan and institutional controls. Annual costs included groundwater monitoring and five-year site reviews. The total estimated present worth cost for the Limited Action at AOC 69W is \$195,300.

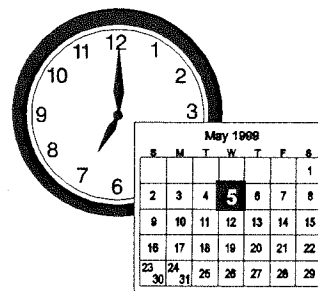


## Learn More About AOC 69W and the Army's Proposed Plan

The Army will describe the proposed plan for AOC 69W and conduct an informal question and answer session at a public meeting to be held at the U.S. Army RFTA. Opportunity will also be provided at this meeting for individuals to provide formal comments on the proposed plan. The public meeting will be held at the following time and place:

Public Meeting 7:00 p.m.  
May 5th, 1999

U.S. Army RFTA Headquarters, Building 679  
Quebec Street  
U.S. Army Reserve Forces Training Area  
Devens, Massachusetts



### What Do You Think?

Do you have a comment or concern relating to the Army's proposed plan? If so, the Army would like to know what it is before making a final decision on whether Limited Action provides adequate protection.

During the 30-day public comment period from April 8, though May 10, 1999, the Army will accept formal written comments on the proposed plan, and hold a public meeting to accept either oral or written comments. It is important to note that regulations distinguish between "formal" comments received during the public comment period and "informal" comments received outside of the public comment period. While the Army uses comments throughout site investigation and cleanup, regulations require the Army to respond to formal comments in writing.

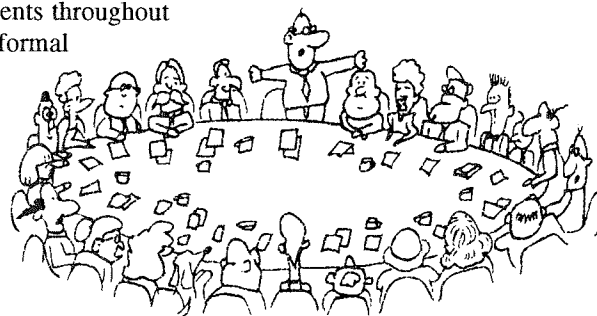
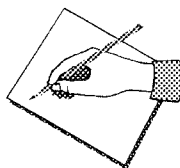
To make a formal comment, you need only

1) Offer oral or written comments during the public meeting on  
May 5, 1999

or

2) Send written comments, postmarked no later than  
May 10, 1999 to:

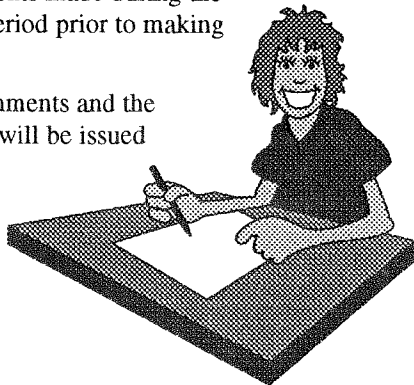
Jim Chambers  
U.S. Army Reserve Forces Training Area  
BRAC Environmental Office  
30 Quebec Street  
Box 100  
Devens, MA 01432-4429  
Fax (978) 796-3133



### Why Submit a Formal Comment?

Your comment will become part of the official public record, a crucial element in the decision-making process. The Army will consider all formal comments made during the 30-day public comment period prior to making the final selection.

A transcript of formal comments and the Army's written responses will be issued in a document called a Responsiveness Summary that will accompany the Record of Decision for AOC 69W.



### Next Steps

The Army expects to complete review of all formal comments, select a remedial alternative, and issue the Record of Decision. The Record of Decision and Responsiveness Summary will be available for public review at the public information repositories at the Ayer Public Library, the Hazen Memorial Library in Shirley, the Harvard Public Library, and the Lancaster Public Library. In addition, the Army will announce the decision through the local news media and the community mailing list.

### Use This Space to Write Your Comments

The Army wants your comments on the proposed plan for AOC 69W. You may use the form below to submit written comments. If you have questions about how to comment, please call the BRAC Environmental Coordinator, Jim Chambers, at (978) 796-3131. Send this form or any other written comments, postmarked no later than May 10, 1999, to:

Jim Chambers  
U.S. Army Reserve Forces Training Area  
BRAC Environmental Office  
30 Quebec Street  
Box 100  
Devens, MA 01432-4429  
FAX (978) 796-3133

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

Comment Submitted by: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

AOC 69W  
Public Comment Sheet



Fold on dotted lines, staple, stamp, and mail



\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Place  
stamp  
here

Jim Chambers  
U.S. Army Reserve Forces Training Area  
BRAC Environmental Office  
30 Quebec Street  
Box 100  
Devens, MA 01432-4429

Jim Chambers  
U.S. Army Reserve Forces Training Area  
BRAC Environmental Office  
30 Quebec Street  
Box 100  
Devens, MA 01432-4429

Bulk Rate  
U.S. Postage  
**PAID**  
Permit #  
Portland, ME

*Return Service Requested*

\*\*AUTO\*\*\*\*\*3-DGS 015  
S4 P1

Lisa Dardjian  
Harvard Public Library  
Fairbanks Street  
PO Box 666  
Harvard MA 01451-0666

