UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY

IN THE MATTER OF: United States **The Department of the Navy,** Naval Activity Puerto Rico, formerly Naval Station Roosevelt Roads Puerto Rico, RESPONDENT, Proceeding under Section 7003 of the Solid Waste Disposal Act, as amended 42 U.S.C. Section 6973.	EPA DOCKET NO. RCRA-02-2007-7301

RCRA § 7003 ADMINISTRATIVE ORDER ON CONSENT

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I. INTRODUCTION

1. This Administrative Order on Consent (Consent Order) is entered into voluntarily by the United States Environmental Protection Agency (EPA) and Respondent, The United States Department of the Navy. The Order is intended to set out the Navy's corrective action obligations under the Resource Conservation and Recovery Act ("RCRA") and replaces the 1994 RCRA permit as the document memorializing these obligations concerning the Naval Activity Puerto Rico (formerly Naval Station Roosevelt Roads) base.

2. This Consent Order provides for the performance by Respondent of the following: implementation of RCRA Facility Investigations (RFIs) at certain units, implementation of Interim Measures at certain units, completion of Corrective Measures Studies (CMSs) at certain units, submission of work plans to complete CMSs to determine the final remedy for certain units, submission of Corrective Measures Implementation (CMI) plans to implement the selected final remedy(ies), completion of public notice and comment on any CMI plans (and RFI and CMS as appropriate), implementation of those CMI Plans as modified based on public comments, submission to EPA of acceptable Closure Plans for SWMU #3 in lieu of CMS and/or CMI plans for that unit, and documentation that acceptable institutional controls are in effect to prevent future inappropriate usage of portions of the Facility and/or the groundwater in certain portions of the Facility. The Respondent had previously been implementing this work at certain of the units under its RCRA permit issued in 1994. This Consent Order also requires Respondent to perform any Additional Work that may be required by Section VIII Paragraph 22 of this Consent Order (Notification and Additional Work Requirements for Newly-discovered Releases) and/or Section IX (EPA Approvals and Additional Work). The Navy's obligations are, however, subject to the provisions of Section X which allow for the transfer of work responsibility to third parties.

3. In entering into this Consent Order, the mutual objectives of EPA and Respondent are to identify, investigate, remedy, and/or prevent the potential endangerment to human health and/or the environment from activities involving "solid waste" and "hazardous waste" and to ensure that the Work ordered by EPA be designed and implemented to protect human health and the environment. These activities are outlined below in Section VIII (Work To Be Performed). Respondent shall fund and perform the Work in accordance with plans, standards, specifications and schedules set forth in this Consent Order or developed by Respondent and approved by EPA pursuant to this Consent Order.

4. EPA has previously notified the Commonwealth of Puerto Rico of this action pursuant to Section 7003(a) of RCRA, 42 U.S.C. § 6973(a).

II. JURISDICTION

5. This Consent Order is issued under the authority vested in the Administrator of EPA by Section 7003 of the Resource Conservation and Recovery Act ("RCRA"), 42 U.S.C. § 6973, as further defined below, which authority has been delegated to the Regional Administrator of EPA Region 2.

6. Respondent agrees to undertake and complete all actions required by the terms and conditions of this Consent Order. In any action by EPA to enforce the terms of this Consent Order, Respondent consents to and agrees not to contest the authority or jurisdiction of the EPA to issue or enforce this Consent Order, and agrees not to contest the validity of this Consent Order or its terms or conditions.

III. PARTIES BOUND

7. This Consent Order, and the responsibilities and obligations it imposes, shall apply to and bind Respondent and, in their official capacity, Respondent's employees, agents, successors and assigns.

8. Regardless of Respondent's employ of, or contractual agreement with, any entity, Respondent remains ultimately liable for failure to carry out, or comply with, any term or condition imposed by this Consent Order. It shall not be a defense to any violation of this Consent Order that the supervisory personnel, contractor, laboratory or consultant committing the violation was not informed of the requirements of this Consent Order

9. All contractual agreements entered into by Respondent aimed at satisfying its responsibilities or obligations under this Consent Order shall strictly comply with the terms and conditions of this Consent Order. In addition, Respondent shall, within one week of the effective date of this Consent Order and immediately, upon hiring, provide a copy of this Consent Order, and any relevant attachments, to all Respondent project management personnel and prime contractors, retained to conduct, monitor or perform any work pursuant to this Consent Order. All Respondent personnel and prime contractors shall perform such work in accordance with the requirements of this Consent Order.

10. Respondent shall give notice, and a copy, of this Consent Order to any successor in interest prior to any transfer of ownership or operation of the Facility (as defined in Section IV below) and shall notify EPA's designated contact ninety (90) days prior to any such transfer. Nothing in this Consent Order shall be read to waive any requirements of the Community Environmental Response Facilitation Act, Public Law 102-426.

11. No change in the Navy's organizational form or in the ownership of the "Facility" (as defined in Section IV below) shall in any way alter or alleviate Navy's responsibility and obligation to carry out all the terms and conditions of this Consent Order. However, the Navy and EPA expect that the Navy will sell and/or otherwise convey various parcels or segments of the Facility to various third parties at which time EPA expects to issue a separate order to such third parties requiring the performance of any remaining corrective action tasks related to the transferred parcel and to suspend the tasks to be performed under this Consent Order to reflect such changes. This process is further detailed in Section X, below.

IV. DEFINITIONS

12. Unless otherwise expressly provided herein, terms used in this Consent Order that are defined in the RCRA statute shall have the meaning assigned to them in that statute. Whenever the terms listed below are used in this Consent Order the following definitions apply:

"AOC" shall mean Area of Concern, i.e., an area being addressed pursuant to Section 3005 © of RCRA, 42 U.S.C. 6925© (Section 212 of HSWA), and its corresponding regulations published in 40 C.F.R. § 270.32 (b)(2), the "Omnibus Provisions."

"CERCLA" shall mean the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 U.S.C. §§ 9601, *et seq*.

"Day" shall mean a calendar day unless expressly stated otherwise.

"Effective Date" shall be the date on which EPA signs this Consent Order following the public comment period which is held pursuant to Section XXVIII (Public Comment on this Consent Order).

"EQB" shall mean the Environmental Quality Board of the Commonwealth of Puerto Rico.

"Facility," unless otherwise indicated, shall mean the entire Naval Activity Puerto Rico (formerly Naval Station Roosevelt Roads) base which has been operated by the United States Department of the Navy and which is approximately 8,600 acres on the east Coast of Puerto Rico in the municipality of Ceiba, and two adjacent, offshore islands (Pineros and Cabeza de Perro). A fuller description of the Facility appears in Section V.6, below.

"Navy" shall mean the United States Department of the Navy.

"RCRA" shall mean the Solid Waste Disposal Act, as amended by various statutes including the Resource Conservation and Recovery Act, 42 U.S.C. § 6901, *et seq.*

"Respondent" shall mean the United States Department of the Navy ("Navy").

"Third Party" shall mean one or more parties, and their successors and assigns, that are not parties to this Order, and may include prospective purchasers of one or more parcels of the Facility and/or other parties that may otherwise acquire one or more parcels of the Facility.

"SOW" shall mean Scope of Work that is attached to this Consent Order.

"SWMU" shall mean solid waste management unit as that term is applied in 40 CFR § 264.101.

"Work" shall mean all the activities and requirements specified in Section VIII (Work To Be Performed) of this Consent Order but does not include other obligations imposed by other paragraphs of this Consent Order.

V. FINDINGS OF FACT

13. 1. Navy is an Operator of a Hazardous Waste Storage or Disposal Facility:

Navy has been a "generator" of "hazardous waste" and the "operator" of a hazardous waste "storage" "facility," which constituted an "existing Hazardous Waste Management facility" (HWMF), as those terms are defined at 40 C.F.R. § 260.10. The Navy facility that is the subject of this Consent Order is located mostly on the east end of the island of Puerto Rico near the town of Ceiba, but also includes two adjacent, offshore islands (Pineros and Cabeza de Perro) (together, hereinafter referred to as "Naval Activity Puerto Rico", "the Facility," or "Navy's Facility").

2. Navy is a "Person":

Navy is a "person" as defined by Section 1004(15) of the Act, 42 U.S.C. § 6903(15). Pursuant to Section 6001 of the Act, 42 U.S.C. § 6961, Navy is subject to all federal, state, interstate, and local requirements, both substantive and procedural, to the same extent as any "person," as that term is defined in Section 1004(15) of RCRA, 42 U.S.C. § 6903(15), is subject to such requirements.

3. Notification and Interim Status:

Pursuant to Section 3010 of the Act, 42 U.S.C. § 6930, in 1980, Navy notified EPA of its hazardous waste activity, as that term is defined by Section 1004(5) of the Act, 42 U.S.C. § 6903(5) and requested the issuance of an EPA Hazardous Waste Identification number. In this notification, Navy identified itself as a generator of hazardous waste and an owner and operator of a hazardous waste treatment, storage, and disposal facility; and Navy established itself as the owner of the Facility as the term "owner" is used under RCRA.

The Navy filed its original Part A of the Hazardous Waste Permit Application on November 7, 1980, and pursuant to 40 CFR § 270.10(e) constituted an "existing Hazardous Waste Management facility" (HWMF). Pursuant to 40 CFR § 270.70 the Navy was subject to the requirement to have a RCRA permit, and pursuant to 40 CFR § 270.70 through 40 CFR § 270.73 has operated since November 7, 1980 as an HWMF.

4. Hazardous Waste Permit Application:

The Navy revised its Part As on April 26, 1988, January 31, 1992, June 10, 1999, June 1, 2001, July 24, 2001, October 3, 2003, and March 30, 2004. The July 24, 2001 Part A, which is a recent Part A that has information on the full range of wastes formerly managed at the Facility, identifies the hazardous waste activity by process code S01, storage, and indicates the presence of 6 such units, with a process design capacity to store 18,645 gallons of hazardous waste. The July 24, 2001 Part A indicates that the following hazardous wastes (pursuant to 40 CFR §§ 261.23 and/or 261.24 for "D" wastes and 261.31 for "F" wastes), among others, were authorized to be stored at the Facility:

D001 -a solid waste exhibiting the characteristic of ignitability.
D002 -a solid waste exhibiting the characteristic of corrosivity.
D006 -a solid waste exhibiting the toxicity characteristic for cadmium.
D007 -a solid waste exhibiting the toxicity characteristic for chromium.
D008 -a solid waste exhibiting the toxicity characteristic for lead.
D009 -a solid waste exhibiting the toxicity characteristic for mercury.
D011 -a solid waste exhibiting the toxicity characteristic for silver.
D018 -a solid waste exhibiting the toxicity characteristic for benzene.
D027 -a solid waste exhibiting the toxicity characteristic for 1, 4-dichlorobenzene.
D035 -a solid waste exhibiting the toxicity characteristic for methyl ethyl ketone.
F001- spent halogenated solvents used in degreasing.
F002- spent halogenated solvents and still bottoms from the recovery of such spent solvents.
F003- spent non-halogenated solvents and still bottoms from the recovery of such spent solvents.
F005- spent non-halogenated solvents and still bottoms from the recovery of such spent solvents.

5. Hazardous Waste Permit

The Navy submitted the Part B of the Hazardous Waste Permit Application on April 26, 1988. The Part B was modified by subsequent amendments dated December 1, 1988; June 15, 1990; October 29, 1991 and January 1, 1992 (hereafter referred to as the Application). Based on the Application, a RCRA permit was issued by EPA and became effective on November 28, 1994. The RCRA Permit authorized continued storage of hazardous waste in containers at designated hazardous waste storage units, all located inside the Defense Reutilization and Marketing Organization (DRMO) compound at the Facility. The RCRA Permit also imposed corrective action investigation and other requirements at solid waste management units (SWMUs) and areas of concern (AOCs) throughout the Facility, where releases of solid and/or hazardous waste and hazardous constituents were considered to have possibly occurred. On June 10, 1999 the Navy submitted a Part B application to renew its RCRA Permit. The renewal application was amended

on May 8, 2000, June 1, 2001, July 3 and July 24, 2001, November 8, 2001, March 27, 2002, May 22, 2003, October 6, 2003, March 30, 2004 and Sept. 20, 2004. Pursuant to 40 CFR § 270.51, the Navy's RCRA permit was administratively extended based on the submission of its Part B renewal application.

On February 3, 2004, the Navy submitted a letter to EPA indicating that it planned to cease using its six permitted hazardous waste container storage units (HWCSUs), and to close them pursuant to the requirements of the RCRA permit. The letter indicated that future hazardous waste generated at the Facility will be stored in an alternative "less than 90 day" storage unit, which would not require a RCRA permit. The Navy subsequently has indicated that the six HWCSUs have all been emptied of hazardous waste, and are being closed pursuant to the requirements of the closure plan in the 1994 RCRA permit.

6. Facility Description:

The Facility, formerly Naval Station Roosevelt Roads, is located on the east coast of Puerto Rico in the municipality of Ceiba, approximately 33 miles southeast of San Juan. The nearest major town is Fajardo, which is 10 miles north of the station. The Facility occupies approximately 8,600 acres and, except for two adjacent, unpopulated offshore islands (Pineros and Cabeza de Perro) off the northeast coast of the Facility, is bordered on all sides but the west by the marine waters of the Atlantic Ocean, Caribbean Sea, Vieques Passage. According to information supplied by the Navy, approximately 2,900 acres of the Facility are designated wetlands. The Facility was used as a military base from 1940 until March 31, 2004. The Facility includes a port facility and a major airfield complex. According to information available to EPA, the Facility contains small arms ranges, but no bombing ranges, and no known waste munition open burning/open detonation areas (OB/OD), except for three possible abandoned areas at the peninsula on Punta Medio Mundo where the currently active small arms range is located. Groundwater has not been used as a drinking water or potable water source at the Facility. For over 30 years, the Facility has obtained drinking and potable water from a water treatment plant that receives raw water from the Rio Blanco.

The Facility ceased operation as an active Naval Station on March 31, 2004, at which point it was designated Naval Activity Puerto Rico. The Navy currently retains jurisdiction, custody and control of the Facility and maintains the Facility in preparation for sale and/or transfer of the property, which is currently targeted to begin in 2006.

7. Solid Waste Management Units and Areas of Concern at the Facility

A. Solid Waste Management Units (SWMUs): Pursuant to Section 3004(u) of RCRA, 42 U.S.C.§ 6924(u) (Section 206 of HSWA), and its corresponding regulations published in 40 C.F.R.§ 264.101, the following SWMUs have been identified at the Facility.

1) A total of fifty two (52) SWMUs were identified in the 1994 RCRA

permit issued to the Navy, based on the RCRA Facility Assessment (RFA), dated November 1988, supplemented by a June 1993 follow-up visual site inspection (VSI) discussed below. The RFA for Naval Station Roosevelt Roads included a Preliminary Assessment (PA) (i.e., a review of available information available to EPA in its own files and those made available by the Navy), and a VSI. The VSI was conducted in August, 1988. The follow-up VSI inspection was conducted in June, 1993 to update the data gathered during the 1988 VSI. Based on the PA, VSI, and follow-up VSI, SWMUs were characterized as to their release potential and evaluated as to which media could be affected.

2) A total of twenty five (25) additional SWMUs have been identified subsequent to issuance of the 1994 RCRA permit. Two of the new SWMUs (#53 and #54) were first identified in the May 31, 2000 "RCRA Quarterly Progress Report" submitted to EPA by the Navy. A third new SWMU (#55) was previously being addressed in conjunction with the releases from SWMUs #7 & #8 (Tow Way Fuel Farm); however, it was identified as a separate SWMU in EPA's letter of February 24, 2004. In addition, 22 SWMUs have been identified based on the *"July 2005 ECP Report Environmental Condition of Property Report"* (the July 2005 ECP Report), which was developed by the Navy.

3). Thus, a total of seventy seven (77) SWMUs have been identified at the Facility. They are listed below, and are described more fully in the RFA and July 2005 ECP Report, discussed above. The defined SWMUs at the Facility are:

SWMU 1 - former Army Cremator disposal site

SWMU 2 - former Langley Drive disposal site

SWMU 3 - the Facility's non-hazardous landfill

SWMU 4 - oil/water separator at Building 860

SWMU 5 - miscellaneous metal dumpsters

SWMU 6 - Building 145 - uncontrolled waste paint storage area

SWMUs 7/8 - Tow Way Fuel Farm free product plumes and sludge disposal pits

SWMU 9 - Tanks 212 through tank 217 sludge disposal pits

SWMU 10 - Transformer Substation 2

SWMU 11 - interior areas of Building 38 (Old Power Plant)

SWMU 12 - oil/water separator at Fire Training Area

SWMU 13 - Building 258 - former Pest Control Area

SWMU 14 - Fire Training Pit at Crash Crew Area

SWMU 15 - former hospital incinerator

SWMU 16 - Building 1666 - waste explosive storage building

SWMU 17 - Building 1973 - hazardous waste container storage area

SWMU 18 - Building 2009 - hazardous waste container storage area

SWMU 19 - Building 121 - closed pesticide storage area

SWMU 20 - Building 860 waste oil storage area

SWMU 21 - floating oil spill clean-up "donuts"

SWMU 22 - Ship Waste Offload Barges

SWMU 23 - "first stage" oil/water separators at Fuel Pier

SWMU 24 - "second stage" oil/water separators at Fuel Pier

SWMU 25 - Defense Reuse and Marketing Organization (DRMO) storage yard

SWMU 26 - uncontrolled storage area at Building 544

SWMU 27 - Capehart Sewage Treatment Plant

SWMU 28 - Bundy Sewage Treatment Plant

SWMU 29 - Industrial Area wastewater treatment plant

SWMU 30 - former waste oil incinerator

SWMU 31 - uncontrolled storage are near Building 31 and 2022

SWMU 32 - discarded battery storage area at Building 31

SWMU 33 - waste storage area at Building 379

SWMU 34 - waste oil and fuels storage area at Airfield

SWMU 35 - oil/water separator at Building 396

SWMU 36 - oil/water separator at Berthing Pier

SWMU 37 - waste oil and fuels storage area at hanger 200 at airfield

SWMU 38 - sanitary and storm water sewer systems

SWMU 39 - Building 3158 battery fluid drainage area

SWMU 40 - waste oil accumulation tank at Alpha Company Maintenance Yard

SWMU 41 - Building 3152 pesticide storage area

SWMU 42 - water purification plant lagoons

SWMU 43 - Building 860 concrete storm water drain

SWMU 44 - Aerial Target Yard storm water drainage ditch

SWMU 45 - exterior areas of Old Power Plant(Building 38)

SWMU 46 - transformer storage pad at Public Works Department

SWMU 47 - miscellaneous “satellite” disposal areas

SWMU 48 - waste oil storage rack near building 3102

SWMU 49 - waste oil accumulation tank near building 3188

SWMU 50 - uncontrolled storage area near building 3166

SWMU 51 - waste storage pad at Building 379

SWMU 52 - waste storage pad at Building 3158

SWMU 53 - Building 64 - former malaria control shop

SWMU 54 - Building 1914 - former automobile repair shop

SWMU 55 - Trichloroethene (TCE) Groundwater Plume at Tow Way Fuel Farm.

SWMU 56 (a/k/a ECP 2)- Hanger 200 Apron

SWMU 57 (a/k/a ECP 3) - Facility No. 278 POL Drum Storage Area

SWMU 58 (a/k/a ECP 4) - Rifle Range at Punta Puerca

SWMU 59 (a/k/a ECP 5) - Former Vehicle Maintenance and Refueling Area

SWMU 60 (a/k/a ECP 6) - Former Landfill at the Marina

SWMU 61 (a/k/a ECP 7) - Former Bundy Area Maintenance Facilities

SWMU 62 (a/k/a ECP 8) - Former Bundy Disposal Area

SWMU 63 (a/k/a ECP 9) - Former Pistol Range at BEQ

SWMU 64 (a/k/a ECP 10) - Former Skeet Range at Ofstie Field

SWMU 65 (a/k/a ECP 11) - Former UST No. 208

SWMU 66 (a/k/a ECP 12) - Former UST No. 289

SWMU 67(a/k/a ECP 13) - Former Gas Station

SWMU 68 (a/k/a ECP 14) - Former Southern Fire Training Area

SWMU 69 (a/k/a ECP 15) - Aircraft Parking Area

SWMU 70 (a/k/a ECP 16) - Disposal Area Northwest of Landfill

SWMU 71 (a/k/a ECP 17) - Quarry Disposal Site

SWMU 72 (a/k/a ECP 18) - Building 31 -Public Works Dept.

SWMU 73 (a/k/a ECP 19) - DRMO Scrap Metal Recycling Yard

SWMU 74 (a/k/a ECP 20) - Fuel Pipelines and Hydrant Pits

SWMU 75 (a/k/a ECP 21) - Building 803

SWMU 76 (a/k/a ECP 22) - Building 2300

SWMU 77 (a/k/a ECP 1) - small arms range and possible former open burning/open detonation (OB/OD) areas located on peninsula on Punta Medio Mundo

B. Areas of Concern (AOC): Pursuant to Section 3005 © of RCRA, 42 U.S.C. 6925© (Section 212 of HSWA), and its corresponding regulations published in 40 C.F.R. § 270.32 (b)(2), the Director of the Division of Environmental Planning and Protection ("the Director") may impose other terms and conditions in a RCRA permit as the Director determines necessary to protect human health and the environment. Under that authority, AOCs requiring corrective action work may be identified. The AOCs that have been identified at the Facility are listed below and described more fully in the RFA and July 2005 ECP Report discussed above.

AOC A - Torpedo Shop
AOC B - uncontrolled waste storage area at former Building 25
AOC C - transformer storage pads near building 2042
AOC D - Ensenada Honda sediments
AOC E (a/k/a ECP 23) - offshore islands Pineros and Cabeza de Perro
AOC F - Monitored Natural Attenuation Sites 124, 731, 734, 2842B, 1738, and 520 [1], and 735 and 1995[2].

C. Determination Of Corrective Action Complete

1) Corrective Action Complete determinations are made pursuant to the February 13, 2003 EPA guidance document *"Guidance on Completion of Corrective Action Activities at RCRA Facilities"*, notice of which was published in the Federal Register Volume 68, No 37, February 25, 2003. Two types of Completion Determinations are recognized:

[1] As described in the December 2003 "Year 3 Summary Report for Monitored Natural Attenuation Sites 124, 731, 734, 2842B, 1738, and 520" prepared for the Navy by CH2MHILL.

[2] As indicated in the April 2004 "Year 2003 Summary Report and Groundwater Test Results for UST Sites 735 and 1995" prepared for Naval Activity Puerto Rico by BoksoMoni Environmental, under contract with Cape Environmental.

a) Corrective Action Complete without Controls, and
b) Corrective Action Complete with Controls.

2) A determination of Corrective Action Complete with Controls does not preclude the Director from requiring the Respondent to perform continued or periodic monitoring of air, soil, groundwater, surface water or subsurface gas, if necessary to protect human health and the environment, when site-specific circumstances indicate that release(s) of hazardous waste or hazardous constituents are likely to occur from a SWMU or AOC at the Facility.

3) A determination of Corrective Action Complete without Controls, or with Controls, does not preclude the Director from requiring the Respondent to perform further investigations, studies, or corrective measures at a later date after a unit or units constituting all or part of a SWMU or AOC is taken out of service and/or if new information or subsequent analysis indicates a release or likelihood of a release from a SWMU or AOC at the Facility that is likely to pose a threat to human health or the environment.

4) Subject to completion of public notice and possible changes in response to public comment, Corrective Action Complete without Controls determinations are approved for the following 5 SWMUs and 2 AOCs:

SWMUs #6,# 12, #24, #25, #26, and AOC B and AOC D. The Corrective Action Complete without Controls determination for SWMU # 25 (DRMO Storage Yard) is contingent on the Respondent completing acceptable closure of all hazardous waste container storage units located inside the DRMO compound, as specified in the Navy's 1994 RCRA permit, 40 CFR § 264.178.

5) An additional twenty one[3] (21) SWMUs had no further actions required under the November 1994 RCRA permit. The 21 SWMUs which had no further action determinations in the 1994 RCRA permit include the following SWMUs: 4, 5, 15, 17, 20, 21, 22, 33, 34, 35, 36, 38, 40, 41, 43, 44, 47, 48, 49, 50, and 52. These are also now

[3] Several SWMUs which had no further actions required under the November 1994 RCRA permit have been determined to now warrant Phase I RFIs, as the Respondent is closing the NAPR facility and plans to sell or transfer all lands to other, mostly non-federal entities. This includes: SWMU 16 (Building 1666 - waste explosive storage building), SWMU 42 (water purification plant lagoons), and AOC A (Torpedo Shop).

considered to have Corrective Action Completed without Controls determinations. However, this determination is subject to Paragraph C.3., above. In addition, this determination for SWMU 38 (sanitary and storm water sewer systems) is contingent on Respondent fully addressing any releases from SWMUs 4, 12, 13, and 14 that have impacted the sanitary and/or storm water sewer systems at the facility, and/or releases from any other SWMU at the facility that has impacted the sanitary and/or storm water sewer systems at the facility.

6) SWMU 19 (pesticide storage area at Building 121) has been clean closed pursuant to 40 CFR Part 265 Subpart G and requirements of the 1994 RCRA Permit. Therefore, SWMU 19 is considered to have achieved the equivalent of a Corrective Action Completed without Controls determination.

7) Subject to completion of public notice and possible changes in response to public comment, Corrective Action Complete with Controls determinations are approved for the following 6 SWMUs: #10, #23, #30, #37, #39, and #51.

a) The Corrective Action Complete with Controls determination for the above SWMUs would be contingent on a demonstration to EPA's satisfaction that acceptable deed restrictions or other institutional and/or engineering controls have been implemented to preclude unacceptable future usages of the lands and/or groundwater impacted by releases from these SWMUs. This demonstration would have to include such detailed information on the restrictions and controls as may be required by EPA to allow EPA to evaluate the adequacy of these restrictions and controls.

8) Based on the July 15, 2005 *ECP Report* determination that six (6) ECP sites have not been impacted by past and present operations at the Facility (i.e., the Navy has found no evidence of a release relating to these SWMUs), EPA is proposing Corrective Action Complete without Controls determinations for the following SWMUs/ECP sites:

SWMU 58 (a/k/a ECP 4) - Rifle Range at Punta Puerca

SWMU 63 (a/k/a ECP 9) - Former Pistol Range at BEQ

SWMU 64 (a/k/a ECP 10) - Former Skeet Range at Ofstie Field

SWMU 65 (a/k/a ECP 11) - Former UST No. 208

SWMU 66 (a/k/a ECP 12) - Former UST No. 289

SWMU 72 (a/k/a ECP 18) - Building 31 -Public Works Dept.

9) Public notice and comment on these proposed Corrective Action Complete determinations is being implemented as part of the public notice and comment on this Consent Order.

8. Documentation of Release:

A. Extensive environmental sampling has occurred at the Facility, and numerous releases of hazardous waste and/or hazardous constituents to the environment have been documented. Details of the past waste management activities and the evidence for releases at those SWMUs and AOCs where releases have been documented are described in Attachment I to this Consent Order.

B. Based on the July 15, 2005 *Phase I/II Environmental Conditions of Property Report* the following 18 ECP sites, which are now identified as SWMUs or AOCs, have documented releases of solid and/or hazardous waste and hazardous constituents:

SWMU 56 (a/k/a ECP 2)- Hanger 200 Apron

SWMU 57 (a/k/a ECP 3) - Facility No. 278 POL Drum Storage Area

SWMU 59 (a/k/a ECP 5) - Former Vehicle Maintenance and Refueling Area

SWMU 60 (a/k/a ECP 6) - Former Landfill at the Marina

SWMU 61 (a/k/a ECP 7) - Former Bundy Area Maintenance Facilities

SWMU 62 (a/k/a ECP 8) - Former Bundy Disposal Area

SWMU 67(a/k/a ECP 13) - Former Gas Station

SWMU 68 (a/k/a ECP 14) - Former Southern Fire Training Area

SWMU 69 (a/k/a ECP 15) - Aircraft Parking Area

SWMU 70 (a/k/a ECP 16) - Disposal Area Northwest of Landfill

SWMU 71 (a/k/a ECP 17) - Quarry Disposal Site

SWMU 73 (a/k/a ECP 19) - DRMO Scrap Metal Recycling Yard

SWMU 74 (a/k/a ECP 20) - Fuel Pipelines and Hydrant Pits

SWMU 75 (a/k/a ECP 21) - Building 803

SWMU 76 (a/k/a ECP 22) - Building 2300

SWMU 77 (a/k/a ECP 1) - Small Arms Range (and former open burning/open detonation (OB/OD) areas located on peninsula on Punta Medio Mundo)

AOC E (a/k/a ECP 23) - offshore islands Pineros and Cabeza de Perro

AOC F - Monitored Natural Attenuation Sites

C. As further detailed in Attachment I, there have been numerous releases of hazardous wastes at the Facility which pose an exposure risk to onsite workers/employees and visitors to the Facility and which pose a risk to environmental receptors as well including both resident and local endangered birds as well as other fauna and flora.

9. Exposure Pathways and Possible Adverse Human Health or Environmental Impacts:

Potentially complete exposure pathways are present at the Facility that could result in both unacceptable adverse human health and environmental impacts (e.g., exposure pathways are present creating a potential hazard of imminent and substantial endangerment). The potentially complete exposure pathways at the Facility that could result in unacceptable adverse human health impacts are discussed in Attachment II of this Consent Order. The complete exposure pathways described in Attachment II are based on expected future land usage being similar to the land usage patterns currently in place. However, changes in future land usage from the present pattern of development/land usage at the Facility could result in additional receptors (such as on-site residents, if new housing areas are established; or on-site child-care or school populations, if new child-care or school facilities are established on-site) being impacted via complete exposure pathways that currently are not considered complete (e.g., such receptors are either not present or exposure pathways have been interrupted either by man-made conditions or by temporary natural conditions). Potentially complete exposure pathways are present at the Facility that could also result in unacceptable adverse environmental impacts to biota at the Facility which have been listed by either the federal or Commonwealth governments as threatened, endangered, or vulnerable (Commonwealth only), and/or to critical habitat. According to the July 2005 ECP Report, the Facility supports a variety of biota that have been listed by either the federal or Commonwealth governments as threatened, endangered, or vulnerable (Commonwealth only),

including 5 sea turtle species (Green, Loggerhead, Hawksbill, Leatherback, and Olive Ridley), 1 snake (Puerto Rican Boa), 12 birds (including the yellow-shouldered blackbird), 1 mammal (the West Indian Manatee), and 1 plant (Cobana negra). The species observed at the Facility that are classified as endangered under Federal law include: Hawksbill and Leatherback sea turtles, the Puerto Rican Boa, the yellow-shouldered blackbird, the Brown pelican, and the West Indian Manatee. Table 2-2 of the July 2005 ECP Report lists the threatened, endangered, or vulnerable species at the Facility. According to the July 2005 ECP Report, the only designated critical habitat at the Facility is for the yellow-shouldered blackbird. That habitat is the subject of a 1980 agreement between the Navy and the United States Fish and Wildlife Service (USFWS). A 1996 study performed for the Navy by GMI determined that the mangrove habitats constitute the most important habitats for the yellow-shouldered blackbird at the Facility. Three species of mangroves occur at the Facility: the red, black, and white mangrove. Approximately 2,900 acres of the Facility are designated wetlands. Of the designated wetland areas, approximately 60% are mangrove habitats. The mangroves themselves are not considered endangered, though the black mangrove is classified as threatened, under Federal law. Since the mangrove areas are considered wetland areas, those areas are protected under Federal law. All the wetland areas at the Facility, including the mangrove areas, are depicted in Figure 2-8 of the July 2005 ECP Report. The waters surrounding the offshore islands Pineros and Cabeza de Perro contain habitat for sea turtles (five species at the Facility are endangered or threatened) and manatees (an endangered species). The beaches on Pineros and Cabeza de Perro provide potential habitat for nesting sea turtles.

VI. CONCLUSIONS OF LAW AND DETERMINATIONS

14. This Section is based on the Findings of Fact set forth above, and the administrative record supporting this Consent Order:

a. The Navy is a Department of the Executive Branch of the Federal government and is subject to the requirements of Section 6001 of RCRA, 42 U.S.C. § 6961.

b Respondent is a "person" as defined in Section 1004(15) of RCRA, 42 U.S.C. § 6903(15).

c. The "D" and "F" wastes listed in the above Findings section are each a "solid waste" as defined in Section 1004(27) of RCRA, 42 U.S.C. § 6903(27). Each such solid waste is also a "hazardous waste" as defined in Section 1004(5) of RCRA, 42 U.S.C. § 6903(5).

d. The past storage and other handling of the above-listed hazardous wastes may present an imminent and substantial endangerment to human health and/or the environment within the meaning of Section 7003(a) of RCRA, 42 U.S.C. § 6973(a).

e. Respondent's storage and/or disposal and other handling of the above-listed hazardous wastes have contributed to the potential endangerment of human health and the environment via the releases detailed in Attachments I and II to this Consent Order.

f. The actions required by this Consent Order are necessary to protect human health and/or the environment.

VII. ORDER ON CONSENT

15. Based upon the administrative record for the Facility and the Findings of Fact (Section V) and Conclusions of Law and Determinations (Section VI) set forth above, the following is hereby agreed to by the parties and ordered by EPA. Respondent shall comply with all provisions of this Consent Order, including, but not limited to, all Attachments to this Consent Order and all documents incorporated by reference into this Consent Order. (If there is any conflict between the language in the main text of this Order and the language in the text of the Attachments, the text of the Order shall be followed, unless otherwise agreed by the parties.)

16. Respondent shall fund and perform the Work in accordance with this Consent Order (subject to the limitations specified in Section XXVI, Funding, below), plans, standards, specifications and schedules set forth in this Consent Order or developed by Respondent and approved by EPA pursuant to this Consent Order.

VIII. WORK TO BE PERFORMED

17. Respondent shall undertake and complete all of the Work to the satisfaction of EPA, pursuant to RCRA § 7003, 42 U.S.C. § 6973.

18. Respondent's obligation to perform the Work will begin on the Effective Date of this Consent Order.

19. The Work undertaken pursuant to this Consent Order shall be conducted in compliance with all applicable EPA guidances, policies and procedures, and with this Consent Order, and is subject to EPA approval.

20. Any Work Plan shall include a schedule of the Work to be performed. The Work Plan shall be submitted to EPA for approval. Following EPA's approval or modification of the Work Plan pursuant to Section IX of this Order, Respondent shall implement the Work Plan in accordance with the schedule and provisions approved by EPA.

21. RCRA FACILITY INVESTIGATIONS ("RFIs"):

A) For all SWMUs and/or AOCs required to have either a Phase One or Full RFA under the 1994 RCRA Permit, acceptable RCRA Facility Investigations have been completed, except for SWMU #14 (Fire Training Pit area adjacent to the Crash Crew training adjoining the base's airfield). The Respondent has submitted a draft work plan to complete the RFI for SWMU 14.

a) Within sixty (60) days of the Respondent's receipt of EPA's written approval of that work plan, Respondent shall commence its implementation, unless an alternative date is approved in writing by EPA.

b) If based on the results of the RFI investigations, a Corrective Measures Study (CMS) is determined to be required for SWMU #14, Respondent shall submit a work plan for a CMS for that SWMU that meets the requirements of the Scope of Work for a Corrective Measures Study set forth in Attachment IV of this Order. This submittal shall be made within ninety (90) days of the Respondent's receipt of EPA's written notification that a CMS is required, unless an alternative date is approved in writing by EPA.

B) Under the November 1994 RCRA permit, SWMU 16 (Building 1666 - waste explosive storage building), and AOC A (Torpedo Shop) had no further actions required as both sites were restricted access sites at an active military Facility. The Facility is now closed. And, based on the nature of the past operations conducted at SWMU 16 and AOC A, there was a clear potential for releases of hazardous waste or constituents to have occurred at those two sites. Therefore, within forty five (45) days of the effective date of this Consent Order, the Respondent shall submit to EPA for approval an acceptable work plan to implement Phase I RFI investigations at SWMU 16 and AOC A, to determine whether or not releases of hazardous waste or hazardous constituents are present at those two sites.

a) If based on the results of those Phase I RFI investigations, a Full RFI is determined to be required for either SWMU 16 or AOC A, Respondent shall submit a work plan for a Full RFI for that SWMU or AOC that meets the requirements of the Scope of Work for a Full RCRA Facility Investigation set forth in Attachment III of this Order. This submittal shall be made within sixty (60) days of the Respondent's receipt of EPA's written notification that a Full RFI is required, unless an alternative date is approved in writing by EPA.

b) If based on the results of the Full RFI investigations, a Corrective Measures Study (CMS) is determined to be required for either SWMU 16 or AOC A, Respondent shall submit a work plan for a CMS for that SWMU or AOC that meets the requirements of the Scope of Work for a Corrective Measures Study set forth in Attachment IV of this Order. This submittal shall be made within ninety (90) days of the Respondent's receipt of EPA's written notification that a CMS is required, unless an alternative date is approved in writing by EPA.

C) In addition, within forty five (45) days of the effective date of this Consent Order, the

Respondent shall submit to EPA for approval an acceptable work plan to implement a Phase I RFI at SWMU 42 (water purification plant lagoons), to determine whether releases of hazardous waste or constituents have occurred at this unit.

a) If based on the results of that Phase I RFI investigation, a Full RFI is determined to be required for SWMU 42, Respondent shall submit a work plan for a Full RFI for SWMU 42 that meets the requirements of the Scope of Work for a Full RCRA Facility Investigation set forth in Attachment III of this Order. This submittal shall be made within sixty (60) days of the Respondent's receipt of EPA's written notification that a Full RFI is required, unless an alternative date is approved in writing by EPA.

b) If based on the results of the Full RFI investigations, a Corrective Measures Study (CMS) is determined to be required for SWMU 42, Respondent shall submit a work plan for a CMS for that SWMU that meets the requirements of the Scope of Work for a Corrective Measures Study set forth in Attachment IV of this Order. This submittal shall be made within ninety (90) days of the Respondent's receipt of EPA's written notification that a CMS is required, unless an alternative date is approved in writing by EPA.

D) Based on the July 2005 ECP Report, 10 ECP sites which are identified as SWMUs and/or AOCs under this Consent Order require additional investigation. Therefore, within forty five (45) days of the effective date of this Consent Order, the Respondent shall submit to EPA for approval an acceptable work plan to complete the equivalent of Phase I RFI investigations at the following SWMUs and/or AOCs:

SWMU 57 (a/k/a ECP 3) - Facility No. 278 POL Drum Storage Area

SWMU 60 (a/k/a ECP 6) - Former Landfill at the Marina

SWMU 62 (a/k/a ECP 8) - Former Bundy Disposal Area

SWMU 67(a/k/a ECP 13) - Former Gas Station

SWMU 68 (a/k/a ECP 14) - Former Southern Fire Training Area

SWMU 70 (a/k/a ECP 16) - Disposal Area Northwest of Landfill

SWMU 71 (a/k/a ECP 17) - Quarry Disposal Site

SWMU 75 (a/k/a ECP 21) - Building 803

SWMU 76 (a/k/a ECP 22) - Building 2300

AOC E (a/k/a ECP 23) - offshore islands Pineros and Cabeza de Perro

a) If based on the results of those Phase I RFI investigations, a Full RFI is determined to be required for any of those SWMUs or AOC, Respondent shall submit a work plan for a Full RFI for those SWMUs or AOC that meets the requirements of the Scope of Work for a Full RCRA Facility Investigation set forth in Attachment III of this Order. This submittal shall be made within sixty (60) days of the Respondent's receipt of EPA's written notification that a Full RFI is required, unless an alternative date is approved in writing by EPA.

b) If based on the results of the Full RFI investigations, a Corrective Measures Study (CMS) is determined to be required for one or more of those SWMUs or AOC, Respondent shall submit a work plan for a CMS for that SWMU or SWMUs or AOC that meets the requirements of the Scope of Work for a Corrective Measures Study set forth in Attachment IV of this Order. This submittal shall be made within ninety (90) days of the Respondent's receipt of EPA's written notification that a CMS is required, unless an alternative date is approved in writing by EPA.

E) Within sixty (60) days of the effective date of this Consent Order, the Respondent shall submit to EPA for approval a work plan to address the contamination at all sites constituting AOC F. This work plan shall conform with EPA's April 21,1999 Directive on "Use of Monitored Natural Attenuation at Superfund, RCRA Corrective Action, and Underground Storage Tank Sites" (OSWER Directive Number 0200.4-17P); or other applicable guidance. The work plan shall include proposals to complete additional site characterization at sites 520, 1738, and 2842, as required. In addition, the work plan shall include: clearly defined clean-up levels/objectives, estimates of the time required to achieve such clean-up levels at each of the sites constituting AOC F, the monitoring points and analytical parameters, and implementation and reporting schedules.

22. INTERIM MEASURES

A) For SWMU #3 (Facility's Non-hazardous Landfill): Respondent shall implement a semi-annual groundwater monitoring and analysis program at SWMU #3, pursuant to the "Groundwater Sampling and Analysis Plan, Solid Waste Landfill Facility, U.S. Naval Station Roosevelt Roads", prepared for the Navy by Burns & McDonnell Waste Consultants Inc., dated April 1999, until such time as the Respondent submits written notification to EPA that SWMU #3 has been closed in a manner that is substantively equivalent to requirements set forth at 40 CFR § 264.310, and

EPA concurs in writing with such a determination.

(a) Following each semi-annual groundwater sampling event, within 60 days of the Respondent's receipt of the validated analytical results from that event, Respondent shall submit to all EPA offices indicated in Paragraph 23, below, a complete report of the results of that groundwater sampling event, including validated analytical results.

(b) If based on the results of the semi-annual groundwater sampling event a release of hazardous waste and/or hazardous constituents from SWMU #3 is indicated, the Respondent shall:

I) notify EPA, in writing , within seven days of such determination, and

ii) within thirty (30) days of that notification, submit a proposal for any further actions that are needed to address that release, as warranted.

B) For SWMU 11 (interior areas of Building 38 (Old Power Plant)),

a) Respondent shall submit, within sixty (60) calender days of the effective date of this Consent Order, acceptable documentation that access controls to SWMU #11 are in place and maintained and that an acceptable institutional control has been developed and become effective so as to preclude future usage of the site unless acceptable clean-up is implemented.

b) Thereafter, on an annual basis, Respondent shall submit, or cause to be submitted, acceptable certification that acceptable deed restrictions or other institutional and/or engineering controls have been implemented and are being maintained to preclude access to the interior areas of Building 38 (Old Power Plant) and any usage of Building 38 and the lands and/or groundwater potentially impacted by releases from Building 38.

23. CORRECTIVE MEASURES STUDY ("CMS")

A) For the following SWMUs a CMS has previously been determined to be required, and a CMS work plan has been approved by EPA; however, implementation has not been fully completed: SWMU 1; SWMU 2; SWMUs 7/8 (Tow Way Fuel Farm); SWMU 9, SWMU 45, SWMU 54 and SWMU 55. Therefore, the Respondent shall complete implementation of

the CMSs for those 8 SWMUs, and within sixty days of completion of all activities required under the CMS Work Plan for that SWMU, shall submit a draft CMS Final Report meeting the requirements of Paragraph (H) below. Any unacceptable impacts to AOC D (Ensenada Honda sediments) which have been caused by releases from SWMUs shall be evaluated as part of the respective CMSs for SWMUs #1 and #2 (the two former litoral landfills) and have previously been evaluated for at SWMUs #7 and #8 (Tow Way Fuel Farm).

B) In lieu of a CMS plan to determine the final remedy for SWMU #3, as well as a CMI plan to implement any selected remedy for that SWMU, Respondent has submitted draft Closure Plans to close SWMU #3. Pursuant to the requirements of this Consent Order, Respondent shall close SWMU #3 in a manner that is substantively equivalent to requirements set forth at 40 CFR § 264.310. Upon written notification by EPA that the draft closure plan(s) for SWMU #3 is (are) acceptable, Respondent shall arrange for public review of that draft closure plan(s) in a manner that is substantively equivalent to requirements set forth at Section XXVIII of this Consent Order. If based on that public review, substantive revisions of the closure plan(s) for SWMU #3 appear warranted, Respondent shall revise the draft closure plan(s) to address relevant comments received. Respondent shall submit the draft Closure Plan(s) and any revised closure plan(s) for SWMU #3 to EPA for its approval pursuant to Section IX of this Consent Order, prior to its implementation.

C) Based on the July 15, 2005 *Phase I/II Environmental Conditions of Property Report*, 6 ECP sites require remediation. Therefore, within forty five (45) days of the effective date of this Consent Order, Respondent shall submit to EPA an acceptable work plan to complete site characterization for each of the below SWMUs and a CMS to determine the final remedy for the following SWMUs/ECP sites:

SWMU 56 (a/k/a ECP 2)- Hanger 200 Apron

SWMU 59 (a/k/a ECP 5) - Former Vehicle Maintenance and Refueling Area

SWMU 61 (a/k/a ECP 7) - Former Bundy Area Maintenance Facilities

SWMU 69 (a/k/a ECP 15) - Aircraft Parking Area

SWMU 73 (a/k/a ECP 19) - DRMO Scrap Metal Recycling Yard

SWMU 74 (a/k/a ECP 20) - Fuel Pipelines and Hydrant Pits

Once a work plan is approved by EPA, Respondent shall complete a CMS for these SWMUs.

D) Should EPA determine that a CMS is required for any other of the SWMUs or AOCs, EPA shall notify Respondent in writing. This notice shall identify the hazardous constituent(s) which have exceeded action levels as well as those which have been determined to pose a potential threat to human health and the environment given site specific exposure conditions, due to additive exposure risk, or for other reasons.

E) EPA may require a CMS under the following conditions:

(a) If the concentrations of hazardous constituents in groundwater, surface water/sediment, soil, or air exceed their corresponding individual action levels or generic risk-based concentration (RBC) levels for human health and/or ecological screening values;

(b) If the concentrations of hazardous constituents in groundwater, surface water/sediment, soil, or air do not exceed their corresponding individual action levels or generic risk-based concentration (RBC) levels for human health and/or ecological screening values, but additive exposure risk due to the presence of multiple constituents makes the individual action levels or RBC levels insufficiently protective of human health or the environment, given site-specific exposure conditions; or

(c) If the concentrations of hazardous constituents in groundwater, surface water/sediment, soil, or air do not exceed individual action levels or generic risk-based concentration (RBC) levels for human health and/or ecological screening values, but still pose a potential threat to human health or the environment, given site-specific exposure conditions.

F) The Respondent shall submit a CMS Work Plan to EPA within sixty (60) calendar days after receiving written notification from EPA that a CMS is required.

(a) The CMS Work Plan shall provide:

(I) A description of the general approach to investigating and evaluating potential corrective measures;

(ii) A definition of the overall objectives of the study;

(iii) The specific plans for evaluating corrective measures to ensure compliance with corrective measure standards;

(iv) The schedule for conducting the study; and

(v) The proposed format for the presentation of information.

(b) The CMS Work Plan must address, at a minimum, all necessary activities to complete Tasks II and III of the Statement of Work for a Corrective Measures Study set forth in Attachment IV, or alternatively a "Streamlined CMS" may be developed if usage of a "Streamlined CMS" is considered appropriate by EPA. "Streamlined CMS" are discussed in the Proposed Corrective Action Rule set forth in the May 1, 1996 Federal Register, vol. 61 No. 85.

G) No later than thirty (30) calendar days after the Respondent has received written approval from EPA for the CMS Work Plan, the Respondent shall begin to implement the CMS according to the schedules specified in the CMS Work Plan.

H) Within sixty (60) calendar days after the completion of the CMS, the Respondent shall submit a CMS Final Report. The CMS Final Report shall:

(a) Summarize the results of the investigations and, if applicable, of any bench-scale or pilot tests conducted;

(b) Provide a detailed description of the corrective measures evaluated and include an evaluation of how each corrective measure alternative meet the standards set forth in paragraph 24(A) of this Order;

(c) Present all information gathered under the approved CMS Plan; and,

(d) Contain any additional information to support EPA in the corrective measure selection decision-making process, described in paragraph 24(B) of this Order.

I) Based on a review of the CMS Final Report, EPA, by written notification to the Respondent, may require the Respondent to evaluate additional

corrective measures or to evaluate further particular elements of one or more proposed corrective measures, prior to approval of the CMS Final Report or to modify the CMS Final Report.

J) EPA shall either approve or disapprove the CMS Final Report in writing. If the CMS Final Report is not approved, EPA shall provide written comments giving the basis for such disapproval.

24. CRITERIA FOR CORRECTIVE MEASURES SELECTION:

A. For any SWMUS and/or AOCs where the final corrective measures have not yet been selected, and which are determined to require corrective measures, the Director shall select, based on the results of the RFI, the CMS, and any further evaluations, the corrective measure(s) that will:

(a) Be protective of human health and the environment;

(b) Control the source(s) of release(s) so as to reduce or eliminate, to the maximum extent practicable, further releases of hazardous waste, including hazardous constituents, that might pose a threat to human health and the environment; and

(c) Meet all applicable waste management requirements.

B. In selecting the corrective measure(s), the Director shall consider the following evaluation factors, as appropriate:

(a) Long-term reliability and effectiveness. Any potential corrective measure(s) may be assessed for the long-term reliability and effectiveness it affords, along with the degree of certainty that the corrective measure(s) will prove successful. Factors that shall be considered in this evaluation include:

(I) Magnitude of residual risks in terms of amounts and concentrations of hazardous waste, including hazardous constituents, remaining following implementation of the corrective measure(s), considering the persistence, toxicity, mobility and potential to bioaccumulate of such hazardous wastes, including hazardous constituents;

(ii) The type and degree of long-term management required, including monitoring, operation and maintenance;

(iii) Potential for exposure of humans and environmental receptors to remaining hazardous wastes, including hazardous constituents, considering the potential threat to human health and the environment associated with excavation, transportation, redisposal or containment;

(iv) Long-term reliability of the engineering and institutional controls, including uncertainties associated with land disposal of untreated hazardous wastes, including hazardous constituents, and residuals; and

(v) Potential need for replacement of the corrective measure(s).

(b) Reduction of toxicity, mobility and volume. A potential remedy(ies) may be assessed as to the degree to which it employs treatment that reduces toxicity, mobility or volume of hazardous wastes and/or hazardous constituents. Factors that shall be considered in such assessments include:

(I) The treatment processes that the corrective measure(s) employs and materials it would treat;

(ii) The amount of hazardous wastes, including hazardous constituents, that would be destroyed or treated;

(iii) The degree to which the treatment is irreversible;

(iv) The residuals that will remain following treatment, considering the persistence, toxicity, mobility and propensity to bioaccumulate of such hazardous wastes, including hazardous constituents; and

(v) All concentration levels of hazardous wastes, including hazardous constituents in each medium that corrective measure(s) must achieve to be protective of human health and the environment.

(c) The short-term effectiveness of a potential corrective measure(s). This may be assessed by considering the following:

(I) Magnitude of reduction of existing risks;

(ii) Short-term risks that might be posed to the community, workers, or the environment during implementation of such a corrective measure(s), including potential threats to human health and the environment associated with excavation, transportation, and redisposal or containment; and

(iii) Time until full protection is achieved.

(d) Implementability. The ease or difficulty of implementing a potential corrective measure(s) may be assessed by considering the following types of factors:

(I) Degree of difficulty associated with constructing the technology;

(ii) Expected operational reliability of the technologies;

(iii) Need to coordinate with and obtain necessary approvals and permits from other agencies;

(iv) Availability of necessary equipment and specialists;

(v) Available capacity and location of needed treatment, storage, disposal services; and

(vi) Requirements for removal, decontamination, closure, or post-closure of units, equipment, devices or structures that will be used to implement the corrective measure(s).

(e) Cost. The types of costs that may be assessed include the following:

(I) Capital costs;

(ii) Operational and maintenance costs;

(iii) Net present value of capital, and operation and maintenance costs; and

(iv) Potential future corrective action costs.

(f) Clean-up Preferences. The degree to which the remedy satisfies the public's and Commonwealth clean-up preferences.

25. CORRECTIVE MEASURE IMPLEMENTATION (CMI), INSTITUTIONAL CONTROLS, CLOSURE OF BUILDINGS 2009 AND 2009 A-D, AND CONTINGENT CORRECTIVE ACTION REQUIREMENTS

A) CMI Plans have been previously developed for five SWMUs and one AOC, but these have not yet undergone public review, been fully approved by EPA, or been implemented:

SWMU #13 "Final CMI Work Plan Design Package" dated January 25, 2001;

SWMU #31 "Final CMI Work Plan Design Package" dated January 25, 2001;

SWMU #32 "Final CMI Work Plan Design Package" dated January 25, 2001;

SWMU #46 “Final CMI Work Plan Design Package” dated January 25, 2001;

SWMU #53 “Final CMI Design Package for Soil Remediation” dated September 20, 2004.

AOC C “Final CMI Work Plan Design Package” dated January 25, 2001;

Public notice and comment on those proposed CMI plans shall be implemented as part of the public notice and comment on this Consent Order, pursuant to Section XXVIII of this Consent Order.

B) Upon completion of public notice and comment on the above CMI plans for SWMUs #13, SWMU #31, SWMU #32, SWMU #46, SWMU #53, and AOC C, pursuant to Section XXVIII of this Consent Order, the Respondent shall implement those CMI Plans, as modified based on public comments if required by EPA pursuant to Section XXVIII of this Consent Order, according to the schedules set forth in those respective CMI plans.

C) Corrective Measures involving institutional controls (such as Land Use or other controls) have been conditionally selected as the remedies for SWMU #30 and SWMU #37, and as part of the remedies for SWMUs #31 and #32. However, acceptable documentation that institutional controls are established for SWMUs #30, #31, #32 and SWMU #37 has not yet been provided. Therefore, within 60 days of completion of public notice and comment on this Consent Order, Respondent shall:

> (a) submit to EPA documentation that acceptable institutional controls are in effect which prevent future usage of the sites of the former SWMUs #31, #32, and #37 for residential purposes or other non-industrial usages such as for a school or a child care facility.
>
> (b) submit to EPA documentation that acceptable institutional controls are in effect which will prevent future usage of any groundwater impacted by releases from SWMU #30 for potable water supply.

D) Should EPA determine that a CMI is required for any other of the SWMUs or AOCs, EPA will notify Respondent in writing.

E) No later than ninety (90) calendar days after the Respondent has received written notification from EPA that a CMI is required for any other of the SWMUs or AOCs, the Navy shall submit to EPA for its review and approval, a Work Plan for implementing the CMI. Once the work plan has been approved by EPA Respondent shall implement the approved work plan.

F) Land Use, Institutional, and Engineering Controls. For all SWMUs and/or AOCs where either a Corrective Action Complete Determination or a clean-up action has been based on a site usage scenario other than an unrestricted (residential) usage scenario, the Respondent shall ensure that acceptable Land Use Controls or other institutional and/or engineering controls are established and maintained so as to preclude future site usage that is incompatible with the site usage and exposure scenarios upon which the Corrective Action Complete Determination for that SWMU or AOC was made, and, for all SWMUs and/or AOCs where no Corrective Action Complete Determination has been made, Respondent shall ensure that acceptable Land Use Controls are established and maintained until either a Corrective Action Complete Without Controls Determination has been approved or a clean-up action based on unrestricted site usage has been completed and approved by EPA. Respondent shall also submit the required reports as provided in Paragraph 27 (Reporting), below.

G) Completion of Closure of Buildings 2009 and 2009 A-D.

a) If, at the time of issuance of this Order, Respondent has not completed closure of the permitted hazardous waste container storage units, Respondent shall complete closure of the former permitted hazardous waste container storage units located at Buildings 2009, 2009-A, 2009-B, 2009-C, and 2009 D. Unless otherwise agreed, closure shall comply with requirements set forth at 40 CFR § 264.178, the Closure Plan included as Attachment E of the Facility's1994 RCRA Permit, the December 2004 "Final Site-Specific Sampling and Analysis Plans for Buildings 2009, 2009 A, and 2009 B-D", and the October 27, 2005 and November 17, 2005 letters from Lieutenant Commander A. Ferguson to Mr. Timothy Gordon of EPA, and any other conditions imposed by EPA for such Closure.

H) Contingent Investigation and Corrective Action Requirements for SWMUs 27, 28, and 29.

a) Respondent shall submit to EPA for review and approval a work plan for a Phase I RFI for all sludge drying beds at each of the following units. The work plan for each unit will be submitted within ninety (90) days of the date when usage of that unit ceases.

SWMU 27 - Capehart Sewage Treatment Unit

SWMU 28 - Bundy Sewage Treatment Plant

SWMU 29 - Industrial Area wastewater treatment plant

b) If based on the results of those Phase I RFI investigations, a Full RFI is

determined to be required for any of those SWMUs, Respondent shall submit a work plan for a Full RFI for that SWMU or SWMUs that meets the requirements of the Scope of Work for a Full RCRA Facility Investigation set forth in Attachment III of this Order. This submittal shall be made within sixty (60) days of the Respondent's receipt of EPA's written notification that a Full RFI is required, unless an alternative date is approved in writing by EPA.

c) If based on the results of the Full RFI investigations, a Corrective Measures Study (CMS) is determined to be required for any of those SWMUs, Respondent shall submit a work plan for a CMS for that SWMU or SWMUs that meets the requirements of the Scope of Work for a Corrective Measures Study set forth in Attachment IV of this Order. This submittal shall be made within ninety (90) days of the Respondent's receipt of EPA's written notification that a CMS is required, unless an alternative date is approved in writing by EPA.

I) Contingent Investigation and Corrective Action Requirements for SWMU 77.

a) The Navy has informed EPA that it will likely convey the area comprising SWMU 77 to the Federal Department of Homeland Security (DHS) for continued usage as a small arms training range.

b) Within 90 days of DHS' cessation of usage of the area of SWMU 77 as a small arms training range, the Respondent shall cause DHS to submit to EPA for review and approval a work plan for a Phase I RFI work plan to determine whether releases of hazardous waste or solid waste and/or hazardous constituents are present at SWMU 77.

c) If based on the results of the Phase I RFI investigations, a Full RFI is determined to be required for some or all of the area comprising SWMU 77, Respondent shall submit a work plan for a Full RFI for that SWMU that meets the requirements of the Scope of Work for a Full RCRA Facility Investigation set forth in Attachment III of this Order. This submittal shall be made within sixty (60) days of the Respondent's receipt of EPA's written notification that a Full RFI is required, unless an alternative date is approved in writing by EPA.

d) If based on the results of the Full RFI investigations, a Corrective Measures Study (CMS) is determined to be required for some or all of the area comprising SWMU 77, Respondent shall submit a work plan for a CMS that meets the requirements of the Scope of Work for a Corrective Measures Study set forth in Attachment IV of this Order. This submittal shall be made within ninety (90) days of the Respondent's receipt of EPA's written notification that a CMS is required, unless an alternative date is approved in writing by EPA.

26. NOTIFICATION and ADDITIONAL WORK REQUIREMENTS FOR NEWLY-DISCOVERED RELEASES

(A) No later than fifteen (15) days after discovery, The Respondent shall notify EPA, in writing, of any release(s) of hazardous waste and/or solid waste, and/or hazardous constituents discovered after the effective date of this Consent Order. The notification shall, at the minimum, identify the location of the release, the basis for determining that a release has occurred, the media impacted by the release, and the specific hazardous and/or solid wastes and/or hazardous constituents indicated or suspected to have been released.

(B) If such a release is indicated to have originated from a unit or area not identified as a SWMU and/or AOC under this Consent Order, the Respondent's notification shall advise whether the unit or area indicated to be the source of the release constitutes a newly identified SWMU and/or AOC, and if not, the Respondent's notification shall advise as to the basis for such a determination. The Respondent's determination of whether the unit or area indicated to be the source of the release constitutes a newly identified SWMU and/or AOC shall be subject to review and final determination by EPA. If EPA determines that the unit or area constitutes a newly identified SWMU and/or AOC, EPA shall notify the Respondent in writing, and the newly identified SWMU and/or AOC shall be subject to the terms and conditions of this Consent Order.

(C) Based on the information provided in the notification, EPA shall determine the need for further investigation of the release(s) and/or other actions, including remedial measures, for such release(s). If EPA determines that such investigations and/or other actions, including remedial measures are needed, EPA shall notify the Respondent to prepare a Sampling and Analysis Work Plan and/or a work plan for any other necessary actions, including remedial measures. The Respondent shall submit to EPA a Sampling and Analysis Work Plan and/or a work plan for any other necessary actions, including remedial measures for such releases within ninety (90) days of written notification by EPA.

27. REPORTING.

(A) Respondent shall submit copies of all correspondence, including but not limited to, work plans, and reports, generated pursuant to the provisions of this Consent Order to the following:

(a) Chief, Caribbean Section, RCRA Programs Branch (1 paper copy and 1 Compact Disc in .pdf format)
EPA Region 2
290 Broadway, 22nd Floor

New York, NY 10007-1866

(b) Project Coordinator (Mr. Timothy Gordon)
(1 paper copy and 1 Compact Disc in .pdf format)
RCRA Programs Branch
EPA Region 2
290 Broadway, 22nd Floor.
New York, NY 10007-1866

(c) Director (Mr. Carl Soderberg)
(1 paper copy and 1 Compact Disc in .pdf format)
U. S. Environmental Protection Agency
Caribbean Environmental Protection Division
Centro Europa Building, Suite 417
1492 Ponce de Leon Ave
Santurce, PR 00907-4127

(d) Puerto Rico Environmental Quality Board
Director, Land Pollution Regulation Program
(1 paper copy and 1 Compact Disc in .pdf format)
National Plaza Building
431 Ponce de Leon Ave
Hato Rey, PR 00917

(B) Unless an alternative date is specified in an existing work plan approved in writing by EPA prior to the effective date of this Consent Order, within 60 days of completion of all tasks in an EPA approved RFI, Interim Measures, Closure Plan, CMS, or CMI work plan, the Respondent shall submit a draft Final Report on that RFI, Interim Measures, Closure Plan, CMS, or CMI to the above parties, in the quantities specified above.

(c) Respondent shall also submit to the parties noted immediately above, the above-specified number of copies of signed quarterly progress reports of all activities (i.e., SWMU Assessment, Interim Measures, Closure Plan, RCRA Facility Investigation, Corrective Measures Study) conducted pursuant to the provisions of this Consent Order, beginning no later than ninety (90) calendar days after its effective date. These reports shall, unless otherwise agreed in writing, contain:

(a) A description of the work completed;

(b) Summaries of all findings made during the reporting period, including summaries of laboratory data;

(c) Summaries of all changes made during the reporting period;

(d) Summaries of all contacts made with representatives of the local community and public interest groups during the reporting period;

(e) Summaries of problems or potential problems encountered during the reporting period and actions taken to rectify problems;

(f) Changes in personnel conducting or managing the corrective action activities during the reporting period;

(g) Projected work for the next reporting period; and

(h) Copies of daily reports, inspection reports, validated laboratory/monitoring data, etc. generated during the reporting period

(D) Upon request, Respondent shall submit copies of other reports (e.g., inspection reports, drilling logs and laboratory data) as requested by EPA.

(E) EPA may require the Respondent to conduct new or more extensive assessments, investigations, or studies, based upon information provided in the progress reports referred to above, or upon other supporting information.

(F) All plans and schedules required by the conditions of this Consent Order are, upon approval of EPA, incorporated into this Consent Order by reference and become an enforceable part of this Consent Order. Any noncompliance with such approved plans and schedules shall be termed noncompliance with this Consent Order. Extensions of the due dates for submittals may be granted by EPA in writing.

G) Annual Reports. (a) For all SWMUs and/or AOCs where either a Corrective Action Complete Determination or a clean-up action has been based on a site usage scenario other than an unrestricted (residential) usage scenario, commencing sixty (60) days following the effective date of this Order, Respondent shall submit, or cause to be submitted, on an annual basis, acceptable certification that acceptable Land Use Controls or other institutional and/or engineering controls have been implemented and are being maintained to preclude unacceptable future usages of the lands and/or groundwater potentially impacted by releases from these SWMUs and AOCs; and (b) Annual Status Report on Transferred Parcels. Each year on the anniversary of the execution of this Order, Respondent shall submit, or

cause to be submitted, to EPA a Report addressing the status of each parcel that is subject to a third party order and that has been previously transferred to an owner or operator other than Respondent, noting the following: the name and address of the new owner and operator; the address of the parcel and information describing the parcel and its boundaries including, if available, a map and, if known, Global Position System locational data; a statement whether or not all corrective action at the parcel is complete or on-going, and whether any institutional controls are in place or are pending; and the name and phone number of the contact person(s) for the parcel. This report will be updated each year to incorporate the then current information.

H) Imminent and Substantial Endangerment due to Solid Waste or Hazardous Waste. Upon receipt of information that there is newly identified solid waste or hazardous waste at the Facility which may present an imminent and substantial endangerment to human health or the environment, Respondent shall immediately provide notice to EPA and EQB. Respondent shall also comply with statutory requirements for the posting of a notice of the endangerment at the Facility.

28. Project Coordinator. On or before the Effective Date of this Consent Order, Respondent shall designate its Project Coordinator. Respondent shall notify EPA in writing within five (5) days of the Effective Date of this Consent Order of the name, address, phone number, electronic mail address and qualifications of its Project Coordinator. The EPA Project Coordinator will be Timothy Gordon, 212-637-4167, 290 Broadway, New York, NY 10007-1866. EPA may also designate an Alternate Project Coordinator. Each Project Coordinator shall be responsible for overseeing the implementation of this Consent Order. EPA and Respondent have the right to change their respective Project Coordinators. The other party must be notified in writing at least 10 days prior to the change.

29. The EPA Project Coordinator shall be EPA's designated representative for the Facility. Unless otherwise provided in this Consent Order, all reports, correspondence, notices, or other submittals relating to or required under this Consent Order shall be in writing and shall be sent to the EPA Project Coordinator at the address specified in Paragraph 23A, above, unless notice is given in writing to Respondent of a change in address. Reports, correspondence, notices or other submittals shall be delivered by U.S. Postal Service, private courier service or electronic mail. All correspondence shall include a reference to the case caption EPA Docket No. RCRA- 02-2007-7301, and the Facility's EPA Identification Number.

30. Within 25 days of the Effective Date of this Consent Order, Respondent shall notify EPA in writing of the names, titles and qualifications of the personnel, including agents, contractors, subcontractors, consultants and laboratories, to be used in carrying out the work. EPA's Project Coordinator will provide Respondent with the necessary qualification standards and Respondent's

Project Coordinator shall ensure that Respondent's contractors, subcontractors, consultants and laboratories meet such requirements. All persons under the direction and supervision of Respondent's Project Coordinator must possess all necessary professional licenses required by federal and Commonwealth law. In addition, all agents, contractors, subcontractors, consultants, and laboratories must implement any work done under this Order pursuant to an EPA approved Quality Management Plan (QMP), developed in accordance with "EPA Requirements for Quality Management Plans (QA/R-2)" (EPA/241/B-01/002, March 2001), or equivalent documentation as determined by EPA. EPA's approval of the QMP(s) shall be pursuant to procedures set forth in Section IX of this Order.

31. Health and Safety Plan. Respondent shall develop a Health and Safety Plan and it shall be implemented during the Work performed under this Consent Order. The Health and Safety plan shall comply with applicable Occupational Safety and Health Administration (OSHA) regulations.

IX. EPA APPROVALS AND ADDITIONAL WORK

32. Unless otherwise specified, EPA will review any plan, report, specification, program, documentation, notification, proposal or schedule submitted pursuant to, or required by this Consent Order, and agrees to endeavor to provide within 90 calendar days of receipt of that document by EPA, EPA's written request for modification, approval, or disapproval, with comments and/or modifications ("EPA's response"), to Respondent. Respondent may request, in the cover letters to its submittals, that EPA provide Respondent with EPA's response, with comments and/or modifications, within an alternative specified period of time. Unless EPA either: (1) provides Respondent with EPA's acceptance of the alternative specified time period for completing its response; or (2) notifies Respondent in writing of a revised alternative time when EPA expects to provide its response, the normal time period for EPA to provide its response will be within 90 calendar days of receipt of that document by EPA. EPA will notify Respondent whenever additional time is needed to provide its response to any submittals required pursuant to this Consent Order. The Parties agree that if during EPA's review of any submittals by Navy required by this Consent Order, Navy's funding expires for work related to that submittal, then such expiration may constitute a delay as provided in Section XXVI of this Consent Order until such time as funding is secured, provided that Navy pursues all necessary funding at all times with due diligence.

33. Within fifteen (15) days of Navy's receipt of EPA's response, Respondent may request a meeting with EPA to discuss EPA's response. Within thirty (30) days of such meeting, or if no meeting is requested, within forty-five (45) days of receipt of EPA's response, Respondent shall either: (1) notify EPA of its intention to amend or modify the submission to incorporate all of EPA's comments and proposed modifications and to submit the amended submittal to EPA within thirty (30) days thereafter or according to a mutually agreed schedule; or (2) provide EPA with a written notice of dispute, setting forth Respondent's position, any actions which Respondent considers necessary to resolve the dispute, and the basis for Respondent's position. Any such

written notice of dispute shall be subject to the dispute resolution procedures as set forth in Section XVIII of this Consent Order.

34. As part of the review of any plan, report, specification, program, documentation, notification, proposal or schedule submitted pursuant to, or required by this Consent Order, EPA or Navy may determine that certain tasks and deliverables required pursuant to Section VIII (Work to be Performed) of this Consent Order may require additional work.

(A) If EPA determines that such additional work is necessary, EPA shall identify, in writing, the additional work required and shall specify the reasons for that determination, and the time period during which the additional work shall be performed.

(B) Within thirty (30) calendar days after the receipt of such request, Navy shall have the opportunity to meet or confer with EPA to discuss the additional work required, and if it deems it necessary it shall within thirty (30) calendar days invoke the Dispute Resolution provisions of this Consent Order.

(C) If the Navy does not invoke Dispute Resolution, such additional work shall be performed in accordance with the terms of this Consent Order.

(D) Any additional work performed by Navy, whether at the request of EPA under (A) above, or at the initiative of the Navy, shall be subject to review and approval by EPA under the terms of this Consent Order.

35. Any noncompliance with an EPA approved document or an EPA determination under the Dispute Resolution provision of this Consent Order constitutes noncompliance with this Consent Order.

X. SUSPENSION AND RESUMPTION OF WORK BY THE NAVY

36. A. The Navy has informed EPA that it intends to sell or otherwise transfer parcel(s) and/or parts of the Facility to one or more Third Party(s) who will assume responsibility for corrective action on the real property it acquires. The Navy has informed EPA that before such transfer the Navy will screen prospective purchasers for their financial and technical capability to perform any required corrective action and once the Navy has approved a potential bidder the Navy will require the potential bidder to enter into an administrative order on consent with EPA and comply with its terms.

B. Except as provided herein below, once an order on consent has been executed between EPA and the Third Party for work on a specified part of the Facility, the work requirements of this Consent Order with the Navy which are being assumed by the Third Party for that specified part of the Facility are suspended. Any suspension in the Navy's responsibility for work related to the transferred parcel will be conditioned on the

satisfactory and timely performance by the Third Party, and will take effect following the effective date of the order to the Third Party. The Navy shall continue to abide by the provisions of this Order which are not suspended. EPA will suspend all of the Navy's obligations under this Order with respect to any given parcel, with the following exceptions:
- Section VIII (Work To Be Performed), unless otherwise agreed in writing by the parties to this Order, the Navy shall complete any Work for which EPA has approved a work plan (or similar documents such as groundwater monitoring plan or monitored natural attenuation plan) and all Work which Navy has initiated;
-Section VIII (Work To Be Performed), the Navy shall retain responsibility for the maintenance of institutional (excluding zoning) and engineering controls unless otherwise agreed in writing by the Navy and the Third Party and approved by EPA, and shall provide EPA with an annual certification of the Land Use Controls or other institutional and engineering controls, and an annual report on the transferred parcels, as required in paragraph 27(G).
- Section X (Suspension and Resumption of Work by the Navy);
- Paragraphs 48, 51-54 in Section XIV (Sampling, Access and Data Availability);
- Section XVI (Record Retention);
- Section XXVI (Funding); and,
- Paragraph 122 in Section XXVIII (Public Comment on this Consent Order and Decisions Made Pursuant to this Consent Order).

C. a. Should EPA later determine that the Third Party has failed to satisfy its corrective action responsibility and is not likely to be able to satisfy its responsibility to perform the work in a timely and satisfactory manner, then EPA may find the Third Party to be in "Default." Before making any Default finding, EPA will undertake the following actions outlined in sub-paragraphs D through and including M, below.

b. EPA expects to use its available enforcement authorities in the event of third party noncompliance with a consent order. However, EPA's decision on whether and when to initiate any enforcement action against a Third Party for noncompliance with such an order shall be within EPA's, and/or the United States Department of Justice's, sole enforcement discretion, and shall not be subject to dispute resolution under this Order.

D. Initial Notice of Noncompliance and Stop Work. Following EPA's preliminary finding that a Third Party has failed to comply with a requirement of another order issued to that party for work at some or all of the Facility, EPA may give that Third Party written notification of the same, and describe the noncompliance ("Initial Notice of Noncompliance"). EPA may also give the Third Party written notification that it should stop work on all or any portion of its corrective action activities at the Facility until EPA determines that the Third Party has remedied such noncompliance ("Notice to Stop Work") or until receipt of written notification from EPA that the Third Party may proceed with such activities as specified in the notification. If requested by the Third Party within

ten calendar days of its receipt of the Initial Notice of Noncompliance, EPA and the Third Party will meet within 30 days of that request, or an alternative time period approved by EPA, to discuss the situation.

E. Second Notice of Noncompliance. If EPA later determines that the Third Party has not adequately addressed the issues identified in EPA's Initial Notice of Noncompliance, EPA may then issue a written Second Notice of Noncompliance and will copy the Navy on such Second Notice. EPA's determination may be based on its finding that the Third Party is not performing the work, not performing the work adequately despite EPA's guidance, not performing the work in a timely manner, or for any other reason which causes EPA to conclude that the Third Party is not willing or able to satisfy its obligations under the applicable order. If requested by the Third Party within ten calendar days of its receipt of the Second Notice, EPA and the Third Party will meet to discuss the finding by EPA within 30 business days after receiving from EPA the Second Notice, or an alternative time period approved by EPA. EPA may in its discretion invite the Navy to the meeting.

F. Following the conclusion of the meeting referenced immediately above, if EPA still believes the noncompliance has not been remedied and believes the noncompliance jeopardizes the successful completion of work required under the Order issued to the Third Party, EPA will promptly notify the Navy and allow the Navy a short period to investigate and to attempt to resolve the issues outlined by EPA.

G. Initial Finding of Default and Dispute Resolution. Assuming the situation is not promptly resolved to EPA's satisfaction during the above-noted time period, the matter will be elevated to the EPA Region 2, RCRA Programs Branch Chief and the NAPR Base Closure Manager . If the matter is not resolved to the EPA Branch Chief's and the NAPR Base Closure Manager's mutual satisfaction within thirty (30) days or such other time as mutually agreed, EPA may issue its Initial Finding of Default.

H. Dispute Resolution. Within ten (10) business days of the Navy's and the Third Party's respective receipt of EPA's issuance of its Initial Finding of Default, both the Navy and the Third Party may trigger the Dispute Resolution procedures provided in their respective consent orders. (With regard to the Third Party, the Dispute Resolution procedures of the Order issued to that party shall apply.) With regard to the Navy, it shall elevate the matter to the EPA Regional Administrator and the Deputy Assistant Secretary of the Navy (Environment) by serving upon EPA a written Statement of Dispute setting forth the basis for the Navy's position and the information upon which it is relying to support its position. EPA may provide the Regional Administrator with a written Response to the Statement of Dispute. If EPA deems it efficient, EPA may take such steps as it deems appropriate to integrate any dispute process invoked by the Navy with any invoked by any Third Party.

I. After review of the Statement of Dispute and the Response to the Statement of Dispute, if any, the EPA Regional Administrator, or his or her designated representative, shall

confer with the Deputy Assistant Secretary of the Navy (Environment), or his or her designated representative, and shall provide the Navy with a written Final Decision setting forth resolution of this matter.

J. Resolution of a dispute in accordance with these provisions constitutes a final resolution of that dispute. The Final Decision of the Regional Administrator will be based on his/her sole and unreviewable discretion, and the Parties shall seek no further review of that resolution. The Navy and EPA shall abide by all terms and conditions of any final resolution of dispute obtained in accordance with these provisions and the Navy shall have no further opportunity to invoke dispute resolution on the issues addressed in the dispute pursuant to this Paragraph after EPA issues the Third Party a Final Finding of Default.

K. Final Finding of Default. In the event of an EPA determination (following any dispute resolution process, if invoked) that a Default has occurred, EPA will issue the Third Party a written Final Finding of Default, with a copy to the Navy. The Final Finding of Default will provide the basis for EPA's determination and will specify whether the Third Party may continue to perform the Work, or any portion of the Work, while the Navy prepares to resume the required corrective action activities under this Order.

L. Resumption of Corrective Action Work by the Navy. Subject to Section XXVI (Funding) and Section XX (Force Majeure), within thirty (30) days of receipt of the Final Finding of Default, or such other time period as is agreed to by EPA following consultation with the Navy, the Navy shall resume work under this Order concerning the required corrective action activities that were previously being performed by the Third Party found to be in Default. EPA and the Navy shall endeavor to meet within sixty days of receipt of the Final Finding of Default to discuss the Navy's resumption of work.

M. In the event that the Navy reassumes corrective action responsibility, it will not challenge or dispute any remedial decisions made by EPA prior to EPA's Final Finding of Default, and it will continue to perform all corrective actions selected by EPA prior to that Final Finding of Default in accordance with the pertinent EPA decision document; provided however, that for any corrective action workplans for investigations or for the implementation of any selected remedy that were approved prior to EPA's Final Finding of Default, the Navy may, within six months of its receipt of EPA's written Final Finding of Default, propose to EPA, for its review and approval, modifications to the relevant work plan(s). The Navy may not, however, initiate Dispute Resolution pursuant to Section XVIII of this Order on the previously approved workplans or EPA's decision with respect to its proposed modifications to them.

N. Notwithstanding any other provision of this Order, EPA reserves its right not to negotiate with and/or issue an administrative order(s) to a new party (or parties) for work at the Facility should EPA determine in its sole discretion that it cannot be reasonably assured that it will have adequate resources to negotiate additional order(s), review new

or revised workplans under such order(s), and/or perform the tasks required to implement and oversee the work by such additional party (parties) under such order(s).

XI. MODIFICATION OF WORK PLANS

37. If at any time during the implementation of Work, Respondent identifies a need for a compliance date modification or revision of an existing EPA approved Work Plan, Respondent shall document in a written request to EPA the exact modification or revision requested and the basis for that modification or revision. EPA will determine if the modification or revision is warranted and will provide written approval or disapproval. Any approved modified compliance date or Work Plan modification will be incorporated by reference into this Consent Order.

38. Emergency Response. In the event of any action or occurrence during the performance of Work that constitutes an emergency situation or may present an immediate threat to human health and the environment, Respondent shall immediately take all appropriate action to minimize such emergency or threat, and shall immediately notify the EPA's Project Coordinator. Respondent shall take such immediate and appropriate actions in consultation with EPA's Project Coordinator. Respondent shall submit to EPA written notification of such emergency or threat at the Facility within three (3) calendar days of such discovery. Respondent shall thereafter submit to EPA for approval, within 20 days, a plan to mitigate this threat. EPA will approve or modify this plan, and Respondent shall implement this plan as approved or modified by EPA. In the case of an extreme emergency, Respondent may act as it deems appropriate to protect human health or the environment. However, Respondent's actions are subject to EPA review and approval and EPA may require Respondent to take additional response actions.

XII. QUALITY ASSURANCE

39. As part of each new Work Plan, unless otherwise agreed, or unless a Master Quality Assurance Project Plan (QAPP) has been previously approved by EPA for usage under this Consent Order and it is appropriately cited in the new Work Plan, Respondent shall include a Quality Assurance Project Plan (QAPP) for EPA review and approval. The QAPP shall address quality assurance, quality control, and chain of custody procedures for all sampling, monitoring and analytical activities. Respondent shall follow "EPA Requirements for Quality Assurance Project Plans" (QA/R5)" (EPA/240/B-01/003, March 2001), "Guidance for Quality Assurance Project Plans (QA/G-5)" (EPA/600/R-98/018, February 1998), and "EPA Requirements for Quality Management Plans (QA/R-2)" (EPA/240/b-01/002, March 2001) (or later versions of these documents) as well as other applicable documents identified by EPA. The QAPP shall be incorporated into this Consent Order by reference.

40. As part of the Work Plan, Respondent shall include Data Quality Objectives for any data collection activity to ensure that data of known and appropriate quality are obtained and that data are sufficient to support their intended use as required by this Consent Order.

41. Respondent shall ensure that laboratories used by Respondent for analysis perform such analysis according to the latest approved edition of "Test Methods for Evaluating Solid Waste (SW-846)" or other methods approved by EPA. If methods other than EPA methods are to be used, Respondent shall specify all such protocols in the applicable Work Plan. EPA may reject any data that does not meet the requirements of the approved Work Plan and EPA analytical methods and may require resampling and additional analysis.

42. Respondent shall ensure that all laboratories it uses for analyses participate in a quality assurance/quality control (QA/QC) program equivalent to the program that EPA follows. Respondent shall, upon EPA's request, make arrangements for EPA to conduct a performance and QA/QC audit of the laboratories chosen by Respondent, whether before, during, or after sample analyses. Upon EPA's request, Respondent shall have its laboratories perform analyses of samples provided by EPA to demonstrate laboratory QA/QC and performance. If the audit reveals deficiencies in a laboratory's performance or QA/QC, Respondent shall submit a plan to address the deficiencies and EPA may require resampling and additional analysis.

43. Any laboratory used by Navy to perform chemical analysis pursuant to this Order must be certified under EPA's National Contract Laboratory Program ("CLP"), or the Navy must obtain prior written approval from EPA for usage of a non-CLP laboratory by Navy to perform chemical analysis pursuant to this Order. Navy shall ensure that EPA personnel and authorized representatives have access to the laboratories and personnel performing any analyses. In the event that EPA or its representatives cannot satisfactorily obtain access to the laboratories for any reason for the purposes of auditing protocols and technical proficiency, then EPA shall so inform the Navy and the Navy shall, as soon as practicable thereafter, substitute another CLP certified, or EPA approved, laboratory which provides access in a manner deemed satisfactory to EPA.

XIII. DOCUMENT CERTIFICATION

44. Any report or plan or other document submitted by Respondent pursuant to this Consent Order which addresses work plans, or makes recommendations as to whether or not further actions are necessary, or makes any representation concerning Respondent's compliance or noncompliance with any requirement of this Consent Order shall be certified by a responsible civilian official or military officer of Respondent with authority to make such a certification.

45. The certification required by Paragraph 44, above, shall be in the following form:

> I certify under penalty of law that I have examined and am familiar with the information submitted in this document and all attachments and that this document and its attachments were prepared either by me personally or under my direction or supervision in a manner designed to ensure that qualified and knowledgeable personnel properly gather and present the information contained therein. I further certify, based on my personal knowledge or on my inquiry of those individuals immediately responsible for obtaining the information, that the information is true,

accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowingly and willfully submitting a materially false statement.

Signature:_____
Name:
Title:
Date:

This certification requirement does not apply to emergency or similar notifications if compliance with this requirement would be impractical.

XIV. SAMPLING, ACCESS AND DATA AVAILABILITY

46. All results of sampling, testing, modeling or other data generated (including raw data if requested) by Respondent, or on Respondent's behalf, during implementation of this Consent Order shall be validated by Respondent and submitted to EPA within 30 days of Respondent's receipt of the data (unless a different schedule is agreed to in writing). Respondent shall submit all data in a format consistent with EPA Region 2's *Electronic Data Deliverable (EDD) Specification Manual*, Version 2.1, dated December 2003, or the most recent version, if such exists. EPA will make available to Respondent data generated by EPA for the purposes of oversight of the Work unless it is exempt from disclosure by any federal or Commonwealth law or regulation.

47. Respondent shall orally notify EPA at least 20 days prior to conducting field sampling. At EPA's request, Respondent shall allow split or duplicate samples to be taken by EPA or EPA's representative.

48. Facility Access. Pursuant to RCRA § 3007(a), 42 U.S.C. § 6927(a) and other authority, Respondent shall provide access to the Facility during regular business hours (and at other times if reasonable under the circumstances) to both EQB and EPA, and EQB's and EPA's contractors and oversight officials. Respondent shall also provide the above-noted entities with access at reasonable times, as noted above, to all records and documentation in its possession or control, including those records and documents in the possession or control of Respondent's contractors and employees, related to the conditions at the Facility and the actions conducted pursuant to this Consent Order. Respondent shall use its best efforts to gain access to areas owned by or in the possession of someone other than Respondent, as necessary to implement this Consent Order, as described in Paragraph 50. The above-noted entities shall be permitted to move freely about the Facility and appropriate off-site areas in order to conduct actions that EPA and EQB determine to be necessary. The above-noted entities shall notify Respondent of their presence at the Facility by presenting their credentials. All entities with access to the Facility under this Paragraph shall comply with all approved health and safety plans and regulations.

49. Pursuant to this Section, any denial of access at reasonable times to any portion of the

Facility property where a request for access was made shall be construed as a violation of the terms of this Consent Order subject to the penalty provisions outlined in Section XIX (Stipulated Penalties) of this Consent Order.

50. Access Agreements. Where action under this Consent Order is to be performed in areas owned by, or in possession of, someone other than Respondent, and that other party is not responsible for the work, Respondent shall use its best efforts to obtain all necessary access agreements within 45 days of approval of any Work Plan for which access is necessary or as otherwise specified, in writing, by the EPA Project Coordinator. Any such access agreement shall provide for access by EQB and EPA and their representatives to move freely in order to conduct actions that EQB and EPA determine to be necessary. The access agreement shall specify that Respondent is not EQB's or EPA's representative with respect to any liabilities associated with activities to be performed. Respondent shall provide EQB's and EPA's Project Coordinators with copies of any access agreements. Respondent shall immediately notify EQB and EPA if after using Respondent's best efforts it is unable to obtain such agreements within the time required. Best efforts as used in this Paragraph shall include, at a minimum, a letter sent by certified mail from Respondent to the present owner of such property requesting access agreements to permit Respondent, EQB, EPA, and their authorized representatives to enter such property, and the offer of payment of sums of money (if reasonable under the circumstances) in consideration of granting access. Respondent shall, within 10 days of its receipt of a denial of access, submit in writing, a description of its efforts to obtain access. EQB and EPA may, at their discretion, assist Respondent in obtaining access. In the event EQB and/or EPA obtains access, Respondent shall undertake the Work on such property and EPA reserves any right it may have to seek reimbursement from Respondent for all costs and attorney fees incurred by the EPA and the United States Department of Justice acting on EPA's behalf in connection with obtaining such access.

51. Confidential Information. Respondent may assert, pursuant to 40 C.F.R. §2.203(b), a confidentiality claim, if appropriate, covering part or all of the information required by this Consent Order. Such an assertion shall be adequately substantiated (e.g., data or other information related to Facility production methods or processes). Any assertion of confidentiality shall be accompanied by sufficient documentation to satisfy the requirements of 40 C.F.R. § 2.204(e)(4). Information determined to be confidential by EPA will be afforded the protection specified in 40 C.F.R. Part 2, Subpart B. If no such claim accompanies this information when it is submitted to EPA, it may be made available to the public by EPA, without further notice to Respondent. No confidentiality claim shall be made with regard to any analytical data.

52. Privileged Documents. Respondent may assert that certain documents, records and other information are privileged under the attorney-client privilege or any other privilege recognized by federal law. If Respondent asserts such a privilege in lieu of providing documents, Respondent shall provide EPA with the following: (1) the title of the document, record, or information; (2) the date of the document, record, or information; (3) the author's name and title; (4) the name and title of each addressee and recipient; (5) a description of the contents; and (6) the privilege

asserted by Respondent. However, no documents, reports or other information created or generated pursuant to the requirements of this Consent Order shall be withheld on the grounds that they are privileged.

53. All data, information, and records created or maintained relating to any solid or hazardous waste found at the Facility shall be made available to EQB and EPA upon request unless Respondent asserts a claim that such documents are legally privileged from disclosure. Respondent shall have the burden of demonstrating to EPA by clear and convincing evidence that such privilege exists.

54. No claim of confidentiality shall be made with respect to any data, including, but not limited to, all sampling, analytical, monitoring, hydrogeologic, scientific, chemical, or engineering data, or any other documents or information evidencing conditions at or around the Facility.

55. Nothing in this Consent Order shall be construed to limit EQB's and EPA's right of access, entry, inspection, and information gathering pursuant to applicable law, including but not limited to RCRA and CERCLA.

XV. COMPLIANCE WITH OTHER LAWS

56. All actions undertaken pursuant to this Consent Order by Respondent shall be done in accordance with all applicable local, commonwealth and federal laws, regulations, ordinances and Executive Orders. Respondent retains the obligation and agrees to obtain all permits or approvals necessary to perform the work required by this Consent Order.

XVI. RECORD RETENTION

57. Respondent shall preserve, during the pendency of this Consent Order and for at least seven (7) years after its termination, all data, records and documents in its possession or in the possession of its divisions, employees, agents or consultants or contractors, which data, records and documents relate in any way to this Consent Order, or to hazardous waste management practices and/or disposal at the Facility.

58. Except where Respondent, and EPA otherwise agree, subsequent to the termination of the aforementioned seven (7) year period, Respondent shall provide written notification to EPA sixty (60) days prior to the destruction of any data, records or documents that relate in any way to this Consent Order, its implementation, or to hazardous waste management practices and/or disposal at its Facility. At EPA's request, Respondent shall then make such records available to EPA for inspection and/or EPA's retention or shall provide copies of any such records to EPA prior to discarding.

59. Respondent shall make a good faith effort to preserve all documents pertaining to this Consent Order in a centralized location to afford ease of access by EPA or its representatives.

Where Respondent finds such a requirement impossible, Respondent shall minimize the number of locations used and shall maintain in a central location a list detailing the location of such documents.

60. All data, information, and records concerning, created for, or maintained by the Respondent, in connection with this Consent Order, shall be made available to EPA upon request in accordance with the provisions of Section XIV. All employees of the Respondent and all persons, including contractors and subcontractors who engage in activity under this Consent Order, shall be made available to and shall cooperate with EPA if information is sought.

61. Nothing in this Section shall be read to shorten any document retention requirement otherwise applicable to the Navy or other entity.

62. Administrative Record. EPA will maintain an administrative record file. The administrative record supporting issuance of this Consent Order and the work being required under it shall be available for public review at EPA's Region 2 offices, 290 Broadway, New York, NY. The Navy shall maintain a public repository in Puerto Rico, where copies of all documents regarding the work performed pursuant to this Consent Order shall be available for public inspection. The requirements for this public repository are discussed in Section XXVIII, Paragraph 122, of this Order.

XVII. FULL TIME EMPLOYEE ASSISTANCE

63. EPA and the Navy are in the process of negotiating Full Time Employee (FTE) assistance for EPA. At this time, the Navy has agreed that for Fiscal Year 2006 it will provide EPA, pursuant to the Navy's Base Realignment and Closure (BRAC) authority, two Full Time Equivalent (FTE) positions. The parties agree to negotiate in good faith concerning arrangements for future years.

XVIII. DISPUTE RESOLUTION PROCEDURES

64. Except as specifically set forth elsewhere in this Consent Order, if a dispute arises under this Consent Order the procedures of this part shall apply. In addition, during the pendency of any dispute, Navy agrees that it shall continue to implement those portions of this Consent Order which are not in dispute and which EPA determines can be reasonably implemented pending final resolution of the issue(s) in dispute. If EPA determines in writing that all or part of those portions of work which are affected by the dispute should stop during the pendency of the dispute, Navy shall discontinue implementing those portions of the work.

65. EPA and Navy shall make reasonable efforts to informally resolve disputes at the Project Coordinator or immediate supervisor level. If resolution cannot be achieved informally, the procedures of this part shall be implemented to resolve the dispute.

66. Within thirty (30) days of the date when Navy is informed of an action by EPA that leads

to or generates a dispute, Navy shall submit to EPA a written statement of dispute setting forth the nature of the dispute including any elements of work, submittals, or actions affected by the dispute, Navy's position with respect to the dispute, and the information Navy is relying upon to support its position, and any impact such dispute may have on specified schedules, elements of work, submittals, or actions required by this Consent Order. If Navy does not provide such written statement to EPA within this thirty (30) day period, Navy shall be deemed to have agreed with the action taken by EPA which led to or generated the dispute.

67. Upon receipt of the written statement of dispute, EPA and Navy shall engage in dispute resolution among the Project Coordinators and/or their immediate supervisors. EPA and Navy shall have twenty (20) days from the receipt by EPA of the written statement of dispute to resolve the dispute. During this period the Project Coordinators shall meet as many times as are necessary to discuss and attempt resolution of the dispute. Any agreed resolution shall be in writing, signed by EPA and Navy. If agreement cannot be reached on any issue within this twenty (20) day period, Navy may, within ten (10) days of the conclusion of the twenty (20) day dispute resolution period, submit a written notice to EPA escalating the dispute to the Dispute Resolution Committee ("DRC") for resolution. If Navy does not elevate the dispute to the DRC within this ten (10) day escalation period, Navy shall be deemed to have agreed with EPA's position with respect to the dispute.

68. The EPA representative on the DRC is the Director, Division of Environmental Planning and Protection, EPA Region II. The Navy representative on the DRC is the Director, BRAC Program Management Office. These representatives may be changed and they may designate other individuals to act for them. Notice of any change in the representative and delegation of authority from a party's designated representative on the DRC shall be provided to the other parties.

69. The DRC will serve as a forum for resolution of disputes for which agreement has not been reached informally. EPA and Navy shall each designate one individual and an alternate to serve on the DRC. Following escalation of a dispute to the DRC, the DRC shall have twenty (20) days to resolve the dispute. Any agreed resolution shall be in writing and signed by EPA and Navy. If the DRC is unable to resolve the dispute within this twenty (20) day period, Navy may, within ten (10) days of the conclusion of the twenty (20) day dispute resolution period, submit a written Notice of Dispute to the Senior Executive Committee (SEC) for resolution. In the event that the dispute is not escalated to the SEC within the designated ten (10) day escalation period, Navy shall be deemed to have agreed with EPA's position with respect to the dispute.

70. The SEC will serve as the forum for resolution of disputes for which agreement has not been reached by the DRC. The EPA's representative on the SEC is the Regional Administrator of the EPA Region II. The Navy's representative on the SEC is the Deputy Assistant Secretary of the Navy (Environment). The members shall as appropriate confer, meet and exert their best efforts to resolve the dispute and issue a unanimous written decision signed by the parties. If unanimous resolution of the dispute is not reached within twenty-one (21) days, the EPA Regional

Administrator shall issue a written position on the dispute. The Secretary of the Navy may, within ten (10) days of the Regional Administrator's issuance of EPA's position, issue a written notice elevating the dispute to the Administrator of the U.S. EPA for resolution in accordance with all applicable laws and procedures. In the event that Navy elects not to elevate the dispute to the Administrator within the designated ten day escalation period, the Regional Administrator's decision will become final and the work will proceed in accordance with the Regional Administrator's written position with respect to the dispute.

71. Upon escalation of a dispute to the Administrator of the EPA pursuant to Paragraph 70, above, the Administrator will review and resolve the dispute within twenty-one (21) days. Upon request, and prior to resolving the dispute, the EPA Administrator shall meet and confer with the Secretary of the Navy to discuss the issues under dispute. Upon resolution, the Administrator shall provide the Navy with a written final decision setting forth the resolution of the dispute. The duties of the Administrator and the Secretary set forth in this Section shall not be delegated.

72. The pendency of any dispute under this part shall not affect Navy's responsibility for timely performance of the work required by this Consent Order, except that the time period for completion of work affected by such dispute shall be extended for a period of time not to exceed the actual delay caused by the resolution of any good faith dispute in accordance with the procedures specified herein. All elements of the work required by this Consent Order which are not affected by the dispute shall continue and be completed in accordance with the applicable schedule.

73. Within fourteen (14) days of resolution of a dispute pursuant to the procedures specified in this part, Navy shall incorporate the resolution and final determination into the appropriate plan, schedule or procedures and proceed to implement this Consent Order according to the amended plan, schedule or procedure.

74. Resolution of a dispute pursuant to this part of the Consent Order constitutes a final resolution of that dispute arising under this Consent Order. The Parties shall abide by all terms and conditions of any final resolution of dispute obtained pursuant to this part of this Consent Order.

75. The procedures of this section shall not apply to disputes about EPA's designation of its project coordinator or any EPA enforcement actions.

XIX. STIPULATED PENALTIES

76. In the event that the Navy fails to comply with the requirements of this Consent Order EPA may assess a stipulated penalty against the Navy as set forth below. A stipulated penalty may be assessed in an amount not to exceed $3,000.00 for the first week (or part thereof), and $6,000.00 for each additional week (or part thereof) for which a failure occurs.

77. Upon determining that the Navy is liable for stipulated penalties, EPA shall so notify the Navy in writing. If the failure in question is not already subject to dispute resolution at the time such notice is received, the Navy shall have fifteen (15) days after receipt of the notice to invoke dispute resolution on the question of whether the failure did in fact occur. The Navy shall not be liable for the stipulated penalty assessed by EPA if the failure is determined, through the dispute resolution process, not to have occurred. Penalties shall accrue but need not be paid during the dispute resolution period. No assessment of a stipulated penalty shall be final until the conclusion of the dispute resolution procedures related to the assessment of the stipulated penalty.

78. Stipulated penalties assessed pursuant to this Part shall be payable to the U.S. Treasury only in the manner and to the extent allowed by law. Should dispute resolution not be invoked or should the Navy be found liable for the penalty pursuant to the dispute resolution process, the Navy shall pay the stipulated penalty following the procedures in Paragraph 79, below. If funds to pay the penalty are not available to the Navy at the time any such penalty becomes due, the Navy shall request the appropriate funding to pay the penalty in the next available budget request. Upon Congressional authorization, and, if necessary, appropriation of the funding the Navy shall be obligated to pay the stipulated penalty, and such payment shall be made in accordance with Paragraph 79, below.

79. Subject to Congressional authorization and if necessary, appropriation, Respondent shall make payments by money order, certified check, electronic funds transfer, or cashier's check payable to the Treasurer of the United States within thirty (30) days of the EPA's notice under paragraph 77, above, or if dispute resolution is invoked within thirty (30) days of the resolution of the dispute. In the event funds to pay the stipulated penalty are not immediately available, the Navy shall pay the stipulated penalty within sixty (60) days after Congressional authorization of and if necessary, appropriation for the payment of the stipulated penalty. Such payment shall be submitted to the following address:

Regional Hearing Clerk
U.S. EPA, Region 2
P.O. Box 360188M
Pittsburgh, PA 15251

80. The caption information (In the Matter of The Department of the Navy) on this Consent Order and the Docket No. RCRA-02-2007-7301 should be clearly typed on the check and any cover letter to ensure proper credit. Respondent shall send simultaneous notices of such payments, including copies of the money order, certified check, company check, electronic funds transfer, or cashier's check to the following:

Carl R. Howard
Assistant Regional Counsel
U.S. EPA, Region 2
290 Broadway
New York, NY 10007-1866

81. Neither the invocation of dispute resolution nor the payment of penalties shall alter in any way Respondent's obligation to comply with the terms and conditions of this Consent Order. The stipulated penalties set forth in this Section do not preclude EPA from pursuing any other remedies or sanctions which may be available to EPA by reason of Respondent's failure to comply with any of the terms and conditions of this Consent Order.

XX. FORCE MAJEURE

82. "Force majeure" for purposes of this Consent Order is defined as any event arising from circumstances beyond the control of Respondent that delays or prevents the performance of any obligation arising under Section VIII (Work to be Performed) and/or the reporting requirements of that section. "Force majeure" specifically does not include increased costs or expenses of complying with the requirements of this Consent Decree.

83. When circumstances are occurring or have occurred that may reasonably be expected to cause a delay in the performance or completion of any requirement of Sections VIII and IX (EPA Approvals and Additional Work) of this Consent Order, Respondent shall notify EPA by telephone of said circumstances within four (4) working days. Such telephone call shall be made to the Chief of the EPA's (Region II) RCRA Program's Branch, whose telephone number at EPA Region II's current office location is (212) 637-4109. EPA will attempt to advise Respondent in writing if this number changes.

84. Within ten (10) working days of the events or events that Respondent contends are responsible for the delay, for which event Respondent is asserting "force majeure", Respondent shall deliver to EPA in writing the: (1) reasons for, and anticipated duration of such delay, (2) the measures taken and to be taken by Respondent to prevent or minimize the delay, (3) the deadlines in the Order and the accompanying work plan that will be affected by the "force majeure", and (4) the timetable for implementation of the measures taken and to be taken by Respondent to prevent or minimize the delay. Such written notification is to be sent to EPA's Project Coordinator noted in Section VIII.

85. Respondent's failure to give oral notice to EPA and/or to give written explanation to EPA as specified by this Section shall constitute a waiver by Respondent of any claim of "force majeure."

86. If EPA and Respondent are unable to agree on whether the reason for the delay or noncompliance was caused by a "force majeure" event, or whether the duration of the adjournment proposed by Respondent is warranted under the circumstances, the parties shall resolve the dispute according to the provisions of this Section XX (Force Majeure). Respondent shall have the burden of proving, by a preponderance of the evidence, "force majeure" as an explanation of any delay in or noncompliance with a requirement of Section VIII (Work to be Performed) and/or Section IX (EPA Approvals and Additional Work) of this Consent Order.

87. Any failure or delay by Respondent in complying with the terms of Sections VIII and/or

Section IX of this Consent Order which delay or failure results from a "force majeure" event, shall not be deemed to be a violation of Respondent's obligations and responsibilities under those Sections. To the extent a delay is caused by a "force majeure" event, the schedule affected by the delay shall be extended, if necessary, for a period equal to only the number of days of actual delay resulting from such circumstances, and Respondent shall not be liable for the number of days of actual delay caused by a "force majeure" event. Respondent, however, shall exercise due diligence in taking all necessary measures to mitigate the period of any such delay.

88. If EPA agrees that a delay or noncompliance is or was attributable to a "force majeure" event and that defense has not been waived, the deadline at issue shall be extended by a length of time not to exceed the duration of the "force majeure" event.

XXI. RESERVATION OF RIGHTS

89. Notwithstanding any other provisions of this Consent Order, EPA retains all of its authority to take, direct, or order any and all actions necessary to protect public health or the environment or to prevent, abate, or minimize an actual or threatened release of hazardous substances, pollutants, or contaminants, or hazardous or solid waste or constituents of such wastes, on, at, or from the Facility, including but not limited to the right to bring enforcement actions under RCRA, CERCLA, and any other applicable statutes or regulations.

90. EPA reserves all of its statutory and regulatory powers, authorities, rights, and remedies, both legal and equitable, which may pertain to Respondent's failure to comply with any of the requirements of this Consent Order, including without limitation the assessment of penalties under Section 7003 of RCRA, 42 U.S.C. § 6973, and including the right to both disapprove of work performed by the Respondent and to request that the Respondent perform tasks in addition to those stated in the workplans.

91. This Consent Order shall not be construed as a covenant not to sue, release, waiver, or limitation of any rights, remedies, powers, claims, and/or authorities, civil or criminal, which EPA has under RCRA, CERCLA, or any other statutory, regulatory, or common law authority of the United States.

92. This Consent Order is not intended to be nor shall it be construed to be a permit. Respondent acknowledges and agrees that EPA's approval of the Work and/or Work Plan does not constitute a warranty or representation that the Work and/or Work Plans will achieve the required cleanup or performance standards. Compliance by Respondent with the terms of this Consent Order shall not relieve Respondent of its obligations to comply with RCRA or any other applicable local, state, or federal laws and regulations.

93. Notwithstanding any other provision of this Consent Order, no action or decision by EPA pursuant to this Consent Order, including without limitation, decisions of the Regional Administrator, the Director of the Division of Environmental Planning & Protection, or any authorized representative of EPA, shall constitute final agency action giving rise to any right of

judicial review prior to EPA's initiation of an action to enforce this Consent Order, including an action for penalties or an action to compel Respondent's compliance with the terms and conditions of this Consent Order.

94. This Consent Order and Respondent's consent to its issuance shall not limit or otherwise preclude EPA from taking any additional legal action against Respondent should EPA determine that any such additional legal action is necessary or warranted.

95. This Consent Order shall not relieve Respondent of its obligation to obtain and comply with any federal, commonwealth or local permit nor is this Consent Order intended to be, nor shall it be construed to be, a ruling or determination on, or of, any issue related to any federal, commonwealth or local permit. However, to the extent provided in CERCLA Section 121(e)(1), the Navy shall not be required to obtain permits for any CERCLA removal or remedial action conducted entirely at the Facility; any CERCLA response actions undertaken at the Facility, including the off-shore islands, shall comply with CERCLA, 42 U.S.C. § 9601, et seq. and the National Oil and Hazardous Substances Pollution Contingency Plan ("NCP"), 40 C.F.R. Part 300. Nothing in this Agreement shall alter the Navy's authority with respect to removal actions conducted pursuant to CERCLA Section 104(a)(2), 42 U.S.C. §9604(a)(2).

96. EPA reserves the right to perform any and all work required by this Consent Order including, but not limited to, any additional site characterization, feasibility study, and/or response or corrective action deemed necessary to investigate and remediate the Facility thoroughly, or to protect human health or the environment

97. Notwithstanding compliance with the terms of this Consent Order, Respondent is not released from liability for the costs of any response actions taken by EPA. EPA reserves any rights it may have to seek reimbursement from the Respondent for any such costs incurred by the EPA. Respondent reserves any rights it may have to challenge such an action.

98. Respondent does not waive any defenses Respondent may have or wish to pursue in any action involving third parties.

99. Nothing in this Consent Order and no determination made or action taken (including any failure to act) pursuant to the Consent Order, including, without limitation, any determination or resolution resulting from Dispute Resolution under Section XVIII, shall constitute an admission or evidence of an admission by Respondent or otherwise constitute an adjudication of any fact or conclusion of law, except in an action or proceeding by EPA to enforce the terms of this Consent Order.

100. Nothing herein shall preclude any actions by EPA to enforce the terms of this Consent Order, or to address or bring any available legal or equitable claim for: (1) any pre-existing or current violations or conditions at the Facility; (2) any emergency conditions or imminent hazard which may exist or arise at the Facility; (3) any corrective action pursuant to the Act or Commonwealth law; or (4) any response action pursuant to CERCLA as amended

101. The Parties recognize that EPA may issue a hazardous waste management permit under the Act or commonwealth law to one or more owner or operator of part or all of the Facility which includes corrective action requirements and which may cover one or more of the same SWMUs or AOCs addressed in this Consent Order. EPA reserves the right to enforce the requirements of such permits, including corrective action, as against the permittee.

102. Although this Consent Order is issued under the Act (RCRA), Navy reserves any right it may have to utilize its own authority, or exercise any other available right as provided by law (including CERCLA, as amended, DERA, or Executive Order 12580) to implement the provisions of this Consent Order and nothing in this Consent Order shall alter Navy's inherent authority with respect to removal actions it may independently conduct pursuant to its own legal authorities. Any such action by the Navy shall, however, be consistent with the provisions of and work required by this Consent Order.

103. Except as otherwise specifically provided herein, the Parties reserve all rights and defenses they may have under any applicable law, executive orders, regulations, and this Consent Order with respect to any person.

XXII. OTHER CLAIMS

104. Respondent waives all claims against the United States relating to or arising out of conduct of this Consent Order, including, but not limited to, contribution and counterclaims.

105. Respondent shall bear its own litigation costs and attorney fees.

106. In any subsequent proceeding initiated by EPA or on behalf of EPA for injunctive or other appropriate relief relating to the Facility, Respondent shall not assert, and may not maintain, any defense or claim based upon the principles of waiver, res judicata, collateral estoppel, issue preclusion, claim-splitting, or other defenses based upon any contention that the claims raised by EPA or on behalf of EPA in the subsequent proceeding were or should have been raised in the present matter.

XXIII. NOTICE OF NON-LIABILITY OF EPA

107. By issuance of this Consent Order, EPA assumes no liability for injuries or damages to persons or property resulting from any acts or omissions of Respondent. EPA shall not be deemed a party to any contract involving the Navy and relating to activities at the Facility and shall not be liable for any claim or cause of action arising from or on account of any act, or the omission of the Navy, its officers, employees, contractors, receivers, trustees, agents or assigns, in carrying out the activities required by this Order.

XXIV. MODIFICATION OF THIS CONSENT ORDER

108. This Consent Order may be modified by the parties. Any such modification, proposed by

the parties, must be approved by EPA. Such modification(s) shall be in writing and shall have as its effective date the date on which it is signed by the Regional Administrator. Any modification is, on its effective date, hereby incorporated into this Consent Order.

109. Notwithstanding the above, the EPA Project Coordinator and Respondent may agree to changes in the scheduling of events. Any such changes must be requested in writing by Respondent and be approved in writing by EPA. In addition, the parties may also agree to amend the work requirements under this Consent Order as Respondent sells and/or otherwise conveys various parcels of the Facility to various third parties. As noted in Section IX (EPA Approvals and Additional Work), above, amendment of work requirements under this Consent Order is expected to follow the issuance of an order(s) to one or more third parties assuming responsibility for corrective action work.

XXV. ENFORCEMENT

110. Navy recognizes its obligations to comply with the applicable federal and commonwealth laws and regulations, including the Act, as set forth in Section 6001 of the Act, 42 U.S.C. § 6961, and Section 102 of the Federal Facility Compliance Act, and to faithfully discharge the requirements of this Consent Order.

XXVI. FUNDING

111. It is the expectation of the Parties to this Agreement that all obligations of the Navy arising under this Agreement will be fully funded. The Navy agrees to seek sufficient funding through its budgetary process to fulfill its obligations under this Agreement. Failure to obtain adequate funds or appropriations from Congress does not, in any way, release Navy from its obligation under this Consent Order to comply with RCRA, or any applicable law or regulation. If sufficient funds are not appropriated by the Congress as requested and existing funds are not available to achieve compliance with the schedules provided in this Consent Order, EPA reserves its right to initiate any other action which would be appropriate absent this Consent Order.

112. Any requirement for the payment or obligation of funds, including penalties, by the Navy established by the terms of this Agreement shall be subject to the availability of appropriated funds, and no provision herein shall be interpreted to require obligation or payment of funds in violation of the Anti-Deficiency Act, 31 U.S.C. Section 1341. In cases where payment or obligation of funds would constitute a violation of the Anti-Deficiency Act, the dates established requiring the payment or obligation of such funds shall be appropriately adjusted. In the event of the Navy reassuming responsibility for work pursuant to Section X of this Consent Order, Navy's obligations are suspended in the event of insufficient availability of appropriated funds, if the Navy, upon resumption of its responsibilities, makes a timely request to Congress for such funds.

113. Navy has informed EPA that funding authorized and appropriated annually by Congress under the BRAC appropriation in the Department of Defense Appropriations Act and proceeds made available to the BRAC account will be the sources of funds for activities required by this

Agreement. However, should these sources be inadequate in any year to meet the total Navy's implementation requirements under this Agreement, the Navy will prioritize and allocate that year's appropriation or funds available. In the event of the Navy reassuming responsibility for work pursuant to Section X of this Order, the Navy will use best efforts to find funding to allow the work to proceed without delay and if complete funding cannot be obtained immediately, to proceed with work that can be funded. The Navy's obligations are suspended in the event of insufficient availability of funds, provided that the Navy, upon resumption of its responsibilities, makes a timely request to Congress for such funds. Navy has informed EPA that the Navy plans to treat its activities implementing this Order as Installation Restoration matters consistent with Title 10 Chapter 160, which requires that those activities be consistent with CERCLA and the NCP.

114. If appropriated funds are not available to fulfill the Navy's obligations under this Agreement, EPA reserves the right to initiate an action against any other person, or to take any action, which would be appropriate absent this Agreement.

XXVII. TERMINATION AND SATISFACTION

115. The provisions of this Consent Order shall be deemed satisfied and the obligations of Respondent under this Consent Order shall terminate upon Respondent's receipt of a written statement from EPA stating that Respondent has completed, to EPA's satisfaction, as noted in Paragraph 116, below, the terms of this Consent Order. Termination of this Consent Order will be subject, unless otherwise agreed, to Respondent's on-going obligations to comply with provisions within Sections VIII (Work To Be Performed), the annual reports on Land Use Controls or other institutional and engineering controls, and transferred parcels (Paragraph 27(G)); XIV (Sampling, Access and Data Availability)(Paragraphs 48, 51-54); XVI (Record Retention); XXI (Reservation of Rights); XXVI (Funding); and XXVIII (Public Comment on this Consent Order and Decisions Made Pursuant to this Consent Order)(Paragraph 122) of this Consent Order, and to maintain institutional and engineering controls and to satisfy any other on-going obligations. So long as Respondent is performing work pursuant to, or required by this Consent Order, this Consent Order shall not be deemed terminated or satisfied.

116. Upon the satisfactory completion of all required actions, including all corrective action for which the Navy and all Third Parties are responsible, and upon written request by Respondent, EPA shall endeavor to send to Respondent a written notice of satisfaction of the terms of this Consent Order as soon as practicable. The notice will state that EPA considers Respondent to have satisfied the terms of this Consent Order.

XXVIII. PUBLIC COMMENT ON THIS CONSENT ORDER AND DECISIONS MADE PURSUANT TO THIS CONSENT ORDER

117. EPA shall provide public notice, a public meeting (or the equivalent) and a reasonable opportunity for public comment on the Consent Order. After consideration of any comments submitted during a public comment period, EPA may not issue this Consent Order or may seek to

amend all or part of this Consent Order if EPA determines that comments received disclose facts or considerations which indicate that this Consent Order is inappropriate, improper, or inadequate in whole or in part.

118. Public Participation procedures will conform with guidance, set forth in the September 1996 RCRA Public Participation Manual, and EPA's Office of Solid Waste and Emergency Response Directives 9901.3 "Guidance for Public Involvement In RCRA Section 3008(h) Actions" (May 5, 1987), and 9902.6 "RCRA Corrective Action Decision Documents: The Statement of Basis and Response to Comments" (April 29, 1991), or other current EPA regulation or guidance, as appropriate.

119. As requested by EPA, Respondent will make any relevant documents, including any RCRA Facility Investigation (RFI), Corrective Measures Study (CMS), and/or Corrective Measures Implementation (CMI) Work Plan(s) and/or Final Report(s), and any other documents developed pursuant to the requirements of this Order available for public review and comment.

120. Following EPA's tentative decision to approve, subject to public review and comment, a draft Final CMS Report and the recommended final corrective measure(s)/remedy(ies), including no further action, EPA may issue a public notice on the proposed final corrective measure(s), including any no further action determination(s), and make available to the public for review and comment for at least thirty (30) days, both the RCRA Facility Investigation Final Report (or summary of report) and the Corrective Measure Study draft Final Report (or summary of report), and any Statement of Basis that may exist for the final corrective measure/remedy decision, and if appropriate, any draft Final Corrective Measures Implementation (CMI) Work Plan that may exist for the proposed corrective measure(s)/remedy(ies).

121. Following the public review and comment on the draft Final CMS Report and, as warranted the draft Final CMI Work Plan, EPA shall notify Respondent in writing of the corrective measures selected by EPA, and, if acceptable EPA's approval of the CMS Report and the CMI Work Plan. The EPA approved CMS Report and the CMI Work Plan shall be incorporated into this Order by reference. Respondent shall then implement the corrective measure/final remedy pursuant to schedules set forth in the approved CMI Work Plan. If the corrective measure(s) recommended in the draft Final Corrective Measure Study Report is (are) not the corrective measure(s)/final remedy selected by EPA after consideration of comments received during the public comment period, EPA shall inform Respondent in writing of the reasons for such decision, and if EPA so directs, Respondent shall modify the draft Final CMS Report and/or any CMI Work Plan that may exist based upon public comments, and EPA direction.

122. Respondent shall establish and maintain a Public Repository, located within 5 miles of the Facility, where the public may inspect all documents developed pursuant to this Consent Order or referenced in this Consent Order. Within ten (10) days of the effective date of this Consent Order Respondent shall place at least one (1) paper copy of all documents developed pursuant to this Consent Order or referenced in this Consent Order in the Public Repository, or for documents developed following the effective date of this Consent Order, within twenty one (21) days of EPA's request that

such document be placed in the Public Repository. Respondent shall continue to maintain this Public Repository until this Consent Order is terminated pursuant to Paragraph 116 of Section XXVII, above. Respondent shall provide Spanish translations of the documents noted below (following EPA's conditional approval of the English version of the document), and as directed by EPA: Public Notices; Fact Sheets and other descriptive summaries of important documents to assist in public outreach; and summary sections of important reports and/or of work plans (but not the full report/work plan). The intention of the parties is to provide translations consistent with EPA, Region 2's Policy on Translations and Interpretations, dated December 10, 1997. EPA reserves its right to ask Respondent to translate additional materials consistent with this Policy, where EPA deems such translation to be important. If EPA requests that the Navy translate additional materials, this, upon the Navy's request, will be subject to approval by the EPA Deputy Regional Administrator and if approved, the Navy will be provided with a writing confirming the Deputy's approval of EPA's request.

XXIX. SEVERABILITY

123. If any provision or authority of this Consent Order or the application of this Consent Order to any party or circumstance is found to be invalid, or is temporarily stayed, the remainder of this Consent Order shall remain in force and shall not be affected thereby.

XXX. EFFECTIVE DATE

124. This Consent Order shall be effective five days after the date EPA signs this Consent Order after the public comment period as specified in Section XXVIII (Public Comment on This Consent Order) above.

XXXI. CONSENT

125. Respondent consents to the issuance of this Consent Order, and agrees to undertake all actions required by the terms and conditions of this Consent Order, including any portions of the Consent Order incorporated by reference. Respondent consents to the issuance of this Consent Order, as an Order, pursuant to Section 7003 of RCRA, 42 U.S.C. § 6973, and explicitly waives its right to request a hearing on this matter. In addition, Respondent consents to and agrees not to contest either EPA's jurisdiction to enforce or compel compliance with any term of this Consent Order or the validity of this Consent Order and all of its provisions. The parties, however, acknowledge that disputes between units of the executive branch are not resolved in federal court.

126. Each undersigned signatory to this Consent Order certifies that he or she is fully authorized to enter into the terms and conditions of this Consent Order.

In The Matter of:

United States Department of the Navy
Naval Activity Puerto Rico,
formerly Naval Station Roosevelt Roads
Puerto Rico

Agreed this 12 day of January, ~~2006~~ 2007.

By: Signature: _____

Print Name: B. J. Penn: _____

Title: Assistant Secretary of the Navy for Installations and Environment (ASN (I & E))

Respondent's name and address: United States, The Department of the Navy

In The Matter of:

United States Department of the Navy
Naval Activity Puerto Rico,
formerly Naval Station Roosevelt Roads
Puerto Rico

It is so ORDERED and Agreed this 24th day of January, 2007.

By: Alan J. Steinberg
Alan J. Steinberg
Regional Administrator
Region 2, U.S. Environmental Protection Agency

ATTACHMENT I

Naval Activity Puerto Rico (NAPR)

Documentation of Releases:

A. Based on the July 15, 2005 *"Phase I/II Environmental Condition of Property Report"* (the ECP Report), the following 18 areas, which are now identified as SWMUs or AOCs, are stipulated to have releases:

SWMU 56 (a/k/a ECP 2)- Hanger 200 Apron

SWMU 57 (a/k/a ECP 3) - Facility No. 278 POL Drum Storage Area

SWMU 59 (a/k/a ECP 5) - Former Vehicle Maintenance and Refueling Area

SWMU 60 (a/k/a ECP 6) - Former Landfill at the Marina

SWMU 61 (a/k/a ECP 7) - Former Bundy Area Maintenance Facilities

SWMU 62 (a/k/a ECP 8) - Former Bundy Disposal Area

SWMU 67(a/k/a ECP 13) - Former Gas Station

SWMU 68 (a/k/a ECP 14) - Former Southern Fire Training Area

SWMU 69 (a/k/a ECP 15) - Aircraft Parking Area

SWMU 70 (a/k/a ECP 16) - Disposal Area Northwest of Landfill

SWMU 71 (a/k/a ECP 17) - Quarry Disposal Site

SWMU 73 (a/k/a ECP 19) - DRMO Scrap Metal Recycling Yard

SWMU 74 (a/k/a ECP 20) - Fuel Pipelines and Hydrant Pits

SWMU 75 (a/k/a ECP 21) - Building 803

SWMU 76 (a/k/a ECP 22) - Building 2300

SWMU 77 (a/k/a ECP 1) - small arms range and possible former open

burning/open detonation (OB/OD) areas located on peninsula on Punta Medio Mundo

AOC E (a/k/a ECP 23) - offshore islands Pineros and Cabeza de Perro

AOC F - Monitored Natural Attenuation Sites 124, 731, 734, 2842B, 1738, and 520 [1], and 735 and 1995[2].

B. Extensive environmental sampling has occurred at the Facility pursuant to the 1994 RCRA permit issued to Naval Station Roosevelt Roads. Details of the evidence of releases at those SWMUs and AOCs identified pursuant to that 1994 RCRA permit where releases have been documented are discussed below:

SWMU 1, Army Cremator Disposal Site: SWMU 1 is located east of the Navy Lodge and is bounded to the north by Kearsage Road, mangroves and Ensenada Honda to the east and south, and the Navy Lodge and Bowling Alley to the west. SWMU 1 was in operation from the 1940s to the 1960s and consists of an abandoned, unlined landfill. An estimated 100,000 tons of waste including scrap metal, inert ordnance, batteries, tires, appliances, cars, cables, dry cleaning solvent cans, paint cans, gas cylinders, construction debris, dead animals, and residential waste were disposed of at this unit (Ref. 5). Prior to the Phase I RFI, a Supplemental Investigation (SI) was performed and consisted of a geophysical investigation (electromagnetic terrain profiling and magnotometry) and collection of 17 soil samples and one groundwater sample. Phase I RFI activities were conducted in 1996 through 1997 and included collecting 15 surface soil samples, 16 subsurface soil samples, nine groundwater samples, three surface water samples, and three sediment samples. No contaminants were detected in surface soil or subsurface soil above the EPA Region 3 industrial risk-based concentrations (RBCs). Arsenic was detected in sediment collected from mangroves and Ensenada Honda at SWMU 1 exceeding the EPA Region 3 industrial RBCs. Semi-volatile organic compounds (SVOCs), volatile organic compounds (VOCs), herbicides, dioxins/furans, and metals were detected in groundwater above Federal Maximum Contaminant Levels (MCLs) or Region 3 tap water RBCs. Metals were detected in surface water collected from mangroves at SWMU 1 above Federal MCLs and/or Federal Ambient Water Quality Criteria (FAWQC).

SWMU 2, Langley Drive Disposal Site: SWMU 2 is located along Langley Drive approximately 2,000 feet northeast of the Navy Exchange and adjacent to mangroves. This SWMU consists of an abandoned, unlined landfill that was operational from 1939 to 1959. SWMU 2 is believed to have been used for the disposal of hazardous and nonhazardous wastes. Prior to the Phase I RFI, an SI was performed and 16 soil samples and one groundwater

[1] As described in the December 2003 "Year 3 Summary Report for Monitored Natural Attenuation Sites 124, 731, 734, 2842B, 1738, and 520" prepared for the Navy by CH2MHILL.

[2] As indicated in the April 2004 "Year 2003 Summary Report and Groundwater Test Results for UST Sites 735 and 1995" prepared for Naval Activity Puerto Rico by BoksoMoni Environmental, under contract with Cape Environmental.

sample were collected. Phase I RFI activities were conducted in 1996 and included collecting eight surface soil samples, four subsurface soil samples, three groundwater samples, and three sediment samples. Metals were detected in surface soil and subsurface soil above EPA Region 3 industrial RBCs. In addition, benzo(a)pyrene and arsenic were detected in sediment collected from mangroves or Ensenada Honda adjacent to SWMU 2 above the EPA Region 3 industrial RBC. VOCs, pesticides, and metals were detected in groundwater above Federal MCLs or Region 3 tap water RBCs. SVOCs and metals were detected in surface water collected from mangroves at SWMU 2 above Federal MCLs and/or FAWQC (Ref. 5).

SWMU 3, Base Landfill: This SWMU is located south of the Forrestal Wastewater Treatment Plant (Building 1758) and Former Incinerator Area (SWMU 30) and is currently an active landfill that has been in operation since the 1960s. The landfill covers approximately 85 acres and was separated into several disposal areas. A new vertical cell of two acres was finished in March 1999 at the Base Landfill, and was placed into operation in June 2000 in accordance with the PREQB Solid Waste Management regulations. The design of the new cell included a two-foot clay liner, and a run-on/runoff collection pond. RFI activities were conducted at SWMU 3 in 2002 and included collecting 17 sediment samples from Puerca Bay or Ensenada Honda and nine groundwater samples. It should be noted that because this is an active landfill, soil investigations were not conducted during the RFI and are expected to be delayed until closure of the landfill. Although the nature and extent of soil contamination at SWMU 3 has not been currently defined, institutional and engineering controls (e.g., use of personal protective equipment) have been implemented at this unit to mitigate or minimize exposure to potentially contaminated soil. Therefore, exposure to potentially contaminated soil is not currently expected to be of concern. SVOCs and metals were detected in groundwater above Federal MCLs or EPA Region 3 tap water RBCs (Ref. 20). Dioxins/furans and metals were detected in sediment above EPA Region 3 industrial and residential RBCs.

SWMU 6, Building 145 and AOC B, Building 25: SWMU 6 and AOC B are adjacent to each other in a limited access area of NAPR at the northeast section of Ensenada Honda. SWMU 6 consists of Building 145, which is a partially subterranean concrete bunker, and AOC B primarily consists of remnants of former Building 25. Drums and other containers were formerly stored in Building 145 since 1957. Phase I and Phase II RFI activities were conducted in 1996 and 1997, respectively, and 14 surface soil samples, 16 subsurface soil samples, three groundwater samples, and one standing surface water sample were collected. Dioxins/furans, metals, pesticides, and SVOCs were detected in surface soil above EPA Region 3 industrial RBCs. Metals were detected in groundwater above Federal MCLs or EPA Region 3 tap water RBCs. Metals, pesticides, and SVOCs were detected in surface water above Federal MCLs and/or EPA Region 3 tap water RBCs (Refs. 3, 4). Risks to on-site workers were evaluated and shown to be within acceptable limits.

SWMU 7/8, Tow Way Fuel Farm (TWFF): SWMU 7/8 is located along Forrestal Road north of the Ensenada Honda. SWMU 7 currently consists of seven underground storage tanks (USTs) for storage of diesel fuel marine (DFM) and jet fuel (JP-5). SWMU 8 consists of suspected excavated sludge pits adjacent to the tanks formerly used during tank cleaning operations (a common industry practice). Numerous environmental investigations have been performed at TWFF since the 1980s and investigations post-permit include: a Multi-Stage Product Recovery

Test Report (1996), Closure Report for Tank 56A/B (1996), Project Close-Out Report Interim Corrective Measure Free Product Recovery System (1997), Corrective Measures Study Investigation (1998). Both soil and groundwater at SWMU 7 have been impacted by release from underground storage tanks (USTs) and free product is also present in the subsurface. A free product recovery system was installed in 1997 as an interim corrective measure (ICM) and approximately 1,722 gallons of free product was recovered from March 1997 through April 2002 (Ref. 21). Metals, semi-volatile organic constituents (SVOCs), and volatile organic constituents (VOCs) were detected in groundwater above Federal MCLs or EPA Region 3 tap water RBCs. Metals and SVOCs were detected in surface soil at SWMU 7/8 and sediment collected from Ensenada Honda (adjacent to SWMU 7/8) above EPA Region 3 industrial RBCs. In addition, metals and SVOCs were detected in surface water collected from Ensenada Honda (adjacent to SWMU 7/8) above EPA Region 3 tap water RBCs and/or FAWQC.

SWMU 9, Tanks 212-217 Sludge Disposal Pits*:* SWMU 9 consists of six USTs (Tanks 212 - 217), installed in 1948, and associated unlined earthen pits with sludges from the tank bottoms. The SWMU was divided into three areas (A, B, anc C): Area A includes Tanks 212 and 213, Area B includes Tanks 214 and 215, and Area C includes Tanks 216 and 217. Areas A and B are located north of Forrestal Drive along Manila Bay Street. Area C is approximately 4,000 feet southeast of Area A and B. Tanks 212 and 213 are still in service for diesel fuel and unleaded gasoline, respectively, but the remaining tanks are not currently utilized. The RFI at SWMU 9 was conducted in three phases of investigation: Phase I was conducted in 1996, Phase II in 1997, and Phase III in 1999 (Refs. 3, 4, and 9). A total of ten surface soil, 54 subsurface soil, 51 groundwater (31 of which 31 samples analyzed at on-site laboratory), six sediment, and six surface water samples were collected during the RFI. Additional data was collected in 2000 as part of the CMS investigation and included 16 sediment samples, 3 surface soil samples, and 16 surface water samples. Metals, SVOCs, and VOCs were detected in groundwater above Federal MCLs or EPA Region 3 tap water RBCs. Metals were detected in surface and subsurface soil above EPA Region 3 industrial RBCs. Metals and SVOCs were detected in sediment collected from mangroves at SWMU 9 above EPA Region 3 industrial RBCs. Metals were detected in surface water collected from mangroves or Ensenada Honda SWMU 9 above Federal MCLs and/or FAWQC.

SWMU 10, Substation 2/Building 90: SWMU 10 is located near the intersection of Forrestal Drive and Valley Forge Road. This area was formerly used to repair electrical transformers and PCB-containing transformer oil may have been poured on the ground. A Remedial Investigation/Feasibility Study (RI/FS) was conducted in 1992 and indicated that surface soil was contaminated with PCBs. Soil at SWMU 10 was remediated during the ICM implemented in 1995. Approximately 235 cubic yards of surface soil (excavated to one foot below ground surface (bgs)) and subsurface soil (excavated from hot spot locations) were removed during excavation activities. Confirmation sampling indicated that the residual concentrations are below the Toxic Substance and Control Act (TSCA) cleanup level (10 ppm) (Refs. 3, 18).

Phase I and Phase II RFI activities were conducted for groundwater at SWMU 10 due the potential of PCBs migrating from soil to groundwater (Refs. 3, 4). A total of six groundwater samples were collected during Phase I and Phase II RFI activities. No PCBs were detected in groundwater at SWMU 10. However, methylene chloride, chloroform, and acetophenone were detected in groundwater above the Federal MCLs and/or tap water RBC during Phase I RFI. No SVOCs or VOCs were detected in groundwater during the Phase II RFI. Since SVOCs and

VOCs were not associated with a release or waste management activities at SWMU 10, no further action was recommended for groundwater at this SWMU in the Draft CMS Investigation Report (Ref. 18).

SWMU 11/45, Building 38: SWMU 11 is located along a dirt access road south of Forrestal Road and north of SWMU 3. SWMU 11 consists of the interior of Building 38, the "Old Power Plant," which was operational in the 1940s, and was previously a TSCA-regulated PCB storage area. SWMU 45 includes the area surrounding Building 38 as well as a cooling water tunnel extending from Building 38 to Puerca Bay. Two former 50,000-gallon Bunker C Fuel underground storage tanks (USTs) were located adjacent to the building. An RI/FS was performed in 1992 and determined that concrete surfaces and soil surrounding Building 38 as well as sediments from Puerca Bay were contaminated with PCBs. An ICM for impacted soil was performed in 1994 and included excavation of the contaminated soil and confirmation sampling to ensure that the cleanup goals (TSCA level of 10 ppm) were achieved. In 1996, the cooling water tunnel was decommissioned and sealed as an ICM to address the reported discharges from the cooling water tunnels to the bay. Phase I RFI activities (Ref. 3), initiated in 1996, included collecting four surface soil samples, eight subsurface soil samples, nine sediment samples, eight groundwater samples, and 125 wipe samples from Building 38's floors and walls. Metals were detected in subsurface soil above EPA Region 3 industrial RBCs. SVOCs were detected in sediment above EPA Region 3 industrial and residential RBCs (Ref. 5). PBCs, SVOCs, and metals were detected in groundwater above Federal MCLs or EPA Region 3 tap water RBCs. Aroclor-1260 was detected in wipe samples at concentrations ranging from 0.22 µg/l (11WS091) to 330,000 µg/l (11WS041). However, subsequent to sample collection, a fire occurred within Building 38. Due to the fire, the wipe sampling results were deemed unusable. Thus, SWMU 11 requires recharacterization for PCBs and dioxins/furans, which are combustion products of PCBs. A Final Recharacterization Work Plan was submitted to EPA on July 21, 2003 (Ref. 23).

SWMU 12, Fire Training Area Oil/Water Separator: SWMU 12 is located north of the base airfield and adjacent to SWMU 14. SWMU consists of a oil/water separator that is utilized for recycling oil used during fire training activities. Four surface soil samples were collected and analyzed at this SWMU during Phase I RFI activities conducted in 1996 (Ref. 3). No contaminants were detected in surface soil above industrial RBCs. Gasoline range organics (GRO) were detected in two soil samples; however, the GRO concentrations fell below the PREQB guideline standard of 100 mg/kg.

SWMU 13, Old Pest Control Shop: SWMU 13 is located adjacent to Forrestal Drive and includes the former Old Pest Control Shop (Building 258), surrounding area, and drainage ditch behind Building 258. Building 258 was used from the 1950s through 1983 for storage of pesticides and was demolished in 1988 subsequent to major hurricane damage. Phase I and Phase II RFI activities (Refs. 3, 4) were conducted in 1996 and 1997, respectively, and a total of nine surface soil samples and 16 sediment samples were collected during the RFI. No contaminants were detected in surface soil above EPA Region 3 industrial RBCs. Pesticides were detected in sediment collected from the drainage ditch above EPA Region 3 RBCs. A CMS report was submitted to EPA on August 4, 2000 (Ref. 12), and was approved by EPA on September 15, 2000. The proposed remedy for SWMU 13 is excavation of drainage ditch sediments and implementation is pending public comment.

SWMU 14, Fire Training Pit Area: SWMU 14 is located adjacent to the NAPR airfield and currently consists of a lined pit used for fire training activities. Prior to construction of the lined pit in 1983, two unlined pits were used for fire training activities. These two pits were operational from the 1960s until 1983. Five surface soil samples were collected from SWMU 14 during Phase I RFI activities conducted in 1996 (Ref. 3). SVOCs were detected in surface soil above industrial RBCs. NAPR requested that additional investigation be suspended until the SWMU is ready for closure (Ref. 13). Thus, no subsurface soil or groundwater data is available for this SWMU. EPA approved this request in a letter dated May 4, 2001 (Ref. 16); thus, an RFI will be required once fire training activities have ceased.

SWMU 23, Oil Spill Separator Tanks: SWMU 23 is located approximately 100 feet inshore from the fuel pier and consists of three oil spill separator tanks for processing waste pumped from the Ships Waste Off-Load Barges (SWOBs). The separated oil subsequently is transferred to the Oil Spill Oil/Water Separator (SWMU 24). Two surface soil samples were collected during Phase I RFI activities conducted in 1996 (Ref. 3). No contaminants were detected above EPA Region 3 industrial RBCs.

SWMU 24, Oil Spill Oil/Water Separator: SWMU 24 is located just west of SWMU 23 and consists of an oil/water separator with a concrete structure built below ground with a steel grating covering the top at ground level. The oil/water separator receives discharge from SWMU 23 and has approximately a 1,500 gallon capacity. One surface soil sample was collected during Phase I RFI activities in 1996 and no contaminants were detected above EPA Region 3 industrial RBCs (Ref. 3).

SWMU 25, DRMO Storage Yard: SWMU 25 is located adjacent to the flammable materials storage building (Building 2009). SWMU 25 includes the Defense Reutilization and Marketing Office (DRMO) facility, which consists of an administrative/hazardous waste storage building, a large metal building used for waste storage, a flammable material storage building, some storage racks, and a large fenced area where surplus material is stored. Nine surface soil samples at SWMU 25 and one sediment sample from a surface drainage ditch at SWMU 25 were collected during Phase I RFI activities conducted in 1996 (Ref. 3). No contaminants were detected above EPA Region 3 industrial RBCs and no further action was recommended in the RFI report.

SWMU 30, Former Incinerator: SWMU 30 is located adjacent to the Sanitary Sewage Treatment Plant and consists of former incinerator which was original installed in 1973. In 1983, this incinerator was dismantled and replaced. Reportedly, the new incinerator has not been utilized. Classified material, contaminated diesel oil, JP-5 fuel (usually mixed with some lube oil), solvents, and sludge residue were reportedly burned in the original incinerator. A former 550-gallon diesel fuel UST was associated with the original incinerator. No free product was encountered during decommissioning of the UST in 1993. However, residual petroleum contamination was subsequently detected in subsurface soil during an investigation performed in 1994. Nineteen subsurface soil samples and five groundwater samples were collected during the 1994 investigation and no contaminants were detected above relevant screening criteria (EPA Region 3 industrial soil RBCs, Federal MCLs and/or EPA Region 3 tap water RBCs). Phase I and Phase II RFI activities were conducted in 1995 and 1999, respectively, and included 11 surface soil samples, 19 subsurface soil samples, and two groundwater samples. PCBs were detected in subsurface soil above EPA Region 3 industrial RBCs and metals were detected in groundwater above Federal MCLs or EPA Region 3 tap water RBCs during the RFI (Ref. 8).

SWMU 31/32, Waste Oil Collection Area and Battery Collection Area: SWMU 31/32 is located in the Public Works Department Operation Yard, near the Transportation Shop (Building 31). SWMU 31 consists of an outdoor area, with a curbed concrete storage pad used for temporary storage of waste oil. SWMU 32 is an outdoor area where discarded batteries were formerly stored but is currently used to store heavy equipment. Phase I and Phase II RFI activities and CMS investigation were conducted at SWMU 31/32 in 1995, 1997, and 1999, respectively (Refs. 3, 4, and 10). A total of 30 surface soil samples were collected during the RFI and CMS investigation. Dioxins and furans were detected in surface soil during the RFI and CMS investigation. The 1999 congener-specific data were converted to 2,3,7,8-tetrachlorodibenzodioxin (TCDD) toxicity equivalent (TEQ) concentrations and screened against Agency for Toxic Substance and Disease Registry (ASTDR) interim criteria of 50 parts per trillion (ppt) in the final CMS report. TEQ concentrations were detected above the ASTDR interim criteria and industrial RBC for TCDD. A Final Basis of Design Corrective Measures Implementation (CMI) Work Plan for SWMU 31/32 was submitted to EPA on January 25, 2001 (Ref. 15) and approved by EPA on May 4, 2001 (Ref. 16). The planned remedy for these SWMUs are to install an asphalt cap and implement institutional controls; however, execution of this remedy is pending public comment.

SWMU 37, Waste Oil Storage Area/Building 200: SWMU 37 is located north of Building 200 and consists of a covered concrete pad used for drum storage. Phase I RFI activities were conducted in 1995 and included collecting four surface soil samples. SVOCs were detected in surface soil above EPA Region 3 industrial RBCs (Ref. 3). Risks to on-site workers were evaluated and shown to be within acceptable limits.

SWMU 39, Former Battery Drain Area/Building 3158: SWMU 39 is located adjacent to Building 3158, formerly used for battery storage, and consisted of a covered battery drainage area. Battery contents were poured into the drain tank and the battery acid was caught below in a container. Two surface soil samples were collected during Phase I RFI activities conducted in 1995. No contaminants were detected in surface soil above EPA Region 3 industrial RBCs (Ref. 3).

SWMU 46, Pole Storage Yard Covered Pad: SWMU 46 is located adjacent to AOC C behind Buildings 2326 and 2042 and was historically used as a storage area for transformers and 55-gallon drums of PCB-contaminated material. SWMU 46 consists of two covered concrete pads surrounded by a chain link fence, presently used for less than 90 day hazardous waste storage/accumulating facilities for base operations. Phase I and Phase II RFI activities (Refs. 3, 4) conducted in 1995 and 1997, respectively, included collecting 27 surface soil samples and 13 subsurface soil samples. SVOCs, PCBs, and metals were detected in surface soil above EPA Region 3 industrial RBCs. No contaminants were detected in subsurface soil above EPA Region 3 industrial RBCs. A 100 Percent Basis of Design CMI Work Plan for SWMU 46 was submitted to EPA on January 25, 2001 (Ref. 15), and approved by EPA on May 5, 2001 (Ref. 16). The planned remedy for this SWMUs is to excavate contaminated surface soil; however, execution of this remedy is pending public comment.

SWMU 51, New AIMD Storage Pad/Building 379: SWMU 51 is located adjacent to Building 379. This SWMU was utilized by Aircraft Intermediate Maintenance Detachment (AIMD) facilities and consists of a concrete storage pad and a 200-gallon aboveground storage tank

(AST). The storage pad is covered, enclosed with a cyclone fence, and surrounded by asphalt. Phase I RFI activities were conducted in 1995 and included collecting five surface soil samples (Ref. 3). No contaminants were detected in surface soil samples above EPA Region 3 industrial RBCs. No further action was recommended in the RFI report (Ref. 3).

SWMU 53, Building 64 (Malaria Control Building): SWMU 53 is located approximately 200 feet from Forrestal Drive and consists of Building 64 (Malaria Control Building). This building was built in 1942 and condemned in 1980. The building remains intact but is currently unoccupied. Phase I and Phase II RFI activities were conducted in 2000 and 2002 and included collecting 15 surface soil and 14 subsurface soil samples. Metals were detected in surface soil above EPA Region 3 industrial RBCs. No contaminants were detected in subsurface soil above EPA Region 3 industrial RBCs. A Final CMS Work Plan for SWMUs 53 and 54 (Ref. 19) was submitted to EPA on March 7, 2003, and approved on June 3, 2003 (Ref. 24).

SWMU 54, Building 1914 (Former NEX Repair/Maintenance Shop): SWMU 54 is located north-northeast across Bairoko Street from SWMU 26 and west across Bairoko Street from Building1686 (Former Base Laundromat) and consists of Building 1914. Building 1914 was built in 1979 and is currently unoccupied. The building was used to perform maintenance on vehicles (e.g., oil changes, lubrications). Site 510 is also included in this SWMU and was the location of a former 4,000-gallon UST, south of Building 1914. The date of installation and the type of fuel stored is unknown (assumed to be gasoline), but it was decommissioned in 1992. Phase I and Phase II RFI activities were conducted in 2000 and 2002 and included collecting 26 groundwater samples, three surface soil, and four subsurface soil samples. No contaminants were detected in surface soil or subsurface soil above EPA Region 3 industrial RBCs. However, 1,1-dichloroethene, 1,2-dichloroethane, benzene, chloroform, ethylbenzene, isobutanol, toluene, trichloroethene, xylene, 2-methylnaphthalene, and naphthalene were detected in groundwater above Federal MCLs or EPA Region 3 tap water RBCs.

SWMU 55, Trichloroethene (TCE) Grondwater Plume at Tow Way Fuel Farm: This SWMU was previously considered associated with releases at SWMU 7/8, but was identified as a separate SWMU in February 2004. Environmental sampling at this SWMU was implemented under the Additional Data Collection Investigation (2002), and the Trichloroethene (TCE) Plume Delineation and Source Investigation Work Plan (2003), and summarized in the Draft Corrective Measures Study Final Report for SWMUs 54 and 55 (2004). The volatile organic constituent (VOC) TCE has been detected in groundwater above Federal MCLs or EPA Region 3 tap water RBCs.

AOC C, Discarded transformer and electrical equipment accumulation area: AOC C is south of SWMU 46 behind Buildings 2326 and 2042. AOC C currently consists of three raised concrete pads with curbing, which formerly stored transformers and other miscellaneous electric equipment. RFI activities conducted in 1997 included collecting 27 surface soil samples and 14 subsurface soil samples (Ref. 4). SVOCs, PCBs, and metals were detected in surface soil above EPA Region 3 industrial RBCs. A 100 Percent Basis of Design CMI Work Plan for AOC C was submitted to EPA on January 25, 2001 (Ref. 15), and approved by EPA on May 5, 2001 (Ref. 16). The planned remedy for this AOC is to excavate contaminated surface soil.

AOC D, Ensenada Honda Sediments: AOC D consists of Ensenada Honda sediment that are believed to have been impacted due to releases from SWMU 1, SWMU 2, SWMU 3, and SWMU

7/8, which are along the shoreline of Ensenada Honda. The exact contaminant transport pathway has not been defined; however, evidence suggests that contaminated surface runoff from SWMU 1, SWMU 2, SWMU 3, and SWMU 7/8 is the most likely contaminant transport pathway, versus discharge of contaminated groundwater from those SWMUs to the surface.

C. **GROUNDWATER:** Contaminant concentrations detected in the groundwater at 11 SWMUs and one AOC identified pursuant to the 1994 RCRA permit (SWMUs 1 through 3, SWMU 6, SWMU 7/8, SWMU 9, SWMU 11/45, SWMU 30 and SWMU 54, and AOC B) exceeded Federal MCLs and/or EPA Region 3 tap water RBCs. The maximum detected concentrations and the identification number of the sample containing that maximum detected concentration are presented below. Also, the relevant screening criteria are provided below and include the April 2003 EPA Region 3 tap water RBCs, Federal MCLs, National Primary Drinking Water Regulation (NPDWR) Action Level for Lead (tap water RBC not available), or site-specific corrective action objectives (CAOs).

SWMU 1, Army Cremator Disposal Site: The maximum detected concentrations in groundwater exceeding EPA Region 3 tap water RBCs and/or Federal MCLs are as follows: 2 µg/l of chloroform (1MW04) [RBC = 0.15 µg/l], 1.1 µg/l of 1,1,2,2-tetrachloroethane (5GW1) [RBC = 0.053 µg/l], 25 µg/l of pentachlorophenol (5GW4) [RBC = 0.56 µg/l, MCL = 1 µg/l] , 22 µg/l of bis(2-ethylhexyl)phthalate (5GW05) [RBC = 4.8 µg/l, MCL = 6 µg/l], 0.0032 µg/l of heptachlor (05GW101A) [RBC = 0.015 µg/l], 0.1 µg/l of aldrin (1MW02) [RBC = 0.0039 µg/l], 0.00005 µg/l of total HxCDD (5GW02) [RBC = 0.000015 µg/l], 86.7 µg/l of total antimony (1MW01D) [RBC = 15 µg/l, MCL = 6 µg/l], 93.4 µg/l of total arsenic (5GW3) [RBC = 0.045 µg/l], 4.8 µg/l of total beryllium (1MW04) [MCL = 4 µg/l], 30.9 µg/l of total cadmium (1MW01) [RBC = 18 µg/l, MCL = 5 µg/l], 259 µg/l of total chromium (1MW04) [RBC = 110 µg/l, MCL = 100 µg/l], 2,950 µg/l of total copper (1MW04) [RBC = 1,500 µg/l, MCL = 1,300 µg/l], 6.5 µg/l of total mercury (1MW04) [MCL = 2 µg/l], 188 µg/l of nickel (1MW04) [MCL = 100 µg/l], 359 µg/l of total selenium (5GW03) [RBC = 180 µg/l, MCL = 50 µg/l], 4,310 µg/l of total thallium (5GW03) [RBC = 2.6 µg/l, MCL = 2 µg/l], 913 µg/l of total vanadium [RBC = 260 µg/l], 42.1 µg/l of dissolved cadmium (1MW01) [RBC = 18 µg/l, MCL = 5 µg/l], 1,680 µg/l of dissolved copper (5GW02) [RBC = 1,500 µg/l, MCL = 1,300 µg/l], and 16.5 µg/l of dissolved thallium (05GW101B) [RBC = 2.6 µg/l, MCL = 2 µg/l] (Ref. 2).

SWMU 2, Langley Drive Disposal Site: The maximum detected contaminant concentrations in groundwater exceeding EPA Region 3 tap water RBCs and/or Federal MCLs are as follows: 7 µg/l of chloroform (2MW02) [RBC = 0.15 µg/l], 7 µg/l of trichloroethene (6GW01) [RBC = 0.026 µg/l, MCL = 5 µg/l], 11 µg/l of pentachlorophenol (R6GW01) [RBC = 0.56 µg/l, MCL = 1 µg/l], 0.13 µg/l of aldrin (2MW01) [RBC = 0.0039 µg/l], 0.04 µg/l of heptachlor epoxide (2MW01) [RBC = 0.0074 µg/l, MCL = 0.2 µg/l], 19.6 µg/l of total antimony (2MW03) [RBC = 15 µg/l, MCL = 6 µg/l], 2.8 µg/l of total arsenic (2MW03) [RBC = 0.045 µg/l], and 631 µg/l of total vanadium (2MW02) [RBC = 260 µg/l]. In addition, the maximum detected concentration of lead (121 µg/l of total lead [R6GW01]) exceeds the National Primary Drinking Water Regulation (NPDWR) Action Level of 15 µg/l (Ref. 2).

SWMU 3, Base Landfill: The maximum detected contaminant concentrations in groundwater exceeding EPA Region 3 tap water RBCs and/or Federal MCLs are as follows: 3 µg/l of chloroform (R7GW11) [RBC = 0.15 µg/l], 0.5 µg/l of benzo(a)pyrene (R7GW01R) [RBC = 0.0092 µg/l, MCL = 0.2 µg/l], 38 µg/l of 1,4-dioxane (R7GW02R) [RBC = 6.1 µg/l], 0.36 µg/l of

benzo(b)fluoranthene (R7GW01R) [RBC = 0.092 µg/l], 0.79 µg/l of indeno(1,2,3-cd)pyrene (R7GW01R) [RBC = 0.092 µg/l], 0.012 mg/l of total arsenic (R7GW04R) [RBC = 0.045 µg/l], 0.027 mg/l of dissolved thallium (R7GW04R) [RBC = 2.6 µg/l, MCL = 2 µg/l], and 0.034 mg/l of total thallium (R7GW04R) [RBC = 2.6 µg/l, MCL = 2 µg/l] (Ref. 10).

SWMU 6/AOC B: The maximum detected contaminant concentrations in groundwater above EPA Region 3 tap water RBCs and/or Federal MCLs are as follows: 5.8 µg/l of total arsenic (ACBMW01) [RBC = 0.045 µg/l], 2,210 µg/l of total barium (ACBMW01) [MCL = 2,000 µg/l], 5.9 µg/l of total beryllium 9ACBMW01) [MCL = 4 µg/l], 168 µg/l of total chromium (ACBMW01) [RBC = 110 µg/l, MCL = 100 µg/l], 2,480 µg/l of total copper (ACBMW01) [RBC = 1,500 µg/l, MCL = 1,300 µg/l], 199 µg/l of total nickel (ACBMW01) [RBC = 730 µg/l, MCL = 0.1 µg/l], and 790 µg/l of total vanadium (ACBMW01) [RBC = 260 µg/l]. In addition, the maximum detected concentration of total and dissolved lead (19.1 µg/l of total lead and 17.5 µg/l of dissolved lead [ACBMW03]) exceeds the NPDWR Action Level of 15 µg/l (Ref. 7).

SWMU 7/8, Tow Way Fuel Farm (TWFF): Site-specific human health risk-based corrective action objects (CAOs), based on an industrial worker and construction worker scenarios, were developed for groundwater contaminants which exceeded Region 3 tap water RBCs at SWMU 7/8. The maximum detected contaminant concentrations in groundwater above the lower of the industrial worker and construction worker CAOs are as follows: 4,600 µg/l of 1,2,4-trimethylbenzene (470MW03) [CAO = 3,300 µg/l], 19,000 µg/l of benzene (470MW01) [CAO = 550 µg/l], 1,400 µg/l of ethylbenzene (470MW03) [CAO = 1,000 µg/l], 28,000 µg/l of trichloroethene (7MW07) [CAO = 22 µg/l], 22 µg/l of dissolved lead (470MW01) [CAO = 15 µg/l], and 52 µg/l of total lead (470MW01) [CAO = 15 µg/l] (Refs. 11, 12).

SWMU 9, Tank 212 - 217 Sludge Disposal Pits:

Area A (Tanks 212 and 213)
The maximum detected contaminant concentrations in groundwater above EPA Region 3 tap water RBCs and/or Federal MCLs are as follows: 29.2 µg/l of total arsenic (9GW02R) [RBC = 0.045 µg/l], 12.8 µg/l of dissolved arsenic (9GW02S) [RBC = 0.045 µg/l], 29 µg/l of total cadmium (9MW02) [RBC = 18 µg/l, MCL = 4 µg/l], 30.4 µg/l of dissolved cadmium (9MW02) [RBC = 18 µg/l, MCL = 4 µg/l], 193 µg/l of total chromium (9MW02S) [RBC = 110 µg/l, MCL = 100 µg/l], 1,600 µg/l of benzene (9MW02) [RBC = 0.34 µg/l, MCL = 5 µg/l], 7 µg/l of methylene chloride (9MW02) [RBC = 4.1 µg/l, MCL = 5 µg/l], 26 µg/l of naphthalene (13GW02) [RBC = 6.5 µg/l], 1 µg/l of acetophenone (9MW01) [RBC = 0.042 µg/l], 5 µg/l of bis(2-ethylhexyl)phthalate (9MW01/9MW02) [RBC = 4.8 µg/l] (Ref. 14).

Area B (Tanks 214 and 215)
The maximum detected contaminant concentrations in groundwater above EPA Region 3 tap water RBCs and/or Federal MCLs are as follows: 26.4 µg/l of total cadmium (9MW03) [RBC = 18 µg/l, MCL = 4 µg/l], 25.1 µg/l of dissolved cadmium (9MW03) [RBC = 18 µg/l, MCL = 4 µg/l], 140 µg/l of benzene (13GW05) [RBC = 0.34 µg/l, MCL = 5 µg/l], 460 µg/l of bromodichloromethane (13GW06) [RBC = 0.17 µg/l], 360 µg/l of bromoform (13GW06) [RBC = 8.5 µg/l], 1,100 µg/l of chloroform (13GW06) [RBC = 0.15 µg/l], 300 µg/l of dibromochloromethane (13GW06) [RBC = 0.13 µg/l], 11 µg/l of methylene chloride (13GW06) [RBC = 4.1 µg/l, MCL = 5 µg/l], and 7 µg/l of bis(2-

ethylhexyl)phthalate (13GW04) [RBC = 4.8 µg/l, MCL = 6 µg/l] (Ref. 14).

Area C (Tanks 216 and 217)
The maximum detected contaminant concentrations in groundwater above EPA Region 3 tap water RBCs and/or Federal MCLs include the following: 12.1 µg/l of total cadmium (9MW04) [RBC = 18 µg/l, MCL = 5 µg/l], 24.7 µg/l of dissolved cadmium (9MW04) [RBC = 18 µg/l, MCL = 5 µg/l], 2 µg/l of 1,2-dichloropropane (13GW11) [RBC = 0.16 µg/l], and 38 µg/l of bis(2-ethylhexyl)phthalate (13GW10) [RBC = 4.8 µg/l] (Ref. 14).

SWMU 11/45, Building 38: The maximum detected contaminant concentrations in groundwater above EPA Region 3 tap water RBCs and/or Federal MCLs are as follows: 6 µg/l of benzo(a)anthracene (11-SB05) [RBC = 0.092 µg/l], 7 µg/l of benzo(a)pyrene (11-SB05) [RBC = 0.0092 µg/l, MCL = 0.2 µg/l], 64 µg/l of bis(2-ethylhexyl)phthalate (45MW02) [RBC = 4 .8 µg/l, MCL = 6 µg/l], 0.035 µg/l of Aroclor-1260 (45HP02) [RBC = 0.032 µg/l,], 103 µg/l of total arsenic (45HP01) [RBC = 0.045 µg/l], 16.1 µg/l of dissolved arsenic (45HP01) [RBC = 0.045 µg/l], 5.6 µg/l of dissolved cadmium (45HP01) [RBC = 18 µg/l, MCL = 4 µg/l], 27.8 µg/l of total cadmium (45MW04) [RBC = 18 µg/l, MCL = 4 µg/l], 182 µg/l of total chromium (45MW01) [RBC = 110 µg/l, MCL = 100 µg/l], and 2.6 µg/l of dissolved mercury (11-SB16) [MCL = 2 µg/l] (Ref. 2). In addition, the maximum detected concentration of total lead (30 µg/l) [45HP02] exceeds the NPDWR Action Level of 15 µg/l (Ref.2).

SWMU 30, Former Incinerator: The maximum detected contaminant concentrations in groundwater detected above EPA Region 3 tap water RBCs and/or Federal MCLs are as follows: 4.4 µg/l of dissolved arsenic [RBC = 0.045 µg/l], 23.3 µg/l of dissolved antimony (1983-DW1) [RBC = 15 µg/l, MCL = 4 µg/l], 3 µg/l of total arsenic [RBC = 0.045 µg/l], 31.5 µg/l of total antimony (1983-MW3) [RBC = 15 µg/l, MCL = 4 µg/l], and 72,000 µg/l of total zinc (1983-DW1) [RBC = 11,000 µg/l] (Ref. 3).

SWMU 54, Building 1914 (Former NEX Repair/Maintenance Shop): The maximum detected contaminant concentrations in groundwater above EPA Region 3 tap water RBCs and/or Federal MCLs are as follows: 2.8 µg/l 1,2-dichloroethane (54TW07) [RBC = 0.12 µg/l, MCL = 7 µg/l], 3,000 µg/l of benzene (54TW15) [RBC = 0.34 µg/l, MCL = 5 µg/l], 8 µg/l of chloroform (54TW08) [RBC = 0.15 µg/l], 2,400 µg/l of ethylbenzene (54TW15) [RBC = 1,300 µg/l, MCL = 700 µg/l], 2,600 µg/l of isobutanol (54TW15) [RBC = 1,800 µg/l], 190 µg/l of trichloroethene (510MW5) [RBC = 0.026 µg/l, MCL = 5 µg/l], 190 µg/l of naphthalene (54TW15) [RBC = 6.5 µg/l] (Ref. 9), and 8,000 µg/l of xylenes (54TW15) [RBC = 210 µg/l].

SWMU 55, Trichloroethene (TCE) Grondwater Plume at Tow Way Fuel Farm: The maximum detected contaminant concentrations in groundwater above EPA Region 3 tap water RBCs and/or Federal MCLs are as follows: 28,000 ug/l TCE (7MW07). [MCL = 5 ug/l].

D. Surface/Subsurface Soil

Contaminants are detected in surface soil and/or subsurface soil above EPA Region 3 industrial RBCs or site-specific CAOs at the following SWMUs and AOCs identified pursuant to the 1994 RCRA permit: SWMU 1, SWMU 2, SWMU 6/AOC B, SWMU 7/8, SWMU 30, SWMU 31/32, SWMU 11/45, SWMU 14, SWMU 37, SWMU 46, SWMU 55, and AOC C. The maximum

detected contaminant concentrations in surface soil and/or subsurface soil for these SWMUs and AOCs are provided below.

SWMU 1, Army Cremator Disposal Site: No contaminants were detected in surface soil or subsurface soil above EPA Region 3 industrial RBCs; however, the total hazard indices (HIs) for on-site worker and construction worker scenarios for exposure to soil are above the target HI of one in the risk assessment. Thus, although there are no contaminants above EPA Region 3 industrial RBCs in surface and subsurface soil, the impact of contamination in surface and subsurface soil will be discussed further in Questions 3, 4, and 5 given the calculated hazard (Ref. 2).

SWMU 2, Langley Drive Disposal Site: Arsenic was detected in surface and subsurface soil above EPA Region 3 industrial RBCs**.** The maximum detected concentrations of arsenic in surface soil and subsurface soil exceeding EPA Region 3 industrial RBCs are 134 mg/kg (R6S7A) and 21.4 mg/kg (06SS101) [RBC = 1.9 mg/kg], respectively. In addition, the maximum detected concentration of lead in surface soil and subsurface soil are 4,760 mg/kg of lead (06SS103) and 5,850 mg/kg of lead (06SS103), which exceeded the site-specific screening criterion of 1,000 mg/kg (Ref. 2).

SWMU 6, Building 145 and AOC B, Building 25: Arsenic, benzo(a)pyrene, 4,4'-DDE, and total HxCDD were detected in surface soil above EPA Region 3 industrial RBCs. The maximum detected concentrations of these contaminants are as follows: 10 mg/kg of arsenic [RBC = 1.9 mg/kg], 1,800 µg/kg of benzo(a)pyrene [RBC = 390 µg/kg], 0.76 µg/kg of total HxCDD [RBC = 0.46 µg/kg], and 22 mg/kg of 4,4'-DDE [RBC = 8.4 mg/kg] (Ref. 7). No contaminants were detected in subsurface soil exceeding EPA Region 3 industrial RBCs.

SWMU 7/8, Tow Way Fuel Farm (TWFF): SVOCs and metals were detected in surface soil above industrial RBCs. Human health-based CAOs were developed for surface/subsurface soil at SWMU 7/8 during the CMS. Benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, indeno(1,2,3-cd)pyrene, and arsenic were detected in surface soil above the CAOs calculated for an industrial worker scenario (all 2,900 µg/kg). The maximum detected contaminant concentrations above CAOs are as follows; 17,000 µg/kg of benzo(a)anthracene, 23,000 µg/kg of benzo(a)pyrene, 5,900 µg/kg of benzo(b)fluoranthene, 5,300 µg/kg of indeno(1,2,3-cd)pyrene, and 3.7 mg/kg of arsenic (Refs. 11, 12). In addition, benzo(a)pyrene was also detected in soil, at depths from 0 to10 feet bgs, above the CAO calculated for a construction worker scenario (7,300 µg/kg).

SWMU 9, Tank 212 - 217 Sludge Disposal Pits:

Area A

Arsenic was detected in surface soil and subsurface above EPA Region 3 industrial RBC [RBC = 1.9 mg/kg] at Area A. The maximum detected concentrations of arsenic in surface soil and subsurface soil were 3.7 mg/kg (9MW02-00) and 5 mg/kg (9TP08-04), respectively. The maximum detected concentration of GRO in subsurface soil was 130 mg/kg (9-02R-HP01), which was slightly above the PREBQ guideline standard of 100 mg/kg. No petroleum constituents were detected in subsurface soil above industrial RBCs; thus, petroleum contamination is not currently expected to be of concern for human health and will not be discussed further in this CA725 EI determination (Ref. 14).

Area B

The maximum detected concentration of arsenic in surface soil was 23 mg/kg (9SS07) and exceeded the EPA Region 3 industrial RBC [RBC = 1.9 mg/kg].

SWMU 10, Substation 2/Building 90: Approximately 235 cubic yards of PCB (Aroclor-1260) impacted soil was removed as an ICM at SWMU 10. However, residual soil contamination (less than ten parts per million [ppm]) was left in place at SWMU 10. The residual soil contamination may exceed the EPA Region 3 industrial RBC of 1.4 mg/kg (Ref. 8).

SWMU 11/45, Building 38: The maximum detected concentration of arsenic in subsurface soil (3.9 mg/kg [45MW04-01]) exceeds the EPA Region 3 industrial RBC [RBC = 1.9 mg/kg] (Ref. 2).

SWMU 14, Fire Training Pit Area: SVOCs were detected in surface soil above EPA Region 3 industrial RBCs. The maximum detected contaminant concentrations in surface soil exceeding EPA Region 3 industrial RBCs are as follows: 7.6 mg/kg of benzo(b)fluoranthene (14SS07) [RBC = 3.9 mg/kg], 5 mg/kg of benzo(a)pyrene (14SS07) [RBC = 0.39 mg/kg], and 0.92 mg/kg of dibenzo(a,h)anthracene (14SS07) [RBC = 0.39 mg/kg] (Ref. 6).

SWMU 30, Former Incinerator: Aroclor-1260 was detected in subsurface soil above the EPA Region 3 industrial RBC. The maximum detected concentration of Aroclor-1260 is 2,000 µg/kg (30-HP05-03) [RBC = 1,400 µg/kg]. The maximum detected concentration of diesel range organics (DRO) in subsurface is 1,800 mg/kg (30-HP04-03) which exceeds the PREQB guideline standard of 100 mg/kg.

SWMU 31/32, Waste Oil Collection Area and Battery Collection Area: Dioxins and furans were detected in surface and subsurface soil above EPA Region 3 industrial RBCs (adjusted based on TEQs). The maximum detected contaminant concentrations in surface soil were as follows: 12 µg/kg of total HxCDD (31SS04) [RBC = 0.19 µg/kg] , 43 µg/kg of HxCDF (31SS04) [RBC = 0.19 µg/kg], 0.74 µg/kg of total PeCDD (31SS04) [RBC = 0.038 µg/kg], and 3.10 µg/kg of total PeCDF (31SS04) [RBC = 0.038 µg/kg]. The maximum detected contaminant concentrations in subsurface soil were the following: 0.11 µg/kg of total TCDD (31-SSDD) [RBC = 0.019 µg/kg], 0.44 µg/kg of total TCDF (31-SS07A) [RBC = 0.19 µg/kg], 0.061 µg/kg of total PeCDD (31-SS05A) [RBC = 0.038 µg/kg], 0.7 µg/kg of total PeCDF (31-SS05A) [RBC = 0.038 µg/kg], 1.1 µg/kg of total HxCDD (31-SS05A) [RBC = 0.19 µg/kg], 2.8 µg/kg of total HxCDF (31-SS05A) [RBC = 0.19 µg/kg], 17 µg/kg of total HPCDD (31-SS05A) [RBC = 1.9 µg/kg], 12 µg/kg of total HPCDF (31-2205A) [RBC = 1.9 µg/kg], and 130 µg/kg of OCDD (31-SS05A) [RBC = 19 µg/kg]. The maximum calculated 2,3,7,8-TCDD TEQ from the subsurface soil sample set was 0.34984 µg/kg (31-SS05A). A 2,3,7,8-TCDD TEQ was not calculated for surface soil since the surface soil samples were not analyzed for specific congeners. Four subsurface soil samples had TEQs greater than the screening level of 50 ppt but were below the ATSDR interim action level of 1 ppb. These samples included 31-SS07A (68.3 ppt), 31-SS08A (50.4 ppt), 31-SSDD (184 ppt), and 31-SS05A (349 ppt) (Ref. 4).

SWMU 37, Waste Oil Storage Area/Building 200: The maximum detected concentration of benzo(a)pyrene in surface soil (0.73 mg/kg [37SS03]) exceeded the EPA Region 3 industrial RBC [RBC = 0.39 mg/kg] (Ref. 1).

SWMU 46, Pole Storage Yard Covered Pad: The maximum detected contaminant concentrations in surface soil above EPA Region 3 industrial RBCs are as follows: 880 µg/kg of benzo(a)anthracene (46SS01) [RBC = 3,900 µg/kg], 2,400 µg/kg of benzo(a)pyrene (46SS11) [RBC = 390 µg/kg], 5,400 µg/kg of benzo(b)fluoranthene (46SS11) [RBC = 3.9 µg/kg], 820 µg/kg of dibenzo(a,h)anthracene (46SS11) [RBC = 390 µg/kg], 2,700 µg/kg of indeno(1,2,3-cd)pyrene (46SS11) [RBC = 3,900 µg/kg], 35,000 µg/kg of Aroclor-1260 (46SS21) [RBC = 1,400 µg/kg], and 5.3 mg/kg of arsenic (ACSS40) [RBC = 1.9 mg/kg] (Ref. 5).

SWMU 53, Building 64 (Malaria Control Building)*:* The maximum detected concentration of arsenic in surface soil exceeding the EPA Region 3 industrial RBC is 5.6 mg/kg (53SS01 and 53SB05) [RBC = 1.9 mg/kg]. The maximum detected concentration of lead in surface soil is 3,900 mg/kg (53SS06), which exceeds the site-specific screening criteria of 1,000 mg/kg (Ref. 9).

AOC C, Discarded Transformer and Electrical Equipment Accumulation Areas: The maximum detected contaminant concentrations in surface soil above EPA Region 3 industrial RBCs are as follows: 2,100 µg/kg of benzo(a)anthracene (ACSS32) [RBC = 3,900 µg/kg], 2,600 µg/kg of benzo(a)pyrene (ACSS32) [RBC = 390 µg/kg], 5,500 µg/kg of benzo(b)fluoranthene (ACSS32) [RBC = 3,900 µg/kg], 440 µg/kg of dibenzo(a,h)anthracene (ACSS32) [RBC = 390 µg/kg], 1,900 µg/kg of indeno(1,2,3-cd)pyrene (ACSS32) [RBC = 3,900 µg/kg], 30,000 µg/kg of Aroclor-1260 (ACSS13) [RBC = 1,400 µg/kg], and 40.5 mg/kg of arsenic (ACSS21) [RBC = 1.9 mg/kg] (Ref. 5).

E. **Surface Water**

Surface water bodies located at NAPR include mangrove swamps (mangroves), Ensenada Honda, and Puerca Bay. Surface water sample results were screened against the FAWQC for Human Health (Water + Organism) or Federal MCLs if FAWQC was unavailable. Standing surface water sample results from SWMU 6/AOC B were screened against EPA Region 3 tap water RBCs. The contaminant concentrations in surface water collected from mangroves at SWMU 1, SWMU 2, and SWMU 9 exceeded FAWQC (Refs. 2, 14). In addition, surface water sample results from Ensenada Honda at SWMU 7/8 exceeded FAWQC (Refs. 11, 12). Standing surface water from SWMU 6/AOC B exceeded the EPA Region 3 tap water RBCs (Ref. 7). The maximum detected contaminant concentrations in surface water impacted by releases from SWMUs and AOCs identified pursuant to the 1994 RCRA permit are presented below.

SWMU 1, Army Cremator Disposal Site: The maximum detected contaminant concentrations of contaminants in surface water exceeding FAWQC are as follows: 105 µg/l of total arsenic (5SW2) [FAWQC = 0.018 µg/l], 108 µg/l of total chromium (5SW01) [MCL = 100 µg/l], 221 µg/l of total selenium (5SW05) [FAWQC = 170 µg/l], and 116 µg/l of total thallium (5SW4) [FAWQC = 1.7 µg/l] (Ref. 2).

SWMU 2, Langley Drive Disposal Site: The maximum detected contaminant concentrations in surface water exceeding FAWQC are as follows: 2.4 µg/l of bis(2-ethylhexyl)phthalate (6SW2) [FAWQC = 1.2 µg/l], 50.6 µg/l of total beryllium (6SW2) [MCL = 4 µg/l], 611 µg/l of total chromium (6SW2) [MCL = 100 µg/l], 549 µg/l of total selenium (6SW3) [FAWQC = 170 µg/l], and 29.3 µg/l of total thallium (6SW1) [FAWQC = 1.7 µg/l] (Ref. 2).

SWMU 6, Building 145 and AOC B, Building 25: The maximum detected contaminant concentrations in surface water exceeding tap water RBCs are as follows: 2 µg/l of acetophenone (6SW01) [RBC = 0.042 µg/l], 1 µg/l of benzo(b)flouranthene (6SW01) [RBC = 0.092 µg/l], 0.52 µg/l of 4,4'-DDD (6SW01) [RBC = 0.28 µg/l], and 5 µg/l of total arsenic (6SW01) [RBC = 0.045 µg/l] (Ref. 7).

SWMU 7/8, Tow Way Fuel Farm (TWFF): The maximum detected contaminant concentrations exceeding FAWQC are as follows: 12 µg/l of bis(2-ethylhexyl)phthalate (7SW3) [FAWQC = 1.2 µg/l], 5.7 µg/l of total antimony (7SW4) [FAWQC = 5.6 µg/l], 7 µg/l of total arsenic (7SW5) [FAWQC = 0.018 µg/l], 4.9 µg/l of dissolved thallium (7SW6) [FAWQC = 1.7 µg/l], and 7.7 µg/l of dissolved arsenic (7SW9) [FAWQC = 0.018 µg/l] (Refs. 11, 12).

SWMU 9, Tank 212 - 217 Sludge Disposal Pits:

Areas A and B

The maximum detected concentrations of metals in surface water exceeding FAWQC are as follows: 4.3 µg/l of dissolved arsenic (9SW23) [FAWQC = 0.018 µg/l], 6.5 µg/l of total antimony (9SW17) [FAWQC = 5.6 µg/l], 110 µg/l of total arsenic (9SW18) [FAWQC = 0.018 µg/l], 6.6 of total beryllium (9SW18) [MCL = 4 µg/l], 38 µg/l of cadmium (9SW18) [MCL = 5 µg/l], 540 µg/l of total chromium (9SW18) [MCL = 100 µg/l], and 3,100 µg/l of total copper (9SW18) [FAWQC = 1,300 µg/l] (Ref. 14).

Area C

The maximum detected concentrations of metals in surface water above FAWQC are as follows: 60.8 µg/l of total arsenic (9SW06) [FAWQC = 0.018 µg/l], 8.1 µg/l of dissolved antimony (9SW27) [FAWQC = 5.6 µg/l], and 155 µg/l of total chromium (9SW06) [MCL = 100 µg/l] (Ref. 14).

F. Sediment

Surface water bodies located at NAPR include mangrove swamps (mangroves), Ensenada Honda, and Puerca Bay. The majority of the sediment sample results were screened against EPA Region 3 industrial RBCs because exposure to sediment contamination in mangroves and Ensenada Honda is expected to be limited to on-site workers. However, the sediment sample results from SWMUs 3 and 11/45 were compared against EPA Region 3 residential RBCs because sediments were collected from Puerca Bay, which is considered a potential recreational area. The contaminant concentrations in sediment collected from mangroves at SWMU 1, SWMU 2, and SWMU 9 exceeded industrial RBCs (Refs. 2, 14). Sediment sample results from Ensenada Honda at SWMU 3 and SWMU 7/8 exceeded industrial RBCs (Refs. 10, 11, 12). Also, sediment sample results from Puerca Bay at SWMU 3 and SWMU 11/45 exceeded residential RBCs (Refs. 2, 10). Sediment sample results from drainage ditch at SWMU 13 exceeded industrial RBCs (Ref. 5). The maximum detected contaminant concentrations in sediment are presented below.

SWMU 1, Army Cremator Disposal Site: The maximum detected concentration of arsenic in sediment (32 mg/kg [5SE4]) exceeds the EPA Region 3 industrial RBCs [RBC = 1.9 mg/kg] (Ref. 2).

SWMU 2, Langley Drive Disposal Site: The maximum detected concentrations in sediment exceeding EPA Region 3 industrial RBCs are 920 µg/kg benzo(a)pyrene (2SD03) [RBC = 390 µg/kg] and 16.4 mg/kg arsenic (6SE3) [RBC = 1.9 mg/kg] (Ref. 2).

SWMU 3, Base Landfill: The maximum detected contaminant concentrations in sediment exceeding EPA Region 3 residential RBCs are 1 µg/kg of total HxCDD (3SD15) [RBC = 0.1 µg/kg] and 4.3 mg/kg of arsenic (3SD02) [RBC = 0.43 mg/kg] (Ref. 10).

SWMU 7/8, Tow Way Fuel Farm (TWFF): The maximum detected contaminant concentrations in sediment exceeding EPA Region 3 industrial RBCs are as follows: 2,200 µg/kg of benzo(a)pyrene (7SD12) [RBC = 390 µg/kg], 530 µg/kg of dibenzo(a,h)anthracene (7SD12) [RBC = 390 µg/kg], and 46 mg/kg of arsenic (7SD3) [RBC = 1.9 mg/kg] (Refs. 11, 12).

SWMU 9, Tank 212 - 217 Sludge Disposal Pits:

***Areas A and B* (tanks 212, 213, 214, & 215)**
The maximum detected concentrations in sediment exceeding EPA Region 3 industrial RBCs are 2.9 mg/kg of arsenic (9SD16) [RBC = 1.9 mg/kg] and 1,300 µg/kg of benzo(a)pyrene (9SD20) [RBC = 390 µg/kg] (Ref. 14).

Area C (tanks 216 & 217)
The maximum detected concentrations of arsenic in sediment (15 mg/kg [9SD26]) exceeds the EPA Region 3 industrial RBC [RBC = 1.9 mg/kg] (Ref. 14).

SWMU 11/45, Building 38: The maximum detected contaminant concentrations detected in sediment exceeding EPA Region 3 residential RBCs are as follows: 12 mg/kg of arsenic (11SD01D) [RBC = 0.43 mg/kg], 3,200 µg/kg of benzo(a)pyrene (SD03D) [RBC = 87 µg/kg], and 5,000 µg/kg of benzo(b)fluoranthene [RBC = 870 µg/kg] (Ref. 2).

SWMU 13, Old Pest Control Shop: The maximum detected contaminant concentrations detected in sediment exceeding EPA Region 3 industrial RBCs are as follows: 50,000 µg/kg of 4,4'-DDD (13SD07) [RBC = 12,000 µg/kg], 21,000 µg/kg of 4,4'-DDE (13SD07) [RBC = 8,400 µg/kg], 34,000 µg/kg of 4,4'-DDT (13SD13) [RBC = 8,400 µg/kg], 1,800 µg/kg of dieldrin (13SD09-00) [RBC = 180 µg/kg] (Ref. 5).

References:

1)Final RCRA Part B Permit PR2170027203. Prepared by EPA. Dated October 20, 1994.
2)Final RCRA Facility Investigation Workplan. Prepared by Baker Environmental, Inc. Dated September 14, 1995.
3)Draft RCRA Facility Investigation Report for Phase I Investigations at Operable Units 1, 6, and 7. Prepared by Baker Environmental, Inc. Dated July 1, 1996.
4)Draft Additional Investigations Report for Operable Units 1, 6, and 7. Prepared by Baker Environmental, Inc. Dated May 6, 1998.
5)Revised Draft RCRA Facility Investigation Report for Operable Unit 3/5. Prepared by Baker Environmental, Inc. Dated April 1, 1999.

6)Letter from Nicoletta DiForte, USEPA, to Paul Rakowski, Navy, re: Revised Draft RCRA Facility Investigation Report for Operable Unit 3/5. Dated September 28, 1999.
7)Letter from Nicoletta DiForte, USEPA, to Paul Rakowski, Navy, re: SWMU 26 Revised Risk Assessment. Dated October 27, 1999.
8)Final Phase II RCRA Facility Investigation Report for SWMU 30. Prepared by Baker Environmental, Inc. Dated February 15, 2000.
9)Revised Draft RCRA Facility Investigation Report for SWMU 9. Prepared by Baker Environmental, Inc. Dated March 10, 2000.
10)Final Corrective Measure Study Report for SWMU 31/32. Prepared by Baker Environmental, Inc. Dated April 17, 2000.
11)Revised Final II CMS Work Plan for SWMUs 1 and 2. Prepared by Baker Environmental, Inc. Dated July 14, 2000.
12)Revised Final II CMS Final Report for SWMU 13 and SWMU 46/AOC C. Prepared by Baker Environmental, Inc. Dated August 4, 2000.
13)Draft Interim Decision Document for SWMU 14. Prepared by Baker Environmental, Inc. Dated November 22, 2000.
14)Final Basis of Design Corrective Measures Implementation Work Plan for SWMU 31/32. Prepared by Baker Environmental, Inc. Dated January 25, 2001.
15)100% Basis of Design Corrective Measures Implementation Work Plan for SWMUs 13 and 46/AOC C. Prepared by Baker Environmental, Inc. Dated January 25, 2001.
16)Letter from Raymond Basso, USEPA, to Christopher Penny, Navy, re: Naval Station Roosevelt Roads - EPA I.D. PRD2170027203. Dated May 4, 2001.
17)Final Corrective Measures Study Final Report SWMU 6/AOC B. Prepared by Baker Environmental, Inc. Dated June 21, 2001.
18)Draft Corrective Measures Study Investigation Report for SWMU 10. Prepared by Baker Environmental, Inc. Dated July 6, 2001.
19)Final CMS Work Plan for SWMUs 53 and 54. Prepared by Baker Environmental, Inc. Dated March 7, 2003.
20)Revised Final RCRA Facility Investigation for SWMU 3. Prepared by Baker Environmental, Inc. Dated March 18, 2003.
21)Final Corrective Measure Study Task 1 Report for Tow Way Fuel Farm. Prepared by Baker Environmental, Inc. Dated April 22, 2003.
22)Final Corrective Measure Study Investigation Report for SWMU 9. Prepared by Baker Environmental, Inc. Dated April 25, 2003.
23)Final Recharacterization Work Plan for SWMU 11. Prepared by Baker Environmental, Inc. Dated July 21, 2003.
24)Draft CMS Investigation Report for SWMUs 53 and 54. Prepared by Baker Environmental, Inc. Dated July 23, 2003.
25)Final CMS Report for SWMUs 53 and 54. Prepared by Baker Environmental, Inc. Dated July 23, 2003.
26) Draft Corrective Measures Study Final Report for SWMUs 54 and 55. Prepared by Baker Environmental, Inc. Dated October 28, 2004.

ATTACHMENT II June 27, 2006

Naval Activity Puerto Rico (NAPR)

Exposure Pathways and Possible Adverse Human Health and/or Environmental Impacts

Groundwater at NAPR is not used for drinking water or other potable uses. Therefore, no receptors, including on-site receptors, are expected to be exposed to contaminated groundwater via drinking and/or potable water consumption, though construction workers could be exposed as a result of excavation activities. Impacts to in-door air is a possible exposure pathway; however, in 2003 EPA evaluated that pathway and determined there were no likely unacceptable impacts at that time. Currently children's day-care facilities are not present at NAPR; thus, day-care receptors are not expected to come in direct contact with contaminated media.

The following table summarizes the indicated potential complete exposure pathways between "contamination" and human receptors, based on expected future land usage being similar to the land usage patterns currently in place:

Summary Exposure Pathway Evaluation Table
*Potential **Human Receptors** (Under Expected Future Usage Conditions)*

"Contaminated" Media	Residents	Workers	Day-Care/ School	Construction	Trespasser	Recreation	Food[1]
Groundwater	No	No	No	Yes	–	–	No
Surface Soil (e.g. < 2 ft)	No	Yes	No	Yes	Yes	No	No
Surface Water	No	Yes	No	–	Yes	No	No
Sediment	No	Yes	No	–	No	Yes	Yes
Subsurface Soil (e.g., > 2 ft)	–	–	No	Yes	–	–	No
Indoor Air	No	Yes	No	No	No	No	No

The specific SWMUs/AOCs identified pursuant to the 1994 RCRA permit where potentially complete exposure pathways are present are as follows:

SWMU 1, Army Cremator Disposal Site*:* Contaminants were detected in groundwater, sediment, and surface water exceeding relevant screening criteria at SWMU 1. No contaminants were detected in surface soil or subsurface soil above the EPA Region 3 industrial risk-based concentrations (RBCs). However, the total hazard indices (HI) for on-site worker and construction worker scenarios were above the target HI of one in the risk assessment. Thus, surface soil and subsurface soil are considered contaminated media at SWMU 1 and on-site workers and construction workers may be exposed to contaminated surface soil and/or subsurface soil. In addition, on-site workers may potentially be exposed to contaminated surface

[1] Indirect Pathway/Receptor (e.g., vegetables, fruits, crops, meat and dairy products, fish, shellfish)

water and sediment. Although groundwater at SWMU 1 is not currently used for drinking water or other potable uses, shallow groundwater occurs at approximately 5 to 26 feet bgs (Ref. 1); thus, construction workers may potentially come in direct contact with contaminated groundwater during intrusive activities.

SWMU 2, Langley Drive Disposal Site*:* Contaminants were detected in groundwater, surface soil, subsurface soil, sediment, and surface water exceeding relevant screening criteria at SWMU 2. On-site workers may potentially be exposed to contaminated surface soil, sediment, and surface water. Although groundwater at SWMU 2 is not currently used for drinking water or other potable uses, shallow groundwater occurs at approximately 3 to 10 feet bgs (Ref. 1); thus, constructions workers may potentially come in direct contact with contaminated groundwater during intrusive activities. In addition, construction workers may be exposed to contaminated surface and subsurface soil.

SWMU 3, Base Landfill: Contaminants were detected in groundwater exceeding relevant screening criteria at SWMU 3. Shallow groundwater occurs at approximately 8 to 25 feet bgs (Ref. 5). However, construction workers are not expected to conduct intrusive activities and come in direct contact with contaminated groundwater. Contaminants were also detected in sediment collected from Ensenada Honda and Puerca Bay at SWMU 3. On-site workers may potentially be exposed to contaminated sediment at SWMU3. Recreators may be present in the marine waters adjacent to SWMU 3; thus, recreators were considered potential receptors at SWMU 3 that may potentially be exposed to contaminated sediments. In addition, recreator activities may potentially include fishing. Since the contaminants detected in sediment are considered to be persistent, bioaccumulative, and toxic (PBT) and bottom-dwelling shellfish (i.e., shrimp) may be fished, recreators may potentially be exposed to contamination via food exposure pathway.

SWMU 6, Building 145 and AOC B, Building 25: Contaminants were detected in groundwater, surface soil, surface water, and sediment exceeding relevant screening criteria at SWMU 6/AOC B. On-site workers may be exposed to contaminated surface soil, surface water, and sediment. Although groundwater at SWMU 6/AOC B is not currently used for drinking water or other potable uses, shallow groundwater occurs at approximately 9 to 10 feet bgs (Ref. 3); thus, constructions workers may potentially come in direct contact with contaminated groundwater during intrusive activities. In addition, construction workers may potentially be exposed to contaminated surface soil.

SWMU 7/8, Tow Way Fuel Farm (TWFF): Contaminants were detected in groundwater, surface soil, subsurface soil, surface water, and sediment exceeding relevant screening criteria at SWMU 7/8. Since groundwater occurs at a depth of 12 to 54 feet bgs (Ref. 6), construction workers are not expected to come in direct contact with contaminated groundwater. However, construction workers may be exposed to contaminated subsurface soil at SWMU 7/8. On-site workers may potentially be exposed to contaminated surface soil, surface water, and sediment.

SWMU 9, Tank 212-217 Sludge Disposal Pits: Contaminants were detected in groundwater, surface soil, subsurface soil, surface water, and sediment exceeding relevant screening criteria at SWMU 9. Although groundwater at SWMU 9 is not currently used for drinking water or other potable uses, shallow groundwater occurs at approximately 6 to 19 feet bgs (Ref. 7); thus,

construction workers may potentially come direct contact with contaminated groundwater during intrusive activities. In addition, construction workers may be exposed to contaminated subsurface soil. On-site workers may potentially be exposed to contaminated surface soil, surface water, and sediment.

SWMU 10, Substation 2/Building 90: PCBs are present in residual soil contamination exceeding relevant screening criteria at SWMU 10. On-site workers may potentially be exposed to contaminated surface soil and construction workers may potentially be exposed to contaminated subsurface soil.

SWMU 11/45, Building 38: Building 38 has two doors that are chained and padlocked, it is fully secure, and signs are posted to restrict access to the building (Ref. 8). Building 38 is not currently being used, and access to the building by Naval personnel is strictly prohibited by the facility without prior authorization to enter. The facility has a building permit process that monitors all work and construction activities at SWMU 11. However if a building permit is approved, on-site workers and construction workers are expected to adhere to the appropriate Occupational Safety and Health Administration (OSHA) regulations (e.g., donning personal protective equipment [PPE]). Thus, on-site workers are not expected to be exposed to contamination.

Contaminants were detected in groundwater, subsurface soil, and sediment exceeding relevant screening criteria at SWMU 45. Because groundwater occurs at depth of 11 feet bgs, construction workers are not expected to come in direct contact with contaminated groundwater. However, construction workers may be exposed to contaminated subsurface soil. On-site workers and recreators may be exposed to contaminated sediments. In addition, recreator activities at Puerca Bay may potentially include fishing. Since the contaminants detected in sediment are considered to be persistent, bioaccumulative, and toxic (PBT), and bottom-dwelling shellfish (i.e., shrimp) may be fished from Puerca Bay, recreators may potentially be exposed to contamination via food exposure pathway.

SWMU 13, Old Pest Control Shop: Contaminants were detected in sediment exceeding relevant screening criteria at SWMU 13. On-site workers may potentially be exposed to contaminated sediment.

SWMU 14, Fire Training Pit Area: Contaminants were detected in surface soil exceeding relevant screening criteria at SWMU 14. On-site workers and construction workers may potentially be exposed to contaminated surface soil.

SWMU 30, Former Incinerator: Contaminants were detected in groundwater and subsurface soil exceeding relevant screening criteria at SWMU 30. Although groundwater at SWMU 30 is not currently used for drinking water or other potable uses, shallow groundwater occurs at approximately 6 to 19 feet bgs (Ref. 2); thus, construction workers may potentially come in direct contact with contaminated groundwater during intrusive activities. In addition, construction workers may be exposed to contamination in subsurface soil.

SWMU 31/32, Waste Oil Collection Area and Battery Collection Area: Contaminants were detected in surface soil and subsurface soil exceeding relevant screening criteria. On-site

workers may be exposed to contaminated surface soil. Construction workers may be exposed to contaminated surface soil and subsurface soil.

SWMU 37, Waste Oil Storage Area/Building 200: Contaminants were detected in surface soil exceeding relevant screening criteria at SWMU 37. Thus, on-site workers and construction workers may be exposed to contaminated surface soil.

SWMU 46, Pole Storage Yard Covered Pad: Contaminants were detected in surface soil exceeding relevant screening criteria at SWMU 46. Thus, on-site workers and construction workers may be exposed to contaminated surface soil.

SWMU 53, Building 64 (Malaria Control Building): Contaminants were detected in surface soil exceeding relevant screening criteria at SWMU 53. Thus, on-site workers and construction workers may be exposed to contaminated surface soil.

SWMU 54, Building 1914 (Former NEX Repair/Maintenance Shop): Contaminants were detected in groundwater exceeding relevant screening criteria at SWMU 54. Although groundwater at SWMU 54 is not currently used for drinking water or other potable uses, shallow groundwater occurs at approximately five to 13 feet bgs (Ref. 4); thus, construction workers may potentially come in direct contact with contaminated groundwater during intrusive activities.

SWMU 55, Trichloroethene (TCE) Grondwater Plume at Tow Way Fuel Farm: This SWMU was previously considered associated with releases at SWMU 7/8, but was identified as a separate SWMU in February 2004. Contaminants were detected in groundwater exceeding relevant screening criteria at SWMU 55. Although groundwater at SWMU 55 is not currently used for drinking water or other potable uses, shallow groundwater occurs at approximately 10 feet bgs (Ref. 9); thus, construction workers may potentially come in direct contact with contaminated groundwater during intrusive activities.

AOC C, Discarded Transformer and Electrical Equipment Accumulation Area: Contaminants were detected in surface soil exceeding relevant screening criteria at AOC C. Thus, on-site workers and construction workers may be exposed to contaminated surface soil.

References:

1. Revised Draft RCRA Facility Investigation Report for Operable Unit 3/5. Prepared by Baker Environmental, Inc. Dated April 19, 1999.
2. Final Phase II RFI report for SWMU 30. Prepared by Baker Environmental, Inc. Dated February 15, 2000.
3. Final Corrective Measures Study Report for SWMU 6/AOC B. Prepared by Baker Environmental, Inc. Dated June 21, 2001.
4. Final RCRA Facility Investigation Report for SWMU 53 and 54. Prepared by Baker Environmental, Inc. Dated September 30, 2002.
5. Revised Final RCRA Facility Investigation Report for SWMU 3. Prepared by Baker Environmental, Inc. Dated March 18, 2003.
6. Final Corrective Measures Study Task I Report for Tow Way Fuel Farm. Prepared by Baker Environmental, Inc. Dated April 22, 2003.

7. Final Corrective Measures Study Investigation Report for SWMU 9. Prepared by Baker Environmental, Inc. Dated April 25, 2003.
8. Interim Measures Plan for SWMU 11. Prepared by Baker Environmental, Inc. Dated July 21, 2003.
9. Draft Corrective Measures Study Final Report for SWMUs 54 and 55. Prepared by Baker Environmental, Inc. Dated October 28, 2004.

The basis for the above conclusions are as follows:

Groundwater

Groundwater underlying the Facility is not used as a drinking water source or for other usages. For over 30 years, the Facility has obtained its drinking water and water for other usages from a water treatment plant that receives raw water from the Rio Blanco. In addition, pump tests conducted in 1999 on two wells in the acquifers underlying the Facility indicated an aggregate yield of approximately 99 gallons per day, which is below the yield of aquifers considered usable for potable water supply. Groundwater is not used as a drinking water or potable water source downgradient of the site, since the marine waters of the Atlantic Ocean, Caribbean Sea, and Vieques Passage border the Facility on all downgradient sides. Although groundwater is not currently used for drinking water or other uses at the Facility, at some SWMUs and AOCs, groundwater occurs at relatively shallow depths at several SWMUs and AOCs ; thus, construction workers may potentially come in direct contact with contaminated groundwater during intrusive activities.

Air (Indoors)

Based on the volatile nature of the contaminants detected at SWMUs 1, 2, 7/8, 9, 54 and 55, migration of contaminants in groundwater to indoor air may be a concern. The maximum detected VOC concentrations in the uppermost groundwater unit were compared to the State of Connecticut Groundwater Standards for the Protection of Indoor Air under the Industrial/Commercial Scenario (CT I/C VC) to determine whether migration of VOCs to indoor air may be of concern. Table 1 identifies those contaminants that exceed the CT I/C VC.

Table 1. Groundwater Exceedences of the CT I/C VC (µg/L)

Contaminant	CT I/C VC	Maximum Detection
SWMU 7/8		
Benzene	530	19,000 (470MW01)
SWMU 9		
Chloroform	710	1,100 (13GW06)
SWMU 54		
Benzene	530	3,000 (54TW15)
SWMU 55		
Trichloroethene	540	28,000 (7MW07)

Although VOCs exceeded the CT I/C VC at SWMU 9 (Refs. 14), there are no buildings present at SWMU 9; so contaminated groundwater is not presently beneath any buildings. Thus, indoor air is not currently considered a concern at SWMU 9. Trichloroethene (TCE) is present beneath the former Building 46 at SWMU 55.

Surface/Subsurface Soil

Contaminants are detected in surface soil and/or subsurface soil above EPA Region 3 industrial RBCs or site-specific CAOs at SWMU 1, SWMU 2, SWMU 6/AOC B, SWMU 7/8, SWMU 30, SWMU 31/32, SWMU 11/45, SWMU 14, SWMU 37, SWMU 46, SWMU 55, and AOC C. The maximum detected contaminant concentrations in surface soil and/or subsurface soil for these SWMUs and AOCs are provided below.

SWMU 1, Army Cremator Disposal Site: No contaminants were detected in surface soil or subsurface soil above EPA Region 3 industrial RBCs; however, the total hazard indices (HIs) for on-site worker and construction worker scenarios for exposure to soil are above the target HI of one in the risk assessment.

SWMU 2, Langley Drive Disposal Site: Arsenic was detected in surface and subsurface soil above EPA Region 3 industrial RBCs**.** The maximum detected concentrations of arsenic in surface soil and subsurface soil exceeding EPA Region 3 industrial RBCs are 134 mg/kg (R6S7A) and 21.4 mg/kg (06SS101) [RBC = 1.9 mg/kg], respectively. In addition, the maximum detected concentration of lead in surface soil and subsurface soil are 4,760 mg/kg of lead (06SS103) and 5,850 mg/kg of lead (06SS103), which exceeded the site-specific screening criterion of 1,000 mg/kg (Ref. 2).

SWMU 6, Building 145 and AOC B, Building 25: Arsenic, benzo(a)pyrene, 4,4'-DDE, and total HxCDD were detected in surface soil above EPA Region 3 industrial RBCs. The maximum detected concentrations of these contaminants are as follows: 10 mg/kg of arsenic [RBC = 1.9

mg/kg], 1,800 µg/kg of benzo(a)pyrene [RBC = 390 µg/kg], 0.76 µg/kg of total HxCDD [RBC = 0.46 µg/kg], and 22 mg/kg of 4,4'-DDE [RBC = 8.4 mg/kg] (Ref. 7). No contaminants were detected in subsurface soil exceeding EPA Region 3 industrial RBCs.

SWMU 7/8, Tow Way Fuel Farm (TWFF): SVOCs and metals were detected in surface soil above industrial RBCs. Human health-based CAOs were developed for surface/subsurface soil at SWMU 7/8 during the CMS. Benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, indeno(1,2,3-cd)pyrene, and arsenic were detected in surface soil above the CAOs calculated for an industrial worker scenario (all 2,900 µg/kg). The maximum detected contaminant concentrations above CAOs are as follows; 17,000 µg/kg of benzo(a)anthracene, 23,000 µg/kg of benzo(a)pyrene, 5,900 µg/kg of benzo(b)fluoranthene, 5,300 µg/kg of indeno(1,2,3-cd)pyrene, and 3.7 mg/kg of arsenic (Refs. 11, 12). In addition, benzo(a)pyrene was also detected in soil, at depths from 0 to10 feet bgs, above the CAO calculated for a construction worker scenario (7,300 µg/kg).

SWMU 9, Tank 212 - 217 Sludge Disposal Pits:

Area A (Tanks 212 and 213)
Arsenic was detected in surface soil and subsurface above EPA Region 3 industrial RBC [RBC = 1.9 mg/kg] at Area A. The maximum detected concentrations of arsenic in surface soil and subsurface soil were 3.7 mg/kg (9MW02-00) and 5 mg/kg (9TP08-04), respectively. The maximum detected concentration of gasoline range organic constituents (GRO) in subsurface soil was 130 mg/kg (9-02R-HP01), which was slightly above the PREBQ guideline standard of 100 mg/kg. No petroleum constituents were detected in subsurface soil above industrial RBCs; thus, petroleum contamination is not currently expected to be of concern for human health and will not be discussed further in this CA725 EI determination (Ref. 14).

Area B of SWMU 9 (Tanks 214 and 215)
The maximum detected concentration of arsenic in surface soil was 23 mg/kg (9SS07) which exceeds the EPA Region 3 industrial RBC [RBC = 1.9 mg/kg].

SWMU 10, Substation 2/Building 90: Approximately 235 cubic yards of PCB (Aroclor-1260) impacted soil was removed as an ICM at SWMU 10. However, residual soil contamination (less than ten parts per million [ppm]) was left in place at SWMU 10. The residual soil contamination may exceed the EPA Region 3 industrial RBC of 1.4 mg/kg (Ref. 8).

SWMU 11/45, Building 38: The maximum detected concentration of arsenic in subsurface soil (3.9 mg/kg [45MW04-01]) exceeds the EPA Region 3 industrial RBC [RBC = 1.9 mg/kg] (Ref. 2).

SWMU 14, Fire Training Pit Area: SVOCs were detected in surface soil above EPA Region 3 industrial RBCs. The maximum detected contaminant concentrations in surface soil exceeding EPA Region 3 industrial RBCs are as follows: 7.6 mg/kg of benzo(b)fluoranthene (14SS07) [RBC = 3.9 mg/kg], 5 mg/kg of benzo(a)pyrene (14SS07) [RBC = 0.39 mg/kg], and 0.92 mg/kg of dibenzo(a,h)anthracene (14SS07) [RBC = 0.39 mg/kg] (Ref. 6).

SWMU 30, Former Incinerator: Aroclor-1260 was detected in subsurface soil above the EPA Region 3 industrial RBC. The maximum detected concentration of Aroclor-1260 is 2,000 µg/kg (30-HP05-03) [RBC = 1,400 µg/kg]. The maximum detected concentration of diesel range organics (DRO) in subsurface is 1,800 mg/kg (30-HP04-03) which exceeds the PREQB guideline standard of 100 mg/kg. No petroleum constituents were detected in subsurface soil above EPA Region 3 industrial RBCs.

SWMU 31/32, Waste Oil Collection Area and Battery Collection Area: Dioxins and furans were detected in surface and subsurface soil above EPA Region 3 industrial RBCs (adjusted based on TEQs). The maximum detected contaminant concentrations in surface soil were as follows: 12 µg/kg of total HxCDD (31SS04) [RBC = 0.19 µg/kg] , 43 µg/kg of HxCDF (31SS04) [RBC = 0.19 µg/kg], 0.74 µg/kg of total PeCDD (31SS04) [RBC = 0.038 µg/kg], and 3.10 µg/kg of total PeCDF (31SS04) [RBC = 0.038 µg/kg]. The maximum detected contaminant concentrations in subsurface soil were the following: 0.11 µg/kg of total TCDD (31-SSDD) [RBC = 0.019 µg/kg], 0.44 µg/kg of total TCDF (31-SS07A) [RBC = 0.19 µg/kg], 0.061 µg/kg of total PeCDD (31-SS05A) [RBC = 0.038 µg/kg], 0.7 µg/kg of total PeCDF (31-SS05A) [RBC = 0.038 µg/kg], 1.1 µg/kg of total HxCDD (31-SS05A) [RBC = 0.19 µg/kg], 2.8 µg/kg of total HxCDF (31-SS05A) [RBC = 0.19 µg/kg], 17 µg/kg of total HPCDD (31-SS05A) [RBC = 1.9 µg/kg], 12 µg/kg of total HPCDF (31-2205A) [RBC = 1.9 µg/kg], and 130 µg/kg of OCDD (31-SS05A) [RBC = 19 µg/kg]. The maximum calculated 2,3,7,8-TCDD TEQ from the subsurface soil sample set was 0.34984 µg/kg (31-SS05A). A 2,3,7,8-TCDD TEQ was not calculated for surface soil since the surface soil samples were not analyzed for specific congeners. Four subsurface soil samples had TEQs greater than the screening level of 50 ppt but were below the ATSDR interim action level of 1 ppb. These samples included 31-SS07A (68.3 ppt), 31-SS08A (50.4 ppt), 31-SSDD (184 ppt), and 31-SS05A (349 ppt) (Ref. 4).

SWMU 37, Waste Oil Storage Area/Building 200: The maximum detected concentration of benzo(a)pyrene in surface soil (0.73 mg/kg [37SS03]) exceeded the EPA Region 3 industrial RBC [RBC = 0.39 mg/kg] (Ref. 1).

SWMU 46, Pole Storage Yard Covered Pad: The maximum detected contaminant concentrations in surface soil above EPA Region 3 industrial RBCs are as follows: 880 µg/kg of benzo(a)anthracene (46SS01) [RBC = 3,900 µg/kg], 2,400 µg/kg of benzo(a)pyrene (46SS11) [RBC = 390 µg/kg], 5,400 µg/kg of benzo(b)fluoranthene (46SS11) [RBC = 3.9 µg/kg], 820 µg/kg of dibenzo(a,h)anthracene (46SS11) [RBC = 390 µg/kg], 2,700 µg/kg of indeno(1,2,3-cd)pyrene (46SS11) [RBC = 3,900 µg/kg], 35,000 µg/kg of Aroclor-1260 (46SS21) [RBC = 1,400 µg/kg], and 5.3 mg/kg of arsenic (ACSS40) [RBC = 1.9 mg/kg] (Ref. 5).

SWMU 53, Building 64 (Malaria Control Building)*:* The maximum detected concentration of arsenic in surface soil exceeding the EPA Region 3 industrial RBC is 5.6 mg/kg (53SS01 and 53SB05) [RBC = 1.9 mg/kg]. The maximum detected concentration of lead in surface soil is 3,900 mg/kg (53SS06), which exceeds the site-specific screening criteria of 1,000 mg/kg (Ref. 9).

AOC C, Discarded Transformer and Electrical Equipment Accumulation Areas: The maximum detected contaminant concentrations in surface soil above EPA Region 3 industrial RBCs are as follows: 2,100 µg/kg of benzo(a)anthracene (ACSS32) [RBC = 3,900 µg/kg], 2,600

µg/kg of benzo(a)pyrene (ACSS32) [RBC = 390 µg/kg], 5,500 µg/kg of benzo(b)fluoranthene (ACSS32) [RBC = 3,900 µg/kg], 440 µg/kg of dibenzo(a,h)anthracene (ACSS32) [RBC = 390 µg/kg], 1,900 µg/kg of indeno(1,2,3-cd)pyrene (ACSS32) [RBC = 3,900 µg/kg], 30,000 µg/kg of Aroclor-1260 (ACSS13) [RBC = 1,400 µg/kg], and 40.5 mg/kg of arsenic (ACSS21) [RBC = 1.9 mg/kg] (Ref. 5).

Surface Water

Surface water bodies located at NAPR include mangrove swamps (mangroves), Ensenada Honda, and Puerca Bay. The most recent surface water sample results were screened against the Federal Ambient Water Quality Criteria (FAWQC) for Human Health (Water + Organism) or Federal Maximum Contaminant Levels (MCLs) if FAWQC was unavailable. Standing surface water sample results from SWMU 6/AOC B were screened against EPA Region 3 tap water RBCs. The contaminant concentrations in surface water collected from mangroves at SWMU 1, SWMU 2, and SWMU 9 exceeded FAWQC (Refs. 2, 14). In addition, surface water sample results from Ensenada Honda at SWMU 7/8 exceeded FAWQC (Refs. 11, 12). Standing surface water from SWMU 6/AOC B exceeded the EPA Region 3 tap water RBCs (Ref. 7). The maximum detected contaminant concentrations in surface water are presented below.

SWMU 1, Army Cremator Disposal Site: The maximum detected contaminant concentrations of contaminants in surface water exceeding FAWQC are as follows: 105 µg/l of total arsenic (5SW2) [FAWQC = 0.018 µg/l], 108 µg/l of total chromium (5SW01) [MCL = 100 µg/l], 221 µg/l of total selenium (5SW05) [FAWQC = 170 µg/l], and 116 µg/l of total thallium (5SW4) [FAWQC = 1.7 µg/l] (Ref. 2).

SWMU 2, Langley Drive Disposal Site: The maximum detected contaminant concentrations in surface water exceeding FAWQC are as follows: 2.4 µg/l of bis(2-ethylhexyl)phthalate (6SW2) [FAWQC = 1.2 µg/l], 50.6 µg/l of total beryllium (6SW2) [MCL = 4 µg/l], 611 µg/l of total chromium (6SW2) [MCL = 100 µg/l], 549 µg/l of total selenium (6SW3) [FAWQC = 170 µg/l], and 29.3 µg/l of total thallium (6SW1) [FAWQC = 1.7 µg/l] (Ref. 2).

SWMU 6, Building 145 and AOC B, Building 25: The maximum detected contaminant concentrations in surface water exceeding tap water RBCs are as follows: 2 µg/l of acetophenone (6SW01) [RBC = 0.042 µg/l], 1 µg/l of benzo(b)flouranthene (6SW01) [RBC = 0.092 µg/l], 0.52 µg/l of 4,4'-DDD (6SW01) [RBC = 0.28 µg/l], and 5 µg/l of total arsenic (6SW01) [RBC = 0.045 µg/l] (Ref. 7).

SWMU 7/8, Tow Way Fuel Farm (TWFF): The maximum detected contaminant concentrations exceeding FAWQC are as follows: 12 µg/l of bis(2-ethylhexyl)phthalate (7SW3) [FAWQC = 1.2 µg/l], 5.7 µg/l of total antimony (7SW4) [FAWQC = 5.6 µg/l], 7 µg/l of total arsenic (7SW5) [FAWQC = 0.018 µg/l], 4.9 µg/l of dissolved thallium (7SW6) [FAWQC = 1.7 µg/l], and 7.7 µg/l of dissolved arsenic (7SW9) [FAWQC = 0.018 µg/l] (Refs. 11, 12).

SWMU 9, Tank 212 - 217 Sludge Disposal Pits:

Areas A and B (Tanks 212, 213, 214 and 215)
The maximum detected concentrations of metals in surface water exceeding FAWQC are

as follows: 4.3 µg/l of dissolved arsenic (9SW23) [FAWQC = 0.018 µg/l], 6.5 µg/l of total antimony (9SW17) [FAWQC = 5.6 µg/l], 110 µg/l of total arsenic (9SW18) [FAWQC = 0.018 µg/l], 6.6 of total beryllium (9SW18) [MCL = 4 µg/l], 38 µg/l of cadmium (9SW18) [MCL = 5 µg/l], 540 µg/l of total chromium (9SW18) [MCL = 100 µg/l], and 3,100 µg/l of total copper (9SW18) [FAWQC = 1,300 µg/l] (Ref. 14).

Area C (Tanks 216 and 217)
The maximum detected concentrations of metals in surface water above FAWQC are as follows: 60.8 µg/l of total arsenic (9SW06) [FAWQC = 0.018 µg/l], 8.1 µg/l of dissolved antimony (9SW27) [FAWQC = 5.6 µg/l], and 155 µg/l of total chromium (9SW06) [MCL = 100 µg/l] (Ref. 14).

Sediment

Surface water bodies located at NAPR include mangrove swamps (mangroves), Ensenada Honda, and Puerca Bay. The majority of the sediment sample results were screened against EPA Region 3 industrial RBCs because exposure to sediment contamination in mangroves and Ensenada Honda is expected to be limited to on-site workers. However, the sediment sample results from SWMUs 3 and 11/45 were compared against EPA Region 3 residential RBCs because sediments were collected from Puerca Bay, which is considered a potential recreational area. The contaminant concentrations in sediment collected from mangroves at SWMU 1, SWMU 2, and SWMU 9 exceeded industrial RBCs (Refs. 2, 14). Sediment sample results from Ensenada Honda at SWMU 3 and SWMU 7/8 exceeded industrial RBCs (Refs. 10, 11, 12). Also, sediment sample results from Puerca Bay at SWMU 3 and SWMU 11/45 exceeded residential RBCs (Refs. 2, 10). Sediment sample results from drainage ditch at SWMU 13 exceeded industrial RBCs (Ref. 5). The maximum detected contaminant concentrations in sediment are presented below.

SWMU 1, Army Cremator Disposal Site: The maximum detected concentration of arsenic in sediment (32 mg/kg [5SE4]) exceeds the EPA Region 3 industrial RBCs [RBC = 1.9 mg/kg] (Ref. 2).

SWMU 2, Langley Drive Disposal Site: The maximum detected concentrations in sediment exceeding EPA Region 3 industrial RBCs are 920 µg/kg benzo(a)pyrene (2SD03) [RBC = 390 µg/kg] and 16.4 mg/kg arsenic (6SE3) [RBC = 1.9 mg/kg] (Ref. 2).

SWMU 3, Base Landfill: The maximum detected contaminant concentrations in sediment exceeding EPA Region 3 residential RBCs are 1 µg/kg of total HxCDD (3SD15) [RBC = 0.1 µg/kg] and 4.3 mg/kg of arsenic (3SD02) [RBC = 0.43 mg/kg] (Ref. 10).

SWMU 7/8, Tow Way Fuel Farm (TWFF): The maximum detected contaminant concentrations in sediment exceeding EPA Region 3 industrial RBCs are as follows: 2,200 µg/kg of benzo(a)pyrene (7SD12) [RBC = 390 µg/kg], 530 µg/kg of dibenzo(a,h)anthracene (7SD12) [RBC = 390 µg/kg], and 46 mg/kg of arsenic (7SD3) [RBC = 1.9 mg/kg] (Refs. 11, 12).

SWMU 9, Tank 212 - 217 Sludge Disposal Pits:

Areas A and B (Tanks 212, 213, 214 and 215)

The maximum detected concentrations in sediment exceeding EPA Region 3 industrial RBCs are 2.9 mg/kg of arsenic (9SD16) [RBC = 1.9 mg/kg] and 1,300 µg/kg of benzo(a)pyrene (9SD20) [RBC = 390 µg/kg] (Ref. 14).

Area C (Tanks 216 and 217)
The maximum detected concentrations of arsenic in sediment (15 mg/kg [9SD26]) exceeds the EPA Region 3 industrial RBC [RBC = 1.9 mg/kg] (Ref. 14).

SWMU 11/45, Building 38: The maximum detected contaminant concentrations detected in sediment exceeding EPA Region 3 residential RBCs are as follows: 12 mg/kg of arsenic (11SD01D) [RBC = 0.43 mg/kg], 3,200 µg/kg of benzo(a)pyrene (SD03D) [RBC = 87 µg/kg], and 5,000 µg/kg of benzo(b)fluoranthene [RBC = 870 µg/kg] (Ref. 2).

SWMU 13, Old Pest Control Shop: The maximum detected contaminant concentrations detected in sediment exceeding EPA Region 3 industrial RBCs are as follows: 50,000 µg/kg of 4,4'-DDD (13SD07) [RBC = 12,000 µg/kg], 21,000 µg/kg of 4,4'-DDE (13SD07) [RBC = 8,400 µg/kg], 34,000 µg/kg of 4,4'-DDT (13SD13) [RBC = 8,400 µg/kg], 1,800 µg/kg of dieldrin (13SD09-00) [RBC = 180 µg/kg] (Ref. 5).

References:

1. Draft RCRA Facility Investigation Report for Phase I Investigations at Operable Units 1, 6, and 7. Prepared by Baker Environmental, Inc. Dated July 1, 1996.
2. Revised Draft RCRA Facility Investigation Report for Operable Unit 3/5. Prepared by Baker Environmental, Inc. Dated April 19, 1999.
3. Final Phase II RFI report for SWMU 30. Prepared by Baker Environmental, Inc. Dated February 15, 2000.
4. Final Corrective Measures Study Report for SWMU 31/32. Prepared by Baker Environmental, Inc. Dated April 17, 2000.
5. Revised Final II Corrective Measures Study Final Report, Prepared by Baker Environmental, Inc. Dated August 4, 2000.
6. Draft Interim Decision Document for SWMU 14. Prepared by Baker Environmental, Inc. Dated November 11, 2000.
7. Final Corrective Measures Study Final Report for SWMU 6/AOC B. Prepared by Baker Environmental, Inc. Dated June 21, 2001.
8. Draft Corrective Measures Study Report for SWMU 10. Prepared by Baker Environmental, Inc. Dated July 6, 2001.
9. Final RCRA Facility Investigation Report for SWMU 53 and 54. Prepared by Baker Environmental, Inc. Dated September 30, 2002.
10. Revised Final RCRA Facility Investigation Report for SWMU 3. Prepared by Baker Environmental, Inc. Dated March 18, 2003.
11. Final Additional Data Collection Investigation Report for Tow Way Fuel Farm. Prepared by Baker Environmental, Inc. Dated April 22, 2003.

12. Final Corrective Measures Study Task I Report for Tow Way Fuel Farm. Prepared by Baker Environmental, Inc. Dated April 22, 2003.
13. Final Groundwater Model Report for Tow Way Fuel Farm. Prepared by Baker Environmental, Inc. Dated April 22, 2003.
14. Final Corrective Measures Study Investigation Report for SWMU 9. Prepared by Baker Environmental, Inc. Dated April 25, 2003.

Attachment III

SCOPE OF WORK FOR A FULL RCRA FACILITY INVESTIGATION (RFI)

I. PURPOSE

The purpose of the RCRA Facility Investigation is to determine the nature rate, direction and extent of releases of hazardous waste, including hazardous constituents, from solid waste management units and other source areas at the facility including areas off-site impacted by the release(s) from the facility, and to gather all necessary data to support the Corrective Measures Study. The Respondent shall furnish all personnel, materials, and services necessary for, or incidental to, performing the RCRA corrective measure.

II. SCOPE

The RCRA Facility Investigation consists of seven tasks:

Task I: Description of Current Conditions

- A. Facility Background
- B. Nature and Extent of Contamination
- C. Implementation of Interim Measures

Task II: Pre-Investigation Evaluation of Corrective Measure Technologies

Task III: RFI Management Plans

- A. Project Management Plan
- B. Data Collection Quality Assurance Plan
- C. Data Management Plan
- D. Health and Safety Plan
- E. Community Relations Plan

Task IV: Facility Investigation

- A. Environmental Setting
- B. Source Characterization
- C. Contamination Characterization
- D. Potential Receptor Identification

Task V: Investigation Analysis

A. Data Analysis
B. Protection Standards

Task VI: Laboratory and Bench-Scale Studies

Task VII: Reports

A. Progress
B. Draft and Final

III. TASK I: DESCRIPTION OF CURRENT CONDITIONS

The Respondent shall submit for EPA approval a report providing the background information pertinent to the facility, contamination and interim measures as set forth below. The data gathered during any previous investigations or inspections and other relevant data shall be included. The report must include, at a minimum, the following information:

A. Facility Background

The Respondent's report shall summarize the regional location, pertinent boundary features, general facility physiography, hydrogeology, and historical use of the facility for the treatment, storage or disposal of solid and hazardous waste. The Respondent's report shall include:

1. Map(s) depicting the following:

(a) General geographic location;

(b) Property lines, with the owners of all adjacent property clearly indicated;

(c) Topography and surface drainage (with a contour interval of two (2) feet and a scale of 1 inch = 100 feet) depicting all waterways, wetlands, floodplains, water features, drainage patterns, and surface-water containment areas;

(d) All tanks, buildings, utilities, paved areas, easements, rights-of-way, and other features;

(e) All solid or hazardous waste treatment, storage or disposal areas active after November 19, 1980;

(f) All known past solid or hazardous waste treatment, storage or disposal areas regardless of whether they were active on or after November 19, 1980;

(g) All known past and present product and waste underground tanks or piping;

(h) Surrounding land uses (residential, commercial, agricultural, recreational); and

(i) The location of all production and groundwater monitoring wells. These wells shall be clearly labeled and ground and top of casing elevations and construction details included (these elevations and details may be included as an attachment).

All maps shall be consistent with the requirements set forth in 40 CFR 270.14 and be of sufficient detail and accuracy to locate and report all current and future work performed at the site;

2. A history and description of ownership and operation, solid and hazardous waste generation, treatment, storage and disposal activities at the facility;

3. Approximate dates or periods of past product and waste spills, identification of the materials spilled, the amount spilled, the location where spilled, and a description of the response actions conducted (local, state, or federal response units or private parties), including any inspection reports or technical reports generated as a result of the response; and

4. A summary of past permits requested and/or received, any enforcement actions and their subsequent responses and a list of documents and studies prepared for the facility.

B. Nature and Extent of Contamination

1. The Respondent's report shall summarize all possible source areas of contamination. This, at a minimum, should include all regulated units, solid waste management units, spill areas, and other suspected source areas of contamination. For each area, the Respondent shall identify the following:

   (a) Location of unit/area (which shall be depicted on a facility map);

   (b) Quantities of solid and hazardous wastes;

   (c) Hazardous waste or constituents, to the extent known; and

   (d) Identification of areas where additional information is necessary.

2. The Respondent shall prepare an assessment and description of the existing degree and extent of contamination. This should include:

   (a) Available monitoring data and qualitative information on locations and levels of contamination at the facility;

   (b) All potential migration pathways including information on geology, petrology, hydrogeology, physiography, hydrology, water quality, meteorology, and air quality; and

   (c) The potential impact(s) on human health and the environment, including demography, groundwater and surface-water use, and land use.

C. Implementation of Interim Corrective Measures

The Respondent's report shall document interim corrective measures which were or are being undertaken at the facility. This shall include:

1. Objectives of the interim corrective measures: how the measure is mitigating a potential threat to human health and the environment and/or is consistent with

and integrated into any long term solution at the facility;

2. Design, construction, operation, and maintenance requirements;

3. Schedules for design, construction and monitoring; and

4. Schedule for progress reports.

IV. TASK II: PRE-INVESTIGATION EVALUATION OF CORRECTIVE MEASURE TECHNOLOGIES

The Respondent shall submit a report that identifies the potential corrective measure technologies that may be used on-site or off-site for the containment, treatment, remediation, and/or disposal of contamination. This report shall also identify any field data that needs to be collected in the facility investigation to facilitate the evaluation and selection of the final corrective measure or measures (e.g., compatibility of waste and construction materials, information to evaluate effectiveness, treatability of wastes, etc.).

V. TASK III: RFI MANAGEMENT PLANS

The Respondent shall submit RFI Management Plans. These Plans shall be followed during the implementation of RFI, and will be part of the RFI Workplan. During the RFI, these Management Plans may be necessary for revisions depending on the detail of information collected to accommodate the facility specific situation. The RFI Management Plans include the following:

A. Project Management Plan

The Respondent shall prepare a Project Management Plan which will include a discussion of the technical approach, schedules, budget, and personnel. The Project Management Plan will also include a description of qualifications of personnel performing or directing the RFI, including contractor personnel. This plan shall

also document the overall management approach to the RCRA Facility Investigation.

B. Data Collection Quality Assurance Plan

The Respondent shall prepare a plan to document all monitoring procedures: sampling, field measurements, and sample analysis performed during the investigation to characterize the environmental setting, source, and contamination, so as to ensure that all information, data and resulting decisions are technically sound, statistically valid, and properly documented.

1. Data Collection Strategy

The strategy section of the Data Collection Quality Assurance Plan shall include but not be limited to the following:

(a) Description of the intended uses for the data, and the necessary level of precision and accuracy for these intended uses;

(b) Description of methods and procedures to be used to assess the precision, accuracy and completeness of the measurement data;

(c) Description of the rationale used to assure that the data accurately and precisely represent a characteristic of a population, parameter variations at a sampling point, a process condition or an environmental condition. Examples of factors which shall be considered and discussed include:

(i) Environmental conditions at the time of sampling;

(ii) Number of sampling points;

(iii) Representativeness of selected media; and

(iv) Representativeness of selected analytical parameters.

(d) Description of the measures to be taken to assure that the following data sets can be compared to each other:

(i) RFI data generated by the Respondent over some time period;

(ii) RFI data generated by an outside laboratory or consultant versus data generated by the Respondent;

(iii) Data generated by separate consultants or laboratories; and

(iv) Data generated by an outside consultant or laboratory over some time period.

(e) Details relating to the schedule and information to be provided in quality assurance reports. The reports should include but not be limited to:

(i) Periodic assessment of measurement data accuracy, precision, and completeness;

(ii) Results of performance audits;

(iii) Results of system audits;

(iv) Significant quality assurance problems and recommended solutions; and

(v) Resolutions of previously stated problems.

2. Sampling

The Sampling section of the Data Collection Quality Assurance Plan shall discuss:

(a) Selecting appropriate sampling locations, depths, etc.;

(b) Providing a statistically sufficient number of sampling sites;

(c) Measuring all necessary ancillary data;

(d) Determining conditions under which sampling should be conducted;

(e) Determining which media are to be sampled (e.g., groundwater, air, soil, sediment, etc.);

(f) Determining which parameters are to be measured and where;

(g) Selecting the frequency of sampling and length of sampling period;

(h) Selecting the types of sample (e.g., composites vs. grabs) and number of samples to be collected;

(i) Measures to be taken to prevent contamination of the sampling equipment and cross contamination between sampling points;

(j) Documenting field sampling operations and procedures, including;

(i) Documentation of procedures for preparation of reagents or supplies which become an integral part of the sample (e.g., filters, and adsorbing reagents);

(ii) Procedures and forms for recording the exact location and specific considerations associated with sample acquisition;

(iii) Documentation of specific sample preservation method;

(iv) Calibration of field devices;

(v) Collection of replicate samples;

(vi) Submission of field-biased blanks, where appropriate;

(vii) Potential interferences present at the facility;

(viii) Construction materials and techniques, associated with monitoring wells and piezometers;

(ix) Field equipment listing and sample containers;

(x) Sampling order; and

(xi) Decontamination procedures.

(k) Selecting appropriate sample containers;

(l) Sample preservation; and

(m) Chain-of-custody, including:

(i) Standardized field tracking reporting forms to establish sample custody in the field prior to and during shipment; and

(ii) Pre-prepared sample labels containing all information necessary for effective sample tracking.

3. Field Measurements

The Field Measurements section of the Data Collection Quality Assurance Plan shall discuss:

(a) Selecting appropriate field measurement locations, depths, etc.;

(b) Providing a statistically sufficient number of field measurements;

(c) Measuring all necessary ancillary data;

(d) Determining conditions under which field measurements should be conducted;

(e) Determining which media are to be addressed by appropriate field measurements (e.g., groundwater, air, soil, sediment, etc.);

(f) Determining which parameters are to be measured and where;

(g) Selecting the frequency of field measurement and length of field measurements period; and

(h) Documenting field measurement operations and procedures, including:

(i) Procedures and forms for recording raw data and the exact location, time, and facility-specific considerations associated with the data acquisition;

(ii) Calibration of field devices;

(iii) Collection of replicate measurements;

(iv) Submission of field-biased blanks, where appropriate;

(v) Potential interferences present at the facility;

(vi) Construction materials and techniques associated with monitoring wells and piezometers used to collect field data;

(vii) Field equipment listing;

(viii) Order in which field measurements were made; and

(ix) Decontamination procedures.

4. Sample Analysis

The Sample Analysis section of the Data Collection Quality Assurance Plan shall specify the following:

(a) Chain-of-custody procedures, including:

(i) Identification of a responsible party to act as sample custodian at the laboratory facility authorized to sign for incoming field samples, obtain documents of shipment,

and verify the data entered onto the sample custody records;

(ii) Provision for a laboratory sample custody log consisting of serially numbered standard lab-tracking report sheets; and

(iii) Specification of laboratory sample custody procedures for sample handling, storage, and dispersement for analysis.

(b) Sample storage procedures and storage times;

(c) Sample preparation methods;

(d) Analytical procedures, including:

(i) Scope and application of the procedure;

(ii) Sample matrix;

(iii) Potential interferences;

(iv) Precision and accuracy of the methodology; and

(v) Method detection limits.

(e) Calibration procedures and frequency;

(f) Data reduction, validation and reporting;

(g) Internal quality control checks, laboratory performance and systems audits and frequency, including:

(i) Method blank(s);

(ii) Laboratory control sample(s);

(iii) Calibration check sample(s);

(iv) Replicate sample(s);

(v) Matrix-spiked sample(s);

(vi) "Blind" quality control sample(s);

(vii) Control charts;

(viii) Surrogate samples;

(ix) Zero and span gases; and

(x) Reagent quality control checks.

(h) Preventive maintenance procedures and schedules;

(i) Corrective action (for laboratory problems); and

(j) Turnaround time.

C. Data Management Plan

The Respondent shall develop and initiate a Data Management Plan to document and track investigation data and results. This plan shall identify and set up data documentation materials and procedures, project file requirements, and project-related progress reporting procedures and documents. The plan shall also provide the format to be used to present the raw data and conclusions of the investigation.

1. Data Record

The data record shall include the following:

(a) Unique sample or field measurement code;

(b) Sampling or field measurement location and sample or measurement type;

(c) Sampling or field measurement raw data;

(d) Laboratory analysis ID number;

(e) Property or component measured; and

(f) Result of analysis (e.g., concentration).

2. Tabular Displays

The following data shall be presented in tabular displays:

(a) Unsorted (raw) data;

(b) Results for each medium, or for each constituent monitored;

(c) Data reduction for statistical analysis;

(d) Sorting of data by potential stratification factors (e.g., location, soil layer, topography); and

(e) Summary data.

3. Graphical Displays

The following data shall be presented in graphical formats (e.g., bar graphs, line graphs, area or plan maps, isopleth plots, cross-sectional plots or transacts, three dimensional graphs, etc.):

(a) Display sampling location and sampling grid;

(b) Indicate boundaries of sampling area, and areas where more data are required;

(c) Display levels of contamination at each sampling location;

(d) Display geographical extent of contamination;

(e) Display contamination levels, averages, and maxima;

(f) Illustrate changes in concentration in relation to distance from the source, time, depth or other parameters; and

(g) Indicate features affecting intramedia transport and show potential receptors.

D. Health and Safety Plan

The Respondent shall prepare a facility Health and Safety Plan.

1. Major elements of the Health and Safety Plan shall include:

    (a) Facility description including availability of resources such as roads, water supply, electricity and telephone service;

    (b) Describe the known hazards and evaluate the risks associated with the incident and with each activity conducted;

    (c) List key personnel and alternates responsible for site safety, response operations, and for protection of public health;

    (d) Delineate work areas;

    (e) Describe levels of protection to be worn by personnel in work areas;

    (f) Establish procedures to control site access;

    (g) Describe decontamination procedures for personnel and equipment;

    (h) Establish site emergency procedures;

    (i) Address emergency medical care for injuries and toxicological problems;

    (j) Describe requirements for an environmental surveillance program;

    (k) Specify any routine and special training required for responders; and

    (l) Establish procedures for protecting workers from weather-related problems.

2. The Facility Health and Safety Plan shall be consistent with:

(a) NIOSH Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities (1985);

(b) EPA Order 1440.1 - Respiratory Protection;

(c) EPA Order 1440.3 - Health and Safety Requirements for Employees engaged in Field Activities;

(d) Facility Contingency Plan;

(e) EPA Standard Operating Safety Guide (1984);

(f) OSHA regulations particularly in 29 CFR 1910 and 1926;

(g) State, local, and other federal agency (e.g., DOD, DOE) regulations; and

(h) Other EPA guidance as provided.

E. Community Relations Plan

The Respondent shall prepare a plan, for the dissemination of information to the public regarding investigation activities and results.

VI. TASK IV: RCRA FACILITY INVESTIGATION (RFI)

The Respondent shall conduct those investigations necessary to: characterize the facility (Environmental Setting); define the source (Source Characterization); define the degree and extent of contamination (Contamination Characterization); and identify actual or potential receptors.

The RFI should result in data of adequate technical quality to support the development and evaluation of the corrective measure alternative or alternatives during the Corrective Measures Study ("CMS").

The RFI activities shall follow the plans set forth in Task III. All sampling and analyses shall be conducted in accordance with the Data Collection Quality Assurance Plan. All sampling locations shall be documented in a log and identified on a detailed site map.

A. Environmental Setting

The Respondent shall collect information to supplement and verify existing information on the environmental setting at the facility. The Respondent shall characterize the following:

1. Hydrogeology

The Respondent shall conduct a program to evaluate hydrogeologic conditions at the facility. This program shall provide the following information:

(a) A description of the regional and facility specific geologic and hydrogeologic characteristics affecting groundwater flow beneath the facility, including:

(i) Regional and facility specific stratigraphy: description of strata including strike and dip, identification of stratigraphic contacts;

(ii) Structural geology: description of local and regional structural features (e.g., folding, faulting, tilting, jointing, etc.);

(iii) Depositional history;

(iv) Identification and characterization of areas and amounts of recharge and discharge;

(v) Regional and facility specific groundwater flow patterns; and

(vi) Characterize seasonal variations in the groundwater flow regime.

(b) An analysis of any topographic features that might influence the groundwater flow system. (Note: Stereographic analysis of aerial photographs may aid in this analysis).

(c) Based on field data, test, and cores, a representative and accurate classification and description of the hydrogeologic units which

may be part of the migration pathways at the facility (i.e., the aquifers and any intervening saturated and unsaturated units), including:

(i) Hydraulic conductivity and porosity (total and effective);

(ii) Lithology, grain size, sorting, degree of cementation;

(iii) An interpretation of hydraulic interconnections between saturated zones; and

(iv) The attenuation capacity and mechanisms of the natural earth materials (e.g., ion exchange capacity, organic carbon content, mineral content etc.).

(d) Based on field studies and cores, structural geology, and hydrogeologic cross sections showing the extent (depth, thickness, lateral extent) of hydrogeologic units which may be part of the migration pathways identifying:

(i) Sand and gravel deposits in unconsolidated deposits;

(ii) Zones of fracturing or channeling in consolidated or unconsolidated deposits;

(iii) Zones of higher permeability or low permeability that might direct and restrict the flow of contaminants;

(iv) The uppermost aquifer: geologic formation, group of formations, or part of a formation capable of yielding a significant amount of groundwater to wells or springs; and

(v) Water-bearing zones above the first confining layer that may serve as a pathway for contaminant migration including perched zones of saturation.

(e) Based on data obtained from groundwater monitoring wells and piezometers installed upgradient and downgradient of the potential contaminant source, a representative description of water level or fluid pressure monitoring including:

(i) Water-level contour and/or potentiometric maps;

(ii) Hydrologic cross sections showing vertical gradients;

(iii) The flow system, including the vertical and horizontal components of flow; and

(iv) Any temporal changes in hydraulic gradients, for example, due to tidal or seasonal influences.

(f) A description of manmade influences that may affect the hydrogeology of the site, identifying:

(i) Active and inactive local water-supply and production wells with an approximate schedule of pumping; and

(ii) Manmade hydraulic structures (pipelines, french drains, ditches, unlined ponds, septic tanks, NPDES outfalls, retention areas, etc.).

2. Soils

The Respondent shall conduct a program to characterize the soil and rock units above the water table in the vicinity of the contaminant release(s). Such characterization shall include but not be limited to, the following information:

(a) SCS soil classification;

(b) Surface soil distribution;

(c) Soil profile, including ASTM classification of soils;

(d) Transacts of soil stratigraphy;

(e) Hydraulic conductivity (saturated and unsaturated);

(f) Relative permeability;

(g) Bulk density;

(h) Porosity;

(i) Soil sorptive capacity;

(j) Cation exchange capacity (CEC);

(k) Soil organic content;

(l) Soil pH;

(m) Particle size distribution;

(n) Depth of water table;

(o) Moisture content;

(p) Effect of stratification on unsaturated flow;

(q) Infiltration

(r) Evapotranspiration;

(s) Storage capacity;

(t) Vertical flow rate; and

(u) Mineral content.

3. Surface Water and Sediment

The Respondent shall conduct a program to characterize the surface water bodies within 5 miles of the facility. Such characterization shall

include, but not be limited to, the following activities and information:

(a) Description of the temporal and permanent surface-water bodies including:

(i) For lakes and estuaries: location, elevation, surface area, inflow, outflow, depth, temperature stratification, and volume;

(ii) For impoundments: location, elevation, surface area, depth, volume, freeboard, and purpose of impoundment;

(iii) For streams, ditches, drains, swamps and channels: location, elevation, flow, velocity, depth, width, seasonal fluctuations, and flooding tendencies (i.e., 100 year event);

(iv) Drainage patterns; and

(v) Evapotranspiration.

(b) Description of the chemistry of the natural surface water and sediments. This includes determining the pH, total dissolved solids, total suspended solids, biological oxygen demand, alkalinity, conductivity, dissolved oxygen profiles, nutrients (NH3, NO3-/NO2-, PO4-3), chemical oxygen demand, total organic carbon, specific contaminant concentrations, etc.

(c) Description of sediment characteristics including:

(i) Deposition area;

(ii) Thickness profile; and

(iii) Physical and chemical parameters (e.g., grain size, density, organic carbon content, ion exchange capacity, pH, etc.)

B. Source Characterization

The Respondent shall collect analytical data to completely characterize the wastes and the areas where wastes have been placed, collected or removed including: type; quantity; physical form; disposition (contain- ment or nature of deposits); and facility characteristics affecting release (e.g., facility security, and engineered barriers). This shall include quantification of the following specific characteristics at each source area:

1. Unit/Disposal Area characteristics:

    (a) Location of unit/disposal area;

    (b) Type of unit/disposal area;

    (c) Design features;

    (d) Operating practices (past and present);

    (e) Period of operation;

    (f) Age of unit/disposal area;

    (g) General physical conditions; and

    (h) Method used to close the unit/disposal area.

2. Waste Characteristics:

    (a) Type of waste placed in the unit;

        (i) Hazardous classification (e.g., flammable, reactive, corrosive, oxidizing, or reducing agent);

        (ii) Quantity; and

        (iii) Chemical composition.

    (b) Physical and chemical characteristics;

        (i) Physical form (solid, liquid, gas);

        (ii) Physical description (e.g., powder, oily sludge);

(iii) Temperature;

(iv) pH;

(v) General chemical class (e.g., acid, base, solvent);

(vi) Molecular weight;

(vii) Density;

(viii) Boiling point;

(ix) Viscosity;

(x) Solubility in water;

(xi) Cohesiveness of the waste;

(xii) Vapor pressure.

(xiii) Flash point

(c) Migration and dispersal characteristics of the waste;

(i) Sorption;

(ii) Biodegradability, bioconcentration, biotransformation;

(iii) Photodegradation rates;

(iv) Hydrolysis rates; and

(v) Chemical transformations.

The Respondent shall document the procedures used in making the above determinations.

C. Contamination Characterization

The Respondent shall collect analytical data on groundwater, soils, and/or surface water/sediment contamination in the vicinity of the facility. This data shall be sufficient to define the extent, origin,

direction, and rate of movement of contaminant plumes. Data shall include time and location of sampling, media sampled, concentrations found, and conditions during sampling, and the identity of the individuals performing the sampling and analysis. The Respondent shall address the following types of contamination at the facility:

1. Groundwater Contamination

   The Respondent shall conduct a groundwater investigation to characterize any plumes of contamination at the facility. This investigation shall, at a minimum, provide the following information:

   (a) A description of the horizontal and vertical extent of any immiscible or dissolved plume(s) originating from the facility;

   (b) The horizontal and vertical direction of contamination movement;

   (c) The velocity of contaminant movement;

   (d) The horizontal and vertical concentration profiles of chemical contaminants;

   (e) An evaluation of factors influencing the plume movement; and

   (f) An extrapolation of future contaminant movement.

   The Respondent shall document the procedures used in making the above determinations (e.g., well design, well construction, geophysics, modeling, etc.).

2. Soil Contamination

   The Respondent shall conduct an investigation to characterize the contamination of the soil above the water table in the vicinity of the contaminant release(s). The investigation shall include the following information:

(a) A description of the vertical and horizontal extent of contami-nation.

(b) A description of contaminant and soil chemical properties within the contaminant source area and plume. This includes contaminant solubility, specification, adsorption, leachability, exchange capacity, biodegradability, hydrolysis, photolysis, oxidation, and other factors that might affect contaminant migration and transformation.

(c) Specific contaminant concentrations.

(d) The velocity and direction of contaminant movement.

(e) An extrapolation of future contaminant movement.

The Respondent shall document the procedures used in making the above determinations.

3. Surface-Water and Sediment Contamination

The Respondent shall conduct a surface-water and sediment investigation to characterize potential contamination in surface-water bodies and sediments resulting from the contaminant release(s) by the facility. The investigation shall include, but not be limited to, the following information:

(a) A description of the horizontal and vertical extent of any immiscible or dissolved plume(s) originating from the facility, and the extent of contamination in underlying sediments;

(b) The horizontal and vertical direction of contaminant movement;

(c) The contaminant velocity;

(d) An evaluation of the physical, biological and chemical factors influencing contaminant movement;

(e) An extrapolation of future contaminant movement; and

(f) A description of the chemistry of the contaminated surface waters and sediments. This includes determining the pH, total dissolved solids, specific contaminant concentrations, etc.;

The Respondent shall document the procedures used in making the above determinations.

D. Potential Receptors

The Respondent shall collect data describing the human populations and environmental systems that are susceptible to contaminant exposure from the facility. Chemical analysis of biological samples may be needed. Data on observable effects in ecosystems may also be obtained. The following characteristics shall be identified:

1. Local uses and possible future uses of groundwater:

   (a) Type of use (e.g., drinking water source: municipal or residential, agricultural, domestic/non-potable, and industrial); and

   (b) Location of groundwater users including wells and discharge areas.

2. Local uses and possible future uses of surface waters draining the facility:

   (a) Domestic and municipal (e.g., potable and lawn/gardening watering);

   (b) Recreational (e.g., swimming, fishing);

   (c) Agricultural;

   (d) Industrial; and

   (e) Environmental (e.g., fish and wildlife propagation).

3. Human use of or access to the facility and adjacent lands, including but not limited to:

   (a) Recreation;

   (b) Hunting;

   (c) Residential;

   (d) Commercial;

   (e) Zoning; and

   (f) Relationship between population locations and prevailing wind direction.

4. A description of the biota in surface water bodies on, adjacent to, or affected by the facility.

5. A description of the ecology overlying and adjacent to the facility.

6. A demographic profile of the people who use or have access to the facility and adjacent land, including, but not limited to: age; sex; and sensitive subgroups.

7. A description of any endangered or threatened species near the facility.

VII. TASK V: RCRA FACILITY INVESTIGATION ANALYSIS

The Respondent shall prepare an analysis and summary of all facility investigations and their results. The objective of this task shall be to ensure that the investigation data are sufficient in quality (e.g., quality assurance procedures have been followed) and quantity to describe the nature and extent of contamination, potential threat to human health and/ or the environment, and to support the Corrective Measures Study.

A. Data Analysis

The Respondent shall analyze all facility investigation data outlined in Task IV and prepare a report on the type and extent of contamination at the facility including

sources and migration pathways. The report shall describe the extent of contamination (qualitative/quantitative) in relation to background levels indicative for the area.

B. Protection Standards

The Respondent shall identify all relevant and applicable standards for the protection of human health and the environment (e.g., National Ambient Air Quality Standards, federally-approved water quality standards, etc.).

VIII. TASK VI: LABORATORY AND BENCH-SCALE STUDIES

The Respondent shall conduct laboratory and/or bench scale studies to determine the applicability of a corrective measure technology or technologies to facility conditions. The Respondent shall analyze the technologies, based on literature review, vendor contracts, and past experience to determine the testing requirements.

The Respondent shall develop a testing plan identifying the types(s) and goal(s) of the study(s), the level of effort needed, and the procedures to be used for data management and interpretation.

Upon completion of the testing, the Respondent shall evaluate the testing results to assess the technology or technologies with respect to the site-specific questions identified in the test plan.

The Respondent shall prepare a report summarizing the testing program and its results, both positive and negative.

IX. TASK VII: REPORTS

A. Progress

The Respondent shall provide the EPA with signed, quarterly progress reports.

B. Draft and Final

The Respondent shall prepare and submit a RCRA Facility Investigation ("RFI") Report. The RFI Report shall

present all information gathered under the approved RFI Workplan.

ATTACHMENT IV

SCOPE OF WORK FOR A CORRECTIVE MEASURE STUDY

I. PURPOSE

The purpose of the Corrective Measure Study (CMS) is to develop and evaluate the corrective action alternative or alternatives and to recommend the corrective measure or measures to be taken. The Respondent will furnish the personnel, materials, and services necessary to prepare the corrective measure study, except as otherwise specified.

II. SCOPE

The Corrective Measure Study consists of four tasks:

Task I: Identification and Development of the Corrective Measure Alternative or Alternatives

A. Description of Current Situation
B. Establishment of Corrective Action Objectives
C. Screening of Corrective Measures Technologies
D. Identification of the Corrective Measure Alternative or Alternatives

Task II: Evaluation of the Corrective Measure Alternative or Alternatives

A. Technical/Environmental/Human Health/Institutional
B. Cost Estimate

Task III: Justification and Recommendation of the Corrective Measure or Measures

A. Technical
B. Environmental
C. Human Health

Task IV: Reports

A. Progress
B. Final

III. TASK I: IDENTIFICATION AND DEVELOPMENT OF THE CORRECTIVE ACTION ALTERNATIVE OR ALTERNATIVES

Based on the results of the RCRA Facility Investigation and consideration of the identified Preliminary Corrective Measure Technologies (Task II of Appendix A of this Permit), the Respondent shall identify, screen, and develop the alternative or alternatives for removal, containment, treatment and/or other remediation of the contamination based on the objectives established for the corrective action.

A. Description of Current Situation

The Respondent shall submit an update to the information describing the current situation at the facility and the known nature and extent of the contamination as documented by the RCRA Facility Investigation Report. The Respondent shall provide an update to information presented in Task I of the RFI to the Agency regarding previous response activities and any interim measures which have or are being implemented at the facility. The Respondent shall also make a facility-specific statement of the purpose for the response, based on the results of the RCRA Facility Investigation ("RFI"). The statement of purpose should identify the actual or potential exposure pathways that should be addressed by corrective measures.

B. Establishment of Corrective Action Objectives

The Respondent, in conjunction with EPA, shall establish site specific objectives for the corrective action. These objectives shall be based on public health and environmental criteria, information gathered during the RFI, EPA guidance, and the requirements of any applicable federal statutes. At a minimum, all corrective actions concerning groundwater releases from regulated units must be consistent with, and as stringent as, those required under 40 CFR §264.100.

C. Screening of Corrective Measure Technologies

The Respondent shall review the results of the RFI and reassess the technologies specified in Task II and identify additional technologies which are applicable at the facility. The Respondent shall screen the preliminary corrective measure technologies identified

in Task II of the RFI and any supplemental technologies to eliminate those that may prove infeasible to implement, that rely on technologies unlikely to perform satisfactorily or reliably, or that do not achieve the corrective measure objective within a reasonable time period. This screening process focuses on eliminating those technologies which have severe limitations for a given set of waste and site-specific conditions. The screening step may also eliminate technologies based on inherent technology limitations. Site, waste, and technology characteristics which are used to screen inapplicable technologies are described in more detail below:

1. Site Characteristics

   Site data should be reviewed to identify conditions that may limit or promote the use of certain technologies. Technologies whose use is clearly precluded by site characteristics should be eliminated from further consideration;

2. Waste Characteristics

   Identification of waste characteristics that limit the effectiveness or feasibility of technologies is an important part of the screening process. Technologies clearly limited by these waste characteristics should be eliminated from consideration. Waste characteristics particularly affect the feasibility of in-situ methods, direct treatment methods, and land disposal (on/off-site); and

3. Technology Limitations

   During the screening process, the level of technology development,performance record, and inherent construction, operation, and maintenance problems should be identified for each technology considered. Technologies that are unreliable, perform poorly, or are not fully demonstrated may be eliminated in the screening process. For example, certain treatment methods have been developed to a point where they can be implemented in the field

without extensive technology transfer or development.

D. Identification of the Corrective Measure Alternative or Alternatives

The Respondent shall develop the corrective measure alternative or alternatives based on the corrective action objectives and analysis of the Preliminary Corrective Measure Technologies, as presented in Task II of the RFI and as supplemented following the preparation of the RFI Final Report. The Respondent shall rely on engineering practice to determine which of the previously identified technologies appear most suitable for the site. Technologies can be combined to form the overall corrective action alternative or alternatives. The alternative or alternatives developed should represent a workable number of option(s) that each appear to adequately address all site problems and corrective action objectives. Each alternative may consist of an individual technology or a combination of technologies. The Respondent shall document the reasons for excluding technologies, identified in Task II, as supplemented in the development of the alternative or alternatives.

IV. TASK II: EVALUATION OF THE CORRECTIVE MEASURE ALTERNATIVE OR ALTERNATIVES

The Respondent shall describe each corrective measure alternative that passes through the Initial Screening in Task I of this appendix and evaluate each corrective measure alternative and its components. The evaluation shall be based on technical, environmental, human health and institutional concerns. The Respondent shall also develop cost estimates of each corrective measure.

A. Technical/Environmental/Human Health/Institutional

The Respondent shall provide a description of each corrective measure alternative which includes but is not limited to the following: preliminary process flow sheets; preliminary sizing and type of construction for buildings and structures; and rough quantities of utilities required. The Respondent shall evaluate each alternative in the four following areas:

1. Technical

The Respondent shall evaluate each corrective measure alternative based on performance, reliability, implementability and safety.

(a) The Respondent shall evaluate performance based on the effectiveness and useful life of the corrective measure:

(i) Effectiveness shall be evaluated in terms of the ability to perform intended functions, such as containment, diversion, removal, destruction, or treatment. The effectiveness of each corrective measure shall be determined either through design specifications or by performance evaluation. Any specific waste or site characteristics which could potentially impede effectiveness shall be considered. The evaluation should also consider the effectiveness of combinations of technologies; and

(ii) Useful life is defined as the length of time the level of effectiveness can be maintained. Most corrective measure technologies, with the exception of destruction, deteriorate with time. Often, deterioration can be slowed through proper system operation and maintenance, but the technology eventually may require replacement. Each corrective measure shall be evaluated in terms of the projected service lives of its component technologies. Resource availability in the future life of the technology, as well as appropriateness of the technologies, must be considered in estimating the useful life of the project.

(b) The Respondent shall provide information on there liability of each corrective measure including their operation and maintenance requirements and their demonstrated reliability:

(i) Operation and maintenance requirements include the frequency and complexity of necessary operation and maintenance. Technologies requiring frequent or complex operation and maintenance activities should be regarded as less reliable than technologies requiring little or straight forward operation and maintenance. The availability of labor and materials to meet these requirements shall also be considered; and

(ii) Demonstrated and expected reliability is a way of measuring the risk and effect of failure. The Respondent should evaluate whether the technologies have been used effectively under analogous conditions; whether the combination of technologies have been used together effectively; whether failure of any one technology has an immediate impact on receptors; and whether the corrective measure has the flexibility to deal with uncontrollable changes at the site.

(c) The Respondent shall describe the implementability of each corrective measure including the relative ease of installation (constructability) and the time required to achieve a given level of response:

(i) Constructability is determined by conditions both internal and external to the facility conditions and include such items as location of underground utilities, depth to water table, heterogeneity of subsurface materials, and location of the facility (i.e., remote location vs. a congested urban area). The Respondent shall evaluate what measures can be taken to facilitate construction under these conditions. External factors which affect implementation include the need for special permits or agreements, equipment availability, and the location of suitable off-site treatment or disposal facilities; and

(ii) Time has two components that shall be addressed: (1) the time it takes to implement a corrective measure and (2) the time it takes to actually see beneficial results. Beneficial results are defined as the reduction of contaminants to some acceptable, pre-established level.

(d) The Respondent shall evaluate each corrective measure alternative with regard to safety. This evaluation shall include threats to the safety of nearby communities and environments as well as those to workers during implementation. Among the factors to consider are fire, explosion, and exposure to hazardous substances.

2. Environmental

The Respondent shall perform an Environmental Assessment for each alternative. The Environmental Assessment shall focus on the facility conditions and pathways of contamination actually addressed by each alternative. The Environmental Assessment for each alternative will include, at a minimum, an evaluation of: the short and long term beneficial and adverse effects of the response alternative; any adverse effects on environmentally sensitive areas; and an analysis of measures to mitigate adverse effects.

3. Human Health

The Respondent shall assess each alternative in terms of the extent to which it mitigates short and long term potential exposure to any residual contamination and protects human health both during and after implementation the corrective measure. The assessment will describe the levels and characterizations of contaminants on-site, potential exposure routes, and potentially affected populations. Each alternative will be evaluated to determine the level of exposure to contaminants and the reduction over time. For management of mitigation measures, the relative reduction of impact will be determined by comparing residual

levels of each alternative with existing criteria, standards, or guidelines acceptable to EPA.

4. Institutional

The Respondent shall assess relevant institutional needs for each alternative. Specifically, the effects of Federal, State, and local environmental and public health standards, regulations, guidance, advisories, ordinances, or community relations on the design, operation, and timing of each alternative.

B. Cost Estimate

The Respondent shall develop an estimate of the cost of each corrective measure alternative (and for each phase or segment of the alternative). The cost estimate shall include both capital, operation and maintenance costs.

1. Capital costs consist of direct (construction) and indirect (nonconstruction and overhead) costs.

(a) Direct capital costs include:

(i) Construction costs: Costs of materials, labor (including fringe benefits and worker's compensation), and equipment required to install the corrective measure.

(ii) Equipment costs: Costs of treatment, containment, disposal and/or service equipment necessary to implement the action; these materials remain until the corrective action is complete;

(b) Indirect capital costs include:

(i) Engineering expenses: Costs of administration, design,construction supervision, drafting, and testing of corrective measure alternatives;

(ii) Legal fees and license or permit costs: Administrative and technical costs necessary

to obtain licenses and permits for installation and operation;

(iii) Startup and shakedown costs: Costs incurred during corrective measure startup; and

(iv) Contingency allowances: Funds to cover costs resulting from unforeseen circumstances, such as adverse weather conditions, strikes, and inadequate facility characterization.

2. Operation and maintenance costs are post-construction costs necessary to ensure continued effectiveness of a corrective measure. The Respondent shall consider the following operation and maintenance cost components:

(a) Operating labor costs: Wages, salaries, training, overhead, and fringe benefits associated with the labor needed for post-construction operations;

(b) Maintenance materials and labor costs: Costs for labor, parts, and other resources required for routine maintenance of facilities and equipment;

(c) Auxiliary materials and energy: Costs of such items as chemicals and electricity for treatment plant operations, water and sewer service, and fuel;

(d) Purchased services: Sampling costs, laboratory fees, and professional fees for which the need can be predicted;

(e) Disposal and treatment costs: Costs of transporting, treating,and disposing of waste materials, such as treatment plant residues, generated during operations;

(f) Administrative costs: Costs associated with administration of corrective measure operation and maintenance not included under other categories;

(g) Insurance, taxes, and licensing costs: Costs of such items as liability and sudden accidental insurance; real estate taxes on purchased land or rights-of-way; licensing fees for certain technologies; and permit renewal and reporting costs;

(h) Maintenance reserve and contingency funds: Annual payments into escrow funds to cover (1) costs of anticipated replacement or rebuilding of equipment and (2) any large unanticipated operation and maintenance costs; and

(i) Other costs: Items that do not fit any of the above categories.

V. TASK III: JUSTIFICATION AND RECOMMENDATION OF THE CORRECTIVE MEASURE OR MEASURES

The Respondent shall justify and recommend a corrective measure alternative using technical, human health, and environmental criteria. This recommendation shall include summary tables which allow the alternative or alternatives to be understood easily. Tradeoffs among health risks, environmental effects, and other pertinent factors shall be highlighted. The EPA will select the corrective measure alternative or alternatives to be implemented based on the results of Tasks II and III of this appendix. At a minimum, the following criteria will be used to justify the final corrective measure or measures.

A. Technical

1. Performance - corrective measure or measures which are most effective at performing their intended functions and maintaining the performance over extended periods of time will be given preference;

2. Reliability - corrective measure or measures which do not require frequent or complex operation and maintenance activities and that have proven effective under waste and facility conditions similar to those anticipated will be given preference;

3. Implementability - corrective measure or measures which can be constructed and operated to reduce levels of contamination to attain or exceed applicable standards in the shortest period of time will be preferred; and

4. Safety - corrective measure or measures which pose the least threat to the safety of nearby residents and environments as well as workers during implementation will be preferred.

B. Human Health

The corrective measure or measures must comply with existing EPA criteria, standards, or guidelines for the protection of human health. Corrective measures which provide the minimum level of exposure to contaminants and the maximum reduction in exposure with time are preferred.

C. Environmental

The corrective measure or measures posing the least adverse impact (or greatest improvement) over the shortest period of time on the environment will be favored.

VI. TASK IV:REPORTS

A. Progress

The Respondent shall provide the EPA with signed, quarterly progress reports.

B. Corrective Measures Study ("CMS") Final Report

The Respondent shall prepare a CMS Final Report. The CMS Final Report shall include all information gathered under the approved CMS Workplan. The CMS Final Report shall at a minimum include:

1. A description of the facility;

(a) Site topographic map & preliminary layouts.

2. A summary of the corrective measure or measures;

(a) Description of the corrective measure or measures and rationale for selection;

(b) Performance expectations;

(c) Preliminary design criteria and rationale;

(d) General operation and maintenance requirements; and

(e) Long-term monitoring requirements.

3. A summary of the RCRA Facility Investigation and impact on the selected corrective measure or measures;

(a) Field studies (groundwater, surface-water, soil, air); and

(b) Laboratory studies (bench scale, pick scale).

4. Design and Implementation Precautions;

(a) Special technical problems;

(b) Additional engineering data required;

(c) Permits and regulatory requirements;

(d) Access, easements, right-of-way;

(e) Health and safety requirements; and

(f) Community relations activities.

5. Cost Estimates and Schedules;

   (a) Capital cost estimate;

   (b) Operation and maintenance cost estimate; and

   (c) Project schedule (design, construction, operation).

December 5, 2006

Naval Activity Puerto Rico

RESPONSE TO PUBLIC COMMENTS
on RCRA 7003 Administrative Order on Consent

From September 12, 2006 through October 12, 2006, the United States Environmental Protection Agency (EPA) held a thirty day public review period on the proposed RCRA 7003 Administrative Order on Consent (Consent Order), which addresses completion of clean-up at the Naval Activity Puerto Rico (NAPR) facility, formerly Roosevelt Roads. On September 12, 2006, EPA published in the San Juan Star, in English and Spanish, a Public Notice announcing this review period and a planned public meeting to discuss the proposed Consent Order. The public meeting was held on September 27, 2006 at the Ceiba Multi-Use Center, in Ceiba, PR.

Three sets of written comments were received by EPA during the public comment period; two of the sets contained multiple comments/questions. The written comments and the most significant relevant comments made at the September 27th public meeting are summarized below, along with EPA's responses to those comments.

1. Comment: When is the next public meeting? Where on your website can the public find out about future activities? Also, can EPA invite members of the community to view where clean-up work has been done, or will be done in the future?

EPA Response: EPA will likely seek public comment and/or hold future public meetings if major modifications are proposed in the existing Consent Order, or if new Consent Orders are proposed between EPA and any "Third Party" acquirer of portions of the NAPR facility where clean-up has not yet been completed (see also Response to Comment 5). EPA would publish a public notice of such future meetings and announce them on EPA's internet web site (**http://www.epa.gov/region02/waste/fsroosev.htm**) where certain significant items concerning the NAPR facility, formerly Roosevelt Roads, are posted.

In addition, as discussed at the public meeting in Ceiba on September 27, 2006, the Navy is planning to establish a Restoration Advisory Board (RAB) which is an advisory group made up of 10 to 20 community volunteers, along with representatives from the Navy, EPA, and the Puerto Rico Environmental Quality Board (PREQB). RAB meetings provide an opportunity for two-way communication between the community and these agencies about the environmental cleanup work being done. The Navy held the initial RAB meeting on November 28, 2006 to develop interest in membership of this RAB. After this meeting the Navy expects to conduct RAB meetings every other month, however the schedule will be determined by the RAB.

Once a schedule is established for future RAB meetings, it will be announced on the Navy BRAC web site. (**http://www.bracpmo.navy.mil//**) This is the official web site to provide information about the United States Navy's Base Realignment and Closure (BRAC) Process to the general public. There is a link on this web site for the Former Naval Station Roosevelt Roads

now known as the Naval Activity Puerto Rico (NAPR). On this page there is a link for the Restoration Advisory Board and a schedule of meetings. Currently, this part of the web site is under construction, but will be updated in the very near future.

The Navy also has set up a project web site (**http://nsrr-ir.org**) to provide the public with information about the cleanup process at NAPR. This web site contains the complete Administrative Record for NAPR including investigations and cleanup documents.

Once the RAB is established, it is expected that there will be opportunities to take the RAB members into the facility to observe the sites where cleanup has been, or will be, completed. Announcements regarding such site visits to the facility will be made at the RAB meetings, and/or on the above discussed BRAC web site.

2. Comment: Where will contaminated soils be disposed of? Will it be in Ceiba?

EPA Response: The Navy, as Respondent under this Consent Order, will, subject to EPA oversight, be responsible for proper management, treatment, and disposal of all contaminated soils. Any excavated contaminated soils must be managed, treated, and disposed of pursuant to all applicable requirements given in 40 Code of Federal Regulations (CFR) Parts 260 through 268. Soils that are determined to be a hazardous waste, as that term is defined pursuant to 40 CFR Part 261, must be treated or disposed of at a permitted treatment, storage, or disposal facility (TSDF), as those terms are defined in 40 CFR Part 270. Since there currently is no permitted commercial TSDF in Puerto Rico, any soils excavated at NAPR that are determined to be a hazardous waste, if they are to be disposed of, must be transported to the U.S. mainland where several permitted commercial TSDFs are located. Therefore, no soils excavated at NAPR that are determined to be a hazardous waste will be disposed of in Ceiba, or elsewhere in Puerto Rico.

3. Comment: Does the proposed Consent Order have a time table or schedule for the clean-up operations?

EPA Response: Although the proposed Consent Order does not have a time table or schedule for the clean-up operations, it does contain time requirements for the Navy to submit work plans and reports related to the investigation of the site and clean-ups. Any such work plans submitted under the Consent Order, in order to be acceptable, must contain schedules for implementing that work. Once determined by EPA to be acceptable and complete, such work plans and their schedules become enforceable requirements under this Consent Order.

4. Comment: The proposed Consent Order does not make reference to the intentions of transferring parts of the Facility to the Government of Puerto Rico.

EPA Response: The majority of the facility likely will be transferred to the Commonwealth of Puerto Rico including, 3,333 acres of conservation areas, 1,851 acres for airport and port related operations, and 291 acres for economic development purposes. If the Commonwealth assumes responsibility for the cleanup of sites within these parcels after transfer, it will be required to enter into a "Third Party" order with the EPA. Otherwise the Navy will be responsible for any

cleanup that is required at these sites.

5. Comment: The proposed Consent Order provides no guidance as to the administrative process to follow in the event a "Third Party" transfers land to another party.

EPA Response: Although this proposed Consent Order does not spell out in detail the administrative process to follow in the event a "Third Party" transfers land to another party, it is not necessary to do so. Section X of the Consent Order contains a provision explicitly noting that the Navy's responsibility for the required work is conditioned on (i.e., is on-going until) the satisfactory and timely performance by the Third Party. This requirement is consistent with requirements in the federal Comprehensive Environmental Response, Compensation, and Liability Act of 1980 ("CERCLA"), Section 120(h), 42 U.S.C. Section 9620(h). Note further that "Third Party" is defined under this Order to include any "successors and assigns… and may include prospective purchasers… and/or other parties that may otherwise acquire one or more parcels…" which includes any party to which a third party transfers any parcel.

6. Comment: Were Areas of Expected Future On-site Residential Housing at the NAPR facility, as shown on the government of the Commonwealth of Puerto Rico's proposed "Portal del Futuro" web site (**http://portaldelfuturo.com**) considered in evaluating potential exposure pathways for releases from AOC F and SWMUs 26, 54, 61 and 62?

EPA Response: The Areas of Expected Future On-site Residential Housing as shown on the proposed "Portal del Futuro" web site (**http://portaldelfuturo.com**) to be located in the southwest corner of the facility, are incorrectly identified on this website as future residential housing areas. The website should indicate that those areas are in fact intended to be transferred to the US Army (the Army) for use by the Army Reserve Command. A portion of the multi-site Area of Concern (AOC) F, and Solid Waste Management Units (SWMUs) 26, 54, and 61, which are described in the Consent Order, are located within the Army's new property boundary. It is anticipated that the Army will enter into a Consent Order with EPA, less extensive but similar to the Consent Order with the Navy, which will require the Army to complete the investigation, cleanup, and monitoring of AOC F and SWMUs 26, 54, and 61. SWMU 62 is located within a projected public sale parcel. The successful purchaser of the property upon which SWMU 62 is located will be required to enter into a "Third Party" Consent Order with the EPA. This "Third Party" Consent Order will provide requirements for the investigation and cleanup of SWMUs in accordance with risk standards established by EPA for current and expected use of the property. The "Third Party" may choose to clean up sites on its parcels to meet an unrestricted reuse (i.e., residential), or it may conform to an alternate protective standard (i.e., industrial or recreational) with a restricted future use of the property.

7. Comment: At the public meeting held on September 27, 2006, a number of persons expressed concern with allowing the Navy to sell property prior to its being cleaned-up, and with transferring the responsibility for completion of the required clean-up to another entity.

EPA Response: Under the Consent Order, the Navy is responsible for completing all required clean-ups throughout the entire facility, unless the entity acquiring the contaminated property,

also enters into an Order with EPA for completing the clean-ups required on any property which it acquires from the Navy. In addition, under terms of the Consent Order and Federal law, in the event of default (or non-performance in completing the required clean-ups) by the entity acquiring contaminated property from the Navy, the Navy can be required to complete any such non-completed clean-ups.

8. Comment: At the public meeting held on September 27, 2006, a number of persons expressed concern with the proposed redevelopment and reuse plan for the facility, which has been developed by the Local Reuse Authority (LRA), the entity chartered by the government of the Commonwealth of Puerto Rico to develop a master reuse proposal for the properties comprising the former Roosevelt Roads facility.

EPA Response: The Consent Order does not define the redevelopment and reuse options for the lands comprising the former facility, and/or the role of the LRA in any such redevelopment or reuse of the facility. The redevelopment and reuse options for the lands comprising the former NAPR facility are determined by the LRA and/or other agencies of the government of the Commonwealth of Puerto Rico.

9. Comment: At the public meeting held on September 27, 2006, a number of persons expressed concern that some or all of the lands comprising the former Roosevelt Roads facility should be transferred to the local community.

EPA Response: The Consent Order does not address to whom the lands comprising the former Roosevelt Roads facility should be transferred. That is determined by the Navy in coordination with the LRA and/or other agencies of the government of the Commonwealth of Puerto Rico. At this time, it is expected that approximately 3, 333 acres of conservation areas will be transferred to the Commonwealth of Puerto Rico.

5 de diciembre de 2006

Naval Activity Puerto Rico (NAPR)

Respuestas a los comentarios públicos sobre la Orden Administrativa de Consentimiento RCRA 7003

Desde el 12 de septiembre de 2006 hasta el 12 de octubre de 2006 la Agencia de Protección Ambiental de Estados Unidos (EPA, por sus siglas en inglés) llevó a cabo un análisis público de treinta días de la Orden Administrativa de Consentimiento (Orden de Consentimiento) RCRA 7003, que versa sobre la culminación de los trabajos de limpieza de los terrenos de la base Naval Activity Puerto Rico (NAPR), antes conocida como Roosevelt Roads. El 12 de septiembre de 2006, EPA publicó en el *San Juan Star*, en inglés y en español, una notificación convocando a un periodo de análisis y a una junta pública para hablar sobre la Orden de Consentimiento propuesta. La junta pública se llevó a cabo el 27 de septiembre de 2006 en el Centro de Usos Múltiples 'Ceiba', en Ceiba, PR.

EPA recibió por escrito tres juegos de comentarios durante el periodo convenido; dos de ellos contenían múltiples señalamientos y preguntas. A continuación se presenta una síntesis de los comentarios escritos, de las participaciones más importantes de la junta del 27 de septiembre de 2006, así como de las respuestas de EPA a esos comentarios y participaciones.

1.

Comentario: ¿Cuándo se llevará a cabo la siguiente junta? ¿Dónde se pueden consultar las fechas de actividades futuras por internet? ¿EPA va a invitar a miembros de la comunidad a revisar donde se está llevando a cabo el trabajo de limpieza, o eso se hará en el futuro?

Respuesta de EPA: Lo más probable es que EPA busque conocer la opinión del público, a través de juntas públicas, cada vez que se propongan modificaciones importantes a la Orden de Consentimiento actual, o que se propongan nuevas Órdenes de Consentimiento entre EPA y cualquier "Tercero" que adquiera porciones de los terrenos de NAPR donde no se haya completado todavía el procedimiento de limpieza (ver también la respuesta al Comentario 5). Y también es bastante probable que EPA publique una notificación para anunciar estas juntas y que las anuncie en su sitio de la red (http://www.epa.gov/region02/waste/fsroosev.htm) donde ya se han publicado ciertos puntos importantes acerca de NAPR.

Además, como se habló en la junta pública del 27 de septiembre de 2006, la Marina está planeando establecer un Comité Consultivo de Restauración (RAB, por sus siglas en inglés) que es un grupo de asesores conformado por entre diez y veinte voluntarios de la comunidad, representantes de la Marina, representantes de EPA y representantes del Comité de Calidad Ambiental de Puerto Rico (PREQB, por sus siglas en inglés). Las juntas de RAB brindarán la oportunidad de una comunicación bilateral entre la comunidad y estas agencias sobre los trabajos de limpieza ambiental que se estén llevando a cabo en ese momento. La Marina llevó a cabo la primera junta de RAB el 28 de noviembre de 2006 para despertar el interés de las personas de participar como miembros de RAB. Después de esta junta, la Marina espera llevar a cabo reuniones de RAB cada tercer mes; no obstante, el calendario de juntas será determinado por RAB.

Una vez que se establezca el calendario de juntas de RAB, se anunciará en http://www.bracpmo.navy.mil/, el sitio oficial de la Marina dedicado a proveer información al público en general sobre el proceso BRAC (Reacondicionamiento y Cierre de Bases Navales de la Marina de Estados Unidos, por sus siglas en inglés). Allí hay una liga que lleva al sitio de NAPR. En esa página habrá una liga que llevará a la página de RAB y al calendario de juntas. Actualmente, esa parte del sitio esta en construcción, pero se actualizará en un futuro sumamente cercano.

La Marina también ha establecido un sitio piloto en la red (http://nsrr-ir.org) para brindar información al público en general acerca del proceso de limpieza de NAPR. Este sitio contiene el Historial Administrativo completo de NAPR incluyendo las investigaciones y los documentos de la limpieza.

Una vez que se establezcan los miembros ordinarios de RAB, se espera que se dé la oportunidad de llevarlos a la base para observar los lugares donde se está llevando a cabo la limpieza, o donde esté por llevarse a cabo. El anuncio de las visitas de campo a la base se hará en las juntas de RAB o en el sitio de BRAC (ver arriba).

2.

Comentario: ¿Dónde se desechará la tierra contaminada? ¿Será en Ceiba?

Respuesta de EPA: La Marina, como destinatario de esta Orden de Consentimiento, será responsable, bajo la supervisión de EPA, del manejo, tratamiento y desecho apropiado de toda la tierra contaminada. Toda la tierra contaminada que se excave debe ser manejada, tratada y desechada en concordancia con todos los requisitos aplicables, establecidos en el Código Federal 40 de Reglamentación (CFR, por sus siglas en inglés), Partes 260 a la 268. La tierra que se determine sea un residuo peligroso, de acuerdo con la definición del término en el CFR 40 Parte 261, deberá ser tratada o desechada en un Lugar de Tratamiento, Almacenamiento y Desecho Autorizado (TSDF, por sus siglas en inglés), tal y como se define en el CFR 40 Parte 270. Ya que, en la actualidad, no existen TSDFs comerciales autorizados en Puerto Rico. Toda la tierra que se excave en NAPR, y que se determine sea un residuo peligroso, para ser desechada deberá ser transportada a Estados Unidos donde hay varios TSDFs autorizados. Por lo tanto, la tierra escavada en NAPR que se determine sea un residuo peligroso no será desechada en Ceiba ni en ninguna otra parte de Puerto Rico.

3.

Comentario: ¿La Orden de Consentimiento propuesta tiene un programa o calendario para las operaciones de limpieza?

Respuesta de EPA: Aunque la Orden de Consentimiento propuesta no contiene un programa o un calendario para las operaciones de limpieza, si contiene ciertos requisitos para que la Marina someta a autorización los planes y reportes relacionados con la investigación del sitio y con la limpieza. Cualquiera de los planes de trabajo que se sometan a autorización bajo la Orden de Consentimiento, para ser recibidos, deben contener programas y calendarios de trabajo. Una vez que EPA los autorice, los planes de trabajo y sus programas se convierten en requisitos obligatorios de la Orden de Consentimiento.

4.

Comentario: La Orden de Consentimiento propuesta no menciona las intenciones de transferir parte de los terrenos de NAPR al gobierno de Puerto Rico.

Respuesta de EPA: La mayor parte de los terrenos de NAPR serán transferidos con toda probabilidad al gobierno de Puerto Rico, incluyendo 3,333 acres de zonas de conservación, 1,851 acres para aeropuertos y operaciones portuarias, así como 291 acres para desarrollo económico. Si el gobierno de Puerto Rico asume la responsabilidad de la limpieza de los sitios dentro de estas parcelas, posteriormente a su transmisión, se requerirá que se sujete a una Orden de “Tercera persona” de EPA. Si no, la Marina será responsable de llevar a cabo la limpieza necesaria en esos sitios.

5.

Comentario: La Orden de Consentimiento propuesta no instruye sobre el procedimiento administrativo a seguir en el supuesto de que una “Tercera persona” le transmita tierra a otra.

Respuesta de EPA: Aunque la Orden de Consentimiento propuesta no determina a detalle el proceso administrativo a seguir en caso de que una "Tercera persona" le transfiera tierra a otra, no es necesario hacerlo. La sección X de la Orden de Consentimiento contiene una provisión que señala explícitamente que la responsabilidad de la Marina para el trabajo requerido está condicionada a (o sea: continúa hasta) la ejecución satisfactoria y oportuna de la "Tercera persona". Este requisito es consistente con la Ley de Responsabilidad, Compensación y Respuesta Ambiental Completa de 1980 (CERCLA, por sus siglas en inglés), Sección 120 (h), 42 U.S.C. Sección 9620 (h). Además, hay que observar que en la definición de "Tercera persona" de esta Orden se incluye a cualquier "sucesor y comisionado [...] e incluye compradores potenciales [...] o cualquier otra persona que adquiera una o más parcelas", lo cual incluye a cualquier persona a la que la "Tercera persona" le transmita cualquier parcela.

6.

Comentario: ¿Se consideraron las Zonas de Futuro Uso Residencial dentro de los terrenos de NAPR, como se muestran en el sitio del gobierno de Puerto Rico "Portal del Futuro" (http://portaldelfuturo.com), para evaluar las rutas potenciales de exposición a emisiones de la Zona Crítica 'F' y las SWMUs 26, 54, 61 y 62?

Respuesta de EPA: Las Zonas de Futuro Uso Residencial dentro de los terrenos de NAPR, como se muestran en el sitio del gobierno de Puerto Rico "Portal del Futuro" (http://portaldelfuturo.com) que se localizarán en el rincón sudoeste de la base, están señaladas de manera incorrecta en ese sitio de la red como zonas residenciales futuras. El sitio debería indicar que esas zonas de hecho se piensa transferirlas al Ejército de Estados Unidos para ser utilizadas por el Centro de Mando de la Reserva del Ejército. Una porción de la Zona Crítica 'F' y de las Unidades de Manejo de Residuos (SWMUs, por sus siglas en inglés) 26, 54 y 61, que se describen en la Orden de Consentimiento, están localizadas dentro de los límites de la nueva propiedad del Ejército. Se espera que el Ejército se someta a una Orden de Consentimiento de EPA menos extensa, pero similar a la Orden de Consentimiento de la Marina, que va a exigir que el Ejército termine la investigación, limpieza y monitoreo de la Zona Crítica 'F' y de las SWMUs 26, 54 y 61. La SWMU 62 se localiza dentro de una parcela que se piensa vender al público. El comprador final de la propiedad donde se localiza la SWMU 62 tendrá que someterse a una Orden de Consentimiento de "Tercera persona" de EPA. Esta Orden de Consentimiento de "Tercera persona" establecerá los requisitos para la investigación y limpieza de las SWMUs conforme los estándares de riesgo establecidos por EPA para el uso actual y proyectado de la propiedad. La "Tercera persona" quizá escoja limpiar los sitios de sus parcelas de tal manera que se le autorice el uso irrestricto (o sea: residencial), o quizá se contente con un estándar de protección alternativo (o sea: industrial o recreativo) que restrinja el uso de la propiedad.

7.

Comentario: En la junta pública celebrada el 27 de septiembre de 2006, varias personas expresaron su preocupación de permitirle a la Marina que venda parte de la propiedad sin haber terminado la limpieza, transfiriéndole así la responsabilidad de terminar la limpieza requerida a otra entidad.

Respuesta de EPA: Bajo la Orden de Consentimiento, la Marina es responsable de terminar todo el trabajo de limpieza necesario a lo largo de los terrenos de la base naval, a menos de que la entidad que adquiera la propiedad contaminada, también se someta a una Orden de EPA para terminar la limpieza necesaria en cualquier propiedad que le compre a la Marina. Además, bajo los términos de la Orden de Consentimiento y la Ley Federal, en caso de incumplimiento (o de no terminar la limpieza necesaria) de parte de la entidad que haya adquirido la propiedad contaminada de la Marina, se le puede exigir a la Marina que termine con la limpieza pendiente.

8.

Comentario: En la junta pública del 27 de septiembre de 2006, varias personas expresaron su preocupación sobre el plan de desarrollo y uso futuro de la zona, que fue elaborado por las

autoridades de LRA (Autoridad de Uso Local del Suelo, por sus siglas en inglés), la entidad comisionada por el gobierno de Puerto Rico para desarrollar una propuesta maestra de uso de los terrenos que forman parte de NAPR.

Respuesta de EPA: La Orden de Consentimiento no define las opciones de desarrollo y uso futuro de los terrenos que forman parte de la antigua base naval. Las opciones de uso y desarrollo futuro de NAPR serán determinados por LRA y otras agencias del gobierno de Puerto Rico.

9.

Comentario: En la junta pública del 27 de septiembre de 2006, varias personas expresaron su preocupación sobre que algunos, sino es que todos, los terrenos que forman parte de NAPR sean transferidos a la comunidad local.

Respuesta de EPA: La Orden de Consentimiento no dice a quien se le deba transmitir la posesión de los terrenos que forman parte de NAPR. Eso lo determinará la Marina en coordinación con LRA y otras agencias del gobierno de Puerto Rico. En la actualidad, se espera que aproximadamente 3,333 acres de zonas de conservación le sean transferidas al gobierno de Puerto Rico.