RHODE ISLAND
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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February 2, 2009

Winoma Johnson
NAVFAC MIDLANT (Code OPNEEV)
Environmental Restoration
Building Z 144, Room 109
9742 Maryland Avenue
Norfolk, VA 23511-3095

RE: Evaluation of Response to Comments on the Draft Feasibility Study, Old Fire Fighter Training Area, Naval Station Newport, Newport, Rhode Island

Dear Ms Johnson,

The Rhode Island Department of Environmental Management, Office of Waste Management (RIDEM) has reviewed the Response to Comments on the Draft Feasibility Study for the Old Fire Fighter Training Area. Attached is an evaluation of these responses. If the Navy has any questions concerning the above, please contact this Office at 401-222-2797, ext. 7111.

Sincerely,

Paul Kulpa

Paul Kulpa
Office of Waste Management

cc: Matthew DeStefano, DEM OWM
Richard Gottlieb, DEM OWM
Robert Lim, EPA Region I
Cornelia Mueller, NSN

Evaluation of Response to Comments on the
Draft Feasibility Study
Old Fire Fighter Training Area
Naval Station Newport

1. **General Comment**
   Whole Document

   Please be advised that a number of the comments below will require modifications to other sections of the report in addition to the section cited in the comment (as an illustration, a modification to the cost estimate will have to be reflected in all sections that include this cost estimate). Please make the appropriate corrections, as needed, throughout the report.

   Evaluation of Response

   The comment has been addressed.

2. **Section 1.10.4, Selection of Chemicals of Concern**
   Page 1-26.

   The report must note that the site exceeds RIDEM standards for recreational areas.

   Evaluation of Response

   The comment has been addressed

3. **Section 2.1.4.1, Chemical Specific Applicable or Relevant and Appropriate Requirements.**
   Page 2-3, Whole Section

   Please note in the appropriate table that the following RIDEM Regulations are ARARs

   State of Rhode Island Oil Pollution Control Regulations,
   Addresses releases of oil to the waters of the State.

   State of Rhode Island Underground Storage Tank Regulations 2007
   Addresses both operation of, and releases from, underground storage tanks that held petroleum products and hazardous materials.

   State of Rhode Island Above Ground Storage Tank Regulations
   Addresses both operation of, and releases from, above ground storage tanks.

   State of Rhode Island Solid Waste Regulations 2004

Addresses disposal of construction debris and solid waste and associated remediation/monitoring.

State of Rhode Island Groundwater Regulations 2005
Establishes numerical and narrative standards for the protection of groundwater and discharges to surface water, establishes technical requirements for the installation of groundwater monitoring wells

State of Rhode Island Rules and Regulations for Hazardous Materials Management 2007
Requirements for transportation and disposal of waste from the site (includes hazardous waste and special waste in the soil and/or sediments). Requirements for storage of hazardous waste adjacent to the bay. Requirements for waste left in place, landfill closure and monitoring

State of Rhode Island Underground Injection Control (UIC) Program 2004
Addresses the investigation, remediation of UICs.

State of Rhode Island Water Quality Regulations 2006
Addresses illicit releases from storm water discharges on the site

Evaluation of Response

The NCP, CERCLA and the FFA clearly allow for the State regulations to be incorporated as ARARs. In accordance with this regulatory requirement, the State regulations have been employed as ARARs in the other Feasibility Studies, Proposed Plans, Record of Decisions, Removal Actions, etc. at the various sites on the Navy base. In recognition of these regulatory requirements, and as agreed to under the FFA, please incorporate the cited regulations in this and other sections as requested in this and other comments.

4. **Section 2.1.4.3, Action Specific Applicable or Relevant and Appropriate Requirements.**
Page 2-5, Whole Section

Please note in the appropriate table that the following RIDEM Regulations are applicable

State of Rhode Island Water Quality Regulations 2006
Addresses dredging and construction of revetments in the marine environment.
Regulates point and non-point discharges.

State of Rhode Island Rules and Regulations for Dredging and Management of Dredged Material 2003
Establishes requirements for dredging and handling/disposal of dredge spoils.

State of Rhode Island Underground Injection Control Program 2004
Addresses the operation of UICs.

Evaluation of Response

See comment 4.

5. **Section 2.1.4.1, Chemical Specific Applicable or Relevant and Appropriate Requirements. Sediments**
Page 2-4,

The report notes that there are no federal standards regarding sediments at the site. The report should state that the RIDEM Site Remediation Regulations as amended 2004 are applicable to the sediments.

Evaluation of Response

The intent of the comment was simply to have the document note that RIDEM regulations are applicable to the sediments. In the response the Navy agrees that the Site Remediation Regulations are applicable. Accordingly please simply modify the report to state that that the Site Remediation Regulations are applicable.

6. **Section 2.2.1, Identification of Media of Concern**
Page 2-6, 4 th Paragraph

As previously stated in past correspondence, RIDEM does not concur with the assessment for the subsistence fisherman. The exposure scenario identified for the subsistence fisherman is equivalent to normal shellfish consumption. Please include a statement documenting the State's position.

Evaluation of Response

The comment has been addressed

7. **Section 2.2.1, Identification of Media of Concern**
Page 2-7, 1 st Paragraph

The report states that the salinity of the groundwater at the site makes it unsuitable for consumption. As commented on the RI report this is not the case as values are within the normal parameters for potable water. Therefore, please remove this statement from the report.

Evaluation of Response

The comment has been addressed

8. **Section 2.2.2, Derivation of Human Health Risk PRGs**
   Sediment PRGs Based upon Recreational Site Use Shell fish Consumption
   Page 2-11,

   As previously stated in past correspondence, RIDEM does not concur with the assessment for the recreational site use. Please include a statement documenting the State's position.

   Evaluation of Response

   The comment has been addressed

9. **Section 2.2.3, Derivation of Ecological Risk Based PRGs**
   Page 2-14,

   As previously stated in past correspondence, RIDEM does not concur with the assessment for the Ecological Risk Assessment. Please include a statement documenting the State's position.

   Evaluation of Response

   The comment has been addressed

10. **Section 2.6, Proposed PRGs**
    Page 2-18, Table 2-14

    The primary contaminant at the site is TPH. The proposed PRGs in Table 14 do not include TPH in any of the media. As the limited number of VOCs and SVOCs tested at the site cannot be substituted for TPH, please modify the table to include TPH for soil, sediment and groundwater.

    Evaluation of Response

    The Navy notes that historically they have conducted remedial investigations, and removal actions for TPH. At this site, however, the EPA has requested that TPH not be listed as a contaminant of concern as it is not a CERCLA waste. The source of release at this site is petroleum, the main contaminant of concern is petroleum and the other contaminants of concern are petroleum related. It does not make sense to conduct a remedial action at a site which does not directly address the source of the contamination and the primary contaminant of concern. Further, the State regulations require that the TPH criteria, as well as, the SVOC or other appropriate criteria be met. Accordingly, as required by the regulations, as stipulated in the FFA and as clearly applicable at a petroleum site, please modify the document to include the TPH criteria.

11. Section 2.6, Proposed PRGs
Page 2-18, Table 2-15

The selected PRGs do not include RIDEM Remediation Regulations as amended in 2004 residential standards as actionable. Please be advised that assuming that the regulatory agencies accepted a remedial action which incorporated an environmental land use restriction being placed on the site the residential criteria are still actionable. That is, exceedance of residential criteria requires an action, specifically the placement of an ELUR. Therefore, please modify Table 2-15 to stipulate that the residential criteria are actionable. In addition, the table must include TPH as an actionable requirement.

Evaluation of Response

It appears that the Navy will include the requested statement that the RIDEM Remediation Regulations are actionable. Please confirm. In regards to petroleum issues please see Comment 10.

12. Section 2.3.2, Groundwater,
Page 2-20.

This section lists the proposed PRGs for groundwater. During the removal action free product was observed on the groundwater. Therefore the PRGs should include free product and TPH. In addition, as contamination was observed in areas where wells were not present the PRGs should be modified to include any analytes that were detected in the groundwater during the removal action.

Evaluation of Response

In regards to TPH please see Comment 10. In regards to the nature and the extent of contamination the Navy has stated that it is not appropriate to modify the list of contaminants of concern unless new information is present. As the Navy is in agreement with the State's position, that is the list of COC may be modified if new information is present; please review the new information from the recent removal and modify the document as necessary.

13. Section 2.3.3, Sediment,
Page 2-21.

This section of the report should note that free product was observed in the sediment adjacent to the discharge pipes from the oil water separators. In addition, as TPH is the main contaminant of concern at the site, TPH should be included as a PRG for sediment. At other sites in lieu of a site specific PRG a value of 500 ppm has been employed.

Evaluation of Response

It appears that based upon EPA requests the Navy does not want the report to address the observed petroleum contamination in the sediments. As noted in Comment 10, petroleum is the main source of contamination at the site and is the main contaminant of concern; therefore it does make sense to address this release in the sediments. Please modify the report as originally requested.

14. Section 2.3.3.1, Sediment COC for Ecological Risk, Page 2-21, 2nd Paragraph.

This section of the reports implies that the observed sediment contamination may not be site related. During the most recent removal action two discharge pipes from the oil water separators were found on the beach. The discharge pipes still contained an oily material; further, the sediments in the immediate vicinity of the discharge pipes emitted free product when disturbed. The report should also note that free product, which required the use of absorbent pads for removal was found in the soils adjacent to the beach and adjacent to the storm water out fall pipe. The report should note the above in this and other appropriate sections and at a minimum state that the contamination observed in the sediment is from site related sources and possibly off site sources.

Evaluation of Response

The Navy has stated that as petroleum is not a CERCLA contaminant of concern, observations made concerning the petroleum found in the sediments at the discharge pipe from the oil water separators will not be included in document, nor will statements be made concerning the source of contamination in the sediments. This exemplifies the problem of the stance that non-CERCLA contamination will not be addressed in the document. In this case an obvious potential source of contamination, an oil water separator discharge pipe, with signs of petroleum contamination at the discharge point is not addressed in the report. Whether a contaminant is a CERCLA contaminant or non-CERCLA contaminant it must be discussed and addressed in the report.

15. Section 2.4.3, Remedial Action Objectives for Soil Page 2-25

The report must state that the remedial objectives for the soil, independent of actions taken elsewhere for soil, will include the removal of all contaminated soil beneath, and in the immediate vicinity to the revetment. This is necessary as it will not be possible to remove these soils once the revetment is installed.

Evaluation of Response

The Navy has cited the TIGER team's recommendations as reasons for not complying with the State's regulations. The TIGER team is not the regulatory agency overseeing the remedial investigation and remedial action at OFFTA. The TIGER Team is simply an

internal Naval advisory committee and has no regulatory authority. The TIGER team did make recommendations for the OFFTA. The Navy is not bound by the TIGER team's position as it has elected not to implement certain recommendations. As an illustration, the TIGER team recommendation included removal of all subsurface structures, concrete, pipes, etc. This recommendation was not carried out. Therefore, please revise the document as requested.

16. **Section 2.4.1, Remedial Action Objections for Soil**
Section 2.4.2, Remedial Action Objections for Groundwater
Section 2.4.2, Remedial Action Objections for Sediment
Page 2-25-27

Free product has been found in the various media at the site. Please include remediation of free product as a groundwater, soil and sediment objective.

Evaluation of Response

See Comment 10

17. **Section 2.4.1, Remedial Action Objections for Soil**
Section 2.4.2, Remedial Action Objections for Groundwater
Section 2.4.2, Remedial Action Objections for Sediment
Page 2-25-27

The remedial objective must include the removal of the discharge pipes from the oil water separator on the beach and on the land

Evaluation of Response

The Navy has stated that as part of the "hot spot" removal action the discharge pipes from the oil water separators were removed. Based upon the Navy's response it appears that the agencies are in agreement in this issue with respect to the need to remove the pipes and associated contamination Please be advised that the pipes in question, which were corroded and compromised in a number of locations were plugged on the beach and near the oil water separator and that they were not removed. As such the document needs to be modified to include the removal of these pipes.

18. **Section 2.4.1, Remedial Action Objections for Soil**
Section 2.4.2, Remedial Action Objections for Groundwater
Page 2-25-27

The remedial objectives must include the removal of any underground storage tanks and associated piping.

Evaluation of Response

All of the tank graves were not inspected, therefore, please includes a provision to inspect all tank graves. In regards to the piping, as noted in the original comments on the work plan inspecting one end of a pipe for the presence of oil will not allow one to ascertain if the pipe ever held oil or if a compromised occurred along the length of the pipe. Therefore, please modify the report as requested.

19. Section 2.4.1, Remedial Action Objections for Soil
Section 2.4.2, Remedial Action Objections for Groundwater
Page 2-25-27

The remedial objectives must include the removal of any construction debris, which is contaminated with oil or other products.

Evaluation of Response

The comment has been addressed

20. Section 2.4.2, Remedial Action Objections for Groundwater
Page 2-26. 4 th Paragraph

The report states that contaminants in the soil are not migrating to groundwater. Since the removal action was initiated this was found not to be the case as measurable free product was observed. Please remove this statement and note that contaminants at the site are being mobilized by groundwater.

Evaluation of Response

The Navy has noted that after a period of pumping free product was no longer observed in the test pits given credence to the position that the free product was dislodged during the construction of the test pits. It is well known that when free product is removed from a well it may take hours, days, weeks or even months before free product returns to the well. Free product may also be observed during certain water table elevations and or seasons and not during others. Further, considering the proximity of the observed free product to the beach, the direction of groundwater flow, the fact that free product was found on the beach and the fact hat a clay lenses or other barriers was not found in the area prohibiting groundwater flow, it does not make sense to state that contaminated groundwater on the site is not affecting the adjacent sediments. Therefore please address the comment as requested.

21. Section 2.4.2, Remedial Action Objections for Groundwater
Page 2-26. 4 th Paragraph

The report notes that the RAO for groundwater were developed using Site Remediation requirements. Please be advised that RAO must also meet the requirements of the

Groundwater Regulations (numerical standards such as MCLs as well as, narrative standards, non degradation, impacts to surface waters, etc) the Water Quality Regulations, the Underground Storage Tank Regulations and the Oil Pollution Control Regulations. Please include a statement indicating that the RAO must meet the above regulations.

Evaluation of Response

See comments dealing with applicability of State regulations.

22. Section 2.4.2, Remedial Action Objections for Groundwater
Page 2-26. 4 th Paragraph

The report notes that the GB groundwater objective for lead is not exceeded. The State's GB groundwater numerical standards are designed to address volatilization into structures. These standards are not designed to be protective of other human health exposure scenarios or discharges to sensitive environments. These cases require the development of site-specific cleanup standards. In the report the Navy notes that MCLs would be used for human receptors of onsite groundwater. In lieu of developing site-specific groundwater Eco Risk PRGs the Navy may elect to use GA standards as default criteria for this exposure route. In regards to TPH, the Navy may elect to use 2.5 ppm, which is the approximate solubility limit for most forms of TPH

Evaluation of Response

The comment has been addressed.

23. Section 2.4.3, Remedial Action Objectives for Sediments
Page 2-27

The report must state that the remedial objectives for the sediment, independent of actions taken elsewhere for the sediments, will include the removal of all contaminated sediments beneath and in the immediate vicinity to the revetment. This is necessary as it will not be possible to remove these sediments once the revetment is installed.

Evaluation of Response

See response to Comment # 15.

24. Section 3.2.2.2, Limited Action, Land Use Control/Deed Restrictions
Page 3-6.

"However, anytime the Navy retains control of the property (in this case the Navel Station Newport Public Works Department) enforces any and use control necessary, an ELUR is not required and RIDEM has no jurisdiction."

Please be advised that the State of Rhode Island Site Remediation Regulations does not release or relinquish enforcement powers for land use restrictions to any entities whether

they are private or public. All land use restrictions are enforceable and come under the jurisdiction of the Rhode Island Department of Environmental Management. Please remove the above sentence and any other similar citation throughout the report and clearly state that RIDEM has the authority to monitor and enforce land use restrictions.

Evaluation of Response

The Navy has indicated that they will work with RIDEM and the EPA on the details of the ELURs. As such, it appears that the Navy is in agreement with the comment. Therefore, as part of the process of working on the details, please remove the above sentence and any other similar citation throughout the report and clearly state that RIDEM has the authority to monitor and enforce land use restrictions. Be advised that the Office of Waste Management cannot approve this or any other document, which states that this Office has no regulatory authority over any ELURs that are to be placed on a site as part of the remedial effort.

25. Section 3.2.2.6, Treatment
Page 3-15.

In situ oxidation has been used to treat a variety of petroleum-contaminated sites. Please include an evaluation of insitu oxidation.

Evaluation of Response

The comment has been addressed

26. Section 3.2.2.6, Treatment, Aerobic Biodegradation
Page 3-25.

The report has evaluated exsitu biodegradation using a process, which entails pumping the groundwater and then treating the groundwater in bioreactors. These bioreactor pump and treat processes are limited by a number of factors including the concentration of the contaminants in the groundwater. Further, it does not address contaminants, which may be in the unsaturated zone.

In lieu of exsitu biodegradation involving pump and treat please evaluate in situ biodegradation. This approach, which is commonly applied at petroleum-contaminated sites, includes a variety of processes, which range from simple injection of air and nutrients to bio venting.

Evaluation of Response

The Office of Waste Management considered insitu treatment a variable alternative. It is recommended that the Navy further evaluate insitu treatment beyond that presented in the report.

27. Section 3.2.2.6, Treatment, Aerobic Biodegradation
Page 3-25.

Please evaluate exsitu biodegradation of excavated soils. In this process contaminated soils are excavated and then treated by a variety of biodegradation process, such as windrows, phytoremediation, etc. The Navy contains significant land holdings at Tank Farm 5, which is ideally suited to these processes (if the land in Tank Farms-4 is not excessed they can also be used for this process).

Evaluation of Response

It does not appear that application of the exsitu techniques as noted in the above comment has been performed. Please evaluate exsitu techniques as noted in comment.

28. Section 3.2.2.6, Treatment, Aerobic Biodegradation
Page 3-25.

Please include an evaluation of phytoremediation, specifically the use of trees to treat petroleum and metal contamination in the saturated and unsaturated zone.

Evaluation of Response

The report notes that phytoremediation is not retained due to depth of root system and needs to harvest and replant the phyto agents. Please be advised that phytoremediation is currently being performed using trees. Desired root system depth is obtain through normal and/or deep planting of trees, Harvesting, proper disposal and replanting are not warranted as the phyto agent is trees. Therefore, please modify the report to include retention of phytoremediation options.

29. Section 3.4.4.2, Limited Action, Intuitional Controls
Page 3-48.

"The intertidal and subtidal areas are the property of the State of Rhode Island, so any actions to restrict access or activities must be coordinated with the State."

Please be advised that a responsible party is not able to place land use control on property that they do not own. Approval of the property owner must be obtained for the land use control. Therefore please modify the above as follows:

The intertidal and subtidal areas are the property of the State of Rhode Island, so any restrictions on the property must be approved by the State. Further, reporting requirements and/or actions to restrict access or activities must be approved by, and coordinated with, the State.

Evaluation of Response

The Navy has noted that the above may be addressed in the Record of Decision (ROD). The function of the Feasibility Study is to evaluate different remedial alternatives including the feasibility that the alternative is applicable. A ROD is a document which presents the selected and approved remedial alternative. As such discussion concerning the applicability is ELUR is addressed in the Feasibility Study. Therefore please modify the report as noted above.

30. Section 3.4.4.2, Limited Action, Long Term Monitoring
Page 3-49.

The report notes that long term monitoring will be required at the site to document that condition have not changed. The concentration of contaminants in the sediment represent an unacceptable risk. If the limited action option is selected, long term monitoring would be required to demonstrate that natural attenuation is decreasing contaminant concentration. Therefore, please modify the report to state that the monitoring would be designed to ascertain whether natural attenuation is occurring.

Evaluation of Response

The comment has been addressed.

31. Section 4.2.4, Soil Alternative 4, Soil Covers and LUCs
Page 4-6.

Please be advised that at all locations a soil cap must meet the requirements set forth in the Site Remediation Regulations as amended in 2004 (minimum of two feet of clean soil, combination of soil and concrete/asphalt, etc). Please modify the report accordingly.

Evaluation of Response

In regards to a soil cap there are yearly reporting requirements which must be factored into the cost analysis (a report must be submitted every year for regulatory approval documenting the condition of the cap and that it has not been compromised, etc.).

32. Section 4.2.4, Soil Alternative 4, Soil Covers and LUCs
Page 4-6.

A soil cap will not address leachability issues; therefore the report must evaluate a geomembrane cap at the site.

Evaluation of Response

Free product has been observed in the water table and contamination has been observed on the beach. State's leachability standards have been exceeded. Further, VOCs, SVOCs

and metals have been detected at concentrations exceeding MCLs. Therefore, as leachability has been documented at the site please modify the report as requested.

33. Section 4.2.4, Soil Alternative 4, Soil Covers and LUCs
Page 4-6.

The report notes that a parking lot may be installed on a portion of the site. The report must state that CRMC approval must be obtained for the installation of the parking lot...

Evaluation of Response

The comment has been addressed.

34. Section 4.2.4, Soil Alternative 4, Soil Covers and LUCs
Page 4-6.

The proposal to create a parking lot on the site will result in additional storm water discharge into the contaminated sediments and the eel grass bed. The report must include an evaluation of this impact.

Evaluation of Response

The Navy has stated that the parking lot is not part of the remedial action and that it is only described as a point of interest. As such, the comment has been addressed and the Office of Waste Management will not consider the parking lot to be component of the remedial action.

35. Section 4.4.2, Soil Alternative 2, Removal, Ex Situ Treatment, Backfill
Page 4-15.

Please evaluate solvent extraction and soil washing employing the treatment facility at Tank Farm # 5.

Evaluation of Response

Please indicate why the treatment building at Tank Farm # 5 will not be available during the expected time frame for the project.

36. Section 4.4.2, Soil Alternative 2, Removal, ExSitu Treatment, Backfill
Page 4-15.

Please evaluate the use of Tank Farm # 5 or the other tanks farms for the biodegradation of the excavated soils, (windrows, phytoremediation, etc). This alternative should be evaluated using processes that either entails backfilling with treated soils from the site, or backfilling with off site fill and use of the treated soils elsewhere on the base, such as the tank farms.

Evaluation of Response

A review of the document reveals that the Navy has not adequately evaluated the various phytoremediation technologies (see previous comments). Please modify the report as requested.

37. Section 4.4.2, Soil Alternative 2, Removal, ExSitu Treatment, Backfill Page 4-15.

Please evaluate. as a possible alternative, insitu phytoremediation of soils at the site.

Evaluation of Response

See previous comments.

38. Section 4.4.3, Soil Alternative 3, Removal, Disposal and LUC Page 4-19.

For all removal options please evaluate, including cost, removal to 500 ppm, 1000 ppm and 2500 ppm TPH. At a number of sites removal actions are coupled with other remedial techniques. Therefore, please evaluate limited removal in conjunction with other remedial actions such as oxidation, biodegradation, phytoremediatiion, etc.

Evaluation of Response

Given the nature of the contamination at the site is common for Feasibility Study to evaluate combination of remedial techniques. As an illustration, a removal may be conducted to remove soils to a specific TPH criteria, 2500 ppm, 1000 ppm etc. This is followed by insitu biodegradation, oxidation, phytoremediation, etc. to remove the remaining concentrations. These combinations have been found to be more cost effective and effective then the individual remedial alternatives by themselves. The Feasibility Study has not evaluated removal actions in conjunction with other remedial techniques. Therefore, please modify the report as requested.

39. Section 4.4.3, Soil Alternative 3, Removal, Disposal and LUC Page 4-19.

As a cost saving measure, please evaluate disposal of contaminated soils in one of the tanks in Tank Farms 1-3.

Evaluation of Response

The Navy has stated they will comply with the States comment if the regulatory agencies would consider the proposals. In the past the Office of Waste Management has suggested that the Navy evaluate whether contaminated soil from the Melville North Landfill and/or the Derecktor Shipyard site could be disposed of at the McAllister Point

Landfill. The EPA was receptive to this proposal and the Navy conducted this evaluation to fruition with the result that soils were placed at McAllister Point Landfill

40. Section 4.4.3, Soil Alternative 3, Removal, Disposal and LUC
Page 4-19.

As a cost saving measure, please evaluate use of the soil in a petroleum batching facility.

Evaluation of Response

The Navy has stated that bringing the soils to an asphalt plant is essentially the same as an immobilization technology. In terms of implementation, time, and cost, transporting soils to an asphalt batching plant is not the same as immobilizing soils on site. Therefore, please evaluate sending the soils to an asphalt batching plant.

41. Section 4.4.3, Soil Alternative 3, Removal, Disposal and LUC
Page 4-19.

In regards to off site disposal, the report must evaluate the amount of soil, which can be sent to a landfill as daily cover in lieu of waste, as this would greatly reduce disposal costs.

Evaluation of Response

The Navy has stated that deposal as daily cover will be clarified in the text. Please also modify the cost estimate to include this disposal option.

42. Section 4.4.3, Soil Alternative 3, Removal, Disposal and LUC
Page 4.19.

Old Fire Fighter Training Area is primarily contaminated with TPH, (certain areas also contain lead). The estimated volume of soil requiring removal at the Old Fire Fighter Training Area is approximately 62,000 cubic yards. The estimate cost for this option is approximately eighteen million dollars. Melville North Landfill contain metals, such as lead which exceeded TCLP, asbestos, PCBs, TPH, SVOCs, radioactive waste, etc. The approximate volume of contaminated soil, which required removal at the Melville North Landfill, was 100,000 cubic yards. The approximate cost to remove and dispose of this soil, including dredging of nearby sediments, was approximately eight million dollars. Both sites were similar in regards to proximity to water and depth of contamination. Please evaluate the cost estimates to ascertain the reason for the discrepancies in the cost of the projects.

Evaluation of Response

In response to the State's concern with respect to cost the Navy has noted that a large portion of the cost estimate is the relocation of utilities and road and parking lot removal and replacement. In regards to the parking lot the Navy was aware of the contamination at this location before the installation of said lot. They elect to move forward with the

construction of the parking lot at their own risk. The Navy elected to take this course of action despite the fact that adequate parking was available elsewhere in the immediate vicinity. As such, the Navy cannot factor the cost associated with the parking lot into the cost estimate. Please be advised that even if the cost for the parking lot/road is included the estimates are still too high). Therefore, please modify the cost estimate for the site.

43. **Section 4.4.4, Soil Alternative 4, Soil Cover and LUCs**
Page 4.23.

Please modify the cost to include yearly inspection and reporting requirements for the ELURs, as well as yearly inspections by RIDEM. Also groundwater-monitoring costs must be biannual for a period of thirty years.

Evaluation of Response

The Navy has indicated that annual groundwater monitoring is not included in the option as this is performed in the Long Term Monitoring Plan after the ROD is complete. The ROD lays out the remedial action to be implemented. The Long Term Monitoring Plan lays out the details of the monitoring program. The function of the Feasibility Study is to evaluate the various remedial alternatives including their cost. Long term monitoring is part of the remedial alternative and associated cost. Accordingly this option must include an estimate for the cost associated with groundwater monitoring and annual inspections

44. **Section 4.4.4, Soil Alternative 4, Soil Cover and LUCs**
Page 4.23.

Please include an evaluation and the cost for the installation of a geomembrane cap over the site.

Evaluation of Response

Please refer to evaluation for Comments 31 and 32.

45. **Section 4.4.4, Soil Alternative 4, Soil Cover and LUCs**
Page 4.26.

A total O&M cost of $16,000 dollars for monitoring and maintaining a cap and a revetment over a thirty-year period appears low. Please review the cost estimates.

Evaluation of Response

The Navy has stated that they will include a maintenance cost for the revetment. Please also review and revise the cost for the cap and associated monitoring.

46. **Section 4.5, Comparative Analysis of Soil Alternatives,**
Page 4.27.

The report should note that monitoring would be required for alternatives which leave waste in place.

Evaluation of Response

Comment has been addressed.

47. **Section 4.5, Comparative Analysis of Soil Alternatives,**
Overall Protection of Human Health and the Environment
Compliance with Applicable or Relevant and Appropriate Requirements
Page 4.27.

These sections of the report contain an typographical error in that it notes Alternative 4 will meet ARARs and provide overall protection of human health and the environment Please remove this statement and state that this alternative will not meet RIDEM Site Remediation Chemical Specific ARARs, (leaching) and accordingly not provide protection of human health and the environment

Evaluation of Response

Please refer to Evaluation for Comments 31 and 32 above.

48. **Section 5.2.2, Groundwater Alternative 2, Limited Action**
Page 5-2.

The report assumes that groundwater monitoring would be annually for years 1-5 and then every five years for years 5-30. Please be advised that biannual monitoring would be required for a period of thirty years. Please revise the report accordingly.

Evaluation of Response

Please refer to Evaluation for Comment 43 above.

49. **Section 5.2.2, Groundwater Alternative 2, Limited Action**
Page 5-2.

The report must note that monitoring for natural attenuation will also be required at a minimum, yearly. This will include monitoring of break down products and other indices that natural attenuation is occurring. The cost of this monitoring must also be evaluated in the report.

Evaluation of Response

Comment has been addressed.

50. **Section 5.2.3, Groundwater Alternative 3, Extraction and ExSitu Treatment Page 5-3.**

Please evaluate use of the existing treatment building in Tank Farm # 5 for batch treatment of groundwater from the site. Also please consider use of this system for exsitu treatment of excavated soils.

Evaluation of Response

The Navy has stated that Tank Farm 5 Treatment Facility is not expected to be available for this remedial effort. It appears that the aforementioned treatment facility has been dismantled. Please confirm.

51. **Section 5.2.3, Groundwater Alternative 3, Extraction and ExSitu Treatment Page 5-3.**

Please evaluate the use of phytoremedaition for groundwater at the site.

Evaluation of Response

Please refer to evaluation of response to comments which deal with this issue.

52. **Section 5.2.3, Groundwater Alternative 3, Extraction and ExSitu Treatment Page 5-3.**

Please include an evaluation of both biological and chemical insitu treatment.

Evaluation of Response

Please refer to evaluation of response to comments which deal with this issue

53. **Section 5.5.2, Groundwater Alternative 2 Limited Action Page 5-11, 3 rd Paragraph**

This section of the report states that based upon a flushing model certain organic contaminants will be reduced in the groundwater. The report must also state whether this process will affect the metal contaminants found at the site. In addition, as the groundwater discharges to the bay the report must note that groundwater will continue to contaminate the adjacent sediments.

Evaluation of Response

The Navy has stated that flushing of metals will take 670 years. Although not stated it is assumed that this will be noted in the above cited section of the report. Please confirm.

54. **Section 5.5.2, Groundwater Alternative 2 Limited Action**
Page 5-15.

Please revise the cost table to state that groundwater monitoring will be biannually for a period of thirty years (solid waste is present at the site).

Evaluation of Response

Please refer to evaluation of response to comments which deal with this issue

55. **Section 5.6, Comparative Analysis of Groundwater Alternatives.**
Page 5-21.

The report should note that compared to active remediation, limited action would require increased sediment and groundwater monitoring as waste is left in place

Evaluation of Response

Please refer to evaluation of response to comments which deal with this issue

56. **Section 5.6, Comparative Analysis of Groundwater Alternatives, Short Term Effectiveness.**
Page 5-21.

Please remove the statement that Alternative 2, (restrictions) has a higher degree of short-term effectiveness then Alternative 3 (treatment). As no one would be drinking water that is undergoing active treatment both alternatives have the same degree of short-term effectives.

Evaluation of Response

Comment has been addressed.

57. **Section 6.2.2, Sediment Alternative 2, Limited Action**
Page 6-3.

The report should stipulate that there would be a ban on the collection of both shellfish and lobster from both the intertidal and subtidal area.

Evaluation of Response

The Navy has noted that RIDEM has objected to bans with respect to shell fishing further, an unacceptable risk does not exist. Please be advised that an unacceptable risk does exist for the consumption of shellfish. Further, RIDEM would be in support of bans until remedial actions address contamination at the site.

58. **Section 6.2.2, Sediment Alternative 2, Limited Action**
Page 6-3.

The report should include a provision for the collection of tissue samples as part of the monitoring requirements

Evaluation of Response

Please refer to evaluation of response to comments which deal with this issue

59. **Section 6.2.2, Sediment Alternative 2, Limited Action**
Page 6-4, Paragraph 1.

The report states that monitoring for ecological risk would continue, as a single round is not sufficient to demonstrate that the contaminants no longer pose a risk. Accordingly, in addition to the monitoring stations proposed for human health risk, areas, which previously exceeded ecological risk, must also be monitored.

Evaluation of Response

Please refer to evaluation of response to comments which deal with this issue

60. **Section 6.2.2, Sediment Alternative 2, Limited Action**
Page 6-4, Paragraph 1.

Please be advised that both the intertidal and subtidal areas would have to under go monitoring under the Limited Action scenario. The report should be modified to include monitoring of both areas.

Evaluation of Response

Please refer to evaluation of response to comments which deal with this issue

61. **Section 6.2.2, Sediment Alternative 2, Limited Action**
Page 6-4, Paragraph 2.

It has been noted that as the beach environment at the site is dynamic sediments may have been moved, scoured or buried. Accordingly, the report must state that the monitoring program will take the appropriate action to address this problem (as an illustration, if

contaminant sediments are being buried the monitoring will also include collecting samples at the known depth of contamination).

Evaluation of Response

Comment has been addressed.

62. **Section 6.2.2, Sediment Alternative 2, Limited Action**
Page 6-4, Paragraph 2.

The report notes that monitoring would be reduced from annually to once every five years if there were not a significant change in contaminant concentration. Monitoring is typically reduced when there is a decreased in contaminant concentration. Therefore, please modify this section to state that monitoring will be reduced if there is a clear and consistent trend of decreasing concentrations of contaminants.

Evaluation of Response

The limited action is not designed to reduce contaminated concentration at the site. As such, it is unlikely that there will be a reduction in contaminate concentration which will warrant a reduction in monitoring. Therefore, remove the cited proposal to reduce monitoring in year five and simply note that monitoring results will be evaluated to see if a reduction is warranted. In regards to cost estimates, at a minimum, it should be based upon an assumption of annual monitoring for a period of thirty years. Finally be advised that the date will be evaluated to ascertain if seasonal effects are present. If the existing data is not sufficient to support this evaluation, then an initial year of quarterly monitoring may be necessary.

63. **Section 6.5.3, Sediment Alternative 3, Removal and Disposal**
Page 6-15.

This section includes an estimate for the cost to dredge the site. The Navy plans to install a new revetment along the shoreline. As part of this installation process the Navy will be installing a Portadam. Dredging while this Portadam is installed will greatly reduce the cost of the dredging operation. Therefore, it is recommended that the location the Portadam be adjusted such that all of the areas, which need to be dredged, are enclosed in the Portadam (intertidal and if possible subtidal) the report must estimate the cost to dredge while the Portadam system is installed. Finally, as the Portadam will be installed for the installation of the revetment, the cost associated with the Portadam must not be included in the estimate cost to dredge.

Evaluation of Response

The Navy has acknowledge that sediment removal conducted in conjunction with the installation of the Portadam when the revetment is being installed will saved money, however as both projects may not be done concurrently the cost estimate will be kept separate. As it is possible that both will be done concurrently and as this represents a

substantial cost savings please modify the cost estimate to also include concurrent removal of sediments during the installation of the revetment.

64. **Section 6.5.3, Sediment Alternative 3, Removal and Disposal**
Page 6-15.

The report indicated that dredge spoils would be sent to a landfill. Please include a cost estimate for sending the spoils to the CAD cell.

Evaluation of Response

The Navy has stated that the CAD cell will not be available for this project. Please state why this is the case.

65. **Section 6.5.3, Sediment Alternative 3, Removal and Disposal**
Page 6-15.

The report proposes dewatering on site. Similar to what was performed at McAllister Point Landfill, please include a cost estimate for dewatering using the system at Tank Farm # 5.

Evaluation of Response

The Navy has stated that transpiration of dredge material to Tank Farm 5 would be cost prohibitive. Considering the area available for dewatering, and the cost savings associated with long term gravity dewatering it is not clear why this would be cost prohibitive. In support of the Navy's postion it is assumed that the associated cost for both options has been calculated. Please submit said estimates in support of the Navy's position.

66. **Section 6.5.3, Sediment Alternative 3, Removal and Disposal**
Page 6-15.

The report proposes dewatering onsite. Similar to what was performed at the Melville North Landfill, please include a cost for dewatering using onsite infiltration ponds.

Evaluation of Response

The Navy has addressed the comment. Please be advises that with respect to onsite soils dewatering ponds similar to that employed at Melville North Landfill can be employed. Please revise the soil removal action to include onsite dewatering ponds.

67. **Section 6.5.3, Sediment Alternative 3, Removal and Disposal**
Page 6-15.

The estimate cost to dredge 800 cubic yards is $1,043,325. This is approximately $1300 per cubic yard. Accounting for contingencies and factors inherent in Feasibility Study (plus/minus error range) this estimated cost still exceeds the cost for dredging performed by

the military at other sites, such as Melville North Landfill, McAllister Point Landfill, Allen Harbor Landfill, etc. Please review the cost estimate.

Evaluation of Response

The Navy has noted that the cost of $1300 per cubic yard includes contingencies and monitoring, (the actual cost is $531 per yard for dredging). This dredging cost is still high. Please review cost for dredging.

68. **Tables 2-1-2-3, 4-3-6-12, ARARs.**

Please add the following RIDEM Regulations as ARARs for soils, groundwater and sediments at the site.

Chemical Specific

Requirement: State of Rhode Island Oil Pollution Control Regulations
Citation: Chapters 46-12, 42-17.1 and 42.35 of the General Laws of Rhode Island
Status Applicable
Synopsis of Requirement Addresses releases of oil into the waters of the State.
Action to be Taken to Attain ARAR Remedial efforts will be designed to insure that releases to waters of the State have been addressed.

Requirement: State of Rhode Island Underground Storage Tank Regulations
Citation: Rules and Regulations for Underground Storage Facilities Used for Petroleum Products and Hazardous Materials DEM-OWR-UST-08-07
Status Applicable
Synopsis of Requirement Addresses investigation and remediation of underground storage tanks.
Action to be Taken to Attain ARAR Remedial efforts will be designed to insure USTs and associated piping /structures are no longer present and releases from the USTs and associated structures comply with regulations.

Requirement: State of Rhode Island Solid Waste Regulations
Citation: Solid Waste Regulations Number 1 General Requirements DEM-OWR-SW-04-01 as amended 1997, 2001, and 2004
Solid Waste Regulations Number 2 Solid Waste Landfills, effective date 1997
Status Applicable
Synopsis of Requirement Addresses disposal of construction debris and solid waste and associated remediation and monitoring.
Action to be Taken to Attain ARAR Remedial efforts must comply with remedial and monitoring requirements of the regulations.

Requirement: State of Rhode Island Site Remediation Regulations
Citation: Rules and Regulations for Investigation and Remediation of Hazardous Materials Releases DEM-DSR-01-03, as amended 1996, 2004
Status Applicable

Synopsis of Requirement Addresses investigation and remediation of hazardous materials into the environment. Establishes standards for soil (direct contact and leachability), groundwater and sediments.
Action to be Taken to Attain ARAR Remedial efforts must comply with investigation, remediation and monitoring requirements of the regulations.

(Note the tables incorrectly state that the regs are for non-NPL sites. Please remove this statement from the table).

Requirement: State of Rhode Island Rules and Regulations for Hazardous Materials Management
Citation: Rules and Regulations for Hazardous Materials Management DEM-OWM-HW-01-07 as amended, 1984,1986,1987,,1988,1992,2001,2002,2005,2007
Status Relevant and Appropriate
Synopsis of Requirement Requirements for transportation and disposal of waste from the site (includes hazardous waste and special waste in the soil and/or sediments). Requirements for storage of hazardous waste adjacent to the bay. Requirements for waste left in place, landfill closure and monitoring
Action to be Taken to Attain ARAR Remedial efforts must comply with waste transportation and disposal requirements of the regulations. Remedial action must ensure that hazardous waste in the soil does not migrate into the environment. Requirements for waste left in place, landfill closure and monitoring

Requirement: State of Rhode Island General Permit for Strom Water Discharge from Small Municipal Separate Strom Sewers and Industrial Activities of Eligible Facilities Operated by Regulated Small MS4s RID040000
Citation: General Permit for Strom Water Discharge from Small Municipal Separate Strom Sewers and Industrial Activities of Eligible Facilities Operated by Regulated Small MS4s 2003
Status Relevant and Appropriate
Synopsis of Requirement Requirements operation of storm water discharges at the site.
Action to be Taken to Attain ARAR Remedial efforts must insure that there are no illicit discharges of contaminated groundwater into storm water at the site.

Requirement: State of Rhode Island Discharge Elimination Permit Industrial Activity RID050000
Citation: General Permit for Strom Water Discharge from Industrial Activities
Status Relevant and Appropriate
Synopsis of Requirement Requirements operation of storm water discharges at the site.
Action to be Taken to Attain ARAR Remedial efforts must insure that there are no illicit discharges of contaminated groundwater into storm water at the site.

Requirement: State of Rhode Island Discharge Elimination Permit Industrial Activity
Citation: General Permit for Strom Water Discharge from Industrial Activities RID050000
Status Relevant and Appropriate
Synopsis of Requirement Requirements operation of storm water discharges at the site.

Action to be Taken to Attain ARAR Remedial efforts must insure that there are no illicit discharges of contaminated groundwater into storm water at the site.

Requirement: State of Rhode Island Discharge Elimination Permit Storm Water Discharge Associated with Construction Activity
Citation: General Permit for Storm Water Discharge from construction activities. September 2003
Status Relevant and Appropriate
Synopsis of Requirement Requirements for storm water discharge during construction activities.
Action to be Taken to Attain ARAR As necessary, construction activities storm water discharge must meet these requirements.

Requirement: State of Rhode Island Water Quality Regulations
Citation: State of Rhode Island Water Quality Regulations, 2006 In accordance with Chapters 42-35,46-12, 42-17-1 of the Rhode Island General Laws
Status Applicable
Synopsis of Requirement Establishes numerical and narrative standards the remedial effort must obtain. Establishes requirements for any discharge from a treatment facility on the site
Action to be Taken to Attain ARAR Remedial efforts must meet the requirements of the regulations; any discharge from a treatment system must meet the requirements of the regulations.

Location Specific

Requirement: State of Rhode Island Water Quality Regulations
Citation: State of Rhode Island Water Quality Regulations 2006 In accordance with Chapters 42-35,46-12, 42-17-1 of the Rhode Island General Laws
Status Applicable
Synopsis of Requirement Addresses all activities on the coast, including, but not limited to dredging and construction of revetments.
Action to be Taken to Attain ARAR Remedial efforts with respect to dredging and revetment construction must comply with requirements of the regulations.

Requirement: State of Rhode Island Water Quality Regulations, Rules and Regulations for Groundwater Quality
Citation: Water Quality Regulations, Rules and Regulations for Groundwater Quality 2005
Status Applicable
Synopsis of Requirement Establishes numerical and narrative standards for groundwater quality, surface water impacts, as well as, technical requirements for monitoring wells.
Action to be Taken to Attain ARAR Remedial investigation, actions and monitoring must comply with requirements of the regulations

Requirement: State of Rhode Island Coastal Resources Management Council Regulations

Citation: Coastal Resources Management Council Regulations
Status Applicable
Synopsis of Requirement Applies to all actions taken in the coastal zone..
Action to be Taken to Attain ARAR CRMC approval is required for all actions taken in the coastal zone (includes land sediments and water).

Action Specific

Requirement: State of Rhode Island Rules and Regulations for Dredging and Management of Dredge Materials
Citation Rules and Regulations for Dredging and Management of Dredge Materials DEM-OWR-DR-02-03
Status Applicable
Synopsis of Requirement Addresses dredging activities and disposal of dredge spoils.
Action to be Taken to Attain ARAR Dredging must comply with the requirements of the regulations.

Requirement: State of Rhode Island Underground Injection Control Program
Citation State of Rhode Island Underground Injection Control Program 2004
Status Applicable
Synopsis of Requirement Addresses the investigation, remediation and operation of UICs.
Action to be Taken to Attain ARAR Any UICs at the site must be investigated and remediated in accordance with the requirements of the regulations. Any remedial activity involving operation of UICs must comply with the requirements of the regulations.

Requirement: State of Rhode Island Water Quality Regulations
Citation: : State of Rhode Island Water Quality Regulations 2006 In accordance with Chapters 42-35,46-12, 42-17-1 of the Rhode Island General Laws
Status Applicable
Synopsis of Requirement Deals with point discharges from any treatment system and non-point discharges from groundwater.
Action to be Taken to Attain ARAR Remedial efforts must comply with requirements of the regulations

Evaluation of Response

Comment has been addressed. Please be advised that the draft final version of this document cannot be submitted until these issues are resolved.

69. **Tables 2-6, 2-7, 2-9, 2-10, 2-14, 2-15, 2-16. 2-19, 2-20**

These tables contain PRGs for contaminants in the sediments, which are site related. As TPH is also a site related contaminant, and as a site specific PRG for TPH has not been developed, please employ a value of 500 ppm for TPH in the sediment.

Evaluation of Response

Comment has been addressed. Please be advised that the draft final version of this document cannot be submitted until these issues are resolved.