PROPOSED PLAN

To Clean Up AOC 43G and 43J
Devens, MA

Superfund Program
August 1996

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 proposal for site cleanup to help the public understand and comment on the proposal. The plan has been developed with support from U.S. Environmental Protection Agency (USEPA) and Massachusetts Department of Environmental Protection (MADEP). For detailed information on the proposed cleanup plan and other options evaluated for use at the site, see the Final Feasibility Study Report for Area of Contamination (AOC) 43G and 43J available for review at the site information repositories at the Base Realignment and Closure (BRAC) Environmental Office at the Devens Reserve Forces Training Area and at the Ayer Town Library.

Recapping Site History

AOC 43G and 43J are both comprised of a former historic gas station which had a 5,000-gallon underground storage tank (UST) and associated pumphouse (both have been removed at each site);

- a majority of AOC 43G is occupied by the former Army Air Force Exchange Service (AAFES) gas station; and
- a large part of AOC 43J is covered by the former 10th Special Forces motor pool.

1940: Historic gas stations at both AOC 43G and 43J are opened.

Early 1950's: Historic gas stations are closed.

1960: Maintenance activities begin at AOC 43J.

1971: AAFES gas station operations begin, including the construction of existing building and installation of five gasoline USTs.

1990: Five gasoline USTs and associated piping are removed from AOC 43G. In addition, 140 tons of contaminated soil is also removed. Preliminary site assessment is completed by removal contractor.

1992: The waste oil UST is removed from AOC 43G along with 60 cubic yards of contaminated soil. An abandoned gasoline UST (5,000 gallons) and a waste oil UST are removed from AOC 43J.

1992-1994: Field investigation activities are conducted at AOC 43G and 43J.

1995: Draft Remedial Investigation (RI) reports and Alternative Screening Reports are published for AOC 43G and 43J.

1996: Final RI, Final Feasibility Study (FS) reports and Draft Proposed Plan are published for AOC 43G and 43J.

1996: Existing gasoline USTs and the sand and gas trap are removed from AOC 43G under a CERCLA removal action.

Why Is Cleanup Needed?

The Army's studies of AOC 43G and 43J conclude that long-term exposure to the source area contaminants found in groundwater at both sites, noted below, presents a potential human health risk to commercial/industrial workers. Reducing contaminant levels is necessary to ensure the area is safe for use by potential commercial/industrial workers should a drinking water well be installed on-site within the plume and/or directly downgradient of the site. In addition, the Army's remedial alternative will prevent site-related contaminants from moving off Army property. Because site-related contaminants were found in subsurface soils and groundwater, no ecological risks are anticipated.

Subsurface soil contamination, including volatile organic compounds (VOCs) and Total Petroleum Hydrocarbons (TPHC), exists at both sites. However, under the assumption that only a utility or maintenance worker will be exposed to these contaminants for a limited duration, contaminants in these areas present no unacceptable risks to human health.

Groundwater at both AOCs is contaminated with VOCs (primarily fuel-related compounds and some chlorinated solvents [only at AOC 43J]) above state and

Contents:

federal drinking water standards. The groundwater below both of these areas is not slated to be used as a drinking water source under the Fort Devens Reuse Plan. However, the risk assessment did calculate a risk associated with use of this groundwater for a potential commercial/industrial drinking water source. The findings of the risk assessment did indicate that contaminant concentrations in the source area would pose an unacceptable risk to commercial/industrial workers.

How Does the Army Choose the Final Cleanup Plan?

The Army uses USEPA's nine criteria, presented below, to balance the pros and cons of the evaluated cleanup alternatives. The Army met the first two criteria and tried to establish the best balance possible for the next five criteria. The last two criteria will be further evaluated after the public comment period. The Army has already evaluated how well each of the cleanup alternatives meets the first seven criteria (See tables on pages 2 and 3). Once comments from the MADEP and the USEPA are received, the Army will finish comparing the alternatives to select the cleanup plans to be used at AOC 43G and 43J.

The following list of the nine criteria highlights the questions the Army must address in selecting a cleanup plan. Public comments that focus on these criteria help the Army better evaluate all aspects of the alternatives. For precise definitions of the criteria, see Section 4.0 and 5.0 of the Final FS Report for each site.

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 meets 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?

AOC 43G Comparison of Remedial Alternatives

Nine Criteria	1 No Action	2A Intrinsic Bio-remediation	2B Intrinsic Bio-remediation/Soil Venting of Gasoline UST Soil	3 Groundwater Collection and Treatment/ Intrinsic Bioremediation Downgradient	4 Groundwater Collection and Treatment/ Passive In-Situ Bioremediation Contaminant Downgradient
Protects human health and environment	◑	●	●	●	●
Meets Federal and State requirements	◑	●	●	●	●
Provides long-term protection	◑	●	●	●	●
Reduces toxicity, mobility, or volume	◑	●	●	●	●
Provides short-term protection	○	●	◑	◑	◑
Can be implemented	●	●	●	●	●
Cost (30 years)	$0	$445,300	$611,500	$1.70 million	$2.53 million
State Agency Acceptance	To be determined after the public comment period				
Community Acceptance	To be determined after the public comment period				
Would not restrict property reuse	●	●	◑	◑	◑
Time to reach cleanup goal	No groundwater data to confirm effectiveness	Approximately 4 to 30 years		Approximately 4 to 30 years	Approximately 4 to 30 years

○ Does not meet criteria ◑ Partially meets criteria ● Meets or exceeds criteria

Army's Preferred Alternative

Four Categories of Cleanup Options

When evaluating the best way to address the risks presented by a site, the Army looks at a large number of technical approaches. The Army then narrows the possibilities to approaches that would protect human health and the environment.

Although reducing risks often involves combinations of highly technical processes, the general approaches can be grouped into four categories:

Take Limited or no Action: Leave the site as it is, or just restrict access and monitor it. For comparison's sake, the FS evaluates how well the nine cleanup criteria would be met if nothing were done to address reduced risks.

Contain contamination: Leave the contamination where it is and cover or contain it in some way to prevent exposure to, or spread of, contaminants. This method reduces risks from exposure to contamination, but does not destroy or reduce it.

Move contamination off site: Remove the contaminated material (soil, groundwater, etc.) and dispose of it or treat it elsewhere.

Treat contamination on site: Use a chemical or physical process on the site to destroy or remove the contaminants from soil, water, sediment, etc. The treated material can then be left on site. Contaminants captured by the treatment process are disposed of in an off-site hazardous waste treatment facility.

AOC 43J Comparison of Remedial Alternatives

Nine Criteria	1 No Action	2 Intrinsic Bioremediation	3 Intrinsic Bioremediation/ Passive In-Situ Bioremediation Containment	4 Intrinsic Bioremediation/ Hydraulic Containment	5 Groundwater Collection and Treatment/ Soil Treatment
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 (30 years)	$0	$441,700	$1.14 million	$1.70 million	$1.88 million
State Agency Acceptance	To be determined after the public comment period				
Community Acceptance	To be determined after the public comment period				
Would not restrict property reuse	●	●	◑	◑	◑
Time to reach cleanup goal	No Groundwater Data to Confirm Effectiveness	approximately 27 years	approximately 27 years	approximately 36 years	approximately 27 years

○ Does not meet criteria ◑ Partially meets criteria ● Meets or exceeds criteria

Army's Preferred Alternative

AOC 43G and 43J Site Cleanup Options

The FS reports for both AOC 43G and 43J reviews the options the Army considered for cleanup, as well as the Army's recommended approach. The options, referred to as "remedial alternatives," are different combinations of plans to contain, move or treat contamination to protect public health and the environment.

At **AOC 43G and 43J**, separate sets of options have been developed to deal with the problem of contamination moving away from the site through groundwater. Alternatives to address the source of site contamination are listed as remedial alternatives.

During the upcoming comment period, the Army welcomes your comments on the recommended cleanup plans as well as the other technical approaches briefly described below. Please consult the Final FS Report for each site for detailed information about all of the remedial alternatives.

Groundwater Cleanup Alternatives

Limited or No-Action Options at both AOC 43G and 43J

Alternative 1: No Action. Leave the site as it is. Contaminants could degrade, but there would be no monitoring to ensure that they do not continue to move through groundwater away from the site.

Alternative 2 (at AOC 43J) and 2A (at AOC 43G): Intrinsic Bioremediation. This alternative, the Army's preferred alternative, is described on page 4.

On-Site Treatment Options at AOC 43G

Alternative 2B: Intrusive Bioremediation/Soil Venting of Gasoline UST Soils. Similar activities to Alternative 2A, but with the addition of a soil venting system to minimize the residual soil contamination below the former gasoline USTs.

Alternative 3: Groundwater Collection and Treatment/Intrinsic Bioremediation Downgradient. Similar activities to Alternative 2A, but with the addition of a groundwater treatment system to minimize the migration of site contaminants from the source area.

Alternative 4: Groundwater Collection and Treatment/Passive In-Situ Bioremediation Containment Downgradient. This alternative would include construction of a groundwater treatment facility, and the installation of passive in-situ bioremediation wells to aid in the natural biodegradation of site contaminants. Passive in-situ bioremediation containment includes installing bioremediation wells downgradient of the source area that would allow the introduction of oxygen and perhaps mineral nutrients that would promote biological remediation of site-related contaminants.

On-Site Treatment Options at AOC 43J

Alternative 3: Intrinsic Bioremediation/Passive In-Situ Bioremediation Containment. Intrinsic bioremediation tasks are similar to Alternative 2. Passive in-situ bioremediation containment includes installing bioremediation wells that would contain the plume by introducing oxygen and perhaps mineral nutrients to promote aerobic biological remediation of site-related contaminants.

Alternative 4: Intrinsic Bioremediation/Hydraulic Containment. Intrinsic bioremediation tasks are similar to Alternative 2. This alternative would include the installation, operation and maintenance of a groundwater containment and treatment facility to keep the contaminants detected in the groundwater from moving further off-site.

Alternative 5: Groundwater Collection and Treatment/Soil Treatment. This alternative includes the installation of a groundwater extraction and treatment system similar to Alternative 4. In addition, this alternative would include the installation, operation and maintenance of a soil vapor extraction (SVE) system to remediate residual contaminated soil left above the lowered water table.

Alternative Comparison and Short-term Local Impacts of the Cleanup

With the exception of the No Action alternative, all of the groundwater remedial alternatives will use a small portion of the land around each of the sites during the cleanup.

At AOC 43G

All alternatives, including Alternative 1, meet the evaluation criteria because intrinsic bioremediation is a naturally occurring process for all alternatives. However, Alternative 1 does not allow for confirming the effectiveness of the bioremediation process.

Alternatives 3 and 4 offer back-up treatment processes which aid in the reduction of site contaminants.

Alternatives 3 and 4 would generate concentrated waste streams (i.e., sludge, filter material, and used carbon) that would require disposal.

At AOC 43J

All alternatives, including Alternative 1, meet the evaluation criteria because intrinsic bioremediation is a naturally occurring process for all alternatives. However, Alternative 1 does not allow for confirming the bioremediation.

Alternatives 3, 4 and 5 offer back-up treatment processes which aid in the reduction of site contaminants.

Alternatives 3, 4 and 5 would generate concentrated waste streams (i.e., sludge, filter material, and used carbon) that would require disposal.

Alternatives 1, 2, 3, and 5 are expected to require 27 years to meet state and federal drinking water standards. Alternative 4 would require 36 years to meet the same standards.

The Proposed Remedial Alternative

After careful study of AOC 43G and 43J, the Army has developed a plan to reduce risks from site contamination. The Army is proposing a remedial alternative that would:

- **Eliminate site-related contaminants from groundwater at both sites via intrinsic bioremediation.** Site related contaminants concentrations will be reduced via natural attenuation and biodegradation. This alternative is collectively referred to as intrinsic bioremediation. Contaminant concentrations will be monitored to assess and confirm the effectiveness of this remedial alternative until remedial objectives are met. Intrinsic bioremediation uses existing natural biological site conditions to reduce and remediate site contamination.

Why Does the Army Currently Recommend Intrinsic Bioremediation?

The Army recommends intrinsic bioremediation to treat groundwater contamination at both sites because the technology:

Meets the 9 criteria, including protecting public health and the environment, and complies with ARARS

Provides a more permanent solution by treating and destroying contaminants rather than transferring them to other media

Would allow greater range for reuse of the site and would eliminate building costly treatment systems that would require more operation and maintenance, and limit future activities at each site

Provides the most protection for the cost. The alternatives that call for groundwater extraction and treatment or the installation of passive bioremediation wells, are more than twice as expensive as intrinsic bioremediation for nearly the same level of protection. The No Action alternative would cost nothing, but without groundwater sampling and the other activities outlined in Alternative 2 (at AOC 43J) and Alternative 2A (at AOC 43G), the effectiveness of this alternative could not be measured

The intrinsic bioremediation alternative also provides the best balance of trade-offs among the other alternatives with respect to the evaluation criteria. This alternative also satisfies the statutory requirements of CERCLA 121 (b).

A Closer Look at the Army's Proposal...

The intrinsic bioremediation alternative for both AOC 43G and 43J can be broken into four basic steps.

1. Army will retain the land at both AOC 43G and 43J

In the Fort Devens Reuse Plan, the areas at and around AOC 43G and 43J will be retained by the Army as part of the Devens Reserve Forces Training Area. By retaining these areas the Army will control the land use at both sites. Further, should the Army transfer either site, an Environmental Baseline Survey (EBS) will be conducted and the remedial alternative will be re-examined. The EBS will be submitted to USEPA and MADEP for comment and concurrence.

2. Monitoring and assessment of contaminant concentrations

Prior to implementation, additional groundwater data shall be collected, from each AOC, to further assess the existing bioremediation ates. Additional site investigation at AOC 43G will be conducted as part of the source control remedial design. The investigation will assess the nature and distribution of contaminants below the former gasoline USTs, and the potential effects on the intrinsic bioremediation alternative. In addition, biodegradation modeling and long-term groundwater monitoring will be used to assess the effectiveness of the alternative at each AOC. The criteria for the modeling and the long-term groundwater monitoring will be developed jointly with the Army, USEPA and MADEP. The results of groundwater monitoring will be submitted annually to USEPA and MADEP. These submittals will include a description of site activities and analytical results.

3. Five year site reviews

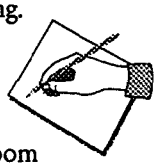
After five years of sampling has been completed at each site, the effectiveness of the alternative will be reviewed. If the remedial alternative is deemed effective, no additional action will be implemented. If not, the Army, USEPA and MADEP will assess the type of additional actions to be taken. A report of the findings of this review will be published for community review.

4. Need for additional action

If the results of the remedial design, at AOC 43G, (see Step 2) show that 1) the groundwater contaminant plume may increase in size on Army property, or 2) the groundwater contaminant plume remains the same size but cannot be sufficiently remediated within 30 years; an SVE system will be installed at the existing source area. Furthermore, if at any time during the implementation of this remedy there is indication that contaminants are migrating off Army property, at either site, above drinking water standards, and/or the five-year site review indicated that the intrinsic bioremediation alternative is not protective of human health, the Army will implement an additional cleanup action to enhance the intrinsic bioremediation alternative.

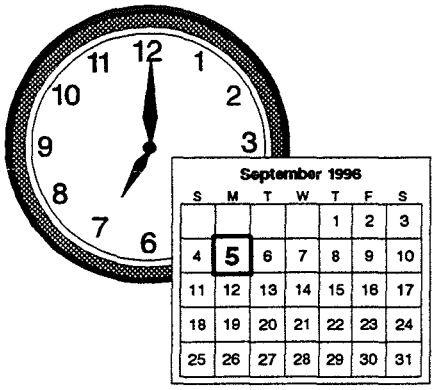
Learn More About the Proposed Plan

The Army will describe the proposed cleanup plan and how it compares with other cleanup options for the site, and respond to your questions and concerns at an informational public meeting.



Information Meeting
7:00 p.m.
September 5, 1996
General Conference Room
at the Devens Commerce Center
43 Buena Vista Street, Building P-12
Devens, MA

The meeting will be held subsequent to the Restoration Advisory Board meeting held at 6:00 p.m. For further information on the meeting call Devens BRAC Environmental Office at 508/796-3131, extension 311.



What Do You Think?

The Army will accept public comment on this proposal from August 26 through September 25, 1996. You don't have to be a technical expert to comment — if you have a concern or preference, the Army wants to hear it before making a final decision on how work should proceed to protect your community.

There are two ways to formally register a comment:

1. Offer oral comments during the public information meeting on September 5, or
2. Send written comments, postmarked no later than September 25, 1996 to:

Jim Chambers
U.S. Army Reserve
Forces Training Area
BRAC Environmental Office
AFRC-FMD-BE
P.O. Box 100
Devens, MA 01433-5010

What's a Formal Comment?

During the 30-day formal comment period, the Army will accept formal written comments and hold a meeting to accept formal verbal comments. It is important to note that regulations distinguish between "formal" and "informal" comments. While the Army uses comments throughout site investigation and cleanup, regulations require the Army to respond to formal comments in writing only.

To make a formal comment, you need only speak during the public meeting on September 5, 1996 or submit a written comment during the comment period. The Army will not respond to your comments during the September 5 meeting. Once the formal meeting is closed, the Army can respond to questions.

The Army will review the transcript of all formal comments received at the meeting, and all written comments received during the formal comment period, before making a final remedial decision and developing a written response to the comments.

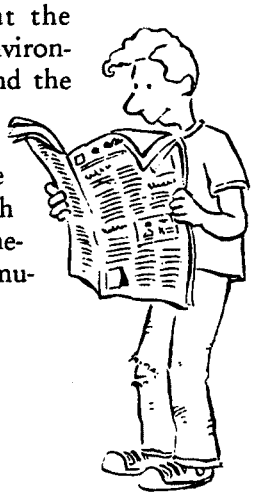
All comments and responses will be evaluated to assist the Army, USEPA and MADEP in selecting the final remedial alternatives at AOC 43G and 43J.

Cleanup Options?

Your formal comment will become part of the official public record, a crucial element in the decision-making process. The transcript of comments and Army's written responses will be issued in a document called a Responsiveness Summary when the Army releases the final remedial decision.

Next Steps

In September 1996, the Army expects to have reviewed all comments received and signed the Record of Decision document describing the chosen remedial alternative. The Record of Decision and Responsiveness Summary will then be made available to the public at the Devens BRAC Environmental Office and the Town of Ayer Library. 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 written comments on the options under consideration for dealing with the contamination at AOC 43G and 3J. You can use the form below to send in written comments. If you have questions about how to comment, please call the Devens BRAC Environmental Coordinator, Jim Chambers, at 508/796-3131. Send this form, or any other written comments, postmarked no later than September 25, 1996 to:

Jim Chambers
U.S. Army Reserve Forces Training Area
BRAC Environmental Office
AFRC-FMD-BE
P.O. Box 100
Devens, MA 01433-5010
Fax 508/796-3133

Comment Submitted by: _____

Address: _____

_____

_____

AOC 43G and 43J
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
AFRC-FMD-BE
P.O. Box 100
Devens, MA 01433-5010

Mailing List Additions/Deletions/Charges

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

Jim Chambers
U.S. Army Reserve Forces Training Area
BRAC Environmental Office
AFRC-FMD-BE
P.O. Box 100
Devens, MA 01433-5010

Name: _____

Address: _____

_____

Affiliation: _____

Phone: _____

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Jim Chambers
U.S. Army Reserve Forces Training Area
BRAC Environmental Office
AFRC-FMD-BE
P.O. Box 100
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Harvard Public Library
P.O. Box 666
Harvard, MA 01451

Forwarding address correction requested