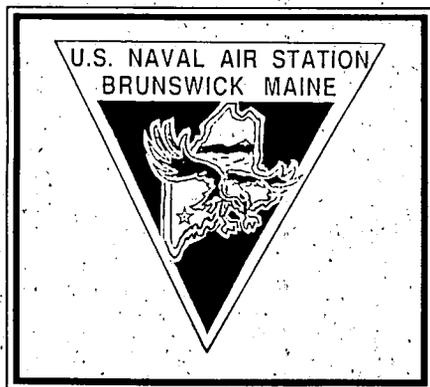


March 1993



Naval Air Station Brunswick

Installation Restoration Program (IRP)

Revised Proposed Plan for Site 8, the Perimeter Road Disposal Site

Introduction

In response to public input, the Navy has produced this revised ***Proposed Plan of remedial alternatives** to address Site 8, the Perimeter Road Disposal Site, under the **Installation Restoration Program (IRP)** at the Naval Air Station Brunswick, Brunswick, Maine. The IRP and the process of selecting remedial alternatives are conducted in accordance with the **Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)**, as amended by the **Superfund Amendments and Reauthorization Act (SARA)**. The IRP is also conducted in cooperation with the U.S. Environmental Protection Agency (USEPA) and the Maine Department of Environmental Protection (MEDEP). The Perimeter Road Disposal Site is the third of 13 sites at the Naval Air Station to make the transition from investigation to remedial action under the IRP.

A **Remedial Investigation and Focused Feasibility Study (RI/FFS)** conducted at Site 8 indicated that surface and shallow soils are contaminated with **polynuclear aromatic hydrocarbons (PAHs)**. A **Risk Assessment** was also conducted to evaluate the potential effects on human health and the environment. Remedial alternatives were evaluated and a **Soil Cover** was the **preferred alternative** offered for public input in the original Proposed Plan issued in October 1992.

Local residents attending the October 15th public meeting and hearing to discuss remedial alternatives for Site 8 requested consideration of excavation as a preferred alternative. Upon serious consideration of this suggestion in light of all available data, the Navy is issuing this revised Proposed Plan which presents Excavation and Use as Sub-grade Material at Sites 1 and 3 as the preferred remedial alternative to address Site 8.

The key components of this alternative are:

- 1) site preparation, including silt fencing or hay bales to prevent silt from entering a nearby stream;
- 2) excavation and transportation of 14,000 cubic yards of soil, rubble, and debris to Sites 1 and 3 for use as subgrade material prior to placement of a low-permeability cap over the landfills;
- 3) confirmation sampling, and
- 4) grading and seeding the excavated area to promote proper drainage and minimize erosion.

A more detailed description of this preferred alternative appears on Page 3. This revised Proposed Plan also contains:

- ◆ the public's role in evaluating remedial alternatives and sources for more information,

Introduction (Cont.)

- ◆ a brief profile of Site 8 and the findings of the Technical Memorandum and RI/FFS,
- ◆ objectives of the cleanup,
- ◆ a summary of the other alternatives considered, as well as the preferred remedial alternative,
- ◆ the criteria used to evaluate each remedial alternative and how each one measures up, and
- ◆ the rationale for preferring Excavation and Use as Subgrade Material at Sites 1 and 3.

The Public's Role in Evaluating Remedial Alternatives.

The public has already played a major role in the consideration of remedial alternatives for Site 8. The suggestion of excavation made at the October 15 public meeting and hearing is now the preferred alternative being proposed for Site 8. Detailed findings of the Technical Memorandum and RI/FFS for Site 8 can be reviewed at the public **Information Repository**. The Information Repository contains information specific to the remedial alternatives under consideration, the IRP in general, and also houses the **Administrative Record**. The Administrative Record includes documents and correspondence that form the basis for decision-making in the IRP, including transcripts of public meetings. The Information Repository is located at:

**Curtis Memorial Library
23 Pleasant Street
Brunswick, Maine 04011
Telephone: (207) 725-5242**

The Navy is also holding another public comment period to solicit any further input on the new preferred alternative or the other remedial alternatives for Site 8. The public comment period will be held from March 12 to April 12. Written comments received during the comment period will be considered by the Navy and regulatory representatives in selecting the final remedial action. These comments will be addressed in the **Responsiveness Summary** portion of the **Record of Decision** in the Administrative Record. Please submit written comments to:

**James Shafer
Naval Facilities Engineering Command
10 Industrial Highway, Mail Stop 82
Lester, Pennsylvania 19113-2090**

Because of the thoroughness of the presentation and the extent of public input at the October 15th public meeting and hearing regarding Site 8, a second public meeting will not be held.

If you have questions about this process or the IRP, please contact:

**Lt. Kurt Wallisch
Public Affairs Office
NAS Brunswick
Brunswick, ME 04011
(207) 921-2527**

**Mark Hyland
Maine DEP
State House Station 17
Augusta, ME 04333
(207) 287-2651**

**Meghan Cassidy
USEPA HAN-CAN 1
JFK Federal Building
Boston, MA 02203
(617) 573-5785**

Profile of Site 8, the Perimeter Road Disposal Site, and Findings of the Remedial Investigation (RI)

Site 8, the Perimeter Road Disposal Site, covers approximately one-half acre north of Perimeter Road on NAS Brunswick. (See Site Map on Page 4.) Site 8 was reportedly a disposal area for rubble, debris, and trash from 1964 to 1974. The site is a flat, open area with steep, wooded embankments leading down to two small tributaries. Surface runoff drains to these tributaries, which flow 1,800 feet north to discharge into the Androscoggin River.

The Navy completed RI activities for Site 8, which included extensive sampling and analysis of surface and subsurface soils, groundwater, leachate and sediments, and surface water and sediments. Results showed PAHs in surface and shallow soils. PAHs result from the incomplete burning of fuels or can exist naturally in the environment. High concentrations can be found in urban or industrialized areas, such as parking lots and airports. The pesticide DDT (dichlorodiphenyltrichloroethane) and some other contaminants were also detected at the site.

As part of the RI, a Risk Assessment was completed to evaluate the

potential effects of the site on human health and the environment. The risk associated with exposure to contaminants was calculated assuming both current use and future residential use of the site, which is the most conservative scenario. The estimated incremental, cumulative, carcinogenic risks to an individual under the current exposure scenarios were within or below the USEPA's target risk range. The noncarcinogenic Hazard Index was below 1.0. The assumed worst-case future residential exposure scenario resulted in a slightly higher carcinogenic risk. While this scenario is unlikely, excavation of the PAH-contaminated soil at Site 8 would address this potential risk. No other contaminants, such as DDT, were found to pose a risk to human health or the environment.

The RI also established that Site 8 does not impact the Jordan Avenue Wellfield due to the limited groundwater contamination at the site, the considerable distance between Site 8 and the wellfield, and groundwater patterns which flow to the tributaries rather than the wellfield.

Remedial Action Objectives

The primary remedial action objective is to reduce the human health and ecological risk associated with PAH-contaminated soil. In addition, other considerations include:

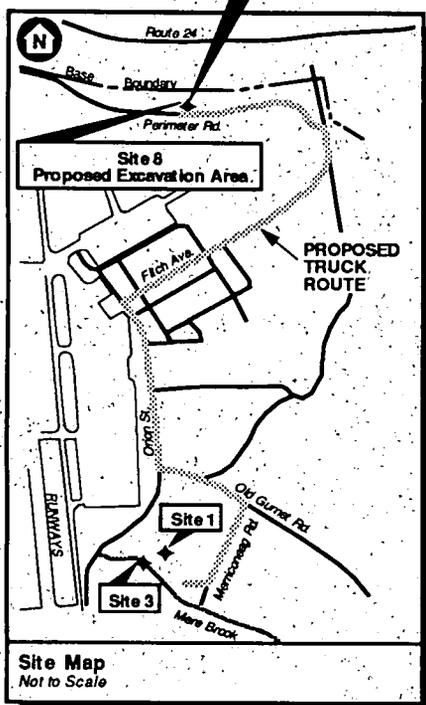
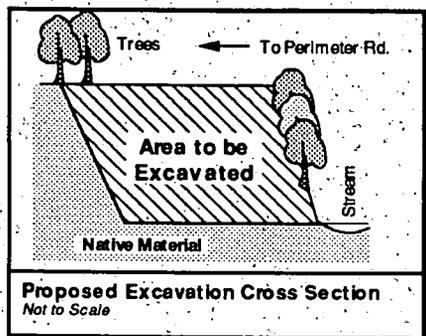
- ◆ compliance with Maine municipal solid waste landfill closure requirements, and
- ◆ the community's desire for less restricted land on base property, in case of future base closure.

The Preferred Alternative: Excavation and Use as Subgrade Material at Sites 1 and 3

The preferred alternative involves excavating PAH-contaminated soil, nonhazardous construction rubble, and debris from Site 8. Removing the rubble and debris along with the contaminated soil will free the site of future land use restrictions that would

be required if the debris was left in place. The excavated material would be transported to Sites 1 and 3 for use as subgrade material beneath the low-permeability cap approved for the sites. The alternative includes the following components:

**The Preferred Alternative:
Excavation and Use as
Subgrade Material at Sites
1 and 3 (Cont.)**



Site Preparation

Site preparation would be minimal because the area is flat and relatively free of trees and brush. Equipment would be brought to the site and stored in a designated area. Silt fencing or hay bales would be placed along the stream at the bottom of the embankment to prevent silt from entering it.

Excavation and Transportation of Material

An estimated 14,000 cubic yards of soil, construction rubble, and debris would be excavated from the embankment of the site. The amount of material to be excavated was estimated from boring, test pit, and monitoring well installation logs presented in the Draft Final Remedial Investigation and Supplemental Remedial Investigation Reports (E.C. Jordan Co., 1990 and 1991).

Because this excavation would be conducted in the vicinity of a stream, several location-specific **Applicable or Relevant and Appropriate Requirements (ARARs)** would apply to this effort:

- ◆ Maine Natural Resources Protection Act (38 MRSA, Section 480-A through S);
- ◆ Natural Resources Protection Act, Permit by Rule Standards (MEDEP Regulations, Chapter 305); and
- ◆ Town Shoreland Zoning Ordinances and State Minimum Guidelines.

Action-specific ARARs that apply to this alternative include:

- ◆ Occupational Safety and Health Administration Safety and Health Standards (29 CFR Part 1926);
- ◆ Clean Air Act National Ambient Air Quality Standards (40 CFR Part 50); and
- ◆ Maine Solid Waste Management Regulations (38 MRSA Section 1304).

Material would be excavated and loaded with a backhoe, which has an estimated reach of approximately 20 feet. This reach would enable the operator to excavate from the slope without moving the equipment to the bottom of the embankment. Dust emissions from excavated material would be controlled by wetting the material prior to excavation. Approximately 800 to 1,000 cubic yards of material would be excavated for transportation per day.

Material would be transported three miles in dump trucks to Sites 1 and 3. The material would be placed at Sites 1 and 3 for use as subgrade material prior to landfill cap construction. The fill material will ensure proper drainage and comply with design criteria for the cap. Obtaining the fill material from Site 8 precludes additional studies and the need to obtain fill material from an off-site source. Eight to ten 12-cubic-yard dump trucks would be needed to haul material at the projected pace of excavation; approximately 90 cubic yards per truck, per day. At this rate, excavation and transport would last from 15 to 20 days. The proposed excavation area, truck route, and Sites 1, 3, and 8 appear on the Site Map.

Confirmation Sampling

After excavation of the rubble and debris, soil samples would be collected and analyzed to confirm that removal of waste is complete. These sampling results would be submitted to the regulatory agencies for review.

Grading and Seeding

After confirmation sampling, the excavated area would be graded to minimize erosion. The area would then be seeded to reestablish vegetation.

Other Remedial Alternatives

No Action

The No Action Alternative is considered to assess impacts on human health and the environment if no actions are taken and to provide a comparison for other alternatives. However, monitoring and site reviews every five years would be conducted to detect changes in contamination at the site.

Minimal Action

Institutional controls such as fencing, warning signs, and land-use restrictions would be enforced at the site to prevent exposure to contaminants. These restrictions would remain in the event of base closure. Monitoring and five-year site reviews would be conducted

to detect changes in contamination at the site.

Soil Cover

The Soil Cover was originally the Navy's preferred alternative (Proposed Plan, ABB Environmental Services, Inc., September 1992). The alternative included a low-permeability cover topped with soil for vegetation, to minimize rain infiltration and to prevent contact with the contained material. In addition, this alternative met the State of Maine's requirement for site closure and minimized future potential health risks. The Soil Cover Alternative also included site inspections and maintenance, fencing and warning signs, and land use restrictions.

Criteria for Evaluating Alternatives

Under CERCLA, remedial alternatives are evaluated using nine criteria, as follows:

Overall Protection of Human Health and the Environment addresses how an alternative, as a whole, would protect human health and the environment. This includes an assessment of how public health and environmental risks are properly eliminated, reduced, or controlled through treatment, engineering, or institutional controls.

Compliance with Applicable or Relevant and Appropriate Requirements (ARARs) addresses whether an action complies with all state and federal environmental and public health laws and requirements that apply, or are relevant and appropriate to, the condition and cleanup options at a specific site.

Long-term Effectiveness and Permanence refers to the ability of an alternative to maintain reliable protec-

tion of human health and the environment over time, once the cleanup goals have been met.

Reduction of Toxicity, Mobility or Volume through treatment are three principal measures of the overall performance of an alternative. The 1986 amendments to CERCLA emphasize that, whenever possible, a selected treatment process should permanently reduce the level of toxicity of contaminants at a site, the spread of contaminants, and their amounts.

Short-term Effectiveness refers to the likelihood of adverse impacts on human health or the environment that may be posed during the construction and implementation of an alternative.

Implementability refers to the technical and administrative feasibility of an alternative, including the availability of materials and services.

Criteria for Evaluating Alternatives (Cont.)

Cost includes capital (up front) costs and long-term operational and maintenance costs. This is expressed as net present worth of the alternative over its period of performance.

State Acceptance addresses whether the MEDEP agrees with, opposes, or has no comment on the proposed alternative.

Community Acceptance addresses whether the community supports the proposed plan. This is evaluated based on comments received during the public comment period.

Of the nine criteria, protection of human health and the environment and

compliance with ARARs are the primary requirements that must be met. Consideration is then given to the strengths and weaknesses of each alternative with respect to long-term effectiveness and permanence, reductions of toxicity, mobility, or volume through treatment, short-term effectiveness, implementability, and cost. Consideration of state and community comments may be used to modify aspects of the preferred alternative or decide that another alternative provides a better balance.

The chart on this page is a summary of how each alternative, including the preferred alternative, meets each criteria.

Remedial Action Alternatives				
Criteria	No Action	Minimal Action	Soil Cover	Excavation and Use as Subgrade (Preferred)
Protection of Human Health and the Environment	No	Yes	Yes	Yes
Compliance with ARARs	No	No	Yes	Yes
Long-Term Effectiveness and Permanence	No	No, (and requires long-term monitoring and land use restrictions)	Yes, (and requires long-term monitoring & land use restrictions)	Yes, (and does not require long-term monitoring or land use restrictions)
Reduction of Toxicity, Mobility, or Volume	No	No	No	No
Short-Term Effectiveness	No	No	Yes, with precautions	Yes, with precautions
Implementation	Yes	Yes	Yes	Yes
Total Cost	\$161,000*	\$197,000*	\$484,000*	\$328,000
State Acceptance	No	No	Yes	Yes
Community Acceptance				Preference Indicated

* Refers to treatment of contamination which does not apply to any of these alternatives.

* Costs include 5-year reviews required by CERCLA.

Rationale for the Preferred Alternative

Excavation and Use as Subgrade Material at Sites 1 and 3 is the Navy's preferred alternative for the following reasons.

- ◆ Removal of material from the site would eliminate physical hazards. Placement of the material under the landfill cap would limit accessibility to the excavated material and contaminated soil.
- ◆ The alternative meets Maine regulations for solid waste landfill closure.
- ◆ Site 8 would not have future land use restrictions left in place, which addresses the community's desire for less restricted land on base.
- ◆ Excavation and transportation of material is a common practice; equipment is readily available and is relatively cost-effective.

Glossary

Administrative Record:

A public file of information that forms the basis for the selection of remedial actions. The Administrative Record is available to the public.

Applicable or Relevant and Appropriate Requirements (ARARs):

ARARs include any state or federal statutes or regulations that pertain to protection of public health and the environment in addressing certain site conditions or in using particular remedial technology.

Carcinogenic:

A chemical that causes or induces cancer

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA):

A federal law passed in 1980 and modified in 1986 by the Superfund Amendments and Reauthorization Act (SARA). The acts require federal agencies to investigate and remediate hazardous waste sites.

Dichlorodiphenyltrichloroethane (DDT):

A pesticide commonly used in the 1960s and 1970s until being banned in the United States in 1974.

Focused Feasibility Study (FFS):

A report that presents the development and analysis of specific remedial alternatives.

Groundwater:

Water found beneath the earth's surface.

Hazard Index:

A total comparison of the exposure dose to its acceptable limit for each chemical. Ratios greater than 1 represent an unacceptable risk. Ratios less than or equal to 1 represent an acceptable risk.

Glossary (Cont.)

Information Repository:

A public file of IRP information. Information on the Naval Air Station's sites is available at the Curtis Memorial Library.

Installation Restoration Program (IRP):

The IRP is the Department of Defense program that deals with investigating and remediating sites from past activities associated with suspected releases of toxic and hazardous materials.

Leachate:

Water that has passed through waste.

Polynuclear Aromatic Hydrocarbons (PAHs):

A group of organic chemicals typically formed during the combustion of hydrocarbon fuel, or that can exist naturally in the environment. PAHs are found in high concentrations in urban or industrial areas, or in the vicinity of airports. PAHs are relatively immobile in the environment. Some PAHs are believed to cause cancer, while others have not been observed to produce adverse health effects.

Preferred Alternative:

The remedial alternative that appears to best meet remedial action objectives, as outlined in a Proposed Plan.

Proposed Plan:

A public document that solicits input on a recommended remedial alternative. The Proposed Plan is based on information and technical analysis generated during the RI/FS.

Record of Decision (ROD):

A public document that announces the remedial alternative to be used at the site. The ROD is based on information and technical analysis generated during the RI/FS and in consideration of public comments received on the Proposed Plan. The ROD includes a Responsiveness Summary of public comments, and corresponding responses.

Remediate:

To take long-term action to address a site condition.

Remedial Action:

A long-term action that stops or substantially reduces a release, or chance of a release, of hazardous substances that is considerable but not an immediate threat to human health or the environment.

Remedial Alternative:

An option evaluated to address the source and/or migration of contaminants to meet health-based remediation goals.

Glossary (Cont.)

Remedial Investigation (RI):

The Remedial Investigation establishes the nature, extent, and composition of contamination at a hazardous waste site, and assists in identifying appropriate remedial alternatives.

Responsiveness Summary:

Part of the ROD that outlines public input on remedial alternatives and the corresponding responses.

Risk Assessment:

Evaluates the potential risk to human health and the environment to help assess remedial alternatives.

Superfund Amendment Reauthorization Act (SARA):

See CERCLA

Target Risk Range:

The range of increased risk associated with exposure to a carcinogen resulting in 1 additional cancer incident in 10,000 to 1 million exposed people.

Sediment:

The sand or mud found at the bottom and side of water bodies such as creeks, rivers, streams, lakes, swamps, and ponds. Sediments typically consist of soil, silt, clay, plant matter, and sometimes gravel.

Toxicity:

The degree of danger posed by a substance to animal or plant life.