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June 13, 2002

Project Number N4152

Mr. James Shafer  
Remedial Project Manager  
EFA Northeast, Naval Facilities Engineering Command  
10 Industrial Highway, Mail Stop 82  
Lester, Pennsylvania 19113

Reference: CLEAN Contract No. N62472-90-D-1298  
Contract Task Order No. 0833

Subject: Response to Comments, Draft Final Feasibility Study  
Old Firefighting Training Area (OFFTA)  
Naval Station Newport, Newport Rhode Island

Dear Mr. Shafer:

Attached you will find responses to comments to the Draft Final Feasibility Study for the OFFTA site. Comments were received from RIDEM, NOAA, and EPA at the end of April, 2002.

Many of the comments requested a groundwater alternative evaluation. In accordance with discussions held May 16 and May 23, 2002, three groundwater alternatives will be added and evaluated in the final FS: no action, limited action (land use controls and monitoring) and one active remediation alternative (pump and treat).

Other comments focused on the need to better define the sediment action areas. At the meeting held on May 30, 2002, NOAA and EPA agreed that excavation of the eelgrass should not be conducted unless the area or concentrations of contaminants exceeding ecological risk-based PRGs are found to be greater than current data shows. Based on this tentative determination, the alternatives describing excavation of eelgrass will remain in the FS. New data for determination of the western extent of marine sediments exceeding PAH PRGs is anticipated for August, and will be used to develop the proposed plan.

RIDEM comments focused on the concerns for addressing petroleum hydrocarbons in the soils and groundwater. Because the Navy intends to eventually have unlimited use of the property, petroleum will be remediated to residential standards during construction, but due to EPA's petroleum exclusion rule for CERCLA – based actions, it is not addressed in the CERCLA – based FS report. Instead, it will be included in the proposed plan.



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Responses to general and specific comments from USEPA, RIDEM and NOAA are provided in Attachments A, B and C, respectively. If you have any questions regarding this material, please do not hesitate to contact me.

Very truly yours,

Stephen S. Parker  
Project Manager

SSP/rp

Enclosure

c: M. Griffin, NSN (2 w/encl.)  
M. Imbriglio, NSN (7 w/encl.)  
P. Kulpa, RIDEM (4 w/encl.)  
K. Keckler, USEPA (4 w/encl.)  
K. Finkelstein, NOAA (2 w/encl.)  
J. Stump, Gannet Flemming (w/encl.)  
J. Trepanowski/G. Glenn, TiNUS (w/ encl.)  
File N4152-3.2 w/o encl./N4152-8.0 (w/encl.)

June 13, 2002  
N4152-8.0

**ATTACHMENT A**  
**Responses to Comments from the**  
**U.S. Environmental Protection Agency**  
**Old Fire Fighting Training Area Draft Final FS For**  
**Soil and Marine Sediment (March 2002)**  
**Comments dated April 25, 2002**

61964

**General Comments**

**No. Comment/Response**

1. *Comment: EPA is concerned with the inadequacy of the sediment alternatives evaluation. Two shortfalls are most notable. First, none of the alternatives fully protects current and future users because the risk from shellfish ingestion remains. Second, the FS fails to effectively evaluate the monitored natural recovery alternative because the amount of time required to reach PRGs is not estimated. As a result, several NCP criteria (e.g., overall protection of human health and the environment; short-term effectiveness; and the long-term effectiveness and permanence) are not sufficiently evaluated such that a unbiased comparison among the alternatives can be made.*

Response: The two issues noted above will be clarified in the Final FS Report. The following paragraphs summarize the Navy's position on these two issues.

In accordance with discussions with EPA conducted on May 16 and May 23, 2002, the Navy has determined that the uncertainty of the transfer of arsenic from sediment to humans via shellfish ingestion does not warrant development of an Arsenic PRG for this scenario. Additional discussion on the uncertainties of this model will be provided in section 2 of the revised FS report.

There is no "monitored natural recovery alternative" in the FS. The limited action alternative includes monitoring, and suggests there may be a period of natural recovery, but it is not the intent of the alternative to allow bacterial processes to address the contaminants. The limited action alternative has been developed due to the uncertainties of the sources of PAH contamination in the marine sediment, and includes monitoring to determine if the onshore removal action results in a long term reduction in the contaminant load in that sediment.

Because the PAHs presently in the marine sediment have been speculatively linked to the contaminants presently in the onshore soil, the storm water advancing through the outfalls, preferential paths within storm drain bedding materials, and other ubiquitous sources in the bay, it may be wise to proceed with the removal of the source, restoration of the storm drains, and endure period of waiting to see if, after this removal, the marine sediment contamination will be naturally reduced through erosion, sedimentation. Conversely, monitoring the contamination may show it to move or increase, based on continued storm drain discharges during construction to the south. Using a "wait and see" approach may result in avoiding the unnecessary destruction of the shoreline habitat present.

The EPA has noted that selecting monitored natural recovery is not acceptable without demonstrating that natural processes will reduce the risk from these contaminants over time. The parameters necessary for making this demonstration include sedimentation rates, erosion models, degradation rates of the contaminants that have PRGs exceeded, and other water quality measurements. Unfortunately, many of these parameters have not been evaluated at the site, and to do so would delay progress on the Proposed Plan and ROD. Therefore, the FS will describe the limited action alternative as an interim action to allow a period of monitoring after the removal of the source area and upgrade of the storm drain systems. If contaminants remain at levels exceeding PRGs for a period of time following the removal of the source area and show no decline in concentration, a removal action may be necessary.

Such an approach has been selected and is documented in an Interim Record of Decision for the

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Portsmouth Naval Shipyard. This alternative was selected for the interim ROD because it could not be determined by the data available if the contaminants present merited the destruction of the habitat through dredging or other means.

2. *Comment: EPA is concerned with the Navy's April 23, 2002 proposal to fence and monitor the offshore area (i.e., Sediment Alternative #2). The draft final FS rightly acknowledges that "...risks to marine biota would remain...." Any remedy selected for the site must be protective of both human health and the environment. It is therefore unclear how Sediment Alternative #2 can be selected under CERCLA.*

Response: Regarding risks to marine biota, the reviewer is referred to the response to general comment No. 1. Sediment alternatives involving dredging may be protective in the long term, if the contaminants can be permanently removed, but not in the short term. The limited alternative (#2) is protective of ecological receptors in the short term because it prevents them from being destroyed by dredging. However, it may not be protective of the ecological receptors in the long term, if the contaminants persist after the onshore removal action is completed. Therefore, neither alternative actually meets the protectiveness criteria.

3. *Comment: Of the options presented in the Feasibility Study, Sediment Alternatives 4 and 5 would provide the most comprehensive removal of sediments exceeding ecological PRGs. The challenge presented by both of these options is how best to determine the extent of excavation to the north (seaward) and west of Station SD-410 based on the available data. If either of these options is selected, some focused sampling (possibly for chemical analysis only) would be needed to delineate the extent of excavation in these directions. For both alternatives, the northern and western extent of proposed excavation depicted on Figures 5-2 and 5-4 is based on extrapolation from a single station, station SD-410. This extrapolation is determined only by the computer program used to generate the map and is not supported by any data in the northern or western directions. Given the high variability of sediment, it would be unwise to risk disruption of an eelgrass bed on the basis of one sample. There is a risk under Sediment Alternative 5 that the eelgrass bed could be effectively cut in two and destabilized if excavation extends too far into the bed. I recommend that the final extent of excavation in the eelgrass be determined by additional focused sampling, that could be conducted while plans move forward for remediation of better-defined areas of the site. Alternatively, Sediment Alternative 4 could be selected with the option to excavate further if monitoring reveals more extensive contamination.*

Response: The Navy concurs that the extent of sediment exceeding PRGs north and west of SD-410 requires resolution prior to any remedial action. The depicted areas on the maps in the FS are sufficient for the precision of the estimates provided therein.

4. *Comment: The proposal under Sediment Alternative 5 to build a causeway for excavation in the eelgrass bed may present unnecessary risk to the eelgrass from construction-related disruptions, current alteration, and possible scouring. It is not clear from the FS whether any of the other possible excavation techniques could be used instead. Please discuss this further.*

Response: Currently available dredging technologies have been evaluated and are discussed in the FS. A land-based suction dredging effort could be employed in the eelgrass areas, though at a greater expense than the use of a causeway. However, based on the preliminary decision to not select dredging in the eelgrass areas, the Navy does not propose any changes to the FS on this issue. If new data shows dredging in the eelgrass is necessary, the Navy concurs that the "Least Environmentally Damaging Practicable Alternative" should be selected for the remedial action work plan.

5. *Comment: Long-term monitoring of beach sediment should be included for all sediment alternatives to assess migration of contaminated sediment to the beach from near-shore and offshore locations*

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*(and potential impacts from soil as well). Sediment migration should be expected from wave action, tides, and storms; and because most near-shore and offshore PRGs are more than one order of magnitude greater than the PRGs for the beach sediment.*

Response: The Navy concurs with this assessment, and monitoring programs for other alternatives will be included.

6. *Comment: Table 2-14 presents a PRG of 5.48 mg/kg for arsenic in nearshore and offshore marine sediments. However, Appendix D argues that remedial actions would be better based on the PAHs rather than the arsenic. This is because of the uncertainties in the risk assessment and the fact the calculated sediment PRG, which is based on shellfish consumption is 5.48 ppm, is less than the soil PRG of 6.2. From an analytical perspective, these PRG values are essentially the same. There is a disconnect between the information as presented in Appendix D and what is presented in Table 2-14. Please clarify whether there is a proposed human health based PRG for arsenic in nearshore and offshore marine sediments.*

Response: Appendix D and sediment PRG sections of the FS will be revised as described in the response to general comment no. 1. The soil PRG for arsenic of 6.2 mg/kg has been applied to the beach (intertidal) sediment per agreement with RIDEM (application of residential-soil risk parameters) resulting in that area being actionable. This will be clarified in Section 2 of the FS report.

7. *Comment: The Navy indicated in their response to EPA's comments that the uncertainties associated with excavation in the wet would be addressed in the revised FS and that a conceptual plan would be presented. This has not been done. Therefore, EPA reiterates its previous comment. Managing the excavation of sediment in the wet will be impacted by sloughing and sediment movement (suspension and redeposition). The volume of sediment that will need to be excavated to achieve the remediation goals will exceed the contaminant-impacted volume because of the sediment movement. Sediment movement will also make it difficult to establish and confirm a clean excavation. Horizontal and vertical over-excavation will be required to attempt to achieve a clean excavation. The FS must discuss these uncertainties and present a conceptual plan for dealing with them.*

*EPA is restating its request for a cost sensitivity analysis to address the potential impacts of several uncertainties associated with the proposed alternatives. Some of these uncertainties include:*

- *the actual volume of contaminated sediment requiring remediation*
- *the amount of over excavation required to achieve remedial goals*
- *the capability of the bridge to the mainland to withstand the truck traffic loadings*
- *the ability to conduct all operations within the site boundaries*

*While it is understood that the volumes presented for the first two bullets would be estimated, the analysis should present a range of potential volumes and an associated cost. For example, if the volume of contaminated sediment increases in the range of A% to B% based on additional sampling and analysis, the cost of Sediment Alternative 3 would increase by X% to Y%; etc. for other alternatives. For bullet number two, perhaps information from previous projects could be used by the Navy for guidance. Regarding the third bullet, EPA now suggests that an evaluation of the access roads and bridge(s) to Coasters Island be conducted as part of a pre-design investigation and a cost estimate for necessary improvements prepared. Because the cost and schedule impacts associated with any road or bridge improvements could be substantial, the need for this information is important. Regarding the fourth bullet, EPA is restating its request that the FS include estimates of the area required to conduct remedial operations, especially for on-site treatment, as this will require the most space.*

Response: In accordance with discussions with EPA conducted on May 23, 2002, the FS will be revised to address these cost issues. As far as estimating the amount of sediment to be removed

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while excavating in the wet, the Navy feels the volume is adequate. Many of the samples were taken in the interval of 0 to 0.5 feet below the bottom surface, and the volume estimates were made assuming 2 feet of excavation, allowing for uncertainty. However, as discussed, the Navy will make an estimate of potential over-excavation and provide a corresponding cost estimate. No supporting cost spreadsheets will be provided – only the cost.

The capability of the bridge from Coasters Harbor Island to the mainland is not expected to be a concern. Confusion may have arisen from the fact there are two bridges to the island, one near the main gate and a second smaller bridge, which is closer to OFFTA. The bridge near the main gate will be the one used for hauling and provides enough capacity. No cost sensitivity analysis will be provided regarding the bridge.

The space requirements for the operations will be discussed qualitatively in the text, including space requirements for the footprints of the equipment and stockpiles. No cost sensitivity analysis will be provided regarding space requirements.

8. *Comment: As stated in my letter to you dated March 18, 2002, EPA has recommended that cancer risks owing to exposure to dioxin be evaluated using two distinct oral cancer slope factors, i.e., the current slope factor of  $1.5 \times 10^5$  (mg/kg/day)<sup>-1</sup> from the EPA HEAST database and the newly derived slope factor of  $1 \times 10^6$  (mg/kg/day)<sup>-1</sup> from the EPA Draft Dioxin Reassessment, which would result in two distinct estimates of cancer risk. Thus, in addition to what has been done for dioxin using the current cancer slope factor in the final draft FS, EPA recommends that an additional appendix or technical memorandum be provided to evaluate cancer risk from dioxin and calculate the risk-based PRGs for dioxin, using the proposed EPA's cancer slope factor. These PRGs can be presented along with the level of 1 ppb to be decided for cleanup level. This approach is recommended by EPA headquarters and is being applied consistently at other Superfund sites. This approach will assist in determining the protectiveness of the remedy.*

Response: The Navy is developing a secondary correspondence on this issue, which will be provided under separate letter. Because the newer slope factor is not considered a consensus value at this time, the Navy also believes that use of this preliminary slope factor would not be defensible because of official disclaimers printed within the draft documents and included on the NCEA web site links to EPA's Dioxin Reassessment.

9. *Comment: As EPA previously commented on the draft of the FS, the Navy needs to address the groundwater risks at the Site. This should be done as a separate chapter since it appears that groundwater risks will remain even after the Navy has addressed soil contamination on the site. Groundwater controls need to be incorporated into the ROD for the remedy to be both protective of human health and to address ARARs.*

Response: In accordance with discussions held with EPA on May 16, 2002 and on May 23, 2002, the Navy concurs with this approach, and the FS will include PRGs for groundwater and a section describing alternatives for this medium.

10. *Comment: Lastly, the FS should state that the "Naval Education Training Center (NETC) Superfund Site" is the name of the site as listed on the National Priorities List. EPA has not changed the name and therefore the Title page and other sections of this document should indicate that the Old Fire Fighting Training Area is part of the Naval Education Training Center (NETC) Superfund Site.*

Response: The Navy concurs, and the suggested revision will be made.

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Specific Comments

- | <u>No.</u> | <u>Page</u> | <u>Comment/Response</u>   |
|------------|-------------|---|
| 1.         | p. iv       | <p><i>Comment: The list of Appendices A and B need to be transposed to correlate with the actual sequence of Appendices in the Draft Final FS.</i></p> <p>Response: The Navy concurs, and the suggested revision will be made.</p>  |
| 2.         | p. ES-1, ¶3 | <p><i>Comment: In the second sentence remove "total petroleum hydrocarbons." TPH is not governed by CERCLA.</i></p> <p>Response: The Navy concurs with EPA and will remove the reference. Throughout the FS, verbiage will be added that the actions taken to remediate the CERCLA contaminants will also address TPH, which is regulated under state regulations.</p>  |
| 3.         | p. ES-2, ¶1 | <p><i>Comment: In the last sentence, even though groundwater ingestion is termed "unrealistic" the remedy must address potential groundwater use. Risks to human health from potential groundwater ingestion were significant.</i></p> <p>Response: In accordance with discussions held with EPA on May 16, 2002 and on May 23, 2002, the FS will include PRGs for groundwater and a section describing alternatives for this medium.</p>   |
| 4.         | p. ES-2, ¶2 | <p><i>Comment: Summarize the risks to construction workers from contact with contaminated groundwater.</i></p> <p>Response: Risks to construction workers were not estimated as part of the groundwater risk evaluation performed for the OFFTA site. This is because PRG criteria for remedial action are based upon human health risks under a residential scenario, which is more conservative.</p>  |
| 5.         | p. ES-2, ¶3 | <p><i>Comment: It is not correct to state that intermediate risk areas may be considered acceptable from an ecological perspective. Some areas with intermediate risk levels may require remediation under CERCLA.</i></p> <p>Response: The sentence will be struck from the report.</p>  |
| 6.         | p. ES-3, ¶1 | <p><i>Comment: The contribution to ecological risk from groundwater intrusion has not been quantified (or even estimated) so it is therefore inappropriate to consider it "negligible." Please delete this sentence. Appendix A of the FS merely compares site groundwater, soil, and sediment data. Many factors - including atmospheric deposition, groundwater transport, and preferential flow pathways - contribute to the sediment contamination and should be fully discussed and possibly modeled. Alternatively, the FS could state that groundwater concentrations are expected to decrease when the source of contamination is removed.</i></p> <p>Response: The Navy concurs, and the latter suggested revision will be made.</p> |
| 7.         | p. ES-3, ¶2 | <p><i>Comment: Please estimate the area and volume of the contaminated groundwater that exceeds MCLs.</i></p> <p>Response: In accordance with discussions held with EPA on May 16, 2002 and on May 23, 2002, the FS will include PRGs for groundwater and a section describing alternatives</p>   |

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for this medium. Area and volume estimates will be included in the groundwater section.

8. p. ES-3, ¶3 *Comment: The FS should develop PRGs for groundwater since there are exceedances of MGLs. Remedial alternatives need to be developed that at least include monitoring and institutional controls.*

Response: In accordance with discussions held with EPA on May 16, 2002 and on May 23, 2002, the FS will include PRGs for groundwater and a section describing alternatives for this medium.

9. p. ES-5, ¶¶3,4, & 5 *Comment: The correct name of the NCP criterion is "Reduction of toxicity, mobility, or volume through treatment." (Emphasis added.) The FS must reveal that none of the alternatives involve treatment and therefore none meet this criterion.*

Response: The Navy concurs, and the suggested revision will be made.

10. p. 1-6, §1.4.2 *Comment: In the last paragraph on the page, please clarify in the second sentence that MW-6R is in bedrock and MW-11S is not. As written, the second sentence appears to contradict the third sentence.*

Response: The Navy concurs, and the suggested revision will be made.

11. p. 1-10, §1.7 *Comment: Please expand the discussion of the extent of groundwater contamination at the site.*

Response: Area and volume estimates will be included in the new groundwater section.

12. p. 1-11, §1.7 *Comment: The last sentence in the first full paragraph on this page states the elevated arsenic concentrations are believed to be attributable to site and regional bedrock. This assumption is questionable given that arsenic concentrations as high as approximately 74 mg/kg have been detected buried in the soil and debris mounds at the site. Additional information from the background study or studies analyzing bedrock core samples from the site or regionally should be presented to support this assumption or the statement should be deleted. There may be other sources of arsenic contamination at the site.*

Response: The subject text will be revised to state that some of the elevated arsenic concentrations may be attributable to site and regional bedrock. The background soils report developed for this site will also be discussed in this context.

13. p. 1-12, ¶3 *Comment: Remove this paragraph because TPH is not addressed by CERCLA. Alternatively, explain that the actions taken to address CERCLA hazardous substances will also address TPH, which is a State regulatory requirement applicable to the site. If this approach is taken, it must be made clear that the remedy is driven by pollutants other than TPH, but has the added benefit of cleaning up TPH too.*

Response: The Navy concurs, and the suggested revision will be made.

14. p. 1-14, ¶3 *Comment: Although groundwater ingestion is termed "unrealistic" in the last sentence, the remedy must address potential groundwater use and address the risks from groundwater exposure.*

Response: Please refer to the response to specific comment no. 3, above.

15. p. 1-14, ¶4 *Comment: Summarize the risks to construction workers from contact with contaminated groundwater.*

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Response: Please refer to the response to specific comments 3 and 4, above.

16. p. 1-15, ¶3 *Comment: It is not correct to state that intermediate risk areas may be considered acceptable from an ecological perspective. Some areas with intermediate risk levels may require remediation under CERCLA.*

Response: The sentence will be struck from this section.

17. p. 1-15, ¶4 *Comment: The federal and state-listed Loggerhead and Kemp's Ridley turtles were listed as occurring in Narragansett Bay.*

Response: The Navy concurs, and the report will be modified appropriately.

18. p. 2-3, §2.2.1 *Comment: The reference to Appendix A in the text is incorrect; the Groundwater Risk Evaluation is presented in Appendix B. The same correction is required on page 2-5 under Groundwater.*

Response: The Navy concurs, and the suggested revision will be made.

19. p. 2-6, ¶3 *Comment: Please delete the words "unrealistic" and "probable" from this paragraph. The residential risk calculated for the site is sufficient to warrant remediation (e.g., monitoring and institutional controls) in the area of contamination.*

Response: Please refer to the response to specific comment no. 3, above.

20. p. 2-6, ¶4 *Comment: Change Appendix "B" to Appendix "A."*

*The contribution to ecological risk from groundwater intrusion has not been quantified (or even estimated) so it is therefore inappropriate to conclude that a present or future risk does not exist. Appendix A of the FS merely compares site groundwater, soil, and sediment data. Many factors - including atmospheric deposition, groundwater transport, and preferential flow pathways - contribute to the sediment contamination and should be fully discussed and possibly modeled. Alternatively, the FS could state that groundwater concentrations are expected to decrease if the source of contamination is removed.*

*Remedial actions for groundwater should be evaluated in the FS in the same manner as proposed remedial actions for contaminated soil and sediment.*

Response: The appendix change will be made as suggested. The new groundwater section will address the groundwater comments.

21. p. 2-7, ¶4 *Comment: If the risk from contaminants was not quantified because that contaminant was below background, the contribution from background must be discussed either qualitatively or quantitatively.*

Response: The risk assessment will be reviewed and a qualitative discussion of the contribution from background will be added if necessary.

22. p. 2-13, ¶5 *Comment: The remedial action objectives should be clarified to explain that they address soil from the surface down to and including the vadose zone.*

*How will the Navy address potential contamination below the vadose zone? There could be risk to construction workers from exposure to deeper contaminated soil. If not*

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*addressed, controls are likely to be required for soils below the vadose zone.*

Response: The RAOs will be clarified. The text will also be revised to indicate that during excavation of the vadose zone, any contamination found below the vadose zone will also be excavated.

23. p. 2-14, ¶1 *Comment: Remove this paragraph and the bullet because TPH is not regulated under the CERCLA and therefore RAOs should not be developed for it in the FS. Alternatively, explain that the actions taken to address CERCLA hazardous substances will also address TPH, which is a State regulatory requirement applicable to the site. If this approach is taken, it must be made clear that the CERCLA remedy is driven by pollutants other than TPH, but has the added benefit of cleaning up TPH too.*

Response: The Navy concurs, and the suggested revision will be made.

24. p. 2-15, ¶4 *Comment: Oysters were determined to be abundant in the beach sediment. Please delete "Shellfish were not present in this area."*

Response: The sentence will be revised – Shellfish selected for testing were not present in this area, although oysters were present in the lower-intertidal area.

25. p. 2-17, §2.2.3.2 *Comment: The last sentence in the partial paragraph at the top of the page discusses a 10% adjustment factor, which is misleading. Please clarify that the adjustment made was a factor of 10, that is, the value calculated using the slope factor was multiplied by 10 to calculate the adjusted target concentration for arsenic.*

Response: The Navy concurs, and the suggested revision will be made.

26. p. 2-18, §2.2.3.2 *Comment: The three references on this page to EPA documents are not contained in the References Section of this FS, but they are in the list of references in Appendix D. Please include the references in the Reference Section.*

Response: The Navy concurs, and the suggested revision will be made.

27. p. 2-20, §2.2.3.4 *Comment: The discussion in the first paragraph is not correct. The FS identified different PRGs for the same contaminant depending on its location in the marine environment. Table 2-15 presents PRGs for beach sediment, near-shore sediment, and offshore sediment. This is reflected in the RAOs on page 2-21, which identify specific portions of the marine environment and their respective RAOs. Please correct the discussion in this paragraph to be consistent with the rest of the FS.*

Response: The Navy concurs, and the suggested revision will be made.

28. p. 2-21, §2.2.3.4 *Comment: The first full paragraph discusses Table 2-16, stating that the only PRGs calculated for shellfish ingestion, exceedances were for arsenic. However, SD-410 has a PRG exceedance for benzo(a)pyrene. Please correct the text.*

Response: The Navy concurs, and the suggested revision will be made.

29. p. 2-22, §2.3.1 *Comment: The third bullet contains an error. The volume should be 37,600 cubic yards.*

Response: The Navy concurs, and the suggested revision will be made.

30. p. 2-23, §2.3.2 *Comment: The volume of contaminated sediment identified in the two bullets on this page may need to be revised following additional sampling to the east and west of the*

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*currently-defined areas of contamination. There is no reason to believe that the contamination ends abruptly at the points indicated in Figure 2-4. Assessment of these areas should be addressed in the pre-design investigations.*

Response: The Navy concurs; however, lacking any additional data, the estimates are adequate for the FS.

31. p. 3-6, §3.2.2.2 *Comment: Change "Deed Restrictions" to "Land Use Restrictions." As discussed in EPA's letter dated June 15, 2001, please explain how land use restrictions can be enforced remain in effect as long as the land remains under the control of the Navy. As has been discussed at other sites, the Navy should describe how, if the land ever was sold, that the Navy would put the applicable land use restriction on any deeds that are created. The Navy must not eliminate restrictions from consideration if, based on the Navy's analysis, contaminated soil will be left anywhere on the site.*

Response: To complete a land use restriction, a legal description of the Land Use Controls and a Class I survey prepared by a surveyor licensed in Rhode Island will be prepared as required by RIDEM Remediation Regulations 8.09. In addition, the Navy will request the General Services Administration include a covenant prohibiting residential use of the property should it be transferred outside the federal government, so long as residential standards are exceeded.

32. p. 3-7, §3.2.2.2 *Comment: The first paragraph eliminates deed restrictions from further consideration. However, deed restrictions have been used in the soil alternatives to restrict the use of groundwater. Please edit the FS to clarify that deed restrictions have been retained to restrict groundwater use.*

Response: The text will be revised as suggested.

33. p. 3-9, ¶1 *Comment: In the second sentence insert "and federal and state regulators" after "the responsible agency."*

Response: The Navy concurs, and the suggested revision will be made.

34. p. 3-15, ¶5 *Comment: In the second sentence insert "and/or TSCA" after "RCRA."*

Response: The Navy concurs, and the suggested revision will be made.

35. p. 3-30, ¶2 *Comment: How is the "no swimming rule" enforced at the base and where is it recorded? During EPA's community interviews in December 1998, many interviewees revealed that people swam in the waters adjacent to the OFFTA. New kayak ramps are being installed by the Navy adjacent to the site. Could the prohibition be expanded to any use of the shoreline? This section should discuss how the government would address transferring any land use restrictions if the property were ever exsessed. This option should be retained because the existing land use controls need to be incorporated into the CERCLA remedy for the Site. As a matter of policy, any new remedy involving institutional controls must be reviewed by EPA headquarters.*

Response: The requested information will be provided by the Naval Station for the revised report.

36. pp. 3-30 & 3-31 *Comment: In the discussion of access restrictions, it is unclear why fencing was found to be an unacceptable option for the soil, but that it is acceptable for the sediment areas. All of the problems identified in the soil are even more problematic for the shoreline,*

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*particularly if the site were ever used for residential development or reopened as a park.*

Response: Because the future land use for this site is presumed to be recreational or residential, that would require the soils to be cleaned to residential standards, and thus fencing the parts of the site where actual residential and recreational activities will take place is unacceptable. Despite land use definitions established, the sediment areas cannot actually be used as residential property, because residential structures cannot be built in an intertidal area, and ownership of a property ends at the mean high water mark. This portion of the FS will be revised to clarify the effectiveness of fencing.

37. p. 3-39 *Comment: Comment: As was stated in EPA's letter dated June 15, 2001, the Navy needs to add a §3.4 Preliminary Screening of Technologies and Process Options for Groundwater. It is disconcerting that virtually no progress has been made on this in a year. On page 2-6 and Appendix B the Navy acknowledges that monitoring and institutional controls are warranted to address risks from contaminated groundwater on site. The FS must identify remedial alternatives (e.g., such as monitoring and institutional controls) that will address risks from groundwater contamination. Groundwater controls need to be incorporated into the ROD for the remedy to be protective of human health and the environment and to address ARARs.*

Response: Please refer to the response to specific comment no. 3, above.

38. p. 3-47,  
§3.3.2.7 *Comment: This section discusses the possible use of floating silt curtains to protect eelgrass beds from suspended sediments during excavation. I recommend that such controls be used with any alternative that would significantly disturb sediments. An additional technology to consider is an anchored silt curtain such as the Gunderboom® system that may provide greater protection from siltation than a floating system. Eelgrass is highly sensitive to reduction in sunlight and every effort should be made to minimize suspended sediments from blanketing the eelgrass beds during construction.*

Response: The Navy concurs with the desired minimized impacts to the eelgrass. The text will be revised to reflect consideration of a full curtain system.

39. p. 4-4,  
§4.2.2 *Comment: If only approximately two feet of soil will be removed from the western portion of the site and only approximately four feet of soil from the central portion of the site, it is recommended that Soil Alternative 2 (and Soil Alternative 3) include the removal and replacement of active storm drains that traverse the site and the removal of inactive storm drains and any other piping, such as sanitary drains, that may allow infiltration of contamination from the site soils or otherwise serve as a conduit for site contamination to migrate off site. (I note that a portion of the central storm drain is constructed of vitrified clay. Misaligned joints and breakage are common problems for vitrified clay.)*

*Also, unless there is reliable documentation that all the former oil piping has been removed from its in-service locations, the soil alternatives should also include subsurface explorations to locate the oil piping and remove it, or confirm that it has been removed.*

Response: The Navy concurs, and the suggested revision will be made.

40. p. 4-4,  
§4.2.2 *Comment: Have the access roads and particularly the bridge(s) to Coasters Island been assessed for their ability to handle excess truck traffic? The assessment should determine the suitability of the access to Coasters Island for the anticipated traffic required for the remediation and provide a cost estimate, if renovation of the access roads or bridge(s) is required to support the remediation. If renovation of the bridge(s) is required, it could cause delay and increase costs. This same comment applies to Soil*

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*Alternative 3 and the Sediment Alternatives 3, 4, and 5.*

Response: The load requirements of the bridge will not be exceeded by vehicles involved in the remedial action.

41. p. 4-8, ¶1 *Comment: Change the first sentence to: "ARARs are determined by EPA in consultation with the Navy and RIDEM."*

Response: The FFA states under Section 7.5 a) "Draft ARARs determinations shall be prepared by the Navy in accordance with CERCLA..., the NCP and pertinent guidance issued by the EPA which is consistent with CERCLA and the NCP." It also states "The Navy shall consider any written interpretations of ARARs provided by the State." It also says that "the Parties recognize that ARAR identification is an iterative process, and potential ARARs must be reexamined throughout the process."

These statements do not indicate that a single agency determines the ARARs.

42. p. 4-14, §4.4.2 *Comment: In the third full paragraph, staging for the treatment systems is discussed, but an estimate of the space required to conduct the treatment operations is not provided. Space will be required for placement of the treatment equipment, operation of the materials handling equipment, input and output stockpiles of soil, dewatering stockpiles, disposal stockpiles, treated soil stockpiles, decontamination areas, management trailers, and access to all these areas. It is not apparent whether the space required for these operations is available within the confines of the site. Please estimate the space required to conduct these operations. If space off site is required to implement the proposed alternatives, discuss this in the FS and identify a potential area.*

Response: The space requirements for the operations will be discussed qualitatively in the text, including space requirements for the footprints of the equipment and stockpiles.

43. p. 4-14, ¶2 *Comment: Add a new second sentence: "If confirmatory sampling finds that hazardous waste is present, all soil contaminated with hazardous waste, including soil below the vadose zone, will be removed." In the first paragraph of page 4-19 the Navy notes that some of the material (approximately 10%) may qualify as hazardous waste. Sampling must be conducted to confirm that no hazardous waste is left on site.*

Response: The text will be revised to include the suggested revisions.

44. p. 4-15, §4.4.2 *Comment: The installation of groundwater monitoring wells is discussed in the second full paragraph. Although the details of any groundwater or long-term monitoring program will be specified at a later date, four monitoring wells is not enough to adequately cover the site, and terminating groundwater monitoring after 18 months may be too soon. Please edit the FS to clarify that for the purposes of cost estimating, four monitoring wells and three rounds of groundwater monitoring have been assumed; however, the details of the groundwater monitoring program will be presented in a future document. The same comment applies to Soil Alternative 3.*

Response: Please refer to the response to specific comment no. 3, above.

45. p. 4-15, ¶3 *Comment: During the PDI, will the Navy determine whether there is still a risk posed by contaminated soils below the vadose zone? Will long-term monitoring will be required?*

Response: Please refer to the response to specific comment no. 3, above.

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46. p. 4-15, ¶4 *Comment: This paragraph should be moved to a new Chapter that addresses groundwater and includes an analysis of alternatives that address risks from groundwater (including institutional controls and long term monitoring). Citing groundwater restrictions in one paragraph of the soil section is not sufficient. Under the current structure of this FS, if all of the contaminated soil were removed there would be no enforceable standard under the ROD for continued remedial action to address risks from groundwater contamination.*

Response: Please refer to the response to specific comment no. 3, above.

47. p. 4-16, ¶2 *Comment: In the first sentence insert "soil" after "long-term." Change the second sentence to: "There would be no restrictions because of contaminated soil that would limit future activities at the property as long as all soil risks are addressed. However, continued groundwater and sediment restrictions may need to be retained."*

Response: The Navy concurs, and the suggested revision will be made.

48. p. 4-17, §4.4.2 *Comment: In the first paragraph, the FS states that there would be no potential to leach after soil removal. While the leaching potential would presumably be reduced following soil removal, there is still a potential to leach. Please edit the FS to either delete this paragraph or clarify that for the purposes of cost estimating, four monitoring wells and three rounds of groundwater monitoring have been assumed; however, the details of the groundwater monitoring program will be presented in a future document.*

Response: The Navy concurs, and the suggested revision will be made.

49. p. 4-17, §4.4.2 *Comment: Under Implementability, are bench-scale or pilot-scale tests anticipated for either LTTS or soil washing technologies? Please clarify in the FS.*

*Also, please discuss the issue of access to Coasters Island for large construction equipment and large, heavy treatment equipment and the uncertainty, if it exists, as to whether the preferred bridge, or any bridge, is capable of handling the traffic weight.*

Response: Bench-scale or pilot-scale tests are not anticipated for the technologies. Clarifying text will be added to the FS. The capability of the bridge from Coasters Harbor Island to the mainland is sufficient. Confusion may have arisen from the fact there are two bridges to the island, one near the main gate and a second smaller bridge, which is closer to OFFTA. The bridge near the main gate will be the one used for hauling and provides enough capacity.

50. p. 4-17, ¶5 *Comment: Remove the first, third, and fourth sentences since no permits are required for on-site operations [Section 121(e)(1) of CERCLA].*

Response: The Navy concurs, and the suggested revision will be made.

51. p. 4-18, ¶4 *Comment: At the end of the last sentence add ", however, if hazardous waste is identified within the mounds, the debris will be tested and decontaminated according to applicable federal and state standards before it is disposed."*

Response: The Navy concurs, and the suggested revision will be made.

52. p. 4-18, ¶5 *Comment: Add a new third sentence: "If hazardous waste is identified before disposal, confirmatory sampling will be conducted in the area where the waste was removed to ensure that all soil contaminated with hazardous waste, including below the vadose zone,*

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*is removed.”*

Response: The Navy concurs, and the suggested revision will be made.

53. p. 4-19, ¶3 *Comment: Please evaluate other more environmentally beneficial ways of restoring and stabilizing the shoreline than a ten-foot wide layer of rip rap.*

Response: Lessons learned at McAllister point landfill support the observation that the west shore of Aquidneck island is naturally an eroding coastline, particularly on the more exposed sections facing the west and northwest. A new shoreline protection system can be enhanced with wave breaks, gravel – sand mix within the voids of the rip-rap, and other features, but shale bedrock outcrops are what nature left in this area prior to site development, and these cannot be replaced. The most similar replacement that can be provided is large stone rip-rap and engineered retaining walls.

54. p. 4-19, ¶4 *Comment: If there is still a risk posed by contaminated soils below the vadose zone, sediments, or groundwater, long-term monitoring will be required.*

Response: The Navy concurs, and the clarifying text will be added.

55. p. 4-19, ¶5 *Comment: This paragraph should be moved to a new Chapter 6 that addresses groundwater. There needs to be an analysis of alternatives that address the groundwater risk (including institutional controls and long term monitoring). Citing groundwater restrictions in one paragraph of the soil section is not sufficient. Under the current structure of this FS, if all of the contaminated soil were removed there would be no enforceable standard under the ROD for continued remedial action to address continued groundwater contamination.*

Response: Please refer to the response to specific comment no. 3, above.

56. p. 4-20, ¶3 *Comment: In the first sentence insert “soil” after “long-term.” Change the second sentence to: “There would be no restrictions owing to contaminated soil that would limit future activities at the property as long as all soil risks are addressed. However, continued groundwater and sediment restrictions may need to be retained.”*

Response: The Navy concurs, and the suggested revision will be made.

57. p. 4-21, §4.4.3 *Comment: Under Short-Term Effectiveness, please add impacts from truck traffic, such as increased traffic, noise, and air emissions from trucks. Supplement this discussion with an estimate of the number of truck round trips anticipated to complete the remediation.*

*Under Implementability, please discuss the issue of access to Coasters Island for large construction equipment and the uncertainty regarding the bridge’s capacity for handling the traffic weight and volume of loaded dump trucks.*

*Under Cost, discuss the uncertainty, if it exists, as to whether renovations to the existing bridge(s) will be required to allow implementation of this alternative.*

Response: Under Short-Term Effectiveness, discussion about the impacts from truck traffic will be added to the text. The capability of the bridge from Coasters Harbor Island to the mainland is sufficient. Clarifying text will be added, although no cost discussion regarding the bridge will be provided.

58. p. 4-21, ¶2 *Comment: Change the paragraph to: “Alternative 3 does not reduce mobility, toxicity, or*

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*volume of organic and inorganic contaminants through treatment. Some treatment of the soil could occur at an off-site TSDF, if required."*

Response: The Navy concurs, and the suggested revision will be made.

59. p. 4-23, ¶1 *Comment: Change the first full sentence to: "Neither alternative would require long-term monitoring as long as there is no remaining risk posed by contaminated soils below the vadose zone (such as to a construction workers) that would require long-term monitoring."*

Response: The Navy concurs, and the suggested revision will be made.

60. p. 4-24, ¶1 *Comment: Change the third sentence to: "Alternative 2 would reduce contaminant toxicity, mobility and volume through treatment, while Alternative 3 does not."*

Response: The Navy concurs, and the suggested revision will be made.

61. p. 4-24, ¶3 *Comment: In the second to last sentence remove "construction, air emissions, and."*

Response: The Navy concurs, and the suggested revision will be made.

62. p. 5-4, ¶3 *Comment: Change the first sentence to: "This alternative was developed to reduce contaminated sediment along the beach." Removal does not satisfy the NCP criteria for reduction of toxicity, mobility and volume through treatment.*

Response: The Navy concurs, and the suggested revision will be made.

63. p. 5-4, §5.2.3 *Comment: Long-term sediment monitoring should include monitoring of beach sediment to assess for migration of contaminated sediment to the beach from near-shore and offshore locations. Most near-shore and offshore PRGs are more than one order of magnitude greater than the PRGs for the beach sediment and therefore recontamination of the beach sediment is possible. This comment also pertains to Sediment Alternatives 4 and 5, as removal of near-shore sediment exceeding PRGs will not provide sufficient protection against recontamination of beach sediment.*

Response: The Navy concurs, and the suggested revision will be made.

64. p. 5-4, ¶4 *Comment: In the eighth bullet add "to the original grade."*

Response: The Navy concurs, and the suggested revision will be made.

65. p. 5-6, §5.2.3 *Comment: In the second paragraph, please include laboratory confirmation of samples. Confirmatory sampling cannot rely strictly on field test kit analyses as this sentence suggests. However, when excavating in the wet, the excavation cannot be left open while waiting for analytical results because the excavation would become contaminated by sediment migrating from surrounding contaminated areas. Therefore, the excavation should be sampled and backfilled immediately after excavation. If laboratory analyses indicate that contamination is not completely removed from an area, the area will have to be re-excavated and the procedure repeated. Alternatively, excavation could be conducted "in the dry" by using porta-dams and not need to be backfilled until laboratory confirmation results are available. The same comment applies to the descriptions for Sediment Alternatives 4 and 5.*

Response: The Navy concurs, and the suggested revision will be made.

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66. p. 5-6, §5.2.4 *Comment: The second sentence states that sediment in and adjacent to the eelgrass beds would remain intact. This is not apparently true. This alternative proposes to remove contaminated sediment adjacent to the eelgrass beds near sample location OFF-3 and south of sample location SD-410. Please correct as appropriate.*
- Response: The Navy concurs, and this section will be revised to accommodate the reviewers observation.
67. p. 5-7, §5.2.4 *Comment: The last sentence in the first full paragraph refers to Alternative 3, but the correct reference is Alternative 4.*
- Response: The Navy concurs, and the suggested revision will be made.
68. p. 5-7, ¶2 *Comment: In the tenth bullet add "to the original grade."*
- Response: The Navy concurs, and the suggested revision will be made.
69. p. 5-10, ¶1 *Comment: In the tenth bullet add "to the original grade." In the thirteenth bullet change "years 1, 2, and 5" to "as required to assess whether ecological and human health risks are acceptable and ecological restoration is occurring. For cost estimating purposes, a review in years 1, 2, and 5 was assumed."*
- Response: The Navy concurs, and the suggested revisions will be made.
70. p. 5-16, §5.4 *Comment: Please edit the discussion under Cost to clarify that the present worth cost analysis is up to a 30-year performance period because not all alternatives proposed have a 30-year life.*
- Response: The Navy concurs, and the suggested revision will be made.
71. p. 5-22, §5.5.3 *Comment: Under Overall Protection of Human Health and the Environment, please explain that Sediment Alternative 3 does not satisfy the RAO to protect against the ingestion of contaminated shellfish from the near-shore and offshore areas.*
- Response: The section will be revised in accordance with the response to General Comments No. 1 and 2.
72. p. 5-23, ¶2 *Comment: Move the last two sentences to the third paragraph since they are location-specific standards.*
- Response: The Navy concurs, and the suggested revision will be made.
73. p. 5-23, ¶6 *Comment: In the first sentence, if "natural attenuation" is to be mentioned there must be more analysis in the FS regarding how long "natural attenuation" will take to reduce contaminant levels to PRGs.*
- Response: This suggestion will be struck from the report; refer to the response to Comment No. 1.
74. p. 5-23, ¶7 *Comment: Delete the last sentence.*
- Response: The Navy concurs, and the suggested revision will be made.

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75. p. 5-26, ¶1 *Comment: In the second sentence the discussion about “natural processes” appears to be the same as natural attenuation. There must be more analysis in this FS regarding how long “natural attenuation” will take to reduce contaminant levels to PRGs.*
- Response: The passage will be struck. A discussion will be provided regarding the value of the eelgrass vs. the stress caused by the contaminants present, which will be based on technical meetings and discussions held May 23 and May 30, 2002.
76. p. 5-27, §5.5.4 *Comment: Under Compliance with ARARs, please delete the third sentence and replace it with the following: “However, if ARARs cause more harm than the benefit derived from implementing the ARARs, the ARARs may be waived.”*
- Response: The Navy concurs, and the suggested revision will be made.
77. p. 5-27, ¶5 *Comment: In the second sentence add at the end: “unless it is shown that monitored natural recovery will remediate the remaining contamination within a reasonable period.”*
- Move the last two sentences to the next paragraph since they concern location-specific standards.*
- Response: The revisions will be made in accordance with other changes to the text.
78. p. 5-28, §5.5.4 *Comment: Under Long-Term Effectiveness and Permanence, please add to the last sentence in the first paragraph “and the risk from ingestion of already contaminated shellfish would not be prevented.” The same comment applies to Sediment Alternative 5.*
- Response: This revision will be considered in accordance with responses to comments nos. 1 and 2.
79. p. 5-28, ¶2 *Comment: Any discussion of natural attenuation must be specific about how long it is expected to take to achieve PRGs. This analysis must also be considered under the short-term effectiveness criterion.*
- Response: This reference will be struck. Monitoring will be added to all remedial action alternatives evaluated for the purpose of assuring that remediated areas are not being recontaminated.
80. p. 5-28, ¶3 *Comment: Remove the second sentence.*
- Response: The Navy concurs, and the suggested revision will be made.
81. p. 5-30, §5.5.5 *Comment: In the third paragraph, to reiterate, long-term monitoring of sediment will be required to monitor for migration of contaminated sediment from the offshore and near-shore areas to the beach sediment. Please edit the FS accordingly.*
- Response: The Navy concurs, and the suggested revision will be made.
82. p. 5-32, ¶6 *Comment: Remove the last two sentences.*
- Response: The suggested revision will be made.
83. p. 5-33, §5.5.5 *Comment: In the last paragraph under Short-Term Effectiveness, please add “a small area of eelgrass beds would be destroyed” to differentiate this alternative from Alternative 4.*

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Response: The Navy concurs, and the suggested revision will be made.

84. p. 5-33,  
§5.5.5 *Comment: Sediment Alternative 5- Removal and Disposal Option B: This section suggests the use of a temporary excavator causeway to be constructed in the nearshore zone in order to perform excavation in the vicinity of station SD-410. Construction of such a causeway may damage the eelgrass beds through alteration of currents and possible scouring around the structure. It is not clear from this section whether any other alternatives exist for excavating in this area. Please discuss.*

Response: The Navy concurs with this suggestion. The reviewer is referred to the response to general comment no. 4.

85. p. 5-35,  
§5.5.5 *Comment: Under Cost, as proposed, this alternative has a life of five years not 30 years. Consequently, the appropriate discount rate is 2.8% (for a five-year project) rather than 3.9%. Please edit the text and costing accordingly. However, incorporation of long-term sediment monitoring into this alternative will alter the life of the alternative and require a reconsideration of the appropriate discount rate.*

Response: The discount rate appropriate to the length of the alternative will be used. However, it would seem more appropriate to use a uniform rate for all alternatives, because even for the alternatives that last 30 years, most of the costs are in the first 5 years.

86. p. 5-36,  
§5.6 *Comment: In the second full paragraph, the discussion about the achievement of RAOs is not properly differentiated between the alternatives. Alternatives 3 and 4 would achieve partial success in protecting human health because beach sediment would be removed, but the risk from ingestion of contaminated shellfish would not be addressed at all for Alternative 3 and only partially for Alternative 4. Alternative 3 would not achieve environmental RAOs, whereas Alternative 4 would partially achieve environmental RAOs by removing the most contaminated near-shore sediment. Alternative 5 would be similar to Alternative 4 in achieving RAOs, with slightly better success in achieving human health and environmental RAOs by removing somewhat more contaminated near-shore sediment, but at the cost of destroying a small area of eelgrass beds. Please edit the text accordingly here and elsewhere in the FS where these issues are discussed.*

Response: The Navy concurs, and the suggested revisions will be made.

87. p. 5-36, ¶15 *Comment: The discussion of "natural processes" appears to be the same as natural attenuation. There must be more analysis in the FS regarding how long "natural attenuation" will take to reduce contaminant levels to PRGs.*

Response: The passage will be revised in accordance with other responses to comments.

88. p. 5-37,  
§5.6 *Comment: Under Long-Term Effectiveness and Permanence, please edit the discussion to acknowledge that the long-term effectiveness of all the alternatives is unknown and questionable because of the possibility that contaminated sediment will migrate from near-shore and offshore areas to the beach sediment. This migration possibility is a concern because the PRGs for near-shore and offshore sediment are generally more than one order of magnitude greater than the PRGs for the beach sediment.*

*Other statements in this section that characterize effectiveness without consideration of the alternatives' failure to mitigate the risk associated with ingestion of contaminated*

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*shellfish should also be corrected.*

Response: A monitoring program will be revised to include the beach sediments, to address the possibility of recontamination. The Shellfish ingestion will be addressed in accordance with the response to General Comment No. 1.

89. p. 5-37, ¶5 *Comment: Add to the end of the last sentence: “, once all of the habitat restoration requirements are met.”*

Response: Refer to the response to Comment 88 above.

90. p. 5-37, ¶6 *Comment: Change the paragraph to: “None of the alternatives provide any reduction of toxicity, mobility, or volume through treatment, since no treatment alternatives are proposed.”*

Response: The Navy concurs, and the suggested revision will be made.

91. p. 5-38, §5.6 *Comment: Under Short-Term Effectiveness, none of the alternatives will be effective in eliminating the risk from ingestion of contaminated shellfish. This risk will remain for a substantial time period. Shellfish already contaminated above tissue PRG risk levels will remain contaminated. Shellfish will continue to ingest contamination at concentrations up to the sediment PRGs, potentially causing exceedance of the tissue PRG in other specimens. Please edit the discussion accordingly.*

Response: Discussions will be revised in accordance with the responses to General Comment No. 1.

92. p. 5-39, §5.6 *Comment: In the first sentence in the last paragraph, please delete the first reference to marine excavation/filling operations.*

Response: The Navy concurs, and the suggested revision will be made.

93. Table 1 *Comment: Add a Table for “Summary of Receptor Risks and Hazards for Groundwater.”*

Response: Please refer to the response to specific comment no. 3, above.

94. Table 2-1, p. 1 *Comment: Under Clean Water Act, please correct the reference “40 U.S.C. 1314” to “33 U.S.C. 1314.”*

*Consider adding the Lead Uptake Biokinetic Model as a TBC here and elsewhere in the FS where chemical-specific ARARs and TBCs are discussed.*

Response: The Navy concurs, and the suggested revisions will be made.

95. Table 2-1, p. 2 *Comment: Hazardous Waste Regulations and Air Quality Regulations are considered action-specific ARARs. Please review and correct as appropriate.*

*Based on the synopsis of the RI Oil Contaminated Soil Policy, it appears that it may not be appropriate to plan to dispose of petroleum-contaminated soil (and sediment?) at Central Landfill in RI. It is highly unlikely that only virgin petroleum was used for the fire training activities. Please review and edit the FS accordingly.*

Response: The Hazardous Waste Regulations and Air Quality Regulations will be moved to the action-specific ARARs table. The appropriateness of the RI Oil Contaminated Soil Policy will be reviewed and the text edited, if necessary.

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96. Table 2-1 *Comment: Add a citation for the federal Safe Drinking Water Act as Relevant and Appropriate. For Synopsis state: "The statute establishes MCLs for contaminants in groundwater." For Consideration state: "MCLs will be used to establish PRGs for groundwater."*

*For the RI Remediation Regulations - Consideration: Insert "and groundwater" after "soil."*

*Move the RI Rules and Regulations for Hazardous Waste Management and the RI Air Quality Regulations to Action-specific ARARs.*

*Remove the State Oil Contamination Policy - Petroleum is not addressed under the jurisdiction of CERCLA.*

Response: The Navy concurs, and the suggested revisions will be made.

97. Table 2-2 *Comment: The Floodplain Management Executive Order requires the Navy to solicit comments regarding how the selected remedy meets the standard for being the least damaging practicable alternative.*

*For the Clean Water Act, Section 404, please also cite the Act in addition to the regulations. Under "Consideration" replace "dredging" with "discharge of dredged material" in the first and second sentences.*

*For the Fish and Wildlife Coordination Act, under both "Synopsis" and "Consideration" insert "endangered species or" before "fish and wildlife."*

Response: The Navy concurs, and the suggested revisions will be made.

98. Table 2-3 *Comment: For the Clean Water Act, Section 402, under Consideration, add: "Discharge of any contaminated groundwater during soil excavation in either a POTW or Narragansett Bay will meet applicable standards."*

*Add the Toxic Substances Control Act (TSCA) as Applicable regarding the identification, handling, and disposal of PCBs exceeding statutory standards.*

*Add the Safe Drinking Water Act (MCLs) as Relevant and Appropriate for establishing standards for monitoring groundwater to determine the extent of groundwater contamination.*

*Under the RI Hazardous Waste Management Act, Consideration - In both sentences after "excavation" add "and/or the generation of contaminated filters or treatment byproducts." Add new third and fourth sentences that state: "All excavated soil and sediment will be tested for hazardous characteristics before disposal. If soil or sediment is identified through this testing, confirmatory testing will be conducted in the area where the hazardous material was located to ensure that all soil or sediment exceeding hazardous waste standards is removed."*

*Under Water Pollution Control, Consideration - Add at the end "Remedial actions, including dredging and filling will not cause degradation of the Bay."*

Response: The Navy concurs, and the suggested revisions will be made.

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99. Table 2-4 *Comment: The maximum detected Aroclor 1254 concentration identified in this table was not found in Table 2-11 or Figure 2-1. Please clarify where Aroclor 1254 exceeded the PRG.*

Response: No samples containing Aroclor 1254 appear in Table 2-11 or Figure 2-1 because they are all screened out when compared to the PRG of 1000 ug/kg (selected in Table 2-9). The PRG is based on the soil action level from EPA Directive 9355.4-01, A Guide on Remedial Actions at Superfund Sites with PCB Contamination.

100. Table 2-9 *Comment: In the Basis for Selection column, the listings for PCBs and Dioxins should both be changed to To-Be-Considered as neither is an ARAR. Please also provide rationale for selection of these TBC values as PRGs.*

Response: The listings for PCBs and Dioxins will be changed to TBC.

The EPA's comment on the Draft FS was as follows. "According to EPA's Directive 9355.4-01, A Guide on Remedial Actions at Superfund Sites with PCB Contamination (August 1990), the level of 1 mg/kg PCBs for residential areas is recommended as the soil action level - analytical starting point to reflect a protective quantifiable concentration.

The PRG for PCBs in residential soil still must be calculated based on risks and site-specific exposure parameters.... For dioxin, according to EPA's Directive 9200.4-26, Approach for Addressing Dioxin in Soil at CERCLA and RCRA Sites (April 13, 1998), the level of 1 µg/kg toxicity equivalents for dioxin is generally used as a starting point for setting cleanup levels and PRG for remedial sites in residential areas. This level is usually recommended unless extenuating site-specific circumstances warrant a different level."

The same responses as given before still apply: The maximum concentration of PCBs detected at the site was Aroclor-1254 at a concentration of 0.53 mg/kg. Therefore, if the level of 1 mg/kg PCBs is used as a soil action level, no further action would be required.

The text and tables were revised to present the value of 1 mg/kg as an action level instead of as a PRG. As indicated in the Draft FS comment, the value of 1 µg/kg toxicity equivalents for dioxin is appropriate to use as a PRG.

101. Table 2-15 *Comment: There are apparently several errors in this table in the Maximum Detected column based on comparison of the values in this table to the data in Table 2-16. All the maximum detected beach sediment values in this table are significantly too small. Errors were also noted in the near-shore sediment maximum detected values, where the values for 2-methylnaphthalene and benzo(a)pyrene are too small. Also, the maximum detected concentration for benzo(a)pyrene exceeds the PRG, making benzo(a)pyrene a COC. Please review all the values in this table and make the appropriate corrections.*

Response: The Table will be reviewed and revised as necessary.

102. Tables 2-x *Comment: Add Tables for "Risk-based COPC Selection for Groundwater," "RIDEM-Based COPC Selection for Groundwater," "Selection of Groundwater COPCs Requiring Further Consideration," "Groundwater Preliminary Remediation Goals," "Selection of Groundwater COCs," and "Groundwater Concentrations Exceeding PRGs."*

Response: Please refer to the response to specific comment no. 3, above.

103. Table 3-1, p. 1 *Comment: Under deed restrictions, restrictions on the use of groundwater should be mentioned because those are the only restrictions implemented in this FS.*

Response: The Navy concurs, and the suggested revision will be made.

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104. Table 3-3 *Comment: Add a "General Response Action" for "Monitored Natural Recovery" provided sufficient information about this alternative is developed (i.e., length of time to achieve PRGs).*
- Response: The Reviewer is referred to the response to general comment no. 1. It is not the Navy's intent to propose a "monitored natural recovery" response action or alternative.
105. Table 3-4 *Comment: Under treatment, the reference to on-site appears to be incorrect. The FS text appears to suggest that any sediment treatment would be performed at a TSDf. Please correct.*
- Response: The Navy concurs, and the suggested revision will be made.
106. Tables 3-x *Comment: Add Tables for "Identification and Preliminary Screening of Technologies and Process Options for Groundwater" and "Representative Process Options for Groundwater."*
- Response: Please refer to the response to specific comment no. 3, above.
107. Table 4-1 *Comment: For Alternatives 2 and 3, remove the bullet for "Institutional Controls Limiting Use of Groundwater." This should be discussed in Table 6-1.*
- Response: Please refer to the response to specific comment no. 3, above.
108. Table 4-2 *Comment: For Reduction of Toxicity...; Reduction in Toxicity, Mobility, or Volume; Alternative 3 - change "Mobility - reduced" to "None."*
- Response: The Navy concurs, and the suggested revision will be made.
109. Table 4-3 *Comment: Remove the RI Oil Pollution Control Regulations - Petroleum is not regulated under the jurisdiction of CERCLA and is therefore not an ARAR.*
- Response: The Navy concurs, and the suggested revision will be made.
110. Table 4-6 *Comment: Remove the RI Oil Pollution Control Regulations - Petroleum is not regulated under the jurisdiction of CERCLA and is therefore not an ARAR.*
- Response: The Navy concurs, and the suggested revision will be made.
111. Table 4-7 *Comment: If removal and replacement of the stone rip rap on the shore includes working below the high tide line, then federal and state wetlands standards need to be cited along with the federal Rivers and Harbors Act.*
- Response: The Navy concurs, and any necessary revisions will be made.
112. Table 4-8 *Comment: For RCRA, Action to be Taken - Add "Any treatment filters or residues will be tested for hazardous characteristics and handled according to applicable standards."*
- For RI Hazardous Waste Management, Action to be Taken - Add "Any treatment filters or residues will be tested for hazardous characteristics and handled according to applicable standards."*
- Need to add the Toxic Substances Control Act (TSCA) as Applicable regarding the*

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*identification, handling, and disposal of PCBs exceeding statutory standards.*

Response: The Navy concurs, and the suggested revisions will be made.

113. Table 4-8, p. 3 *Comment: Move RI Remediation Regulations for Groundwater to Tables 6-x.*

Response: Please refer to the response to specific comment no. 3, above.

114. Table 4-9 *Comment: Remove the RI Oil Pollution Control Regulations - Petroleum is not regulated under the jurisdiction of CERCLA and is therefore not an ARAR.*

Response: The Navy concurs, and the suggested revision will be made.

115. Table 4-10 *Comment: If removal and replacement of the stone rip rap on the shore includes working below the high tide line, then federal and state wetlands standards need to be cited along with the federal Rivers and Harbors Act.*

Response: The Navy concurs, and any necessary revisions will be made.

116. Table 4-10 *Comment: Add the Toxic Substances Control Act (TSCA) as Applicable regarding the identification, handling, and disposal of PCBs exceeding statutory standards.*

*Move RI Remediation Regulations for Groundwater to Tables 6-x.*

Response: The Navy concurs, and the suggested revisions will be made.

117. Table 4-12, p. 2 *Comment: For Reduction of Toxicity...; Alternative 4 - change to "None."*

Response: The Navy concurs, and the suggested revision will be made.

118. Table 4-12, p. 4 *Comment: For Administrative Requirements...; Alternative 2 - change to "Need to comply with all ARAR standards. No on-site permits required." For Alternative 3 - remove "construction." and add "Need to comply with all ARAR standards. No on-site permits required."*

Response: The Navy concurs, and the suggested revisions will be made.

119. Table 5-1 *Comment: For Alternative 2, please elaborate on the long-term monitoring included for this alternative. It would also be appropriate to review the long-term monitoring descriptions for all the alternatives as the descriptions here do not appear to correspond with the detailed description of monitoring provided in Appendix F, Cost Estimates. Please correct as appropriate.*

Response: The sections discussing long-term monitoring will be reviewed and changes made as necessary to provide more elaboration and clarification.

120. Table 5-2 *Comment: For Compliance with Chemical-specific ARARs, Alternatives 3 and 4 - Change to "No, unless it can be shown monitored natural recovery will occur within an acceptable time period."*

*Much of the information presented in this table is incomplete or not accurate. Please refer to other comments provided in this document regarding the protectiveness of the alternatives, descriptions of achievement of RAOs for each alternative, and short-term impacts of alternatives. For example, it is not clear that the sediment pre-design*

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*information was fully incorporated into this table. Since the sediment in the majority of the eelgrass beds do not exceed PRGs, it is not clear why the table indicates that Alternatives 3 and 4 would not reduce environmental risks in the eelgrass beds. Also, none of the alternatives fully protects current and future users because the risk from shellfish ingestion remains (at least in the short term) for each alternative. Also, Alternative 3 does nothing to reduce environmental risk at near-shore areas. Also, all alternatives require long-term management because of the likelihood of contaminated sediment migration to the beach. Also, there are risks to the community for all alternatives. At a minimum these risks include truck traffic, noise pollution, and air emissions from vehicles. There are additional risks to workers, such as working in or near deep water, and hypothermia, made more acute by the wet environment. Please review this table closely as there are other similar corrections that should be made.*

Response: The information presented in this table will be reviewed and changes made as necessary to correct or clarify the information presented.

121. Table 5-3 *Comment: Remove the RI Oil Pollution Control Regulations - Petroleum is not regulated under the jurisdiction of CERCLA and is therefore not an ARAR.*

Response: The Navy concurs, and the suggested revision will be made.

122. Table 5-6 *Comment: Remove the RI Oil Pollution Control Regulations - Petroleum is not regulated under the jurisdiction of CERCLA and is therefore not an ARAR.*

Response: The Navy concurs, and the suggested revision will be made.

123. Table 5-9 *Comment: For the Clean Water Act, Section 304 and state Water Pollution Control; Action to be Taken - Change last sentence to: "This alternative fails to meet the standard, unless it can be shown that the sediment left in place will reach PRGs within an acceptable time frame from natural recovery processes."*

*Remove the RI Oil Pollution Control Regulations - Petroleum is not regulated under the jurisdiction of CERCLA and is therefore not an ARAR.*

Response: The Navy concurs, and the suggested revision will be made.

124. Table 5-11, ¶3 *Comment: For Hazardous Waste Management Standards; Action to be Taken - Change "soils" to "sediments."*

Response: The Navy concurs, and the suggested revision will be made.

125. Table 5-12 *Comment: Split Tables for Alternatives 4 and 5.*

*For Alternative 4; Clean Water Act and state Water Pollution Control; Action to be Taken - Action to be Taken - Change last sentence to: "This alternative fails to meet the standard, unless it can be shown that the sediment left in place will reach PRGs within an acceptable time frame from natural recovery processes."*

*Remove the RI Oil Pollution Control Regulations - Petroleum is not regulated under the jurisdiction of CERCLA and is therefore not an ARAR.*

Response: The passage will be revised to reflect the differences in effectiveness to meet the standards, but the table will not be split.

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126. Table 5-14, p. 3 *Comment: For Hazardous Waste Management Standards; Action to be Taken - Change "soils" to "sediments."*

Response: The Navy concurs, and the suggested revision will be made.

127. Table 5-15 *Comment: Some comments made for Table 5-2 also apply to this table. Please correct. Under "Community Protection", Alternatives 3, 4, and 5 are not the same as Alternative 1. Please correct.*

Response: The Navy concurs, and the suggested revisions will be made.

128. Table 5-15, p. 2 *Comment: For Chemical-Specific, Alternatives 3 and 4 - Add: "This alternative fails to meet the standard, unless it can be shown that the sediment left in place will reach PRGs within a reasonable time frame by natural processes."*

Response: The passage will be revised to reflect the differences in effectiveness to meet the standards, but the table will not be split.

129. Table 5-x *Comment: For Chemical-specific Table for Alternative 5; Action to be Taken - use the text in the revised Table 5-12.*

*Remove the RI Oil Pollution Control Regulations - Petroleum is not regulated under the jurisdiction of CERCLA and is therefore not an ARAR.*

Response: The passages will be revised to reflect the differences in effectiveness to meet the standards, but the tables will not be split

130. Tables 6-x *Comment: Please add tables for Groundwater including "Summary of Alternatives," "Summary of Detailed Analysis of Alternatives for Groundwater Remediation," ARARs Tables, and "Summary of Comparative Analysis of Groundwater Alternatives."*

*The Chemical-specific ARARs need to include the federal Cancer Slope Factors, Risk Reference Doses, and the Safe Drinking Water Act, Maximum Contaminant Levels (MCLs), 40 C.F.R. Part 141, Relevant and Appropriate. For state standards need to include the RI Remediation Standards for Groundwater.*

*Location and Action-specific ARARs are dependant on what alternatives are evaluated. For installation and operation of monitoring wells the Navy needs to include the federal Coastal Zone Management Act and Floodplain Executive Order as Location-specific. Also state Coastal Resources Management standards are Location-specific. If any wells will be installed below the high-tide line, then federal and state wetlands standards will apply. For Action-specific ARARs for monitoring would include federal Safe Drinking Water Act (MCLs)/To be used as standards for groundwater monitoring and for determining the extent of contamination. In addition, state Remediation Standards for Groundwater should be cited. The Navy should also include the RI Hazardous Waste Management standards for any generation of hazardous waste from monitoring samples.*

*For Institutional Controls there would not be any Location-specific ARARs (unless groundwater wells or any surface structures are installed in the floodplain or in a coastal resource area). The RI Remediation Standards can be cited for requiring the recording of Environmental Land Use Restrictions.*

*Any active on-site treatment alternative would generate additional Action-specific*

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ARARs.

Response: The Navy concurs, and the suggested revisions will be made.

131. Figure 2-1 *Comment: The title of this figure does not appear to be correct. Please correct as appropriate.*

*TP1 and TP-04 are both shaded in green in this figure indicating that a subsurface soil sample exceeds PRGs. However, both TP1 and TP-04 are listed in Table 2-11 as surface soil samples. Also, the data box for TP1 lists the depth as 2-2 feet, but Table 2-11 lists it as 1-2 feet. Please correct as appropriate.*

*The data label for MW-7S is incomplete. Please correct.*

Response: The figure will be reviewed for accuracy and changes made as appropriate.

132. Figure 2-4 *Comment: Beach sediment samples SD-417 and SD-442, which both exceeded PRGs, are missing from this figure. Please add them.*

*Sample location OFF-5E had exceedances of PRGs and should be shaded pink. Please correct.*

*Sample location OFF-6 had an exceedance of a PRG and should be shaded light blue. Please correct.*

*SD-410 had an exceedance of the shellfish ingestion PRG and consequently poses a human health risk as well as an ecological risk. Please indicate this in the figure.*

*It appears that beach sediment east and west of the shaded area has not been investigated sufficiently to determine whether PRGs have been exceeded in these areas. The scope of any pre-design investigation should include sampling and analysis for samples collected east and west of the beach sediment currently identified as contaminated.*

*Please add the outfall pipe located between OFF-2 and OFF-3.*

*Please indicate, possibly with a note, the relative location of OFF-18 to locations SD-468 and SD-469.*

*The same comments apply to Figures 5-1, 5-2, and 5-4.*

Response: The suggested revisions will be made to the figures, as pertinent to other comment responses. The actual area exceeding PRGs around SD-410 will be defined by additional sampling prior to completion of the PRAP.

133. Figures 5-2 & 5-4 *Comment: Please show the shoreward side of the causeway on the figures. Depending on how the causeway is constructed and what it is used for, the ramp will have to extend approximately 30 to 60 feet shoreward from the low tide line.*

Response: The figures showing the causeway will be revised for clarity.

134. Appendix B, §5.6.1 *Comment: Please note that from Figure 5-1 and Table 5-7, 72.7% of children exposed to groundwater and surface soil is estimated to have blood lead level below 10 µg/dL,*

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*meaning 27.3% of this group of children would have blood lead level above 10 µg/dL.*

Response: The report correctly presents the lead risks as they stand. It is likely that the reviewer misunderstood the risks as 100 minus the percent of children. This is evident by the figures because as the curve extends out farther on the x-axis towards higher blood lead concentrations the Y-reading for % of children becomes smaller in magnitude. Therefore, the vertical line on the figures where the curve intersects the x-axis value of 10 ug/dL represents % of children with blood lead levels above 10 ug/L, as the report currently states.

135. Appendix B, §5.6.2 *Comment: Please note that 83.8% of children exposed to groundwater and subsurface soil is estimated to have blood lead level below 10 µg/dL, leaving 16.2% of the children to be estimated with blood lead level above 10 µg/dL.*

Response: See the response to comment no. 134.

136. Appendix B, §7.5 *Comment: Please correct the errors regarding the percentage of children at risk for having blood lead levels above 10 µg/dL.*

Response: See the response to comment no. 134.

137. Appendix D *Comment: The tables referenced in this appendix were not included in the appendix and do not appear to relate to other tables provided in the FS. Please include the referenced tables for Appendix D.*

Response: This oversight has been corrected.

138. Appendix D *Comment: In the second paragraph under Shellfish Ingestion on page D-12, the drainage pipe near SD-410 is discussed. It should be noted that another possible cause for contamination in this area could be infiltration or channeling of contamination from subsurface soil into or along the drainage pipe.*

Response: The Navy concurs, and additional discussion will be provided for the revised FS.

139. Appendix E, p. E-6, Table E-4 *Comment: The tables on this page provide the estimated sediment areas and volumes associated with various sediment sampling locations. What is not provided in this appendix is an explanation of how the areas are extrapolated from the sample point data. It is difficult to evaluate the need to excavate within the eelgrass bed based on the single sample SD-410, because it is not known whether this sample was taken in a highly localized hot spot or a large area of contamination. Please explain the method used to extrapolate an area of contamination based on sample SD-410.*

Response: As the comments point out, there is no data within the eelgrass areas north and west of SD-410. Therefore the area was marked out as shown only to show there was an exceedance. The actual area is not defined yet, and the areas and volumes are estimates based on the data that is available. The estimated quantities are appropriate for the purposes of the FS provided the reviewers understand the limitations of the data and accept changes to the size and shapes of the action areas as more data is made available.

140. Appendix F *Comment: Soil Alternative #2: For Line Items 6.5 and 6.6 on page 2 of the spreadsheet, it is not apparent how the number of samples was calculated. The values appear to be inconsistent with the volume per sample and the total volume sampled. Please review and correct as appropriate. This comment also applies to Soil Alternative 3.*

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*For Line Items 6.7 and 6.8, the number of confirmation samples needs to be increased. A multi-sample composite should be collected every 2,500 square feet and analyzed for SVOCs, metals, pesticides/PCBs, dioxins, TPH, TCLP, and ignitability, as a minimum. Since RIDEM requires that all vadose zone soil achieve the PRGs, additional samples will need to be collected at depth to the water table to verify compliance. The details of the sampling plan can be presented in subsequent documents; however, for cost estimating purposes, assume that a composite subsurface sample will be collected every 2,500 SF for each two-foot depth interval. Please edit the FS accordingly. This comment also applies to Soil Alternative 3.*

*For Line Item 8.2, the conversion factor from cubic yards to tons used was 1.25; however, for Line Item 9.1, the conversion factor used was 1.5 (fill cost \$7/ton per page 2 of 3 on the calculation sheet). Please review cubic yards to tons conversions throughout the spreadsheet for consistency and correct as appropriate. This comment also applies to Soil Alternative 3.*

*For Line Items 8.2 and 8.5, it is assumed that these costs include all the handling required to get soil from stockpiles to treatment, back to stockpiles and back to the subsequent treatment, and back to stockpiles again. Otherwise, a significant cost component is missing from this cost estimate. Please review and correct as appropriate.*

*If soil washing will produce a residual volume of contaminated fines, as is usually the case, then an additional disposal volume should be added to this spreadsheet. Please review and correct as appropriate.*

*For Line Items 8.11 and 8.12, the number of samples proposed is not enough considering that this soil will be reused at the site. A multi-sample composite should be collected every 150 cubic yards and analyzed for SVOCs, metals, pesticides/PCBs, dioxins, TPH, TCLP, and ignitability, as a minimum. Please edit the FS accordingly.*

*For Line Item 8.14, the cost appears too low. Please check it.*

*For Line Item 9.2, the note "no compaction" should be deleted; compaction will be required and the volume used assumes compaction will be done. Please correct. This comment also applies to Soil Alternative 3.*

Response: The cost tables will be reviewed and changes made as appropriate. Clarifying text will also be added to the assumptions as appropriate.

141. Appendix F *Comment: For Soil Alternative #2, in the Subcontract column on page 3 of the spreadsheet, the first subtotal line has an incorrect value. It appears that the first line of the spreadsheet is missing from the subtotal. Please review this and other subtotals and correct as appropriate. This comment also applies to Soil Alternative 3 except please refer to page 2.*

*For Soil Alternative #2, in the Present Worth Analysis, as presented, Soil Alternative 2 has a five-year project life. The discount rate that should be used for a project with a five-year life is 2.8% not 3.9%, according to the February 2002 OMB Circular No. A-94, Appendix C. Please adjust the calculation accordingly. This comment also applies to Soil Alternative 3.*

Response: The cost tables will be reviewed and changes made as appropriate. See response to comment 85 regarding present worth.

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142. Appendix F *Comment: On page 1 of the Calculation Sheet for Sediment Alternative #3, the meaning of the Capital Cost Assumption 3 is not clear. Does this refer to means to prevent equipment from getting stuck in the sand? Please clarify. This comment also applies to Sediment Alternatives 4 and 5.*

*Capital Cost Assumption 4: This assumption suggests that sediment will be excavated in the wet so that the work will be impacted by waves and the changing tide. It is assumed that these conditions exist since they have been discussed in the FS. At near low tide conditions, the boom will be flapping back and forth with the waves and back-surge. The back-surge will pull sediment under the boom, unless it is continuously anchored around its perimeter, or over the boom. If this method has been used successfully at other sites, please provide a more detailed explanation as to how a boom would be installed in these conditions to be effective against erosion. It would appear that porta-dams would be a much more reliable technology to facilitate excavation and prevent erosion and sediment migration, although it would be at a cost. Please discuss in the FS the cost impacts of using porta-dams rather than a silt boom to conduct the beach excavation. This comment also applies to Sediment Alternatives 4 and 5.*

*Capital Cost Assumption 5: In the third bullet, I assume that the bridge will not require improvements. If there is no current basis for that assumption, it would be appropriate to include an assessment of the bridge and access roads in the scope of work for the pre-design investigations. If improvements are required for the bridge to support the weight and volume of traffic required to conduct this (and other) alternative(s), the costs could be significant and the work could delay implementation of the remedy. Please edit the FS accordingly to discuss this. This comment also applies to Sediment Alternatives 4 and 5, but the referenced text is found in assumption 7.*

Response: Clarifying text will be added to the capital cost assumptions. The bridge will not require improvements, and no additional information will be added to the cost appendix regarding the bridge.

143. Appendix F *Comment: Capital Cost Assumption 5: On page 1 of the Calculation Sheet for Sediment Alternative #4, there appear to be errors in the calculations related to the causeway. First, with a 20-foot wide top and a 1:1 side slope, the base width will be 44 feet with a 12-foot height, not 42 feet. Second, the volume cannot be calculated without assuming a length. If the length is assumed to be 20 feet at the top, the shape would be the frustum of a pyramid. With the dimensions cited, the volume of the causeway would be 476 cubic yards. However, it is unlikely that a 1:1 side slope would allow access to the top of the causeway, so that a ramp with a shallower slope would be required. This would require even more crushed stone to construct. Consequently, the cost of the causeway has been significantly under-calculated, perhaps by a factor of three or more. Also, please verify that a 1:1 slope will be adequate to support the anticipated live load. If a shallower slope is required to support the load, that will impact the cost of the causeway and the reach required by the excavator (which is already approximately 30 feet). Please review the calculations and the assumptions for the size of the causeway, and correct the cost calculations. This comment also applies to Sediment Alternative 5.*

Response: The calculations and the assumptions for the size of the causeway will be reviewed and corrected as necessary.

144. Appendix F *Comment: Capital Cost Assumption 7: In the sixth bullet on page 2 of the Calculation Sheet for Sediment Alternative #4, the area value is missing from the first sentence. Please correct. This comment also applies to Sediment Alternative 5.*

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Response: The area values will be provided.

145. Appendix F *Comment: As presented, Sediment Alternative 5 has a five-year project life. The discount rate that should be used in the Present Worth Analysis for a project with a five-year life is 2.8% according to the February 2002 OMB Circular No. A-94, Appendix C. Please adjust the calculation accordingly.*

Response: See response to comment 85 regarding present worth.

**ATTACHMENT B**  
**Responses to Comments from the**  
**Rhode Island Department of Environmental Management**  
**Old Fire Fighting Training Area Draft Final FS For**  
**Soil and Marine Sediment (March 2002)**  
**Comments dated April 26, 2002**

**General Comments**

The first portion of RIDEM's comments refers to the comment numbering scheme for the Draft FS. The letter "D" has been added to those numbers to differentiate them from the comments on the Draft Final FS.

**No. Comment/Response**

- D6. Page 2-4, Section 2.21, Identification of Media of Concern, Soil Paragraph 2.

*Both carcinogenic and noncarcinogenic risks were below EPA risk range and RIDEM's benchmarks for recreational receptors and excavation workers.*

*Please modify the above as follows: Both carcinogenic and noncarcinogenic risks were below EPA Risk range for recreational receptors and excavation workers. The concentrations of contaminants are above the State's standards for unrestricted recreational use of the site.*

*Evaluation of Draft Final Report*

*The Draft Final contains a typographical error. In the Navy's response submittal dated 2 August 2001, the Navy stated that the text will be revised as suggested. The text in the draft final contains the following: "Both carcinogenic and non carcinogenic risk were below EPA risk range and RIDEM's benchmarks for recreational and excavation workers, although the concentrations of the standards are above the standards for unrestricted recreational use of the site." The modified text is confusing and inaccurate as the State does not have benchmarks. Therefore please modify as originally requested.*

Response: The Navy concurs and the text will be revised as noted.

- D7. Page 2-5, Section 2.21, Identification of Media of Concern, Soil Paragraph 2.

*Comment: ...of 1.0 for any target organ.*

*Please add the following sentence to the above: ...of 1.0 for any target organ. The RIDEM unrestricted recreational standard was exceeded on the shoreline.*

*Evaluation of Draft Final Feasibility Study*

*Please indicate whether any of the shoreline samples exceed RIDEM's residential standards.*

Response: PAHs and metals in the beach sediments exceed RIDEMs direct exposure criteria (DEC) for residential use soils. Exceedances are noted in most stations for Benzo(a) pyrene and chrysene, both of which have a DEC of 400 ug/kg. Also, DEC's for lead, manganese and arsenic were exceeded in the beach sediments. This was not called out as a separate item in the FS, since the PRGs in the beach sediments are exceeded for PAHs. This is further evidence that treating the beach sediments as residential soils directs the exceedances. This information will be added to the FS as appropriate.

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- D10. Page 2-5, Section 2.21, Identification of Media of Concern, Groundwater Paragraph 8.

*Comment: This section of the report discusses the groundwater objectives for the site. The report should list, in addition to any chemical specific objective, the requirement for no free product in the groundwater at the site.*

*Evaluation of Draft Final Feasibility Study*

*In response to comments, dated 2 August 2001, the Navy stated that the text would be revised as suggested. Please indicate which paragraph in Section 2.2.1 contains the agreed to changes. In addition, removal of free product should be listed as an remedial action objective for groundwater.*

Response: The Navy is deferring this comment to the EPA, who stated in their comments that TPH is not a CERCLA contaminant. The reviewer is also referred to the response to Comment no. 1, below.

- D11. Page 2-9, Section 2.2.2.3, Development of Remedial Objectives for Soil, Whole Section.

*Comment: Although not stated, the report should note that either the lower of the RIDEM Direct Exposure Standards or the Sediment PRGs will be applied to the beach.*

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*Please be advised that RIDEM's residential scenario is applied to recreational areas. Accordingly, the Office of Waste Management reiterates the comment*

Response: The Navy understands RIDEMs requirement, and the report will be revised to state that for the FS, the PRGs are used to identify action areas in the beach sediment (intertidal zone), and not the RIDEM direct exposure criteria. The realistic use of the beach as residential property is questionable at best, even using a conservative risk model. Reasonable risk management consideration should result in a revised approach from direct application of either PRGs developed from a residential model or DEC's to intertidal sediment.

- D12. Page 2-12, Section 2.2.2.4, Remedial Action Objectives for Soil Whole Section.

*Comment: This section of the report discusses the remedial objective for soil. In addition to the chemical specific objectives the report should include the objective of no free product in the soil. This requirement applies to both the vadose and saturated zones.*

*Evaluation of Draft Final Feasibility Study*

*In response to comments the Navy has agreed to modify this section of the report to reflect this requirement as an remedial objective for soil. This modification has not been performed. Therefore, please correct this typographical omission and modify the report as previously agreed.*

Response: The reviewer is referred to the response to comment D10, above and comment 1, below.

- D14. Page 2-13, Section 2.2.3.1, Identification of Chemicals of Potential Concern in Sediment.

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*Comment: In addition to the specific chemicals of concern the report should include a PRG for TPH. The TPH standard of 500 ppm may be applied at the site.*

*Evaluation of Draft Final Feasibility Study*

*In response to comments the Navy has agreed to modify this section of the report to reflect this requirement. This modification has not been performed. Therefore, please correct this typographical omission and modify the report as previously agreed.*

Response: The reviewer is referred to the response to comment D10, above, and comment 1, below.

D15. Page 2-19, Section 2.2.3.4, Remedial Action Objectives for Sediment.

*Comment: In addition to the objectives listed, the report should include the objective of no free product in the sediment.*

*Evaluation of Draft Final Feasibility Study*

*In response to comments the Navy has agreed to modify this section of the report to reflect this requirement. This modification has not been performed. Therefore, please correct this typographical omission and modify the report as previously agreed.*

Response: The reviewer is referred to the response to comment D10, above, and comment 1, below.

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- D16. Page 3-6, Section 3.2.2.2,  
Limited Action (Deed Restrictions), Bullet 1, Sentence 2

*Comment: It is stated that deed restrictions, by themselves are not reliable because they are difficult to enforce. Please be advised that deed restrictions are routinely used not only in Rhode Island, but also across the nation as a form of remediation. Enforcement of the deed restriction depends on an effective monitoring program. At Naval Construction Battalion Center, across the Narragansett Bay, such a program is in place for sites where deed restrictions have been applied.*

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*The report states that the ELUR would be implemented in accordance with the Navy guidance on deed restrictions. Deed restrictions would also have to meet regulatory requirements. Therefore, this section of the report should note that any deed restrictions would have to meet the requirements of the regulators.*

Response: The Navy concurs and the report will be revised as noted.

- D23. Page 4-20, Section 4.4.3,  
Soil Alternative 3: Removal and Disposal

*Comment: The estimated volume of soil requiring removal at the Old Fire Fighter Training Area is approximately 50,000 cubic yards. The estimated cost for this option is approximately eight million dollars. The approximate volume of contaminated soil, which required removal at the Melville North Landfill, was 100,000 cubic yards. The estimated cost to remove and dispose of this soil was approximately eight million dollars. Please evaluate the cost estimates to ascertain the reason for the discrepancies in the cost of the projects.*

*Evaluation of Draft Final Feasibility Study*

*The revised cost in the Draft Final Feasibility Study is higher than in the Draft Feasibility Study. The report has not stated why it will cost twice as much to remove one half of the volume of contaminated soil from Old Fire Fighter Training Area when compared to Melville North Landfill. The discrepancy in the cost between the two sites brings into question the estimates for Old Fire Fighter Training Area. Therefore, please provide an explanation for the difference in the cost.*

Response: The estimates provided in the FS contain contingency costs for difficulty factors, data limitations and other uncertainties. The actual costs are likely to be lower than the estimated costs, but this is not certain until the project is at completion. TtNUS stands by the cost estimates as they are presented.

- D35. Table 2.8, Selection of Soil COPCs.

*Comment: During remedial investigation activities a variety of oils were observed at the site (heavy oils, hydraulics, fuel oils, oil sludges, etc). Samples of the various oil types were not collected and analyzed (certain efforts were designed to visual determine the extent of contamination and or only the predominant oil type was tested, etc). Therefore, please modify the COPC table to include the full list of RIDEM regulated Method 1 SVOCs.*

*Evaluation of Draft Final Feasibility Study*

*The Navy has stated that .."even if the additional SVOCs were added to the COPC table, they would be screened out in the COC selection, resulting in no net change in the document." This position is based upon the assumption that the SVOC concentrations would be so low that these*

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*compounds would be screened out during the COPC selection process. As the samples were never collected it is not possible to determine if the concentrations of the compounds would have been screened out. Therefore, as previously stated the full list of SVOCs will be included in those areas where stained soils, saturated soils, or free product is encountered.*

Response: This comment is confusing, but seems to be requesting that compounds for which there is no data be included in the COPC selection table. However, because there is no data, they would not be included in the later steps of the PRG development. It is unclear what this will add to the report.

1. General Comment

*Comment: The majority of the contamination at the site resulted from the release of, or burning of, waste oils. Accordingly, the report addresses petroleum contamination at the site and has proposed a remedial standard for TPH, as well as, remedial actions to address the petroleum-related contamination. The Office of Waste Management concurs that the report should discuss petroleum contamination at the site and the report must include both a remedial standard for TPH and remedial actions for TPH. However, in order to avoid confusion with the petroleum exclusion rule in Superfund, the report should note in the appropriate sections that virgin petroleum is excluded from Superfund.*

Response: The action at the site is being conducted under CERCLA, and the risk assessment has provided PRGs for meeting target risk goals. The FS evaluates alternatives to remove those contaminants to meet the target risk goals. The Navy concurs that in order to avoid confusion with the petroleum exclusion rule in Superfund, the report should note in the appropriate sections that virgin petroleum is excluded from Superfund.

Because the Navy intends to have an unrestricted use of the site at project completion, oil-saturated soils, waste materials and free product will be removed from the site during the remedial actions. Such requirements are best added to the proposed plan and ROD. However, the CERCLA-based alternatives in the FS will not discuss petroleum as a cleanup criteria.

2. Page ES-2, Background, Paragraph 3, Sentence 5

*Comment: This sentence states that intermediate and low risks are acceptable from an ecological standpoint. Please note the Office of Waste Management does not consider intermediate stations as acceptable from an ecological perspective. Therefore, either modify the sentence as follows or include the following caveat:*

*Modified Sentence*

*The stations rated, as low risk may be considered acceptable from an ecological perspective*

*Caveat*

*The Rhode Island Department of Environmental Management does not agree with, and has not approved the Ecological Risk Assessment for the site, and does not concur with the position that intermediate risk stations may be considered acceptable from an ecological point of view.*

Response: The sentence in question will be struck from the report.

3. Page ES-2, Background, Paragraph 1, Last sentence Paragraph 2.

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*Comment: This section states that residential use of the groundwater is unrealistic due to the groundwater classification, the high salinity of the groundwater and the availability of an alternate water supply. The groundwater classification at the site does not prohibit its use for domestic purposes. In this State there are private wells in GB aquifers. In regards to the salinity issue, the highest chloride concentration observed in the monitoring wells at the site is 5 ppm. The majority of the shallow and bedrock wells had chloride concentrations of 1 ppm or less. The secondary USEPA MCL for chloride is 250 ppm, and chloride concentration in seawater is 19,000 ppm. Accordingly, it is inappropriate to state that the groundwater is saline. Finally, the availability of an alternate water supply does not preclude the use of wells. Therefore, the last sentence in paragraph 2 and the last sentence in paragraph 1 should be eliminated from the report.*

Response: In accordance with agreements made at teleconferences held May 23 and May 16, the revised FS will include a section to evaluate groundwater alternatives. It is anticipated that this section will result in a revision to the text noted above that will be suitable to the reviewer.

4. Page ES-4, Summary of Soil Alternatives, Soil Alternatives 2 and 3

*Comment: Based on the Navy's estimates Alternative 2 will cost approximately \$246 per cubic yard of soil and Alternative 1 will cost approximately \$167 per cubic yard. These costs seem extremely over-inflated. Please provide the justification for these costs.*

Response: Costs are based on references provided in the FS appendices. In the past, RIDEM took issue with the line item cost estimates, and requested pricing backup for FS reports provided for both McAllister and Derecktor. In both cases, large quantities of published materials were photocopied and provided to the OWM, but with no follow up from them. Therefore, this time the Navy requests that RIDEM use the references cited to back-check the cost estimates if they are so inclined.

5. Page 1-14, Section 1.9, Human Health Risk Assessment  
Paragraph 3, last sentence, Paragraph 4.

*Comment: Paragraph 4 and the last sentence in paragraph 3 should be removed from the report, see comment 3.*

Response: The reviewer is referred to the response to comment no. 3.

6. Page 1-14, Section 1.9, Human Health Risk Assessment  
Paragraph 5.

*Comment: This paragraph contains a commentary concerning the subsistence fisherman scenario. Please remove this paragraph.*

Response: The subject paragraph states the unlikelihood of existing subsistence fishing scenarios at the site, a correct statement that is a part of the logic to use the lifetime recreational fishing scenario for the site. The Navy understands RIDEMs disagreement on the subject and agree that further discussion is necessary to reach a resolution.

7. Page 1-15, Section 1.10, Ecological Risk Assessment  
Paragraph 3.

*Comment: This paragraph states that intermediate risk stations are consider acceptable from an ecological risk point of view. Please modify the paragraph as suggested in comment 2.*

Response: The sentence in question will be struck from the report.

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8. Page 2-5, Section 2.21, Identification of Media of Concern, Groundwater Paragraph 2.

*Comment: Paragraph 2 should be deleted from the report, see comment 3.*

Response: The reviewer is referred to the response to comment no. 3.

9. Page 2-5, Section 2.2.1, Identification of Media of Concern (Sediment), Paragraph 3, Last Sentence

*Comment: This sentence states that HI's did not exceed 1.0 for sediment. The Shellfish section notes that shellfish will be addressed within the sediment section. Shellfish have HI's greater than one and therefore by extension sediment must then have an HI greater than one. Please modify the report to state that the shellfish ingestion routes results in the sediment having a HI greater than 1.*

Response: Clarifications on the Shellfish HI values will be provided in the revised FS.

10. Page 2-12, Section 2.2.2.3, Identification of Chemicals of Concern in Soil, Paragraph 1, Sentences 2 and 3.

*Comment: These sentences note that for each constituent the maximum concentration is compared to the PRG and any chemical with an exceedance is retained as a COC. Please be advised that under RIDEM Remediation Regulations any detection of a constituent must be retained as a COC until it can be demonstrated that said constituent does not pose a risk individually or cumulatively.*

Response: The development of the soil PRGs describes risk based calculation of concentrations of constituents that would not pose a risk individually or cumulatively. If contaminants don't exceed PRGs, they don't pose a risk within the parameters cited. The risk assessment provides the basis for the PRG calculations, and the PRGs are calculated within the parameters requested by RIDEM for residential soils. Therefore, the comparison is correct as presented.

11. Page 2-12, Section 2.2.2.3, Identification of Chemicals of Concern in Soil, Whole Section.

*Comment: Please include pyrene and flouranthene as PRGs for soil (concentrations exceeded RIDEM Standards).*

Response: Refer to the response to comment No. 10.

12. Page 2-13, Section 2.2.2.4, Remedial Action Objectives for Soil, Whole Section.

*Comment: This section of the report addressed contamination in the vadose zone. The saturated zone at the site is also contaminated and the report should include a remedial objective for these soils. The remedial action for the site will entail the removal of contaminated soils. As such contamination in the saturated zone will be easily accessible. In many location it is anticipated that the contamination may only exist within the top few feet of the saturated zone. The Office of Waste Management recommends that the Navy take advantage of this opportunity to excavate these soils. Please be advised that the State regulations does not allow for free product in any media, including the saturated zone, and that all remedial actions must be protective of human*

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*health and the environment.*

Response: The reviewer is referred to the response to comments 1 (TPH) and 3 (groundwater)

13. Page 2-13, Section 2.2.2.4, Remedial Action Objectives for Soil, Whole Section.

*Comment: This section of the report lists the remedial action objectives for the site. During the remedial investigation of the site it was discovered that a number of buried pipes contained petroleum sludges. Although not stated, it is assumed that any buried structures, (tanks, pipes, concrete vaults, etc.) which are found to be contaminated, will be addressed as part of this remedial effort. Accordingly, this section of the report should note that any buried contaminated structures on the site will be addressed (either cleaned and left in placed, removed, etc.).*

Response: The Navy concurs in accordance with the response to comment no. 1.

14. Page 2-13, Section 2.2.3.1, Identification of Chemicals of Potential Concern in Sediment.

*Comment: In correspondence dated 5 March 2002 the Office of Waste Management submitted a list of PRGs which were considered acceptable for both protection of human health and the environment. Please be advised that the following compound was omitted from the list submitted by this Office:*

*Dibenzo(a,h)anthracene 134 ppm*

Response: The PRG noted by the comment above is provided in the FS and has been applied to residential/recreational use of the beach area, since it is derived from the human health/recreational sediment exposure model.

15. Page 2-15, Section 2.2.3.2, Development of Preliminary Remediation Goals for Sediment, Paragraph 1, Sentence 1

*Comment: This sentence states that the purpose of the PRG process is to select a manageable number of COCs.. Under the State program, the purpose of the PRG process is not to select a manageable number of COCs, but rather to determine what concentration of each COC is acceptable from a human health and ecological risk standpoint. The existing sentence implies that if someone arbitrarily feels there are too many COCs that they could be eliminated without any consideration, thus leaving contamination at the site. Please revise this paragraph accordingly.*

Response: The Navy concurs, and the discussion will be revised.

- 16 Page 2-23, Section 2.3.2, Sediment, Paragraph 4

*Comment: "The associated volume of the contaminated sediment in the eelgrass beds using a 1-foot depth is 76 cy." If a remedial investigation has been completed, please explain why the depth of contamination needs to be assumed.*

Response: All estimated areas and quantities are assumptions based on available data. The estimates of quantities are appropriate for the purposes of the FS provided the reviewers understand the limitations of the data and accept that decisions need to be made based on information presented, and that changes to the size and shapes of the action areas may occur as more data is made available.

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- 17 Page 3-6, Section 3.2.2.2, Limited Action,  
Whole Section.

*Comment: Please be advised that in cases where deed restrictions are placed to address contamination at a site the responsible party must submit an annual report to the DEM documenting that all of the restrictions are being met. This report must be submitted every year as long as the restrictions remain on the property. The Office of Waste Management will periodically inspect the site to ensure that the provisions of the deed restrictions are being met. The cost for this annual reporting should be included for this and the other alternatives, which require deed restrictions.*

Response: The Navy concurs, and the suggested revisions will be made.

- 18 Page 5-3, Sediment Alternative 2: Limited Action,  
Whole Section.

*Comment: The report proposes the use of a fence to restrict access to the beach area. Please be advised that a fence is not considered to be an effective barrier to contamination. Fences are easily scaled or accessed through holes and they do not prohibit direct contact with the contaminated soils, nor do they address windblown dust problems. As such, the Office of Waste Management does not consider a fence to be an acceptable remedy to address contamination at the site.*

Response: By fencing the beach area, the risk is changed from a residential or recreational use to a trespasser use. A trespasser would use the beach much less than a resident would, and even less than the shoreline visitor which is described in Section 6 of the RI. Based on the risk calculated for the shoreline visitor, risks to a trespasser would be below action levels. An action of fencing therefore removes the risk, although not the contaminants. This has been found to be an acceptable alternative at many sites.

- 19 Page 5-3, Sediment Alternative 2: Limited Action,  
Whole Section.

*Comment: The report proposes the use of buoys to restrict harvesting of shellfish and or lobsters from the site. Buoys will not prohibit the migration of lobster in and out of the contaminated zone. As such this remedy will not be protective.*

Response: The Navy is aware that lobsters do not remain at the site, and this is one of the reasons that the lobster ingestion scenario should not be an actionable one. Lobsters caught in Coasters Harbor probably spent a fraction of their lives at this location, and so contaminants measured in those lobsters are most likely from other sources.

The RAOs will be modified to more clearly address shellfish ingestion scenarios.

- 20 Page 5-40, Comparative Analysis of Sediment Alternatives,  
Whole Section.

*Comment: This section of the report includes an estimated cost table for the various sediment remedial alternatives. Based upon the information in the table the estimated cost to dredge 6029 cubic yards of sediment is \$ 624 per yard. This cost is excessive. Please provide a more realistic cost estimate for the dredging operation.*

Response: The reviewer is referred to the response to comments no. 4 and D23.

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- 21 Page D-3, Development of Sediment PRGs Based Upon Shellfish Consumption by Humans, Part 2.

*Comment: The subsistence fisherman was originally evaluated in the human health risk assessment. However, this exposure scenario was removed in the PRG process. As previously stated in meetings and correspondence the Office of Waste Management has noted that the shellfish ingestion rate used by the Navy in the human health risk assessment does not agree with values published by the FDA (the Navy's ingestion rate grossly underestimates this exposure). The Office of Waste Management has requested that the Navy use the FDA rate for the average individual. In lieu of modifying the ingestion rate for the average individual the Navy elect to evaluate the subsistence fisherman (the ingestion rate of which is more inline with the FDA study). The Office of Waste Management agreed with the Navy's proposal. The current PRG process does not evaluate the subsistence fisherman, whose consumption rate is more in line with the FDA study. Therefore, the human health PRGs are not reflective of the risk at the site. The Navy may elect to either modify the human health PRGs to include the subsistence fisherman, or employ the dermal PRGs independent of depth. The Office of Waste Management has reviewed the information and has determine that application of the dermal PRGs independent of depth would address the areas which would be addressed if a FDA consumption rate was employed.*

Response: The comment suggests that PRGs calculated for dermal exposure to sediments could be applied to all the sediments, regardless of water depth, and that these would be protective of the subsistence fishing scenario. Because the Navy is mandated to act only on risk-based cleanup goals, the Navy respectfully requests RIDEM to submit the risk calculations that provide the basis for this proposal.

It should be noted that applying dermal PRGs as stated in the comment without regard to actual exposure would direct a remedial action that would extend throughout the harbor to Coddington Point and south to the Officers Club Marina.

During the conference call held on May 23, 2002 between the Navy, EPA and RIDEM, RIDEM suggested that the shellfish ingestion PRGs calculated for McAllister Point be applied to OFFTA, since those PRGs were considered protective by RIDEM, and they were based on what the Navy considers a subsistence level of shellfish ingestion. These PRGs were limited to Arsenic, at 0.39 mg/kg and total PCBs at 121 mg/kg. PRGs for PAHs were not calculated under this scenario.

PCBs are not a site contaminant for OFFTA so they would have to be excluded. Employing a PRG of 0.39 for arsenic would also result in all sediments being actionable. Both of these PRGs were eliminated from the recommended implementation list, and the final PRGs selected for use at McAllister were based on ecological exposures.

**ATTACHMENT C**  
**Responses to Comments from the**  
**National Oceanic and Atmospheric Administration**  
**Old Fire Fighting Training Area Draft Final FS For**  
**Soil and Marine Sediment (March 2002)**  
**Comments dated April 10, 2002**

No.    Comment/Response

1.    General Comment

*Previously, NOAA reviewed the draft of this document in May of 2001 and the related Draft Sediment Predesign Investigation in March of 2002. Although specific NOAA comments from the draft FS were addressed by the Navy in the Response to Comments, the actual locations for potential remediation remains unclear because of regulatory and technical indecision. Especially, as requested in May 2001, the eelgrass area that requires further serious discussion not further letter writing. I would recommend a presentation by the Navy outlining the area where the sediment exceeds the PRGs and the benefits and drawbacks of the options may be discussed. We can the hopefully reach agreement on the necessary remedial action.*

Response: The Navy concurs with NOAAs position on the need for clear decisions on protection of the eelgrass. Unfortunately, the sediment predesign investigation did not complete the evaluation of PAHs on the western edge of the eelgrass beds, and additional data may be necessary to resolve the possible action area in that direction.

At NOAAs suggestion, a meeting was held on May 30, 2002 at which marine ecologists from NOAA and EPA were asked their opinion on the damage/benefits from dredging contaminants in the eelgrass and other habitats present at the site. It was the consensus of the scientists present that excavation of the eelgrass should not be conducted unless the area or concentrations of contaminants exceeding ecological risk-based PRGs are found to be greater than current data shows. RIDEM did not render an opinion on the subject pending review with internal staff. A summary of discussions was provided to the attendees and review parties under TtNUS cover letter dated June 5, 2002.

Based on this tentative determination, the alternatives describing excavation of eelgrass will remain in the FS which is to be finalized in July 2002. New data for determination of the western extent of the sediments exceeding PAH PRGs is anticipated for August, and will be used to develop the proposed plan.

2    General Comment:

*NOAA was pleased to note the improved Figures given the availability of the new data from the Draft Predesign Investigation. In addition, the final draft now includes more sediment contaminants of concern (Table 2-13); that was an original NOAA comment. We questioned why flourantherne was not included here and were provided a reason in the Response to Comments. But now flourantherne among seven other PAH compounds are included. Please explain.*

Response: The sediment PRGs were recalculated based on responses to comments to the version provided in the Draft FS, but also based on improvements to the PRG calculation which originated from a comment on the statistical evaluation of the PRGs calculated for Portsmouth Naval shipyard.

The improvement to the process identified at Portsmouth Naval Shipyard was applied to Section

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3, Step 4 of the PRG development (Appendix D of the OFFTA FS). In this step, the 95% upper limit (UL) of the porewater concentration is calculated for use as the porewater concentration associated with nontoxic samples. Previously, the 95% upper confidence limit (UCL) was used. It is thought by statisticians that the 95% UCL is less appropriate.

The recalculation was described in a submittal provided to all reviewers November 9, 2001 (Draft Final PRGs).

3 General Comment

*In Table 2-14 the PRGs Based on Ecological Risk generally increased when compared to last years draft document. The PRG was eliminated for benzo(a)pyrene and benzo(ghi)perylene but dibenzo(a,h)anthracene was included. Please explain. We also note some differences in Table 2-15, which selects the sediment COCs, but are uncertain why the concentrations and list of chemicals changed. Appendix D, PRG Development for Sediment did not help us answer these questions.*

Response: These revisions were documented in a the submittal for the Draft Final PRGs, provided under Tetra Tech NUS, Inc. letter dated November 9, 2001 as stated above.