N00102.AR.000480
NSY PORTSMOUTH
5090.3a

Lepage Environmental Services, Inc.

P. O. Box 1195 • Auburn, Maine 04211-1195 • 207-777-1049 • Fax: 207-777-1370

October 10, 1997

Peter Vandermark
Seacoast Anti-Pollution League
P. O. Box 1136
Portsmouth, New Hampshire 03802

Subject: Review Comments, *Field Sampling and Treatability Work Plan, DRMO Salvage Yard*

Dear Mr. Vandermark:

As you requested, we are transmitting comments to the Seacoast Anti-Pollution League (SAPL) concerning the August 1997 document, *Field Sampling and Treatability Work Plan, DRMO Salvage Yard*, prepared by Foster Wheeler Environmental Corporation. The purpose of the document is to describe the field sampling, treatability testing, and chemical analyses of unsaturated soils at the Defense Reutilization and Marketing Office (DRMO) Salvage Yard.

The DRMO Salvage Yard covers approximately 2 acres at the southern tip of the Shipyard. The site has been used for over 30 years for storage and handling of materials intended to be reused, recycled, or disposed. Past waste handling practices, which included the open storage of batteries and burial of incinerator ash, have resulted in contamination of soils and ground water at the site. The results of the work to be performed under this work plan are intended to provide the Navy with "focused feasibility", final constructability determination, and cost estimates for remediating the unsaturated soils by chemical fixation. Comments and questions are as follows:

1. **Page 1, Section 1.1.** How does the proposed remedial action (chemical fixation of unsaturated soils) fit with the alternatives described in the March 1995 *On-Shore Feasibility Study Report* (FS)?

2. **Page 1, Section 1.1.** How are "unsaturated soils" defined? Are these soils above the water table or the capillary fringe? How are seasonal and tidal affects on ground water elevations considered?

3. **Page 3, Section 1.3.** The text states that the average depth to ground water is about 10 feet. What is the range of depth to ground water across the site? What are the magnitude of seasonal and tidal effects on depth to ground water? What is the configuration of the water table at and near the shore?

4. **Page 3, Section 1.3.** What is considered "representative" material on which to perform treatability studies? The sampling methodology described later in the work plan includes

collecting a sample at each of the two areas indicative of the highest levels of contamination. The remaining ten sample locations were selected randomly. If all or the majority of the ten locations are non-detect or have very low concentrations (or all have very high concentrations), how might that effect the "representativeness" of the data, as well as the outcome of the treatability study?

5. Page 3, Section 1.4. Citations and a reference list should be provided for the standard USEPA protocols and Navy documents mentioned in the third line. Do Navy documents applying to intrusive on-site work exist or will they be prepared and available for review in the future?

6. Pages 3 & 17, Sections 1.4 & 2.4. If changes in the work plan are made, they may need to be approved by the EPA and the Maine Department of Environmental Protection (DEP). How will deviations from the work plan be communicated to the Restoration Advisory Board (RAB)?

7. Page 5, Section 1.4.1. Is one sample from the most highly contaminated area sufficient to conduct a treatability study?

8. Pages 5 and 6, Section 1.4.2. What is the rationale for terminating the borings at 10 feet at four locations and 3 feet at the remaining eight locations? Also, the use of the term "native soil" in the last bulleted item on page 5 is confusing. Isn't the material of interest at this site fill, rather than natural soil? What are the criterial for determining which soils will be discarded in the field?

9. Page 6, Section 1.4.4. The references for the chemical data for the site should be cited in order for reviewers to understand what information was used to design this study.

10. Pages 6 & 7, Section 1.4.4 & Figure 1-3. The locations of the 12 borings as shown on Figure 1-3 do not appear to fit the description on page 6. That is, not all of the boring appear to be located within the fill as outlined on Figure 1-2. Borings 7 and 10 appear to be located outside the fill areas, and borings 9 and 11 appear to be located along the edge of the fill.

11. Page 8, Section 1.4.4. The text in the second paragraph states that at least one boring within each of the two fill areas lies within the most highly contaminated zone based on previous investigations. It would be helpful to see those areas highlighted on a map and have the data summarized in the text. In addition, the reference for the data should be provided. In the third paragraph, the text states that the borings will be moved westward and/or southward should a proposed location prove inaccessible. Why were these two directions specified, and what is the rationale for moving a boring one direction versus the other?

12. Page 9, Section 1.5. Will subcontractors be expected to have their own site health and safety plans, or will they operated under Foster Wheeler's?

13. Page 9, Section 1.6. The first bulleted item states that the Navy will coordinate all communications with the agencies. How will the RAB be kept up to date? According to the fifth

bullet, the Navy will be responsible for coordinating the location of all underground utilities. Does this include notification of DigSafe?

14. Page 19, Section 3.1.1. Who are "all parties" mentioned in the last paragraph in the section and how will they be notified?

15. Page 20, Section 3.1.3. The bulk of the soil data reported in the March 1995 FS was for shallow soils, so the pattern of contamination would be expected to show that soil contamination decreased with depth. However, some deeper soil data did indicate an increase in contaminant concentrations with depth. In addition, Figure 2-19 in the FS outlines the areas where ground water media protection standards were exceeded. Both of these factors indicate potential for soil contamination with depth. If the intent of the study includes characterization of unsaturated soils, why don't the borings extend down to the water table at all locations, rather than 3 or 10 feet?

16. Page 21, Section 3.1.4. New or modified sampling procedures should be approved by the EPA and the DEP prior to implementation.

17. Pages 21 & 22, Section 3.1.5. In addition to cleaning auger bits with Liquinox and rinsing with potable water (steps 1 and 2), equipment should have a final deionized water rinse (step 6).

18. Page 22, Section 3.2. The Navy should provide additional information about the SPLP leachate analysis and justification for selection of this method over TCLP.

19. Page 22, Section 3.2. What are the chemical and geotechnical characteristics of the soil that need to be evaluated and how will they be tested? Additional information about the treatment method should be provided, such as if any heating or other treatment is needed, and what the final product will look like (soil, concrete, etc.). Were other alternatives to disposal at the Jamaica Island Landfill (JILF) considered, such as on-site (at the DRMO) or outside the Shipyard? Why was the JILF selected?

20. Page 23, Section 3.2.1. The second paragraph states that the initial testing should identify the material likely to contain the highest concentrations of leachable metals. It is not clear that sufficient site characterization has been performed to clearly identify the "hottest" of the "hot" spots, nor is it clear from the information contained in this report that the proposed borings will be located in the "hottest" spots. Furthermore, the text on page 26 indicates that the ash matrix has not been characterized sufficiently to identify the complete list of contaminants, nor have the volumes of the two fill areas been determined. In addition, the compositing of the entire length of a boring into a single sample is likely to have the effect of "diluting" the highest concentrations. Please clarify. What are the other metals or contaminants of concern and why is lead considered a good indicator? Do the other potential contaminants follow the same distribution pattern as lead? Do they behave the same way, physically and chemically? Will all the potential contaminants respond the same way to treatment as lead?

21. Pages 25 & 26, Section 3.2.2. Parts of this section were difficult to follow. Additional information about the treatment process and desired outcome should be provided. What are the "certain handling characteristics or desired engineering properties" we're looking for? I'm not sure what a "monolithic structure of high structural integrity" is, nor am I sure what constitutes "micro-scale". How big is the "large-scale" solidification mentioned at the top of page 26? Is there a problem if the soil has a native moisture content greater than 15%? What is the estimate of 32,000 cubic yards based on? How and when will the ash matrix be sufficiently characterized and the relative volumetric proportions of the two matrices be determined?

22. Page 28, Section 3.2.3. Why are the effects of periodic salt water intrusion being investigated? Is it because the treated material may be exposed to salt or brackish water after disposal at JILF? If so, the six wet/dry cycles will only represent three days worth of tidal cycles. Is that sufficient to evaluate the resistance of the stabilized material to disintegration resulting from "repeated" wetting and drying? What is considered "repeated"? Is there an alternative disposal site that would not require exposure to saline water?

23. Page 32, Section 3.2.4.2. How would the target analyte list be narrowed? What are the criteria for considering an analyte to be a "key contaminant"?

24. Pages 34 & 35, Section 3.4. The report should also include a description of the field activities and data, including documenting any changes in the procedures described in this plan.

25. General Comment. How and when has the potential for radioactive hazards at this site been evaluated and where is the data presented?

26. General Comment. A list of acronyms and their definitions would be very helpful, especially when trying to understand the difference between an NTR, ROICC, and RPM (see Figure 2-1).

If you have any questions regarding the comments above, please give me a call at 207-777-1049.

Sincerely,

Carolyn A. Lepage

STATE OF MAINE CAROLYN A. LEPAGE 8202 CERTIFIED GEOLOGIST

Carolyn A. Lepage, C.G.
President

cc: Marty Raymond, Portsmouth Naval Shipyard
Iver McLeod, Department of Environmental Protection
Meghan Cassidy, Environmental Protection Agency

105DRMO.oc7