

**Baker**

**Baker Environmental, Inc.**  
Airport Office Park, Building 3  
420 Rouser Road  
Coraopolis, Pennsylvania 15108

June 23, 1994

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

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

Attn: Ms. Linda Berry, P.E.  
Navy Technical Representative  
Code 1823

Re: Contract N62470-89-D-4814  
Navy CLEAN, District III  
Contract Task Order (CTO) 0174  
Response to EPA and NC DEHNR Comments  
Draft Final FS and PRAP for Operable Unit No. 5  
MCB, Camp Lejeune, North Carolina

Dear Ms. Berry:

Baker Environmental, Inc. (Baker) has reviewed EPA and NC DEHNR comments regarding the Draft Final Feasibility Study (FS) Report and Proposed Remedial Action Plan (PRAP) for Operable Unit No. 5 at Marine Corps Base, Camp Lejeune, North Carolina. Responses to these comments are provided in Attachment A (EPA Comments) and Attachment B (NC DEHNR Comments). The comment letters are provided for convenience in Attachment C. The responses are included on the enclosed disc under the file name "dffbresp".

If you have any questions, or would like further information, please do not hesitate to contact me at (412) 269-2038 or Mr. Raymond P. Wattras (Activity Coordinator) at (412) 269-2016.

Sincerely,

BAKER ENVIRONMENTAL, INC.

  
Donald C. Shields  
Project Manager

DCS/jc  
Attachment

cc: Ms. Beth Hacie, Code 02145 (w/o attachments)  
Ms. Lee Anne Rapp, Code 183 (w/o attachments)  
Mr. Neal Paul



A Total Quality Corporation

**ATTACHMENT A**  
**RESPONSE TO COMMENTS SUBMITTED BY**  
**USEPA REGION IV ON THE**  
**DRAFT FINAL FS REPORT**  
**FOR OPERABLE UNIT 5 (SITE 2)**  
**MARINE CORPS BASE, CAMP LEJEUNE**

**I. Comment Letter Dated May 23, 1994**

**General Comments**

1. Due to the small size of the site, it was determined that an assumption regarding construction activities taking place year-round was unrealistic. Construction activities taking place 30 days per year was deemed more realistic.

Please note that this scenario includes a groundwater ingestion rate of 1 liter per day, which is extremely conservative.

The adult and child residential scenarios were presented in the RI in order to be conservative. Based on future use of the site as described in the Base Master Plan, the residential scenarios are highly unlikely. Also, due to low groundwater flow rates (1 to 2 gpm) in the shallow aquifer, it is unlikely that any residential development could utilize it as a source of potable water. The construction worker scenario results in a more realistic remediation goal.

**Specific Comments**

1. The construction worker pathway was derived based on the following assumptions:
  - ▶ Thirty days of construction activities on site per year
  - ▶ Construction worker would be exposed to groundwater in excavations
  - ▶ Ingestion rate of 1 liter per day

Please refer to the response to the General Comments.

2. Table 2-3 has been revised in response to this comment. The LHA for barium is 2,000 µg/L and the LHA for phenol is 4,000 µg/L.

## ATTACHMENT B

### RESPONSE TO COMMENTS SUBMITTED BY USEPA REGION IV ON THE DRAFT FINAL FS/PRAP REPORT FOR OPERABLE UNIT 5 (SITE 2) MARINE CORPS BASE, CAMP LEJEUNE

#### I. Comment Letter Dated May 20, 1994

##### Draft Final Feasibility Study

1. Table ES-2 has been revised in response to this comment. The groundwater remediation level for lead is 15.0 µg/L.
2. These values are based on analytical results of background (collected in areas not impacted by site operations). Samples were collected at MCB Camp Lejeune during this and previous investigations conducted by Baker (Section 4.2.1.2 of the RI Report).
3. The text has been revised in response to this comment. There is no quantitative analysis of uncertainties associated with RGOs provided in this report. The uncertainty analysis is qualitative.
4. TCE was not detected in the groundwater sample collected from this monitoring well during the second round of sampling. The text has been revised to reflect this. Reference to a "reasonable time period" has been deleted.
5. Based on the results of the June 6, 1994 meeting between NC DEHNR, USEPA and LANTDIV and subsequent discussions with NC DEHNR, the following monitoring program was agreed to:
  - Analysis:
    - ▶ VOCs
    - ▶ Barium (Total and Filtered)
    - ▶ Beryllium (Total and Filtered)
    - ▶ Cadmium (Total and Filtered)
    - ▶ Chromium (Total and Filtered)
    - ▶ Lead (Total and Filtered)

- ▶ Manganese (Total and Filtered)
- ▶ Total Suspended Solids
- ▶ Total Dissolved Solids

- Frequency:

- ▶ Years 1-2: Quarterly
- ▶ Years 3-5: Semiannually
- ▶ Years 6-30: Annually

6. Please refer to the response to Comment No. 5.
7. Please refer to the response to Comment No. 5.
8. The text has been revised in response to this comment.
9. The text has been revised in response to this comment. The sentence referring to aquifer drawdown associated with air sparging and soil venting has been deleted.
10. Inorganics were detected in groundwater samples collected from shallow monitoring wells at the site. Several of these analytes exceeded Federal and/or North Carolina groundwater quality standards. The distribution of detected inorganics in shallow groundwater followed no discernible spatial or temporal pattern that would indicate a likely source. The inorganics detected in groundwater samples at Site 2 may be due predominantly to the presence of soil particles entrained in the groundwater samples and may not be attributable to site operations. As such, the potential exists that inorganics detected in concentrations exceeding Federal and/or North Carolina groundwater quality standards during one round of sampling, may not be detected at these concentrations during subsequent rounds of sampling.

#### **Draft Final Proposed Remedial Action Plan**

11. The text has been revised in response to this comment. Long-term monitoring will help to prevent groundwater contaminant migration toward Overs Creek. If groundwater contaminants are observed to be migrating toward Overs Creek, additional remedial steps may be implemented.
12. The text has been revised in response to this comment. There will be no risks in the unacceptable range associated with this media.

**Attachment C**  
**EPA and NC DEHNR Comments on the**  
**Draft Final FS and PRAP for Operable Unit No. 5**  
**MCB Camp Lejeune, North Carolina**

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

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

May 23, 1994

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

4WD-FFB

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

SUBJ: MCB Camp Lejeune - OU5  
Draft Final Remedial Investigation Report

Dear Ms. Berry:

The Environmental Protection Agency (EPA) has completed its review of the above listed document. Comments are enclosed from the human health review. These comments were not included in the letter dated May 19, 1994.

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*  
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	DONSHIELDS		
From	LINDA BERRY		
Co.			
Dept.			
Fax #			

### General Comments

The primary concern with the current document is regarding the selection of remediation levels for groundwater based on a scenario of a construction worker who ingests the groundwater for a total of only 30 days. This approach is inconsistent with that used to derive the MCL/NCWQS values (assumption of ingestion for 365 days per year for 70 years). Additionally, the one-month construction worker exposure to groundwater was not presented as a potential scenario in the baseline risk assessment (OU #5 Remedial Investigation (RI)). It seems logical that if residential consumption is enough of a possibility to apply the Federal and State drinking water standards, the risk-based values should be based on similar assumptions.

### Specific Comments

1. Section 2.1.6, pgs 2-8, 2-9; Tables 2-8, 2-9, ES-1.  
From where is the construction worker ingestion of groundwater pathway derived? The baseline risk assessment (RI for OU #5) only evaluated potential residential ingestion of groundwater. Residential assumption-based remediation levels are consistent with the drinking water standards (Federal and State).
2. Table 2-3.  
The Lifetime Health Advisory (LHA) value for barium is 2000 ug/L. The LHA value for phenol is 4000 ug/L.

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



May 20, 1994

Commander, Atlantic Division  
Naval Facilities Engineering Command  
Code 1823-1

Attention: MCB Camp Lejeune, RPM  
Ms. Linda Berry, P. E.  
Norfolk, Virginia 23511-6287

Commanding General

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

RE: Draft Final Feasibility Study, Draft Final Proposed  
Remedial Action Plan and Draft Final Record of  
Decision for Operable Unit #5 (site 2)

Dear Ms. Berry:

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

North Carolina Superfund Comments  
Camp Lejeune MCB Operable Unit 5  
Draft Final Feasibility Study  
Draft Final Proposed Remedial Action Plan  
Draft Final Record of Decision

Draft Final Feasibility Study

1. Page ES-8, Table ES-2  
This table indicates that the groundwater remediation level for lead is 15.5  $\mu\text{g/L}$ . The Federal MCL and North Carolina groundwater standard for lead is 15.0  $\mu\text{g/L}$ .
2. Page 1-17 to 1-23, Tables 1-2, 1-4, 1-6, 1-8  
These tables include a column for Base-Specific Background. The text does not provide any information on how this concentration range was established. This comment was also noted with regard to the Draft Remedial Investigation Report for OU 5.
3. Page 2-9, Section 2.1.7  
This section is concerned with the uncertainties associated with the RGO calculations yet it provides only a general discussion of the types of uncertainties associated with calculating risk based RGOs. There is no quantitative uncertainty analysis provided in this section or in Appendix B (RGO Calculations) to assess the accuracy of the input values.
4. Page 2-11, Section 2.3  
This section states that the TCE level seen in well 2GW3D would be expected to decrease to potable levels within a reasonable time period through natural dispersion. Please indicate what characteristics of the site support this expectation and define what is meant by a reasonable time period.
5. Page 4-2, Section 4.1.2  
This section indicates that the groundwater monitoring program associated with RAA No. 2 includes only TCL volatiles as the analytical requirements. Since there are elevated metals in the groundwater which will probably be part of a requested state variance it would be appropriate to include metals as part of the groundwater monitoring program.
6. Page 5-4, Section 5.1.2  
This section states that the analytical requirements for the long-term groundwater monitoring required under RAA No. 2 would be TCL volatile organics and TAL inorganics. This is appropriate but is not consistent with the analytical requirements indicated in Section 4.1.2 (Page 4-2). See also comment number 5.

7. Page 5-7, Section 5.1.3  
The analytical requirements for RAA No. 3 should include TAL inorganics. See also comments 5 and 6.
8. Page 5-17, Section 5.1.6  
The third and fourth sentences of the "Compliance with ARARs" paragraph needs to be revised for clarity.
9. Page 5-18, Section 5.1.6  
The paragraph on "Short-Term Effectiveness" incorrectly indicates that aquifer drawdown is a potential environmental impact of the air sparging and soil venting remedial action alternative (RAA No. 6).
10. Page 5-19, Section 5.2.2  
This section indicates that RAA Nos. 1 and 2 will "potentially" exceed Federal and State ARARs. It is incorrect to indicate this as a "potential" given that Federal and State ARARs have already been exceeded for this site and that RAA Nos. 1 and 2 would allow the continued contamination of groundwater.

#### Draft Final Proposed Remedial Action Plan

11. Page 10  
The last bullet on the page indicates in part that the groundwater remedial alternative will help to mitigate future contamination of Overs Creek. While it is conceivable that the Time Critical Removal Action will help Overs Creek it is unclear how the proposed limited action groundwater alternative will help Overs Creek other than from a monitoring perspective.
12. Page 13  
The last paragraph on this page indicates that after the TCRA there will be no risks associated with soil, sediment or surface water at OU 5. It is inappropriate to state that there are no risks associated with a site regardless of the degree of corrective or remedial action taken.

#### Draft Final Record of Decision

13. General  
The NC State regulations for Hazardous and Solid Waste (15A NCAC 13A and 13B respectively) should be included as ARARs.