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IN REPLY REFER TO:
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BEMD
7 JUL 1997

From: Commanding General, Marine Corps Base, Camp Lejeune
To: Commander, Atlantic Division, Naval Facilities Engineering Command, (Code 1823), 1510 Gilbert Street, Norfolk, Virginia 23511-2699

Subj: DRAFT-FINAL FEASIBILITY STUDY, OPERABLE UNIT NO. 6, SITE 86

Encl: (1) Comments on the Draft-Final Feasibility Study, Operable Unit No. 6, Site 86, Marine Corps Base, Camp Lejeune

1. The subject document has been reviewed by the Installation Restoration Division. Our comments are contained in the enclosure.

2. It is requested that the Installation Restoration Division, Environmental Management Department, Marine Corps Base, Camp Lejeune be notified of the actions taken to accommodate the comments.

3. If you have any questions or comments, please contact Mr. Brian Marshburn, Installation Restoration Division, Environmental Management Department, at DSN 484-5068, or commercial (910) 451-5068.

N. NEAL PAUL
By direction

Comments on the Draft-Final Feasibility Study, Operable Unit No. 6, Site 36
Marine Corps Base, Camp Lejeune

General Comments

1. Sections 1 and 2 of the Feasibility Study appear to be very lengthy information that has been covered by past documentation (i.e., the Remedial Investigation). Therefore, these sections could be abridged.

2. Please provide a more detailed explanation of how the net present worth (NPW) values are obtained for the remedial alternative actions (RAA) selected during the final screening.

3. Briefly explain what will be involved in the 5-year review to ensure adequate protection of human health and the environment should the selected remedial action alternative be a "no action plan".

Specific Comments

4. § 1.5.2 Human Health Risk Assessment-Future Scenario, page 1-10, paragraph 1. It is mentioned that if iron were removed from the risk evaluation for exposure to subsurface soil for the child receptor, the noncarcinogenic risk would decrease. However, noncarcinogenic risk values (Tables 1-4 and 1-5) under this exposure scenario do not exceed the maximum acceptable risk value of 1.0. Therefore, this comment should be omitted.

5. § 3.3 Preliminary Screening of Remedial Action Technologies and Process Options, page 3-2, paragraph 5. This paragraph lists, in bulleted format, groundwater technology types/process options that were eliminated during the feasibility study's preliminary screening phase. The list includes aquifer use restrictions and extraction wells. These two technology types/process options were retained, actually, and kept as part of the remedial action alternatives. Please correct.

6. § 4.1.3 RAA 3: Natural Attenuation, page 4-3, paragraph 3. Are the benefits of a microcosm study worth the cost incurred? Although a cost estimate has been provided in Table 5-3 as a lump sum, an explanation of the basis of these costs would be appreciated.

7. § 4.1.3 RAA 3: Natural Attenuation, page 4-3, paragraph 4. It is proposed that aquifer use restrictions be incorporated to prohibit future use of the surficial aquifer within a one-mile radius of the site. Please provide rationale as to why this radius length could not be reduced to 1,500 feet --the standard critical distance between a contaminant plume and a water supply well used by NCDEHNR to evaluate site sensitivity--and still maintain adequate protection of human health?

8. §4.0 Figures Section, Figure 4-2. Please modify this drawing to include the location of future wells as discussed during the 28 May 1997 meeting with representatives of the North Carolina Department of Environment, Health, and Natural Resources at the Wilmington Regional Office, and also during a site visit on 29 May 1997 by personnel from Baker Environmental, Inc. and MCB Camp Lejeune's Environmental Management Department/Installation Restoration Division.

9. § 5.0 Table 5-1, Summary of Detailed Analysis-Reduction of Toxicity, Mobility, or Volume through Treatment, Under the evaluation of the "amount to be destroyed or treated" for RAA 2, could the summary read "Natural Attenuation is expected to treat and/or destroy the majority of the contamination" since there will be long-term monitoring involved to track the migration of the contaminant plume and evaluate the fluctuation in contaminant of concern levels?

10. § 5.0 Table 5-2, Annual O&M Costs, The number of labor hours required for annual groundwater monitoring is listed at 200 hours. This quantity is based on 2 sampling events per year at 4 days per event for two people working 10 hour days, which calculates to 160 hours. Please make a correction to reflect this basis.

11. § 5.0 Table 5-3, Direct and Indirect Capital Expenses, Well replacement costs for RAA 3 are for a one-time replacement of eleven wells. If the one-time replacement is appropriate under this remedial action alternative, why is the frequency of replacing a variable number of wells every 5 years necessary under RAA 2, RAA 4, and RAA 5 (Tables 5-2, 5-4, and 5-5, respectively). Do the well replacement costs include well abandonment costs?

12. § 5.0 Table 5-3 and 5-4, Direct and Indirect Capital Expenses, Although cost estimates for groundwater modeling and data evaluation have been provided in these tables as lump sums, an explanation of the basis of these costs would be appreciated.

13. § 5.0 Table 5-3, Annual O&M Costs, Based on Table 5-3D, the number of days per sampling event should be 5 days instead of 3. Please correct. Also, the number of sampling events is listed at 1 per year. However, for the assumption of 30 years for annual monitoring, quarterly sampling will be performed for the first 5 years and semi-annual sampling thereafter. Please clarify.

14. § 5.0 Table 5-3, Annual O&M Costs, Should the basis column for analytical laboratory data indicate that 12 samples (monitoring 9 existing wells and 3 wells) will be obtained instead of 9? Please clarify.

15. § 5.0 Table 5-3, Annual O&M Costs, A comment at the bottom of the table states that semi-annual sampling will be performed for the remaining 15 years. Please correct to read 25 years.

16. § 5.0 Tables 5-2, 5-3, 5-4, and 5-5, Annual O&M Costs, For two people, RAA 2 requires four days per sampling event to collect nine groundwater samples, RAA 3 five days for twelve samples, RAA 4 five days for nine samples, and RAA 5 three days for nine samples. Can these activities be accomplished in a lesser amount of time? Also, please explain why RAAs 2, 4, and 5 require differing number of days to obtain the same amount of samples.

17. § 5.0 Tables 5-2, 5-3, 5-4 and 5-5, Annual O&M Costs, For shipping costs, please clarify why the costs will be incurred on a daily basis, when the samples could be sent off to the analytical laboratory on the final day of sample collection.

18. § 5.0 Tables 5-2, 5-3, 5-4, and 5-5, Annual O&M Costs. The lump sum cost for reporting of laboratory results is $3,000 per sampling event. This cost seems expensive for simply reporting analytical data. Please explain the basis of this estimate.

19. § 5.0 Table 5-3A, Cost Estimate Assumptions for Additional Monitoring Wells and Soil Borings, and Table 5-3B, Cost Estimate Assumptions for Groundwater Monitoring Well Replacement Costs. The unit costs listed in this table for linear footage per well installation, 2" PVC schedule 40 screen, and protective cover are high compared to local rates charged for these items. Please justify the costs. Also, please explain the type of miscellaneous expenses that might be incurred during well installation.