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LETTER OF TRANSMITTAL AND U S EPA REGION IV COMMENTS ON DRAFT REMEDIAL INVESTIGATION/RESOURCE CONSERVATION AND RECOVERY ACT FACILITY INVESTIGATION FOR SITE 12 JERICHO ISLAND DISPOSAL AREA MCRD PARRIS ISLAND SC

2/1/2001

U S EPA REGION IV

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CERTIFIED MAIL
RETURN RECEIPT REQUESTED

4WD-FFB

2/01

Brigadier General Stephen A. Cheney
Commander
Marine Corps Recruiting Depot - Parris Island
P. O. Box 19001
Parris Island, SC 29906-9001

SUBJ: Draft Remedial Investigation/RCRA Facility Investigation Report
Site 12/SWMU 10 – Jericho Island Disposal Area
Marine Corps Recruit Depot Parris Island, South Carolina
EPA ID#: SC6170022767

Dear General Cheney:

The U.S. Environmental Protection Agency (EPA) has received and reviewed the above referenced document. EPA's comments are enclosed. Based on the data presented, EPA recommends that the Navy focus on a narrow set of alternatives that include off site disposal and land use controls that restrict residential development and restrict the use of site groundwater in the Feasibility Study.

If I can be of assistance in any way or you have questions about these comments, please call me at (404)562-8506.

Sincerely,

Robert H. Pope
Federal Facilities Branch
Waste Management Division

cc: Tim Harrington, MCRD
Jerry Stamps, SCDHEC
Don Hargrove, SCDHEC
Art Sanford, NAVFAC

Draft Remedial Investigation/RCRA Facility Investigation Report
Site 12/SWMU 10 – Jericho Island Disposal Area
U.S. Marine Corps Recruit Depot, South Carolina
EPA ID# SC6170022762

General Comments:

1. The RI/RFI Report presents the data clearly and concisely. The technical approach, data presentation, and conclusions are consistent and adequately substantiated. However, the report should be reviewed by a technical editor as there are sentence fragments, redundant phrases and other grammatical errors, particularly in section 3, which need to be corrected.

2. The data collected appear to be of sufficient quantity and quality to support decision making, and the general conclusions of the RI/RFI Report are reasonable. Since the waste and debris appear to be of limited quantity and dumped at the surface, clean-up and off site disposal of the waste may be an acceptable remedial alternative. EPA recommends that the Navy focus on a narrow set of alternatives (i.e., no action and clean-up with off site disposal and land use controls that restrict residential development and use of the groundwater) through a Focused Feasibility Study.

3. It is recommended that PAHs be screened without using surrogates for PAH compounds for which a screening value is not available. Since most PAHs act with a similar toxic effect, screening the total PAHs (where applicable) should be adequate to evaluate those PAHs without screening values.

4. The food chain model included in this risk assessment should be removed from steps 1 and 2 and (if included at all) be included after COPC refinement for those contaminants expected to present potential risk via trophic transfer.

5. A closer evaluation of detection frequency needs to be included in this report. Numerous COPCs (which have maximum concentrations that exceed the associated screening values) are eliminated in Step 3a based on their limited frequency of detection above the sample quantitation limit (SQL). However, in many cases the SQLs reported for the contaminants exceeded the ecological screening value for the contaminant. Therefore, this rationale for eliminating COPCs is questionable. Examples of contaminants to which this applies to includes: PAHs, pesticides, and several metals.

6. For clarity, it is recommended that COPC refinement included in Step 3a be presented by assessment endpoints after the abiotic screen has been completed. Step 3a should include refinement of COPCs by evaluating their potential effect to all identified assessment endpoints. As it is currently presented, it appears that the refinement still focuses on evaluating COPCs primarily by conducting food chain models. The original abiotic screen identifies potential risk to the first of the assessment endpoints for this site (soil and/or sediment dwelling invertebrate communities) that is not adequately discussed in the COPC refinement section.

7. The food chain model included in this report contains several factors that are not adequately conservative for a screening level ecological risk assessment in which limited site specific data is available. It is recommended that the ecological sub-committee develop a more appropriate food chain model for use in evaluating contaminants expected to bioaccumulate in Step 3 of the risk assessment process.

Specific Comments:

1. **Page 1-3, Section 1.4.2, 2nd paragraph, 1st sentence.** The text refers to three surface debris areas, but the referenced figure (Figure 1-2) illustrates only two. It appears the east-central upland debris pile is not shown. Revise the figure for completeness.

2. **Pages 2-1 and 2-2, Sections 2.2 and 2.3.** Information regarding the specific topography and surface water drainage for Jericho Island should be included along with the general MCRD description. For example, no perennial streams are apparent on Jericho Island, and surface water is expected to move by overland flow to a poorly defined radial network of swales, discharging to the surrounding marsh.

3. **Page 3-7, Section 3.2.7, 2nd sentence.** Please clarify why falling head tests were not conducted in these wells. It is assumed that this is because the well screens partially penetrated the water table.

4. **Page 3-11, Section 3.4, 4th paragraph, last sentence.** Please provide potentiometric contour maps of the shallow and deep water table to substantiate the radial groundwater flow. Also, it appears that the deep and shallow water tables are significantly higher at the southern margin of Jericho Island than anywhere else measured. Discuss the significance of these measurements.

5. **Figures 3-1 through 3-4.** Drawings illustrating the topography, roads, debris piles and sampling locations at a smaller scale would provide a more useful and readable base map than the aerial photograph. The proximity of the sampling locations to the debris piles should be evident on the revised maps. Smaller scale maps would also support planning and volume estimating for the feasibility study.

6. **Page 4-1, 3rd paragraph.** The 1995 data do not appear to be included in Appendix C, please include the data or provide a reference for the source of this data. Additionally, there appears to be a wide range of reported detection limits for the various analyte groups. Provide a discussion relating the achieved detection limits to the relevant screening levels, and, in cases where the reported detection limit exceeds the screening level, how the data was managed (e.g., included at ½ the detection limit or treated as zero).

7. **Page 4-5, Section 4.2, 4th paragraph, 6th and 7th sentences.** These two statements appear to be contradictory. Please clarify whether the statement that no ecological screening criteria were exceeded is intended to apply to unfiltered results only.

8. **Page 4-9.** Provide an additional section to summarize the nature and extent findings across the various media relative to their spatial distribution and the potential source materials. For example, in the vicinity of the east central debris pile various SVOCs were detected above screening levels in surface soil, surface water and sediment which may be consistent with degradation of plastic and asphaltic debris. Similar discussion contrasting the detected metals with background concentrations and waste materials should be included. Additionally, provide discussion regarding the VOCs detected in the various media (i.e., are they waste derived or laboratory contamination). Considering the nature and age of the waste materials, the climate at MCRD, and the results of the organic data validation, the VOC results may be questionable.

9. **Page 4-33, Figure 4-5**. The sediment screening value for mercury is incorrectly listed as 15.9 mg/kg. This figure should be corrected with the appropriate sediment screening value for mercury (0.13 mg/kg).

10. **Page 5-2, Section: 5.2.2, 2nd paragraph.** This paragraph discusses the bioaccumulation/bioconcentration of PAHS. However, for most species the PAHS are metabolized readily and do not accumulate in the higher trophic levels. It is suggested that this paragraph be revised and referenced.

11. **Page 5-2, Section: 5.2.3, 6th paragraph, 3rd sentence.** This sentence states that the mobility of metals generally increases with decreasing pH and cation exchange capacity. However, this is true for only the metals existing as cations. Metals such as arsenic and hexavalent chromium usually exist as anions (arsenate and chromate) and will migrate more readily with increasing pH. Revise the sentence to discuss the metal COPCs (i.e. lead). Follow this discussion through to Table 5-2.

12. **Pages 7-26 through 7-45, Section 7.8**. Currently contains statements that do not appear to be supported by the data presented in the tables for this section. As with Site 1/41, it is recommended that the COPC refinement for this site be re-evaluated by the ecological subcommittee and then once the subcommittee has reached consensus the COPC refinement section of this report be revised.

13. **Page 7-16, Section 7.4.2.1.** The text presented on this page is not consistent with the equation shown for evaluating risk to the red drum on page 7-20. The text states that prey items for the red drum are assumed to be exclusively mummichogs; however; the equation on page 7-20 indicates that three separate prey items were used in estimating exposure to the red drum. It is recommended that the rationale for selecting a representative prey item for the red drum be presented. The representative prey item should be the one assumed to represent the highest exposure potential for that organism. These types of assumptions should be presented and agreed upon prior to submittal of any food chain model. This, and other areas of uncertainty inherent in food chain models, could be addressed by the ecological sub committee and proposed for use in future food chain models.

14. **Page 7-18, Section 7.4.3.1.** It is unclear why a detailed discussion of estimated red drum exposure to mercury is presented; however no other contaminants (or assessment endpoints) have similarly detailed discussions.

15. **Page 8-1, point 4.0, 1st sentence.** The text states that four inorganics exceeded human health criteria, but two are indicated on Table 4-8 and are parenthetically noted within the referenced sentence. Please correct/clarify this statement.

16. **Page 8-2, Section 8, 5th Paragraph, 1st Sentence**. This paragraph should be reworded as follows for the human health portion: *The analytical data for SWMU 21 suggests that there is no additional risk for the maintenance and construction workers. Residential risk was not considered. At the current time there is no evidence that the contamination is more or less extensive than observed.*

17. **Page 8-4, point 6.0, last bullet.** Each of these points appears to be reasonable and germane to the risk management decisions for this site. Additional information should be included in Section 4.0 to support these conclusions (see Specific Comment 8).

18. **Page 8-5, points 9.0 and 10.0.** These points should be combined, a single action recommendation should be presented based on results from all media. The FS/CMS should consider clean-up and off site disposal of wastes in all three of the identified debris areas. The Navy can compare this approach to clean-up of the wastes in the southernmost area only as part of the FS/CMS. Additionally, it is recommended that the FS/CMS use a focused approach (see General Comment 2).

19. **Page 8-5, point 12.0.** While it is agreed that the groundwater exceedances are of limited concern, the proposed clean-up approach (southernmost area only) would not be expected to minimize future potential groundwater impacts (if these COPCs are related to site wastes, see Specific Comment 8). All of the organic compounds, as well as a portion of the inorganic compounds, are associated with wells that are up-gradient or cross-gradient to the southernmost area (based on radial groundwater flow). This provides an additional reason to clean-up all identified debris areas - to be protective of groundwater.

20. **Appendix A.** Manually recorded field data sheets and chain-of-custody forms have some documentation QA/QC discrepancies that are consistent with discrepancies noted for previously reported field activities performed during the same time period (e.g., chain-of-custody #02227 includes un-initialed cross-outs, and an unaccounted period of time between relinquishing the samples and laboratory receipt). Please continue to take steps to eliminate these problems in future investigation efforts.

21. **Appendix D.** It is noted that this appendix includes the RBC Tables in their entirety, as well as the Drinking Water Advisories. It is not necessary to include these tables, as they are standard tables readily available. This will reduce the bulk of Appendix D.