N00102.AR.001185
NSY PORTSMOUTH
5090.3a

20 01

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND - REGION I
1 CONGRESS STREET, SUITE 1100 (HBT)
BOSTON, MASSACHUSETTS 02114-2023

October 8, 2002

Mr. Frederick J. Evans, P.E.
Remedial Project Manager
Engineering Field Activity Northeast
10 Industrial Hwy., Mail Stop #82
Lester, PA 19113-2090

Re: ***OU3 Phase II Draft Remedial Action Work Plan, Portsmouth Naval Shipyard, Kittery, Maine***

Dear Mr. Evans:

Thank you for the opportunity to review the above report which was submitted on behalf of the Navy by Foster Wheeler Environmental Corporation.

Overall, the Work Plan provides sufficient detail for implementation of the work in tandem with the design drawings and specifications. However, we are concerned that the sediment and erosion control plan at Appendix D does not appear to provide sufficient control measures to ensure that site construction doesn't result in unnecessary soil transport offsite. Specifically, we believe a hale bale dike is required to protect Clark Cove in addition to the turbidity curtain. Our specific comments are attached.

If you have any questions, please feel free to contact me at barry.michael@epa.gov or 617.918.1344.

Sincerely,

MSBarry

Michael S. Barry
Federal Facilities Superfund Section

cc. Kristen Alberti/Gannett-Fleming
Kathy Campbell/CDW
Deb Cohen/Tetra Tech NUS
Ken Finkelstein/NOAA
Carolyn Lepage/Lepage Environmental
Conrad Leszkiewicz/CDW
Iver McLeod/ME DEP
Ken Munney/USFWS
Marty Raymond/PNS
RAB Members

Attachment
US EPA Comments to OU3 Phase II Draft RA Workplan
Portsmouth Naval Shipyard

1. *Appendix A*: The Construction Project Schedule should include the numerous, specific tasks in Section 3.2, page 3-1 as did the work plan for Phase I, even if the dates are preliminary at this time.

2. *Appendix D: Section 3.1.1*: How was the runoff coefficient of 0.75 for "industrial use" derived? Review of Figure 2 and knowledge of the site don't seem to support that value. This is normally applied to areas with extensive buildings and pavement. While this is appropriate for large areas of PNS, the Work Plan indicates that the site is an existing landfill with only one building within the area of work. Review of Figure 2 also suggests that all of the drainage areas would not have the same runoff coefficient value. One area has a building, another apparently sloped dredged material, while others are either flat or flat with steep breaks in slope.

3. *Appendix D, Section 3.3:* The comparison of peak flow before and during construction is both of limited value in determining soil erosion potential and is likely in error due to choice of runoff coefficients. The pre construction runoff coefficient(s) is likely to be lower than that during construction. This is due to flatter than 2% slope (as shown on the Figures Section, Figure 3) and topography surrounding the stockpile shown on the Appendix D Figure 2. The pre construction soil is also likely to be rougher, with at least sparse, poor vegetation. The stockpiled material is not likely to be compacted, therefore, it is likely to be more permeable and retard runoff.

   A more appropriate evaluation of erosion potential and the need for mitigation measures is to calculate potential soil erosion for the two conditions. This is typically calculated using the Universal Soil Loss Equation (USLE), which takes into account the length of the exposed slope, the slope angle itself, rainfall intensity expressed as a rainfall erosion factor, the soil type, its erosion potential and soil surface conditions (including vegetation and/or construction practices). For example, a smooth compacted, surface as stated in this erosion and sediment control plan, is more prone to erosion than existing, undisturbed soil or even disturbed, but rough textured surface soil.

   As an example, Area 1 shown on Figure 3 has a slope of approximately 2% and a length of just over 600 feet. The length-slope factor is 0.34. The soil is described as a fine sandy loam for a factor of 0.35, while the soil is described as smooth and compacted for a construction condition factor of 1.3. For the Kittery, Maine area, the rainfall erosion potential factor is approximately 120. This combination of factors results in annual erosion of soil of approximately 21 tons per acre per year. By comparison, the maximum recommended annual soil erosion for landfill closure in EPA landfill closure guidance is 2 tons per acre per year as a relative benchmark.

   A review of pre construction conditions indicates that the erosion potential is

significantly less. The longest slope length is approximately 578 feet with a slope of less than 1% (Area 6). The second longest slope has a length of 576 feet with a slope of less than 0.5% (Area 4). The steepest slope is the stockpile. This area (Area 1) has an approximate slope of 2.5% with a maximum slope length of 225 feet. Additionally, the soil surface texture during pre construction is rougher than the "smooth compacted condition" that is stated to be present during construction. Therefore, using revised length-slope factors, the rougher soil texture, and non construction conditions, the approximate annual soil erosion for the three areas are 7, 5, and 12 tons per acre, per year, respectively. If there is even some vegetation on the first two existing areas, the soil erosion volume will be even less. The existing soil stockpile is presumed to have no vegetation.

In summary, EPA believes that significant soil erosion is possible at OU3 in rain events during cap construction.

4. *Appendix D, Section 4.1.1, Second Paragraph:* We do not concur with the statement that "The need for installation of hay bales will be determined in the field based upon observation of the effects of storm events on the erosion controls that are in place" for areas 1, 2 and 3. Because of the concerns in comment 3 above, hay bale dikes are required along the east shoreline to prevent siltation of Clark Cove from erosion soil during rain rain events throughout the construction period. The turbidity curtain will provide added mitigation control to the larger cove, but is insufficient alone due to the potential soil loading and it's inability to prevent soil migration into the close inshore area. Recent experience indicates to EPA that siltation fences alone will be overpowered by heavy rain events and likely fail. Hay bail dikes are preferable around inland site boundaries, but siltation fences are acceptable as proposed since the downgradient areas are less sensitive than a water body and more easily remediated during cap construction.

   We recommend that temporary hay bale dikes or siltation fences be installed every 200 feet along slopes prone to sheet flow prior to storm events. They can be temporarily removed and the replaced as necessary to allow movement of construction and grading equipment and will contain erosion.

5. *Appendix D, Section 4.1.2, Second Paragraph:* If 3H:1V are to be constructed, runoff diversion dikes should be constructed prior to construction, not "If erosion ... becomes a concern during construction". The erosion and sediment control plan should anticipate and mitigate problems rather than react to them.

6. *Appendix D, Section* 5.1: Erosion and sediment control measures should be checked daily, at the end of the workday also as they can be damaged during normal site operations in addition to storms.

7. *Appendix D, Figure* 3: The erosion control measures depicted are not sufficient, see comment 4, above.