

# Site Management Plan

Naval Station Roosevelt Roads  
RCRA/HSWA Permit No. PR2170027203  
Ceiba, Puerto Rico



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## LIST OF ACRONYMS AND ABBREVIATIONS

AOC	Area of Concern
BOS	Base Operating Support
CAP	Corrective Action Plan
CERCLA	Comprehensive Environmental Recovery, Compensation, and Liabilities Act
CLEAN	Comprehensive Long-Term Environmental Action Navy
CMI	Corrective Measures Implementation
CMS	Corrective Measures Study
CS	Confirmation Study
CTO	Contract Task Order
DDT	dichlorodiphenyltrichloroethane
DoN's	Department of the Navy's
DRMO	Defense Reutilization and Marketing Office
FY	Fiscal Year
HHRA	Human Health Risk Assessment
IAS	Initial Assessment Study
ICM	Interim Corrective Measures
IR	Installation Restoration
IRP	Installation Restoration Program
LANTDIV	Naval Facilities Engineering Command, Atlantic Division
MCL	Maximum Contaminant Level
NAVSTA	Naval Station
NPDES	National Pollution Discharge Elimination Systems
NSRR	Naval Station Roosevelt Roads
OU	Operable Unit
PCAS	Post Construction Award Services
PCB	polychlorinated biphenyls
PID	Photoionization Detector
ppb	parts per billion
ppm	parts per million
PREQB	Puerto Rico Environmental Quality Board
PSH	Phase Separated Hydrocarbons

## LIST OF ACRONYMS AND ABBREVIATIONS

*(Continued)*

RAB	Restoration Advisory Board
RAC	Remedial Action Contractor
RCRA	Resource Conservation and Recovery Act
RFA	RCRA Facility Assessment
RFI	RCRA Facility Investigation
RFP	Request for Proposal
RI	Remedial Investigation
RI/FS	Remedial Investigation/Feasibility Study
SMP	Site Management Plan
SWMU	Solid Waste Management Unit
TCE	trichloroethene
TWFF	Tow Way Fuel Farm
USEPA	United States Environmental Protection Agency
UST	Underground Storage Tank
VSI	Visual Site Inspection

## **1.0 INTRODUCTION TO SITE MANAGEMENT PLAN**

This section contains an identification of the purpose and rationale for the Site Management Plan (SMP), a discussion of the overall strategy that the Navy employs at Naval Station Roosevelt Roads (NSRR), and a discussion of how the SMP is organized.

### **1.1 Purpose and Rationale**

This SMP has been created to serve multiple needs and multiple users. The four purposes of the plan are:

1. To serve as an information repository for the general user (e.g. the public, new members of the program team) on the overall corrective action program.
2. To serve as a joint planning document, primarily through the use of the schedule which is a part of the SMP, for both the Navy and regulatory agencies.
3. To serve as a “snapshot” status document which, through its frequent update, can be reviewed to find the status of each individual unit and the overall corrective action program.
4. To serve as the Navy’s detailed planning and project management document for the allocation and planning of funding and technical resources.

Each purpose of the plan is discussed briefly in the paragraphs that follow.

The general descriptive material, which addresses each of the Solid Waste Management Units (SWMUs) and Areas of Concern (AOC), provides a good review of the entire corrective action program at NSRR. It is expected that this type of information will be particularly useful as a summary of the various elements that comprise the program. This information will also be useful to individuals wishing to be introduced to the program, as it is ongoing at Roosevelt Roads.

The schedule, which is included in this SMP, is a valuable tool for planning purposes. It is expected that the schedule will allow both the Navy and the regulatory agencies to plan activities and levels of effort required in advance of the time they need to be committed. This also provides all interested parties an opportunity to follow the logical sequence of the program as indicated by the schedule, as well as the forward planning to eventual final site disposition.

Project status is always an important aspect to any program. Having an up-to-date status document allows all interested parties to track program progress. The SMP is designed to be the document in which the overall program status will be kept current. This will allow both the Navy and regulators to utilize a single document in preparing their periodic reports to management, and will also afford the opportunity to track progress through review of the SMP updates.

Finally, the SMP is designed to serve as the Navy's overall management document. Historical expenditures along with budgeted needs will be included in the document. Anticipated shortfalls in budgets or other critical factors can be identified early and managed appropriately so as to ensure consistent program progress.

## **1.2 Global Strategy of the Corrective Action Program**

The overall goal of the Resource Conservation and Recovery Act (RCRA) Corrective Action Program is to address all potential or actual environmental impacts at NSRR, which resulted from past or ongoing waste management activities. This goal will be met using superior technical standards while pursuing an aggressive schedule coupled with rigorous cost control.

The paragraph above essentially represents the "mission statement" for the program. There are five specific elements of how the program is approached that will result in achievement of the "mission". These are the following:

1. Work as a "Team": The Navy has proactively sought to create a "Team" to approach corrective action at NSRR. The "Team" is comprised of the Activity, Naval Facilities Engineering Command, Atlantic Division (LANTDIV), technical consultants, Puerto Rico Environmental Quality Board (PREQB) and United States Environmental Protection Agency (USEPA). Working together as a team fosters cooperation that leads to an understanding of each team members' goals and needs. This results in more targeted documents, a reduction of the overall time line, and the cost-effective use of funds.

2. Group SWMUs/AOCs together into Operable Units (OUs): Early on in the process, the Navy analyzed the permit and the waste management areas that were listed. It became obvious that there were similarities among many of the areas in terms of levels of investigations required, the potential contaminants of concern, area of occurrence, or similarity in use (e.g. tank farms). Units showing one or more of these similarities were grouped into OUs to be investigated and reported on together. This approach has proven to save money and time by reducing the number of reports requiring production and review.
3. Proactive Interim Corrective Measures (ICMs): The Navy has proactively performed ICMs where the problem at a site has been straightforward or an imminent potential for a new or continued release at a given unit was obvious. To date, the following ICMs have been completed, or have been placed offline at NSRR.
  - Building 121 - Pesticide Storage. A RCRA closure was performed at this unit (SWMU 19) prior to issuance of the permit. While not truly an ICM since it was a formal closure, it did remove a SWMU from the need for further action without completion of the formal Corrective Measure Study (CMS) process. The EPA has approved the final closure report that was submitted in June 1994.
  - Substation 90 (SWMU 10). Polychlorinated biphenyl (PCB) contamination was discovered in soil. Soils above the clean-up levels were excavated and disposed off-site. The EPA has approved the closeout report for this SWMU.
  - Building 38 - Former Power Plant (SWMU 11/45). PCB contamination was discovered (during a Remedial Investigation/Feasibility Study [RI/FS] performed under the Comprehensive Environmental Response, Compensation, and Liability Act [CERCLA] as part of the original Installation Restoration Program [IRP]) in soil. Soils above the clean-up level were excavated and disposed off-site. The EPA has approved the closeout report for this project.
  - Cooling water tunnels associated with Building 38 (SWMU 45). These tunnels were found to contain a PCB bearing sludge, which could be a continuing source of release to Puerca Bay. Based on this, the Navy had the tunnels cleaned and filled with low density concrete. This effectively removed the tunnels as a source of potential further release. Also, two

45,000 gallon concrete Underground Storage Tanks (USTs) at Building 38 were abandoned in place after cleaning and then filling with low density concrete.

- Tow Way Fuel Farm (TWFF). The presence of petroleum products in the subsurface prompted the Navy to perform an emergency ICM response, which is currently offline. The original ICM utilized a series of wells equipped with pumps to skim free product off the groundwater table. Currently, the ICM at the TWFF consists of the removal of phase separated hydrocarbons (PSH) through the use of a Grundfos submersible pump. The Grundfos pump is lowered down the monitor well to pump out existing PSH contamination. This activity is routinely conducted on a monthly basis. This ICM has been successful in removing free product.
4. Streamlined reporting: The Navy has always tried to streamline reporting wherever it has been technically appropriate. Report addendums have been issued in some cases to save the need for reissuance of the complete document. The best example of this has been in the work plans for various investigations. Each succeeding investigation work plan has referenced back to the original RCRA Facility Investigation (RFI) work plans dated September 1995, which were approved by the EPA. It is the intent to continue to employ this approach especially as it relates to streamlined CMSs for those units requiring the application of a corrective measure. This will particularly be the case where the selection of the appropriate technology is technically obvious.
  5. Remedial technology selection: The Navy intends to pursue a course in remedial technology selection that emphasizes cost effectiveness and rapidity of cleanup. Options involving long-term operation and maintenance will be avoided unless overriding technical considerations dictate their use. This approach will not only ensure that appropriate clean-ups are performed, where necessary, but also minimize the time required to complete the corrective action process.

### **1.3 Organization of the SMP**

The SMP is divided into five sections as briefly described below.

- Section 1.0, the Introduction, provides an explanation of the purpose and rationale for the SMP and also outlines the global strategy the Navy employs in the corrective action program.
- The various SWMUs/AOCs at NSRR are described in Section 2.0. Along with the SWMU/AOC descriptions, this section contains contractual information regarding funding and upcoming projects, as well as a status update for each unit.
- Remedial Action Contractor (RAC) projects are discussed, both in terms of scope and cost, in Section 3.0.
- Section 4.0 contains the corrective action program schedule.
- Section 5.0 contains the references utilized in the text.

## **2.0 NAVAL STATION ROOSEVELT ROADS**

This section describes the Station's Installation Restoration (IR) program from its inception through its transformation into a RCRA Corrective Action Plan (CAP) including future activities. The purpose is to provide a background understanding of how the program developed and evolved so that past, current, and future activities can be placed in the proper context.

### **2.1 Technical Information**

The following subsections provide both a facility description, as well as a programmatic history of NSRR. These subsections also present the sites and their corresponding OU designations after the inception of the RCRA Part B Permit in 1993.

#### **2.1.1 Facility Description**

NSRR occupies over 8,600 acres on the northern side of the east coast of Puerto Rico, along Vieques Passage with Vieques Island lying to the east about 10 miles from the harbor entrance. The northern entrance to NSRR is about 35 miles east along the coast road (Route 3) from San Juan. The closest large town is Fajardo (population approximately 37,000), which is about 10 miles north of NSRR on Route 3. Ceiba (population approximately 17,000) adjoins the west boundary of NSRR.

NSRR was commissioned in 1943 as a Naval Operations Base, and finally redesignated a Naval Station in 1957. The primary mission of NSRR today is provision of full support for Atlantic Fleet weapons training and development activities. NSRR has administrative and command responsibilities for some operations separated from the main base on Vieques Island.

#### **2.1.2 Programmatic History**

Environmental activities, having to do with past suspected releases of hazardous constituents, were conducted in accordance with CERCLA regulations until 1993 under the Department of the Navy's (DoN) Installation Restoration Program. The first step in this program was the Initial Assessment Study (IAS) that was performed in 1984. This study (consisting primarily of a records review) identified sites that showed the potential for releasing hazardous constituents. These sites were:

- Site 5 - Army Cremator Disposal Area
- Site 6 - Langley Drive Disposal Area
- Site 7 - Station Landfill
- Site 8 - Drone Washdown
- Site 9 - PCB Disposal, Dry Dock Area
- Site 10 - Building 25 Storage Area
- Site 11 - Building 145
- Site 12 - Tow Way Road Fuels Farm
- Site 13 - Tanks 210 to 217
- Site 14 - Ensenada Honda Shoreline and Mangroves
- Site 15 - Substation 2, Building 90
- Site 16 - Old Power Plant, Building 38
- Site 17 - Crash Crew Training Area, and
- Site 18 - Pest Control Shop

[Note: Sites 1, 2, 3, 4, 19, and 20 are on Vieques Island.]

Sixteen of these sites were recommended for further study based on the findings of the IAS. A Confirmation Study (CS) was conducted in 1988, which included investigations at 15 of the 16 sites identified in the IAS. The entire study was performed in a series of steps designed first to verify whether a release had occurred and, if one had, to assess the extent and severity. During Rounds 1 and 2 of the CS, 25 groundwater monitor wells were installed, with samples of groundwater, surface water, sediment, and soil collected for laboratory analysis. In addition, a Remedial Investigation (RI) was performed at Site 16.

The IRP continued under CERCLA until 1993 when the USEPA issued a draft RCRA “Part B” permit for the Defense Reutilization Marketing Office (DRMO) hazardous waste storage facility. Contained within the operating permit were provisions for corrective action at SWMUs throughout the Station. These SWMUs were identified during RCRA Facility Assessments (RFAs) conducted in 1988 and 1993. In the permit, each SWMU was discussed and the EPA determined its potential for release. Based on this determination, further actions were mandated which ranged from no action, to full RFIs. Final work plans for the RFIs were submitted and approved in 1995. Work has proceeded based on the work plans since their approval.

### 2.1.3 Solid Waste Management Units

A total of 52 SWMUs and four AOCs were identified in the original RFA of 1988, or the reinspection in 1993. Two additional sites were first listed as SWMUs in the May 31, 2000 RCRA Quarterly Progress Report submitted by Baker Environmental, Inc. The SWMUs and AOCs are summarized in Table 2-1, which contains information regarding SWMU name, former IRP designation (if appropriate), permit action required, OU, and current status. The locations of those SWMUs requiring investigations are shown on Figure 2-1.

The paragraphs that follow provide a brief description of each SWMU at which work was required in the permit. Included is a brief discussion of findings to date and present site status.

#### **SWMU 1 - Former Army Cremator Disposal Site [Site 5]\***

\*Note: The "Site" designations refer to the Navy's tracking system for funding, etc. They generally correspond to the former IRP designations. They are not used for anything but internal Navy tracking.

#### Description

SWMU 1, a part of OU 3, consists of an abandoned, unlined waste-pile/landfill, on the edges of, and encroaching into, the mangrove swamps along the shoreline of the Ensenada Honda. This site was the primary disposal site of the Station's solid waste from the early 1940's to the early 1960's. During the U.S. Navy's IR Program Round 1 investigations (1986) and Round 2 (1987), surface water, sediment, and groundwater samples revealed the presence of metals (arsenic, chromium, thallium, and selenium), low-level pesticides, and low-level organics. An RFI encompassing soil, sediments, surface water, and groundwater was required in the permit.

#### Status

- RFI work plans were approved in 1995.
- The site was investigated in October/November 1996, and September/October 1997.

- The Revised Draft RFI Report for OU 3/5 was submitted in April 1999, and approved by the EPA in September 1999.
- The Revised Final II CMS Work Plan was submitted July 2000, and approved by the EPA in May 2001.
- The CMS has been initiated.
- The Draft Screening-Level Ecological Risk Assessment Problem Formulation (Step 1) and Exposure Estimate were submitted in August 2001.
- The Draft Additional Data Collection Work Plan in Support of Ecological Risk Assessment was submitted in August 2001, and approved by the EPA in October 2001.
- Due to insufficient funding, response to EPA comments will be postponed until Fiscal Year (FY) 2003.
- Addendum to the Draft Screening-Level Ecological Risk Assessment Problem Formulation (Step 1) and Exposure Estimate was submitted in May 2003, and approved by the EPA in June 2003.
- Ecological Field Investigation initiated in July 2003.

### **SWMU 2 - Langley Drive Disposal Area [Site 6]**

#### Description

This site is an abandoned, unlined waste-pile/landfill, which is part of OU 3, on the edges of, and protruding into the mangroves along the shoreline of the Ensenada Honda Bay. This site was utilized from 1939 to 1959 for disposal of solid and possibly hazardous wastes/constituents. During IR Round 1 (1986) and Round 2 (1987) investigations, investigations of soil, surface water, and sediment samples revealed the presence of metals (lead and selenium). An RFI encompassing soil, surface water, sediments, and groundwater was required by the permit.

## Status

- RFI work plans were approved in 1995.
- The site was investigated in October/November 1996.
- The Revised Draft RFI Report for OU 3/5 was submitted in April 1999, and approved by the EPA in September 1999.
- The Revised Final II CMS Work Plan was submitted July 2000, and approved by the EPA in May 2001.
- The CMS has been initiated.
- The Draft Screening-Level Ecological Risk Assessment Problem Formulation (Step 1) and Exposure Estimate was submitted in August 2001.
- The Draft Additional Data Collection Work Plan in Support of Ecological Risk Assessment was submitted in August 2001, and approved by the EPA in October 2001.
- Due to insufficient funding, response to EPA comments will be postponed until FY 2003 or until funding is available.
- Addendum to the Draft Screening-Level Ecological Risk Assessment Problem Formulation (Step 1) and Exposure Estimate was submitted in May 2003, and approved by the EPA in June 2003.
- Ecological Field Investigation initiated in July 2003.

## **SWMU 3 - Station Landfill [Site 7]**

### Description

SWMU 3, a part of OU 4, is currently an active landfill. It is unlined, and has been utilized since the

early 1960's as a disposal site for solid wastes. It should be noted that a new cell has been installed and is currently in use. The method of disposal involved excavation of a trench to the water table, and then filling the trench with wastes, followed by covering with soil. During IR Round 1 (1986) investigation, eight groundwater monitoring wells were installed. Round 1 (1986) and Round 2 (1987) sampling of the groundwater found metals (arsenic, chromium, lead, and selenium) above Maximum Contaminant Level (MCL) levels. An RFI encompassing soil, surface water, sediments, and groundwater was required by the permit.

#### Status

- RFI work plans were approved in 1995.
- Two wells installed and sampled to meet solid waste requirements.
- Remaining replacement wells installed December 2000.
- A Final RFI Work Plan for SWMU 3 was submitted in January 2002.
- EPA approved the RFI Work Plan for SWMU 3 in January 2002.
- RFI fieldwork was initiated February 28, 2002.
- RFI fieldwork was completed March 12, 2002.
- Revised Final RFI Report was submitted to the EPA March 18, 2003.

#### **SWMU 6 - Building 145 [Site 11]**

#### Description

SWMU 6, a part of OU 1, consists of a partially subterranean, concrete bunker (Building 145) formerly used as a long-term storage area for containers of surplus and discarded paints, polishes, etc. The Navy's 1984 IAS indicated this building was used for more than 25 years for this purpose and, at the time of the IAS, contained a large quantity (sixty 55-gallon drums plus 100 five-gallon

pails) of containers. The condition of the containers was mostly poor, with some resting in standing water, with tree roots penetrating through the top of the structure. According to the 1988 Visual Site Inspection (VSI), all contents formerly stored in this SWMU had been removed, the same finding resulted from the 1993 follow-up inspection. However, since there was never any sampling to confirm the absence of releases of hazardous constituents from this unit, and based on the condition of this unit as described in the 1984 IAS, a Phase I RFI for surface and subsurface soils was required in the permit.

#### Status

- RFI work plans were approved in 1995.
- SWMU 6 was investigated in March 1996 as a part of the OU 1, 6 and 7 First Phase RFIs. Because of the close proximity of AOC B, the two units were investigated together.
- A Draft RFI Report for OU 1, 6, and 7 was submitted in July 1996.
- EPA commented on this report in November 1996, stating that additional investigations were required at this SWMU.
- Additional investigations were performed in September 1997.
- A Draft RFI Report for Additional Investigations at OU 1, 6, and 7 was submitted in May 1998.
- EPA commented on this report in September 1998, requesting that the risk assessment be revised.
- The Navy responded to EPA's comments in November 1998, with a revised risk assessment.
- EPA approved the Navy's response to comments in November 1999, completing the RFI stage.
- A Draft CMS Work Plan was submitted in January 2000, and approved by the EPA in

March 2000.

- A Final CMS Final Report was submitted in June 2001 recommending no further action, along with the Navy's response to comments.
- No further action proposed in RCRA Part B permit renewal.
- Awaiting EPA review.

### **SWMU 7 - Tow Way Fuel Farm [Site 12]**

#### Description

The TWFF consists of the areas impacted by releases from numerous large, partially in-ground, concrete fuel storage tanks located at the TWFF. SWMU 7 is a part of OU 2. These tanks date from the 1940's. Over the years, documented spills, and leakage have occurred from these tanks. During IR Round 1 (1986) investigation, six groundwater monitor wells were installed. Round 1 (1986) and Round 2 (1987) sampling found benzene in the groundwater at levels of between 2,000 to 4,100 parts per billion (ppb), significantly above the MCL of 5 ppb for drinking water. The February 1992 Report "Underground Fuel Investigation Tow Way Fuel Farm" prepared by the firm of O'Brien and Gere, indicated a free product layer over 14 feet thick at its center. The report also indicated the releases had a significant impact on groundwater, based on 18 wells in which the groundwater was sampled for five hazardous constituents. Lead concentrations exceeding the MCL of 50 ppb were measured in all 18 wells, with a maximum concentration of 3,580 ppb measured in one well. Benzene concentrations exceeding the MCL of 5 ppb were measured in 7 wells, with a maximum concentration of 34,383 ppb measured in one well. Ethylbenzene concentrations above health-based action levels were measured in four wells, and toluene and xylene concentrations above health-based action levels were each measured in one well.

A full RFI was mandated by the permit encompassing soils and groundwater. Provisions were made for investigations of surface water and sediment contingent on the results of the initial RFI work.

## Status

- RFI work plans were approved in 1995.
- The TWFF was investigated in April 1996.
- A Revised Draft RFI Report was submitted in June 1997, and approved by the EPA in September 1997. It was concluded in this document that the site should be subjected to a CMS.
- A CMS work plan was submitted in December 1997.
- A CMS field investigation was performed in April 1998.
- The Draft CMS Investigation Report for TWFF was submitted in June 1998.
- EPA commented on this report, and gave contingent approval in October 1998.
- The Navy submitted a response to EPA comment letter dated October 1998 in December 1998.
- EPA commented in March 1999, concurring with the Navy's response to comments, as well as requested the Final version of the CMS Investigation Report.
- The Navy submitted a response to EPA comments as well as the EPA approved Final CMS Investigation Report in April 1999.
- The CleanOX<sup>®</sup> Pilot Study was performed in January 1999, and the Final CleanOX<sup>®</sup> Pilot Test Report was submitted in October 1999.
- A work plan for TWFF investigations related to detections of trichloroethene (TCE) in groundwater was submitted April 1999, and approved by the EPA in May 1999.
- The TWFF TCE investigation was performed in June 1999.

- The Draft TCE Investigation Report was submitted in December 1999, and approved by the EPA in January 2000. The Final TCE Investigation Report was submitted in February 2000.
- The Revised Draft CMS Task I Report was submitted in January 2000. The EPA commented on this in May 2000. A Revised Section 3.0 of the Task I CMS Report was submitted in January 2001. The EPA commented on the Revised Section 3.0 in May 2001.
- The Pneumatic Fracture Pilot Test was performed during March, May, and July 2001.
- The Draft Pilot Test to Evaluate Enhancement of Product Recovery Report for TWFF was submitted in October 2000.
- The Draft Final Work Plan for Additional Data Collection was submitted in July 2001. The EPA commented on the Draft Final Work Plan in August 2001, giving contingent approval. The EPA also requested that the Navy submit a proposal for implementing an Ecological Risk Assessment.
- The Final Work Plan for Additional Data Collection and the Draft Work Plan for Ecological Risk Assessment was submitted in September 2001. The EPA commented on these two documents electronically in October 2001, requesting that the Navy submit an addendum to the September 26, 2001 submittals. The Navy submitted on November 2, 2001 revisions to the Final Work Plan for Additional Data Collection for the TWFF, and the Draft Work Plan for Ecological Risk Assessment for SWMU 7/8.
- The EPA approved the Final Work Plan for Additional Data Collection and the Draft Work Plan for Ecological Risk Assessment on November 21, 2001.
- Revised Corrective Measure Schedule for TWFF submitted December 18, 2001.
- Additional data collection fieldwork initiated January 6, 2002.
- Additional data collection fieldwork was completed March 14, 2002.
- Proposed revision to the Corrective Measure Schedule for TWFF submitted March 26, 2002.

- The Final Corrective Measure Study Task I Report was submitted on April 22, 2003. The Final Additional Data Collection Investigation Report and the Final Groundwater Model Report were both submitted on April 22, 2003 as an appendix to the Final Task I Report. Replacement pages for the Final CMS Task I Report were submitted to the EPA on May 23, 2003. The EPA approved the Final Corrective Measure Study Task I Report, the Final Additional Data Collection Investigation Report, and the Final Groundwater Model Report on June 10, 2003.
- A CMS Final Report is underway for the phase separated hydrocarbon contamination at the site.
- The Final TCE Plume Delineation and Source Investigation Work Plan was submitted to the EPA on July 25, 2003.

The free product recovery system is presently not in operation. However, this system was found to be inefficient, and therefore remains off-line. Currently, free product is removed from each well with measurable quantities of PSH at the TWFF monthly, utilizing a Grundfos submersible pump. Groundwater and product levels are reported in the TWFF Quarterly Progress Report that is attached in the RCRA Final Permit Required Quarterly Progress Report.

#### **SWMU 8 - Tow Way Fuel Farm Sludge Disposal Pits [Site 12]**

##### Description

This unit consists of unlined earthen pits adjacent to the TWFF fuel tanks where sludges were buried and covered with soil when the fuel tanks were periodically cleaned. This SWMU is part of OU 2, where benzene, lead and other hazardous constituents have been detected in groundwater above action levels, and evidence of soil contamination has been described.

SWMU 8 was combined with SWMU 7 (with EPA approval) since the releases from each are inseparable.

Status

See description for SWMU 7.

**SWMU 9 - Tanks 212-217 Sludge Disposal Pits [Site 13]**

SWMU 9 consists of unlined earthen pits in which petroleum sludges were buried after tank cleanings. These burial pits are associated with fuel tanks 212 through 217, located along Forrestal Drive. Although the unit is a part of OU 2, it is now treated as a separate entity since SWMU 7/8 is so complicated. The tanks were installed in 1940, and were cleaned approximately every five years, until 1978, resulting in burial of sludges. During the IR Round 1 (1986) Investigation, 11 groundwater monitor wells were installed. Rounds 1 and 2 sampling found benzene and toluene in the groundwater at levels above relevant action levels. In addition, during Rounds 1 and 2, 6 sediment samples were collected in the mangrove swamps, downslope from the tanks. Organic constituents (benzene, chlorobenzene, methylene chloride, toluene, TCE) and lead were detected in these sediment samples, but below relevant action levels. No soil borings were made for visual, odor, or organic vapor Photoionization Detector (PID) observations. An RFI encompassing soils and groundwater was required in the permit. Based on the results, investigations were required for surface water and sediments.

Status

- RFI work plans were approved by EPA in 1995.
- Initial investigations were conducted in April 1996 at this unit during OU 2 work (included with SWMU 7/8). The results were included in the original OU 2 RFI Report submitted in September 1996.
- EPA comments, dated March 1997, indicated the need for additional investigatory work at SWMU 9.
- This work was completed in the fall (September/October) 1997, and the data was combined with the initial investigations in a Draft RFI Report for SWMU 9 dated March 1998.
- EPA comments were received in June 1998. Some questions remained regarding previously suspect areas and a new area of contamination was found in what should have been a

background location. This prompted the need for further investigations.

- This work was completed in June 1999, with results reported in a Revised Draft RFI Report for SWMU 9 submitted March 2000.
- EPA approved the Revised Draft RFI in May 2000 and requested that a CMS be conducted for this SWMU.
- A Final CMS Work Plan was submitted in January 2001, and approved by the EPA in May 2001.
- CMS investigations were completed in February 2001.
- A Draft CMS Investigation Report was submitted in July 2001, and commented on by the EPA in October 2001. The EPA requested that the Navy submit an addendum to the July 2001 Navy submittal.
- Modification 5 was negotiated on June 25, 2002. This modification is to respond to EPA comments, develop work plans, conduct field investigation, and reporting.
- The Final CMS Investigation Report was submitted on April 25, 2003, and approved by the EPA on February 19, 2003.
- Draft Additional Data Collection Work Plan was submitted on April 25, 2003, and approved by the EPA on June 3, 2003.
- Field Investigation initiated on July 13, 2003.

#### **SWMU 10 - Substation 2 (Building 90) [Site 15]**

##### Description

SWMU 10, a part of OU 1, consists of Substation 2 (Building 90), where electrical transformers were formerly repaired, resulting in PCB containing transformer oils being poured on the ground. A first phase groundwater RFI was mandated by EPA.

## Status

- This unit was previously subjected to a removal action constituting an ICM to address the release of PCBs to soil. Affected soils were excavated and disposed offsite. Clean up proceeded in accordance with EPA approved work plans, as well as reduced the PCBs to the approved residual levels. A project closeout report was submitted to EPA in May 1995.
- While the soils were remediated, the EPA expressed concern that no information on a possible release to groundwater was available.
- RFI work plans were approved by EPA in 1995.
- Provisions for hydropunch wells to obtain groundwater samples were included in the approved RFI work plans.
- Initial investigations took place in October 1995.
- The hydropunch technology proved unsuccessful at this site. Results were presented in the July 1996 Draft RFI Report for OU 1, 6, and 7.
- EPA commented on this report in November 1996, requesting additional investigations at this SWMU.
- Additional investigations were performed at this SWMU in September 1997.
- A Draft RFI Report for Additional Investigations at OU 1, 6, and 7 was submitted in May 1998.
- The EPA did not concur or refute the recommendation in the above mentioned report.
- EPA requested a CMS be developed in March 2000.
- A Draft CMS Final Report for SWMU 10 was submitted to the EPA on July 6, 2001.

- Awaiting EPA review.
- No further action proposed in RCRA Part B permit renewal.

**SWMU 11 - Old Power Plant (Building 38) [Site 16]**

Description

SWMU 11, a part of OU 3, consists of areas inside the Old Power Plant (Building 38), which includes a former concrete pad where transformers and transformer fluids containing PCBs were stored. Both the 1988 VSI and the 1993 follow-up inspection reported extensive staining. There are also indications of transformer fluids being discarded by pouring into subsurface cooling-water tunnels associated with the Power Plant, which then empty into a nearby bay. Also associated with SWMU #11 is SWMU #45, which includes outside areas surrounding the Power Plant. In addition, there are two abandoned 50,000 gallon underground fuel storage tanks, located outside the Power Plant on the northwest side of the building, which are not discussed in the RFA, but are described in the Navy's 1984 IAS report. An RFI encompassing soils, surface water, sediments, and groundwater was required in the permit for SWMUs 11 and 45.

Status

- RFI work plans were approved by the EPA in 1995.
- Investigations were completed in 1996.
- A fire inside the building has likely negated much of the PCB wipe sampling results originally obtained. The results were therefore not reported in the Draft RFI Report for OU 3/5 submitted in March 1998.
- A Revised Draft RFI Report for OU 3/5 was submitted in April 1999, and EPA approved it in September 1999.
- Possible releases to the building interior may require recharacterization.
- A work plan for recharacterization was submitted to EPA on March 31, 1998, and

resubmitted on November 26, 2001.

- EPA commented on this work plan March 8, 2002, requesting the Navy to determine future disposition of the building in order for clean-up requirements to be developed. EPA also requested that the Navy address EPA comments on the above mentioned work plan.
- The Navy notified the EPA (May 19, 2002) that additional funding is required to address the EPA comments. Once funding becomes available the Work Plan will be modified.
- EPA commented on Recharacterization Work Plan on June 13, 2003. Requested an Interim Measures Plan for SWMU 11 to be developed.
- The Final Recharacterization Work Plan and The Interim Measures Plan were submitted on July 21, 2003.

#### **SWMU 12 - Fire Training Pit Oil/Water Separator**

##### Description

SWMU 12, a part of OU 1, consists of the Oil/Water Separator serving the Fire Training Pit. During the 1988 VSI, oil stains were observed on the concrete and rails around this unit, and dead vegetation adjacent to it, indicated past overflows onto the adjacent soils. A First Phase RFI encompassing surface soil sampling was required in the permit.

##### Status

- RFI work plans were approved by the EPA in 1995.
- SWMU 12 was investigated in September and October 1995, as well as in March 1996.
- Results from these field investigations were presented in the Draft RFI Report for OU 1, 6, and 7 submitted in July 1996.
- EPA commented on this report in November 1996, requesting the Navy to respond to their

comments.

- The response to EPA comments was submitted in January 1997.
- The RFI stage has been considered complete.
- No further action proposed in the RCRA Part B permit renewal.

**SWMU 13 - Old Pest Control Shop Area (Building 258) [Site 18]**

Description

SWMU 13, a part of OU 1, consists of the now demolished, Old Pest Control Shop Area (Building 258), and the surrounding area, including the drainage ditch behind the former Building 258. Past practices and known spills indicate the release of pesticides into the soil and the adjacent drainage ditch, which discharges into the nearby bay (Ensenada Honda). During IR Round 1 investigations (1986) and Round 2 (1987), composited soil samples, sediment, surface water samples, and groundwater samples were gathered. Surface water samples taken from the drainage ditch leading from this site found pesticide concentrations exceeding proposed Subpart S Action Levels. Groundwater investigations, consisting of three wells sampled during Round 2 (1987), detected low level concentrations of pesticides (below proposed Subpart S Action levels) in one well. An RFI encompassing soils around the vicinity of the demolished building, and sediments in the adjoining drainage ditch was required in the permit. Provisions were made for additional groundwater investigations, contingent on the results of the soil and sediment investigations.

Status

- RFI work plans were approved by the EPA in 1995.
- Initial investigations were performed in October 1995.
- The results were reported in the Draft RFI Report for OU 1, 6, and 7 submitted in July 1996.
- The EPA commented on the draft report in November 1996, requesting additional investigations at this SWMU.

- Additional investigations were conducted in September 1997.
- The results were reported in the Draft RFI for Additional Investigations at OU 1, 6, and 7 submitted in May 1998.
- The EPA approved the Draft RFI Additional Investigations Report in September 1998, and requested a CMS work plan.
- The Navy submitted response to comments in November 1998 including a CMS outline for this SWMU.
- A Revised Final II CMS Final Report was submitted in August 2000, and EPA approved in September 2000.
- A 100% Final CMI Work Plan Design Package was submitted in January 2001, and EPA approved in May 2001.
- The EPA needs to place the CMI work plan out for public comment prior to implementing the corrective measure.

#### **SWMU 14 - Fire Training Pit Area [Site 17]**

##### Description

SWMU 14, a part of OU 1, consists of the Fire Training Pit area. The present day Fire Training Pit, which is concrete lined, was constructed in 1983. Prior to 1983, two unlined fire-fighting pits were used. According to the Navy's 1984 IAS, visibly contaminated soils were removed from these two unlined pits during construction of the new pit in 1983. The IAS study indicates that one sample of the excavated soil was analyzed for PCBs, but none were detected. There is no indication that other sampling has been performed to establish the absence of other hazardous constituents in the soils underlying the pre-1983 unlined fire training pits, or the impact, if any, of released hazardous constituents on the groundwater. An RFI encompassing subsurface soils, down to the water table, was required in the permit. Groundwater investigations were made contingent on the subsurface soil

sampling results.

#### Status

- RFI work plans were approved by the EPA in 1995.
- Initial investigations were performed in March 1996.
- The results were presented in the Draft RFI Report for OU 1, 6, and 7 submitted in July 1996.
- The EPA commented on the Draft RFI report in November 1996, requesting the Navy to respond to their comments.
- The Navy submitted their response to EPA comments in January 1997.
- A Human Health Risk Assessment (HHRA) was submitted in February 2000.
- The EPA commented on the risk assessment in July 2000, requesting either a supplemental site characterization work plan, or a revised HHRA along with a streamlined CMS report.
- Response to EPA comments was submitted in August 2000.
- A Draft Interim Decision Document was submitted in November 2000, as a result of a conference call held in October 2000.
- The EPA approved this decision document in May 2001.
- Further action is deferred until this site is closed.

## **SWMU 23 - Oil Spill Oil/Water Separator Tanks [Site 21]**

### Description

SWMU 23, a part of OU 1, consists of three rectangular steel oil/water separator tanks underlain by a curbed, concrete pad. This SWMU is located approximately 100 feet inshore from the Fuel Pier, and is partially surrounded by asphalt pavement, but is adjacent to soil along one side. These tanks act as first stage, gravitational oil/water separators, where bilge and ballast water, and oil/fuel/water mixtures from spills are emptied from the SWOBs and “donuts” (SWMUs #21 and 22). During both the 1988 VSI and the 1993 follow-up inspection, the concrete pad and adjacent areas of asphalt pavement and soil outside the pad’s curb were observed to be heavily stained. A first phase RFI for the soils surrounding the unit was required in the permit, which also made a groundwater investigation contingent upon the soil sampling results.

### Status

- RFI work plans were approved by the EPA in 1995.
- Investigations were performed in October 1995.
- The results were presented in the Draft RFI Report for OU 1, 6, and 7 submitted in July 1996.
- The EPA did not concur or refute the recommendations presented in the above mentioned report.
- The RFI stage has been considered complete.
- No further action proposed in the RCRA Part B permit renewal.

### **SWMU 24 - Oil Spill Oil/Water Separator and Adjoining Pad [Site 22]**

#### Description

SWMU 24, a part of OU 1, consists of an in-ground, concrete oil/water separator, which serves as the second stage separator of oils/fuels from the wastewater stream resulting from bilge and ballast water and marine oil/fuel spills. This SWMU is surrounded by asphalt paving on three sides, with bare ground on one side. Staining of the asphalt was observed during the 1993 follow-up inspection. Also, during the 1993 follow-up inspection, a bermed pad, with heavy oil staining, was identified as associated with this SWMU. A RFI for soils was required for this SWMU in the permit.

#### Status

- RFI work plans were approved by the EPA in 1995.
- Investigations were performed in October 1995.
- The results were presented in the Draft RFI Report for OU 1, 6, and 7 submitted in July 1996.
- The EPA did not concur or refute the recommendations in the above mentioned report.
- The RFI stage has been considered complete.
- No further action proposed in the RCRA Part B permit renewal.

### **SWMU 25 - DRMO Storage Yard [Site 23]**

#### Description

SWMU 25, a part of OU 1, consists of an open area within the DRMO storage yard. This area was formerly used to store ignitable hazardous wastes. During the 1988 VSI, several areas of oil staining were observed; the 1993 follow-up inspection did not observe visual evidence of releases. In the RCRA permit, the EPA requested confirmatory soil sampling due to evidence of releases observed

in 1988. A RFI for surface soils was required.

#### Status

- RFI work plans were approved by the EPA in 1995.
- Investigations were performed in October 1995.
- The results were presented in the Draft RFI Report for OU 1, 6, and 7 submitted in July 1996.
- The EPA commented on the Draft RFI in November 1996, stating that further action at the DRMO yard has been deferred until permitted unit is closed.

#### **SWMU 26 - Building 544 Area [Site 24]**

#### Description

SWMU 26, a part of OU 1, consists of an open area behind former Building 544 where, during the 1988 VSI, approximately 25, badly rusted, 55-gallon drums of waste oil, or other substance, were observed to be lying (mostly on their sides) on bare soil. At that time, it was indicated that the containers were in very poor condition, and partially overgrown with vegetation. A tar-like substance was observed to be leaking onto the ground. Subsequently, in June 1992, the Navy indicated that the containers were removed, "and no visual evidence exists of any soil staining". The 1993 follow-up inspection found no visual evidence of releases. However, as documented during the 1993 follow-up inspection, the area has the appearance of possible stressed vegetation, possible miscellaneous disposal activity, and mounds of excavated soil covered with plastic were observed. While this is the case, the 1993 inspection looked at areas not included in the SWMU. Since the 1993 reinspection, the area has been used for a construction lay down area by multiple contractors. The RCRA permit required a RFI for surface soils.

#### Status

- RFI work plans were approved by the EPA in 1995.

- The initial investigation was performed in October 1995.
- The results were submitted in the Draft RFI Report for OU 1, 6, and 7 submitted in July 1996.
- The EPA commented on the Draft RFI Report in November 1998, requesting further investigations.
- Additional investigations were conducted in September 1997.
- The results were presented in the Draft RFI Report for Additional Investigations at OU 1, 6, and 7 submitted in May 1998.
- The EPA commented on the Draft RFI Report for Additional Investigations at OU 1, 6, and 7 in September 1998, requesting the risk assessment be revised.
- A revised risk assessment was submitted on May 3, 1999.
- The EPA approved the no further action recommendation in October 1999, as well as stated that the RFI was complete.
- No further action proposed in the RCRA Part B permit renewal.

### **SWMU 30 - Former Incinerator Area [Site 25]**

#### Description

SWMU 30, a part of OU 1, consists of a presently inactive incinerator, formerly used to burn contaminated fuels, waste oils and sludges. A previous incinerator at this same site was reportedly dismantled and removed in 1983, and the present incinerator installed at that time. The 1993 follow-up inspection found that a 500 gallon underground storage tank associated with this unit, was in the process of being removed. Sampling of the subsurface soils was performed by the Navy, and the results indicated total recoverable petroleum hydrocarbon levels in excess of 30,000 parts per million

(ppm). Therefore a RFI for soils was required to fully characterize this release and define all constituents associated with it. Contingent on the results, groundwater investigations may be required.

#### Status

- RFI work plans were approved by the EPA in 1995.
- Initial investigations were performed in October 1995.
- The results were submitted in the Draft RFI Report for OU 1, 6, and 7 submitted in July 1996.
- The EPA commented on the Draft RFI Report in November 1997, requesting further investigations.
- Additional investigations were performed in June 1999.
- The results were presented in the Draft RFI Report for SWMU 30 submitted in December 1999.
- The EPA gave contingent approval of the no further action recommendation in January 2000. They requested response to their comments. Based on the Navy's response to comments, the RFI was complete.
- No further action proposed in RCRA Part B permit renewal.

#### **SWMU 31 - Waste Oil Collection Area (Building 31 and 2022) [Site 26]**

#### Description

SWMU 31, a part of OU 1, is located in the Public Works Department storage yard, near the Transportation Shop (Building 31) and Building 2022. This SWMU consists of an outdoor, curbed, concrete pad used for temporary storage of containers of waste oil. There is also a 500 gallon tank for collection of waste oils. The recent 1993 follow-up inspection found extensive oil staining surrounding this storage pad. In addition, this SWMU is associated with Building 31, where the

Navy's 1984 IAS reported past practices which included storing containers of unidentified wastes outside the building and where solvent odors were reported. Presently, the entire area surrounding this SWMU is paved with asphalt. A RFI for surface soils surrounding the asphalt pavement was required. In addition, the EPA requested that subsurface soils be investigated beneath the asphalt.

Since the time of the 1993 reinspection and prior to the investigations were performed, the area has been reconstructed in a slightly different location. The former area not used in the new construction was paved over.

#### Status

- RFI work plans were approved by the EPA in 1995.
- Initial investigations were performed in October 1995.
- The results were presented in the Draft RFI Report for OU 1, 6, and 7 submitted in July 1996.
- The EPA commented on the Draft RFI Report in November 1996, requesting the risk assessment be revised.
- The Draft RFI Report Addendum for OU 1, 6, and 7, as well as the Final RFI Work Plans Addendum 2, were submitted in January and February 1997, respectively.
- The EPA commented on the above mentioned documents in April 1997.
- The Final RFI Work Plans Addendum 2 Revised was submitted in June 1997.
- The EPA approved the Addendum 2 Revised Work Plans in July 1997.
- Additional investigations were performed in September 1997.
- The results were presented in the Draft RFI Report for Additional Investigations at OU 1, 6, and 7 submitted in May 1998.

- The EPA commented on the Draft RFI Report for Additional Investigations at OU 1, 6, and 7 in September 1998, requesting CMS work plans.
- Response to comments including a CMS outline was submitted in November 1998.
- A Final CMS Final Report was submitted in April 2000, and EPA approved in May 2000.
- A Final CMI Work Plan Design Package was submitted in January 2001, and EPA approved in May 2001.
- The EPA needs to place the CMI work plan out for public comment prior to implementing the corrective measure.

### **SWMU 32 - PWD Storage Yard/Battery Collection Area Description [Site 27]**

#### Description

SWMU 32, a part of OU 1, is located in the Public Works Department storage yard, near the Transportation Shop (Building 31). It was described in the 1988 RFA as an outdoor area where discarded batteries were stored. However, during the 1993 follow-up inspection, in addition to pallets of discarded batteries, numerous (estimated at 100-110) 55-gallon drums of contaminated jet fuel and soil were observed to be stored on wooden pallets resting on bare ground. Along with these drums an area of stained soil was visible. In addition, the 1993 follow-up inspection, found associated with this SWMU a small, partially open, uncurbed, storage building (“paint locker”), containing approximately 200 various sized cans. The entire area is debris strewn, with an appearance of possible stressed vegetation. A first phase RFI for surface soils was required in the permit. It should be noted that the area has now been cleaned up and is used for the storage of spare parts and for equipment parking.

#### Status

- RFI work plans were approved by the EPA in 1995.

- Initial investigations were performed in October 1995.
- The results were presented in the Draft RFI Report for OU 1, 6, and 7 submitted in July 1996.
- The EPA commented on the Draft RFI Report in November 1996, requesting the risk assessment be revised.
- The Draft RFI Report Addendum for OU 1, 6, and 7, as well as the Final RFI Work Plans Addendum 2, were submitted in January and February 1997, respectively.
- The EPA commented on the above mentioned documents in April 1997.
- The Final RFI Work Plans Addendum 2 Revised was submitted in June 1997.
- The EPA approved the Addendum 2 Revised Work Plans in July 1997.
- Additional investigations were performed in September 1997.
- The results were presented in the Draft RFI Report for Additional Investigations at OU 1, 6, and 7 submitted in May 1998.
- The EPA commented on the Draft RFI Report for Additional Investigations at OU 1, 6, and 7 in September 1998, requesting CMS work plans.
- Response to comments including a CMS outline was submitted in November 1998.
- A Final CMS Final Report was submitted in April 2000, and EPA approved in May 2000.
- A Final CMI Work Plan Design Package was submitted in January 2001, and EPA approved in May 2001.
- The EPA needs to place the CMI work plan out for public comment prior to implementing the corrective measure.

## **SWMU 37 - Waste Oil Storage Area (Building 200) [Site 28]**

### Description

SWMU 37, a part of OU 1, consists of a covered, open-sided, concrete pad, which is curbed (not curbed during 1988 VSI). The pad is located behind Hangar 200, and serves as a container storage area for waste gasoline, oils, and other wastes. During the 1988 VSI, oil stains were observed on the concrete pad. During the 1993 follow-up inspection, an area of stressed vegetation with soil yielding elevated organic vapor readings, was observed adjacent to the backside of the pad. Based on the findings of the inspections, the EPA required a first phase RFI for surface soils.

### Status

- RFI work plans were approved by the EPA in 1995.
- Investigations were performed in October 1995.
- The results were presented in the Draft RFI Report for OU 1, 6, and 7 submitted in July 1996.
- The EPA commented on the Draft RFI Report in November 1996, requesting the Navy to respond to their comments.
- A Draft RFI Report Addendum for OU 1, 6, and 7 was submitted in January 1997.
- The EPA did not concur or refute the recommendation for SWMU 37 provided in the Draft RFI Report Addendum.
- The RFI stage has been considered complete.
- No further action proposed in the RCRA Part B permit renewal.

### **SWMU 39 - Former Battery Drain Area (Building 3158) [Site 29]**

#### Description

SWMU 39, a part of OU 1, consists of a small building (Building 3158) with an attached, open sided, roofed pad, where it was noted during the 1988 VSI, discarded batteries had their fluids drained into a tank, and were stored here. The tank had a curbed, concrete pad underlying it, which was observed to be cracked and stained. The 1993 follow-up inspection found this building was no longer used for drainage and storage of discarded batteries, but now contained assorted small cans of miscellaneous hydraulic fluids, etc. In addition, the roofed pad was gone including the concrete pad itself. No evidence of releases was observed during the 1993 follow-up inspection. However, the open-air, battery drain tank's curb was observed to be cracked and stained during the 1988 VSI, allowing releases onto adjacent soil. A first phase RFI was required in the permit for surface soils surrounding the building.

#### Status

- RFI work plans were approved by the EPA in 1995.
- Investigations were performed in October 1995.
- The results were presented in the Draft RFI Report for OU 1, 6, and 7 submitted in July 1996.
- The EPA did not concur or refute the recommendation for SWMU 39 provided in the Draft RFI Report.
- The RFI stage has been considered complete.
- No further action proposed in the RCRA Part B permit renewal.

## **SWMU 45 - PCB Spill Area/Old Power Plant [Site 16]**

### Description

SWMU 45, a part of OU 3, consists of an area outside of Building 38, the old Power Plant (SWMU 11), where transformer oils containing PCBs, were routinely discarded directly onto the ground during transformer maintenance. As discussed previously in SWMU 11, there are also two abandoned 50,000 gallon underground fuel storage tanks associated with SWMU 45/SWMU 11. Therefore, a RFI encompassing soils, surface water, sediments, and groundwater was required in the permit for SWMU 45, in association with SWMU 11.

### Status

Two ICMs have been completed at this site which addressed the PCB releases and the tanks and cooling tunnels. The first ICM was a soil removal action, which addressed PCB contamination in the area around the building where transformers had been maintained. Meeting established clean-up levels in soil successfully concluded this effort. A project closeout report was submitted to the EPA in May 1995, which was subsequently approved.

The second ICM addressed the underground storage tanks and cooling water tunnels associated with Building 38. The tanks were cleaned and abandoned in place by filling with low density concrete. Originally, the cooling water tunnels were to be cleaned to remove the sludges inside and limit the potential for a continuing release. Inflow of groundwater to the tunnels through construction joints and elsewhere limited the ability to clean the tunnel interior. The final solution was to fill the tunnels with low density concrete. The EPA approved this change. A project close out report was submitted in June 1997, and is presently under review by the EPA.

One important finding came out of the ICM at the tunnels. During excavation to see if the groundwater inflow point could be determined, evidence of oil was seen outside the tunnels.

- The EPA approved RFI work plans in 1995.
- The ICM, which included the removal of sludge and liquids, as well as the cleaning, backfilling, and filling the USTs and tunnels with concrete, was completed.

- The site was investigated in November 1996, and September/October 1997.
- The Revised Draft RFI Report for OU 3/5 was submitted in April 1999, and EPA approved in September 1999.
- CMS for Puerca Bay sediments is planned.
- A Revised Final II CMS Work Plan was submitted in July 2000, and EPA approved in May 2001.
- A CMS has been initiated.
- The Draft Screening-Level Ecological Risk Assessment Problem Formulation (Step 1) and Exposure Estimate was submitted in August 2001.
- The Draft Additional Data Collection Work Plan in Support of Ecological Risk Assessment was submitted in August 2001, and approved by the EPA in October 2001.
- Due to insufficient funding, response to EPA comments will be postponed until FY 2003 or until funding is available.
- Addendum to the Draft Screening-Level Ecological Risk Assessment Problem Formulation (Step 1) and Exposure Estimate was submitted in May 2003, and approved by the EPA on June 10, 2003.
- Ecological Field Investigation initiated in July 2003.

**SWMU 46 - Pole Storage Yard Covered Pad [Site 30]**

Description

SWMU 46, a unit of OU 1, consists of a large, roofed, open-sided, uncurbed, concrete pad utilized in the past by the Public Works Department as a storage area for transformers, miscellaneous electrical equipment, and drums of PCB-contaminated material. Also, there are reports that, in the past, similar materials may have been stored in adjoining areas directly on the ground. Evidence of past oil spills

has been reported.

The unit now serves as the primary under 90 day storage area for hazardous wastes generated by the Base Operating Support (BOS) contractor during the performance of normal maintenance activities. There are now two pads, utilized for the same purpose, located at the site of similar construction. On the southern portion of the site is an area which was labeled on some old drawings as “contaminated soil pile” No other information was available concerning what may have caused this labeling. Also, there is no evidence of a soil pile presently visible. Based on the known site use, the EPA required a first phase RFI to be performed in the vicinity of the pad and the associated areas.

#### Status

- RFI work plans were approved by the EPA in 1995.
- Initial investigations were performed in October 1995.
- The results were presented in the Draft RFI Report for OU 1, 6, and 7 submitted in July 1996.
- The EPA commented on the Draft RFI Report in November 1996, requesting further investigations at this SWMU.
- Additional investigations were conducted in September 1997.
- The results were presented in the Draft RFI Report for Additional Investigations at OU 1, 6, and 7 submitted in May 1998.
- The EPA approved the Draft RFI Report for Additional Investigations at OU 1, 6, and 7 in September 1998, and requested CMS work plans.
- Response to comments, including a CMS outline for SWMU 46 which was combined with AOC C in the CMS stage, was submitted in November 1998.
- A Revised Final II CMS Final Report was submitted in August 2000, and EPA approved in September 2000.

- A 100% Final CMI Work Plan Design Package was submitted in January 2001, and EPA approved in May 2001.
- The EPA needs to place the CMI work plan out for public comment prior to implementing the corrective measure.

#### **SWMU 51 - New AIMD Storage Pad (Building 379) [Site 31]**

##### Description

SWMU 51, a part of OU 1, consists of a curbed concrete storage pad located outside Building 379. This storage pad is roofed and enclosed with a cyclone fence. It was first identified during the 1993 follow-up inspection, and is presently utilized by the AIMD facilities in place of SWMU 33. Also present at this SWMU is a 200 gallon tank which touches the storage pad, but is outside the curbed area. The entire pad area is surrounded by asphalt pavement. During the 1993 follow-up inspection, large oil stains were observed emanating from two drain valves in the curb surrounding this pad, and from the 200 gallon tank located outside the pad curb. As any releases from this SWMU would likely be carried by stormwater runoff, a RFI for soils at the downslope edge of the asphalt pavement surrounding the SWMU was required in the RCRA permit.

##### Status

- RFI work plans were approved by the EPA in 1995.
- Investigations were performed in October 1995.
- The results were presented in the Draft RFI Report for OU 1, 6, and 7 submitted in July 1996.
- The EPA commented on the Draft RFI Report in November 1996.
- The EPA did not concur or refute the recommendation for SWMU 51 presented in the draft RFI report.

- The RFI stage has been considered complete.
- No further action proposed in the RCRA Part B permit renewal.

### **SWMU 53 – Malaria Control Building (Building 64)**

#### Description

SWMU 53 consists of a building that is presently unoccupied and lies on approximately 1/8 acre. The building structure itself is 21 feet by 18 feet in dimension, and occupies about ten percent of the total SWMU 53 acreage. This SWMU is located on a gentle slope (approximately 5-7% grade) from northeast (upgradient) to the southwest (down gradient) approximately 200 feet away from Forrestal Drive. The building was utilized to store pesticides, such as malathion, aldrin, and dichlorodiphenyltrichloroethane (DDT). It is not known if stocks of pesticides were maintained in the building for the entire duration. Although no direct evidence exists, it is assumed that mixing and other preparation for pesticide use was also performed at the building. No wastes are known to have been disposed at the unit. There are no known releases related to this unit. No other use of the site was identified. SWMU 53 is located across Forrestal Drive from SWMU 13. The information gathered from the visual site inspection by Baker and environmental staff at NSRR, revealed that there are no known wastes dumped at this facility, nor is there any evidence of source contamination (Baker, 2000). Baker observed signs of possible past leakage of chemicals on the storage shelves inside the building, as well as identified migration pathways along the floor leading to the outside. With this in mind, along with the activities known to have taken place at this SWMU, a site characterization was performed to determine whether a release of hazardous waste including hazardous constituents has occurred, is likely to have occurred, or is likely to occur.

#### Status

- A Draft Sampling and Analysis Plan was submitted in August 2000, and EPA approved on October 10, 2000.
- Investigations were performed in December 2000.

- The results were presented in the Final Sampling and Analysis Report submitted in August 2001. The SWMU has been recommended for an RFI.
- Draft RFI Work Plan submitted to the EPA for review on August 27, 2001.
- The EPA approved the Final Sampling and Analysis Report on November 21, 2001. The EPA requested revisions be made to the Draft RFI Work Plan.
- Final RFI Work Plan Submitted to the EPA for review on December 6, 2001 and approved by the EPA on January 3, 2002.
- RFI field investigation was initiated on February 11, 2002.
- The Final RFI Report was submitted on September 30, 2002 and approved by the EPA on September 19, 2002.
- Final CMS Work Plan for SWMUs 53 and 54 was submitted on March 7, 2003 and approved by the EPA on June 3, 2003.
- Field Investigation initiated on March 22, 2003.
- Draft CMS Investigation Report for SWMU 53 and Draft CMS Final Report for SWMU 53 were submitted on July 23, 2003.

**SWMU 54 – Former NEX Repair/Maintenance Shop (Building 1914)**

Description

SWMU 54 consists of a Building 1914 built in 1979, which is currently unoccupied and lies on approximately 1 acre of land in the Bundy Area of NSRR. The building structure and pavement covers approximately 40 percent of the total SWMU 54 acreage. This SWMU contains a slight slope to the west, and a small hill to the east approximate 100 feet in elevation. A small hill lies in the southern part of this SWMU, which is approximately 50 feet in elevation. The building structure itself consists of a small concrete block building with a center office area and open bays on either side. The building was used to perform maintenance on vehicles including oil changes, lubrications,

etc. No wastes are known to have been disposed at the unit. There are no known releases related to the unit. SWMU 54 is located across Bairoko Street from SWMU 26 and Building 1686 (Former Base Laundromat).

The information gathered from the visual site inspection performed by CH2MHILL and environmental staff at NSRR revealed that there were several areas of oil stained soil around the NEX Building 1914 (CH2MHILL, February 2000). For that reason, it was recommended that a sampling program be performed to characterize the areas around several structures in the SWMU 54 area. CH2MHILL also observed two open excavation locations south of the building, which contained algae stained water. With this in mind, along with the activities (oil changes, lubrications, etc.) known to have taken place at this SWMU, a site characterization was performed to determine whether a release of hazardous waste including hazardous constituents has occurred, is likely to have occurred, or is likely to occur.

#### Status

- A Draft Sampling and Analysis Plan was submitted in August 2000, and EPA approved on October 10, 2000.
- Investigations were performed in December 2000.
- The results were presented in the Final Sampling and Analysis Report submitted in August 2001. The SWMU has been recommended for an RFI.
- Draft RFI Work Plan submitted to the EPA for review on August 27, 2001.
- The EPA approved the Final Sampling and Analysis Report on November 21, 2001. The EPA requested revisions be made to the Draft RFI Work Plan.
- Final RFI Work Plan Submitted to the EPA for review on December 6, 2001 and approved by the EPA on January 3, 2002.
- RFI field investigation was initiated on February 11, 2002.
- The Final RFI Report was submitted on September 30, 2002 and approved by the EPA on

September 19, 2002.

- Final CMS Work Plan for SWMUs 53 and 54 was submitted on March 7, 2003 and approved by the EPA on June 3, 2003.

**AOC B - Building 25 Area [Site 10]**

Description

AOC B, a part of OU 6, consists of the site of the now demolished Building 25. According to the Navy, the demolished building formerly contained hazardous waste materials. The 1993 follow-up inspection found (17) 55 gallon drums of lubricating oils and diesel stored outdoors and unsheltered, resting directly on a bricked surface that was the former floor of Building 25. The area was surrounded by a sandbag dike. Extensive oil stains were observed on both the brick floor and the surrounding soils. Eight groundwater wells were installed throughout IR Site 10 and sampled both during Round 1 (1986) and Round 2 (1987) investigations. Hazardous constituents (arsenic, chromium, lead, and selenium) were detected in the groundwater at levels exceeding Subpart S action levels/MCLs. A RFI for soils, both surrounding the old Building 25 area and the soils underlying the remaining brick floor surface, was required in the permit. Also, a RFI for groundwater was required to fully characterize possible releases of hazardous constituents.

Status

- RFI work plans were approved by the EPA in 1995.
- Initial investigations were performed in October 1996.
- The results were presented in the Draft RFI Report for OU 1, 6, and 7 submitted in July 1996.
- The EPA commented on the Draft RFI Report in November 1996, requesting further investigations.
- Additional investigations were performed in September 1997.

- The results were presented in the Draft RFI Report for Additional Investigations at OU 1, 6, and 7 submitted in May 1998.
- The EPA commented on the Draft RFI Report for Additional Investigations at OU 1, 6, and 7 in September 1998, requesting the risk assessment be revised.
- Response to comments, including a revised risk assessment for AOC B, was submitted in November 1998.
- The EPA commented in November 1999, on the Navy's November 1998 response to comment letter dated September 1998. The EPA stated that the RFI was complete.
- A Draft CMS Work Plan was submitted in January 2000, and approved by the EPA in March 2000.
- A Final CMS Final Report was submitted in June 2001 recommending no further action, along with the Navy's response to comments.
- No further action proposed in RCRA Part B permit renewal.
- Awaiting EPA review.

### **AOC C - Transformer Storage Pads [Site 32]**

#### Description

AOC C, a part of OU 1, is located near Building 2042 and consists of three outdoor, uncovered, concrete pads used primarily for storage of discarded transformers; however, other discarded electrical materials, including batteries were observed. During the 1993 inspection, three transformers were observed well outside of the concrete pads sitting directly on bare soil. During the 1988 VSI, and 1993 follow-up inspection, oil staining inside the concrete pads and evidence of releases to soil were observed. A first phase RFI was mandated for this area in the RCRA permit.

## Status

- RFI work plans were approved by the EPA in 1995.
- Initial investigations were performed in October 1995.
- The results were presented in the Draft RFI Report for OU 1, 6, and 7 submitted in July 1996.
- The EPA commented on the Draft RFI Report in November 1996, requesting further investigations at this SWMU.

Before this work could be done, much of the surface soil was scraped and stockpiled on site. This was performed by the BOS contractor when he mistakenly interpreted instructions to “clean up” the area before hurricane season to include soil and vegetation removal. This work negated the original sampling efforts since the soils sampled were largely removed.

In due course, after extensive negotiations with the EPA and testing of the piles, the Navy was allowed to haul the stockpiled soil to the Station landfill. This was done only when each load passed field screening tests for PCBs.

- Recharacterization of the site soils was deemed necessary. Since releases of PCBs were established, sampling is not only required for surface soil but also for subsurface soils.
- Additional investigations were performed in September/October 1997.
- The results were presented in the Draft RFI Report for Additional Investigations at OU 1, 6, and 7 submitted May 1998.
- The EPA approved the Draft RFI Report for Additional Investigations at OU 1, 6, and 7 in September 1998, and requested CMS work plans.
- Response to comments, including a CMS outline, was submitted in November 1998.

- A Revised Final II CMS Final Report was submitted in August 2000, and approved by the EPA in September 2000.
- A 100% Final CMI Work Plan Design Package was submitted in January 2001, and EPA approved in May 2001.
- The EPA needs to place the CMI work plan out for public comment prior to implementing the corrective measure.

**AOC D - Sediments [Site 33]**

Description

AOC D, a part of OU 7, consists of the marine sediments potentially impacted by the Station's outfalls, the Station's three large (one operating and two closed) littoral landfills, recurring major oil spills, the possible submarine discharge of contaminated groundwater from the Tow Way Fuel Farm area, and past waste disposal practices, which included routine disposal of hazardous wastes and/or constituents into stormwater drains. Three National Pollution Discharge Elimination Systems (NPDES) permitted wastewater outfalls, and an undetermined number of stormwater outfalls are present at NSRR. A First Phase RFI for sediments underlying the surface waters adjacent to Naval Station (NAVSTA) Roosevelt Roads was required in the permit, with an emphasis on Ensenada Honda and other areas impacted by known or suspected releases.

Status

- RFI work plans were approved by the EPA in 1995.
- Initial investigations were performed in October 1995.
- The results were presented in the Draft RFI Report for OU 1, 6, and 7 submitted in July 1996.
- The EPA commented on the Draft RFI Report in November 1996, requesting additional investigations at this SWMU.

- Additional investigations were performed in September 1997.
- The results were presented in the Draft RFI Report for Additional Investigations at OU 1, 6, and 7 submitted in May 1998.
- The EPA commented on the Draft RFI Report for Additional Investigations at OU 1, 6, and 7 in September 1998, requesting the risk assessment be revised.
- Response to comments, including the revised risk assessment, was submitted in November 1998.
- The EPA approved the revised risk assessment included in the November 1998 response to EPA comments in February 1999.
- No further action proposed in the RCRA Part B permit renewal.

## **2.2 Contract Information**

This section of the SMP for NSRR describes the contractual vehicles in use at the Station to perform the Comprehensive Long-Term Environmental Action Navy (CLEAN)-type work under the RCRA program. Included is information regarding the scope of work for each Contract Task Order (CTO), the budget for each CTO, and any changes that have been made to the scope, schedule and/or budget.

### **2.2.1 CTO Summary**

Each of the CTOs that have been or are being used to perform IR work at Roosevelt Roads, are discussed in this section. Since some of the CTOs are complicated, a description of the various tasks, which are included in the scope of work, is included.

#### **CLEAN I (Baker)**

The following paragraphs discuss the history of the CTOs that were utilized under the Navy CLEAN I contract. Included in the discussion were the primary work efforts of each CTO, as well as

whether the CTOs are currently active.

**CTO-0007 RI/FS Roosevelt Roads (pre-RCRA CTO)**

This was the original CTO issued under CLEAN for IR work at Roosevelt Roads. It was the intent of this CTO to address various sites included under IR Program within the traditional CERCLA approach. Immediately after the CTO was issued, it became known that the Station would be subject to RCRA regulations (because of the DRMO permit). The focus of work under the CTO was shifted to investigations designed to provide information on various sites that could be used during permit negotiations to keep sites out of corrective action.

As the program matured at NSRR, it became obvious that two items were needed including a site management plan, and a means by which Baker could provide general technical assistance to LANTDIV and the Activity regarding RCRA related matters. This need prompted the modification of CTO-0007 (MOD 04) by the addition of funds to perform the necessary services.

The primary work efforts under this CTO resulted in the following reports/documents:

- Final Supplemental Investigation, Installation Restoration Program Activities (Baker, April 1994).
- Draft Site Management Plan (this was never finalized since the RFI work plans essentially became the site management tool especially pertaining to schedule).
- Additional reports of a more minor nature were periodically issued.

In addition to the reports, extensive RCRA assistance was provided which included permit negotiation and interpretation, trips to the Station to accompany EPA personnel on inspections, and aiding Activity staff in permit compliance.

The CTO was closed in 1997.

### **CTO-0173 RI/FS, Unit IR 16, Roosevelt Roads (pre-RCRA CTO)**

Originally this CTO was for the preparation of work plans and performance of an RI/FS at IR Site 16 (Building 38). Initial site investigations performed to determine the scope of the RI/FS indicated that there was little hope of providing sufficient information to avoid the site being included in the permit and, therefore, the plans were not developed nor were extensive investigations performed. The scope of the CTO was modified to include preparation of RFI work plans for Site 16. Because Site 16 was included in the overall RFI work plans, the finalization of the full work plans was performed under this CTO. [Note: the work plans were originally started under CTO-0223, but the extensive revisions and number of iterations needed caused funds in this CTO to be exhausted. It was deemed easier to use CTO-0173 to complete the plans than to modify CTO-0223. CTO-0223 was eventually closed with \$3,359 remaining.]

CTO-0173 was interim closed on November 18, 1997.

### **CTO-0223 RFI/CMS Work Plans, NSRR**

CTO-0223 was established for the development of RCRA Facility investigation work plans. The plans were written based on the draft permit. Finalization of the permit, (which changed numerous items), the multiple iterations required to satisfy the regulatory agencies, and the need for a Corrective Measures Evaluation Study caused the funds in this CTO to be expended without completing the scope of work. Rather than modify CTO-0223, the tasks remaining were completed under CTO-0173.

The two primary work products resulting from this CTO were:

- Final RCRA Facility Investigation, Naval Station Roosevelt Roads, Puerto Rico (Baker, September 1995).
- Draft Final pre-Investigation Corrective Measures Screening Report, Naval Station Roosevelt Roads, Puerto Rico (Baker, April 1994). [Note: This document was never finalized but was accepted by the EPA.]

CTO-0223 was final closed on September 28, 1999.

## **CTO-0277 IR Sites - RFI, Puerto Rico**

This CTO was the primary “doer” at Roosevelt Roads in terms of the RCRA Corrective Action Program. A majority of the investigations at the facility performed until around 2000 have been done under CTO-0277. Investigations were performed on an Operable Unit basis (see Table 2-1 for SWMUs included in the various OUs), which allowed multiple sites requiring similar levels of effort, having similar constituents of potential concern, or which are located near to one another, to be investigated at the same time.

There were originally four primary tasks included in CTO-0277. The tasks and their present status are described below:

- OU 1, 6 and 7 - This task included performance of the first phase RFI at the SWMUs within these OUs. Initial investigations were performed in October 1995, and a Draft RFI Report was submitted in July 1996. The report was reviewed by the regulatory agencies and comments were provided in November 1996. An addendum to the RFI Report was prepared January 1997, and Final RFI Work Plans Addendum 2 was prepared in February 1997. These two documents were both reviewed and commented upon in April 1997. A revised addendum was submitted in June 1997, as was a revised version of the work plans to perform additional investigations at a small sub-set of the SWMUs. The work plans were approved in July 1997, and the investigatory work was performed in September/October 1997. A report was submitted in May 1998, with comments received in September 1998. Responses were submitted in November 1998, and comments were received in November 1999. The RFI stage was considered complete for SWMU 6, AOC B, 26, and 30, with CMS work plans requested for SWMUs 13, 31, 32, 46, and AOC C.
- OU 2 - A full RFI was required at this OU. The initial investigation was completed in April 1996 and a Draft RFI Report for OU 2 was submitted in September 1996. This document was reviewed and commented on in March 1997. The EPA requested that revisions be made based on the complexity of SWMUs 7/8. Based on the requested revisions, SWMU 9 was separated from SWMUs 7/8 to limit confusion between these areas and allow the specific problems at the TWFF be addressed separately. A Revised Draft RFI Report for SWMU 7/8 was submitted in June 1997, and subsequently reviewed and approved by the EPA in September 1997. SWMU 7/8 has subsequently proceeded through the Corrective Measures

Study Investigation stage with the submission of a Corrective Measures Study Investigation work plan in December 1997, and the corresponding investigatory work performed in April 1998. The EPA approved the SWMU 7/8 Final CMS Investigations Report that was submitted in April 1999. Additional RFI investigatory work was performed at SWMU 9 in September/October 1997, and again in June 1999. Due to funding restraints, the remainder of the RFI stage for SWMU 9 was performed under CTO 099 of the CLEAN II contract. A Revised Draft RFI Report for SWMU 9 was submitted in March 2000, and subsequently reviewed and approved by the EPA in May 2000. Currently, the RFI stage for all three SWMUs (7/8, and 9) within OU 2 has been approved, and all three SWMUs are in the corrective measures stage.

- OU 3/5 - A full RFI was required for the SWMUs included in this operable unit. Investigations were performed in October/November 1996, and September/October 1997. A RFI report was submitted in April 1999, and EPA approved in September 1999. Currently, three of the four SWMUs (1, 2, and 45) within OU3/5 are in the corrective measures stage.
- OU 4 - A full RFI was required at the Station landfill that comprises this OU. This work was originally included in CTO-0277, but was subsequently moved to CTO-0099 (CLEAN II) for funding reasons.

All these tasks required the full support of project management and subcontractors.

The corrective action program at the Activity has evolved over time. Numerous new tasks have been identified due to changes in the program or to problems that have arisen. The tasks, all of which were added to CTO-0277 without additional funding, include the following:

- AOC C - This task is related to the removal of soils at AOC C. During preparation for hurricane season in 1995, the BOS contractor misinterpreted instructions to clean up the site. Instead of removing loose debris, the entire area was scraped with a bulldozer and the top layer of soil was stockpiled at the site. Since first phase investigations indicated that releases of PCBs were present in the soils, it was considered likely that PCBs could be in the stockpiled soil. The EPA was informed of the situation and an approach was negotiated which included:

- Characterization of the soil pile to determine concentrations of PCBs.
- Upon finding relatively low levels, approval was received to dispose of the soil in the Station landfill used as daily cover.
- Field supervision of soil pile removal including field confirmatory sampling.
- Preparation of various sampling and summary reports.

This “extra” work has been completed with this AOC currently in the CMI stage.

- Tow Way Fuel Farm - The TWFF was mostly under the LANTDIV UST program when CTO-0277 was authorized. Since that time, both the product release sites and the free product plume have been brought under the RCRA corrective action program. This has caused the addition of numerous, minor to major, additional tasks which include:
  - Quarterly reporting on the progress and effectiveness of the free product recovery system that constitutes the ICM at the site. Each report contains groundwater models depicting groundwater flow and gradient, as well as product thickness.
  - Extensive revisions to the RFI report for the area by adding and interpreting all the work from previous investigations (not performed under CLEAN). This was not included in the original scope of work for this CTO.
  - Obtaining and managing an operations and maintenance subcontractor at the site to obtain measurements not included in the RAC scope of services.
  - Designing and installing upgrades to the system by adding new recovery wells, etc.
  - Performing periodic site inspections on an as needed basis.
- New Commissary - During construction of the new commissary on base, some waste roofing tar and steel pieces were found in the area designated for the new parking lot that were apparently buried in an old drainage course. Because this site is across the street from

SWMU 2, there was concern that the landfilling performed in the Langley Drive Disposal Site extended into the new commissary area. A visual examination of the area was made and it was determined that a geophysical survey was necessary. A subcontractor was obtained that performed conductivity surveys over the entire parking lot site. A small number of anomalies were seen that generally appeared to coincide with the trace of the former drainageway. These sites were either ruled out because the source of the anomaly was known (in one particular case it was because there was a manhole at that point), or was subjected to test pitting. The test pits yielded some steel plates (which would explain the anomalies), but did not uncover evidence of routine, systematic or deliberate waste disposal activities. It is likely that the steel found was related to the crusher, which was formerly in the quarry above the new commissary site. There were no further actions taken.

- Additional Investigations - In response to EPA reviews of various reports, additional site characterization work was found to be necessary at certain SWMUs. Included in areas were SWMUs 1, 6, 9, 10, 13, 26, 45, 46, and AOCs B, C, and D. The work included soil sampling, drilling, well installation, groundwater sampling, laboratory analysis, data validation, data evaluation and reporting. None of these items were provided in the original scope of work.

The work at NSRR has been generally divided into tasks. These tasks, including all labor, travel, other direct costs and subcontractors, are:

- Task 1 - Project Management (includes senior review)
- Task 2 - Aerial Photography, Mapping, and Surveying
- Task 3 - Operable Units 1, 6 and 7 Investigations and Reporting
- Task 4 - Operable Unit 2 Investigations and Reporting
- Task 5 - Operable Unit 3/5 Investigations and Reporting
- Task 6 - Operable Unit 4 Investigations and Reporting
- Task 7 - Additional Investigations
- Task 8 - Tow Way Fuel Farm ICM
- Task 9 - New Commissary and AOC C Actions
- Task 10 - Undesignated and Award Fee Funds

This list is provided as information here since it forms the basis for budget and cost discussions in

subsequent sections. All work under this CTO has been completed.

#### **CTO-0296 RAC Design Package Site 16/SWMU 45, Roosevelt Roads**

This CTO provided funding for the design of the ICM at SWMUs 11/45. The design included clean out and abandonment in place of two 50,000 gallon tanks and the clean out of the cooling water tunnels associated with the Old Power Plant. Because of field conditions encountered during the performance of the ICM, the design had to be significantly altered. This was primarily due to unforeseen groundwater inflow problems in the tanks and tunnels.

Post Construction Award Services (PCAS) were provided on this project. These included direct construction oversight during critical periods, redesign and review of redesign by others, and site visits by the Project Engineer. Funds for the PCAS efforts were taken from those available in other tasks that were completed under budget.

The CTO was interim closed January 27, 1997.

#### **CTO-0316 Restoration Advisory Board/Community Relations**

This CTO was established to provide technical and support services for Restoration Advisory Board (RAB) activities. Included in this CTO has been preparation and presentation of program status summaries at RAB meetings, production and publishing of fact sheets (including translation services), provision of graphics support services for RAB meeting materials, and preparation and distribution of RAB meeting minutes.

CTO-0316 was final closed September 6, 2001.

#### **CTO-0357 SI Report Site, Clean-up Requirements for MCON-P504**

CTO-0357 was an Activity funded CTO to perform field investigations at a site immediately adjacent to the base landfill. During the course of foundation investigations in the area, landfilled garbage was encountered. It was known that, at certain points in the landfills' history (pre RCRA), what was now classed as hazardous waste was disposed in some areas. A concern was raised regarding the possible risk to workers resulting from exposure to the material when working in the intended

facility.

A brief work plan was developed and the field investigations were performed. The results of the work were provided in brief report and the conclusions were discussed at a meeting in Puerto Rico.

CTO-0357 was final closed August 9, 2001. It was completed well under budget, which allowed money to be returned to the Activity.

#### **CTO-0361 Quarterly RCRA Permit Report**

CTO-0361 was established to address the RCRA permit requirement for the provision of quarterly reports detailing the progress of RCRA Corrective Action activities at NSRR. The initial two quarterly reports were prepared under 277 as expediency. CTO-0361 initially provided funding for four (one year) reports. This changed by modification and additional funding for two years worth of reports was provided.

CTO-0361 was final closed September 6, 2001.

#### **CLEAN II (CH2M Hill - Prime; Baker - Subcontractor)**

The following paragraphs discuss the history of the CTOs that are utilized under the Navy CLEAN II contract. Included in the discussion of each CTO are the primary work efforts of each CTO, as well as whether the CTOs are currently active.

#### **CTO-030 Site Management Plan Upgrade 97/98 Miscellaneous Support**

This CTO has two primary purposes:

- Provide funds for the development of this SMP.
- Provide funds for provisions of miscellaneous assistance pertaining to RCRA and RCRA program management (essentially replaces “MOD 04” of CTO-007).

On June 9, 1999, Modification 02 was established for the Site Management Plan upgrades for 1999 and 2000 along with the development of a web site and miscellaneous RCRA assistance.

On December 18, 2000, Modification 03 was established for the Site Management Plan upgrades for 2001 and 2002.

The CTO is no longer active and will be closed.

### **CTO-033 RAC Design Package for Interim Corrective Measure AOC C**

This CTO was established to provide for the design of an ICM at AOC C (Transformer Storage Pad). The site was recharacterized during the September/October 1997 investigations. This work is included in the CTO-033 scope as Site Recharacterization Activities. Based on the results of the new investigations, a CMS was required. The plan was to use a streamlined CMS approach to describe the remedies, as well as confirm that the remedies are protective of human health and the environment. SWMU 46 has been combined with AOC C for corrective measure purposes. A Revised Final II CMS Final Report was submitted in August 2000, and EPA approved in September 2000. A 100% Final CMI Work Plan Design package was submitted in January 2001, and EPA approved in May 2001. The CMI will be placed out for public comment. A removal action for the soils is anticipated.

Two modifications (July 28, 1999 and May 23, 2000) to the original scope of work have been implemented. Modification 01 deals with the corrective measure studies performed at SWMUs 1, 2, 9, 30, and 45. Modification 02 deals with the screening level ecological risk assessment performed at SWMUs 1, 2, 9, and 45.

A third modification was administered to de-scope certain tasks from the original contract and make a determination of the funding required for the four concurrence letters. Also included with this modification is the development of the final CMS for SWMU 10, the TWFF screening level ERA, web site maintenance, GIS management, RCRA Quarterly Progress Report, and Project Management.

A fifth modification was negotiated on June 25, 2002 to respond to the EPA comment letter dated October 4, 2001, develop work plan for Additional Ecological Investigation at SWMU 9, field investigation at SWMU 9 and associated reporting.

### **CTO-034 RAC Design Package for Interim Corrective Measure Design SWMU 13**

CTO-034 provides funding for the design of an ICM at SWMU 13 (Old Pest Control Shop and Area, Bldg. 258). It is known that the sediments in the drainage ditch, which receives runoff from the site, contained levels of pesticides that pose a slight risk to human health (if a complete exposure pathway is present). The site was subjected to additional characterization as part of the September/October 1997 investigations. Based on the results, corrective measures were required. A Revised Final II CMS Final Report was submitted in August 2000, and EPA approved in September 2000. A 100% Final CMI Work Plan Design package was submitted in January 2001, and EPA approved in May 2001. The CMI will be placed out for public comment. A removal action for the sediments in the drainage ditch is anticipated.

Three modifications (April 14, 2000, December 26, 2000, and December 2001) to the original scope of work have been implemented. Modification 01 deals with the CMS design for the TWFF, but was negated by the May 19, 2000 concurrence letter for the pilot study completion at the TWFF. Modification 02 deals with the corrective measures field investigation at the TWFF. Modification 03 provided funding for all the work performed under concurrence along with de-scoping certain tasks no longer required.

The CTO is no longer active and will be closed.

### **CTO-099 RCRA Field Investigations and Additional Site Characterization Investigations at SWMUs 3, 9, and 30**

This CTO scope was issued by LANTDIV in December 1998 and was designed to provide funds for the additional investigations at SWMUs 3, 9 and 30. In due course, a cost estimate was submitted and final costs were negotiated in April 1999. The entire CTO was estimated to represent an effort of approximately \$576,000. The RFI for SWMUs 3, 9, and 30 are complete.

In July 2000, Modification 01 was established for the Sampling and Analysis Plan for SWMUs 53 and 54, including work plans, fieldwork, and corresponding reporting. This work has been completed.

In August 2001, Modification 02 was established to conduct an RFI for SWMUs 53 and 54 including

work plans, fieldwork, and corresponding reporting. This work has been completed.

In September 2002 concurrence was given to develop CMS Work Plan for SWMUs 53 and 54, CMS Investigation at SWMU 53, CMS Investigation Report and CMS Final Report for SWMU 53. The Work Plan and field investigation are complete and the Draft versions of the reports have been submitted.

#### **CTO-265 Pre-Design Investigation at Tank 429**

This CTO scope was issued by LANTDIV in July 2002 and was designed to provide funds for the Pre-Design Investigation at Tank 429. The entire CTO was estimated to represent an effort of approximately \$41,000. All work associated with this CTO has been completed. This CTO should be closed.

#### **CTO-268 TCE Plume Delineation at SWMU 7**

This CTO scope was issued by LANTDIV in January 2003 and was designed to provide funds for the TCE plume delineation at SWMU 7 including the development of work plans, field investigation and reporting. The entire CTO was estimated to represent an effort of approximately \$164,000. The work plan phase of the project has been completed. Once EPA approval is received on the work plans, the field investigation will be initiated.

#### **CTO-269 Re-Characterization Sampling and RFI at SWMU 11**

This CTO scope was issued by LANTDIV in January 2003 and was designed to provide funds for the re-characterization sampling at SWMU 11 including the development of work plans, field investigation and reporting. The entire CTO was estimated to represent an effort of approximately \$70,000. The work plan phase of the project has been completed. Once EPA approval is received on the work plans, the field investigation will be initiated.

#### **CTO-271 Ecological Field Investigation and Reporting at SWMUs 1, 2, and 45**

This CTO scope was issued by LANTDIV in January 2003 and was designed to provide funds for the ecological field investigation and reporting at SWMUs 1, 2, and 45 including field investigation

and reporting. The entire CTO was estimated to represent an effort of approximately \$439,000. The field investigation is underway, the reporting will follow once the analytical laboratory and data validation tasks are complete.

### **CLEAN III (CH2M Hill - Prime; Baker - Subcontractor)**

The following paragraphs discuss the history of the CTOs that are utilized under the Navy CLEAN III contract. Included in the discussion of each CTO are the primary work efforts of each CTO, as well as whether the CTOs are currently active.

#### **CTO-008 RCRA Quarterly Progress Reports**

This CTO scope was issued by LANTDIV in April 2003 and was designed to provide funds for the development of the RCRA Quarterly Progress Report for NSRR for a period of four quarters. The entire CTO was estimated to represent an effort of approximately \$49,000. The first quarterly progress report (February-April 2003) has been submitted.

#### **2.2.2 Contractual Financial Status**

Table 2-2 details the CTO cost summary, as well as the contractual status of each CTO for NSRR under the three CLEAN contracts. Included in the table is information related to:

- CTO identification
- Modifications (and their basis)
- Award fee values
- Costs
- Applicable comments detailing specific items.

Where appropriate, Baker and CH2M Hill budgets are included. It should be noted that the table addresses all NSRR projects (including non-IR program) for completeness.

Recent information regarding each CTO's current status pertaining to cost to complete, costs to date and technical/budget percents are contained within the monthly progress reports provided to LANTDIV. These should be referred to for up-to-date information regarding CTO financial

performance.

Table 2-2 also presents the total funding, funds remaining, and status for each CTO. Also shown are the totals spent to date and funds remaining for the entire program.

### **2.2.3 Unfunded Tasks**

This section describes the unfunded tasks that are still outstanding. Included are executed letters of concurrence and future tasks.

#### Letters of Concurrence/Modification to Existing Contracts

Table 2-3 summarizes the concurrence letters that have been approved for the various CTOs and are still active. Letters of concurrence are employed when the scope, cost, and/or schedule are changed from that which was established at the beginning of the CTO. They are used to avoid the need to go through the full contract process that is entailed in a contract modification.

Concurrence letters have been generally used to allow the use of existing funds within a CTO, originally specified for a future task, such as:

- Emergencies (e.g. AOC C soil piles removal, well replacement at the Base Landfill).
- Preparing reports that were not originally planned (e.g. Tow Way Fuel Farm Quarterly Reports).
- Expanding reports by the addition and analysis of additional data (e.g. OU 2 RFI report, OU 3/5 RFI report).
- Performing additional sampling and analysis (e.g. additional investigations at SWMUs 9, 10, 26, 31/32, 46, AOC B, AOC C, and AOC D).
- Miscellaneous unscoped work (e.g. attendance at meetings, technical subconsultant contracting).

The use of these letters has allowed the Navy to be responsive to changing requirements, changing site conditions, and problems that have arisen during the course of the corrective action program.

The future tasks from which the funds are obtained to complete the items in concurrence letters are re-funded in three ways.

- When a given CTO has had its funds nearly exhausted and scope items remain, a contract modification will be issued (this usually addresses multiple concurrence letters).
- Savings resulting from reduced scope in other tasks or efficiencies realized, remove the need for additional funding.
- The scope items which are now unfunded are moved to another (usually new CTOs) and included within the new scope of work.

#### Future Unfunded Tasks

The following tasks have been identified but are unfunded:

1. SWMU 9 Design and Removal Activities

Funds are required for the design and removal to be performed at SWMU 9.

2. CMI Remediation for 31/32

Funds are required for the CMI actions at SWMU 31/32.

3. CMI Remediation for SWMUs 13, 46, AOC C

Funds are required for the CMI remediation at SWMUs 13, 46/AOC C.

4. CMS for SWMU 54

Funds are required for the performance of a Task I CMS and CMS Final Report for the TCE

Plume in groundwater at SWMU 45.

5. CMI Design for SWMU 53

Funds are required for the development of CMI Design package for soil remediation at SWMU 53.

**2.3 Document Status**

Table 2-4 contains the chronological order of the documents from the RCRA program at NSRR since its inception. Each major deliverable or task has been identified and the pertinent correspondence regarding the major issues is indicated. This is a summary table that addresses all historical activities in the program. As new reports and related correspondence are received, the table will be updated. For new items, any schedule mandates for response will be included.

### **3.0 REMEDIAL ACTION CONTRACTOR PROJECTS**

This section of the SMP provides details regarding the various interim corrective measures and corrective measures at NSRR.

#### **3.1 Interim Corrective Measures**

The following subsections describe the ICMs that have been completed or currently ongoing, as well as the current financial situation.

##### **3.1.1 Completed ICMs**

ICMs have been completed for the following:

- SWMU 19 - Building 121, Pesticide Storage
- SWMU 11/45 - Soils outside of Building 38
- SWMU 10 - Substation 90, and
- SWMU 11/45 - Cooling Water Tunnels and USTs

Each of these is described briefly below.

##### **SWMU 19 - Building 121, Pesticide Storage**

This unit was closed under RCRA. While not a “true” ICM, the closure results did indicate the need for future work as this SWMU. Closure was performed in accordance with an EPA approved work plan. Confirmation sampling was done in the areas decontaminated and clean-up goals were achieved. A closure report was produced which, in due course, was approved by the EPA.

##### **SWMU 11/45 - Soils Outside of Building 38**

The soils in the front of Building 38 were found to be contaminated with PCBs during a RI (CERCLA) performed prior to RCRA permit receipt. Based on this finding, an ICM was proposed for the site. The design, which was approved by the EPA, entailed the removal of contaminated soils with shipment off-island for disposal.

The work was performed and clean-up goals were achieved. The results of the ICM are provided in the Final Closeout Report for Sites 15 and 16 prepared by Metcalf & Eddy, Inc. (May 1995). This closeout report was approved by the EPA.

### **SWMU 10 - Substation 90**

Soils contaminated with PCBs were discovered at Substation 90. Since the contamination was the same as that found at Building 38, it was decided to combine ICMs to save costs associated with multiple contractor mobilizations and gain an “economy of scale” in items such as waste shipment. The work plans followed and the closeout report was also combined with Building 38.

### **SWMU 11/45 - Cooling Water Tunnels and USTs**

The cooling water tunnels and USTs associated with Building 38 contained PCB containing sludges which posed a risk for continuing releases. A design for an ICM was prepared by Baker under CTO-0296, and the work was performed by OHM Corporation. Originally, the design called for cleaning out the tanks and tunnels and abandoning in place. Water inflow to the tunnels prevented adequate cleaning. The design was changed, with the approval of EPA, to fill the USTs and tunnels with low density concrete. This action was taken, and the project closeout report was submitted and approved in due course by EPA.

#### **3.1.2 Ongoing ICMs**

The only on-going ICM is the free product recovery system at the TWFF. The original ICM is currently offline as discussed previously. Although monthly removal of phase separated hydrocarbons is occurring in conjunction with the monthly gauging activities.

#### **3.1.3 ICM Cost**

Table 3-1 provides the cost status for the ICMs at NSRR.

## **3.2 Corrective Measures**

The following subsections describe the project status, as well as the cost status of the corrective measures that have been completed, or currently ongoing at NSRR.

### **3.2.1 Project Status**

There are currently seven SWMUs and one AOC with initiated corrective measures, and four SWMUs and one AOC with completed corrective measures at NSRR.

The SWMUs with initiated corrective measures include the following:

- SWMU 1
- SWMU 2
- SWMU 45
- SWMU 6
- SWMU 7/8
- SWMU 9
- SWMU 10
- AOC B

The SWMUs with completed corrective measures and CMI designs include the following:

- SWMU 13
- SWMU 31
- SWMU 32
- SWMU 46
- AOC C

These sites are ready to move into the CMI stage. As the sites progress through the process, this section of the SMP will document and track the steps taken.

A 100% Final CMI Work Plan Design Package for SWMUs 13, 46/AOC C was submitted in January 2001 and EPA approved in May 2001. The CMI work plan for SWMUs 13, 46/AOC C will be placed out for public comment. The Final CMI Work Plan Design Package for SWMUs 31/32 was submitted in January 2001 and EPA approved in May 2001. The CMI work plan for SWMU 31/32 will be placed out for public comment.

### **3.2.2 Cost Status**

Table 3-2 tracks the cost status of corrective measures performed at NSRR.

### **3.3 Corrective Measures Implementation**

The following subsections describe the project status, as well as the cost status of the Corrective Measures Implementation that has been completed, or currently ongoing at NSRR.

#### **3.3.1 Project Status**

There are currently four SWMUs and one AOC for which proposed remediation would be implemented following the public comment period.

The SWMUs for which the proposed corrective measures implementation work plan has been approved include the following:

- SWMU 13
- SWMU 31
- SWMU 32
- SWMU 46
- AOC C

The SWMUs for which the corrective measures implementation work plan has yet to be developed or determined include the following:

- SWMU 7/8
- SWMU 9

The corrective measures implementation work plans for SWMUs 7/8 and 9 will be developed as proposed in their respective CMS reports which are currently being developed. Table 3-3 provides a cost status for the corrective measures implementation work proposed for the above-mentioned SWMUs.

### **3.4 Future Projects**

Table 3-4 summarizes the current and future RAC projects for NSRR.

#### **4.0 CORRECTIVE ACTION PROGRAM SCHEDULE**

The present program schedule is shown on Figure 4-1. The schedule will be updated during each revision of the SMP.

## 5.0 REFERENCES

Baker Environmental, Inc. (Baker) (1994). Final Supplemental Investigation, Installation Restoration Program Activities, Naval Station Roosevelt Roads, Puerto Rico. April 1994.

Baker. (1994). Draft Final Pre-Investigation Corrective Measures Screening Report, Naval Station Roosevelt Roads, Puerto Rico. April 1994.

Baker. (1995). Final RCRA Facility Investigation Work Plans, Naval Station Roosevelt Roads, Puerto Rico. September 1995.

Baker. (2000). Phase I Environmental Assessment at Malaria Control Building, Building 64, Naval Station Roosevelt Roads, Puerto Rico. March 2000.

CH2MHill. (2000). Phase I Environmental Assessment at Building 1914 NEX, Naval Station Roosevelt Roads, Puerto Rico. February 2000.

Metcalf & Eddy, Inc. (1995). Final Closeout Report for Interim Remedial Action of PCB Contaminated Soils, Sites 15 and 16, Naval Station Roosevelt Roads, Puerto Rico. May 1995.

## **TABLES**

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TABLE 2-1

**SWMU/AOC IDENTIFICATION AND STATUS  
SITE MANAGEMENT PLAN  
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO**

<b>SWMU</b>	<b>SWMU Name</b>	<b>Former IRP Designation</b>	<b>RFI Required</b>	<b>Operable Unit</b>	<b>Status*</b>	<b>Comments</b>
1	Former Army Cremator Disposal Site	Site 5	Full	3	3, 7	CMS initiated. Ecological Investigation Underway.
2	Langley Drive Disposal Area	Site 6	Full	3	3, 7	CMS initiated. Ecological Investigation Underway.
3	Base Landfill	Site 7	Full	4	3	Replacement wells installed December 2000. Work plan submitted January 2002 and EPA approved. Investigation initiated February 28, 2002 and completed March 12, 2002. Revised Final RFI Report submitted 3/18/03.
4	Drone Fuel Oil/Water Separator	Site 8	None	--	1	
5	Dumpsters	--	None	--	1	
6	Building 145	Site 11	First Phase	1	4, 7	Final CMS Final Report was submitted June 2001. No further action proposed in RCRA Part B permit renewal. Awaiting EPA review.
7	Tow Way Fuel Farm	Site 12	Full	2	2, 7, 11B	The original free product recovery system remains off-line. Additional data collection fieldwork initiated January 6, 2002, and completed March 14, 2002. Final CMS Task I Report submitted April 22, 2003.
8	Tow Way Road Sludge Burial Pits	Site 12	Full	2	2, 7, 11B	Combined with SWMU 7 into one unit.
9	Tank 212-217 Sludge Burial Pits	Site 13	Full	2	3, 7	Additional ecological investigation underway.
10	Substation 2/Building 90	Site 15	Contingent	1	4, 7, 11C	CMS underway. Awaiting EPA review. No further action recommended in RCRA Part B permit renewal.
11	Old Power Plant/Building 38	Site 16	Full	3	2	The Building 38 interior may require recharacterization. Final Recharacterization Work Plan submitted to EPA July 21, 2003.
12	Fire Training Pit Oil/Water Separator	--	First Phase	1	4	No further action proposed in RCRA Part B permit renewal.

TABLE 2-1

**SWMU/AOC IDENTIFICATION AND STATUS  
SITE MANAGEMENT PLAN  
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO**

<b>SWMU</b>	<b>SWMU Name</b>	<b>Former IRP Designation</b>	<b>RFI Required</b>	<b>Operable Unit</b>	<b>Status*</b>	<b>Comments</b>
13	Old Pest Control Shop/Building 258	Site 18	First Phase	1	8, 10	100% Final CMI Work Plan Design Package submitted January 2001, and EPA approved May 2001. CMI work plan to be placed for public comment.
14	Fire Training Pit Area	Site 17	First Phase	1	12	Further action is deferred until site is closed.
15	Base Hospital Incinerator	--	None	--	1	
16	Waste Explosives Storage Building 1666	--	None	--	1	
17	Building 1973 Non-Flammable Hazardous Waste Storage	--	None	--	1	
18	Building 2009 - Ignitable Hazardous Waste Storage	--	None	--	1	
19	Building 121 - Pesticide Storage	Site 21	None	--	1, 11C	RCRA closure submitted in June 1994 and approved by USEPA.
20	Tank Truck near Building 860	--	None	--	1	
21	Mobile Floating Tanks	--	None	--	1	
22	Mobile Barges/SWOBS	--	None	--	1	
23	Oil Spill Separator Tanks	Site 21	First Phase	1	4	No further action proposed in the RCRA Part B permit renewal.
24	Oil Spill Oil/Water Separator and Adjoining Pad	Site 22	First Phase	1	4	No further action proposed in the RCRA Part B permit renewal.
25	DRMO Storage Yard	Site 23	First Phase	1	12	Any further investigations at unit will be done in conjunction with closure activities under the RCRA operating permit.
26	Building 544 Area	Site 24	First Phase	1	4	No further action proposed in the RCRA Part B permit renewal.
27	Domestic Sewage Treatment Plant (Capehart Area)	--	None	--	1	
28	Domestic Sewage Treatment Plant (Bundy Area)	--	None	--	1	
29	Wastewater Treatment Plant (Industrial Area)	--	None	--	1	
30	Former Incinerator Area	Site 25	First Phase	1	4	No further action proposed in the RCRA Part B permit renewal.

TABLE 2-1

**SWMU/AOC IDENTIFICATION AND STATUS  
SITE MANAGEMENT PLAN  
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO**

<b>SWMU</b>	<b>SWMU Name</b>	<b>Former IRP Designation</b>	<b>RFI Required</b>	<b>Operable Unit</b>	<b>Status*</b>	<b>Comments</b>
31	Waste Oil Collection Area/Building 31 and 2022	Site 26	First Phase	1	8, 10	Final CMI Work Plan Design Package submitted January 2001, and EPA approved in May 2001. CMI work plan to be placed for public comment.
32	PWD Storage Yard/Battery Collection Area	Site 27	First Phase	1	8, 10	Final CMI Work Plan Design Package submitted January 2001, and EPA approved in May 2001. CMI work plan to be placed for public comment.
33	Under 90 Day Storage/Building 379	--	None	--	1	
34	Under 90 Day Storage Airfield	--	None	--	1	
35	Oil/Water Separator Building 396	--	None	--	1	
36	Oil/Water Separator Berthing Pier	--	None	--	1	
37	Waste Oil Storage Area/Building 200	Site 28	First Phase	1	4	No further action proposed in the RCRA Part B permit renewal.
38	Below Ground Sanitary Storm Sewers	Site 29	None	--	1	
39	Building 3158/Former Battery Drain Area	--	First Phase	1	4	No further action proposed in the RCRA Part B permit renewal.
40	Alpha Company Mobile Oil Tank	--	None	--	1	
41	Building 3152 Wash Pad	--	None	--	1	
42	Water Purification Plant Lagoons	--	None	--	1	
43	Drone Wash Down Drainage Ditch	Site 8	None	--	1	
44	Aerial Target Drainage Ditch System	Site 8	None	--	1	
45	PCB Spill Area/Old Power Plant	Site 16	Full	3	3, 7, 11C	CMS initiated. Ecological Investigation Underway.
46	Pole Storage Yard Covered Pad	Site 30	First Phase	1	8, 10	100% Final CMI Work Plan Design Package was submitted in January 2001, and EPA approved in May 2001. CMI work plan to be placed for public comment.
47	Satellite Disposal Areas	--	None	--	1	
48	Container Storage Rack/Building 3102	--	None	--	1	
49	500 Gallon Waste Oil Tank/Building 3188	--	None	--	1	
50	Drum Storage Area/Building 3166	--	None	--	1	
51	New AIMD Storage Pad/Building 379	Site 31	First Phase	--	4	No further action proposed in the RCRA Part B permit renewal.

**TABLE 2-1**

**SWMU/AOC IDENTIFICATION AND STATUS  
SITE MANAGEMENT PLAN  
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO**

<b>SWMU</b>	<b>SWMU Name</b>	<b>Former IRP Designation</b>	<b>RFI Required</b>	<b>Operable Unit</b>	<b>Status*</b>	<b>Comments</b>
52	Storage Pad near Building 3158	--	None	--	1	
53	Building 64 - Malaria Control Building	--	First Phase	--	3, 7	Final CMS Work Plan submitted March 7, 2003, and EPA approved June 3, 2003. CMS field investigation performed March 2003. Draft CMS Final Report submitted July 23, 2003.
54	Building 1914 - Former NEX Repair/Maintenance Shop	--	First Phase	--	6	Final CMS Work Plan submitted March 7, 2003, and EPA approved June 3, 2003. CMS Pending.
AOC A	Torpedo Shop	--	None	--	1	
AOC B	Building 25 Area	Site 10	Full	6	4, 7	Final CMS Final Report was submitted in June 2001. No further action proposed in RCRA Part B permit renewal. Awaiting EPA review.
AOC C	Transformer Storage Pads	Site 32	First Phase	1	8, 10	100% Final CMI Work Plan Design Package submitted in January 2001, and EPA approved in May 2001. CMI work plan to be placed for public comment.
AOC D	Sediments	Site 33	First Phase	7	4	No further action proposed in RCRA Part B permit renewal.

**Notes:** \*1 No work required  
 2 Investigations pending  
 3 Under Investigation  
 4 Removal from Permit pending  
 5 Additional Investigations required  
 6 Corrective Measures Study pending  
 7 Corrective Measures Study underway  
 8 Corrective Measures Study completed  
 9 Remedial Design

10 Remediation Implementation  
 11 Interim Corrective Measure  
 A Planned  
 B Underway  
 C Completed  
 12 Further action deferred  
 -- Not applicable

TABLE 2-2

**CTO COST SUMMARY AND CONTRACT VALUES  
SITE MANAGEMENT PLAN  
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO**

<b>CTO</b>	<b>Title</b>	<b>Total Funding (\$)</b>	<b>Cost To Date (\$)</b>	<b>Modification</b>	<b>Funds Remaining (\$)</b>	<b>Award Fee Value (\$)</b>	<b>Status</b>	<b>Comments</b>
<b>CLEAN I</b>								
007	RI/FS Roosevelt Roads	829,103	829,008		95		Closed	
015	Miscellaneous Investigations	9,414	9,414		0		Closed	
025	Sewer Inflow Infiltration	382,855	382,854		1		Closed	
028	Wastewater Treatment Plants	647,813	647,813		0		Closed	
039	UST Management Plan	125,515	125,515		0		Closed	
105	Inflow Infiltration	1,458,875	1,457,278		1,597		Closed	
173	RI/FS, Unit IR 16, Roosevelt Roads	95,802	95,470		332		Closed	
223	RFI/CMS Work Plans, NSRR	153,819	148,855		4,964		Closed	
277	IR Sites-RFI, Puerto Rico	3,277,591	3,263,625		200	189,863	Completed	
296	RAC Design Package, Site 16/SWMU 45, Roosevelt Roads	125,591	116,714		9,877		Closed	
316	Restoration Advisory Board/Community Relations	88,645	87,920		725	7,399	Closed	
357	SI Report, Site Clean-up Requirements for MCON-P504	105,883	75,720		30,163		Closed	
361	Quarterly RCRA Permit Report	84,995	84,979		16	6,616	Closed	
	<b>Totals</b>	<b>7,385,901</b>	<b>7,325,165</b>		<b>47,970</b>	<b>203,878</b>		

TABLE 2-2

**CTO COST SUMMARY AND CONTRACT VALUES  
SITE MANAGEMENT PLAN  
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO**

CTO	Title	Total Funding (\$)	Cost To Date (\$)	Modification	Funds Remaining (\$)	Award Fee Value (\$)	Status	Comments
<b>CLEAN II</b>								
30	Site Management Plan Upgrade 97/98, Miscellaneous Support	1,055,733	1,055,733	01, 02, 03	0	98,895	Closed	(1)
33	RAC Design Package for Interim Corrective Measure – AOC C	968,102	860,000	01, 02, 03, 04, 05	108,102	75,439	Ongoing	(2)
34	RAC Design Package for Interim Corrective Measure – SWMU 13	1,012,155	1,012,155	01, 02, 03	0	97,502	Closed	(3)
99	RCRA Field Investigations and Additional Site Characterization Investigations (SWMUs 3, 9, 30)	1,055,859	1,015,859	01, 02	40,000	90,643	Ongoing	(4)
265	Pre-Design Investigation at Tank 429	40,833	40,000		833	3,731	Completed	
268	TCE Plume Delineation at SWMU 7	164,347	10,000		154,347	14,457	Ongoing	
269	Re-Characterization Sampling and RFI at SWMU 11	70,124	6,000		64,124	7,201	Ongoing	
271	Field Investigations and Reporting at SWMUs 1, 2, and 45	438,639	12,000		426,639	30,174	Ongoing	
	<b>Totals</b>	4,805,792	4,011,747		794,045	418,042		
<b>CLEAN III</b>								
08	RCRA Quarterly Progress Reports	48,759	13,000		35,759	5,496	Ongoing	
	<b>Totals</b>	48,759	13,000		35,759	5,496		

- Notes:**
- (1) Modification 01 for CTO 30 was for Site Management Plan updates for 1999 and 2000 while Modification 03 was for 2001 and 2002.
  - (2) Modifications 01 and 02 for CTO 33, dealt with a master CMS for SWMUs 1, 2, 9, 30, and 45, as well as a screening level ERA for SWMUs 1, 2, 45, and 9, respectively.
  - (3) Modification 02 for CTO 34, dealt with a corrective measure field investigation for the TWFF. Modification 01 (CMS design for TWFF) was negated by the PF Pilot Study.
  - (4) Modification 01 for CTO 99, dealt with sampling and analysis field work and reporting for SWMUs 53 and 54 and Modification 02 dealt with the RFI for SWMUs 53 and 54.

TABLE 2-3

**CONCURRENCE LETTERS  
SITE MANAGEMENT PLAN  
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO**

CTO	Subject	Type <sup>(1)</sup>	Date Sent	Navy Sign Date	Approximate Funding (\$)	Work Status
277	Meeting attendance in Puerto Rico	S, C	03/29/96	--	4,400	Trip completed April 1996.
277	Well installation at Base Landfill	S, C	03/29/96	04/03/96	10,500	Installation of well completed.
277	AOC C Emergency Response (soil piles)	S, C	06/07/96	06/11/96	24,200	Soil piles tested and removed.
277	New Commissary parking lot investigations	S, C	07/10/96	07/11/96	23,700	Investigations completed.
277	Aerial photography increased cost	C, T	07/25/96	07/25/96	17,100	Aerial photography and mapping completed.
277	Sludge sampling at Building 38 (pits)	S, C	11/08/96	11/14/96	--	Sampling completed using on-site analysis.
277	Increased scope of reporting at OU 2	S, C	03/31/97	04/07/97	--	Report submitted and approved by EPA.
277	Use of subconsultant - Blasland, Bouck & Lee	C	05/02/97	05/07/97	15,000	Necessary subconsulting obtained.
277	Provision of short-term monitoring services at Tow Way Fuel Farm	S, C	06/30/97	07/08/97	7,200	Monitoring and reporting by subcontractor completed.
277	Additional investigations at SWMUs 9, 10, 26, 31, 32, 46 and AOC B	S, C, T	08/07/97	08/11/97	200,000	Investigations completed; reporting completed.
277	Tow Way Interim Corrective Measure reporting	S, C	10/07/97	10/15/97	56,000	Three reports completed.
277	Corrective Measures Study for the Tow Way	S, C	10/07/97	10/15/97	12,000	Workplan submitted to EPA.
277	Installation of additional wells at the Tow Way	S, C	10/07/97	10/15/97	102,000	Additional wells installed, report submitted January 1998.
277	Validation of Landfill Sampling Data	S, C	06/03/98	06/08/98	2,000	Validation of samples taken by others.
277	Reporting for OU 3/5 RFI	S, C	02/08/99	02/23/99	50,000	EPA comments greatly expanded reporting task over that originally anticipated by the addition of other sampling databases.
138806.PM.PO	Joint Interest Group meeting facilitation (CLEAN II PMO letter)	--	06/20/97	06/23/97	7,200	Meeting held; facilitated by Management Edge.
31	Investigations at SWMU 7 and 31/32	S, C, T	06/10/99	06/25/99	160,000	Sampling completed and report submitted.
33	Additional sampling at AOC C (pre-design)	S, C, T	08/08/97	08/19/97	11,000	Sampling completed and report submitted. EPA approved.
33	CMS for SWMU 13, 31/32, and 46/AOC C	S, C, T	4/19/99	5/17/97	34,000	CMS reports submitted and approved. CMI work plans submitted and approved.
33	CMS for SWMUs 10, and 6/AOC B	S, C, T	5/17/01	5/24/01	57,000	Draft CMS for SWMU 10 submitted. SWMU 6/AOC B CMS completed.
33	Additional Data Collection Ecological Work Plan for SWMUs 1, 2, and 45	S, C, T	7/30/01		28,000	Draft Work Plans submitted. EPA approved.
34	Additional sampling at SWMU 13 (pre-design)	S, C, T	08/08/97	08/19/97	--	Sampling completed and report submitted. EPA approved.
34	PF Pilot Study at TWFF	S, C, T	5/19/00	6/27/00	290,000	Pilot Study completed and report submitted.
34	Work Plan for Ecological Risk Assessment at TWFF	S, C, T	8/16/01	09/26/01	21,000	Draft Work Plans submitted. EPA approved.
34	Increase in Field Work for CMS Investigation at TWFF	S, C, T	9/21/01	09/26/01	120,000	Field work initiated January 6, 2002, and completed March 14, 2002.
99	Work Plan for RFI at SWMU 3	S, C, T	11/15/01	11/26/01	3,500	Work Plan completed and approved by the EPA.
99	CMS for SWMU 53 and 54	S, C, T	09/19/02	09/23/02	90,000	Work plan and field investigation completed. Draft Reports for SWMU 53 submitted.

**Notes:** <sup>(1)</sup> S = Scope  
<sup>(1)</sup> C = Cost

<sup>(1)</sup> T = Schedule  
-- Non Requested

TABLE 2-4

**DOCUMENT STATUS/TRACKING  
SITE MANAGEMENT PLAN  
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO**

<b>PRE-RCRA DOCUMENTS</b>	<b>Date Submitted</b>
Initial Assessment Study of Naval Station Roosevelt Roads, Puerto Rico	9/84
Evaluation of Data from First Round of Verification Sample Collection and Analysis, Confirmation Study to Determine Possible Dispersion and Migration of Specific Chemicals, U.S. Naval Station Roosevelt Roads, Puerto Rico and U.S. Naval Ammunition Facility, Vieques	5/86
Confirmation Study to Determine Possible Dispersion and Migration of Specific Chemicals, U.S. Naval Station Roosevelt Roads, Puerto Rico and U.S. Naval Station Ammunition Facility, Vieques	4/88
Phase II RCRA Facility Assessment of the U.S. Naval Station Roosevelt Roads Facility, Roosevelt Roads, Puerto Rico	11/88
Draft Report, Volume III, Supplemental Investigation, Installation Restoration Program Activities, Naval Station Roosevelt Roads, Ceiba, Puerto Rico	06/11/93
Draft Geophysical Survey, The Army Cremator Disposal Area (Site 5), Naval Station Roosevelt Roads, Puerto Rico	07/26/93
	1993
RCRA Facility Assessment Reinspection of the U.S. Naval Station Roosevelt Roads Facility, Roosevelt Roads, Puerto Rico	
Draft Pre-Investigation Corrective Measures Screening Report, Naval Station Roosevelt Roads, Puerto Rico	12/17/93
Draft Final Pre-Investigation Corrective Measures Screening Report, Naval Station Roosevelt Roads, Puerto Rico	04/29/94
Draft Additional Information Analytical Results Provided As an Addendum to Supplemental Investigation, Installation Restoration Program Activities, Naval Station Roosevelt Roads, Ceiba, Puerto Rico	06/24/94
<b>RCRA DOCUMENTS</b>	
<b>RCRA Permit</b>	<b>Date Submitted</b>
Draft RCRA/HSWA of 1984 Permit for U.S. Naval Station Roosevelt Roads, Ceiba, Puerto Rico	1984
NSRR Comments	01/27/94
Final RCRA/HSWA Permit for U.S. Naval Station Roosevelt Roads, Ceiba, Puerto Rico	10/20/94

TABLE 2-4

**DOCUMENT STATUS/TRACKING  
SITE MANAGEMENT PLAN  
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO**

OU	SWMU	STAGE	ACTIVITY	DATE SUBMITTED	REQUESTED ACTION	
All	All	RFI	Draft RFI Management Plans	3/95		
			EPA comments	06/12/95		
			Final RFI Management Plans	9/95		
			EPA comments	09/29/95	Approved Final RFI Management Plans except for Appendix D.	
			EPA comments	10/15/95		
1	6	RFI	Draft RFI Report for OU 1, 6, and 7	7/96		
			EPA comments	11/08/96	Further investigation required.	
			Draft RFI Report Addendum for OU 1, 6, and 7	01/20/97		
			EPA comments	04/25/97		
			Navy response to comments	06/12/97		
			EPA comments	08/07/97		
			Draft RFI Report Revised Addendum for OU 1, 6, and 7	08/29/97		
			Draft RFI Report for Additional Investigations at OU 1, 6, and 7	05/06/98		
			EPA comments	09/15/98	Revise Risk Assessment.	
			Navy response to comments	11/24/98		
			EPA comments	11/05/99	RFI complete. EPA requested a CMS be developed.	
			CMS	Draft CMS Work Plan	01/07/00	
				EPA comments	03/15/00	Approved CMS Work Plan.
				Navy response to comments	05/30/00	
	Draft CMS Final Report	05/30/00				
	EPA comments	07/05/00				
	Navy response to comments	08/22/00				
	Draft Final CMS Final Report	11/30/00				
	EPA comments	05/04/01		Submit Final CMS Final Report.		
	Navy response to comments	06/21/01				
	Final CMS Final Report	06/21/01				
	10	ICM	Work Plan for the Interim Remedial Action Soils	05/15/93		
			Installation Restoration Program Interim Remedial Action Decision Document for the Surface Soils Operable Unit Substation No. 2 (Site 15), Building 90	11/93		
Final Closeout Report for Interim Remedial Action of PCB Contaminated Soils Sites 15 & 16			5/95			

TABLE 2-4

**DOCUMENT STATUS/TRACKING  
SITE MANAGEMENT PLAN  
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO**

OU	SWMU	STAGE	ACTIVITY	DATE SUBMITTED	REQUESTED ACTION
1 (Cont.)	10 (Cont.)	RFI	Draft Relative Risk Ranking System Data Collection Sampling and Analysis Report	11/17/95	
			Draft RFI Report for OU 1, 6, and 7	7/96	
			EPA comments	11/08/96	Further investigation required.
			Draft RFI Report Addendum for OU 1, 6, and 7	01/20/97	
			Final RFI Work Plans Addendum 2	02/28/97	
			EPA comments	04/25/97	
			Navy response to comments	06/12/97	
			Final RFI Work Plans Addendum 2 Revised	06/13/97	
			EPA comments	07/15/97	
			Draft RFI Report for Additional Investigations at OU 1, 6, and 7	05/06/98	
			EPA comments	09/15/98	EPA did not concur or refute the recommendation.
			EPA comments	03/07/00	EPA requested a CMS to be developed.
	NFA	RCRA Part B Permit Renewal Application	05/08/00	No further action recommended in renewal application.	
	CMS	Draft CMS Final Report	07/06/01		
	12	RFI	Draft RFI Report for OU 1, 6, and 7	7/96	
			EPA comments	11/08/96	Revise 1996 RFI to address specific comments.
			Draft RFI Report Addendum for OU 1, 6, and 7	01/20/97	
			Draft RFI Report Revised Addendum for OU 1, 6, and 7	08/29/97	
	NFA	RCRA Part B Permit Renewal Application	05/08/00	No further action recommended in renewal application.	
	13	RFI	Draft Relative Risk Ranking System Data Collection Sampling and Analysis Report	11/17/95	
			Draft RFI Report for OU 1, 6, and 7	7/96	
			EPA comments	11/08/96	Further investigation required.
			Draft RFI Report Addendum for OU 1, 6, and 7	01/20/97	
			Final RFI Work Plans Addendum 2	02/28/97	
			EPA comments	04/25/97	
			Navy response to comments	06/12/97	
			Final RFI Work Plans Addendum 2 Revised	06/13/97	
			EPA comments	07/15/97	
			Draft RFI Report for Additional Investigations at OU 1, 6, and 7	05/06/98	
			EPA comments	09/15/98	Submit CMS Work Plans.
Navy response to comments			11/24/98		



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**DOCUMENT STATUS/TRACKING  
SITE MANAGEMENT PLAN  
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO**

OU	SWMU	STAGE	ACTIVITY	DATE SUBMITTED	REQUESTED ACTION
1 (Cont.)	24	RFI	Draft Relative Risk Ranking System Data Collection Sampling and Analysis Report	11/17/95	
			Draft RFI Report for OU 1, 6, and 7	7/96	
		NFA	RCRA Part B Permit Renewal Application	05/08/00	No further action recommended in renewal application.
	25	RFI	Draft Relative Risk Ranking System Data Collection Sampling and Analysis Report	11/17/95	
			Draft RFI Report for OU 1, 6, and 7	7/96	
			EPA comments	11/08/96	Further action at the DRMO yard has been deferred until permitted unit is closed.
			Draft RFI Report Addendum for OU 1, 6, and 7	01/20/97	
	26	RFI	Draft Relative Risk Ranking System Data Collection Sampling and Analysis Report	11/17/95	
			Draft RFI Report for OU 1, 6, and 7	7/96	
			EPA comments	11/08/96	Further investigation required.
			Draft RFI Report Addendum for OU 1, 6, and 7	01/20/97	
			Final RFI Work Plans Addendum 2	02/28/97	
			EPA comments	04/25/97	
			Final RFI Work Plans Addendum 2 Revised	06/12/97	
			EPA comments	07/15/97	
			Draft RFI Report for Additional Investigations at OU 1, 6, and 7	05/06/98	
			EPA comments	09/15/98	Revise Risk Assessment.
			Navy response to comments	11/24/98	
			EPA comments	02/12/99	
			Navy response to comments (Revise Risk Assessment)	05/03/99	
	EPA comments	10/27/99	Approved the No Further Action recommendation. RFI complete.		
	NFA	RCRA Part B Permit Renewal Application	05/08/00	No further action recommended in renewal application.	
	30	RFI	Draft Relative Risk Ranking System Data Collection Sampling and Analysis Report	11/17/95	
			Draft RFI Report for OU 1, 6, and 7	7/96	
			EPA comments	11/08/96	No action requested.
			EPA comments	11/14/97	
			Navy response to comments	12/24/97	
			EPA comments	02/11/98	Approved the Work Plan for Additional Data Characterization.
			Navy response to comments	05/06/98	
			Draft RFI Report for SWMU 30	12/10/99	
EPA comments			01/20/00	Approved the No Further Action recommendation. RFI complete.	
Navy response to comments			02/15/00		
NFA	RCRA Part B Permit Renewal Application	05/08/00	No further action recommended in renewal application.		

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**DOCUMENT STATUS/TRACKING  
SITE MANAGEMENT PLAN  
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO**

OU	SWMU	STAGE	ACTIVITY	DATE SUBMITTED	REQUESTED ACTION	
1 (Cont.)	31	RFI	Draft Relative Risk Ranking System Data Collection Sampling and Analysis Report	11/17/95		
			Draft RFI Report for OU 1, 6, and 7	7/96		
			EPA comments	11/08/96	Revise Risk Assessment.	
			Draft RFI Report Addendum for OU 1, 6, and 7	01/20/97		
			Final RFI Work Plans Addendum 2	02/28/97		
			EPA comments	04/25/97		
			Final RFI Work Plans Addendum 2 Revised	06/12/97		
			EPA comments	07/15/97		
			Draft RFI for Additional Investigations at OU 1, 6, and 7	05/06/98		
			EPA comments	09/15/98	Submit CMS Work Plans.	
		Navy response to comments	11/24/98			
		EPA comments	02/12/99	Approved Streamlined CMS Outline.		
		Navy response to comments	05/03/99			
		Draft Work Plan for Additional Dioxin Sampling	05/28/99			
		EPA comments	06/30/99	Approved the Work Plan for Additional Dioxin Sampling.		
		Draft CMS Final Report	01/28/00			
		EPA comments	03/15/00			
		Final CMS Final Report	04/17/00			
		EPA comments	05/04/00			
		Navy response to comments	05/30/00			
		Draft CMI Work Plan Design Package	08/14/00			
		EPA comments	12/05/00			
		Final CMI Work Plan Design Package	01/25/01			
		Navy response to comments	01/26/01			
		EPA comments	05/04/01	Approved Final CMI Work Plan Design Package. EPA needs to place CMI work plan out for public comment.		
		32	RFI	Draft Relative Risk Ranking System Data Collection Sampling and Analysis Report	11/17/95	
				Draft RFI Report for OU 1, 6, and 7	7/96	
				EPA comments	11/08/96	Revise Risk Assessment.
Draft RFI Report Addendum for OU 1, 6, and 7	01/20/97					
Final RFI Work Plans Addendum 2	02/28/97					
Final RFI Work Plans Addendum 2 Revised	06/12/97					
EPA comments	07/15/97					
Draft RFI for Additional Investigations at OU 1, 6, and 7	05/06/98					
EPA comments	09/15/98			Submit CMS Work Plans.		
Navy response to comments	11/24/98					

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**DOCUMENT STATUS/TRACKING  
SITE MANAGEMENT PLAN  
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO**

OU	SWMU	STAGE	ACTIVITY	DATE SUBMITTED	REQUESTED ACTION	
1 (Cont.)	32 (Cont.)	CMS	EPA comments	02/12/99	Approved Streamlined CMS Outline.	
			Navy response to comments	05/03/99		
			Draft Work Plan for Additional Dioxin Sampling	05/28/99		
			EPA comments	06/30/99	Approved the Work Plan for Additional Dioxin Sampling.	
			Draft CMS Final Report	01/28/00		
			EPA comments	03/15/00		
			Final CMS Final Report	04/17/00		
			EPA comments	05/04/00		
		Navy response to comments	05/30/00			
		CMI	Draft CMI Work Plan Design Package	08/14/00		
			EPA comments	12/05/00		
			Final CMI Work Plan Design Package	01/25/01		
			Navy response to comments	01/26/01		
		37	RFI	Draft Relative Risk Ranking System Data Collection Sampling and Analysis Report	11/17/95	
	Draft RFI Report for OU 1, 6, and 7			7/96		
	EPA comments			11/08/96	Revise 1996 RFI to address specific comments.	
	Draft RFI Report Addendum for OU 1, 6, and 7			01/20/97		
	NFA			RCRA Part B Permit Renewal Application	05/08/00	No further action recommended in renewal application.
	RFI		Draft Relative Risk Ranking System Data Collection Sampling and Analysis Report	11/17/95		
			Draft RFI Report for OU 1, 6, and 7	7/96		
	46		RFI	RCRA Part B Permit Renewal Application	05/08/00	No further action recommended in renewal application.
				Draft Relative Risk Ranking System Data Collection Sampling and Analysis Report	11/17/95	
	Draft RFI Report for OU 1, 6, and 7			7/96		
	EPA comments	11/08/96		Further investigation required.		
	Draft RFI Report Addendum for OU 1, 6, and 7	01/20/97				
	Final RFI Work Plans Addendum 2	02/28/97				
	EPA comments	04/25/97				
	Navy response to comments	06/12/97				
Final RFI Work Plans Addendum 2 Revised	06/13/97					
EPA comments	07/15/97					
39	RFI	Draft RFI Report for Additional Investigations at OU 1, 6, and 7	05/06/98			
		EPA comments	09/15/98	Submit CMS Work Plans.		
	NFA	Navy response to comments	11/24/98			

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DOCUMENT STATUS/TRACKING  
SITE MANAGEMENT PLAN  
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

OU	SWMU	STAGE	ACTIVITY	DATE SUBMITTED	REQUESTED ACTION	
1 (Cont.)	46 (Cont.)	CMS	EPA comments	02/12/99	Approved Streamlined CMS Outline.	
			Draft CMS Final Report	05/03/99		
			EPA comments	07/27/99		
			Final CMS Final Report	09/30/99		
			Navy response to comments	10/08/99		
			EPA comments	12/10/99		
			Navy response to comments	01/13/00		
			Revised Final CMS Final Report	01/26/00		
			EPA comments	03/15/00		
			Navy response to comments	05/30/00		
			Revised Final II CMS Final Report	08/04/00		
			EPA comments	09/15/00		EPA approved Revised Final II CMS Final Report.
			Navy response to comments	11/03/00		
			EPA comments	12/05/00		
	Navy response to comments	01/26/01				
	CMI	CMI	Draft CMI Work Plan Design Package	07/10/00		
			EPA comments	09/15/00		
			Navy response to comments	11/03/00		
			Final CMI Work Plan Design Package	11/03/00		
			EPA comments	12/05/00		
			100% Final CMI Work Plan Design Package	01/25/01		
			Navy response to comments	01/26/01		
	EPA comments	05/04/01	EPA approved 100% Final CMI Work Plan Design Package. EPA needs to place CMI work plan out for public comment.			
	51	RFI	Draft Relative Risk Ranking System Data Collection Sampling and Analysis Report	11/17/95		
			Draft RFI Report for OU 1, 6, and 7	7/96		
		NFA	RCRA Part B Permit Renewal Application	05/08/00	No further action recommended in renewal application.	
	AOC C	RFI	Draft Relative Risk Ranking System Data Collection Sampling and Analysis Report	11/17/95		
			Draft RFI Report for OU 1, 6, and 7	7/96		
			EPA comments	11/08/96		Further investigation required.
			Draft RFI Report Addendum for OU 1, 6, and 7	01/20/97		
Final RFI Work Plans Addendum 2			02/28/97			
Navy response to comments			06/12/97			
Final RFI Work Plans Addendum 2 Revised			06/13/97			
EPA comments			07/15/97			
Draft RFI Report for Additional Investigations at OU 1, 6, and 7			05/06/98			
EPA comments			09/15/98	Submit CMS Work Plans.		
	Navy response to comments	11/24/98				

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**DOCUMENT STATUS/TRACKING  
SITE MANAGEMENT PLAN  
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO**

OU	SWMU	STAGE	ACTIVITY	DATE SUBMITTED	REQUESTED ACTION
1 (Cont.)	AOC C (Cont.)	CMS	EPA comments	02/12/99	Approved Streamlined CMS Outline.
			Draft CMS Final Report	05/03/99	
			EPA comments	07/27/99	
			Final CMS Final Report	09/30/99	
			Navy response to comments	10/08/99	
			EPA comments	12/10/99	
			Navy response to comments	01/13/00	
			Revised Final CMS Final Report	01/26/00	
			EPA comments	03/15/00	
			Navy response to comments	05/30/00	
			Revised Final II CMS Final Report	08/04/00	
			EPA comments	09/15/00	EPA approved Revised Final II CMS Final Report.
		Navy response to comments	11/03/00		
		EPA comments	12/11/00		
		Navy response to comments	01/26/01		
		CMI	Draft CMI Work Plan Design Package	07/10/00	
			EPA comments	09/15/00	
			Navy response to comments	11/03/00	
Final CMI Work Plan Design Package	11/03/00				
EPA comments	12/05/00				
100% Final CMI Work Plan Design Package	01/25/01				
Navy response to comments	01/26/01				
EPA comments	05/04/01	EPA approved 100% Final CMI Work Plan Design Package. EPA needs to place CMI work plan out for public comment.			
6	AOC B	RFI	Draft RFI Report for OU 1, 6, and 7	7/96	
			EPA comments	11/08/96	Further investigation required.
			Draft RFI Report Addendum for OU 1, 6, and 7	01/20/97	
			EPA comments	04/25/97	
			Navy response to comments	06/12/97	
			EPA comments	08/07/97	
			Draft RFI Report Revised Addendum for OU 1, 6, and 7	08/29/97	
			Draft RFI Report for Additional Investigations at OU 1, 6, and 7	05/06/98	
			EPA comments	09/15/98	Revise Risk Assessment.
			Navy response to comments	11/24/98	
EPA comments	11/05/99	RFI complete. EPA requested a CMS be developed.			

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**DOCUMENT STATUS/TRACKING  
SITE MANAGEMENT PLAN  
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO**

OU	SWMU	STAGE	ACTIVITY	DATE SUBMITTED	REQUESTED ACTION
6 (Cont.)	AOC B (Cont.)	CMS	Draft CMS Work Plan	01/07/00	Approved CMS Work Plan.
			EPA comments	03/15/00	
			Navy response to comments	05/30/00	
			Draft CMS Final Report	05/30/00	Submit Final CMS Final Report.
			EPA comments	07/05/00	
			Navy response to comments	08/22/00	
			Draft Final CMS Final Report	11/30/00	
			EPA comments	05/04/01	
			Navy response to comments	06/21/01	
Final CMS Final Report	06/21/01				
7	AOC D	RFI	Draft Relative Risk Ranking System Data Collection Sampling and Analysis Report	11/17/95	Further investigation required.
			Draft RFI Report for OU 1, 6, and 7	7/96	
			EPA comments	11/08/96	
			Draft RFI Report Addendum for OU 1, 6, and 7	01/20/97	Revise Risk Assessment.
			EPA comments	04/25/97	
			Navy response to comments	06/12/97	
			Draft RFI Report for Additional Investigations at OU 1, 6, and 7	05/06/98	
			EPA comments	09/15/98	
			Navy response to comments	11/24/98	
		EPA comments	02/12/99		
Navy response to comments	05/03/99				
NFA	RCRA Part B Permit Renewal Application	05/08/00	No further action recommended in renewal application.		
2	7/8	ICM	July 1995, August 1995, and September 1995 Free Product Recovery Reports	12/28/95	
			January 1996 Free Product Recovery Report	02/14/96	
			EPA comments	02/28/96	
			February 1996 Free Product Recovery Report	03/12/96	
			EPA comments	04/05/96	
			Navy response to comments	05/01/96	
			Free Product Recovery System Specification Document	05/10/96	
			Free Product Recovery System Work Plan	05/10/96	
			EPA comments	06/20/96	
			Navy response to comments	08/08/96	
			EPA comments	09/13/96	
			Navy response to comments	09/27/96	
			EPA comments	12/13/96	
			Navy response to comments	12/23/96	
Report on Additional Well Installation at TWFF	03/06/98				
EPA comments	05/11/98				

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**DOCUMENT STATUS/TRACKING  
SITE MANAGEMENT PLAN  
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO**

OU	SWMU	STAGE	ACTIVITY	DATE SUBMITTED	REQUESTED ACTION
2 (Cont.)	7/8 (Cont.)	RFI	RFI Work Plans Addendum 1 for TWFF	10/04/95	
			Draft Relative Risk Ranking System Data Collection Sampling and Analysis Report	11/17/95	
			EPA comments	12/06/95	
			Revised Work Plan Addendum 1	01/03/96	
			EPA comments	01/19/96	
			Revised Addendum 1, TWFF - SWMU 7	02/02/96	
			Draft RFI Report for OU 1, 6, and 7	7/96	
			Draft RFI Report for OU 2	9/96	
			EPA comments	03/04/97	
			Revised Draft RFI Report for OU 2 (SWMU 7/8)	6/97	
		EPA comments	09/09/97	Approved Revised Draft RFI Report for OU 2 (SWMU 7/8). A CMS is required.	
		CMSI	Draft CMS Work Plan for TWFF	12/12/97	
			EPA comments	02/11/98	
			Navy response to comments	05/06/98	
			Draft CMS Investigations Report for TWFF	06/30/98	
			EPA comments	10/02/98	Approved Draft CMS Investigations Report for TWFF.
			Navy response to comments	12/16/98	
			EPA comments	03/08/99	
			Navy response to comments	04/21/99	
		Final CMS Investigations Report for TWFF	04/21/99		
		CMS	Draft CMS Task I Report	11/30/98	
			EPA comments	03/08/99	
			Revised Section 3.0 of the Draft CMS Task I Report	04/21/99	
			EPA comments	06/30/99	
			Navy response to comments	01/13/00	
			Revised Draft CMS Task I Report	01/21/00	
			EPA comments	05/04/00	
			Navy response to comments	06/29/00	
			EPA comments	10/10/00	
			Navy response to comments	11/08/00	
			Revised Section 3.0 of the Revised Draft CMS Task I Report	01/31/01	
			Draft Additional Data Collection Work Plan	01/31/01	
			EPA comments	05/04/01	Complete Task I CMS.
Draft Final Additional Data Collection Work Plan	07/06/01				
EPA comments	08/08/01				
Final Additional Data Collection Work Plan	09/27/01				

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**DOCUMENT STATUS/TRACKING  
SITE MANAGEMENT PLAN  
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO**

OU	SWMU	STAGE	ACTIVITY	DATE SUBMITTED	REQUESTED ACTION
2 (Cont.)	7/8 (Cont.)	CMS (Cont.)	Draft Work Plan for Ecological Risk Assessment	09/27/01	
			EPA comments electronically	10/12/01	
			Revisions to the Final Additional Data Collection Work Plan	11/02/01	
			Revisions to the Draft Work Plan for Ecological Risk Assessment	11/02/01	
			EPA comments	11/21/01	Approved the Final Additional Data Collection Work Plan and the Draft Work Plan for Ecological Risk Assessment.
			Revised Corrective Measure Schedule	12/06/01	
			EPA Comments	01/03/02	Approved the revised CMS schedule.
			Additional Data Collection Fieldwork completed	03/14/02	
			Revised Corrective Measure Schedule	03/26/02	
			Draft Final CMS Task I Report	07/11/02	
			Draft Additional Data Collection Investigation Report	07/11/02	
			Draft Groundwater Model Report	07/11/02	
			EPA Comments	10/24/02	Report largely acceptable, certain items need revised, clarified, or expanded.
			Revised Draft Final CMS Task I Report	01/06/03	
			Draft Final Additional Data Collection Investigation Report	01/06/03	
			Draft Final Groundwater Model Report	01/06/03	
			Response to EPA Comments dated 10/24/02	01/08/03	
			EPA Comments	03/13/03	Requests responses to EPA/BAH/EQB comments
			Final CMS Task I Report	04/22/03	
			Final Additional Data Collection Investigation Report	04/22/03	
			Final Groundwater Model Report	04/22/03	
			Response to EPA Comments dated 3/13/03	04/22/03	
			Draft TCE Plume Delineation Work Plan for the TWFF	05/08/03	
			Conference Call with EPA	05/15/03	Discussions on Task I CMS for TWFF
			Replacement pages for Final CMS Task I Report	05/23/03	
			EPA comments	06/10/03	Approved the Final CMS Task I Report
			EPA comments on Draft TCE Plume Delineation Work Plan	06/10/03	
			Conference Call with EPA	07/01/03	Discuss EPA comments on Draft TCE Plume Delineation Work Plan
			Electronic submission of Final TCE Plume Delineation and Source Investigation Work Plan to EPA for review	07/18/03	
		EPA comments on Elect. submission of Final TCE Work Plan	07/24/03		
		Final TCE Plume Delineation and Source Invest. Work Plan	07/25/03		
		CleanOX® Pilot Test	Final CleanOX® Pilot Test Report	10/99	
		TCE Investigation	Work Plan for TWFF Investigations Related to Detections of TCE	04/21/99	
EPA comments	05/12/99		Approved Work Plan for TWFF Investigations Related to Detections of TCE.		
Draft TCE Investigation Report	12/10/99				
EPA comments	01/20/00				
	Final TCE Investigation Report	02/15/00			

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**DOCUMENT STATUS/TRACKING  
SITE MANAGEMENT PLAN  
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO**

OU	SWMU	STAGE	ACTIVITY	DATE SUBMITTED	REQUESTED ACTION
2 (Cont.)	7/8 (Cont.)	Pilot Test	Pilot Scale Remediation Work Plan Insitu Chemical Oxidation For the TWFF	06/15/98	
			Hydraulic Characteristics Evaluation T.O. #9 Free Product Recovery System	08/31/99	
			Draft Work Plan Pilot Test to Evaluate Enhancement of Product Recovery	10/26/99	
			Phase I Work Plan Pilot Test to Evaluate Enhancement of Product Recovery	01/13/00	
			Phase II Work Plan Pilot Test to Evaluate Enhancement of Product Recovery	01/20/00	
			EPA comments	03/03/00	
			Draft Report of Findings Quantification of Product Release Pier 1	03/10/00	
			Report of Findings Quantification of Product Release Pier 1	03/16/00	
			Navy response to comments	05/19/00	
			Draft Pilot Test to Evaluate Enhancement of Product Recovery Report for TWFF SWMU 7/8	10/31/00	
		Navy response to 3/3/00 EPA comments	01/24/01		
		Conceptual Groundwater Model	Conceptual Groundwater Model for TWFF	02/28/01	
			EPA comments	03/19/01	EPA requested during a conference call that the conceptual groundwater model be resubmitted to address EPA comments.
			Resubmission of the Conceptual Groundwater Model for the TWFF	04/27/01	
		Meeting Minutes	EPA comments	05/23/01	
			TWFF Pilot Study Pilot Scale Remediation Work Plan Insitu Chemical Oxidation	09/17/98	
			TWFF Corrective Measures Meeting Minutes	01/19/01	
			Groundwater Model Teleconference Meeting Minutes	03/30/01	
			TWFF Meeting Minutes	04/18/01	
	Final TWFF Conceptual Groundwater Model Conference Call Meeting Minutes	06/25/01			
	9	RFI	Draft RFI Report for OU 2	9/96	
			EPA comments	03/04/97	
			Addendum 3 Work Plan for SWMU 9	05/15/97	
			EPA comments	07/15/97	
			Draft RFI Report for SWMU 9	03/06/98	
			EPA comments	06/15/98	
			Draft RFI Work Plans, Additional Investigations at SWMU 9	09/04/98	
			EPA comments	10/02/98	Approved Draft RFI Work Plans, Additional Investigations at SWMU 9.
Revised Draft RFI Report for SWMU 9			03/10/00		
EPA comments			05/04/00	Approved Revised Draft RFI for SWMU 9. A CMS is required.	
Navy response to comments	07/13/00				

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**DOCUMENT STATUS/TRACKING  
SITE MANAGEMENT PLAN  
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO**

OU	SWMU	STAGE	ACTIVITY	DATE SUBMITTED	REQUESTED ACTION
2 (Cont.)	9 (Cont.)	CMS	Draft CMS Work Plan for SWMU 9	07/14/00	
			EPA comments	09/15/00	
			Navy response to comments	11/12/00	
			Draft Final CMS Work Plan	11/15/00	
			EPA comments	12/05/00	
			Final CMS Work Plan for SWMU 9	01/15/01	
			EPA comments	05/04/01	Approved Final CMS Work Plan for SWMU 9. CMS investigations initiated.
			Draft CMS Investigation Report for SWMU 9	07/02/01	
			EPA comments	10/04/01	
			Navy notice of lack of funding given to EPA	11/28/01	
			Navy response to comments	04/05/02	
			EPA Comments	11/19/02	
			Navy response to comments	12/23/02	
			EPA Comments	02/19/03	Approved CMS Investigation Report for SWMU 9
			Final CMS Investigations Report for SWMU 9	04/25/03	
			Draft Additional Data Collection Work Plan	04/25/03	
EPA Comments	06/03/03	Approved Draft Additional Data Collection Work Plan			
Field Investigation initiated	07/13/03				
3/5	1	RFI	Draft Relative Risk Ranking System Data Collection Sampling and Analysis Report	11/17/95	
			Draft RFI Report for OU 1, 6, and 7	7/96	
			Draft RFI Report for OU 3/5	03/20/98	
			EQB comments	05/28/98	
			EPA comments	11/24/98	CMS was requested.
			Navy response to comments	02/19/99	
			EPA comments	03/08/99	
			Revised Draft RFI Report for OU 3/5	04/01/99	
			EPA comments	09/28/99	Approved the Revised Draft RFI Report for OU 3/5.

TABLE 2-4

**DOCUMENT STATUS/TRACKING  
SITE MANAGEMENT PLAN  
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO**

OU	SWMU	STAGE	ACTIVITY	DATE SUBMITTED	REQUESTED ACTION
3/5 (Cont.)	1 (Cont.)	CMS	Draft CMS Work Plans for SWMUs 1, 2, and 45	04/01/99	
			EPA comments	08/11/99	
			Navy response to comments	09/17/99	
			Final CMS Work Plans	10/29/99	
			EPA comments	01/20/00	
			Navy response to comments	02/23/00	
			Revised Final CMS Work Plan	03/10/00	
			EPA comments	05/04/00	
			Navy response to comments	07/13/00	
			Revised Final II CMS Work Plan	07/14/00	
			EPA comments	09/15/00	
			Navy response to comments	10/19/00	
			EPA comments	05/04/01	Approved the Revised Final II CMS Work Plan. CMS initiated.
			Draft Screening-Level Ecological Risk Assessment Problem Formulation (Step 1) and Exposure Estimate SWMUs 1 and 2	08/10/01	
	Draft Additional Data Collection Work Plan in Support of Ecological Risk Assessment at SWMUs 1 and 2	08/10/01			
	EPA comments	10/04/01	Approved the Draft Additional Data Collection Work Plan in Support of Ecological Risk Assessment.		
	Navy notice of lack of funding given to EPA	11/28/01			
	Navy Response to comments	05/14/03			
	Addendum to the Draft SLERA Problem Formulation (Step 1) and Exposure Assessment for SWMUs 1 and 2	05/14/03			
	EPA comments	06/10/03	Approved Addendum to the Draft SLERA Problem Formulation ...		
Field Investigation initiated	07/23/03				
2	RFI	Draft Relative Risk Ranking System Data Collection Sampling and Analysis Report	11/17/95		
		Draft RFI Report for OU 1, 6, and 7	7/96		
		EPA comments	11/08/96		
		Draft RFI Report Addendum for OU 1, 6, and 7	01/20/97		
		EPA comments	04/25/97		
		Navy response to comments	06/12/97		
		Draft RFI Report for OU 3/5	03/20/98		
		EQB comments	05/28/98		
		EPA comments	11/24/98	CMS was requested.	
		Navy response to comments	02/19/99		
		EPA comments	03/08/99		
		Revised Draft RFI Report for OU 3/5	04/01/99		
EPA comments	09/28/99	Approved the Revised Draft RFI Report for OU 3/5.			

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**DOCUMENT STATUS/TRACKING  
SITE MANAGEMENT PLAN  
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO**

OU	SWMU	STAGE	ACTIVITY	DATE SUBMITTED	REQUESTED ACTION
3/5 (Cont.)	2 (Cont.)	CMS	Draft CMS Work Plans	04/01/99	
			EPA comments	08/11/99	
			Navy response to comments	09/17/99	
			Final CMS Work Plans	10/29/99	
			EPA comments	01/20/00	
			Navy response to comments	02/23/00	
			Revised Final CMS Work Plan	03/10/00	
			EPA comments	05/04/00	
			Navy response to comments	07/13/00	
			Revised Final II CMS Work Plan	07/14/00	
			EPA comments	09/15/00	
			Navy response to comments	10/19/00	
			EPA comments	05/04/01	Approved the Revised Final II CMS Work Plan. CMS initiated.
			Draft Screening-Level Ecological Risk Assessment Problem Formulation (Step 1) and Exposure Estimate SWMUs 1 and 2	08/10/01	
			Draft Additional Data Collection Work Plan in Support of Ecological Risk Assessment at SWMUs 1 and 2	08/10/01	
			EPA comments	10/04/01	Approved the Draft Additional Data Collection Work Plan in Support of Ecological Risk Assessment.
			Navy notice of lack of funding given to EPA	11/28/01	
			Navy Response to comments	05/14/03	
Addendum to the Draft SLERA Problem Formulation (Step 1) and Exposure Assessment for SWMUs 1 and 2	05/14/03				
EPA comments	06/10/03	Approved Addendum to the Draft SLERA Problem Formulation ...			
Field Investigation initiated	07/23/03				

TABLE 2-4

**DOCUMENT STATUS/TRACKING  
SITE MANAGEMENT PLAN  
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO**

OU	SWMU	STAGE	ACTIVITY	DATE SUBMITTED	REQUESTED ACTION
3/5 (Cont.)	11	RFI	Draft Relative Risk Ranking System Data Collection Sampling and Analysis Report	11/17/95	
			Draft RFI Report for OU 1, 6, and 7	7/96	
			EPA comments	11/08/96	
			Draft RFI Report Addendum for OU 1, 6, and 7	01/20/97	
			Final RFI Work Plans Addendum 2	02/28/97	
			EPA comments	04/25/97	
			Navy response to comments	06/12/97	
			Final RFI Work Plans Addendum 2 Revised	06/13/97	
			EPA comments	07/15/97	
			Draft RFI Report for OU 3/5	03/20/98	
			SWMU 11 - Building 38 Old Power Plant Sampling Results and Recharacterization Work Plan	03/31/98	
			EQB comments	05/28/98	
			EPA comments	11/24/98	CMS was requested.
			Navy response to comments	02/19/99	
			EPA comments	03/08/99	
			Revised Draft RFI Report for OU 3/5	04/01/99	
			EPA comments	09/28/99	Approved the Revised Draft RFI Report for OU 3/5.
			SWMU 11 - Building 38 Old Power Plant Sampling Results and Recharacterization Work Plan - Resubmittal of 3/31/98	11/26/01	
			EPA Comments	03/08/02	Revise Work Plan
			Navy notice of lack of funding given to EPA	05/19/02	
	EPA comments	06/13/03			
	Navy response to comments	07/21/03			
	Final Recharacterization Work Plan for SWMU 45	07/21/03			
	Interim Measures Plan	07/21/03			
	45	ICM	Remedial Action Alternatives Analysis For the Old Power Plant, Building 38, Site 16 Confirmation Study to Determine Possible Dispersion and Migration of Specific Chemicals	5/88	
			Draft Implementation Plan/Fee Proposal Remedial Action Contract Design Package Site 16/SWMU 45 Interim Corrective Measure	12/06/94	
			Final Implementation Plan/Fee Proposal Remedial Action Contract Design Package Site 16/SWMU 45 Interim Corrective Measure	01/11/95	
Draft Work Plan for Site 16, SWMU 45			02/07/95		
EPA comments			02/15/95		
Preparation of RAC Design Package for Site 16/SWMU 45 Interim Corrective Measure			02/21/95		

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**DOCUMENT STATUS/TRACKING  
SITE MANAGEMENT PLAN  
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO**

OU	SWMU	STAGE	ACTIVITY	DATE SUBMITTED	REQUESTED ACTION
3/5 (Cont.)	45 (Cont.)	ICM (Cont.)	Final Work Plan for Site 16, SWMU 45	02/21/95	
			Navy response to comments	02/21/95	
			Draft Final Engineering Report for Site 16/SWMU 45	04/12/95	
			Final Engineering Report for Site 16/SWMU 45	05/24/95	
			Final Closeout Report for Interim Remedial Action of PCB Contaminated Soils Sites 15 & 16	5/95	
			60% RAC Design Package for SWMU 45/Site16	08/11/95	
			Interim Corrective Measure at SWMU 45	08/11/95	
			EPA comments	09/15/95	
			100% Design for SWMU 45	10/17/95	
			Navy response to comments	10/17/95	
			Revised Final RAC Design for SWMU 45	12/11/95	
			SWMU 45 Work Plan for Tank and Cooling Tunnels	04/12/96	
			EPA comments	04/30/96	
			Revised Sampling, Analysis, and Quality Assurance Plan for Tank Closure, SWMU 45	04/30/96	
			Final Work Plan for Tank Closure(s) at SWMU 45	05/15/96	
			EPA comments	03/31/97	
			Navy response to comments	05/05/97	
		Final Closeout Report for Cooling Water Tunnels and Underground Storage Tanks at SWMU 45	06/17/97		
		RFI	Draft RFI Report for OU 1, 6, and 7	7/96	
			EPA comments	11/08/96	
			Draft RFI Report Addendum for OU 1, 6, and 7	01/20/97	
			Final RFI Work Plans Addendum 2	02/28/97	
			EPA comments	04/25/97	
			Navy response to comments	06/12/97	
			Final RFI Work Plans Addendum 2 Revised	06/13/97	
			EPA comments	07/15/97	
			Draft RFI Report for OU 3/5	03/20/98	
			EQB comments	05/28/98	
			EPA comments	11/24/98	CMS was requested.
Navy response to comments	02/19/99				
EPA comments	03/08/99				
Revised Draft RFI Report for OU 3/5	04/01/99				
EPA comments	09/28/99	Approved the Revised Draft RFI Report for OU 3/5.			

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**DOCUMENT STATUS/TRACKING  
SITE MANAGEMENT PLAN  
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO**

OU	SWMU	STAGE	ACTIVITY	DATE SUBMITTED	REQUESTED ACTION
3/5 (Cont.)	45 (Cont.)	CMS	Draft CMS Work Plans for SWMUs 1, 2, and 45	04/01/99	
			EPA comments	08/11/99	
			Navy response to comments	09/17/99	
			Final CMS Work Plans	10/29/99	
			EPA comments	01/20/00	
			Navy response to comments	02/23/00	
			Revised Final CMS Work Plan	03/10/00	
			EPA comments	05/04/00	
			Navy response to comments	07/13/00	
			Revised Final II CMS Work Plans	07/14/00	
			EPA comments	09/15/00	
			Navy response to comments	10/19/00	
			EPA comments	05/04/01	Approved the Revised Final II CMS Work Plan for SWMU 45. CMS initiated.
			Draft Screening-Level Ecological Risk Assessment Problem Formulation (Step 1) and Exposure Estimate SWMU 45	08/10/01	
			Draft Additional Data Collection Work Plan in Support of Ecological Risk Assessment at SWMU 45	08/10/01	
			EPA comments	10/04/01	Approved the Draft Additional Data Collection Work Plan in Support of Ecological Risk Assessment.
			Navy notice of lack of funding given to EPA	11/24/01	
			Navy response to comments	05/22/03	
Addendum to the Draft SLERA Problem Formulation (Step 1) and Exposure Assessment for SWMUs 1 and 2	05/22/03				
EPA comments	06/10/03	Approved Addedndum to the Draft SLERA Problem Formulation ...			
Field Investigation initiated	07/23/03				
4	3	RFI	Draft Relative Risk Ranking System Data Collection Sampling and Analysis Report	11/17/95	
			Draft RFI Work Plan for SWMU 3	12/17/01	
			EPA Comments	01/03/02	Contingent approval upon modification.
			Final RFI Work Plan for SWMU 3	01/24/02	
			EPA Comments	03/08/02	Approval of Final RFI Work Plan for SWMU 3
			RFI Field Investigation completed	03/12/02	
			Draft RCRA Facility Investigation Report for SWMU 3	09/04/02	
			EPA Comments	11/19/02	
			Navy response to comments	12/23/02	
			Final RCRA Facility Investigation Report for SWMU 3	12/23/02	
			EPA Comments	02/19/03	
			Navy response to comments	03/18/03	
Revised Final RCRA Facility Investigation Report for SWMU 3	03/18/03				

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**DOCUMENT STATUS/TRACKING  
SITE MANAGEMENT PLAN  
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO**

OU	SWMU	STAGE	ACTIVITY	DATE SUBMITTED	REQUESTED ACTION
	53 and 54	New SWMUs	Draft Sampling and Analysis Plan for SWMUs 53 and 54	08/04/00	
			EPA comments	10/10/00	Approved the Draft Sampling and Analysis Plan for SWMUs 53 and 54.
			Draft Sampling and Analysis Report for SWMUs 53 and 54	04/11/01	
			EPA comments	07/05/01	
			Final Sampling and Analysis Report for SWMUs 53 and 54	08/27/01	
			EPA comments	11/21/01	Approved Final Sampling and Analysis Report.
		RFI	Draft RFI Work Plan for SWMUs 53 and 54	08/27/01	
			EPA comments	11/21/01	
			Final RFI Work Plan for SWMUs 53 and 54	12/06/01	
			EPA Comments	01/03/02	Approved Final RFI Work Plan.
			RFI Field Investigation completed	03/14/02	
			Draft RFI Report for SWMUs 53 and 54	07/17/02	
			EPA comments	09/19/02	Approved Draft RCRA Facility Invest. Report for SWMUs 53 and 54.
		CMS	Final RFI Report for SWMUs 53 and 54	09/30/02	
			Draft CMS Work Plan for SWMUs 53 and 54	11/27/02	
			EPA comments	02/19/03	
			Navy response to comments	03/07/03	
			Final CMS Work Plan for SWMUs 53 and 54	03/07/03	
			Field Investigation initiated	03/22/03	
			EPA comments	06/03/03	Approved Final CMS Work Plan for SWMUs 53 and 54.
			Draft CMS Investigation Report for SWMU 53	07/23/03	
Draft CMS Final Report for SWMU 53	07/23/03				

**TABLE 2-4**

**DOCUMENT STATUS/TRACKING  
SITE MANAGEMENT PLAN  
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO**

<b>TWFF QUARTERLY REPORTS</b>	<b>DATE SUBMITTED</b>	<b>COMMENTS</b>
Tow Way Fuel Farm Quarterly Summary Report No. 1, Naval Station Roosevelt Roads, Ceiba, Puerto Rico	06/03/97	Report summarized O&M reports and reanalyzed groundwater flow and free product occurrence.
Tow Way Fuel Farm Quarterly Summary Report No. 2, Naval Station Roosevelt Roads, Ceiba, Puerto Rico	08/29/97	Recommended the installation of additional monitoring/recovery wells at the Tow Way.
Tow Way Fuel Farm Quarterly Summary Report No. 3, Naval Station Roosevelt Roads, Ceiba, Puerto Rico	12/10/97	EPA comments submitted 2/11/98.
Tow Way Fuel Farm Quarterly Summary Report No. 4, Naval Station Roosevelt Roads, Ceiba, Puerto Rico	03/06/98	EPA comments submitted 5/11/98.
Tow Way Fuel Farm Quarterly Summary Report No. 5, Naval Station Roosevelt Roads, Ceiba, Puerto Rico	06/05/98	
Tow Way Fuel Farm Quarterly Summary Report No. 6, Naval Station Roosevelt Roads, Ceiba, Puerto Rico	09/04/98	
Tow Way Fuel Farm Quarterly Summary Report No. 7, Naval Station Roosevelt Roads, Ceiba, Puerto Rico	12/04/98	
Tow Way Fuel Farm Quarterly Summary Report No. 8, Naval Station Roosevelt Roads, Ceiba, Puerto Rico	02/26/99	
Tow Way Fuel Farm Quarterly Summary Report No. 9, Naval Station Roosevelt Roads, Ceiba, Puerto Rico	05/28/99	
Tow Way Fuel Farm Quarterly Summary Report No. 10, Naval Station Roosevelt Roads, Ceiba, Puerto Rico	08/31/99	
Tow Way Fuel Farm Quarterly Summary Report No. 11, Naval Station Roosevelt Roads, Ceiba, Puerto Rico	11/30/99	
Tow Way Fuel Farm Quarterly Summary Report No. 12, Naval Station Roosevelt Roads, Ceiba, Puerto Rico	02/29/00	
Tow Way Fuel Farm Quarterly Summary Report No. 13, Naval Station Roosevelt Roads, Ceiba, Puerto Rico	05/31/00	

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**DOCUMENT STATUS/TRACKING  
SITE MANAGEMENT PLAN  
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO**

<b>RCRA QUARTERLY PROGRESS REPORTS</b>	<b>DATE SUBMITTED</b>	<b>COMMENTS</b>
RCRA Final Permit Required Quarterly Progress Report, Period 11/29/94 - 4/30/95, Naval Station Roosevelt Roads, Ceiba, Puerto Rico	05/30/95	
RCRA Final Permit Required Quarterly Progress Report, Period 5/1/95 - 7/31/95, Naval Station Roosevelt Roads, Ceiba, Puerto Rico	08/25/95	EPA comments submitted 7/27/95.
RCRA Final Permit Required Quarterly Progress Report, Period 8/1/95 - 10/31/95, Naval Station Roosevelt Roads, Ceiba, Puerto Rico	10/31/95	EPA comments submitted 2/28/96.
RCRA Final Permit Required Quarterly Progress Report, Period 11/1/95 - 1/31/96, Naval Station Roosevelt Roads, Ceiba, Puerto Rico	02/28/96	
RCRA Final Permit Required Quarterly Progress Report, Period 2/1/96 - 4/30/96, Naval Station Roosevelt Roads, Ceiba, Puerto Rico	05/30/96	EPA comments submitted 6/20/96.
RCRA Final Permit Required Quarterly Progress Report, Period 5/1/96 - 7/31/96, Naval Station Roosevelt Roads, Ceiba, Puerto Rico	08/30/96	
RCRA Final Permit Required Quarterly Progress Report, Period 8/1/96 - 10/31/96, Naval Station Roosevelt Roads, Ceiba, Puerto Rico	11/27/96	
RCRA Final Permit Required Quarterly Progress Report, Period 11/1/96 - 1/31/97, Naval Station Roosevelt Roads, Ceiba, Puerto Rico	02/28/97	EPA comments submitted 3/7/97. Navy response to comments 4/8/97.
RCRA Final Permit Required Quarterly Progress Report, Period 2/1/97 - 4/30/97, Naval Station Roosevelt Roads, Ceiba, Puerto Rico	05/30/97	
RCRA Final Permit Required Quarterly Progress Report, Period 5/1/97 - 7/31/97, Naval Station Roosevelt Roads, Ceiba, Puerto Rico	09/11/97	
RCRA Final Permit Required Quarterly Progress Report, Period 8/1/97 - 10/31/97, Naval Station Roosevelt Roads, Ceiba, Puerto Rico	12/03/97	EPA comments submitted 2/11/96.
RCRA Final Permit Required Quarterly Progress Report, Period 11/1/97 - 1/31/98, Naval Station Roosevelt Roads, Ceiba, Puerto Rico	03/06/98	
RCRA Final Permit Required Quarterly Progress Report, Period 2/1/98 - 4/30/98, Naval Station Roosevelt Roads, Ceiba, Puerto Rico	06/05/98	
RCRA Final Permit Required Quarterly Progress Report, Period 5/1/98 - 7/31/98, Naval Station Roosevelt Roads, Ceiba, Puerto Rico	09/04/98	
RCRA Final Permit Required Quarterly Progress Report, Period 8/1/98 - 10/31/98, Naval Station Roosevelt Roads, Ceiba, Puerto Rico	12/04/98	
RCRA Final Permit Required Quarterly Progress Report, Period 11/1/98 - 1/30/99, Naval Station Roosevelt Roads, Ceiba, Puerto Rico	02/26/99	
RCRA Final Permit Required Quarterly Progress Report, Period 2/1/99 - 4/30/99, Naval Station Roosevelt Roads, Ceiba, Puerto Rico	05/28/99	
RCRA Final Permit Required Quarterly Progress Report, Period 5/1/99 - 7/31/99, Naval Station Roosevelt Roads, Ceiba, Puerto Rico	08/31/99	
RCRA Final Permit Required Quarterly Progress Report, Period 8/1/99 - 10/31/99, Naval Station Roosevelt Roads, Ceiba, Puerto Rico	11/30/99	
RCRA Final Permit Required Quarterly Progress Report, Period 11/1/99 - 1/31/00, Naval Station Roosevelt Roads, Ceiba, Puerto Rico	02/29/00	
RCRA Final Permit Required Quarterly Progress Report, Period 2/1/00 - 4/30/00, Naval Station Roosevelt Roads, Ceiba, Puerto Rico	05/31/00	

TABLE 2-4

**DOCUMENT STATUS/TRACKING  
SITE MANAGEMENT PLAN  
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO**

<b>RCRA QUARTERLY PROGRESS REPORTS WITH THE TWFF QUARTERLY SUMMARY REPORT AS AN ATTACHMENT</b>	<b>DATE SUBMITTED</b>	<b>COMMENTS</b>
RCRA Final Permit Required Quarterly Progress Report, Period 5/1/00 - 7/31/00, Tow Way Fuel Farm Summary Progress Report No. 14, Naval Station Roosevelt Roads, Ceiba, Puerto Rico	08/31/00	
RCRA Final Permit Required Quarterly Progress Report, Period 8/1/00 - 10/31/00, Tow Way Fuel Farm Summary Progress Report No. 15, Naval Station Roosevelt Roads, Ceiba, Puerto Rico	11/30/00	
RCRA Final Permit Required Quarterly Progress Report, Period 11/1/00 - 1/31/01, Tow Way Fuel Farm Summary Progress Report No. 16, Naval Station Roosevelt Roads, Ceiba, Puerto Rico	02/28/01	
RCRA Final Permit Required Quarterly Progress Report, Period 2/1/00 - 4/30/01, Tow Way Fuel Farm Summary Progress Report No. 17, Naval Station Roosevelt Roads, Ceiba, Puerto Rico	05/31/01	
RCRA Final Permit Required Quarterly Progress Report, Period 5/1/01 - 7/31/01, Tow Way Fuel Farm Summary Progress Report No. 18, Naval Station Roosevelt Roads, Ceiba, Puerto Rico	08/31/01	
RCRA Final Permit Required Quarterly Progress Report, Period 8/1/01 - 10/31/01, Tow Way Fuel Farm Summary Progress Report No. 19, Naval Station Roosevelt Roads, Ceiba, Puerto Rico	11/30/01	
RCRA Final Permit Required Quarterly Progress Report, Period 11/1/01 - 1/31/02, Tow Way Fuel Farm Summary Progress Report No. 20, Naval Station Roosevelt Roads, Ceiba, Puerto Rico	02/28/02	
RCRA Final Permit Required Quarterly Progress Report, Period 2/1/02 - 4/30/02, Tow Way Fuel Farm Summary Progress Report No. 21, Naval Station Roosevelt Roads, Ceiba, Puerto Rico	05/31/02	
RCRA Final Permit Required Quarterly Progress Report, Period 5/1/02 - 7/31/02, Tow Way Fuel Farm Summary Progress Report No. 22, Naval Station Roosevelt Roads, Ceiba, Puerto Rico	08/30/02	
RCRA Final Permit Required Quarterly Progress Report, Period 8/1/02 - 10/31/02, Tow Way Fuel Farm Summary Progress Report No. 23, Naval Station Roosevelt Roads, Ceiba, Puerto Rico	11/27/02	
RCRA Final Permit Required Quarterly Progress Report, Period 11/1/02 - 1/31/03, Tow Way Fuel Farm Summary Progress Report No. 24, Naval Station Roosevelt Roads, Ceiba, Puerto Rico	02/28/03	
RCRA Final Permit Required Quarterly Progress Report, Period 2/1/03 - 4/30/03, Tow Way Fuel Farm Summary Progress Report No. 25, Naval Station Roosevelt Roads, Ceiba, Puerto Rico	05/28/03	
RCRA Final Permit Required Quarterly Progress Report, Period 5/1/03 - 7/31/03, Tow Way Fuel Farm Summary Progress Report No. 26, Naval Station Roosevelt Roads, Ceiba, Puerto Rico	08/29/03	

TABLE 2-4

**DOCUMENT STATUS/TRACKING  
SITE MANAGEMENT PLAN  
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO**

<b>GUIDANCE DOCUMENTS</b>	<b>DATE SUBMITTED</b>	<b>COMMENTS</b>
Navy Policy for Conducting Ecological Risk Assessment	04/05/99	
<b>JOINT INTEREST GROUP MEETING MINUTES</b>	<b>DATE SUBMITTED</b>	<b>COMMENTS</b>
Joint Interest Group Meeting held on June 23 - 24, 1998 in Puerto Rico	08/04/98	
Joint Interest Group Meeting held on March 9 - 10, 1999 in Puerto Rico	04/14/99	
Joint Interest Group Meeting held on December 1 - 2, 1999 in Puerto Rico	12/01/99	
Joint Interest Group Meeting held on May 11 - 12, 2000 in Puerto Rico	08/09/00	
Joint Interest Group Meeting held on May 6, 2003 in New York City EPA Region II Offices	05/12/03	
<b>JOINT INTEREST GROUP CONFERENCE CALL MEETING MINUTES</b>	<b>DATE SUBMITTED</b>	<b>COMMENTS</b>
Joint Interest Group Conference Call held on August 4, 1998	08/11/98	
Joint Interest Group Conference Call held on September 8, 1998	09/24/98	
Joint Interest Group Conference Call held on October 7, 1998	10/12/98	
Joint Interest Group Conference Call held on November 4, 1998	11/13/98	
Joint Interest Group Conference Call held on December 8, 1998	12/29/98	
Joint Interest Group Conference Call held on January 7, 1999	01/12/99	
Joint Interest Group Conference Call held on April 13, 1999	04/14/99	
Joint Interest Group Conference Call held on February 2, 1999	04/14/99	
Joint Interest Group Conference Call held on May 12, 1999	05/13/99	
Joint Interest Group Conference Call held on July 6, 1999	07/09/99	
Joint Interest Group Conference Call held on October 5, 1999	10/18/99	
Joint Interest Group Conference Call held on January 11, 2000	01/28/00	
Joint Interest Group Conference Call held on February 1, 2000	02/25/00	
Joint Interest Group Conference Call held on March 7, 2000	03/17/00	
Joint Interest Group Conference Call held on September 19, 2000	09/28/00	
Joint Interest Group Conference Call held on October 16, 2000	10/25/00	
Joint Interest Group Conference Call held on November 8, 2000	11/20/00	
Joint Interest Group Conference Call held on March 19, 2001	04/18/01	
Joint Interest Group Conference Call held on June 12, 2003		

**TABLE 2-4**

**DOCUMENT STATUS/TRACKING  
SITE MANAGEMENT PLAN  
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO**

<b>SITE MANAGEMENT PLAN</b>	<b>DATE SUBMITTED</b>	<b>COMMENTS</b>
Site Management Plan, Naval Station Roosevelt Roads, Ceiba, Puerto Rico	03/01/99	
Site Management Plan, Naval Station Roosevelt Roads, Ceiba, Puerto Rico	09/28/01	
Site Management Plan, Naval Station Roosevelt Roads, Ceiba, Puerto Rico	10/31/01	
Site Management Plan, Naval Station Roosevelt Roads, Ceiba, Puerto Rico	11/30/01	
Site Management Plan, Naval Station Roosevelt Roads, Ceiba, Puerto Rico	01/04/02	
Site Management Plan, Naval Station Roosevelt Roads, Ceiba, Puerto Rico	01/31/02	
Site Management Plan, Naval Station Roosevelt Roads, Ceiba, Puerto Rico	02/28/02	
Site Management Plan, Naval Station Roosevelt Roads, Ceiba, Puerto Rico	03/29/02	
Site Management Plan, Naval Station Roosevelt Roads, Ceiba, Puerto Rico	4/30/02	
Site Management Plan, Naval Station Roosevelt Roads, Ceiba, Puerto Rico	05/31/02	
Site Management Plan, Naval Station Roosevelt Roads, Ceiba, Puerto Rico	06/28/02	
Site Management Plan, Naval Station Roosevelt Roads, Ceiba, Puerto Rico	07/31/02	
Site Management Plan, Naval Station Roosevelt Roads, Ceiba, Puerto Rico	08/08/03	

**TABLE 3-1**

**INTERIM CORRECTIVE MEASURES COST STATUS  
SITE MANGEMENT PLAN  
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO**

<b>SWMU</b>	<b>Description of ICM</b>	<b>Funded Amount (\$)</b>	<b>Expended Amount (\$)</b>	<b>Status</b>	<b>Comments</b>
19	RCRA Closure of a Pesticide Storage Building			Complete	RCRA closure approved by EPA.
11/45	PCB Contaminated Soils Removal - Building 38			Complete	Project close-out report approved by EPA.
10	PCB Contaminated Soils Removal - Substation 90			Complete	Project close-out report approved by EPA.
11/45	Cooling Water Tunnels and USTs Closure			Complete	Project close-out report approved by EPA.
7/8	Two Way Fuel Farm Free Project Recovery System	774,504	770,000	Ongoing	
	<b>Totals</b>	774,504	770,000		

**TABLE 3-2**

**CORRECTIVE MEASURES COST STATUS  
SITE MANAGEMENT PLAN  
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO**

<b>SWMU</b>	<b>Corrective Measure</b>	<b>Funded Amount (\$)</b>	<b>Expended Amount (\$)</b>	<b>Status</b>	<b>Comments</b>
1	Yet to be determined	380,000		Initiated	EPA approved CMS work plan.
2	Yet to be determined	380,000		Initiated	EPA approved CMS work plan.
6	No further action required	57,000		Completed	Submitted Final CMS Final Report.
7/8	Yet to be determined			Initiated	Task I CMS completed. CMS Final Report ongoing.
9	Yet to be determined	380,000		Initiated	EPA approved Final CMS Investigation Report.
10	No further action required	57,000		Initiated	Draft CMS Final Report submitted. No further action recommended in RCRA Part B permit renewal.
13	Excavation and off-site disposal/treatment	34,000		Completed	EPA approved Revised Final II CMS Final Report.
31/32	Asphalt cap over non-paved area	34,000		Completed	EPA approved Final CMS Final Report.
45	Yet to be determined	380,000		Initiated	EPA approved Revised Final II CMS work plan.
46	Excavation and off-site disposal	34,000		Completed	EPA approved Revised Final II CMS Final Report.
53	Yet to be determined			Initiated	Submitted Draft CMS Final Report.
54	Yet to be determined			Initiated	CMS Work Plan approved by EPA.
AOC B	No further action required	57,000		Completed	Submitted Final CMS Final Report.
AOC C	Excavation and off-site disposal	34,000		Completed	EPA approved Revised Final II CMS Final Report.
	<b>Totals</b>	471,000			

**Notes:**

\$380,000 is the total amount funded for SWMUs 1, 2, 45, and 9.

\$57,000 is the total amount funded for SWMUs 6/AOC B and 10.

\$34,000 is the total amount funded for the CMS for SWMUs 13, 46/AOC C, and 31/32.

**TABLE 3-3**

**CORRECTIVE MEASURES IMPLEMENTATION COST STATUS  
SITE MANAGEMENT PLAN  
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO**

<b>SWMU</b>	<b>Corrective Meaures Implementation</b>	<b>Funded Amount (\$)</b>	<b>Expended Amount (\$)</b>	<b>Status</b>	<b>Comments</b>
13	Removal of pesticide and total cPAH contaminated sediments	106,000		(1)	EPA approved 100% Final CMI Work Plan Design Package.
46/AOC C	Removal of pesticide and total cPAH contaminated sediments	151,000		(1)	EPA approved 100% Final CMI Work Plan Design Package.
31/32	Capping and isolating dioxin contaminated surface soils			(1)	EPA approved Final CMI Work Plan Design Package.
7/8	To be developed in CMS	226,000		(2)	SWMU is still in CMS stage.
9	Unknown			(3)	Status of SWMU 9 moving to CMI has yet to be determined.
	<b>Totals</b>	483,000			

- Notes:**
- (1) Awaiting public comment.
  - (2) Needs to be developed.
  - (3) Yet to be determined.

**TABLE 3-4**

**CURRENT AND FUTURE RAC PROJECTS COST STATUS  
SITE MANAGEMENT PLAN  
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO**

<b>Site</b>	<b>Description of RAC Project</b>	<b>Estimated Cost (\$)</b>	<b>Estimated Schedule (\$)</b>	<b>Status</b>	<b>Comments</b>
13	Removal of pesticide and total cPAH contaminated sediments	142,000		(1)	CMI needs to go out for public comment before implementation can occur.
46/AOC C	Removal of pesticide and total cPAH contaminated sediments	142,000		(1)	CMI needs to go out for public comment before implementation can occur.
31/32	Capping and isolating dioxin contaminated surface soils	79,000		(1)	CMI needs to go out for public comment before implementation can occur.
7/8	Phase separated hydrocarbon removal			Ongoing	Original free product recovery system off-line.
	<b>Totals</b>	221,000			

**Note:** (1) Awaiting public comment.

\$142,000 is the total estimated cost of the RAC project for SWMUs 13 and 46/AOC C.

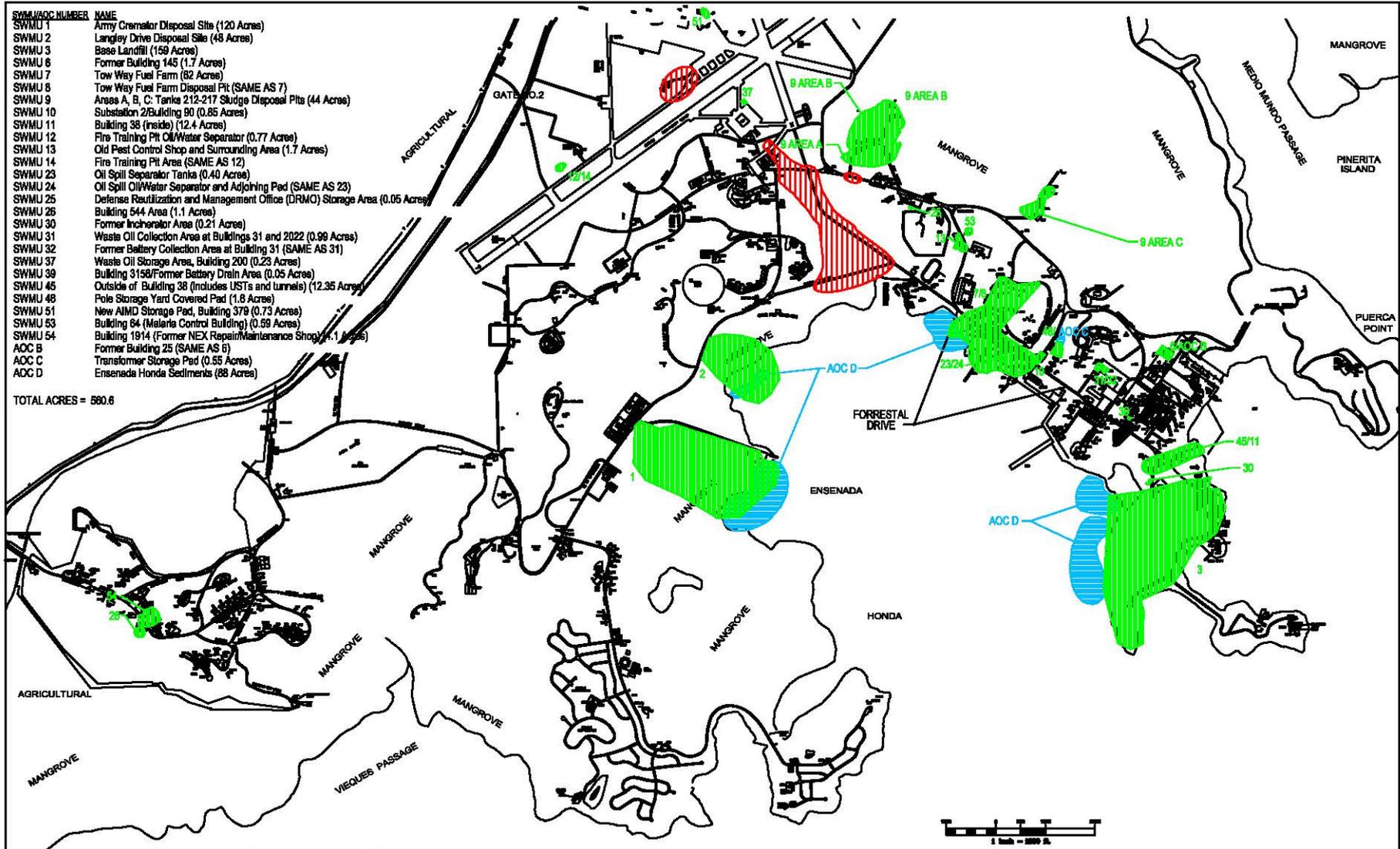
## **FIGURES**

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SWMU/AOC NUMBER	NAME
SWMU 1	Army Crematorium Disposal Site (120 Acres)
SWMU 2	Langley Drive Disposal Site (48 Acres)
SWMU 3	Base Landfill (158 Acres)
SWMU 6	Former Building 145 (1.7 Acres)
SWMU 7	Tow Way Fuel Farm (82 Acres)
SWMU 8	Tow Way Fuel Farm Disposal Pit (SAME AS 7)
SWMU 9	Areas A, B, C Tanks 212-217 Sludge Disposal Pits (44 Acres)
SWMU 10	Substation 2/Building 80 (0.85 Acres)
SWMU 11	Building 38 (inside) (12.4 Acres)
SWMU 12	Fire Training Pit Oil/Water Separator (0.77 Acres)
SWMU 13	Old Pest Control Shop and Surrounding Area (1.7 Acres)
SWMU 24	Fire Training Pit Area (SAME AS 12)
SWMU 23	Oil Spill Separator Tanks (0.40 Acres)
SWMU 25	Oil Spill Oil/Water Separator and Adjoining Pad (SAME AS 23)
SWMU 26	Defense Reutilization and Management Office (DRMO) Storage Area (0.05 Acres)
SWMU 28	Building 544 Area (1.1 Acres)
SWMU 30	Former Incinerator Area (0.21 Acres)
SWMU 31	Waste Oil Collection Area at Buildings 31 and 2022 (0.98 Acres)
SWMU 32	Former Battery Collection Area at Building 31 (SAME AS 31)
SWMU 37	Waste Oil Storage Area, Building 200 (0.23 Acres)
SWMU 39	Building 3150/Former Battery Drain Area (0.05 Acres)
SWMU 45	Outside of Building 38 (includes USTs and tunnels) (12.35 Acres)
SWMU 46	Pole Storage Yard Covered Pad (1.8 Acres)
SWMU 51	New AIMD Storage Pad, Building 379 (0.73 Acres)
SWMU 53	Building 84 (Malaria Control Building) (0.59 Acres)
SWMU 54	Building 1914 (Former NEX Repair/Maintenance Shop) (1.1 Acres)
AOC B	Former Building 25 (SAME AS 5)
AOC C	Transformer Storage Pad (0.55 Acres)
AOC D	Ensenada Honda Sediments (88 Acres)

TOTAL ACRES = 560.6



Legend
1 - SWMUs
AOC D - AOCs
11 - Natural Resources Damages

Color	Map
Green	SWMU
Blue	AOC
Red Hatched	Natural Resources Damages



NAVAL STATION ROOSEVELT ROADS  
CEIBA, PUERTO RICO

BAKER ENVIRONMENTAL, Inc.  
Coraopolis, Pennsylvania



FIGURE 2-1  
SOLID WASTE MANAGEMENT UNIT (SWMU)  
AND AREA OF CONCERN (AOC) LOCATIONS

SCALE 1" = 100'

DATE AUGUST 2008

FIGURE 4-1

NAVAL STATION ROOSEVELT ROADS PROJECT SCHEDULE

NAVAL STATION ROOSEVELT ROADS PROJECT SCHEDULE UPDATED 8/8/2003														
Site Description	Mar-03	Apr-03	May-03	Jun-03	Jul-03	Aug-03	Sep-03	Oct-03	Nov-03	Dec-03	Jan-04	Feb-04	Mar-04	Apr-04
<b>Operable Unit 1</b>														
SWMU 6 - Building 145	EPA Review of Final CMS Final Report submitted 6/21/01	EPA Review of Final CMS Final Report submitted 6/21/01	EPA Review of Final CMS Final Report submitted 6/21/01	EPA Review of Final CMS Final Report submitted 6/21/01	EPA Review of Final CMS Final Report submitted 6/21/01	EPA Review of Final CMS Final Report submitted 6/21/01								
SWMU 10 - Substation 90	EPA review of Draft CMS Final Report submitted 7/6/01	EPA review of Draft CMS Final Report submitted 7/6/01	EPA review of Draft CMS Final Report submitted 7/6/01	EPA review of Draft CMS Final Report submitted 7/6/01	EPA review of Draft CMS Final Report submitted 7/6/01	EPA review of Draft CMS Final Report submitted 7/6/01								
SWMU 13 - Old Pest Control Shop / Building 258	Prepare for public notice and comment period	Prepare for public notice and comment period	Prepare for public notice and comment period	Prepare for public notice and comment period	Prepare for public notice and comment period	Prepare for public notice and comment period								
SWMU 14 - Fire Training Pit Area			This site will be deferred until the site is no longer used.			This site will be deferred until the site is no longer used.			This site will be deferred until the site is no longer used.			This site will be deferred until the site is no longer used.		
SWMU 25 - DRMO Storage Yard	Further action at the DRMO yard has been deferred until permitted unit is closed.			Further action at the DRMO yard has been deferred until permitted unit is closed.				Further action at the DRMO yard has been deferred until permitted unit is closed.			Further action at the DRMO yard has been deferred until permitted unit is closed.			Further action at the DRMO yard has been deferred until permitted unit is closed.
SWMU 31 - Waste Oil Collection Area/Buildings 31 and 2022	Prepare for public notice and comment period	Prepare for public notice and comment period	Prepare for public notice and comment period	Prepare for public notice and comment period	Prepare for public notice and comment period	Prepare for public notice and comment period								
SWMU 32 - PWD Storage Yard/ Battery Collection Area/Building 31	Prepare for public notice and comment period	Prepare for public notice and comment period	Prepare for public notice and comment period	Prepare for public notice and comment period	Prepare for public notice and comment period	Prepare for public notice and comment period								
SWMU 46 - Pole Storage Yard Covered Pad	Prepare for public notice and comment period	Prepare for public notice and comment period	Prepare for public notice and comment period	Prepare for public notice and comment period	Prepare for public notice and comment period	Prepare for public notice and comment period								
AOC C - Transformer Storage Pads	Prepare for public notice and comment period	Prepare for public notice and comment period	Prepare for public notice and comment period	Prepare for public notice and comment period	Prepare for public notice and comment period	Prepare for public notice and comment period								
<b>Operable Unit 6</b>														
AOC B - Building 25 Area	EPA Review of Final CMS Final Report submitted 6/21/01	EPA Review of Final CMS Final Report submitted 6/21/01	EPA Review of Final CMS Final Report submitted 6/21/01	EPA Review of Final CMS Final Report submitted 6/21/01	EPA Review of Final CMS Final Report submitted 6/21/01	EPA Review of Final CMS Final Report submitted 6/21/01								
<b>Operable Unit 2</b>														
SWMU 7/8 - Tow Way Fuel Farm	3/13 EPA comments on Rev Draft Final CMS Task 1 Report. Prepare Final Task 1 CMS Report. Initiate Draft TCE Plume Delineation Work plan	4/22 Submit Final CMS Task 1 Report and responses to 3/13 EPA comments to EPA. Develop Draft TCE Plume Delineation Work Plan	5/23 Replacement pages for Final CMS Task 1 CMS submitted to EPA. EPA review of Final CMS Task 1 Report. 5/8 Draft TCE Plume Delineation Work Plan to EPA. EPA Review of Draft TCE Plume Delineation Work Plan	6/10 EPA approval of Final CMS Task 1 Report. 6/10 EPA comment on Draft TCE Plume Delineation Work Plan.	Prepare Draft CMS Final Report. Prepare Final TCE Plume Delineation Work Plan. 7/25 Final TCE Work Plan submitted to EPA.	Prepare Draft CMS Final Report. EPA Review of Final TCE Plume Delineation Work Plan.	Prepare Draft CMS Final Report. EPA review and approval of Final TCE Plume Delineation Work Plan.	Submit Draft CMS Final Report to EPA. EPA review of the Draft CMS Final Report. Field Investigation.	EPA review of the Draft CMS Final Report. Laboratory Analysis and Data Validation.	EPA review of the Draft CMS Final Report. Prepare Draft TCE Plume Source Delineation Report.	EPA review and comment on the Draft CMS Final Report. Prepare Final CMS Final Report. Prepare Draft TCE Plume Source Delineation Report.	Submit Final CMS Final Report to EPA. EPA review of the Final CMS Final Report. Submit Draft TCE Plume Source Delineation Report to EPA.	EPA approval of Final CMS Final Report. EPA Review of the Draft TCE Source Delineation Report to EPA.	Complete corrective measure. EPA Review and Comment on Draft TCE Source Delineation Report. Prepare Final TCE Plume Source Delineation Report.
SWMU 9 - Tanks 212-217	Prepare Draft Work Plan for Additional ECO Characterization.	4/25 Submit Draft Work Plan for additional ECO characterization. EPA review of Draft Work Plan	EPA Review of Draft Work Plan.	6/3 EPA approval of the Draft Work Plan.	Initiate Field Investigation	Field Investigation	Initiate Draft Report on Additional ECO Field Investigation.	Draft Report on Additional ECO Field Investigation.	Submit Draft Report on Additional ECO Field Investigation to EPA. EPA review of Draft Report on Add Eco Field Investigation.	EPA review of Draft Report on Additional ECO Field Investigation	EPA review and comment on the Draft Report on Additional ECO Field Investigation. Prepare Final Report.	Final Report on Additional ECO Field Investigation.	Submit Final Report on Additional ECO Field Investigation to EPA.	EPA approval on the Final Report. Prepare Draft CMS Task 1/Final Report.
<b>Operable Unit 3</b>														
SWMU 11- Old Power Plant/Building 38	3/18 Submit Draft Recharacterization Work Plan. EPA review of Draft Work Plan	EPA Review of Draft Work Plan.	EPA Review of Draft Work Plan.	6/13 EPA review and comment on the Draft Work Plan. Prepare Final Work Plan.	7/21 Final Recharacterization Work Plan submitted to EPA. EPA review of Final Work Plan	EPA review and Approval on the Final Work Plan.	Initiate Field Investigation	Field Investigation	Initiate Draft RFI Report on Recharacterization Field Investigation.	Submit Draft RFI Report on Recharacterization Field Investigation to EPA. EPA review of Draft RFI Report.	EPA review of Draft RFI Report.	EPA review and comment on the Draft RFI Report. Prepare Final RFI Report.	Final RFI Report.	Submit Final RFI Report.
SWMU 45 - PCB Spill Area/Old Power Plant		Address EPA Comments dated 10/4/01	5/22 - Submitted Response to EPA Comments Dated 10/4/01 and Addendum to the Draft SLERA.	6/10 EPA approval of Response to Comments and Addendum to the Draft SLERA.	Field Investigation	Laboratory Analysis	Data Validation. Figure 4-1.xls 8/8/2003	Initiate Revised Draft Screening Level ERA.	Develop Revised Draft Screening Level ERA.	Submit Revised Draft Screening Level ERA to EPA. EPA review of Revised Draft Screening Level ERA.	EPA review of Revised Draft Screening Level ERA.	EPA review and comment of Revised Draft Screening Level ERA.	Initiate Final Screening Level ERA.	Develop Final Screening Level ERA.
<b>Operable Unit 5</b>														
SWMU 1 - Former Army Cremator Disposal Site		Address EPA Comments dated 10/4/01	5/14 - Submitted Response to EPA Comments Dated 10/4/01 and Addendum to the Draft SLERA.	6/10 EPA approval of Response to Comments and Addendum to the Draft SLERA.	Field Investigation	Laboratory Analysis	Data Validation. Initiate Revised Draft Screening Level ERA.	Submit Revised Draft Screening Level ERA to EPA.	EPA review of Revised Draft Screening Level ERA.	EPA review and comment of Revised Draft Screening Level ERA.	Initiate Final Screening Level ERA.	Submit Final Screening Level ERA to EPA.	EPA review of Final Screening Level ERA.	EPA review and comment of Final Screening Level ERA.
SWMU 2 - Langley Drive Disposal Site		Address EPA Comments dated 10/4/01	5/14 - Submitted Response to EPA Comments Dated 10/4/01 and Addendum to the Draft SLERA.		Field Investigation	Laboratory Analysis	Data Validation. Initiate Revised Draft Screening Level ERA.	Submit Revised Draft Screening Level ERA to EPA.	EPA review of Revised Draft Screening Level ERA.	EPA review and comment of Revised Draft Screening Level ERA.	Initiate Final Screening Level ERA.	Submit Final Screening Level ERA to EPA.	EPA review of Final Screening Level ERA.	EPA review and comment of Final Screening Level ERA.
<b>Operable Unit 4</b>														
SWMU 3 - Base Landfill	3/18 Submit Revised Final RFI Report to EPA. EPA review of Revised Final RFI Report.	EPA review of Revised Final RFI Report.	EPA review of Revised Final RFI Report.	EPA review of Revised Final RFI Report.	EPA review of Revised Final RFI Report.	EPA review and approval of Revised Final RFI Report.								
<b>New SWMUs</b>														
SWMU 53 - Malaria Control Building	3/7 Submit Final CMS Work Plan to EPA. 3/23 Initiate Field Invest. EPA review Final CMS Work Plan.	Lab Analysis. EPA review Final CMS Work Plan.	Data Validation. Initiate Draft CMS Final Report w/ Draft CMS Investigation Report. 6/3 EPA approval on Final CMS Work Plan.	Prepare Draft CMS Final Report w/ Draft CMS Investigation Report to EPA. EPA review Draft CMS Final Report w/ Draft CMS Investigation Report.	7/25 - Submit Draft CMS Final Report w/ Draft CMS Investigation Report to EPA. EPA review Draft CMS Final Report w/ Draft CMS Investigation Report.	EPA review Draft CMS Final Report w/ Draft CMS Investigation Report.	EPA comment on Draft CMS Final Report w/ Draft CMS Investigation Report. Initiate Final CMS Final Report w/ Final CMS Investigation Report.	Submit Final CMS Final Report w/ Final CMS Investigation Report to EPA. EPA review Final CMS Final Report w/ Final CMS Investigation Report.	EPA review Final CMS Final Report w/ Final CMS Investigation Report.	EPA review and approval on Final CMS Final Report w/ Final CMS Investigation Report.				
SWMU 54 - Former NEX Repair/Maintenance Shop	3/7 Submit Final CMS Work Plan to EPA. EPA review Final CMS Work Plan.	EPA review Final CMS Work Plan.	EPA review Final CMS Work Plan.	6/3 EPA approval on Final CMS Work Plan.								Initiate Draft CMS Final Report.	Prepare Draft CMS Final Report.	Submit Draft CMS Final Report to EPA. EPA review Draft CMS Final Report.
<b>Tow Way Interim Corrective Measure</b>														
Quarterly Progress Reports			5/28 Quarterly Report # 25 submitted for the period 2/1/03 to 4/30/03				Quarterly Report # 26 to be submitted for the period 5/1/03 to 7/31/03			Quarterly Report # 27 to be submitted for the period 8/1/03 to 10/31/03			Quarterly Report # 28 to be submitted for the period 11/1/03 to 1/31/04	
RCRA Permit Requirements Quarterly Progress Reports			5/28 Quarterly Report submitted for the period 5/1/02 to 7/31/02				Quarterly Report to be submitted for the period 5/1/02 to 7/31/02			Quarterly Report to be submitted for the period 5/1/02 to 7/31/02			Quarterly Report to be submitted for the period 5/1/02 to 7/31/02	
<b>RCRA Miscellaneous</b>														
Site Management Plan														

Notes:  
 Pink Text denotes EPA Action Items  
 Blue Text denotes EPA Review  
 Red Text denotes Navy submittal to EPA  
 Green Text denotes Navy Work

Site Recommended for No Further Action		
SWMU 6	SWMU 24	SWMU 39
SWMU 10	SWMU 26	SWMU 51
SWMU 12	SWMU 30	AOC B
SWMU 23	SWMU 37	AOC D