DEPARTMENT OF THE NAVY
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28 AUG 2002

From: Commanding Officer, Navy Environmental Health Center
To: Commanding Officer, Atlantic Division, Naval Facilities Engineering Command (Kirk Stevens), 1510 Gilbert Street, Norfolk, VA 23511-2699

Subj: MEDICAL REVIEW OF DRAFT AMENDED REMEDIAL INVESTIGATION OPERABLE UNIT NO. 20, SITE 86, TANK AREA AS419-AS421, MARINE CORPS BASE CAMP LEJEUNE, CAMP LEJEUNE, NC

Ref: (a) Baker Environmental, Inc. Letter of Transmittal S.O. No. 26007-191-0000-SRN of 03 Jun 02

1. Per reference (a), we have completed a review of the subject document and forward our comments to you as enclosure (1).

2. Please complete and return enclosure (2) as your comments are needed to continually improve our services to you.

3. We are available to discuss the enclosed information by telephone with you and, if you desire, with you and your contractor. If you require additional assistance, please call Mr. Kenneth Gene Astley at (757) 953-0937 or Mr. David McConaughy at (757) 953-0942. The DSN prefix is 377. The e-mail addresses are: astleyg@nehc.med.navy.mil and mcconaughyd@nehc.med.navy.mil.

P. B. GILLOOLY
By direction

Copy to: (w/o Encl (2))
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MCB Camp Lejeune (ACS EMD/IRP, Tom Morris)

NAVY ENVIRONMENTAL HEALTH CENTER
ENVIRONMENTAL PROGRAMS DIRECTORATE

Remedial Investigation Review

Location: Jacksonville, North Carolina

Command: Marine Corp Base Camp Lejeune

Work Description: Remedial Investigation

Document Date: May 2002

Contract No/Delivery Order No: N62470-95-D-6007/0191

EP Document No: 4381

Prepared for: LANTNAVFACENGCOM

Prepared by: CHM2 Hill Inc., Baker Environmental, Inc. and CDM Federal Programs Corporation

Date Received: 5 June 2002

Reviewed by:
Kenneth Gene Astley, (757) 953-0937, astleyg@nehc.med.navy.mil, DSN 377

Enclosure (1)

MEDICAL REVIEW OF
DRAFT AMEDNDED REMEDIAL INVESTIGATION
OPERABLE UNIT NO. 20 SITE 86 - TANK AREA AS419- AS421
MARINE CORPS BASE CAMP LEJEUNE, NORTH CAROLINA

Ref: (a) Risk Assessment Guidance for Superfund, Vol. 1, Part A: Human Health Evaluation Manual, Dec 1989 (EPA540/1-89/002)
(b) Navy Interim Final Policy on the Use of Background Chemical Levels, Ser N453E/OU59690, 18 Sep 2000

General Comments:

1. The document entitled "Draft Amended Remedial Investigation Operable Unit No. 20 Site 86 Marine Corps Base Camp Lejeune, North Carolina," was provided to the Navy Environmental Health Center (NAVENVIRHLTHCEN) for review on 5 June 2002. CHM2 Hill Inc., Baker Environmental, Inc. and CDM Federal Programs Corporation prepared the report for the Atlantic Division, Naval Facilities Engineering Command.

2. This document is too conservative in many of its assumptions. For example, the text states on Page 6-4 that "Groundwater is currently not utilized as a potable source at the site. .... However, there remains the possibility that upon **closure** of this facility, residential housing or industrial/commercial buildings could be constructed, and groundwater at Site 86 could be used for potable purposes in the future. Therefore, in accordance with USEPA guidance, groundwater exposure was conservatively evaluated for future residential receptors." The text also states on Page 6-13 that "MCB Camp Lejeune operates as a Marine Corps base. It is assumed that long-term plans for the facility are the same as the present plan, with land use also generally the same as at present."

Review Comments and Recommendations:

1. Table 1-2, "Summary of LTM Analytical Results"
Page 6-18, Section 6.3.4, "Data Analysis"

Comment: The qualifier "ND" is found throughout Table 1-2 but is not defined. If this qualifier is being used to report non-detected results, reference (a) requires these non-detects to be reported by using the Sample Quantitation Limits (SQLs) vice ND. The text states on Page 6-18 that, when reporting a "nondetect," a value of one half of the sample-specific detection limit was used to calculate the 95%UCL. The value of one half the sample-specific detection limit should be included in Table 1-2 instead of "ND." The numerical unit of the sampling results was not included in Table 1-2.

Recommendation: Define the qualifier "ND" as used in Table 1-2. If the chemicals have not been detected, designate these chemicals as one half of the sample-specific detection limit. The numerical unit of the sampling results should be included in Table 1-2.

2. Page 1-3, Section 1.4, "Site Description and History"
Page 1-9, Section 1.5.3.2, "Risk Assessments"

Comments:

a. The text states on Page 1-3 that the past industrial activity conducted at Site 86 was a storage area for petroleum products. The text reports no industrial activity presently at the site. However, there is the possibility of recreational trespassers.

b. The text states on Page 1-9 that "Future residential development of the site is unlikely since the site is located in a highly industrialized area near the airfield. Based on this information, the future groundwater exposure scenario evaluated in the baseline risk assessment (BRA), although highly protective of human health, is unlikely to occur." The text does not confirm whether or not there are plans to develop the site. If there are no plans to develop the site for future industrial use, we suggest developing remedial goals using the trespasser, recreational and maintenance worker scenarios, not the industrial/commercial. If the site is to be used as a "remote" commercial/industrial site, or only maintenance workers will be exposed to the site, the remedial goals (and risk assessment) should reflect the appropriate amount of time that will actually be spent on location.

Recommendation: Ensure the remediation goals, are representative of anticipated future land use.

3. Page 6-7, Section 6.2.3, "Criteria for Selecting Chemicals of Potential Concern"
Page 1-10, Section 1.5.3.2, "Risk Assessments"

Comments:

a. The text states on Page 6-7 that "....Generally, a comparison to naturally-occurring levels applies only to inorganic analytes, because the majority of organic chemicals are not naturally occurring." The text also states on Page 6-7 that "If the maximum detected concentration of an inorganic was less than two times the base-wide average concentration, it was not retained as a COPC."

b. The text states on Page 1-10 that "There is no record of any historical use of iron at Site 86. Consequently, it is assumed that iron is a naturally occurring inorganic in groundwater, and its presence is not attributable to site operations. As a result, the potential human health risk from exposure to iron in groundwater may be a conservative and unrealistic estimate." The text states on Page 6-7 that "Although iron is considered an essential nutrient, it is evaluated quantitatively in this RA [risk assessment] since toxicity criteria are available for this analyte."

c. Reference (b) states that both naturally occurring and **anthropogenic** chemicals that are present at levels below background should be eliminated from consideration in the risk assessment.

d. The text provides no evidence if the sampled pesticides and semi-volatile organic compounds were used at the site. The text does not state that background sampling information was compared to site sampling data for potentially anthropogenic chemicals.

Recommendations:

a. Iron should be eliminated from the human health risk assessment due to the fact there is no history of its use at the site and because it is an essential nutrient.

b. If the sampled pesticides and semi-volatile organic compounds were not used at the site, or if the background survey for this site found that pesticides, semi-volatile organic chemicals and inorganics are present at levels below background, then they should be eliminated from consideration in the risk assessment. The Navy policy for conducting a background evaluation is located on the Navy Risk Assessment Web Site. You may access the web site by going to http://www.nehc.med.navy.mil/ep/index.htm and clicking on "Navy Guidance for Conducting Human Health Risk Assessment" located at the bottom of the page. The Navy Policy link is located on the left side of the guidance home page.

FROM: _____
(YOUR NAME/COMMAND)
TO: NAVENVIRHLTHCEN, ENVIRONMENTAL PROGRAMS
FAX: COM: (757) 444-7261/DSN: 564-7261

MEDICAL/HEALTH COMMENTS - YOUR VIEW

Please help us improve our review process by indicating the extent to which you agree or disagree with the comments we provided your activity.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. "Value added" to IR/BRAC process?	1	2	3	4	5
2. Received in a timely manner?	1	2	3	4	5
3. High level of technical expertise?	1	2	3	4	5
4. Very useful to the RPM?	1	2	3	4	5
5. Contractor incorporated comments?	1	2	3	4	5
6. Easily readable/useful format?	1	2	3	4	5
7. Overall review was of high quality?	1	2	3	4	5
8. NAVENVIRHLTHCEN was easily accessible?	1	2	3	4	5
9. NAVENVIRHLTHCEN input during scoping or workplan development would be "value added"?	1	2	3	4	5
10. Added involvement in IR/BRAC document needed?	1	2	3	4	5

Please return by fax using the box provided at the top of this page. If you have any other comments, please list them below or telephone Mr. David McConaughy, Industrial Hygienist at (757) 462-5557, DSN 253, at any time to discuss your viewpoint. As our customer, your comments and suggestions on how we can improve our services to you are important!