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LETTER OFFERING COMMENTS ON DRAFT FINAL REMEDIAL INVESTIGATION/ PUBLIC HEALTH AND ENVIRONMENTAL ASSESSMENT REPORT FORT STORY VA
7/17/1992
COMMONWEALTH OF VIRGINIA DEPARTMENT OF WASTE MANAGEMENT

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COMMONWEALTH of VIRGINIA

DEPARTMENT OF WASTE MANAGEMENT
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July 17, 1992

Joan VanDervort
Environmental Division
Department of the Army
U.S. Army Transportation Center
Fort Eustis, VA 23604-5000

Re: Draft Final Remedial Investigation/Public Health and Environmental Assessment Report, Fort Story, Virginia

Dear Ms. VanDervort:

Thank you for the opportunity to comment on the Draft Final Remedial Investigation/Public Health and Environmental Assessment Report for Fort Story, Virginia. In general, the report was very well prepared and documented. However, I do have several questions and comments regarding the content of the report.

1. On page 2-1, it is stated that surface water is collected from Landfill 3. Later, on page 2-7, this surface water is identified as ponded water on the western flank of the landfill which is "essentially the expression of groundwater in that area (page 4-2)". How was it determined that this ponded water was actually surface water and not leachate from the landfill or just plain collected rainwater? Please note that leachate would tend to give falsely high values for contaminant levels, but ponded rainwater would give falsely low values.

2. Since the existence of monitoring well LF-4 was discovered after monitoring well sampling took place, do you see any merit in sampling LF-4 now to determine the potential for contaminants to migrate downstream? Also, on page 2-1, it is stated that "functional" monitoring wells were sampled. How was functionality of monitoring wells determined? It might be useful to close out any monitoring wells that are non-functional, and make a formal record that this has been done.

3. On page 2-2 in Table 2-1, data for monitoring well LF-4 is

included even though this well was not sampled. How was the data determined? Also, if you do not plan to sample the well and include analytical data in the final report, the construction data for LF-4 should be removed from this table as it is not pertinent to the report.

4. Why weren't wells EMW7, 8 and 9 included in groundwater sampling procedures?

5. On page 3-2 in item 3.3.1.2, it is stated that the Site 3A pond was originally intended for recreational fishing. Is the pond used for this purpose?

6. Are the pond (Site 3A) or the surrounding wetlands area receiving runoff from any other potentially contaminating sources beside Site 3 (Landfill)? Does the pond have an outfall to another water body?

7. On page 3-3, it is stated that seasonal fluctuations in the water table can affect the hydraulic gradient in the water table. Is this hydraulic gradient also tidally influenced since the site is surrounded on three sides by tidally influenced bodies of water? How was the groundwater flow direction determined? Was it determined on a seasonal basis? If the hydraulic gradient is both seasonally and tidally influenced, the statements made in the risk assessment portion of the document and on page 5-5 regarding the contaminants detected in upgradient monitoring wells are not relevant, and the risk associated with these contaminants should also be included, as "upgradient" is not a constant state.

8. Is there any leachate being produced by Site 3? If so, has this leachate been sampled and analyzed?

9. Is there any type of drainage ditch or depression present between Site 3 and Site 3A? If so, was sampling performed along this drainage area?

10. Figure 5-1 indicates a drainage ditch leading either into or away from Site 3A. What is the flow direction in this drainage ditch? If the flow direction in the drainage ditch is away from Site 3A, was sediment sampling performed along the drainage ditch? If not, it might be worthwhile. Where does this drainage ditch originate/terminate?

11. Page 5-2 discusses filtered sample analysis results for metals. While filtered results for metals can be informational, please keep in mind that the DWM prefers unfiltered metals analysis in areas where drinking water wells

are not developed. These unfiltered (i.e., total metals) results should be used for all risk assessment calculations.

12. On page 5-9, in the "Nature and Extent of Contamination" portion of the report, conclusions are drawn about the significance of certain levels of contaminants. These do not appear to be appropriate conclusions to draw in this portion of the report as the risk (and therefore the significance) has not yet been calculated for these contaminants.

13. Page 6-1 addresses possible exposure pathways for Site 3 and page 6-2 addresses possible exposure pathways for Site 3A. In neither area is the potential for installation personnel to be exposed. Is any type of maintenance work or other activity performed by installation personnel in the vicinity of these sites which could result in any type of exposure?

14. Page 7-5 of the report states that in order to concentrate the risk assessment on the compounds that have the greatest potential to cause a long-term health effect, only site-related compounds with the highest carcinogen and reference dose indices were chosen. Please note that no contaminants should be ruled out as the additive risk of several "insignificant" contaminants may prove to be significant. Therefore, any site-related contaminants detected that were not included in the risk assessment should be included.

15. Page 7-10 states that although residential areas within a one-mile radius of Site 3 include areas of Fort Story and Virginia Beach, these communities are hydraulically upgradient. However, as stated in Item #7, the gradient may be seasonally and tidally influenced. This may impact inclusion of these residents in the risk assessment.

This needs to be changed. There are no pools at FT STORY only 1 Production well at FS

16. Page 7-10 states that a few deep production wells were identified on Fort Story during previous investigation, but most of the wells still in use at this time are apparently used for filling swimming pools and for fire protection. Dermal and inhalation exposure to contaminants by swimmers in pools filled using these wells should be addressed in the risk assessment.

17. On page 7-14, it is stated that surface soil was not sampled but available information indicates that the landfill was covered with clean soil at closure. Although there is information that leads to the conclusion that surface soil should be clean, there is no data to support this assumption. Also, on the same page it is stated that VOCs in the ground or surface water could diffuse upward and migrate to locations

where the contaminants may be inhaled by humans. These diffusing VOCs also create the potential to contaminant the surface soil. Therefore, some measure of confidence would be acquired by obtaining and analyzing surface soil samples.

18. Page 7-17 discusses the elimination of carbon disulfide from the risk assessment. Page 7-25 provides an explanation and a reference for this elimination. Please include a little more detail in the report about the source of naturally occurring carbon disulfide. Also on page 7-25, the statement is made that the levels detected are below concentrations producing biological effects in fish and man. While this may be the case, the additive effect of the risk associated with carbon disulfide in conjunction with the other contaminants detected has not been addressed.

19. On page 7-19, it is stated that metals chosen as contaminants of concern are not volatile and do not readily cross the outer layer of the skin. Please provide a reference for the dermal behavior of metals.

20. On page 7-23 in section 7.6.4.4 and on page 8-2, impact of lead on populations of wildlife consuming water from the ponded area is briefly discussed. Statements about the significance of impacts to wildlife based upon drinking water standards that were developed for human beings are not relevant. Significance of impacts to wildlife can only be assessed by determining how much lead is bioaccumulating in the wildlife, and subsequent risk to the environment via this consumption. Also, on page 7-43, it is stated that metals would not be expected to bioconcentrate and therefore levels in fish tissue would be relatively lower than those detected in sediment. I spoke with Patricia McMurray, Toxicologist with the Superfund program regarding this issue and she did not agree with this statement. Please provide a reference for the statement that metals would not be expected to bioconcentrate. Why was no biota sampling performed for the Remedial Investigation?

21. Page 7-30 states that acetone detected in one sample is assumed to be due to external contamination of the sample. Please provide more detail on possible sources of external contamination since this contaminant was not detected in field or trip blanks. Unless possible sources of external contamination can be justified, the acetone should be included in the risk assessment.

22. Page 7-36 states that the overall hazard index was calculated without an RfD for lead. According to Ms. McMurray

(Toxicologist), the RfD for lead can be estimated using the Biokinetic model, a software program commercially available. Ms. McMurray has this modeling package available on her computer and can be contacted at (804) 225-3260 regarding calculation of an RfD for lead.

While the "No further action" recommended alternative for Sites 3 and 3A appears justified based upon the information provided, please keep in mind that comments made above could cause additional sampling and analysis or calculations to be performed that would change the recommended alternative for these sites. If you have any questions, please feel free to contact me at (804) 225-2906.

Sincerely,

Lisa A. Ellis

Lisa A. Ellis
Remedial Project Engineer
Federal Facilities Program

cc: Erica Dameron

K.C. Das

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