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FINAL STATEMENT OF BASIS FOR SOLID WASTE MANAGEMENT UNIT 17 CARBONACEOUS FUEL BOILER AREA NS MAYPORT FL

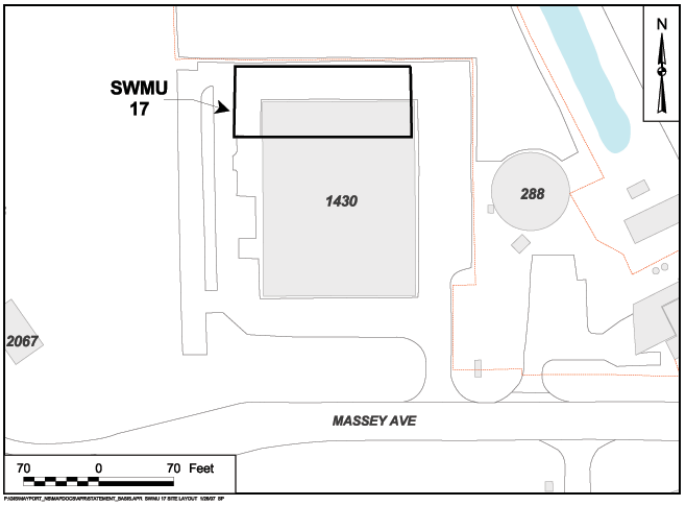
8/8/2008

NAVAL STATION MAYPORT

STATEMENT OF BASIS
SWMU 17 – Carbonaceous Fuel Boiler Area
Naval Station Mayport
Mayport, Florida

USEPA ID #FL9 170 024 260

August 8, 2008



Facility/Unit Type: Naval Station
Contaminants: Polycyclic Aromatic Hydrocarbons
Media: Soil and Groundwater
Corrective Action: Soil – Land Use Control (LUC); Groundwater – No Action

SUMMARY

The proposed corrective action for **Solid Waste Management Unit** (SWMU) 17 at the Naval Station (NAVSTA) Mayport is **Land Use Controls** (LUCs) for **surface soil**. The surface soil around SWMU 17 has been impacted by low concentrations of polycyclic aromatic hydrocarbons (PAHs) that exceed the **Florida Department of Environmental Protection**'s (FDEP's) Soil Cleanup Target Levels (SCTLs) for direct residential exposure. Recent **groundwater** sampling has shown that groundwater contamination is not a concern at SWMU 17. LUCs will restrict the site to non-residential land use only and will also prohibit any soil disturbance, excavation, or removal activities unless prior written approval is obtained from the NAVSTA Mayport Environmental Department in accordance with the NAVSTA Mayport excavation permit process. No surface water exists at SWMU 17.

Non-residential land use restrictions prohibit residential or residential-like uses including, but not limited to, any form of housing; childcare facilities; any kind of school including pre-schools, elementary schools, and secondary schools; playgrounds; and adult convalescent and nursing care facilities.

The public is invited to comment on this proposed corrective action or any other **corrective measure** alternative including those not previously studied. More information on how the public may participate in this decision-making process is provided in the Public Participation section of this document.

INTRODUCTION

Pursuant to the **Resource Conservation and Recovery Act** (RCRA), as amended by the 1984 **Hazardous and Solid Waste Amendments** (HSWA), the FDEP issued the current HSWA **permit** to NAVSTA Mayport on August 30, 2005.

This **Statement of Basis** (SB) identifies the proposed corrective action for SWMU 17, explains the related rationale, describes alternatives evaluated as part of the **Corrective Measures Study** (CMS) and CMS Addendum, solicits public review and comment on alternatives, and provides information as to how the public can be involved in the corrective action selection process. Additional details regarding the facility, environmental investigations, and the evaluation of the corrective measure alternatives may be found in the **RCRA Facility Investigation** (RFI), CMS, and CMS

Addendum Reports. These documents are kept as part of the Administrative Record at the **Information Repository**. Refer to the Public Participation section of this document for their location. A glossary, which defines some of the technical terms contained herein, is included at the end of this document.

The corrective measures reflected in this SB are those proposed by the United States Navy (Navy) and FDEP for implementation at SWMU 17. Changes to the proposed corrective action or a change from the proposed corrective action to another appropriate solution will require public participation.

PROPOSED CORRECTIVE ACTION

The proposed corrective action for surface soil consists of LUCs. LUCs will be imposed to restrict the site to non-residential use only, and it would prohibit any unauthorized soil disturbance in the vicinity of sample location MPT-17-SS08B east of Building 1430. Sample location MPT-17-SS08B is the location that contains PAH compounds in surface soil in excess of the SCTL for residential exposure. The total present worth cost of the proposed soil corrective measure is $84,000, which includes a $24,000 capital cost and an operation and maintenance cost of $60,000 over a 30-year period.

As required by NAVSTA Mayport's RCRA permit, the Navy will develop a **Corrective Measures Implementation Plan** (CMIP), with FDEP concurrence, for this SWMU following selection of the final corrective measure. The CMIP will specify procedures for the future long-term oversight and maintenance of the LUCs to be imposed at SWMU 17. The facility will ensure that these or similar instructions, processes, and requirements are complied with for all activities at SWMU 17 under the NAVSTA Mayport site approval process and/or the excavation permit process. NAVSTA Mayport will also conduct periodic inspections to confirm that the LUCs are complied with and report the results of those inspections to the FDEP. All processes, site inspections, and reporting activities will be conducted pursuant to specific requirements to be set forth in an approved CMIP for the site. The proposed LUC corrective action at SWMU 17 will ensure future protection of human health and the environment.

The proposed corrective action for groundwater at SWMU 17, NAVSTA Mayport, is No Action.

FACILITY BACKGROUND

NAVSTA Mayport is located near the town of Mayport within the city limits of Jacksonville, Florida, in northeastern Duval County on the southern shore of the confluence of the St. Johns River and the Atlantic Ocean (see Figure 1). SWMU 17, the Carbonaceous Fuel Boiler (CFB), is located in the north central part of NAVSTA Mayport (see Figure 2). SWMU 17 is located southwest of the Mayport Turning Basin, approximately 50 feet west of Echo Pier.

Figure 1. Naval Station Mayport Location Map

Figure 2. SWMU 17 Location Map

The CFB was a furnace fueled by domestic solid waste from both the NAVSTA Mayport fleet and the housing area within the station. The CFB also burned waste oil collected from various locations within the station as well as oil recovered from bilge water by the oily waste treatment plant. Waste oil and diesel fuel were stored at the CFB in two 6,000-gallon underground storage tanks (USTs) and two 550-gallon USTs, respectively. The CFB was operated 24 hours a day from 1979 to mid-1994, at which time it was taken out of service.

The RCRA Facility Assessment (RFA) Report reported that the CFB had dry ash stored on the northern side of the building in roll-off containers. Wet ash was also collected and stored in another roll-off.

When tested, the wet ash never exceeded the federal regulatory criteria for hazardous waste using the

extraction procedure (EP) toxicity test. All ash that did not exceed the EP toxic tests were disposed of in the station's landfill. The dry ash on some occasions exceeded the EP toxic tests for lead and cadmium. When exceedances were detected, the ash was removed and properly disposed of off-site. An RFI was conducted from March through October 1995 to delineate the nature and extent of any contamination.

SUMMARY OF FACILITY RISKS

A **Human Health Baseline Risk Assessment** and an Ecological Risk Assessment were performed as part of the RFI. An exceedance of an FDEP or **United States Environmental Protection Agency** (USEPA) risk level indicates a potential concern for the SWMU.

Human Health Risk Assessment

Preliminary risk characterization for SWMU 17 was conducted for potential exposures to surface soil and groundwater under current and future land-use scenarios.

Soil. Surface soil samples were collected from the two areas identified in the CMS as containing impacted surface soil during two separate sampling events. In May 2004, the first event was conducted on the impacted area located on the western side of Building 1430. Results from the first event showed that there were no longer any exceedances of FDEP SCTLs for direct residential exposure for the surface soil in that area. In February 2005, surface soil samples were collected on the eastern side of Building 1430. Laboratory analysis of these samples confirmed that PAH compounds were present in excess of the residential SCTL.

Two SVOCs [benzo(a)pyrene and dibenzo(a,h)anthracene] were determined to be **chemicals of concern** (COCs). Because PAH compounds like benzo(a)pyrene and dibenzo(a,h)anthracene may have cumulative adverse carcinogenic effects, the other PAH compounds detected [benzo(a)anthracene; benzo(b)fluoranthene; benzo(k)fluoranthene; chrysene; andindeno(1,2,3-cd)pyrene] were also considered when the PAH concentrations were evaluated. The total of the benzo(a)pyrene equivalents for these PAH compounds was determined to be 0.49 milligrams per kilogram (mg/kg). The FDEP residential direct exposure SCTL for benzo(a)pyrene equivalents is 0.1 mg/kg, and the FDEP industrial direct exposure SCTL for benzo(a)pyrene equivalents on 0.7 mg/kg. The benzo(a)pyrene equivalent for PAH compounds at SWMU 17 is in excess of the FDEP residential SCTL. However, the benzo(a)pyrene equivalent for PAH compounds at SWMU 17 is within the acceptable industrial/commercial risk exposure range (0.1 to 0.7 mg/kg).

Noncancer risks associated with the surface soil ingestion, dermal contact, and inhalation of dust for all current (adolescent trespasser, adult trespasser, and excavation worker) and future (child resident, adult resident, occupational worker, and maintenance worker) land use pathways were all below FDEP's target Hazard Index (HI) of 1.

Risks associated with the exposure to **subsurface soil** were not evaluated because COCs were not identified for that medium in the RFI.

Groundwater. Ammonia was detected in excess of its FDEP Groundwater Cleanup Target Level (GCTL) in the shallow monitoring well (MPT 17 MW03S) during the RFI field activities. A groundwater sample collected in January 2005 from the same well indicated that ammonia was no longer present at concentrations exceeding its GCTL. The cancer risk associated with ingestion of groundwater was equivalent to the FDEP's target risk for an adult resident (1 X 10-6). Noncancer risk associated with groundwater ingestion was below the FDEP's and USEPA's target HI of 1.0. Therefore, groundwater is not a medium of concern for SWMU 17.

Ecological Assessment

Soil. Exposure of terrestrial receptors to potential contamination in surface soil was not evaluated in the RFI due to the lack of habitat (i.e., a majority of the SWMU is paved with asphalt) and industrial land use. No pathway for ecological exposure to subsurface soils was identified.

Groundwater. The ecological risk assessment evaluated risks to aquatic life associated with exposure to contamination in groundwater as it discharges to surface water in the Mayport Turning Basin.

The concentrations of iron in groundwater at SWMU 17 (2000 µg/L) exceeded both the State of Florida GCTL of 300 µg/L and the Marine Surface Water Cleanup Target Level of 300 µg/L. Upgradient groundwater monitoring wells have significantly higher iron concentrations (4000 µg/L). The iron concentrations decrease as groundwater flows toward the NAVSTA Mayport Turning Basin. The CFB at the SWMU was fueled by domestic solid waste and burned waste oil collected from various locations at NAVSTA Mayport. This data indicates that iron is not a SWMU related contaminant.

Interim Measures

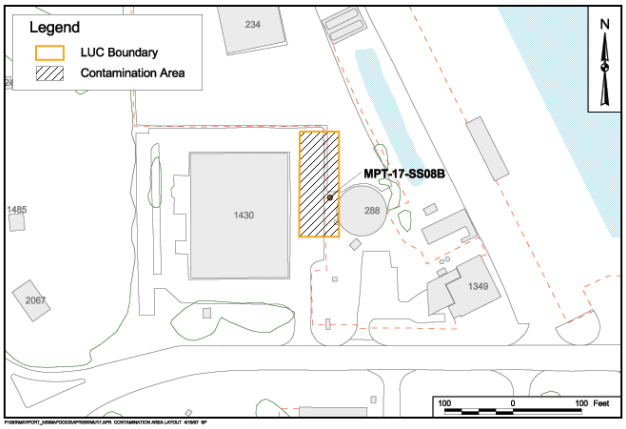
After the completion of the RFI for SWMU 17, an **interim measure** consisting of LUCs was implemented to restrict the SWMU to non-residential use.

SCOPE OF CORRECTIVE ACTION

Benzo(a)pyrene equivalents [benzo(a)pyrene; dibenzo(a,h)anthracene; benzo(a)anthracene; benzo(b)fluoranthene, benzo(k)fluoranthene; chrysene; and indeno(1,2,3-cd)pyrene] are the only contaminants in surface soil that exceeds the residential SCTL in Chapter 62-777 Florida Administrative Code (FAC). As such, any corrective action implemented at SWMU 17 must include LUCs to restrict soil disturbance and the future use of the SWMU to non-residential activities.

The total area of surface soil contamination was estimated to be 900 square feet (ft^2) with an average depth of 1 foot and estimated volume of 33 cubic yards (yd^3) (see Figure 3.)

Figure 3. SWMU 17 Surface Soil Contamination Area/Proposed Corrective Action



SUMMARY OF ALTERNATIVES

An evaluation of the following corrective measure alternatives for SWMU 17 was conducted in accordance with the Final RCRA Corrective Action Plan Guidance [USEPA, May 31, 1994, Office of Solid Waste and Emergency Response (OSWER) Directive 9902.3-2A].

Alternatives

Soil Alternative 1: No Action. The No Action alternative serves as a baseline consideration or addresses SWMUs that do not require remediation.

Soil Alternative 2: LUCs. This alternative would implement LUCs to restrict the site to non-residential land use only, and it would also prohibit any unauthorized soil disturbance. Non-residential land use restrictions prohibit residential or residential-like uses including, but not limited to, any form of housing, child-care facilities, pre-schools, elementary schools, secondary schools, playgrounds, adult convalescent or nursing care facilities. Once implemented, procedures would be set in place to ensure that the LUCs continue to be maintained via preparation of a SWMU-specific CMIP as required by NAVSTA Mayport's RCRA permit.

Soil Alternative 3: Excavation and Disposal. Soil Alternative 3 would address contaminated surface soil through excavation and off-site disposal. An estimated 33 yd^3 of PAH-impacted soil would be excavated for disposal.

The removal of the top 1 foot of soil exceeding the FDEP SCTLs for direct residential exposure would be excavated for disposal in an approved off-site landfill.

EVALUATION OF THE PROPOSED REMEDY AND ALTERNATIVES

The identified corrective measure alternatives were evaluated using the criteria contained in the Final RCRA Corrective Action Plan (USEPA, May 31, 1994, OSWER Directive 9902.3-2A). Four criteria and five other factors were used to evaluate the corrective measure alternatives. These criteria and factors are as follows:

Criteria

- Protect Human Health and the Environment
- Attain Media Cleanup Standards
- Source Control
- Waste Management Standards

Other Factors

- Long-Term Reliability and Effectiveness
- Reduction in Toxicity, Mobility, or Volume
- Short-Term Effectiveness
- Implementability
- Cost

Table 1 summarizes the evaluation of the surface soil corrective measure alternatives for SWMU 17 as performed in the CMS Addendum Report.

RECOMMENDATIONS

Based on the screening of technologies and assessment of various alternatives performed, Soil Alternative 2 is recommended for addressing the surface soil contamination at SWMU 17 (see Figure 3).

Table 1. Evaluation of Surface Soil Corrective Measure Alternatives for SWMU 17

Soil Alternative 1: No Action	Soil Alternative 2: LUC Implementation	Soil Alternative 3: Excavation, Disposal, and LUCs
Protect Human Health and the Environment		
Would not be protective of hypothetical future residents because it would not restrict future use to industrial activities.	Would be protective of workers and would restrict the future use to industrial.	Would be protective of hypothetical future residents because contaminants would be eliminated through excavation.
Attain MCS		
May attain residential standards over time, but the SWMU already meets industrial standards.	LUCs would not attain clean-up standards for residential use. LUCs would allow you to manage unacceptable risks.	Removal would attain cleanup standards in less than 1 year.
Source Control		
No new source control would be implemented.	No new source control would be implemented.	Excavation and disposal of the contaminated soil would eliminate the source.
Comply with Waste Management Standards		
No standards for waste management apply as no waste would be generated.	No standards for waste management apply as no waste would be generated.	Waste would be properly disposed of in accordance with applicable state, federal, and local regulations.
Long-Term Reliability and Effectiveness		
Would not provide long-term reliability and effectiveness because it would not prevent future residential development.	LUCs would provide long-term reliability and effectiveness.	There would be a high degree of long-term reliability and effectiveness.
Reduction in Toxicity, Mobility, or Volume through Treatment		
Reduction of toxicity would occur through natural processes, but would not be monitored.	Reduction of toxicity would occur through natural processes over a long period of time, but would not be monitored.	Mobility of all contaminants would be reduced through excavation and off-site disposal.
Short-Term Effectiveness		
No short-term risks to workers, the community, or the environment.	No short-term risks to workers, the community, or the environment.	Short-term risk would be controllable, but dust emissions would have to be mitigated during excavation.
Implementability		
Would be readily implementable since no action would occur.	Would be readily implementable.	Would be implementable.
Cost (Total Present Worth)		
$0	$85,000	$765,000

Shading indicates the proposed alternative.

The preferred corrective action involves the implementation of LUCs to restrict the site to non-residential use only, and it would also prohibit any unauthorized soil disturbance at SWMU 17. SWMU inspections would be used to ensure that the LUCs are being maintained. No action is required for groundwater at SWMU 17.

Non-residential land use restrictions prohibit residential or residential-like uses including, but not limited to, any form of housing; childcare facilities; any kind of school including pre-schools, elementary schools, and secondary schools; playgrounds; and adult convalescent and nursing care facilities.

PUBLIC PARTICIPATION

To make a final decision and incorporate corrective measures into the HSWA permit, the FDEP is soliciting public review and comment on this SB for the proposed corrective action for SWMU 17 at NAVSTA Mayport. The 40 *Code of Federal Regulations* (CFR) 124.10(6) requires a 45 day comment period for a permit modification request made by the permittee under RCRA. The FDEP has undertaken the lead role on this request initiated by the Navy (the permittee). The comment period will begin on August 24, 2008, and will be published in the *Florida Times Union* newspaper.

Copies of the RFI and CMS Reports and the SB are available for public review at the Information Repository located at the Jacksonville Public Library - Beaches Branch, 600 3rd Street, Neptune Beach, FL, 32266 [Phone (904) 241-1141].

A public hearing will be held if one is requested. To request a public hearing, to obtain more information about this SB, or to submit written comments please contact Diane Racine or John Winters (contact information provided below).

All comments must be postmarked no later than October 7, 2008.

Next Steps

Unless otherwise indicated, the FDEP will modify the HSWA permit to incorporate the final decision on the RCRA permit modification request when the permit is renewed. The final decision will detail the corrective measure chosen for SWMU 17 and will consider comments received during the **public comment period** in a **Response to Comments Summary**.

When the permit is modified, notice will be given to the Navy and to each person who has submitted written comments or who has requested notice of the final decision. The final permit decision shall become effective 30 days after the issuance of the notice of the decision unless a later date is specified or review is requested under 40 CFR 124.19. If no comments are received requesting a change in the draft permit, the final permit modification shall become effective immediately upon issuance.

CONTACT

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KEY WORDS

CFB	Carbonaceous Fuel Boiler
CFR	Code of Federal Regulations
CMIP	Corrective Measures Implementation Plan
CMS	Corrective Measures Study
COC	Chemical of Concern
COPC	Chemical of Potential Concern
EP	Extraction Procedure
FAC	Florida Administrative Code
FDEP	Florida Department of Environmental Protection
ft^2	Square Feet
GCTL	Groundwater Cleanup Target Level
HI	Hazard Index
HSWA	Hazardous and Solid Waste Amendments
LUC	Land Use Control
MCS	Medial Cleanup Standard
mg/kg	Milligrams per Kilogram
NAVSTA	Naval Station
Navy	United States Navy
PAH	Polycyclic Aromatic Hydrocarbons
PCB	Polychlorinated Biphenyl
RCRA	Resource Conservation and Recovery Act
RFA	RCRA Facility Assessment
RFI	RCRA Facility Investigation
SB	Statement of Basis
SCTL	Soil Cleanup Target Level
SVOC	Semivolatile Organic Compound
SWMU	Solid Waste Management Unit
USEPA	United States Environmental Protection Agency
UST	Underground Storage Tank
VOC	Volatile Organic Compound
yd^3	Cubic Yards

GLOSSARY

Aquifer: An underground layer of permeable rock, sediment, or soil capable of storing and trasporting water with or between grains, cracks, and pere spaces.

Chemical of Concern (COC): A chemical detected in environmental media at a concentration that may adversely affect human health or ecological receptors.

Corrective Measure: Includes corrective action necessary to protect human health and the environment for releases of hazardous constituents from any SWMU at the facility regardless of the time at which waste was placed at the location as required by 40 CFR 264.101. Actions may address releases to air, soils, surface water, or groundwater.

Corrective Measures Implementation Plan (CMIP): A written plan that outlines detailed design, construction, operation, maintenance, and monitoring of a chosen cleanup corrective action.

Corrective Measures Study (CMS): A step in the RCRA corrective action process where the owner and operation identifies and evaluates cleanup alternatives for addressing contamination at a SWMU

Florida Department of Environmental Protection (FDEP): The state agency responsible for implementing Florida environmental laws.

Groundwater: Water found within an aquifer.

Hazardous and Solid Waste Amendments (HSWA): Amendments to RCRA, passed in 1984, which greatly expand the nature and complexity of activities covered under RCRA.

Human Health Baseline Risk Assessment: Study to determine the likelihood that a given exposure or series of exposures may have damaged or will damage human health.

GLOSSARY CONTINUED

Information Repository: A public file containing technical reports, reference documents, and other materials relevant to the SWMU investigation and clean-up.

Interim Measure: An action taken to address a release or potential release of hazardous substances which may pose an imminent and substantial threat to human health or the environment.

Land Use Control (LUC): Is broadly interpreted to mean any restriction or control arising from the need to protect human health and the environment, that limits use of and/or exposure to any portion of a given property, including water resources. This term encompasses institutional controls, such as those involving real estate interests, governmental permitting, zoning, public advisories, deed notices, and other legal restrictions. The term may also include restrictions on access, whether achieved by means of engineered barriers such as a fence or concrete pad, or by human means, such as the presence of security guards. Additionally, the term may involve both affirmative measures to achieve the desired restriction (e.g., night lighting of an area) and prohibitive directives (e.g., no drilling of drinking water wells).

Permit: A RCRA permit, issued for NAVSTA Mayport, establishes the facility's operating conditions for managing hazardous waste.

Public Comment Period: A legally required opportunity for the community to provide written and oral comments on a proposed environmental action.

RCRA Facility Investigation (RFI): Evaluates the nature and extent of the releases of hazardous waste.

Resource Conservation and Recovery Act (RCRA) of 1976: Requires each hazardous waste treatment, storage, and disposal facility to manage hazardous waste in accordance with a permit issued by the USEPA or a state agency that has a hazardous waste program approved by the USEPA.

Response to Comments Summary: A document summarizing the public comments received and the responses to the comments.

Risk Assessment: A study estimating the potential risk a SWMU poses to human health and the environment.

Solid Waste Management Unit (SWMU): Any discernable unit (to include regulated units) at which RCRA regulated waste has been placed at any time, irrespective of whether the unit was intended for the management of solid or hazardous waste.

Statement of Basis (SB): A public participation document detailing the proposed corrective action at a SWMU.

Surface Soil: Soil found from 0 to 2 feet below land surface.

Subsurface Soil: Soil found 2 feet below land surface and deeper.

Unauthorized: An act done or made without official permission or consent.

United States Environmental Protection Agency (USEPA): The federal agency responsible for implementing United States environmental laws.

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STATEMENT OF BASIS
SWMU 17 - Carbonaceous Fuel Boiler Area
Naval Station Mayport
Mayport, Florida

Your comments on the SWMU 17 proposed corrective action:

Please include additional comments on a separate page and note the Statement of Basis on which you are commenting (i.e., Statement of Basis for SWMU 17).

Name _____

Address _____

City, State Zip _____

Phone Number (optional) _____

Fax Number (optional) _____

Fold this page in half so that the address on the back is visible, staple or tape closed, stamp, and mail.

Comments on the Statement of Basis for the Carbonaceous Fuel Boiler Area (SWMU 17)

Place Stamp Here

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