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PROPOSED PLAN FOR DECISION UNIT 5-1 AT SITE 13 TANK FARM 5 OPERABLE UNIT 2 (OU 2) NS NEWPORT RI

11/1/2013

NAVFAC MID ATLANTIC

Proposed Plan

Decision Unit 5-1 at Site 13 – Tank Farm 5
Operable Unit 2
Naval Station (NAVSTA) Newport
Middletown, Rhode Island

The Proposed Cleanup

This Proposed Plan has been prepared in accordance with federal laws to present the Navy's proposed cleanup approach for Decision Unit (DU) 5-1 at Site 13, Tank Farm 5, located at the Naval Station Newport, in Newport, Rhode Island. This plan describes the Navy's proposed cleanup (remedy) for the Site, which after careful study, consists of the following:

- Soil – Construction of a **soil cover** with long-term maintenance and inspection to prevent exposure to areas of soil which exceed cleanup goals.
- Groundwater - **Monitored natural attenuation** to allow natural groundwater geochemistry to achieve cleanup standards.
- **Land use controls** to control access and use of the property.
- **Five-year reviews** of the remedy to ensure continued protection of human health and the environment.

This document provides the public with information about the proposed cleanup.

Let us know what you think!

Mark Your Calendar!

PUBLIC COMMENT PERIOD
November 20, 2013 to December 20, 2013

The Navy will accept comments on the Proposed Plan for DU 5-1 at Site 13 during this period. **Send written comments, postmarked no later than Friday, December 20, 2013, to**:

Ms. Lisa Rama
Public Affairs Office
690 Peary Street
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Newport, RI 02841
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PUBLIC MEETING AND PUBLIC HEARING
Wednesday, November 20, 2013, 6:30 PM to 7:30 PM
Courtyard Marriott
9 Commerce Drive
Middletown, Rhode Island

The Navy will hold a public meeting at 6:30 PM to provide information about this Proposed Plan. Following a presentation describing the planned site cleanup, the Navy will host an informal question-and-answer session. The Navy will then hold a formal Public Hearing at 7:30 PM until all comments on the Proposed Plan are heard. It is at this Hearing that an official transcript of comments will be entered into the record.

For detailed historical information, visit the local Information Repository identified at the end of this Proposed Plan.

Introduction

This Proposed Plan provides information on the Navy's preferred cleanup plan for DU 5-1 at Site 13 - Tank Farm 5, at NAVSTA Newport located in Middletown, Rhode Island. Tank Farm 5 is identified by the U.S. Environmental Protection Agency (USEPA) as Operable Unit 2 at NAVSTA Newport, part of the Naval Education and Training Center (NETC) Superfund Site. This plan has been prepared to inform the community of the Navy's strategy for the proposed cleanup approach, and to encourage community input on the proposed plan and overall environmental cleanup process for DU 5-1 at Site 13. (Note: A glossary of terms is provided at the end of this document).

Federal and state environmental laws govern cleanup activities at federal facilities. A federal law called the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA),

better known as “Superfund”, provides procedures for investigating and cleaning up environmental problems. Under this law, the Navy is pursuing cleanup of designated sites at NAVSTA Newport to restore the environmental condition of the property. DU 5-1, which is a portion of Site 13 (also known as Tank Farm 5) is one of these designated sites.

The Navy works closely with the USEPA and the Rhode Island Department of Environmental Management (RIDEM) to achieve this objective. The Navy is the lead agency for all investigation and cleanup programs ongoing at NAVSTA Newport. USEPA oversees the DU 5-1 cleanup and must concur with the final cleanup plan.

As the lead agency, the Navy has prepared this Proposed Plan for DU 5-1 at Site 13 in accordance with CERCLA Section 117(a) and Section 300.430(f)(2) of the National Oil and Hazardous Substances Pollution Contingency Plan. This plan and its associated public involvement opportunities fulfill the Navy’s public participation responsibilities under these laws. This proposed plan was developed with support from the USEPA and RIDEM.

The purpose of this Proposed Plan is to:

- Encourage public review and comment on the proposed remedy for the Site.
- Provide background information on the Site, which includes; a description of the site, a summary of the results of investigations, and the conclusions of human health and ecological risk assessments.
- Describe cleanup alternatives (Remedial Action Alternatives) that have been considered for the Site.
- Identify and explain the Navy's preferred cleanup plan for the Site.

Once the public has had the opportunity to review this Proposed Plan, the Navy, USEPA, and RIDEM will carefully consider all comments received and, based on the comments, could modify the cleanup plan or even select a different plan from the one currently proposed. Ultimately, the selected remedy will be documented in a Record of Decision (ROD) for the Site. The Navy will respond to all comments received during the comment period and public hearing in a document called the Responsiveness Summary. The Responsiveness Summary will be issued with the ROD.

This Proposed Plan presents the highlights of key information from previous investigations at DU 5-1 at Site 13 many of which have been presented to the public at Restoration Advisory Board (RAB) meetings.

More detailed information about DU 5-1 at Site 13 can be found in the Remedial Investigation (RI), Feasibility Study (FS), the related regulatory agency correspondence, and other documents available for review at the public Information Repository listed at the end of this Proposed Plan. The Navy encourages the public to review these documents to gain a better understanding of the environmental activities completed at DU 5-1 at Site 13 that support this Proposed Plan.

Scope and Role of the Response Action for DU 5-1 at Site 13

DU 5-1 at Site 13, Tank Farm 5, is one of several sites identified at NAVSTA Newport for cleanup under the CERCLA process. Each of these sites progresses through the cleanup process independently of the others.

The Proposed Plan for DU 5-1 at Tank Farm 5 is not expected to have an impact on the strategy or progress of cleanup for the other sites at NAVSTA Newport. As these other sites progress through the cleanup process, separate Proposed Plans will be issued accordingly.

Site Background

Where is DU 5-1 and Site 13?

DU 5-1 at Site 13 is part of the NAVSTA Newport facility. Site 13 is also known as Tank Farm 5, and is located in the central portion of the facility, in Middletown, Rhode Island, as illustrated in Figure 1.

DU 5-1 is defined as the portion of Tank Farm 5 where CERCLA contaminants were released: Based on historical records, it has been determined that there was a common practice of uncontrolled burning of tank bottom sludge and disposal of the burned and unburned material in this area. DU 5-1 occupies approximately 6 acres at the northwest corner of Tank Farm 5 (Figure 3). DU 5-1 is bounded to the north by Greene Lane, to the east by other portions of Tank Farm 5, to the south by the Navy Fire Fighting School (previously part of Tank Farm 5), and to the west by Defense Highway.

DU 5-1 includes a former oil-water separator (OWS) area and associated discharge pipe and discharge area combined with Gomes Brook. The OWS was originally constructed as a chamber for burning tank bottom sludge and was later converted to an OWS. During its operation, excess fluids were drained from the burn pit/OWS to the wetland formed by Gomes Brook, to the north/northwest.

FIGURE 1:
Locations of Tank Farm 5 and DU 5-1

What caused the contamination at DU 5-1?

The contamination at DU 5-1 was caused by the uncontrolled burning and disposal of tank bottom sludge. Both burned and unburned fuel sludge was released to the ground. Associated contaminants also passed through the OWS and were released into Gomes Brook and the associated wetlands. This activity was common practice during the early period of the tank farm operations. However, the residual contaminants remaining at DU 5-1 are regulated under CERCLA.

FIGURE 2: Tank Farm 5 during construction and the upland (southern) portion of DU 5-1 (Note that north is to the left)

Site Characteristics

What does DU 5-1 at Site 13 look like today?

DU 5-1 is part of the 85–acre Tank Farm 5 property located on Defense Highway in Middletown, Rhode Island. There are no functional buildings at Tank Farm 5 and no above ground structures are currently present at DU 5-1, with the exception of one small, corrugated sheet metal shed in the northern portion of DU 5-1, which was investigated separately. Since the tanks at Site 13 were taken out of service, the 85-acre parcel has gone unused, except for soil staging for Naval public works operations, and for seasonal deer hunting (archery only), allowed to Navy employees by lottery through the Naval Station Public Works office.

DU 5-1 consists of approximately 6 acres of undeveloped overgrown fields, wetlands, wooded areas, and access roads (Figure 3). Since most of the infrastructure was demolished in the late 1990s, manmade structures remaining at DU 5-1 are limited to a small shed and some fencing which runs near the boundary of DU 5-1 to the north and west, and along a portion of its southern boundary.

A portion of Gomes Brook flows approximately southeast to northwest through DU 5-1, and the brook has an associated small wetland area, some of which is located in the 100-year floodplain (Figure 3). Gomes Brook exits the site through a concrete culvert and underneath Defense Highway, discharging into Narragansett Bay to the west.

Topography at DU 5-1 generally slopes in a northwesterly direction from the former OWS towards Gomes Brook to the north. Topography also slopes to Gomes Brook from the east-northeastern portion of DU 5-1. There is a north-south access road from Greene's Lane that was constructed across Gomes Brook and forms the eastern border of DU 5-1. Gomes Brook enters DU 5-1 through a culvert at the eastern boundary of DU 5-1, as it flows under this access road. On either side of the access road, topography slopes steeply down towards Gomes Brook.

What contaminants are present at DU 5-1?

Media investigated for evidence of contamination were soil, sediment, surface water, and groundwater. Only soil and groundwater were found to have levels of contaminants present that exceeded CERCLA cleanup standards. The current contaminants of concern (COCs) have been identified in soil and groundwater at DU 5-1:

Soil:

The COCs in soil are arsenic and manganese, which are both naturally occurring elements, but were identified as elevated in concentration at DU 5-1. Detailed statistical evaluation of the soil data was conducted, and indicates that for manganese, the statistical measure of what is present at the site is within the statistical measure of what is predicted to be present in some areas but not others, based on chemistry of regional soil types. However, manganese has been determined to pose a potential risk to construction workers, who could be exposed to excavated soil for extended periods of time. As a result, manganese is identified as a COC.

Similar evaluation of arsenic data for soil indicates that the concentrations of arsenic at the site are slightly above background, suggesting that arsenic at DU 5-1 may also not be site-specific. However, because the statistical tests do not conclusively define arsenic as being below the background condition, and because arsenic concentrations are above the RIDEM state regulated criterion for soil, arsenic is identified as a COC.

Due to the concentrations of arsenic and manganese, soil is carried forward as a media of concern.

Groundwater:

The COCs in groundwater are comprised of four metals: arsenic, cobalt, iron and manganese.

It has been concluded that these metals, which are all naturally present in the soil and bedrock, are somewhat elevated in groundwater at DU 5-1 as a result of geochemical conditions caused by bacterial degradation of petroleum released either at or upgradient of DU 5-1 at Tank Farm 5, particularly Tank 50 (upgradient of the site) which was previously found to have leaked (Figure 3).

Degradation of petroleum occurs through bacterial action, which reduces oxygen in the subsurface. This results in increased levels of these naturally occurring metals in water. The metals are dissolved into the groundwater from the soil and bedrock, which flows through the subsurface of the Site. It is predicted that when degradation is completed, geochemical conditions slowly return to their natural steady state. As the bacteria die off and break down, the metals will likely undergo a second reaction known as precipitation. This also occurs as the groundwater flows to an unaffected part of the site where there is more oxygen available, and the dissolved metals in groundwater naturally decrease.

As the degradation of residual petroleum upgradient of DU 5-1 is completed and the bacterial action subsides, the process of the metals dissolving into groundwater will slow down and eventually stop.

Removal Actions at DU 5-1

Between 1996 and 1999, under State authority, the Navy demolished the underground tanks upgradient of DU 5-1, which had been used for fuel storage since the 1950s.

Between 2004 and 2007, a number of CERCLA removal actions were conducted. Discharge piping from the OWS was remediated and a large quantity of affected soil and sediment from the discharge areas was excavated and removed from the Site. The Navy investigated and conducted removal actions to address the bottom sediment and water (BSW) piping that led from each tank located upgradient of DU 5-1, and to address storage sheds, transformer and electrical buildings, and other areas of interest identified by RIDEM. In addition, petroleum releases within the tank farm were addressed under State authority.

Lead was detected at elevated levels in soil associated with the boundary fence around Tank Farm 5 and this lead will be addressed in a separate maintenance action to address the fence and the associated soil.

History of Site Investigations

1980 – The Naval Assessment and Control of Installation Pollutants program was initiated to identify and assess contamination at Navy installations.

1983 – The Initial Assessment Study of NAVSTA was completed. The IAS concluded that Tank Farm 5 should be retained due to the burning of tank bottom sludge.

1984 – The Defense Environmental Restoration Program was established to promote and coordinate efforts for the evaluation and cleanup of contamination at Department of Defense installation. Part of this program was the establishment of the Installation Restoration Program.

1988 – A Technical Review Committee was convened to oversee CERCLA investigations and remedial actions.

1989 – NAVSTA was listed on the National Priorities List.

1990 – A Community Relations Plan was issued for NAVSTA.

1992 – The RI Report (prepared in accordance with CERCLA requirements) was issued. The RI included collection of soil, groundwater, surface water, sediment, and soil gas samples.

1995 – The RAB was formed, replacing the Technical Review Committee established in 1988.

1996-1999 – Under State authority, the Navy demolished the OWS, and in the area upgradient of DU 5-1, cleaned and demolished-in-place the underground tanks which had been used for fuel storage since the 1940s.

2004 – 2007 – The Navy conducted an extensive Site Investigation and removal action for all of Tank Farm 5 under both State and CERCLA authorities. The work included investigating for possible former sludge disposal pits, assessing underground piping, demolishing and removing piping, conducting a soil removal, and sampling other Review Areas. No evidence of former sludge pits was found.

2006 – A base-wide background soil investigation was conducted to provide a background data set for comparisons to soil data at all NAVSTA Newport sites.

2010 – A Data Gaps Assessment (DGA) was conducted to provide up-to-date, site-representative data for DU 5-1 to determine residual risks to human health and the environment following the 2004 – 2007 removal actions. The DGA included the collection of soil, groundwater, surface water, and sediment samples, a baseline Human Health Risk Assessment (HHRA) and an Ecological Risk Assessment (ERA), prepared in accordance with CERCLA requirements.

Where are the DU 5-1 contaminants located?

In soil, the levels of arsenic that exceed the state criterion are in surface soil and in the subsurface soil. Locations where arsenic exceeds this criterion in surface soil (0 to 1 foot depth) are primarily on or near the former location of the OWS and the discharge pipe that was previously removed. The concentrations of manganese that are above background values were observed in subsurface soil only.

In groundwater, the elevated levels of metals are found at the former OWS and in the area of the former discharge pipe.

In surface water and sediment, no contaminants posing risk to human health or the environment were identified.

Summary of Site Risks

As part of the 2010 DGA, human health and ecological risk assessments were conducted using CERCLA methodologies. The Navy evaluated the potential effects of site contaminants on human health and the environment, both under current land use and potential future land use scenarios.

It is the Navy's current judgment that the Preferred Alternative identified in this Proposed Plan, or one of the other active measures considered in the Proposed Plan, is necessary to protect public health or welfare or the environment from actual or threatened releases of pollutants or contaminants from this site that may present an imminent and substantial endangerment to public health or welfare.

HUMAN HEALTH RISKS

The HHRA estimated the "baseline risk," which is the likelihood of health problems occurring from exposure to site media (soil, groundwater, sediment and surface water) if no cleanup actions were taken at the Site. To estimate the baseline risk for human health, a four-step process was used:

Step 1 - Identify Chemicals of Potential Concern. Chemicals of Potential Concern (COPCs) were defined as chemicals detected at DU 5-1 at concentrations that exceeded federal or state risk-based screening levels and background levels, where applicable. Chemicals with concentrations above these benchmarks were further evaluated in Step 2.

HUMAN HEALTH RISKS (continued)

Step 2 - Conduct an Exposure Assessment.

The ways that humans could come into contact with the identified COPCs were evaluated. Both current and reasonably foreseeable future exposure scenarios were considered. For DU 5-1, the potential exposures to COPCs that were evaluated included:

- Workers, trespassers, recreational users, and future residents who could come into contact with site soil through direct contact or ingestion or inhalation of soil particulates (dust) or vapors.
- Workers or future residents who could come into contact with vapors trapped within future buildings (if constructed).
- Construction workers or future residents who could come into contact with groundwater through direct contact, or ingestion.

It should be noted that the current and planned future use of the Site is industrial/commercial, with some restricted recreational use. The restricted recreational use is for bow-hunting for deer by lottery selection only, during the state-regulated hunting season. Otherwise, the Site's access is restricted only by partial fencing and posted "no trespassing" signs; the Site is not fenced. There is no current or planned residential or unrestricted recreational use of the Site, and site groundwater is not used as a potable water source. These uses are evaluated in the risk assessment process to provide a basis for the need for a cleanup action.

Step 3 - Complete a Toxicity Assessment.

Possible harmful effects associated with potential exposure to the COPCs were evaluated. Generally, these COPCs were separated into two groups: carcinogens (chemicals that may cause cancer) and non-carcinogens (chemicals that may cause adverse health effects other than cancer).

Step 4 - Characterize the Risk.

The results of Steps 2 and 3 were combined to estimate overall risks from exposure to the COPCs. The terms used to define the estimated risk are explained in the text box, *What's the Risk to Me?*

Unacceptable risks were associated with the following exposure scenarios:

- Exposure of future construction workers to subsurface soil, due to the presence of manganese.
- Exposure of future residents to groundwater (through potable and other household uses of groundwater) owing to elevated levels of arsenic, cobalt, iron and manganese, which were associated with increased cancer and non-cancer risk.

Cancer and non-cancer risks for residential and industrial exposures via vapor intrusion into any buildings that could be constructed in the future were found to be within acceptable levels.

Cancer and non-cancer risks for adolescent trespassers' and recreational users' exposures to surface water and sediment were found to be within acceptable levels.

Lead concentrations did not exceed screening criteria, so further evaluation of lead using detailed exposure models was not conducted.

What's the Risk to Me?

In evaluating risks to humans, risk estimates for carcinogens (chemicals that may cause cancer) and non-carcinogens (chemicals that may cause adverse effects other than cancer) are expressed differently.

For carcinogens, risk estimates are expressed in terms of probability. For example, exposure to a particular carcinogenic chemical may present a 1 in 10,000 increased chance of causing cancer over an estimated lifetime of 70 years. This can also be expressed as $1x10^{-4}$. The USEPA acceptable risk range for carcinogens is $1x10^{-6}$ (1 in 1,000,000) to $1x10^{-4}$ (1 in 10,000). In general, calculated risks higher than this range would require consideration of clean-up alternatives.

For non-carcinogens, exposures are first estimated and then compared to a reference dose (RfD). The RfD is developed by USEPA scientists to estimate the amount of a chemical a person (including the most sensitive person) could be exposed to over a lifetime without developing adverse health effects. The exposure dose is divided by the RfD to calculate the measure known as a hazard index (a ratio). A hazard index greater than 1 suggests that adverse effects may be possible.

For risks specific to this site, refer to Table 1.

Summary of the Human Health Risk Assessment

The outcome of the risk assessment is summarized in Table 1. This table presents the receptors to which there is possible risk of non-cancer health effects (expressed as a Hazard Index of 1 or more). There were no unacceptable cancer risks, except for life-long exposure to groundwater. Refer also to the box on page 6: *What's the Risk to Me?*

ECOLOGICAL RISKS

To conduct the ERA, the following three-step process was used:

Step 1 - Problem Formulation.

The primary objective of the ERA was to evaluate whether or not ecological receptors (animals, birds, fish and plants) are potentially at risk when exposed to contaminants at DU 5-1. The ERA for DU 5-1 at Tank Farm 5 was completed to make sure that ecological receptors were able to exist and grow in ways similar to the surrounding area.

The ecological receptors evaluated for the ERA included:

- Soil invertebrates
- Sediment invertebrates
- Aquatic organisms
- Herbivorous mammals and birds
- Piscivorous mammals and birds
- Invertivorous mammals and birds
- Terrestrial plants

Similar to the HHRA, COPCs were identified by comparing DU 5-1 chemical concentrations to risk-based screening levels. These COPCs were evaluated further in Step 2.

Step 2 – Risk Analysis.

The potential exposures to the COPCs and the resulting possible harmful effects were evaluated. Exposure was determined by estimating or measuring the amount of a chemical in soil, surface water, sediment, plant or animal tissue, and evaluating exposure to these chemical concentrations by ecological receptors.

Step 3 – Risk Characterization.

The results from Step 2 were evaluated for the likelihood of harmful effects to ecological receptors at DU 5-1. The ERA did not identify potential ecological risks to the terrestrial and aquatic receptors exposed to chemicals found at DU 5-1 in soil, groundwater, sediment or surface water.

How is Ecological Risk Expressed?

The risk to ecological receptors is expressed as a Hazard Quotient (HQ). A receptor's exposure estimate (e.g., amount of chemical in media or ingested in food) is compared to benchmarks for the chemicals that are designed to be protective. When the HQ is below 1, toxicological effects are unlikely to occur and no significant risk is present. When the HQ is above 1, there is a potential for significant risk to be present.

Cleanup Objectives

Based on the results of the risk assessments and comparisons to federal and state regulations, the following COCs were identified for remediation at DU 5-1:

- Soil –
  - Arsenic in surface and subsurface soil, due to concentrations present above a state-mandated criterion.
  - Manganese in subsurface soil which may pose risk to construction workers doing excavation activities.
- Groundwater – the metals, cobalt, iron and manganese, due to predicted risk based on potential future residential use of the groundwater. While arsenic contributed to the risk measured at the site, the concentrations in the groundwater are within both federal and state drinking water standards, so there is no cleanup level established for arsenic.

Cleanup goals for the COCs in soil and groundwater were developed in the FS, based on calculations of acceptable risk levels, regulatory criteria, and background concentrations. For the COCs in soil at DU 5-1, the associated cleanup goals and the basis for the selection of these goals are presented in Table 2. For groundwater COCs, the associated cleanup goals and the basis for their selection are presented in Table 3.

Cleanup Objectives (also known as Remedial Action Objectives [RAOs]) are the goals that a cleanup plan should achieve. The objectives are designed to be protective of human health and the environment and to comply with pertinent federal and state regulations. The cleanup objectives are developed to address all the identified COCs in soil and groundwater. The following RAOs were identified for DU 5-1:

- Prevent the ingestion of and direct contact with vadose zone soil containing COCs that pose unacceptable risk for residential and other unrestricted uses.
- Prevent the exposure of construction workers to soils with Site contaminants exceeding cleanup goals. Meeting this RAO will also be protective for the restricted recreational uses planned.
- Prevent use of site groundwater until groundwater cleanup goals have been achieved.
- Restore groundwater quality to its beneficial use.

Cleanup goals were developed in the FS for the COCs in soil and groundwater. These goals were developed based on calculations of acceptable risk levels, regulatory criteria, and background concentrations.

Summary of Cleanup Alternatives

Remedial alternatives (cleanup options) were developed and evaluated in the DU 5-1 FS report. The alternatives were developed to meet the RAOs listed above and are briefly described below. Full details are available for review in the FS that can be found in the public information repository described at the end of this Proposed Plan.

SOIL

The following three cleanup options were evaluated for DU 5-1 soil and are summarized in Table 4 (note that some common elements of each alternative are described later in this Proposed Plan):

Soil Alternative SO1 – No Action:
Under CERCLA, a “no action” alternative must be evaluated to serve as a baseline for comparison with the other alternatives. Under this option, the Site would be left as it is today and no further cleanup or monitoring would be performed. Only administrative reviews of the Site status would be conducted every 5 years, in accordance with CERCLA.

Soil Alternative SO2 – Land Use Controls and Inspections, Fencing, Long-Term Groundwater Monitoring, and Signs:
This alternative would establish written Land Use Controls (LUCs) to prevent residential and unrestricted recreational use of the property, and thus prevent the exposure of these persons to soil COCs in areas where they remain at concentrations greater than preliminary remedial goals (PRGs). In addition, fencing and signage would be required to prevent inadvertent access to areas of soil which exceed PRGs for industrial workers and restricted recreational users (hunters) under the current land use scenario. Three of four sides of the site are already fenced, and the east boundary of the site would be fenced to dissuade access from within the Tank Farm property. Long-term maintenance and inspections would be conducted annually to assure adherence to the LUCs and ensure that no uncontrolled excavations occur. Permanent use of this fence may not be necessary if the use of the property changes. However, the LUCs will remain to assure that any potential future property owners prevent uncontrolled access to soil due to the arsenic present above the state mandated criteria and manganese exceeding PRGs. Groundwater monitoring would be conducted to verify that soil contaminants which remain have not been mobilized to groundwater. The 5-year review would assure that the LUCs are properly controlling the land use at each review cycle.

Soil Alternative SO3 – Containment/Permeable Soil Cover, Land Use Controls and Inspections, Long-Term Groundwater Monitoring, and Signs:
This alternative would include construction of a soil cover over the area of soil that exceeds PRGs for industrial users and construction workers. Soil containing concentrations of arsenic and manganese at levels that exceed industrial PRGs down to a depth of two feet would be covered with a permeable soil cover. The area of the site with arsenic concentrations above 43 milligrams per kilogram (mg/kg), which is a ceiling value identified by the RIDEM, would receive a cover 24 inches thick (approximately ¼-acre of the site). The area of the site with arsenic concentrations above the PRG (17 mg/kg) but below 43 mg/kg will receive a cover 6 inches thick (over approximately ¾-acres of the site).

Because this is a cover-in-place alternative, some soils that exceed PRGs would remain. Therefore, this alternative also requires LUCs in order to prevent the Site from being used as an unrestricted area, because unrestricted use would allow the potential for the covered soil to be uncovered and for subsurface soil exceeding the cleanup goals to be exposed, allowing the exposure to reoccur. The LUC would include long-term maintenance and inspections to ensure that no uncontrolled excavations occur that could result in the exposure of construction workers and other site occupants to subsurface soils.

Groundwater monitoring would be conducted for a minimum of five years to verify that soil contaminants that remain are not mobilized to groundwater, to ensure the continued protection of human health and the environment.

GROUNDWATER

The following three cleanup options were evaluated for DU 5-1 groundwater and are summarized in Table 5 (note that some common elements of each alternative are described later in this Proposed Plan).

Groundwater Alternative GW1 – No Action:

Under CERCLA, a "no action" alternative must be evaluated to serve as a baseline for comparison with the other alternatives. Under this option, the site would be left as it is today and no further cleanup or monitoring would be performed. Only administrative reviews of the site status would be conducted every 5 years, in accordance with CERCLA.

Groundwater Alternative GW2 – Monitored Natural Attenuation, LUCs and Inspections:

This alternative would include a long-term groundwater monitoring program to verify that natural attenuation processes are effectively reducing metals concentrations. Monitored natural attenuation (MNA), which is a USEPA-approved remedial option under certain circumstances, is a careful long-term examination of the site geochemistry, with a focus on the natural microbial degradation of contaminants.

It is expected that the elevated concentrations of metals that exceed PRGs in the groundwater are present as an indirect result of the bacterial degradation of petroleum at or upgradient of DU 5-1. Releases of organic contaminants such as petroleum can alter an aquifer's geochemistry, such that naturally-occurring metals in soil can become mobilized and migrate to groundwater. It is expected that as the biodegradation of the petroleum concludes and the aquifer geochemistry is restored to normal conditions, much of these dissolved metals will come out of solution naturally and become immobilized in their particulate form, with metals concentrations in groundwater returning to the natural steady-state conditions.

If it is determined that natural attenuation of metals is occurring at an acceptable rate, the Navy would continue the MNA program until cleanup goals for metals in groundwater are achieved. LUCs would be implemented to prevent humans from exposure to groundwater contaminants during the interim period until groundwater RGs have been achieved naturally. Figure 3 presents the LUC boundary. A time frame for this process to occur is estimated to be between 11 and 23 years based on the natural rate of ground water flushing through the site, but this estimate would need to be reviewed and refined at each five-year review period at a minimum to assure adequate progress is being made.

Groundwater Alternative GW3 – In-Situ Treatment, Long-Term Monitoring, LUCs and Inspections

Alternative GW3 would rely on in-situ treatment of the groundwater to reduce concentrations of metals. Monitoring and LUCs would also be required until the cleanup goals were achieved.

This treatment alternative was developed based on the same understanding of the contaminants as described for Alternative GW2: that the elevated metals concentrations in the groundwater have been liberated from the soil at and upgradient of DU 5-1 as a result of bacterial degradation of petroleum that was released there in the past. As degradation of the petroleum in the subsurface occurs, changes in the subsurface chemical conditions are affected that cause metals naturally present in soil and rock to leach into and become dissolved in groundwater.

Differing from Alternative GW2, under this alternative, groundwater would be injected with treatment fluid to encourage and speed up the precipitation of the metals back into their solid form: treatment would involve enhancing the growth of certain bacteria that are naturally present in the soil, thereby artificially creating geochemical conditions in the subsurface that are favorable to metals existing in their particulate state, rather than in their dissolved form. Treatment would, in theory, reverse the effect of the petroleum degrading upgradient of the site, and cause the dissolved metals to undergo a reverse chemical reaction known as precipitation, changing the metals from their dissolved state in groundwater back to a particulate state, and returning those metals as silts into the soil matrix and within bedrock.

This treatment process, known as bioprecipitation, would be conducted by installing a series of injection wells at DU 5-1, and pumping a solution of sulfate-reducing bacteria and nutrients into the subsurface to enhance the bacterial growth. Prior to implementation, a detailed microcosm study would be conducted on the site to assure that the proper conditions exist for this treatment approach to be effective on the metals at concentrations present. This is a required step for all treatment programs, and allows for change to the treatment system based on the conditions at the time.

Careful monitoring of the injection process and groundwater conditions during treatment is needed to verify that the groundwater conditions respond as expected. There is uncertainty in the success of this system, and continued monitoring would be required for some time after to assure that COC concentrations do not reoccur as geochemistry fluctuates.

A time frame for achieving groundwater cleanup goals is estimated to be approximately four years, but since there are variables associated with in situ treatment systems, this estimate would need to be reviewed and refined as part of the design and the five-year reviews, at a minimum, to confirm that adequate progress is being made. There is a high probability additional treatment injections would need to be conducted, extending the duration.

Long-term groundwater monitoring would be conducted for the purpose of evaluating the effectiveness of the treatment process. An extended period of long-term monitoring may be necessary to assure concentrations of COCs in groundwater do not rebound after treatment is discontinued. LUCs would be implemented to prevent exposure to COCs in groundwater and protect human health during the interim period until cleanup goals have been achieved in the groundwater.

Common Elements

Each of the cleanup options, except for the No Action alternative, also includes the following common elements as part of the overall site remedy:

- Monitoring of Groundwater: Groundwater monitoring will be performed to verify expected subsurface conditions over time, either as part of MNA or monitoring for treatment, and to verify that soil contaminants which remain have not been mobilized to groundwater.

- LUCs and Inspections: The Navy will implement LUCs to restrict any uses of the site that would allow access to the groundwater or soil under unrestricted uses. For example, residential use of the site would not be allowed and use of groundwater as a water supply would not be allowed until cleanup goals are achieved. Long-term maintenance and inspections would be conducted annually to assure adherence to these LUCs. Long-term maintenance and inspections will also ensure that components of the remedy (i.e. monitoring wells, soil cover) are not damaged.

- 5-Year Reviews – In accordance with CERCLA, a detailed review of site conditions would occur every 5 years in coordination with federal and state regulatory agencies for as long as COCs are present at concentrations that do not allow for unrestricted use and unlimited exposure.

Evaluation of Alternatives

USEPA has established nine criteria for use in comparing the advantages/disadvantages of each cleanup alternative. These criteria fall into three groups: (1) “threshold criteria” that any selected alternative must meet; (2) “primary balancing criteria” that are used to differentiate between alternatives; and (3) “modifying criteria” that may be used to modify the recommended remedy. In the FS, each alternative identified above was individually analyzed with respect to the criteria. Next, the alternatives were compared against each other with respect to each criterion. Tables 4 and 5 at the end of this proposed plan provide a summary of the alternatives for soil and groundwater.

Preferred Action Alternatives

The Navy is proposing a combination of Soil Alternative SO3 and Groundwater Alternative GW2 for the whole-site remedial action. This combination is recommended because it offers the best balance among the nine evaluation criteria (shown on Tables 4 and 5).

Alternative SO3 is the construction of a soil cover and a permanent LUC that will be augmented with signs allowing the current industrial and restricted recreational use of the site (limited hunting). Two portions of the soil cover will be installed: one portion will be six inches in thickness and cover the surface soils with arsenic at concentrations between 17 mg/kg and 43 mg/kg. The other portion will be 24 inches in thickness and cover the surface soils with arsenic at concentrations above 43 mg/kg. This approach is developed in accordance with RIDEM Remediation Regulations and provides adequate protection to address both arsenic and manganese, since arsenic concentrations exceed the state criterion and manganese concentrations in subsurface soil pose a non-cancer risk to the construction worker. Key elements of Alternative SO3 are presented on Figure 4.

Alternative GW2, the allowance for metals present in groundwater at elevated levels to naturally attenuate, is appropriate to address residual metals in groundwater that are likely caused by local geochemical conditions created by past Navy activities at the Site. This is acceptable because there is no current use of groundwater at the site or downgradient, the Navy has conducted a number of source control actions to remove petroleum and other contaminants that were mobilizing groundwater contaminants, and because the COCs in groundwater have a natural origin.

The Groundwater Alternative GW2 relies on MNA, which includes a long-term groundwater monitoring program to verify that natural attenuation processes are effectively reducing metals concentrations to the natural steady-state conditions. Data typically required for an MNA remedy that already shows a decreasing trend in contaminant concentrations has not been collected for this Site, however, MNA is expected to be successful over time, based on the

evaluation of biodegradation parameters for this site. The available site data indicate that MNA will be successful over an estimated 23 years for overburden groundwater and 11 years for bedrock groundwater. The time required will be reevaluated at each five-year cycle, at a minimum, to assure that the remedy is acceptable.

The five-year review will assess if adequate reductions in concentrations of COCs are evident in the monitoring data. After an appropriate amount of data has been collected to allow a determination, if MNA is determined to be an ineffective remedy for the Site, the Navy will seek a change to the remedial action with approval by USEPA and RIDEM, in accordance with CERCLA and the FFA, using an additional public notification and ROD revision, or Explanation of Significant Differences, as appropriate.

If reductions in metals concentrations in groundwater are seen, the Navy would continue the MNA program until cleanup goals for metals in groundwater are achieved. In the meantime, implementing LUCs will ensure continued protection of human health by preventing the use of groundwater until cleanup goals are achieved and ensure the components of the remedy (monitoring wells) are not disturbed. Groundwater currently is not used as a drinking water source and there are no plans to do so in the future.

The Navy has determined that the combination of Alternatives SO3 and GW2 is the "Least Environmentally Damaging Practicable Alternative," as defined in the Clean Water Act, to protect wetland resources, based on the Navy's assessment that the remedial action can be conducted in a manner to be protective of wetland and floodplain resources. Specifically, for the groundwater component of the proposed remedy, limited remedial work, such as the potential for installation, operation, or maintenance of monitoring wells, or creating access corridors for components of the remedial action, may involve alteration of federal jurisdictional wetlands or floodplains. The soil component of the proposed remedy will involve installation of a soil cover within an area identified by EPA as a federal jurisdictional wetland (see Figure 3). However, the environmental benefit of protecting exposures exceeds the short term impact of the limited earthwork within the resource area. The cover areas will be restored with native wetland species to restore the wetland resources temporarily altered as part of the remedial action. In accordance with the federal wetland and floodplain protection requirements, the Navy is soliciting public comment on this determination.

Overall, the Navy expects the Preferred Alternative SO3 and GW2 to (1) be protective of human health and the environment; (2) comply with all pertinent federal and state regulations; (3) be cost-effective; and (4) use technologies that are permanent.

Next Steps

Community consideration of this Proposed Plan is the next step in the cleanup process for DU 5-1 at Site 13. The public is encouraged to review this plan and submit comments to the Navy.

The Navy will accept written comments on the Proposed Plan during the public comment period, from November 20, 2013 to December 20, 2013. The Navy will accept oral comments during a Public Hearing that follows a Public Information Session to be held on November 20, 2013 at the Courtyard Marriott, 9 Commerce Drive, Middletown, Rhode Island.

You do not have to be a technical expert to take part in the process. The Navy would like to know your thoughts before making a final decision on whether or not to implement the proposed remedy for DU 5-1 at Site 13.

Once the community has commented on this Proposed Plan, the Navy, USEPA, and RIDEM will consider all comments received. It is possible that this Proposed Plan could change based on comments received from the community. The Navy will provide written responses to all comments received on the Proposed Plan. The responses to public comments will be provided in a document called a Responsiveness Summary, which will be submitted with the ROD prepared for the Site.

The ROD will contain the rationale for the Navy's and USEPA's decision for the Site. The Navy and the USEPA anticipate that all comments will be reviewed and the ROD will be signed by December 2013. The ROD will then be made available to the public via the public information repository described at the end of this Proposed Plan. The Navy will announce the availability of the ROD through local newspapers and to the NAVSTA RAB.

After the Record of Decision

After the ROD is signed, the Navy will design and implement the selected alternative(s). The available data and information will be used to prepare an engineering design of the selected actions.

After the design is completed, with the concurrence of USEPA and RIDEM, the Navy will oversee any construction (i.e. fence installation) and LUC activities to ensure that the actions are properly implemented. Long-term groundwater monitoring and 5-year reviews will be conducted to ensure that the remedies remain protective over time.

Commitment to the Communities

The Navy is committed to keeping the communities informed on the environmental cleanup program at NAVSTA Newport. The RAB, composed of the community and government agency representatives, meets regularly to discuss the environmental cleanup program at NAVSTA Newport. At these meetings, community RAB members can provide input and offer suggestions on program activities. Upcoming RAB meetings are publicized in the local news media and are open to the public. If you would like further information about the RAB or the environmental restoration program at NAVSTA Newport, please contact the Navy Public Affairs Office at the address provided on Page 1 and 12 of this Proposed Plan. If you would like further information about the specific investigations conducted at DU 5-1, please contact the Navy project manager, Mr. Roberto Pagtalunan, at the phone number listed at the end of this Proposed Plan.

For More Information

This Proposed Plan summarizes information that can be found in greater detail in the RI and FS for DU 5-1 at Site 13, Tank Farm 5. These and other site documents are available online at http://www.rabnewportri.org (click on the link for the NAVFAC Website). The public is invited to review these documents and comment on this Proposed Plan during the public comment period. A copy of the ROD which selects the final remedy and includes the Responsiveness Summary also will be made available on the website.

Important Dates

30-Day Public Comment Period:
Wednesday, November 20, 2013 to Friday, December 20, 2013

Public Meeting:
Wednesday, November 20, 2013 (6:30 p.m. to 7:30 p.m.)

Public Hearing:
Wednesday, November 20, 2013 (7:30 p.m.)

Your Comments Are Important!

Public comments are used to improve the decision-making process. The Navy will hold a 30-day comment period for receiving written comments as well as hold a Public Hearing for receiving oral comments. All comments, whether oral or written, received during the public comment period and Public Hearing will become part of the official public record. The Navy will respond to all these comments in writing. For your convenience, there is a comment sheet provided at the end of this Proposed Plan.

Send written comments to:

Ms. Lisa Rama
Public Affairs Office
690 Peary Street
Naval Station Newport
Newport, RI 02841
Fax: (401) 841-3538
Lisa.Rama@navy.mil

All public comments and the Navy's responses will be issued in a document called a Responsiveness Summary that will accompany the ROD (cleanup plan) for Site 13. Copies of the Responsiveness Summary will be mailed or emailed to everyone who gave comment(s). The Navy will consider all comments in making the final decision for the Site. The Navy will announce the final decision through the local newspapers.

The public is encouraged to participate during this period as your thoughts and opinions will help in making the final decision. You do not have to be a technical expert to take part in the process.

TABLE 1. RECEPTORS AND CALCULATED RISK

RECEPTOR	MEDIUM	TOTAL CANCER RISK	TOTAL NON-CANCER RISK (HAZARD INDEX)
Construction Worker	All Soil (0 - 10 Feet)	$< 1x10^{-4}$	3
Child Resident	Surface Soil (0 - 1 Foot)	$< 1x10^{-4}$	2*
	All Soil (0 - 10 Feet)	$< 1x10^{-4}$	3*
	Groundwater	$1x10^{-4}$	22
Adult Resident	Groundwater	$1x10^{-4}$	7*
Lifelong Resident (Adults/Children)	Groundwater	$2x10^{-4}$	NA

*Non-cancer risks to residential receptors from soil cited did not exceed an HI of 1 for each target organ.

TABLE 2. CLEANUP GOALS FOR SOIL

CHEMICAL OF CONCERN	SURFACE SOIL CLEANUP GOAL (mg/kg)	BASIS FOR SELECTION	SUBSURFACE SOIL CLEANUP GOAL (mg/kg)	BASIS FOR SELECTION
Residential Use Scenario				
Arsenic	17[(d)]	Background[(a)]	24[(d)]	Background[(a)]
Manganese	NA/NA	NA	448/1086[(b)(d)]	Background[(b)]
Industrial Use Scenario				
Arsenic	17[(c)(d)]	Background[(a)]	24[(c)(d)]	Background[(a)]
Manganese	NA/NA	NA	585/1086[(b)(c)]	Background[(b)]

(a) Arsenic background values 95% Upper Predictive Limit (UPL) are presented for combined background soils.
(b) Manganese values presented are 95% UPL values for two soil types (Ne/Pm) for which background was calculated.
(c) Subsurface soil RGs for industrial use soil are applicable only to the 0-2 foot interval if a land use control is applied.
(d) Cleanup goals adjusted based on background.

TABLE 3. CLEANUP GOALS FOR GROUNDWATER

CHEMICAL OF CONCERN	CLEANUP GOAL (µg/L)	BASIS FOR SELECTION
Residential Use Scenario		
Total and Dissolved Metals		
Arsenic	NA[(a)]	NA[(a)]
Cobalt	3.3	Non-Cancer Hazard Index = 1[(b)]
Iron	10,900	Non-Cancer Hazard Index = 1[(b)]
Manganese	300	EPA Health Advisory[(c)]

(a) Arsenic contributed to risk, but concentrations are compliant with both Federal MCL for drinking water, and RIDEM's Method 1 GA Groundwater Objectives from Section 8.03 of the Rhode Island Remediation Regulations, DEM-DSR-01-93, as amended Nov. 2011, and therefore does not have a cleanup goal
(b) Risk-based cleanup goals are calculated for the risk-based COCs identified from the HHRA.
(c) The EPA health advisory is used in lieu of an enforceable standard.

TABLE 4
COMPARISON OF SOIL CLEANUP ALTERNATIVES

	Alternative SO1	Alternative SO2	Alternative SO3
ALTERNATIVE DESCRIPTION/COMPONENTS			
Evaluation Criteria	No Further Action	LUCs, Inspections, Groundwater Monitoring, Fencing and Signs	Soil Cover, LUCs, Inspections, Groundwater Monitoring, and Signs
ESTIMATED TIMEFRAMES FOR CLEANUP (YEARS)			
Time to achieve cleanup goals	NA	1	1
***CRITERIA ANALYSIS:* Threshold Criteria – Selected alternative must meet these criteria**			
Protects Human Health and the Environment – *Will it protect people and animal life? Is it permanent?*	⊘	●	●
Compliance with ARARs – *Does this alternative meet federal and state environmental laws, regulations, and requirements?*	⊘	○	●
Primary Balancing Criteria – Used to differentiate between alternatives meeting the threshold criteria above			
Provides Long-Term Effectiveness and Permanence – *Do risks remain onsite? If so, are the controls adequate and reliable?*	⊘	○	●
Reduces Mobility, Toxicity, and Volume Through Treatment – *Does the alternative reduce the harmful effects of the contaminants, their ability to spread, and the amount of contaminated material present?*	⊘	⊘	⊘
Provides Short-Term Protection – *How soon will risks be reduced? Are there short-term hazards to workers, residents, or the environment that could occur during cleanup?*	⊘	○	○
Implementability – *Is the alternative technically feasible? Are necessary goods and services (treatment equipment, space, etc.) available?*	●	●	●
Costs (see footnotes a and b) *Capital Costs (initial costs)* *O&M Costs (total long-term, 30-year)* *Total Present Worth Cost (total cost in today's dollars)*	 $0 $0 $0	 $64,000 $504,000 $568,000	 $484,000 $504,000 $988,000
Modifying Criteria – May be used to modify recommended cleanup			
State Agency Acceptance – *Do state environmental agencies agree with Navy's recommended alternative?*	To be determined following the public comment period.		
Community Acceptance – *What objections, modifications, or suggestions do the public offer during the public comment period?*	To be determined following the public comment period.		

Notes:

a) For purposes of cost estimation, all O&M costs represent 30-year time frames only. Actual total costs may be higher.

b) The 5-year reviews at this DU are a component of the Newport facility 5-year reviews.

Costs are rounded to the nearest $1,000

ARARs: Applicable or relevant and appropriate requirements
LUCs: Land Use Controls
O&M: Operation and Maintenance

⊘ Does Not Comply
○ Partially Complies
● Complies

TABLE 5
COMPARISON OF GROUNDWATER CLEANUP ALTERNATIVES

	Alternative GW1	Alternative GW2	Alternative GW3
ALTERNATIVE DESCRIPTION/COMPONENTS			
	No Action	MNA and LUCs	In-Situ Bio-Precipitation, Monitoring, and LUCs
ESTIMATED TIMEFRAMES FOR CLEANUP (YEARS)			
Time to achieve cleanup goals	NA	11 – 23 years	4± years*
***CRITERIA ANALYSIS:* Threshold Criteria– Selected alternative must meet these criteria**			
Protects Human Health and the Environment – *Will it protect people and animal life? Is it permanent?*	⊘	●	●
Compliance with ARARs – *Does this alternative meet federal and state environmental laws, regulations, and requirements?*	⊘	●	●
Primary Balancing Criteria– Used to differentiate between alternatives meeting the threshold criteria above			
Provides Long-Term Effectiveness and Permanence – *Do risks remain onsite? If so, are the controls adequate and reliable?*	⊘	○	○
Reduces Mobility, Toxicity, and Volume Through Treatment – *Does the alternative reduce the harmful effects of the contaminants, their ability to spread, and the amount of contaminated material present?*	⊘	⊘	●
Provides Short-Term Protection – *How soon will risks be reduced? Are there short-term hazards to workers, residents, or the environment that could occur during cleanup?*	⊘	○	○
Implementability – *Is the alternative technically feasible? Are necessary goods and services (treatment equipment, space, etc.) available?*	●	●	○
Costs (see footnotes a and b) *Capital Costs (initial costs)* *O&M Costs (total long-term, 30-year)* *Total Present Worth Cost (total cost in today's dollars)*	 $0 $0 See soil alternatives	 $62,000 $811,000 $873,000	 $1,277,000 $883,000 $2,160,000
Modifying Criteria– May be used to modify recommended cleanup			
State Agency Acceptance – *Do state environmental agencies agree with Navy's recommended alternative?*	To be determined following the public comment period.		
Community Acceptance – *What objections, modifications, or suggestions do the public offer during the public comment period?*	To be determined following the public comment period.		

Notes:

a) For purposes of cost estimation, all O&M costs represent 30-year timeframes only. Actual total costs may be higher.

b) The 5-year reviews at this DU are a component of the Newport facility 5-year reviews.

**Time to permanently achieve cleanup goals may be longer based on success of in-situ treatment.*

Costs are rounded to the nearest $1,000

ARARs: Applicable or relevant and appropriate requirements
LUCs: Land Use Controls
MNA: Monitored Natural Attenuation
O&M: Operation and Maintenance

● Complies
○ Partially Complies
⊘ Does Not Comply

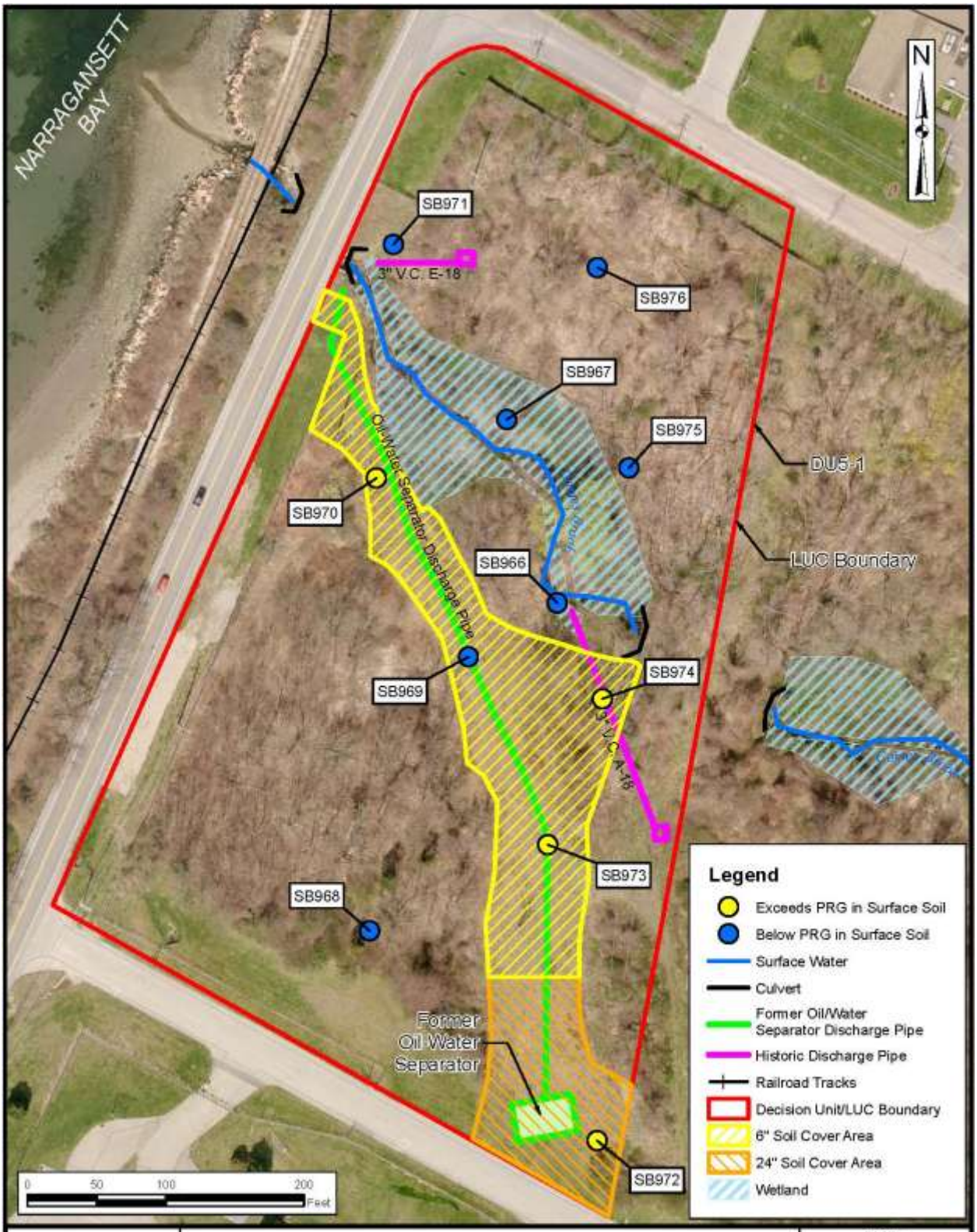
TETRA TECH

NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

SITE MAP

DECISION UNIT 5-1, TANK FARM 5
PROPOSED REMEDIAL ACTION PLAN

SCALE	PER SCALE BAR
FILE	I:\...\TF5_FS_SITEMAP_FIG1-3.MXD
REV	0
DATE	10/31/13
FIGURE NUMBER	3



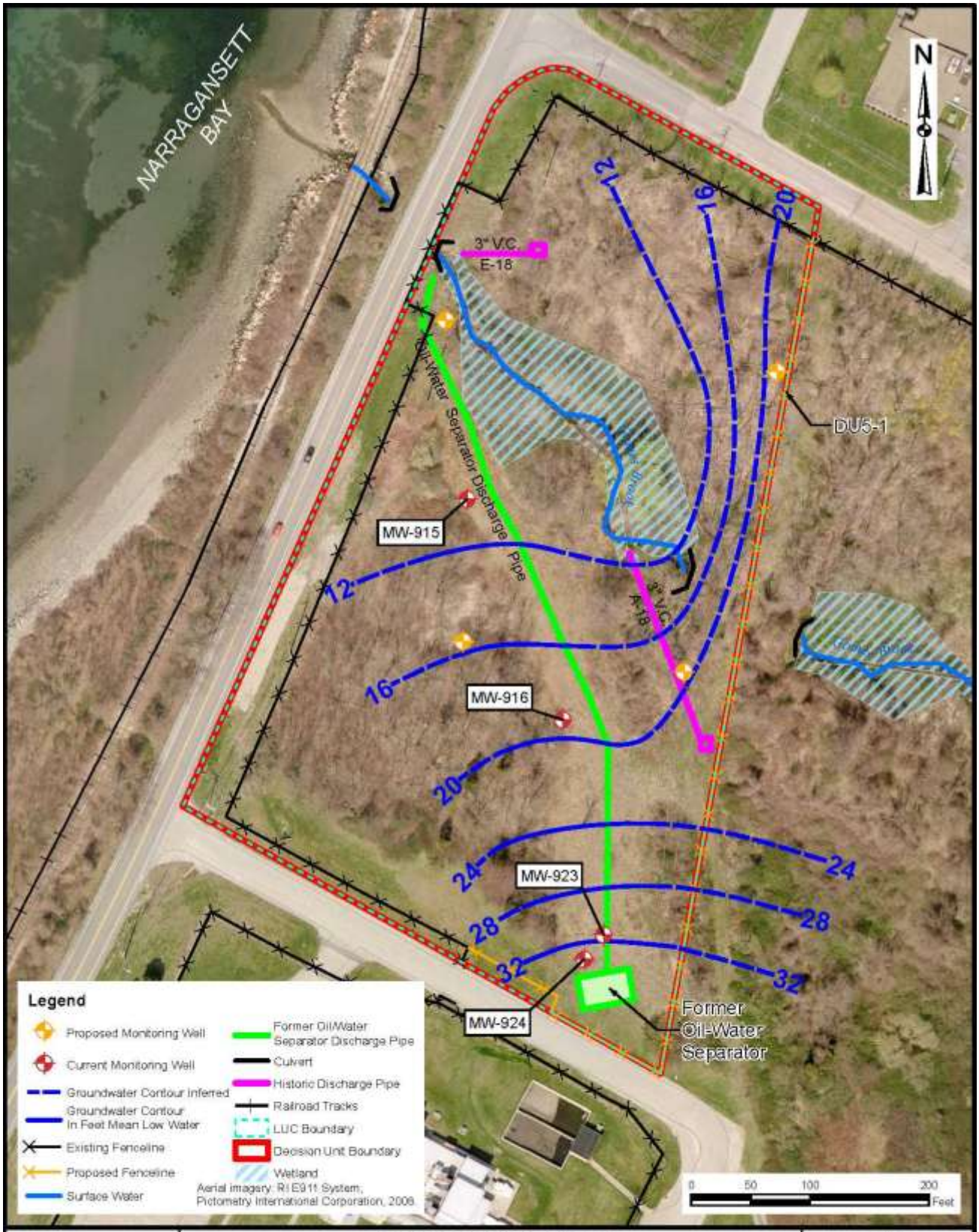
TETRA TECH

NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

SOIL REMEDY (SO-3)

DECISION UNIT 5-1 – TANK FARM 5
PROPOSED REMEDIAL ACTION PLAN

SCALE	PER SCALE BAR
FILE	I:_\TF5_PRAP_SU5-1_SOIL EXCEEDANCEPOLY2_FIG4-2.MXD
REV	0
DATE	10/31/13
FIGURE NUMBER	4



TETRA TECH

NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

GROUNDWATER REMEDY (GW-2)

DECISION UNIT 5-1 - TANK FARM 5
PROPOSED REMEDIAL ACTION PLAN

SCALE	PER SCALE BAR
FILE	I:\...\TF5_DU5-1 GWREM_FI35_PRAP.MXD
REV	0
DATE	05/16/13
FIGURE NUMBER	5

GLOSSARY OF TERMS

Administrative Record: The collection of documents supporting the decision for the proposed cleanup alternative. A copy of the Administrative Record is available for public review at the local information repository.

Applicable or Relevant and Appropriate Requirements (ARARs): Federal environmental and state environmental and facility siting statutes and regulations that must be complied with for each alternative. The ARARs vary depending on the alternative being proposed.

Chemicals of Concern: Chemicals identified in risk assessments as the primary drivers of unacceptable risks.

Chemicals of Potential Concern: Chemicals which are found at concentrations above federal and state risk-screening levels and, therefore, are included in further risk assessments.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA): A federal law passed in 1980 and amended in 1986 by the Superfund Amendments and Reauthorization Act (SARA). These laws created a system and funding mechanism for investigating and cleaning up abandoned and/or uncontrolled hazardous waste sites. The Navy's cleanup of sites regulated by CERCLA/SARA is funded by the Department of Defense under the Defense Environmental Restoration Fund.

Feasibility Study: A description and engineering study of the potential cleanup alternatives for a site.

Groundwater: Groundwater is the water found beneath the earth's surface that fills pores and cracks between such materials as sand, soil, gravel, or rock.

Information Repository: A public file containing site information, documents of onsite activities, and general information about a site.

Injection Wells: Wells that are used for adding liquid, solid, and/or gaseous substances into the ground for purposes of site cleanup.

Installation Restoration Program: A Navy program created to identify, investigate, evaluate, and if necessary, clean-up sites to protect human health and the environment.

Land Use Control: A legal or administrative restriction that prevents access or certain uses of land.

Monitored Natural Attenuation: Natural attenuation is a process by which chemicals in the groundwater are reduced in concentration over time through natural processes, such as bacterial action, to convert them into non-toxic forms. Monitored Natural Attenuation is an accepted practice to confirm and watch this process taking place over time, to identify when cleanup goals are met.

Monitoring Well: A monitoring well is drilled at a specific location on or off a waste site. Groundwater can be sampled at selected depths and studied to determine the direction of groundwater flow and the types and quantities of chemicals present in groundwater.

Precipitation: The process of separating a solid substance from a liquid.

Proposed Plan: A CERCLA document that summarizes the preferred cleanup remedy for a site and provides the public with information on how they can participate in the remedy selection process.

Record of Decision: A CERCLA legal, technical, and public document that explains the rationale and final cleanup decision for a site. It contains a summary of the public's involvement in the cleanup decision.

Remedial Action Objectives: Goals that are set to protect human health and the environment, and provide the basis to select cleanup methods.

Remedial Investigation: A step in the CERCLA process that is completed to gather sufficient information to support selection of a cleanup approach to a site. The RI involves site characterization or the collection of data and information necessary to characterize the nature and extent of contamination at a site. The RI also determines whether or not the contamination presents a significant risk to human health or the environment.

Responsiveness Summary: A document containing the responses to the public comments on the Proposed Plan. This summary is issued as part of the Record of Decision.

Restoration Advisory Board: A forum for the exchange of information and partnership among citizens, community representatives, the Navy, and regulatory agencies for the environmental cleanup programs at NAVSTA Newport.

Vadose Zone: The unsaturated region of soil extending from the ground surface to an underlying aquifer or geologic formation.

For More Information…

Contacts

If you have general questions about the restoration program at NAVSTA Newport, please contact:

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Ms. Kymberlee Keckler
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5 Post Office Square
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235 Promenade St.
Providence, RI 02908-5767
(401) 222-2797 x 7020
pamela.crump@dem.ri.gov

Information Repository

Documents relating to environmental cleanup activities for the NAVSTA Newport property are available for public review at the following information repository:

Go to:
http://go.usa.gov/DyNw
or
http://www.rabnewportri.org/
and click on the link for the "NAVFAC Website"

COMMENT SHEET
Proposed Plan for DU 5-1 at Site 13 (Tank Farm 5)

Use this space to write your comments.

The Navy encourages your written comments on the Proposed Plan for DU 5-1 at Site 13 (Tank Farm 5) at the Naval Station (NAVSTA) Newport, in Middletown, Rhode Island. You can use the form below to send written comments. If you have questions about how to comment, please contact the Navy's Public Affairs Office (Ms. Lisa Rama) at (401) 841-3538. This form is provided for your convenience.

Please fax or mail this form, or additional sheets of written comments, postmarked no later than December 20, 2013, to the address shown below:

Ms. Lisa Rama
Public Affairs Office
690 Peary Street
Naval Station Newport
Newport, RI 02841
Fax: (401) 841-3538

Comment Submitted by: _____

Address: _____

_____

_____

_____

Affix
Postage

Ms. Lisa Rama
Public Affairs Office
690 Peary Street
Naval Station Newport
Newport, RI 02841

(Fold on dotted line, staple, stamp, and mail)