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LETTER AND COMMENTS FROM VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY REGARDING DRAFT REMEDIAL INVESTIGATION REPORT FOR SITE 11A BUILDING 3033
JEB LITTLE CREEK VA
12/02/2008
VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

COMMONWEALTH of VIRGINIA

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December 2, 2008

Mr. Scott Park, P.E.
NAVFAC Mid Atlantic
9742 Maryland Avenue
Code EV3, Bldg. N-26, Rm.3208
Norfolk, Virginia 23511-3095

Subject: Naval Amphibious Base Little Creek
Draft Remedial Investigation Report
IR Site 11a, Building 3033 Former Waste Oil Tank

Dear Mr. Park:

The Virginia Department of Environmental Quality (VDEQ), Office of Federal Facilities Restoration has reviewed the *Draft Remedial Investigation Report for IR Site 11a, Building 3033 Former Waste Oil Tank* dated September 2008. Based on this review the following comments are offered.

1. Executive Summary, 3rd bullet: Please delete the parenthetical at the end of the bullet. Doing so will help keep the summary in general terms and include surface water and sediment which will be eliminated following additional explanation and justification.
   Site Description and History: In the 2nd paragraph, please revise the 4th sentence to include the use of the former building which is now known (12 bay vehicle repair facility). Please revise the opening sentence of the 3rd paragraph to include the approximate distance Site 11 lies to the south of Site 11a. A suggested revision is "During the 1998 Supplemental RI at IR Site 11 located 600 feet south of Site 11a, TCE was detected in an upgradient monitoring well…"
   Site Physical Characteristics: Please add a 3rd paragraph which addresses the absence of drainage channels, surface water, or sediment features on the site.
   Nature and Extent of Contamination, Soil: Please acknowledge any contaminants in soil detected above screening levels. If no detections were above the screening level, please acknowledge that fact.
   Human Health Risk Assessment: Please provide a more descriptive explanation as to why a risk assessment was not conducted on site soil. In the opening sentence of the last paragraph on page xv please replace the semicolon with a period and delete the portion of the sentence that follows the semicolon.
   Ecological Risk Assessment: Please add some discussion regarding ecological risks (or absence of risk) due to exposure to site soil. Please revise the last sentence of the paragraph as follows, "No further action is necessary to protect potential ecological receptors."

2. Section 2.2: Please add the approximate distance between Site 11 and Site 11a to the opening sentence. In the 2nd sentence, please replace the words "grass-covered" with the words "mown grass". In the 2nd paragraph please note the absence of surface water features on or adjacent to the site and, therefore, no sediment associated with the site. Please revise the 3rd paragraph to include a description of the uses of Building 3033.

3. Section 2.3.2: To the end of the 2nd and 3rd sentences in the 2nd paragraph, please add a parenthetical expression providing the total number of samples collected (xx total surface soil samples, xx total subsurface soil samples) and (xx total groundwater samples). The latter potion of the 3rd paragraph and the beginning of the 4th paragraph should be combined into a separate paragraph as they both address site soils. The last paragraph of the section could be revised as follows, "The supplemental investigation resulted in a recommendation for further delineation of VOCs in groundwater at Site 11a, and that Site 11a be considered for a pilot study to evaluate the effectiveness of an in-situ technology for reducing the concentrations of TCE below the MCL."

4. Section 2.3.3 and Figure 2-4: Why doesn't GP125, a point where highest concentrations were detected, intercept a portion of the plume depicted in Figure 2-4? Please explain in the text if necessary.

5. Section 2.3.5: Figure 2-5 is referenced in the 3rd sentence but was not provided.

6. Section 2.4: Sufficient soil data was an identified data gap going into the RI. This section should include discussion concerning the absence of soil data from earlier investigations and its necessity in a formal RI.

7. Section 4.2.1: At the end of this section please add a brief discussion concerning the absence of drainage channels, surface water, or sediment on the site.

8. Section 4.2.2: In the 3rd paragraph following the presentation of the equation based on Darcy's Law, the assumptions provided for Columbia aquifer groundwater include an incorrect hydraulic conductivity, *K*. According to the interpretation of the geometric mean *K* presented in the paragraph preceding, the *K* value should be 3.15 ft/day rather than 7 ft/day shown in the text. Please correct. The calculated velocity, *v*, was determined using the correct *K* value, 3.15 ft/day.

9. Section 5.1: The 2nd paragraph indicates soil data were compared to background UTLs. Why weren't RBCs used as well? Please explain.

10. Section 5.1.1, Pesticides/PCBs: Please revise the last sentence of the last paragraph as follows, "Therefore, the presence of pesticides may be associated with routine pesticide application and may not be associated with a CERCLA release."

11. Section 5.1.2, Pesticides/PCBs: Please revise the last sentence of the 1st and 2nd paragraphs as follows, "Therefore, the presence of pesticides may be associated with routine pesticide application and may not be associated with a CERCLA release."

12. Figure 5-4: Please add RBCs to the screening criteria table.

13. Section 6: Please add the following sentence as the 2nd sentence in the opening paragraph, "The site does not have any surface water or sediment features on or adjacent to it." The 3rd sentence of the opening paragraph provides a list of screening criteria. Please add RBCs and soil 95% UTLs to the list. Also, in this paragraph please explain why soil was not included in Table 6-1. In the opening sentence of the 2nd paragraph the phrase "occurrence in several media" is used. Please list those media the phrase is referring to. In the last paragraph, please add more discussion as to why soil is not a media of concern.

14. Section 6.1.1: The 3rd paragraph seems a little confusing. If the pH of site groundwater ranges from 4.7 to 7.0 and PCP "exists primarily in a highly adsorbed pronated form at pH values below 4.74", shouldn't the PCP be present in its highly soluble ionic form rather than the less soluble pronated form described in the last sentence? In the 4th paragraph, the section referenced in the 2nd sentence should be Section 4.2.2 rather than Section 4.3.2. In the last paragraph, the effective porosity, $n_e = 0.20$, does not agree with the effective porosity, $n_e = 0.35$, used in the calculation of groundwater velocity presented in Section 4.2.2. Please explain and revise the calculations as necessary.

15. Section 6.1.3, PCP: Please consider revising the 1st and 2nd sentences of the opening paragraph as follows, "PCP has been observed to degrade both aerobically and anaerobically. The anaerobic degradation of PCP occurs via reductive dechlorination where each chlorine molecule acts as an electron receptor and is replaced by hydrogen, producing…"

16. Section 6.2.6: Please revise the 2nd sentence of the 2nd paragraph by correcting the direction of Columbia aquifer groundwater flow to agree with the direction presented in Section 4.2.2.

17. Section 8.1: Does the USEPA endorse the Navy ERA policy? If so, please state that fact at the end of the 2nd paragraph. If not, please explain why this process is used.

18. Section 8.2.3, Exposure Media: Please note the last paragraph of this subsection may need to be enhanced if any detected soil concentrations exceed RBCs.
    Exposure Pathways and Routes: Please consider revising the 5th sentence similar to, "Site-related constituents were not detected in surface soils at levels above their respective screening value; therefore, no complete exposure pathways exist at the site."

19. Section 9.2.2: Please change the word "required" to "recommended".

20. Appendix A, Table A6: Are the units presented in the table correct (ug/L or ug/kg)?

The following comments are provided by the VDEQ risk assessor.

General Comments

1. Risk assessments, particularly for the construction worker scenario, should include an evaluation of all contaminants present in soil. Regardless of the source of this contamination, workers would be exposed to the pesticides and metals during routine activities. Risks from the various contamination sources cannot effectively be separated. Also see Specific Comment #3.

2. The RI does not include an assessment of vapor intrusion due to "data limitations," but the nature of these limitations is never explained. The FS states that the Navy intends to perform additional sampling. Whenever this pathway is mentioned, language noting the plans for further investigation under a separate plan should be noted. See also Specific Comment #3.

3. For the residential pathways both shallow and deep aquifers should have been examined. Residents could theoretically tap into deeper aquifers for tap water. However, this analysis will not change the conclusions of the risk assessment.

4. If possible, additional soil sampling to the east of the former UST needs to be performed, particularly at depth. At this point it is unclear if this area was backfilled with soil from the site or clean fill from off-site when Building 3033 was removed. Backfilling could have moved contamination from other portions of the site to these areas.

5. As a side note, I am not totally convinced that the UST was the source of the groundwater contamination. With no records of any solvents being stored in the tank other possibilities including a source in what was Building 3033 should not be discounted.

Specific Comments

1. Section 2, Figure 2-4: This figure is very informative. CH2MHill should be given credit for a good job here.

2. Section 5.1.2, Page 5-4: Concentrations of inorganics in soils are incorrectly referred to as being in µg/kg. These values are actually mg/kg.

3. Appendix F, Table F-1: This table indicates that a quantitative risk assessment was not performed for soil because soil contamination was due to a release from a UST and not a CERCLA release. Note that the CERCLA petroleum exclusion applies to substances indigenous to petroleum. A substance is not covered by the petroleum exclusion if it not normally found in refined petroleum fractions or present at levels which exceed those normally found in such fractions. Since the contamination is assumed to come from a UST that contained materials other than petroleum, soil should be included in the risk assessment. Contaminants that did not come from the tank (pesticides, metals) should also be included.

   This table also does not include the vapor intrusion pathway future residents. This pathway should be included with a footnote explaining it will be evaluated in future investigations.

4. Appendix F, Table H-7.4 RME Supplement B- It is unclear why the groundwater concentrations in this table were used. The table evaluates the inhalation RME for construction workers in an excavation trench. The 95% UCLs of these contaminants in shallow groundwater are several orders of magnitude higher than the values in the table, as are the arithmetic means. The 95% UCLs for these contaminants should be used as the concentration in groundwater for this table and risks recalculated. The values used for the CTE analysis appear to be correct.

This concludes VDEQ's comments concerning this document at this time. 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 (electronic copy)
NABLC Correspondence File
Pat McMurray, VDEQ Waste Division-ORP
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