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"FINAL PROPOSED PLAN FOR REMEDIAL ACTION AT OPERABLE UNIT 3 (OU 3) SITE 8  
FIREFIGHTING TRAINING AREA, BORESITE TEST RANGE AND HAZARDOUS WASTE  
STORAGE AREA NAS CECIL FIELD FL"  
1/1/1998  
ABB ENVIRONMENTAL SERVICES INC

# Proposed Plan for Remedial Action Naval Air Station Cecil Field Site 8, Operable Unit 3, Firefighting Training Area, Boresite Test Range, and Hazardous Waste Storage Area

Jacksonville, Florida

January 1998

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Terms that appear in *italics* within the text are defined in the glossary.

### 1.0 INTRODUCTION

The purpose of this *Proposed Plan* is to facilitate public participation in the selection of the remedial technology that will be used to clean up contamination at Site 8 (*Operable Unit [OU] 3*), the Firefighting Training Area, Boresite Test Range, and Hazardous Waste Storage Area, at Naval Air Station (NAS) Cecil Field (Figure 1).

In order to assist the public in understanding and evaluating the *remedial alternatives* being considered, the following information is presented in this document:

- background information on Site 8 developed through records review and field investigations;
- cleanup methods, or remedial alternatives, developed during the feasibility study (FS);
- the *preferred alternative* and the rationale for recommending it; and
- the schedule of events for public participation.

The cleanup alternatives discussed in this plan were developed for groundwater and sediment at Site 8 and were prepared by the Navy (the lead agency for site activities), the U.S. *Environmental Protection Agency* (USEPA), and the *Florida Department of*

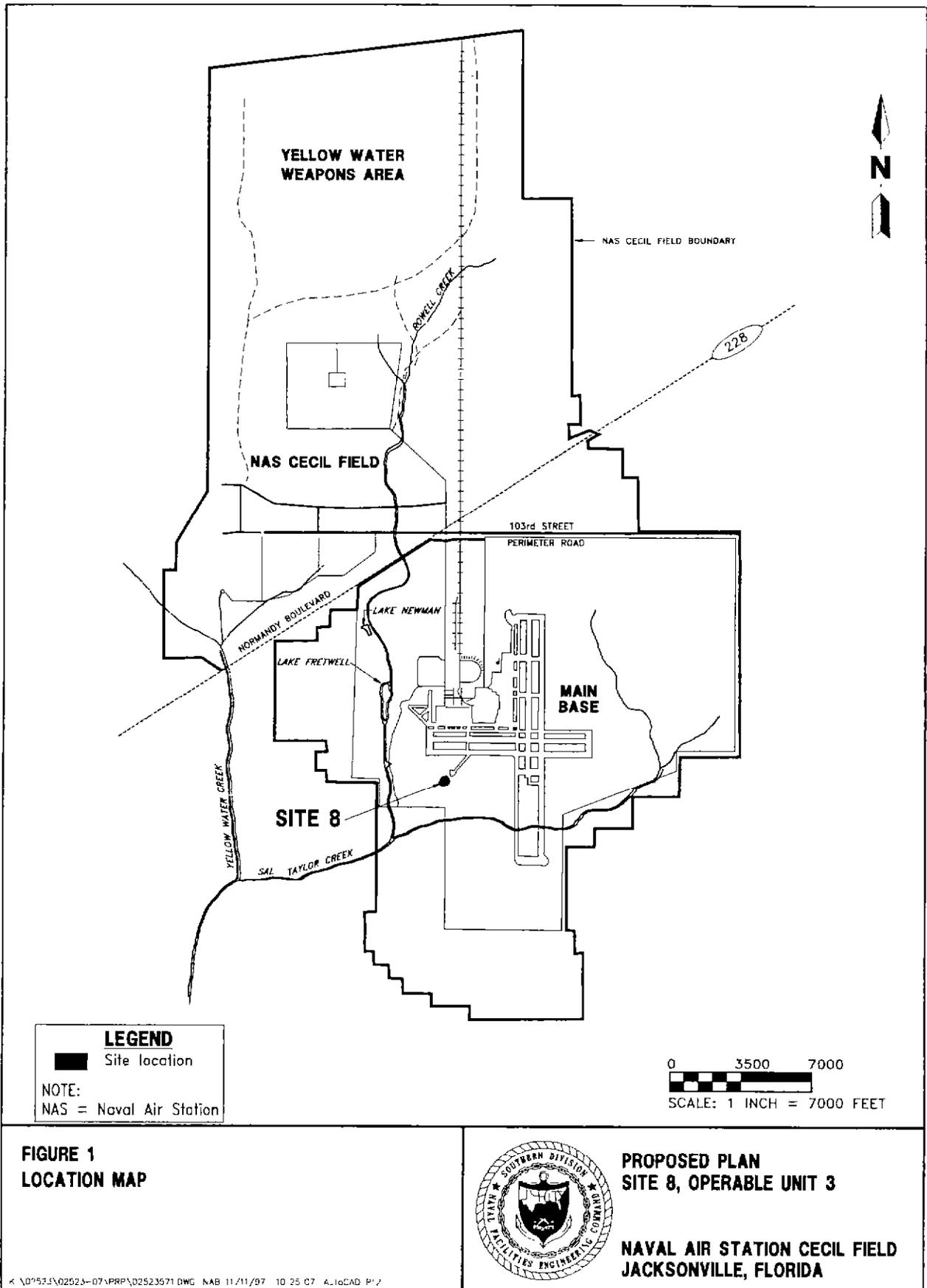
*Environmental Protection* (FDEP), in consultation with the NAS Cecil Field *Restoration Advisory Board* (RAB). The Navy, USEPA, and FDEP will select a remedy for Site 8 after receiving, reviewing, and considering comments from the public.

### Public Participation

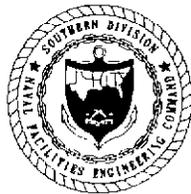
This Proposed Plan is intended to meet the public participation requirements of the *Comprehensive Environmental Response, Compensation, and Liability Act* (CERCLA), section 117(a). CERCLA requires that the Navy, as the lead agency, publish a document that describes the remedial alternatives being considered for a site and identify the preferred alternative.

Public input is a key element in the decision-making process of selecting a remedy for the site. Community members are encouraged to submit comments on this proposed plan during a public comment period from November 28 to December 28, 1997. Comments were also requested by Public Notice to the November 18, 1997 RAB meeting to discuss the draft Proposed Plan. If requested, a public meeting will also be held.

People are encouraged to submit comments or voice concerns they have regarding this Proposed Plan. In a *Responsiveness Summary*, which will be included in the *Record of Decision* (ROD) for Site 8,



**FIGURE 1  
LOCATION MAP**



**PROPOSED PLAN  
SITE 8, OPERABLE UNIT 3**

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the Navy will summarize and respond to the questions and comments received.

All available documents pertaining to Site 8 will become part of the public record and will be placed in the *Information Repository* located at the Charles D. Webb Wesconnett Public Library. The library address and telephone number are presented in Section 6.0 of this Proposed Plan.

## 2.0 SITE BACKGROUND

Site 8, Firefighting Training Area, Boresite Test Range, and Hazardous Waste Storage Area, is situated in the southwestern part of the main base. Site 8 is located approximately 1,600 feet south of the east and west flightlines and approximately 3,500 feet west of the north and south flightlines (Figure 1).

Features at Site 8 include a taxiway and concrete pad, the boresite backstop, an open field between the pad and boresite, and an asphalt-paved access road (Figure 2). Site 8 is surrounded by open fields and planted pine forest. When Site 8 was used as a training area, three pits existed along and abutted the turning pad. These pits were shallow, being approximately 3 feet deep, 60 feet wide, and 60 to 100 feet long.

From 1975 through 1988, firefighting training activities utilized the pits by placing aircraft frames in them, igniting the frames with flammable materials, then extinguishing the fires. Flammable materials included petroleum, oil, and lubricant wastes; waste paint and paint thinners; and chlorinated and nonchlorinated solvents. Extinguishing materials were composed of water and nontoxic proteinaceous materials such as fish, feather, horn, or hoof meal. Extinguishing materials and unburned wastes were left on site, where they evaporated or infiltrated into the soil or migrated from the site via surface runoff.

From the late 1970s to 1980, the site was also used for storage of unlabeled drums containing hazardous waste. Reportedly, some of these drums were stored in the open field between the concrete pad and the backstop and were shot through by aircraft guns, resulting in the spillage of liquid wastes on the ground.

## Summary of Previous Investigations

Investigations at Site 8 began in 1985. The findings of previous investigations are summarized below in chronological order.

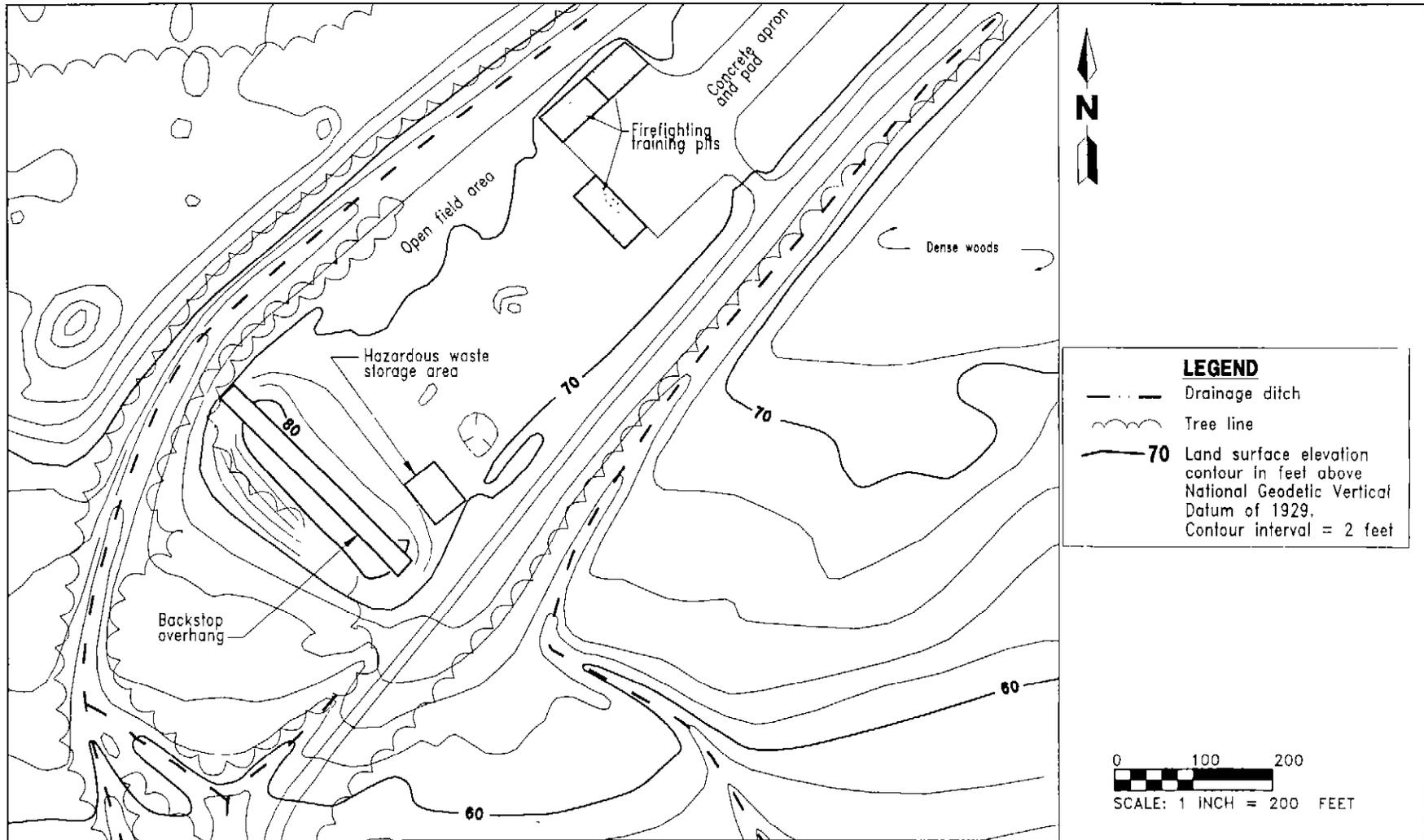
**Initial Assessment Study (IAS)**. The IAS was conducted in 1985 by Environdyne Engineers to identify waste sites at NAS Cecil Field warranting further investigation. The study included a review of historical data, as well as site visits and personnel interviews. No sampling activities were conducted. Site 8 was identified by the IAS as requiring further study.

**Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI)**. The RFI was conducted in 1988 by Harding Lawson Associates to assess sites identified in the IAS. One surface water, one sediment, seven soil, and four groundwater samples were collected during the RFI at Site 8. Soil analytical results indicated the presence of methylene chloride, 1,1,1-trichloroethane, chromium, and lead. All contaminant concentrations were below current guidance criteria. Contaminants were not detected in the other sampled media. The RFI recommended further investigation.

**Remedial Investigation (RI)**. RI activities were conducted by ABB Environmental Services (ABB-ES) during the fall of 1994, the spring of 1995, and the summer of 1997, to characterize the nature and extent of contamination at Site 8. Environmental samples for laboratory analysis were collected from surface soil, subsurface soil, groundwater, surface water, and sediment.

Analytical results indicate the presence of volatile organics, semivolatile organics (particularly polynuclear aromatic hydrocarbons [PAHs], total recoverable petroleum hydrocarbons [TRPH]) and inorganics in soil. Petroleum-related and chlorinated chemicals and inorganics were detected in groundwater. Surface water contamination included chlorinated solvents, pesticides, and inorganics. Sediment contamination included TRPH and the polychlorinated biphenyl, Aroclor-1260.

TRPH and PAHs were mainly detected in surface soil samples collected in the vicinity of the former training pits and in the open field between the



**FIGURE 2  
GENERAL FEATURES**



**PROPOSED PLAN  
SITE 8, OPERABLE UNIT 3**

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concrete pad and the backstop. TRPH were also detected in the subsurface soil at one sample location within the southernmost pit. TRPH were detected above guidance criteria; PAHs were not.

The inorganic, beryllium, was detected in three surface soil samples at concentrations near the guidance criteria.

Groundwater contaminants included the petroleum-related chemicals benzene, toluene, xylenes, and naphthalene and the chlorinated solvent 1,1-dichloroethene (1,1-DCE). Petroleum-related contaminants were detected in the groundwater immediately downgradient of the former training pits and east of the access road. Chlorinated chemicals detected were in groundwater collected from the wooded area east of the access road and south of the former training pits. Benzene, toluene, xylenes, naphthalenes, and 1,1-DCE were detected in the groundwater at concentrations greater than guidance criteria.

Contaminants in surface water and sediment samples were detected at concentrations below guidance criteria.

**Baseline Risk Assessment (BRA).** The BRA is an evaluation of whether or not an existing or a future exposure to contamination at the site could pose a risk to human health or the environment. For the BRA, the risks presented by the site are estimated with the assumption that no action would be taken to address contamination. This evaluation then serves as a baseline for assessing whether or not cleanup of the site is necessary. The first step in completing the BRA is to identify chemicals of potential concern, which are those chemicals present at the site above background conditions, USEPA risk-screening levels, and FDEP risk management criteria and could potentially pose a risk to human health or the environment. Different chemicals are identified as chemicals of potential concern for humans and ecological receptors.

The second step in completing the BRA is to conduct the exposure assessment. In this step, all the ways by which humans and ecological receptors can come into contact with soil, groundwater, surface water, and sediment are considered:

- For humans, under current conditions, the populations that may be exposed to media at Site 8 include adult and adolescent trespassers, adult site maintenance workers, and adult excavation workers. These populations may be exposed to contaminants through direct contact or inhalation.
- For humans, under future conditions, the hypothetical populations that may be exposed include adult and child resident, adult and adolescent trespasser, adult occupational worker, adult site maintenance worker, and adult excavation worker. These populations may be exposed to contaminants through ingestion, direct contact, or inhalation.
- For ecological receptors, the populations that may be exposed to surface soil and groundwater include terrestrial plants and benthic macro-invertebrates.

The third step in completing the BRA is to complete the toxicity assessment. At this step in the process, the possible harmful effects of exposure to each chemical of potential concern are evaluated. Generally, contaminants are separated into two groups: carcinogens (contaminants that cause cancer) and noncarcinogens (contaminants that cause adverse effects other than cancer).

The last step in completing the BRA is to conduct the risk characterization. In this step, the results of the exposure and toxicity assessments are combined to estimate the overall risk from exposure to site contamination.

Potential ecological and human health risks were identified for chemicals detected in surface water, sediment, surface soil, and groundwater at Site 8. Ecological risks posed by Aroclor-1260 and TRPH in sediment were assessed to be slight, if at all, and maximum concentrations were below guidance criteria. The low ecological risks may not exist because the sediment samples were collected from ditches that present poor aquatic habitat.

The ecological risk posed by aluminum in groundwater discharging to Site 8 ditches is interpreted to be overestimated. The reference species, salmon, used to assess risk is a northern-climate species not

found at NAS Cecil Field. Also, the ditches present a poor aquatic habitat and cannot support large aquatic animals.

Human health risks were estimated for chemicals in Site 8 surface soil, groundwater, and surface water. Beryllium accounts for the excess lifetime cancer risk due to exposure to surface soil by possible future aggregate (adult and child) resident ( $6 \times 10^{-6}$ ). 4,4'-Dichlorodiphenyltrichloroethane (DDT) was assessed to pose a risk to exposure to surface water by a trespasser ( $2 \times 10^{-6}$ ). 1,1-DCE, and to a lesser extent naphthalene and bis(2-ethylhexyl)phthalate, were assessed to pose a risk if the groundwater were used as a potable water supply by the aggregate resident ( $6 \times 10^{-5}$ ). These risks are within the USEPA acceptable risk range of 1 in 1,000,000 ( $1 \times 10^{-6}$ ) to 1 in 10,000 ( $1 \times 10^{-4}$ ), but greater than the FDEP threshold of  $1 \times 10^{-6}$ .

If the surficial aquifer groundwater were used as a potable water supply, ingestion of that groundwater would pose a noncancer hazard quotient (HQ) for iron, which exceeded the threshold value of 0.1 for a resident child.

Risk evaluation indicates that the chemicals detected in surface soil and surface water are slight and do not pose an unacceptable risk to human health or the environment. Risk posed by exposure to surface soil is for a resident population. Site 8 is an industrial site (aviation-related) and its future use will continue to be an industrial site. Risk posed by exposure to surface water is for a trespasser population that could wade in or drink the water. Surface water is intermittent over much of the drainage ditches at Site 8. Areas where surface water is persistent are not amenable to recreational activities (such as wading or fishing), and the water is not of potable quality, often being stagnant or silty and tannic.

**Summary of Site 8 Baseline Risk Assessment**

Median	Human Health Risk	Ecological Risk
Surface Soil	None	None
Groundwater	Yes	None
Surface Water	None	None
Sediment	None	Yes
Subsurface Soil	None	None

## Remedial Action Objectives (RAOs)

Based on site conditions, estimated risks, applicable or relevant and appropriate requirements (ARARs), and State criteria, and as a result of discussions with the NAS Cecil Field Base Realignment and Closure (Act) (BRAC) cleanup team (BCT) (which consists of representatives from the Navy, USEPA, and FDEP), the following RAOs were established for Site 8:

- Prevent exposure to groundwater that contains 1,1-DCE at concentrations greater than the Florida Groundwater Cleanup Goal.
- Prevent exposure to sediment containing Aroclor-1260 at concentrations exceeding the threshold exposure limit (TEL) and as a result may pose an unacceptable ecological risk. (Aroclor-1260 concentrations were, however, less than the probable effects level [PEL], and remedial action may not be warranted.)

In order to meet these objectives, two alternatives for soil and two alternatives for groundwater were evaluated for managing the migration of contaminants. A description of the alternatives is presented in Section 3.0. An alternatives evaluation summary is presented in Section 4.0, and the preferred alternative is presented in Section 5.0.

## 3.0 REMEDIAL ALTERNATIVES

Each of the alternatives for addressing groundwater and sediment contamination is discussed below.

### 3.1 Groundwater

**ALTERNATIVE 8GW1, No Action.** A No Action alternative is required by law. "No Action" means leaving the site the way it is today. The No Action alternative provides a baseline against which other alternatives can be compared. This alternative does not involve remedial actions to treat contaminated groundwater.

**ALTERNATIVE 8GW2, Natural Attenuation.** Existing data indicate that natural attenuation of contaminants in the surficial aquifer is already occurring. Under this alternative, naturally occurring biological, physical, and chemical processes within the surficial aquifer at Site 8 would be relied

on to reduce, over time, the concentrations of contaminants, particularly 1,1-DCE, in groundwater. This alternative includes groundwater monitoring (1) to verify that aquifer conditions continue to be amenable to natural attenuation, (2) to monitor the ongoing rate of degradation, and (3) to monitor potential contaminant migration beyond current limits. Alternative 8GW2 also includes groundwater use restrictions, 5-year site reviews, and modeling of groundwater flow and degradation processes.

A total of 12 wells will be sampled quarterly for the first year, and annually thereafter (Figure 3). Other components of this alternative include evaluation of assessment of chemical, microbial, and geochemical parameters. Microbial and geochemical parameters include biochemical oxygen demand, sulfate, chloride, nitrate, total and dissolved iron, dissolved organic carbon, redox potential, pH, dissolved oxygen alkalinity, and temperature.

### **3.2 SEDIMENT**

**ALTERNATIVE 8SD1, No Action.** A No Action alternative is required by law. "No Action" means leaving the site the way it is today. The No Action alternative provides a baseline against which other alternatives can be compared. This alternative does not involve remedial actions to treat contaminated sediment.

**ALTERNATIVE 8SD2, Dredging and Off-Site Disposal.** Under this alternative, sediment in the vicinity of sample locations CF8SD3, CF8SD4, and CF8SD8 (Figure 4), would be dredged to a depth of approximately 2 feet below the bottom of the ditch and transported to an appropriate off-site land disposal facility. Major components of this alternative include the following:

- delineation of the area to be dredged,
- site preparation,
- sediment dredging,
- waste characterization,
- transportation and disposal of the sediments,

- backfilling of the dredged area with clean fill, and
- site restoration.

## **4.0 ALTERNATIVES EVALUATION**

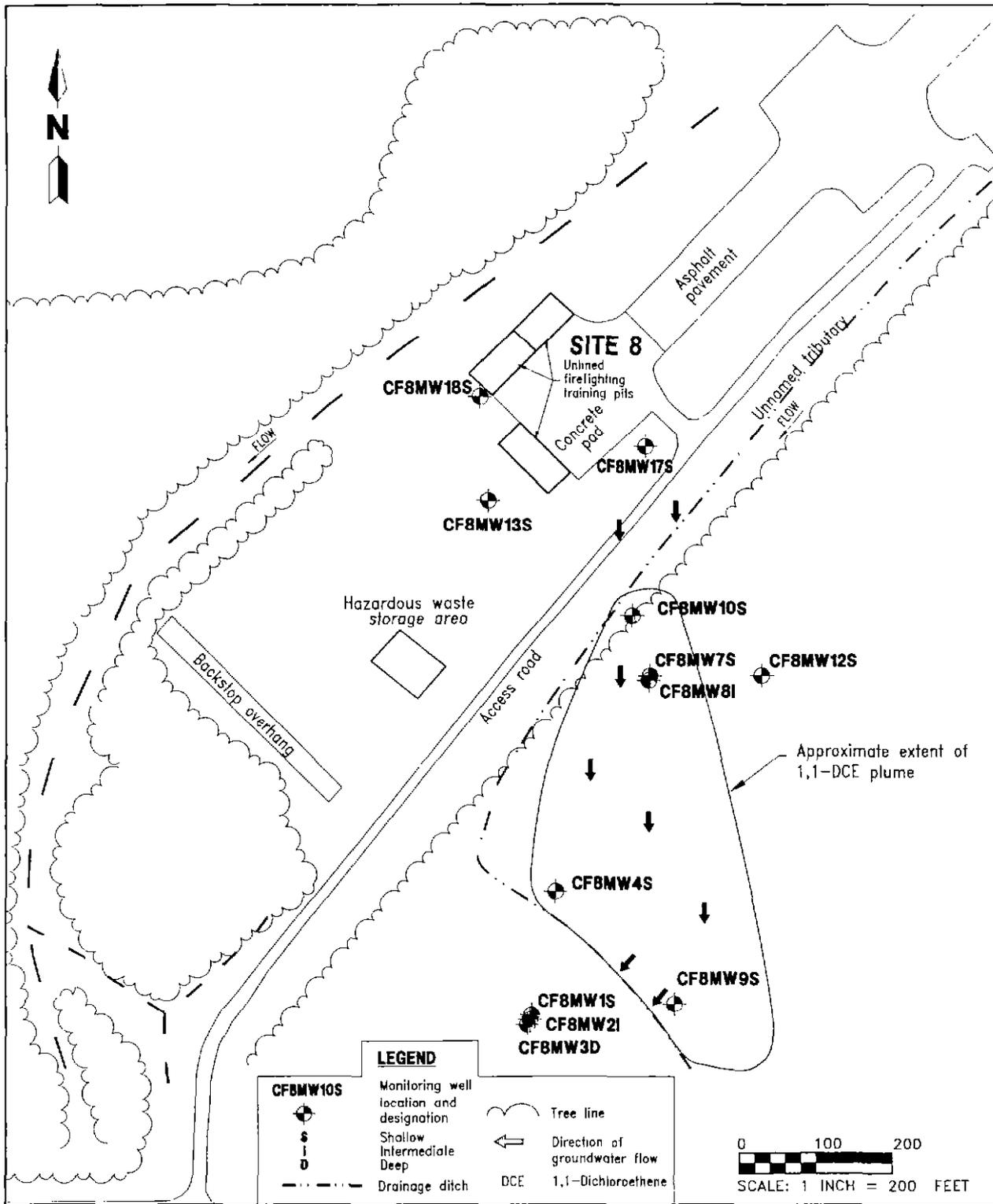
The *National Oil and Hazardous Substances Contingency Plan* outlines the approach for performing the *comparative analysis* of alternatives. The two alternatives are compared to nine criteria. The first seven criteria are technical criteria based on environmental protection, cost, and engineering feasibility. Table 1 presents an explanation of all nine criteria.

The nine criteria may be separated into three groups: threshold criteria, primary balancing criteria, and modifying criteria. The preferred alternative must satisfy the threshold criteria. Primary balancing criteria weigh the major tradeoffs among alternatives. Modifying criteria will be considered after review of public comments received on the Proposed Plan. The comparative analysis of the five alternatives is provided in the following paragraphs.

### **GROUNDWATER**

**Overall Protection of Human Health and the Environment.** According to the RI, human health risks for exposure to Site 8 groundwater were within the USEPA acceptable risk range, but were greater than  $1 \times 10^{-6}$ , the State human health risk threshold. Alternative 8GW1 provides no action or treatment and, therefore, would not reduce the human health risk, except over time. Alternative 8GW2 would eliminate human receptor exposure to chemicals of concern in Site 8 surficial aquifer groundwater both immediately and over time by (1) restricting use of the surficial aquifer groundwater and (2) degradation of the contaminants over time.

**Compliance with ARARs.** Alternative 8GW1 would not provide near-term compliance and may not be expected to achieve chemical-specific ARARs over time. In the short term Alternative 8GW2 would not comply with chemical-specific ARARs for 1,1-DCE. Data from the RI indicate,



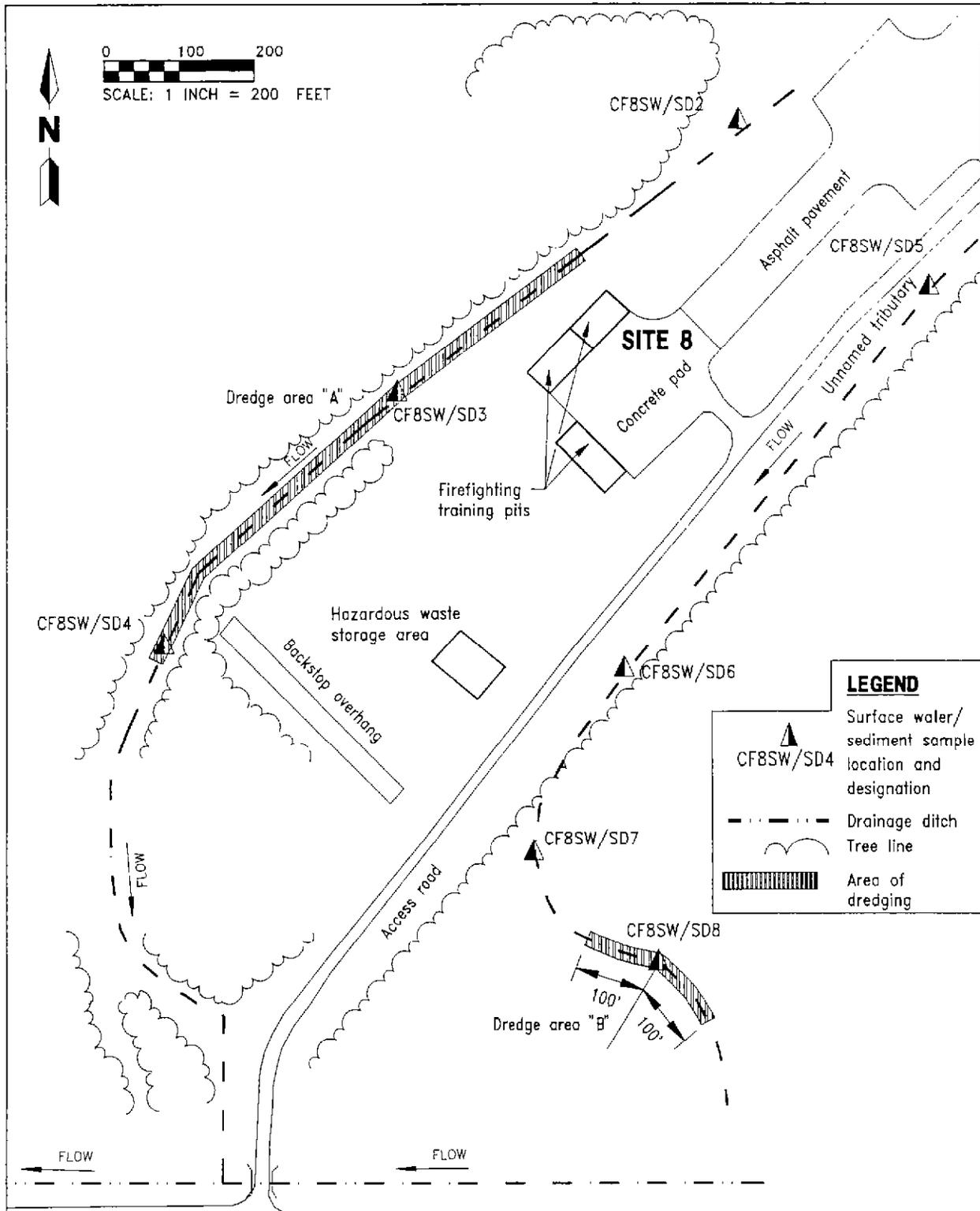
**FIGURE 3  
ALTERNATIVE BGW2, NATURAL ATTENUATION  
GROUNDWATER MONITORING LOCATIONS**



**PROPOSED PLAN  
SITE 8, OPERABLE UNIT 3**

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**FIGURE 4**  
**AREAL EXTENT OF SEDIMENT**  
**TO BE DREDGED**



**PROPOSED PLAN**  
**SITE 8, OPERABLE UNIT 3**

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**Table 1**  
**Explanation of Evaluation Criteria**

<b>Criteria</b>	<b>Description</b>
<b>Threshold</b>	<p><b>Overall Protection of Human Health and the Environment.</b> This criterion evaluates the degree to which each alternative eliminates, reduces, or controls threats to human health and the environment through treatment, engineering methods, or institutional controls (e.g., access restrictions).</p> <p><b>Compliance with State and Federal Regulations.</b> The alternatives are evaluated for compliance with environmental protection regulations determined to be applicable or relevant and appropriate to the site conditions.</p>
<b>Primary Balancing</b>	<p><b>Long-Term Effectiveness.</b> The alternatives are evaluated based on their ability to maintain reliable protection of human health and the environment after implementation.</p> <p><b>Reduction of Contaminant Toxicity, Mobility, and Volume.</b> Each alternative is evaluated based on how it reduces the harmful nature of the contaminants, their ability to move through the environment, and the amount of contamination.</p> <p><b>Short-Term Effectiveness.</b> The risks that implementation of a particular remedy may pose to workers and nearby residents (e.g., whether or not contaminated dust will be produced during excavation), as well as the reduction in risks that result by controlling the contaminants, are assessed. The length of time needed to implement each alternative is also considered.</p> <p><b>Implementability.</b> Both the technical feasibility and administrative ease (e.g., the amount of coordination with other government agencies needed) of a remedy, including availability of necessary goods and services, are assessed.</p> <p><b>Cost.</b> The benefits of implementing a particular alternative are weighed against the cost of implementation.</p>
<b>Modifying</b>	<p><b>U.S. Environmental Protection Agency (USEPA) and Florida Department of Environmental Protection (FDEP) Acceptance.</b> The final Feasibility Study and the Proposed Plan, which are placed in the Information Repository, represent a consensus by the Navy, USEPA, and FDEP.</p> <p><b>Community Acceptance.</b> The Navy assesses community acceptance of the preferred alternative by giving the public an opportunity to comment on the remedy selection process and the preferred alternative and then responds to those comments.</p>

however, that 1,1-DCE concentrations consistently decline in the downgradient direction of the plume and can be below its maximum contaminant level of 7 micrograms per liter ( $\mu\text{g}/\ell$ ) and the FDEP guidance concentrations ( $2.2 \mu\text{g}/\ell$ ). Over time, compliance with ARARs will be achieved as natural processes within the aquifer reduce contaminant concentrations.

#### **Long-Term Effectiveness and Permanence.**

Alternative 8GW1 could possibly provide long-term effectiveness and permanence through decay of the contaminants of concern. Alternative 8GW1 does not provide monitoring; therefore, effectiveness and permanence cannot be evaluated. Because of the monitoring component of alternative 8GW2, it will be known when contaminant concentrations in groundwater have declined to levels below guidance criteria values, thus achieving long-term effectiveness and permanence.

#### **Reduction of Toxicity, Mobility, and Volume through Treatment.**

Alternative 8GW1 would possibly provide reductions in toxicity, mobility, and volume through decay of the contaminants of concern over time. Alternative 8GW1 does not provide monitoring over time or evaluate the effectiveness of natural decay. With alternative 8GW2, the toxicity, mobility, and volume of waste would be monitored and verified if they have been reduced over time.

**Short-Term Effectiveness.** Alternative 8GW1 would provide no short-term effectiveness. Through implementation, alternative 8GW2 would provide an immediate reduction in risk to human health through groundwater use restrictions.

**Implementability.** Alternative 8GW1 is easy to implement in that no action is required. Alternative 8GW2 is relatively easy to implement as it does not require additional construction or site modification. This alternative does require groundwater sampling equipment, an analytical laboratory, modeling equipment, use restrictions, and 5-year reviews. This alternative will require appropriately trained field and office personnel and administrative oversight.

**Cost.** There is no cost associated with alternative 8GW1. The estimated present worth cost of alternative 8GW2 is approximately \$465,000 over a 30-

year period. Cost would be less if the goals of alternative 8GW2 are met before 30 years.

**State Acceptance.** Natural attenuation of 1,1-DCE in groundwater at Site 8 is considered a viable and acceptable solution by the BCT. As a result, the natural attenuation alternative is acceptable to the State.

**Community Acceptance.** Community acceptance of the preferred alternative (Section 5.0) will be evaluated after the public comment period ends. Public comments will be addressed in the Responsiveness Summary prepared in conjunction with the ROD for Site 8.

A comparative analysis of the two alternatives is presented in Table 2.

## **SEDIMENT**

#### **Overall Protection of Human Health and the Environment.**

Contaminants in Site 8 sediment do not pose a human health risk and occur in concentrations less than PEL values. Alternative 8SD1 does not involve remedial actions to treat contaminated sediment.

Alternative 8SD2 would eliminate ecological receptor exposure to chemicals of concern in Site 8 sediment by removing the contaminants from the ditches and disposing of them at an appropriate off-site land disposal facility. The excavated area will be filled with clean soil, and the potential exposure to sediment will be eliminated.

**Compliance with ARARs.** Because contaminant concentrations are below State PEL values, it is not necessary to determine a cleanup value, which would most likely be equal to or greater than the PEL value. Alternative 8SD1, then, complies with ARARs. Alternative 8SD2 would meet ARAR requirements, in that the contaminants of concern would be removed from the site and disposed of properly.

#### **Long-Term Effectiveness and Permanence.**

Alternative 8SD1 may provide long-term effectiveness and permanence through degradation of the contaminants of concern. Alternative 8SD2 would provide long-term effectiveness and permanence through the removal and backfilling process.

**Table 2**  
**Comparative Analyses of Remedial Alternatives**

Alternative	Threshold Criteria		Primary Balancing Criteria				
	Overall Protection to Human Health and Environment	Compliance with ARARs	Long-Term Effectiveness and Permanence	Reduction in Toxicity, Mobility, and Volume of Contaminants	Short-Term Effectiveness	Implementability	Cost
Alternative 8GW1 Site 8, Groundwater-No Action	Does not protect human health. No threat for the environment.	Eventually complies with the chemical-specific ARARs. Anticipated to take 20 to 30 years, however, may not be verified.	Anticipated to be effective over the long term, however, may not be verifiable.	Natural transformation processes (physical, chemical, and biological) are anticipated to reduce the toxicity, mobility, and volume of contaminants.	Contaminated groundwater is left onsite. Not effective over the short term	Easy to implement.	\$ 0
Alternative 8GW2 Site 8, Groundwater-Natural Attenuation	Use of groundwater models to implement the groundwater use restrictions and provide protection to human health.	Eventually complies with the chemical specific ARARs Anticipated to take 20 to 30 years.	Anticipated to be effective over the long term.	Natural transformation processes (physical, chemical, and biological) are anticipated to reduce the toxicity, mobility, and volume of contaminants.	Contaminated groundwater is left onsite. Not effective over the short term.	Easy to implement.	\$465,000
Alternative 8SD1 Site 8, Sediment No Action	No threat to human health at Site 8 sediments. No protection to ecological receptors is provided.	May meet chemical-specific ARARs.	May be effective over the long term.	May reduce the toxicity, mobility, and volume of the contaminants	Contaminated sediments are left onsite. Not effective over the short term.	Does not require any resources to implement "no action."	\$ 0
Alternative 8SD2 Site 8, Sediment-Dredging and Off-Site Disposal	Provides overall protection to human health and the environment.	Complies with the ARARs.	Provides long-term effectiveness.	Reduces the toxicity, mobility, and volume of contaminants.	Provides short-term effectiveness	Excavation and off-site disposal are implementable.	\$100,300 to \$473,700

Note: ARAR = applicable or relevant and appropriate requirement.

**Reduction of Toxicity, Mobility, and Volume through Treatment.** Alternative 8SD1 may not be effective in reducing the toxicity, mobility, and volume of the contaminants of concern. Alternative 8SD2 will reduce toxicity, mobility, and volume through the removal and backfilling process.

**Short-Term Effectiveness.** There would be no immediate reduction in risk to ecological receptors, macroinvertebrates, from alternative 8SD1. Alternative 8SD2 would reduce risk to macroinvertebrates through source removal. Implementation of alternative 8SD2, though, will completely destroy the ecological habitat of the dredge area.

**Implementability.** Alternative 8SD1 is easily implemented in that it requires no action. Alternative 8SD2 is relatively easy to implement. This alternative requires mobilization of a backhoe, Table 2 Comparative Analyses of Remedial Alternatives dump trucks, and related minor equipment. Disposal is expected to be relatively easy as several solid waste landfills that accept nonhazardous soil exist within the Jacksonville area.

**Cost.** There is no cost associated with alternative 8SD1. The estimated cost range of alternative 8SD2 is \$100,300 to \$473,700. The range of total costs is based on disposal of sediment and decontamination fluid as solid waste (RCRA Subtitle D) or hazardous waste (RCRA Subtitle C).

**State Acceptance.** Based on discussions among the Navy, FDEP, and USEPA, either alternative is considered a viable option.

**Community Acceptance.** Community acceptance of the preferred alternative (Section 5.0) will be evaluated after the public comment period ends. Public comments will be addressed in the Responsiveness Summary prepared in conjunction with the ROD for Site 8.

A comparative analysis of the two remedial alternatives is presented in Table 2.

## **5.0 PREFERRED ALTERNATIVE**

The preferred alternative is a combination of alternatives 8GW2, natural attenuation (Figure 5), and 8SD1, no action. Alternative 8GW2 will monitor the progress of the degradation of 1,1-DCE and

other contaminants of concern in the surficial aquifer groundwater, a process already taking place. Additionally, it will restrict the use of the surficial aquifer groundwater, thus providing immediate human health protection.

Alternative 8SD1 was selected because contaminant concentrations are below PEL values. It is probable that if cleanup values were developed for the sediment at Site 8, they would be equal to or greater than the PEL values.

## **6.0 UPCOMING SITE-RELATED COMMUNITY PARTICIPATION ACTIVITIES**

### **Public Comment Period**

The public comment period for the Proposed Plan is the next step in selecting the preferred alternative for Site 8, OU 3. A public comment period will be held from November 28 to December 28, 1997, to accept comments on the Proposed Plan for Site 8, OU 3.

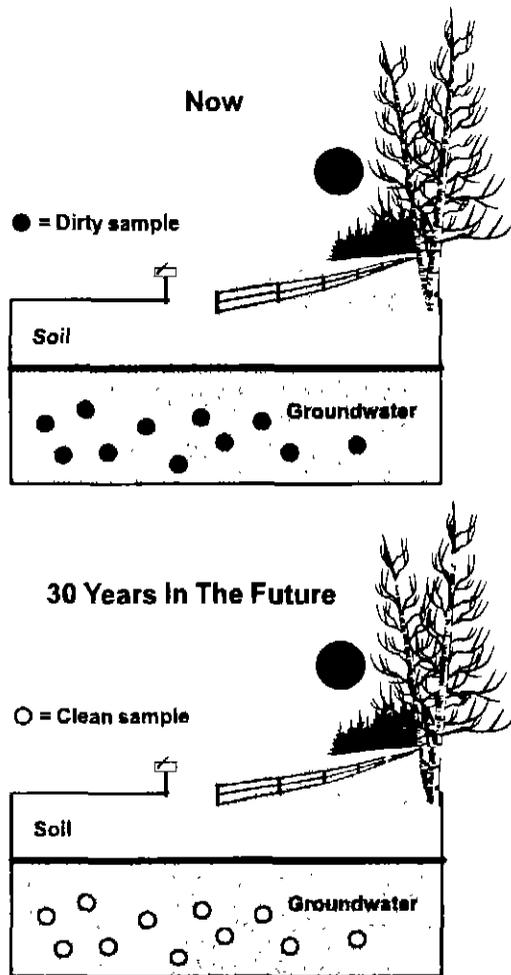
During the public comment period, interested parties may submit written comments to Mr. Charles Underwood, the NAS Cecil Field Public Affairs Officer, NAS Cecil Field, P.O. Box 111, Jacksonville, Florida 32215-0111 or email: pao@cecilfield.com. Based on public comments or new information, the Navy may modify the preferred alternative.

### **Public Meeting**

The public was invited to attend a meeting with the RAB on November 18, to discuss the Proposed Plan. If requested, a public meeting will be held to discuss recommendations of the Site 8 Proposed Plan. To request a meeting, please contact the NAS Cecil Field Public Affairs Office (see Available Information on page 13 for address and telephone number).

### **Signing of the ROD**

Following evaluation of comments received during the public comment period, the USEPA, FDEP, and the Navy will sign the ROD for Site 8. The ROD will detail the preferred alternative for the site and will include the Navy's responses to comments received during the public comment period. Once



### Alternative 8GW2: Annual Monitoring

- Leaves contamination in groundwater, relies on natural contamination breakdown and dispersion processes
- Includes groundwater-use restrictions and/or other institutional controls
- Includes monitoring program
- Site conditions reviewed every five years

### Factors To Consider

- Cost would be \$465,000 over an estimated 30 years
- Federal and State chemical concentrations limits currently exceeded in groundwater expected to be met only after the estimated 30-year period
- Preventing groundwater use would protect human health
- Requires enforcement and maintenance of institutional controls



**FIGURE 5  
ALTERNATIVE 8GW2: ANNUAL MONITORING**



**PROPOSED PLAN  
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the design of the selected alternative is complete, the remedial action will begin.

### Ongoing Informational Updates

NAS Cecil Field will keep the local community informed about new developments at Site 8 by preparing fact sheets and distributing them to individuals on the NAS Cecil Field mailing list. If you would like to be added to the mailing list, please contact Mr. Charles Underwood.

#### Available Information

Copies of the documents prepared by the Navy during the investigation of Site 8, OU 3, including the RI, BRA, and FS, are available for review at the following Information Repository:

Charles D. Webb Wesconnett Branch  
Jacksonville Public Library  
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For further information on Site 8, OU 3 or any other *Installation Restoration program* activities at NAS Cecil Field, please contact the Public Affairs Officer:

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## 7.0 GLOSSARY

**Comparative analysis:** A method for comparing the remedial alternatives to one another.

**Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA):** An act of Congress that established Superfund and the laws that must be followed when cleaning up certain hazardous waste sites.

**Feasibility study:** A description of the remedial action objectives and an engineering analysis of the potential cleanup alternatives for a site that pose risks to public health or the environment.

**Florida Department of Environmental Protection (FDEP):** The State agency that is involved in identifying and enforcing regulations and concurring with the preferred remedy at a site.

**Information Repository:** A public file containing the administrative record, site information, documents on site activities, and general information about the site.

**Installation Restoration program:** A program designed by the Navy for cleaning up contaminated sites at Navy bases.

**National Oil and Hazardous Substances Contingency Plan:** The Federal regulation (40 Code of Federal Regulations Part 300) that guides the Superfund program. The Navy's *Installation Restoration program* is patterned after the Superfund program.

**Onsite:** The region within a site's boundaries or within the limits of an area of concern.

**Operable Unit:** A grouping of sites based on types of waste disposed of and/or the suspected contaminants of concern.

**Preferred alternative:** The remedial technology selected to address contamination at a remedial investigation site.

**Proposed Plan:** A document that describes all the alternatives considered for addressing contamination at the site, including a description of the preferred alternative for remedial action at the site.

**Record of Decision (ROD):** The document, signed by the Navy, FDEP, and USEPA, that records the rationale and ultimate cleanup decision for a given site or operable unit.

**Remedial alternatives:** A combination of technical and administrative methods developed and evaluated in the FS that can be used to treat or manage contamination at a site.

**Responsiveness summary:** A section within the ROD that presents the Navy's responses to public comments on the Proposed Plan.

**Restoration Advisory Board (RAB):** An advisory board, composed mainly of concerned citizens and supported by representatives of the Navy, USEPA, and FDEP, tasked with advising NAS Cecil Field on activities associated with environmental restoration.

**U.S. Environmental Protection Agency (USEPA):** The Federal agency responsible for identifying and enforcing regulations and conducting the preferred remedy at a site.