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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4

345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

March 19,1996

4WD-FFB

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Lance Laughmiller
Department of the Navy - Atlantic Division
Naval Facilities Engineering Command
Code 1823
Norfolk, Virginia 23511-6287

SUBJ: MCB Camp Lejeune
Draft Remedial Investigation
Operable Unit No. 9 - Site 65

Dear Mr. Laughmiller:

The Environmental Protection Agency has completed its review of the above subject document. Comments are enclosed.

If you have any questions or comments, please call me at (404) 347-3016 or voice mail, (404) 347-3555, x-6459.

Sincerely,

Gena D. Townsend
Senior Project Manager

Enclosure

cc: Patrick Waters, NCDEHNR
Neal Paul, MCB Camp Lejeune

Comments

I. General Comments

1. Section 1.4, Page 1-4, Bullet 1, directs the reader to aerial photographs from 1956 through 1964 (Figures 1 through 3). However, aerial features on the aerial photographs are not identified on the figures. The text should identify past and present landmarks locations.

2. Section 3.4.2, Pages 3-5 through 3-7, describes the site-specific hydrogeologic conditions for the surficial and Castle Hayne aquifers at Site 65. However, the text does not describe recharge and discharge areas for each aquifer. In addition, the text does not address the hydrogeologic conditions of the semi-confining unit between the surficial and Castle Hayne aquifers. The hydrogeologic characteristics of all aquifers and confining units should be described in order to predict potential contaminant movement within the groundwater.

3. Section 4.8, Page 4-19, Paragraph 1, indicates that inorganics were detected in all media. The text continues to state that the inorganics' wide distribution and concentrations, which are similar to base background levels and concentrations detected at other areas of the base, indicate that they are not site related. However, according to previous sections, the base background levels used in this investigation only apply to the soil media but not the water media. Thus, the text needs to specify that concentrations of the inorganics in the soil are similar to the base average background levels indicating the contaminants are not site related. The text should be clarified and revised accordingly.

II. Specific Comments

1. **Section 3, Table 3-5.**
The footnote in Table 3-5 misspells conversations as "conservations". The misspelling should be corrected.

2. **Sections 3, Figures.**
Figures 3-3, 3-6, 3-9, 4-1 through 4-10, and 7-2 misspell North as "Norh". These misspellings should be corrected.

3. **Section 4, Tables 4-1 and 4-2.**
Tables 4-1 and 4-2 present both Site Background and Base Background data in soils. However, during the contamination

screening, only the Base Background data (average concentrations) is used in the screening criteria. Thus, it appears that the Site Background data has little use in this investigation. The text does not indicate the use of Site Background data. Therefore, the text should provide an explanation for the data.

4. **Section 4, Table 4-3.**
Table 4-3 presents Comparison Criteria II for surface and subsurface soils which is two times average base background metal concentrations shown in Appendix L. However, some of the data from the Criteria II do not match the data in Appendix L. For example, on Table 4-3 Criteria II for chromium in the surface soil shows 3.693 mg/kg, but Appendix L shows that the concentration is 6.693 mg/kg. The text should be revised accordingly.

III. Risk Assessment Comments

The primary problems noted in review of this document concern the screening of sediment constituents and some of the toxicity values used. These concerns are addressed in specific comments below.

1. **Section 6.2.1.6, pg 6-5; Table 6-8.**
The "Sediment Screening Values listed and referenced here are for protection of potential ecosystem effects and are therefore, appropriate to use in the ecological risk assessment. However, for the human health portion of the risk assessment, if current or potential exposure to sediments is assumed, the same values used to screen soil constituents (residential scenario) should be used to select sediment chemicals of potential concern. (*Supplemental Guidance to RAGS: Region 4 Bulletins,* EPA Region 4, November 1995,[attachment] Human Health Bulletins No. 1, 3).

2. **Section 6.8, pg 6-36.**
The "USEPA 1993" reference should be designated as "Draft".

3. **Tables 6-10, 6-23; all risk spreadsheets (App. T), tables, and text where applicable.**
Mercury in fish tissue should be assumed to be in the methylated form (EPA *Guidance For Assessing Chemical Contaminant Data For Use In Fish Advisories, Vol.1,* August 1993); therefore, the reference dose (RfD) for methylmercury (**1E-4** mg/kg-d) should be used to assess the health risks from consumption of fish.

4. **Table 6-14, Inhalation rates.**
As a default inhalation rate for the child, **15 m^3/day** should be assumed. (*Supplemental Guidance to RAGS: Region 4 Bulletins,* EPA Region 4, November 1995 [attachment]).

5. **Table 6-23, toxicity values; all risk spreadsheets (App. T), tables, and text where applicable.**
The RfD listed for **Manganese** is the value as shown on the current IRIS file; however, for evaluation of environmental exposures to Manganese, the dietary contribution must be subtracted (assume 0.07 mg/kg-day as a default) and the uncertainty factor of 3 must be applied. This results in a RfD for environmental exposures of **2.4E-2** mg/kg-d.

IRIS lists RfDs for several salts of **Thallium**; since Thallium is retained as a COPC, use the RfD of **8E-5** mg/kg-d (Thallium chloride).

For **Benzo[a]pyrene**, EPA has a provisional inhalation slope factor of **3.1E+0** $(mg/kg-d)^{-1}$ (ECAO, December 1994).