



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**  
REGION 2  
290 BROADWAY  
NEW YORK, NY 10007-1866

MAR 30 2005

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

Mr. Kevin Cloe  
Navy Technical Representative  
Installation Restoration Section (South)  
Environmental Program Branch  
Environmental Division,  
Atlantic Division (LANTDIV), Code EV23KC  
Naval Facilities Engineering Command  
6506 Hampton Blvd.  
Norfolk, VA 23508-1278

Re: Naval Activity Puerto Rico (former Naval Station Roosevelt Roads) - EPA I.D. Number PRD2170027203

1. September 20, 2004 Final Corrective Measures Implementation (CMI) Design Package for Soil Remediation at SWMU 53 (former malaria control building)
2. September 22, 2004 Draft Final Additional Data Collection Investigation Report and Screening Level Ecological Risk Assessment (Step 3A) for SWMU 45 (Spill areas outside of old power plant, including cooling water tunnels).

Dear Mr. Cloe:

The United States Environmental Protection Agency (EPA) Region 2 has completed its review of the above documents which were submitted on behalf of the Navy by Baker Environmental, your contractor. The Final CMI Design Package for Soil Remediation at SWMU 53, incorporates revisions submitted with Baker Environmental's letter of September 20, 2004 to address EPA's August 20, 2004 comments. However, the revised Final CMI Design Package, though dated September 20, 2004, was actually submitted subsequently (on February 18, 2005) following EPA's preliminary approval of your September 20, 2004 revisions.

As part of our review, EPA requested our contractor, Booz Allen Hamilton, to review both documents. Based on Booz Allen's and our own reviews, EPA has found that the September 20, 2004 CMI Design Package for SWMU 53 has been acceptably revised to address EPA's comments, and is acceptable to undergo public notice and review as the proposed corrective measure for this SWMU.

However, while the September 22, 2004 Draft Final Additional Data Collection Investigation Report and Screening Level Ecological Risk Assessment (Step 3A) for SWMU 45 has been revised to acceptably address most of EPA's prior comments, certain sections still need to be revised and/or clarified to address the comments given in the enclosed Technical Review. Please note that, as briefly discussed with Mr. Felix Lopez of the U.S. Fish & Wildlife Service (FWS), and explained in the enclosed Technical Review, to better evaluate potential risks to the West Indian manatee, EPA recommends that the Navy develop a proposal to collect seagrass samples in areas of the bay potentially impacted by releases from SWMU 45, and analyze those seagrass samples for metals. Those results would then be incorporated into the revised Draft Final Additional Data Collection Investigation Report and Screening Level Ecological Risk Assessment (Step 3A) for SWMU 45.

Within 45 days of your receipt of this letter, please submit a proposal to collect seagrass samples in areas of the bay potentially impacted by releases from SWMU 45, and to analyze those seagrass samples for metals. Also, within 45 days of your receipt of this letter, please submit either a written response and/or an addendum to the September 22, 2004 Draft Final Report, addressing the other comments given in the enclosed Technical Review.

If you have any questions, please telephone me at (212) 637- 4167.

Sincerely yours,



Timothy R. Gordon,  
Remedial Project Manager  
Caribbean Section  
RCRA Programs Branch

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Enclosure

cc: Ms. Yarissa Martinez, P.R. Environmental Quality Board, with encl.  
Mr. Julio I. Rodriguez Colon, P.R. Environmental Quality Board, with encl.  
Mr. Felix Lopez, U.S. Fish & Wildlife Service, with encl.  
Mr. Mark Kimes, Baker Environmental, with encl.  
Ms. Kathy Rogovin, Booz Allen & Hamilton, w/o encl.

**TECHNICAL REVIEW OF THE SEPTEMBER 22, 2004, DRAFT FINAL  
ADDITIONAL DATA COLLECTION REPORT, SCREENING LEVEL  
ECOLOGICAL RISK ASSESSMENT AND STEP 3A OF BASELINE  
ECOLOGICAL RISK ASSESSMENT AT SWMU 45**

**NAVAL ACTIVITY PUERTO RICO  
CEIBA, PUERTO RICO**

**REPA3-1203-052  
March 25, 2005**

**I GENERAL COMMENTS**

1. In general, the Draft Final Additional Data Collection Report (ADCR) and Screening Level Ecological Risk Assessment (SLERA) and Step 3A of Baseline Ecological Risk Assessment (BERA) at SWMU 45 has adequately addressed previous EPA comments. The conclusions drawn from the recalculated risks to the West Indian manatee, however, may not be appropriate. Some concerns also remain regarding the presentation of statistical background comparisons. These issues are discussed in more detail in the comments below.
2. In general, the Navy's *Guidance for Environmental Background Analysis* (NFEC, 2002) and statistical analysis approach as presented in the flow chart shown in Fig 4-10a, is consistent with the statistical analysis process outlined in EPA's *Guidance for Comparing Background and Chemical Concentrations in Soil for CERCLA Sites* (EPA 540-R-01-003, September 2002). Based on the statistical results presented in Tables 4-27, 4-30, and 4-33, the Navy's determination of significance and conclusions of site concentrations either being statistically equivalent to or elevated from the background concentrations are consistent with EPA guidance. However, the tables do not provide support or justification for the use of particular statistical tests. The Navy should include notations in all statistical tables that support the use of a particular test to demonstrate that the appropriate tests were conducted. Without such notations, it is not apparent how the results in the tables relate to the statistical analysis process shown in Fig 4-10a. The tables should be revised accordingly. See Specific Comments 5 through 8.

**II SPECIFIC COMMENTS**

**Section 4.6.1.4.2 Aquatic Food Web Exposures, p. 4-28**

1. There are discrepancies between the results reported in this text section, and the results presented in Table 4-20. Specifically, this section indicates that four detected metals (arsenic, cobalt, mercury, and vanadium) had hazard quotient (HQ) values greater than or equal to 1.0 for one or more of the aquatic receptors. Based on Table 4-20, HQ values also exceeded 1.0 for cadmium, selenium, and zinc. NAPR should revise the text and/or

table to correct the discrepancy.

#### **Section 4.7.1.4.2 Aquatic Food Web Exposures, p. 4-48**

2. NAPR has not identified any potential risk drivers for aquatic food web exposures. While it is agreed that no further evaluation of risk to the belted kingfisher is necessary, it is not clear that no further evaluation is needed for the West Indian manatee. Maximum detected concentrations of arsenic, cadmium, mercury and selenium resulted in NOAEL-based HQ values of 39, 6.2, 21 and 2.3, respectively. Concentrations of these metals in Puerca Bay sediments were also significantly greater than background concentrations. NAPR indicates on p. 4-52 that selenium and cadmium should not be further evaluated based on a lack of detections in upgradient media at SWMU 45 and because these chemicals are not associated with historical activities at Building 38. No rationale is presented for excluding arsenic and mercury from further evaluation, but it is inferred based on discussion presented on p. 4-45 that NAPR has excluded arsenic and mercury for reasons similar to those cited for cadmium and selenium. This rationale is not sufficient for excluding these chemicals from further evaluation. Whether or not the elevated concentrations of these chemicals originated specifically from SWMU 45 is inconsequential; the important issue is whether or not the elevated concentrations are *facility* related. Given that concentrations exceeded background concentrations, it must be assumed that the contamination is facility related, unless NAPR can prove otherwise.

NAPR should present evidence that elevated concentrations are not facility related, or else arsenic, cadmium, mercury, and selenium must be carried forward into the baseline ecological risk assessment. It is emphasized that particular care must be taken in evaluating risks to the manatee because this species is known to frequent the Roosevelt Roads area, is listed as a federally endangered species, and is likely to draw public interest. It is recommended that NAPR collect seagrass samples for analysis of metals to further evaluate manatee risks in the baseline ERA.

#### **Section 4.7.2 Uncertainties Associated with the Refined Screening-Level Risk**

##### **Characterization, p. 4-53**

3. The uncertainty section does not include a discussion of the uncertainties associated with the statistical background comparison. This section should be revised to address the uncertainties associated with the use of the various statistical tests given the samples involved in the ERA.

**Table 4-20a.**

4. Table 4-20a, which should present risks to the West Indian manatee based on more conservative toxicity reference values, appears to have been inadvertently omitted from the document. This table should be added to the final version of this document.

#### Tables 4-27, 4-30, and 4-33

5. Student's t-test was used for chromium (Table 4-27) and total recoverable copper (Table 4-30) concentrations despite the small sample sizes. T-tests are usually used if a larger number of data points are available (>25). In the case of smaller data sets, t-tests can be used if the distributions are normal or lognormal. The tables should be revised to clearly indicate whether the data distributions are normal or lognormal to provide justification for using this parametric test.
6. Conversely, for dissolved copper (Table 4-30), with the same sample size and frequency of detection as total recoverable, the Wilcoxon Rank-Sum (WRS) test was used. It is not clear why the t-test was used for total recoverable copper concentrations and the WRS test used for dissolved fraction of copper concentrations. The table should be revised to add footnotes with data distribution information to clarify why this non-parametric test was used.
7. The Gehan test was used for the concentration distributions of tin (Table 4-30), with a small sample size ( $n=9$ =site measurements and  $m=9$ =background measurements). However, it is generally recommended that there be at least 10 data values in each data set to use the Gehan test. The table should be revised to indicate the rationale for using this particular test.
8. Tables 4-27, 4-30, and 4-33, include on the Mean of Distribution column header, a superscript (5) Normality verified with Shapiro-Wilks test; Homogeneity of variance verified with F-test. This footnote is unclear. If the footnote indicates that when parametric methods (e.g., t-test), are used, chemical concentrations have been verified to be normally distributed, whereas non-parametric methods (e.g., WRS test), are used for chemical concentrations that are not normally distributed, then it should be revised to more clearly state the rationale for the use of a particular test.