

3/11/05-02510



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 2  
290 BROADWAY  
NEW YORK, NY 10007-1866

MAR 11 2005

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

Mr. Christopher T. Penny  
Project Coordinator  
Installation Restoration Section (South)  
Environmental Program Branch  
Environmental Division,  
Atlantic Division (LANTDIV), Code 182  
Naval Facilities Engineering Command  
6506 Hampton Blvd.  
Norfolk, VA 23508-1278

Re: Atlantic Fleet Weapons Training Facility (AFWTF) - EPA I.D.# PRD980536221  
1) Navy's Draft Responses to Comments on the Draft Phase I RCRA Facility Investigation (RFI) Report and Draft Groundwater Baseline Investigation Report, and  
  
2) Draft Site Specific Work Plan for Phase I RCRA Facility Investigation for Eight PI/PAOC Sites.

Dear Mr. Penny:

The United States Environmental Protection Agency (EPA) has completed its review of the Draft Responses submitted on the Navy's behalf by your consultant, CH2MHill, on November 30, 2004 to address EPA's August 26, 2004 Comments on the *Draft Phase I RCRA Facility Investigation (RFI) Report* ("the Phase I RFI Report") and the *Draft Groundwater Baseline Investigation at U.S. Navy's Eastern Maneuver Area Report* ("the Groundwater Baseline Report"). Also, EPA has completed its review of the *Draft Site Specific Work Plan for Phase I RCRA Facility Investigation for Eight PI/PAOC Sites*, which was also submitted on the Navy's behalf by your consultant, CH2MHill, on November 30, 2004. These documents were developed pursuant to the requirements of the January 2000 RCRA Section 3008(h) Administrative Order ("the Order") between the Navy and EPA. This letter is addressed to you as the Navy's designated Project Coordinator, pursuant to Section IX of the Order.

EPA's review has indicated that your November 2004 Responses are not fully acceptable, nor is the Phase I RFI Work Plan for Eight PI/PAOC Sites fully acceptable. Enclosed with this letter are comments by various programs within EPA Region 2 and the Puerto Rico Environmental Quality Board (PREQB) on these documents. The comment documents enclosed with this letter are listed below:

1. Technical Review of the November 2004 Draft Response to Comments on the Draft Phase I RCRA Facility Investigation (RFI) Report and the Draft Groundwater Baseline Investigation Report, dated January 18, 2005, prepared by TechLaw Inc. for EPA Region 2, RCRA Programs Branch, revised by EPA February 2, 2005.
2. Technical Review of the November 2004 Draft Site Specific Work Plan Phase I RCRA Facility Investigation for Eight PI/PAOC Sites, dated January 18, 2005, prepared by TechLaw Inc. for EPA Region 2, RCRA Programs Branch.
3. EPA Region 2's CERCLA Comments on Navy's November 2004 Draft Response to Comments on the Draft Phase I RCRA Facility Investigation (RFI) Report and the Draft Groundwater Baseline Investigation Report.
4. EPA Region 2's CERCLA Comments on the November 30, 2004 Draft Site Specific Work Plan Phase I RFI For Eight PI/PAOC Sites, Former Atlantic Fleet Weapons Training Facility Vieques, Puerto Rico.
5. Memo dated January 27, 2005, from Ms. Gina Ferreira of EPA Region 2, Strategic Planning and Multi-Media Programs Branch, giving Comments on Draft Site Specific Work Plan Phase I RCRA Facility Investigation for Eight PI/PAOC Sites .
6. PREQB, January 25, 2005 letter from Julio Rodriguez Colon, Director Land Pollution Regulation Program, with attached comments on the Draft Site Specific Work Plan Phase I RCRA Facility Investigation for Eight PI/PAOC Sites.
7. PREQB, January 25, 2005 letter from Julio Rodriguez Colon, Director Land Pollution Regulation Program, with comments on the November 2004 Draft Response to Comments on the Draft Phase I RCRA Facility Investigation (RFI) Report and the Draft Groundwater Baseline Investigation Report.
8. PREQB, January 25, 2005 letter from Julio Rodriguez Colon, Director Land Pollution Regulation Program, with comments on the QA/QC Responses in the November 2004 Draft Response to Comments on the Draft Phase I RCRA Facility Investigation (RFI) Report and the Draft Groundwater Baseline Investigation Report.

Please revise your November 2004 Draft Responses to EPA's and EQB's Comments on both the Draft Phase I RFI Report and the Draft Groundwater Baseline Investigation Report to address all the enclosed comments that are applicable. Also, please revise the November 2004 Site Specific Work Plan for Phase I RCRA Facility Investigation for Eight PI/PAOC Sites to address all the enclosed comments that are applicable. EPA requests that pursuant to Section XI (paragraph 1) of the Order, within 75 days of your receipt of this letter, please submit both revised Responses to address EPA's and EQB's Comments on the Draft Phase I RFI Report and the Draft Groundwater Baseline Investigation Report, and a revised Site Specific Work Plan for Phase I

## RCRA Facility Investigation for the Eight PI/PAOC Sites.

In addition, based on your proposed responses (Emailed to EPA on March 3, 2005 by Mr. Brett Doerr of your consultant CH2MHill) to EPA's letter of January 4, 2005 regarding the Background Investigation Work Plan, and as discussed during the March 8, 2005 meeting between EPA and EQB representatives, yourself and other Navy and CH2MHill representatives, EPA requests that, within 75 days of your receipt of this letter, the Navy also submit a Phase I Summary RFI Report covering the 12 SWMUs and AOCs required investigated under the Order. This Phase I Summary RFI Report should reflect that, in addition to SWMU 1 (which is proposed for further investigation, i.e., a full RFI), human health risk assessment (HHRA) will be performed for the 10 other solid waste management units (SWMUs) and areas of concern (AOCs) where concentrations of hazardous constituents were measured at levels exceeding their Region 9 Preliminary Remediation Goals (PRGs).

Consistent with your proposed responses to EPA's letter of January 4, 2005, HHRAs for the 10 SWMUs and AOCs should be performed independent of any comparison of the inorganic (metals) constituent concentrations measured at those SWMUs and AOCs to their "background" concentrations. However, as discussed during the March 8<sup>th</sup> meeting, comparison of inorganic constituent concentrations measured at SWMUs/AOCs to the natural background concentrations of those constituents, may be utilized: a) to determine when a SWMU/AOC has been adequately characterized for constituents which also occur naturally, i.e. in the "background"; and b) as part of any risk management decisions for addressing such constituents after the HHRA has been completed. However, comparison of the concentrations measured at a SWMU/AOC to background concentrations cannot be utilized to eliminate those constituents from any HHRA evaluation, nor to make a "no further action" (NFA) recommendation prior to completing the HHRA evaluation, as is currently proposed in the June 2004 Draft Phase I RFI report.

The Phase I Summary RFI Report requested above for the 12 SWMUs and AOCs required investigated under the Order, should also include all analytical results, as well as all figures, tables, etc., that are applicable for those 12 SWMUs and AOCs and were included in the June 2004 Draft Phase I RFI Report. To update the public on the preliminary results for those 12 SWMUs and AOCs required investigated under the Order, EPA may make this Phase I Summary RFI Report available for public inspection prior to development and implementation of an acceptable work plan to establish a background data set for the surface and subsurface soils of east Vieques.

However, as discussed in your letter of November 5, 2004, EPA concurs that, until completion of the Background Investigations and any required human health and ecological risk evaluations, the Navy is not be required to submit the full revised Draft Final Phase I RFI Report, which will include final action, or no further action, recommendations for the 12 SWMUs and AOCs required investigated under the Order, as well as interim recommendations for the "photo identified" (PI) and potential areas of concern (PAOC) sites defined subsequent to development of the Order.

Please telephone Mr. Tim Gordon of my staff at (212) 637- 4167 if you have questions.

Sincerely,



Adolph Everett, P.E.  
Chief, RCRA Programs Branch

Enclosures (see above list)

cc: Ms. Yarissa Martinez, Office of the President, Puerto Rico Environmental Quality Board (PREQB), with encl.  
Mr. Julio I Rodriguez, PREQB, Director Land Pollution Control Area, w/o encl.  
Mr. Felix Lopez, U.S. Dept. of the Interior, Fish & Wildlife Service, with encl.  
Mr. Paul Rakowski, Naval Facilities Engineering Command, w/o encl.  
Mr. John Tomik, CH2M Hill, with encl.  
Ms. Diane Ridolfi, NOAA, with encl.

ENCL. 1

**TECHNICAL REVIEW OF THE  
NAVY'S NOVEMBER 2004 RESPONSES  
TO COMMENTS by EPA REGION 2 and the  
PUERTO RICO ENVIRONMENTAL QUALITY BOARD on the  
DRAFT PHASE I RCRA FACILITY INVESTIGATION REPORT and  
DRAFT GROUNDWATER BASELINE INVESTIGATION REPORT  
FORMER ATLANTIC FLEET WEAPONS TRAINING FACILITY  
VIEQUES ISLAND, PUERTO RICO**

**January 18, 2005  
(revised by EPA February 2, 2005)**

**TECHNICAL REVIEW OF THE  
NAVY's NOVEMBER 2004 RESPONSES  
TO COMMENTS by EPA REGION 2 and the  
PUERTO RICO ENVIRONMENTAL QUALITY BOARD on the  
DRAFT PHASE I RCRA FACILITY INVESTIGATION REPORT and  
DRAFT GROUNDWATER BASELINE INVESTIGATION REPORT  
FORMER ATLANTIC FLEET WEAPONS TRAINING FACILITY  
VIEQUES ISLAND, PUERTO RICO**

**TABLE OF CONTENTS**

**EPA REGION 2 COMMENTS ON DRAFT PHASE I RFI REPORT:**

Cover Letter Comments .....	1
General Comments .....	2
Specific Comments .....	10
Errata .....	28

**EPA REGION 2 COMMENTS ON DRAFT GROUNDWATER BASELINE INVESTIGATION REPORT:**

General Comments .....	31
Specific Comments .....	32
Errata .....	36

**EPA CERCLA COMMENTS ON DRAFT PHASE I RFI REPORT:**

General Comments .....	37
------------------------	----

**EPA CERCLA COMMENTS ON DRAFT GROUNDWATER BASELINE INVESTIGATION REPORT:**

Comments .....	43
----------------	----

**PREQB COMMENTS ON DRAFT PHASE I RCRA FACILITY INVESTIGATION REPORT:**

Comments .....	44
----------------	----

QA/QC COMMENTS:

Comments ..... 45

**TECHNICAL REVIEW OF THE  
NAVY'S RESPONSES TO COMMENTS by EPA REGION 2 and the  
PUERTO RICO ENVIRONMENTAL QUALITY BOARD on the  
DRAFT PHASE I RCRA FACILITY INVESTIGATION REPORT and  
DRAFT GROUNDWATER BASELINE INVESTIGATION REPORT  
FORMER ATLANTIC FLEET WEAPONS TRAINING FACILITY  
VIEQUES ISLAND, PUERTO RICO  
DATED NOVEMBER 2004**

**COVER LETTER COMMENTS  
from Mr. Adolph Everett/Chief RCRA Programs Branch  
and Mr. Tim Gordon/RCRA Programs Branch Caribbean Section**

- *Please note, Navy Responses to Cover Letter Comments 1 and 2 have been reviewed. These comment have been adequately addressed.*

**Comment #3:** Several key documents cited in the Phase I RFI and Groundwater Baseline reports have not been approved by EPA, nor have comments on those documents made by EPA, as well as the Puerto Rico Environmental Quality Board (PREQB) and the U.S. Fish & Wildlife Service (USFWS) ever been fully addressed by the Navy. These key documents include the April 2003 Draft Environmental Baseline Survey Report (EBS) and the April 2003 Final Draft Preliminary Range Assessment Report (PRA). On July 3 and June 21, 2003, respectively EPA had previously commented on the Draft Environmental Baseline Survey Report (EBS) and Draft Preliminary Range Assessment Report (PRA). To date EPA has never received a response to our comments on the EBS and PRA; nor has EPA received revised editions of either document. EPA may not be able to complete its evaluations of the Phase I RFI and Groundwater Baseline reports until the Navy fully responds to our comments on the April 2003 EBS and PRA reports, as both are key documents in evaluating the Phase I RFI and Groundwater Baseline reports.

**Navy Response:** *The April 2003 Final Draft Environmental Baseline Survey Report (EBS) and the April 2003 Final Draft Preliminary Range Assessment Report (PRA) were prepared as internal Navy documents that were associated with the property transfer rather than to meet regulatory requirements. However, the comments from EPA, EQB, and USFWS on the EBS and PRA will be addressed in a comment response letter. In addition, the comment responses will be incorporated into the Draft Expanded Range Assessment Report and the Draft RCRA Facility Investigation Report, which will be submitted to the regulators for review and comment.*

**Comment:** Please also specify an anticipated schedule of when the documents are expected to be submitted to EPA.

**EPA REGION 2 TECHNICAL REVIEW OF THE DRAFT PHASE I RCRA FACILITY  
INVESTIGATION FORMER ATLANTIC FLEET WEAPONS TRAINING FACILITY  
VIEQUES ISLAND, PUERTO RICO, DATED JUNE 2004**

**GENERAL COMMENTS**

**Comment #1:** In each Conclusions and Recommendations section, it is stated that a work plan for a proposed background investigation of the soils and groundwater has been submitted to the EPA. The data from the background investigations will be compared to chemical concentrations detected at each area of concern to assess whether the constituent concentrations exceeding the screening levels are either site-related or can be attributed to background conditions. When comparing these background concentrations to the chemical constituents EPA's Risk Assessment Guidance for Superfund notes it is important that "...background concentrations may present a significant risk, and, while cleanup may or may not eliminate this risk, the background risk may be an important site characteristic to those exposed." Accordingly, this guidance should be kept in mind when conducting the risk assessment. Revise the text to include an acknowledgment of this guidance. [Risk Assessment Guidance for Superfund, Volume 1, Human Health Evaluation Manual (Part A), Interim Final, Page 5-19, USEPA Office of Emergency and Remedial Response, December 1989.]

**Navy Response:** *During the RFI, the site-specific inorganic constituents data exceeding PRGs will be compared to the range of the inorganic background concentrations and PRGs to assess the nature and extent of inorganic contamination within the soils using the methods identified in the EPA Guidance (EPA 1989, 2002a, 2002b). This comparison will be used to: 1) determine if contamination is present at a site, and 2) delineate the extent of contamination. Any inorganic constituents detected in soils at levels exceeding the range of the background levels will be considered as site-related contamination. An evaluation will then be made to determine if the extent of contaminants detected has been adequately delineated or if additional site characterization is needed.*

*Once the nature and extent of the contamination has been defined, the risk assessment will be completed for all constituents that exceed the PRGs, including those constituents that are within the range of background concentrations. Background data will not be used to screen out data to select constituents of potential concern (COPCs). Once the risk assessment is completed, any inorganic constituent concentrations contributing to unacceptable risks, or with HI values above acceptable criteria, will be compared to the background data. Based on this comparison, risk management decisions will then be made to assess if any further actions (i.e., additional investigations, additional statistical analyses, remedial actions, institutional controls) are recommended to protect human health or the environment.*

**Comment:** The comment has been adequately addressed. No additional response is necessary at this time.

**Comment #2:** EPA's Risk Assessment Guidance for Superfund notes that "...chemicals with qualifiers attached that indicate known identities but unknown concentrations (e.g., J-qualified data)..." should be included in the list of chemicals of potential concern for a quantitative risk assessment. Bearing this in mind, all chemical contaminants should be re-examined and contaminants with unknown concentrations should be considered a potential concern. Revise the Conclusions and Recommendations subsections in each section to be in accordance with this guidance. [Risk Assessment Guidance for Superfund, Volume 1, Human Health Evaluation Manual (Part A), Interim Final, Page 5-20, USEPA Office of Emergency and Remedial Response, December 1989.]

**Navy Response:** *The Conclusions and Recommendations subsections in each section will be revised to state that the chemical concentrations with "J" qualifiers are treated as detected concentrations in the screening evaluation for this RFI report. For sites where risk assessments will be conducted, these data will be treated as detected concentrations in accordance with Risk Assessment Guidance for Superfund, Volume 1, Human Health Evaluation Manual (Part A), Interim Final, Page 5-20, USEPA Office of Emergency and Remedial Response, December 1989.*

**Comment:** **The comment has been adequately addressed. No additional response is necessary at this time.**

**Comment #3:** Pesticides were detected in excess of screening levels at several locations, including SWMUs 1, 4, 6/7, and 10; AOC G; several PIs; and PAOC U. Many of these sections state that the chemicals detected in soils above screening levels have also been detected in the background soils. However, note that EPA's Risk Assessment Guidance for Superfund states,

In general, comparison with naturally occurring levels is applicable only to inorganic chemicals, because the majority of organic chemicals found at Superfund sites are not naturally occurring (even though they may be ubiquitous). The presence of organic chemicals in background samples collected during a site investigation actually may indicate that the sample was collected in an area influenced by site contamination and therefore does not qualify as a true background sample. Such samples should instead be included with other site samples in the risk assessment. Unless a very strong case can be made for the natural occurrence of an organic chemical, do not eliminate it from the quantitative risk assessment for this reason.

Pesticides are not naturally occurring chemicals. This should be taken into account when conducting any future risk assessment studies. Revise the text to include acknowledgment that pesticides and other organic chemicals, while perhaps detected in background soils, are not naturally occurring, and that EPA risk assessment guidance will be followed. [Risk Assessment Guidance for Superfund, Volume 1, Human Health Evaluation Manual (Part A), Interim Final, Page 5-19, USEPA Office of Emergency and Remedial Response, December 1989.]

***Navy Response:*** Results from the Phase I RFI indicated that pesticides are widespread throughout the Facility, indicative of facility-wide pesticide application for pest-control, and should be considered as part of the Background Investigation. However, as presented in the Technical Memorandum titled Background Investigation Work Plan For Eastern Vieques presented to EPA on October 28, 2004, it is proposed that the Background Investigation will be limited to only those constituents that occur naturally within the soils. As a result, pesticides will be investigated separately on a facility-wide basis to assess pesticides in the surface soils. Any further actions at a particular RFI or RI site (i.e., additional investigations, remedial actions) associated with elevated levels of pesticides will be deferred until the pesticide investigation has been completed. A Work Plan for the facility-wide pesticide investigation will be prepared following regulatory approval of the Background Investigation Work Plan using the following methods identified in the EPA and Navy Guidance (Navy 1999; EPA 2002a, 2002b):

*EPA. 2002a. Role of Background in the CERCLA Cleanup Program. Office of Solid Waste and Emergency Response and Office of Emergency Remedial Response, OSWER 9285.6-07P. April.*

*EPA. 2002b. Guidance for Comparing Background and Chemical Concentrations in Soil at CERCLA Sites. External Review Draft, EPA 540-R-01-003. September.*

*Navy. 1999. Handbook for Statistical Analysis of Environmental Background Data, Prepared by: SWDIV and EFA West, of Naval Facilities Engineering Command, July.*

**Comment:** Incorporate this additional information into the revised Phase I RFI. Please also specify an anticipated schedule of when a work plan for the proposed pesticides investigation is expected to be submitted to EPA.

**Comment #4:** As stated in Section 14.2: Data Assessment of PI and PAOC Sites, several of the PI and PAOC sites listed in Table 14-1 have been identified as Munitions Response Sites (MRSs), and these sites will be further evaluated under the Munitions Response Program (MRP). Please note that there are various environmental issues and requirements associated with munitions and explosives of concern (MEC) [e.g., pre-blown-in-place (BIP) and post-BIP sampling, remediation]. EPA should be kept informed of any activities involving MEC cleanup and presented with any sampling results.

***Navy Response:*** Please see response to Comment 2 from the Cover Letter Comments from Mr. Adolph Everett/Chief RCRA Programs Branch and Mr. Tim Gordon/RCRA Programs Branch Caribbean Section.

**Comment:** The comment has been adequately addressed. No additional response is necessary at this time.

**Comment #5:** Most of the PAOC sites are lacking in significant detail and the figures are too small to provide useful information. Provide additional detail and smaller scale figures for each PAOC site with each sample location clearly indicated in relation to significant structures or other features at the site (e.g., stained areas).

**Navy Response:** *The PAOC site figures will be revised in the next RFI Report and the Draft PI/PAOC Work Plan to provide more detail on the surrounding site conditions.*

**Comment:** The comment has been adequately addressed. No additional response is necessary at this time.

**Comment #6:** Appendix H: Analytical Data Summary includes what appears to be summary data. In addition to the summary tables, provide copies of the original analytical data reports provided by the laboratory. These documents should be provided for review purposes.

**Navy Response:** *The original analytical data reports will be provided on a CD and included with the revised Phase I RFI submittal.*

**Comment:** The comment has been adequately addressed. No additional response is necessary at this time.

**Comment #7:** Section 2.2, Task DM – Data Management of the June 2003 Master Work Plan states that in order to detect contaminants with low screening level criteria, special analytical methods would be required. The Master Work Plan also indicates that “full documentation of these analytical methods will be provided with the sample analyses.” However, no method documentation has been provided in the draft Phase I RFI. Include this documentation in the report.

**Navy Response:** *The analytical methods agreed to with EPA were the RCRA Appendix IX list using SW846 methods. No special analytical methods were utilized during these investigations. In the future, documentation will be provided for any special analytical methods utilized.*

**Comment:** On page 2-10 of the June 2003 Final Master Work Plan, it states in Section 2.2, Task DM – Data Management, “For certain chemicals, EPA Region IX has calculated screening level criteria for potential risk to human health and the environment. To detect some of the chemicals at levels as low as the screening level criteria, special analytical methods will be required. Full documentation of these analytical methods will be provided with the sample analyses.” Based on the Navy’s response to this comment, it could be inferred that none of these chemicals for which there are Region IX-calculated risk-based screening level criteria were screened for during the Phase I RFI activities. Confirm that this is the case by providing a list of the chemicals that would require special analytical

methods, based on Region IX criteria.

**Comment #8:** The Analytical Data Detection Summary tables for the various SWMUs and AOCs indicate a result of ND (not detected) for cyanide, sulfide, and dioxins for many samples which were not analyzed for these parameters. Revise the tables by replacing ND with NA (not analyzed) for the samples which were not analyzed. Add the abbreviation to the footnotes of each table. Revisions of the tables should include the following:

- **Table 3-4:** Replace ND with NA in the cyanide, sulfide, and dioxin rows for all samples except CGW1SS08, 17, 33, 35, and 48.
- **Table 3-5:** Replace ND with NA in the cyanide and sulfide rows for samples CGW1MW01, and 05.
- **Table 4-1:** Replace ND with NA in the cyanide, sulfide, and dioxin rows for all samples except CGW2SS03, 07, 09, and 12.
- **Table 6-1:** Replace ND with NA in the dioxin rows for all samples except CGW5SS01.
- **Table 8-1:** Replace ND with NA in the sulfide and dioxin rows for all samples except CGW8SS02.
- **Table 9-5:** Replace ND with NA in the cyanide, sulfide, and dioxin rows for all samples except CGW10SS06, 07, 10, 11, 13, 15, and 19.
- **Table 9-7:** Replace ND with NA in the sulfide and dioxin rows for all samples except subsurface sample numbers CGW10SB06, 11, 13, and 19 (reported as samples CGWWTPSB06, 11, 13 and 19 in Table 9-7, refer to Specific Comment 18).
- **Table 9-8:** Replace ND with NA in the cyanide row for all samples except CGW10MW04 and 05.
- **Table 10-1:** Replace ND with NA in the dioxin row for all samples except CGW12SS05.
- **Table 13-1:** Replace ND with NA in the cyanide, sulfide, and dioxin rows for all samples except CGAGSS04.

**Navy Response:** *The requested changes to the listed tables will be made in the revised report.*

**Comment:** The comment has been adequately addressed. No additional response is necessary at this time.

**Comment #9a:** Section 2.15, Data Screening Procedure, states that surface soil sample analytical results were compared to the “EPA (2002) Region 9 residential risk-based concentrations preliminary remediation goals (PRGs)....” The text goes on to state that “in some instances when soil screening values were not available from these primary sources, three other references were consulted,” including the Canadian protocol for deriving environmental soil quality guidelines (SQGs), Dutch Soil Quality Standards, and U.S. Fish and Wildlife Service (USFWS) soil screening values, and that the lowest screening value from these three sources was selected for screening. The various Surface Soil Analytical Data Detection Summary tables in the following

sections of the report include the relevant screening concentrations for comparison to the detected contaminant levels. However, the referenced criteria sources in the table footnotes include only the Region 9 PRGs, the Region 9 Soil Screening Level (Migration to Groundwater - DAF 20), and toxicological benchmarks from Efroymson (1997). It is not clear if the Canadian, Dutch, or USFWS screening values were used for any contaminants, and if so for which ones. Indicate in the text and footnotes if any of these additional sources were used. If the additional sources were not used, remove them from the discussion in Section 2.15.

**Comment #9b:** In addition, for ecological soil screening values that were not available in the above sources, such guidance as the USEPA Region 5 Ecological Soil Screening Levels, or the USEPA Region 9 Toxicity Reference Values for invertebrates, mammals, or birds should be used for comparison to the soil concentrations. Revise the table to include all additionally available soil screening values, and review the data for exceedences as necessary.

**Navy Response:**

a) *The text will be modified such that the referenced screening criteria from Canada or Dutch sources will be deleted from Section 2.15.*

b) *Where ecological screening values are not available in the references already identified in the RFI report, alternate values from USEPA Region 5 Ecological Soil Screening Levels and the USEPA Region 9 TRVs will be considered in future reports. These alternate values would be used in the future if determined to be appropriate for the contaminant and ecological receptors of concern at the site.*

**Comment:** The comment has been adequately addressed. No additional response is necessary at this time.

**Comment #10a:** The screening criteria for dioxins are given in the various Analytical Data Detection Summary tables as Preliminary Remediation Goals for Residential Soil (PRG-Rs). However, the only dioxin soil screening value provided in the Region 9 PRG Table 2002 Update guidance document (USEPA, October 2002) is for 2,3,7,8-Tetrachlorinated dibenzo-p-dioxin (TCDD). Therefore, it is assumed that Toxic Equivalence Factors (TEFs) were applied to the 2,3,7,8-TCDD PRG-R to derive screening levels for the other dioxin congeners, although this has not been clearly stated in the report, nor has the technical approach for the use of TEFs been adequately documented. Confirm in the text that this was the derivation method used, and revise the document to provide both a technical basis and presentation of the approach used for applying TEFs in the Phase I RFI.

**Comment #10b:** In addition, modified soil concentrations for all 2,3,7,8-TCDD congeners (based on TEFs) should be summed to obtain total congener soil concentrations (the total Toxic Equivalence, or TEQ) at each sample location (i.e., add 2,3,7,8-TCDD; 1,2,3,7,8-PECDD; 1,2,3,4,7,8-HXCDD; 1,2,3,6,7,8-HXCDD; 1,2,3,7,8,9-HXCDD; 1,2,3,4,6,7,8-HPCDD; and

OCDD) in order to provide an estimation of potential cumulative effects for different congener groups. The total values should then be compared to the screening benchmarks for the base value of 2,3,7,8-TCDD (3.9E-6 in the case of Region 9 Residential PRGs for Human Health), as well as comparing individual congener concentrations to screening values. Revise the document to incorporate this information.

**Navy Response:**

*a) Dioxins were presented as the TCDD equivalent concentrations (TEQs) and compared against TCDD PRG values. The TEQs are estimated by multiplying the reported concentration for a congener with its TEF value, and summing the calculated value for each congener. When a congener was not detected, half the detection limit value was used for the TEQ estimation. The methodology will be described in the revised Phase I RFI report as presented below:*

*Toxic Equivalency Factors (TEFs) and Toxic Equivalents (TEQs) Estimation Methodology*

*“The toxicity of the dioxin mixtures is assessed by using the relative potency information for each of the congeners as defined by EPA (1989, Interim Procedures for Estimating Risks Associated with Exposure to Mixtures of Chlorinated Dibenzo-p-Dioxins and -Dibenzofurans (CDDs and CDFs) and 1989 Update. EPA/625/3-89/016, March 1989). The TEF approach compares the relative toxicity of individual congeners to that of 2,3,7,8-TCDD. The TEF of 2,3,7,8-TCDD is one, whereas the TEFs of the other compounds are a fraction of one, reflecting their lower toxic potency. The toxic potency of a mixture of congeners (i.e., the TEQ) is the sum of the products of the TEFs for each congener and its concentration in the mixture. Thus, TEQs represent 2,3,7,8-TCDD toxic equivalents for mixtures of dioxin-like CDDs, CDFs, and/or PCBs.*

**Recommended Toxicity Equivalent Factors For Carcinogenic Dioxins/Furans**

<b>Compound</b>	<b>Toxicity Equivalent Factors</b>
<b>Dioxins</b>	
2,3,7,8-Tetrachlorodibenzodioxin	1
2,3,7,8-Pentachlorodibenzodioxin	0.5
2,3,7,8-Hexachlorodibenzodioxin	0.1
2,3,7,8-Heptachlorodibenzodioxin	0.01
Octachlorodibenzodioxin	0.001
Other CDDs	0
<b>Furans</b>	
2,3,7,8-Tetrachlorodibenzofuran	0.1
1,2,3,7,8-Pentachlorodibenzofuran	0.5
2,3,4,7,8-Pentachlorodibenzofuran	0.05
2,3,7,8-Hexachlorodibenzofuran	0.1
2,3,7,8-Heptachlorodibenzofuran	0.01
Octachlorodibenzofuran	0.001
Other CDFs	0
CDD chlorodibenzo-p-dioxins	
CDF chlorinated dioxin furans	

*The concentration of each congener is multiplied by the TEF to estimate the 2,3,7,8-TCDD equivalent concentration (TEQ). The congeners that were not detected will be included in the TEQ estimations at half the detection limit values, if at least one of the congeners of the mixture was detected in a sample. If no congeners were detected, then the estimated TEQ is considered a non detect."*

*b) As stated above in response to comment 10a), the method used for the TEQ calculation is the same as that described in 10b). The method description provided above in the response to comment 10a) will be included in the revised RFI Phase I report in Section 2.15 at the end.*

**Comment:**

**a) Based on EPA's "1989 Update to the Interim Procedures for Estimating Risks Associated with Exposures to Mixtures of Chlorinated Dibenzo-p-Dioxins and -Dibenzofurans (CDDs and CDFs)," the TEF of 1,2,3,7,8-pentachlorodibenzofuran (PeCDF) should be 0.05, and the TEF of 2,3,4,7,8-PeCDF should be 0.5. These TEF values have been reversed in the table above. Revise the table to correct this discrepancy.**

**The format of the Data Detection Summary Tables in the draft Phase I RFI, while functional for most analytical data, may not be entirely appropriate for the presentation of the dioxin data, which requires application of the TEFs prior to comparison to the environmental quality criteria. Consider creating an additional table(s) specifically for**

dioxin that can incorporate presentation of the raw analytical data, the TEF for each congener, the TEQs, and the PRG-R for 2,3,7,8-TCDD.

Also, please note that the EPA's draft document "Exposure and Human Health Reassessment of 2,3,7,8-Tetrachlorodibenzo-p-Dioxin (TCDD) and Related Compounds," was submitted to the National Academy of Sciences (NAS) in October 2004 for review. This draft document will likely include modifications to the TEF values for 1,2,3,7,8-pentachlorodibenzodioxin (PeCDD) from 0.5 to 1, and octachlorodibenzodioxin (OCDD) and octachlorodibenzofuran (OCDF) from 0.001 to 0.0001. Once this document has been approved, the revised TEFs found in this document will apply to data collected during the AFWTF activities.

b) The comment has been adequately addressed. No additional response is necessary at this time.

**Comment #11:** The Data Detection Summary Tables include a screening benchmark column labeled "PRG-R." However, the footnote on many of the summary tables includes a definition for the acronym "PRGSO" (EPA Region 9 Preliminary Remediation Goals [2002] - Residential Soil [R], based on a Hazard Index of 0.1 for non-carcinogens). If PRG-R is the same as PRGSO, modify the column header or the footnote in each table for consistency. If they are different, provide the relevant definition of PRG-R.

**Navy Response:** *The PRGSO criteria are the same as the PRG-R criteria. The revised report will consistently use the PRG-R reference for the criteria throughout the report.*

**Comment:** Please note that revised Tables 3-4, 4-1, 5-1, 6-1, 7-1, 8-1, 9-5, 10-1, 12-1, and 13-1 in Attachment A – RFI Table Updates continue to use "PRGSO" in the footnotes. Be sure to revise the footnotes for the revised Phase I RFI. Also define the abbreviation "NA" in the footnotes for Tables 3-4, 3-5, 4-1, 6-1, 8-1, 9-5, 9-7, 9-8, 10-1, and 13-1.

## SPECIFIC COMMENTS

**Comment #1:** *Section 1.2.9.3, Wildlife and Section 1.2.9.4: Federally Listed Species:* These two sections identify wildlife and threatened and endangered plant and animal species on Vieques. The text includes no discussion of the various species' potential exposure pathways, their sensitivities to the chemical contaminants of concern (COCs), or any habitat disturbance or loss that could occur due to the presence of contamination or due to remediation activities. While it is understood that a discussion or analysis of these subjects was not required by the Work Plan, these topics should be evaluated during future risk assessment-related site activities

and reports. Any future investigation or remediation plans should discuss potential impacts of these contaminants or activities, and take steps to minimize the impacts.

**Navy Response:** *As noted, for sites where contamination is identified, evaluations of ecological exposure pathways, potential toxicity of contaminants, and potential habitat impacts are part of the ecological risk assessment process that will be applied to future site activities and reports. The ecological risk assessment process will be described in future Work Plans for the risk assessment work at the Former AFWTF.*

**Comment:** **The comment has been adequately addressed. No additional response is necessary at this time.**

**Comment #2:** ***Section 2, Field Investigation Procedures:*** The fifth sentence of the first paragraph states that work was conducted in 2004 “at SWMUs 2, 4, 5, 8, 10, 12, and AOC G.” Based on the contents of the report, work was also conducted at SWMU 1. Revise the text to include SWMU 1.

**Navy Response:** *SWMU 1 will be added to the list of sites investigated in January and February 2004. The sentence referred to above in Section 2 will read “ ... at SWMUs 1, 2, 4, 5, 8, 10, 12, and AOC G.”*

**Comment:** **The comment has been adequately addressed. No additional response is necessary at this time.**

**Comment #3:** ***Section 2.6, Surface Soil Sampling:*** This section describes the surface soil sampling method, and indicates that an “Encore™” sampling device was used. This device is not discussed in the report text, the June 2003 Master Work Plan, or the June 2003 Final Site Specific Work Plan. Please provide additional detail as to how this device is used, and clarify whether the VOC samples were collected prior to placing the soils in the bowl, or after. All VOC samples should be collected prior to placing the soils in the bowl in order to disturb the soil sample as little as possible.

**Navy Response:**

*The En Core™ sampler is listed in the Final Master Work Plan, dated June 12, 2003, Master Field Sampling Plan, Table 2-2, VOC sample containers. En Core™ samplers are also described in the SOP of the Master Work Plan under the SOP titled “Soil Sampling for VOCs Using the En Core™ Sampler.”*

*The En Core™ sampler is also listed in the Final Site-Specific Work Plan dated June 12, 2003, in Section 3, Table 3-2, VOC sample containers.*

*The additional detail provided below regarding the method of collection will be added to the RFI report in Sections 2.6 and 2.7, Surface and Subsurface Soil Sampling. The added text will be "Due to the soil conditions encountered, the procedure used to collect VOC soil samples included: retrieving the soil sample from the 0 to 8-inch depth with a hand auger, pouring the soil into a stainless steel bowl, then pushing the En Core™ sampler into the soil several times to get a composite sample. After the VOC sample was collected, the soil in the bowl was then homogenized with a stainless steel spoon and the remaining non-VOC samples were collected. This method of En Core™ sampling is consistent with EPA Method 5035 and EPA field sampling SOP."*

**Comment:** This response indicates that the soil was poured into a bowl prior to collecting the VOC sample in the En Core™ sampler. This procedure is inconsistent with the SOP for "Soil Sampling for VOCs Using the En Core™ Sampler." The SOP requires that the sample be collected "quickly" to avoid loss of volatile constituents. Transferring the sample to a bowl prior to collection may have allowed VOCs to escape from the sample. In the future, if soil conditions will not allow for use of proper En Core™ procedures, samples should be collected using an alternate sampling method, or by placing the sample directly into a sample container.

**Comment #4:** *Section 2.7, Subsurface Soil Sampling:* Clarify the rationale in deciding at what depth to collect the subsurface soil samples (e.g., the sample was collected at the depth corresponding to the highest Flame Ionization Detector reading).

**Navy Response:** *Section 2.7 of the RFI will be edited to include a more detailed rationale. An example insert is: "The SWMU 2 original scope was to drill to 15 feet, sample continuously, and collect the soil samples with the three highest OVA headspace readings. However, bedrock was encountered at 4 to 5 feet and there were no OVA headspace detections. The sample was then collected at the location that would have the greatest potential for contamination, which was directly above bedrock."*

**Comment:** The comment has been adequately addressed. No additional response is necessary at this time.

**Comment #5:** *Section 2.7, Subsurface Soil Sampling:* The second paragraph describes the 2004 sampling activities. It is stated here that at SWMU 2, a soil sample was collected from the "2-ft interval directly above the bedrock." Provide the name and location of this sample.

**Navy Response:** *Section 2.7, Subsurface Soil Sampling, states that the soil boring samples were "collected from the 2-ft interval directly above the bedrock" which is a general statement explaining the rationale of the soil boring sample depth interval. The next sentence explains the depths of the two soil boring samples (CGW2SB01 and CGW2SB02).*

*As stated in Section 4.2, the names CGW2SB01 and CGW2SB02 are used in conjunction with SB-01 and SB-02. The names (CGW2SB01 and CGW2SB02) are provided in the text, and the locations (SB-01 and SB-02) are shown in Figures 4-3 and 4-4.*

**Comment:** The comment has been adequately addressed. No additional response is necessary at this time.

**Comment #6a:** *Section 2.7, Subsurface Soil Sampling:* At SWMU 10, the borings were reportedly advanced until a “black plastic liner” was encountered. Provide further description of the liner (i.e., its use, thickness, condition, etc.).

**Comment #6b:** Also, provide text to support the rationale behind sampling no deeper than the liner.

**Navy Response:**

a) *The following additional description will be added in Section 2.7 about the black plastic liner: “The black plastic liner was approximately 2 mils in thickness and appeared to be in good condition. The assumed use of this liner was to prevent percolation of stored effluent into the soils below the liner.”*

b) *The Draft RFI, Section 2.7 text states that “samples were obtained by boring with a hand auger until a black plastic liner was encountered. Once this was found, a sample was obtained from the liner to approximately 8 inches below the liner (one auger bucket length).” The RFI Site-Specific Work Plan describes the rationale in Section 2.7.3, Sampling Rationale, which states that “The subsurface samples will be collected immediately below the liner to determine if the liner has remained intact.” This sampling rationale will be added to the Draft Phase I RFI Report.*

**Comment:** The comment has been adequately addressed. No additional response is necessary at this time.

**Comment #7:** *Section 3.2.2, 2004 Geophysical Investigation:* The last paragraph of this section indicates that the boundary of the former landfill extends farther south, and possibly farther north, than previously estimated. It is stated here that “Additional investigations will be needed to delineate the northern and southern boundaries of SWMU 1....” Provide additional discussion of how and when this is expected to take place.

**Navy Response:** *Section 3.4, Conclusion and Recommendations, of the Draft RFI Report discusses the need for further investigation at SWMU 1 based on the results of the geophysical survey. Also, Section 14.3.6, Sites Recommended for Full RFI, discusses further investigation at*

*SWMU 1. As discussed with EPA during the CTC meeting on October 21, 2004, and described in a letter to the Navy dated October 8, 2004, this work is expected to take place after the Background Investigation is conducted. The soil samples collected at SWMU 1 have detected elevated inorganic concentrations. To assess whether these constituents are site-related or are associated with background conditions, a background investigation will be completed. The results of the background investigation will be utilized initially to assess the extent, if any, of soil contamination present at SWMU 1, then to evaluate the need for additional soil investigations. The additional soil and geophysical investigations are proposed to be conducted during the Phase II RFI Investigation of SWMU 1.*

**Comment:** This comment has been adequately addressed. No additional response is necessary at this time.

**Comment #8:** *Section 3.2.4, 2004 Groundwater Investigation:* This section indicates that the monitoring wells at SWMU 1 were installed in such a way as to allow for the detection of any possible floating free phase product. The first paragraph of this section states that the five monitoring wells were installed “at a depth of less than 10 ft below the first encountered groundwater using both 10-ft and 15-ft screens....” For clarity, specify that the *bottom* of the well screen was installed at a depth less than 10 feet below the groundwater. Also, specify if “groundwater” refers to the water table, potentiometric surface, or the first encountered groundwater.

**Navy Response:** *In Section 3.2.4, Groundwater Investigation, first paragraph, the sentence reads: “The monitoring wells were installed at a depth of less than 10 ft below the first encountered groundwater using both 10-ft and 15-ft screens to allow detection of potential floating free phase product, if any, at the groundwater/vadose zone interface.”*

*This sentence will be edited to read: “The monitoring wells were constructed using both 10-ft and 15-ft screens. The bottom of the screens were installed at a depth of less than 10 feet below the first encountered groundwater to allow detection of floating free phase product, if any, at the groundwater/vadose zone interface.”*

**Comment:** The comment has been adequately addressed. No additional response is necessary at this time.

**Comment #9:** *Section 3.2.4, 2004 Groundwater Investigation, last paragraph, page 3-5 and Appendix H, Analytical Data Summary, SWMU 1 – GW:* The last paragraph of this section states that *three* samples, including CGW1MW02, 03, and 04, were analyzed for cyanides, sulfide, and dioxins. However, cyanide, sulfide, and dioxin results for only CGW1MW02 and 04 are presented in the summary tables in Appendix H. Revise the summary table to include cyanide, sulfide, and dioxin data for groundwater well MW-03 as well, or revise the text to

correctly indicate which wells were analyzed for these constituents. In addition, revise Table 3-5, Groundwater Analytical Data Detection Summary for any detected dioxin concentrations at MW-03, as necessary.

***Navy Response:*** Section 3.2.4, Groundwater Investigation, last paragraph, page 3-5, will be revised to read: "Two samples (CGW1WM02 and 04) were also analyzed for cyanide, sulfide and dioxins."

**Comment:** The proposed revision is acceptable. However, Table 3-5, Groundwater Analytical Data Detection Summary, also requires revision to indicate that well MW-03 was not analyzed for cyanide, sulfide, or dioxin, rather than indicating Non-Detect (ND) levels.

***Comment #10:*** Section 3.2.4, 2004 Groundwater Investigation; Figure 3-4, Geologic Cross Section A-A'; and Figure 3-5, Geologic Cross Section B-B': The SWMU 1 wells were reportedly screened across the water table to detect possible floating product. However, based on Figure 3-4: Geologic Cross Section A-A' and Figure 3-5: Geologic Cross Section B-B', the "Groundwater Level Elevation" is located above the screens in all five monitoring wells. This line may represent the potentiometric surface, but this is not clear from the figure. Clarify the figure and revise the figure to be consistent with the text, or discuss this apparent discrepancy.

***Navy Response:*** Please note that the text says "The monitoring wells were installed at a depth of less than 10 ft below the first encountered groundwater using both 10-ft and 15-ft screens to allow detection of floating free phase product, if any, at the groundwater/vadose zone interface." During the drilling of the monitoring wells, the location of the water table was not evident. The wells were initially screened across the first encountered groundwater. The water levels then slowly recovered to a level above the screens. The legends of Figures 3-4 and 3-5 will be revised to include potentiometric surface next to the first encountered groundwater level for further clarity.

**Comment:** The comment has been adequately addressed. It should be noted that because the groundwater levels recovered to a depth shallower than the well screens, the wells cannot serve one of their intended purposes: to detect floating product. However, since there were reportedly no VOCs or SVOCs detected in the samples collected from these wells, floating product is not likely to be an issue.

***Comment #11:*** Section 3.2.4, 2004 Groundwater Investigation; Figure 3-4, Geologic Cross Section A-A'; and Figure 3-5, Geologic Cross Section B-B': This section states that the saturated zone was encountered above the bedrock in wells MW-1, 4, and 5, and below the bedrock surface in wells MW-2 and MW-3. However, Figure 3-4: Geologic Cross Section A-A', depicts saturated soils only at wells MW-2 and MW-3, and the "Groundwater Level Elevation" is

located above the well screens. Clarify what is meant in the text by the “first encountered groundwater,” versus the “initial saturated thickness of groundwater during drilling” and the “groundwater level elevation,” as shown on the figures. Revise the figures and/or the text for consistency.

***Navy Response:*** *The legend in Figure 3-4 will be edited as follows: Initial Saturated Thickness of Groundwater During Drilling will be changed to “First Encountered Groundwater During Drilling.” “Potentiometric Surface” will be added after “Groundwater Level Elevation” in the legends of Figures 3-4 and 3-5 for further clarity.*

**Comment:** **The comment has been adequately addressed. No additional response is necessary at this time.**

***Comment #12: Section 3.4, Conclusions and Recommendations:*** The recommendations address the issue of the landfill boundary being farther south than expected by stating that “One additional downgradient well should be installed once the southern boundary of the landfill has been identified.” However, as discussed in the text, the northern boundary will require additional delineation as well. Therefore, MW-01 may not represent background conditions at SWMU 1. One additional upgradient well may be required to the north of the landfill, depending on the results of any further delineation studies. Revise the text to account for this contingency.

***Navy Response:*** *In Section 3.4, first paragraph, the last sentence states: “Further investigation will need to be accomplished to determine if monitoring well MW-01 is located north of the fill material.” This sentence will be revised to read: “An additional geophysical investigation will need to be accomplished to further delineate the extent of the waste material which will determine if monitoring well MW-01 is located an acceptable distance north of the fill material to continue to be considered as the background well.”*

**Comment:** **The response to Specific Comment #7 seems to suggest that the determination of whether MW-01 can be considered a background well, and the need for additional soil sampling, will be hinged on the results of the up-coming background comparison. A decision to collect additional soil samples should also take the results of the geophysical survey into account. If the geophysical study suggests that the extent of the landfill has not been determined, additional soil samples may be necessary, even if the background comparison suggests otherwise, as pockets of contamination may not yet have been identified. Revise the text to indicate that the geophysical survey results will be considered in determining whether additional soil samples are needed.**

***Comment #13: Section 4.2, Field Investigation Results; Table 4-1, Surface Soil Analytical Data Detection Summary; and Appendix H, Analytical Data Summary, SWMU 2 – Surface Soil:*** Section 4.2 states that “Surface soil samples CGW2SS03, CGW2SS07, and CGW2SS09

were analyzed for additional parameters such as cyanide, sulfide, and dioxins....” However, data for these parameters are presented in Table 4-1 and in Appendix H for sample CGW2SS12 in addition to the three samples listed. Revise the text to include sample CGW2SS12.

**Navy Response:** *Sample CGW2SS12 will be included in the text in Section 4.2, fifth paragraph, as follows: “Surface soil samples CGW2SS03, CGW2SS07, CGW2SS09, and CGW2SS12 were analyzed for additional parameters such as cyanide, sulfide, and dioxins....”*

**Comment:** *The comment has been adequately addressed. No additional response is necessary at this time.*

**Comment #14:** *Section 4.2, Field Investigation Results and Figure 4-4, Surface and Subsurface Soil Sample Locations (Fuel Loading Area):* It is stated in the second paragraph that the sample locations were “established based on the locations of existing concrete pads and interpretations of the ERI aerial photography....” However, it is not clear how, in particular, the location of the subsurface sample at the fuel loading area (near the fuel pipe supports) was selected. Provide additional detail regarding the site-selection process for the subsurface samples (e.g., location downgradient from the fuel pipe).

**Navy Response:** *The third paragraph in Section 4.2 states: “The other four surface soil samples were collected near the two fuel pipe supports in the concrete ramp area (two surface soil samples from each pipe support area), and a single subsurface soil sample was collected from the new soil boring at this location, as shown in Figure 4-4.”*

*This sentence will be edited to read: “The other four surface soil samples were collected near the two fuel pipe supports in the concrete ramp area (two surface soil samples from each pipe support area), and a single subsurface soil sample was collected approximately 30 feet north of a pipe support. This location was determined to be the closest location to the pipe at which the drilling crew could safely execute the required work.”*

**Comment:** *The comment has been adequately addressed. No additional response is necessary at this time.*

**Comment #15:** *Section 7.11, SWMU 6:* This section notes that stained surface soils and no release controls were observed during the 1995 RFA. Show the approximate location of the stained soils on a figure and describe the location in the text. Also indicate whether the June 2000 soil sampling program focused on the stained areas. If the stained areas were not sampled, consider conducting sampling in these areas or provide justification for not sampling the stained areas.

**Navy Response:** *Based on available information, the exact location of the staining cannot be determined. The 1995 RFA did not provide an accurate description or photographs of the location of the soil staining. Therefore, the June 2000 soil samples were collected surrounding*

*the existing concrete pad where runoff to soil would most likely occur. During the June 2000 site visit, no drums or waste materials were present at the site and no soil staining was observed. This information will be added to Section 7 of the Draft RFI Report.*

**Comment:** The comment has been adequately addressed. No additional response is necessary at this time.

**Comment #16:** *Section 9.2, Field Investigations:* If the clay and plastic liner in the sewage treatment lagoons was at all visible, provide detail regarding the condition of the visible areas (e.g., any cracks or holes). A liner in poor condition could allow contaminants to migrate into the subsurface. If the liner was not visible, revise the text to include this information.

**Navy Response:** *The text in Section 9.2.2, 2004 Soils Investigations, will be revised as shown by the following underlined text: "The depth of the subsurface soil sample was dependent on the depth to liner and varied from one location to another. The black plastic liner was covered with soil within the lagoon areas. It was encountered at all 16 soil boring locations, identified by small pieces brought up in the hand auger cuttings throughout the four lagoon areas. Upon abandonment, the soil borings were capped at the liner depth with a cement grout to maintain liner integrity."*

**Comment:** The comment has been adequately addressed. No additional response is necessary at this time.

**Comment #17:** *Section 9.1, Site Description and 9.2.1, 2000 Soils and WWTP Effluent Investigations:* Section 9.1 states that during February 2000 the sewage lagoon system was found to be overgrown and appeared inactive. This system was reportedly abandoned in October 2000, and a new system was built nearby. However, according to Section 9.2.1, a waste water effluent sample was collected in June 2000 during investigation of the old lagoon system. Provide additional information regarding the discharge point and treatment of the sewage throughout 2000, as well as the operational periods of the current, former, and any interim sewage treatment systems.

**Navy Response:** *The following text will be added after the third sentence of Section 9.2.1: "The raw wastewater discharge to the lagoon system originated from the Camp Garcia area. This consisted of a steel pipe approximately 6 inches in diameter that runs into the northeastern most lagoon, approximately 80 ft from the berm as shown on Figure 9-3. An effluent sample was collected from a crack in the rusted pipe within the northeast lagoon. During the February 2000 preliminary field work it was noted that the lagoons were not active."*

*Based on further site history investigations, the following additional historical information will be added to Section 9.1: "The original sewage treatment lagoons for Camp Garcia went into service in the early 1950s. The facility originally consisted of four unlined lagoons: two of them serving as equalization/treatment lagoons, and the other two providing polishing treatment.*

*Effluent from the final two polishing lagoons was then chlorinated in a chlorine contact chamber and discharged to the sea near Bahia Tapon. In 1974, after the level of activity and associated domestic wastewater generation rate significantly decreased at Camp García, the treatment lagoon system was modified to make it a no-discharge system. These lagoons were being utilized as evaporation lagoons until the new no-discharge lagoon was constructed in September 2000 immediately northwest from the old lagoons. The new lagoon encompasses an area of approximately 40,000 square ft, and was constructed with a clay and plastic liner. The new lagoon was decommissioned when the property transfer occurred in May 2003. During the January 2004 field work effort it was noted that the new lagoon area was abandoned and no sign of the lagoon was present.”*

**Comment:** The additional description is helpful, but certain points remain slightly unclear. Please confirm that the following understanding is correct: Based on the draft Phase I RFI and the above response, the original lagoons were found to be “inactive” as of February 2000. However, the lagoons and associated piping remained in place, and it appears that effluent continued to discharge to the lagoons via the receiving water pipeline, since an effluent sample was collected from a crack in the pipeline. Indicate whether the wastewater emanating from the crack in the pipe was discharging to the ground surface or discharging within the lined lagoon area, and describe the rate of discharge. Provide additional information regarding where the sampled effluent originated (e.g., discharge from process/sanitary/storm sewers, or groundwater discharge into a broken pipe). Indicate whether the cracked pipe has since been repaired, or if other measures have been taken to eliminate the discharge.

Also indicate how sewage is currently treated at the camp, since the new lagoon system has been abandoned.

**Comment #18:** *Section 9, SWMU 10 – Sewage Treatment Lagoons, Table 9-7, Subsurface Soil Analytical Data Detection Summary:* The sample names shown in Table 9-7 are inconsistent with other areas of the report. Table 2-1 indicates that subsurface soil samples in SWMU 2 are named with the prefix “CGW10SB.” Appendix H also lists the 2004 SWMU 10 subsurface samples with the prefix “CGW10SB.” However, Table 9-7 uses the prefix CGWWTPSB, which is the naming prefix used in 2000. Revise the sample names in Table 9-7 to be consistent with other sections of the report.

**Navy Response:** *Table 2-1 shows that sample names for SWMU 2 are named CGW2SB, not CGW10SB (the latter of which refers to SWMU 10 samples). The station IDs were named differently in the 2000 sampling effort. For SWMU 10 the prefix CGWWTP (Camp García waste water treatment plant) was used in 2000. The new naming scheme for SWMU 10 became CGW10 (Camp García SWMU 10) after the Master Work Plan, June 12, 2003 was finalized. These naming schemes from the past and the present have been used on the COCs, the laboratory documentation, the data validation, and for the database storage, and therefore need to remain unchanged for historical documentation purposes. However, a footnote will be added to all relevant tables to clarify the name association.*

**Comment:** Please disregard the “SWMU 2” reference in the comment above. This comment should have read “SWMU 10.” The comment has been adequately addressed. No additional response is necessary at this time.

**Comment #19:** *Section 9, SWMU 10 – Sewage Treatment Lagoons, Table 9-7, Subsurface Soil Analytical Data Detection Summary:* Summary data for sampling locations CGWWTPSB05 (CGW10SB05) through CGWWTPSB10 (CGW10SB10) have not been provided, although detections are indicated in the Appendix H tables. Revise the summary table to include these data.

**Navy Response:** *Table 9-7 includes all data presented in Appendix H. Please note that Table 9-7 presents both the 2000 data (CGWWTPSB01 to 04) and the 2004 data (CGW10SB05 to 10).*

**Comment:** Based on the response to this comment, it appears that the first page(s) of Table 9-7 are missing from the reviewer’s copy of the document, however the data was reviewed based on the Appendix H tables. The comment has been adequately addressed. No additional response is necessary at this time.

**Comment #20:** *Section 9, SWMU 10 – Sewage Treatment Lagoons:* This section does not provide detection summary tables for the raw wastewater discharge sample collected in 2000 (CGWWTPWW001), although the data provided in Appendix H indicates that contaminants were detected. Include a detection summary table that incorporates these data.

**Navy Response:** *A detection summary table (new Table 9-9) will be included in Section 9 of the report for sample CGWWTPWW001. The new Table 9-9 is provided in Attachment A.*

**Comment:** The comment has been adequately addressed. No additional response is necessary at this time.

**Comment #21:** *Section 13.4, Conclusions and Recommendations:* Provide detail regarding the condition of the floor inside the building (e.g., any cracks or holes). A floor in poor condition could serve as a migration pathway for contaminants into the subsurface.

**Navy Response:** *During a subsequent site visit, it was noted that the floor of the Pump Station and Chlorination building had no cracks. It was observed, however, that a concrete sump structure was built in the northeast corner of the 10-ft-by-10-ft square building. This concrete sump structure allowed water to flow out the Chlorination building into the chlorine contact chambers. These observations will be included in Section 13.1.*

**Comment:** Due to the presence of the sump in the Chlorination building, there is a possibility that contamination was released to the subsurface. Provide additional

**information regarding the condition of the sump. Only surface soil samples have been collected at this AOC to date. It is recommended that subsurface soil and/or groundwater samples be collected from the vicinity of the sump.**

**Also, please provide additional information, if available regarding how the chlorination system was operated (in terms of contact chambers, conveyances, etc.).**

**Comment #22: Section 14.2, Data Assessment of PI and PAOC Sites:** According to this section, samples have been collected at PI 4, PI 5, PI 6, PI 7 (south), PI 8, PI 10, PI 11, PI 21, PI 22, PAOC U, PAOC V, and PAOC X. However, it is unclear when these samples were collected. Revise the text to indicate the dates of sample collection at each PI and PAOC site.

**Navy Response:** *The dates the samples were collected will be added to Section 14.*

**Comment:** The comment has been adequately addressed. No additional response is necessary at this time.

**Comment #23: Section 14.2.1, PI Sites:** It has been suggested by records and interviewees that PI 10 is possibly the site of a former sewage-treatment drying lagoon. Only surface soil samples were collected here, and only metals were detected above the screening criteria. However, this site is a good candidate for groundwater and subsurface sampling, particularly if the area is unlined. If present, VOCs would more likely be encountered in subsurface soils and groundwater than in surface soils. Also, if the area has been inactive for a long period, as suggested, heavy rains could have washed away surficial contamination. Consider conducting groundwater and subsurface sampling in this area and revise the text to indicate that this work will be undertaken in future studies. Alternatively, provide further discussion of the rationale behind collecting only surface soil samples.

**Navy Response:** *The three soil samples were collected from the center of the rectangular areas. There were no detections of non-inorganic constituents in the surface soil samples collected; therefore, the recommended action for this site is to compare the inorganic concentrations to background levels. The EBS states that the rectangular features could be a wastewater treatment plant leach field, sludge-drying lagoons, or tidal lagoons. No further detailed historical information exists for this site. Further information revealed that in the 1962 aerials, dark liquid (possibly water) was visible. In the 1964 aerials the impoundments were still visible, but there was no visible liquid and the impoundments were re-vegetating. In the 1994 aerials, the impoundments were fully re-vegetated.*

**Comment:** Comparison of detected levels to background at PI 10 is a viable exercise for the data that have been collected to date. However, as discussed in the comment above, if this area was actually used for a leach field or lagoon in the 1960s, any contamination at this site is more likely to be found in the subsurface or groundwater, as opposed to in the

surface soils. It is strongly recommended that subsurface soil and/or groundwater samples be collected from this area during the additional PI/PAOC investigations.

**Comment #24:** *Section 14.2.1, PI Sites:* In the description of PI 11, it is noted that a diesel generator was observed outside the pump house. Indicate the fuel source for the generator, if known (e.g., stored nearby, trucked from remote location). Clarify whether a sample was collected from near the generator to address potential historic spills.

**Navy Response:** *The following sentences will be added as the second and third sentences in the third paragraph of the PI-11 section of Section 14.2.1 "Further information indicated that an AST served as the fuel source for the generator. There is no known information concerning the location of the AST for the generator."*

**Comment:** The comment has been adequately addressed. No additional response is necessary at this time.

**Comment #25:** *Section 14.2.1, PI Sites:* The discussion regarding PI 11 states in the fourth paragraph that "A stained area was observed immediately under the outfall of an open pipe projecting from the side of the pump house." However, it is then stated on Page 14-22 that "No surface staining or stressed vegetation was observed." Revise the text to correct this apparent discrepancy.

**Navy Response:** *The stained soil was observed during the EBS as per the provided reference (NAVFACENCOM, 2003). In Section 14.2.1, PI-11, the first sentence in the second to last paragraph stating "No surface staining or stressed vegetation was observed" will be deleted.*

**Comment:** The comment has been adequately addressed. No additional response is necessary at this time.

**Comment #26:** *Section 14.2.1, PI Sites:* Clarify why the PI 12 site was inaccessible. Indicate whether the structures discussed are currently present. If the structures are present, this area may require further inspection.

**Navy Response:** *Section 14.2.1, PI 12, will be edited to include: "An effort was made to locate Site PI-12 during the CH2M HILL site reconnaissance in September 2001, and during the EBS in December 2002 through February 2003. Both efforts were unsuccessful due to the dense mesquite shrubs and the distance from access roads (610 meters or 2,000 ft). However, during the EBS helicopter overflight this site was noted as a cleared area. Aerial photographic analysis of Site PI-12 was done by ERI in August 2000 and identified the site as light toned material in a cleared area."*

*This site exists in the 1936 aerials which predate any Navy activities in this area. The history of this site indicated that it was a private residence and a wind-driven water well, which does not suggest the need for further evaluation.*

**Comment:** Please include the above information in the revised Phase I RFI report, to be submitted to include the information in your Responses. However, EPA is not satisfied that a No Further Action determination is appropriate for this PAOC without any analytical data having been collected at this site. Therefore, in addition to the revised Phase I RFI, please include a sampling program for this PAOC to confirm whether or not releases are present.

**Comment #27:** *Section 14.2.1, PI Sites:* The description of PI 21 mentions pits containing “discolored liquid (brown, green)” and “pipes protruding from the embankment.” Provide additional information regarding the discolored liquid (e.g., depth, color, odor, sheen, size, etc.) and the pipes (e.g, diameter, material of construction, purpose, etc.).

**Navy Response:** *Aerial photography showed the discolored liquid (which could have been water) in photos from 1959 through the mid-1970s, and 1994. No additional information is available.*

**Comment:** Considering the lack of information available regarding PI 21, and the historical reports of piping and stained soils, it is strongly recommended that surface soil, subsurface soil, and groundwater samples be collected from this area during the additional PI/PAOC investigations. Therefore, in addition to the revised Phase I RFI, please include a sampling program for this PAOC to confirm whether or not releases are present.

**Comment #28:** *Section 14.2.1, PI Sites:* An empty drum, “bulging at both ends and ...close to rupturing,” was reportedly found at PI 22. Provide any additional available information regarding the former contents of this drum. It is also unclear whether one of the three drums found was intact, including contents. Provide any additional information regarding residual materials remaining within any of the drums.

**Navy Response:** *The EBS stated that the three drums were empty in the first paragraph of Section PI 22. The text in the third paragraph will be modified as follows: “One of the three empty drums was labeled as ‘DARACEM 19’ and had a tear on the side. The other two drums, one of which was partially buried, were not labeled.”*

**Comment:** DARACEM 19 is a naphthalene sulfonate. Please confirm that naphthalene was included in the sample analysis. Also, please include that information in the revised Phase I RFI report, to be submitted to include the information in your Responses.

**Comment #29:** *Section 14.2.1, PI Sites:* Soil samples were collected at PI 22. However, it is unclear if these samples were all surface soil samples, or if some were collected at depth. It is also not stated exactly where the samples were collected or how the locations were selected, with the exception of PI22-4. It is not possible to determine from Figure 14-9 where the samples were collected. Revise the text to include the depth of the collected samples, all of the sample locations, and the rationale in selecting these locations.

**Navy Response:** *Additional text provided in the EBS will be added which states: "Four surface soil samples were collected from beneath the drums and in low-lying areas near the automotive parts and storage pad and analyzed for Appendix IX RCRA constituents, and TPH-DRO, and TPHGRO. All four samples were collected from 0 to 6 inches below ground surface (bls) using stainless steel scoops and trowels."*

**Comment:** Based on the text on page 14-27 of Section 14.2.2, PI Sites and Figure 14-9: PI 22 Site Map and Sampling Locations, there was a total of four samples collected at PI 22. Sample PI22-4 was apparently collected about 50 meters east of the other three samples, near a rubber mat. Revise the text in the above response to account for this apparent discrepancy. Please also include that information in the revised Phase I RFI report, to be submitted to include the information in your Responses.

**Comment #30:** *Section 14.2.2, PAOC Sites:* The sampling rationale for the PAOCs is generally unclear. Provide additional detail regarding how specific locations were selected.

**Navy Response:** *Three PAOC sites had sampling conducted PAOC U, PAOC V, and PAOC X. Additional text will be added as follows:*

*PAOC U: "Four surface soil samples were collected in the vicinity of the building and areas of stained soil. Samples were analyzed for Appendix IX RCRA constituents, TPH-DRO and TPH-GRO."*

*PAOC V: "Two surface soil samples were collected in the storage area. Samples were analyzed for PCBs."*

*PAOC X: "Four surface soil samples were collected in the vicinity of the visible construction debris. Samples were analyzed for Appendix IX RCRA constituents, TPH-DRO, and TPHGRO."*

**Comment:** Please include the above information in the revised Phase I RFI report, to be submitted to include the information in your Responses.

**Comment #31:** *Section 14.2.2, PAOC Sites:* The discussions of PAOCs I, M, N, O, Q, R, T, and V indicate that there are, or were, boilers, power plants, fuel farms, fuel facilities, and heat plants located at these areas. Provide additional detail regarding the types and quantities of fuels used and stored in these areas.

**Navy Response:** After additional searches and interviews, further information is available for following sites:

*PAOC I: This was a former power plant and mechanics shop. This building (number 401) housed a 50kW diesel generator with a built-in fuel tank of unknown size. There is no historical information suggesting past releases. Light maintenance may have been conducted at the site but could not be verified.*

*PAOC M: This site, and adjacent site PAOC N, were the fuel facility department. PAOC M (Building 4503) was the administration office and PAOC N was the filling station with three ASTs (numbered 4504, 4505, and 4506). The tank installed in 2000 contained 2,000 gallons of diesel and 1,000 gallons of mogas. The history of the three old ASTs is unknown, but they are assumed to contain similar fuels.*

*PAOCs O, Q, and R: These sites were listed on the demolition list as boiler house and heat plant buildings. However, further investigations reveal that these sites were buildings that potentially housed small hot water boilers for specific sites. No further information exists describing the fuel source at these facilities.*

*PAOC T: This site was the Grounds Contractors storage shed (Building 305). Tools and machinery were stored in this shed. There is no history of fuels or chemicals being stored onsite. Light maintenance may have been conducted at the site but cannot be verified.*

*PAOC V was a site that temporarily stored a leaking transformer. There is no fuel source for this site.*

**Comment:** Please include the above information in the revised Phase I RFI report, to be submitted to include the information in your Responses. However, EPA is not satisfied that a No Further Action determination is appropriate for all of those PAOCs without any analytical data having been collected at the sites of those PAOCs. Therefore, in addition to the revised Phase I RFI, please include a sampling program for these PAOCs to confirm whether or not releases are present.

**Comment #32: Section 14.2.2, PAOC Sites:** PAOC I was reportedly a mechanic's shop, and the structure is still present. The text notes that there was no evidence of petroleum during the 2001 visual site inspection (VSI). However, there was likely petroleum or other fuels stored here while the shop was operational. Spills or other releases may typically be associated with mechanic's shops. Consider sampling in this area, or provide additional justification for why No Further Action is required.

**Navy Response:** Please see Response to Comment 31 above. There have been no indications of releases at this site.

**Comment:** Please include the above information in the revised Phase I RFI report, to be submitted to include the information in your Responses. However, EPA is not satisfied that a No Further Action determination is appropriate for this PAOC without any analytical data having been collected at the site. Therefore, in addition to the revised Phase I RFI, please include a sampling program for this PAOC to confirm whether or not releases are present.

**Comment #33:** *Section 14.2.2, PAOC Sites:* PAOC M was reportedly a fuel facility. The text notes that there was no evidence of petroleum during the VSI. However, based on the unit description there was likely petroleum or other fuels stored here prior to demolition. Spills or other releases are typically associated with fuel storage areas. Consider sampling in this area, or provide additional justification for why No Further Action is required.

**Navy Response:** *See Response to Comment 31 above. In addition, the EBS 2003 site description states that PAOC M included a former dispatch office and sleeping quarters. There is no known information on the size, contents, or status of the ASTs at PAOC N. As stated in the Executive Summary and Section 14, site PAOC M is recommended for NFA because no contamination source is likely for the site, and PAOC N is recommended for a Phase I RFI.*

**Comment:** Please include the above information in the revised Phase I RFI report, to be submitted to include the information in your Responses. However, EPA is not satisfied that a No Further Action determination is appropriate for this PAOC without any analytical data having been collected at the site. Therefore, in addition to the revised Phase I RFI, please include a sampling program for this PAOC to confirm whether or not releases are present.

**Comment #34:** *Section 14.2.2, PAOC Sites:* A former water treatment facility pump house was located at PAOC P. No evidence of petroleum was observed during the VSI. Provide additional information on the power source for the pump house (e.g., electricity, petroleum) and where any associated fuel was stored.

**Navy Response:** *There is no known information regarding the power source for the water treatment facility pump house. Based on the power source from site PI-6 (photos in Section 14), which is also a pump house, it is assumed that PAOC P was powered by electricity.*

**Comment:** Please indicate whether electricity is wired to this area or a generator was likely used. If a generator was used, another fuel source may have been stored in the area.

**Comment #35:** *Section 14.2.2, PAOC Sites:* The text reports that PAOC T was formerly used by a public works grounds contractor for storage. Provide additional information regarding the type of work performed by the contractor, and what was stored in the shed (e.g., power tools, pesticides).

***Navy Response:** Please see Response to Comment 31.*

**Comment:** Please include the above information in the revised Phase I RFI report, to be submitted to include the information in your Responses. However, EPA is not satisfied that a No Further Action determination is appropriate for this PAOC without any analytical data having been collected at the site. Therefore, in addition to the revised Phase I RFI, please include a sampling program for this PAOC to confirm whether or not releases are present.

***Comment #36: Section 14.2.2, PAOC Sites:** The discussion of PAOC S mentions a "POL pipeline." Define POL here and add the definition to the List of Acronyms.*

***Navy Response:** POL refers to petroleum, oils, and lubricants, and will be defined in the text in Section 14.2.2 and in the acronym list.*

**Comment:** Please include the above information in the revised Phase I RFI report, to be submitted to include the information in your Responses. However, EPA is not satisfied that a No Further Action determination is appropriate for this PAOC without any analytical data having been collected at the site. Therefore, in addition to the revised Phase I RFI, please include a sampling program for this PAOC to confirm whether or not releases are present.

***Comment #37: Section 14.2.2, PAOC Sites:** An area of "pooled, discolored water" was reportedly observed at PAOC W. However, No Further Action has been recommended for this PAOC. Provide additional detail regarding the pool of discolored water (e.g., depth, color, odor, sheen, size, source, etc.) and justify a recommendation of No Further Action.*

***Navy Response:** This site was identified during the EBS by interviews with senior members of the Camp Garcia public works department and other persons familiar with the history of the PAOC W site. This pooled water consisted of discolored water less than 1 ft deep. The members had no knowledge of a known source or release. The following sentence will be added before the last sentence: "The pool was presumed by the EBS Team to be stagnant water and was not sampled."*

**Comment:** While it is possible that the pool was stagnant water, additional site description could help justify the rationale for not collecting a sample. Please indicate whether the pool is a permanent or intermittent feature (such as runoff collected in a low-lying area). Please include this information in the revised Phase I RFI report, to be submitted to include the information in your Responses. However, EPA is not satisfied that a No Further Action determination is appropriate for this PAOC without any analytical data having been collected at the site. Therefore, in addition to the revised Phase I RFI, please include a sampling program for this PAOC to confirm whether or not releases are present.

**Comment #38: Appendix A, Soil Boring Logs:** Organic vapor screening results are provided for some soil borings, but not for others. Provide PID data for all the soil borings, if available.

**Navy Response:** All OVM readings taken are included in Appendix A. The OVM readings were collected at all locations specified in the Phase I RFI Site-Specific Work Plan. In some instances OVM headspace readings were collected when they were not required, such as several surface soil samples in SWMU 1. Also, some soil boring logs were included from previously completed work during the Phase I Environmental Assessment in June 2000. The site-specific work plan for that work (June 2000) did not specify OVM headspace readings to be collected. Also, the Final Master Work Plan, June 12, 2003, Master Field Sampling Plan, Section 2.6, Surface Soil Sampling, and Section 2.8, Subsurface Soil Sampling, do not require OVM headspace readings.

**Comment:** Please include the above information in the revised Phase I RFI report, to be submitted to include the information in your Responses.

**Comment #39: Appendix H, Analytical Data Summary:** The analytical data collected from the Navy was compared against the split samples analyzed by the TechLaw-designated laboratories (Pace Analytical and GPL), and the EPA DESA laboratory. Most of the analytical results were comparable (defined as within two times the detection limit when detected by one laboratory but reported as nondetected by another). The table below provides the instances where a compound was detected above the detection limit by one laboratory, but not by another, as well as the few instances where the split sample results were significantly different (indicated by **bold text**). This information should be taken into account when comparing data to background concentrations or standards. Include a discussion in the text of how the split sample results will be taken into account.

Sample Name (Navy/Split)	Compound	Navy	Pace / GPL	EPA DESA
CGW1SS33-R01 / CGW15533-R01	Perchlorate	100 U µg/kg	140 J µg/kg	NA
CGW1SS35-R01 / CGW15535-R01	Perchlorate	104 U µg/kg	140 J µg/kg	NA
CGW2SS07-R01 / CGW2SS07-R01	2-Hexanone	12 U µg/kg	23 J µg/kg	NA
CGW5SS01-R01 / CGW5SS01-R01	1,2,3,7,8-PECDD	1 U pg/g	1.658 ng/kg	NA
CGW8SS02-R01 / CGW8SS02-R01	2,3,7,8-TCDD	1 U pg/g	1.539 ng/kg	NA
CGW10SS06-R01 / CGW10SS06-R01	Cyanide	0.16 U mg/kg	NA	018 mg/kg

Sample Name (Navy/Split)	Compound	Navy	Pace / GPL	EPA DESA
CGW10SS07-R01 / CGW10SS07-R01	2,4-Dinitrotoluene	140 U µg/kg	630 µg/kg	NA
	2,6-Dinitrotoluene	140 U µg/kg	260 µg/kg	NA

NA = Not analyzed

**Navy Response:** *Currently, the Navy does not have all the information concerning the results of the split samples collected by the EPA. If all split sample data collected by Tech Law-designated laboratories (Pace Analytical and GPL), and the EPA DESA laboratory and all data validation information are sent to the Navy for review, these data can be evaluated for QA/QC procedures used. If the data reviewed are found to be valid and usable, then the most conservative analytical results (the higher of the sample and its associated split sample) will be utilized in the risk assessment.*

**Comment:** Please include the above information in the revised Phase I RFI report, to be submitted to include the information in your Responses.

**Comment #40:** *Appendix I, Vieques Former AFWTF Phase I RCRA RFI Data Quality Evaluation (DQE), Page 3, Calibration, last paragraph:* In the last sentence, change the word “calibration” to the phrase “second column confirmation”.

**Navy Response:** *The above mentioned edit will be incorporated into the DQE.*

**Comment:** Please include the above information in the revised Phase I RFI report, to be submitted to include the information in your Responses.

**Comment #41:** *Appendix I, Vieques Former AFWTF Phase I RCRA RFI Data Quality Evaluation (DQE), Page 6, Field Duplicate Sample Results, third paragraph:* In the third sentence, change “seven soil borings, one surface soil” to “seven surface soils, one soil boring”. (See Exhibit 8.)

**Navy Response:** *The text will be edited as stated above.*

**Comment:** Please include the above information in the revised Phase I RFI report, to be submitted to include the information in your Responses.

**Comment #42:** *Appendix I, Vieques Former AFWTF Phase I RCRA RFI Data Quality Evaluation (DQE), Page 7, Laboratory Method Accuracy, second paragraph:* The fifth sentence states that the validator rejected those (semivolatile) analytes that were not spiked into the LCS. However, Method 8270C requires that the LCS contain *only* those eleven analytes present in the matrix spike solution. Those analytes should not have been rejected unless:

- There was a project-specific requirement that the laboratory should include all 8270C analytes in the LCS solution, or
- The EPA Region II Checklist, which was used as the guidance document for the data validation by CH2M Hill, requires rejection of analytes which are not spiked into the LCS for Method 8270C.

Revise the text to provide justification for rejection of these results. Also revise the text to include justification for rejection of the other analytes, as this has not been provided in the text.

**Navy Response:** *Appendix I, Vieques Former AFWTF Phase I RCRA RFI Data Quality Evaluation (DQE), Page 7, Laboratory Method Accuracy, second paragraph, fifth sentence will be revised to read: "The semi-volatile data reveal that 842 records were qualified as rejected data. These records reflect that the spike recoveries were below the laboratory's lower control limit. Use of EPA Region II guidance requires that this data be rejected rather than estimated in associated samples.*

*A review of the 3rd party data validation results as "percent completeness" by method and matrix reveals that all project DQOs and completeness goals were not only met but exceeded. The completeness statistics indicate that the Navy CLEAN BOA-approved laboratory provided excellent analytical services to the project team and our client.*

**Comment:** Please include the above information in the revised Phase I RFI report, to be submitted to include the information in your Responses.

**Comment #43:** *Appendix I, Vieques Former AFWTF Phase I RCRA RFI Data Quality Evaluation (DQE), Page 8, PARCCs-Completeness:* In the second sentence, change "1588/39833" to "38245/39833". Completeness is the number of non-rejects divided by the total number of data points. The percent completeness (96%) is still correct. However, the percent completeness would increase to 98% if non-spiked analytes in the LCS were not rejected.

**Navy Response:** *1588/39833 will be changed to 38245/39833.*

**Comment:** Please include the above information in the revised Phase I RFI report, to be submitted to include the information in your Responses.

## ERRATA

**Comment #1:** *Appendix I, Vieques Former AFWTF Phase I RCRA RFI Data Quality Evaluation (DQE), Page 3, Calibration, last paragraph:* In the fourth sentence, change the word "to" to "two".

**Navy Response:** *The above mentioned edit will be incorporated.*

**Comment:** Please include the above information in the revised Phase I RFI report, to be submitted to include the information in your Responses.

**Comment #2:** *Appendix I, Vieques Former AFWTF Phase I RCRA RFI Data Quality Evaluation (DQE), Page 5, Potential Field Sampling and Laboratory Contamination, second paragraph on page:* Change “DDT” to “DDD” in both sentences. (See Exhibit 5, Page 2 and Exhibit 4, Page 1.)

**Navy Response:** *DDT will be changed to DDD.*

**Comment:** Please include the above information in the revised Phase I RFI report, to be submitted to include the information in your Responses.

**Comment #3:** *Appendix I, Vieques Former AFWTF Phase I RCRA RFI Data Quality Evaluation (DQE), Page 6, Matrix Spike/Matrix Spike Duplicate Precision and Accuracy, third paragraph:* In the last sentence, change the word “date” to “data”.

**Navy Response:** *The above mentioned edit will be incorporated.*

**Comment:** Please include the above information in the revised Phase I RFI report, to be submitted to include the information in your Responses.

**Comment #4:** *Appendix I, Vieques Former AFWTF Phase I RCRA RFI Data Quality Evaluation (DQE), Page 7, Dissolved vs. Total Metals, first paragraph:* Please rewrite the last two sentences of this paragraph. Although the dissolved mercury result was a detected result, and the total mercury result was a non-detect, the two mercury results (total and dissolved) were less than the reporting limit of 0.2 µg/L. (See Exhibit 10.)

**Navy Response:** *The last two sentences will be edited to read: “A single dissolved mercury result was greater than the associated total mercury result, which was a non-detect. Both mercury results (total and dissolved) were less than the reporting limit of 0.2 µg/L.”*

**Comment:** Please include the above information in the revised Phase I RFI report, to be submitted to include the information in your Responses.

**Comment #5:** *Appendix I, Vieques Former AFWTF Phase I RCRA RFI Data Quality Evaluation (DQE), Exhibit 4 – Data Qualification Changed by Validations:* The first three rows on the first page are repeated as the first three rows on all the remaining pages. For clarity, please correct this formatting error.

**Navy Response:** *The above mentioned edits will be incorporated.*

**Comment: Please include the above information in the revised Phase I RFI report, to be submitted to include the information in your Responses.**

**EPA REGION 2 TECHNICAL REVIEW  
OF THE DRAFT GROUNDWATER BASELINE INVESTIGATION  
AT U.S. NAVY'S EASTERN MANEUVER AREA REPORT,  
VIEQUES ISLAND, PUERTO RICO  
DATED JUNE 2004**

**GENERAL COMMENTS**

**Comment #1:** The second objective of the Consent Order was to “investigate the groundwater flow patterns along the western perimeter” of the Eastern Maneuver Area. According to Section 2.2.3.2: 2004 Groundwater Baseline Investigation Sampling, the depth to groundwater was measured, as specified in the September 2001 Final Work Plan for Groundwater Baseline Investigation, Section 2.2.1. However, the only groundwater level data presented as a groundwater contour map (Figure 3-4) in the Groundwater Baseline Investigation report is from the “Round 1” sampling event in 1999. Any additional groundwater level data collected during “Round 2” should be presented in tables and figures, analyzed, and discussed in this report, as this will aid in achieving the stated Consent Order objective.

During future field activities, it will be important to collect additional groundwater data, particularly for the unconsolidated overburden. Considering that the 1999 data, according to Section 3.2: Assessment of Groundwater Flow Conditions, differed from the 1989 Torres-Gonzalez data, additional data will be needed if flow direction is to be accurately assessed.

**Navy Response:** *The depth to groundwater was obtained from monitoring wells prior to the groundwater sampling event in February 2004, as stated in the Final Work Plan for the Groundwater Baseline Investigation, Section 2.2.1, Groundwater Sampling Procedure. Only four monitoring wells (RCRA-1, 2, 3, and 4) were required by the Work Plan to be monitored for water levels and sampled. The depth to water for these wells is shown in Appendix D of the Phase I RFI report. To provide a more comprehensive assessment of the groundwater flow data, the water level data from the Hydrogeologic Investigation (completed in 1999) were evaluated.*

*Note: The Consent Order states “The groundwater baseline work plan shall be designed to establish baseline groundwater quality, regional groundwater flow patterns along the western perimeter of the Navy’s Facility, and to ...” The August 26, 1999, groundwater data established the baseline regional groundwater flow pattern along the western perimeter.*

*A table (Table 2- B) will be added that shows the February 2004 water level data with groundwater elevations and will be discussed in Section 3.2. This table is presented in Attachment C. Because a round of water level measurements was not required from all 19 wells/piezometers during the 2004 sampling event, a figure would not be beneficial for interpreting the regional groundwater flow pattern.*

**Comment:** The comment has been adequately addressed. No additional response is necessary at this time. Please note, however, that Table 2-B was missing from the Response

**document. Please include the above information in the revised Groundwater Baseline Investigation Report, to be submitted to include the information in your Responses.**

**Comment #2:** Appendix G of the report includes what appears to be summary data of the RCRA well sampling results. In addition to the summary tables, provide copies of the original analytical data reports provided by the laboratory. These documents should be provided for review purposes.

**Navy Response:** *Appendix IX Analytical Data Summary Tables from RCRA-1, 2, 3, and 4, along with a CD of the original analytical data reports, will be provided in the revised RFI Report.*

**Comment:** Please include the above information in the revised Groundwater Baseline Investigation Report, to be submitted to include the information in your Responses.

## **SPECIFIC COMMENTS**

**Comment #1:** *Figure 1-3, Monitoring Well and Piezometer Locations:* The depth to groundwater at each well is provided in this figure, but it is unclear when this information was collected. Provide clarification on the figure or in the text as to when the depth to groundwater was determined. Provide a legend on the figure to indicate the topographic contour interval, and what the circumscribed numbers represent.

**Navy Response:** *The depth to water column listed on Figure 1-3 will be deleted from the figure. A legend will be created which includes topographic contour intervals and what the circumscribed numbers (roads) represent. This modified Figure 1-3 is presented in Attachment D.*

**Comment:** Please include the above information in the revised Groundwater Baseline Investigation Report, to be submitted to include the information in your Responses.

**Comment #2:** *Section 2.1, Sample Locations:* Section 2.1 describes the field activities that took place at the AFWTF during the 1999 Hydrogeologic Investigation and it indicates that monitoring wells were installed at 11 locations. The September 2001 Groundwater Baseline Work Plan, Section 1.1.2: Previous Investigations, indicates that these 11 wells were sampled for explosives and metals. The data from these 11 wells is not presented or discussed in the text of the Draft Groundwater Baseline Investigation. The data and discussion would be useful in the Draft Groundwater Baseline Investigation for providing a broader picture of groundwater quality in the study area. Please revise the Draft Groundwater Baseline Investigation to include the sampling data from the 1999 Hydrogeologic Investigation, and any other appropriate sampling events, and a discussion of the results.

***Navy Response:*** *An Analytical Summary Table of Explosive Compounds and Metals Data from the August 1999 sampling event and the February 2004 sampling event will be added to an Appendix in the Revised Groundwater Baseline Investigation Report. In addition, text summarizing the results will be added to the revised report.*

**Comment:** Please include the above information in the revised Groundwater Baseline Investigation Report, to be submitted to include the information in your Responses.

***Comment #3: Section 2.2.3.2, 2004 Groundwater Baseline investigation Sampling:*** The September 2001 Final Work Plan for Groundwater Baseline Investigation indicates that groundwater sampling will be conducted following EPA's "Low-Flow" guidance. Section V of the guidance states that drawdown during pumping should be kept to 0.3 feet or less. However, according to the groundwater sampling data sheet in Appendix D of the report, drawdown occurred which was significantly greater than 0.3 feet during sampling. Provide a discussion of the reason for deviation from the low-flow sampling procedures and how this may have affected sampling results.

***Navy Response:*** *As presented in Appendix D, Groundwater Sampling Data Sheets for RCRA-1, 2, 3, and 4, only one well has purging drawdown greater than 0.3 ft. The well purging information is provided below:*

*RCRA-1 static water level at 47.48 ft bls, purging water level was 47.50 ft bls (drawdown= 0.02 ft);*

*RCRA-2 static water level at 36.40 ft bls, no drawdown;*

*RCRA-3 static water level at 56.95 ft bls, purging water level was 57.22 ft bls (drawdown= 0.27 ft);*

*RCRA-4 static water level at 38.62 ft bls, purging water level was 41.00 ft bls (drawdown= 2.38 ft). RCRA-4 was purged and sampled at a higher flow rate than specified in the low flow sampling procedures. The groundwater sample data are valid based on the consistency of the temporal field parameters collected during purging: pH within 0.04, conductivity within 0.002%, and DO within 0.07%. In addition, more than three casing volumes were purged from the well, and turbidity was comparable to the turbidity measurements of the other three wells, which were all low. Therefore, the groundwater sample collected from well RCRA-4 is representative of ambient formation groundwater conditions.*

**Comment:** Indicate why a higher flow rate was used for purging and sampling at RCRA-4. Also specify how a similar issue will be avoided in the future. If for some reason it is not possible to conduct low-flow sampling at this location, please specify and indicate the reason for this. Please include the above information in the revised Groundwater Baseline Investigation Report, to be submitted to include the information in your Responses.

***Comment #4: Section 3, Summary of Investigation Results, Table 3-1, Groundwater Analytical Data Detection Summary and Appendix G, Analytical Data Summary:*** Appendix G

indicates that cyanide was detected in sample RCRA-2-GW. However, these results are not included in Table 3-1. Revise Table 3-1 and the report text to include this information.

***Navy Response:*** Cyanide was non-detect in the normal sample and detected at a concentration of 6.59 µg/L in the field duplicate. Table 3-1 only presents the detections in the normal samples. All analytical results are provided in Appendix G. The field duplicates are typically used for monitoring precision in sampling procedures and not for characterization.

**Comment:** Please include the above information in the revised Groundwater Baseline Investigation Report, to be submitted to include the information in your Responses.

***Comment #5: Figure 3-4, Groundwater Contour Map:*** The area of blue and red lines and text shown on this figure, located south of the Camp Garcia area, is illegible due to the small size. Please provide a detail of this area either on Figure 3-4 or as a separate figure. Also provide a description in the legend of the areas outlined in green shown on this figure.

***Navy Response:*** Figure 3-4 will be revised so that data are more legible and the legend will include a description of the green areas (conservation areas). This modified Figure 3-4 is presented in Attachment D.

**Comment:** Please include the above information in the revised Groundwater Baseline Investigation Report, to be submitted to include the information in your Responses.

***Comment #6: Section 4, Summary and Conclusions:*** This section states that the bedrock groundwater flow is “not likely to flow from the former Navy property to the west,” and that VOC contamination reported in the laboratory results is likely due to laboratory cross-contamination. However, these contaminants were also detected in the split samples analyzed by EPA. Therefore, these contaminants may actually be present in groundwater. This should be confirmed, as stated in the text.

***Navy Response:*** Currently, the Navy does not have all the information concerning the results of the split samples collected by the EPA. If all split sample data collected by Tech Law-designated laboratories (Pace Analytical and GPL), and the EPA DESA laboratory and all data validation information are sent to the Navy for review, these data can be evaluated for QA/QC procedures used. If the data reviewed are found to be valid and usable then the above mentioned information will be incorporated into the Groundwater Baseline Investigation Report.

**Comment:** Please include the above information in the revised Groundwater Baseline Investigation Report, to be submitted to include the information in your Responses.

***Comment #7: Section 4, Summary and Conclusions:*** The last sentence of the fourth paragraph indicates that the conclusions drawn here will be verified in future investigations. Provide

additional detail (i.e., what, when, where) and discussion of the future work that is expected to take place.

***Navy Response:*** *The future investigation referred to is the Soil and Groundwater Background Investigation that is being proposed. That investigation will be conducted across the eastern portion of Vieques. A work plan of the Background Investigation has been previously submitted to EPA for review. The technical approach for the investigation is currently under review by EPA and EQB. The last sentence of Section 4, paragraph 4 will be edited to read: "However, this conclusion will be verified during the Background Investigation on the former AFWTF."*

**Comment:** Please include the above information in the revised Groundwater Baseline Investigation Report, to be submitted to include the information in your Responses.

***Comment #8: Appendix A, Test Boring and Well Construction Records:*** The Test Boring and Well Construction Records are provided for some wells at the AFWTF site, but not all of the wells. Some test boring and well construction data have not been provided due to an "insufficient data set" (e.g., RCRA-2, NW-1, NW-6, P-1, P-6, P-7). Provide an explanation in the text as to why there were sufficient data for some wells but not others.

***Navy Response:*** *These test boring and well construction records were completed during the 1999 Hydrogeologic Investigation by a drilling company licensed within the Commonwealth of Puerto Rico. Some of the logs may have been incomplete because the wells were installed using air rotary drilling techniques where continuous bedrock samples were not required to be collected. The primary purpose of the wells was to collect groundwater analytical data.*

**Comment:** Please include, and expand on, this information in the revised Groundwater Baseline Investigation Report, to be submitted to include the information in your Responses. Also, please indicate specifically which wells were installed using air rotary techniques. Also, the above response states that the logs "may" be incomplete because of the installation technique. Clearly indicate any other reasons, if any, for why the logs would be incomplete.

***Comment #9: Appendix A, Test Boring and Well Construction Records:*** The Test Boring and Well Construction Records do not include information regarding the depth at which groundwater was first encountered at certain wells (e.g., RCRA-1, NW-4, NW-7, P-2, P-3, P-5). Revise the Test Boring and Well Construction Records to include this information if it is available.

***Navy Response:*** *These test boring and well construction records were completed as part of the 1999 Hydrogeologic Investigation. Copies of the records are not available. However, the wells were installed to collect groundwater samples from the first encountered groundwater.*

**Comment:** Please include the above information in the revised Groundwater Baseline Investigation Report, to be submitted to include the information in your Responses.

**Comment #10:** *Appendix E, Data Quality Evaluation, Page 5, Laboratory Method Accuracy:* The fourth sentence indicates that 14 records were rejected. However, the paragraph goes on to describe a total of 16 rejected data points. The last sentence of this paragraph indicates that “5.4% (14/260)” of the total sample measurements were rejected. However, this percentage is based on 14 rejected sample results, instead of 16 rejected sample results. Correct the reference to indicate 16 rejected data points and change “5.4% (14/260)” to “6.2% (16/260)” to accurately reflect the total number of rejected samples.

**Navy Response:** *A review of the DQE queries indicates that 14 records were rejected in two analytical fractions, pesticide and semi-volatile. The rejected data were attributed to blank spike recoveries outside criteria. The rejected data represent 5.4% of the total sample measurement. A review of the 3rd party data validation results as “percent completeness” by method and matrix reveals that all project DQOs and completeness goals were not only met but exceeded. The completeness statistics indicate that the Navy CLEAN BOA-approved laboratory provided excellent analytical services to the project team and our client.*

**Comment:** The text in Appendix E, Data Quality Evaluation, states that toxaphene was rejected in one field sample, and three semi-volatile compounds were rejected in four field samples and one field duplicate. This adds up to 16 total rejected records [ $1+(3 \times 4)+3=16$ ]. However, the text states that this totals 14 rejected records. (If the field duplicate sample is excluded, the total should be 13 rejected records.) Furthermore, based on the “Final Conc Qual” column of Exhibit 5, it appears that 4-nitroquinoline-n-oxide; acetonitrile; 1,4-dioxane (p-dioxane); and isobutanol were also rejected in these same five samples (RCRA-1GW-R01; RCRA-2GW-R01; RCRA-3GW-R01; RCRA-4GW-R01; and RCRAFD01P-R01). Please revise the text to correct this discrepancy, or provide additional information regarding how the number of rejected records was determined. Please include the information in the revised Groundwater Baseline Investigation Report, to be submitted to include the information in your Responses.

**Comment #11:** *Appendix E, Data Quality Evaluation, Page 6, Completeness:* Completeness is the percentage of valid measurements out of the total number of measurements made. In the second sentence, change “(34/1067)” to “(1031/1067)”. The percent completeness (97%) is still correct.

**Navy Response:** *The completeness ratio will be changed from (34/1067) to (1031/1067) while maintaining the percent completeness at 97%.*

**Comment:** Please include the above information in the revised Groundwater Baseline Investigation Report, to be submitted to include the information in your Responses.

## **ERRATA**

**Comment #1:** *Appendix E, Data Quality Evaluation, Exhibit 5 – Change in Data Qualification by Validation:* The first three rows on Page 1 of 6 are repeated as the first three rows on all the remaining pages. Please correct this formatting error.

**Navy Response:** *The first three rows on Page 1 of 6 repeat as part of a formatting error and will be corrected.*

**Comment:** Please include the above information in the revised Groundwater Baseline Investigation Report, to be submitted to include the information in your Responses.

**EPA CERCLA COMMENTS  
ATLANTIC FLEET WEAPONS TRAINING FACILITY DRAFT RFI  
PHASE I REPORT, VIEQUES, PUERTO RICO**

**GENERAL COMMENTS**

- *Please note, Navy Responses to all EPA CERCLA Comments on the Draft Phase I RFI have been reviewed. Comments 1-18, 20-22, 24-29, 31-36, 38, 40-43, 45-52, 57-60, 62-65, and 67-70 have been adequately addressed.*

**Comment #19:** *Section 1.2.7, Soils, page 1-8:* A listing is provided of which sites are underlain by various rock types. Other investigations have indicated that the base map used for these determinations can be incorrect in detail. Site-specific data, where it has been collected, needs to be used to ground truth the reference map.

**Navy Response:** In general, the geology reference map, as presented in Figure 1-5, is accurate for the sites investigated.

**Comment:** The above response states that the geology reference map “is accurate for the sites investigated.” Please elaborate on this response by confirming whether the field activities conducted to date have verified the map’s accuracy. Please include this information in the revised Phase I RFI report, to be submitted to include the information in your Responses.

**Comment # 23:** *Section 2.13, Data Validation, page 2-9:* The modifications made to the CLP National Functional Guidelines for data validation for this project should be described or referenced here.

**Navy Response:** *The validation of data for Region II is dictated by the SW846 analytical methods used by the laboratories to generate the data and is performed in accordance with EPA Region II Data Validation Standard Operating Procedures. The data validation methods used by the contractor for this project are as follows:*

*VOA and GRO - USEPA Region II SOP HW-24, Revision 1, June 1999: Validating Volatile Organic Compounds by SW-846 Method 8260B*

*SVOA and DRO - USEPA Region II SOP No. HW-22, Revision 2, June 2001: Validating Semivolatile Organic Compounds by SW-846 Method 8270C*

*Metals and wet chemistry - USEPA Region II SOP No. HW-2, Revision 11, January 1992, for Evaluation of Metals Data for the Contract Laboratory Program*

*Pesticide and PCB - USEPA Region II SOP No. HW-23, Revision 0, April 1995: Validating*

*Pesticide/PCB Compounds by SW-846 Method 8080A and SOP No. HW-23B, Revision 1.0, May 2002*

*Explosives - USEPA Region II SOP No. HW-16, Revision 1.3, September 1994: Nitroaromatics and Nitroamines by HPLC*

*Dioxin - USEPA "Region II, Data Validation Standard Operating Procedure for SW-846 Method 8290 Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by High-Resolution Gas Chromatography/High-Resolution Mass Spectrometry (HRGC/HRMS)," SOP No. HW-19, Revision 1, October 1994*

*Herbicides - USEPA Region II SOP, Revision 1.3, November 1994: Chlorinated Herbicides*

**Comment: Please revise Section 2.13 to include this information.**

**Comment #30:** The extent of land filling at SWMU 1 has been investigated using aerial photographs up until 1964. However, the text states that the land filling was active until 1978. If there are images from 1964 to 1980 available, these should also be reviewed.

**Navy Response:** *The 1964 aerial photograph was the latest aerial available at the time the report was produced. Since that time, an aerial photograph from 1970 was found. However, no aeriels between 1970 and 1984 have been identified.*

**Comment:** For the revised Phase I RFI, revise the text to include the findings from the additional photo from 1970.

**Comment #37:** SWMU 4: a) There was a single subsurface sample collected at this SWMU, while there are at least 3 areas where there are potential releases. Each area should be investigated. As with other sites, the surface soils are not sufficient to determine that no contamination exists. b) The pH of soil needs to be profiled in the vicinity of the acid battery storage area. c) It is not clear if the catch basin was below grade or how oil that collected there was disposed of. Please provide a better description and justify the depth of the nearby subsurface sample in the context of the depth of the basin. d) The conclusions section mentions groundwater sampling -which did not occur at the SWMU. Please correct. e) Please indicate if the sheds have concrete or dirt floors. If the later is the case, samples should be collected from inside the sheds.

**Navy Response:** *a) The regulatory approved Site-Specific Work Plan was followed during the SWMU 4 investigation. See the SWMU 4 Site-Specific Work Plan for sample rationale. The soil boring was completed where there was a potential for subsurface releases due to the drainage basin. All the other potential releases were associated with surface spills. As a result, surface soil samples were collected at these locations.*

b) *The pH analysis of the soils was not part of the approved Scope of Work for the SWMU 4 investigation.*

c) *Section 5.1, Site Description, second paragraph, third sentence will be edited to read: "The unit was located inside Building 303 and was placed over the above grade concrete floor which is flat and continuous throughout the entire building." The concrete slab that Building 303 is constructed on sits approximately 6 inches above grade. The walls of Building 303 consist of metal sheeting attached to the sides of the concrete slab. The soil boring location was selected adjacent to the hydraulic oil catch basin within a grassy area.*

d) *Groundwater will be removed from Section 5.4, Conclusions and Recommendations, second paragraph, first sentence.*

e) *Text will be added to Section 5.1, fourth paragraph on page 5-2, which states: "According to the 1995 RFA, no batteries or acid were present at the former Corrosive Materials Storage Building, nor were there visible signs of acid leakage on the concrete floor from previous storage of these materials." The Flammable Materials Storage Building has a concrete floor.*

**Comment:** Please include the above information in the revised Phase I RFI report, to be submitted to include the information in your Responses. Also include the statement regarding the floor in the Flammable Materials Storage Building (mentioned in part e) in the revised text.

**Comment #39:** SWMU 5: a) Figure 6-2 does not adequately depict where the batteries were actually stored. b) Soil pH should be profiled right in the area where batteries were stored.

**Navy Response:**

a) *Figure 6-1 has been modified to show the corrected location of the spent battery storage location labeled with a colored box with the text "Spent Battery Accumulation Area." Figure 6-2 will be edited to show this location also. Both revised figures are provided in Attachment B.*

b) *The task of pH soil profiling was not part of the regulatory approved Scope of Work as stated in the Site-Specific Work Phase I RFI, June 12, 2003.*

**Comment:** Figure 6-1 was not provided in the reviewer's copy of Attachment B to the response to comments. Please be sure to include the revised Figure in the revised Phase I RFI.

**Comment #44:** AOC A: The four samples which exceeded the TPH screening value were those under the excavated piping. This area remains contaminated and has not been sampled for SVOCs, a potential contaminant of concern. This requires additional sampling. The area should also be addressed in a manner consistent with PREQB UST regulations.

**Navy Response:** *The samples collected for AOC A did not have detections for naphthalene, indicative of diesel contamination, or BTEX or MTBE above the screening criteria. The size of this area where the four samples were collected is approximately 20 feet long and 10 feet wide. The size of the impacted area and the site's remote location formed the basis for no further action status. Additional samples for SVOC analysis can be added for this site during the next field event.*

**Comment:** While the four samples mentioned in the above comment did not have detections for naphthalene, BTEX, or MTBE, they did show exceedences for TPH/Diesel Range Organics (C10-C28). Further sampling should be conducted at AOC A during the next field event, as stated in the response above. Therefore, in addition to the revised Phase I RFI, please include a sampling program for AOC A to confirm whether or not releases are present.

**Comment #53:** PI-21: As this site was noted as a possible artillery firing position, please discuss why it does not need to be treated as having possible MEC. Also, the aerial survey noted a vertical tank at this location. This is noted in the work plan but not in the report. Was the nature of the tank determined and what does reconnaissance of the former tank area show? Lastly, further investigation (or description, if available) of the piping needs to be conducted prior to considering NFA.

**Navy Response:** *The recommendation has been revised for this site and MEC screening will be conducted; however, the use of this site for an artillery firing position has not been verified through the analysis of historical aerial photographs. The following text will be added to the revised report: "The vertical tank identified in the 1962 aerial and piping mentioned in the Work Plan were not located at this site in 2001. The nature of this tank has never been determined."*

**Comment:** Considering the lack of information available regarding PI 21, and the historical reports of piping and stained soils, it is recommended that surface soil, subsurface soil, and groundwater samples be collected from this area during the additional PI/PAOC investigations. It is also recommended that the sample locations be based on further evaluation of historical documents (if available) and/or interviews. Otherwise, sample locations should be biased towards site drainage areas or other areas of potential concern, such as the piping area.

**Comment #54:** PI-22: The figure does not afford any interpretation of the data as it is not clear where the samples were collected relative to site features. The drums at this site need to be investigated and removed. Sampling of surface and subsurface soils are needed in the area where the drums are located. Other possible sampling requirements should be assessed based on a figure that shows site features such as debris and excavations. The drums alone make it clear that this is not yet a candidate for NFA. Navy records should be searched to try and interpret the meaning of the drum label "DARACEN 19."

**Navy Response:** *The PI and PAOC figures will be revised to show more detail surrounding the site. Text will be added which states: "Four surface soil samples were collected from beneath the drums and in low-lying areas near the parts and storage pad, and analyzed for Appendix IX RCRA constituents, TPH-DRO and TPH-GRO. All four samples were collected from 0 to 6 inches below ground surface using stainless steel scoops and trowels." Based on the Phase I data results, only metals were detected in the surface soils. Following the completion of the Background Investigation, the site analytical data will be compared to background data to assess if any constituent concentrations are site-related. Should contamination be identified, the need for additional site investigation will be considered."*

*Further information indicated that DARACEM 19 was a cement additive. The report will correct "DARACEN 19" to "DARACEM 19."*

**Comment:** **DARACEM 19 is a naphthalene sulfonate. Please confirm that naphthalene was included in the sample analysis.**

**Also, based on the text on page 14-27 of Section 14.2.2, PI Sites and Figure 14-9: PI 22 Site Map and Sampling Locations, four samples were collected at PI 22. One of these samples, Sample PI22-4, was apparently collected approximately 50 meters east of the other three samples, near a rubber mat. Revise the text in the above response to account for this apparent discrepancy.**

**Comment #55:** **PI 23:** It remains unclear what the pit was. Without further information, it needs to be assumed that there could have been contamination. Viewing the area from a distance and a lack of information is not sufficient to justify NFA.

**Navy Response:** *Based on interviews, review of aerial photos, and the flyover, there is no evidence that releases of contaminants occurred at the site. The pit is in a very remote location not known to be the site of any Navy activity. It is most likely a soil borrow pit. Based on this information, the site is recommended for NFA.*

**Comment:** **Please include this additional information in the revised report.**

**Comment #56:** **PAOC I:** Please indicate what sort of mechanic's shop was located here. Depending what sort of activities were conducted, there is the potential for oils, BTEX or solvents to be present.

**Navy Response:** *PAOC I: This was a former power plant and mechanics shop. This building (number 401) housed a 50kW diesel generator with a built-in tank of unknown size. Light maintenance may have been conducted at the site but cannot be verified.*

**Comment:** **Please include this additional information in the revised report.**

**Comment #61:** PAOC W: A more detailed description of the area is needed to assess if further action is needed. The text notes discolored water. What color is it and what is presumed to be the cause? Is this thought to be a natural or manmade feature? Is the area around the pool disturbed? The site should not move to NFA unless there is evidence which explains the presence of the discolored pool. A lack of knowledge about the site should prompt further investigation.

**Navy Response:** *This site was identified during the EBS as a pool of discolored water less than 1 ft deep through interviews with senior members of the Camp Garcia public works department and other persons familiar with the history of the Site. There was no evidence of a contaminant release at this location. The pool of water was presumed to be from runoff of precipitation. There was no disturbed ground surrounding the puddle, so it was believed to be a natural feature. The pool was considered by the EBS team to be stagnant water and therefore was not sampled.*

**Comment:** Please include this additional information regarding the stagnant pool in the revised text.

**Comment #66:** Section 14.3.5, Sites Recommended for NFA, page 14-40: I concur that the following 4 sites are appropriate for NFA: PI-12, PI-20, PAOC P, and PAOC T. For 7 other sites, it may be possible to move to NFA with better site descriptions and more details. This is true for PI-23, PAOC I, PAOC M, PAOC O, PAOC Q, PAOC R, and PAOC W. For the remaining sites included in this section, there seems to be a need for additional sampling in order to be sure that no contamination exists at the site. Details are generally provided above, but often this is the result of either no sampling or a lack of subsurface sampling. These sites are AOC A, PI-5, and PAOC V.

**Navy Response:** *The NFA sites were determined to be NFA based on several factors:*

- 1 – An archive record search to identify potential contaminant source areas. Because the facilities at Camp Garcia were mostly temporary to support military maneuvers, most of the PI and PAOC sites have minimal site details and very little history available.*
- 2 – Visual inspections for evidence of contaminant release.*
- 3 – Historical aerial photo analysis to assess if there were disturbed areas that may have been indicative of waste disposal areas.*
- 4 – Field sampling and laboratory analysis which is utilized to assess whether contaminants are present at a site.*

*Since the operations at Camp Garcia were mostly temporary facilities to support military maneuvers, most of the PI and PAOC sites have minimal site details available with very little history. These sites are recommended to be NFA based on the sources of data available.*

**Comment:** This is an acceptable approach for an NFA determination. However, it is not clear from the report which of steps were taken at each site. Revise the text to include a list of steps that were taken to obtain information on each site, and the outcome of each of those steps (e.g., historical documents were obtained and reviewed). If a step was not

**taken, indicate why not. Also, as discussed previously, EPA is not satisfied that a No Further Action determination is appropriate for all of those PAOCs without any analytical data having been collected at the sites of those PAOCs. Therefore, in addition to the revised Phase I RFI, please include a sampling program for these PAOCs to confirm whether or not releases are present.**

**CERCLA COMMENTS  
ATLANTIC FLEET WEAPONS TRAINING FACILITY  
GROUNDWATER BASELINE INVESTIGATION  
AT THE U.S. EASTERN MANEUVER AREA, VIEQUES, PUERTO RICO**

- *Please note, all Navy Responses to CERCLA Comments on the Groundwater Baseline Investigation have been reviewed. These comment have been adequately addressed.*

**PREQB COMMENTS ON  
DRAFT PHASE I RCRA FACILITY INVESTIGATION REPORT  
FORMER ATLANTIC FLEET WEAPONS TRAINING FACILITY (AFWTF),  
VIEQUES ISLAND, PUERTO RICO**

- *Please note, Navy Responses to all PREQB Comments on the Draft Phase I RFI have been reviewed. Comments 1-34, 36, 37, and 39-45 have been adequately addressed.*

**Comment #35:** At page 14-17 for PI-10, it is reported, “Dark colored soils were observed on portions of the enclosed areas. Evidence of limited solid waste disposal was also observed in the immediate vicinity”. Then, at page 14-18 it was concluded that “...based on the lack of stained surface soils...” among others, no evidence of human activity was found. A clarification regarding this apparent contradiction should be made.

**Navy Response:** *The EBS observations included from interviews and records stated: “Dark colored soils were observed on portions of the enclosed areas. Evidence of limited solid waste disposal was also observed in the immediate vicinity.” No evidence of human activity or release to the environment was observed during the CH2M HILL 2001 site inspection, based on the lack of stained surface soils.*

**Comment:** Please include this additional information in the revised report.

**Comment #38:** The presented description of the visual inspection of PI-12 is not enough to justify a no further action recommendation for the site. More detail on how the helicopter over flight observation was performed must be included. Information like if the observations were made at simple sight or any visual aid was utilized during the investigation would be helpful.

**Navy Response:** *This site was identified as a wind-driven water production well prior to the 1970s and a private residence prior to the 1940s, neither of which are regulated activities. There were no documented activities at this site after the 1970s. Binoculars were used during the helicopter fly over and no potential source areas were identified. Based on this information, NFA is recommended. This site is observed in the 1936 aerials, which predate Navy activities on this portion of Vieques.*

**Comment:** Please include this additional information in the revised report.

**QA/QC COMMENTS**  
**DRAFT PHASE I RCRA FACILITY INVESTIGATION REPORT**  
**FORMER ATLANTIC FLEET WEAPONS TRAINING FACILITY (AFWTF),**  
**VIEQUES ISLAND, PUERTO RICO**

- *Please note, Navy Responses to all QA/QC Comments have been reviewed. These comments have been adequately addressed. No additional response is necessary at this time.*

**TECHNICAL REVIEW OF THE  
DRAFT SITE SPECIFIC WORK PLAN PHASE I RCRA FACILITY INVESTIGATION  
FOR EIGHT PI/PAOC SITES  
FORMER ATLANTIC FLEET WEAPONS TRAINING FACILITY  
VIEQUES ISLAND, PUERTO RICO  
DATED NOVEMBER 2004**

**January 18, 2004**



**TECHNICAL REVIEW OF THE  
DRAFT SITE SPECIFIC WORK PLAN PHASE I RCRA FACILITY INVESTIGATION  
FOR EIGHT PI/PAOC SITES  
FORMER ATLANTIC FLEET WEAPONS TRAINING FACILITY  
VIEQUES ISLAND, PUERTO RICO  
DATED NOVEMBER 2004**

**TABLE OF CONTENTS**

	<u>Page</u>
GENERAL COMMENTS .....	1
SPECIFIC COMMENTS .....	3

**TECHNICAL REVIEW OF THE  
DRAFT SITE SPECIFIC WORK PLAN PHASE I RCRA FACILITY INVESTIGATION  
FOR EIGHT PI/PAOC SITES  
FORMER ATLANTIC FLEET WEAPONS TRAINING FACILITY  
VIEQUES ISLAND, PUERTO RICO  
DATED NOVEMBER 2004**

**GENERAL COMMENTS**

**1. *Sampling Rationale***

The field investigation will include collection of subsurface soil, surface soil, and groundwater samples. The Work Plan contains a separate section for each of the sites to be investigated, with a description of the site and a summary of the future sampling efforts. No rationale is given as to why some of the sites are proposed to have surface and subsurface soil samples, and some include surface soil, subsurface soil, and groundwater samples. Also, samples appear to be arbitrarily located. The sampling locations should be biased towards the most likely release areas (e.g., doorways [existing/former], exterior areas adjacent to structures with potential issues [e.g., staining, SWMUs/AOCs, etc]). Revise the Work Plan to include a detailed rationale for each sample collection effort.

The Work Plan indicates that sampling locations will be derived from historic aerial photographs, rather than first-hand information from a site visit. It is not entirely clear from the information presented whether partial structures and/or slabs currently exist, or if the buildings or slabs were identified only in historic photographs (e.g., PAOC J). The Work Plan discusses results of a previous Visual Site Inspection (VSI), but does not always indicate whether all or part of the structure remains. While it is acceptable to make preliminary decisions based on the photographs, the actual sample locations should be field-verified for appropriateness. Revise the Work Plan to discuss in each section whether there are any building or foundation remains in each PI and PAOC, and to confirm that the appropriateness of sampling locations will be verified in the field, with a bias toward likely release areas (e.g., doorways, low-lying areas, etc.).

Surface soil samples are proposed to be collected 0 to 2 feet below land surface (bls) and subsurface soil samples 4 to 6 feet bls. Sites such as PAOC J and PAOC K have the potential for the presence of dense non-aqueous phase liquids (DNAPL) contamination. In light of this possibility, consider sampling groundwater at the bedrock or confining layer interfaces. This could possibly result in deeper sample collection and/or additional sample collection. Clarify the rationale in deciding at what depth to collect the subsurface soil samples (e.g., the sample will be collected at the depth corresponding to the highest Flame Ionization Detector reading, etc.).

Additionally, the proposed surface soil sampling depth of 0 to 2 feet is inappropriate. In order to be representative of surface soils, samples are typically collected from 0 to 6 inches. While a depth of 0 to 2 feet may be used when addressing ecological risk in order to take into account burrowing animals, these samples should not be used to address surface soil issues. Revise the work plan to indicate that surface soil samples will be collected from 0 to 6 inches.

2. Several lines, vaults, and manholes have been identified in PI 4 and PAOC S, however there is little discussion regarding sewer lines throughout the report. Several historic maintenance buildings are likely to have had sewer and sanitary lines. Revise the work plan to include a discussion of sanitary and storm sewer lines, survey and integrity testing results, drains in the remaining buildings and slabs, and potential sampling locations in these particular areas. Also, revise the figures to reflect these changes.
3. The Work Plan presents a very limited discussion of the geology and hydrogeology of the site. This results in a less than adequate understanding of flow, stratigraphy, and possible contamination distribution. Proposed depths for groundwater monitoring well installations have also not been provided. Although it is understood that the site-specific depth to groundwater is unknown, the Work Plan should include relative depths for the collection of groundwater samples (e.g., two feet below water table). Revise the Work Plan to include a discussion of the proposed well depths. Also include figures showing regional groundwater contours.

**TECHNICAL REVIEW OF THE  
DRAFT SITE SPECIFIC WORK PLAN PHASE I RCRA FACILITY INVESTIGATION  
FOR EIGHT PI/PAOC SITES  
FORMER ATLANTIC FLEET WEAPONS TRAINING FACILITY  
VIEQUES ISLAND, PUERTO RICO  
DATED NOVEMBER 2004**

**SPECIFIC COMMENTS**

1. **Section 2.1.3, PI 4 - Former Helicopter Maintenance Area, Trenched Area, and Bermed Area Used for Fuel Bladder Storage, Site Summary:** A concrete vault whose opening was covered by a piece of plywood was found to have an undetermined amount of stagnant water. According to the previous investigation results and the proposed sampling rationale the vault water will not be sampled. Provide additional details regarding the pool of water (e.g. depth, color, odor, sheen, size, source, etc). Consider conducting sampling in this area or provide justification for not sampling. Show the location of the concrete vault on Figures 2-1 and 2-2.
2. **Section 2.2.3, PI 7 - Former Quarry, Tar Disposal Area, and Construction Debris Area, Sampling Rationale:** According to previous investigation results, samples PI7-1, PI7-2, and PI7-4 have detected concentrations of chemical constituents that exceed one or more of the relevant screening criteria. However, additional soil borings will only be installed around location PI7-3. The overall characterization of the landfill/disposal area is unclear. Landfills tend to be very heterogeneous in nature and difficult to characterize based on limited sampling. Clarify in the Work Plan whether a geophysical survey and/or test pits have been considered, or provide justification for not surveying this area. Also, revise the text to explain how the limited data set will adequately characterize the nature and extent of contamination in the area. If this cannot be demonstrated, revise the Work Plan to include additional surface, subsurface, and/or groundwater samples in and/or around the above areas of concern.
3. **Section 2.6.3, PAOC N - Former Fuel Farm and Filling Station, Sampling Rationale:** Due to the potential for past releases from the fuel tanks and dispensers, one soil boring is planned for installation adjacent to an existing AST and another soil boring will be installed at the former fuel building area. However, the text does not address the exact locations planned for these sampling points, nor does it present a rationale for the selection of sampling locations (e.g., downgradient to the areas). Revise the text to include additional discussion regarding the potential location of the soil borings.
4. **Section 2.7.1, PAOC S - Former POL Pipeline and Power Plant, Sight Summary:** The description of PAOC S mentions a pipeline. The pipeline runs to the south of the Camp Garcia compound area where there is a valve used to fill fuel trucks. Due to the high potential of a release in this area, revise the text to verify that soil borings will be

collected in the vicinity of this valve.

5. **Figure 2-12, PAOC S Proposed Sampling Locations:** According to Figure 2-12, surface and subsurface soil samples are proposed in the area of the former pipeline location at approximately 1,500-foot intervals. Provide additional information regarding the pipeline and its history (e.g., diameter, material of construction, extent of use, explanation as to why it was removed, survey/integrity results, POL logs for volumes of materials transferred, depth installed, etc.). The limited proposed soil borings, spaced at 1,500 feet apart, may not be able to account for potential leaks from the pipeline, which was used for massive volumes of POL. Revise the Work Plan to include a sampling plan with a decreased sample distance and increased sample frequency. Moreover, amend the text to indicate whether the soil being sampled represents backfill, and whether it is at a depth at or below the elevation of the former pipeline. A sample of the material overlying the historical pipeline that was returned to the excavation would not likely be adequate for the characterization of potential contaminants. Should the proposed sampling result in the detection of POL contaminants it is suggested that surface water and sediment samples downgradient of this location be collected and evaluated for this site. Revise the text to include this recommendation.
6. **Table 3-1: Proposed Sampling and Required QA/QC Samples:** According to Section 2.1.3, four monitoring wells are proposed for installation at the PI 4 site. However, according to Table 3-1 only three wells are to be sampled. Revise both the text and the table to resolve this discrepancy.
7. **Table 3-1: Proposed Sampling and Required QA/QC Samples:** According to Table 3-1 and Section 2.7.3, nine soil borings are proposed for installation at the former POL Pipeline and Power Plant area. However, Table 3-1 shows only five borings are to be tested for TAL metals and TCL pesticides. Revise the text to explain why only 5 borings will be analyzed for these parameters, and to provide the location of the borings.

**EPA's CERCLA Comments on  
Navy's November 2004 Draft Response to Comments on the  
Draft Phase I RFI Report  
And  
Draft Groundwater Baseline Investigation Report  
Former Atlantic Fleet Weapons Training Facility  
Vieques, Puerto Rico**

The numbering of the comments is consistent with comments numbered in the comment response report:

**CERCLA COMMENTS ATLANTIC FLEET WEAPONS TRAINING FACILITY DRAFT  
RFI PHASE I REPORT, VIEQUES, PUERTO RICO**

(Begins on Page 30 of 52)

General Comments:

# 1: This response does not adequately address our concerns; it is strongly recommended that samples be collected in order to determine whether or not contaminants in exceedance of screening values are present and associated with unacceptable risk. Since the result of the no further action determination is that any type of exposure or redevelopment may occur at these sites, some amount of empirical data, agreed to by all agencies, should be collected for evaluation to support the anecdotal and qualitative information previously presented.

# 2: This response does not adequately address our concerns; subsurface soil sampling should be considered to adequately characterize the subsites. While it may be appropriate in some instances for determinations for no further action to be reached after evaluation only of surface soil data, it is premature to make this determination for sites at which historical information or current site conditions indicate a potential release, as is the case for PAOC V, which is where the leaking transformer was stored for some time. Although the paucity of surface soil samples may not indicate contaminant concentrations in excess of appropriate human health risk-based screening concentrations, additional samples - including subsurface soil samples - should be collected to ensure reworking of the surface soils has not occurred, that current site conditions have been adequately and thoroughly characterized, and that the area is in fact an appropriate candidate for no further action.

# 3: The comment response states that the Munitions Response Program has effectively been implemented, the need for additional environmental investigation will be evaluated based on the number and type of munitions items that have been identified in each area. What is the process that will be followed to determine if any additional environmental investigation is necessary? What criteria will be considered in this process? The comment response should present a more thorough discussion of how these sites will be evaluated for environmental concerns. It appears

that if no munitions are identified than an environmental investigation will not be conducted. This may not be protective. Further, information needs to be provided regarding how the type and number of munitions items identified will impact the environmental investigation to be performed.

# 4: EPA agrees with the response. This response should be incorporated into the revised text of the RFI report.

# 5: The comment response states that the deviation from the work plan will be discussed in the revisions to the RFI report. EPA will review the revised text to determine if the deviation from the work plan is acceptable.

#6: The Navy has indicated that the surface soil sample depth of 0-6" was agreed to in the Master Work Plan and Site-Specific Work Plan for the Phase I RFI. Though the Navy has indicated at various meetings that this depth was agreed upon, it should also be noted that future sampling efforts should include sampling to a depth of 12 inches or even possibly up to 24 inches if it is determined that receptors of concern (e.g. land crab) are present. It was also discussed that due to the pending finalization of the listing of the Site on the National Priorities List (NPL), areas already sampled may have to be revisited if necessary, as per the CERCLA program.

# 7: EPA agrees with the response.

# 8: EPA disagrees with the response. The risk-based screening is a conservative process that is used to limit the number of chemicals that will be quantitatively evaluated. This optional process should be done in a manner that ensures that chemicals are not prematurely discounted from a quantitative assessment of potential risk. Chemicals may be transformed in the environment from one form to another. For example, inorganic mercury may be methylated in certain environments by bacteria and chromium can be converted into hexavalent chromium under specific conditions. Therefore, in order to compare chemical concentrations appropriately at this stage of the investigation, the most conservative form of the chemical should be used in the screening process.

# 9: EPA disagrees with the response. If subsurface soils are initially screening against only leachability potential, and the direct contact screening occurs later in the process and only for those sites that are retained for further investigation, the potential exists for sites with a direct contact concern - and not a leachability potential - to be excluded prematurely from the evaluation process. The subsurface soils should include a direct contact screen at this stage of the investigations.

# 10: EPA agrees with the response.

# 11 & # 13: A basewide sediment and surface water investigation should be conducted. As noted in comment # 18, surface runoff from the 12 sites addressed in the report generally flows south to the Caribbean Sea and the coastal areas of Vieques contain lagoons and mangrove

swamps (Section 1.2.5 Topograph and Surface Water, page 1-7). The response should note that surface runoff pathways will be investigated. See response to comment # 20.

Specific Comments:

# 14: It may make sense to include the sampling rationale, previously provided in the Site-Specific Work Plan as an appendix to this document.

# 15: This response is confusing: The first paragraph leads one to believe that if inorganics are within the range of background concentrations, then the site will not be selected for further study, while the second paragraph indicates that all contaminants in exceedance of PRGs will be included in the risk assessment. The concern here is if data comparison to background is done as the initial screening, then sites may be improperly selected for NFA. Please clarify that the selection of sites for NFA will be based on screening site contaminants against PRGs rather than background concentrations.

# 17: EPA agrees with the response and will review the data in the revised tables.

# 18: See concerns raised for # 11 & 13. This response does not address our concerns. There is a concern that there are surface drainage features which may provide habitat to aquatic receptors and serve as contaminant transport mechanisms from subsites to the lagoons and mangrove areas along the coastal areas. This is consistent with the response to comment # 20, which notes that “depending on site-specific fate and transport pathways, coastal aquatic habitats could be affected by offsite migration of soil contaminants.”

The Navy notes that should future sampling indicate there has been a release from the site and the contamination may have migrated to surface water and sediment, then surface water and sediment sampling will be proposed for regulatory consideration. The Navy needs to provide details on what future sampling efforts are anticipated for these sites (only SWMU1, Camp Garcia Landfill, is proposed for a full RI to further characterize the extent of waste material at the landfill) that would allow for the evaluation of the need to collect surface water and sediment samples.

# 19: Drill logs from wells along the western perimeter of eastern area do not show volcanics to be present, which contradicts the map. Please go through the exercise of reconciling field information with the geologic map.

# 20: The Navy’s response indicates that all onsite and offsite ecological exposure pathways and receptors will be considered as appropriate in future site-specific assessments. It is not clear if the future site-specific assessments mean the Navy will re-visit this issue for the sites included in the Phase I RFI Report or whether they will simply take this into consideration for future efforts. This should be clarified.

#25: Given the spacing of anomalies detected with the geophysics, it is unclear if the ends of the transects truly bound the area of concern. Within the interpreted fill boundary, individual anomalies are often at least 50 to 100 feet apart. As a result, the ends of the transects do not, by themselves, provide a clear case that the area has been delineated to the east and west. If there is other evidence which conclusively makes the case, it can be presented, but based on the geophysics, it is not yet possible to determine that the boundaries have been adequately defined.

# 26: EPA maintains its position that the approach is not appropriate and that all detected contaminants should be noted in the text. A clear picture of all detections is needed to both understand the results and to plan any future work if it is needed. Furthermore, with the present approach, the Navy leaves itself open to the impression that it is trying to hide the detections by making the reader look for possible detections in the tables.

# 27: EPA agrees with the response.

# 28: Agreement needs to be reached that the SWMU-1 work plan will include subsurface sampling in and around known waste areas. The response does not make it clear that this will be the case and it would be counterproductive to move forward with a work plan without resolving the issue.

# 29: a) The following comment was offered to the RFI work plan in August of 2003:  
“While each site is different and a few do include subsurface sampling, the overall investigation strategy for the sites is based on sampling of surface soils from the top 6 inches. The impetus for concern in many of the areas dates to 10, 20 or more years in the past. With active weathering in a tropical climate, it is very possible that contaminants may be present in the subsurface while being absent from the top 6 inches of soil. As a result, it does not seem appropriate to use only surface soils as a means of evaluating whether a site will be able to move to No Further Action.”  
I do not know the fate of the comment in finalizing the work plan, but the concern was noted and apparently not addressed. From a technical perspective, the comment remains sound.

b) Again, all detections need to be discussed, even when they are below PRGs.

# 30: It is presumed that the additional aerial will be presented and discussed in the revised report.

# 31: Again, all detections need to be discussed, even when they are below PRGs.

# 32: EPA agrees with the response.

# 33: EPA agrees with the response.

# 34: It appears that the change in locations of the wells was made between the draft and final work plans and that the final work plan was not given to CERCLA for review. In moving forward, the additional investigation should include wells within the boundaries of the area.

# 35: EPA agrees with the response.

# 36: The lack of subsurface sampling in the area most likely to be contaminated remains as a problem. The area should not move to NFA without this sampling.

# 37: a) and b) This sampling should be conducted before the sites are considered for NFA. e) The comment requested information as to the flooring of the sheds, not the building. If they are not concrete, sampling should be conducted in the sheds.

# 38: EPA agrees with the response.

# 40: The comment contained a typo and should have referenced Figure 7-2. The figure and text need to better explain where the two storage areas were located. For SWU-6, Page 7-1 states that waste oil and tires were stored on a grassy area, which is presumably not the concrete pad. For SWMU-7, the text indicates that soils in the storage area were stained, again implying that storage was on soil, not concrete. Please clarify.

# 41: a) From the response, it appears that the samples collected in 2000 may have been collected from below the liner, rather than above it. Presuming that the 'lagoon material' is considered to be that above the liner, it is not clear that the TCPL samples were representative.

d) Selection of MW-1 as a background location was a reasonable guess without any groundwater elevation data. Now that data indicates the well may be impacted by the lagoons, the well should not be considered as background.

# 42: EPA agrees with the response.

# 43: EPA agrees with the response and will review the revised text in the next draft.

# 44: EPA agrees with the response.

# 45: EPA agrees with the response.

# 46: Based on previous responses, it appears that the surface soil sample depths were 0-8" rather than 0-6".

# 47: EPA agrees that information taken from historical records and interviews should be reported as it was originally presented. However, it may be appropriate to add additional language to the text that clarifies the use of this term, based on the many discussions held by the Navy, NOAA, EPA, and other parties.

# 48: EPA agrees with the response. This response should be incorporated into the revised text of the RFI report.

# 49: It is appropriate to show the site features on a figure, and to clearly show that the area could not be contaminated.

# 50: This comment needs further review with the amended figure in hand. No technical argument obviating the need for PCB sampling of soils was provided.

# 51: EPA agrees with the response.

# 52: Please clarify if the surface soil samples were collected near the stained soils or from the stained soils themselves. Subsurface sampling should be conducted, as noted in the original comment.

# 53: EPA agrees with the response.

# 54: The response indicates that sampling took place under the drums. Please expand on this, so as to indicate exactly what was done. Presumably, the drums were moved, but left at the site? Only one drum is noted as empty and another is noted as bulging. Was any attempt made to determine what was in the bulging drum? Please give additional detail.

# 55: The response essentially disagrees with the comment and reasserts that NFA is appropriate. Again, a lack of information is not a reasonable basis on which to conclude that no impact has occurred.

# 56: The response indicates that there was, or perhaps still is, a diesel tank at the site. This represents a potential release point and contaminant. More details need to be provided.

# 58: It is presumed that the Navy can determine how it was likely to fuel a boiler. Diesel fuel or heating oil seem likely candidates. If there is no record of decommissioning the facilities, it should be assumed that contamination from the fuel source could be present.

# 60: The need for subsurface samples is not addressed.

# 61: No mention of how the water was discolored is provided. Is there a pool there presently and if so what color is the water? If there is no better description, then there is no assurance that it was not discolored as a result of contaminant release. As with other areas, a lack of information should not be used to conclude that there is no environmental concern.

# 62: Figure 4-11 does not give enough information about the area to understand where the samples were collected in relationship to site features. Sampling 'near the visible debris' is not an adequate description. Typically, sampling should occur under debris - and subsurface sampling is warranted.

# 66: The substance of the comment is not addressed. There remains disagreement as to which sites are ready to move towards NFA.

# 67: See Comment # 15. The second and third sentence lead the reader to believe that if site data are comparable to background data then no further work will be conducted because it will be determined that contamination is not present. Please clarify that the selection of sites for

NFA will be based on screening site contaminants against PRGs rather than background concentrations.

The comment was intended to guide work plan development for SWMU-1. The text suggests that the analytical suite will be limited based on existing samples. In an area such as this, where disposal was heterogeneous, a full suite of parameters needs to be included.

**CERCLA COMMENTS ATLANTIC FLEET WEAPONS TRAINING FACILITY  
GROUNDWATER BASELINE INVESTIGATION AT THE U.S. EASTERN  
MANEUVER AREA, VIEQUES, PUERTO RICO**

(Begins on Page 53 to 56)

# 1: The comment response is confusing. The same four wells are included in both investigations. The Groundwater Baseline Investigation is using these four wells to determine if contaminants are migrating from the former naval facility. The Background Investigation is using these 4 wells to establish the range of inorganics under background conditions. If the wells have been impacted by migrating contamination, how can they be used in the database to establish background conditions? The response does not address the concerns raised about the four wells.

# 6: It is still not clear whether the groundwater “quality” data includes contaminant data especially from MW-1 (located closest to the northern part of the coastline) or MW-7 (located closest to the southern part of the coastline). Also the Navy noted that Table 3-1 has been updated for clarification but this table still only includes data from the 4 RCRA wells.

# 7: EPA agrees with the response.

# 8: EPA agrees with the response and will review the revised text in the next draft.

# 10: The Navy has responded that should it be determined that the extent of contamination from a site is as far as the Atlantic Ocean or Caribbean Sea, the potential for discharge into the sea and potential impacts of that discharge will be evaluated. However, it is not clear how the determination for this additional evaluation will be made. The “trigger” for this activity should be discussed.

**EPA's CERCLA Comments**  
**November 30, 2004 Draft Site Specific Work Plan Phase I RFI**  
**For Eight PI/PAOC Sites**  
**Former Atlantic Fleet Weapons Training Facility**  
**Vieques, Puerto Rico**

**General Comments:**

1. As the data collected from these investigations will be used to support risk assessments, it is recommended that all samples include a full TCL and TAL analysis, rather than just a TCL (i.e., PAOC N Former Fuel Farm and Filling Station Site, PAOC S - Former POL Pipeline and Power Plant; etc.) or a partial TCL which does not include PCBs, herbicides or pesticides. Site-specific information is detailed in Table 3-1 Proposed Sampling and Required QA/QC Samples, Phase 1 RCRA Facility Investigation, Camp Garcia - 2005.
2. Surface soil samples will be collected from the top 24". This is appropriate for ecological samples which are collected near water bodies and where there is concern for exposure to receptors which burrow in the soil; i.e. the land crab. However, the eight sites discussed in this document are not near water bodies, with the exception of the pipeline (Figure 2-12). Therefore, for ecological purposes it is recommended that surface soil samples be collected from the top 0-12", for these sites within Camp Garcia. The pipeline runs near (if not through) a wetland area and therefore the four proposed surface soil samples should be collected from the top 24".
3. No surface water or sediment sampling is proposed for any of these sites. There should be a discussion of the surface drainage patterns for these eight sites. Any pathways to the ephemeral stream located west of Camp Garcia or south/southeast of the pipeline should be discussed and surface water and sediment samples collected as necessary.
4. For each of the sites, the site summary should include more complete information on the period of time over which the site was used. If buildings are present, indicate the best estimate of when they were constructed or demolished. If scarring is noted from aerial photos, use the sequence of photos to bracket the time period over which activity took place.
5. Two of the PI/PAOC sites (PI4 and PAOC N) are proposed to have groundwater wells installed and groundwater tested as part of the RFI sampling. Please provide justification for the inclusion of groundwater sampling at these sites compared to the other six.
6. Camp Garcia has a number of sites in a fairly small area. As was done on the western end of the island, groundwater levels should be collected in a single round and the overall flow through the area should be presented in the report. Groundwater quality data should also be

presented and discussed together. The risk assessors involved in the project should be consulted on the efficacy of bringing all of this data together to address groundwater risk issues. To be clear, this includes all of the sites except PI-7.

7. Soil borings should be advanced to bedrock or the water table, whichever is encountered first. Subsurface soil sampling depths should target the horizon with the highest potential for contamination, based on visual observation and PID screening. If there are no indications of contamination, the subsurface soil samples may be collected from the 4-6 foot horizon (or, from just above the water table or bedrock if they are encountered at a more shallow depth). This comment applies to each of the areas to be investigated.
8. EPA recommends a minimum of 10 surface soils and 10 subsurface soils be collected in each area. This is the minimum number of samples necessary to evaluate data using statistics to determine upper confidence limits, rather than defaulting to the maximum detected concentrations. This also will increase the confidence in the data that the site is characterized adequately. As presented, several of the sites would have as few as four samples. It is extremely difficult to characterize a site with such a paucity of data, and it is not possible to represent these few data with one average value.
9. All maps of the areas of concern are of very poor quality. It is difficult to determine where historical buildings or other structures and features existed, where current buildings are, or what the land use is in the areas adjacent to the areas of concern. This information is important when identifying appropriate locations for additional sampling. Please provide maps or figures which characterize the areas more thoroughly.
10. The discussions and site summaries presented for each site are very poor. These discussions and summaries should contain information on the size of the area, adjacent land use, more detailed descriptions of former buildings, activities, and uses, and the current status of the site, how the proposed sample locations and the number of samples were selected, and why certain sites were not selected for groundwater monitoring wells.

### **Specific Comments**

11. Page 1-5, 2<sup>nd</sup> bullet, Section 1.1 Phase 1 RFI for Eight PI/PAOC Sites Objective: Screening level ecological risk assessments (SLERAs) should be prepared at all eight of the PI/PAOC sites, as indicated in Exhibit 3-1, Outline for Phase 1 RFI Report for the Eight PI and PAOC Sites. In a SLERA, maximum media concentrations are compared to appropriate ecological screening criteria to determine if there may be potential ecological risk at a site. Please note that all contaminants which do not have screening values should be carried through the risk assessment process, rather than being dropped out during the SLERA. A comparison to background concentrations does not get included in the preparation of a SLERA.

The second bullet also states that a human health risk assessment (HHRA) will be conducted if the detected contaminant concentrations exceed background levels and screening levels. EPA guidance recommends that the HHRA be conducted after appropriate risk-based screening (including identification of any Group A carcinogens and/or frequency of detection

screening) occurs and contaminant concentrations are found to exceed the chemical-specific risk-based concentrations. Any comparison of concentrations detected onsite with background would occur independent of the human health risk assessment

12. Page 2-1, Section 2.1, PI 4 – Former Helicopter Maintenance Area, Trenched Area, and Bermed Areas used for Fuel Bladder Storage: The text notes the presence of a disturbed area in the southeast portion of the site. From the description it appears that the area is distinct from the trenched area, but it is not identified on the maps. Please indicate any possible explanation for the disturbed area, its location, and show that it is being sampled.

Please indicate if the helicopter maintenance building is still present at the site - as well as any other features which remain intact. It is presumed from the description that, presently, there are no longer any buildings, only concrete pads - but this should be clarified.

13. Figure 2-1, PI 4 Proposed Sampling Locations: a) There is a white area in the southwestern portion of the figure. Please identify what this area is. If it presents any kind of environmental concern, then it should be sampled. b) This figure should be amended to indicate the location of all features at the site. Several of the things noted in the text and in photos are not depicted, including concrete pads, a manhole, and a concrete vault. Those features which are likely associated with the septic system need to be investigated as this is a possible means of contaminant release. c) The well locations are generally targeted to areas down gradient of potential sources. Wells should be placed right in potential source areas. As the trenched area is fairly large, an additional well should be added in the trenching area to look directly for sources, while the well to the southeast should be retained so as to cover the area more broadly. Note also that the location of the southeastern well is different in Figures 2-1 and 2-2. This should be amended for consistency, with the final location based on a topographic estimation of likely groundwater flow.

14. Page 2-5, Section 2.1.2, Previous Investigation Sampling Results: Sampling in the bermed area was only done for DRO and GRO. CERCLA bases actions on individual constituents and these sample parameters are not sufficient to rule out the possibility of contamination. Sampling of surface soils only, after many years since a possible release, is similarly incomplete. Two surface and subsurface samples should be collected from the bermed area and sampled for VOCs, SVOCs, and metals.

15. Page 2-6, Section 2.2.1, Site Summary: The northern portion of PI-7 is stated to have been “associated with the construction of a radar communication facility.” Please indicate if this location was in fact a radar station of some sort, or, if not, how it was “associated” with the construction. Greater detail is needed on what happened here to cause a ground scar - especially if no sampling is to occur.

16. Figure 2-4, PI 7 Proposed Sampling Locations: While the figure does put the area into general context, it is not sufficient to understand the site. A detailed, larger scale figure is needed which shows any specific site features. If this was a quarry that has been filled or partially filled with debris, it should be possible to depict the extent of quarrying activity and specifically where the debris is located. If this level of detail is not presently known, then a

more detailed survey and map preparation should be an element of the work plan. Final sampling locations and their distribution should not be determined prior to such an effort. Work at the site may need to progress with the work plan providing preliminary locations and numbers of samples, but then be amended and finalized in a technical memo.

At present, it is not possible to determine if the six sampling locations proposed are adequate or appropriate to characterize possible contamination.

Please explain why no samples are proposed for the northern portion of PI 7 and why all of the samples proposed for the southern portion of this site are concentrated to the southern end of the site.

17. Figure 2-5, photo 3, PI 7 Rubber Pipe: The 'rubber pipe' depicted is not mentioned in the text. Is this thought to be a significant feature or just discarded debris? Were any of the samples taken proximal to the 'pipe'? Were the ends of the pipe visible and did they lead to anywhere? Does the inside surface show any indication of what it might have been used for?
18. Table 2-1 Soil Sample Results at AFWTF-P17: Additional ecological soil screening values may also be used for those contaminants where screening values have not been provided by Efroymsen.

USEPA:

Ecological Soil Screening Level (Eco-SSL) Guidance and Documents  
[www.epa.gov/oerrpage/superfund/programs/risk/ecorisk/ecossl.htm](http://www.epa.gov/oerrpage/superfund/programs/risk/ecorisk/ecossl.htm)

Canada:

Canadian Environmental Quality Guidelines, Environment Canada [www.ec.gc.ca/ceqg-rcqe/](http://www.ec.gc.ca/ceqg-rcqe/)

The Netherlands:

Crommentuijn, T., M. Polder, and E. van de Plassche. 1997. Maximum Permissible Concentrations and Negligible Concentrations for Metals, Taking Background Concentrations into Account. Nat. Inst. Public Health and the Environ., Bilthoven, The Netherlands. RIVM Report 601501 001.  
<http://www.rivm.nl/bibliotheek/rapporten/601501001.html>

19. Page 2-11, Section 2.2.3, Sampling Rational: a) The work at PI-7 does not presently include any investigation of groundwater. A minimum of three water table wells should be added. As stated in the text, it is not clear what might have been used or disposed of at the site and there is a potential that the limited nature of soil sampling may miss a source. Groundwater sampling can often point to the existence of a source even when specific soil samples miss the contamination. Wells should be targeted with two directly in (and toward the

downgradient end of) potential source areas, as well as including an upgradient well. As with the soil samples, the final locations should be based on a better map. b) Based on unknown disposal, explosives should be added to the parameters list or soil and groundwater.

20. Section 2.3, PAOC-J, and Section 2.4, POAC-K: These areas directly abut one another, with soil sample locations from one located right next to the other. a) The sample from POAC-J which is right near the wash rack should be moved a bit to provide better overall coverage. b) Groundwater from the two sites should be investigated, and done so in a coordinated fashion. Install one well right in the location of the wash rack (could be installed in the center boring which is already planned), a second in the southern central portion of PAOC-J, and a third about 100 feet upgradient and to the northwest. The wells should be sampled for the same analytical suite as the soils.
21. Figure 2-8, PAOC L Proposed Sampling Locations: The scale bar on this figure appears to be incorrect. Please check and amend.
22. Page 2-16, Section 2.5.3, Sampling Rational: For PAOC-L, it is stated that an additional boring will be completed in the center of the site. This fifth boring is not included on the figure. Also, as the building is still standing, it is assumed that this will be done indoors. Please add text indicating what the floor of the building is made of and how the sampling will be accomplished.  
  
The southernmost boring should be completed as a well and sampled for the same suite of parameters as the soil borings.
23. Section 2-6, PAOC N: A “fuel building” is mentioned in the sampling section, but its location and history are unclear. As per the general comment above, please indicate a more precise history, including when each feature is thought to have been installed and demolished. Figures should show the exact location of each AST or other feature.
24. Section 2.6, PAOC-N, and Section 2.7 PAOC-S: These two areas appear to be right next to each other, with one of the planned sample locations from each PAOC located in roughly the same location. This should be brought out in the site history and the efforts at the two sites needs to be better coordinated.
25. Page 2-20, Section 2.6.3, Sampling Rationale: The text notes that three wells are planned for PAOC-N, but only two are shown on the figure. Well locations need to be better coordinated with PAOC-S work. The upgradient well for PAOC-N is quite close to a soil sample location for PAOC-S. This well should be moved to the northwest a bit to provide an upgradient point for both sites. Greater detail on the layout of ASTs and features at the power plant should be provided. This needs to include information on where fuel for the power plant was stored and the type of fuel used. With additional details it seems possible that an additional well will be needed at the PAOC-S site. This would mean a total of four wells for the two areas.

26. Page 2-20, Section 2.7.1, Site Summary: The description of the former POL pipeline and power plant is very limited. Information on the length of the pipeline, areas that the pipeline traversed, and the size of the power plant area should all be included in the site descriptions. This information is necessary to determine the appropriate locations for samples and monitoring wells.
27. Section 2.7, PAOC S - Former POL Pipeline and Power Plant: It would be useful if Figure 2-12 could show the location of the power plant, and Figure 2-13 could show the pipeline. It is confusing to have two figures which do not show how these areas (pipeline and power plant) are inter-related. Further, these figures should identify the wetland areas and any surface water pathways to these wetlands or lagoons.
28. Figure 2-12, Proposed Sampling Locations: It is presumed that the westernmost sample is in the area of the pipe terminus, where fuel was loaded into trucks. However, from the photo provided, it appears that perhaps this actually slightly off the road. As the regular filling of tanker trucks could have resulted in spills, this area should be given special consideration. Three samples targeted to the area where the trucks actually loaded (or to surface staining if present) should be included.
29. Section 2.8, PAOC U – Vehicle Maintenance Area: Please explain why no monitoring wells are proposed for the investigation of PAOC U.
30. Page 2-23, Section 2.8.1, Site Summary: A number of additional details are needed on PAOC-U. The text needs to indicate things like what was in the drums that were removed, if the batteries were all intact and full, and the period of time over which the area is thought to have been used for this storage.
31. Page 2-27, Section 2.8.2, Previous Investigation Results: The text notes various parameters that were the ‘not detected or below criteria’. Please note all anthropogenic compounds which were detected.
32. Page 2-28, Section 2.8.3, Sampling Rationale: Due to the storage of batteries in the area, the pH of soil samples should also be determined.
33. Section 2.8.3: A monitoring well should be added to the program and located in the area between the three buildings. Sampling parameters should match those in the soil samples. The upgradient wells for the other local sites can serve as a reference for PAOC-U as well.
34. Page 3-1, Section 3, Technical Approach and Investigation Procedures: It is indicated that “At sites where elevated metals concentrations (with respect to screening criteria) have been detected, a background investigation will be completed to assess whether the metals are site-related or are attributable to background conditions.” This should be reworded to note that the proposed background investigation will encompass Eastern Vieques, and will not be site-specific.

35. Page 3-5, Section 3.2.3, Monitoring Well Installation: When monitoring wells (or borings) are placed in bedrock, the bedrock needs to be cored and the core should be logged. Alternatively, a downhole televiewer capable of determining rock type and fracture orientation may be used if conditions allow. This issue has been raised in the past and the work plan should make it clear that this will be done. Logging of chips from the air hammer is not sufficient.
36. Section 3.2.6: It has been agreed in the past that the Navy would work towards meeting EPA Region 2's EDD formats. No discussion of the progress on this effort has occurred and the old Navy formats are presented here. The Region 2 EDDs are located on the following web page. They should be reviewed and a discussion on how to transition to these formats should ensue. <http://www.epa.gov/region02/superfund/medd.htm>
37. Page 3-19, Section 3.5, Task 5: Report, and Exhibit 3-1: Please indicate that a screening level ecological risk assessment (SLERA) will be conducted rather than an "ERA."



**U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION II**  
Division of Environmental Planning and Protection  
Strategic Planning and Multi-Media Programs Branch  
290 Broadway, 25th Floor  
New York, New York 10007-1866

## MEMORANDUM

DATE: January 27, 2005

SUBJECT: Comments on the Draft Site-Specific Work Plan Phase I RCRA Facility Investigation for Eight PI/PAOC Sites at AFWTF, Vieques Island Puerto Rico prepared by CH2MHILL dated November 30, 2004

TO: Tim Gordon, Project Manager  
DEPP, RCRA Programs Branch

FROM: Gina Ferreira, Environmental Scientist  
DEPP, Strategic Planning and Multi-Media Programs Branch

### General Comments

Two of the PI/PAOC sites (PI4 and PAOC N) are proposed to have groundwater wells installed and groundwater tested as part of the RFI sampling. Please provide justification for the inclusion of groundwater sampling at these sites compared to the other six.

Ecological Soil Screening Levels (EcoSSLs) developed by EPA should be used as ecological screening criteria for soil samples collected at the sites. There are currently nine ESSs and more planned for finalization by March 2005. These values can be found at the following website: <http://www.epa.gov/ecotox/ecossl/>.

The proposed shallow soil sampling depth is 0 - 2 feet. Previous shallow soil samples were collected from 0 - 6 inches. Provide justification for this change. If the 0 - 2 foot depth is sampled now, it will be difficult to properly compare the two datasets (previous and current).

### Specific Comments

1. Page 1-5, Section 1.1, 2<sup>nd</sup> bullet - Screening level ecological risk assessments (SLERAs) should be prepared at all eight of the PI/PAOC sites. In a SLERA, maximum media concentrations are compared to appropriate ecological screening criteria to determine if there may be potential ecological risk at a site. A comparison to background concentrations does not get included in the preparation of a SLERA.



COMMONWEALTH OF PUERTO RICO  
OFFICE OF THE GOVERNOR  
ENVIRONMENTAL QUALITY BOARD

ENCL. 6

January 25, 2005

Mr. Dale Carpenter, Chief  
Caribbean Section  
RCRA Program Branch  
US Environmental Protection Agency, Region II  
290 Broadway  
New York, New York 10007-1866

**RE: Review of Draft Site Specific Work Plan  
Phase I RCRA Facility Investigation for Eight PI/PAOC Sites  
Former Atlantic Fleet Weapons Training Facility (AFWTF)  
Vieques Island, Puerto Rico**

Dear Mr. Carpenter:

The Hazardous Waste Permit Division (HWPD) of the Land Pollution Control Area has finished the revision of the referenced document.

The revised document has the intention to describe the work that will be completed for the recommended Phase I RFI at two Photo Identified (PI) sites and six Potential Areas of Concern (PAOC) (PI 4, PI 7, PAOC J, PAOC L, PAOC N, PAOC S, and PAOC U) sites at the former AFWTF. The sites were recommended for further investigation in the Draft Phase I RFI Report Former AFWTF (CH2M HILL, 2004).

The document review was not scheduled as a commitment for the Second Quarter in the 2004-2005 RCRA Grant Work Plan negotiated between the USEPA Region II and PREQB, therefore, it is been submitted as additional work.

Enclosed you will find the comments on the above-mentioned document. Should you have any comments regarding this matter, do not hesitate to contact Mrs. Gloria M. Torograit, of my staff, at (787) 766-8117 or (787) 767-8181 extension 2853.

Cordially,

Julio I. Rodríguez Colón  
Director  
Land Pollution Regulation Program

xc. Timothy Gordon, RCRA Caribbean Section ✓  
Yarissa Martínez, PREQB

**Comments on Draft Site Specific Work Plan  
Phase I RCRA Facility Investigation for Eight PI/PAOC Sites  
Former Atlantic Fleet Weapons Training Facility (AFWTF)  
Vieques Island, Puerto Rico**

General Comments:

1. The Navy must take into account that the Draft Site Specific Work Plan (SSWP) Phase I RFI is being submitted and evaluated although the Draft Phase I RFI Report (CH2M HILL, June 2004), which recommends the eight PI/PAOC sites for a Phase I RFI is still under review for future approval.
2. In general, the document specify that the Site Specific "Phase I RFI Report will include a comparison of the site investigation results to background constituent concentrations to assess whether site-related contamination is present at each of the eight sites. This comparison will facilitate a preliminary estimate of the extent of contamination, if any, at each site. A work plan for the background study is being developed and will be submitted as a separate document from this SSWP."

It is unclear whether this background work plan refers to the Draft Final Work Plan and Sampling and Analysis Plan Soil and Groundwater Background Investigation (CH2M HILL, May 2004) that is currently under review by EPA and the PREQB. A clarification should be made in order to clearly state if the referred background investigation is the same. Considerations should be made regarding the uniformity of the investigation approach and sampling procedures to assure the comparability of the background results with this investigation results.

3. At page 3-2 on Section 3.1 it is stated that: "The Master Work Plan (MWP) for AFWTF (CH2M HILL, 2003) that is being used as guidance on the activities to be performed at each site for this investigation". The approved MWP included a Quality Assurance Project Plan (QAPP) that, among other things, establishes the Analytical Methods for the samples. At Table 3-2 and Table 3-3 of the SSWP the presented methods are not the same as in the QAPP.
4. The SSWP did not present as part of the sampling rationale the explanation of any sampling point selection strategy in order to assure a level of confidence and to guarantee that the samples are representative of the site's environmental conditions.

QA/QC Comments:

1. *General.* The Work Plan establishes that for all the PI/PAOC's, coordinates will be developed from the aerial photographs to identify the locations of the sampling points. It is recommended to perform a visual inspection of the sites before selecting the sampling points, usually, it can help to select the sampling strategy and to detect physical evidence of contamination on site. If it is not possible to visit the site

previous of the activities, the Navy has to be aware that the number of samples can be increased in the field if evidence of potential contamination is found (like stress vegetation and/or stained soils). It is also recommended that the coordinates be already established as part of the work plan development. Furthermore, it would be helpful for the reviewer that the process for selection of the sampling coordinates from the aerial photographs be explained.

2. *Introduction and Section 1.1.* A soil background study is proposed in order to develop background constituent concentrations. The sites that will be selected to obtain the background samples are of concern, since, most of these PI/PAOC are bounded or surrounded by other areas that were under investigation, are under ongoing study or has potential of being contaminated. In this sense, it must be demonstrate that the locations that will be selected for background samples are not impacted (see also, second paragraph of General Comment 2).
3. *Section 2.0, PI-4.* In the Figure 2-2, the location of one of the proposed monitoring wells was not included (see Figure 2-1).
4. *Section 2.0, PAOC-L.* The number of sampling locations is not clear. As understood four (4) samples will be obtained from the perimeter of the building and one soil boring will be completed in the center of the site. Clarification is needed if samples will be obtained from the boring that will be performed at the center of the site. It is recommended to obtain samples from this (center of the building) boring. Specify at the Work Plan the deep of this boring and the sampling parameters.
5. *Section 2.0, PAOC-N.* In addition of the proposed soil sampling parameters, it is recommended to include the parameters of Lead (Pb), Methyl tert-Butyl Ether (MTBE) and Total Petroleum Hydrocarbon (TPH).

Also, in this sub-part the Sampling Rationale established that three (3) groundwater wells would be established (2 down gradient and one up gradient). However, the figure 2-9, only showed the location of two (2) groundwater wells.

6. *Section 2.0, PAOC-S.* The Work Plan proposes to obtain four (4) soil samples through the POL pipeline. It is recommended to reduce the sampling interval in order to obtain more soil samples. In addition, it is necessary to performs a physical inspection of the pipeline at the field and increase the number of soil samples, if any visual evidence of contamination is identify, this approach does not constitute a modification of the pre-established sampling locations, just the addition of more if necessary.

7. *Section 3.0, page 3-1.* In this part the Navy establishes the following: "...a background investigation will be completed to assess whether the metals are site-related or are attributable to background conditions". Please, refer to comment #2.
8. *Section 3.0, Table 3-1:*
  - The table establishes, under the PI 4 column, that three (3) groundwater samples will be obtained. As established at Sub-section 2.1.3 (Sampling Rationale at Page 2-5) samples from the four (4) groundwater wells that were proposed (three (3) down gradient and one (1) up gradient) will be obtained.
  - The table establishes, under the PI 4 column, that for groundwater samples the parameter of explosives is not applicable. However, Sub-section 2.1.3 (Sampling Rationale-page 2-5) established that groundwater samples would be analyzed for explosives.
  - The table establishes, under the PAOC N column, that two (2) groundwater samples will be obtained. As established at Sub-section 2.6.3 (Sampling Rationale at Page 2-20) samples from the three (3) groundwater wells that were proposed (two (2) down gradient and one (1) up gradient) will be obtained.
9. *Section 3.0, Sub-part 3.2.3.* This Sub-part establishes that six (6) monitoring wells will be installed during the Phase I RFI. However, in accordance with Section 2.0 a total of seven (7) groundwater wells will be installed.
10. *Section 4.0.* At this part the Navy established that the subcontractors have not been established. It is necessary that the Navy establishes the kind of work or the duties that will be subcontracted.



COMMONWEALTH OF PUERTO RICO  
OFFICE OF THE GOVERNOR  
ENVIRONMENTAL QUALITY BOARD

ENCL. 7

January 25, 2005

Mr. Dale Carpenter, Chief  
Caribbean Section  
RCRA Program Branch  
US Environmental Protection Agency, Region II  
290 Broadway  
New York, New York 10007-1866

**RE: Review of Response to Comments by  
EPA Region 2 and the Puerto Rico  
Environmental Quality Board on the  
Draft Phase I RCRA Facility Investigation (RFI) Report  
Former Atlantic Fleet Weapons Training Facility (AFWTF)  
Vieques Island, Puerto Rico**

Dear Mr. Carpenter:

The Hazardous Waste Permit Division (HWPD) of the Land Pollution Control Area has finished the revision of the above-mentioned document.

The document review was not scheduled as a commitment for the Second Quarter in the 2004–2005 RCRA Grant Work Plan negotiated between the USEPA Region II and PREQB, therefore, it is been submitted as additional work.

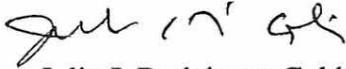
The revised document has the intention to address the comments generated as a result of the revision of the Draft Phase I RFI Report. The document included responses to comments generated by EPA Region 2, EPA CERCLA, and PREQB. The review was concentrated on the comments made by PREQB. In general the responses were adequate but few additional clarifications need to be made.

The responses to comments 10, 13, 15, 17 and 24 regarding SWMU's 5, 6 & 7, 8 and 12 respectively were partially adequate. At the mentioned SWMU's no groundwater samples were ever taken as part of the RFI. The proposed editions are fine but they should be also edited to exclude groundwater.

Comments 35 and 38 were adequately addressed, nevertheless, the explanation given should be included at the revised Phase I RFI Report. Additional, at comment 45 a typographical error was send unnoticed. The comment should read "The acronym POL at page 14-32 should be defined and added to the acronyms list". The references to pages 1-6, 3-6 and 14-9 were with the purpose of recommending revision for typographical errors. No matter the incurred typo the comment was adequately answered.

Should you have any comments regarding this matter, do not hesitate to contact Mrs. Gloria M. Toro-Agrait, of my staff, at (787) 766-8117 or (787) 767-8181 extension 2853.

Cordially,



Julio I. Rodríguez Colón  
Director  
Land Pollution Regulation Program

xc. Timothy Gordon, RCRA Caribbean Section ✓  
Yarissa Martínez, PREQB



COMMONWEALTH OF PUERTO RICO  
OFFICE OF THE GOVERNOR  
ENVIRONMENTAL QUALITY BOARD

January 25, 2005

Mr. Dale Carpenter, Chief  
Caribbean Section  
RCRA Program Branch  
US Environmental Protection Agency, Region II  
290 Broadway  
New York, New York 10007-1866

Dear Mr. Carpenter:

**Re: Responses to Comments by EPA Region 2 and the  
Puerto Rico Environmental Quality Board  
Review of the QA/QC Responses  
Draft Phase I RCRA Facility Investigation Report  
Atlantic Fleet Weapons Training Facility, Vieques**

The Land Pollution Control Area (LPCA) from the Puerto Rico Environmental Quality Board (PREQB) evaluated the Former Atlantic Fleet Weapons Training Facility (AFWTF) QA/QC responses to the EPA comment letter regarding the, "Draft Phase I RCRA Facility Investigation Report". After the evaluation, it was found that most of the comments were clarified, only three (3) responses included in the following, were not adequately addressed:

- EQB raised the concern that a licensed chemist with the authorization to practice the profession in Puerto Rico did not certify the sampling results. At the response, the company argued that there is no Federal requirement that a Puerto Rico-licensed chemist certify the sampling results under the RCRA or CERCLA program.

Even though it is not a requirement under the RCRA or CERCLA program, under the Puerto Rico Law # 97 from June 4, 1983; know as "Ley para Reglamentar la Profesión de Químicos en Puerto Rico", it is a requirement. Also, the Regulation for the Control of Hazardous Solid Waste (# 2863) from March 5, 1983, establishes at the Rule 204B (Test Methods) that, "...All chemical analysis shall be certified by a

*chemical engineer or chemist licensed in Puerto Rico*". Since, we are working under an Enforcement Agreement, it is our understanding that it is applicable.

- For the SWMU #1, the company indicated that only the groundwater wells MW-2 and MW-4 were analyzed for cyanide, sulfide and dioxins. At the Appendix H evidence was found of the laboratory analysis for the sulfide and cyanide parameters. However, no evidence was found of the analysis for the dioxin parameters. The company has to include at the Appendix H revision the Dioxins results from the wells MW-2 and MW-4.
- The company indicated that the dissolved metals results from the SWMU #1 (presented at Table 3-5) were included in Appendix H. At least, at the copy received at the EQB, evidence of these results was not found. Please, include it at the revision.

If you have any question regarding this matter, please contact Mrs. Marisol Marrero of my staff, at (787) 767-8181 extension 2842.

Cordially,

Julio Iván Rodríguez  
Director  
Land Pollution Control Area

C: Gloria M. Toro, Hazardous Waste Permit Division