Baker

63.01 - 10/27/94 - 00630

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June 15, 1994

Commander
Atlantic Division
Naval Facilities Engineering Command
1510 Gilbert Street (Building N-26)
Norfolk, Virginia 23511-2699

Attn: Ms. Katherine Landman
Code 1823

Re: Contract N62470-89-D-4814
Navy CLEAN, District III
Contract Task Order (CTO) 0160
Comments and Responses for
Draft Interim RI/FS and PRAP
Operable Unit No. 10 (Site 35)
MCB, Camp Lejeune, North Carolina

Dear Ms. Landman:

Enclosed please find comments from LANTDIV, EPA, and NC DEHNR and responses to those comments regarding the Draft Interim RI/FS and PRAP for Operable Unit No. 10 (Site 35) at MCB, Camp Lejeune, North Carolina. A computer disk containing the responses under the filename RESPONSE in WordPerfect format is also enclosed.

If you have any questions, please do not hesitate to contact me at (412) 269-2063 or Mr. Raymond Wattras at (412) 269-2016.

Sincerely,

BAKER ENVIRONMENTAL, INC.

Daniel L. Bonk

Daniel L. Bonk, P.E.
Project Manager

DLB/jc
Enclosures

RESPONSE NO. 1 TO COMMENTS SUBMITTED BY
KATE LANDMAN, LANTDIV
ON THE INTERIM RA DRAFT RI/FS
FAX DATED MAY 6, 1994

Baker's responses to LANTDIV recommendations concerning the Interim RA Draft RI/FS for Site 35 are listed below. The responses coincide with the recommendations presented.

RI REPORT

1. Executive Summary, Page ES-1, Paragraph 4

The sentence addresses only oil and grease results in soils. It has been modified for clarity.

2. Page 1-1, Section 1.0, Paragraph 2 (also page 2-4, Section 2.5)

The status of future investigations at Building G480 UST is uncertain. Baker understands that a decision is pending to include it under either the IR or UST programs. The sentence has been modified to indicate that separate investigations at the G480 UST and the UST at the Former Mess Hall Heating Plant are ongoing or pending. ✓OK G480 will be included with IR program. CLEJ will write letter for official turnover.

3. Page 2-3, Section 2.2, Paragraph 1 and Figure 2-1

Baker has reviewed the available background information and made appropriate modifications to Section 2.2 and Figure 2-1. These wells, which were permanent exhibited the presence of VOCs.

4. Page 3-1, Section 3.1, Paragraph 2

Text modified as per comment.

5. Page 4-1, Section 4.1, Paragraph 2

Text modified as per comment.

6. Page 4-1, Section 4.1, Paragraph 3

Text modified as per comment.

7. Page 4-9, Section 4.1, Paragraph 2 and Figure 4-1

Text modified as per comment.

8. Page 4-8, Figure 4-1

Figure modified as per comment.

9. Page 4-9, Section 4.2, Paragraph 2

Text modified as per comment.

10. Page 4-10, Table 4-2

The "B" qualifier has been removed from the table.

11. Page 4-12, Section 4.2, Paragraph 2

Table 4-2 has been amended to show beryllium in sample SB3203 as 0.08 UL.

12. Page 4-12, Section 4.3, Paragraph 2

Text modified as per comment.

13. Page 4-15, Figure 4-2

Figure modified as per comment.

14. Page 4-20, Figure 4-5

Figure modified as per comment.

15. Page 5-1, Section 5.0, Paragraph 2

Text modified as per comment.

16. Page 5-4, Table 5-1

Inorganic analytical results from background sampling locations throughout Camp Lejeune have been compiled. As additional background results are obtained, element averages and ranges are updated. A copy of Camp Lejeune base-specific background concentrations is available and will be provided. ask Dan for copies. (or is it in RI/FS as appendix?)

17. Page 5-3, Section 5.4, Paragraph 3

Text has been amended to indicate that all soil samples obtained under the Interim Remedial Action RI from the unsaturated zone at Site 35 contained no detectable concentrations of BTEX, PAHs, and TPH.

18. Page 5-11, Table 5-3

The "Depth to Water Table" Column and footnote in Table 5-3, have been modified as per the comment. Approximate water levels presented in Figure 4-4 are correct.

19. Page 6-4, Section 6.2.1, Paragraph 1

Text modified as per comment.

20. Page 6-5, Section 62.1, Paragraph 1

Text has been modified to show the constituent as di-n-octyl phthalate.

21. Page 6-6, Table 6-1

a. and b. Table modified to reflect first quarter of 1994 RBCs.

c. Table modified to reflect first quarter of 1994 RBCs. In addition, text on Page 6-5, Section 6.2.1, Paragraph 2 has also been amended to be consistent with the modified table.

d. Table 6-1 has been amended to show 3 positive detections.

22. Page 6-5, Section 6.2.2, Paragraph 1

Text modified as per comment.

23. Page 6-8, Table 6-2

a. Text has been revised as per comment. There were some discrepancies between the January 1994 RBC Table and April/March 1994 RBC Tables. For the Preliminary Draft RI Report, January 1994 RBC values (for carcinogenic constituents) and January 1993 RBC values (for noncarcinogenic constituents) will be used. These values will be updated to reflect the most recent RBC values and Agency directives for the Draft Final and Final RI Report submittals. ✓ good.

b., c., d., and e. Text modified as per comment.

24. Page 6-9, Table 6-3

a., b., c., d., e. and f. Text modified as per comment.

25. Page 1-3, Figure 1-1

Figure modified as per comment.

26. Page ii, Table of Contents

Table of contents modified as per comment.

27. Section 4.0, Analytical Results

Soil TCLP and RCRA Hazardous Characteristics analytical results indicate that Site 35 soil samples obtained during the Interim RI are not hazardous. A new Section 4.4 has been added to the text to provide a discussion of these results. ✓ good.

text in section 3.1 page 3-3 ¶ 2. discusses SBC01 origin but does not mention SBC02. OK.

FS REPORT

1. ES-9, Paragraph 1

This paragraph was incomplete with several errors which made it impossible to comprehend. It has been corrected and modified (see last paragraph, page ES-11).

2. Page 1-4, Section 1.2.5, Paragraph 1

The comprehensive RI/FS will investigate the nature and extent of contamination at Site 35; however, it is not designed to determine the relationship between the occasional petroleum odor and the surface water and groundwater. The last sentence "Further investigation is necessary to confirm this relationship" has been removed because it implied that such confirmation was a key to the RI/FS.

3. Page 1-7, Section 1.2.6, Paragraphs 4 and 5

Page 1-7 of the FS and been modified in accordance with page 6-29 of the RI.
See comments.

4. Page 2-3, Section 2.2, Paragraph 2

A sentence has been added to the end of this paragraph which states that the results of TCLP and hazardous characteristic tests confirm the classification of the Site 35 soil as nonhazardous waste.

5. Page 2-3, Section 2.3, Paragraph 1

Text modified as per comment.

6. Page 2-8, Section 2.3, Paragraph 2

Text modified as per comment.

7. Page 3-1, Section 3.1, Paragraph 1

Text modified as per comment (page 3-1 only).

8. Page 3-13, Section 3.3.5.1, Paragraph 2

Text modified as per comment.

9. Section 4.1

Text Sections 4.1.2.2, 4.1.3.2, 4.1.4.3, 4.1.5.2, and 4.1.6.3. have been modified to specifically address the potential need to import clean soil to the site for use as backfill.

10. Section 4.2

Text Sections 4.2.2.2, 4.2.3.2, 4.2.4.2, 4.2.5.2, and 4.2.6.2 have been modified as per comment by adding the following sentence. "For costing purposes, it was assumed that the concrete slab-on-grade located at the site of the Former Mess Hall would be suitable."

11. Page 4-15, Section 4.2.4.2, Paragraph 3

Sections 4.2.2.2, 4.2.3.2, 4.2.4.2, and 4.2.5.2 have been modified as per comment with the addition of a brief paragraph discussing the potential liability associated with off-site treatment/disposal.

12. Page 5-3, Section 5.1.1.2, Short-Term Effectiveness Paragraph

Text has been modified to include a discussion of the potential for exposure to highway construction workers if the no action alternative is implemented.

13. Page 5-11, Section 5.1.4.2, Paragraph 1

Text modified as per comment.

14. Page 5-20, Table 5-6

Table modified as per comment.

15. Page 5-21, Table 5-6

Table modified as per comment.

16. Page 5-23, Section 5.2.6

Text modified as per comment.

17. Page 5-23, Section 5.2.7

Text modified as per comment.

RESPONSE NO. 1 TO COMMENTS SUBMITTED BY
BULL MULLEN, LANTDIV
ON THE DRAFT INTERIM RI/FS
FAX DATED MAY 6, 1994

INTERIM REMEDIAL ACTION REMEDIAL INVESTIGATION

(Note: though not provided, comments have been numbered in order of occurrence)

1. Page ES-2, Paragraph 4, Sentence 2

Text has been modified as per comment.

2. Page ES-2, Paragraph 4, Last Sentence

Text has been modified as per comment.

3. Page 1-13

Baker will review the additional data obtained under the comprehensive RI/FS and incorporate appropriate and pertinent information into later revisions of this report.

4. Page 4-1

a. Analytical results in Table 4-1 are presented in the same units as reported by the laboratory. Modifying these results could potentially result in transcription errors. Results presented in Figure 4-1 were modified because only positive results are provided on the figure. Reporting positive results on Figure 4-1 with units of mg/Kg instead of µg/kg makes the figure more user friendly when evaluating the spatial nature of data. Baker requests that the presentation of analytical results on Table 4-1 and Figure 4-1 remain unchanged to prevent further errors in the reporting of analytical data.

b. Acetone is a possible laboratory contaminant but was not detected in corresponding blank samples. Data validation reports will be added as an Appendix F of the RI Report which discuss the acetone results.

5. Page 4-2

a. The laboratory needed to make dilutions to bring certain analytes within the working range of the instrument. This results in elevated detection limits for the non-detected chemicals.

b. Definitions for data qualifiers will be added to table.

6. Page 4-10

a. Definitions for data qualifiers will be added to table.

b. The validation report has been added as Appendix C to address any questions related to the validity of the data.

7. Page 4-12

Agreed.

8. Page 4-15

a. and b. Figure has been amended to correct these issues.

9. Page 4-19

Baker concurs with this comment. Figure 4-4, however, is primarily used to depict the hydrogeologic cross-section.

10. Page 5-2

These constituents were not eliminated from consideration in Section 5, however, the potential for these chemicals to occur as a result of laboratory or sampling activities is mentioned. These chemicals are later eliminated in the baseline risk assessment by a comparison with RBCs. Data validation reports have been provided in Appendix F and indicate that these chemicals were not detected in corresponding blank samples.

The natural occurrence of acetone is considered to be arguable by USEPA. Because no EPA reference could be located which supports the potential natural occurrence of acetone, Baker wishes to forgo a discussion on acetone at this time.

11. Page 5-10

Oil and grease has not typically been analyzed by Baker at other Camp Lejeune sites. Consequently, base-wide background oil and grease data are not available. However, background oil and grease data obtained from upstream sample locations indicate that concentrations of oil and grease encountered in site soils along Brinson Creek may not be site related. Eliminating oil and grease would be appropriate if an upstream source does exist. Oil and grease results obtained from potentially impacted site soils exhibit the presence of other fuel-related constituents including benzene, toluene, ethylbenzene, xylenes, and PAH. These were not detected in soil samples obtained along Brinson Creek. This, in addition to the background issue, is likely enough to support elimination of oil and grease.

12. Page 6-1

Not only are these compounds considered common laboratory contaminants, but they are not associated with site history, nor do their concentrations exceed the USEPA Region III RBC value. Therefore, they were not retained as a COPC.

INTERIM REMEDIAL ACTION FEASIBILITY STUDY

1. Page ES-3

Baker believes it is appropriate to exclude oil and grease from the remediation as per the discussion presented in the FS Report. Additional sediment and surface water data will be obtained under the comprehensive RI/FS which will further consider the remediation of Brinson Creek where elevated oil and grease levels are detected.

2. Page ES-7

Text modified as per comment.

3. Page 1-4

Analytical results in Table 4-1 are presented in the same units as reported by the laboratory. Modifying these results could potentially result in transcription errors. Results presented in Figure 4-1 were modified because only positive results are provided on the figure. Reporting positive results on Figure 4-1 with units of mg/Kg instead of µg/kg makes the figure more user friendly when evaluating the spatial nature of data. Baker requests that the presentation of analytical results on Table 4-1 and Figure 4-1 remain unchanged to prevent further errors in the reporting of analytical data.

4. Pages 1-6 and 2-7

Oil and grease has not typically been analyzed by Baker at other Camp Lejeune sites. Consequently, base-wide background oil and grease data are not available.

5. Page 5-24

Cost of potential liability cannot be quantified and typically is not computed to compare alternatives. Section 4.2 has been modified to include discussions of potential liability.

6. Appendix B

The actual method of treatment/disposal has been added to each contact form at a location where it will stand out.

RESPONSE NO. 2 TO COMMENTS SUBMITTED BY
ON THE DRAFT INTERIM RI/FS
KATE LANDMAN, LANTDIV
FAX DATED MAY 11, 1994

Because of the relatively high concentrations of toluene and xylenes in certain soil samples, dilution of the sample extract was necessary to quantify concentrations of these constituents. Dilution was necessary to get detector responses within the working calibration range established during standardization. Unfortunately, dilution serves to elevate reported detection limits for other analytes. Dilution cannot provide lower detection limits for those chemicals which are not detected.

Elevated detection limits do not affect the conclusions of the baseline risk assessment because: (1) the chemicals encountered in Site 35 soils were limited to fuel related constituents (i.e. toluene, xylenes, ethylbenzene, etc.) and (2) the COPC selection process limits the number of chemicals evaluated.

RESPONSE NO. 3 TO COMMENTS SUBMITTED BY GENA TOWNSEND, USEPA, REGION IV ON THE DRAFT INTERIM REMEDIAL ACTION FAX DATED MAY 11, 1994

1.0 GENERAL COMMENTS

1. Section 2.0 has been modified to include analytical results. Furthermore, Appendix G has been added to the RI Report which presents analytical data associated with previous investigations.

2. Appendix F has been added to provide the data validation results and Form 1's.

3. In Section 3.2, Page 3-4, the method used for oil and grease (SW846 3rd Edition, Method 9071) is stated.

4. Chemicals were not eliminated from consideration in the baseline risk assessment based on background data. Background data including site-specific data and base-specific data were discussed to provide a benchmark as to the potential range of inorganic concentrations which could occur naturally. Inorganics were evaluated in the baseline risk assessment because background data do not provide sufficient justification for their elimination.

2.0 SPECIFIC COMMENTS

Remedial Investigation

1. Section 2.3, Page 2-3, Paragraph 2

Section 2.0 has been modified to include analytical results. Furthermore, Appendix G has been added to the RI Report which presents analytical data associated with previous investigations.

2. Section 2.4, Page 2-4, Paragraph 1

Text modified as per comment.

3. Section 2.4, Page 2-4, Paragraph 2

Analytical results from the CSA have been added to the RI Report in Appendix G.

4. Section 2.4, Page 2-4, Paragraph 4

Text modified as per comment.

5. Section 3.1, Page 3-1, Paragraph 4

Text has been corrected to read "... SB-33 and SB-34 ...".

6. Section 4.3, Page 4-12, Paragraph 4

The usefulness of analytical results for oil and grease (or TPH) in a baseline risk assessment is limited to discussion, since toxicity values are not published. However, so as not to exclude this data for consideration in the BRA, Section 6.6 (Additional Considerations), discusses the use of a Site

Sensitivity Evaluation (SSE) to determine low boiling TPH (i.e., gasoline), high boiling point TPH (i.e., diesel) and oil and grease initial cleanup levels.

7. Section 5.3, Page 5-2, Paragraph 4

Site 35 data were compared to Eastern United States background concentrations, base-specific background concentrations, and site specific background concentrations to provide a benchmark for potentially natural inorganic concentrations. The discussion concerning the sporadic nature of inorganic occurrence at the site has been omitted.

8. Page 6-3, Paragraph 2, Last Sentence

An explanation of the prevalence criteria used in the BRA has been added to the text in Section 6.2, Page 6-3.

9. Pages 6-6 through 6-9, Tables 6-1 through 6-3

Footnotes that define data qualifiers have been added to these tables.

10. Page 6-7, Paragraph 1

Although the potential for these chemicals to be laboratory contaminants is mentioned, they were not eliminated on this basis. These chemicals were eliminated after comparisons to USEPA Region III RBC values. Text has been modified to reflect this.

Feasibility Study

11. (USEPA 12.). Section 1.2.3.5, page 1-5, Paragraph 3

Text has been modified. Lead was detected in 3 of 11 surface soil samples with a maximum detected concentration of approximately 69 mg/Kg. This maximum detected concentration exceeds both base specific and site specific background but not Eastern US background. Text was also modified to remove the subjective statement concerning sporadic distribution of inorganic constituents.

RESPONSE NO. 4 TO COMMENTS SUBMITTED BY
KATE LANDMAN, LANTDIV
ON THE DRAFT INTERIM PRAP
FAX DATED MAY 12, 1994

1. Page 5, Operable Unit History

Text modified as per comment.

2. Page 6, Previous Investigations, Confirmation Study, Paragraph 3

Text modified as per comment.

3. Page 7, Previous Investigations

A section titled "Other Investigations" has been added (see Page 10) to the Draft Final PRAP to provide a discussion of the two USTs at Site 35.

4. Page 8, Interim Remedial Action RI/FS by Baker, Paragraph 3

Text modified as per comment to include lead.

5. Page 8, Interim RA RI/FS by Baker, Paragraph 4

None of the comments obtained from the various reviewers merited revisions to this section. Consequently, none were made.

6. Page 9, Human Health Risk Assessment, Paragraph 3 and 4

Text modified as per comment. Text now says 3.3×10^{-6}, not 6×10^{-6}. Furthermore, the HI was corrected as 0.05.

7. Page 16, Table 1

Table modified as per comment.

SITE 35 - INTERIM RI/FS (DRAFT)

RESPONSE NO. 5 TO COMMENTS SUBMITTED BY TOM MORRIS, MCB CAMP LEJEUNE FAX DATED MAY 12, 1994

DRAFT INTERIM RA/RI

1. Page 1-1, Section 1.0

References to Building TC480 have been changed to G480 throughout the document.

2. Page 1-4, Section 1.2.2

a. Montford Point has been changed to Camp Johnson.

b. Paragraph 4 on page 1-4 has been modified to read "a leak in the underground line to the dispensing pump was reportedly responsible for the loss of roughly 30 gallons . . . ."

DRAFT INTERIM PRAP

Text modified as per comments.

Post-It™ brand fax transmittal memo 7671	# of pages ▸ 1
To TOM MORRIS	From K. LANDMAN
Co. MCB CLEJ	Co. LANTDIV
Dept. EMO/IR	Phone # 804-322-4818
Fax # 910-451-1787	Fax # 804-322-4805

RESPONSE NO. 6 TO COMMENTS SUBMITTED BY
PATRICK WATTERS, DEHNR
FAX DATED MAY 24, 1994

RI REPORT

1. General

Agreed. Text has been modified to discuss site and base specific background. A site-specific background sample was obtained from boring location SB-29 and base-specific background was obtained from a database which is continually expanding with ongoing Camp Lejeune investigations. Shacklette and Boerngen data are still presented to provide a regional benchmark for potential inorganic soil concentrations, but more emphasis is given to site-specific and base-specific background soil analytical results.

2. Page 2-3, Section 2.3

The area of the geophysical anomaly identified by NUS is being subjected to additional investigation under the comprehensive site-wide RI/FS being conducted concurrent to the Interim Remedial Action RI/FS.

3. Page 3-1, Section 3.1

Text modified as per comment.

4. Page 4-1, Section 4.1

Text has been amended to show 2-hexanone for soil sample SB3405 at 12,000 µg/kg, not 23,000 µg/kg.

5. Page 4-9, Section 4.2

Copies of the validation reports will be added to the report as Appendix F, this should clarify issues pertaining to the use of qualifiers.

6. Page 6-5, Section 6.2.1

Text has been amended to further define the criteria by which COPCs were not retained for metals.

FEASIBILITY STUDY

7. Page ES-7

Text modified as per comment.

8. Page 1-5, Section 1.2.5.3

See response to Comment 1.

9. Page 3-16, Section 3.3.5.2.1

The term "rotovation" has been removed from the text and replaced with "tilling and mixing."

10. Page 5-6, Table 5-1

The rationale for collecting one sample per 100 cubic yards is based on Baker's professional judgement. Although not noted in Table 5-1, it is anticipated that the one sample will be a composite sample obtained at several locations throughout the 100 cubic yard pile. Additional field screening may also be employed to ensure the representativeness of sampling. The sampling criteria will be addressed in detail in the Remedial Design Work Plan.

DRAFT PRAP

11. Page 5-11, Section 5.1.4.2

Text modified as per comment.

12. Page 5-11, Section 5.1.4.2

Text modified as per comment.

13. Page 5-11, Section 5.1.5.2

Text modified as per comment.

14. Page 5-23, Section 5.2.7

Text modified as per comment.

DRAFT PROPOSED RAP

15. General

Table 1 has been modified to indicate the state's preference of on-site treatment options.

RESPONSE NO. 7 TO COMMENTS SUBMITTED BY GENA TOWNSEND, USEPA REGION IV DRAFT INTERIM RA/RI AND FS FAX DATED MAY 25, 1994

1. Page ES-3, Paragraphs 2 and 3

Text modified as per comment.

2. RI Tables 6-1, 6-2 and 6-3

Tables have been amended to include footnotes identifying the data qualifiers. The residential RBC for bis(2-ethylhexyl) phthalate has been corrected.

3. RI Tables 6-2, 6-3 and 6-5

Because the RfD for dibenzofuran is not on-line in IRIS, dibenzofuran was evaluated quantitatively in the uncertainties section. The HI value associated with dermal contact and ingestion was 0.002 and does not change the conclusions of the baseline risk assessment. The implications associated with the quantitative evaluation of dibenzofuran are presented in Section 6.7.5, Chemicals Not Quantitatively Evaluated.

4. RI Table 6-4

a. The averaging time listed in Table 6-4 for noncarcinogens has been amended to 365 days.

b. The exposure frequency and exposure duration references have been amended to include a reference to "Professional Judgement".

5. RI Table 6-4, Section 2.2.2.2, Page 6-13

Text has been amended to show a surface area of 5300 cm^2/day, to account for the head, hands, lower legs, and arms.

6. RI Table 6-4, Section 6.2.2.3, Page 6-14

Text, table and calculations have been amended to show a respiration rate of 2.5 m^3/hour.

7. RI Table 6-5, Table 6-7, Appendix D

Agreed. Modification of oral toxicity values by Region IV default absorption factors will account for an estimate of absorbed dose. However, because of the uncertainty associated with this practice, modification and effects on the baseline risk assessment are presented in Section 6.7.3. Modification of oral toxicity indices to account for absorption does not affect the conclusions of the baseline risk assessment. Examples are provided in the text to reflect this.

FEASIBILITY STUDY

8. Section 1.2.6, Page 1-7, Paragraph 4

Text modified to present an HI value of 0.05 as per tables 6-7 and 6-9 of the RI.

Atlantic Division
Naval Facilities Engineering Command
Environmental Quality Division
FACSIMILE TRANSMISSION

TOTAL # OF PAGES: 9

DATE: 06 May 1994

TO: Dan Bonk

FROM: Kate Landman, Code 1823

COMPANY: Baker Environmental

PHONE #: (804) 322-4818

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REMARKS: CTO-0160
Interim RA Draft RI/FS
CLEJ Sites 35 (OU#10)

Dan,
Attached are comments from Bill Mullen and myself on the Draft RI/FS. (No comments on the PRAP - hopefully we'll get that Monday..?) I made a few notes on the comments from Bill Mullen. He makes a few comments on areas that I believe we have discussed in detail and decided to proceed differently that he suggests. Perhaps his comments indicate that some further explanation could be made that could clarify the thought processes that went into the decisions (for those that were not involved in the whole process). I'm open to suggestions.

My comments, although long-winded are mostly just picky corrections/clarifications. A few items might warrant a phone call to clarify the issue for me. I am most concerned about the ongoing adjacent UST investigations and the Fuel Farm demolition schedule - I am waiting for clarification on these from Camp Lejeune, and I have already spoken to you about this. My main concern is that the information in the RI is accurate. As usual, don't waste your time with formal responses to my comments. Just call me to discuss as needed.

Patrick Watters did get his copies of the PRAP. I left Gena Townsend a message to check if she got hers but did not hear back from her today. I guess we'll assume that she did get them until we hear otherwise. Patrick tells me that he will likely not have comments for the Draft RI/FS until 5/20 (2 weeks from today!). He'll try to expedite this. I do not know Gena's status at this time, but I imagine that she has a similar backlog. I also have not rec'd comments from Camp Lejeune yet, and have not been able to get a commitment for a submission date. Also, I do expect some additional comments from Sherri Eng, LANTDIV chemist. These will probably be available next week.

Have a good weekend,
-Kate

LANTDIV Comments
CTO-0160 Draft Interim RA RI/FS
OU#10, Site 35-Camp Geiger Area Fuel Farm
MCB Camp Lejeune

K. Landman, 5/6/94

RI REPORT

1. Executive Summary, Page ES-1, Paragraph 4
Last sentence is not clear. Are you addressing just O&G results for soil samples taken, all soil results (which included lead analysis), or something else?

2. Page 1-1, Section 1.0, Paragraph 2 (also Page 2-4, Section 2.5)
The last sentence refers to a former No. 2 Fuel Oil UST (removed) adjacent to Bldg. TC480. This UST was an unregulated heating oil tank that was apparently removed (your report, page 2-4 says it was removed in January 1994 - this is news to me - I am confirming with Mark Spangler of Camp Lejeune). Text indicates that there is an investigation underway under a different program (presumably the UST program) for this location; to my knowledge, there is no separate investigation pertaining to this former UST. (Again, I am confirming with Mark Spangler. If you have other info pertaining to additional studies at this location, please call me.) To date, I am aware only of the abandoned No. 6 Fuel Oil tank adjacent to the former Mess Hall Heating Plant that is undergoing a separate investigation (report on investigations at this site just published April 13, 1994 - I mailed you a copy).

3. Page 2-3, Section 2.2, Paragraph 1 and Figure 2-1
First sentence refers to 3 temporary wells. These wells were permanent, not temporary. Also, Site Summary Report referred to these wells as 35GW4, 35GW5, and 35GW6, respectively. Text states that VOCs were not detected in these locations; however, Site Summary Report specifically states that VOCs were found. (Law's 1992 CSA also states that VOCs were found in all 3 wells, including the upgradient). Also, the legend of Figure 2-1 shows these wells as being installed in 1983. Both text on page 2-1 and Site Summary Report refer to installation of these wells in 1986.

4. Page 3-1, Section 3.1, Paragraph 2
Typo, 1st sentence, 'corner *of* "D" Street'. Typo, sentence 4, "*SB-33* and SB-34 were drilled".

5. Page 4-1, Section 4.1, Paragraph 2
Table 4-1 shows that 2-hexanone in SB3405 was 12000 J µg/kg, not 23000 µg/kg as indicated in sentence 5.

6. Page 4-1, Section 4.1, Paragraph 3
Typo in last sentence, extraneous word - "...attributed to sources other than *the* those at Site 35".

7. Page 4-9, Section 4.1, Paragraph 2, and Figure 4-1
Naphthalene was reported at 7100 J µg/kg in SB3003 according to Table 4-1 (as opposed to 7100 µg/kg as reported in text). Also see comment 9.

8. Page 4-8, Figure 4-1
a) Figure 4-1 lists naphthalene at 71.0 J mg/kg in SB3003, but Table 4-1 shows 7100 Jµg/kg, which is 7.1 J mg/kg.
b) Figure 4-1 omits fluorene from SB3005D, but Table 4-1 reports 13000 J µg/kg (13.0 J mg/kg).
c) Figure 4-1 shows acetone at 0.018 J mg/kg for BCSB01, but Table 4-1 reports 180 J µg/kg, which is 0.180 J mg/kg.
d) Figure 4-1 does not report results for BCSB03D, but Table 4-1 reports:
bis-(2-ethylhexyl)phthlate 350 J µg/kg

di-n-octylphthalate 290 J µg/kg

e) Figure 4-1 shows di-n-octylphthalate at 0.21 J mg/kg but Table 4-1 reports 200 J µg/kg.

9. Page 4-9, Section 4.2, Paragraph 2
Potassium is listed twice in sentence 1.

10. Page 4-10, Table -2
Vanadium entries for SB3305 and SB3405 use the qualifier "BL". There is no qualifier "B" described in the first paragraph of section 4.2 on page 4-9.

11. Page 4-12, Section 4.2, Paragraph 2
Beryllium was detected in 2 samples according to Table 4-2: in SB3203 @ .08 L mg/kg, and in BCSB03 @ 0.11 L mg/kg.

12. Page 4-12, Section 4.3, Paragraph 2
Sentence 6 has a typo: "which *all* no detections of TPH" - ?

13. Page 4-15, Figure 4-2
Entry for BCSB3D (0-1) is incorrectly labeled as SB3005 DUP (8-10).

14. Page 4-20, Figure 4-5
Monitoring well MW-27 was not installed until October of 1992, so groundwater elevation could not have been measured in August of 1991.

15. Page 5-1, Section 5.0, Paragraph 2
Typo in fourth sentence - should read "unnamed drainage *channels* north of Brinson Creek".

Ask for copies

16. Page 5-4, Table 5-1
Patrick Watters of NCDEHNR has previously asked me about Camp Lejeune base-specific background levels. Is there a actual compendium of background data specific to Camp Lejeune, or are the values in this table just prepared from a general review of previous studies at this & other sites? If Baker has prepared an actual compendium for general purpose comparisons, I'd like to get a copy (Patrick would like to have one too).

17. Page 5-3, Section 5.4, Paragraph 3
In the discussion of SB30 results for 4-6ft bgs, it is notable that the depth to water table for MW-21, which is adjacent to SB30, is about 6ft bgs. This indicates that even this particular sample (your "one exception") could still be classified as being just above the water table.

18. Page 5-11, Table 5-3
The Depth to Water Table measurements listed for SB30 and SB34 do not appear to coincide with water table levels presented in Section 4 (Figure 4-4) and Table 5-2 for nearby wells. SB30 is near well MW-21, which had a static water level of about 6ft bgs; however, the table shows 8ft bgs. SB34 is near MW16 which had a static water level of about 10ft bgs; however, the table shows 4ft bgs. Please explain or correct.

In addition, the last footnote to Table 5-3 has a typo - static water level measurements were inferred from *nearby* wells.

19. Page 6-4, Section 6.2.1, Paragraph 1
The 1st sentence indicates that acetone was detected at a maximum concentration of 1300 *ug/kg*. According to Table 4-1, acetone was detected at a maximum concentration of 1300 J *ug/kg*.

20. Page 6-5, Section 6.2.1, Paragraph 1
The 3rd sentence refers to di-*n*-butyl phthalate detected at 290 J ug/kg. Table 4-1 indicates that the compound detected is di-*n*-octyl phthalate.

21. Page 6-6, Table 6-1
a) The Region III RBC (using Jan 94 list) shows residential soil RBC = 46 mg/kg for bis(2ethylhexyl) phthalate. Table 6-1 shows 120 mg/kg.

b) The Region III RBC (using Jan 94 list) shows commercial/industrial RBC = 100,000 mg/kg for aluminium (after reducing to HI of 0.1). Table 6-1 indicates 300,000 mg/kg (from 1st qtr 93 table). Please verify the accuracy of the number from the first qtr 1993 table used.

c) The Region III RBC (using Jan 94 list) for manganese shows commercial/industrial RBC = 510 mg/kg and residential RBC = 39 mg/kg (after reducing to HI of 0.1). Table 6-1 shows industrial RBC = 5100 mg/kg and residential RBC = 390 mg/kg (from 1st qtr 93 table). Please verify the accuracy of the number from the first qtr 1993 table used. This presents an interesting situation if the value reported here is indeed the actual value - this would indicate that manganese is present in excess of the 0.1 HI protective level. This is even more interesting since manganese is considered a common soil element - why is there an RBC at all? This would also affect the statement on page 6-5, section 6.2.1, paragraph 2, that all metals were "well below their respective RBC values for residential soil."

d) Nickel had 3 positive detections according to Table 4-2. Table 6-1 indicates that there were only 2.

22. Page 6-5, Section 6.2.2, Paragraph 1
a) Trichloroethene was detected at a maximum concentration of 7 J ug/kg.

b) Acetone was detected at a maximum concentration of 51 J ug/kg.

c) Toluene was detected at a maximum concentration of 190,000 J ug/kg.

23. Page 6-8, Table 6-2
a) The Region III RBC (using Jan 94 table) indicates for xylenes, the industrial RBC = 100,000 mg/kg after reducing to 0.1 HI). Table shows 200,000 mg/kg. Please verify the accuracy of this value from the first qtr 1993 table used.

b) see comment 21c. manganese

c) see comment 21a. bis(2ethylhexyl) phthalate

d) Max concentration for iron was 2500 J mg/kg.

e) Magnesium had 3 positive detections.

24. Page 6-9, Table 6-3
a) 2-Hexanone was detected 3 times, with a max concentration of 12.0 J ug/kg.

b) Toluene was detected at a max concentration of 190 J ug/kg.

c) see comment 23a. xylenes

d) see comment 21c. manganese

e) see comment 21a. bis(2ethylhexyl) phthalate

f) Magnesium had 4 positive detections and a max concentration of 186 L mg/kg.

24. Page 1-3, Figure 1-1
The road identified as River Drive is actually called Main Service Road.

25. Page ii, Table of Contents
Section 1.2.2 Site History starts on page 1-4, not 1-2.

26. Section 4.0, Analytical Results
Soil samples were also analyzed for RCRA characteristics (i.e. ignitability, corrosivity, reactivity, and full TCLP) to aid in classification of the impacted soil as either hazardous or non-hazardous. Where are these results presented?

~~See comment to reverse~~ OK

FS REPORT

1. Page ES-9, Paragraph 1
a) In sentence 2, it is not clear what is meant by the inclusion of RAA 2 in this sentence: "although RAA 4 is estimated to be the lowest cost option it is, *along with RAA 2 (Source Removal and Off-Site Landfill Disposal)*, the alternative most likely to face objections from USEPA and NC DEHNR."

b) In sentence 4, I think you are talking about RAA 4 not RAA 2.

2. Page 1-4, Section 1.2.5, Paragraph 1
The last sentence refers to further investigation necessary to confirm the relationship between the odor at Site 35 and the water table fluctuation. If this issue is to be addressed in the full RI/FS, a reference to this fact should be included here.

fix 3. Page 1-7, Section 1.2.6, Paragraphs 4 & 5
Page 6-29 of the RI report states that the ICR is 3×10^{-6}. Page 1-7 says 6×10^{-6}. Also, page 6-29 of the RI report states that the HI is 0.05. Page 1-7 says 0.006.
now says 0.005, s/b 0.05

4. Page 2-3, Section 2.2, Paragraph 2
This paragraph discusses the reasons for classification of the soil as non-hazardous. What about the results of the TCLP/RCRA characteristics analyses? (See comment 26 of RI report).

5. Page 2-3, Section 2.3, Paragraph 1
Typo in last sentence, should be "3700 cubic yards...".

6. Page 2-8, Section 2.3, Paragraph 2
Typo in first sentence, should be "Based on the remediation..."

7. Page 3-1, Section 3.1, Paragraph 1
I believe that the fuel farm is scheduled to be dismantled in the near future. Inclusion of this fact (and the current schedule for action) would be appropriate here. If you are not aware of the details, we can get this info from Tom Morris - let me know if you need assistance in this. Also applies to Page 4-2, Section 4.1.2.1 and section 4.2 under Implementability sections.

8. Page 3-13, Section 3.3.5.1, Paragraph 2
Typo - "primarily" should not be capitalized.

9. Section 4.1

For each alternative involving excavation and off-site treatment/disposal, provisions for replacement of excavated soil with clean soil (to include both clean soil from the excavation and any additional soil supplied from off-site/elsewhere on base) should be included. Note that each section identified as "Excavation and Staging" or "Excavation, Staging, and Backfill Activities" (Sections 4.1.2.2, 4.1.3.2, 4.1.5.2) implies use of the clean soil as backfill, but these sections do not specifically address the backfill operation or the need to bring in additional clean soil to replace the removed contaminated soil.

10. Section 4.2
For each alternative involving excavation, the Implementability sections describe the staging area as likely being a plastic sheeting laid atop a flat soil surface. Since the Appendix calculations identify the probable use of the concrete pad at the former mess hall, it would be appropriate to mention this in the text.

11. Page 4-15, Section 4.2.4.2, Paragraph 3
This paragraph identifies some concerns associated with off-site disposal due to potential future liabilities. This is even more of an issue for the RAA-2 case where off-site disposal at a landfill is identified for all of the contaminated, untreated soil (for RAA-4 it is assumed that the soil will at least be partially treated by the aeration process). Section 4.2.2 (RAA-2) does not mention this issue - it would be appropriate to include mention of it. (While it is true that this is an issue for all off-site disposal/treatment options, the treatment options presumably carry lessened risk due to the fact that the soil is taken there to be treated as opposed to direct disposal.)

12. Page 5-3, Section 5.1.1.2, Short-Term Effectiveness paragraph
The paragraph indicates that the No Action option poses minimal risks to community or workers because no remedial activities are involved. While this is true based on the results of the risk assessment, the highway project will involve excavation that presumably would expose workers to the same VOC emissions that would occur during excavation activities identified under other remedial options later in this section. For this reason, it is not appropriate to exclude the No Action option from this scenario (i.e. compare this paragraph on page 5-3 with similar sections on page 5-5 for RAA-2).

13. Page 5-11, Section 5.1.4.2, Paragraph 1
Typo in last sentence - "...the remaining contaminated *soil* will need to be treated/disposed....".

14. Page 5-20, Table 5-6
a) Under Alternative 3, the Implementability line and the USEPA/State Acceptance lines both say "See Alternative 3". This is Alternative 3!

b) Related problems under Alternative 5 on the next page, where a references to Alternative 3 refer you back to Alternative 2, and a similar pattern exists for several line items for Alternative 6. Please be sure that the reference is appropriate to the technology and that there is only one layer of reference (i.e. don't send me from Alt. 6 to Alt 5 only to be sent to Alt 2!)

15. Page 5-21, Table 5-6
Under Alternative 4, for Overall Protection of HH&E line, typo - remove extraneous "not".

16. Page 5-23, Section 5.2.6
Typo in sentence 3 - " RAAs 4 and 6 involve on-site *treatment* which will be...". In sentence 4, clarify that the staging area applies to all 5 RAAs 2-6.

17. Page 5-23, Section 5.2.7
See comments 1a and 1b.

Comments to Draft interim Remedial Action Remedial Investigation/Feasibility Study Operable Unit No. 10, (Site 35 - Camp Geiger Area Fuel Farm)

Provided by: William Mullen
Technical Remedial Manager,
LANTDIV, NAVFACENGCOM

* handwritten notes by K. Landman

Provided to: Ms. Katherine Landmen
Remedial Project Manager
LANTDIV, NAVFACENGCOM

Interim Remedial Action Remedial Investigation

ES-2 ¶4, sentence 2	Sentence "Significant levels of fuel-related contaminants and TPH were not detected in these samples" should be reworded to "No significant levels of fuel-related contaminants and TPH were detected in surface soil or subsurface soil samples (if true) collected during the site investigation".
¶4 last sentence	Discussion of oil and grease sample results and possible natural sources of oil and grease should be enhanced so that both thoughts are connected and substantiated.
1-13	Additional hydrogeology information will be collected during the field work for OU-10 RI/FS. This information may provide definition of the confining unit and grain-size distribution of the sediments. The additional information should be included in later drafts of this report (if available).
4-1	Discussion in text and in Table 4-1 for compounds of concern analytical results is presented in µg/kg while results presented in Figure 4-1 is in mg/kg. Please be consistant with data presentation or clearly note reason for changing scale.
	What is source of the widespread distribution of Acetone in soil borings and surface soil samples? There is a later reference to possible lab or sampling contamination but this is not confirmed with results from lab blank. Please explain.
4-2	What is reason for very high minimum detection ranges for compounds of concern presented in Table 4-1?
	Provide definition of U, J, UJ in notes for table.
4-10	Provide definition of L, R, U, UL, J, K in notes for table.

Comments to Draft interim Remedial Action Remedial Investigation/Feasibility Study Operable Unit No. 10, (Site 35 - Camp Geiger Area Fuel Farm)

	Discuss reasons for rejected and biased (low and high) sampling analysis results for Aluminium, Antimony, Beryllium, Chromium, Potassium, Selenium, Sodium, and Vanadium.
4-12	Discussion of naturally occuring compounds does not include any range of concentrations normally detected for naturally occuring compounds that are detected by the oil and grease analytical method.
4-15 See K. Landman Comment # 13	Sampling results presented on Figure 4-2 for SB3005 indicate 3 duplicate samples for the 8-10' depth interval. TCL analytical results indicate that only 2 duplicate samples were collected at that depth and location. Please clarify. Also, link shown for one of those duplicates connects to results presented for BCSB03 (0-1'). Is this correct?
4-19	Depiction of well screen construction of MW-19 indicates that the water level has been above the screened interval for the two periods of measurement presented. Clearly this well would not be useful for analysis
5-2	I do not agree that compounds detected commonly in soils during this field event (acetone and bis(2-ethylhexyl)phthalate) should be disregarded as laboratory contamination, ***especially considering lab blanks do not show the presence of these compounds.*** Acetone is a naturally occuring compound and its dection, at low concentrations, may not necessarily represent a release. Please revise discussion accordingly.
5-10 Can we support conclusion on pg 5-10 with O&G data from a "background" sample for some other site similar to Brinson Creek area?	Could those background samples be associated with some other site and therefore not representative of true background. If that is the case, eliminating oil and grease from the consideration as a compound of concern would not be appropriate
6-1	If acetone and phthalates were detected in samples and not in lab blank, how is it those compounds were not considered Compounds of Concern and evaluated for risk to human health and the environment?

Interim Remedial Action Feasibility Study

Comments to Draft Interim Remedial Action Remedial Investigation/Feasibility Study Operable Unit No. 10, (Site 35 - Camp Geiger Area Fuel Farm)

ES-3	Can oil and grease be excluded from remediation if it is detected in background samples? Isn't it still above acceptable state criteria?
ES-7	Statement that no action alternative will not provide a decrease in volume and toxicity over time does not correspond to natural biodegration and attenuation which has been shown to occur. Granted this gradual decrease in concentration/toxicity would be slower than other RAAs, it would still occur and should be noted.
1-4	See 2nd comment on page 4-1 of the RI.
1-6 and 2-7	See comment to page 5-10 of the RI.
5-24	Ranking of RAA's 2, 3, and 5 do not take into account potential future liability as a PRP for disposal of soil into a landfill. This could be a significant cost consideration and might need to be included (even if an actual cost can't be quantified for the liability). The liability for RAA 3 and 5 would be less if the final soil disposition is on Marine or Navy property.
Appendix B	Actual method of disposal and or treatment is not clear on the contact form is some cases. ?

Atlantic Division
Naval Facilities Engineering Command
Environmental Quality Division

FACSIMILE TRANSMISSION

TOTAL # OF PAGES: 4

DATE: 11 May 1994

TO: Dan Bonk

FROM: Kate Landman, Code 1823

COMPANY: Baker Environmental, Inc.

PHONE #: (804) 322-4818

PHONE #: (412) 269-2063

DSN: 262-4818

FAX #: (412) 269-2002

FAX #: (804) 322-4805

REMARKS: Draft Interim RI/FS
OU #10, Site 35
MCB Camp Lejeune

Dan,
The attached discussion is a further expansion on comments made by Bill Mullen regarding the relatively high detection limits presented in the analytical results in the Draft RI for Site 35 (specifically, Bill's comment from page 4-2 in his 5/5/94 comments). Bill's comments are based on a discussion he had with our LANTDIV chemist, Sherri Eng. These comments are in lieu of comments that were to be provided directly by Sherri (she was unable to provide a detailed review in a timely manner due to workload constraints). With the exception of minor editorial changes and additions by me [shown in brackets], the discussion is verbatim from Bill Mullen.

The net result here is that Bill does not feel that in this particular case the high detection limits will present a problem in the long run. He feels that we may need to do some explaining if this point is picked up by the State or EPA. However, he is reasonably confident that re-sampling would not be needed here. His main points were

1) If the lab does not automatically follow the dilution process to lower detection limits, then they should contact Baker ASAP to discuss subsequent actions. Under most circumstances, this will result a request to proceed with further dilution to lower detection limits.

2) Baker should inform the NTR that this type of situation has occurred as soon as possible, as a matter of project status. If warranted, a call to the NTR to discuss the subsequent actions prior to giving the go-ahead to the lab may be necessary (in my opinion, this would be a rare instance; however, Bill recommends advance discussion as much as is practical.)

3) Baker should ensure that the lab is aware of this procedure to avoid this type of situation in future sampling events.

Chemistry is not my forte', but please feel free to call either me or Bill if you want to discuss this further. If necessary, we can get Sherri Eng involved too.

Kate Landman (804) 322-4818
Bill Mullen (804) 322-4588
Fax (both) (804) 322-4805

Kate

Draft Interim RI/FS, OU#10 (Site 35) **11 May 1994**
Addendum to Comments by Bill Mullen

The detection limits are probably high due to the presence of xylene and toluene in the samples at extremely elevated concentrations (320,000 and 190,000J ug/kg). The only way to lower the detection limits is to dilute the sample and re-run the sample. [A matrix problem is not likely here since the contaminants of concern are not metals.] THIS SHOULD HAVE BEEN DONE SINCE THERE ARE CONSEQUENCES THAT MAY HAVE AN EFFECT ON THIS PROJECT! TO UNDERSTAND, YOU MUST READ ON!!!

The problem is that EPA usually requires that sampling results that show high detection limits assume that compounds not detected in that sample as present at 1/2 the detection limit. A fair number of compounds (TABLE 4-1, PAGE 4-2) are not detected at 900 to 1400 ug/kg (depending on specific samples). Clearly taking 1/2 of the detection limit for Vinyl Chloride, which would be 650 ug/kg would really adversely affect the risk assessment for your site since MCL is 2 ppb in groundwater.

Diluting the sample lowers the concentrations of all compounds present, while it raises the method detection limit. This has good, bad, and better results. The BAD is that a compound present at 10 ppb could be diluted to the point that it does respond to the machine. The GOOD is that the compounds present at moderate levels will still be detected at concentrations relative to the dilution effect. The BETTER is that the detection will be reduced to a manageable number (10, 50, or even 100 ug/kg).

Example:

A normal method detection limit is 1 ppb for a particular analysis. A sample with three compounds in it is analyzed, and the 1st compound is present at a concentration of 100,000 ppb, the 2nd compound is present at 10 ppb, and the 3rd compound is present at 750 ppb.

The sample is run and due to the conflicting results (the response peak of the compound with the larger concentration masks the presence of the lower one) the detection limit for this run is say for example 1000 ppb. The reported result would be a concentration of 100,000 ppb of No. 1, and No.s 2 and 3 would be non detect (or No. 3 would be estimated at 750). The EPA preferred 1/2 detection limit would be 500 ppb for compounds 2 and 3 (unless estimated concentration is higher).

If the same sample is diluted by a factor of 10, the 1st compound concentration is @ 10,000 ppb and the method detection is raised from 1 to 10 ppb. Unfortunately, the 2nd compound is also diluted by a factor of 10 and drops from 10 ppb to @1 ppb and is not detected. The 3rd compound is also diluted to @75 ppb and is detected.

Using the EPA preferred 1/2 detection limit evaluation, the 2nd compound is assigned a concentration of 5 ppb [i.e. 1/2 of the new method detection limit of 10 ppb], which is much more representative of the actual concentration of 1 ppb.

Needless to say, the high detection limits are fairly significant for what could happen, not what is really there [at this site]. For this project, with the concurrent (sort of) RI/FS going on, there would be reason to argue [against] the elevated values that 1/2 detection limit would give for vinyl chloride and associated other compounds presented in Table 4-1. [So, for this specific Interim RI/FS, we probably don't have a problem, especially since soils involved are the ones that will be excavated and remediated.]

HOWEVER, it would be more significant for some other sites where no additional field work was planned. High detection limits and the resulting high risk assessments could require another sampling round to convince regulators that we aren't missing something significant.

[Baker should have been contacted by the lab immediately upon determination that a sample has very high detection limit. The purpose of the call is to determine if further dilution is necessary to lower the detection limits for the sample. In most cases, this would be the appropriate course of action. In some cases, it may not be

necessary to follow though - for example, if other samples very close by to the sample in question can demonstrate that the high detection limit is not significant, then it may not be necessary to continue with dilution. In any case, Baker should be given the option to request further dilution, and the NTR (me) should be notified as soon as possible as a matter of project status. }

✓ resp. prepared

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

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

May 10, 1994

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

4WD-FFB

Ms. Katherine Landman
Department of the Navy - Atlantic Division
Naval Facilities Engineering Command
Code 1823
Norfolk, Virginia 23511-6287

SUBJ: MCB Camp Lejeune - OU10
Draft Interim Remedial Action

Dear Ms. Landman:

The Environmental Protection Agency (EPA) has partially completed its review of the "Draft Interim Remedial Action, Remedial Investigation/Feasibility Study, Operable Unit 10, Site 35, dated April 5, 1994. The comments from EPA's contractor, Dynamac, are enclosed.

If there are 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: Mr. Neal Paul, MCB Camp Lejeune
Mr. Patrick Watters, NCDEHNR

Post-it™ brand fax transmittal memo 7671	# of pages ▸ 4
To DAN BONK	From KATE LANDMAN
Co. BAKER	Co. LANTDIV
Dept.	Phone # (804) 322-4818
Fax # (412) 269-2002	Fax # (804) 322-4805

1.0 General Comments

The following general comments were developed from review of the Draft Interim Remedial Action RI/FS Report.

1. A summary of previous sampling and analysis data for soil and groundwater and the list of parameters analyzed have not been provided. This information should be provided to indicate the known nature and extent of horizontal and vertical contamination present at the site in order to define site-related data gaps.

2. The laboratory sample analysis forms for the samples collected during the Interim Remedial Action RI/FS should be provided. This would allow the summary data tables to be cross checked against the actual lab analysis forms.

3. The text should state the analytical method used for the oil and grease analysis of soil samples collected during the Interim Remedial Action RI/FS.

4. Inorganic constituents have been detected throughout the soil at Site 35. The text states that slightly elevated levels of inorganic constituents were detected and are believed to be of natural origin. This argument is not justified since inorganic constituents in background samples were either not detected or were present at levels below the concentrations detected in the investigation samples. The text also states that there does not appear to be a significant source of inorganic contaminants in Site 35 soils due to the random distribution of the inorganic constituents and the fact that the concentrations at which these analytes were detected fall within the range of element concentrations detected in soils in the eastern United States. This conclusion is unacceptable. Adequate justification should be presented for the deletion of inorganic constituents from the BRA section of the Interim Remedial Action RI/FS Report.

2.0 SPECIFIC COMMENTS

The specific comments are listed on the following pages. The comments are listed in order of occurrence in the Draft Interim Remedial Action RI/FS Report and are organized by section number, page and paragraph and/or figure and table number, as appropriate.

<u>Remedial Investigation</u>

1. <u>Section 2.3, Page 2-3, Paragraph 2:</u>
   The text states, "Results of laboratory analysis revealed that groundwater in one well and soil cuttings from two

borings were contaminated with petroleum hydrocarbons." Summaries of analytical results of previous investigations should be included in the Draft Interim Remedial Action RI/FS Report to support this statement. See General Comment No. 1.

2. Section 2.4, Page 2-4, Paragraph 1:
The text states that soil samples collected during the Comprehensive Site Assessment (CSA) were analyzed for total petroleum hydrocarbons (TPH). The text does not state which portion of the range of TPH constituents was included in the analyses. The text should be revised to state whether the analyses represents the TPH gasoline or diesel range or a combination of the two.

3. Section 2.4, Page 2-4, Paragraph 2:
The text states, "The results of the CSA identified areas of impacted soil and groundwater." Summaries of analytical results of previous investigations should be included in the Draft Interim Remedial Action RI/FS Report to support this statement. See General Comment No. 1.

4. Section 2.4, Page 2-4, Paragraph 4:
The text states that soil samples collected during a followup to the CSA were analyzed for TPH. The text does not state which portion of the range of TPH constituents was included in the analyses. See Specific Comment No. 2.

5. Section 3.1, Page 3-1, Paragraph 4:
The text states, "[Soil Borings] SB-34 and SB-34 were drilled to be downgradient of the Fuel Farm, a suspected source of groundwater contamination." The text should be modified to provide a unique number to each of the soil borings.

6. Section 4.3, Page 4-12, Paragraph 4:
The text states that the detectable levels of oil and grease in soil samples obtained during the Interim Remedial Action RI/FS may be due to the presence of naturally occurring hydrocarbons. This argument is not justified since oil and grease constituents were present at levels below the concentrations detected in the background investigation samples. Adequate justification should be presented for the deletion of oil and grease constituents from the BRA section of the Draft Interim Remedial Action RI/FS Report.

7. Section 5.3, Page 5-2, Paragraph 4:
The text states that inorganic constituents were detected in one or more Interim Remedial Action RI/FS samples and that the occurrence of these constituents does not appear to be site related because of the sporadic nature of their detection in

site soils. This conclusion is unacceptable. See General Comment No. 4.

8. Page 6-3, Paragraph 2, Last Sentence:
Regarding using sample prevalence as a screening criterion, the wording that "one positive detection in twenty or fewer environmental samples..." is vague and inconsistent with the statement presented in the preceding sentence. Please revise. A detection frequency of 5 percent requires that at least 20 samples be collected from any single medium.

9. Pages 6-6 through 6-9, Tables 6-1 through 6-3:
Footnotes should be provided for the symbols "J", "K" and "L" used in these tables.

10. Page 6-7, Paragraph 1:
Eliminating bis(2-ethylhexyl)phthalate and di-n-butylphthalate on the basis of these constituents being common laboratory contaminants is not automatically justified unless appropriate screening criteria are met. To be considered a laboratory contaminant, the concentration of a contaminant in an environmental sample should not exceed 10 times the concentration of that contaminant in the associated blank. However, it is unclear from the text whether the proper screening has been conducted. Additionally, no justification is provided in the paragraph regarding the elimination of dibenzofuran. Therefore, a complete rationale should be provided for the deletion of these contaminants as COPCs.

Feasibility Study

12. Section 1.2.5.3, Page 1-5, Paragraph 3:
The text indicates that lead was detected during the confirmation study, but that these concentrations fall within the lead concentrations observed in soils and other surficial material of the eastern United States. See General Comment No. 4.

Atlantic Division
Naval Facilities Engineering Command
Environmental Quality Division

FACSIMILE TRANSMISSION

TOTAL # OF PAGES: 2

DATE: 12 May 1994

TO: Dan Bonk

FROM: Kate Landman, Code 1823

COMPANY: Baker Environmental

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REMARKS: CTO-0160
Draft Interim PRAP, Site 35
MCB Camp Lejeune

Dan,
Attached are my comments on the Draft Interim PRAP. Just a few items I noticed as I read it. Looks good. Still waiting for comments from Camp Lejeune, NCDEHNR and the rest of EPA comments on the Draft RI/FS and PRAP.

Call me if/when you find out anything more about the lab problem. I won't be in the office tomorrow, but if you need to talk to me about the lab stuff (or anything else), I'll be at home working on my thesis, so feel free to call me there: (804) 622-0229.

By the way, I was looking over the schedule, and I was wondering when we should be thinking about scheduling the various meetings in regards to the Interim RI/FS (State/EPA and TRC/Public meetings). Camp Lejeune especially needs to start planning as far in advance as possible. We should think about setting tentative dates now. Any ideas? We should try to coordinate as much as possible with actions at other sites to avoid having repeat meetings.

-Kate

LANTDIV Comments **K. Landman, 5/12/94**
CTO-0160 Draft Interim PRAP
OU#10, Site 35-Camp Geiger Area Fuel Farm
MCB Camp Lejeune

1. Page 5, Operable Unit History
History should include information about the 1990 spill and the plans for Fuel Farm demolition (see Draft RI report, page 1-6.

2. Page 6, Previous Investigations, Confirmation Study, Paragraph 3
The wells installed in 1986 were permanent, not temporary. Also, VOCs were detected in the Conformation Study according to the Site Summary Report. See Draft RI report comment #3.

3. Page 7, Previous Investigations
A mention should be made of other investigations, specifically regarding the 2 USTs mentioned in Section 2.5 of the Draft RI report (page 2-4). Be sure to see my comment 2 of Draft RI.

4. Page 8, Interim Remedial Action RI/FS by Baker, Paragraph 3
The last sentence mentions occurrences of inorganic constituents chromium, vanadium, and arsenic. What about lead?

5. Page 8, Interim RA RI/FS by Baker, Paragraph 4
Statements concerning O&G will likely need to be revised to reflect Dynamac (and EPA/State, if any) comments to Draft RI on O&G "write-off" by comparison to upstream samples.

6. Page 9, Human Health Risk Assessment, Paragraph 3 & 4
On-site worker risk was reported to be 3.3×10^{-6} (not 6×10^{-6}) on Table 6-9, page 6-30 of Draft RI report. The HI was calculated at 0.05 (not 0.006).

7. Page 16, Table 1
a) Under Alternative 1, Location Specific ARARs, typo - "serve" - ? This is the same table as Table 5-6 in Draft FS report. It contains the same error (and was not noted in previous comments to Draft FS).

b) See other comments for Table 5-6 under Draft FS comment 14.

INSTALLATION RESTORATION DIVISION

UNITED STATES MARINE CORPS

ENVIRONMENTAL MANAGEMENT DEPARTMENT

MARINE CORPS BASE

CAMP LEJEUNE, NORTH CAROLINA

Post-It™ brand fax transmittal memo 7671 | # of pages ▸ 9

To DAN BONK	From KATE LANDMAN
Co. BAKER	Co. LANTDIV
Dept.	Phone # (804) 322-4818
Fax # (412) 269-2002	Fax # (804) 322-4805

ATTN:

FAX #

FROM: THOMAS S. MORRIS (ENVIRONMENTAL ENGINEERING TECHNICIAN)

COMMENTS: KATE, I APOLOGIZE FOR THESE COMMENTS BEING LATE - BUT I HAVE BEEN OUT WITH KIDNEY STONE PROBLEMS THE PAST WEEK AND A HALF. AS YOU CAN SEE, WE DON'T HAVE TOO MUCH TO COMMENT ON. PLEASE LET ME KNOW IF THERE IS ANYTHING ELSE I CAN HELP WITH!

TOM

IF THERE IS A PROBLEM WITH THIS TRANSMISSION, PLEASE CALL (910) 451-5068, EXT 404 (DSN 484-5068). OUR FAX NUMBER IS (910) 451-5997 (DSN 484-5997).

DRAFT

INTERIM REMEDIAL ACTION
REMEDIAL INVESTIGATION

OPERABLE UNIT NO. 10
SITE 35 - CAMP GEIGER AREA FUEL FARM

MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

CONTRACT TASK ORDER 0160

APRIL 5, 1994

Prepared For:

DEPARTMENT OF THE NAVY
CHESAPEAKE DIVISION
NAVAL FACILITIES
ENGINEERING COMMAND
Washington, D.C.

Under:

LANTDIV CLEAN Program
Contract N62470-89-D-4814

Prepared By:

BAKER ENVIRONMENTAL, INC.
Coraopolis, Pennsylvania

1.0 INTRODUCTION

This Interim Remedial Action Remedial Investigation (RI) Report has been prepared by Baker Environmental, Inc. (Baker) for presentation to the Department of the Navy (DON), Naval Facilities Engineering Command, Atlantic Division (LANTDIV) under Navy CLEAN Contract Number N62470 to address petroleum hydrocarbon contaminated soil at Operable Unit (OU) No. 10, Site 35 - Camp Geiger Area Fuel Farm. The Interim Remedial Action RI has been conducted in accordance with guidelines and procedures presented in the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) (40 CFR 300.430). The NCP was published under the Comprehensive Environmental Response Compensation and Liability Act of 1980 (CERCLA) commonly referred to Superfund and amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA). USEPA's Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA (USEPA 1988) was also used as guidance for preparing this document.

This report uses available information from previous investigations on surface and subsurface soils at Site 35 in conjunction with the soil data generated during the Interim Remedial Action RI conducted by Baker in December, 1993. Previous investigations were conducted by Water and Air Research, Inc., Environmental Science and Engineering, inc. (ESE), NUS Corporation (NUS) and Law Engineering, Inc. (Law). The results of this Interim Remedial Action RI will serve as the basis for an evaluation or remedial action alternatives for mitigating potential risks to human health and the environment posed by the petroleum hydrocarbon contaminated soil at Site 35. Available results of previous investigations at underground storage tank (UST) sites near the Fuel Farm have not been included in the overall evaluation of Site 35. Two tank sites including: 1) an abandoned No. 6 fuel oil UST adjacent to the Former Mess Hall Heating Plant; and 2) a former No. 2 Fuel Oil UST (removed) adjacent to Building TC480 (Explosive Ordnance Disposal Armory, Office and Supply Building) are subject to investigation and remediation under a different program.

→ G480 ← Apparently, we have incorrectly been refering to this bldg as TC480 in all text and diagrams until now. "G" stands for Geiger, and is the correct designation for this building. (-Kate)

1.1 Purpose

The purpose of the Interim Remedial Action RI is to provide additional soil data for use in conjunction with existing data in an Interim Remedial Action Feasibility Study (FS) to support the selection of an Interim Remedial Action for petroleum hydrocarbon impacted soil at Site 35. Based on previously obtained data and reports of fuel-like odors along Brinson

situated within Camp Geiger just north of the intersection of Fourth and "G" Streets. Previous environmental investigations at the site identified underground fuel distribution piping that connect the ASTs to existing and former underground storage tanks (USTs) and expanded the area referred to as Site 35. To date, the Site 35 study area has been roughly bounded on the west by D Street, on the north by Second Street, and on the east by Brinson Creek, and on the south by Fourth Street and Building No. TC-474.

1.2.2 Site History

Construction of MCB, Camp Lejeune began in 1941 with the objective of developing the "Worlds Most Complete Amphibious Training Base." Construction started at Hadnot Point, where the major functions of the Activity are centered. Development at the Activity is primarily in five geographical locations under the jurisdiction of the Base Command. These areas include Camp Geiger, ~~Montford Point,~~ Courthouse Bay, Mainside, and the Rifle Range Area.
CAMP JOHNSON

Construction of Camp Geiger was completed in 1945, four years after construction of MCB, Camp Lejeune was initiated. Figure 1-2 presents a site map of the Camp Geiger Fuel Farm area. Originally, the Fuel Farm ASTs were used for the storage of No. 6 fuel oil, but, were later converted for storage of other petroleum products including unleaded gasoline, diesel fuel, and kerosene. The date of their conversion is not known.

Formerly, the ASTs at Site 35 supplied a gasoline filling station which was located on the northeast corner of the intersection of "F" and Fourth Streets. A leak in an underground line at the station was reportedly responsible for the loss of roughly 30 gallons per day of gasoline over an unspecified period (Law, 1992). The leaking line was subsequently sealed and replaced. ?

After looking at the Law report (page 9), it looks like this event occurred at the fuel farm and not at the gas station. Perhaps this is Tom's question. (-Kate)

The ASTs at Site 35 are currently used to dispense gasoline, diesel and kerosene to government vehicles and to supply USTs in use at Camp Geiger and the nearby New River Marine Corps Air Station. The ASTs are supplied by commercial carrier trucks which deliver product to fill ports located on the fuel unloading pad at the southern end of the facility. Six, short-run (120 feet maximum), underground fuel lines are currently utilized to distribute the product from the unloading pad to the ASTs. Product is dispensed from the ASTs via trucks and underground piping.

DRAFT

INTERIM PROPOSED REMEDIAL ACTION PLAN OPERABLE UNIT NO. 10 SITE 35 - CAMP GEIGER AREA FUEL FARM

MARINE CORPS BASE,
CAMP LEJEUNE, NORTH CAROLINA

CONTRACT TASK ORDER 0160

APRIL 5, 1994

Prepared For:

DEPARTMENT OF THE NAVY
ATLANTIC DIVISION
NAVAL FACILITIES
ENGINEERING COMMAND
Norfolk, Virginia

Under the:

LANTDIV CLEAN Program
Contract N62470-89-D-4814

Prepared By:

BAKER ENVIRONMENTAL, INC.
Coraopolis, Pennsylvania

INTERIM PROPOSED REMEDIAL ACTION PLAN

Introduction

This Interim Proposed Remedial Action Plan (Interim PRAP) is issued to describe the Marine Corps Base (MCB) Camp Lejeune and the Department of the Navy's (DON's) preferred remedial action for petroleum hydrocarbon contaminated soil at Operable Unit No. 10 (Site 35 - Camp Geiger Area Fuel Farm) at MCB Camp Lejeune.

MCB Camp Lejeune and the DON are issuing this Interim PRAP as part of the public participation responsibility established under Section 117(a) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), and the Federal Facilities Agreement (FFA) between the DON, United States Environmental Protection Agency (USEPA) Region IV, and the North Carolina Department of Environment, Health, and Natural Resources (NC DEHNR).

MCB Camp Lejeune and the DON, with the assistance of USEPA Region IV and the NC DEHNR, will select an interim remedy for Operable Unit No. 10 only after the public comment period has ended and the information submitted during this time has been reviewed and considered. The Final Interim Record of Decision (Interim ROD) may recommend a different remedial action than is presented in this plan depending upon new information or public comments.

This Interim PRAP briefly summarizes information that can be found in greater detail in the Interim Remedial Action Remedial Investigation (RI) Report, the Interim Remedial Action Feasibility Study (FS), and other documents referenced in the Interim Remedial Action RI and FS Reports prepared for Operable Unit No. 10. The DON encourages the public to review these other documents in order to gain a more comprehensive understanding of the sites. The administrative record file, which contains information on which the selection of the remedial action will be based, is available for public review AT THE ONSLOW COUNTY LIBRARY AND at MCB Camp Lejeune, Building 67. The public is invited to review and comment on the administrative record and this Interim PRAP.

Operable Unit Description

Camp Lejeune is a training base for the U.S. Marine Corps, located in Onslow County, North Carolina. The Base covers approximately 236 square miles and includes 14 miles of coastline.

MCB Camp Lejeune is bounded to the southeast by the Atlantic Ocean, to the northeast by State Route 24, and to the west by U.S. Route 17. The town of Jacksonville, North Carolina is located north of the Base (See Figure 1).

The study area, Operable Unit No. 10 is one of 13 operable units within MCB Camp Lejeune. An "operable unit" as defined by the National Contingency Plan (NCP) is a discrete action that comprises an incremental step toward comprehensively addressing site problems. The cleanup of a site can be divided into a number of operable units, depending on the complexity of the problems associated with the site. Operable units may address geographical portions of a site, specific site problems, or initial phases of an action. With respect to MCB Camp Lejeune, operable units were developed to combine one or more individual sites where Installation Restoration Program (IRP) activities are or will be implemented.

Camp Geiger is located at the extreme northwest corner of MCB, Camp Lejeune, Onslow County. The main entrance to Camp Geiger is off U.S. Route 17, approximately 3.5 miles southeast of the City of Jacksonville, North Carolina. Site 35, the Camp Geiger Area Fuel Farm, refers primarily to five, 15,000-gallon aboveground storage tanks (ASTs), a pump house, and a fuel unloading pad situated within Camp Geiger just north of the intersection of Fourth and "G" Streets (See Figure 2).

Operable Unit Background History

Construction of Camp Geiger was completed in 1945, four years after construction of MCB, Camp Lejeune was initiated. Originally, the ASTs were used for the storage of No. 6 fuel oil, but, were later converted for storage of other petroleum products including unleaded gasoline, diesel fuel, and kerosene. The date of their conversion is not known. The ASTs currently in use at the site are reported to be the original tanks.

Formerly, the ASTs at Site 35 supplied a gasoline filling station which was located on the northeast corner of the intersection of "F" and Fourth Streets. A leak in the underground line from the ASTs to the dispensing island was reportedly responsible for the loss of roughly 30 gallons per day of gasoline over an unspecified period (Law, 1992). The leaking line was subsequently sealed and replaced. ?

The ASTs at Site 35 are currently used to dispense ga: government vehicles and to supply USTs in use at Camp Ge

IT WAS MY UNDERSTANDING THAT THIS GASOLINE STATION HAD ITS OWN UST LOCATED ON THE NORTH SIDE OF STATION.

See my Comment page 14 of R1 (-Kok)

or "Hydropunch" samples. A "Tracer" study was also performed to investigate the integrity of the active USTs and underground distribution piping.
ASTs

Soil and groundwater samples obtained under the CSA were analyzed for both organic and inorganic compounds. Groundwater analyses included purgeable hydrocarbons (EPA 601), purgeable aromatics and methyl-tertiary butyl ether (MTBE) (EPA 602), polynuclear aromatic hydrocarbons (EPA 610), and unfiltered lead (EPA 239.2). Soil analyses were limited to total petroleum hydrocarbons (TPH) (SW846 3rd Edition, 5030/3550) and lead (SW846 3rd Edition, 6010). Ten soil samples were analyzed for ignitability by SW846 3rd Edition, 1010.

The results of the CSA identified areas of impacted soil and groundwater. The nature of the contamination included both halogenated (i.e., chlorinated) organic compounds and nonhalogenated, petroleum-based constituents. The contamination encountered was typically identified in both shallow (2.5 to 17.5 feet bgs) and deep (17.5 to 35 feet bgs) wells.

In general, contaminant concentrations in soil were greatest in those samples taken at or below the water table. Law concluded that soil contamination at Site 35 was likely due to the presence of a dissolved phase groundwater plume and seasonal fluctuations of the water table.

A follow-up to the CSA was conducted by Law in 1992. Reported as an Addendum to the CSA (Law, 1993), it was designed to provide further characterization of the southern extent of the petroleum contamination resulting from historical releases. Three monitoring wells were installed including MW-26, -27, and PW-28. Soil samples were obtained from each of these locations and analyzed for TPH. As part of the follow-up, a pump test was performed to estimate the hydraulic characteristics of the surficial aquifer. This test was designed to determine performance characteristics of a designated pumping well and to estimate hydraulic parameters of the aquifer. An approximate hydraulic conductivity of 100 feet/day was determined for the surficial aquifer.

Interim Remedial Action RI/FS by Baker

Baker conducted an Interim Remedial Action RI in December of 1993. An additional seven soil borings were located within and around groundwater contaminant plume areas identified during the CSA. In addition to the soil borings, thirteen shallow soil samples were taken along Brinson Creek to determine the extent of contamination emanating from Site 35. Two of

COMMUNITY PARTICIPATION

A critical part of the selection of a remedial action alternative is community involvement. The following information is provided to the community in order to obtain input that addresses the selection of remedial action alternative for Operable Unit No. 10, Site 35.

Public Comment Period

The public comment period will begin on July 17, 1994, and end on August 16, 1994, for the Proposed Remedial Action Plan for Operable Unit No. 10, Site 35. Written comments should be sent to the following address:

Commander
Atlantic Division Naval Facilities Engineering Command
1510 Gilbert Street (Bldg. N-26)
Norfolk, Virginia 23511-2699
Attention: Ms. Katherine Landman, Code 1823

Information Repositories

A collection of information, including the administrative record, is available at the following location:

MCB Camp Lejeune
Building 67
Marine Corps Base
Camp Lejeune, NC 28542
~~(919) 451-5724~~ (910) 451-5068

M-F: 7:00 a.m.-3:00 p.m.

A-DD

Onslow County Library
58 Doris Avenue East
Jacksonville, NC 28540
(910) 455-7350

Hours:
M-Th: 9:00 a.m.- 9:00 p.m.
F-Sa: 9:00 a.m.- 6:00 p.m.
Closed Sunday

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To DAN BONK	From KATE LANDMAN
Co. BAKER	Co. LANTDIV
Dept.	Phone # 804-322-4809
Fax # 412-269-2002	Fax # 804-322-4805

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

✓ resp prepared

May 20, 1994

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, ENV/IRD
Marine Corps Base
PSC Box 20004
Camp Lejeune, NC 28542-0004

RE: Draft Interim RI/FS Report and Draft Interim Proposed Remedial Action Plan 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. 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

P.O. Box 27687, Raleigh, North Carolina 27611-7687 Telephone 919-733-4996 FAX 919-715-3605
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North Carolina Superfund Comments
Draft Interim RI/FS Report and PRAP
Operable Unit 10 (Site 35) MCB Camp Lejeune

RI Report

1. General
These are several references (Page 4-9, Section 4.2; Page 5.2, Section 5.3; Page 5-4, Table 5-1) in the RI report that utilizes data presented in the Shacklette and Boerngen USGS Paper of 1984 as background concentrations. Using data that covers the entire eastern United States as a basis for background comparisons at Camp Lejeune is inappropriate. The data in the Shacklette and Boerngen report covers a very large geographical area and therefore would not be representative of the specific area around Camp Lejeune. This is evidenced by Table 5-1 in the RI Report which shows metals concentrations from the Shacklette and Boerngen report spanning as much as 3 orders of magnitude.

   The use of "Base-Specific Background" values as noted in Table 5-1 should be supported with information on how, where, and when this data was obtained.

2. Page 2-3, Section 2.3
This section indicates that a geophysical anomaly had been identified in a previous study to the north of the former gasoline station. It is not clear from the RI/FS report if this anomaly has been fully investigated to determine conclusively whether or not this is a potential source of contamination.

3. Page 3-1, Section 3.1
The fourth sentence should state that soil borings SB-33 and SB-34 were drilled downgradient of the Fuel Farm.

4. Page 4-1, Section 4.1
The second paragraph under Section 4.1 states that 2-hexanone was found in soil sample SB3405 at 23,000 µg/kg. Table 4-1 (Page 4-2) shows a value of 12,000 µk/kg for SB3405.

5. Page 4-9, Section 4.2
This section indicates that some of the data shown in Table 4-2 has qualifiers to indicate if the data was rejected (R), biased high (H), or biased low (L). There is no information provided to explain why these data qualifiers are necessary.

6. Page 6-5, Section 6.2.1
The second paragraph on the page lists numerous metals and states that they were not considered as COPCs because the concentrations were well below their respective EPA Region III RBC value for residential soil. Table 6-1 on page 6-6 does not show RBC values for iron, lead, calcium, magnesium, potassium and sodium.

Feasibility Study

7. Page ES-7
The reference to the NC DEHNR guidelines (Groundwater Section Guidelines for the Remediation of Soils and Groundwater) as a chemical specific ARAR for the remediation goals is inconsistent with the NCP. This guidance should be viewed as under the "to be considered" category noted in Subpart E of the NCP and not an ARAR because they were not promulgated under NC State environmental statutes.

Rich Background

8. Page 1-5, Section 1.2.5.3
See the general comment regarding the use of regional background values noted for the RI Report.

9. Page 3-16, Section 3.3.5.2.1
Please explain the origin and use of the term "rotovation" and whether or not it has a more specialized meaning beyond mixing and agitating the soil.

10. Page 5-6, Table 5-1
The collection of 1 sample does not appear adequate to represent 100 CY of excavated soil. Please indicate the rationale for using this sampling scheme.

11. Page 5-11, Section 5.1.4.2
It is not clear how uncontrolled VOC emissions from the soil aeration alternative (RAA # 4) will result in "no" environmental impact.

12. Page 5-11, Section 5.1.4.2
The last sentence on this page needs to be revised for clarity.

13. Page 5-14, Section 5.1.5.2
Same comment as number 10 above regarding "no" environmental impact from uncontrolled VOC emissions.

14. Page 5-23, Section 5.2.7
The last sentence on this page should reference RAA # 4 instead of RAA # 2.

Draft Proposed Remedial Action Plan

15. General
With regard to the six proposed remedial action alternatives, the State concurs that RAAs 1, 2 and 4 are the least desirable based on the reasons cited in the PRAP. We should note that with regard to RAA No. 2, the State prefers on-site treatment to off-site disposal options as a matter of policy.

With regard to RAAs 3, 5 and 6, we prefer the on-site alternative (RAA 6) followed by RAAs 5 and 3 based mostly on the on-site treatment versus off-site disposal policy.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

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

√ resp prepared.

May 25, 1994

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

4WD-FFB

Ms. Katherine Landman
Department of the Navy - Atlantic Division
Naval Facilities Engineering Command
Code 1823
Norfolk, Virginia 23511-6287

SUBJ: MCB Camp Lejeune - OU10
Draft Interim Remedial Action
Remedial Investigation & Feasibility Study

Dear Ms. Landman:

The Environmental Protection Agency (EPA) has completed its review of the "Draft Interim Remedial Action, Remedial Investigation/Feasibility Study, Operable Unit 10, Site 35, dated April 5, 1994. Comments on the human health aspects are enclosed.

If there are 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: Mr. Neal Paul, MCB Camp Lejeune
Mr. Patrick Watters, NCDEHNR

Post-it™ brand fax transmittal memo 7671 | # of pages ▸ 2

To DAN BONK	From KATE LANDMAN
Co. BAKER	Co. LANTDIV
Dept.	Phone # 804-322-4818
Fax # 412-269-2002	Fax # 804-322-4805

Comments

1. Remedial Investigation (RI) pg ES-3, paragraphs 2, 3.
It should be clearly explained here that the Comprehensive Remedial Investigation will include a comprehensive baseline risk assessment for human health as well as for ecological concerns.

2. RI Tables 6-1, 6-2, 6-3.
Please explain what the "K", "L" designations indicate (next to several of the concentration values).

The risk (1E-6)-based concentration for bis(2-ethylhexyl) phthalate for residential soil is 46 ppm.

3. RI Tables 6-2, 6-3, 6-5.
Despite not being listed on the Region RBC Table, dibenzofuran has a provisional RfD of 4E-3 mg/kg-d (EPA-Environmental Criteria and Assessment Office, 1993), which should be used to assess its potential health risk.

4. RI Table 6-4.
The Averaging Time (AT) for the noncarcinogenic endpoint should be 365 days (ED x 365). The appropriate value is shown in the risk calculations in Appendix D.

The Exposure Frequency (EF) of 100 days/year appears to be a professional judgement value rather than from EPA Standard Default Exposure Factors (1991).

5. RI Table 6-4; Section 6.2.2.2, pg 6-13.
The surface area of the adult male head, forearms, hands is 3160 (not 5300) cm^2. 5300 cm^2 would include the lower legs as well.

6. RI Table 6-4; Section 6.2.2.3, pg 6-14.
The default Respiration Rate (RR) recommended by the EPA Standard Default Exposure Factors (1991) for the occupational setting is "20 m^3 per 8-hour workday", which corresponds to 2.5 (not 0.83) m^3 per hour.

7. RI Table 6-5; Table 6-7; Appendix D.
For calculation of risks from dermal exposure, oral toxicity values must first be converted to an absorbed dose value (see Appendix A of Risk Assessment Guidance for Superfund, Vol. I, Part A, EPA, 1989).

8. Feasibility Study (FS) Section 1.2.6, pg 1-7, paragraph 4.
The statement "HI value of 0.006 was calculated for the on-site Site 35 worker" does not agree with the value in the RI (risk assessment) portion of the report (Tables 6-7, 6-9 of RI).