UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
CARIBBEAN ENVIRONMENTAL PROTECTION DIVISION
CENTRO EUROPA BUILDING, SUITE 417
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SAN JUAN, PR 00907-4127

February 5, 2008

Mr. Kevin Cloe
Project Manager
Commander Atlantic Division
Naval Facilities Engineering Command
6506 Hampton Boulevard
Norfolk, VA 23508-1278

Re: Review of the Draft Remedial Investigation Report for AOC I at the Former US Naval Ammunition Support Detachment (NASD) Vieques Island, Puerto Rico

Dear Mr. Cloe:

The U.S. Environmental Protection Agency (EPA) completed the review of the Draft Remedial Investigation Report for Area of Concern (AOC) I, Former Asphalt Plant, Former Naval Ammunition Support Detachment dated November 2007. Enclosed you will find our comments.

If you have any questions or comments, please contact me at (787) 741-5201.

Sincerely,

Daniel Rodríguez
Remedial Project Manager
Response and Remediation Branch

Enclosure

cc: Josefina González, EQB, w/ encl.
Richard Henry, FWS, w/encl.
Brett Doerr, CH2M Hill, w/ encl.

EPA Comments on the Draft Remedial Investigation Report
Area of Concern (AOC) I
Former Naval Ammunition Support Detachment
Vieques, Puerto Rico
November 2007

General Comments:

1. The report makes conclusions on the soil contamination at the site based on data obtained in the 2000 (PA/SI work plan) and the 2004 (RI/FS work plan). However, limitations of the use of this historical data were not evaluated. The RI report and the Data Quality Evaluation report should describe any differences in the methods used for collection, analysis and data validation of this data, and whether these two sets of data could be directly compared.

2. Please revise the HHRA to more clearly state that the site is fenced and there is no current exposure to trespassers or any other populations.

Specific Comments:

3. Executive Summary, page ES-3: In the discussion of comparing concentrations of constituents in surface soil to background values, it should be clearly noted that this comparison was only for inorganics.

4. Section 2.3.4, Hydrology and Hydrogeology, page 2-6:

   a. Differences in the groundwater levels at the site varied from 4 to 5 feet between January 2006 and March 2006, with the lowest levels observed in March. The highest water elevations should also be depicted on Figure 2-8, with an indication of the depths and locations of the elevated OVA readings detected in the rock at locations MW04 and MW07. These OVA readings should also be included in the text (Section 4.2.3) with a discussion of the potential of contaminant flushing with fluctuating water levels. Consideration should be given to collecting and analyzing a sample to determine contaminant concentrations in the rock and the potential of a source of groundwater contamination within the rock.

   b. Tidal fluctuations and potential shifts in groundwater flow directions should be investigated.

5. Section 4.0, Nature and Extent of Contamination: The discussion of the sample results includes comparisons of on-site data to background

concentrations. EPA is concerned with how some of these comparisons are shown. For example in Section 4.2.2.3, Inorganic Constituents, on Page 4-9, there is discussion of the arsenic concentrations. The text states that the on-site concentrations exceed the background levels "...but by only a small amount (i.e., by 6 ug/L or less)." This is confusing, because a difference of 6 ug/L does not accurately provide context for the comparison. A difference of 6 ug/L could be a significant concern, if that is the difference between compliance with an MCL or not. It might be helpful to provide more context for this comparison. For example, relative percent difference between on-site and background concentrations might be a way of demonstrating similar concentrations. Also, it might be helpful to compare concentrations to ARARs such as MCLs; compliance with MCLs would be another line of evidence to demonstrate no site-related impact. Please review this type of comparison through the chapter to more clearly present the on-site concentrations relative to background levels.

6. Section 4.1, Summary of Detected Constituents, page 4-1, and Table 4-2: The text indicates that site-specific SSLs were calculated for AOC I, yet Table 4-2 indicates that Region IX SSLs were used. Please clarify.

7. Section 4.2.2.3, Inorganic Constituents, page 4-8: The document indicates that although inorganic concentrations (i.e., arsenic) in the groundwater were detected above MCLs, they are likely attributed to background even though concentrations in the background well were not elevated. Data from other background wells in the vicinity of AOC I, or in the same geologic material should be assessed prior to concluding that the inorganics are not site related.

8. Appendix M, Human Health Risk Assessment, Section M.4.4, Toxicity Values for TCE, page 4-2: The approach for evaluating TCE is not consistent with Region 2. The Region 2 approach quantifies risk from TCE using the draft provisional 2001 NCEA toxicity values for TCE. If these values result in risk/hazard outside the acceptable risk range, then the uncertainty section can include risk estimates based on other toxicity values, such as those developed by CalEPA and discussions of how the risk range likely covers the actual risk associated with TCE. Table M-7 also requires revision based on this approach.

9. Appendix M, Attachment 1, RAGS Part D Tables:

   a. Table 4.2: The PEF value used is the default from EPA's Soil Screening Guidance. Please consider using a site-specific PEF to account for the correct size, vegetation, etc. that would influence particulate emissions.

   b. Table 10.7: The risks presented in this table, which is an aggregate of

10. Appendix N, Ecological Risk Assessment:

a. Section N.2.1.3, Habitats and Biota, page N-4: The reference site used was an area described as being "highly disturbed by mowing and deposition of gravel." A disturbed area is not an appropriate reference site.

b. Section N.2.1.5, Summary of Available Analytical Data, page N-5: It is noted that surface soil samples consist of samples collected from the top 6" (26 soil samples) and top 2' (18 soil samples). Therefore, there should be some discussion regarding the potential uncertainty in combining data sets in Section N.4 Uncertainties. In addition, it should be noted that the 0-6" depth range may over- or underestimate actual exposure.

c. Figure N-1, Ecological Conceptual Model: It is more appropriate to discuss absorption for plant exposure rather than dermal contact. The figure should also illustrate ingestion of contaminated foods (plant and/or animal tissue) in addition to soil ingestion.

d. Section N.2.1.9, Exposure Pathways and Routes, page N-6: Although there may not be aquatic habitat, it is noted that Marine toads and marine toad tadpoles were observed in the water-filled concrete structure (page N-4).

e. Tables N-5, N-6 & N-7: Please include all references cited in these tables in Section N.5 references.

f. Table N-7, Exposure Parameters for Upper Trophic Level Ecological Receptors – Step 2, provides the dietary composition for each of the five receptors. Although the Pearly-eyed thrasher, Norway rat and Indian mongoose are considered terrestrial omnivores (Table N-4), this is not reflected in the dietary composition provided in this table. It is understood that this allows for a more conservative calculation, however the risk hypotheses should be modified to reflect a diet consisting of only one type of food source (soil invertebrates or terrestrial plants).

g. Section N.2.2.1, Exposure Estimation, page N-9: All contaminants in exceedances of screening values should be evaluated for exposure via food webs.

h. Section N.2.2.2, Screening Exposure Point Concentrations, page N-9: Please note that the reference for deriving soil-to-plant BCFs (rather than sediment-to-plant BCFs), specifically Attachment 4-1 Exposure Factors and Bioaccumulation Models for Derivation of Wildlife Eco-SSLs) of EPA's Ecological Soil Screening Levels, was updated in August of 2007 and therefore this equation may not adequately reflect changes to the reference document.

i. Section N.2.3.1, Medium-Specific Screening Values, page N-11: It should be noted that soil screening values for several contaminants have been modified, and additional contaminants have been added to EPA's Ecological Soil Screening Level list. Specifically, copper, dieldrin, and pentachlorophenol were updated in 2007 and manganese, nickel, selenium, silver, zinc, DDT and metabolites and total PAHs were added to the list of available screening values (http://www.epa.gov/ecotox/ecossl/). These values should be added to Table 4-1 Surface Soil Detection and Exceedance Results, Table 8-1 Surface Soil Summary Statistics and table N-11 Step 2 Screening Statistics and COPC Selection –Surface Soil.

j. Section N.2.4.3, Food Web Exposures, page N-13: It is noted that in comparison to NOAELs, nine metals had HQs greater than "1". Although these metals did not necessarily exceed surface soil screening values, they are included in the table on bioaccumulative compounds (Table 4-2) *In Bioaccumulation Testing and Interpretation for the Purpose of Sediment Quality Assessment* (EPA, February 2000) and therefore were included in the food web modeling. This information should be clearly noted with the ecological risk assessment appendix.

k. Table N17, Summary of COPCs – Step 2: It would be helpful to note that chemicals identified as COPCs for food web modeling, were identified based on exceedance of NOAELs, rather than LOAELs.

l. Section N.3.1, Refinement of Conservative Screening Assumptions, page N-13 and Table N-7, Exposure Parameters for Upper Trophic Level Ecological Receptors – Step 2: Please include information about the home range of the selected upper trophic level receptors. Although these upper trophic level receptors may be highly mobile and thus averaging their exposure over time, it should be noted that they may be feeding at another AOC or SWMU which may have similar contaminants present. Therefore, it cannot be assumed that the average contaminant concentrations in the food sources are less than the concentration of contaminants on site.

m. Section N.4, Uncertainties, Spatial Distribution of Samples, page N-18: It is noted in this Section that the site encompasses approximately 2 acres. However, the main text of this report indicates that this site is approximately 1 acre in size. Please clarify the size of the site.