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April 11, 2003

Mrs. Dawn M. Hayes, P.E.
Code EV22DH
1510 Gilbert Street
Norfolk, Virginia 23511-2699

Subject: Naval Amphibious Base Little Creek
Draft Ecological Risk Assessment
IR Site 7

Dear Mrs. Hayes:

The Virginia Department of Environmental Quality (VDEQ), Office of Remediation Programs has reviewed the *Draft Ecological Risk Assessment (ERA) for IR Site 7* dated December 2002. Based on the VDEQ review we offer the following comments:

1. General Comment: When assessing the risk associated with surface water chemical data collected from a site, the screening values used should never exceed the Virginia Water Quality Standard (VWQS) for the parameter being assessed. For example, in Tables 3-13, 3-16, 4-6, 4-7, 4-8, and 4-9, the screening value for mercury (1.10 or 0.94 $\mu\text{g/l}$) exceeds the aquatic life-saltwater-chronic VWQS (0.025 $\mu\text{g/l}$). Those tables should be amended to reflect this and any other changes to the screening values upon considering the VWQS. Any changes to the screening values resulting from the incorporation of appropriate VWQS should be carried through all phases of this ERA.
2. General Comment: The assertion that groundwater flows north to Little Creek Cove may not be entirely correct. The presence of the perennial canal along the western edge of site 7 provides a conduit for groundwater. In the vicinity of the canal, groundwater would be expected to flow east or west to the canal unless there is an impermeable barrier along the canal slope and bottom. Absent such a barrier, there is an interface between the groundwater in the vicinity of the canal and the canal itself. In fact, a tidal wedge (that may project from the canal) has been observed at other coastal NPL facilities where tidal fluctuations were documented in water table wells as far as 200 feet inland. Please amend the report, and Figure 3-1 in particular, to address this concern or provide additional data showing that this type of groundwater movement is not happening at site 7.
3. General Question, Figure 3-1: What data supports the solid line depiction of the 2.0, 2.5, and 3.0 foot "Lines of Equal Groundwater Elevation" absent any monitoring wells in the middle of the site? The absence of wells between MW03 and the wells along Little Creek Cove indicates that every "Line of Equal Groundwater Elevation" between MW03 and Little Creek Cove wells, as shown on Figure 3-1, should be dashed as they could only be inferred. If groundwater elevations were measured in this middle area, please include this data in the report or provide a reference as to where it may be found. Otherwise, please amend Figure 3-1 to show the 2.0, 2.5, and 3.0 foot "Lines of Equal Groundwater Elevation" as dashed lines.
4. General Question: Why were no sub-surface soil samples collected? Please provide additional explanation to address this data gap.
5. Section 3.2.2, Page 3-8: Food web exposures to groundwater should be considered in this ERA because the dissolved phase of several metals were shown to be elevated in the down-gradient wells and may be available to receptors at the interface between

groundwater, sediment, and surface water. Without groundwater quality data from the central areas of site 7 it is impossible to determine if there is a contaminant plume beneath the site that may be migrating toward the periphery wells and may pose a risk to ecological receptors. The wells currently in place along the periphery of the site may be used to assess groundwater quality near the interface zone. However, not knowing what may be migrating to those sites makes it impossible to completely exclude groundwater from this ERA. Unless adequate justification for not doing so is provided in other reports, it is recommended that additional monitoring wells be installed in the middle of site 7 in order to determine the presence/absence of a contaminant plume.

6. Section 3, Tables: Please add the appropriate table header information to pages 7 through 12, following Table 3-3, Page 6 of 12.
7. Section 6.0: There is insufficient groundwater data to support the conclusion listed in the opening paragraph of this section. Not knowing what COCs may be migrating to the near-shore areas from beneath site 7 make arguments supporting the conclusion difficult. In order to be able to fully support the conclusion, additional groundwater quality data is needed from the mid-portion of site 7.

If you have any questions concerning these comments, please give me a call at (804) 698-4464.

Sincerely,



Paul E. Herman, P.E.

Remediation Project Manager

cc: NABLC Tier 1
Durwood Willis, VDEQ