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LETTER REGARDING RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT COMMENTS ON U S NAVY RESPONSE TO COMMENTS ON PHASE 3 REMEDIAL INVESTIGATION FOR SITE 16 CREOSOTE DIP TANK, FIRE FIGHTING TRAINING AREA AND BUILDING 41 NCBC DAVISVILLE RI
02/24/2009
RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

RHODE ISLAND
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
235 Promenade Street, Providence, RI 02908-5767 TDD 401-222-4462

24 February 2009

Mr. Curtis Frye
US Department of the Navy
BRAC PMO, Northeast
4911 South Broad Street
Philadelphia, PA 19112-1303

RE: Navy Response to RIDEM Comments
Phase III Remedial Investigation
Site 16 (Creosote Dip Tank, Fire Fighter Training Area & Building 41)
Naval Construction Battalion Center
Davisville, Rhode Island
Submitted 28 January 2009, Dated 26 January 2009

Dear Mr. Frye:

The Rhode Island Department of Environmental Management, Office of Waste Management (RIDEM) has reviewed the above referenced document. The Navy's responses to RIDEM's comments are provided in a document dated 26 January 2009. Comments on the Navy's responses are provided below:

1. **Page ES-1, Section ES.1, Paragraph 1** - This paragraph indicates that the entire Site 16 is part of NCBC. The portion of this site that is east of Allens Harbor Road and north of Davisville Road (the extreme eastern portion of the site) is not part of NCBC, but was part of the former Quonset Naval Air Station which was transferred to Rhode Island Economic Development Corporation sometime between 1975 and 1980. Please revise this paragraph to reflect this.

   Response is acceptable.

2. **Page ES-8, Section ES-4, Summary of Screening Level Ecological Risk Assessment Results, Paragraph 3** – This sentence states that per Navy and EPA guidance the initial assessment of COPCs was refined. Please be advised that under RIDEM Remediation Regulations COPCs cannot be

dropped from further consideration until it can be shown that both individually and cumulatively that there is no risk from the COPC. *The Navy response states that a COPC is only eliminated if it has been demonstrated that both individually and cumulatively that there is no significant risk from that chemical. Please provide the calculations that show this for the COPCs that have been dropped from further consideration.*

3. **Page 2-49, Section 2.12.2.13 Additional Tasks Performed During the Phase III RI Field Work, Paragraph 1 -** It is noted that an iridescent, discontinuous film-like sheen was observed at the top of standing water in the bottom of test pits dug for this site. Please state if the film-like sheen material was sampled.

   The discussion of Page 4-46 states that PAH concentrations of the water samples are higher at the test pit site (unfiltered) and are lower in concentration down gradient of the test pit site (presumably filtered). The Navy's rationale for this is due to suspended solids. It does not answer the question of whether the sheen material was sampled or not.

4. **Page 3-4, Section 3.5, Soil, Sentence 1** – "*The term soil generally refers to the first 5 feet of unconsolidated material underlying the ground surface.*" Please provide a reference for this definition. RIDEM, in its Remediation Regulations (Section 8.02(A)(i)(2)) considers evaluating ***soil*** from the ground surface to the top of the water table for a residential scenario. The top of the water table, in many instances can be more than 5 feet below the ground surface.

   The Navy states that groundwater under site 16 is very shallow and in particular under the North Central portion of the site is less than 10 feet below ground surface. Based upon Figures 3-2A through 3-5 of the Phase III RI this would in general appear to be true assuming this is the lowest groundwater elevation reached. Please state if the Navy has seasonal data to indicate if this is the lowest groundwater elevation.

   The Navy need only consider groundwater elevation in the marina area as the rest of the site would be considered commercial/industrial based on current and foreseeable future land use. RIDEM considers the marina to be a recreational area which falls under the residential criteria. Surface soil in a commercial/industrial area need only be considered to a depth of at least 2 feet below ground surface as noted in Section 8.02(A)(i)(2) under the RIDEM Remediation Regulations.

5. **Page 4-2, Section 4.0, Nature and Extent of Contamination, Paragraph 2** – While metals may not be a primary contaminate of concern in

groundwater, they are a possible contaminate of concern in surface and sub-surface soil. Please revise the text to reflect this.

Response is acceptable.

6. **Page 4-2, Section 4.0, Nature and Extent of Contamination, Paragraph 2** – In discussing background concentrations of metals for NCBC various locations are presented which could represent background metals concentrations for this site such as NCBC itself, NETC and even out of state bases. This statement should be removed as it is not appropriate to compare Site 16 to other sites where it is not known when and how these studies were conducted. Section 8.06 of the RIDEM Remediation Regulations has a set procedure for the determination of background concentrations. The metals background study conducted for NCBC during the 1990's would not be of much use today as it would not comply with the current RIDEM Remediation Regulations. It is understood such a study was not conducted as part of this remedial investigation. This could lead the public to review the other studies mentioned and draw conclusions about Site 16 which may not be valid.

   Response is acceptable provided statement in response is added to text.

7. **Page 4-6, Section 4.1, Overview of Data Presentation for Environmental Media - Surface Water and Seep Data, Paragraph 3, Last sentence** – "*A risk-based concentration developed for human exposure to seeps is likely to be at least an order of magnitude greater than the screening criteria presented in Tables 4-58 and 4-59.*" Please remove this sentence as the statement is based on supposition and not a calculated result. Moreover, this statement would be more appropriate in Chapter 6 (Human Health Risk Assessment) where the calculated result should be shown.

   The response is acceptable provided the explanation is added to the text.

8. **Page 4-7, Section 4.1, Overview of Data Presentation for Environmental Media - Sediment, Paragraph 2** – "*However, it should be noted that the screening criteria presented are very conservative for sediments. A risk-based concentration developed for human exposure to sediments is likely to be at least an order of magnitude greater than the screening criteria presented in these tables.*" These sentences should be removed. For the first sentence the whole point of screening criteria is to be conservative to insure that any potential adverse affects are analyzed. For the second sentence please see comment 7, above.

   The response is acceptable provided the explanation is added to the text.

9. **Page 4-42, Section 4.3.1.1, Undeveloped Area** – It is noted that SVOC contamination has not been fully characterized horizontally in the Creosote Dip Tank Area, Fire Fighting Training Area, BTEX Hot Spot Area and at the septic tanks associated with Building E-107. RIDEM concurs with the Navy recommendation for further surface/shallow subsurface soil sampling prior to the completion of the Feasibility Study.

   RIDEM concurs with the Navy response, however, in addition to PAHs metals, VOCs, SVOCs, PCBs and pesticides should also be sampled for as there is evidence that a small landfill exists at this site.

10. **Page 4-51, Section 4.3.4, Semivolatile Organic Compounds in Sediments, Paragraph 1** – "*The outfall represents overland flow from parking areas and hence does not represent Site 16 chemical releases.*" It should be noted that the drainage pipes are subject to I/I (inflow/infiltration) and as such a portion of the contaminates could be from Site 16 chemical releases. The reverse is also true that some of the surface runoff could leak from the pipes into the ground before it makes its way to the outfall. This should also be stated in the report.

    The response is acceptable but also note that this pathway may have been more significant in the past as part of the revised narrative.

11. **Page 4-55, Section 4.4.2.5, Deep Bedrock Groundwater Zone** – Please change "deep bedrock overburden monitoring wells" to "deep bedrock monitoring wells".

    Response is acceptable.

12. **Page 4-56, Section 4.4.3, Pesticides/PCBs in Seeps, Paragraph 2** – Please state if the Navy plans on performing a risk analysis for Alpha-BHC and other pesticides since it exceeded a screening criteria.

    Response is acceptable.

13. **Page 4-59, Section 4.6.1, Metals in Soils, Bullet 2** – This bullet notes that metals concentrations in soils were compared to other bases in Rhode Island, New England and the eastern United States. This statement should be removed for the reasons stated in comment 6. It could, however, be stated that these background levels are just being used as a gauge for comparison to Site 16, but should not be used as a basis for concluding no further study is needed for metals with regard to this media.

    See response to comment 6.

14. **Section 4, Nature and Extent of Contamination, General Comment –** Based on the discussion in Chapter 4 the majority of contamination has been delineated, though in a number of areas the full extent of contamination has not been fully bounded.

    For soils this would include the north central area (Creosote Dip Tank Area, BTEX Hotspot Area, Fire Fighter Training Area, etc) and east the Building 41 area. For soils below -5 feet mean sea level soil contamination has not been bounded to the south of Allen Harbor and to the far east leading to Narragansett Bay for VOCs in soil. For VOC in groundwater there is at least one area in each zone (shallow, intermediate, deep, bedrock and deep bedrock) which has not been fully delineated in terms of extent.

    While there is enough information to begin evaluating potential technologies for remedial alternatives for this site additional investigation will be needed to better delineate the extent of contamination. This information will be necessary in order to develop appropriate remedies with accurate cost estimates. Therefore, additional delineation of the contamination should be completed prior to or during the early stages of the Feasibility Study for NCBC IR Site 16.

    The purpose of the comment was not for the Navy to look for additional source areas, but rather to delineate the extent of CVOC contamination. This will among other things allow the Navy to properly locate monitoring wells as part of any long-term monitoring plan, assist with the placement of any potential Environmental Land Use Restrictions (ELUR) and is a requirement of the RIDEM Remediation Regulations (Section 7.01).

15. **Page 5-1, Section 5.0 Chemical Fate and Transport, Paragraph 1, Sentence 3** – Please include TPH in addition to metals and dioxin as contaminates of secondary concern since there were exceedances of RIDEM Remediation Regulations Residential Direct Exposure Criteria.

    Response is acceptable if it includes a discussion of TPH as a COPC in Section 5 of the report

16. **Page 5-7, Section 5.2, Contaminate Transport Pathways, Paragraph 3, Bullets 2 and 3** – This bullet, in reference to natural attenuation, states that the plume outline (extent) is stable or shrinking over time and that concentrations of contaminates in most wells are decreasing over time. While these statements may be true, very few rounds of sampling are available to draw any definitive statements on an overall decrease in contaminate concentrations and plume extent. In addition, the Navy has not fully delineated the extent of the plumes in any one of the strata. Therefore, please remove these bullets.

Response is acceptable.

17. **Page 5-11, Section 5.3, Chemical and Physical Properties and Degradation Processes Affecting Contaminate Mobility and Persistence of CVOC, Paragraph 2, Last Sentence** – Given the soil samples that have been taken from this site, please state if the Navy has evaluated the soil for geochemical and microorganisms to determine if the proper conditions exist for the rapid breakdown of CVOC.

    Response is acceptable.

18. **Table 5-3, Page 1 of 9, Receptors of Concern, Immediate Upgradient Area** – This section notes that the low-level VOC in this area is unlikely to cause a vapor intrusion problems because buildings have concrete floors. Please note that concrete floors can crack over time providing a pathway for vapors to enter a building. The vapor intrusion scenario should be investigated in the human health risk assessment for this area to insure that existing, as well as future building construction, does not pose an unacceptable risk for vapor intrusion or that proper construction techniques are incorporated into the design of any existing or future buildings in the area.

    The purpose of the comment was for the Navy to evaluate the whole of Site 16 for vapor intrusion. While in certain areas vapor intrusion of CVOC may not be a concern today, that could change with time as the plume advances. In addition, concrete floors in and of themselves are not an acceptable barrier to vapors since the floor can crack providing a pathway for the vapors. Therefore the Navy needs to evaluate fate and transport of the plume to determine what areas may have unacceptable risk to human health in the future and what can/will be done to remedy that situation.

19. **Table 5-3, Page 4 of 9, Receptors of Concern, Creosote Dip Tank Area** – This area has the potential for both commercial/industrial as well as residential use (in the form of hotels or recreational use (proposals over the years have shown both). Please note this in this section.

    RIDEM disagrees with the response to this comment. Under the MARAD agreement land use must be in support of the marine industry. A marina would be consistent with the MARAD agreement. Under the RIDEM Remediation Regulations a marina would be considered recreational use. Section 3.58 of the Regulations defines residential activity to include unrestricted outdoor recreational area. The cleanup of NCBC is to be based on current or reasonably foreseeable future land use. The marina

currently exists and is anticipated to continue to exist in the future. Therefore, RIDEM Remediation Regulations residential standards would apply to this area.

20. **Table 5-3, Page 5 of 9, Receptors of Concern, Fire Fighting Training Area** – This area has the potential for both commercial/industrial as well as residential use (in the form of hotels or recreational use (proposals over the years have shown both). Please note this in this section.

    See comment to response no. 19.

21. **Page 6-5, Section 6.1.2.1, Derivation of Screening Criteria, Screening Levels for Soil and Sediment, Paragraph 2** – This paragraph notes that COPC selection tables will include the ORNL RSLs and RIDEM Direct Exposure Criteria for commercial/industrial soils. They should also include the RIDEM Residential Direct Exposure Criteria as this will help determine whether an Environmental Land Use Restriction (ELUR) will be required.

    Response is acceptable.

22. **Page 6-5, Section 6.1.2.1, Derivation of Screening Criteria, Screening Levels for Groundwater and Groundwater Seeps, Paragraph 1, Sentence 2** – The definition for RIDEM GB groundwater is given as "i.e., an area that is presumed not suitable for use as a current or potential source of drinking water". This regulation from Section 8.03(A)(ii) of the Remediation Regulations is used by RIDEM to determine the appropriate cleanup levels for GB classification groundwater. The GB classification of groundwater at this site is not based on the RIDEM Remediation Regulations, but is based on the RIDEM Groundwater Quality Regulations. Section 9.1.3 of the Groundwater Quality Regulations defines GB groundwater as *"those groundwater resources designated by the Director which may not be suitable for public or private drinking water use without treatment due to known or presumed degradation"*. Please change the definition of GB groundwater to that of the Groundwater Quality Regulations since it has not yet been determined that this area cannot be used as a potential future source of groundwater.

    Response is acceptable.

23. **Page 6-5 & 6, Section 6.1.2.1, Derivation of Screening Criteria, Frequency of Detection Screen** – This paragraph notes, with conditions that if a constituent was detected less than once in 20 samples it was no longer considered as a COPC. Please note this is inconsistent with the RIDEM Remediation Regulations (Section 8.01(A). In order to drop a constituent from further consideration in the risk analysis it must be shown

that individually and cumulatively that the constituent poses no unacceptable risk.

While the action taken with respect to this comment is acceptable, RIDEM disagrees with the rationale. It still must be shown that individually and cumulatively each COPC does not pose an unacceptable risk. Even though the toxicity screen is very conservative the calculation must still be provided.

24. **Page 6-8, Section 6.1.2.2, Decision Rules for Establishing COPCs, Bullet 4** – This bullet states that chemicals present at naturally occurring levels were not retained as COCs in accordance with Navy guidance. Please state if there are any chemicals the Navy did not retain as a result of this bullet. Please note the only background study done at NCBC was for basewide inorganics for groundwater. This study, however, is not in compliance with Section 8.06 of the RIDEM Remediation Regulations.

    Please provide the list of CPOCs that were not carried forward as a result of them being determined to be within background values.

25. **Page 6-9, Section 6.1.3.1, Surface Soil (0 to 2 feet) – Undeveloped Area, Last Paragraph, Last Sentence** – Please reference the background study which shows aluminum and beryllium to be within background levels.

    See comment 34.

26. **Page 6-11, Section 6.1.3.2, Surface Soil (> than 2 feet) – Undeveloped Area, Last Paragraph, sentence 2** – Please reference the background study which shows the background concentrations of aluminum, arsenic and beryllium to be within background levels.

    See comment 34.

27. **Page 6-12, Section 6.1.3.2, Surface Soil (> than 2 feet) – Undeveloped Area, Last Paragraph, First Sentence** – Please reference the background study reference the study which shows arsenic and aluminum to be within background levels.

    See comment 34.

28. **Page 6-13, Section 6.1.3.3, Surface Soil (0 to 2 feet) – Developed Area, Paragraph 2, Sentence 2** – Please reference the background study which shows aluminum, arsenic and manganese to be within background levels.

    See comment 34.

29. **Page 6-14, Section 6.1.3.4, Surface Soil (> than 2 feet) – Developed Area, Paragraph 2, Sentence 3** – Please reference the study which shows aluminum, arsenic, beryllium, iron and manganese to be within background levels.

    See comment 34.

30. **Page 6-16, Section 6.1.3.5, Shallow Overburden Groundwater, Paragraph 1, Sentence 4** – Please reference the study which shows Cr, Mn, Ni in unfiltered samples and Cr, Fe and Mn in filtered samples to be within background levels.

    See comment 34.

31. **Page 6-17, Section 6.1.3.6, Intermediate Overburden Groundwater, Paragraph 1, Sentence 3** – Please reference the study which shows Cr, Mn and Ni in unfiltered samples and Fe, Mn and V in filtered samples to be within background levels.

    See comment 34.

32. **Page 6-18, Section 6.1.3.7, Deep Overburden Groundwater, Paragraph 1, Sentence 3** – please reference the study which shows Cr, Mn and Ni in unfiltered samples and Ba, Cr, Fe, Mn and Ni in filtered samples to be within background levels.

    See comment 34.

33. **Page 6-18, Section 6.1.3.8, Shallow Bedrock Groundwater, Paragraph 2, Sentence 3** – Please reference the study which shows Al, Ni and Tl in unfiltered samples and Fe and Mn in filtered samples to be within background levels.

    See comment 34.

34. **Page 6-19, Section 6.1.3.9, Deep Bedrock Groundwater, Paragraph 2, Sentence 3** – Please reference the study which shows Mn in filtered samples to be within background levels.

    Of major to concern to RIDEM is arsenic in soils. If the Navy can demonstrate that sufficient samples have been obtained (18 samples + 1 per additional acre over the 5th acre), no individual sample exceeded 15 mg/kg and no greater than 10% of sample results from the data set exceed 7.0 mg/kg then RIDEM can agree with arsenic not being a CPOC. It should also be noted that a study conducted by T. O'Connor entitled

Background Levels of Priority Pollutant Metals in Rhode Island Soils in the early 1990's showed the average background level of arsenic in Rhode Island to be 1.7 mg/kg.

For the remainder of the COPCs, simply because a COPC is below a screening level does not mean that cumulatively it does not pose a risk. Please provide calculations that demonstrate that COPCs no longer considered do not cumulatively pose an unacceptable risk.

35. **Section 6.1.3, COPCs Selected for the HHRA, General Comment** – It appears that a number of COPCs have been eliminated from further consideration in the human health risk assessment based on their being within "background values". It is assumed that these are studies that were conducted for NCBC during the early to mid 1990's. While at the time RIDEM approved these background studies, they no longer comply with the current RIDEM Remediation Regulations, amended 2004. As a result, these studies can no longer be used to eliminate COPCs. RIDEM is not aware of any current background studies that have been conducted at the site. In accordance with Section 8.01(A) of the RIDEM Remediation Regulations RIDEM is requesting that COPCs noted in comments 25 thru 34 be included in the HHRA until it can be shown that individually and cumulatively the COPC shows acceptable risk.

    Please provide calculations that show cumulatively that the eliminated COPCs do not pose an unacceptable risk.

36. **Table 6-25, Receptors and Exposure Routes, Construction Workers** – Please state if the Soil Dermal Contact and Soil Ingestion exposure routes include both surface and subsurface soil.

    Response is acceptable.

37. **Pages 6-23 and 24, Section 6.2.1.1, Potential Current and Future Receptors of Concern and Exposure Pathways, Child and Adult Recreation Users & Future Child and Adult Residents** – Please be advised that under the RIDEM Remediation Regulations the Recreational and Residential scenarios have the same standard of protection. In addition, a portion of the site is currently used for recreational purposes (marina) and plans have been shown in the past that would have residential uses (hotels).

    RIDEM is aware of the 19 January 2007 letter regarding recreational criteria under the commercial/industrial scenario. By considering the recreational scenario under the commercial/industrial criteria it is automatically given that institutional controls will be placed on the property (i.e., commercial/industrial criteria are not acceptable for

recreational use unless there is extremely limited use of the property for such use – example: used once a year for the company picnic), insuring the proper implementation of the institutional control, annual reporting requirements to insure institutional controls are in place and maintained, the institutional control is protective of human health for the use intended and RIDEM has the authority to take enforcement actions or require additional investigation and/or remedial activities if the restrictions are not maintained or the use of the property changes.

The marina is a facility that will be utilized 365 days a year. RIDEM will apply the residential criteria to this portion of the site. This, however, does not mean that institutional controls cannot be a part of the remedy for this area of the site. RIDEM will work with the Navy and EPA to determine an appropriate solution for this portion of the site.

38. **Table 6-27, Input Parameters Reasonable Maximum Exposures, Page 1 of 4, Incidental Ingestion/Dermal Contact with Soil** – For the adult resident the ingestion rate for soils is stated as 100 mg/day. Appendix D of the RIDEM Remediation Regulations has a default value of 1000 mg/day. Please use this value in the calculations. In addition please explain why a child resident would be at a site for 25,550 days (70 years). This is the Value used for AT_c.

    With respect to the technical aspects of the response, the response is acceptable. Please be advised that the RIDEM Remediation Regulations will become ARARs at which point the Navy will need to comply with these regulations as well as CERCLA and Navy guidance.

39. **Table 6-**28, Input Parameters Central tendency Exposures, Page 1 of 4, For AT_n and AT_c under the All Exposures Section, please explain why the averaging time would be different. Similar to comment 38 please explain why a child resident would be at the site for 70 years. For AT_n please explain why a child resident would only be at the site for 730 days (2 years) and the adult resident would only be at the site for 7 years. It is assumed the child would move with the parent, therefore the averaging time should be the same (though RIDEM Remediation Regulations consider a child scenario for the first 6 years).

    Response is acceptable.

40. **Chapter 6, Section 6.2.4, General Comment** – Please explain why the central tendency exposure frequency is always one half the reasonable maximum exposure frequency.

    Response is acceptable.

41. **Page 6-46, Section 6.4.2, Interpretation of Risk Assessment Results, Paragraph 1, Sentences 3 & 4** – "*However, the 1 x 10^{-5} risk benchmark should not be viewed as a discrete limit. Risks slightly greater than 1 x 10^{-5} may be considered acceptable (i.e. protective) if justified on site-specific conditions, including any uncertainties about the nature and extent of contamination and associated risks.*" Section 8.01(A) of the RIDEM Remediation Regulations does not discuss cumulative risks which slightly exceed 1 x 10^{-5}. Exceedances of 1 x 10^{-5} would require evaluation of remedial alternatives. Whether the no action alternative would be the preferred alternative would be a risk management decision. Please include this statement in this section.

    Response is acceptable.

42. **Page 6-47, Section 6.4.3.1, Soil, Noncarcinogenic Risks – RME, Southeast Undeveloped Area** – Please state if the child resident scenario had His in excess of similar to the Northwest Undeveloped Area.

    The Navy's response was that the HIs for the residential child exposure to surface soil was less than 1 and for subsurface soil was 5. The Navy is proposing to amend to sentence to state that HIs for both surface and subsurface soil are less than 1 for the child resident. This does not make sense if the HI for subsurface soil is 5. Please revise this section accordingly.

43. **Page 6-50, Section 6.4.3.2. Groundwater Undeveloped Area, Paragraph 2, Last Sentence** – This sentence notes that metals concentrations in groundwater are elevated in unfiltered samples versus filtered samples. Please note that RIDEM Remediation Regulations Groundwater Objectives are based on unfiltered samples sine it is assumed most people do not filter their groundwater prior to consumption.

    Response is acceptable.

44. **Page 6-55, Section 6.4.3.5, Vapor Intrusion** – Please state if the exposure frequency for the residential scenario used was 350 days/year. Tables 6-42 and 43 simply provide the results of the analysis.

    Response is acceptable.

45. **Page 6-57, Section 6.4.3.6, Risks from Lead, Paragraph 1, Last Sentence** – Please see comment 43. In addition, if any public water supply were to be developed from water in this area, concentrations of lead would need to be below 15 ug/l irrespective of any risk assessment performed.

Unless the lead in the soil is naturally occurring it is possible that it was deposited by site related activities. The fact that filtered water consistently has a lower concentration of lead than unfiltered samples could simply mean that the lead contaminated water has fully moved through the site. The Navy is proposing a prohibition of domestic use of groundwater. This should be extended to include any withdrawal of groundwater except for sampling and remediation purposes unless that groundwater is treated to meet RIDEM GA Groundwater Objectives or MCLs.

46. **Page 6-58, Section 6.4.3.6, Risks from Lead, Paragraph 1** – Please explain why the hypothetical residential scenario was not included in this analysis. It seems only the construction worker, industrial worker, and recreational user were considered.

    Response is acceptable.

47. **Chapter 6, General Comment** – Please explain why the central tendency exposure (CTE) averaging time is one half the reasonable maximum exposure (RME) averaging time. It is understood this is based on professional judgment, however, it is RIDEM's understanding that the Army uses ¾ of the RME for the CTE. Both branches of the military are part of the Department of Defense therefore it would seem they would use the same criteria.

    Response is acceptable.

48. **Page 8-4, Section 8.2, Summary of Human health Risk Assessment Results, Bullet 2** – This bullet states that the sediments in Allen Harbor are submerged and that potential for human contact is limited. Please be advised that shell fishing is very common this area and this would put human receptors in direct contact with the sediment. This should be noted in this bullet.

    Response is acceptable, however, as part the remedy for this site an ELUR would need to be place on the property to maintain the erosion control and prohibit shell fishing in the marina.

49. **Page 8-5, Section 8.2, Summary of Human health Risk Assessment Results, Bullet 2** – This bullet notes that groundwater use restrictions are currently in place for the undeveloped area. Please state if this also applies to the developed area. In addition, if the groundwater cannot be remediated a environmental land use restriction will need to be applied to the whole property upon transfer.

Response is acceptable. The Navy agrees that if groundwater use does not allow for unrestricted use an ELUR will be placed on all of Site 16 upon property transfer.

50. **Page 8-6, Section 8.4, Recommendations for Further Action, Bullet 1** – This bullet implies that the whole of the northeastern quadrant of Site 16 needs to meet commercial industrial direct exposure criteria. Please be advised that a small portion of the section of land is used for recreational purposes (marina). Under the RIDEM Remediation Regulations recreational uses must meet residential direct exposure criteria. Please note this in this bullet.

See response to comment 37.

RIDEM would like to thank you for the opportunity to comment on this document and looks forward to working with the Navy and USEPA. If you have any questions or require additional information please call me at (401) 222-2797 ext. 7138 or email me at richard.gottlieb@dem.ri.gov.

Sincerely,

Richard Gottlieb

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