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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION I
JOHN F. KENNEDY FEDERAL BUILDING
BOSTON, MASSACHUSETTS 02203-0001

January 13, 1997

Mr. Fred Evans
Department of the Navy
Northern Division
Naval Facilities Engineering Command
10 Industrial Hwy., Mailstop #82
Lester, PA 19113-2090

Re: Draft Initial Contaminants of Concern Evaluation
in Support of Phase I Modeling Effort
Portsmouth Naval Shipyard
Kittery, Maine

Dear Fred:

The United States Environmental Protection Agency (EPA) has reviewed the draft document entitled "Initial Contaminants of Concern Evaluation in Support of Phase I Modeling Effort for Portsmouth Naval Shipyard, Kittery, Maine". The document was received at EPA on December 23, 1996.

EPA's comments on the above-referenced document are provided in Attachment I to this letter.

If you have any questions regarding these comments, please contact me at (617)573-5785.

Sincerely,

Meghan F. Cassidy

Meghan F. Cassidy
Remedial Project Manager

Enclosure

cc: Marty Raymond/PNS
Iver McLeod/ME DEP
Andrea Sewall/CDM
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RAB Members

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ATTACHMENT I

The following are EPA's comments on the draft "Initial Contaminants of Concern Evaluation in Support of Phase I Modeling Effort for Portsmouth Naval Shipyard, Kittery, Maine".

1. General: The report should be dated and a cover page provided. A Table of Contents, and a list of Tables and Figures would also aid the reader.

2.. In general and Table 18 specifically: Certain metals appear on the list which could have typical seawater concentrations close to or exceeding the standards used to screen them "in". Examples of this are mercury and copper. Typical seawater concentrations should be obtained and compared to the groundwater discharge concentrations used to screen the contaminants.

3. In general, and specific cases cited: Due to the short review period, EPA did not have sufficient time to do a complete quality checking of all tables, criteria, etc. Spot checking however, did find some examples of errors: Table 1 - potassium Kd used in screening should be 9; Table 3 - aluminum and sodium Kd's used in screening should be 235 and 11, respectively; Table 9 has six references whereas the text only lists five.

4. General and Section 3.0: EPA could not check the actual calculations done using the simple leaching/groundwater fate and transport model since the spreadsheets were not included with the submittal. These spreadsheets should be submitted with a response to comments package.

5. General: A results summary table listing all of the COPCs considered across all three OUs would be helpful.

6. General: The chemical form (i.e., valence) of certain metals is very important to understanding and predicting mobility, fate, toxicity, and risk. An example is chromium, for which the hexavalent form is significantly different than the trivalent form. Therefore, this letter-report should specify which forms have been sampled and analyzed, as well as which forms were used for compiling the criteria.

7. Page 1, para. 1: A sentence should be added saying that the list of COCs developed during the Phase I screening can and will be modified, if needed. The need would arise, for example, if the December 1996 sampling results show that the conditions assumed or shown by the prior data are not accurate or representative, for one or more of the contaminants being considered. Such new information could cause COCs to be dropped, or possibly added.

8. Section 1, para. 1: Figure 5-1 from the Work Plan should be updated and included in this document.

Updating of Figure 5-1 should ensure that it includes all steps now in the screening process. See comments #17 and #18 below, in particular, concerning the "subjective" screening step(s) now included. In addition to these subjective steps, the process is generally more complex than shown in Figure 5-1 in terms of the types of criteria being used. For example, there are five documents cited in Section 2.2 of the COC Evaluation. Also, if no criterion is available, then a COC is carried to the next stage of screening. These added complexities (stages of screening; multiple criteria; "subjective" and somewhat-quantitative screening methods) should be shown in the flowchart.

9. Section 1, paragraph 2, sentence 2: Define "were related to off-shore receptors (surface water)". Receptors and any consideration of risk assessment, except for the implied protection that is inherent in the Federal and state standards and guidance, are absent from the Phase I screening process; thus this phrase should be deleted or more fully explained.

10. Page 5, Section 2.2: Clarify whether all Maine Water Quality Criteria are more stringent than Federal Ambient Water Quality Criteria.

11. Section 2.2, References #4 and #5: EPA does not support using Region III Tap Water Risk Based concentrations, or any other drinking water standard, as a screening criteria for off-shore surface water impact.

12. Section 2.3: The tables used to show the development of site-specific Kd values should be included in this report. Also, it is recommended that the Kd values not be computed using water quality concentrations for unfiltered samples. For this screening use only filtered sample results. When data from low-flow sampling is available it should be compared to the current data to determine if it would significantly change the Kd values.

13. Section 2.3, last paragraph: This passage should include noting that the "common formula" for calculating groundwater discharge concentrations, although approved for use in this initial COC-to-COPC screening stage, may be non-conservative. Facilitated transport by suspended solids may be occurring, for example. This would not be accounted for by the common formula. Such possibilities should be acknowledged, and the results of the low-flow sampling should be carefully reviewed to ensure that COCs have not been screened out that should be retained as COPCs. For instance, low-flow sampling results may show that certain low-mobility contaminants may be getting released through the groundwater discharging to the surface waters.

14. Section 2.3, last paragraph: The foc (fractional organic content) values appear to be very high, and will cause the simple screening model to predict that only the most mobile COCs with very low criteria should be screened "in". For this reason, the letter-report should include the information on the sampling and analysis for the foc values.

15. Section 3.0, paragraph 3: Site-specific values could be used instead of the single set of "generic" values. The groundwater fate and transport model is simple enough that use of site-specific parameters would not be a significant effort.

16. Section 3.0, paragraph 3, listing of parameters: There appears to be upgradient inflow, because the flow rate is 65,700 ft^3/yr whereas the total infiltration rate is the source area is only 10,000 ft^3/yr. The assumptions and data values for this parameter (i.e., upgradient inflow) should be included in the listing and description.

17. Section 3.0, paragraph 4: Limiting the number of COPCs has merit. Screening down to 15 chemicals may be somewhat arbitrary. Instead, 15 should be used as a "goal"; 12 could be adequate for one site, but 17 might be necessary for another site.

18. Section 3.0, paragraph 5: This "qualitative screening" was not included in the Work Plan, and therefore it should be explained, especially because the application of this qualitative screening generally involves dropping COCs and not adding them.

Also, the "qualitative screening" should be made as quantitative as possible, using regulatory guidance to the extent possible. One example is the "low frequency of detection" criterion, which may lend itself to becoming a quantitative criterion, such as "Less than 5% detection indicates that the COC should be screened out." In this example, an analogy could be made to risk assessment data-handling procedures, or similar, to help identify a lower-bound percent detection criterion.

19. Tables: The tables would likely be easier to read (especially for members of the public) if the numbers/values were displayed in decimal format rather than scientific notation. If possible, consider using decimal format for future versions of the tables.