03.01- 01/27/95-01389

State of North Carolina
Department of Environment,
Health and Natural Resources
Division of Solid Waste Management

James B. Hunt, Jr., Governor
Jonathan B. Howes, Secretary
William L. Meyer, Director

DEHNR

January 27, 1995

Commander, Atlantic Division
Naval Facilities Engineering Command
Code 1823-2
Attention: MCB Camp Lejeune, RPM
Ms. Katherine Landman
Norfolk, Virginia 23511-6287

Commanding General
Attention: AC/S, EMD/IRD
Marine Corps Base
PSC Box 20004
Camp Lejeune, NC 28542-0004

RE: Draft Remedial Investigation Report for Operable Unit 10 (Site 35), MCB Camp Lejeune.

Dear Ms. Landman:

The referenced documents have been received and reviewed by the North Carolina Superfund Section. Our comments are attached. Comments on the Ecological and Baseline Risk Assessments are attached as a memo from David Lilley, our Industrial Hygienist to myself. Please call me at (919) 733-2801 if you have any questions about this.

Sincerely,

Patrick Watters

Patrick Watters
Environmental Engineer
Superfund Section

Attachment

cc: Gena Townsend, US EPA Region IV
Neal Paul, MCB Camp Lejeune
Bruce Reed, DEHNR - Wilmington Regional Office

North Carolina Superfund Comments
Draft Remedial Investigation Report
Operable Unit 10 (Site 35) MCB Camp Lejeune

1. Page ES-5, Soil Investigation
The second paragraph implies that all soil samples were analyzed for PCBs. Analyses for PCBs were performed on surface soil samples only.

2. Page ES-6, Surface & Subsurface Soil
The last paragraph states that PCBs were not detected in the surface or subsurface soil samples. As noted in comment # 1, PCB analyses were performed on the surface soil samples only.

3. Page ES-11, Aquatic Ecosystem
The claim that the mercury contamination seen in the surface water is not site related may be true but there are no soils or sediment data to back this up. Also, there were levels of mercury in the groundwater above the State standards which does not support this conclusion.

4. Page ES-15, First Recommendation
The recommendation to extend the RI south of Fifth Street should also include the area directly south of well 35MW32BW-01 (Building TC462). The sample from this well showed elevated levels of TCE, cis-1,2 and trans-1,2 dichloroethene similar to those seen in well 35MW-30B. Also, the horizontal extent of VOC contamination south of wells 33A and 35A (Figure 4-4) has not been fully determined. The horizontal extent of the VOC contamination northwest of wells MW21 and MW25 (see Figure 4-4) should also be investigated.

5. Page ES-15, Fourth Recommendation
The recommendation states that the Interim FS is needed to address groundwater contamination that threatens Brinson Creek. The solvent contamination seen at wells MW-19 and MW-33B are a clear threat to Brinson Creek and it is not clear if these areas would be a part of the Interim FS. It would help to add a diagram or site map to show what areas are to be addressed in the Interim FS and those that need further study.

6. Page 2-2, Section 2.1.1.2
The benzene and TCE values quoted for the soil gas investigation do not match those shown on Figure 2-2. The benzene result for 35-SG-61 is 640 ug/L on Figure 2-2 and 2.0 ug/L in Section 2.1.1.2. The TCE result for 35-SG-13 is 152 ug/L on Figure 2-2 and .8 ug/L in Section 2.1.1.2.

7. Figures 2-2 and 2-3
These figures are hard to read and some consideration should be given to making separate figures to show the benzene and TCE plumes.

Also, it appears that the blue and red color scheme for Figure 2-3 has been inadvertently reversed. The plumes that are

shown in blue are apparently represented by the sample results shown in red and vice versa. For example, the western most blue (benzene) "plume" near buildings G532 and G533 shows all the benzene samples (in blue) as being "ND".

8. Page 4-5, Section 4.2.1.2
Regarding the loss of the metals data for the soil samples, there was no indication that any additional sampling was to be performed. The State feels it would be prudent to take additional surface and subsurface soil samples to fill in these data gaps. This is especially important for metals such as mercury which was detected above the groundwater and surface water standards.

9. Page 4-14, Section 4.2.3.2
This section indicates that sediment data for mercury was rejected. Please see the previous comment regarding the need for additional sampling.

10. Page 4-20, Section 4.3.1.1
This section indicates that PCBs were not detected in the subsurface soil samples. As noted in an earlier comment, subsurface soil samples were not analyzed for PCBs.

11. Pages 4-25 & 4-26, Section 4.3.3.1
The last section on page 4-25 is titled "Pesticides/PCBs", however there is no discussion of PCBs in this section. Also the first sentence indicates that inorganics were not seen in surface water samples. This is contradicted on page 4-26 and on Figure 4-12. Please explain.

12. Figure 4-4
The levels of xylenes seen at wells 35MW16S, 35-MW21S and 35-MW25S exceed the State groundwater standard of 530 ug/L yet they are not identified as such.

January 19, 1995

TO: Patrick Watters

FROM: David Lilley DBL

RE: Comments prepared on the Draft RI at Operable Unit 10 (Site 35), Camp Geiger Area Fuel Farm, Camp Lejeune, NC

After reviewing the above mentioned document, I offer the following comments:

1. Page 6-4, second sentence: It is unclear to the reader what is meant by "judicious use of data". Please explain.

2. Page 6-8, Section 6.2.2.1, first paragraph: Toluene was found in concentrations greater than ten times the blank concentration, and xylene in concentrations greater than 5 times the blank. Carbon disulfide, toluene, and xylene were detected at a frequency of 8% (1/13), therefore, all three chemicals should be retained as COPCs.

3. Page 6-8, Section 6.2.2.1, second paragraph: According to Table 4-1, benzo(b)fluoranthene, benzo(a)pyrene, and dibenz(a,h)anthracene were all detected at concentrations above the residential RBC's developed by USEPA Region III, and (using Region III's numbers) present a combined risk of about 1.0E-05. These SVOCs should be retained as COPCs. For the other chemicals listed in the above mentioned paragraph, please explain the criteria used to determine the levels detected were not elevated.

4. Page 6-8, Section 6.2.2.1, third paragraph: A detection frequency of 10-20% <u>is</u> a reason to retain beta-BHC, endosulfan II, endrin ketone, and endrin aldehyde as COPCs. The mentioned chemicals should be added to the list of COPCs.

5. Table 6-2: Potassium, silver, and sodium appear in Appendix U.2, are not listed in Table 4-2 of this document, are not mentioned in the second paragraph of page 6-9, then reappear in Table 6-2. If they are to be eliminated from the list of COPCs, please explain why.

6. Table 6-2: The data for antimony and thallium are missing.

7. Page 6-9, surface soil : No mention is made on page 6-9 as to whether the following will be kept as COPCs: aluminum, calcium, chromium, iron, and magnesium. If they are to be eliminated from the list of COPCs, please explain why.

8. Page 6-9, Subsurface soil, fourth paragraph: It is claimed that the concentrations of manganese and vanadium detected are below two times the background concentration. According to Table 6-4, both chemicals were detected in concentrations exceeding two times the background concentration in 25% (2/8) of the samples taken. Please explain.

9. Table 6-4: The data for antimony and thallium are missing.

10. Table 6-4: Cobalt, potassium, selenium, and zinc were detected at concentrations exceeding two times background at the same rate as arsenic (1/8). Calcium, chromium, iron, and magnesium were detected at concentrations exceeding two times background at a rate greater than that of arsenic. However, arsenic was retained as a COPC and the others were not. Please explain.

11. Page 6-9, groundwater: 1,1,2,2-tetrachloroethane is eliminated from the list of COPCs because it's prevalence was less than 5%. However, both the "hits" were in concentrations greatly exceeding the EPA Region III RBC of 0.052 ug/l. Since the concentrations found on site were at much higher levels (20.5 and 64.7 ug/l), this chemical should be retained as a COPC.

12. Table 6-5: Why is there an "NA" in the box for number of detects above the NCWQS for trans 1,2-dichloroethene? Please fill in the appropriate number.

13. Table 6-8: It is unclear to the reader why 1,1,2- trichloroethane, 1,1-dichloroethane, 1,1-dichloroethene, and tetrachloroethene were eliminated from the list of COPC in the last paragraph on page 6-9, but appear on the list of COPCs in Table 6-8. If you were going to include all the chemicals that were eliminated, why doesn't 1,1,2,2-tetrachloroethane appear on this table? On the second page of Table 6-8 there is a key that reads:

    * Selected for comparison to existing criteria
    X Selected with respect to human health risk

    What does this mean?

14. Page 6-10, second paragraph: It is claimed phenol, dibenzofuran, fluorene, phenanthrene, and carbazol were detected at frequencies of less than 5%. According to Appendix U.5, they were detected at the following frequencies: phenol - 8.3%; dibenzofuran - 12.5%; fluorene - 12.5%; phenanthrene - 12.5%; and carbazol - 8.3%. The 5% rule applies to the number of times a chemical is

detected, not the number of times a chemical is detected above a given criteria. Please include the above listed chemicals in the list of COPCs.

15. Page 6-10, third paragraph: It is stated that the listed pesticides were eliminated from the list of COPCs because of infrequent detection at levels just above the CRQL. All the listed pesticides were detected at rates greater than 5%; what criteria was used for determining how far above the CRQL a concentration must be in order to be included in the list of COPCs?

16. Page 6-10, fourth paragraph: It is claimed that all inorganics detected in the groundwater were retained as COPCs. According to Appendix U.6a, the following inorganics were also detected: aluminum, calcium, chromium, iron, magnesium, potassium, silver, and sodium. These inorganics were detected, but they are not listed on page 6-10 as COPCs. Please explain.

17. Page 6-10, Surface Water, second paragraph: The reader could not locate the base specific background data for barium and selenium. Please provide the background values for these two chemicals.

18. Page 6-10, Surface Water, second paragraph: The following inorganics were detected (according to Appendix U.8) but no mention as to whether they are included as COPCs: aluminum, calcium, chromium, iron, magnesium, potassium, sodium.

19. Page 6-10, Surface Water, second paragraph: It is claimed arsenic and thallium were not retained as a COPCs, but they appear in the list of COPCs on Table 6-8. Please explain.

20. Page 6-11, first paragraph (sediment): It is claimed bis(2-ethylhexyl)phthalate was detected infrequently at concentrations below the CRQL. The bis(2-ethylhexyl)phthalate was detected in 15% (3/20) of the samples in concentrations exceeding ten times the blank, and should be retained as a COPC.

21. Table 6-8: Chromium is listed as a COPC but it is not mentioned on page 6-11 (third paragraph, sediment). Please explain.

22. Page 6-11, third paragraph: It is claimed selenium was detected 1/20 times, when it was actually detected 4/20 times. The reader could not locate a background value, please provide this data.

23. Page 6-11, third paragraph: The following inorganics were detected (according to Appendix U.10) but no mention as to whether they are included on or why they were excluded from the list of COPCs is included: aluminum, antimony, calcium, iron, magnesium, mercury, potassium, and sodium.

24. Page 6-11, Biota, first sentence: It is claimed that eight biota samples were analyzed for VOCs, but the frequency of 2-butanone, toluene, and total xylenes were reported as 1/9. In addition, see comment 4 of the Ecological Risk Assessment. In general, the "Biota" sections of the Baseline Human Health Risk Assessment and Ecological Risk Assessment appear to have so much missing data and are so randomly arranged that a review is not possible. Please remedy this problem.

25. General comment on section 6.2: According to the RAGs Manual, Chapter 5, if any constituents are eliminated from the list of COPCs, "the rationale for not evaluating certain data based on any of these steps must be fully discussed in the text of the risk assessment report". Although the procedures outlined for the selection of COPCs seem appropriate, the procedures were not always followed or properly explained. Without a proper explanation for elimination, all chemicals detected must be included in the list of COPCs.

26. It should be noted that the review was terminated at section 6.3, Exposure Assessment. All the above comments are on the selection of COPC process. Since the entire risk assessment is effected by the selection of COPCs, an effective review of the remainder of this risk assessment is not possible until the above concerns are addressed.

January 18, 1995

TO: Patrick Watters

FROM: David Lilley DBC

RE: Comments prepared on the Ecological Risk Assessment for the Draft RI, OU 10, Site 35, Camp Lejeune, NC

After reviewing the above mentioned document, I offer the following comments:

1. Page 7-1, last paragraph: It is unclear to the reader why fish samples collected but not analyzed. Please explain.

2. Page 7-4, sediments, first paragraph: According to Table 4-10, bis(2-ethylhexyl)phthalate was detected in 15% (3/20) of the samples collected. Ten percent (2/20) of the sample concentrations exceeded ten times the blank concentration. Therefore, bis(2-ethylhexyl)phthalate should be retained as a COPC.

3. Page 7-4, Brinson Creek-Fillets, first paragraph: According to Table 4-14, acetone was detected concentrations greater than ten times the blank concentration in 44% (4/9) samples. Therefore acetone should be included in the list of COPCs.

4. Page 7-4, Brinson Creek-Fillets, first paragraph: Why is 2-butanone mentioned when it was not included in the summary on Table 4-14? Appendix U contains the raw (not a summary) sampling data for the other media, but not biota. In Appendix R, summary data lists sample 35-FS03-SM-F01 as being the sample with the maximum detected value of carbon disulfide, which is listed as 1328.00 (significant figures?) ug/kg. The same sample number is listed in Table 4-14 as containing 1370 ug/kg carbon disulfide. In Appendix R, summary data lists sample 36-FS03-BC02 as being the sample with the maximum detected value of methylene chloride, which is listed as 16317.00 (significant figures?) ug/kg. The same sample number is listed in Table 4-14 as containing 47051 ug/kg methylene chloride. Which (if either) is correct? The raw data, such as the data presented in Appendix U for the other media, must be included for biota so other inconsistencies may be spotted.

5. Page 7-5, surface soils, first paragraph: According to Table 4-1, toluene was found in concentrations greater than ten times the blank in 9% (1/11) of the samples, and xylene in concentrations greater than 5 times the blank in 9% (1/11) of the samples. Therefore, toluene and xylene should be retained as COPCs.

6. Page 7-5, surface soils, first paragraph: According to Table 4-1, benzo(b)fluoranthene, benzo(a)pyrene, and dibenz(a,h)fluoranthene were all detected at concentrations above the residential RBCs developed by USEPA Region III. Therefore, they should be retained as COPCs.

7. Page 7-5, surface soils, first paragraph: According to Table 4-1, beta-BHC, endosulfan II, endrin aldehyde were detected at a frequency of 18% (2/11), and endrin ketone at a frequency of 9% (1/11). Therefore, they should be retained as COPCs.

8. Page 7-6, fifth paragraph: The vapor pressure for thallium is essentially zero, not 880 mmHg as listed. The vapor pressure is also listed incorrectly on Table 7-1. In addition, Cobalt has a vapor pressure of zero, not 1,300 mmHg as listed in Table 7-1.

DL/dl/ra.com/2,3