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**ADDITIONAL EPA COMMENTS ON THE  
DRAFT REMEDIAL INVESTIGATION REPORT  
SOLID WASTE MANAGEMENT UNIT 4  
FORMER NAVAL AMMUNITION SUPPORT DETACHMENT  
VIEQUES, PUERTO RICO  
AUGUST 2009**

**SPECIFIC COMMENTS**

1. **Section 2.2.7, Environmental Data Management, Regulatory Standards and Risk Based Screening Values, pages 2-23 and 2-24:** It would be helpful if, in the main body of the report, a table was included that listed the sources of all the regulatory standards and risk-based screening values that were used for screening of chemicals of potential concern (COPCs).
2. **Section 2.2.8, Ecological Survey, Crab Study, page 2-25:** The description of the June 2005 crab study is misleading. It implies that the sampling was focused in and around Boca Quebrada within SWMU 4. The study actually involved the collection of five to six land crab and composite fiddler crab samples from 12 sampling locations around Vieques that represented potential or known land crab harvest areas. In addition, two reference areas, one on Vieques and one on the main island of Puerto Rico, were sampled. Only one of the 12 sampling locations was located within SWMU 4 in the vicinity of the lagoon and ephemeral stream. Whole body individual land crab analysis was conducted. Whole body composite fiddler crab analysis was also conducted to serve as an additional indicator species for potential contaminant uptake. The text should be modified to reflect this information.
3. **Section 4.2.3, Surface Water and Sediment, Inorganic Constituents, page 4-17:** The report notes that no background data are available for the surface water and sediment inorganic compounds, yet COPCs for these compounds are compared to background data for these media in the Ecological Risk Assessment in Appendix W in Tables W-34 and W-35. Further, background values are also provided in Table 22 Background Data of the Ecological Risk Assessment Protocol. This discrepancy should be corrected.
4. **Section 9.3, Proposed Future Action, page 9-11:** The Navy proposes to separate SWMU 4 into two operable units for the purposes of characterization and remedial decision making: terrestrial (including the lagoon and ephemeral streams) and marine. It is noted that this separation will allow for the terrestrial portion of SWMU 4 to move forward in the CERCLA process to remedy selection before the marine portion is characterized. Further, the marine portion of SWMU 4 would be combined with other marine sites around Vieques. This implies that the lagoon will not be surveyed for underwater munitions. The sampling conducted in Laguna Boca Quebrada and the ephemeral stream was designed to focus on evaluating what may be migrating from the OB/OD pits. However, the surface water and sediment data collected to date

may not be sufficient to answer the question of whether munitions that may be underwater in the lagoon are leaking, and whether the biota are being adversely impacted. Therefore, it is recommended that all aquatic portions of this site be included in future MEC investigations of marine sites around Vieques. If MEC are determined to be in the lagoon, additional sampling of surface water, sediment and biota in close proximity to known locations of munitions would be warranted to determine any potential impact to biota.

5. **Appendix W, Ecological Risk Assessment, Section 1.2.2, Summary of Available Analytical Data, page 1-7:** The report notes surface soil and sediment samples were obtained from 0 to 2 feet bls. This appears to contradict the statement on page 1-13 (Section 1.3.2, Data Groupings) which indicates surface sediment samples were collected from 0-6 inches. Clearly indicate the depth of surface soils and sediment samples used in the ecological risk assessment.
6. **Appendix W, Ecological Risk Assessment, Section 1.2.2, Summary of Available Analytical Data, page 1-7:** Sub-surface sediment samples were also collected but they were not evaluated for ecological risk to aquatic organisms. One of the reasons sub-surface sediment data were collected was because the sediment in the lagoon appeared to have two distinct phases to it: a loose layer designated as “fluff” in the 0-6” depth and a more compacted layer beneath the “fluff” up to a depth of 1 foot bgs (Main Text, Section 2.2.3, Surface Water and Sediment, page 2-19). It is possible that both layers are biologically active and that the fluff layer may not always be present depending up the flow within the lagoon complex during periods of high precipitation. Therefore, subsurface sediment data should be considered in the ecological risk assessment.
7. **Appendix W, Ecological Risk Assessment, Table W-2, Samples Used in the Ecological Risk Assessment:** Sample depth is noted in inches in this table, and surface soil samples appear to range in depth from 0-1,” 0-2” and 0-6.” Please review the sample depths in this table and address inconsistencies between the table and the text which indicates surface soil samples were collected from the top 2 feet (Section 1.3.2, Data Groupings, page 1-13).
8. **Appendix W, Ecological Risk Assessment, Section 1.2.3, Conceptual Model, Exposure Pathways and Routes, page 1-9:** Please include fish in the receptors identified for complete exposure pathways to aquatic receptors.
9. **Appendix W, Ecological Risk Assessment, Section 1.4.2, Ingestion TRVs, page 1-19:** The second paragraph refers to Table P-19, however this table was not included in Appendix P. Please identify the correct table where these uncertainty factors may be identified.
10. **Appendix W, Ecological Risk Assessment, Section 1.5, Risk Characterization, page 1-20:** It should be clearly noted that these additional factors (frequency of detection and background concentrations) are considered after the initial screening

level ecological risk assessment is complete and preliminary COPCs are identified. During Step 3A these factors may be considered in refining the COPC list.

- 11. Appendix W, Ecological Risk Assessment, Section 1.5.1, Comparison with Medium-Specific TRVs, page 1-21:** It should be noted whether COCs are considered Step 2 COCs based on hazard quotients generated from reporting limits, as per Table W-24 Screening Statistics – SWMU 4 Surface Soil.
- 12. Appendix W, Ecological Risk Assessment, Section 1.5.1, Comparison with Medium-Specific TRVs, Surface Sediment, pages 1-22 and 1-23:** SEM/AVS ratios should not be used to refine the COPC list without field studies to confirm the bioavailability of contaminants.
- 13. Appendix W, Ecological Risk Assessment, Section 1.5.3, Risk Evaluation, page 1-24:** All contaminants which do not have screening values should be retained in the risk assessment and discussed in the Uncertainty Section. Similarly, contaminants which appear in blanks should also be retained and discussed in the Uncertainty Section.
- 14. Appendix W, Ecological Risk Assessment, Table W-14, Exposure Parameters for Upper Trophic Level Ecological Receptors – Baseline:** Please discuss the area use factor (AUF) used to calculate exposure.
- 15. Appendix W, Ecological Risk Assessment, Attachment 1, Calculated EqP Sediment Values:** These values should be included in the “Ecological Risk Assessment Protocol for Vieques Environmental Restoration Program. Further, please identify the location of Table P-17, as this table is not in Appendix P.