

**Baker**

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MCB CAMP LEJEUNE  
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**Baker Environmental, Inc.**  
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Coraopolis, Pennsylvania 15108

(412) 269-6000  
FAX (412) 269-2002

November 22, 1993

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  
Final Interim Remedial Action RI/FS Project Plan  
Operable Unit No. 10 (Site 35)  
MCB, Camp Lejeune, North Carolina

Dear Ms. Landman:

Enclosed please find three (3) copies of the Final Interim Remedial Action RI/RF Project Plan for Operable Unit No. 10 (Site 35). This Interim Remedial Action RI/FS Project Plan includes the Work Plan, Sampling and Analysis Plan, Quality Assurance Project Plan, and Health and Safety Plan for implementing an Interim Remedial Action RI/FS at the referenced Operable Unit. Due to the limited amount of field work required to conduct the Interim Remedial Action RI/FS, and the fact that a "full-scale" set of RI/FS Project Plans are being developed for Operable Unit No. 10, the Interim Remedial Action RI/FS Project Plan references the full-scale RI/FS Project Plans when appropriate.

Comments and responses to comments to the Draft Final Interim Remedial Action RI/FS Project Plan for OU No. 10 are attached. The computer disk containing these responses under file name RESPCA (Responses to LANTDIV Comments) and RESPCB (Responses to NCDEHNR Comments) is enclosed.

Copies of this Final Interim Remedial RI/FS Project Plan have been forwarded to the North Carolina DEHNR, EPA Region IV, MCB Camp Lejeune EMD, and TRC members in accordance with the distribution listed in the Delivery Order No. CTO-0160 dated March 22, 1993.



A Total Quality Corporation

**Baker**

**Ms. Katherine Landman  
November 22, 1993  
Page 2**

**If you have any questions, please do not hesitate to contact me at (412) 269-2063.**

**Sincerely,**

**BAKER ENVIRONMENTAL, INC.**



**Daniel L. Bonk, P.E.  
Project Manager**

**DLB/jc  
Enclosures**

**cc: Ms. Lee Anne Rapp, Code 183 (w/o enclosure)  
Ms. Beth Hacic Code 02231 (w/o enclosure)  
Mr. Neal Paul w/ enclosure)**

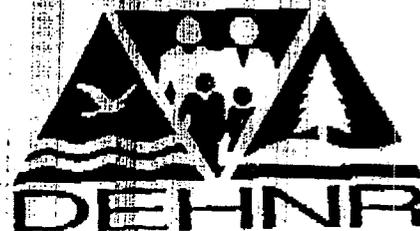
**Attachment A**  
**North Carolina DEHNR Comments**  
**on the Draft Interim Remedial Action RI/FS**  
**Project Plans for Site 35 (Operable Unit 10)**

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

James B. Hunt, Jr., Governor  
Jonathon B. Howes, Secretary



November 1, 1993

Commander, Atlantic Division  
Naval Facilities Command  
Code 1823-2  
Attention:

MCB Camp Lejeune, RPM  
Ms. Katherine Landman  
Norfolk, Virginia 23511-6287

Commanding General

Attention:

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

RE:

Draft Final Interim Remedial Action RI/FS Project  
Plan, Operable Unit 10, Site 35 - Camp Geiger Area  
Fuel Farm, MCB Camp Lejeune, Jacksonville, NC

The NC Superfund Section has completed its review of the referenced document and has no further comments. We have however, recently received comments from our sister agencies on the draft version of this document which we are attaching for your consideration. Please call me if you have any questions about this.

Sincerely,

Patrick Watters  
Environmental Engineer  
NC Superfund Section

cc: Preston Howard, DEHNR  
Neal Paul, MCB Camp Lejeune  
Gina Townsend, US EPA Region IV  
Bruce Reed, DEHNR Wilmington Regional Office

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

James B. Hunt, Jr., Governor  
Jonathan B. Howes, Secretary  
A. Preston Howard, Jr., P.E., Director



September 29, 1993

MEMORANDUM

TO: Bill Meyer, Director  
Division of Solid Waste Management

FROM: A. Preston Howard, Jr. *JLH*

SUBJECT: MCAB Camp Lejeune  
Operable Unit #10  
Draft Interim RI/FS Project Plan Review  
Onslow County

The Division of Environmental Management has completed the review of the subject document and offers the following comments and recommendations.

The document references that clean-up action levels can be established using recently published North Carolina guidelines (NCDEHNR, 1993). We believe that they are referring to the "Groundwater Section Guidelines For The Investigation and Remediation of Soil and Groundwater". As you know, our document provides guidance for petroleum-related substances. Since chlorinated organic compounds will be assessed at this site, the Responsible Party's consultant should contact the Division of Solid Waste Management, Hazardous Waste Section, for guidance with assessing, testing, and disposal of any hazardous waste substances or wastes.

If there are any questions, please advise.

APHjr/sbp/MCAB1.SWM

cc: Alan Klimek  
Steve Tedder  
Wilmington Regional Office  
Central Files  
Groundwater Files

**Attachment B**  
**Response to North Carolina DEHNR Comments**  
**on the Draft Interim Remedial Action RI/FS**  
**Project Plans for Site 35 (Operable Unit 10)**

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**Response to Comment Submitted by the North Carolina DEHNR  
to the Draft Interim Remedial Action RI/FS Project Plan  
Operable Unit No. 10 (Site 35)  
Marine Corps Base, Camp Lejeune, North Carolina  
Comments Letter Dated September 29, 1993**

**Response to Comment**

1. The comment is correct in that references to clean-up action levels refer to the recently published North Carolina guidelines (NCDEHNR 1993) which covers petroleum-related substances. Section 3.6 (Task 6 - Risk Assessment) has been modified to indicate that these guidelines are to be used to establish soil clean-up levels for TPH contamination. A quantitative risk assessment will be performed under the full RI/FS that will be used, in conjunction with EPA and NCDEHNR input, as a basis for establishing soil clean-up action levels for any non-TPH contamination, if encountered in the soil.

**Attachment C**  
**LANTDIV Comments**  
**on the Draft Final Interim Remedial Action RI/FS**  
**Project Plans for Site 35 (Operable Unit 10)**

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Comments to: 8 November, 1993  
Final Draft  
Interim Remedial Action Remedial Investigation/Feasibility Study Project Plan  
Operable Unit No. 10, (Site 35 - Camp Geiger Arca Fuel Farm)

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

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

Page 1-2, 1st and 2nd bullets, Petroleum products were exempted from Hazardous Waste by definition. Change word "hazardous" to "toxic" in both sentences.

Page 1-2, 2nd bullet, reference to near surface contamination should be better defined. Page 2-7 refers to the highest level contamination @ 8 feet bgs.

Page 1-2, 2nd bullet, sentence not clearly worded, do the soils migrate or do the contaminants?

Page 2-6, Figure 2-4. Delete "0" Contour line. There is no basis to the exact location for this line. The presence of a zero line is based on extremely sparse data points and is not defensible. For site work planning and clarity, replace the "0" with a "1" line. Also, due to the extreme differences in concentrations identified, perhaps log scale contour lines would be more effective in displaying the TPH concentrations within the soils.

Page 2-7, Last Paragraph. What analytical method to determine TPH concentrations will be used during this Interim Remedial Action Remedial Investigation/Feasibility Study Project? Method 418.2 is not a preferred method since it only provides total TPH, and a characterization of TPH components is not possible. EPA method 8015 or equivalent is preferred.

Page 3-3, first full sentence on page. If chlorinated solvents have been identified in ground water at site, and are potential soil contaminants at this site the reliance on visual classification of contamination as a screening tool is not acceptable. Soils heavily contaminated with petroleum products may mask the presence of chlorinated solvents, and certainly *may* have no relation to the presence of metals within the soils.

Since there is no information regarding the presence of chlorinate solvents or metals in the soil to date, use of visual contamination characteristics will not insure adequate analytical information is collected to provide an adequate remediation design. **Therefore, it is recommended that at several soil boring locations, all soil samples collected be analyzed to vertically characterize all contamination present. These**

**locations should be, at a minimum, within the highest areas of previously identified contamination and at the furthest "up and down gradient" locations of sampling.**

**Attachment D**  
**Response to LANTDIV Comments**  
**on the Draft Final Interim Remedial Action RI/FS**  
**Project Plans for Site 35 (Operable Unit 10)**

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**Responses to Comments Submitted by LANTDIV (William Mullen)  
to the Draft Final Interim Remedial Action RI/FS Project Plan  
Operable Unit No. 10 (Site 35)  
Marine Corps Base, Camp Lejeune, North Carolina  
Comments Letter Dated November 8, 1993**

**Responses to Comments**

1. The word "hazardous" has been changed to "toxic" in both sentences.
2. The paragraph immediately following the 2nd bullet has been modified to provide support for the contention that near surface contamination is present in this area.
3. Both bullets on this page are excerpted directly from the document entitled "Draft Engineering Evaluation/Cost Analysis Guidance for Non-Time-Critical Removal Actions," dated June 1987, by the USEPA, Emergency Response Division. For this reason they have not been modified.
4. Figure 2-4 was excerpted, without modification, directly from a previous site investigation prepared by Law entitled "Final Report, Underground Fuel Investigation, Comprehensive Site Assessment, Volume I, Camp Geiger Fuel Farm, Marine Corps Base, Camp Lejeune, North Carolina," dated February 8, 1992. It is intended to depict existing contamination as previously reported and, therefore, has not been modified. Baker will prepare a new figure for the Interim Remedial Action RI/FS Report that will address the concerns highlighted in this comment.
5. Section 7.3 - Analytical Procedures, page 7-1, has been modified to include EPA Method 8015 as the analytical procedure to be performed as per this comment.
6. Baker reviewed the data obtained under previous studies at this site and determined that there was an absence of any records to document the historical use or accidental discharge of chlorinated solvents at this site. However, low levels of chlorinated solvents were detected in shallow groundwater during previous investigations. The presence of the chlorinated contaminants in the shallow groundwater indicate either a lack of adequate records or that the detected contamination emanates from an off-site source. Based on our experience at other Camp Lejeune sites, Baker has made the assumption that the chlorinated contaminants detected in shallow groundwater emanates from off-site. Nevertheless, a limited number of soil samples will be obtained to verify this premise.

Seven soil borings are proposed to obtain samples in the unsaturated zone between the ground surface and the top of the shallow groundwater (anticipated at 10 feet below the ground surface or less). Soil samples will be obtained continuously throughout the unsaturated interval using a 2-foot long, split-spoon sampler. This will yield approximately as many as five soil samples per boring depending on the actual thickness of the unsaturated interval.

The sample selection criteria will be based on a combination of PID readings, visual observations, and the professional judgement of the Baker site manager.

The sample exhibiting the highest PID reading will be selected if no visibly contaminated samples are encountered. Conversely, the most visibly contaminated sample will be selected if encountered and the other soil samples obtained from the boring do not exhibit elevated PID readings. Therefore, in general, it is anticipated that only one sample per boring will be selected for laboratory analysis. The exception to this would be if a single boring yields one or more distinct visibly contaminated soil samples as well as one or more soil samples exhibiting elevated PID readings. In this case, two samples would be obtained from the boring to represent both the visibly contaminated and elevated PID reading conditions.

It is Baker's experience that this is an appropriate and acceptable means of screening soil samples for analysis and, in this case, is preferred in lieu of analyzing each sample retrieved from the unsaturated zone in several of the borings.

The text of Sections 3.1 (page 3-1) and 6.1 (page 6-1) have been modified appropriately.

**Attachment E**  
**USEPA Comments**  
**on the Draft Final Interim Remedial Action RI/FS**  
**Project Plans for Site 35 (Operable Unit 10)**

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(no EPA comments  
rectd.)