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LETTER AND COMMENTS FROM RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL
MANAGEMENT REGARDING FEASIBILITY STUDY FOR SITE 16 NCBC DAVISVILLE RI
03/23/2011
RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT



RHODE ISLAND
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

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TDD 401-222-4462

23 March 2011

Mr. Jeffrey Dale, RPM
U.S. Department of the Navy
BRAC PMO, Northeast
4911 South Broad Street
Building 679, PNBC
Philadelphia, PA 19112

RE: NCBC Site 16 Feasibility Study
Davisville, Rhode Island
Submitted 1 March 2011, Dated 23 February 2011

Dear Mr. Dale:

The Rhode Island Department of Environmental Management, Office of Waste Management (RIDEM) has reviewed the above referenced document and has the following comments to offer:

1. Page 1-12, Section 1.2.3.2, Site 16 Geology, Paragraph 2, Sentence 3: *"Also in the North Central Area of the site and toward Allen Harbor, relatively recent material was deposited on top of the undisturbed deposits but below the reworked soil and fill material (including the observed waste materials)."* Please clarify this sentence as it is not clear how recently deposited materials are below reworked soil and fill materials.
2. Page 1-20, Section 1.2.4, Nature and Extent of Contamination, Metals: This section notes the EPA Industrial/Commercial screening criteria for lead as 800 mg/kg. Please be advised that the RIDEM Industrial/Commercial direct exposure criteria for lead is 500 mg/kg. Please revise this section accordingly.
3. Page 1-23, Section 1.2.6.1.1, Soil Exposure Units, Bullet 3: This bullet states that a forensics analysis indicates that PAHs found in this area (south of Building 41) are from coal tar pitch and building materials rather than from fuel, therefore no remedial action is proposed. Since this is a public document, please explain the circumstances under which the decision was made not to remediate this contamination (additional sampling) since clean-up standards are based on level of contamination, irrespective of source.

4. Page 1-25, Section 1.2.6.1.2, Risk Summary, Paragraph 1: This paragraph notes that Site 16 is not currently used for residential purposes and the anticipated future use of the land is commercial/industrial. A portion of the site is currently a marina and is expected to remain so well into the future. Section 3.58 of the RIDEM Remediation Regulations notes that recreational areas are subject to residential direct exposure criteria. Please revise this paragraph to note that recreational criteria (residential direct exposure criteria) apply to the portion of the site that is leased by the Yacht Club that lies within the boundaries of IR Site 16.

5. Page 2-1, Section 2.1, Media of Concern, Paragraph 2: It is stated in this paragraph that Rhode Island does not have an EPA-endorsed Comprehensive State Groundwater Protection Program so Rhode Island's GB groundwater classification was not used in the development of PRGs and remedial alternatives. Please be advised that standards for groundwater classified as GB are based on promulgated regulations and are therefore valid standards whether EPA endorses them or not. Please revise this paragraph in addition to revising the PRGs to include the RIDEM GB groundwater classification.

6. Page 2-5, Section 2.2.2, Chemicals of Concern in Groundwater, Bullet 2, Last Sentence: Based on this sentence it appears that only dissolved COCs that exceed either MCLs or RSLs are included for further consideration in the FS. Please be advised that Table 1, associated with Rule 11.3 of the RIDEM Groundwater Quality Regulations require that analysis be based on *unfiltered samples*. Please include aluminum, lead, silver and thallium in the analysis.

7. Page 2-6, Section 2.3, Remedial Action Objectives, Paragraph 3: This paragraph states that the site will be used for commercial and industrial purposes only. Please revise this paragraph to note that a portion of the site is occupied by the Yacht Club, which under the RIDEM Remediation Regulations is defined as recreational use. Please note this will also affect the soil remedial action objectives in Section 2.3.1.1.

8. Action Specific ARARs: A Table needs to be included for action specific ARARs. The following items need to be placed in this table:

Process	Requirement	Status	Synopsis	Action to be Taken to Meet ARAR
Groundwater Monitoring	Rules and regulations for Groundwater Quality (12-100-006)	Applicable	Rules and regulations intended to protect and restore the quality of the State's groundwater. Includes groundwater monitoring requirements and monitoring well construction abandonment. Also	Groundwater monitoring program will comply with these regulations

			establishes groundwater quality standards and/or requirements	
	Rhode Island Hazardous Waste Management Act of 1978 (RIGL 23-19.1 et seq.	Relevant and Appropriate	Rules and regulations for hazardous waste generation, transportation, treatment, storage, and disposal. They incorporate, by reference, the Federal RCRA requirements.	Wastes generated during monitoring and excavation activities will be managed in accordance with these regulations.
	Water Pollution Control (RIGL 46-12 et seq) and Water Quality standards and Ambient Water Quality Guidelines	Relevant and Appropriate	Establishes water use classifications and water quality criteria for all waters of the State. Establishes acute and chronic ambient water quality criteria for the protection of aquatic life.	Discharges of groundwater from the site to surface water will comply with the substantive portions of these regulations to the extent they are more stringent than federal standards
	State of Rhode Island Rules and Regulations for the Investigation and Remediation of hazardous material Releases; DEM-DSR-01-93 – Sections 9, 10, 11 and 12	Relevant and Appropriate	Establishes minimum requirements for a remedial action work plan, approvals, the remedial action and requirements for managing arsenic in soil	These sections are required in order to insure proper steps are accomplished to successfully implement the ultimate remedial response and arsenic is a COC.

9. Table 2-2, Location Specific ARARs : The following need to be added to this table:

Process	Requirement	Status	Synopsis	Action to be Taken to Meet ARAR
	Rhode Island Historic Preservation Act (RIGL 42-45 et. Seq.)	Applicable	This act requires the recovering and preservation of archeological and historic data and artifacts when threatened by a publicly funded action.	Compliance with this requirement in the event historical or archeological artifacts are discovered during remedial activities.

10. Table 2-3; Preliminary Remediation Goals – Soil – Under the column for RIDEM Direct Contact Risk – Under this column PRGs are provided for Residential, Commercial and Recreational scenarios. For the recreational scenario it is consistently labeled as NA (Not Applicable). Please revise this to be the same value as the residential PRG since Section 3.58 of the RIDEM Remediation Regulations defines recreational use as having the same maximum exposure criteria as residential use.
11. Page 2-14, Section 2.5.2, Action Specific ARARs, Paragraph 1, Sentence 1: “Action-specific ARARs and TBCs are technology or activity based regulatory requirements or guidance that would control or restrict remedial action.” Please change this to: “Action-specific ARARs and TBCs are technology or activity based regulatory requirements or guidance that would provide upper or lower boundaries on the implementation of remedial actions.” The ARARs and TBCs do not restrict one’s choice of a reasonable remedial action, they just place boundaries on what is acceptable.
12. Page 3-5, Section 3.2.2.1, LUCs, Effectiveness – Arsenic, lead, benzene, TPH, PAHs and other organics remain at the site. It is pointed out that prohibiting residential use would prevent the occurrence of unacceptable risk to human receptors from direct exposure to contaminated soil. Please revise this paragraph to state that at various locations all the above mentioned COCs also exceed commercial/industrial direct exposure criteria. It would follow then that commercial/industrial use would also need to be prohibited. Clearly this is not reasonable. Perhaps the entire paragraph should be revised to state that LUCs, by themselves are not effective in protecting human health and the environment, but instead could be used to supplement a more aggressive remedial action.
13. Page 3-6, Section 3.2.3, Containment, Effectiveness, Last Sentence: This sentence points out that capping and covering is typically incompatible with residential development that would make maintenance very difficult. Please revise the sentence to point out that under the industrial/commercial scenario the same could also be said where development of the land is likely. There is no guarantee on how long NORAD will remain at the site and many portions of Parcels 7 and 8 have yet to be developed.
14. Page 3-7, Section 3.2.4, Removal, Paragraph 1: Please explain and provide a reference as to why the load bearing capacity of the soil must be greater than 1,500 lb/ft² in order to consider a removal action. In addition, please provide the test results that Navy has taken of the load bearing capacity of the soil at Site 16 along with a map delineating areas of less than 1,500 lbs/ft² since apparently this will have an impact on where removal actions can be implemented. As a reminder to the Navy, at Tank Farm 4 at Naval Education and Training Center in Newport an oil/water separator and oil contaminated soil was removed from wetlands. In addition, as part of an NRDA claim from the US Fish and Wildlife Service muck was dug out of the wetlands that lie between Calf Pasture Point and Allen Harbor

Landfill to improve flora quality. It is highly unlikely that the load bearing capacity of these soils was in excess of 1500 lbs/ft². Perhaps the Navy should consider the use of a lighter piece of equipment for soil removal.

15. Table 3-2; Preliminary Screening of Remedial Technologies and Process Options For Groundwater, LUCs, Passive Controls, Screening Comment: This section notes that groundwater use is restricted through the MARAD and LIFOC. The LIFOC ends once the land is transferred and MARAD use is not guaranteed (QDC could decide to just purchase the land). Please revise to state that depending on alternative selected an **environmental** groundwater restriction would need to be placed on the land in accordance with RIDEM Remediation Regulations.
16. Page 3-13, Section 3.5.2.1, LUCs, Paragraph 1, Last Sentence: "*Signs would be posted to indicate the restrictions in the LUCs.*" This sentence is in reference to groundwater LUCs. For soil LUCs posting signs would make sense (no digging, no trespassing, etc.). Unless paid to do so, it is unlikely anyone would come to the site to install a well to obtain groundwater. Please revise this sentence to state that any groundwater use restrictions would be accomplished by the placement of an Environmental Land Use Restriction (ELUR) on the deed of the property.
17. Page 3-14, Section 3.5.2.1, LUCs, Effectiveness, Paragraph 1, Last Sentence: "*Because of the long time required for natural attenuation, a LUCs-only alternative would not be feasible.*" This sentence seems to only allow LUCs to be used in conjunction with monitored natural attenuation. Please revise this sentence to state – "*A LUCs-only alternative would not be effective, however, it can be used in conjunction with other alternatives.*"
18. Page 3-29, Section 3.5.6.1, Direct Surface Discharge, Effectiveness: Please change NPDES to RIPDES as Rhode Island has an EPA approved program.
19. Page 4-6, Section 4.2, Assembly and Detailed Analysis of Soil Remedial Alternatives, Paragraph 2: This paragraph notes that alternatives for unrestricted use were not developed as the approved reuse plan does not include residential use. Please revise this sentence to note that there is existing recreational use of a portion of the site which is reasonably expected to continue into the foreseeable future.
20. Page 4-6, Section 4.2.1.2, Alternative S-1, No-Action, Detailed Analysis, Paragraph 1, Sentence 2: This sentence states that the portion of the land north of Davisville Road cannot be used for residential purposes. Please revise this sentence to note that currently and for the foreseeable future a portion of the land is used for recreational purposes.
21. Page 4-7, Section 4.2.1.2, Alternative S-1, No-Action, Detailed Analysis, Long-Term Effectiveness and Permanence, Paragraph 1: The first sentence states that Alternative S-1 would have long-term effectiveness. Please explain how there is long-term effectiveness as COCs in soil exceed residential, recreational and

commercial/industrial direct exposure criteria. Under any land use there is unacceptable risk.

22. Page 4-9, Section 4.2.2.1, Alternative S-2, Soil Cover and Cap, Monitoring and LUCs; Component 3: Monitoring – This section outlines a monitoring schedule of quarterly for the first year, semi-annual for the next two years and annual thereafter. Please revise to a minimum of quarterly for the first two years with a review of data at that time to adjust the frequency of subsequent monitoring events.
23. Page 4-10, Section 4.2.2.1, Alternative S-2, Soil Cover and Cap, Monitoring and LUCs, Component 4: LUCs – As part of this alternative it is proposed to amend the LUCIP with an LUC to protect cover and caps. Please revise this to note that any environmental LUCs including those in the LUCIP would be converted to an Environmental Land Use Restriction (ELUR) and incorporated into the deed for the property in accordance with the RIDEM Remedial Regulations.
24. Page 4-11, Section 4.2.2.2, Alternative S-2, Detailed Analysis, Compliance with ARARs and TBCs: This alternative does not address the recreational user and therefore does not comply with chemical specific ARARs and TBCs.
25. Page 4-11, Section 4.2.2.2, Alternative S-2, Detailed Analysis, Long-term Effectiveness and Permanence, Sentence 2: This sentence notes that caps and covers effectively isolate current users from soils they should not be exposed to. A portion of the site is currently used for recreational purposes which this alternative does not address. Please revise this section to state that the proposed caps and covers would not effectively protect current site users.
26. Page 4-11, Section 4.2.2.2, Alternative S-2, Detailed Analysis, Compliance with ARARs and TBCs: Contrary to what is stated in this paragraph, the chemical specific ARARs and TBCs would not be complied with as they do not address the recreational use of land associated with the marina. Please revise this paragraph accordingly.
27. Page 4-12, Section 4.2.2.2, Alternative S-2, Detailed Analysis, Implementability, Paragraph 2: “*LUCs would be incorporated into existing LUCIP.*” Please revise this to note that any environmental LUCs including those in the LUCIP that are appropriate would be converted to an Environmental Land Use Restriction (ELUR) and incorporated into the deed for the property in accordance with the RIDEM Remedial Regulations.
28. Alternative S-2 General Comment: Any type of significant development of this property would involve excavation and regrading of the land surface. The placement of caps and covers (Alternative S-1) will severely restrict the ability of anyone attempting to develop this property. This is not a viable alternative.

appropriate would be converted to an Environmental Land Use Restriction (ELUR) and incorporated into the deed for the property in accordance with the RIDEM Remedial Regulations.

37. Page 4-21, Section 4.3.1.2, Alternative G-1, Detailed Analysis, Overall protection of Human Health and the Environment, Paragraph 1, Sentence 2: "Under the current LUCs, the portion of the site north of Davisville Road cannot be used for residential purposes and groundwater supply wells cannot be installed." Please revise this to: "Under the current LUCs, the portion of the site north of Davisville Road cannot be used for a groundwater supply." The groundwater restriction applies to all uses (except investigative and remedial purposes). The way the sentence is currently written implies that groundwater can be used for commercial/industrial purposes, which is also not allowed.
38. Page 4-23, Section 4.3.2.1, Alternative G-2, MNA and LUCs, Description, Component 1: Monitored Natural Attenuation, Paragraph 3: This paragraph states that monitoring would be conducted quarterly for the first year, semi-annually for years 2 and 3 and annual thereafter. RIDEM typically requires two years of quarterly sampling (to be able to statistically analyze the samples and obtain seasonal variations). Subsequent sampling frequency is based on past data. Please revise this paragraph accordingly.
39. Page 4-24, Section 4.3.2.1, Alternative G-2, MNA and LUCs, Component 2: LUCs, Paragraph 3: This paragraph states that an LUC (ELUR) would be applied over areas where the TCE concentration is greater than 250 ug/l or the VC concentration is greater than 2 ug/l. Since groundwater moves the ELUR would need to be placed from the most up-gradient point of the above noted concentrations to the shoreline of Narragansett Bay to insure future buildings are properly constructed so that vapor intrusion is not an issue. Please revise this paragraph accordingly.
40. Page 4-26, Section 4.3.2.2, Alternative G-2, Detailed Analysis, Short-Term Effectiveness, Paragraph 2: This paragraph states that Alternative G-2 would take approximately 150 years to meet PRGs. This is not a reasonable time frame for an alternative to meet its goals. This alternative could be considered in conjunction with another alternative to significantly reduce the time frame to meet PRGs.
41. Page 4-27, Section 4.3.3.1, Alternative G-3, Component 2: LUCs: An ELUR would need to be placed from the most up-gradient point of where TCE exceeds 250 ug/l and VC exceeds 2 ug/l to the shoreline of Narragansett Bay to insure future buildings are properly constructed so that vapor intrusion is not an issue. Please revise this paragraph accordingly.
42. Page 4-28, Section 4.3.3.2, Alternative G-3, Detailed Analysis, Long-Term Effectiveness and Permanence, Paragraph 2: This paragraph states that part of the alternative is to verify that no migration of the COCs is occurring. Based on experience from IR Site 07 it is known that the COC plume will migrate, Therefore,

the monitoring program should take this into consideration. Please modify this section accordingly.

43. Page 4-31, Section 4.3.4.1, Alternative G-4, Description, Component 1: In-Situ Enhanced Bioremediation, Paragraph 2: This paragraph states that samples would be collected quarterly for the first year and annually thereafter. Please revise this to state that samples would be collected quarterly for the first two years and subsequent sampling frequency will be based on past results.
44. Page 4-31, Section 4.3.4.1, Alternative G-4, Description, Component 2: Monitored natural Attenuation: An ELUR would need to be placed from the most up-gradient point of where TCE exceeds 250 ug/l and VC exceeds 2 ug/l to the shoreline of Narragansett Bay to insure future buildings are properly constructed so that vapor intrusion is not an issue. Please revise this paragraph accordingly.
45. Page 4-32, Section 4.3.4.2, Alternative G-4, Detailed Analysis, Long-Term Effectiveness and Permanence, Paragraph 3: This paragraph states that part of the alternative is to verify that no migration of the COCs is occurring. Based on experience from IR Site 07 it is known that the COC plume will migrate, Therefore, the monitoring program should take this into consideration. Please modify this section accordingly.
46. Page 4-35, Section 4.3.5.1, Alternative G-5, Description, Component 1: Installation of ZVI PRBs, Paragraph 3: This paragraph states that samples would be collected quarterly during the first year and annually thereafter. Please revise to state that sampling would be collected quarterly for the first two years and then a review of the data would determine sampling frequency thereafter.
47. Page 4-36, Section 4.3.5.1, Alternative G-5, Description, Component 3: Monitored Natural Attenuation: See comment 38.
48. Page 4-36, Section 4.3.5.1, Alternative G-5, Description, Component 4: LUCs: See comment 39.
49. Page 4-41, Section 4.3.6.1, Alternative G-6, Description, Component 4: Monitored Natural Attenuation: See Comment 38.
50. Page 4-41, Section 4.3.6.1, Alternative G-6, Description, Component 5: LUCs: See comment 39.
51. Page 5-1, Section 5.1.1, Soil Alternatives, Overall Protection of Human Health and the Environment: None of the soil alternatives address the current and future recreational use of a portion of this site. Therefore, contrary to what is stated in this section, none of the soil alternatives are protective of human health as presented. Please revise this document to include the recreational use of land associated the marina.

52. Page 5-1, Section 5.1.3, Soil Alternatives, Compliance with ARARs and TBCs: The above soil alternatives do not comply with ARARs and TBCs due to the recreational use of a portion of the site. See comment above.
53. Page 5-3, Section 5.1.5, Soil Alternatives, Short-Term Effectiveness, Paragraph 4: This paragraph states that Alternatives S-2, S-3 and S-4 would meet the remedial action objectives. The soil alternatives presented only consider commercial/industrial use of the property. The soil alternatives do not address the current and future recreational use of a portion of this site. Please revise document accordingly.
54. Page 5-5, Section 5.3.1, Groundwater Alternatives, Overall Protection of Human health and the Environment, Paragraph 3, Sentence 2: This sentence states that a portion of the site cannot be used for residential purposes and groundwater supply wells cannot be installed. For the purposes of this Section, please remove the reference to residential use as groundwater use/classification is not a function of land use.

RIDEM would like to thank you for the opportunity to comment on this request 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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