PROPOSED REMEDIAL ACTION PLAN

Sites 6 and 6A-Bohneyard Operable Unit 1-Soil

This Proposed Remedial Action Plan (PRAP) was prepared to satisfy Section 117(a) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This plan explains the history of the site and the type and extent of contamination found at the Bohneyard. The primary purpose of this plan is to describe the remedial alternatives evaluated for these sites and to identify NAS, Patuxent River's preferred remedial alternative. Community involvement is critical for selecting a final remedy. Public comment is invited and encouraged on the preferred alternative and the other alternatives evaluated for the Bohneyard. Information on how to participate in this decision making process is presented toward the end of this plan.

1 Introduction

This is the Proposed Remedial Action Plan (PRAP) for Operable Unit 1 (OU-1), soil at Sites 6 and 6A- Bohneyard at the NAS Patuxent River. This plan provides:

- Background information on the Bohneyard, as developed through prior investigations (Section 2)
- A discussion of the scope and role of the response action (Section 3)
- A summary of site risks (Section 4)
- A discussion of feasible remedial methods and alternatives, as developed in the Focused Feasibility Study (FFS) (Sections 5 and 6)
- A rationale for recommending the preferred alternative (Section 7)
- Opportunities for public participation (Section 8)
- A Glossary

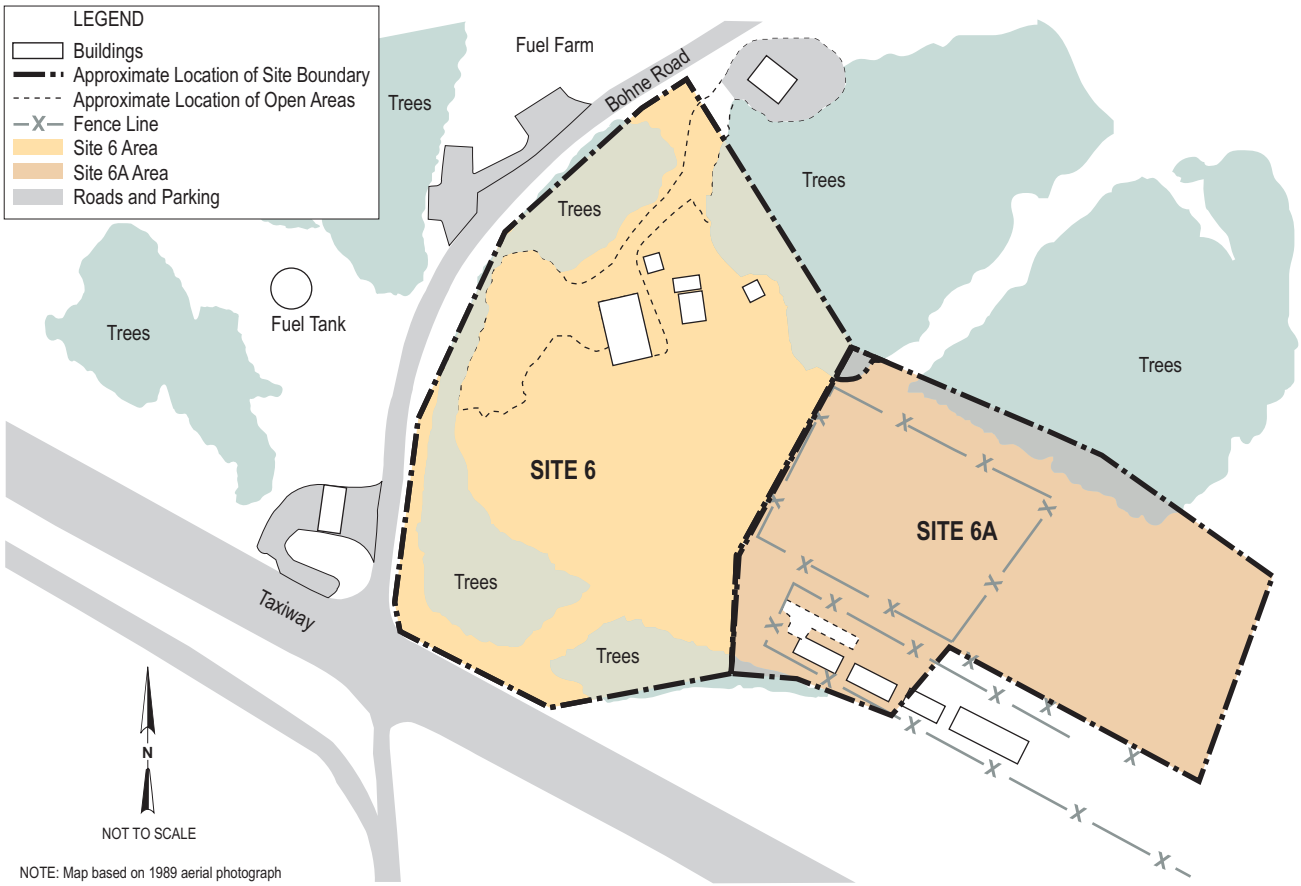
The Navy completed field investigations and the FFS to develop the best remedial alternatives for soil at Site 6 and at adjacent Site 6A. Alternatives were chosen to manage the source of contamination and reduce or eliminate human health and environmental risks associated with contaminated soil. The alternatives considered in the FFS were developed by the Navy, US Environmental Protection Agency (EPA) Region III, and the Maryland Department of Environment (MDE). The FFS evaluated three remedial alternatives. The Navy, EPA, and MDE will finalize the remedy after evaluating comments received from the public.

2 Site Background

Sites 6 and 6A (The Bohneyard) are in the northwestern part of the NAS and cover approximately 10 acres. The name Bohneyard was given to the site because it was a storage yard located on Bohne Road. Site 6 is bounded on the west and northwest by Bohne Road and on the southwest by a

Figure 1. Current Aerial View of Site 6 and 6A, Bohneyard

Figure 2. Detail of Existing Features of Sties 6 and 6A.



taxiway. Site features consist of buildings associated with a fuel farm on the northeastern side and trees on the southern and western sides. Site 6A is located east of Site 6 and consists of a supply yard and storage facilities with a wooded area north of the site. The site is bounded by industrial facilities to the east and south. Figure 1 is a photograph of the Bohneyard.

Figure 2 shows the boundaries of the Bohneyard. Between 1943 and 1949, fly ash and bottom ash from the station's coal-fired power plant were disposed at Site 6. It is estimated that about 110,000 cubic feet, or 6,000 tons of ash were deposited in a six-inch layer over the entire site.

Beginning in 1955, Site 6 was used to store oily wastes. These wastes were stored in drums and in a partially buried 10,000-gallon tank. Historical aerial photographs from 1952 indicate that drums were also stored in sections of Site 6A. Starting in 1966 drums of waste solvents, paints, and possibly pesticides were also stored. Other materials reportedly stored include oil/water separator sludge, and paint thinner. Between 1979 and 1982, all drums were removed from the area. Many of the drums reportedly leaked some of their contents onto the ground. An estimated eight tons of liquid wastes were disposed of or spilled. Various other materials, such as scrap metal, vehicles, and equipment were also stored at Site 6.

In September and October 1989, sludge from the St. Mary's Water Treatment Plant was spread at a rate of 50 dry tons per acre (200 wet tons per acre) over part of the site that is now a grass field at Site 6.

The 10,000-gallon tank was removed in October 1992, cleaned and cut into scrap metal. The tank contents were removed and disposed off-site. There was no offsite soil disposal associated with the tank removal.

On June 30, 1994, NAS Patuxent River was placed on the National Priorities List (NPL). The NPL is EPA's list of the most serious uncontrolled or abandoned hazardous waste sites in the United States.

Summary of Previous Investigations

Investigations of Site 6 and Site 6A were conducted between 1984 and 1997. The investigations are summarized in the following paragraphs.

Initial Assessment Study (IAS). The first investigation of Site 6 was the IAS conducted in 1984. The IAS included a records review, personnel interviews, and a site visit. The IAS recommended that a confirmation study be conducted at Site 6 to determine the presence of contamination and to determine the potential for impacts on human health and the environment.

Confirmation Study. A confirmation study was conducted at Site 6 in 1984. Soil, groundwater, surface water, and sediment samples were collected.

RCRA Facilities Assessment (RFA). As part of the Resource Conservation and Recovery Act (RCRA) process, in 1989 an assessment was done by EPA of waste handling and disposal practices at Site 6 and other areas at the NAS. Site 6 was identified in the RFA as a location of potential contamination.

Interim Remedial Investigation (IRI). The IRI was completed in 1991; the report was completed in 1994. Soil and groundwater samples were collected.

Interim Remedial Action Activities. The 10,000 gallon waste oil tank was excavated on October 2, 1992, cleaned and cut into scrap. The tank contents were removed and disposed offsite.

Engineering Evaluation/Cost Analysis (EE/CA). A field investigation in support of the EE/CA was conducted in 1994 based on recommendations in the IRI. Soil and groundwater samples were collected. The EE/CA was prepared to evaluate remedial options for contaminated soil at Site 6.

Preliminary Ecological Risk Assessment. An ecological risk assessment was prepared in 1996 to assess the potential risks to ecological receptors from contaminants at Site 6 and Site 17.

Pre-Design Investigation. In 1997, additional surface and subsoil samples were collected to provide additional information regarding the nature and extent of contamination and to evaluate characteristics of the Bohneyard soils.

Ongoing Remedial Investigation for the Bohneyard, OU-2. Groundwater, surface water, and sediments are currently being investigated. The complete investigation report will be prepared in 2000.

Focused Feasibility Study (FFS). An FFS was prepared in 1999 to: 1) provide the basis for the remedial action for soil at the Bohneyard; 2) evaluate and screen remedial technologies; and 3) develop remedial action alternatives.

The documents listed above are available for public review in the information repository of the libraries listed on page 9.

3 Scope and Role of Operable Unit or Response Action

For the Bohneyard, the Navy has divided the work into two manageable components called "operable units (OUs)." OU-1 comprises contaminated soil at the Bohneyard. OU-2 comprises groundwater and downstream surface water and sediment. OU-2 is currently under investigation. The Navy intends to announce a preferred remedy for OU-2 after the investigation is complete.

Creation of separate OUs allows the Navy to reuse the property as a parking lot for airplane refueling trucks, and also eliminate current exposure pathways that may pose an unacceptable human health or ecological risk from contamination in soil.

Based on an evaluation of site conditions, risks, and legal requirements that may be applicable or relevant and appropriate requirements (ARARs), Remedial Action Objectives (RAOs) were identified to protect potential human receptors from direct exposure to soil containing inorganic compounds at concentrations exceeding Performance Standards (PSs).

The ecological screening assessment concluded that only very limited habitat would be present on the Bohneyard based on future use, and therefore potentially supporting very few ecological receptors. Thus, ecological risks under the future land use scenario are negligible based on the lack of complete and significant exposure pathways at the Bohneyard.

Therefore, the purpose of the proposed RAOs for OU 1 at the Bohneyard is to reduce possible adverse effects on human health receptors and to comply with federal and Maryland environmental laws.

4 Summary of Site Risks

As part of the investigations of the Bohneyard, OU-1, a human health risk assessment was conducted to evaluate the potential risks to human health if no actions were to be taken at the sites. In addition, an ecological screening assessment was conducted to evaluate the potential risks to ecological receptors if no action was taken at the Bohneyard.

Human Health. The human health risk assessment evaluated potential risks based on several scenarios whereby exposure to soil contamination on site could occur. The human health risk scenarios were current and future site workers, potential future construction workers, current and future adult and child trespassers, potential child recreation user, and potential future adult and child residents. Each exposure scenario identifies the reasonable maximum exposure to chemicals on site under appropriate circumstances for each scenario.

The human health risk assessment found that cancer risks to all receptors at the Bohneyard were within or below the range of acceptable excess lifetime cancer risks identified by EPA. The cancer risks for Site 6 ranged from 2.3×10^{-6} for a future construction worker to 9.4×10^{-5} for the future resident. The cancer risks for Site 6A ranged from 1.1×10^{-6} for a future construction worker to 3.7×10^{-5} for the future resident.

Noncancer hazard indices, which evaluate the potential for other types of toxic effects on body systems, were developed. Cumulative noncancer hazards were found to exceed EPA's recommended threshold for the future residential child or adult, for the child who visits the site for recreation, and for the future construction worker. The noncarcinogenic hazard indices for all exposure pathways for Site 6 ranged from 0.32 for the adult trespasser to 4.9 for the future child resident. The noncarcinogenic hazard indices for all exposure pathways for Site 6A ranged from 0.28 for the adult trespasser to 4.6 for the future child resident.

Noncancer hazards resulted from the presence of inorganic chemicals in soil. The chemicals of concern for human health in soil at the Bohneyard are aluminum, arsenic, cadmium, chromium, iron, silver, thallium, and vanadium.

In order to ensure that the potential noncancer hazards to human health are mitigated during the remedial action, PSs were developed. These PSs identify maximum allowable concentrations of each of the chemicals of concern for two scenarios. PSs were developed for the potential future residential adult and child as the most-conservative exposure scenario. In addition, PSs were developed for the current and future site worker as the most-likely exposure scenario. Based on planned future use of the property, the selected alternative may entail a combination of approaches to address each of these exposure scenarios. Table 1 provides the PSs developed for each of the chemicals of concern.

Table 1
Performance Standards for Protection of Human Health at the Bohneyard

Parameter	Residential Standard	Site Worker Standard
Aluminum	4,220	34,500
Arsenic [1]	4.1	4.1
Cadmium	0.75	4.5
Chromium [1]	18.1	18.1
Iron	2,350	30,700
Silver	18.7	134
Thallium	0.45	4.8
Vanadium	4.5	26.2

Concentrations are in parts per million.
[1] Maximum background concentration

Ecological. The EPA has developed an 8-step process for conducting ecological risk assessments (ERAs). Step 1 of this process consists of the following: (a) a description of the environmental setting (habitats and potential receptors) determined from available information and a site visit; (b) a description of known source areas and contaminants; (c) a determination of potential transport pathways from source areas; (d) an evaluation of potential exposure pathways to determine which are likely to be complete, linking a potential source with a potential receptor; (e) development of preliminary assessment and measurement endpoints; and (f) determination of medium-specific ecological screening values that relate chemical-specific media concentrations with the potential for adverse effects based on conservative assumptions. Items a through e are used to develop a preliminary conceptual model of the site.

The results of Step 1 (preliminary conceptual model) are used to define areas where potential ecological risks

could occur based on the presence of receptors, exposure pathways, and possible sources of contamination. In order for adverse impacts to ecological receptors to be possible, a site must have a source of contaminants, a potential receptor or receptors, and an exposure pathway linking the two.

Contaminants are known to be present in the surface soils at the Bohneyard. Ecological receptors are not likely to occur on the Bohneyard under future use due to the lack of habitat. Since ecological receptors will likely not be present, there is no complete exposure pathway linking the contaminants to an ecological receptor.

The results of the human health risk assessments conducted for soil at the Bohneyard indicate that actual or threatened releases of hazardous substances from these sites, if not addressed by the preferred alternative or one of the other active measures considered, may present a current or potential threat to public health, welfare, or the environment. The site-specific RAO for the Bohneyard, OU-1, is to prevent or minimize contact of human receptors with soil where concentrations exceed the PSs.

Chemicals may move through the soil and into the groundwater. In order to determine whether concentrations of these chemicals detected in soil at the Bohneyard may currently be transferring to groundwater at unacceptable levels, Soil Screening Levels (SSLs) were calculated. SSLs for soil-to-groundwater transfer were calculated for only those chemicals detected in downgradient groundwater at the Bohneyard above screening levels. Those chemicals are iron, lead, and trichloroethene. The SSLs calculated indicate that the current concentrations of these chemicals in soil are not likely to be present in the groundwater above the SSLs.

5 Summary of Alternatives

This section presents a summary of the remediation alternatives developed in the Bohneyard FFS that will meet the human health RAOs. A detailed analysis of the possible remedial alternatives is presented in the FFS report. The analysis is conducted in accordance with EPA's Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP).

Alternative 1 —No Action. The no-action alternative is required to be evaluated under CERCLA. Under this alternative, no action would be performed to reduce the toxicity, mobility, or volume of the contaminated soil at the Bohneyard. Contaminants at the site would be left where they are. The no-action alternative serves as a baseline against which the effectiveness of the other alternatives is compared.

Alternative 2 — Cover with Institutional Controls. Consistent with the Navy's plans for re-use of Site 6 as a parking lot for aircraft fueling trucks, a concrete/asphalt parking lot would be constructed over about one-half of Site 6. A cover comprised of soil over gravel would be placed over the remaining area of Site 6 in which site worker exposure PSs are exceeded. The cover will consist of 4" of compacted gravel with 8" of topsoil for vegetative purposes. At Site 6A, an asphalt cover will be constructed for storage/staging. Institutional controls would consist of access restrictions to prevent trespassing at the Bohneyard, land use controls to control site development and access to groundwater, and monitoring to assess whether contaminants are migrating to the environment. Because contaminated soil would be left in place, a review would be conducted every five years to evaluate whether human health and the environment continue to be protected by this alternative.

Alternative 3 — Excavation and Offsite Disposal. Under this alternative, soil that is contaminated at levels exceeding residential exposure PSs would be removed from the Bohneyard and would be disposed of offsite at a non-hazardous waste landfill. Excavated areas would be backfilled with clean fill and would be re-vegetated. Institutional controls and five-year reviews would not be needed to protect human health and the environment because soil posing potential risks would be removed permanently.

6 Evaluation of Alternatives

The NCP outlines the approach for comparing remedial alternatives. Evaluation of the alternatives uses "threshold," "primary balancing," and "modifying" criteria. All alternatives are evaluated against threshold and primary balancing criteria, which are technical criteria based on environmental protection, cost, and engineering feasibility. To be considered for remedy

Table 2
Features of Alternatives for Operable Unit 1, Soil, Sites 6 and 6A

Alternative	Main Components	Applicable Standards	Cost Present Worth, $
1 No Action	None	- Does not meet PSs - Does not meet ARARs	0
2 Cover with Institutional Controls	-Install a concrete, asphalt, or soil and gravel cover over all soil with concentrations exceeding human-health risk PSs -Institutional controls -Monitoring	- Provides barrier to potential receptors - Minimizes migration of contaminants - Meets all ARARs	Total = $1,720,000 NAS to provide $1,220,000 IR program to provide $500,000
3 Excavation and Offsite Disposal	-Excavate all soil with concentrations exceeding human-health risk PSs -Offsite Disposal -Backfill with clean soil	- Meets all PSs - Meets all ARARs	$ 2,600,000

*NAS to provide an additional $1,220,000 for cost to construct a concrete parking lot.

selection, an alternative must meet the two threshold criteria:

1. Overall protection of human health and the environment.
2. Compliance with ARARs and to-be-considered (TBC) criteria

The primary balancing criteria then are considered to determine which alternative provides the best combination of attributes. The primary balancing criteria are:

1. Long-Term Effectiveness and Permanence.
2. Reduction in Toxicity, Mobility, or Volume through Treatment
3. Implementability
4. Short-Term Effectiveness
5. Cost

The preferred alternative is evaluated further against two modifying criteria:

1. Acceptance by the MDE
2. Acceptance by the community

The remedial alternatives presented in Section 5 were evaluated in the FFS against the first seven of the nine criteria identified in the NCP. The two additional modifying criteria are evaluated after the public comment period for the PRAP. Table 2 presents a comparison of the alternatives. The summary analysis and evaluation of the first seven criteria are presented below. The FFS provides a more detailed analysis and evaluation.

Threshold Criteria

Overall Protection of Human Health and the Environment. Alternative 1 (no action) will not protect human health or the environment from soil contamination at the site. It will, therefore, not be considered further in this analysis. Alternative 2 would protect human health and the environment by containing contaminated soils that exceed the PSs on site under a concrete cover, a soil and gravel cover, or an asphalt cover. Institutional controls would restrict access to the site and limit its use to industrial activities. Alternative 3 would provide the highest level of protection of human health and the environment because this alternative would remove contaminated soil from the site.

Compliance with ARARs and TBCs. Alternatives 2 and 3 would comply with all ARARs and TBCs. Major ARARs for Alternatives 2 and 3 are:

- Sediment and Erosion Control requirements (Annotated Code of Maryland 4.1 and 4.2)
- Stormwater Management requirements (COMAR 26.09)
- Solid Waste Disposal requirements (COMAR 26.13.02, COMAR 26.13.04, Annotated Code of Maryland Title 7)

Primary Balancing Criteria

Long-Term Effectiveness and Permanence. Alternative 2 would be effective in the long term because covering has been demonstrated to provide long-term effectiveness. This alternative provides a means for protecting and monitoring the environment by controlling the sources of contamination at the site. The covers will require long-term maintenance to maintain their integrity. Alternative 3 would be the most effective in the long term because all sources of contamination would be removed from the site.

Reduction in Toxicity, Mobility, or Volume through Treatment. The primary contaminants of concern are metals. Treatment of metal contamination at levels detected in the soil at the Bohneyard is not fully effective. Therefore, none of the alternatives uses treatment to reduce the toxicity, mobility, or volume of soil contamination.

Implementability. Alternatives 2 and 3 are implementable using conventional, well-demonstrated, and commercially available technologies. Alternatives 2 and 3 have been proven to be reliable and readily implementable. Concrete covering, asphalt covering, and installing a soil cover over contaminated soils under Alternative 2 is a commonly used technology in terms of installation, operation, and maintenance. Excavation and offsite disposal of soils under Alternative 3 also is easily implementable, since excavation equipment and approved disposal facilities are commonly available.

Short-Term Effectiveness. Alternatives 2 and 3 would be effective in the short term. Excavating, handling, and transporting contaminated soil would be required under Alternative 3, and, thus the potential for unacceptable exposure is higher during excavation under Alternative 3 than under Alternative 2. However, any exposures to workers or to the community can be controlled adequately. The time to achieve the remedial action objectives for Alternatives 2 and 3 would be approximately 2 and 12 months, respectively.

Cost. The total estimated present-worth cost of Alternative 2 is $1,720,000. The funding for Alternative 2 will be provided by both the NAS and the IR program. The NAS and the IR program will provide $1,220,000 and $500,000, respectively. The estimated present-worth cost of Alternative 3 is $2,600,000.

Modifying Criteria

State of Maryland Acceptance. The MDE has reviewed the PRAP and supports the Navy's preferred alternative. However, their final concurrence with the alternative will be provided following review of all comments received during the public comment period.

Community Acceptance. Community acceptance of the preferred alternative will be evaluated after the public comment period ends. All public comments will be addressed in the responsiveness summary prepared for the Record of Decision (ROD) for Site 6 and Site 6A.

7 Preferred Alternative

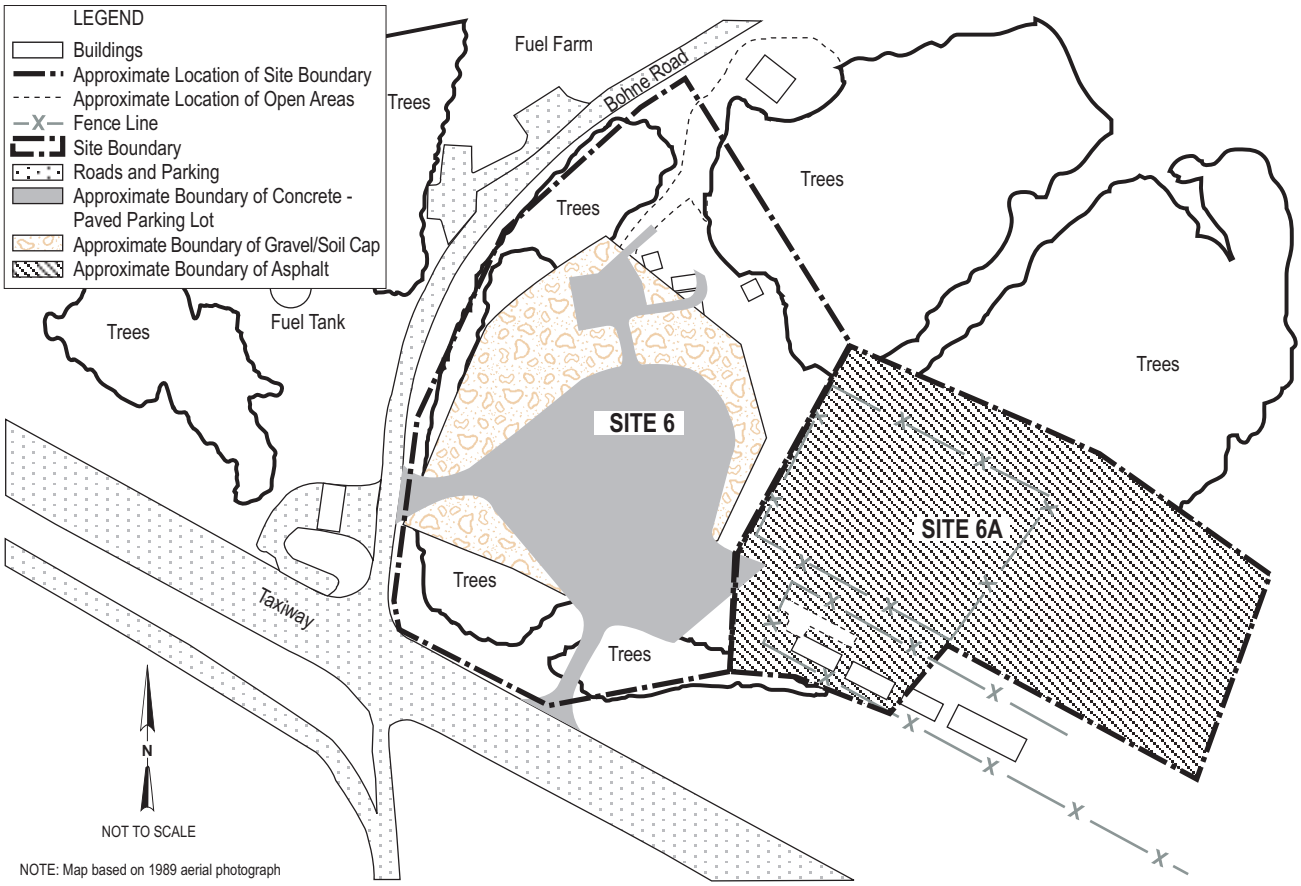
The Navy's preferred alternative is Alternative 2. The preferred alternative can change in response to public comments or new information. Alternative 2, displayed conceptually in Figure 3, meets the RAOs. By containing contaminated soil with gravel and soil, a concrete cover, or an asphalt cover, this alternative effectively addresses soil contamination that exceeds remediation goals at the Bohneyard. Based on available information and the current understanding of site conditions, Alternative 2 appears to provide the best balance with respect to the first seven of the nine NCP evaluation criteria. Alternative 2 achieves a level of protection comparable to Alternative 3 at approximately 1/2 the cost and limits the exposure of workers to contaminated soil during excavation. The preferred alternative is anticipated to meet the following statutory requirements:

- Protection of human health and the environment
- Compliance with applicable or relevant and appropriate requirements of federal and Maryland environmental laws
- Cost-effectiveness

At this site, treatment of inorganic (metal) contaminants is not practicable. For this reason, the preferred alternative does not satisfy the statutory preference for treatment.

The preferred alternative addresses soil contamination at the Bohneyard, providing for containment that prevents direct contact with on-site personnel. Institutional controls will protect human health and the environment further by limiting future land use and by providing continued long-term monitoring of the contaminants remaining on site.

Figure 3. Detail of Preferred Alternatives for Sites 6 and 6A.



This alternative also meets base long-term operational needs by reusing and centralizing an area for parking aircraft fueling trucks near petroleum storage tanks adjacent to the runway / taxiways. In addition, centralization will allow the base to redevelop approximately 23 acres which are currently used to park the fueling trucks.

8 Participation

A community relations program is being conducted through the installation restoration process. Public input is a key element in the decision making process. Nearby residents and other interested parties are strongly encouraged to use the comment period to relay questions and concerns they may have about the Bohneyard, the proposed remediation alternatives, and the preferred alternative. The Navy will summarize and respond to comments in a responsiveness summary, which will become a part of the official ROD.

This PRAP fulfills the public participation requirements of CERCLA Section 117(a), which specifies that the lead agency (the Navy) must publish a plan outlining remedial alternatives evaluated for the site and identifying the preferred alternative. The remediation alternatives are presented in detail in the FFS.

A restoration advisory board (RAB) was formed in 1995. Meetings continue to be held to provide an information exchange among community members, the EPA, MDE and the Navy. These meetings are open to the public and are held about every three months.

Public Comment Period

The public comment period for the PRAP gives the public an opportunity to provide input regarding the source control and risk reduction process for the Bohneyard. The public comment period will be from July 26, 1999 to August 27, 1999 and a public meeting will be held on August 10, 1999, at Frank Knox Training Center, Building 2819, located outside Gate 2. All interested parties are encouraged to attend the meeting to learn more about the alternatives developed for

the site. The meeting will provide an additional opportunity to submit comments on the PRAP to the Navy.

During the comment period, interested parties may submit written comments to the following address:

Commanding Officer
Attention: Environmental Support Group,
Ms. Joan Hinson
22445 Peary Road
Building 504
Patuxent River, Maryland 20670

Comments must be postmarked no later than August 27, 1999. Based on comments or new information, the Navy may modify the preferred alternative or choose another of the alternatives developed in the FFS.

Record of Decision

After the public comment period, the Navy, in consultation with the EPA and MDE, will determine whether the Proposed Plan should be modified based on the comments received. These modifications, if required, will be made by the Navy and will be reviewed by the EPA and MDE. If the modifications substantially change the proposed remedy, additional public comment may be solicited. If not, then the EPA and Navy will prepare and sign the ROD. The ROD will detail the remedial actions chosen for the site and will include the Navy's responses to comments received during the public comment period. Once the design is complete and a remedial action contractor is procured, the remedial actions will begin.

The Community Relations Plan, IR fact sheets, and final technical reports (including the FFS report) are available to the public at the following locations:

Lexington Park Public Library
1 Coral Place
Lexington Park, Maryland 20653
Phone (301) 863-8188

Hours of Operation:
Monday through Thursday 9:00 am to 8:00 pm
Friday 12:00 noon to 5:00 pm
Saturday 9:00 am to 1:00 pm

Patuxent River Naval Air Station Library
Cedar Point Road
Patuxent River, Maryland 20670
Phone (301) 342-1927

Hours of Operation:
Monday through Thursday 8:30 am to 6:00 pm
Friday 8:30 am to 5:00 pm

For more information about the

Installation Restoration Program

or to be added to the mailing list, please call

Environmental Public Affairs at (301) 757-4814.

or see the environmental web site at:

www.nawcad.navy.mil/envionrmental/

Glossary

ARARs — Applicable or Relevant and Appropriate Standards, Limitations, Criteria, and Requirements; these are federal or state environmental rules and regulations.

Backfill — Filling an excavated area.

CERCLA — Comprehensive Environmental Response, Compensation, and Liability Act (1980), also known as the Superfund Law, as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA). CERCLA provides the organizational structure and procedures for responding to releases of hazardous substances, pollutants, and contaminants from inactive hazardous waste disposal sites.

COC – Contaminant of Concern. Chemical compounds that have been identified as a concern for human health and the environment at detected concentrations.

Ecological Receptors — Living organisms that could be affected by contamination in the environment.

EPA — United States Environmental Protection Agency.

FS—Feasibility Study — Analysis of the practicability of a proposal; e.g., a description and analysis of potential cleanup alternatives for a site such as one on the National Priorities List. The feasibility study usually recommends selection of a cost-effective alternative. It usually starts as soon as the remedial investigation is underway; together, they are commonly referred to as the "RI/FS."

FFS—Focused Feasibility Study — An FS that is limited in scope to one operable unit or medium (such as soil), although measures will be taken to minimize impacts on other units or media at the site.

Institutional Controls — Administrative methods to prevent human exposure to contaminants, such as by restricting land development.

MDE— Maryland Department of the Environment.

Media — Soil, groundwater, surface water, or sediments at a site.

NCP – National Oil and Hazardous Substances Contingency Plan. Provides the organizational structure and procedures for preparing for and responding to discharges of oil and releases of hazardous substances, pollutants, and contaminants.

NPL – National Priorities List. Nationwide list of sites, developed by EPA, that identifies sites covered under CERCLA regulations for priority investigation and remedial action.

OU —Operable Unit— Term for each of a number of separate activities undertaken as part of a Superfund site cleanup. For example, cleanup of soil and groundwater could be two separate operable units.

Public Comment Period — The time allowed for the members of an affected community to express views and concerns regarding an action proposed to be taken by EPA, such as a rulemaking, permit, or Superfund remedy selection.

RCRA — Resource Conservation and Recovery Act. A 1976 regulation of the management of hazardous waste to ensure the safe disposal of wastes. The intent of the RCRA program is to protect public health and the environment by controlling hazardous waste.

ROD—Record of Decision— A public document that explains which cleanup alternative(s) will be used at National Priorities List sites where, under CERCLA, trust funds pay for the cleanup. A ROD also is a public document that explains which cleanup alternative was selected for a Superfund site.

RAOs—Remedial Action Objectives— Objectives of remedial actions which are developed based on contaminated media, contaminants of concern, potential receptors and exposure scenarios, human health- and ecological-risk assessment, and attainment of regulatory cleanup levels, if any exist.

IRI—Interim Remedial Investigation—Similar to a Remedial Investigation, but carried out prior to NAS listing on the NPL. An in-depth study designed to gather data needed to determine the nature and extent of contamination at a site, establish site cleanup criteria, identify preliminary alternatives for remedial action, and support technical and cost analyses of alternatives.

Performance Standards – Criteria that must be met by the selected remedial alternative in order to ensure that the action meets all remedial action objectives, including protection of human health and the environment.

Present-Worth Cost – Total cost, in current dollars, of the remedial action. The present-worth cost includes capital costs required to implement the remedial action, as well as the cost of long-term operations, maintenance, and monitoring.

Removal Action — Short-term immediate actions taken to address releases of contamination that require quick and timely response.

Groundwater — Subsurface water that occurs in soils and geologic formations that are fully saturated.

Sediment — Solid material transported by water that is deposited in layers along channels of flow.

Surface Water — Water that occurs on the ground surface, usually in the form of a lake, stream, river or other body of water.

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Paste
Postage
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Commanding Officer

Attention: Environmental Support Group

22445 Peary Road

Building 504

Patuxent River, Maryland 20670

Tape Here