



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION I  
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BOSTON, MASSACHUSETTS 02203-0001

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NSY PORTSMOUTH  
5090.3a

January 7, 1997

Mr. Fred Evans  
Northern Division  
Naval Facilities Engineering Command  
10 Industrial Hwy., MSC #82  
Lester, PA 19113-2090

Re: Risk Characterization Tables for the Ecological Risk  
Assessment  
Portsmouth Naval Shipyard  
Kittery, Maine

Dear Fred:

The United States Environmental Protection Agency (EPA) has reviewed the risk characterization tables produced as a result of the ecorisk workshop held on October 29 and 20, 1996 at Portsmouth Naval Shipyard (PNS). This working session was conducted as part of the process of completing the Ecological Risk Assessment for PNS. EPA received the package for review on December 2, 1996.

EPA's comments on the submission are provided in Attachment I to this letter. Comments provided by the U.S. Fish and Wildlife Service are also included in Attachment I. A letter summarizing the National Oceanic and Atmospheric Administration's (NOAA's) review is also included with this letter.

In general, EPA's review produced only minor comments as the information included in the package is very similar to that discussed by the group during the October meeting. EPA would like to acknowledge the level of effort and critical thought incorporated into this phase of the offshore ecological risk assessment by Mr. Bob Johnston and Mr. Wayne Munns.

I would suggest that a conference call be scheduled to review these comments if necessary. Please contact me at (617)573-5785 to arrange such a call.

Sincerely,

Meghan F. Cassidy  
Remedial Project Manager



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Enclosures

cc: Marty Raymond/PNS  
Iver McLeod/ME DEP  
Ken Finklestein/NOAA  
Ken Munney/U.S. Fish & Wildlife Service  
Patty Whittemore/EPA  
Patti Tyler/EPA

## ATTACHMENT I

The following are EPA's comments on the risk characterization tables produced as a result of the ecorisk workshop held on October 29 and 20, 1996 at Portsmouth Naval Shipyard (PNS). This working session was conducted as part of the process of completing the Ecological Risk Assessment for PNS.

- 1) The risk definitions should incorporate the acknowledgement of laboratory data (i.e., sediment toxicity tests) as a measure of effect in addition to the field data.
- 2) Risk Management Considerations: The information included here should not be included in the risk characterization section of the ecological risk assessment. This information should only be included in a conclusion or recommendation section.
- 3) Enclosure 2 identifies the corrections made to the scatter plots and risk characterization tables for the epibenthic and benthic assessment endpoints. Has the Navy made those changes to the original weight of evidence tables or do the EPA authors need to complete this task?
- 4) Table 9a: At the workshop didn't we agree to change the word "adverse" to "extreme"?
- 5) Table 9b: Should epibenthic exposure be elevated/high instead of elevated/medium?
- 6) Table 9c: Should pelagic exposure be low/medium instead of low/low?

The following comments were provided by the U.S. Fish and Wildlife Service

- 7) Table 9H: Change the Avian Magnitude of Risk to Low with the same accompanying footnote.
- 8) Table 10a-1: The meaning and the determination of the lookup values will need to be more fully explained (presumably in the text).
- 9) Calculations for Table 10:
  - a) This table should be referenced as Table 10b.
  - b) Dry Docks, Eelgrass should be Risk=1(Low) according to Table 9E.
  - c) The Avian endpoint should be included for Portsmouth Harbor.
  - d) The < and > symbols should be included for correct referencing of the lookup values.

e) A sample calculation for the determination of risk and confidence values should be provided.

f) It would be helpful to have the AOCs in the same order on Table 10b.

g) Denote the assessment endpoints that were not evaluated by a symbol and footnote.



**U.S. DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Admin.**  
National Ocean Service  
Office of Ocean Resource Conservation and Assessment  
Hazardous Materials Response and Assessment Division  
c/o EPA Waste Management Division (HEE-6)  
J.F. Kennedy Federal Building  
Boston, MA 02203  
2 January 1997

Ms. Patty Marajh Whittemore  
Ms. Meghan Cassidy  
U.S. EPA Office of Site Remed. and Rest.  
J.F. Kennedy Federal Building  
Boston, MA 02203

Lt. Jim Conroy  
Department of the Navy  
Northern Division  
10 Industrial Highway, Mail Stop #82  
Lester, PA 19113-2090

Dear Patty, Meghan and Jim:

Thank-you for the most recent set of "Weight of Evidence" Tables for the Portsmouth Naval Shipyard offshore Ecological Risk Assessment dated 27 November 1996. The tables appear in order; however, I have several comments numbered below.

1. Risk Definitions. I would suggest separating the list of definitions used to interpret the exposure and effects evidence (Table 9a) from the definitions for Risk Management Considerations (Table 10b). Because each set of definitions are used for a very specific purpose, placing them together may confuse the reader. In addition, Table 10b will likely be separated from Table 9b by several pages of text. However, I understand that the definitions placed back to back possibly are for demonstration purposes only and does not indicate how these tables will be presented in the final document.

2. Weight of Evidence Calculation. I find the statement "plotted values are offset by 0.5 units" puzzling. Why must they be off by 0.5 units? The calculation should be adjusted to get the absolute value.

The calculation for the effects and exposure measure centroids for Clark Cove - Pelagic is odd. The actual effects value is 1.8 and the endpoint weight is 1.66. The exposure value is 2.0. After adding the 0.5 units to either the average or weighted centroid shown in the text results in a final number that is slightly different from the one I calculated. Note also the exposure value for Jamaica Cove - Pelagic. However, the associated scatter plots show the correct centroid values.

The calculation for the exposure value for Sullivan Point - Pelagic is incorrect. The exposure value is 2.0, not  $1.25 + 0.5 = 1.75$  as shown. In addition, the associated scatter plot is incorrect as the centroid should lie directly above the "LOW" exposure measure.

3. Scatter Plots. Some of the scatter plots do not show the defined term (e.g., Low, Medium, High) exactly in the center of the box along either the X (Effects/Exposure Measure) or Y (Endpoint Weight) axes. They should be because they indicate a specific value. For example Endpoint Weight Low = 1 and therefore should be in the center of the lower left box along the Y axis. But this results in another problem. Because these terms (e.g., Low, Medium, High, No, Potential, Probable, etc.) indicate exact values, the area where a centroid may fall is lessened. For example, in the effects scatter plot a centroid cannot fall below the center of the LOW-NO box because the centroid value cannot go below 1-1. Similarly, it cannot go above the PROBABLE-HIGH (3-3) box. In fact the locations that the centroid may fall is reduced by 75% in the corner boxes and by 50% in the other boxes that border the X or Y axes. This will likely result in the data

results accumulating towards the center of the scatter plot indicating an unclear estimation of risk; exactly what we are trying to avoid. I briefly have attempted to "play" with the scatter plot setup to eliminate this problem but have not come up with an alternative figure. I believe we should discuss this as it can result in a risk presentation that appears unclear.

Please let me know if you have any questions.

Sincerely,



Kenneth Finkelstein, Ph.D.

cc: Patti Tyler (EPA)  
Ken Munney (USF&WS)