



STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

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

26 February 1996

Mr. Philip Otis, P.E., Remedial Project Manager  
US Department of the Navy, Northern Division  
Code 18, Mail Stop #82  
10 Industrial Highway  
Lester, PA 19113-2090

RE: Phase III Remedial Investigation  
IR Program site 09, Allen Harbor Landfill  
NCBC Davisville, Rhode Island  
Submitted 25 January 1996

Dear Mr. Otis;

The Rhode Island Department of Environmental management (RIDEM) Division of Site Remediation has reviewed the above referenced document. Comments are attached.

If you have any questions or require additional information please call me at (401) 277 3872 ext. 7138.

Sincerely,

Richard Gottlieb, P.E.  
Principal Sanitary Engineer

Attachment

cc: W. Angell, DEM DSR  
C. Williams, EPA Region 1

letter.rwg/richg

Comments For:

**DRAFT FINAL**  
**IR PROGRAM SITE 09, ALLEN HARBOR LANDFILL**  
**PHASE III REMEDIAL INVESTIGATION**  
**NAVAL CONSTRUCTION BATTALION CENTER**  
**DAVISVILLE, RHODE ISLAND**

1. **Page 2-7, Section 2.1.4.2, Drilling;**  
**Paragraph 1, Sentence 4.**

*In general, the two soil samples with the highest headspace measurements from each well boring soil was sampled approximately every 5 ft to the bottom of the fill unit, about 15 ft below ground surface (bgs), and then was sampled continuously into the top of the gray silt unit to obtain the depth to the top of the gray silt unit were submitted for laboratory analysis of TCL VOC.*

Please clarify this sentence.

2. **Page 5-8, Section 5.1.3.3, Site Evaluation;**  
**Paragraph 1, Sentence 4.**

*Review of this table shows that only the maximum observed concentration of trichloroethene (250,000 ug/L) exceeded 1% of its corresponding water solubility (1,100,000 ug/L). (This sentence references Table 5-5.)*

The above sentence should be revised to also include 1,2 Dichloroethene (3%) and 1,1,2,2-Tetrachloroethane (3.4%).

3. **Page 5-13, Section 5.2.1.1, Porosity;**  
**Paragraph 1, Last Sentence.**

Given the complexity of the groundwater modelling effort please explain why a basic soil property such as porosity was not evaluated for use as an input parameter to the model.

4. **Page 5-13, Section 5.2.1.3, Organic Carbon Content;**  
**Paragraph 2, Last Sentence.**

*However, subsurface soil samples collected from an adjacent site (IR Program Site 07, Calf Pasture Point) exhibited the TOC concentrations shown in the Table below.*

Please explain how the TOC from Site 07 would be reflective of the TOC at Site 09 (Allen harbor Landfill). In addition, please state how the fill layer at Site 09 is accounted for with respect to this parameter.

5. **Page 5-14, Section 5.2.1.4, Density**  
**Paragraphs 1 and 2.**

It is not clear from these paragraphs if the same density was used for all soil types at the landfill. A Table, similar to the one presented for the TOC would be helpful in delineating densities for the various types of soil.

**6. Page 5-14, Section 5.2.2.1, Salinity;  
Paragraph 1, Sentence 1.**

The reference for (Stumm and Morgan, 1981) is not listed in the references. In addition, other references are also not listed. Please recheck document to insure all references are listed.

**7. Page 5-22, Section 5.3.3, Solute Transport Model Parameters;  
Table on Page.**

Please explain why in this Table soil bulk density ranges from 1.38 to 1.88 g/cc while in section 5.1.3 a soil bulk density of 2.0 g/cc is used for the NAPL calculations. In addition, the Table on page 5-14, delineating TOC values, is not consistent with the values shown in this Table. It would seem that values for soil parameters should be consistent from one aspect of the model to the other.

**8. Page 5-34, Section 5.5, Potential Harbor Sediment Concentrations;  
Paragraph 2.**

This paragraph references Table 5-18 (Estimated Harbor Sediment Concentrations Potentially Attributable to Shallow Ground-Water Migrating from the Site for Selected Sediment Organic Content) and the maximum detected TCE concentration of 3 ug/kg in the sediment. The preceding paragraph notes that the maximum detected TOC concentration reported was 4.8% at sample location W1 and that the effects of biodegradation and volatilization were not included. Table 5-18 shows that for a TOC of 5% sediment concentrations of TCE could be as high as 4079.6 ug/kg which is 17 times greater than the screening criteria of 230 ug/kg. Even for 1% TOC the concentration would still be 3.5 times the screening criteria.

The Section on Page 7-6 entitled "Potential Impact on Allen Harbor Shoreline Sediment by the Migration of Solutes in Ground Water from Site 09" notes that because the TCE calculation does not include biodegradation and volatilization this is a worst case scenario which does not represent site conditions. This Section then concludes that shallow groundwater migrating from the site does not contribute unacceptable risk to the sediment at the Site/Allen Harbor shoreline.

Given that some of the wetland/shoreline samples had TOC as high as 4.8% (close to 5.0%) and that predicted TCE concentrations are 17 times the screening criteria level (more than an order of magnitude difference) the effects of biodegradation and volatilization must be further characterized. Therefore, the Division does not concur at this time with the Navy's conclusion that shallow groundwater does not have a significant affect on sediment.

**9. Page 6-5, Section 6.1.2.2, Media Sampling (Phase II Sampling);  
Paragraph 1, Sentence 2.**

*During this investigation, samples of..... were obtained at one or more of the NCBC Davisville sites.*

For clarity this sentence should specifically note that samples were obtained at Allen Harbor Landfill (Site 09).

**10. Page 6-69, Section 6.4.2.4, Human Exposure Routes; Exposures via Air.**

Please explain why inhalation of surface soil particles is not considered as an exposure pathway, especially for the no action alternative.

**11. Page 6-83, Section 6.5.2.5, Risks Associated with Lead; Paragraph 1, Last Sentence.**

This sentence notes that based on RIDOH (1994) lead regulations concentrations of lead in soil above 1,000 ppm are unacceptable and require lead hazard reduction. The document should be revised to reflect the August 1995 amendments to these regulations which state that if lead in soil is between 500 and 1,000 ppm there be no exposed surface soil and that the Environmental Lead Management plan is fully implemented.

**12. Pages 6-92 & 93, Section 6.6.1.3, Summary of Risks Due to Lead; Last Sentence Pg. 6-92, First Sentence Pg. 6-93.**

Please refer to comment above.

**13. Page 7-2, Historical Waste Disposal vs. Present Day Observations, Paragraph 1.**

*Please note that the derivation of the volumes of solvents estimated to have been disposed at the Site for Table 1-2 are very conservative and undocumented.*

Please state what is meant by "undocumented". It would seem that when this list was prepared there was a certain level of acceptance of this data. Explain why the Navy published this list or the statement should be removed from the text.

**14. Figure 3-15, Layer 2 Piezometric Configuration at High Tide, April 19, 1995.**

This Figure delineates only one contour line at elevation 4.5. Based on this one contour line it is impossible to determine which direction the groundwater is travelling in. While it is recognized that other similar Figures utilize a 0.5 foot contour interval a smaller interval is needed on this Figure to establish flow direction for the reader of this document.

**15. General Comment.**

Refer to comment #3 of RIDEM's 1 November 1995 letter regarding the Draft Phase III RI. The purpose of this comment was to evaluate the impact of a cap on groundwater quality. The Navy stated that this would be considered as part of the feasibility study.

) RIDEM still anticipates this analysis to be performed as part of the feasibility study.

**16. General Comment.**

Refer to comment #12 of RIDEM's 1 November 1995 letter regarding the Draft Phase III RI. The purpose of this comment was to ascertain if the Base water supply system was tested prior to use since based on experiences at IR Sites 02 and 03 this supply contained low levels of VOC. The Navy indicated that the Base water supply system was sampled and analyzed and that the results would be added to the draft final RI. The results were not found in the draft RI. Please include.