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NAS CECIL FIELD, FL  
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LETTER REGARDING U S EPA REGION IV COMMENTS ON DRAFT RECORD OF  
DECISION FOR OPERABLE UNIT 10 (OU 10) SITE 25 WITH ATTACHMENT NAS CECIL  
FIELD FL  
6/6/2003  
U S EPA REGION IV

6/16/03

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 4



61 Forsyth Street  
Atlanta, Georgia 30303-3104

June 6, 2003

4WD/FFB

Commander  
Department of the Navy  
SOUTHNAVFACENCOM  
Attn: Mark Davidson, Code ES339  
P.O. Box 190010  
North Charleston, South Carolina 29419-9010

Subject: Draft Record of Decision (ROD) for Operable Unit 10, Site 25  
Naval Air Station Cecil Field, Jacksonville, Florida

Dear Mr. Davidson:

The U.S. Environmental Protection Agency has completed its review of the subject draft ROD dated May 2002. We were very pleased to see that changes that had been made to the OU 11, Site 45 ROD were carried over to the OU 10, Site 25 ROD. Consistency certainly speeds our review process. Attached is an annotated copy of the ROD with our comments.

The OU 10, Site 21 Draft ROD was reviewed using the "Guide to Preparing Superfund Proposed Plans, Records of Decision, and Other Remedy Selection Decision Documents", dated July 1999 (<http://www.epa.gov/superfund/resources/remedy.rods/index.htm>) and the "Principles and Procedures for Specifying, Monitoring and Enforcement of Land Use Controls and Other Post-ROD Action", dated 26 Feb. 2003, v6.0.

Should you have any questions with regard to this letter, please contact me at 404/562-8539 or at [vaughn-wright.debbie@epa.gov](mailto:vaughn-wright.debbie@epa.gov).

Sincerely,

A handwritten signature in cursive script that reads "Deborah A. Vaughn-Wright".

Deborah A. Vaughn-Wright  
Remedial Project Manager

cc: David Grabka, FDEP  
Mark Speranza, TTNUS  
Jeff Meyers, SOUTHDIV

## 1.0 DECLARATION OF THE RECORD OF DECISION

### 1.1 SITE NAME AND LOCATION

Operable Unit (OU) 10, Site 25 consists of the soil and groundwater at the Former Transformer Storage Yard at Naval Air Station (NAS) Cecil Field, Jacksonville, Florida [United States Environmental Protection Agency (U.S. EPA) (ID FL5 170 022 474)]. Site 25 is located in the north-central portion of the Main Base.

### 1.2 STATEMENT OF BASIS AND PURPOSE

This Record of Decision (ROD) presents the selected remedy for OU 10, Site 25 at NAS Cecil Field. The selected remedial actions were chosen in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, as amended by the Superfund Amendments and Reauthorization Act (SARA) of 1986, and to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) [40 Code of Federal Regulations (CFR) §300]. This decision document was prepared in accordance with U.S. EPA decision document guidance (U.S. EPA, 1999). This decision is based on the Administrative Record for the site. The United States Department of the Navy (Navy) and U.S. EPA Region IV issue this ROD (jointly).

### 1.3 ASSESSMENT OF THE SITE

The response actions selected in this ROD are necessary to protect the public health, welfare, or the environment from actual or threatened releases of hazardous substances into the environment or of pollutants or contaminants from this site that may present an imminent and substantial endangerment to public health or welfare.

### 1.4 DESCRIPTION OF THE SELECTED REMEDY

OU 10, Site 25 is part of a comprehensive environmental investigation and cleanup currently being performed at NAS Cecil Field under the CERCLA program. This ROD addresses only OU 10, Site 25. The selected remedy eliminates unacceptable exposure to benzene hexachloride (BHC) in the groundwater. The selected remedy for OU 10, Site 25 includes no further action (NFA) for soil. The selected remedy also includes monitored natural attenuation for groundwater and land use controls (LUCs) that will prevent extraction or consumption of groundwater from taking place at this location. The selected remedy was determined based on evaluation of the site conditions, site-related risks, future land use, applicable or relevant and appropriate requirements (ARARs), and Remedial Action Objectives (RAOs).

The major components of the selected remedy are as follows:

- NFA for soil.
- LUCs, including institutional controls, <sup>such as</sup> and deed restrictions, will be implemented to prevent residential development of Site 45 and to restrict the use of the surficial aquifer groundwater.
- Long-term monitoring will be performed by collecting and analyzing groundwater samples to verify that no unacceptable contaminant migration is occurring and to evaluate reductions in contaminant concentrations through naturally occurring processes such as biodegradation, dispersion, and dilution.
- Site conditions will be reviewed at the end of 5 years. If natural attenuation and LUCs are shown to be insufficient to meet the cleanup goals and RAOs as predicted by modeling, another remedial approach will be evaluated and may be implemented.

The Navy shall prepare in accordance with U.S. EPA Guidance and submit to the U.S. EPA and Florida Department of Environmental Protection (FDEP) for review and approval a Remedial Design (including a Land Use Control Remedial Design), Remedial Action Work Plans, Interim Remedial Action Report for Groundwater, Final Remedial Action Completion Report, and a Five-Year Review Report. The Five-Year Review Report shall contain the findings and conclusions of the review, including recommendations, follow-up actions to issues, and a protectiveness determination.

## 1.5 STATUTORY DETERMINATIONS

The selected remedy is protective of human health and the environment, is cost effective, and complies with federal and State requirements that are legally applicable or relevant and appropriate to remedial action. The nature of the selected remedy for OU 10, Site 25 is such that ARARs will be met through natural attenuation for groundwater. The selected remedy represents the maximum extent to which permanent solutions and treatment technologies can be used in a practicable manner at this site. Of those alternatives that are protective of human health and the environment and comply with ARARs, the selected remedy provides the best balance of trade-offs in terms of the five balancing criteria, while also considering the statutory preference for treatment. Although the selected remedy does not provide for treatment as a principal element, reduction of groundwater contaminant concentrations are expected over time due to dispersion, advection, and adsorption processes. Because this remedy would result in groundwater with contaminant concentrations greater than health-based levels remaining on site for an estimated 5 years, a site review will be conducted at the end of that time period to verify that the cleanup goals and RAOs have been met.

## 2.4 SCOPE AND ROLE OF OPERABLE UNIT

The environmental concerns at NAS Cecil Field are complex. As a result, work at the 24 sites in the IR Program has been organized into 12 OUs. More than 200 other areas are undergoing evaluation in the BRAC and Petroleum Programs.

This ROD is the final action for OU 10, Site 25. Final RODs have been approved for OU 1 through OU 4; OU 5, Site 14; OU 6 through OU 8; OU 9, Sites 36/37; OU 11, Site 45; and OU 12, Sites 42 44 and Old Golf Course. An RI, Baseline Risk assessment (BRA), and FS have also been prepared for OU 5, Site 15 but the FS is currently being re-evaluated. RI and FS reports were finalized for OU 9, Sites 57 and 58 in August and October 2002, respectively. RI and FS reports were finalized for OU 10, Site 21 in October 2001 and September 2002, respectively. An interim action has been completed for OU 12, Site 32. Decision documents are forthcoming for OU 10, Site 21 and OU 12, Site 32.

Investigations at OU 10, Site 25 indicated the presence of groundwater contamination from past operating practices. This contamination could pose an unacceptable human health risk if the groundwater was used as a potable water source.

The following Remedial Action Objective (RAO) was established for groundwater at OU 10, Site 25:

- Prevent ingestion of groundwater with alpha- and beta-BHC concentrations greater than their respective cleanup goals of 0.006 microgram per liter ( $\mu\text{g/L}$ ) and 0.02  $\mu\text{g/L}$ , which are the FDEP Groundwater Cleanup Target Levels (GCTLs). *What about Gamma BHC? Sampling had levels at 0.43. The FL GCTL & the Federal MCL are 0.2  $\mu\text{g/L}$ .*

The remedy documented in this ROD will achieve this RAO.

## 2.5 SUMMARY OF SITE CHARACTERISTICS

Contaminant sources, detected concentrations, fate and transport, contaminated media, and geologic and hydrogeologic conditions of OU 10, Site 25 are discussed in Sections 4.0, 5.0, and 6.0 of the OU 10, Site 25 RI Report (TINUS, 2001b). These site characteristics are summarized in the following paragraphs.

### 2.5.1 Geology and Hydrogeology

Shallow soil to a depth of 4 feet below ground surface (bgs) at Site 25 was composed of approximately 80 percent fine sand and approximately 20 percent silt and clay, with a United Soil Classification System (USCS) classification of SM. Specific gravity of the soil ranged from 2.58 to 2.70, and porosity ranged from 38.8 to 43.2 percent.

contaminants. The origin of the BHC is probably related to activities at the former pesticide storage building, Building 247, which is located about 20 feet from well CEF-P25-01S.

### 2.5.3 Current and Potential Future Site Uses

Site 25 is located within the industrial park and office complex portion of the Jacksonville Economic Development Commission (JEDC) Parcel. Site 25 is currently not being used. Existing buildings and structures have been demolished and removed for future use of the site as part of an industrial park and office complex as provided for in the JEDC Reuse Plan. *Current Site conditions support both industrial and residential usage.*

## 2.6 SUMMARY OF SITE RISKS

### 2.6.1 Human Health Risk Assessment

Because of the soil IRA, exposure to soil no longer represents a human health risk. The 95-percent UCL of the concentrations detected in the soil remaining at the site is less than FDEP SCTLs for direct residential exposure. Soils with contaminant concentrations in excess of FDEP SCTLs for leachability to groundwater were removed during the 2001 IRA.

The PRE performed as part of the RI (TtNUS, 2001b) indicated that exposure to Site 25 groundwater could potentially result in adverse human health effects. These adverse effects are associated with exceedances of FDEP GCTLs for alpha- and beta-BHC.

### 2.6.2 Ecological Risk Assessment

The ecological risk assessment performed as part of the RI established that Site 25 consisted primarily of buildings and parking lots that provide an ecological habitat of marginal quality and of little use to terrestrial wildlife (TtNUS, 2001b). The developed nature of the site renders exposure to soil by terrestrial receptors insignificant. Therefore, the soil exposure pathway is negligible and soil contaminants were not considered in the ecological risk assessment.

## 2.7 CLEANUP GOALS

A cleanup goal is the target concentration to which a COC must be reduced within a particular medium of concern to achieve one or more of the established RAOs. Cleanup goals are established to ensure that COC concentration levels left on site are protective of human and ecological receptors.

For Site 25, groundwater cleanup goals were determined for alpha- and beta-BHC based on the following criteria:

*Add a clear simple statement - The COCs are ---*

surrounding community and would be very easy to implement. There would be no cost associated with this alternative.

### 2.8.2 Alternative 2: Natural Attenuation, LUCs, and Groundwater Monitoring

Natural processes such as dispersion, advection, adsorption, and biological degradation would eventually reduce the groundwater concentrations of BHC to cleanup goals. A long-term groundwater monitoring program would be implemented to evaluate the decrease in BHC groundwater concentrations ~~due to~~ <sup>as a</sup> naturally occurring processes. Groundwater monitoring would also be used to evaluate the potential downgradient migration of BHC. LUCs would consist of preventing the use of groundwater until cleanup goals have been met. Regular site inspections would be conducted to verify the continued application of LUCs. A site review would be performed at the end of 5 years to confirm the adequacy of the remedy, as predicted through modeling.

This alternative would protect human health because it would reduce the risk from direct exposure to contaminated groundwater. This alternative would achieve the RAO, and groundwater monitoring would establish compliance with ARARs through natural attenuation. There would be no reduction of contaminant toxicity, mobility, or volume through active treatment, but contaminant toxicity and volume would be reduced through long-term natural attenuation. There would be minimal short-term risks associated with the performance of groundwater monitoring activities that would be addressed through appropriate health and safety procedures. Based upon modeling results, the cleanup goals would be attained within 16 months for beta-BHC and 32 months for alpha-BHC. The activities for this alternative would be easy to implement. The 5-year net present worth (NPW) cost of this alternative would be approximately \$89,000.

### 2.8.3 Alternative 3: In-Situ Enhanced Biodegradation, LUCs, and Groundwater Monitoring

This alternative would consist of enhancing the naturally occurring anaerobic biodegradation of BHC in groundwater with the application of a hydrogen release compound (HRC) such as lactic acid by direct push technology (DPT). Prior to this application, a treatability study would be performed to verify the effectiveness of the HRC and determine whether an oxygen release compound (ORC) such as magnesium peroxide might also have to be applied to complete the aerobic biodegradation of BHC metabolites. LUCs and groundwater monitoring would be the same as for Alternative 2.

Alternative 3 would protect human health because it would actively remove BHC from groundwater and reduce the risk from direct exposure to contaminated groundwater. This alternative would achieve the RAO, and groundwater monitoring would establish compliance with ARARs through treatment and natural attenuation. There would be a significant reduction of contaminant toxicity, mobility, or volume through

The goal of the selected groundwater remedy is to protect human health and the environment by eliminating, reducing or controlling hazards posed by the site and to meet applicable or relevant and appropriate requirements (ARARs) MAY 2003

## 2.10 SELECTED REMEDY

### 2.10.1 Summary of Rationale For Remedy Selection

Based on the conclusions of the RI (TtNUS, 2001b), there are no longer any unacceptable risk associated with exposure to Site 25 soil.

The goals of the selected groundwater remedy are to protect human health and the environment by eliminating, reducing, or controlling hazard posed by the site and to meet ARARs. Based upon consideration of the requirements of CERCLA, the NCP, the detailed analysis of alternatives, and U.S. EPA, FDEP, and public comments, Alternative 2 was selected to address the contaminants in the groundwater at OU 10, Site 25.

This remedy was selected based on discussions held by the BCT (BCT, 2001). The main reason for selecting this remedy is that it is protective of human health and the environment and will meet the RAO

and cleanup goals within a similar timeframe than more active and costly alternatives. This remedy was selected for the following reasons: ① Alternative is considered to be adequately protective at a much more reasonable cost than active treatment. In addition, the groundwater contaminant plume is small and stable and confined to the shallow aquifer with no evidence of ongoing contaminant migration. ② Florida Groundwater Target Levels are exceeded. ③ Contaminants detected can cause adverse environmental impacts. ④ Risk levels are greater than the FL threshold level of 10<sup>-6</sup>.

The remedy is illustrated on Figure 2-5 and consists of five major components: (1) NFA for soil, (2) natural attenuation of groundwater contamination, (3) LUCs, (4) groundwater monitoring, and (5) contingency remedy.

#### Component 1: NFA for Soil

#### Component 2: Natural Attenuation of Groundwater Contamination

Natural attenuation would rely on naturally occurring processes within the aquifer to reduce concentrations of BHC. Dispersion and dilution through aquifer movement, adsorption on soil particles, and biodegradation would mainly be responsible for this reduction. Aquifer conditions would be regularly monitored to make sure that concentrations are being adequately reduced through natural processes.

#### Component 3: LUCs

Groundwater contamination remains at Site 25 at concentrations that preclude unrestricted reuse; therefore, the remedy includes LUCs to prevent unacceptable risk. These LUCs will be implemented to prohibit usage of the surficial aquifer beneath the site and thereby preclude unacceptable risks from exposure to contaminated groundwater. The boundaries of OU 10, Site 25 and the area to be covered by

the groundwater LUCs are shown in Figure 2-7. The following are the LUC performance objectives for OU 10, Site 25, and these objectives will also be incorporated into the deed and other LUC mechanisms:

- Prohibit the consumption of groundwater that exceeds federal MCLs or FDEP GCTLs.
- Prohibit all use of the groundwater from the surficial aquifer underlying the site (including, but not limited to, dewatering, irrigation, heating/cooling purposes, and other industrial processes) without prior written approval from the Navy, U.S. EPA, and FDEP.
- Maintain the integrity of any existing or future monitoring or remediation system(s).

The LUCs shall be <sup>implemented</sup> maintained for as long as they are required to prevent unacceptable exposure to contaminated groundwater or to preserve the integrity of the remedy. The Navy or any subsequent owners shall not modify, delete, or terminate any LUC without U.S. EPA and FDEP concurrence. The LUCs shall be maintained until the concentrations of BHC in the groundwater beneath Site 25 have been reduced to levels that allow for unlimited exposure.

The Navy will be responsible for implementing, inspecting, reporting, and enforcing the LUCs described in this ROD in accordance with the approved LUC Remedial Design. Although the Navy may later transfer these procedural responsibilities to another party by contract, property transfer agreement, or through other means, the Navy shall retain ultimate responsibility for remedy integrity. Should this LUC remedy fail, the Navy will ensure that appropriate actions are taken to reestablish its protectiveness and may initiate legal action to either compel action by a third party(ies) and/or to recover the Navy's costs for remedying any discovered LUC violation(s).

The LUC Remedial Design will be prepared as the LUC component of the Remedial Design. Within 90 days of ROD signature, the Navy shall prepare and submit to U.S. EPA and FDEP for review and approval, a LUC Remedial Design that shall contain implementation and maintenance actions, including periodic inspections. The Navy will implement, maintain, monitor, and enforce the LUCs according to the Remedial Design.

#### **Component 4: Groundwater Monitoring**

Groundwater monitoring will consist of regularly collecting and analyzing groundwater samples both from within the contaminant plume to assess natural attenuation and downgradient of the leading edge of the plume to evaluate contaminant migration.

Monitoring will consist of collecting samples from five existing monitoring wells and analyzing them for BHC. ~~Monitoring would be performed for a period of 5 years.~~ Sampling frequency would be quarterly for the first year, semi-annual for the next 2 years, and annual thereafter. If the results of two consecutive sampling events indicate that the BHC cleanup goals have been met, the site will be considered as remediated for BHC in groundwater. *As agreed upon by the ~~NAVY~~ Navy, EPA and the State of Florida*

until  
Florida

**Component 5: Contingency Remedy**

Site conditions will be reviewed at the end of 5 years. If the results of this review show that (1) the implemented LUCs have failed to prevent unacceptable risks from exposure to groundwater contamination; (2) contaminated groundwater has migrated to an unacceptable degree as determined by sentinel well sampling results; or (3) the BHC contamination in groundwater is not attenuating as expected, then additional ~~active~~ remedial measures would need to be evaluated and possibly implemented. Potential contingency remedial measures could include in-situ enhanced bioremediation or extraction, on-site treatment, and surface discharge of contaminated groundwater.

**2.10.3 Summary of Estimated Remedy Costs**

The estimated capital, operation and maintenance (O&M), and NPW costs of the selected remedy are as follows:

- Capital Cost: \$5,000
- 5-year NPW of O&M Costs: \$84,000
- 5-year NPW Cost: \$89,000

The above cost figures have been rounded to the nearest \$1,000 to reflect the preliminary nature of the estimates. A detailed breakdown of the above estimates is provided in Appendix B.

**2.10.4 Expected Outcomes of the Selected Remedy**

The expected outcomes of the selected remedy may be summarized as follows:

- Immediately upon implementation of the remedy, Site 25 will be environmentally safe for its intended use as part of an industrial park and office complex or for any other purpose including industrial, commercial, or residential use.

- Within 32 months after implementation of the remedy, or possibly sooner as may be determined through monitoring, the groundwater cleanup goals will be attained and the surficial aquifer will become available for unrestricted use.
- LUCs will be required to prevent use of the surficial aquifer at Site 25. These controls will be required for as long as groundwater BHC concentrations preclude unrestricted reuse.
- Site 25 is currently not in use. In the future, Site 25 is planned to be part of an industrial park and office complex. It is anticipated that the reuse of NAS Cecil Field, including Site 25, will be beneficial to the Jacksonville area and expand the tax base of Duval County.

## 2.11 STATUTORY DETERMINATIONS

Under CERCLA Section 121 and the NCP, the selected remedy must be protective of human health and the environment, comply with ARARs (unless a statutory waiver is justified), be cost effective, and utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable. The following sections discuss how the selected remedy meets these statutory requirements.

### 2.11.1 Protection of Human Health and the Environment

The selected remedy, Alternative 2, will protect human health and the environment. LUCs will prohibit use of groundwater from the surficial aquifer beneath the site. The PRE indicates that exposure to groundwater associated with Site 25 results in incremental cancer risks that fall within U.S. EPA's target risk range of 1.0E-04 to 1.0E-06 and hazard indices of less than 1.0. The concentrations of alpha- and beta-BHC in groundwater are less than U.S. EPA's tap water criteria, but exceed the FDEP GCTLs. Although this results in a hazard index of less than 1.0, the exceedance of the GCTL still triggers the need for monitoring.

### 2.11.2 Compliance with ARARs

The selected remedy, Alternative 2, will comply with all ARARs. The ARARs that the selected remedy complies with are presented below and in more detail in Table 2-5 through Table 2-10. There are no Location-Specific ARARs.

The Chemical- and Action-Specific ARARs include the following:

determined that the selected remedy provides the best balance of trade-offs in terms of the five balancing criteria, while also considering the statutory preference for treatment as a principle element and bias against off-site treatment and disposal and considering State and community acceptance.

#### 2.11.6 Preference for Treatment as a Principal Element

Although the selected remedy does not ~~provide~~ <sup>meet the statutory preference for</sup> for treatment as a principal element, <sup>however</sup> reduction of groundwater contaminant concentrations are expected over time due to such naturally occurring processes as biological degradation, dispersion, advection, and adsorption.

#### 2.11.7 Five-Year Review Requirement

Because this remedy will result in hazardous substances, pollutants, or contaminants remaining on-site above levels that allow for unlimited use and unrestricted exposure, a statutory review will be conducted within 5 years after initiation of remedial action to ensure that the remedy is, or will be, protective of human health and the environment.

#### 2.12 DOCUMENTATION OF SIGNIFICANT CHANGES

The Proposed Plan for OU 10, Site 25 (TtNUS, 2003) was released for public comment on July 1, 2003. The Proposed Plan identified NFA for soil and Alternative 2, Natural Attenuation, LUCs, and Groundwater Monitoring, as the preferred groundwater alternative. The public was invited to comment during a 30-day period extending from July 1 to July 30, 2003. No changes to the proposed remedy, as originally identified in the Proposed Plan, have been made as a result of public comments.

Add Federal MCLs

TABLE 2-2

SUMMARY OF POSITIVE DETECTIONS IN GROUNDWATER  
 REMEDIAL INVESTIGATION SAMPLING  
 SITE 25 RECORD OF DECISION  
 NAVAL AIR STATION CECIL FIELD  
 JACKSONVILLE, FLORIDA

| Parameter | CEF-080-03S | CEF-P25-01S |           | FDEP GCTL | NAS Cecil Field IBDS Value |
|-----------|-------------|-------------|-----------|-----------|----------------------------|
|           |             | Apr-00      |           |           |                            |
|           | Oct-00      | Sample      | Duplicate |           |                            |

Pesticides/Polychlorinated Biphenyls (µg/L)

|                     |    |                |              |       |    |
|---------------------|----|----------------|--------------|-------|----|
| alpha-BHC           | NA | <b>0.058 J</b> | <b>0.06</b>  | 0.006 | NC |
| beta-BHC            | NA | <b>0.074</b>   | <b>0.069</b> | 0.02  | NC |
| delta-BHC           | NA | 0.06 U         | 0.055 U      | 2.1   | NC |
| gamma-BHC (Lindane) | NA | <b>0.16</b>    | <b>0.16</b>  | 0.2   | NC |
| Heptachlor Epoxide  | NA | 0.06 U         | 0.055 U      | 0.2   | NC |

Inorganics (µg/L)

|                    |      |    |    |                    |                       |
|--------------------|------|----|----|--------------------|-----------------------|
| Aluminum, Total    | 287  | NA | NA | 200                | 13,100                |
| Aluminum, Filtered | 99 U | NA | NA | 200 <sup>(1)</sup> | 13,100 <sup>(1)</sup> |

Bolded values exceed detection limits.

Shaded results exceed of FDEP GCTL or NAS Cecil Field IBDS.

FDEP Florida Department of Environmental Protection Groundwater Cleanup Target Level (FDEP, 1999).

IDBS NAS Cecil Field site-specific Inorganic Background Data Set (HLA, 1998).

J Estimated concentration.

U Not detected at indicated detection limit.

1 Criterion for total aluminum.