STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

Department of Environmental Management
DIVISION OF SITE REMEDIATION
291 Promenade Street
Providence, R.I. 02908-5767

Mr. Robert Krivinskas, Remedial Project Manager
U.S. Department of the Navy
NAVFACENGCOM - Northern Division
Code 1823, Mail Stop #82
10 Industrial Highway
Lester, PA 19113-2090

3 April 1995

RE: FOCUSED FEASIBILITY STUDY
SITE 09, ALLEN HARBOR LANDFILL
Naval Construction Battalion Center, Davisville Rhode Island

Dear Mr. Krivinskas:

The Division has conducted a review of the above cited document for Site 09, Allen Harbor Landfill. In addition to the attached comments and as cited in my 8 February 1995 correspondence, the Rhode Island Rules and Regulations for Solid Waste Management Facilities mandates that landfill slopes are not to exceed 3:1. The sheet pile wall as described in Alternative 2, does not comply with this requirement. Since one of the two threshold criteria is compliance with ARARs and the landfill slopes can be cut back to achieve the 3:1 design criterium, the Division maintains that Alternative 2 does not meet the threshold criteria.

Further, the Navy's preferred alternative will not meet the balancing criterion of long term effectiveness/permanence in that the sheet piling will need to be replaced. Since the Navy's preferred alternative does not utilize a permanent solution it is not considered cost effective by the State.

Finally, the Navy must consider the modifying criteria of State and community acceptance and for the reasons cited above, this Division can not accept the Navy's preferred alternative as presented.

The State's preferred alternative is a modified Alternative 3. The Division hereby request a meeting to discuss potential minor modifications (i.e. slurry wall placement, shoreline profiles, etc.) to this alternative.

Please be advised that after obtaining approval from this Division for remedial action, the Navy must obtain approval from the Rhode Island Coastal Resources Management Council (CRMC) and also obtain RIDEM Water Quality Certification.

If I can be of further assistance to you please feel free to call me at (401) 277-3872 extension 7142.

Sincerely,

Judith Graham

Judith Graham
Engineer

cc: W. Angell, DEM DSR
R. Gottlieb, DEM DSR
T. Gray, DEM DSR
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RIDEM COMMENTS

FOCUSED FEASIBILITY STUDY
SOURCE CONTROL
SITE 09 - ALLEN HARBOR LANDFILL
MARCH 1995

NAVAL CONSTRUCTION BATTALION CENTER
DAVISVILLE, RHODE ISLAND

1. General Comment.

The report consistently references the CRMC regulations for shoreline protection as a "preference" for non-structural methods; however, section 300.7 E. (1) clearly requires the applicant to demonstrate the unsuitability of non-structural methods. The Navy has not demonstrated that non-structural alternatives are not feasible.

2. General Comment.

RCRA subtitle C resulted in the promulgation of a large body of regulations including the Rhode Island Hazardous Waste Management Act which governs all aspects of hazardous waste management. It is generally not applicable to the historical activities at the Allen Harbor Landfill, however, certain regulations may become applicable should the final remedy involve further physical handling of hazardous wastes. Therefore, when reference is made to these requirements, please specify the precise regulations being cited.

3. General Comment.

The report should include a discussion of expected operation and maintenance activities under the "long-term effectiveness" sections for each alternative.

4. General Comment.

Regarding groundwater monitoring requirements, the report cites Rhode Island Rules and Regulations for Hazardous Waste Management, Section 9. These requirements are essentially the same as those required by Rhode Island Rules and Regulations for Solid Waste Management Facilities, Section 15, however, this regulation is more stringent as it requires statistical analysis of the data acquired; therefore, it will take precedence and must be cited.

5. General Comment.

Rhode Island Rules and Regulations for Solid Waste Management Facilities encompass more than just capping requirements; for example, leachate collection systems, landfill gas

and post-closure requirements are also addressed. As such, all aspects of these regulations must be evaluated for applicability.

6. **General Comment.**

Off-site receptors such as the harbor and the wetlands must be completely addressed in the Operable Unit 2 (OU2) portion of studies.

7. **Page ES-4, Focus Feasibility Study Summary;**
Paragraph 1, Last sentence.

The report cites continued generation of leachate due to infiltration of precipitation as a potential risk to the environment; however, the calculations of leaching potential in Appendix C characterizes leachate production due to infiltration at 0.0035 cf/day, and leachate production due to lateral flow through the saturated thickness of the waste at 4 cf/day. Leachate generation due to the lateral flow would seem more significant, please discuss this.

8. **Page ES-5, Alternative 2 description;**
Paragraph 1, Last sentence.

This sentence should state that the sheet pile wall will have an exposed vertical face of 15 feet.

9. **Page 1-11, Section 1.5.3, Area Water Use;**
Paragraph 2, Sentence 10.

The reference to Figure 1-5 should be changed to Figure 1-6.

10. **Page 2-9, Section 2.3.3, Tidal Effects;**
Paragraph 3, Last sentence.

Please justify the use of porosities of 20% and 15% for the shallow and deep groundwater, respectively.

11. **Page 2-10, Section 2.3.4, Site Hydrology;**
Paragraph 4, Sentence 5.

Westcott Road should be labeled on Figure 2-12.

12. **Page 2-11, Section 2.4, Ecological Setting;**
Paragraph 2, Last Sentence.

This sentence states that Allen Harbor was closed to shellfishing by RIDEM in 1985

based on the results of sediment and clam sampling and then refers the reader to Section 2.5.1 for more information. Section 2.5.1 should be revised to describe the results that were found during those studies so that the public can understand why the harbor was closed to shellfishing.

13. **Page 2-15, Section 2.6, Nature and Extent of Contamination; Paragraph 3.**

In addition to the federal screening level of 400 ppm for lead, this paragraph should also note the Rhode Island Department of Health (RIDOH) Lead Regulations which state that soil is considered lead free when the concentration of lead is 150 ppm or less. Please, also note that these regulations apply only to residential areas and child daycare facilities.

14. **Page 3-10, Section 4.3, Identification and Screening of Technologies and Process Options; Paragraph 1, Sentence 4.**

This sentence notes that due to the presence of existing fencing which limits access to the site, fencing was eliminated from further consideration as a site use restriction process option.

Please note that one of the design criteria (Page 3-11) for the Allen Harbor Landfill is that access to Calf Pasture Point along Sanford Road be maintained. The existing fence along Sanford Road is located on the western side of the road. Fencing would also need to be erected along the eastern side of the road to prevent the public from entering the landfill. Therefore, additional fencing is required. This comment also applies to the second paragraph on page 4-23. It should also be noted that in our comments for the 100% design of the landfill cap, RIDEM stated that fencing needs to enclose the entire perimeter of the cap for safety reasons as a result of the gas venting system.

15. **Page 4-10, Section 4.3, Alternative 2 - RCRA Subtitle C Multi-Layer Cap, Slurry Wall, Sheet Pile Wall Storm Protection and Deed Restrictions. Paragraph 2.**

As noted in Design Comment #19, RIDEM requests documentation to show that sheet piling can reasonably be expected to last up to 40 years in a salt water environment. This comment also applies to the third paragraph on page 4-15 where a similar statement is made.

16. **Page 4-10, Section 4.3, Alternative 2 - RCRA Subtitle C Multi-Layer Cap, Slurry Wall, Sheet Pile Wall Storm Protection and Deed Restrictions; Paragraph 4, Last sentence.**

The report states that soil-bentonite slurry walls can exhibit permeabilities of less than 10^{-8}

cm/sec. The report should state what the anticipated permeability of the slurry wall will be.

17. **Page 4-11, Section 4.3, Alternative 2 - RCRA Subtitle C Multi-Layer Cap, Slurry Wall, Sheet Pile Wall Storm Protection and Deed Restrictions; Paragraph 4, Sentence 1.**

This sentence states that existing fencing limits access to the site. Please note that one of the design criteria requires access to Calf Pasture Point via Sanford Road. The existing fence is on the western side of the road. Therefore, to limit access to the landfill fencing would have be placed on the eastern side of Sanford Road. This should be reflected in the document.

18. **Page 4-20, Section 4.4.1, Alternative 3 - RCRA Subtitle C Multi-Layer Cap, Slurry Wall, Sheet Pile Wall, Riprap Storm Protection and Deed Restrictions; Paragraph 5, Last Sentence.**

This sentence states that any revisions would most likely result in additional waste excavation and additional cap material requirements. Please explain what is meant by additional cap material requirements.

19. **Page 4-21, Section 4.4.1, Alternative 3 - RCRA Subtitle C Multi-Layer Cap, Slurry Wall, Sheet Pile Wall, Riprap Storm Protection and Deed Restrictions; Paragraph 4.**

With respect to the Navy's concerns for drainage on the lower height sheet pile wall, the report should consider different types of drainage design.

20. **Page 4-22, Section 4.4.1, Alternative 3 - RCRA Subtitle C Multi-Layer Cap, Slurry Wall, Sheet Pile Wall, Riprap Storm Protection and Deed Restrictions; Paragraph 1.**

To increase air movement across the work area and possibly reduce the level of personal protective equipment (PPE) necessary, it is suggested that the sheet piling be installed to its finished height. Rather than using the sheet piling to protect the face of the landfill while cutting back the slopes, techniques similar to those being employed at the McAllister Point landfill should be considered to alleviate this concern. In addition, based on conversations with steel companies, it is very expensive to cut sheet piling in the field.

21. **Page 4-24, Section 4.4.2, Alternative Evaluation; Paragraphs 1 and 2.**

It is stated that there will be long-term effects of periodic inundation of the cap behind the sheet pile wall and difficulties associated with the underlying drainage system which

would impact the long-term effectiveness of the cap with respect to alternative 3. The Navy should consider an alternative design in which the sheet pile wall does not extend above ground elevation and the revetment ties in at that elevation. This would eliminate the drainage concerns.

In addition, RIDEM questions the long-term effectiveness of the steel sheet pile wall particularly at the interface of the wall at sea level. The wall will be in a situation of wet and dry conditions, due to tidal changes, which will promote the decay of the wall eventually necessitating its replacement long before the remainder of the wall corrodes.

22. **Page 5-2, Section 5.0, Conclusions and Recommendations; Paragraph 3, Sentence 5:**

This sentence states that short-term risks to on-site workers associated with exposures to waste materials are expected to be less significant for the implementation of Alternative 2 than for Alternative 3. The Division disagrees with this conclusion for the following reasons:

a) Based upon the typical cross-sections as provided in this document and labeled Figures 4-3 and 4-7, the depth of cut into the face of the landfill is almost identical for both alternatives at its maximum depths.

b) The configuration of Alternative 3 as selected for comparison places the cap material below 0 MSL; the Division does not believe that this is the optimum design for this alternative.

23. **Tables 4-4 and 4-6.**

Please explain why the total net present value of O&M differ from these tables when the components which make-up this category are the same in cost and time ($2,737,774.32 vs. $2,640,404.32).

24. **Figure 4-5.**

Please point out the geotextile fabric above and below the 12" stone bedding layer.

25. **Pages A-7 and 8, Appendix A, Section A.4.2, Potential State Action-Specific ARARs/TBCs.**

RIDEM disagrees with the Navy's rationale for not identifying Rhode Island Solid Waste regulations as being an ARAR with the exception of one regulation. Please be advised that the Rhode Island Solid Waste Regulations as presented to the Navy in a 8 February 1995 letter from Judith Graham to Mr. Robert Krivinskas are applicable and the rationale for their applicability is provided in that letter.

Drainage/Discharge/Hydraulic Control

- The table should cite the State of Rhode Island Stormwater Design and Installation Standards, September 1, 1993 as a TBC for drainage/discharge design standards.

Capping /Monitoring

- There are no hazardous waste landfills in the State of Rhode Island; as for Superfund closure and post-closure activities, the Division consistently requires adherence to the Rhode Island Rules and Regulations for Solid Waste Management Facilities. These regulations specify design criteria for proper landfill closures, however, if the Navy prefers and believes they can achieve a permeability of 10^{-13} cm/sec as required for the installation and closure of a hazardous waste landfill than the Division will support such a design.

- Cite the monitoring requirements as set forth in the Rhode Island Rules and Regulations for Solid Waste Management Facilities.

- Cite the slope requirements as set forth in the Rhode Island Rules and Regulations for Solid Waste Management Facilities, the proposed sheet pile slope (Alternative 2) does not comply with this requirement. Additionally, CRMC section 300.2 C (a) requires a maximum grade of 30%.