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RI/FS/PRAP Shal. Ag.

State of North Carolina
Department of Environment, Health, and Natural Resources
Division of Solid Waste Management
P.O. Box 27687 · Raleigh, North Carolina 27611-7687

James G. Martin, Governor
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Director

31 December 1991

Commander, Atlantic Division
Naval Facilities Engineering Command
Code 1822
Attention: MCB Camp Lejeune RPM
Ms. Laurie Boucher
Norfolk, Virginia 23511-6287

Commanding General
Attention: AC/S, Environmental Management
Building 1, Marine Corps Base
Camp Lejeune, North Carolina 28542-5001

Subject: USMC Camp Lejeune Military Reservation
NC6170022580
Jacksonville, Onslow County, North Carolina

Dear Sir and Madam:

The North Carolina Superfund Section has received and reviewed the Draft Remedial Investigation (RI) Report for the Shallow Aquifer at the Hadnot Point Industrial Area (HPIA), the Draft Focused Feasibility Study (FFS) Report for the Shallow Aquifer at the HPIA, the Draft Proposed Plan for the Shallow Aquifer at the HPIA, the Draft Sampling and Analysis Plans for Sites 6, 48, and 69, the Draft Remedial Investigation/Feasibility Study (RI/FS) Work Plan for Sites 6, 48 and 69, and the Draft Health and Safety Plan for Sites 6, 48, and 69 at the USMC Camp Lejeune Military Reservation, a National Priority List Site. Our comments on each of these documents are presented below:

Draft RI Report for the Shallow Aquifer at HPIA

1. On page ES-2 it is stated that exposure levels for metals were not assessed because the analysis represent unfiltered samples. As shown in Figure 4-4 on page 4-33; however, at least 4 or 5 separate sources appear to be related to 4 separate lead plumes in the HPIA. It appears that the investigators have assumed that the only source areas at HPIA are related to the fuel and solvent plumes shown in Figures 4-1, 4-2, and 4-3. It should be noted that lead has many uses and, therefore, may originate from other sources unrelated to fuel or solvents. These uses and potential sources include spilled battery acid, pesticides (lead acetate, lead arsenate, lead arsenite), antifouling paints (lead acetate), herbicides (lead arsenate), explosives (lead azide, lead dioxide, lead nitrate, lead stannate, lead thiocyanate), paint (lead borate, lead carbonate, lead chloride, lead chromate, lead linoleate, lead oleate, lead oxide, lead resinate, lead silicate, lead sulfate, lead titanate, lead tungstate), photography (lead iodide, lead nitrate), medicine (lead linoleate), and fabric fireproofing (lead silicate).
2. The Hadnot Point Fuel Tank Farm, discussed in Section 4.1.1, the Buildings, discussed in Sections 4.1.2 through 4.1.9, and the Transformer Storage Yard, discussed in Section 4.1.10 should be labeled in Figures 4-1 through 4-4 or in a separate similar map of the HPIA. It is unclear if the Fuel Tank Farm and the Transformer Storage Yard are the same as Sites 22 and 21 respectively described on page 1-5 of the FFS.
3. On page 5-1 it is stated that "two plumes of contamination have been delineated for the shallow aquifer." As stated in the first comment on the RI above the lead plume cannot be ignored without adequate sampling with low suspended solid content from fully developed monitoring wells.
4. The discussion of lead in Section 5.2.4.8 on page 5-10 appears to ignore that lead in groundwater can originate from a variety of lead salts with widely varying solubilities. The solubility of lead and its salts can vary from essentially 0 for elemental lead or 0.86 mg/l at 18°C for lead sulfide to 9,900 mg/l at 20°C for lead chloride or 443,000 mg/l at 20°C for lead acetate. This is yet another reason that the lead present in the groundwater at HPIA cannot be ignored and the potential sources should be fully investigated.

Draft FFS Report for the Shallow Aquifer at the HPIA

1. In Section 1.6 on pages 1-11 and 1-12 it is concluded that "two areas of contaminated groundwater have been identified in the shallow aquifer at HPIA." As previously discussed in the comments on the RI Report, the lead contamination in the groundwater at HPIA should not be ignored.
2. On pages 2-9, 2-16, and 6-1 it is stated that a waiver to the existing NPDES

permit for the existing sewage treatment plant (STP) at HPIA must be obtained as a prerequisite to discharging treated groundwater to this STP. The reason for this waiver should be explained.

3. On page 2-11 the activated sludge system technology was eliminated due to the sludge generation and the system not being capable of treating trichloroethene (TCE); however, the trickling filter technology was retained as stated on page 2-9. It should be noted that the trickling filter technology also generates a sludge requiring disposal. It is also questionable whether the activated sludge technology is less capable of treating TCE than the trickling filter technology since with both technologies any reduction in TCE is probably due more because of evaporation than aerobic biological activity. As stated in "A Compendium of Technologies Used in the Treatment of Hazardous Waste", EPA/625/8-87/014, September 1987, when considering biological treatment "anaerobic digestion can handle certain halogenated organics better than aerobic treatment."

*clarify
only need to
carry one through*

4. On page 3-9 it is stated that sludge generated in the trickling filter treatment of extracted groundwater will be analyzed for toxicity characteristic leachate procedure (TCLP) constituents to confirm that the sludge is not characteristically hazardous. It should also be noted that disposal of this sludge in a solid waste landfill or by land application should be approved by the State of North Carolina prior to such disposal. Specifically, the TCLP levels should be protective of the groundwater quality.

5. The costs for Alternative 5: Trickling Filter/Carbon Adsorption, presented on page 4-21 should be presented in a Table form like was done for Alternatives 1 through 4.

Draft Proposed Plan for the Shallow Aquifer at the HPIA

1. The "chemical reduction" treatment mentioned on pages 9, 10, and 11 should be identified and described.

2. The Capital Costs for Alternative 2,3,4 and 5 presented on pages 10 and 11 do not appear to agree with the capital costs presented in Section 4 of the FFS.

3. The contact and address for the North Carolina Superfund Section is presented on page 17. The phone number for the North Carolina Superfund Section Office should also be added to this list. This phone number is (919) 733-2801.

Draft Sampling and Analysis Plan for Sites, 6, 48, and 69

1. A list of acronyms used in this report would be helpful to prevent confusion

and misunderstanding. It is especially important for the public to know what compounds are included when reference is made to TCL and TAL compounds.

2. If Polychlorinated Biphenyl's (PCB's) are found in the surface water or sediment in the unnamed drainage ditch referred to in the table on page 3-6, then PCB's should be added to the analytical requirements for surface water and sediment collected from Bear Head Creek to aid in defining the extent of contamination.
3. Depending on the results of the soil sampling, pesticides and PCB's should be added to the analytical requirements presented in Section 3.2.5.4 on page 3-21 for groundwater collected from monitoring wells near the northeast corner of Site 6, Lot 203.
4. Due to the history of PCB's and pesticides at Site 69, as described on page 2-10, these analytes should be added to the required analysis for surface water (Section 3.4.2.3, page 3-36), and groundwater (Section 3.4.3.2, page 3-39).

Draft RI/FS Work Plan for Sites, 6, 48, 69

The North Carolina Superfund Section has no comments on this document at this time.

Draft Health and Safety Plan for Sites 6,48, and 69

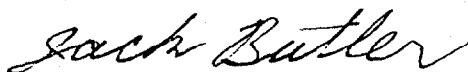
1. In Table 6-2-1 on page 11, Lindane is gamma BHC, not beta or delta BHC.
2. In Table 6-2-1 on page 12, the correct synonym for tetrachloroethene is perchloroethylene, not pentachloroethylene.
3. On page 31 there appears to be inconsistencies in the recommendations for upgrading of personal protection. For example, anything above 1 ppm on direct reading instruments requires level D, but exposures up to PEL are allowed in level D protection if detector tubes are used. It is assumed that this is because if detector tubes are used, the chemicals employees are being exposed to have been identified. Even if the chemical exposure has been identified, detector tubes will not show fluctuations as well as a direct reading instrument, so the application of some kind of safety factor may be considered. In addition, it is not felt by the North Carolina Superfund Section that Combustible Gas Meters are sensitive enough to be used to determine the required level of respiratory protection.
4. It is not clear why the Combustible Gas Meter is to be used initially and periodically while installing monitoring wells but not while performing other invasive sampling procedures, such as subsurface soil sampling, soil gas

surveying, and drum sampling.

5. On page 36 the difference between a short and a long blast on an air horn should be defined in terms of time.
6. The use of air purifying respirators seems to be vague and somewhat inconsistent throughout the safety plan and respiratory protection plan. Air purifying respirators are not recommended in areas where unknowns are present because the contaminant of concern must be known in order to choose the proper cartridge.

The North Carolina Superfund Section appreciates the opportunity to comment on these documents. If you have any questions please contact me at (919) 733-2801.

Sincerely,



Jack Butler
Environmental Engineer
North Carolina Superfund Section

cc: Carl Froede, EPA Region IV