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June 12, 2009

U.S. Environmental Protection Agency - Region II
290 Broadway – 22nd Floor
New York, New York 10007-1866

Attn: Mr. Adolph Everett, P.E.
Chief, RCRA Programs Branch

Re: Contract N69450-08-R-0093
Corrective Action for SWMUs 14, 56, 68, and 69
Naval Activity Puerto Rico, Ceiba, Puerto Rico
U.S. Naval Activity Puerto Rico (NAPR)
EPA I.D. No. PR2170027203
Final Corrective Measures Study Final Report for SWMU 68

Dear Mr. Everett:

Right Way Environmental Contractors, Inc. (RWEC), on behalf of the Navy, is pleased to provide you with one hard copy of the replacement cover and spine, inside cover, signature page, and figure for the Draft Final Corrective Measures Study Final Report for SWMU 68. These replacement pages make up the Final Corrective Measures Study Final Report for SWMU 68. Directions for inserting the replacement pages for each report are provided for your use. Also included with each hard copy is an electronic copy provided on CD of the Final Corrective Measures Study Final Report for SWMU 68.

These documents are being submitted in accordance with the EPA comments dated April 23, 2009 and PREQB comments dated March 31, 2009. The Navy responses to these comments are attached for your review. Additional distribution has been made as indicated below.

If you have questions regarding this submittal, please contact Mr. Mark Davidson at (843) 743-2124.

Sincerely,
Right Way Environmental Contractors, Inc.



Pedro R. Tejada
Vice President

Attachments

cc: Ms. Debbie R. Sanders, BRAC PMO SE (letter only)
Mr. David Criswell, BRAC PMO SE (letter only)
Mr. Mark E. Davidson, BRAC PMO SE (1 hard copy and 1 CD)
Mr. Pedro Ruiz, NAPR (1 CD)
Mr. Tim Gordon, US EPA Region II (1 hard copy and 1 CD)
Mr. Carl Soderberg, US EPA Caribbean Office (1 hard copy and 1 CD)
Ms. Gloria Toro, PR EQB (1 hard copy and 1 CD)
Ms. Willmarie Rivera, PR EQB (1 CD)
Mr. Felix Lopez, US F&WS (1CD)
Mr. Michael Smith, TechLaw, Inc. (1 CD)

**NAVY RESPONSES TO EPA COMMENTS DATED APRIL 23, 2009 ON THE
DRAFT FINAL CORRECTIVE MEASURES STUDY FINAL REPORT FOR SWMU 68**

(EPA comments are provided in italics, while the Navy responses are provided in regular print)

1. *Evaluation of the Response to TechLaw General Comment 2: The response does not appear to adequately address the issue raised in the original comment. The original comment refers to the drainage feature extending east from the western-most 1961 polygon feature (shown as a blue line on Figures 2-4 and 2-5) while the Navy's response addresses a drainage feature located west of the western-most polygon feature. It is unclear whether the drainage feature extending east from the western-most 1961 polygon (shown in blue in Figure 2-4 and 2-5) has been adequately characterized at the time of the Phase I/Phase II Environmental Condition of Property (ECP) or Phase I RCRA Facility Investigation (RFI). Although portions of this drainage feature are included within the area proposed for surface soil removal (refer to Figures 3-1 and 5-1), the southeastern limits of any potential contamination associated with that drainage feature do not appear to have been previously defined, nor are they fully included within the proposed excavation area. Please revise the Response to indicate that confirmatory samples will be collected as part of the soil removal actions to confirm that all contaminated soils have been removed from the southeastern limits of this drainage feature (shown in blue in Figures 3-1 and 5-1). The CMS Report does not need to be revised. Specific details of any confirmatory sampling program recommended can be given in the CMI Design/work plan document when submitted. Alternatively, please submit a plan to conduct such soil sampling (to define the southeastern limits of contamination associated with that drainage feature) in conjunction with the PEM1 wetland delineation to be implemented prior to the soil removal actions.*

Navy Response to EPA Comment No. 1: As indicated by Figure 2-4, sample 14E-02 (collected during the Phase II ECP field investigation) was established at the terminus of the historical drainage feature. Detected copper, lead, and zinc concentrations in this surface soil sample (i.e., 28 mg/kg, 17 mg/kg, and 48 mg/kg, respectively) are less than CAOs. A Phase I RFI surface soil samples also was collected from the historical drainage feature (68SB08). Identical to 14E-02, copper, lead, and zinc concentrations detected in this surface soil samples (29J mg/kg, 53 mg/kg, and 51 mg/kg, respectively) are less than CAOs. The Navy acknowledges that soil along the portion of the historical drainage feature between the proposed excavation area and Phase I RFI surface soil sample 68SB08 has not been characterized. Therefore, the Navy will collect two additional surface soil samples from this portion of the historical drainage feature as part of the confirmation sampling program that will be detailed within the Corrective Action Project Plan (see Section 5.1.1). Each surface soil sample will be analyzed for copper, lead, and zinc.

2. *Evaluation of the Response to TechLaw General Comment 5: The response partially addresses the issue raised in the original comment. While it is acknowledged that the Draft Final CMS Report does not require the evaluation of additional chemicals and/or media, the Response should be revised to document that in future human health risk assessments conducted for NAPR, chemicals of potential concern (COPC) selection will be consistent with U.S. Navy Human Health Risk Assessment Guidance (2008). In addition, the Response should be revised to state that in future human health risk assessments conducted for NAPR, all chemicals detected above risk-based screening criteria will be retained as COPCs and assessed under total risk baseline conditions. The Response should also be revised to state that any chemicals detected at or below background levels (non-site related) will be discussed qualitatively as a part of the risk characterization process, typically in the uncertainty analysis, and not included in the quantified risk and hazard estimates. Please revise the Response to note these changes will be followed in future risk assessment methodology for all future human health risk assessments conducted for NAPR.*

Navy Response to EPA Comment No. 2: As stated in the Navy Response to Comments letter dated January 15, 2009, COPC selection in future human health risk assessments conducted for NAPR will include chemicals detected above risk-based screening criteria will be retained as COPCs and assessed under total risk baseline conditions (consistent with *U.S. Navy Human Health Risk Assessment Guidance* [2008]). As stated in the 2008 *U.S. Navy Human Health Risk Assessment Guidance*, those chemicals at or below background levels (non-site related) will be discussed as a part of the risk characterization and then exit the risk assessment process.

3. *Although revised Section 5.1.1 indicates that a Corrective Action Work Plan will be developed, and Section 5.2 indicates that a CMI Design and CMI Final Reports will be prepared. However, there is no indication of when these documents are to be submitted to EPA, nor is such submission reflected in the schedule provided in Figure 5-2. Please revise these sections of the CMS Report and the schedule provided in Figure 5-2 to clearly indicate when these documents will be submitted to EPA for review and approval.*

Navy Response to EPA Comment No. 3: Figure 5-2 has been revised to clearly show when the CMI Design, contractor planning documents (including the Corrective Action Work Plan), and CMS Final Report will be submitted to the EPA for review and comment.

4. *Also, by letter dated March 31, 2009, the Puerto Rico Environmental Quality Board (PREQB) has submitted two comments on the SWMU 68 CMS Report. PREQB's letter and two pages of comments are enclosed.*

Navy Response to EPA Comment No. 4: Navy responses to PREQB comments are presented below.

PREQB COMMENTS DATED MARCH 31, 2009

(The original PREQB comments, the Navy's original responses to PREQB comments, and PREQB's evaluation of the Navy responses are printed in italics, while the Navy responses to PREQB's evaluation of the Navy's original responses are provided in regular print)

Comment 6, Page 3-5, Section 3.2.2, CAO Development for Ecological Receptors. Please expand the discussion to support the assumption that "Subsurface soil (greater than one foot below the ground surface) represents an incomplete exposure pathway for ecological receptors." This exposure assumption should be based on site-specific data that demonstrate a lack of potential habitat for soil invertebrates and burrowing animals, such as land crabs that are known to burrow much deeper than 2 feet bgs in Puerto Rico. If the biologically active zone extends from 0 to 2 feet bgs (e.g., land crab burrows), the ecological CAOs also should be applied to subsurface soils to the depth to which fauna are likely to burrow at the site.

Navy Response to Comment: A review of the soil analytical data presented with Appendix A (Phase II ECP analytical data) and Appendix B (November 2006 Phase I RFI field investigation) indicates that copper, lead and zinc are not present in subsurface soil at concentrations greater than CAOs. However, given that subsurface soil samples collected during previous investigations were taken from depths greater than 2.0 feet, the Draft Corrective Measures Study Final Report will be revised to indicate an excavation depth of 2 feet. The Navy does not believe that an excavation depth greater than 2 feet is necessary based on available analytical data. It is noted that land crabs have not been observed at SWMU 68 during previous field investigations.

Evaluation of Response to Comment: The original comment sought scientific support for the presumed lack of a complete ecological exposure pathway for subsurface soils, not a discussion of excavation depths of exceedances of CAOs. Please clarify whether: (A) ecological CAOs were exceeded at depths greater than 2 feet bgs; and (B) the Navy considers the biologically active zone to extend down to a maximum depth of 2.0 feet bgs. If no CAOs were exceeded deeper than 2 feet bgs and soils exceeding CAOs will be excavated to depths of 2 feet bgs, then the comment is editorial, seeking justification for the presumed lack of an exposure pathway to bolster the ERA discussion. But if CAO exceedances occur deeper than 2 feet bgs, please support the presumed lack of a complete ecological exposure pathway for soils deeper than 2 feet bgs, by discussing whether: (A) there is there habitat suitable for the crabs or other wildlife that might burrow; (B) plants occur onsite that provide food for birds or other wildlife and are rooted deeper than two feet, thus providing a complete food chain exposure pathway to subsurface contaminants; and/or (C) contamination deeper than 2.0 feet could migrate to groundwater and subsequently be carried into nearby wetlands, where exposure would occur via surface water or sediments.

Navy Response to PREQB Evaluation of Response to Comment: As stated in the Navy's original response to the PREQB comment, copper, lead, and zinc were not detected in subsurface soil collected during the Phase II Phase I RFI field investigations at concentrations greater than CAOs. It is noted that subsurface soil at SWMU 68 was collected at depths greater than 2.0 feet below ground surface. Although, all exceedances of CAOs occurred in surface soil (collected from the 0.0 to 1.0-foot depth interval), excavation depths will extend down to a depth of 2.0 feet based on the lack of data from the 1.0 to 2.0-foot depth interval. It is noted that confirmation samples will be collected from the bottom of each excavation and analyzed for copper, lead, and zinc to provide additional verification that these three metals are not present at concentrations greater than CAOs in subsurface soil at depths greater than 2.0-feet bgs.

Comment 15, Appendix C, Table C-2. Please confirm that a dermal absorption fraction (ABS_d) of 0.03 (not 0.03%) and a gastrointestinal absorption factor (GIABS) of 1 were used in calculating dermal absorption associated with exposure to arsenic in soil. Please revise the footnote to accurately reflect the default ABS_d values used and indicate what GIABS value and toxicity criteria were used to calculate risk for arsenic in soil. Also, the EPA Regional Screening Level (RSL) table should be used as the reference for ABS and gastrointestinal absorption factors rather than EPA Region III. Note that it is the most up-to-date reference for toxicity criteria as well. Please revise the particulate emission factor to reflect the most recent EPA-recommended default value of 1.4E+09 m³/kg, as presented in the RSL table dated September 2008. Note that these changes are unlikely to alter the conclusions of the risk evaluation for arsenic; however, these changes should be implemented for accuracy and to ensure consistency with current EPA Region 2 policy.

Navy Response to Comment: The Draft Corrective Measures Study Final Report will be revised to include a table in Appendix C that includes all relevant toxicity factors used to calculate risk and hazard for arsenic exposures. Note that the toxicity values used in the preliminary evaluation were the most current values. Appendix C will also be revised to eliminate references to EPA Region III. However, the PEF used in the preliminary calculations will not be revised. The Preliminary Human Health Risk Calculations for Arsenic included in this Draft Corrective Measure Study Final Report were conducted as part of the EPA-approved Revised Final Phase I RCRA Facility Investigation Report for SWMU 68 (approved by the EPA in a letter dated August 11, 2008). It follows that all exposure parameters used calculations were approved at that time. However, as agreed upon in the January 9, 2009 conference call between the Navy, EPA and PREQB, EPA's current default PEF of 1.36E+09 m³/kg will be used in future human health risk assessments conducted at NAPR.

Evaluation of Response to Comment: For clarity, in addition to toxicity criteria, please include all exposure factors used to calculate cancer risks and noncancer hazards in the table to be added to Appendix C.

Navy Response to PREQB Evaluation of Response to Comment: All exposure factors are currently presented in Appendix C, Table C-2 in the Draft Final Corrective Measures Study Final Report – SWMU 68, dated March 5, 2009.