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DEPARTMENT OF THE NAVY
NAVY ENVIRONMENTAL HEALTH CENTER
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31 JUL 1995

From: Commanding Officer, Navy Environmental Health Center
To: Commanding Officer, Atlantic Division, Naval Facilities Engineering Command, ATTN: Katherine Landman, 1510 Gilbert Street, Norfolk, VA 23511-2699

Subj: MEDICAL REVIEW OF INSTALLATION RESTORATION PROGRAM DOCUMENTS FOR MARINE CORPS BASE, CAMP LEJEUNE, NC

Ref: (a) Baker Environmental, Inc. transmittal ltr of 10 May 95

Encl: (1) Medical Review of Remedial Investigation/Feasibility Study Project Plans for Operable Unit No. 13 (Site 63), Marine Corps Base, Camp Lejeune, North Carolina
(2) Medical/Health Comments Survey

1. As you requested in reference (a), we completed a medical review of the "Medical Review of Remedial Investigation/ Feasibility Study Project Plans for Operable Unit No. 13 (Site 63), Marine Corps Base, Camp Lejeune, North Carolina." The attached comments are included for your information as enclosure (1).

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

3. The points of contact for this review are Mr. Kenneth G. Astley and Mr. David McConaughy, Health Risk Assessment Department, Environmental Programs. If you would like to discuss this medical review or if you desire further technical assistance, please call them at (804) 444-7575 or DSN 564-7575, extensions 377 and 434, respectively.

A. F. JONES
By direction

MEDICAL REVIEW OF SITE 63 PROJECT PLANS DOCUMENT

Ref: (a) Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA, October 1988 (EPA/540/G-89/004)
(b) Risk Assessment Guidance for Superfund, Vol. 1, Part A: Human Health Evaluation Manual, Dec 1989 (EPA 540/1-89/002)

General Comments:

1. The draft document entitled "Remedial Investigation/Feasibility Study Project Plans for Operable Unit No.13 (Site 63), Marine Corps Base, Camp Lejeune, North Carolina," dated May 1995 was provided to the Navy Environmental Health Center for review on 16 May 1995. The report was prepared for Atlantic Division, Naval Facilities Engineering Command by Baker Environmental, Inc.

2. Information contained in the plans was sometimes contradictory. For example, the Field Sampling and Analysis Plan holding times documented in Appendix N were incorrect, however the correct values were documented in Tables 6-1 and 6-2 of the Quality Assurance Project Plan.

Review Comments and Recommendations:

REMEDIAL INVESTIGATION/FEASIBILITY STUDY WORK PLAN

1. Page 2-11, Section 2.2.5, "Previous Investigations"

Comment: Reference (a), Page 2-7, Section 2.2.2.1 states "Existing data should be used to develop a site description, which should include location, ownership, topography, geology, land use, waste type, estimates of waste volume, and other pertinent details." Section 2.2.5 of the text states that an Initial Assessment Study (IAS) was conducted in 1983. The IAS concluded that no hazardous wastes were involved and only bivouac wastes generated during "war games" were disposed at the site. The text does not state whether the analysis of data generated during the Site Investigation (SI) conducted in 1991 determined if an estimate of waste volume was necessary.

Recommendation: An estimate of hazardous waste volume should be made if the 1991 SI indicates that it is necessary.

2. Page 2-11, Section 2.2.5.1, "Soil Investigation"
Page 4-1, Section 4.1.2.1, "Sampling Locations"
Page 6-1, Section 6.1, "Soil Sample Collection"

Comments:

(a) The text on Page 2-11 indicates that "Soil samples from two depths, zero to two feet below ground surface (bgs) and from just above the top of groundwater were collected from each borehole." The text states on Page 4-1 that "Two soil samples from each boring will be submitted for chemical analysis. These samples will be collected from the surface (0 to 1 foot) and just above the water table." The text states on Page 6-1 that "The surface sample from each boring (0 to 1 foot) will be collected by hand."

(b) Reference (b) defines surface soil samples as samples taken from depths of zero to six inches. The *ATSDR Public Health Guidance Manual* (1994) (Agency for toxic Substances and Disease Registry) defines "surface soil" samples as soil samples taken from depths of zero to three inches, and "subsurface soil" samples are defined as samples taken at depths greater than three inches.

Recommendation: We are encouraging the adoption of "zero to three inches" as the norm for surface soil sample collection for any future site soil sampling investigation and/or monitoring efforts that may be undertaken. The adoption of this sampling protocol will not be in controversy with current Environmental Protection Agency guidance since reference (b), Page 4-12, does direct that surface soil samples should be collected "from the shallowest depth that can be practically obtained" to accurately reflect potential surface soil exposure pathways.

3. Page 2-12, Section 2.2.5.2, "Groundwater Investigation"
Table 2-4, "Nature And Extent Of Groundwater Contamination"

Comment: The text states on Page 2-12 that 100,000 micrograms per liter (ug/l) of iron was detected. Table 2-4 indicates that 10,000 ug/l of iron was detected.

Recommendation: The statements in Section 2.2.5.2 and Table 2-4 are inconsistent and should be revised.

4. Page 3-1, Section 3.0, "Data Quality And Sampling Objectives"

Comment: Reference (a), Page B-1, Appendix B, "Elements of a Work Plan" states that "The conceptual site model developed during scoping is presented, describing the potential migration and exposure pathways and the preliminary assessment of human health and environmental impacts." A conceptual site model was not addressed in the text.

Recommendation: A conceptual site mode should be included in the text.

5. Page 4-7, Section 4.6.1.4, "Exposure Assessment"

Comment: The subsection entitled "Identification of Potentially Exposed Human Populations" states "Human population, that may be potentially exposed to chemicals at the MCB Camp Lejeune, include base personnel and their families, base visitors, and on-site workers and recreational fishermen." However, visitors, workers, and recreational fishers were not listed as potential (present or future) receptors in the subsection entitled "Identification of Potential Exposure Scenarios Under Current and Future Land Uses."

Recommendation: If a population has been removed from the list of populations potentially exposed due to an incomplete exposure pathway adequate justification should be provided. Otherwise, all potentially exposed human populations should be considered in Section 4.6.1.4, Subsection entitled, "Identification of Potential Exposure Scenarios Under Current and Future Land Uses."

FIELD SAMPLING AND ANALYSIS PLAN

1. Page 4-3, Section 4.2, "QA/QC Samples"
   Page 4-4, Section 4.2, "QA/QC Samples"
   Page 10-2, Table 10.1, "QA/QC Sample Frequency"
   Page 10-4, Table 10-2, "QC Analysis Frequency"

   Comments:

   (a) Table 10-1 on Page 10-2 contains infomation on trip blanks not found on Page 4-3.

   (b) Table 10-2 on Page 10-4 contains information on matrix spike/matrix spike duplicates not found on Page 4-4.

   Recommendation: Tables 10-1 and 10-2 and the text on Pages 4-3 and 4-4 should be updated to conform with each other.

2. Figure 4-1, "Proposed Soil Investigation"
   Figure 4-2, "Proposed Groundwater Investigation"
   Figure 4-3, "Proposed Surface water/Sediment Investigation"

   Comment: The background sampling locations are not indicated on the site maps represented in the figures.

   Recommendation: Indicate background sampling locations on the site maps.

3. Appendix N, Attachment A, "Summary of Containers, Preservation, and Holding Times For Aqueous Samples"
   Quality Assurance Project Plan, Page 6-2, Table 6-1, "Summary of Containers, Preservation, and Holding Times For Aqueous Samples"
   Quality Assurance Project Plan, Page 6-3, Table 6-2, "Summary of Containers, Preservation, and Holding Times For Solid Samples"

Comment: Some of the information given in Tables 6-1 and 6-2 for sample holding times conflicts with infomation given in Attachment A. For example, Appendix N states that semivolatile organic compounds should be extracted within 5 days. Table 6-1 states that the compounds should be extracted within 7 days.

Recommendation: The information given in Tables 6-1 and 6-2 on sample holding times should be used to update infomation in Attachment A.

QUALITY ASSURANCE PROJECT PLAN

1. Page ii, "Table of Contents"

Comments:

(a) Reference (a), Page B-4, "Elements of a Quality Assurance Project Plan" states that at the bottom of the title page, provisions should be made for the signatures of approving personnel. A title page was not included with the document.

(b) Reference (a), Page B-5, "Elements of a Quality Assurance Project Plan" states that the end of the table of contents should include a list of the recipients of official copies of the Quality Assurance Project Plan. The end of the table of contents did not include a list of recipients of official copies.

Recommendation: A title page should be included with the Quality Assurance Project Plan which includes provision at the bottom for the signatures of approving personnel. The end of the table of contents should include a list of the recipients of official copies.

FROM: _____
(YOUR NAME/COMMAND)

TO: NAVENVIRHLTHCEN, ENVIRONMENTAL PROGRAMS

FAX: COM: (804) 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 about the comments we provided for to 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 call Mr. David McConaughy, Health/Risk Assessment Department, at (804) 444-7575, or DSN 564, extension 434, at any time to discuss your viewpoint. As our customer, your comments and suggestions of how we can improve our services to you are important!