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LETTER AND COMMENTS ON BEHALF OF SEACOAST ANTI POLLUTION LEAGUE
REGARDING DRAFT REVISED RISK ASSESSMENT FOR OPERABLE UNIT 3 (OU 3) NSY
PORTSMOUTH ME
2/25/1999
LEPAGE ENVIRONMENTAL SERVICES

Lepage Environmental Services, Inc.

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February 25, 1999

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

Subject: Review of *Draft Revised OU3 Risk Assessment*

Dear Mr. Vandermark:

As you requested, we are transmitting comments to the Seacoast Anti-Pollution League (SAPL) concerning the Navy's *Draft Revised OU3 Risk Assessment*. The document was prepared by Tetra Tech NUS, Inc., and is dated January 1999. Dr. David Brown performed the majority of the review, and his comments are enclosed. Additional comments are as follows:

- 1. General Comment.** We have commented on the Navy's *Draft Facility Background Development* document in a separate letter to you dated February 25, 1999. The issues identified in that letter apply to the *Draft Revised OU3 Risk Assessment* as well.
- 2. General Comment.** The *Draft Revised OU3 Risk Assessment* was "performed to characterize the potential risks to likely human receptors under current and future land use" (see Section 6.1.1). The document does not link the risks posed by on-shore contamination to risks associated with off-shore areas, or address the accumulated risk posed by seafood consumption in addition to the on-shore scenarios described in the document. The final *Revised OU3 Risk Assessment* is to be used in developing and evaluating remedial alternatives. Clearly the linkage between on-shore and offshore contamination and risks must be considered in making remedial action decisions, and, therefore, should be addressed in this report.
- 3. General Comment.** Exceedences of both federal and state risk guidelines were noted for hypothetical future residents. In making remedial action decisions in the future, the Navy should not assume that there will never be residential development on what is now Shipyard property.
- 4. General Comment.** The documents we have reviewed prior to this one describe OU3 as consisting of the Jamaica Island Landfill, Mercury Burial Sites I and II, and the Waste Oil Tanks. The *Draft Revised OU3 Risk Assessment* includes consideration of the Former Child Development Center (Former CDC). The Former CDC is described on page ES-1 as a part of, and as a depositional area for airborne contamination from, the Jamaica Island Landfill (JILF). Is the Former CDC now considered a part of OU3? Please clarify. See comment 12, below.

5. General Comment. The “hot spot” only nature of the contamination in soils at the Former CDC (as described on page ES-3, for example) does not seem indicative of ambient airborne or background contamination. Yet sufficient samples have not been taken that would test alternative theories regarding the source of the contaminants at the Former CDC.

6. Page ES-4, Comparison of 1998 Revised Risk Assessment with 1994 Risk Assessment. Is the 1998 Risk Assessment referred to in this section the subject document or a different report? To avoid confusion, if it is the *Draft Revised OU3 Risk Assessment*, the date 1999 should be used as that is the date the document was released. If there is a separate 1998 document, it should be cited in the text and added to the reference list.

7. Page 2-7, Section 2.1.2, Facility Surface Features. The description of the maximum elevations in the second paragraph is confusing. The first sentence states the maximum elevation at the interior of the original islands is 60 feet mean sea level (msl). Since this statement appears to describe conditions for the whole Shipyard, it doesn't make sense that the maximum elevation at OU3 is 100 feet msl, as stated in the second sentence. Please clarify

8. Page 2-7, Section 2.1.2, Facility Surface Features. The third sentence in the second paragraph implies that the location of Mercury Burial Site II (MBII) is known with certainty. This is at odds with subsequent sections that accurately point out that the exact location of MBII is not known. The text of the third sentence should be revised to indicate the elevation at MBII is thought to be 17 feet, given the uncertainty of its exact location. This comment also applies to the last sentence in Section 2.2 on page 2-8, which should refer to the “presumed” or “reported” location of MBII.

9. Page 2-9, Figure 2-4. There is a lot of useful and important information on this figure, but it is very difficult to read and should be revised. For example, the line weights and dates for the extent of fill at various times are not easy to discern, making it difficult to trace the evolution of the Jamaica Island Landfill.

10. Page 2-15, Figure 2-6. The outline of Site 9 is fairly obvious, but the limits of Sites 8 and 11 are not clear-cut on Figure 2-6. The line weights should be adjusted appropriately. The same is true for the outline of Site 11 on Figure 2-7.

11. Page 2-27, Section 2.3.1.1, Soil. The number of the figure mentioned in the middle of the paragraph should be Figure 2-4.

12. Page 2-31, Section 2.3.3, Summary of the Nature and Extent of Contamination. The last paragraph on page 2-31 is confusing, and appears to contradict the statement on page ES-1 that the Former CDC is a depositional area for airborne particulates from the Jamaica Island Landfill. Please clarify.

13. **Page 2-32, Section 2.4, 1994 Baseline Human Health Risk Assessment Summary.** The seventh sentence in the second paragraph states that the *Estuarine Ecological Risk Assessment* will be finalized once regulatory comments are finalized. We would like to point out that SAPL has raised some important issues with regard to off-shore risks that should also be resolved prior to finalizing the document.

14. **Page 2-34 - 2-36, Section 2.4.2, Offshore Human Health Risk Assessment.** The discussion in this section cites new yearly consumption rates that suggest lobster, mussels, and flounder are no longer considered surrogates for overall seafood exposures. This change appears to **underestimate** seafood risk. Please clarify.

15. **Page 3-1, Section 3.3, Summary of Background Groundwater Datasets.** The numbers of wells presented in the first paragraph are confusing. It appears that data from a total of six wells (four freshwater and two saline) were considered. This paragraph should be revised.

16. **Page 3-4, Section 3.3, Summary of Background Groundwater Datasets.** We have concerns about the representativeness of the background locations selected. The fact that diesel-range and/or gasoline-range organics (DRO, GRO) were detected in half of the background samples indicates these locations are likely to be affected by facility activities. Therefore, we do not believe these are appropriate background samples, especially if the risks associated with "background" are going to be discounted in overall risk calculations and in risk-management decisions. Has the Navy considered background locations off-island? The maximum concentration for DRO in the background wells was four times the State of Maine Maximum Exposure Guideline (MEG), and the maximum gasoline-range concentration was just below the MEG. How were the risks associated with the DRO and GRO concentrations evaluated?

17. **Page 6-2, Section 6.1.1, Revised Human Health Risk Assessment, Site 8/9.** The definition of "shallow" and "deep" wells must be provided.

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

Sincerely,

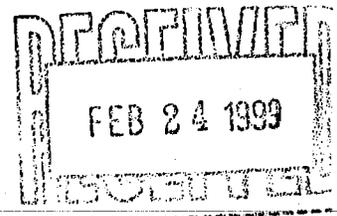


Carolyn A. Lepage, C.G.
President



Enc.

cc: Iver McLeod, Department of Environmental Protection
Meghan Cassidy, Environmental Protection Agency
David Brown, Sc.D.
Marty Raymond, Portsmouth Naval Shipyard



February 22, 1998

Carolyn A. Lepage, C.G.
Lepage Environmental Services, Inc.
P.O. Box 1195
Auburn, Maine 04211-1195.

Subject: Revised OU3 Risk Assessment, Portsmouth Naval Shipyard, Kittery, Maine
January 1999.

Dear Ms. Lepage:

The Revised OU 3 Risk Assessment incorporates new risk assessment guidance and new data collected since the 1994 risk assessment. The findings in the risk assessment are to be used to evaluate remedial alternatives during the On-Shore Feasibility Study for OU3. The Revised Assessment provides, in more detail than the 1994 Assessment, an identification of the Chemicals of Potential Concern (COPC), based on comparison of the most current monitoring with guidance from EPA and the State of Maine. This includes evaluation of more pathways of exposure. While some questions arose during the review, the Risk Assessment clearly identifies the key pathways for four sites and gives a quantitative comparison of projected exposures to the reference or background concentrations of each contaminant.

Supporting data, calculations and rationale are contained in a detailed appendix.

Three of the four concerns identified in my recent review of the 1994 On-Shore and Off-Shore Risk Assessments are addressed in the 1999 Revised Risk Assessment. In my December 20, 1998 comments I suggested that the update should consider the following:

1. Lobster, mussels and flounder are used as surrogates for all exposure pathways and estimates of risks for the entire array of human consumption pathways that occur in the estuary. There are data and analysis currently available that will permit an evaluation of this assumption. Further analysis would allow a more focused public health message to those consuming seafood.
2. The rationale for ruling out all compounds except lead as site-related is based on comparisons of chemical contamination concentrations before 1994. Does the current data and analysis still support this rationale?
3. EPA has updated the toxicity measures and the methodology for application of these measures to differing pathways. Do the conclusions expressed in the Human Health risk Assessment for Off-Shore media still hold?
4. Arsenic is responsible for an unusually high level of risk in the assessment. Is this consistent with current thinking about the toxicity of arsenic?

With the exception of number 1, use of surrogates to assess seafood risks, this new Revised Risk Assessment has considered each of the points.

Comparison of 1998 and 1994 Risk Assessments.

A. Scope: The areas are evaluated differently. The landfill and mercury burial sites are combined in the 1999 Risk Assessment. The seeps are evaluated in the 1999 Risk Assessment but not in the 1994 Risk Assessment.

B. Methodology: Inhalation exposures are based on modeled estimates rather than on measured concentrations. Inorganic compounds are included in evaluation of dermal contact. Calculation of representative exposure point concentrations differed.

C. Pathways and exposure scenarios: Populations potentially exposed are increased. Pathways are added. Food pathway is not considered.

While the quantitative risk estimates in the 1999 Assessment are less than those in the 1994 Assessment, the chemicals of concern for each area are similar. The risk assessment comparison should include a table showing which risks are detected in each Risk Assessment.

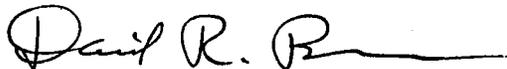
Specific Comments and Questions.

1. Lead was identified as the primary substantial risk in different pathways in the 1994 RA. But the 1999 risk assessment also identified PAHs, Dioxins, and certain inorganic compounds including mercury or arsenic. A table that lists those contaminants that drive the excess risk in each pathway for each of the four sites would assist the reader in evaluation of remedial alternatives.
2. The use of model estimates for the air pathways appears to have identified only two chemicals for inclusion in the assessment: Chromium and TCE. About four different compounds, including mercury, arsenic and Benzene, are measured in the 1994 assessment. Can the assessment show how the use of modeled estimates modified the compound evaluated in the inhalation pathway?
3. Different sections of the report comment on the similarity between background measures and the detected exposures(see page 6-6 paragraph 2). The reference cited to support this discussion is Jones et al. 989. This work refers to studies outside of the United States. Are there references to support this point from areas in the US that could be added to the report? Fuel sources are different historically in different areas of the world and these data may not be representative of Maine.
4. Arsenic risks and cancer are believed by some to be related to the valance state of the arsenic. Can the authors include a comment on the uncertainty with respect to arsenic risk in the chemical characterization section? It is possible that the focus on arsenic could cause a more important hazard to be overlooked.

5. The 1994 Risk Assessments also determined a risk level for ingestion of seafood. The introductory materials in this assessment should explicitly state that this ingestion pathway is not evaluated.
6. The comment in paragraph 4 page 4-43 is not clear. What is the significance of the detection at levels which exceed USEPA Generic Soil Screening Levels, etc? Should this section be clarified?
7. Page 4-44, paragraph 3 notes that benzene was detected in shallow freshwater/saline wells at levels that exceed guidelines. What is the significance of this pathway relative to future exposures? These findings appear to be an indication of need for a remedial action.

In summary, this risk assessment provides a clear and detailed analysis of the risks for different pathways and for different exposure groups. The report should be a valuable addition to the evaluation and determination of the remedial alternatives. Thank you for this opportunity to read the documents.

Sincerely



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