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EPA Superfund
Record of Decision:

PATUXENT RIVER NAVAL AIR STATION
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PATUXENT RIVER, MD
09/29/1999

Record Of Decision

for

Operable Unit 1 , Soils

Bohneyard (Sites 6 and 6A)

Naval Air Station Patuxent River

Patuxent River, Maryland

Engineering Field Activity Chesapeake

Naval Facilities Engineering Command

September 1999

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Acronyms and Abbreviations

ARAR	applicable or relevant and appropriate requirement
bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, and xylene
CERCLA	Comprehensive Envirorunental Response, Compensation, and Liability Act of 1980
CFR	Code of Federal Regulations
COC	Chemical of Concern
COMAR	Code of Maryland Regulations
DDD	dichlorodiphenyldi-chloroethane
DDE	dichlorodiphenyldichloro-ethane
DDT	dichlorodiphenyltrichloro-ethane
EE/CA	Engineering Evaluation/Cost Analysis
EPA	U.S. Environmental Protection Agency
ERA	Ecological Risk Assessment
FFS	Focused Feasibility Study
HRS	Hazard Ranking System
IAS	Installation Assessment Study
IR	Installation Restoration
IRI	Interim Remedial Investigation
LUCAP	Land Use Control Assurance Plan
LUCIP	Land Use Control Implementation Plan
mg/kg	milligrams per kilogram
MDE	Maryland Department of the Environment
msl	mean sea level
NAS	Naval Air Station
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NPL	National Priorities List
OSWER	Office of Solid Waste and Emergency Response (EPA)
OU	Operable Unit
PAH	polynuclear aromatic hydrocarbon
PCB	polychlorinated biphenyl
PRAP	Proposed Remedial Action Plan
PS	Performance Standard

Acronyms and Abbreviations (Cont.)

RAO	remedial action objective
RFA	RCRA Facilities Assessment
RCRA	Resource Conservation and Recovery Act
RI	Remedial Investigation
ROD	Record of Decision
SARA	Superfund Amendments and Reauthorization Act of 1986
SSL	soil screening level
SVOC	semivolatile organic compound
TBC	to be considered
TCE	trichloroethylene
TCL	target compound list
TPH	total petroleum hydrocarbon
U.S.C.	United States Code
U.S. Navy	United States Department of the Navy
VOC	volatile organic compound

1.0 Declaration

1.1 Site Name and Location

This Record of Decision (ROD) addresses Operable Unit 1 (OU-1), soil, at Sites 6 and 6A (the Bohneyard), located at Naval Air Station (NAS) Patuxent River in St. Mary's County, Maryland.

1.2 Statement of Basis and Purpose

This ROD presents the selected remedial action for the Bohneyard, OU-1, NAS Patuxent River.

The selected remedy was chosen in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). This decision is based on the Administrative Record for the Bohneyard site developed in accordance with Section 113(k) of CERCLA, and is available for public review.

The United States Department of the Navy (U.S. Navy) and the United States Environmental Protection Agency (EPA) Region III issue this ROD jointly. The Maryland Department of Environment (MDE) concurs with the selected remedy for the Bohneyard, OU-1 (see Appendix A). Public comments are discussed in Section 3.0, "Responsiveness Summary."

1.3 Assessment of Sites 6 and 6A, Bohneyard

Actual or threatened releases of hazardous substances from the Bohneyard, OU-1, if not addressed by implementing the response action selected in this ROD, may present an imminent and substantial endangerment to public health, welfare, or the environment.

1.4 Description of the Selected Remedy

The remedy for the Bohneyard, OU-1, is part of a comprehensive environmental remediation currently being conducted at the NAS Patuxent River under the CERCLA program. The selected remedy in this ROD is for controlling contaminated soil at the Bohneyard. The major components of the selected remedy for OU-1 include the following:

- A concrete and asphalt parking lot will be constructed over approximately one-half of Site 6.

- A cover comprised of 8 inches of topsoil over 4 inches of compacted gravel will be placed over the remaining area of Site 6 in which concentrations of hazardous substances are greater than the site worker exposure Performance Standards (PSs) set forth in Table 2-1 of this ROD.

- At Site 6A, an asphalt cover will be constructed for storage and staging.

- Institutional controls will consist of access restrictions to prevent trespassing, limiting access to groundwater underlying Sites 6 and 6A, and monitoring to assess whether contaminants are migrating to the environment.

1.5 Statutory Determinations

The remedy for the Bohneyard, OU-1, selected by the EPA and the U.S. Navy with MDE concurrence, is protective of human health and the environment. The selected remedy complies with federal and state requirements that are legally applicable or relevant and appropriate to the remedial action, and uses alternative treatment technologies or resource recovery technologies to the maximum extent practicable.

The selected remedy is cost-effective, and it uses permanent solutions for the site. At this site, treatment of contaminants is not practicable. For this reason, the selected remedy does not satisfy the statutory preference for treatment.

Because the selected remedy will result in hazardous substances remaining onsite above health-based levels, a review will be conducted every 5 years after commencement of the remedial action to ensure that the remedy continues to provide adequate protection of human health and the environment. The review will be consistent with Section 121(c) of CERCLA, 42 United States Code (U.S.C) Section 9621 (c).

1.6 Signature and Support Agency Acceptance of the Remedy

This ROD represents the selection of a remedial action under CERCLA for the Bohneyard-Sites 6 and 6A, OU-1.The foregoing represents the selection of a remedial action by the EPA and the U.S.
Navy, with the concurrence from the MDE.

Concur and recommend for immediate implementation:

United States Department of the Navy

By: Paul E Roberts | Date: 29 Sept 99

Captain Paul Roberts, USN
Commanding Officer
Naval Air Station
Patuxent River, Maryland

United States Environmental Protection Agency

By: [illegible] | Date: 9/29/99

Abraham Ferdas, Director
Hazardous Site Cleanup Division (3HS00)
U.S. Environmental Protection Agency, Region III
Philadelphia, Pennsylvania

2.0 Decision Summary

2.1 Site Name, Location, and Description

This ROD presents the U.S. Navy's selected remedial actions for OU-1 (soil) at Sites 6 and 6A (the Bohneyard).

NAS Patuxent River is located in St. Mary's County in southern Maryland, at the confluence of the Patuxent River and Chesapeake Bay (Figure 2-1). The community of Lexington Park is about 1 mile west of the site and next to the installation boundary. The Bohneyard is located in the northwest part of the NAS (Figure 2-2).

The Bohneyard is located in the northwestern part of the NAS, at the intersection of Bohne Road (now named Bonnie Road) and the taxiway, as shown in Figure 2-2. The Bohneyard covers an area of approximately 10 acres ranging in elevation from about 35 to 45 feet above mean sea level (msl) and gently slopes towards the west. Site 6 is bounded on the west and northwest by Bonnie Road, and on the southwest by a taxiway. Site features consist of buildings associated with a fuel farm on the northeastern side and trees on the southern, eastern, 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.

2.2 Site History and Enforcement Activities

The history of the Bohneyard, previous site investigations, and site enforcement activities are summarized below.

2.2.1 History of Site Activities

Between 1943 and 1949, fly ash and bottom ash from the station's coal-fired power plant were disposed of at Site 6. It is estimated that approximately 110,000 cubic feet, or 6,000 tons, of ash were deposited in a 6-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 show that drums also were stored in sections of Site 6A. Starting in 1966, drums of waste solvents, paints, and possibly pesticides also were stored. Other materials reportedly stored here included 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 8 tons of liquid wastes were disposed of or spilled. Various other materials, such as scrap metal, vehicles, and equipment, also were stored at Site 6.

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

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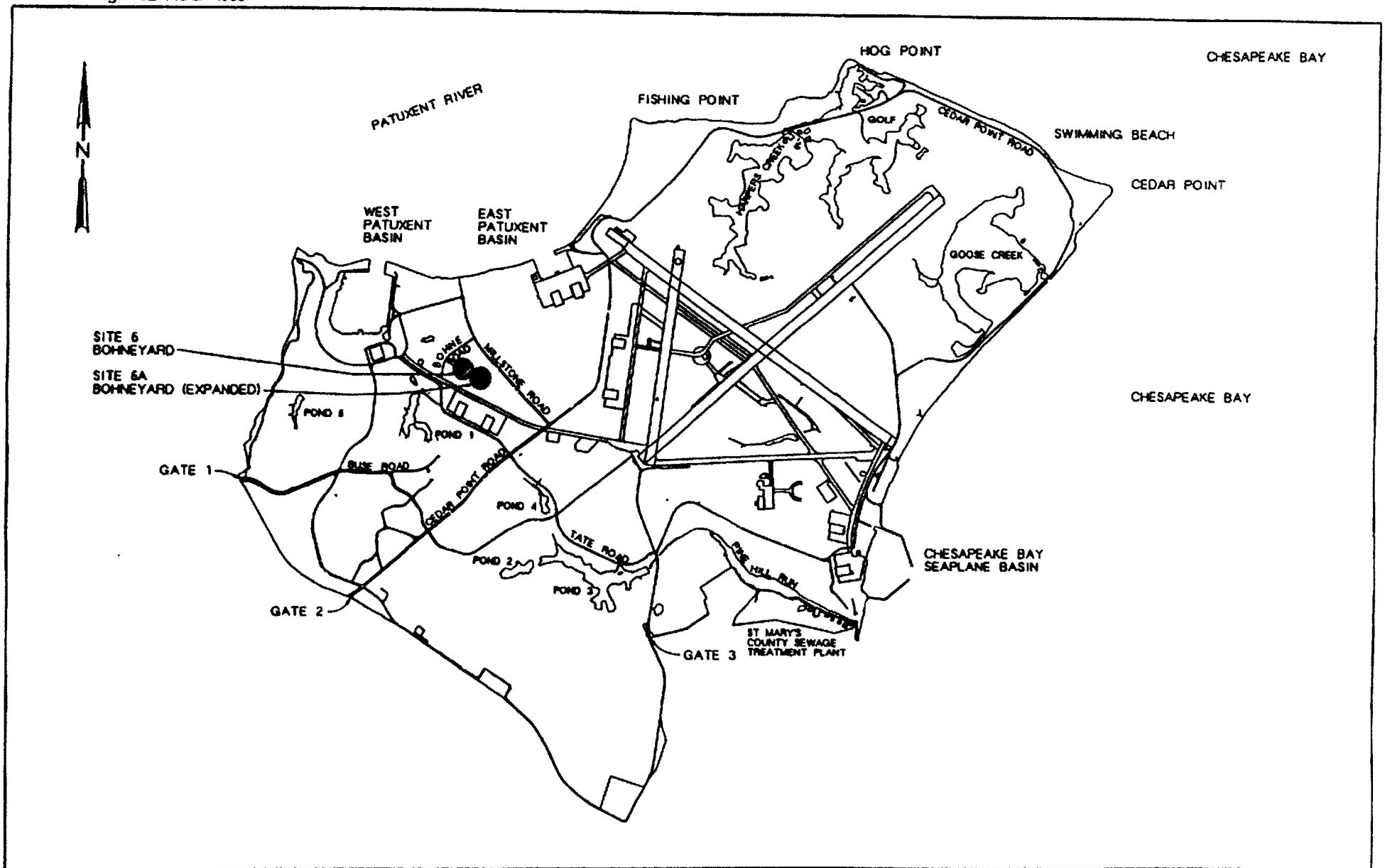

LEGEND

● BOHNEYARD SITE

FIGURE 2-1
LOCATION OF SITES 6 AND 6A
NAS PATUXENT RIVER
MARYLAND

CH2MHILL

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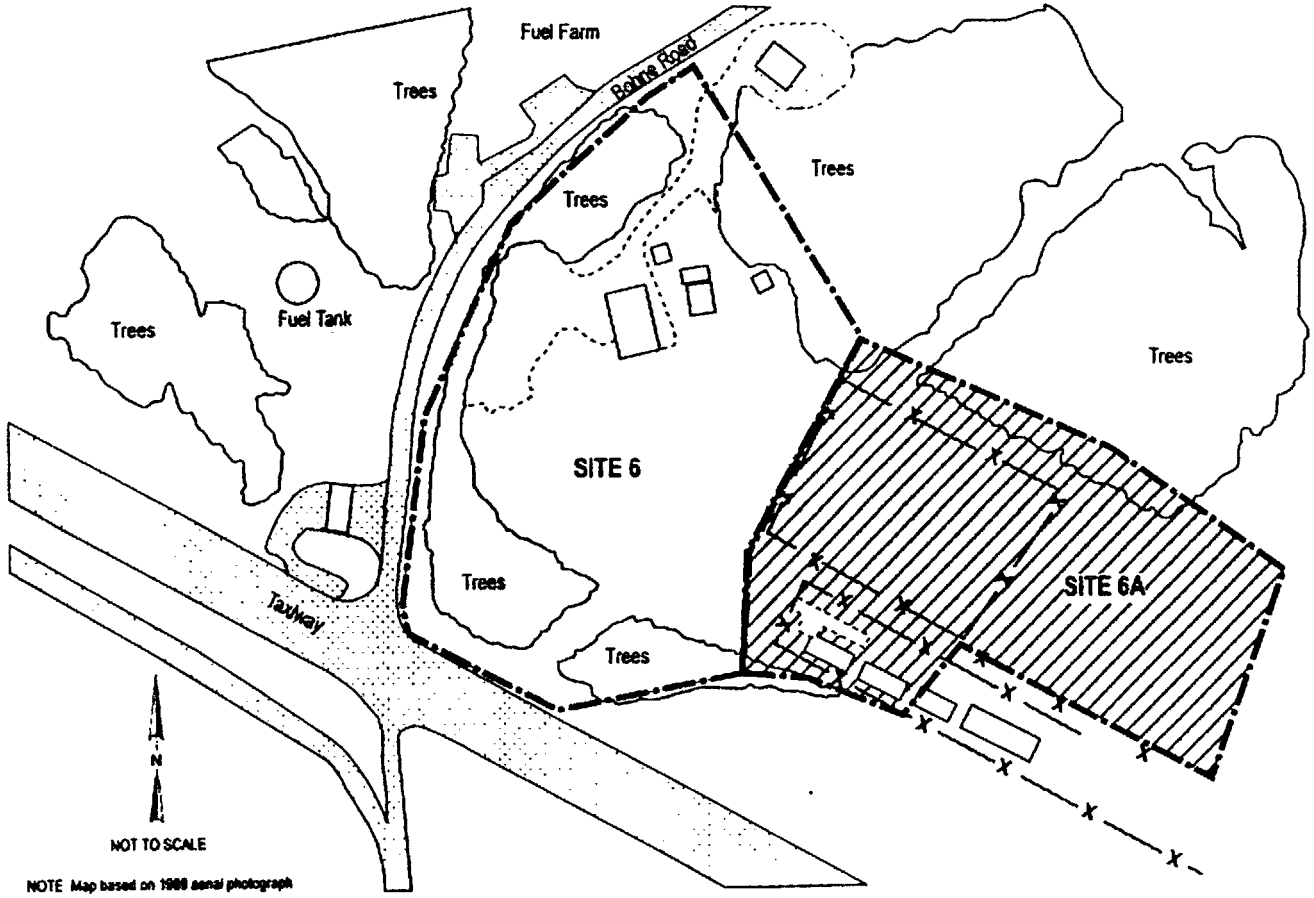

LEGEND

- Buildings
- Approximate Location of Open Areas
- Fence Line
- Site 6
- Site 6A
- Roads and Parking

FIGURE 2-2
SITES 6 AND 6A—Bohneyard Locations
NAS PATUXENT RIVER
MARYLAND

CH2MHILL

2.2.2 Summary of Previous Investigations and Response Actions

Investigations of Site 6 and Site 6A were conducted between 1984 and 1999. 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). In 1989, as part of the Resource Conservation and Recovery Act (RCRA) process, EPA conducted an assessment 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 contents of the tank were removed and disposed of offsite. There was no offsite soil disposal associated with the tank removal.

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 response 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.

Predesign 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 soil.

Ongoing Remedial Investigation for the Bohneyard, OU-2. Groundwater, surface water, and sediment 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.

2.2.3 Summary of Enforcement Actions

No enforcement actions have been taken specifically at Sites 6 and 6A. The U.S. Navy has owned the property since the early 1940s, and has been identified as the responsible party.

On June 30, 1994, NAS Patuxent River was placed on the National Priorities List (NPL). The NPL is the nationwide list, developed by EPA, which identifies sites covered under CERCLA regulations for priority investigation and remedial action.

2.3 Highlights of Community Participation

The proposed remedial action for the Bohneyard, OU-1, described in the FFS and the Proposed Remedial Action Plan (PRAP), was released to the public on July 27,1999. The public comment period for the remedial action documents was held from July 26, 1999, to August 27,1999. A public meeting was conducted on August 10, 1999, at the Frank Knox Training Center, Building 2189, located outside Gate 2. A copy of the PRAP Notice of Availability and the transcripts of the public meeting are provided in Appendix B.

The PRAP, as well as other technical documents related to the Bohneyard, was placed in the Administrative Record at the following libraries:

Lexington Park Public Library 1 Coral Place Lexington Park, Maryland 20653	Patuxent River Naval Air Station Library Cedar Point Road Patuxent River, Maryland 20670

All public participation requirements are consistent with CERCLA sections 113 (k) (2) (B) (i-v) and 117.

2.4 Scope and Role of Response Action at the Bohneyard, OU-1

The Bohneyard is one of 46 Installation Restoration (IR) sites located at NAS Patuxent River. Past disposal activities at the Bohneyard have primarily affected soil, surface water, sediment, and groundwater in the vicinity of the Bohneyard.

This ROD addresses the first of two OUs at the Bohneyard. OU-1, covered by this ROD, consists of contaminated soil. OU-2, which comprises groundwater and downstream surface water and sediment, is currently under investigation. Creation of separate OUs allows the U.S. Navy to eliminate exposure pathways that pose an unacceptable human health or ecological risk from contamination in soil and reuse the property as a parking lot for airplane refueling trucks.

The remedies evaluated for OU-1, described in subsection 2.7, will reduce the risk to human health and the environment associated with soil at the Bohneyard and complies with federal and Maryland environmental laws. The remedy will provide effective source control and reduce the potential for contaminant migration.

2.5 Site Characteristics

This section summarizes site features; sources, nature, and extent of contamination; and contaminant fate and transport.

2.5.1 Surface Water Features

An intermittent stream and its associated wetland habitat occur around the fringe of the Bohneyard.

2.5.2 Groundwater Features

The shallow groundwater at the Bohneyard is unconfined and occurs at a depth of approximately 10 to 12 feet. Groundwater flow pattems in the shallow aquifer are generally controlled by the surface topography (CH2M HILL, 1985). The water level elevation data from the 1985 Confirmation Study suggest that the groundwater beneath the western portion of the site flows toward the west. Groundwater under the southeast comer may flow toward the northeast and the groundwater beneath the northeast comer may flow toward the northwest. Subsequent investigations (CH2M HILL, 1994; HNUS, 1995; and CH2M HILL, unpublished data for OU-2 RI) were consistent with these findings.

2.5.3 Site Ecology

Approximately 80 percent of the Site 6 portion of the Bohneyard is open habitat covered by mowed grasses and other herbaceous plants, interspersed with patches of unmowed herbaceous plants. The site contains a few small structures and four larger buildings. Associated with past and current development of the site, there are patches of gravel, pavement, and small areas of exposed soil.

A supply yard, other storage facilities, and open grassy areas to the southeast of Site 6 make up the Site 6A portion of the Bohneyard. No aquatic habitats are present on the Bohneyard. An intermittent stream and its associated wetland habitat occur around the fringe of the Bohneyard and will be addressed as part of OU-2. No rare, threatened, or endangered species are known to occur on either site.

2.5.4 Sources of Contamination

During the 1940s, fly ash and bottom ash from the station's coal-fired power plant were disposed of on the Site 6 part of the Bohneyard. Approximately 110,000 cubic feet, or 6,000 tons, of ash were deposited in a 6-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 show that drums also were stored in sections of Site 6A. Starting in 1966, drums of waste solvents, paints, and possibly pesticides, also were stored. Between 1979 and 1982, all drums were removed from the area. Many of the drums reportedly leaked some of their contents onto the ground. Other materials reportedly stored include oil/water separator sludge and paint thinner. Approximately 8 tons of liquid wastes were disposed of or spilled. Various other materials, such as scrap metal, vehicles, and equipment, also were stored at Site 6.

In the fall of 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 Site 6 that is now a grass field.

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

2.5.5 Nature and Extent of Contamination

The highest concentrations of most contaminants are found within the boundaries of Site 6, primarily in shallow samples (zero to 2 feet below ground surface [bgs]). Several inorganic compounds were detected at concentrations elevated above background. Among these, arsenic (maximum concentration of 40.6 milligrams per kilogram (mg/kg), chromium (maximum concentration of 42.2 mg/kg), and cadmium (maximum concentration of 22.3 mg/kg) had their highest concentrations near the center of Site 6. However, samples collected in the northeast comer of Site 6A and in the intermittent streambed immediately north of that point also contained elevated concentrations of chromium (28.5 mg/kg and 41 mg/kg, respectively). Samples collected at depth (during the IRI, during the predesign investigation, and in the vicinity of the waste oil tank) generally showed a reduction in inorganic concentrations with depth. Samples in the vicinity of the waste oil tank followed the overall trend, but with some exceptions in the 4.5- to 6-foot bgs range.

Several organics also were detected in soil samples. Volatile organic compounds (VOCs) included trichloroethylene (TCE) and some of its degradation products. TCE was detected in three shallow soil samples outside of the waste oil tank area (maximum concentration 0.002 mg/kg), along with several of the samples collected near the waste oil tank. In the vicinity of the waste oil tank, TCE and its degradation products were detected at their maximum concentrations at a depth of 4.5 to 6 feet bgs (0.04 mg/kg of TCE). Fuel-related compounds, including benzene, toluene, ethylbenzene, and xylene (BTEX) were detected in this location at a total concentration of 0.52 mg/kg.

Most of the samples collected were analyzed for semivolatile organic compounds (SVOCs). The most common SVOC detections were polynuclear aromatic hydrocarbons (PAHs), with the highest total PAH concentration detected at the southwestern corner of Site 6 (8.27 mg/kg). Although PAHs were detected only in surface soil samples, at one location, detections continued to the full depth sampled (5 to 10 feet bgs). Samples collected during the IRI also were analyzed for total petroleum hydrocarbons (TPH). The maximum detected concentrations were found near the waste oil tank. TPH was detected in several other surface soil samples, but at significantly lower concentrations.

Samples contained detectable concentrations of Polychlorinated biphenyls (PCBs), particularly in the vicinity of the waste oil tank, which is known to have contained PCBcontaminated oil. Aroclor-1260 was detected at a maximum concentration of 13 mg/kg in a sample collected from 6 to 7.5 feet bgs. Other samples contained concentrations at least one order of magnitude lower in the vicinity of the waste oil tank, and two orders of magnitude lower in other portions of the sites. Dichlorodiphenyltrichloro-ethane (DDT) and its degradation products dichlorodiphenyldichloro-ethane (DDE) and dichlorodiphenyldichloroethane (DDD) were detected in multiple shallow samples, with no distinguishable pattern.

Inorganic contaminants are likely related primarily to fly ash and bottom ash historically disposed of at Site 6. VOCs, SVOCs, and PCBs probably result from fuel use and storage of waste oils and other materials at both Sites 6 and 6A. Pesticide detections probably result from historical use of pesticides on the NAS, but it is possible that some elevated levels are related to drum storage on the site.

2.5.6 Contaminant Fate and Transport

The contaminants in the soil at Site 6 and Site 6A are inorganics, VOCs, and PAHs. These contaminants are expected to be present in the form of mineral constituents of fly ash particles mixed with the native soil.

Because the inorganics are expected to be bound within fly ash particles, their availability for dissolution is expected to be low. Also, the alkaline nature of fly ash due to the presence of calcium oxides, magnesium oxides, and other alkaline oxides, reduces the likelihood that leaching of metals will occur, as long as naturally occurring acids (such as acid rain) are neutralized.

Chemicals may move through the soil and into groundwater. To determine whether current concentrations of contaminants detected in soil at the Bohneyard are migrating to groundwater at unacceptable levels, soil screening levels (SSLs) were calculated using a soil-to-groundwater transfer model and site-specific data. SSLs were calculated for iron and trichloroethylene (TCE) because these contaminants were detected in groundwater above risk-based screening levels. The calculated SSLs for iron and TCE in soil were then compared to the maximum concentrations detected in soil at the Bohneyard. The calculated SSLs for iron and TCE are greater that the maximum concentration of these contaminants detected in soil. Because soil concentrations for iron and TCE are below the calculated SSLs using site-specific data, iron and TCE are not expected to migrate from soil to groundwater. As a result, there is no expectation that current soil concentrations of iron and TCE will impact groundwater at the site.

The TCE detected in groundwater could be the result of leaks from the partially buried tank used to store waste oil. The tank was removed in 1992. However, soil samples collected in the vicinity of the tank location exhibited detectable TCE concentrations (refer to Section 2.5.5). Although iron is present above risk-based levels in groundwater, the aluminum concentration is also high. This suggests that the groundwater samples may have been turbid, due to the presence of suspended solids in the samples.

2.6 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, a screening ecological risk assessment was conducted to evaluate the potential risks to ecological receptors based on the future use of the Bohneyard. A summary of the public health and ecological risks associated with the Bohneyard, OU-1, are summarized below.

2.6.1 Human Health Risks

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

For carcinogens, risks are generally expressed as the incremental probability of an individual's developing cancer over a lifetime as a result of exposure to the carcinogen. Excess lifetime cancer risk is calculated from the following equation:

Risk = CDI x SF

where: risk = a unitless probability (e.g., 2×10^{-5}) of an individual's developing cancer.

CDI = chronic daily intake averaged over 70 years (mg/kg-day).
SF = slope factor, expressed as (mg/kg-day)-l.

These risks are probabilities that usually are expressed in scientific notation (e.g., 1×10^{-6}). An excess lifetime cancer risk of 1×10^{-6} indicates that an individual experiencing the reasonable maximum exposure estimate has a 1 in 1,000,000 chance of developing cancer as a result of site-related exposure. This is referred to as an "excess lifetime cancer risk" because it would be in addition to the risks of cancer individuals face from other causes such as smoking or exposure to too much sun. The chance of an individual's developing cancer from all other causes has been estimated to be as high as one in three. EPA's generally acceptable risk range for site-related exposures is 10^{-4} to 10^{-6}.

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.

The potential for noncarcinogenic effects is evaluated by comparing an exposure level over a specified time period (e.g., life-time) with a reference dose (RfD) derived for a similar exposure period. An RfD represents a level that an individual may be exposed to that is not expected to cause any deleterious effect. The ratio of exposure to toxicity is called a hazard quotient (HQ). An HQ<1 indicates that a receptor's dose of a single contaminant is less than the RfD, and that toxic noncarcinogenic effects from that chemical are unlikely. The Hazard Index (HI) is generated by adding the HQs for all chemical(s) of concern that affect the same target organ (e.g., liver) or that act through the same mechanism of action within a medium or across all media to which a given individual may reasonably be exposed. An HI<1 indicates that, based on the sum of all HQ's from different contaminants and exposure routes, toxic noncarcinogenic effects from all contaminants are unlikely. An HI>1 indicates that site-related exposures may present a risk to human health.

The HQ is calculated as follows:

Non-cancer HQ = CDI/RfD

where:

CDI = Chronic daily intake
RfD = reference dose.

CDI and RfD are expressed in the same units and represent the same exposure period (i.e., chronic, subchronic, or short-term).

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. Cumulative noncancer hazards were found to exceed EPA's recommended threshold for the future residential child and adult, and for the child who visits the site for recreation. 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. Cumulative noncancer hazards were found to exceed EPA's recommended threshold for the future residential child and for the child who visits the site for recreation.

Tables 2-1 and 2-2 show the carcinogenic risks and noncarcinogenic hazard indices for all exposure pathways for Site 6 and Site 6A, respectively.

TABLE 2-1
Summary of Potential Human Health Risks
Site 6
NAS Patuxent River, Maryland

Receptor	Total Cancer Risk	Total Hazard Index
Residential	9.4×10^{-05}	(Adult) 1.1 (Child) 4.9
Child Trespasser	1.7×10^{-05}	1.5
Adult Trespasser	1.1×10^{-05}	0.32
Site Worker	2.8×10^{-05}	0.76
Construction Worker	2.3×10^{-06}	0.63

TABLE 2-2
Summary of Potential Human Health Risks
Site 6A
NAS Patuxent River, Maryland

Receptor	Total Cancer Risk	Total Hazard Index
Residential	3.7×10^{-05}	(Adult) 0.96 (Child) 4.6
Child Trespasser	6.7×10^{-06}	1.4
Adult Trespasser	4.2×10^{-06}	0.28
Site Worker	1.0×10^{-05}	0.68
Construction Worker	1.1×10^{-06}	0.70

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.

To ensure that the potential noncancer hazards to human health are mitigated during the remedial action, Performance Standards (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. Table 2-3 provides the PSs developed for each of the chemicals of concern. Figures 2-3 and 2-4 identify soil sample locations that exceed PSs for surface soil at Site 6 and 6A, respectively.

TABLE 2-3
Performance Standards for Protection of Human Health at Sites 6 and 6A

Parameter	Residential Standard	Site Worker Standard
Aluminum	4,220	34,500
Arsenic*	4.1	4.1
Cadmium	0.75	4.5
Chromium*	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 mg/kg.
*Maximum background concentration

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 human health. 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.

2.6.2 Ecological Risks

EPA has developed an 8-step process for conducting ecological risk assessments (ERAs). Step 1 of this process consists of the following components: (1) a description of the environmental setting (habitats and potential receptors) determined from available information and a site visit; (2) a description of known source areas and contaminants; (3) a determination of potential transport pathways from source areas; (4) an evaluation of potential exposure pathways to determine which are likely to be complete, linking a potential source with a potential receptor; (5) development of preliminary assessment and measurement endpoints; and (6) determination of medium-specific ecological screening values that relate chemical-specific media concentrations with the potential for adverse effects based on conservative assumptions. Items 1 through 5 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. For adverse impacts to ecological

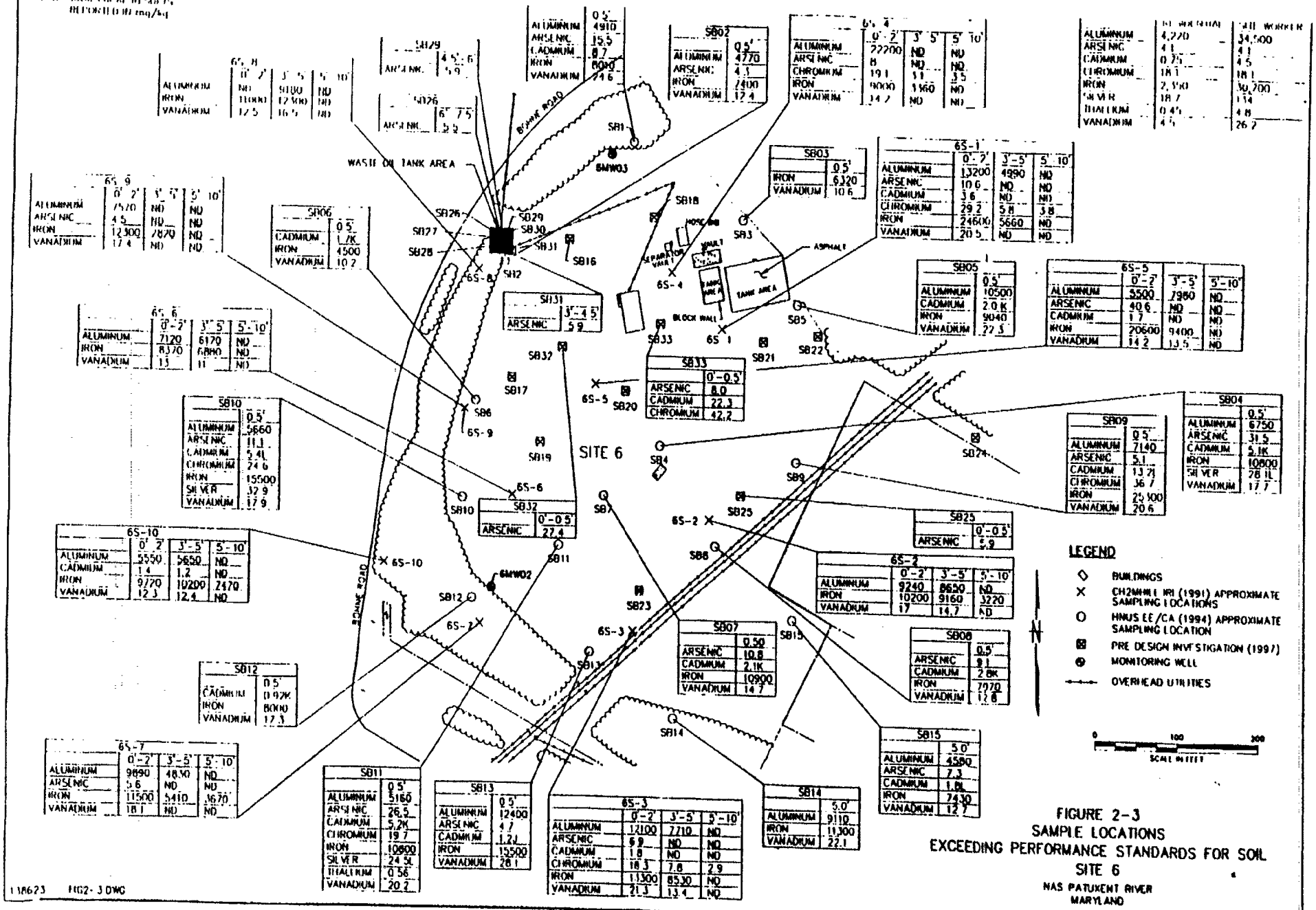

FIGURE 2-3
SAMPLE LOCATIONS
EXCEEDING PERFORMANCE STANDARDS FOR SOIL
SITE 6
NAS PATUXENT RIVER
MARYLAND

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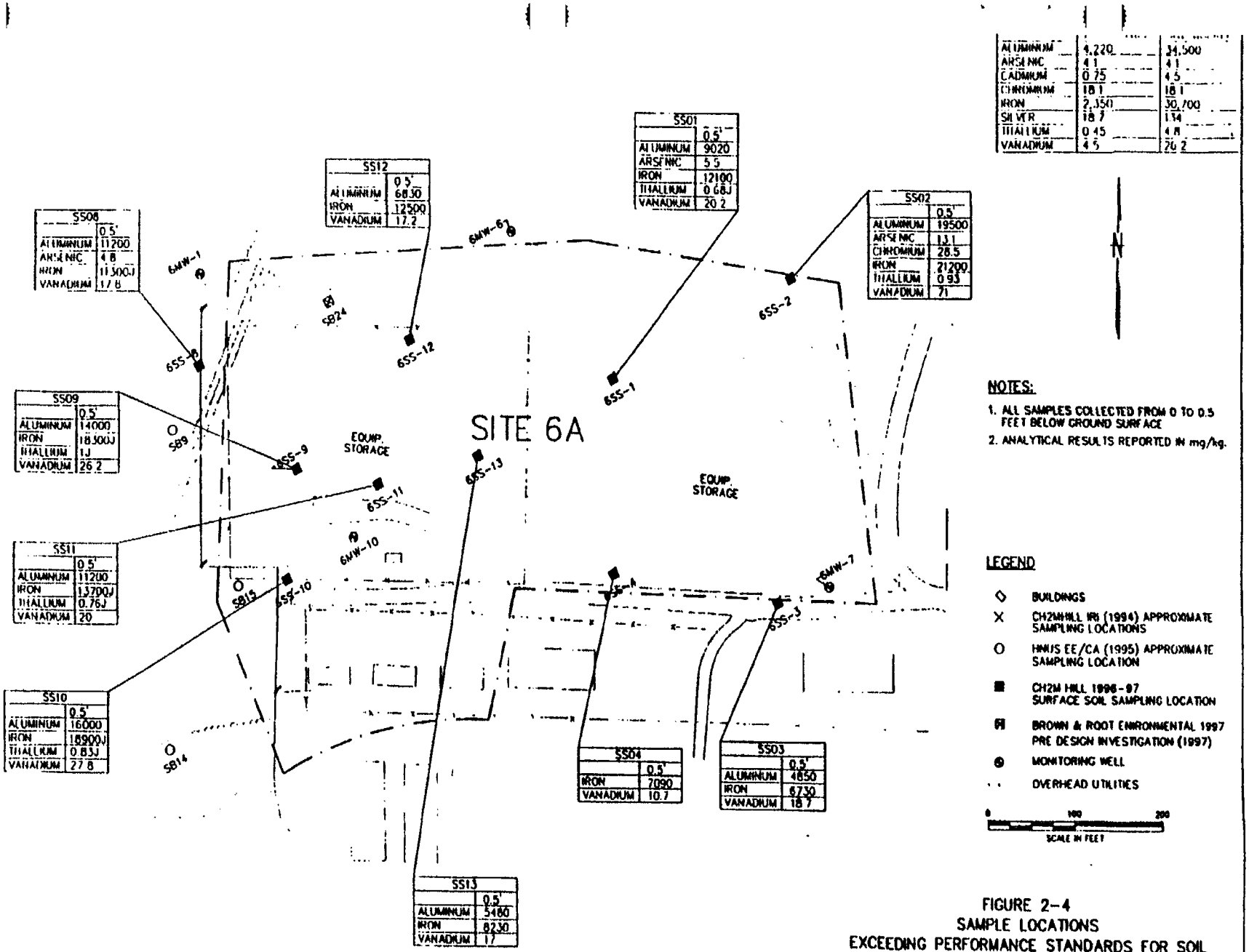

ALUMINUM	4,220	34,500
ARSENIC	4.1	4.1
CADMIUM	0.75	4.5
CHROMIUM	18.1	18.1
IRON	2,350	30,700
SILVER	18.7	1.14
THALLIUM	0.45	4.8
VANADIUM	4.5	20.2

FIGURE 2-4
SAMPLE LOCATIONS
EXCEEDING PERFORMANCE STANDARDS FOR SOIL
SITE 6A
NAS PATUXENT RIVER
MARYLAND

139623 FIG2-4.DWG

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

2.7 Description of Alternatives

To meet the RAO for OU-1, remedial technologies were screened to develop remediation alternatives. Technologies were screened based on their suitability for specific site characteristics, including contaminant types, quantities, and concentrations; and physical site conditions. A detailed analysis of the possible remedial alternatives for OU-1 was conducted as part of the FFS report. The detailed analysis was conducted in accordance with the EPA document entitled *Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA* (EPA, 1989) and the NCP. A summary of the remedial alternatives evaluated for OU-1 is presented below.

- Alternative 1 - No Action
- Alternative 2 - Cover with Institutional Controls
- Alternative 3 - Excavation and Offsite Disposal

2.7.1 Alternative 1 - No Action

Description: 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.

2.7.2 Alternative 2 - Cover and Institutional Controls

Description: Consistent with the U.S. Navy's plans for reuse 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 soil contaminant concentrations are greater than the site worker exposure PSs. The cover will consist of 4 inches of compacted gravel with 8 inches of topsoil for vegetative purposes. At Site 6A, an asphalt cover will be constructed for storage and staging.

The protectiveness of this remedy would depend on (1) maintaining the integrity of the concrete parking lot, asphalt cover and soil cover, (2) prohibiting access to groundwater at Sites 6 and 6A, and (3) continued use of Sites 6 and 6A for industrial or commercial purposes.

Because contaminated soil would be left in place, a review would be conducted every 5 years to evaluate whether human health and the environment continue to be protected by this alternative.

2.7.3 Alternative 3 - Excavation and Offsite Disposal

Description: 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 nonhazardous waste landfill. Excavated areas would be backfilled with clean fill and would be revegetated. Institutional controls and 5-year reviews would not be needed to protect human health and the environment because soil posing potential risks would be removed permanently.

2.8 Summary of Comparative Analysis of Alternatives

To determine the preferred alternatives, the remedial alternatives for OU-1 described in Section 2.7 were evaluated against nine evaluation criteria identified in the NCP at 40 C.F.R. Section 300.430(e)(9).

The NCP outlines the approach for comparing remedial alternatives. Evaluation of the alternatives uses “threshold” criteria, “primary balancing” criteria, and “modifying” criteria.

To be considered for remedy selection, an alternative must meet the two threshold criteria: “overall protection of human health and the environment” and “compliance with applicable or relevant and appropriate requirements (ARARs).” The primary balancing criteria, “long-term effectiveness and permanence,” “reduction in toxicity, mobility, or volume through treatment,” “implementability,” “short-term effectiveness,” and “cost” are then considered to determine which alternative provides the best combination of attributes. The threshold and primary balancing criteria are technical criteria based on human health and environmental protection, cost, and engineering feasibility. The alternatives are further evaluated against the two modifying criteria: “acceptance by the state” and “acceptance by the community,” before selecting the preferred remedy.

Each of the alternatives presented in subsection 2.7 were compared using the threshold, primary balancing, and modifying criteria.. The summary analysis and evaluation of each remedial alternative against the threshold and primary balancing criteria is provided below. The FFS provides a detailed analysis and evaluation of the comparative analysis of alternatives against the primary and modifying criteria.

The state and community acceptances are assessed in Section 3.0, “Responsiveness Summary.”

2.8.1 Threshold Criteria

2.8.1.1 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 soil that exceeds the PSs onsite 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.

2.8.1.2 Compliance with ARARs and TBCs

Alternatives 2 and 3 would comply with all ARARs and (to be considered) TBCs. Major ARARs for Alternatives 2 and 3 are:

- Sediment and Erosion Control requirements (Annotated Code of Maryland, Environment Article, Title 4, Subtitle 1; COMAR 26.17.01)
- Stormwater Management requirements (Annotated Code of Maryland, Environment Article, Title 4, Subtitle 2; COMAR 26.17.02)

2.8.2 Primary Balancing Criteria

2.8.2.1 Long-Term Effectiveness and Permanence

Alternative 2 would be effective in the long-term because covering has been demonstrated to provide long-term effectiveness provided it is properly maintained. This alternative provides for a means for protecting and monitoring the environment. It controls the sources of contamination at the site by containing them beneath the cover. Alternative 3 would be the most effective in the long-term because all sources of contamination would be removed from the site.

Five-year site reviews will be required since contamination would remain in place at the site under this alternative. Long-term monitoring will be conducted to track future contamination migration and evaluated during the 5-year site reviews.

2.8.2.2 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.

2.8.2.3 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 are easily implementable, because excavation equipment and approved disposal facilities are commonly available.

2.8.2.4 Short-Term Effectiveness

Alternative 2 would be more effective than Alternative 3 in the short term. Alternative 2 would achieve the remedial action objective (preventing human contact) more quickly than Alternative 3. Alternative 2 will take 2 months to achieve the RAO, as opposed to 12 months under Alternative 3. In addition, 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 adequately controlled.

2.8.2.5 Cost

The total estimated present-worth cost of Alternative 2 is $1,720,000. Both the NAS and the IR program will provide the funding for Alternative 2. 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.

2.8.3 Modifying Criteria

2.8.3.1 Community Acceptance

Community relations activities to date for OU-1 include establishing an Administrative Record, briefings to the Restoration Advisory Board regarding findings of the RI and FFS, and release of the PRAP for public review and comment on July 27, 1999. A public meeting was conducted on August 10, 1999, at the Frank Knox Training Center, Building 2189, located outside Gate 2.

At the public meeting, two community members said they preferred Alternative 3 (excavation) over the Navy's preferred alternative, Alternative 2 (covering), while one community member supported the Navy's preferred alternative. These and other concerns that were raised by the local community at the public meeting and the Navy's responses to these concerns are provided in the responsiveness summary (Section 3 of this ROD). The transcripts from the public meeting are provided in Appendix B.

2.8.3.2 State Acceptance

With respect to state acceptance, the MDE has reviewed the PRAP and has concurred with the selected remedial action, Alternative 2.

2.9 Selected Remedy

The U.S. Navy's selected remedy is Alternative 2. 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. On the basis of available information and the current understanding of site conditions, Alternative 2 appears to provide the best balance with respect to the nine NCP evaluation criteria. Alternative 2 achieves a level of protection comparable to Alternative 3 at approximately one-half the cost and limits the exposure of workers to contaminated soil during excavation. A schematic of the selected remedy is displayed in Figure 2-5.

Consistent with the U.S. Navy's plans for reuse of Site 6 as a parking lot for aircraft fueling trucks, a concrete 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 soil contaminant concentrations are greater than site worker exposure PSs. The cover will consist of 4 inches of compacted gravel with 8 inches of topsoil for vegetative purposes. At Site 6A, an asphalt cover will be constructed for storage and 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

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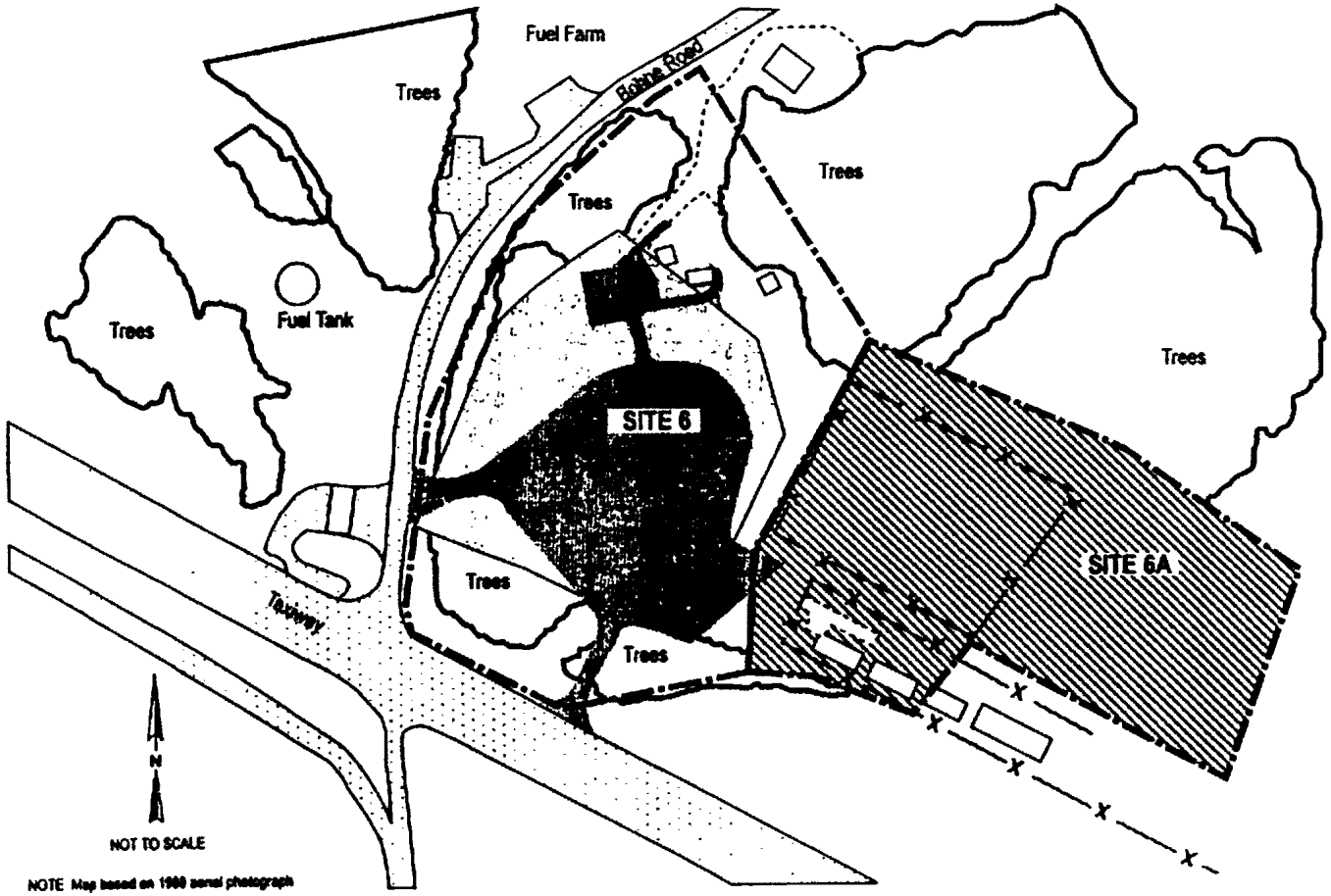

LEGEND

- Buildings
- Approximate Location of Site Boundary
- Approximate Location of Open Areas
- Fence Line
- Roads and Parking
- Approximate Boundary of Concrete - Paved Parking Lot
- Approximate Boundary of Gravel/Soil Cap
- Approximate Boundary of Asphalt

FIGURE 2-5
DETAIL OF SELECTED ALTERNATIVE FOR SITES 6 AND 6A
NAS PATUXENT RIVER
MARYLAND

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whether contaminants are migrating to the environment. Because contaminated soil would be left in place, a review would be conducted every 5 years to evaluate whether human health and the environment continue to be protected by this alternative.

2.9.1 Performance Standards of the Preferred Remedy

Performance standards related to the selected alternative are discussed below.

Cover Design Criteria: Concrete, asphalt, and soil cover (described below) will be placed over soil at the Bohneyard in which concentrations of hazardous substances shown on Table 2-1 are greater than the site worker PSs. A concrete parking lot would be constructed over about one-half of Site 6. The 8-inch-thick concrete wearing surface will be underlain by a compacted gravel subbase ranging in thickness from 6 to 10 inches. The compacted subbase will be separated from the ground surface by geotextile grade separation material. A cover comprised of soil over gravel would be placed over the remaining area of Site 6 in which concentrations of hazardous substances are greater than the site worker exposure PSs. The cover will consist of a minimum of 4 inches of compacted gravel with minimum of 8 inches of topsoil for vegetative purposes.

At Site 6A, an asphalt cover will be constructed for storage and staging. The cover design shall include construction of durable, flexible pavement that resists cracking. The asphalt cover will be a minimum of 2 inches thick. The cover shall prevent direct contact with the underlying contaminated soil, and control surface water run-on and runoff.

Design and construction of the cover at the Bohneyard will be in accordance with master U.S. Navy specifications.

Land Use Controls: The protectiveness of the remedy selected in this ROD depends on (1) maintaining the integrity of the concrete parking lot, asphalt cover and soil cover described above, (2) prohibiting access to ground water at Sites 6 and 6A, and (3) continued use of Sites 6 and 6A for industrial or commercial purposes. The remedy is not designed to protect human health if Sites 6 and 6A are used for residential purposes. Accordingly, unless the remedy selected in this ROD is revisited and all necessary steps, including additional response actions, are taken to protect human health and the environment, NAS Patuxent River shall prohibit, except as provided below;

- Future excavation and any other activity that would disturb the integrity of the concrete parking lot, asphalt cover, or soil cover described above;
- Access to groundwater underlying Sites 6 and 6A; and
- Residential use of Sites 6 and 6A.

These shall be the “land use controls” for Sites 6 and 6A.

Land Use Control Implementation Plan: NAS Patuxent River shall develop, in consultation with EPA and MDE, a Land Use Control Implementation Plan (LUCIP). The LUCIP shall include a description of Sites 6 and 6A, including a map, a description of its size, and a description of the contaminants of concern; the land use controls selected above; the particular mechanisms to implement these controls; a reference to this ROD; and any other pertinent information.

Assuring Continued Effectiveness of Land Use Control: The Navy, MDE and EPA intend to negotiate a Land Use Control Assurance Plan (LUCAP) in the near future, which will establish procedures for ensuring that the land use controls for Sites 6 and 6A and all other IR sites at Patuxent River Naval Air Station remain effective and protective in the long-term. In the meantime, NAS Patuxent River shall implement the procedures outlined below to ensure the continued effectiveness of the land use controls for Sites 6 and 6A.

NAS Patuxent River shall conduct an annual visual inspection of Sites 6 and 6A to verify that the land use controls for these sites have been implemented and are being properly maintained. NAS Patuxent River shall promptly notify EPA and MDE of any deficiencies noted, any corrective measures taken or to be taken, and the schedule for taking such corrective measures.

In addition to a visual inspection, NAS Patuxent River shall annually review the status of the land use controls for these sites. Any non-compliance issues will be appropriately resolved with EPA and MDE.

NAS Patuxent River shall annually prepare and forward to EPA and MDE a report, signed by the Station Commanding Officer, certifying the continued retention of the land use controls for Sites 6 and 6A.

The above requirements for inspecting, reviewing and certifying the continued effectiveness of land use controls at Sites 6 and 6A are intended to be in addition to, and not a replacement for, requirements in the Operation and Maintenance Plan for the remedy selected in this ROD. The Operation and Maintenance Plan will be developed following signing of this ROD.

At least sixty days (except in emergency situations) prior to implementation of any major change in land use at Site 6 and 6A, NAS Patuxent River shall notify EPA and MDE of the contemplated change. The notification shall be provided to obtain EPA and/or MDE's concurrence with the NAS Patuxent River's determination as to whether the contemplated change will or will not necessitate the need for re-evaluation of the selected remedy or implementation of specific measures to ensure continued protection of human health and the environment.

NAS Patuxent River also agrees to immediately notify EPA and MDE if, despite its best efforts to ensure compliance the land use controls for Sites 6 and 6A, any major change in land use at Site 6 and 6A is discovered which has not been previously reviewed by U.S. EPA and MDE. Such notifications will provide an pertinent information as to the nature and extent of the change and describe any measures implemented or to be implemented (to include a timetable for future completion) to reduce or prevent human health or ecological impacts.

2.10 Statutory Determinations

The Navy's selected remedy, Alternative 2, is anticipated to meet the following statutory requirements of CERCLA Section 121:

- Protection of human health and the environment

- Compliance with applicable or relevant and appropriate requirements of federal and Maryland environmental laws
- Cost-effectiveness
- Use of permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable

At this site, treatment of 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 onsite 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.

The selected remedy is expected to comply with ARARs. ARARs are federal and state environmental statutes that are either directly applicable or relevant and appropriate in the development and evaluation of remedial alternatives at a particular site. Chemical-, location-, and action-specific ARARs have been evaluated for the Bohneyard, OU-1. Location- and action-specific ARARs that have been evaluated for Bohneyard, OU-1, are presented in Appendix C. Chemical-specific ARARs, or Performance Standards (PSs) were calculated to identify maximum allowable concentrations of each of the chemicals of concern for various human health risk scenarios, as described in subsection 2.6.1.

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.

2.11 Documentation of Significant Changes

The selected remedy, Alternative 2, is the same alternative recommended in the PRAP. The selected remedy also is identical to the recommended alternative presented at the August 10, 1999, public meeting.

There were no significant changes to the recommended remedial action alternative in the PRAP.

3.0 Responsiveness Summary

As described in subsection 2.8, the remedial alternatives for OU-1 were evaluated against seven of the nine evaluation criteria identified in the NCP at 40 C.F.R. Section 300.430(e)(9). The last two of the nine evaluation criteria in the NCP are state acceptance and community acceptance. The Responsiveness Summary is a concise and complete summary of state and community acceptance. The Responsiveness Summary provides the lead agency (U.S. Navy) with information on the views of the community. It also documents how the lead agency has considered public comments during the decision-making process and provides answers to major comments. This Responsiveness Summary was prepared after the public comment period, which ended on August 27, 1999, in accordance with the guidance document, *Community Relations in Superfund: A Handbook* (Office of Solid Waste and Emergency Response [OSWER] Directive 9230.0-3B, January 1992).

3.1 Summary of Public Comments and Agency Responses

A public meeting was conducted on August 10, 1999, at the Frank Knox Training Center, Building 2189. Two community members said they preferred Alternative 3 (excavation) over the Navy's preferred alternative, Alternative 2 (covering), while one community member supported the Navy's preferred alternative. The Navy, EPA, and MDE believe that despite the fact that two community members preferred Alternative 3 (excavation) over Alternative 2 (covering), Alternative 2 is the most efficient and cost effective way to remediate the Bohneyard. The soil at the Bohneyard is contaminated with inorganic (metal) contamination at relatively low levels (levels above background but below industrial exposures). Unless the offsite disposal includes some form of treatment, the Navy will assume future liability which cannot be easily quantified. Since metal contamination at relatively low levels is not amenable to treatment, there is an additional liability that the Navy will assume with off-site disposal. Further justification of the preferred alternative is provided as a response to Question #4 below.

The community concerns have been studied, and responses are provided below. The public meeting transcripts are provided in Appendix B.

1. What was the criteria for listing the NAS Patuxent River on the NPL?

Navy Response: NAS Patuxent River was evaluated by EPA based on Hazard Ranking System (HRS) II guidelines. The goal of the HRS process is to develop a site-specific hazard ranking score, evaluating the relative threat associated with actual or potential releases to air, surface water, soil, and groundwater. The hazard ranking score is used as a screening tool for determining whether a site is to be included on the NPL. The Navy uses the NPL score to prioritize sites for cleanup funding.

After surveying available data, NAS was given a score of 50. Since the EPA cut-off level for NPL inclusion is 28.5, NAS is therefore subject to inclusion on the NPL. This ranking is generated for the entire base as a whole, not for one particular site. The NAS Patuxent River was proposed to be listed on the NPL on January 18, 1994. The NPL inclusion date is

June 30, 1994. The inclusion date was posted in the Federal Register (59FR 27989) on May 31, 1999.

2. What are Soil Screening Levels (SSLs), and how do they apply to the Sites 6 and 6A?

Navy Response: Chemicals may move through the soil and into groundwater. To determine whether current concentrations of contaminants detected in soil at the Bohneyard are migrating to groundwater at unacceptable levels, soil screening levels (SSLs) were calculated using a soil-to-groundwater transfer model and site-specific data. SSLs were calculated for iron and trichloroethylene (TCE) because these contaminants were detected in groundwater above risk-based screening levels. The calculated SSLs for iron and TCE in soil were then compared to the maximum concentrations detected in soil at the Bohneyard. The calculated SSLs for iron and TCE are greater that the maximum concentration of these contaminants detected in soil. Because soil concentrations for iron and TCE are below the calculated SSLs using site-specific data, iron and TCE are not expected to migrate from soil to groundwater. As a result, there is no expectation that current soil concentrations of iron and TCE will impact groundwater at the site.

The TCE detected in groundwater could be the result of leaks from the partially buried tank used to store waste oil. The tank was removed in 1992. However, soil samples collected in the vicinity of the tank location exhibited detectable TCE concentrations (refer to Section 2.5.5). Although iron is present above risk-based levels in groundwater, the aluminum concentration is also high. This suggests that the groundwater samples may have been turbid, due to the presence of suspended solids in the samples.

3. How is contaminated groundwater addressed?

Navy Response: Groundwater monitoring-well sampling was conducted as part of the ongoing Remedial Investigation for Operable Unit (OU) 2. The nature and extent of contamination in OU-2 will be discussed in detail as part of the RI for OU-2.

Analytical results from groundwater samples collected in 1996 and 1997 were screened against Maximum Contaminant Levels (MCLs) for drinking water, where available, to assess whether chemicals detected in soil were causing potentially unacceptable levels of contamination in groundwater. Where MCLs were not available, Maximum Contaminant Level Goals (MCLGs) were used for screening. If neither of these values were available, the current EPA Region III Risk-Based Concentration (RBC) for tap water was used as a screening criterion.

Two chemicals were detected in groundwater at concentrations exceeding these screening criteria: iron and trichloroethene. The maximum concentrations of thallium and lead also exceed the screening criteria. However, thallium was only detected once in an upgradient well. Lead was only detected once in one well, at a concentration that is just slightly above the MCL. In addition, during the three previous rounds of sampling, lead was detected at concentrations that were an order of magnitude below the MCL. Due to this, thallium and lead are not evaluated further. No screening values were available for calcium, magnesium, potassium, sodium, or 4-methyl-2-pentanone. Because the four inorganic chemicals for which screening values were not available are common human nutrients, no further evaluation will be conducted. The maximum concentration of 4-methyl-2-pentanone in

groundwater was 5 ug/L, detected in only one well and flagged 'B' to indicate that similar levels also were detected in blank samples. As a result, 4-methyl-2-pentanone will not be further evaluated.

A human health and ecological risk assessment for exposure to groundwater will be conducted as part of the RI/FS for OU-2.

4. What is the justification for selecting Alternative 2 vs. Alternative 3?

Navy Response: Alternative 2 effectively addresses soil contamination that exceeds remediation goals at the Bohneyard. Even though contaminated soil remains onsite, the risk of exposure to the soil is eliminated or greatly reduced, therefore it is protective of human health. The asphalt and soil cover will be regularly maintained. On the basis of available information and the current understanding of site conditions, Alternative 2 provides the best balance with respect to the NCP evaluation criteria.

Under Alternative 3, there is a liability associated with excavation of contaminated soil. Under Alternative 3, the contaminated soil would be excavated and sent to a secure off-site landfill. Unless the off-site disposal includes some form of treatment, the Navy will assume future liability which cannot be easily quantified. Since metal contamination at relatively low levels is not amenable to treatment, there is an additional liability that the Navy will assume with off-site disposal.

Alternative 2 is projected to be completed in a shorter time than Alternative 3 (2 months as opposed to 12 months), therefore Alternative 2 will begin protecting human health and the environment sooner than Alternative 3.

Alternative 2 also poses less short term risk to workers. Alternative 3 requires that workers excavate contaminate soil, which potentially exposes them to hazardous substances. Alternative 2 does not require that workers be exposed to hazardous substances in the soil because it does not require excavation.

Alternative 2 is protective of human health, and is substantially more cost-effective than Alternative 3. The cost of Alternative 2 to the Installation Restoration program is $500,000, and the cost of Alternative 3 to the Installation Restoration program is $2.6 million. EPA, Navy and MDE are satisfied that the cost estimates, though they contain some uncertainty, are the best available predictors of the relative costs of Alternatives 2 and 3, and the best currently available information for making a decision about cost-effectiveness.

5. How is the cost estimate in the PRAP developed, and what is it used for?

Navy Response: The cost of the alternative is one of the nine NCP criteria used in selecting the preferred alternative. Cost estimates for each alternative were developed by following the standard CERCLA procedures. Specifically, for each remedial alternative, a detailed cost analysis was developed based on conceptual engineering and analyses. Unit prices were based on published construction cost data, quotes from vendors and contractors, and/or engineering judgment. Costs are expressed in terms of 1998 dollars. In order to allow the costs of remedial alternatives to be compared on the basis of a single figure, the present worth value of all capital and annual costs was determined for each alternative. The EPA CERCLA RI/FS Guidance Document (EPA, 1988) recommends that a 5 percent discount rate be used in present-worth analyses.

The cost estimates for all the alternatives are provided to an accuracy of +50 percent to -30 percent (the actual cost may range from 30% lower to 50% higher of the estimated cost), therefore are all compared on the same basis. EPA, Navy and MDE are satisfied that the cost estimates, though they contain some uncertainty, are the best available predictors of the relative costs of Alternatives 2 and 3, and the best currently available information for making a decision about cost-effectiveness. The Navy will obtain more accurate estimates as the design is developed.

6. What are the stormwater discharge procedures for the concrete containment structure?

Navy Response: The fuel farm will contain a concrete containment structure as part of the concrete cover at Site 6. Steps will be taken as part of the fuel operation to avoid spills into the ground and sewers. The base fuel farm personnel will inspect the contents of the containment structure; if the contents only contain stormwater, the contents will be released. Fuel that is captured in the concrete containment structure will be disposed of in accordance with State and Federal regulations.

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.

Cancer Risk: Cancer risks are expressed as numbers reflecting the increased chance that a person will develop cancer if exposed to chemicals or substances. For example, EPA's acceptable risk range for Superfund sites is 1×10^{-4} to 1×10^{-6}. This means that the probability of cancer should not be greater than 1 in 10,000 chance to a 1 in 1,000,000 chance above background.

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.

CDI — Chronic Daily Intake-Exposure expressed as mass of a substance contacted per unit body weight per unit time, averaged over a long period of time (seven years to a lifetime).

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 (other than human beings or domesticated animals) that could be affected by contamination in the environment.

EPA — United States Environmental Protection Agency.

Exposure Pathways: Describes the course a chemical or physical agent takes from the source to the exposed individual. Elements of the exposure pathway are: (1) the source of the released chemical; (2) the contaminated medium (e.g., soil); (3) a point of contact with the contaminated medium; and (4) an exposure route (e.g., ingestion or inhalation) at a contact point.

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.

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."

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

HI — Hazard Index – A number indicative of non-carcinogenic health effects, which is the ratio of the existing level of exposure to an acceptable level of exposure. A value equal to or less than one indicates that the human population is not likely to experience adverse effects.

HQ — Hazard Quotient - The ratio of a single substance exposure level over a specified time period (e.g. subchronic) to a reference dose for that substance derived from a similar exposure period.

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

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.

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. EPA's list of the most serious uncontrolled or abandoned hazardous waste sites in the United States.

OU — Operable Unit- Tern 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.

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.
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.

RfD— -Reference Dose—An estimate (with uncertainty spanning perhaps an order of magnitude or greater) of a daily exposure to the human population, including sensitive subpopulations, in which the exposure is likely to be without appreciable risk of deleterious effects during a lifetime.

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

ROD— Record of Decision—A public document that explains which cleanup alternative was selected for a Superfund site.

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.

Appendix A

State Letter of Concurrence

MDE

MARYLAND DEPARTMENT OF THE ENVIRONMENT

2500 Broening Highway • Baltimore Maryland 21224
(410) 631- 3000 • 1- 800 -633-6101 • http:// www. mde. state. md. us

Parris N. Glendening
Governor

Jane T. Nishida
Secretary

September 16, 1999

Mr. Bayly Smith
Environmental Division
Public Works Department
22554 Peary Road, Building 504
Naval Air Station
Patuxent River MD 20670

Re: Record of Decision, Sites 6 and 6A, Operable Unit 1 (Contaminated Soil), Patuxent River Naval Air Station

Dear Mr. Smith:

The Maryland Department of the Environment (MDE), Waste Management Administration has reviewed the above-referenced document. This Record of Decision (ROD) documents the Navy's decision to construct soil and asphalt covers at two areas of the Bohneyard (Sites 6 and 6A).

The soil and asphalt covers, along with institutional controls, are intended to prevent human exposure to the organic and inorganic contaminants identified in the soil and thereby mitigate the associated risk. As discussed in the ROD, the Navy is continuing to evaluate the groundwater at this site as Operable Unit 2.

Based upon the acceptable level of protection to human health and the environment provided by the remedy, the MDE concurs with the selected remedy. If you have any questions, please contact me at (410) 631-3394.

Sincerely,

Kim Lemaster

Kim Lemaster
Section Head
Federal/NPL Superfund Division

cc: Mr. Andrew Sochanski
Mr. Jeff Waite
Mr. Richard Collins
Mr. Karl Kalbacher

Appendix B

Public Meeting Transcripts

In The Matter of:

PROPOSED REMEDIAL ACTION PLAN
BOHNEYARD OPERABLE UNIT 1 - SOIL

August 10, 1999

For The Record, Inc.
Court Reporting and Litigation Support
603 Post Office Road
Suite 309
Waldorf, MD USA 20602
(301) 870-8025 FAX: (301) 870-8333

Original File 90810PAX.ASC, 75 Pages
Min-U-Script® File ID: 1562939810

Word Index included with this Min-U-Script®

Page 1

PROPOSED REMEDIAL ACTION PLAN
SITES 6 AND 6A, BOHNEYARD
OPERABLE UNIT 1 - SOIL
PUBLIC HEARING
AUGUST 10, 199

The public hearing was taken on Tuesday, August 10, 1999. Commencing at 6:38 p.m., at the Frank Knox Training Center, Patuxert River, Maryland before Mary Clare Ochsner-Hammond, Notary Public.

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PROCEEDINGS

CAPTAIN ROBERTS: Good evening. I'd like to welcome everyone to Pax River. Tonight, the first part of the evening is a public meeting to specifically address the proposed restoration to Site 6 and 6A, which we commonly call the Bohneyard.

If you look at the process we go through in our ongoing efforts to clean up old sites on the base, there's a fairly extensive process that we go through and part of that process is to make sure that we get public comments on our proposals.

The approach that we want to take on the site, since we get so far through the process, we hold a public meeting to make sure we get community and public comments and any concerns that they might have in the proposed effort that we're taking.

So, the first part of the evening is

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that public meeting to inform you of what we're doing, what the project is, looking at our alternatives, what we've done and what we're recommending. We really encourage comment, questions, et cetera. We think that's very important.

The second half of the evening is the Restoration Advisory Board. We meet quarterly. The Restoration Advisory Board is co-chaired by myself and Madeleane Kreizer — I'm glad you're here. It's a partnership that's been established with the community for ongoing discussions on all the restoration projects we have

We're in different stages of different projects and we work together and talk about the issues, look at what we have, what alternatives we have, what funding is available, looking at the alternatives and we are dong that every, single quarter. If you look at what we're doing, we really believe that the way this restoration advisory board is working. I think it's an example in the Navy.

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And we've had comments about that. It's a very active group. We have very well-qualified people. They ask the hard questions and it's a really good relationship and we're very pleased that we have community input and involvement constantly in everything that we're very pleased clean up the sites at Pax River.

So, that would be the second half of the evening. We're pleased to have you here. We have a new member on the team, Jeff Waite, who will be giving an overview of what Site 6 and 6A is, what we have there, what we have done in preparation up to this day and what we found and what our proposals are.

And we have quite a team here from Chesapeake who are the people who are really helping us with the restoration, the Maryland Department of the Environment, the EPA. I'll add another little comment to that.

I'm also very pleased about the partnering that we have between Pax River Chesapeake Division, NAVFAC, Maryland Department

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[1] of the Environment, and the EPA. As we work on
[2] these projects and as we keep going through steps
[3] and looking at alternatives, et cetera, we're in
[4] a formal partnership working together on looking
[5] at what is the best alternative, what funding is
[6] available, and what do we want to use that site
[7] for and are we making — are we doing the right
[8] thing?
[9] The partnership is working very well.
[10] In fact, so many ideas on compromises or
[11] adjustments to alternatives have come from these
[12] people because they see other projects, they get
[13] around, they know what's going on. So, that
[14] partnership is really working well. I'm very
[15] pleased with that.
[16] So, I think it's one of the reasons —
[17] if you look at the Restoration Advisory Board and
[18] the partnership that we have and the efforts that
[19] are ongoing — that our programs are working very
[20] well. Many of our programs are held up as
[21] examples on how to do business. And we have some
[22] future projects I think that will really be held

Page 6

[1] up as they way we really ought to do business.
[2] So, I am really pleased about that.
[3] So, we have everyone here who can answer
[4] any question. From the regulators, to the people
[5] working on the projects, we can answer just about
[6] anything. So I'd like to introduce Jeff. Go
[7] ahead and give us a brief update on what Site 6
[8] and 6A is.
[9] **MS. JORDAN:** I'm going to do 6.
[10] **CAPTAIN ROBERTS:** Oh, you're gong to do
[11] 6? Donna, you're not on my agenda. Are you —
[12] okay. Donna's going to do Site 6 and you'll do
[13] Site 6 —
[14] **MR. WAITE:** I'll be doing the
[15] update.
[16] **CAPTAIN ROBERTS:** Donna, get me out of
[17] trouble. Come on up. By the way, Donna used to
[18] have the job of working on our IR programs and
[19] she's now moved up to a position where she's
[20] working all the projects, involved with NAVFAC
[21] works.
[22] **MS. JORDAN:** Okay. Thank you, sir.

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[1] Before I start with proposed plan, I just
[2] want to digress a little bit to say I've been
[3] working on the base for about three years now in
[4] the IR program as the project manager. I took
[5] Wanda Holmes' place for those of you who were
[6] here when Wanda Holmes was here.
[7] It's been great. It's been a great
[8] team. We got a lot of good stuff done. I'm
[9] going to talk about some more good things that
[10] we're going to be doing here very shortly, but I
[11] just wanted to say it's been my pleasure to serve
[12] all of you.
[13] I've really enjoyed it here. I'm really
[14] going to miss being the RPM for Pax. My new
[15] position is scheduled to take place for at least
[16] one year, no more than two. So, hopefully, I'll
[17] get a chance to come back and serve you all
[18] again.
[19] On the back table is our proposed plan
[20] for Site 6 and 6A, known as the Bohneyard.
[21] Hopefully, you've all had a chance to at least
[22] take a look at the document. I'm going to give

Page 8

[1] you some information that's currently in this
[2] proposed plan and go over a little bit about
[3] where we are in the installation restoration
[4] process.
[5] Okay. The proposed plan is a public
[6] document that explains to the public what it is
[7] that we want to do at one of our installation
[8] restoration sites. It talks about the impacts to
[9] human health and the environment. It gives the
[10] rationale to why we select a particular
[11] alternative and it's the only legal portion that
[12] actually gets public input.
[13] Now, here at Pax River we go beyond
[14] that. We don't wait necessarily until the
[15] proposed plan to get public comment. We have
[16] quaterly RAB meetings. We have an open-house
[17] policy with the public to get comments at any
[18] stage or phase of any work we do here at the
[19] installation restoration program.
[20] Just a quick review of the installation
[21] restoration process. First step is identifying
[22] the site. Next, is doing some type of

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[1] preliminary assessment, maybe taking a couple
[2] soil samples, run the samples, getting some
[3] documentation on what the site had contained at
[4] one time, going out and doing some additional
[5] site work and then if we find that we need to,
[6] that site moves to the remedial investigation
[7] feasibility study, which is a much larger scope
[8] of investigating the site. And also coming up
[9] with alternatives for addressing the site.
[10] Next is the proposed plan and Record of
[11] Decision. The proposed plan is when we send out
[12] to the public information on what it is we plan
[13] to do at a particular site and that information
[14] gets documented in the Record of Decision and
[15] I'll go into that a little bit later on in the
[16] presentation.
[17] Then we have the remedial design and
[18] design what it is we want to do at the site and
[19] then that design is implemented. Once the design
[20] has been implemented and the action is complete,
[21] then we continually monitor the remedy to make
[22] sure that it stays in place and that it is

Page 10

[1] effective.
[2] The Record of Decision. That serves as
[3] legal documentation for the remedy that we
[4] selected at the installation restoration site.
[5] It's a requirement under the Comprehensive
[6] Environmental Response. Compensation, and
[7] Liability Act, CERCLA. Also known as Superfund.
[8] And it outlines the technical aspects of the
[9] remediation, what it is we're trying to do and
[10] why and get the technical basis for that and it
[11] also serves as information to be shared with the
[12] public.
[13] This isn't a really good picture of the
[14] site, but this is the current site condition of
[15] Site 6 and 6A, which is known as the Bohneyard.
[16] In the back, when you came into the room earlier,
[17] you might have noticed two color plans and
[18] they're right back there.
[19] I had the board turned around so you can
[20] see them. To my left is the current condition at
[21] Site 6 and 6A, the Bohneyard. Right now the base
[22] is using that for fuel operations.

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[1] Next to it is the future plan for the
[2] Bohneyard, which will consolidate all the fuel
[3] operations here at Pax River for the fuel trucks.
[4] They'll be located in one area. The entire
[5] Bohneyared site encompasses about ten acres.
[6] It got the name because of the location.
[7] It's on Bohne Road and it was just a storage
[8] yard, hence Bohneyard. So, that's how we came up
[9] with the name. There's some buildings out there
[10] now that are associated with their fuel
[11] operations.
[12] Site 6A is the site located east of Site
[13] 6 and that area is mainly used just for storage.
[14] A little bit of history of Site 6 and 6A. I'll
[15] start with Site 6 first. Site 6 was used
[16] actually early in the forties and it received
[17] bottom ash from the coal-fired plant here on
[18] station and spread across the site.
[19] Later on, it started receiving drums
[20] containing oily waste and later on those drums
[21] contents expanded to waste paints, oils, thinners
[22] and lubricants. Later on, late seventies/early

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[1] eighties, operations ceased and the drums were
[2] eventually removed from the site.
[3] In '89 the base received a sludge
[4] application from the nearby wastewater treatment
[5] plant and then in 1992, there was a large,
[6] partially buried tank that contained waste oil
[7] that was later removed.
[8] This is what the site used to look like
[9] when it was in operation with the drum storage.
[10] After the drums were removed they had the sludge
[11] application, and then the results of the sludge
[12] application: Nice, green grass.
[13] And this is the storage compound. And I
[14] don't have my pointer, but if you look over in
[15] the top, sort of like the middle left area, you
[16] can see storage and that's for the ROICC.
[17] Resident Officer In Charge of Construction. He's
[18] using that right now as a storage area for
[19] equipment.
[20] Site 6A came along later in the program.
[21] We already started looking at Site 6 and once the
[22] base became a National Priority Listed site, we

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[1] got a hold of some earlier aerial photographs and
[2] it was determined that this adjacent area to Site
[3] 6 also had some drum storage. So, we needed to
[4] take a look at that site also.
[5] Summary of site risk for both sites. As
[6] far as having any cancer-causing contaminants, we
[7] found everything to be within the acceptable
[8] range for cancer risk. The concern is mainly in
[9] noncancer causing and this is due to some of the
[10] metals that we detected out there, such as
[11] arsenic, chromium, aluminum, silver, and it is
[12] not acceptable for the noncancer risk, which is
[13] why we're going to be doing an action out there
[14] at Site 6 and 6A.
[15] We also looked at the ecological portion
[16] and this took some time to look at because the
[17] ecological assessment piece has really been
[18] evolving over the last several years as far as
[19] learning more about how to assess an area and we
[20] have been working very closely with the EPA's
[21] biological technical assistant group to do this.
[22] What we do for these sites, we're given

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[1] the current size of the site and then what we're
[2] planning to use the site for. There was really
[3] not going to be much habitat left out there.
[4] There's not much out there now. So, that part
[5] isn't going to change much. It's going to be
[6] even less out there once we start and get the
[7] fuel operations consolidated. So, essentially,
[8] we have no ecological risk at the site.
[9] We just completed a Focused Feasibility
[10] Study for both sites and that's where we looked
[11] at what we could do to remedy these areas and
[12] rather than look at a very large list of
[13] different alternatives for addressing the site,
[14] we first looked at what the base wanted to use
[15] the site for and then we tailored our
[16] alternatives to that usage. And what we looked
[17] at were three alternatives.
[18] The first alternative is just a
[19] no-action alternative. That's something we have
[20] to include in all our feasibility studies. If we
[21] do nothing, what is the cost? Are we doing —
[22] are we going to be protecting the health of the

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[1] environment by doing nothing? We have to look at
[2] that.
[3] The next alternative. We looked at
[4] putting some type of cover in and then putting
[5] institutional controls in place. What is meant
[6] by institutional controls, is just making sure
[7] that whatever we decide to do out there does not
[8] get impacted later. So, when you say, for
[9] instance, you cannot put a day care facility out
[10] here or you may not be able to dig beyond two
[11] feet out here, something like that.
[12] This is different from deed restriction
[13] because we don't have the authority to actually
[14] restrict the transfer of the property. Only GSA
[15] does that, but what this allows us to do is to
[16] have more flexibility over the reuse of this
[17] area.
[18] Third alternative that we looked at
[19] was just to dig and haul. And taking things
[20] off-site — and based on the cost, it's cheaper.
[21] Aside from Alternative 1, which has no cost.
[22] Between Alternatives 2 and 3, 2 was the better

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[1] alternative.
[2] To evaluate the alternatives, we had to
[3] look at what we call the nine criteria. The
[4] National Contingency Plan. The nine criteria are
[5] broken down into three tiers. The first tier is
[6] the threshold criteria, that being one of the
[7] most important criteria as far as making sure we
[8] have overall protection of human health and the
[9] environment.
[10] The next group is what we call the
[11] balancing criteria. To take a look at the
[12] effectiveness of the remedy. Are we doing
[13] anything to reduce the amount of items that are
[14] out there? Is this something that can be easily
[15] implemented? Short term, is it going to work?
[16] And then we also look at cost.
[17] The last criteria is the modifying
[18] criteria and this is very important to use in the
[19] program because this is where we get the
[20] community acceptance and the State of Maryland
[21] acceptance. And if the community cannot accept
[22] our alternative, then the State of Maryland does

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[1] not support us either.
[2] Alternative 2, to cover with
[3] institutional controls, it met our criteria —
[4] the nine criteria we just looked at. We cannot
[5] treat the metals that are out there. The metals
[6] are just not conducive to treatment. So, that
[7] was something that we cannot look at.
[8] It is something that the National
[9] Contingency Plan wants us to look at when we're
[10] investigating the site. Is there something we
[11] can do to treat the material to reduce the
[12] amount? That isn't something that we could do
[13] with the metals in the soils.
[14] Institute controls could be easily
[15] implemented and it meets the base's long-term
[16] operational needs and it allows the base — by
[17] being able to consolidate the fuel operations, it
[18] frees up about 23 acres here on the base for them
[19] to use for something else.
[20] And at the end of this meeting in the
[21] public comment period, if you decide for some
[22] reason we don't really like what it is that we're

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[1] planning to do, then we'll have to address that.
[2] We might have to look at another alternative.
[3] This picture is also back there in the
[4] back, but this is what the finished project is
[5] going to look like and there are two gentleman
[6] here from OHM. If you remember, OHM did the Site
[7] 11 landfill for us. They did the construction on
[8] that. They also just had started Site 17, the
[9] pesticide shop. There is still additional work
[10] to do out there.
[11] I'm going to have Dan Pringle stand up
[12] please. Dan Pringle is going to be the project
[13] manager for this project from the start. Paul
[14] Ingersoil is here also and he's the project
[15] engineer.
[16] Current schedule. We're in the public
[17] comment period right now. It started on the 26th
[18] of July and it's scheduled to end on the 27th of
[19] August. We're planning to have the Record of
[20] Decision signed by September 22nd. And then
[21] we're hoping that OHM can mobilize on or about
[22] September 13.

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[1] They will be allowed to come in, set up
[2] trailers, set up E&S controls, before the ROD is
[3] actually signed. We want to try to get them our
[4] in the field so as soon as the ROD is signed,
[5] we're ready to go.
[6] Our information on repositories are
[7] listed up here. And if you have comments, send
[8] them please to the attention of the commanding
[9] officer. Ms. Joan Hinson and also on the back of
[10] the proposed plan, it's already addressed for
[11] you. If you want to use this form, you just fill
[12] this out, cut it and fold it and mail it. Are
[13] there any questions? Comments? Yes, ma'am?
[14] **MS. KREITZER**: Why don't you take three
[15] if it's going to be a permanent answer to getting
[16] rid of everything that's a problem? Why are they
[17] going to put asphalt over something and then have
[18] to check it every five years? I mean, is it a
[19] cost factor?
[20] **MS. JORDAN**: Yes.
[21] **MS. KREITZER**: Well, if you find out in
[22] five years that you've got to take all the

Page 20

[1] asphalt off, are you going to save any money? I
[2] mean —
[3] **MS. JORDAN**: Well —
[4] **MS. KREITZER**: I mean —
[5] **MS. JORDAN**: Okay.
[6] **MS. KREITZER**: What's the cost of
[7] hauling dirt off as opposed to the other, leaving
[8] it there and covering it?
[9] **MS. JORDAN**: Okay —
[10] **MS. KREITZER**: Which it not a — it
[11] doesn't make — in my head, it doesn't make good
[12] sense.
[13] **MS. JORDAN**: Okay Rick, did you want
[14] to —
[15] **MR. TARR**: I'm going to bring it up.
[16] **MS. JORDAN**: He's going to bring up the
[17] slide. We looked at that. We also talked with a
[18] company that had done a project similar to this
[19] up north. It seems to work fairly well. There
[20] doesn't seem to be any problems with the asphalt
[21] breaking up, so we feel like this is something
[22] that would be worthwhile to do.

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[1] **MS. KREITZER**: Well, as opposed to
[2] something which you know will remove the
[3] contamination? I mean, if you're not going to be
[4] able to do anything except park out there — you
[5] didn't want any people out there?
[6] **MS. JORDAN**: Right. The estimate that's
[7] shown here for excavating, that's just an
[8] estimate. What we're running into at Site 17
[9] right now, we had an estimate of how much we
[10] thought it was going to cost to excavate and we
[11] didn't know it was going to cost that much.
[12] It was either excavate or cover. And we
[13] figured if we just go out there, dig it up, it
[14] will be gone and we won't have to deal with it.
[15] What we're finding, though, is that we're
[16] actually having to chase contamination.
[17] **MS. KREITZER**: Well when you're
[18] through, you're not going to know whether or not
[19] you've solved the problem. You're going to have
[20] to keep checking it. How about, isn't there —
[21] and then if you have to dig it up later, how
[22] about the expense? What is the difference in the

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[1] expense? Does the EPA or some other outfit pick
[2] up some of the bill or is this all on the station
[3] that has to —
[4] **MS. JORDAN**: No, it comes out of our
[5] installation restoration. The only thing that
[6] the base is paying for — at this point, they're
[7] just paying for their concrete cover for the
[8] parking spots.
[9] **MS. KREITZER**: That they'll use.
[10] They'll use the concrete?
[11] **MS. JORDAN**: Right. Right.
[12] **MR. TARR**: Madeleane, the two prices you
[13] see under Alternatives 2 and 3? Under
[14] Alternative 2, the 1.7 is the concrete covering,
[15] the asphalt, and that's the whole parking lot.
[16] **MS. KREITZER**: The concrete cover and
[17] the asphalt?
[18] **MR. TARR**: Yeah, that's all one, big
[19] cover.
[20] **MS. KREITZER**: I thought it was only the
[21] concrete cover.
[22] **MR. TARR:** It's the whole remedy. And

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[1] that includes that O&M for 30 years, spending
[2] $20,000 a year to check it every once in the
[3] while and sample and so forth.
[4] **MS. KREITZER**: In the here it doesn't
[5] say anything about how long it's going to hold
[6] up.
[7] **MR. TARR**: Well —
[8] **MS. KREITZER**: And I did read in here
[9] that the — you didn't want a lot of people in
[10] there. You don't want kids over there.
[11] **MR. TARR**: RIGHT.
[12] **MS. KERITZER**: You don't want housing
[13] over there.
[14] **MR. TARR:** Right. The 1.7 is —
[15] **MS. KREITZER**: So, if the base closes,
[16] down the line —
[17] **CAPTAIN ROBERTS**: Madeleane, there's a
[18] couple things. First of all, there's the
[19] location. If you look at where this thing is
[20] located, it's right in the middle of all of our
[21] fuel tanks.
[22] **MS. KREITZER**: I didn't hear.

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[1] **CAPTAIN ROBERTS:** It's in the middle of
[2] all our fuel tanks. This is where we store all
[3] of our jet fuel. So, we don't put things in
[4] there like that anyway. Okay?
[5] **MS. KREITZER:** Well, that makes sense.
[6] **CAPTAIN ROBERTS**: It doesn't make sense
[7] to put them in there, stored next to all these
[8] fuel tanks, okay? That's one reason, okay? The
[9] other thing is when you looked at what do you
[10] have to do to protect human health?
[11] What do you have to do to protect the
[12] ecology, the bunnies and so on and so forth, and
[13] if you look at what's in there, the metals and so
[14] on, to simply cover it in place — we know what's
[15] there, okay? When you don't take things out, of
[16] course, you're going to have to monitor. Any
[17] place you go — basically, any site that you
[18] have — if your remember the pesticide shop?
[19] **MS. KREITZER**: Yeah
[20] **CAPTAIN ROBERTS**: Any time you don't
[21] take all of it out and get rid of it, you have to
[22] monitor. That's the way the laws read —

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[1] **MS. KREITZER**: Well, that makes sense.
[2] **CAPTAIN ROBERTS:** — and that's the way
[3] it works.
[4] **MS. KREITZER**: Why not do it if there's
[5] a doubt in mind? I mean, how great's the doubt
[6] as to whether this is going to work?
[7] **CAPTAIN ROBERTS**: I don't think there's
[8] much doubt as to the feasibility and that this
[9] will work. I think the data is there in the
[10] studies that we did.
[11] **MS. KREITZER**: Okay. Five years down
[12] the line, if you find you've got a problem, what
[13] are we going to have to do? Take off the asphalt
[14] and dig it out — take it out? I just, in my
[15] head —
[16] **CAPTAIN ROBERTS**: Can you help me with
[17] that, Andy, on the monitoring in this
[18] alternative?
[19] **MR. SOCHANSKI**: One of things we looked
[20] at — well, again, metals in soils, they don't
[21] really migrate that much and we don't have a
[22] groundwater problem. So, they're there in the

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[1] soil.
[2] And originally, we were looking at some
[3] sort of cover out there and I guess six months or
[4] a year ago the base mentioned, Hey, we'd like to
[5] use this area as a parking lot. So, you know,
[6] considering that option, a parking lot in cover
[7] seemed ideal and —
[8] **MS. KREITZER**: How about long term?
[9] **MR. SOCHANSKI**: Long term? I mean,
[10] you're going to have concrete out there 6 inches
[11] for the parking area. Asphalt is going to be , I
[12] guess, 5, 6 inches.
[13] **MS. KREITZER**: The parking is not going
[14] to be on the asphalt?
[15] **MR. SOCHANSKI:** 6A is going to be
[16] covered with asphalt.
[17] **MS. KREITZER:** And the other one is
[18] concrete?
[19] **MR. SOCHANSKI**: The other one is going
[20] to be concrete. Beyond the areas in 6 that's
[21] concrete, there's going to be gravel and then a
[22] soil cover and then grass around the fringes.

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[1] So, the only real monitoring we're going to have
[2] to do is make sure the asphalt doesn't crack, the
[3] concrete doesn't crack and the gravel and soil
[4] and grass that's actually on the fringe areas
[5] isn't eroding away.
[6] **MS. KREITZER**: How about water? I
[7] mean —
[8] **MR. SOCHANSKI**: And the design is going
[9] to take care of water runoff, yeah.
[10] **CAPTAIN ROBERTS**: And metals don't
[11] migrate like some of the other things that we've
[12] talked about that magrate.
[13] **MS. KREITZER**: And they don't have
[14] anything from the fuel tanks that — the stuff
[15] that leaked, the barrels that leaked and all that
[16] stuff? I'm not trying to give you a hard time.
[17] **CAPTAIN ROBERTS**: No, no, they're good
[18] questions. I'm sorry, what was your question?
[19] **MS. KREITZER**: Well, they had those
[20] drums out there. They said there was leakage.
[21] **CAPTAIN ROBERTS**: There was some leakage
[22] and that's what we're finding in the site. Most

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[1] of it is metals, okay? And so, it's not like
[2] when we dealt with pesticides or those types of
[3] things that migrate through the soil very easily.
[4] The metals don't migrate. So, we know what's
[5] there, okay?
[6] The original look was, well, when you're
[7] in the kind of situation we have, what you do is
[8] put some kind of cover or cap on it, okay? Well,
[9] in this case we decided to turn it into a win-win
[10] in that we were going to put a cap on it, but
[11] we'd also put it in as a kind that we could use
[12] that would consolidate and improve our
[13] operations — our fuel operations, so we could
[14] consolidate all of our fuel trucks at the fuel
[15] farm.
[16] So, we did two things at the same time:
[17] We consolidated the fuel truck operations. We've
[18] met the requirements to the environmental — all
[19] the environmental requirements. So, the money
[20] that we're doing is actually improving our
[21] operations, consolidating it, and what it does is
[22] where the fuel trucks are now?

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[1] **MS. KREITZER**: Yeah
[2] **CAPTAIN ROBERTS**: It's going to open up
[3] 23 acres that we can use for future development
[4] on the base.
[5] **MS. KREITZER**: That makes sense, but
[6] what about taking the dirt out first? That's too
[7] expensive? Is that the idea? And then taking —
[8] I'm using the same site —
[9] **MS. JORDAN**: That's an additional two
[10] point — two point is just to do the digging.
[11] That doesn't include —
[12] **MS. KREITZER**: I think that asphalt and
[13] all that is fine, but I mean if you — then you
[14] wouldn't have to make continual monitoring and
[15] then wouldn't that be —
[16] **CAPTAIN ROBERTS**: Usually, what you'll
[17] find — and you can help me again on this one,
[18] Andy — my understanding is, under the
[19] circumstances of this particular site with what
[20] we have — a normal approach is some type of a
[21] cover, okay?
[22] And it just happens that this particular

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[1] location we're in the fuel farm where we have all
[2] these fuel tanks and fuel lines and so on and so
[3] forth, is probably the ideal solution. Because
[4] using that cap, which is one of the standard
[5] procedures under the conditions we have, will
[6] also improve base operations. So, it's a
[7] win-win.
[8] **MS. KREITZER**: So, you wouldn't want to
[9] take the dirt out and then cap because of
[10] whatever reasons?
[11] **MR. TARR**: It's not cost-effective and,
[12] two, with the cover you can manage the risk.
[13] It's contained. It's not going anywhere.
[14] **MS. KREITZER**: Okay. But in five years,
[15] if it's any problems will that be —
[16] **MR. TARR**: Addressed.
[17] **MS. KREITZER**: I know it will be
[18] addressed but will the cost be —
[19] **CAPTAIN ROBERTS**: If you really look at
[20] it in my mind — and you can help me with this,
[21] these people who are experts — the problem we
[22] might have is where we put the soil and gravel we

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[1] might have some erosion that we have to replace.
[2] Those heavy metals aren't going to migrate
[3] anywhere. We don't have a groundwater problem.
[4] We've already done the studies and all that. We
[5] know we don't have that.
[6] **MS. KREITZER**: So, what are you checking
[7] for?
[8] **CAPTAIN ROBERTS**: So, what we have is
[9] some of those heavy metals in that top dirt. So,
[10] the most cost-effective —
[11] **MS. KREITZER**: After five years, what
[12] are your looking at, the surface?
[13] **MR. TARR**: Surface.
[14] **CAPTAIN ROBERTS**: Looking to make sure
[15] the concrete isn't cracking.
[16] **MS. KREITZER**: And the asphalt?
[17] **CAPTAIN ROBERTS**: And the cover around
[18] it isn't eroding. So, that's not a large —
[19] **MS. KREITZER**: I'm not trying to —
[20] **CAPTAIN ROBERTS**: No they're very good
[21] questions. Because you have been — you have
[22] seen other circumstances where we said we've got

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[1] to take a bunch dirt off out here.
[2] **MS. KREITZER**: Yes, and I just wondered
[3] about if it was cost-effective to do that? No.
[4] Is that the bottom line?
[5] **CAPTAIN ROBERTS**: But the pesticides,
[6] you really didn't have a choice. The levels of
[7] contaminants that we had — if you remember, we
[8] exceeded the human health standard and the
[9] ecological standard. The pesticide shop was
[10] pretty bad and pesticides migrate.
[11] So, the idea there was to get rid of the
[12] real heavy concentration of contaminants and have
[13] it burned and then fill it in and cover it again.
[14] Remember? We were going to cover that one.
[15] So, I think under the circumstances, if
[16] you took that anywhere else — not just here at
[17] Pax River — under those circumstances that we
[18] have a general approach is some kind of a cap or
[19] a cover. Is that right, Andy, normally?
[20] **MR. SOCHANSKI**: Yes. And, Madeleane,
[21] one of the reasons why we only found metals I
[22] believe, is even though the site was used to

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[1] store drums, oily waste, paints, eventually
[2] solvents and that sort of thing, is — remember
[3] from the history sludge was applied.
[4] It was filled, and that probably helped
[5] to eliminate some of those volatile contaminants
[6] that might have stayed in the soil. So, there
[7] might have been a natural bioremediation of those
[8] contaminants and that's probably one of those
[9] reasons why at the end from now today, we are
[10] just finding metals and they're just slightly
[11] above the risk range that warrants some action.
[12] **CAPTAIN ROBERTS**: Would the coal
[13] residue, the coal ash, contribute to the metal?
[14] **MR. SOCHANSKI**: It very well could.
[15] **MS. KREITZER**: Yeah, you've got two
[16] kinds of ash going in there. What is the
[17] difference between those two?
[18] **MR. TARR**: Nothing. There's no
[19] difference, just terminology.
[20] **MS. KREITZER**: Terminology is different?
[21] **MR. TARR**: Basically the slag that is
[22] left over as a result of burning coal. That's

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[1] all it is.
[2] **MS. KREITZER**: I was curious because I
[3] didn't know what the difference was.
[4] **CAPTAIN ROBERTS**: That's a very good
[5] question. Many of those that we have dealt with
[6] we've taken soil. And in these circumstances
[7] it's not cost-effective or, in our opinion,
[8] necessary. I just wanted to point that location
[9] out.
[10] In that fuel farm, you're not going to
[11] do much over there anyway. You can't put a
[12] school. You can't put a day care. You can't put
[13] those kinds of things there anyway because we're
[14] sitting in the middle of fuel tanks.
[15] **MS. KREITZER**: Thank you
[16] **CAPTAIN ROBERTS**: Yes?
[17] **AUDIENCE MEMBER**: Isn't it likely that
[18] being used for fuel storage and fuel tank trucks
[19] and so forth, that it's going to — the asphalt
[20] or the cement is going to deteriorate more
[21] rapidly than it would under ordinary
[22] circumstances?

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[1] **MS. JORDAN**: Well, the concrete is going
[2] to be reinforced so we will the lessen the chance
[3] of that happening. And just because there is a
[4] crack in the asphalt or concrete doesn't mean
[5] that we have to all of a sudden dig up all the
[6] soil. We can just come in patch what's cracked
[7] and it's fairly easy to patch.
[8] And we still feel it would be more
[9] cost-effective just to monitor it. It's not
[10] expensive to go out there and just take a look,
[11] because we have fuel people out there anyway in
[12] the operation.
[13] We think that that's very inexpensive to
[14] do and as far as having to patch the asphalt, we
[15] feel it is going to be cheaper than trying to
[16] take it off-site and it costs a lot to take
[17] things off-site and dispose of them.
[18] **AUDIENCE MEMBER**: Now, he did say it's
[19] going to free up 23 acres that they now are using
[20] for fuel areas?
[21] **MS. JORDAN**: That's correct.
[22] **AUDIENCE MEMBER**: Now, will you have to

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[1] clean up those 23 acres also?
[2] **MS. JORDAN**: Not under the IR program.
[3] **MR. TARR**: As of right now, we don't
[4] know of any problems over there. It's just
[5] basically an asphalt parking lot with the storage
[6] of fuel trucks, et cetera.
[7] **AUDIENCE MEMBER**: Donna, just to add to
[8] that, where the fuel trucks are going to be
[9] parking, they're actually going to be parked on
[10] the concrete and there's 8 inches of reinforced
[11] concrete there. There is a little bit of asphalt
[12] that's going to be added to the existing asphalt
[13] that's already out there.
[14] I understand where you're coming from.
[15] Typically, if you drop diesel fuel or some type
[16] of petroleum product on that, it will erode the
[17] asphalt a lot faster than normal.
[18] Where the trucks are going to be and
[19] where they're going to be accessing this area,
[20] it's all concrete. We have two concrete access
[21] ways where the trucks will be coming in and
[22] coming out and the ready paths where the trucks

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[1] will be stationed will all be concrete.
[2] **AUDIENCE MEMBER**: The other thing to
[3] remember is we have a series of cache basins that
[4] will take any spills away form the contaminated
[5] area. So, it won't be sitting on the concrete
[6] for a period of time.
[7] **MS. KREITZER**: You'll have the means to
[8] wash it —
[9] **AUDIENCE MEMBER**: Yes.
[10] **MS. KREITZER**: — and the clean it up?
[11] **AUDIENCE MEMBER**: Right. Yes.
[12] **AUDIENCE MEMBER**: I'm wondering if you
[13] can compare the effectiveness of the areas where
[14] there's concrete versus the asphalt versus the
[15] impacted soil or gravel, and are the areas
[16] planned for the type of surface associated with
[17] any higher or reduced risk in terms of this
[18] areas that may not meet the human performance
[19] standards?
[20] **MS. JORDAN**: No. I think if I
[21] understand what you're saying, what we did is
[22] looked at — as far as where the contamination

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[1] was, looked at that, then we looked at what the
[2] base needed for capacity for parking, looked at
[3] how much material would we need and we agreed, I
[4] think, it came up to be about a foot of material,
[5] some impacted gravel and concrete to act as a
[6] barrier.
[7] So, the main risk out there is if you
[8] come in contact with the soils for a long period
[9] of time. So, if we are preventing that contact,
[10] that's what we're using to manage the risk. So,
[11] that' how we came up with the different areas of
[12] concrete.
[13] The areas that were not going to receive
[14] the concrete or asphalt, then we looked at
[15] putting gravel and then the soil. So, what we're
[16] looking at is quantity of material between the
[17] surface and where the contaminants were. Chris,
[18] did you want to add to that?
[19] **MR. SMITH**: I can a little bit.
[20] Obviously, the concrete is the best deterrent to
[21] prevent contact. The asphalt would then be next
[22] and then the soil would be last. In addition to

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[1] that, the higher risk areas are all in 6A — or 6
[2] which is concrete covered. So, in the effect, we
[3] did what you are looking for us to do, but that
[4] wasn't a major driving force.
[5] **AUDIENCE MEMBER**: I see in looking at
[6] the literature that it says an estimated eight
[7] tons of liquid wastes were disposed of or spilled
[8] and the next thing I see here is that this was
[9] put on the National Priorities List, which is the
[10] most serious, uncontrolled hazardous waste sites
[11] in the entire country. That's kind of scary.
[12] The question that would arise — to try
[13] to get a handle on this is — did anyone look at
[14] the wells, the groundwater wells? Was there
[15] checks of those done?
[16] **MS. JORDAN**: Yes.
[17] **AUDIENCE MEMBER**: And were they pretty
[18] well surrounding the area?
[19] **MS. JORDAN**: Yes, we put in a number of
[20] wells surrounding the area and, as Andy
[21] mentioned, we're not finding a significant
[22] groundwater problem out there.

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[1] **AUDIENCE MEMBER**: Your are finding some,
[2] through?
[3] **MS. JORDAN**: We found at least one hit
[4] of TCE, but the last run of samples were below
[5] what you are required for standards for drinking
[6] water. So, we're okay on groundwater.
[7] **MR. SOCHANSKI**: And that was only one
[8] well
[9] **AUDIENCE MEMBER**: Well, one would
[10] concern people. It's not zero.
[11] **MS. JORDAN**: We're not drinking — no
[12] one is drinking from where we are finding
[13] groundwater.
[14] **AUDIENCE MEMBER**: Well, that would be a
[15] long discussion on aquifers and whatever because
[16] I don't know how those flow under the ground, but
[17] the question that would come to mind is you
[18] would assume common sense— and common sense
[19] doesn't always work because of the nature.
[20] unfortunately — common sense would seem to say
[21] if you took a group force cheap approach, which
[22] you are, and put cement down rather than to get

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[1] rid of the thing, that then it would seem to me
[2] that that requires a certain series of monitors,
[3] including well water, and might assume that since
[4] you put the cement or asphalt over it that the
[5] rate is not going to be increased. It may or may
[6] not be true. It depends on the earth's strata
[7] and a whole lot of other complicated factors.
[8] **MS. JORDAN**: The groundwater, we are
[9] continuing to look at. We're just working on the
[10] soil right now, but Operable Unit 2 will be the
[11] next unit for Site 6 and 6A. That's when we get
[12] more discussion on ground —
[13] **AUDIENCE MEMBER**: The question is — and
[14] this would scare any citizen — what was the —
[15] what are the criteria used to determine that this
[16] was one of the most serious sites in the country?
[17] Because it seems like if it's such a serious site
[18] that you can't just asphalt over it. What is the
[19] significance of that statement?
[20] **MR. SOCHANSKI**: The NPL listing was a
[21] listing of the base on the National Priorities
[22] List, not this site specifically. That is —

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[1] **AUDIENCE MEMBER**: So, there's things
[2] that are worse? Is what we're saying?
[3] **MS. JORDAN**: The pesticide shop is
[4] considered worse than this site.
[5] **MR. SOCHANSKI**: And as far as scoring on
[6] the National Priorities List, they looked at
[7] several areas of sites within the base and used
[8] that to rank it and propose it for the NPL
[9] listing and subsequent —
[10] **AUDIENCE MEMBER**: So, that doesn't
[11] necessarily have anything to do with this issue,
[12] even though it's listed right on this page?
[13] **MR. SOCHANSKI**: No.
[14] **AUDIENCE MEMBER**: Which is a little
[15] disconcerting without some disclaimer. Okay
[16] **MR. SOCHANSKI**: That's provided for
[17] historical perspective. One thing under the NPL
[18] program, we have to address all the sites that
[19] are contaminated.
[20] **CAPTAIN ROBERTS**: What happens to you
[21] is, if you have a couple of very bad sites, which
[22] we've had, they put you on the National Priority

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[1] List. All your sites then have to go through
[2] this process where you're going to be on this
[3] because the base is on the National Priority
[4] List.
[5] **AUDIENCE MEMBER**: So, all of them have
[6] to go through — does that imply a more stringent
[7] perusal than they would otherwise because you're
[8] on that list? And that means the place or
[9] something like?
[10] **CAPTAIN ROBERTS**: Right.
[11] **AUDIENCE MEMBER**: Thank you. Just
[12] curious.
[13] **AUDIENCE MEMBER**: We have two cost
[14] figures given to us, one of 2.6 million and one
[15] of 2.7 million. And what I'd like to know is how
[16] was this data derived? Specifically, is this the
[17] result of competitive bid estimates or are these
[18] just staff estimates?
[19] **MS. JORDAN**: No, they're not the result
[20] of competitive bid estimates. It's —
[21] **AUDIENCE MEMBER**: These are staff
[22] estimates then?

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[1] **MS. JORDAN**: Right. Engineers' best
[2] guess judgment on the activities that would be
[3] involved, type of materials that would be
[4] involved, and some known cost about how much
[5] we're currently paying for certain activities,
[6] like hazardous waste disposal. We have enough
[7] information in databases on that to get a very
[8] good figure to use for that, but these costs were
[9] not competitively bid.
[10] **AUDIENCE MEMBER**: So, in other words,
[11] what would your confidence factor be in these? I
[12] mean, do you think is it 95 percent probability
[13] that these are accurate or a 60 percent
[14] probability or 30 percent probability?
[15] **MS. JORDAN**: I'd say more than 50
[16] percent, but how we look at it is there isn't one
[17] cost that we would consider to be more credible
[18] than the other. So, they're both on equal
[19] playing fields. So to speak. Both costs would be
[20] considered in a ballpark or greater than 50
[21] percent estimate and it's just an estimate
[22] because until we get into actuals, you don't

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[1] really know how much it's going to cost.
[2] **AUDIENCE MEMBER**: In other words, you're
[3] choosing a plan of action based upon a cost
[4] consideration, which is an estimate of maybe a 50
[5] percent probability of accuracy?
[6] **MS.JORDAN**: But both of them are on
[7] that same arena
[8] **CAPTAIN ROBERTS**: Well, I would add to
[9] that. She gave a list of what we had on the
[10] alternatives, and cost was only one thing out of
[11] a number them. There are many things that are
[12] looked at and considered in selection of
[13] alternatives. If you look here, cost is only
[14] one, okay?
[15] The issue we've gotten into here is the
[16] effectiveness of soil removal versus capping.
[17] Where a cap or a cover meets — helps meet and
[18] solve the ecological problems, human health, it
[19] meets the ecological, okay?
[20] And if that site was sitting somewhere
[21] else, not just where it's at now — when we do
[22] all these analyses, when you look at a lot of the

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[1] practices that were going on out there, some type
[2] of cover would probably be the recommended
[3] solution, okay?
[4] In this particular case, as you've
[5] heard, they said they were looking at some type
[6] of a cover or cap. Then, we went back and said
[7] if we do that, we can consolidate fuel
[8] operations.
[9] So, we didn't come in and say, We want
[10] to use it for a parking lot, let's put a cap on
[11] it. It came the other way. When we looked at
[12] the alternatives, we were looking at some kind of
[13] a cap for it and said if we do a cap, why don't
[14] we do a real good cap with all this concrete and
[15] we can consolidate our operations on base and
[16] then it's win-win. We protect the site and we
[17] improve the operations on the base.
[18] It did not come from — I think people
[19] are getting the idea that we said, We've got this
[20] site and we want to use it for fuel trucks, so
[21] this is what we're going to do. That is not the
[22] case. It came around the other way.

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[1] We did out regular analysis. We were
[2] looking at some type of a cover or cap and when
[3] we were doing that and we said, well, if we do
[4] that, look at where it's at, we ought to
[5] consolidate our fuel truck operations and we
[6] could use the property, instead of just capping
[7] it and not use it for anything. So, that evolved
[8] out of looking at the alternatives.
[9] **AUDIENCE MEMBER**: But I think
[10] Madeleane's concern about removal, which would be
[11] probably at least as effective as capping. If
[12] the heavy metals were removed, it would be as
[13] effective an alternative as capping it.
[14] However, it seems that the decision was
[15] based upon cost factors as to whether we would
[16] remove or cap, or remove and then cap to make it
[17] into a parking lot and the cost criteria seems to
[18] be very nebulously arrived at an that was the
[19] point that I was trying to raise. Does that
[20] follow up on your —
[21] **MS. KREITZER**: Because if you get rid of
[22] it instead capping it, then you don't have a

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[1] problem.
[2] **AUDIENCE MEMBER**: And it's — so in
[3] other words, really removing does not preclude
[4] using it as a parking lot later, as a fuel depot
[5] or whatever. The decision not to remove seems to
[6] be a cost decision and that decision is —
[7] **CAPTAIN ROBERTS**: The cost difference
[8] you see here is simply to remove the soil. It is
[9] not asphalt. It is not concrete. It is nothing
[10] else. It is simply the cost of removing the
[11] soil. So, any other use, you're going to have to
[12] come up with additional funding to do the
[13] concrete, the asphalt, if that's what you wanted.
[14] This seemed to be a win-win situation to do it
[15] this way.
[16] **MR. SOCHANSKI**: George and Madeleane, if
[17] you look at Alternative3. Alternative 3 is $2.6
[18] million estimated for excavation. So, let's say
[19] that is within the ballpark. It could be a
[20] little low, but chances are, you know, it's
[21] somewhere in the ballpark.
[22] If they decided to excavate, it's

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[1] somewhere around $2.6 million. Now, if you want
[2] a parking lot, asphalt or concrete, you're
[3] talking about somewhere in the neighborhood of
[4] about another million dollars added on to it for
[5] the parking lot and the asphalt area for storage.
[6] **MS. KREITZER:** Well, I have a
[7] hypothetical question: Suppose some years down
[8] here this is not going to be used as a parking
[9] lot, the base, you know, who knows what's going
[10] to happen, okay? You've still got your problem
[11] there. I mean, you said the metals are going to
[12] stay there. They're going to stay there.
[13] **MR. SOCHANSKI:** Yes, that is correct.
[14] **MS. KREITZER:** Fifty years down the line
[15] you've still got the problem. You haven't solved
[16] it long term. I was thinking if digging it out
[17] and then paving, it just in my head makes sense,
[18] but, you know. I'm —
[19] **MR. SOCHANSKI:** Well, you are correct.
[20] If you eliminate or remove all the contamination,
[21] the contamination isn't there.
[22] **MS. KREITZER:** Then you haven't got a

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[1] problem.
[2] **MR. SOCHANSKI:** Then you have the
[3] unlimited use of that property in the future.
[4] **MS. KREITZER:** Down the line. I mean,
[5] you don't know what's going to happen down the
[6] line.
[7] **MR. SOCHANSKI:** That is correct. We
[8] really don't.
[9] **AUDIENCE MEMBER:** Was excavation or any
[10] type of treatment on-site given consideration for
[11] an alternative?
[12] **MS. JORDAN:** We didn't look at treatment
[13] because of the metal contamination. Metals to
[14] soils are just not treatable. Really, it's not
[15] really effective to try to treat that. So, we
[16] didn't really look into that any further. What
[17] was the other part of your question?
[18] **AUDIENCE MEMBER:** That was it.
[19] **MS. JORDAN:** That was it? Okay. Any
[20] other comment? Chris?
[21] **MR. SMITH:** I was going to bring up one
[22] other point and that is by excavating this metal

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[1] soil— the soil contaminated with metals, one of
[2] the issues that you're going to run into is that
[3] while you take it from this location and you put
[4] it somewhere else, you're still responsible for
[5] it.
[6] **MS. KREITZER:** Yeah, but that's just a
[7] temporary thing when you — that's not
[8] something —
[9] **MR. SMITH:** No, what I'm saying is
[10] Alternative 3, the two —
[11] **MS. KREITZER:** Yeah, but aren't you
[12] going to take it to a place which is for that
[13] purpose? You've got a dump that's —
[14] **MR. SOCHANSKI:** Correct, but at some
[15] point in time, as you're pointing out, that is
[16] going to be used for something else or, you know,
[17] it's just as likely they may mine it. There's
[18] lots of things that can happen. So, you're —
[19] the base is still responsible for taking that
[20] soil and just putting it in a landfill somewhere.
[21] **MS. KREITZER:** I thought you take them
[22] out to some place that's designated, like you've

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[1] done for the other stuff.
[2] **MR. SMITH:** Well, the pesticide shop
[3] soil went and was incinerated. So the
[4] contaminant there was dealt with. Then that was
[5] considered clean soil. In this case, you would
[6] always have contaminated soil.
[7] **MS. KREITZER:** But you have no place
[8] where you take it to dump?
[9] **AUDIENCE MEMBER:** No, we do. We still
[10] own it. If it's in a landfill, we're responsible
[11] for it. It's still Navy waste. It's not — it's
[12] Navy waste in a licensed, hazardous landfill. If
[13] ever in the future they decide to build anything
[14] on that hazardous waste landfill, it's still Navy
[15] waste. So, if we move it from one site to
[16] another, we've taken it off this base, but it's
[17] still Navy waste.
[18] **MS. KREITZER:** I'm not talking about
[19] just moving it to another site on base. I
[20] thought they hauled it off —
[21] **AUDIENCE MEMBER:** No, no, off base. If
[22] it's in Kentucky, it's still Navy waste

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[1] sitting —
[2] **MR. TARR:** We would still have to manage
[3] it. We would still have to manage the soil no
[4] matter where it goes. If we leave it on-site or
[5] if we dig it up and send it to another landfill,
[6] which would be a permanent disposal site, but if
[7] there were ever any problems associated with that
[8] landfill, say groundwater problems —
[9] **MS. KREITZER:** You mean in Kentucky?
[10] **MR. TARR:** Say in Kentucky.
[11] **MS. KREITZER:** Well, right now my
[12] problem isn't Kentucky.
[13] **MR. TARR:** I know. I'm just saying no
[14] matter where the soil resides, we're still going
[15] to have a waste to manage and —
[16] **MS. KREITZER:** You're not going to have
[17] it though. The people who are running it are —
[18] **MR. TARR:** No, no, we would still have
[19] a —
[20] **MS. KREITZER:** I'm not trying to give
[21] you guys a hard time, honest.
[22] **MR. TARR:** I know that.

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[1] **MS. KREITZER:** Theses are questions that
[2] are in my head.
[3] **MR. SOCHANSKI:** Madeleane, we're just
[4] pulling out to a bigger scale. What we're saying
[5] is we still have a problem if we move it from one
[6] about. But we're just trying to get you to
[7] to another location, which you don't care as much
[8] about. But we're just trying to get you to
[9] acknowledge that we still haven't made that waste
[10] go away. We just put it out of sight.
[11] **MS. KREITZER:** You haven't put it out of
[12] sight. It's out of here.
[13] **MR. SOCHANSKI:** Right, out of here.
[14] It's still existing somewhere else. The EPA is a
[15] federal agency. It's got to look at the whole,
[16] big picture. We've just picked it up and moved
[17] it from one area to another. But we saved money
[18] by not hauling it to Kentucky and we're still
[19] making it equally inaccessible to the people. We
[20] sort of solve the problem on-site without having
[21] to go to the expense of trucking it to Kentucky.
[22] It's still a problem.

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[1] **AUDIENCE MEMBER:** If you move it to
[2] Kentucky, you're still responsible for it.
[3] **MR. SOCHANSKI:** Right.
[4] **AUDIENCE MEMBER:** I was wondering if
[5] perhaps Captain Roberts could speak to the
[6] possible redevelopment ideas for the 23 acres
[7] that will be freed up from that fuel storage.
[8] **CAPTAIN ROBERTS:** I'm sorry, I couldn't
[9] hear very well. I'm a helo pilot. You have to
[10] speak up.
[11] **AUDIENCE MEMBER:** I was wondering if you
[12] might comment on the potential for redevelopment
[13] of those 23 acres that might be available now for
[14] other uses if 6A and 6 are the new fuel storage
[15] areas.
[16] **CAPTAIN ROBERTS:** If you look at where
[17] we've got that 23-acre area, it's right over by
[18] Cedar Point Road. It's over there across from
[19] Test Article Prep where the V-22 is, right along
[20] Cedar Point Road. That's prime, prime area for
[21] development, okay?
[22] We haven't said — have any ideas of

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[1] exactly what might be there. Future programs
[2] might need support there. It's a prime location.
[3] So, that's 23 acres if there was ever a future
[4] need here for any increases for new programs or
[5] anything, that property would be a prime location
[6] to able to a accommodate a new program or a new
[7] requirement here and I think that's important.
[8] Also, the long-term future of the base
[9] is to have area like that that you're able to
[10] provide some development to maintain the
[11] viability of the base in the future. If you get
[12] yourself to a point where you can't have good
[13] development — and we've had a lot here in some
[14] prime sites — and have additional areas like
[15] that available for development, it really makes
[16] us viable for the future and the long-term
[17] strategic viability of the base important and
[18] this also helps us in that situation.
[19] **AUDIENCE MEMBER:** Are the comments that
[20] might be made here recorded and meant to be
[21] heavily weighted more than or the same as
[22] comments here?

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[1] **MS. JORDAN:** The same. We have a
[2] reporter here that is recording comments and
[3] questions that come up and those comments and
[4] questions, along with what the response is, has
[5] to be documented in a Record of Decision.
[6] **AUDIENCE MEMBER:** Because I won't
[7] belabor this point here, but I'll make more
[8] comments on the notes there, but I notice in
[9] reading this paragraph somewhat carefully it
[10] says, not necessarily emphasizing that there was
[11] groundwater well measurements, but it says here
[12] calculated. It was calculated based on —
[13] **MS. JORDAN:** What paragraph are you
[14] talking about?
[15] **AUDIENCE MEMBER:** I'm looking at page 5
[16] on where apparently the answer to one of my
[17] questions was that one well didn't come in, but
[18] the way this is worded, it's talking about not
[19] even measurement. It's talking about
[20] calculations.
[21] **MS. JORDAN:** Right.
[22] **AUDIENCE MEMBER:** And then it's saying

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[1] that these soil screening levels that were
[2] calculated indicated the current concentration
[3] for these chemicals in the soils are not likely
[4] to be present. That seems like hedging on top of
[5] hedging. So, I would hope that in the future —
[6] and I don't know that I hear this and this is the
[7] comment I would make — that in the future there
[8] would still be groundwater well checking of the
[9] things because this is pretty nebulous. As I
[10] read mor carefully what you may be trying to
[11] tell me, I just I hope that's in the plans.
[12] **MS. JORDAN:** Yes.
[13] **AUDIENCE MEMBER:** That's in the current
[14] contracts?
[15] **MS. JORDAN:** That's Operable Unit 2>
[16] That will be the next area of Site 6 and 6A that
[17] we will be addressing, the groundwater, which we
[18] will be calling Operable Unit 2. Andy, did you
[19] want to address his question about the Soil
[20] Screening Level calculation?
[21] **MR. SOCHANSKI:** Yeah. The Soil
[22] Screening Level calculations that are done is, we

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[1] use that as a basis to look for the transfer of
[2] contamination from soil into the groundwater.
[3] And that's based upon soil type and various other
[4] parameters.
[5] And then that's compared to actual soil
[6] concentrations, what's the contaminant in there.
[7] And what we actually found out is that we didn't
[8] have a problem using that information in
[9] calculating impact to groundwater. We didn't see
[10] any impact to groundwater and then that's further
[11] confirmed by the groundwater data at the site.
[12] **AUDIENCE MEMBER:** Well, it's talking to
[13] unacceptable levels and I guess I'd have to spend
[14] more time looking at what you're saying.
[15] **MR. SOCHANSKI:** The SSLs calcualte —
[16] **AUDIENCE MEMBER:** Based on seeing
[17] something that was unacceptable — from reading
[18] this, right — and then there were calculations,
[19] I guess, to project to, I guess, some other area
[20] where the groundwater might be impacted. But the
[21] chemicals are iron, lead, and something I can't
[22] pronounce.

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[1] **MR. SOCHANSKI:** TCE.
[2] **AUDIENCE MEMBER:** TCE. Thank you. TCE
[3] sounds bad. How bad is that? I know what the
[4] others are. But anyway, I'll just make a not
[5] not to belabor it here because I'm not totally
[6] satisfied.
[7] **MR. SOCHANSKI:** Okay.
[8] **AUDIENCE MEMBER:** And you can follow up
[9] on it.
[10] **MR. SOCHANSKI:** Okay.
[11] it.
[12] **AUDIENCE MEMBER:** I just tried to read
[13] the paragraph here, being the first time I was
[14] exposed to this.
[15] **MR. SOCHANSKI:** What they actually did
[16] was look at the contamination in the soil
[17] transferred to groundwater and came up with some
[18] numbers
[19] **AUDIENCE MEMBER:** So, it's real up to
[20] this point?
[21] **MR. SOCHANSKI:** Correct. Then they
[22] compared that with the groundwater data

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[1] downgradient of the site.
[2] **AUDIENCE MEMBER:** Okay, But that was
[3] projected based on caculation at that point?
[4] **MR. SOCHANSKI:** Correct.
[5] **AUDIENCE MEMBER:** That's what I'm trying
[6] to understand. Keep going.
[7] **MR. SOCHANSKI:** Based on the soils and
[8] the soil concentrations —
[9] **AUDIENCE MEMBER:** They did not —
[10] **MR. SOCHANSKI:** So, what they end up
[11] doing is comparing that information and seeing
[12] what the model actually predicts. If iron's
[13] going to be in groundwater or lead or arsenic
[14] or —
[15] **AUDIENCE MEMBER:** I think that's how I
[16] understood it, but we're both getting our minds
[17] together here, wouldn't you feel comfortable if
[18] rather than basing it on calculated projection
[19] that you at least, I hope, periodically are going
[20] to test with something real?
[21] **MR. SOCHANSKI:** Yes. And then what they
[22] did was compare that data to the groundwater data

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[1] downgrade, okay? Chemicals detected downgrading
[2] in groundwater. So, we actually did compare
[3] current groundwater data to those calculated
[4] levels.
[5] **AUDIENCE MEMBER:** I see it the opposite
[6] way, that is started with the groundwater basis
[7] and then was calculated — projected, based on
[8] the calculations. I see it the opposite way.
[9] But I won't belabor it.
[10] **AUDIENCE MEMBER:** But those calculations
[11] are based on the assumption that rainwater
[12] continues to percolate through the soil and move
[13] those contaminants. That's without any
[14] treatment.
[15] **AUDIENCE MEMBER:** I agree with that. It
[16] seems obvious that you're better off having put
[17] the cement over it, since the problem follows you
[18] for eternity. If you did it right, of course,
[19] you could probably have it incinerated, but
[20] that's to costly. I understand the whole
[21] situation, I think
[22] **AUDIENCE MEMBER:** Those contaminants

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[1] tend to be rather immobile. They bind well to
[2] the soil and it depends on the type of soil.
[3] Those soils there, due to the pH, physical and
[4] chemical composition of soils, hold those things
[5] very well.
[6] But once thing that could tend to cause
[7] those things to move is lots of water flushing
[8] through the system. You take that way and it's
[9] very unlikely to move from the site. That's why
[10] capping is such a good remedy.
[11] The reason the sludge was applied — for
[12] another reason, was it raised the pH of the soil
[13] and further buffered the chemicals into the soil
[14] to bind up with metal, further locking them
[15] on-site. They're going to lock up even better
[16] now when they're used as a storage site.
[17] Take the water away, and they're almost
[18] completely immobile. Of course, you monitor this
[19] to make sure, but they're locked up on-site and
[20] they're not going to go anywhere. The risk
[21] calculations are based on the site being left as
[22] is.

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[1] **AUDIENCE MEMBER:** Not to belabor, all I
[2] would say in summary is I hope there will be
[3] future well groundwater monitors. You know,
[4] those five year things didn't seem to include
[5] that.
[6] **MS. JORDAN:** We're just
[7] addressing soil here. As I mentioned earlier, we
[8] do address the groundwater. That's the thing
[9] we're talking about when we're talking about
[10] monitoring what the latest data has shown. So,
[11] we're not forgetting about the groundwater
[12] totally. We just want to move ahead with the
[13] soil right now, but we are going to be addressing
[14] the groundwater.
[15] **AUDIENCE MEMBER:** I was just wondering,
[16] it seems with this alternative there's so much
[17] impervious material being laid down on the site.
[18] Is there anything being planned, I guess from
[19] the green factor to kind of mitigate and soften
[20] that impact to the vegetation and trees or if
[21] there is, an impact.
[22] **AUDIENCE MEMBER:** There are no trees on

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[1] the site now.
[2] **AUDIENCE MEMBER:** Well, the trees that
[3] border the site that may be effected by this
[4] Diversion of natural ground —
[5] **AUDIENCE MEMBER:** Trees aren't impacted.
[6] It's all grass. When we put the asphalt down,
[7] we'll grass — leave some grass and a few trees
[8] removed, but very, very few.
[9] **AUDIENCE MEMBER:** Well, I guess I
[10] misinterpreted. It looked like that 6A was going
[11] to be completely asphalted and right now it's not
[12] completely impervious, is that right?
[13] **AUDIENCE MEMBER:** Well, it's gravel.
[14] It's not a natural surface anyway, but it's not
[15] impervious. It's gravel.
[16] **AUDIENCE MEMBER:** Okay
[17] **MS. JORDAN:** Are there any additional
[18] questions or comments?
[19] **AUDIENCE MEMBER:** Well, I guess the only
[20] thing that she's getting at I think is that when
[21] this actually went — as somebody over here
[22] described it — to the final containment area, we

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[1] lost sight of it.
[2] The implications were that when it hits
[3] this final containment area, it's no longer of
[4] any concern at all, but if that track — the Navy
[5] has to track that forever, what happens to the
[6] stuff that goes in the containment area after
[7] it's there? Where does it go after the
[8] containment?
[9] **MS. JORDAN:** You mean if we take it
[10] off-site somewhere?
[11] **AUDIENCE MEMBER:** Well, it doesn't
[12] disappear. I assume it just sits there forever
[13] in this containment. She's asking does it get
[14] impacted into the soil or anything? Does it go
[15] to the containment?
[16] **AUDIENCE MEMBER:** I think what he's
[17] talking about, Donna, is if there were —
[18] **AUDIENCE MEMBER:** Just runoff, all
[19] runoff.
[20] **MS. JORDAN:** Right. It will be
[21] contained. There's a valve there and the fuel
[22] operation people, they have to check that before

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[1] they can release that.
[2] **AUDIENCE MEMBER:** What happens to — the
[3] question is, what happens to what ends up in the
[4] containment area, whatever that fuel or —
[5] **AUDIENCE MEMBER:** If the station —
[6] **AUDIENCE MEMBER:** Is that taken
[7] somewhere? Is it burned or is it —
[8] **MR. TARR:** No, if it's just plain
[9] rainwater, what they'll do is look inside the
[10] containment structure, and if they don't see any
[11] fuel laying on top, they'll manually open the
[12] valve and everything will drain out of the
[13] containment structure, which —
[14] **AUDIENCE MEMBER:** To the soil, which is
[15] her concern.
[16] **MR. TARR:** Into a —
[17] **AUDIENCE MEMBER:** Into the soil.
[18] **MR. TARR:** — adjacent to the site, and
[19] be allowed to percolate back into the ground,
[20] away from the area of concern.
[21] **AUDIENCE MEMBER:** But that's —
[22] **MR. TARR:** But if there's fuel in the

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[1] containment structure, then that is manually
[2] cleaned up by Navy personnel before anything is
[3] released.
[4] **AUDIENCE MEMBER:** And properly —
[5] **MR. TARR:** Disposed of.
[6] **AUDIENCE MEMBER:** That was the basic
[7] concern.
[8] **CAPTAIN ROBERTS:** Wherever we have fuel
[9] operations, we have to take steps to make sure
[10] that when we have a fuel spill of any kind, that
[11] we don't import into sewers, into the ground, ect
[12] cetera.
[13] If you look at where we have our fuel
[14] trucks, it's like a big pad with walls around it
[15] and then there are cache containment areas. Any
[16] spill will go into that and catch it. It's all
[17] concrete too.
[18] That fuel is the taken out of there —
[19] taken and burned. It can't be used in the
[20] aircraft or anything else, anywhere. There's a
[21] lot of rules and regulations around fuel tanks
[22] and all those areas. We don't — we don't have

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[1] spills into the ground out of —
[2] **AUDIENCE MEMBER:** So, it's probably
[3] never just flushed even if, as he's saying, it
[4] didn't seem to be have any visual fuel floating
[5] on top or — you would probably still not just
[6] flush it.
[7] **CAPTAIN ROBERTS:** Oh, no. I mean —
[8] **AUDIENCE MEMBER:** He was saying you
[9] would flush it.
[10] **AUDIENCE MEMBER:** Into a containment
[11] area?
[12] **AUDIENCE MEMBER:** That's what I heard
[13] him say.
[14] **MR. TARR:** They'll flush it, open the
[15] valve and it will drain out, as long as it's
[16] visually inspected for no fuel.
[17] **CAPTAIN ROBERTS:** It's all checked,
[18] sampled. You can't —
[19] **AUDIENCE MEMBER:** There has to be some
[20] **CAPTAIN ROBERTS:** There has to be some
[21] regulators. You can't do things like that.
[22] **AUDIENCE MEMBER:** I understand what I

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[1] hope you're saying
[2] **CAPTAIN ROBERTS:** If you look at the way
[3] we manage our fuel, the safety systems we have,
[4] and go over and look at the platform where those
[5] trucks are right now, you'll see they're all
[6] barricaded, sealed, and any spill goes into a
[7] containment area and it's captured.
[8] The fuel has to be burned. It cannot be
[9] used for anything else. When you have rainwater,
[10] you can't just open the valve. You've got to
[11] view it, make sure all you have is rainwater.
[12] And I think the MPE guys will tell you, you just
[13] can't run around dumping fuel into the ground.
[14] **AUDIENCE MEMBER:** Can I bring up one
[15] point to make sure there's no misunderstanding?
[16] The concrete pad that we're going to install is a
[17] staging area. There is no fuel transfer. It's a
[18] parking area for fuel truck. So, the chances of
[19] spillage are minimal. The trucks are going to be
[20] parked there and then when they're needed, they
[21] still handle any potential spills, but there
[22] isn't a constant fuel transfer occurring on this

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[1] pad.
[2] **AUDIENCE MEMBER:** When you have a
[3] concrete cap or asphalt cap on top of this field,
[4] in designing the cap has any consideration been
[5] given to extending the edge of the cap below
[6] ground as a possibility of keeping the soil in
[7] tact under the cap to prevent migration of water?
[8] So, I mean, if the cap is just flat on top of it,
[9] it's one thing. If it's flat like that and it
[10] goes down 2 feet, you would in a sense have a
[11] container for the soil that's contaminated.
[12] **AUDIENCE MEMBER:** I don't follow the
[13] question.
[14] **CAPTAIN ROBERTS:** He's saying if it's
[15] flat is it going down in the —
[16] **AUDIENCE MEMBER:** Every drop of water —
[17] the way we have the cap designed, the concrete
[18] bad itself the water that hits the concrete pad
[19] drains to these concrete strumps. So, we don't
[20] get any run-on coming from the soil on to the
[21] concrete or we don't have any runoff going to the
[22] concrete on to the soil. Everything drains into

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[1] the containment area.
[2] **AUDIENCE MEMBER:** Okay, that answers my
[3] question. You have a different thought process.
[4] **MS. JORDAN:** Any additional comments?
[5] Question? Okay. We still have about, I guess,
[6] a little over two weeks in the public comment
[7] period. So, if something else strikes you before
[8] the comment period is over — good, bad or
[9] indifferent — we would really like to hear your
[10] comments. If you could fill it out and mail it
[11] to the base so we can look at that, we would
[12] appreciate it. Okay. Thank you
[13] **CAPTAIN ROBERTS:** Is there is any other
[14] comments for this part of the public hearing
[15] before we start the RAB on some of the other
[16] sites? I really appreciate the questions and
[17] comments. I do. I think it's important that we
[18] get those and there's a thorough understanding of
[19] what it is we're doing and why we're doing it.
[20] **MS. KREITZER:** It's not criticism.
[21] **CAPTAIN ROBERT:** No, no, I don't
[22] consider it as criticism. I think they're very,

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very, very good questions. I think those are the kinds of things that we ought to be addressing and make sure that it's clear — when we get to this point in a project and you have a selected alternative. I think it needs to be very clear why we have selected that alternative and what that alternative does to protect the environment and what it does to protect the people, right?

MS. KREITZER: I think so.

CAPTAIN ROBERTS: That's exactly the way we've always done business. So, I think these are very, very good questions. And brought out some various things that might have caused some confusion by the slides even. You brought things up and I started asking people some questions too. So, it's very, very good and I appreciate your comments.

If you want to put some something in and turn those in, too, that's great. All your comments are on there. I do view this as one of those few chances when you're working with these kinds of sites where you have an opportunity to

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make it a win-win.

In many cases, you know, just like our cap down there, that landfill was so bad, we capped it. We're burning the fuel off. It's going to be there forever. We're going to have to monitor it forever and we'll never be able to use it for anything.

This is one of those few occasions where we're going to meet the environmental requirements and it's going to improve the efficiency of the base where we can reuse it for something else, which was afterthought when we looked at what the future of that site might be.

So, it's one of those win-wins that we very seldom get in this business, the way I view it, okay. Any other questions? Okay. What we will do now is we'll switch from the public meeting into the Restoration Advisory Board.

(Whereupon, the public meeting was concluded.)

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CERTIFICATE OF REPORTER

I, Mary Clare Ochsner-Hammond., do hereby certify that the foregoing proceedings were recorded by me via stenotype and reduced to typewritting under my supervision; that I am neither counsel for, related to, nor employed by any of the parties to the action in which these proceedings were transcribed; that I am not arelative or employee of any attorney or cousel employed by the parties hereto, nor financially or otherwise interested in the outcome in the action.

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Appendix C

Table of ARARs

Table C-1
Action-Specific ARARs
Focused Feasibility Study of Sites 6 and 6A - Patuxent River Naval Air Station

Action	Requirement	Prerequisite	Citation	ARAR Determination	Comments
Clean Air Act (CAA) 40 USC 7401 et seq.*					
NAAQS	Establishes national ambient air quality standards for six criteria pollutants (carbon monoxide, lead, nitrogen oxides, sulfur dioxide, and airborne particulates).	Emissions of criteria pollutants	40 CFR Part 50	Applicable	Particulate emissions during remedial actions must be controlled in compliance with these regulations.
NESHAPs	Establishes standards for emissions of hazardous air pollutants.	Emissions of hazardous air pollutants.	40 CFR Part 61	Not at ARAR	Hazardous air pollutants will not be discharged as the results of remedial activities as Sites 6 and 6A
NSPS	Establishes standards for minimizing emissions from new stationary sources.	Emissions from new stationary sources that may cause or contribute to air pollution that may endanger human health or the environment	40 CFR Part 60	Not at ARAR	Remedial activities at Site 6 and 6A will not result in significant air emission from a stationary source.
RCRA Identification and Listing of Hazardous Waste					
	Establishes standards to determinate whether or not a waste is hazardous as listed in 40 CFR 261 or is hazardous based on characteristics.	Hazardous or undefined waste material.	40 CFR Part 261	Not an ARAR	Based on TCLP results for Site 6, none of the soils are expected to be characteristic hazardous waste
General Pretreatment Regulation for Existing and New Sources of Pollutants					
Discharge to POTW	Pretreatment standards. Control the introduction of pollutants into POTWs so as to prevent interference with the operation of a POTW; prevent pass through of pollutants through a treatment works; and improve opportunities to recycle and reclaim municipal and industrial wastewater and sluges.	Discharge to POTW.	40 CFR Part 403	Applicable	Discharges of water from Sites 6 and 6A during construction of the remedy or from decontamination of equipment to a POTW must comply with these regulations.
Maryland Water Pollution Control Regulations					
Discharge of waters of the State	Designates use of waters of the State and establishes water quality criteria to protect that use.	Discharge to waters of the State.	COMAR 26.08.02	Applicable	Discharges of water from Sites 6 and 6A during construction of the remedy or from decontamination of equipment must comply with these regulations.
Maryland Pretreatment Regulations					
Pretreatment requirements	Requires industrial discharges into publicly owned treatment works (POTWs) to comply with pretreatment requirements.	Discharges of wastewater to a POTW.	COMAR 26.08.08	Applicable	Discharges of water from Sites 6 and 6A during construction of the remedy or from decontamination of equipment must comply with these regulations.

Table C-1
Action-Specific ARARs
Focused Feasibility Study of Sites 6 and 6A - Patuxent River Naval Air Station

Action	Requirement	Prerequisite	Citation	ARAR Determination	Comments
Maryland Nonpoint Sources Pollution Control Laws					
Erosion and sediment control requirements	Regulates erosion and sediment control during construction activities and stormwater runoff.	Construction activities resulting in erosion and sedmentation.	Annotated code of Maryland Environment Article, Title 4, Subtitle 2, COMAR 26.17.01	Applicable	Any remedial action at Site 6 and 6a that involve land disturbance must be conducte in compliance with these laws.
Maryland Stormwater Management Regulations					
Stormwater Managment Critiria	Requirements to maintain runoff characteristics of pre-development levels. All land-disturbing activities must be in compliance with local sorrmwater management programs.	Land disturbance activities on sites greater than 5,000 square feet in size.	Annotated Code of Maryland Environment Article, Title 4, Subtitle 2, COMAR 26.17.02	Applicable	Runoff generated from Sites 6 and 6A during remedial activities must comply with these regulations.

* Statutes and polices, and there citations , are provided as headings to identify general categories of potential ARARs. Specific potential ARARs are addressed in the table below each general heading.

ARAR - Applicable or relevant and appropriate requirement.
CAA - Clean Air Act.
CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act.
CFR - Code for Federal Regulations.
NAAQS - National Ambient Air Quality Standards (primary and secondary)
NESHAP - National emission standards for hazardous air pollutants.
OSHA - Occupational Safety and Health Administration.
POTW - Publicly owned treatment works.
RCRA - Resource Conservation and Recovery Act.
SIP - State implementation Plan
TCLP - Toxicity Characteristic Leaching Procedure