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PROPOSED PLAN UNEXPLODED ORDNANCE 32 (UXO 32) SCRAP YARD NSWC INDIAN  
HEAD MD  
07/01/2013  
TETRA TECH



# PROPOSED PLAN

## UXO 32 – SCRAP YARD

### U.S. NAVY ANNOUNCES THE UXO 32 PROPOSED PLAN FOR SOIL, SURFACE WATER, AND SEDIMENT NAVAL SUPPORT FACILITY INDIAN HEAD INDIAN HEAD, MARYLAND

## INTRODUCTION

The purpose of this **Proposed Plan**<sup>1</sup> is to present the preferred alternative for a response action for soil at Munitions Response Program (MRP) Site UXO 32 – Scrap Yard, also identified previously as Installation Restoration Program (IRP) Site 41 – Scrap Yard, (referred to herein as UXO 32 or the Site) at Naval Support Facility Indian Head (NSF-IH) located in Indian Head, Maryland. This Proposed Plan recommends **Land Use Controls (LUCs)** to address potential risk from exposure to soil at UXO 32. In addition, this Proposed Plan recommends no action for surface water or sediment at UXO 32. **Groundwater** at UXO 32 will be addressed in the future. This Proposed Plan provides the rationale for these recommendations, based on the investigative and remedial activities performed at UXO 32, and explains how the public can participate in the decision-making process. The location of the NSF-IH and UXO 32 are shown on **Figure 1**.

The Department of the Navy (Navy), the lead agency for the Site activities, and the U.S. Environmental Protection Agency Region 3 (EPA), in consultation with the Maryland Department of the Environment (MDE), issue this document as part of the public participation requirements under Section 117(a) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), as amended, and Title 40 of the Code of Federal Regulations (CFR), Section 300.430(f)(2). Title 40 CFR 300 is known as the **National Oil and Hazardous Substances Pollution Contingency Plan (NCP)**. This Proposed Plan summarizes information that can be found in detail in the **Remedial Investigation (RI)** report and other documents contained in the **Administrative Record File** for the Site.

The Navy and EPA, in consultation with MDE, will make a final decision on the **response action** for the Site after reviewing and considering all information submitted during the 30-day public **comment period**, and may modify the preferred response action or select another action based on any new information or public comments. Therefore, community involvement is critical and the public is encouraged to review and comment on this Proposed Plan. After the public comment period has ended and the comments and information submitted during that time have been reviewed and considered, the Navy and EPA, in consultation with MDE, will document the action selected for the site in a **Record of Decision (ROD)**.

## MARK YOUR CALENDARS

### Public Comment Period July 29 through August 28, 2013



#### Submit Written Comments

The Navy, EPA, and MDE will accept written comments on the Proposed Plan during the public comment period. To submit comments or obtain further information, please refer to the insert page.

### Attend the Public Meeting August 21, 2013, from 5:00 p.m. to 6:00 p.m.

Indian Head Senior Center  
Cornwallis Square  
Indian Head, MD 20640



The public comment period will include a public meeting during which the Navy, EPA, and MDE will provide an overview of the site, previous investigation findings, remedial alternatives evaluated, and the preferred alternative, answer questions, and accept public comments.

## LOCATION OF INFORMATION REPOSITORIES

Indian Head Town Hall  
4195 Indian Head Hwy  
Indian Head, MD 20640  
(301) 743-5511

Monday through Friday | 8:30 a.m. to 4:30 p.m.

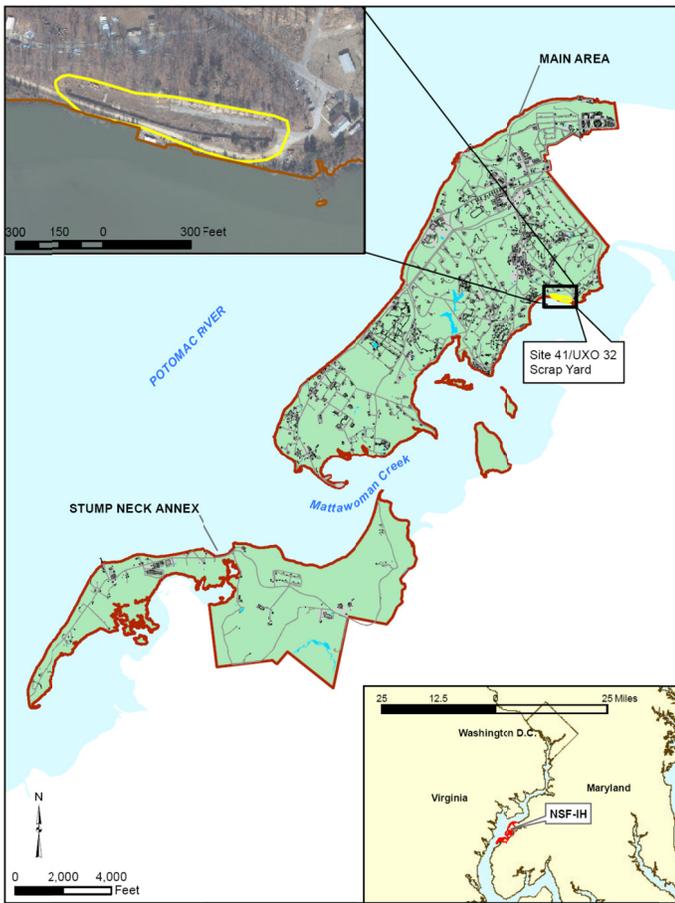
Charles County Public Library  
2 Garrett Ave  
La Plata, MD 20646-5959

(301) 934-9001 and (301) 870-3520  
Monday through Thursday | 9:00 a.m. to 8:00 p.m.  
Friday | 1:00 p.m. to 5:00 p.m.  
Saturday | 9:00 a.m. to 5:00 p.m.

Naval Support Facility Indian Head General Library  
Building 620 (The Crossroads)  
4163 N Jackson Rd  
Indian Head, MD 20640-5117

Monday through Friday | 9:30 a.m. to 5:00 p.m.

<sup>1</sup> A glossary of specialized terms used in this Proposed Plan is attached. Words included in the glossary are indicated in bold print the first time they appear in the plan.



**Figure 1 – Facility Location, NSF-IH, Indian Head, Maryland**

## SITE HISTORY

NSF-IH is located in northwestern Charles County, Maryland. It consists of the Main Installation (2,500 acres) on Cornwallis Neck Peninsula and the Stump Neck Annex on Stump Neck Peninsula (Figure 1). NSF-IH was established in 1890 and is the Navy's oldest continuously operating ordnance station. At various times during its operation, NSF-IH has served as a gun and armor proving ground, a powder factory, a propellant plant, and a research facility. Stump Neck Annex, which was acquired in 1901, provided a safety buffer for the testing of larger naval guns that were tested by firing into the Potomac River and at Stump Neck.

The production of gunpowder and development of new explosives during the onset of World War II resulted in the construction of several new facilities at Indian Head, as well as the construction of Route 210 as a Defense Access Road in 1943. Development and improvements at Indian Head continued throughout the 1950s and 1960s.

After the Vietnam conflict, the mission of NSF-IH shifted from primarily a production facility to a highly technical engineering support operation. In 1987, the facility was established as a Center for Excellence to promote technological excellence in the following specialized fields: energetic chemicals; guns, rockets and missile propulsion; ordnance devices; explosives; safety and environmental protection; and simulators and training.

Current military land use includes operations and training; production; maintenance and utilities; research, development, testing, and evaluation; explosive storage; supply and non-explosive storage; administration; community facilities and services; housing; and open space.

UXO 32 is approximately 750 feet long and ranges from 75 to 100 feet wide. It is located in the southeastern portion of NSF-IH adjacent to Mattawoman Creek (Figure 1). Prior to being designated as MRP Site UXO 32 in 2004 after the discovery of numerous ordnance and explosive items, the Scrap Yard was known as IRP Site 41. Initially, the Site was the location of a coal storage facility dating from the early 1900s, but it has been used as a scrap yard since the 1960s.

It was reported that electrical transformers were stored at the northwestern end of the Site from the 1960s until 1988. Following an inspection in 1981, 17 transformers were identified as either containing or contaminated with polychlorinated biphenyls (PCBs). These transformers were believed to have leaked and contaminated the soil in this portion of the Site. In addition, lead-acid batteries were stored in the Scrap Yard and may have released lead to the soil.

## SITE CHARACTERISTICS

UXO 32 is used currently for miscellaneous equipment and materials storage. All previous scrap materials were removed during the removal action completed in 2011. The fenced site is flat and approximately 75 percent covered with concrete and/or asphalt pavement (referred to herein as the concrete storage pad, or concrete pad) (Figure 2). The Site provides little ecological habitat of value. The impacted areas associated with the Site include a relatively narrow area of marginal quality (bare soil and turf grass) south of the Scrap Yard and the soil beneath the concrete storage pad. Overland runoff from the Site flows southwest into Mattawoman Creek.



Figure 2 – UXO 32 Site Boundary and Concrete Pad (2012)

Shallow groundwater beneath the Site occurs under unconfined (water table) conditions. The shallow groundwater flows south-southeast and discharges into Mattawoman Creek. The depth to the water table ranges from 2 to 4 feet below ground surface. Groundwater from the shallow aquifer is not used as a potable water supply. Drinking water is obtained from a public water supply and deeper aquifers (located more than 190 feet deep). There is no known hydrogeologic connection between the shallow water table aquifer and the deeper aquifers used for drinking water.

There are no endangered species or critical habitats at the Site.

#### ENVIRONMENTAL INVESTIGATION HISTORY

The Navy conducted several investigations and an interim **removal action** at UXO 32 between 1983 and 2012. Following is a chronological list, including brief descriptions, of these activities and/or associated documents.

#### PRELIMINARY ASSESSMENT

The Preliminary Assessment (PA) (Navy Environmental Enforcement and Support Activities [NEESA], 1992) evaluated 17 sites (Sites 39 through 55) to identify contamination resulting from past activities. The PA Report is an addendum to the Initial Assessment Study (IAS) (NEESA, 1983) completed for other sites. Except for Sites 51 and 52, all sites were recommended for further study.

#### PHASE II SITE INSPECTION

A multiphase Site Inspection (SI) was performed in 1992 and 1993 as a follow up to the PA at Sites 39 through 50, 53, 54, and 55 (Ensafe/Allen & Hoshall, 1992 and 1994). The goal of the SI at UXO 32 was to determine whether solvents, PCBs, or lead had contaminated surface soil, creek sediment, or shallow groundwater. Based on the results of the SI, all of the sites were recommended for further study.

#### REMEDIAL INVESTIGATION

The purpose of the multisite RI performed in 1997 was to evaluate previously collected and new environmental data to determine the human health and environmental risks from exposure to potential contaminants at the Sites (Tetra Tech [Tt], 1999). The RI at UXO 32 included collection and analysis of soil, shallow groundwater, surface water, and sediment samples for organics, metals, and total petroleum hydrocarbons (TPH). The RI Report recommended a **Feasibility Study (FS)** for UXO 32 to mitigate unacceptable risks from contaminants in soil and groundwater.

#### FEASIBILITY STUDY

Additional activities were performed in 1999 to fill data gaps as part of the FS Report preparation process. Surface soil and subsurface soil samples were collected. The results were used to refine the extent of contamination (Tt, 2001).

## ENGINEERING EVALUATION AND COST ANALYSIS

An Engineering Evaluation and Cost Analysis (EE/CA) and an Action Memorandum for a non-time-critical removal action, or an interim removal action, to mitigate risk from exposure to contaminated soil were prepared in 2002 (Navy, 2002). The removal action was implemented from 2002 through 2011.

### INTERIM REMOVAL ACTION

Approximately 4,900 tons of contaminated soil were removed and transported to an offsite disposal facility during the interim removal action completed at the Site in 2011. Abandoned railroad tracks were removed, cleaned, and set aside for scrapping. Approximately 185 tons of non-munitions-related scrap metal, 32 tons of demilitarized munitions debris scrap metal, and over 12,200 individual cartridge actuated devices and propellant actuated devices were removed from the Site (Shaw, 2011).

The concrete pad within the fenced area was cleaned to remove residual soil and surface PCB contamination. Verification samples showed that, following cleaning, no other action was required for the pad. Several asphalt areas (e.g., the access road) were repaved as part of the action.

### ADDITIONAL GROUNDWATER INVESTIGATION

Following the interim removal action, additional groundwater sampling was conducted at UXO 32 in the summer of 2011 to further characterize and delineate groundwater contaminants at the Site (Tt, 2013). Trichloroethene (TCE), tetrachloroethene (PCE), arsenic, and cobalt were identified as chemicals of potential concern in groundwater with the greatest contribution to human health risk. However, these contaminants are also present upgradient of UXO 32, and the arsenic contamination is limited to a downgradient area adjacent to the Site. Therefore, following additional investigation(s) upgradient of UXO 32, Site groundwater will be addressed separately in the future.

### FOCUSED FEASIBILITY STUDY (SOIL)

A Focused FS addressing a final response action for soil was prepared to document efforts at the Site since the 2001 FS, especially taking into consideration the 2011 interim removal action (Tt, 2013). The Focused FS also provided the 2012 updated Human Health Risk Assessment (HHRA) (Tt, 2012), which considered post-removal site conditions/data. The LUCs preferred alternative for soil described herein was developed in the Focused FS (Tt, 2013).

## PRINCIPAL THREATS

There are no principal threats in any of the media included in this Proposed Plan for UXO 32.

## What is a "Principal Threat?"

The NCP establishes an expectation that EPA will use treatment to address "principal threats" posed by a site wherever practicable (40 CFR Section 300.430[a][1][iii][A]). The "principal threat" concept is applied to the characterization of "source materials" at a **Superfund** site. A "source material" is material that includes or contains hazardous substances, pollutants, or contaminants that act as a reservoir for migration of contamination to groundwater, surface water, or air, or acts as a source for direct exposure. Contaminated groundwater generally is not considered a source material; however, non-aqueous-phase liquids (NAPLs) in groundwater may be viewed as source material. Principal threat wastes are those source materials considered highly toxic or highly mobile that generally cannot be contained reliably or would present a significant risk to human health or the environment should exposure occur. The decision to treat these wastes is made on a site-specific basis through a detailed analysis of the alternatives using the **nine selection criteria** required by the NCP. If through this analysis a treatment remedy is selected, then this selection is reflected in the ROD, which will include a finding that the remedy uses treatment as a principal element.

## SCOPE AND ROLE OF THE ACTION

UXO 32 is one of many sites in the IRP and MRP that are part of the comprehensive environmental investigation and cleanup activities currently being performed at NSF-IH under the CERCLA program. The status of these sites can be found in the current version of the Site Management Plan, which is located in the Administrative Record. This Proposed Plan addresses the evaluation of the final remedial action for soil, sediment, and surface water at UXO 32, only, and does not include or affect any other sites at the facility.

There are 56 IRP sites in various stages of investigation or remediation at Indian Head. RIs are underway for eight of these, one is undergoing a Site Screening Investigation, one is in the Remedial Design phase, and six are in the Remedial / Removal Action phase. Remedial Actions are complete on three sites where long-term monitoring still is required. There are eight sites that require no further action beyond LUCs, but are included in Five-Year Reviews due to the presence of hazardous substances that remain at the site above levels that allow for unlimited use and unrestricted exposure (UU/UE). Previous investigations have determined that the remaining sites require no further action.

The preferred alternative for soil at UXO 32 is LUCs. No actions are required for UXO 32 sediment or surface water. The groundwater operable unit at UXO 32 (IRP Site 70) will be addressed separately in the future.

The purpose of this Proposed Plan is to summarize activities performed to date to investigate UXO 32 and to provide a rationale for the proposed response action for soil, surface water, and sediment.

## SUMMARY OF SITE RISKS

This section summarizes the results of the risk evaluation(s) conducted for UXO 32. The risk assessment evaluates the potential for chemicals at a site to have an adverse effect on human and ecological **receptors** if no action is taken to clean up the site. A detailed discussion of risks posed by site contaminants at UXO 32 before and after the interim removal action and the risk evaluation process can be found in the RI (Tt, 1999), Mattawoman Creek Study (Tt, 2004), and post-removal HHRA (Tt, 2012).

### HUMAN HEALTH RISKS

Risks to human health were evaluated previously as part of the 1999 RI and the 2004 Mattawoman Creek study. The **Conceptual Site Model** and human health risks were re-evaluated following the 2011 removal action to reflect current site conditions (Tt, 2012). For an explanation of the human health risk process, see the text box on page 5.

The Site is on an industrial facility and it is unlikely that this land use will change in the future. However, to be conservative, the Navy evaluated the residential exposure scenario to determine whether LUCs prohibiting residential use would be necessary at the Site to prevent unacceptable risks or hazards. The potential receptors and exposures evaluated in the post-removal risk assessment were as follows:

- Current and future full-time industrial workers exposed to surface and subsurface soil and indoor vapors from groundwater.
- Current and future construction workers exposed to surface and subsurface soil and groundwater.
- Future child and adult recreational users exposed to surface and subsurface soil.
- Hypothetical future child and adult residents exposed to surface and subsurface soil, groundwater, and indoor vapors from groundwater.

Surface soil measures from 0 to 6 inches below ground surface. Subsurface soil is deeper than 6 inches.

The HHRA in the 1999 RI showed there are no unacceptable human health risks from exposure to surface water or sediment, because calculated risks were within or below EPA's acceptable risk range. Unacceptable risk associated with contaminated groundwater will be addressed in a separate Proposed Plan.

The estimated **Incremental Lifetime Cancer Risk (ILCR)** value for the future lifelong resident ( $4 \times 10^{-4}$ ) exposed to soils is greater than the EPA acceptable risk range of  $1 \times 10^{-4}$  to  $1 \times 10^{-6}$ . In addition, the noncancer **Hazard Index (HI)** values for the future construction worker (3) and child resident (8) exceed the EPA acceptable HI of unity (1),

## What is Human Health Risk and How is it Calculated?

A human health risk assessment estimates the "baseline risk." This is an estimate of the likelihood of health problems occurring if no cleanup action were taken at a site. To estimate the baseline risk at a site, the Navy performs the following four-step process:

- Step 1: Analyze Contamination**
- Step 2: Estimate Exposure**
- Step 3: Assess Potential Health Dangers**
- Step 4: Characterize Site Risk**

In **Step 1**, the Navy looks at the concentrations of contaminants found at a site as well as past scientific studies on the effects these contaminants have had on people (or animals, when human studies are unavailable). Comparisons between site-specific concentrations and concentrations reported in past studies help the Navy to determine which contaminants are most likely to pose the greatest threat to human health.

In **Step 2**, the Navy considers the different ways that people might be exposed to the contaminants identified in Step 1, the concentrations that people might be exposed to, and the potential frequency (how often) and length of exposure. Using this information, the Navy calculates a "**reasonable maximum exposure (RME)**" scenario that portrays the highest level of human exposure that could reasonably be expected to occur.

In **Step 3**, the Navy uses the information from Step 2 combined with information on the toxicity of each chemical to assess potential health risks. The Navy considers two types of risk: (1) cancer risk, and (2) noncancer risk. The likelihood of any kind of cancer resulting from a contaminated site is generally expressed as an upper bound probability, or Incremental Lifetime Cancer Risk (ILCR); for example, a "1 in 10,000 chance," or in other words, for every 10,000 people that could be exposed, one extra cancer may occur as a result of exposure to site contaminants in one or more media. An extra cancer case means that one more person could get cancer than normally would be expected to from all other causes. For noncancer health effects, the Navy calculates a "hazard index." The HI represents the ratio between the Reasonable Maximum Exposure (RME), the estimated maximum exposure level for a given category of individuals coming into contact with contaminants at the Site in one or more media, and the "reference dose", the dosage at which no adverse health effects are expected to occur. The key concept here is that a "threshold level" (measured usually as a hazard index of less than 1) exists below which noncancer health effects are no longer predicted.

In **Step 4**, the Navy determines whether site risks are great enough to cause health problems for people at or near the site. The results of the three previous steps are combined, evaluated, and summarized. The Navy adds up the potential risks from the individual contaminants and exposure pathways and calculates a total site risk.

and the cumulative HI for several target organs is greater than 1. Risks were associated primarily with exposure to remaining arsenic and polycyclic aromatic hydrocarbons (PAHs) in surface and subsurface soils.

Further, there is a risk associated with exposure to lead in soils (under the cap) by a pregnant female construction worker and future child resident based on predictions using EPA's Adult Lead Model and the Integrated Exposure Uptake Biokinetic (IEUBK) Model.

In conclusion, the post-removal action HHRA determined the following contaminants should be carried forward to

the Focused FS as **Chemicals of Concern (COCs)** for soil: arsenic, lead, PAHs, dioxins/furans, and one PCB (Aroclor-1260).

The HHRA also concluded that arsenic in soil may be a source of contamination to shallow groundwater through the migration pathway. Groundwater will be addressed in a separate Proposed Plan.

**ECOLOGICAL RISKS**

An ecological risk assessment (ERA) conducted during the RI (Tt, 1999), prior to the interim removal action, indicated that there were potential ecological risks from arsenic, cadmium, lead, and PCBs detected in surface soil. The risks were calculated in accordance with the EPA/Navy Ecological Risk Guidance (refer to the box on page 6). However the areas associated with these potential risks were addressed by the interim removal action completed in 2011. The ERA conducted for the adjacent Mattawoman Creek (Tt, 2004) did not identify any risks to ecological receptors.

There are no endangered species or critical habitats at UXO 32; therefore, there is no risk to these species.

**REMEDIAL ACTION OBJECTIVE**

Based on the potential pathways, receptors of concern, and current and potential future land use scenarios, the **Remedial Action Objective (RAO)** for UXO 32 soil is as follows:

Reduce or eliminate risk to human receptors posed by direct contact with contaminated soil. These risks are associated with human receptors exposed to surface and subsurface soil.

No RAOs are needed for sediment or surface water.

**SUMMARY OF REMEDIAL ALTERNATIVES**

Remedial alternatives for UXO 32 soil are presented below. Only two alternatives were evaluated in the Focused FS Report (Tt, 2013): Alternative 1 – No Action and Alternative 2 – LUCs. Detailed descriptions of these remedial alternatives can be found in the Focused FS Report.

**ALTERNATIVE 1 – NO ACTION**

This alternative is included to serve as a baseline against which other alternatives are compared. In this alternative, no remediation or action would be planned. Contaminants would be left in place at concentrations exceeding those suitable for UU/UE; therefore, periodic protectiveness reviews ultimately would be required.

Alternative 1 – Estimated Cost	
Capital Cost	\$0
Lifetime O&M Cost	\$0
Total Present Value Cost	\$0
Projected Time Frame to Achieve RAOs	Cannot achieve

**ALTERNATIVE 2 – LUCS**

**LUCs** would be put in place to prohibit residential development and the implementation of any construction activities without the use of the proper personnel protective equipment. Because contaminants would be left on the site at levels that would not allow for UU/UE, remedy protectiveness reviews would be performed every 5 years (i.e., 5-Year Reviews).

These resource use restrictions will be documented in the NSF-IH Base Master Plan and the Navy's *LUC Tracker tool*. The Base Master Plan will provide guidance for the Navy to take adequate measures to minimize adverse human and environmental effects at the time of any future land development. The exact mechanisms to be used to implement the restrictions and the means through which these mechanisms will be enforced will be set forth in a LUC Remedial Design document to be prepared subsequent to the ROD.

**What is Ecological Risk and How is it Calculated?**

An ERA evaluates the potential adverse effects that human activities have on the plants (flora) and animals (fauna) that make up ecosystems. The ecological risk assessment process follows a phased approach similar to that of the human health risk assessment. The risk assessment results are used to help determine what measures, if any, are necessary to protect plants and animals. **Ecological risk assessment includes three steps:**

**Step 1: Problem Formulation**

The problem formulation includes the following:

- Identifying area(s) and environmental media (e.g., surface water, soil, sediment) in which site-related constituents may be present
- Evaluating potential transport pathways (i.e., movement) of constituents in these areas/media
- Consideration of site-specific habitat information for identification of ecological receptors
- Identifying exposure pathways and routes for these receptors

**Step 2: Risk Analysis**

In the risk analysis, potential exposures to plants and animals are estimated and the concentrations of chemicals at which an effect may occur are evaluated.

**Step 2: Risk Analysis**

The risk characterization uses all of the information identified in the first two steps to estimate the risk to plants and animals. This step also includes an evaluation of the uncertainties (potential degree of error) associated with the predicted risk evaluation and their effects on the conclusions that have been made.

Alternative 2 – Estimated Cost	
Capital Cost	\$8,000
Lifetime O&M Cost	\$223,000
Total Present Value Cost *	\$231,000
Projected Time Frame to Achieve RAOs *	<1 year

*\*Although RAO is achieved in less than 1 year with the implementation of LUCs, the LUCs must remain in perpetuity. Therefore, a 30-year duration was utilized for cost-estimating purposes.*

## EVALUATION OF REMEDIAL ALTERNATIVES

The NCP outlines the approach for comparing remedial alternatives. Remedial alternatives are evaluated using **nine evaluation criteria**, including two threshold criteria which must be met, five balancing criteria, and two modifying criteria, to facilitate a comparison of the relative performance of the alternatives and provide a means to identify their advantages and disadvantages. The criteria are:

### Threshold:

1. Overall protection of human health and the environment
2. Compliance with **Applicable or Relevant and Appropriate Requirements (ARARs)**

### Balancing:

3. Long-term effectiveness and permanence
4. Reduction of toxicity, mobility, and volume
5. Short-term effectiveness
6. Implementability
7. Cost

### Modifying:

8. State acceptance
9. Community acceptance

The Focused FS provides a detailed analysis and evaluation of the remedial alternatives based on criteria 1 through 7. Criteria 8 and 9 will be evaluated after receipt

of the public's comments on this Proposed Plan during the 30-day comment period. A discussion of how each alternative satisfies each criterion and how it compares to the other alternatives is provided below and summarized in **Table 1**.

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

Alternative 2 would protect human health and the environment by implementing and maintaining institutional controls to prevent residential exposure to COCs and limit construction worker exposure to COCs. No unacceptable ecological risk remains following the 2011 interim removal action. The No Action alternative (Alternative 1) is not protective of human health and the environment because it does not prevent or limit any of the remaining unacceptable risks from exposure to COCs at the Site. Therefore, it cannot be selected as the preferred alternative and will not be considered further in this analysis.

### **Compliance with ARARs**

No chemical-, location-, or action-specific federal or state ARARs apply to either alternative. Therefore, the evaluation of this criterion is not applicable.

### **Reduction of Toxicity, Mobility, and Volume Through Treatment**

Alternative 2 does not employ any treatment technology to address contaminants remaining on the site, and, therefore, would not reduce toxicity, mobility and volume through treatment.

### **Short- and Long-Term Effectiveness**

No risks to the public or remedial Site workers are anticipated from implementation of Alternative 2, which would take less than 1 year. Continued implementation and enforcement of the restrictions included in the LUCs will be necessary to maintain the effectiveness of Alternative 2.

### **Implementability**

Site use restrictions can be easily implemented and strictly enforced because the site is located at a military facility, and similar LUCs have been implemented at other sites at NSF-IH.

### **Cost**

The Present Value Cost of Alternative 2 is \$231,000 (LUCs over 30 years for cost estimating purposes).

**Table 1: Comparative Analysis of Remedial Alternatives**

Criteria	Alternative 1 No Action	Alternative 2 LUCs
Overall Protectiveness of Human Health and the Environment	x	●
Compliance with ARARs	Not Applicable	Not Applicable
Long-Term Effectiveness and Permanence	x	○
Reduction of Toxicity, Mobility, or Volume Through Treatment	x	x
Short-Term Effectiveness	x	●
Implementability	●	●
Cost (Present Value)	\$0	\$231,000
State/Support Agency Acceptance	x	●
Community Acceptance	To Be Determined	To Be Determined

● – Well satisfies criterion   ○ – Moderately satisfies criterion   x – Poorly satisfies criterion

## PREFERRED REMEDIAL ALTERNATIVE

The Navy and EPA, in consultation with MDE, are proposing Alternative 2 – LUCs as the preferred alternative for soil at UXO 32. Based on the results of investigations conducted, the Navy, EPA, and MDE expect this alternative would be protective of human health and the environment. No action is needed for the sediment and surface water media, and the groundwater medium will be addressed in the future.

### ALTERNATIVE 2 – LUCs

The preferred alternative, Alternative 2 – LUCs, is expected to achieve substantial and long-term risk reduction, and to achieve the RAO. Only non-residential, military/industrial land use is anticipated at UXO 32. Residential use of the Site would be prohibited, and any construction activity at the site would be required to be conducted with the use of appropriate personnel protective equipment. No unacceptable ecological risk remains following the 2011 interim removal action.

Based on information currently available, the Navy believes Alternative 2 meets the threshold criteria and provides the best balance of tradeoffs among the other alternatives with respect to the primary balancing and modifying criteria. The Navy expects the preferred alternative to satisfy the following statutory requirements of CERCLA Section 121(b): to be protective of human health and the environment; to be in compliance with ARARs; to be cost effective; and to utilize permanent solutions and alternative treatment technologies to the maximum extent practicable. The preferred alternative can change in response to public comment or new information.

## COMMUNITY PARTICIPATION

The Navy and EPA provide information regarding the cleanup of the NSF-IH to the public through public meetings, the Administrative Record file for the site, the **Information Repository**, and announcements published in the newspaper(s). The Navy and EPA encourage the public to gain a more comprehensive understanding of the site and the CERCLA activities that have been conducted at the site.

The 30-day public comment period runs from July 29 through August 28, 2013. The public meeting will be held on August 21, 2013, from 5:00 p.m. to 6:00 p.m. at the Senior Center, 100 Cornwallis Square, Indian Head, Maryland (phone 301-744-4627). The location of the Administrative Record and Information Repository are also provided at the beginning of this Proposed Plan.

The public meeting minutes will be included in the Administrative Record file. All comments received during the public meeting and comment period will be summarized, and responses will be provided in the **Responsiveness Summary** section of the ROD. The ROD is the document that will present the selected remedy and will be included in the Administrative Record file.

Written comments can be submitted via mail, email, or facsimile, and should be sent to the following Navy Public Affairs Officer:

**Public Affairs Officer**  
**Naval Support Facility South Potomac**  
 Attn: Public Affairs Officer, Code 00P  
 6509 Sampson Road, Suite 217  
 Dahlgren, VA 22448-5108  
 Phone: (540) 653-1475  
 Fax: 540 653-4269  
 Email: gary.wagner@navy.mil

For further information, please contact the following Project Managers for NSF-IH:

**Mr. Joe Rail – Remedial Project Manager**  
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1314 Harwood St, SE  
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**Mr. Nicholas Carros – IRP Manager**  
**Naval Support Facility Indian Head**  
Environmental Program Office (Building 554)  
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**Mr. Curtis DeTore – Remedial Project Manager**  
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1800 Washington Blvd, Suite 645  
Baltimore, MD 21230-1719  
Phone: 410-537-3791  
Fax: 410-537-3472  
Email: cdetore@mde.state.md.us

## REFERENCES

Ensafe/Allen & Hoshall, 1992. *Final Site Inspection (SI) Report, Phase I – Olson Road Landfill, Indian Head Division, Naval Surface Warfare Center*. July.

Ensafe/Allen & Hoshall, 1994. *Final SI Report, Phase II, Indian Head Division, Naval Surface Warfare Center*. March.

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## GLOSSARY OF TERMS

**Administrative Record File:** A record made available to the public that includes all information considered and relied upon in selecting a remedy for a site. The Administrative Record File for NSF-IH is available for review in the **Information Repositories** listed at the beginning of this Proposed Plan.

**Applicable or Relevant and Appropriate Requirements (ARARs):** The federal and state environmental laws and regulations that a selected remedy will meet. These requirements may vary among sites.

**CERCLA:** Comprehensive Environmental Response, Compensation, and Liability Act of 1980, also known as the Superfund Law, as amended. CERCLA provides the authority and procedures for responding to releases of hazardous substances, pollutants, and contaminants from inactive hazardous waste disposal sites. The NCP enforces CERCLA as amended.

**Comment Period:** A time for the public to review and comment on various documents and actions taken, either by the Navy, EPA, or MDE. A minimum 30-day comment period is held to allow community members to review the Administrative Record File and review and comment on the Proposed Plan.

**Chemical of Concern (COC):** A site-specific chemical substance identified as a risk driver (via the risk assessment) to be addressed in the FS. Identifying COCs is an iterative process that requires a health assessor to examine contaminant concentrations at the site, the quality of environmental-sampling data, and the potential for human exposure.

**Conceptual Site Model (CSM):** The CSM depicts relationships between sources of contamination, contaminant release mechanisms and migration pathways, exposure routes, and potential receptors in order to define complete exposure pathways.

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**Engineering Evaluation and Cost Analysis (EE/CA):** A streamlined document that identifies the non-time-critical removal action criteria, identifies and evaluates the different approaches that may be used, and recommends a removal action alternative. An EE/CA is similar to a Focused FS.

**Feasibility Study (FS):** A document that identifies the site cleanup criteria, identifies the different approaches that may be used to clean up the site, and develops and evaluates the cleanup approaches (alternatives) against the nine evaluation criteria established in the NCP.

**Groundwater:** Water beneath the ground surface that fills pore spaces between materials such as sand, soil, or gravel to the point of saturation. In aquifers, groundwater can occur in quantities sufficient for drinking water, irrigation, and other uses. Groundwater may transport substances that have percolated downward from the ground surface as it flows toward its point of discharge.

**Hazard Index (HI):** The sum of the ratios of the daily intakes of chemicals from onsite exposure divided by the reference doses for those chemicals. The reference dose represents the daily intake of a chemical not expected to cause adverse noncancer health effects.

**Incremental Lifetime Cancer Risk (ILCR):** The additional cancer risk posed over a lifetime by, e.g., exposure to contaminants present at a Superfund site. For example, an ILCR of  $1 \times 10^{-4}$  means that for every 10,000 people that could be exposed, 1 extra cancer may occur as a result of exposure to site contaminants than would occur as a result of all other causes.

**Information Repository:** A file containing information, technical reports, reference documents, and the Administrative Record File regarding an NPL site. This file is usually maintained in a place with easy public access, such as a public library.

**Land Use Controls (LUCs):** Also referred to as **Institutional controls (ICs)**, LUCs are legal or administrative actions or requirements imposed on a property to limit or prevent property owners or other people from coming into contact with contamination on the property. LUCs may be used to supplement a cleanup (by limiting contact with residual contamination), or may be used instead of conducting a cleanup, except in the case of contaminated groundwater. Examples include deed restrictions and site security requirements.

**National Oil and Hazardous Substances Pollution Contingency Plan (NCP):** The purpose of the National Oil and Hazardous Substances Pollution Contingency Plan is to enforce CERCLA, as amended. That is, to provide the organizational structure and procedures for preparing for, and responding to, discharges of oil and releases of hazardous substances, pollutants, or contaminants.

**Nine Evaluation Criteria:** Criteria from the NCP used by EPA at all Superfund sites to evaluate remediation alternatives and select a preferred alternative to be presented in a Proposed Plan.

**National Priorities List (NPL):** EPA's list of the most serious uncontrolled or abandoned hazardous waste sites identified for possible long-term remedial response. The list is based primarily on the score a site receives on the Hazard Ranking System (HRS). EPA is required to update the NPL at least once per year.

**Proposed Plan:** A public participation requirement of CERCLA, implemented through the Superfund Amendments and Reauthorization Act of 1986 (SARA), in which the lead government agency (in this case, the Navy) summarizes the preferred cleanup strategy and rationale for the public. This agency also reviews the alternatives presented in the detailed analysis of the FS. The Proposed Plan may be prepared either as a fact sheet or as a separate document. In either case, it must actively solicit public review and comment on all alternatives under consideration.

**Reasonable Maximum Exposure (RME):** The estimated maximum exposure level for a given category of individuals coming into contact with contaminants in one or more media.

**Receptor:** An individual, either a human, plant, or animal, which may be exposed to a chemical present at the site.

**Record of Decision (ROD):** The official signed document that sets forth the lead agency's (the Navy in this case) final remedy for a site. The ROD is based on information and technical analysis generated during the RI and FS or EE/CA and consideration of public comments and community concerns. The ROD explains the remedy selection process and is issued by the Navy following the public comment period.

**Remedial Action Objective (RAO):** An RAO describes what the proposed site cleanup is expected to accomplish. The objective typically serves as the design basis for the remedial alternatives.

**Remedial Investigation (RI):** An in-depth study designed to gather data needed to evaluate the nature and extent and fate and transport of contamination at a Superfund site, establish site cleanup criteria, identify preliminary alternatives for response action, and support technical and cost analyses of alternatives.

**Removal Action:** As defined in the NCP, the cleanup or removal of released hazardous substances from the environment, such actions as may be necessary to monitor, assess, and evaluate the threat of release of hazardous substances, the disposal of removed material, or the taking of such other actions as may be necessary to prevent, minimize, or mitigate damage to the public health

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or welfare or to the environment, which may otherwise result from a release or threat of release.

**Response Action:** As defined by Section 101(25) of CERCLA, response action means remove, removal, remedy, or response action, including related enforcement activities.

**Responsiveness Summary:** A summary of oral and written public comments received by the lead agency during a comment period and the responses to these comments, prepared by the lead agency. The Responsiveness Summary is an important part of the ROD, highlighting community concerns for decision makers.

**Superfund:** The program operated under the legislative authority of CERCLA and SARA that funds and carries out EPA solid/hazardous waste emergency and long-term removal and remedial activities. These activities include establishing the NPL, investigating sites for inclusion on the NPL, determining their priority, and conducting and/or supervising cleanups and other remedial actions.





## Public Comment Period

July 29 through  
August 28, 2013

## Submit Written Comments



Written comments must be postmarked no later than the last day of the public comment period, which is August 8, 2013. Based on the public comments or on any new information obtained, the Navy may modify the preferred alternative. The insert page of this Proposed Plan may be used to provide comments, although the use of the form is not required. If the form is used to submit comments, please fold page, seal, add postage where indicated, and mail to addressee as provided.

## Attend the Public Meeting

August 21, 2013  
5:00 p.m. to 6:00 p.m.

Indian Head Senior Center  
Cornwallis Square  
Indian Head, MD 20640

The public comment period will include a public meeting during which the Navy, EPA, and MDE will provide an overview of the site, previous investigation findings, remedial alternatives evaluated and the preferred alternative; answer questions; and accept public comments on the Proposed Plan.



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here

**Public Affairs Officer**  
Naval Support Facility South Potomac  
Attn: Public Affairs Officer, Code 00P  
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Dahlgren, VA 22448-5108