

**Baker**

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

August 10, 1995

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

Commander  
Atlantic Division  
Naval Facilities Engineering Command  
1510 Gilbert Street (Building N-26)  
Washington, D.C. 23511-2699

Attn: Ms. Katherine Landman  
Code 18232

Re: Contract N62470-89-D-4814  
Navy CLEAN, District III  
Contract Task Order (CTO) 0304  
Response to Comments  
to the Draft RI/FS Project Plans for  
Operable Unit No. 13 (Site 63)  
MCB, Camp Lejeune, North Carolina

Dear Ms. Landman:

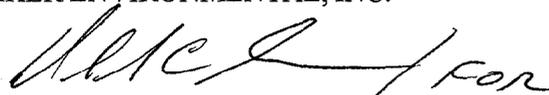
Baker Environmental, Inc. (Baker) has reviewed the comments from LANTDIV, MCB Camp Lejeune, USEPA, NC DEHNR and NEHC regarding the Draft Remedial Investigation/Feasibility Study (RI/FS) Project Plans for the above-referenced CTO. Responses to the comments are provided in Attachment A. Comment letters are provided in Attachment B. All of the responses are included in WordPerfect 5.0 format on the enclosed disc under the file name "RESPONSE".

Due to the limited nature of comments, Baker is planning on submitting a final version of these plans on or before September 8, 1995.

If you have any questions, please do not hesitate to contact me at (412) 269-2053.

Sincerely,

BAKER ENVIRONMENTAL, INC.



Matthew D. Bartman  
Project Manager

MDB/lq

cc: Mr. Neal Paul, MCB Camp Lejeune (w/o enclosure)  
Ms. Beth Collier, Code 02115 (w/o enclosure)  
Ms. Lee Anne Rapp, Code 18312 (w/o enclosure)



A Total Quality Corporation

**Attachment A**

**Response to Comments submitted by LANTDIV  
on the Draft RI/FS Project Plans for CTO-304  
Operable Unit No. 13 (Site 63)  
MCB Camp Lejeune, North Carolina**

**Comment letter by Ms. Katherine Landman dated July 10, 1995**

**General Comment**

The northeastern most well will be relocated south, and will be situated between 63MW02 and the stream (Figure 4-1).

**WORK PLAN**

1. The last sentence in the first paragraph of Section 1.0, page 1-1 will read, "... appropriate CERCLA response and RCRA corrective action alternatives...".
2. The term ARARs in the second bullet item (page 1-2, Section 1.2) will be qualified with the word "potential".
3. The last paragraph in Section 2.1.3, page 2-4 will read, "Baker conducted a site investigation (SI) at Site 63 under the direction of Atlantic Division, Naval Facilities Engineering Command (LANTDIV). The final SI report (Baker, 1994) presents the results of this investigation."
4. The last sentence in Section 1.2.4, page 2-4 will read, "... (FEMA National Flood Insurance Program)...".
5. The last sentence in the second paragraph in Section 2.1.6, page 2-5 will read, "This aquifer is not used for water supply at MCB Camp Lejeune."
6. The first sentence in the seventh paragraph in Section 2.1.6, page 2-5 will read, "The data compiled by Cardinell et al. indicate that the vertical hydraulic conductivity of the confining unit ranged from 0.0014 to 0.41 feet/day."
7. The last sentence of the first paragraph on page 2-6 will read, "Chloride was measured at 960 mg/L in a single sample collected in 1989."
8. The sixth line of the second paragraph in Section 2.1.6, page 2-6 will read, "...a relatively small amount infiltrates to the Castle Hayne...".
9. The last sentence in the third paragraph in Section 2.1.6, page 2-6 will read, "Therefore, the potentiometric surface is...".
10. The last sentence in the second paragraph of Section 2.1.7, page 2-6 will read, "...meet at the New River Inlet."
11. The last sentence of the second paragraph in Section 2.1.10, page 2-8 will read, "...the land use areas for Site 63."

12. A survey of wells within a one mile radius will be performed, and the last paragraph in Section 2.1.11 will be revised accordingly.
13. The second paragraph of Section 2.2.5, page 2-11 will be revised. That paragraph will read, "...the field investigation in July and August of 1991. The final report was issued on January 31, 1994.
14. The first bullet item in Section 2.2.5.1, page 2-11 will read, "...detected in the surface soil collected from soil boring 63SB03."
15. Tables 2-3 through 2-6 will include applicable North Carolina and Federal standards. Additionally, a paragraph will be added after the second bullet item in Section 2.2.5.3, page 2-12. This paragraph will read, "If sediment contaminant concentrations are above the ER-M, adverse effects on the biota are considered probable. If contaminant concentrations are between the ER-L and the ER-M, adverse effects are considered possible, and USEPA recommends conducting sediment toxicity tests as a follow-up. If contaminant concentrations are below the ER-L, adverse effects are considered unlikely. The results above fall between the ER-M and the ER-L, thus follow-up study is recommended. However, the data from this proposed RI/FS will be the basis for determining if a follow-up study is required.
16. Refer to the general comment response regarding well locations. An additional bullet item will be added between the third and fourth existing bullet items, page 4-2, Groundwater Investigation. The new bullet item will read, "The temporary wells will be installed by a GeoProbe rig and will not be developed because; 1) no sand filter pack will be placed around the well screen, 2) compared to augering, direct push methods results in less soil disturbance to the aquifer, and 3) drilling mud or water will not be introduced into the well boring."
17. The last sentence of the first bullet item on page 4-3 (Section 4.3.1) will be deleted. The third bullet item on the same page will remain.
18. The first sentence of the second full paragraph on page 4-8 (Section 4.6.1.4.) will read, "The upper 95 percent confidence limits...".
19. The NTR will be changed in the first paragraph in Section 5.0, page 5-1 and Figure 5-1 to be Katherine Landman.
20. Figure 2-1 will be updated to show all areas presented in Table 2-2. Also, the Camp Geiger area reference on Table 2-2 and Section 2.1.10.1, page 2-9 will include the MCAS. Courthouse Bay will not be boldface.
21. The grain size and TOC data for the stream samples will be evaluated in the ecological risk assessment. The trench will not be included in the ecological risk assessment because it is not connected to a stream and probably does not support an aquatic environment..
22. Refer to the response for comment 20.

## **FIELD SAMPLING & ANALYSIS PLAN**

1. Section 4.1 heading in the Table of Contents will read, "...Operable Unit No. 13 (Site 63) - Verona Loop Dump".

List of Appendices, Appendix E will read, "...Decontamination of Sampling and Monitoring Equipment".

2. The first paragraph in Section 1.0, page 1-1 will read, "...Verona Loop Dump...".

The term NEESA, beginning in the fifth line of the second paragraph on the same page, will be changed to "Naval Facilities Engineering Service Center (NFESC)".

3. References to dissolved metals in Section 5.0 will be removed.

## **QAPP**

1. The Table of Contents will be revised to indicate that the Introduction is on page 1-1, not 1-3. Additionally, Section 8.2 will be added to the Table of Contents. Also, table headings for Table 10-1 and 10-2 in the Table of Contents will be reversed.

## **HASP**

1. The word "subsurface" was changed to "surface" soil samples in Section 3.2.1 according to the LANTDIV comment.
2. The text of Section 3.2.3 of the Final HASP was rewritten to include changes occurring in the Work Plan in accordance with the LANTDIV comment.

**RESPONSE TO COMMENTS SUBMITTED BY USEPA  
ON THE DRAFT RI/FS PROJECT PLANS FOR CTO-304  
OPERABLE UNIT NO. 13 (SITE 63)  
MCB CAMP LEJEUNE, NORTH CAROLINA**

**Comment letter by Ms. Gena Townsend dated July 5, 1995**

**General Comments**

1. A new appendix will be added to the FSAP that will provide a seven point justification of the "screen and casing material. This appendix will be "Appendix B".

Post-It™ brand fax transmittal memo 7671 # of pages ▶ 34

To	GENA TOWNSEND	From	KATE LANDMAN
Co.	EPA REGION IV	Co.	CANTON
Dept.		Phone #	804 322 4818
Fax #	404 347 0076	Fax #	4805

d in July of 1991 and January of 1995  
ing that the area west of the unpaved  
reference in Section 4.1.3.1, page 4-2  
the unpaved road will be changed to  
Continued static groundwater level

3. Section 4.3.2 of the Work Plan and [redacted] of the FSAP will be changed to reflect that soil cuttings will be containerized. A composite sample will be collected and analyzed for RCRA hazardous waste characteristics, PCBs, and TCLP constituents. Proper disposal will be based on these analytical results.
4. The groundwater investigation will be phased, as necessary. Additional temporary wells, including intermediate (and deep), will be placed if the analytical data of groundwater samples from the upper portion of the surficial aquifer indicate that contamination is present. Sections 4.3.1 (Work Plan) and 4.1.3.1 (FSAP) will be revised to reflect that.
5. One additional temporary well will be placed southwest of the site boundary, in close proximity to Verona Road (Figure 4-1). The Work Plan and the FSAP will be revised accordingly.
6. Section 4.3.1, page 4-2 of the Work Plan will be modified to provide an explanation why the temporary wells will not be developed. An additional bullet item will be added between the third and fourth existing bullet items. The new bullet item will read, "The temporary wells will be installed by a GeoProbe rig and will not be developed because; 1) no sand filter pack will be placed around the well screen, 2) compared to augering, direct push methods result in less soil disturbance to the aquifer, 3) drilling mud or water will not be introduced into the well boring."
7. The Verona Road drainage ditch will not be sampled because potential contamination from the roadway (eg. PAHs and lead ) would preclude an accurate and fair assessment of contamination attributable to Site 63.
8. Pesticide-grade isopropanol will be used as a rinsing solvent. The SOP provided as Appendix E will be revised for these project plans to reflect the difference in rinsing solvents between the EPA regions. Additionally, the SOP will be revised for future RI/FS project plans to expand the discussion of Region IV's SOPs.
9. An initial table of contents will be provided.

### **General Comments - FSAP**

1. Section 6.6, page 6-6 will be revised to provide approximate dimensions of the stream and sampling locations.
2. Section 6.4.3, Page 6-4 will be revised to comply with the EPA SOPQAM. A minimum of three well volumes will be purged from each well prior to sampling.

The studies referenced in the FSAP may not be sanctioned by the ECB, however, the Puls and Paul, and the Puls and Powell studies were conducted by the USEPA R.S. Kerr Environmental Research Laboratory. Additionally, the 1992 Draft USEPA RCRA Groundwater TEGD established low-flow purge and sampling guidance based on studies conducted by Puls, Powell, and Barcelona, among others. It has been demonstrated that purge volumes are independent of well depth and casing volume. Additionally, rules of thumb applied to purge volume requirements (e.g., three to five well volumes) do not necessarily yield representative samples. Stabilization of certain indicator parameters at fixed pumping rates may provide consistent results (Barcelona, Wehrmann, and Varljen, 1994). These studies have shown that water quality parameter (WQP) stabilization was a reasonable predictor of contaminant concentration stabilization. Generally, the contaminant concentrations stabilized before the WQPs.

### **General Comments - QAPP**

1. The format for Table 8-1 will be modified in the next version of the project plans. The modification will enable the table to be more uniform by dividing up the compound list based on method of analysis. Corrections to the table (i.e., concentration units) have been noted and will be corrected in the next version.
2. The definition of a duplicate sample will be modified to be consistent with EPA SOPQAM. References to split samples will be removed from the text.

### **Specific Comments - Work Plan**

1. A paragraph will be added to Section 2.1.1, page 2-2, between the second and third paragraphs. It will read, "Site 63 does not lie in close proximity to any developed areas within Camp Lejeune. The closest developed area is Camp Geiger/Air Station, located approximately 2.5 miles to the north, on the opposite bank of Hicks Run Creek. Figure 2-1 shows the spacial relationship between Site 63 and the developed areas within Camp Lejeune."
2. The title of Section 2.1.2 on page 2-3 will be revised to read, "History and Mission of Camp Lejeune".
3. The supply well search distance was expanded to a one mile radius. No supply wells were found within that radius. The last paragraph in Section 2.1.11 will be revised to read, "...there are no supply wells located within a one mile radius of Site 63.
4. Section 2.2.3, page 2-10 will be revised to provide examples of bivouac wastes ("Meals-Ready-to-Eat packaging and shell casings"). A clearer definition is not possible because the historical documents reviewed do not define bivouac wastes.

5. The first sentence of the first paragraph of Section 2.2.5.1, page 2-11 will be revised to read, "Six (6) soil borings were drilled on site and advanced to the water table (See Figure 4-1)."

**Specific Comments - QAPP**

1. The additional items (i.e., preservation and analysis) will be added to the list of label requirements in the next version of the QAPP.
2. The concentration units on Table 8-1 (now Tables 8-1 through 8-4) will be corrected in the next version of the QAPP. The Contract Laboratory Program Statement of Work (CLP/SOW) does not provide specific analytical reference numbers. The SOW itself is the method of reference.
3. The format of Table 8-1 will be revised to provide the information for each analysis as a separate table (Tables 8-1 through 8-4). Footnotes will be specific for each table.
4. The concentration units will be corrected and a separate table for TCLP constituents will be generated.
5. The second sentence of this paragraph states "Trip blanks are initiated in the laboratory prior to the shipping of sample packs". Additionally, it is stated that trip blanks accompany the samples through shipment to the sample site. No action will be taken on this comment.
6. The definition of a duplicate sample will be modified to be consistent with EPA SOPQAM. References to split samples will be removed from the text.

**Response to Comments submitted by the Navy Environmental Health Center  
on the Draft RI/FS Health and Safety Plan for CTO-0304  
Operable Unit No. 13 (Site 63)  
MCB Camp Lejeune, North Carolina**

Comment letter by Ms. Mary Ann Simmons dated June 30, 1995

**Specific Comments**

1. The text referencing the tables has been modified globally throughout the HASP to indicate the "Tables" tab can be found at the end of the HASP. This text includes referencing three tables, Tables 3-1, 8-1, and 10-1.
2. No tasks involved with this project are anticipated to require a third person to be in the support zone for observation or rescue, therefore, the statement regarding "potentially high hazard activities" is an unlikely event and has been deleted from the text of the Final HASP.
3. Although past experience performing similar type of work has not generated any dust levels of concern, a Miniram will be included in the text in Section 5.0 and be available on site in the event dust is generated during intrusive soil activities.
4. Baker is using real-time air monitoring equipment (Photo-ionizing detector and Miniram) and calibrating it according to manufacturer's recommendations. This equipment is used to give an almost immediate indication if certain chemicals may be present in the work area. This equipment is calibrated prior to each days use and additionally if the equipment begins operating erratically. This method has proven successful on numerous projects.
5. Text has been included in the Final HASP to document the temperature and humidity on a daily basis as part of the documentation procedures.
6. A level of protection was assigned for personnel decontaminating heavy equipment and included in Section 6.1 of the Final HASP.
7.
  - a. Containerizing and disposing of used decontamination liquids is addressed in Section 6.11.3.3, IDW Management, of the Baker Field Sampling and Analysis Plan specifically developed for this project.
  - b. A task-hazard analysis for each task, including equipment decontamination has been included in Section 3.6.

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To	MARY ANN SIMMONS	From	KATE LANDMAN
Co.	NEHC	Co.	LANTDIV
Dept.		Phone #	804 322 4818
Fax #	804 444 3672	Fax #	4805

**RESPONSE TO COMMENTS SUBMITTED BY NC DEHNR  
ON THE DRAFT RI/FS PROJECT PLANS FOR CTO-304  
OPERABLE UNIT NO. 13 (SITE 63)  
MCB CAMP LEJEUNE, NORTH CAROLINA**

Comment letter by Mr. Patrick Watters dated June 29, 1995

**General Comments**

1. The groundwater investigation will be phased, as necessary. Additional wells, including intermediate (and deep), will be placed if the analytical data of groundwater samples from the upper portion of the surficial aquifer indicate that contamination is present. Sections 4.3.1 (Work Plan) and 4.3.1.1 (FSAP) will be revised to reflect that.
  
2. The temporary well located on the northeast edge of the site will be moved approximately 200 feet south, to be more directly downgradient of the site. The temporary well located on the northwest edge of the site may or may not be within the area of disposed materials, and was not placed to serve as an upgradient well. The temporary well west of the unpaved road is however, intended to serve as an upgradient well.

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To	PATRICK WATTERS	From	KATE LANDMAN
Co.	NC DEHNR	Co.	LANTDIV
Dept.		Phone #	804 322 4818
Fax #	919 733 4811	Fax #	4805

**Response to Comments submitted by MCB, Camp Lejeune  
on the Draft RI/FS Project Plans for CTO-304  
Operable Unit No. 13 (Site 63)  
MCB Camp Lejeune, North Carolina**

Comment letter by Mr. Robert L. Warren dated June 26, 1995

1. The first sentence of the eighth paragraph of Section 2.1.6, page 2-5 will be revised to read, "...consists primarily of unconsolidated sand, shell fragments, and fossiliferous limestone."
2. The word "potentiometer surface" in Section 2.1.6, third paragraph of page 2-6 will be revised to "potentiometric surface".
3. The phrase "...and have had dramatic effects on the surrounding area." will be deleted from the paragraph of Section 2.1.10.2, page 2-9.
4. Baker reviewed the USGS Water Supply Well Map and the Wellhead management program report. Section 2.1.11, page 2-9 will be revised accordingly.
5. A vertical scale and vertical exaggeration will be added to Figure 2-3 of the Work Plan.
6. A bar scale will be added to Figure 2-4 of the Work Plan.
7. The groundwater flow arrows will be deleted from Figures 2-5 and 4-1.
8. Equipotential lines will be added to Figure 4-2.
9. Groundwater purge methods will comply with the EPA SOPOAM. Section 6.4 of the FSAP will be revised accordingly.

Post-It™ brand fax transmittal memo 7671		# of pages ▶	1
To	NEAL PAUL	From	KATE LANDMAN
Co.	MCB CLET	Co.	LANTDIV
Dept.	END/IRD	Phone #	804 322 4818
Fax #	910 451 1104	Fax #	4805

**Attachment B**

**LANTDIV Comments**  
**CTO-0304 Draft RI/FS Project Plans**  
**OU#13, Site 63**  
**MCB Camp Lejeune**

**K. Landman, 7/10/95**

**General Comment**

1. Will the area downgradient of 63MW02 be adequately characterized? There is currently no well planned for this area. See Work Plan specific comment #16.

**WORK PLAN**

1. **Page 1-1, Section 1.0**

Typo in last sentence of 1st paragraph - should read: ....appropriate CERCLA response *and* RCRA corrective action alternatives.....

2. **Page 1-2, Section 1.2**

In 2nd bullet on this page, specify that ARARs to be indentified in this phase are only *potential* ARARs. They will not become actual ARARs unless we select a remedial option to which they apply.

3. **Page 2-4, Section 2.1.3**

In the last paragraph, suggest re-wording for clarity as follows:

*Baker conducted a site investigation at Site 63 under the direction of Atlantic Division, Naval Facilities Engineering Command (LANTDIV). The Final SI Report (Baker, 1994) presents the results of this investigation.*

4. **Page 2-4, Section 2.1.4**

Typo in last paragraph - should read ....(FEMA National *Flood* Insurance Program).

5. **Page 2-5, Section 2.1.6**

Typo in 2nd paragraph - should read ....aquifer not used for water supply *at* MCB Camp Lejeune.

6. **Page 2-5, Section 2.1.6**

In the 7th paragraph, please specify in the text the source of the estimate for vertical hydraulic conductivity of the confining unit. Is this from previous Baker work?

7. **Page 2-6, Section 2.1.6**

In the 1st paragraph on this page, it is assumed that the last sentence refers to a single past measurement of chloride in the well referred to in the previous sentence. Please clarify.

8. **Page 2-6, Section 2.1.6**

In the second paragraph, should the 5th sentence read as follows? Though most of the rainfall entering the surficial aquifer discharges to local streams, a relatively small amount

infiltrates through to the Castle Hayne.

9. Page 2-6, Section 2.1.6

Typo in the 3rd paragraph on this page - should read *potentiometric surface* not *potentiometer surface*.

10. Page 2-6, Section 2.1.7

Typo in the last sentence of paragraph 2 - should read ...meet *at* the New River Inlet.

11. Page 2-8, Section 2.1.10

Typo in the last sentence of 2nd paragraph - should read ... land use *areas* for *Site* 63.

12. Page 2-9, Section 2.1.11

In the last paragraph, water supply wells within 1/2 mi radius are discussed. Normally, a survey of nearby wells within at least a one-mile radius is included.

13. Page 2-11, Section 2.2.5

In the 2nd paragraph, clarify when the SI was completed by Baker, i.e. when was field work conducted and when was the report finalized? The Final SI report is dated 1994.

14. Page 2-11, Section 2.2.5.1, Surface Soil

In the 1st bullet, the 1st sentence should refer to *surface* soil samples, not subsurface.

15. Page 2-11, Section 2.2.5.3

When comparing previous results to NC & Federal standards, both the standard(s) and the previous results should be presented for comparison. Also, significance of the effective-range median should be discussed here if it is to be used as a general comparator for metals levels.

16. Page 4-2, Section 4.3.1, Groundwater Investigation

Will we be able to adequately define the area downgradient of 63MW02? Should a well be added to the east of the site boundary, about 1/2 way between MW02 and the surface water body?

Also, clarify that the temporary wells are to be installed by a geoprobe-type direct push unit, not a drill rig. This will clarify why the temporary wells will not need to be developed.

17. Page 4-3, Section 4.3.1, Surface Water/Sediment Investigation

Last sentence of 1st bullet has typo - should be *connection*. Also, 3rd bullet is redundant with last sentence of 1st bullet.

18. Page 4-8, Section 4.6.1.4, Exposure Point Concentrations

Typo in 2nd paragraph - delete extraneous word *upper* in The upper 95 percent upper confidence limits...

19. Page 5-1, Section 5.0 and Figure 5-1  
The NTR will be Katherine Landman, not Linda Saksvig.

20. Table 2-2  
Text on page 2-8 indicates that all the areas included in this table are shown on Figure 2-1. The locations of several regions are not indicated, such as Berkeley Manor/Watkins Village, Tarawa Terrace I & II, Knox Trailer, and French Creek. Also, the statistics for Camp Geiger include the MCAS area - for clarity, this should be indicated here and in the text heading for Section 2.1.10.1 on page 2-9.

Also, why is the Courthouse Bay line in this table in boldface?

21. Table 4-1  
Page 4-3 of the Sap indicates that grain size & TOC will only be analyzed for from the 5 stream samples, not all 7 samples. Please clarify.

22. Figure 2-1  
See comment #20.

## **FIELD SAMPLING & ANALYSIS PLAN**

1. Table of Contents  
Section 4.1 heading should read *Operable Unit No. 13 (Site 63) - Verona Loop Dump*.

In the List of Appendices, Appendix E should read *Decontamination of Sampling and Monitoring Equipment*.

2. Page 1-1, Section 1.0  
In the 1st paragraph, the site name should be *Verona Loop Dump*.

Also, NEESA has been reorganized and the name has changed to NFESC, Naval Facilities Engineering Service Center.

3. Page 5-1, Section 5.0  
Explanations referring to dissolved metals analyses are confusing since we are not planning any samples dissolved metals analysis. These references should be removed.

## **QUALITY ASSURANCE PROJECT PLAN**

1. Table of Contents  
Section 1.0, Introduction, starts on Page 1-1, not 1-3.

Also, Section 8.2, Laboratory Analysis on page 8-1 was omitted. It should be added.

In the List of Tables, Tables 10-1 and 10-2 have been reversed. Table 10-1 is QA/QC Sample Frequency and appears on page 10-2. Table 10-2 is QC Analysis Frequency and appears on page 10-4.

## **HEALTH & SAFETY PLAN**

1. Page 3-1, Section 3.2.1, Surface Soil  
See Work Plan comment #14.

2. Page 3-2, Section 3.2.3  
See Work Plan comment #15.

WASTE MANAGEMENT DIVISION  
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, REGION IV  
345 COURTLAND STREET, N.E.  
ATLANTA, GEORGIA 30365

FACSIMILE TRANSMISSION SHEET

(Please Number All Pages)

TO: KATE LANDMAN

Cover Sheet) 11

TO: \_\_\_\_\_  
ADDRESS: \_\_\_\_\_  
\_\_\_\_\_

5 JULY 1995  
Post-It™ brand fax transmittal memo 7671 # of pages ▶ 11

To	MATT BARTMAN	From	KATE LANDMAN
Co.	BAKER	Co.	LANTDIV
Dept.		Phone #	804 322 4818
Fax #	412 269 2002	Fax #	804 322 4805

322-4805

FROM: GENA TOWNSEND

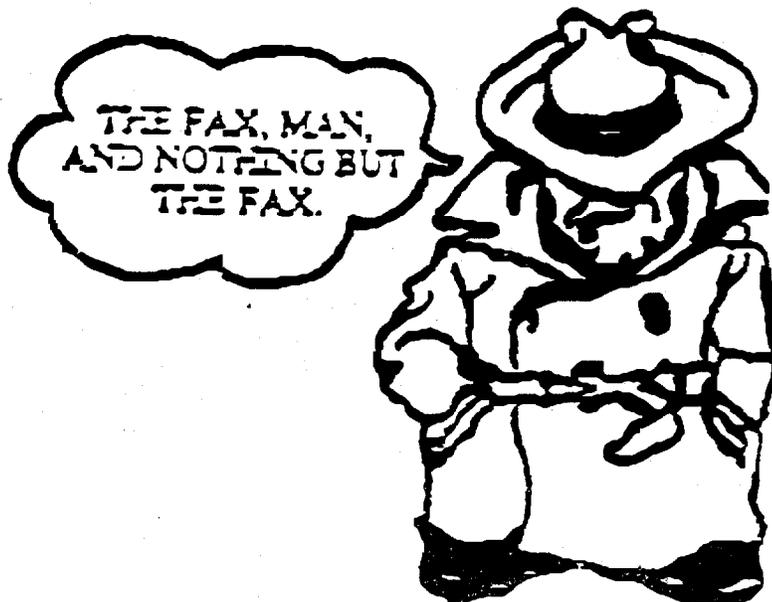
FAX NUMBER: (404) 347- 5205

IF THE FOLLOWING MESSAGE IS RECEIVED POORLY, PLEASE CALL \_\_\_\_\_  
IN OUR OFFICE AT (404) 347- 3016

SPECIAL NOTES OR INSTRUCTIONS

- Matt : - General comment 5 requests a deep well
- ° Gen. cmt 6 requests re-positioning or add'l well in SW corner
  - ° GC 7 asks if Verona road has a ditch §, if we need sw/seed samples here
  - ° pages 8 & 9 are messed up I have asked Gena to re-send

-Kate





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

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

July 5, 1995

4WD-FFB

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

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

SUBJ: MCB Camp Lejeune  
Draft RI/FS  
Operable Unit No. 13 - Site 63

Dear Ms. Landman:

The Environmental Protection Agency (EPA) has completed its review of the above subject documents. Comments are enclosed.

If you have any questions or comments, please call me at (404) 347-3016 or voice mail, (404) 347-3555, x-6459.

Sincerely,

A handwritten signature in black ink that reads "Gena D. Townsend". The signature is written in a cursive style.

Gena D. Townsend  
Senior Project Manager

Enclosure

cc: Patrick Waters, NCDEHNR  
Neal Paul, MCB Camp Lejeune

## 1.0 GENERAL COMMENTS

The Draft RI/FS Work Plan, consisting of a Work Plan, Field Sampling and Analysis Plan and Quality Assurance Project Plan, is a well-written document which outlines the tasks required to implement an RI/FS for Site 63 (Verona Loop Dump) at MCB Camp Lejeune. Except for the following noted comments, the Draft RI/FS Work Plan has adequately described the scope and objective of each individual RI/FS activity to be conducted at Site 63.

1. The Draft RI/FS Work Plan states that all the proposed monitoring wells are to be constructed of polyvinyl chloride (PVC) material. The economical concern for selecting PVC over stainless steel as a well construction material is understandable and valid. However, EPA Region IV discourages the use of PVC and recommends the use of stainless steel for the following two reasons: (1) Organic contaminants can leach from the PVC into the groundwater, resulting in nonrepresentative samples, and (2) It is possible for organic contaminants in the groundwater to adsorb to the PVC material, again resulting in nonrepresentative samples. Therefore, if PVC is to be used, specific analytical data should be provided indicating that neither the leaching nor the sorption of organic compounds from the PVC well materials will interfere with the data quality of the groundwater samples.
2. The Draft RI/FS Work Plan proposes to use as background, a well which is to be installed west of the unpaved road at Site 63. However, designation of a background well location at this stage may be premature, as groundwater flow direction at Site 63 has yet to be determined.
3. The Draft RI/FS Work Plan states that investigation-derived wastes (IDWs), such as drill cuttings and excavated soils, will be contained in drums and analyzed for the Toxicity Characteristic Leaching Procedure (TCLP) constituents, polychlorinated biphenyls (PCBs) and RCRA hazardous waste characteristics (i.e., corrosivity, reactivity and ignitability) only if they are determined to be potentially contaminated based on visual observations and HNu photoionization (PID) screening in the field. Otherwise, the soil cuttings will be used to backfill the boreholes. This approach is unacceptable since the PID screening is applicable to volatile organic compounds only and the nature and extent of soil contamination at Site 63 are still unknown. Proper disposal methods of IDWs should be determined only after the aforementioned chemical analyses (e.g., TCLP) have been conducted.
4. Section 2.1.6 of the Work Plan states that the surficial aquifer, in the area of Camp Lejeune, supplies primary recharge to the Castle Hayne Aquifer. However, Section 4.1.3.1 of the FSAP indicates that the proposed monitoring

wells will only sample from the shallow aquifer. The WP should extend the hydrogeological investigation for the vertical migration of DNAP constituents.

5. Section 4.3.1, Subsection Groundwater Investigation, Bullet 1, identifies the proposed monitoring wells (depicted on Figure 4-2) to be installed at Site 63. However, the locations for the monitoring wells do not cover the southwest component of the approximate site boundary identified on Figure 4-2. The monitoring well locations should cover all components at the site boundary. Either the monitoring well that is supposed to be located along the site's south boundary should be relocated in the southwest component of the site, or another well in close proximity to Verona Road should be added.
6. Section 4.3.1, Page 4-2, states that the existing wells will be developed, but temporary wells will not. However, the text does not provide an explanation why the temporary wells will not be developed. The text should state that the temporary wells will be installed by a Geoprobe and if this method of well installation is approved by EPA, Region IV.
7. Figure 4-3 shows the location for surface water/sediment samples. However, the figure neither depicts the Verona Road drainage ditch nor the necessary surface water or sediment sample plan. The text should explain why there are no sampling activities planned for the ditch along Verona Road.
8. Appendix E of the Field Sampling and Analysis Plan presents sampling and monitoring equipment decontamination procedures. The text discusses standard operating procedures (SOPs) of several EPA regions (including regions I, II and III) while omitting the most relevant information, the SOP used in Region IV, on the basis that the Region IV SOP is similar to that of regions II and III. However, unlike regions II and III, where methanol, hexane and acetone are approved rinsing solvents, Region IV specifies that pesticide-grade isopropanol be used as the standard rinsing solvent. Therefore, the use of any solvent other than pesticide-grade isopropanol for equipment cleaning purposes in Region IV must be justified.
9. The text contains separate contents pages for the WP, FSAP, and QAPP. However, a comprehensive table of contents is not provided. The text should present an initial table of contents that covers the entire document.

**General Comments - PSAP**

1. Section 6 of the Field Sampling and Analysis Plan discusses grab sampling of surface water and sediments. However, the location of these samples, within each media, is not indicated. In addition, the EPA SOPQAM states that in small streams, (less than 20 feet wide) a single grab sample should be collected from the center of the stream (at mid-depth for water). The text should indicate the approximate width of the stream, along with approximate sampling locations of surface water and sediments. For a larger stream, composite surface water and sediment samples should be collected.
  
2. Section 6.4.3, Page 6-4, states that one well volume will be removed before the well will be sampled, based on the purge volume on independent investigations and studies by Puls and Paul, 1995 and Barcelona, Wehrmann, and Varljen, 1994. However, EPA SOPQAM recommends that three well volumes be removed during purging. Furthermore, the aforementioned investigations are not approved and may not be sanctioned by ECB. Thus, the Work Plan should be revised to comply with the EPA SOPQAM, or ECB Athens should be contacted for approval of any variations in procedure.

**General Comments - QAPP**

1. Table 8-1 on Pages 8-2 through 8-10 presents compounds, quantitation, and detection limits (concentrations), as well as methods for analysis. However, the table is inconsistent in format. The table contains incorrect concentration units for soil/sediment samples. For some portions of the table, the analytical methods and type of sample are not identified, and some information notes have no in-text references. The text should present Table 8-1 in a uniform fashion and create several individual tables, based on the quantitation, detection, practical quantitation, and performance limits. In addition, all footnotes should be numbered consecutively throughout the contents of the table.
  
2. Section 10.1, Page 10-1, Paragraph 7, states that "Duplicates for soil samples are collected, homogenized, and split... The duplicate for water samples should be collected simultaneously.... The same samples used for field duplicates shall be split by the laboratory." However, according to sampling definitions by EPA SOPQAM, duplicate samples means two or more samples collected simultaneously into separate containers from the same source under identical conditions. Split samples are defined as samples which are portioned into two or more containers from a single sample container or sample mixing container. Therefore, the statements in Section 10.1 about the duplicates and split appear to be confusing. By definition, duplicates and splits are different, and the text should distinguish between the two items. Thus, if the samples are split, the text should address them separately.

### Specific Comments - Work Plan

1. Section 2.1.1, Page 2-2, Paragraph 3, Sentence 3.  
The text states that Hadnot Point comprises the most concentrated area of development. The text later identifies structures in the Hadnot Point area. However, the text does not give a direction or distance from the investigated area. The text should clearly define the direction and distances from the investigated area to populated areas, as well as provide a map to clearly define the area of investigation.
2. Section 2.1.2, Page 2-3.  
The text states that construction of MCB Camp Lejeune began in 1941 with the objective of developing the world's most complete amphibious training base. The text follows with a description of the locale, instead of describing the history of Site 63 or explaining how the site became a dump. This section lacks sufficient information to identify past MCB practices at the site or define the type of history that is being presented. Thus, the section should be revised to present past site-specific MCB or the title should be changed.
3. Section 2.1.11, Page 2-9, Paragraph 7, Sentence 1.  
The text states that there are no supply wells located within a one-half mile radius of Site 63. Camp Lejeune water is supplied entirely from groundwater, yet the text only identifies water supply wells within a half-mile of the investigated area. If there are water supply wells within three miles of the site, the text should identify these wells or explain why these water supply wells will not be affected from any contamination that may be identified at Site 63.
4. Section 2.2.3, Page 2-10, Paragraph 7, Sentence 3.  
The text states that the type of materials disposed are described only as bivouac waste, a term which is not defined in the text. The text should be revised to include a definition of bivouac waste.
5. Section 2.2.5.1, Page 2-11, Paragraph 4.  
The text describes six previous soil borings drilled on site, in order to determine soil contamination. However, the text neither adequately describes the locations of these borings nor mentions their depiction on Figure 4-1. For the purpose of clarity, the text should refer to Figure 4-1 when describing these soil borings.

**Specific Comments-FSAP**

1. Section 4, Figure 4-2.

Figure 4-2 presents the locations of proposed monitoring wells for the investigation at Verona Loop Dump. However, there are no identification numbers given to the seven proposed monitoring wells on the map. All seven proposed monitoring wells should be given identification numbers. In addition, the well at the upper left corner (northwest of

However, according to EPA SOPQAM (EPA, 1991), the method of purging is to pump the well until three to five times the volume of standing water in the well has been removed and until the specific conductance, pH, and temperature of the groundwater stabilizes. The text should indicate the pumped volume recommended by the EPA SOPQAM.

### Specific Comments - QAPP

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

Appendix O of the FSAP lists all required information for sample labels. However, Section 6.2 of the QAPP omitted two required elements for sample labels: preservation and analysis to be performed. These two items should be added to the list of sample label information required in the QAPP.

2. Section 8, Pages 8-2 through 8-5, Table 8-1.

The text in Table 8-1 shows a concentration unit  $\mu\text{g/L}$  for soil/sediment samples (see Pages 8-2 through 8-5). However, this is incorrect for the soil/sediment samples; the concentration unit should be  $\mu\text{g/kg}$ .

The text lists two notes below the table. However, the footnote numbers are not cited in the table. The table should be revised accordingly.

The fourth column lists the CLP/SOW method but the numbers are not given. The text should be revised to provide the method numbers.

3. Section 8, Pages 8-6 and 8-7, Table 8-1.

The tables on Pages 8-6 and 8-7 are a part of Table 8-1 (continued). However, their formats are inconsistent. The continued table should follow the same format of the previous one.

A total of four notes are listed below the table, but only two of them are referenced on the table. In order to be more effective, all notes should contain in-text citations.

In addition, column labels are inconsistent. For example, the third column does not list the types of sample (water and soil) as previously indicated. The table should include two separate columns: one for water, and the other for soil and detection limits. The type of sample (water and soil) should also be indicated.

4. Section 8, Page 8-9, Table 8-1.

The second portion of Table 8-1 (continued) shows a concentration unit  $\text{mg/kg}$  for water samples. However, the concentration unit for the water samples should be  $\text{mg/l}$ . The text should be corrected and revised accordingly.

Furthermore, this continued table should follow the same format of the previous ones. Since the concentration unit for TCLP Metals is different from the previous concentration unit, separate tables should be created.

This comment also applies to the next portion (Table 8-1) on Page 8-10.

5. Section 10.1, Page 10-1, Paragraph 4.

The text states that a corresponding trip blank will be prepared for each set of samples to be analyzed for volatile organic compounds. According to the definition of trip blanks in the EPA SOPQAM, the trip blanks are prepared prior to the sampling event. However, this description is not mentioned in the text. In the beginning of this paragraph, the text should state that trip blanks are prepared prior to the sampling event.

6. Section 10.1, Page 10-1, Paragraph 7, Sentence 1.

The text states that duplicates for soil samples are collected, homogenized, and split. According to sampling definitions in the EPA SOPQAM, duplicate and split samples are different. However, the text appears to regard the two different types of samples as one, and their meanings are unclear. The should clearly define duplicates and splits in this investigation. If the split samples are applicable to the investigation, the text should address them separately and be revised accordingly.

See General Comment No. 2 in the QAPP.



**UNITED STATES MARINE CORPS**

MARINE CORPS BASE  
PSC BOX 20004  
CAMP LEJEUNE, NORTH CAROLINA 28542-0004

IN REPLY REFER TO:

6286  
BEMD

**12 6 JUN 1995**

From: Commanding General, Marine Corps Base, Camp Lejeune  
To: Commander, Atlantic Division, Naval Facilities Engineering  
Command, Attn: Katherine Landman (Code 1823), 1510  
Gilbert Street, Norfolk, Virginia 23511-2699

Subj: REMEDIAL INVESTIGATION/FEASIBILITY STUDY PROJECT PLANS FOR  
OPERABLE UNIT NO. 13 (SITE 63), MARINE CORPS BASE, CAMP  
LEJEUNE, NORTH CAROLINA

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

1. The subject document has been reviewed, and our comments are contained in the enclosure. It is requested that the Installation Restoration Division, Environmental Management Department, Marine Corps Base, Camp Lejeune be notified of the actions taken to accommodate the comments provided in the enclosure.

2. If you have any questions or comments, please contact Mr. Neal Paul, Director, Installation Restoration Division, Environmental Management Department, at telephone (910) 451-5068.

ROBERT L. WARREN  
By direction

Post-It™ brand fax transmittal memo 7671		# of pages ▶ 2	
To	MATT BARTMAN	From	KATE LANDMAN
Co.	BAKEL	Co.	LANTON
Dept.		Phone #	804 322 4818
Fax #	412 269 2002	Fax #	804 322 4805

*copy made for Mark DeJohn*

Comments for the Remedial Investigation/Feasibility Study Project  
Plans for Operable Unit No. 13 (Site 63), Marine Corps Base,  
Camp Lejeune, North Carolina

1. Page 2-5, section 2.1.6, eighth paragraph: The term "sand shell rock" is geologically improper and vague. Does this refer to a sandy, molluscan mold limestone, a fossiliferous limestone, an unconsolidated sand with shell deposits, or something else?
2. Page 2-6, third paragraph: Change the term "potentiometer surface" to "potentiometric surface."
3. Page 2-9, sub-section 2.1.10.2, first paragraph: The report states "The remaining personnel and dependents live off base and have had dramatic effects on the surrounding area." To which dramatic effects does the report refer? Either include these effects in the text, or delete this statement.
4. Page 2-9, section 2.1.11, fourth paragraph: The report states "Based on a review of a USGS water supply well location map, there are no supply wells located within a one-half mile radius of Site 63." This statement implies that Baker ignored important information from the Camp Lejeune special map as well as Camp Lejeune's "Wellhead Management Program" report. Ensure that information from these and other Base resources are included in all site investigation activities.
5. Figure 2-3: Neither a horizontal scale, nor a vertical exaggeration value are provided with this figure. Although the diagram has been referenced from a USGS report, please provide a horizontal scale and vertical exaggeration value if available.
6. Figure 2-4: The legend states "SCALE: 1 in = 2,000 ft." However, this statement becomes irrelevant when the map is photocopied for reduction or enlargement. Provide a bar scale within the "legend" section of the figure.
7. Figures 2-5 and 4-1: Delete the groundwater flow direction arrow. It is irrelevant with respect to these maps.
8. Figure 4-2: Since this map displays the groundwater elevations in each monitoring well and the direction of groundwater flow, equipotential contour lines should be included.
9. Page 6-4, subsection 6.4.3: The proposed methodology for the purging of wells seems to contradict explicit guidance from the Environmental Protection Agency (EPA). Regardless of Baker's justification, approval from EPA must be provided before this purging method is executed. If such approval has already been granted, then explain in the text.

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

June 29, 1995

Commander, Atlantic Division  
Naval Facilities Engineering Command  
Code 1823

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

Commanding General

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

*CTO-0304  
Matt Bartman*

RE: Draft RI/FS Project Plans and Health & Safety Plan  
for Operable Unit 13.

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

North Carolina Superfund Comments  
Draft RI/FS Project Plans and Health & Safety Plan  
Camp Lejeune Operable Unit 13

RI/FS Work Plan

1. Page 3-3, Section 3.1.2.2

This section indicates that part of the site-specific data needs includes determining the horizontal and vertical extent of soil contamination. The same data need should be expressed with regard to groundwater contamination which means there may be a need for deep monitoring wells depending on the levels of contamination seen in the shallow aquifer.

2. Figure 4-2

Based on the indicated groundwater flow direction in this figure, the northernmost well for Site 63 is more or less in an upgradient location. Since there are already two upgradient wells, it may be appropriate to either relocate this well between the intermittent stream and the site boundary consistent with groundwater flow or add another well. This would provide an additional downgradient groundwater data point for the northern part of the site.

# facsimile TRANSMITTAL

to: Ms. Katherine Landman, Code 18232  
 fax #:  
 re: HASP for OU 13, Camp Lejeune  
 date: June 30, 1995  
 pages: 4, including this cover sheet.

Kate,

Here are our comments for the subject HASP. The signed version will be mailed out early next week.

Have a great holiday weekend and please let us know if we can be of further assistance.

*Mary Ann Simmons*

6/30/95

Post-It™ brand fax transmittal memo 7671 # of pages ▶ 4

To	MATT BARTMAN	From	KATE LANDMAN
Co.	BAKER	Co.	LANTDIV
Dept.		Phone #	804 322 4818
Fax #	412 269 2002	Fax #	804 322 4805

From the desk of...

Mary Ann Simmons  
 Industrial Hygienist  
 Navy Environmental Health Center  
 2510 Walmer Avenue  
 Norfolk VA 23513-2617

804/444-7575 ext. 402  
 Fax: 804/444-7261

## HEALTH AND SAFETY PLAN REVIEW

Ref: (a) 29 CFR 1910.120 (Hazardous Waste Operations and Emergency Response)  
(b) Navy/Marine Corps Installation Restoration Manual (February 1992)

### General Comments:

1. The "Draft Remedial Investigation/Feasibility Study Health and Safety Plan, Operable Unit No. 13 (Site 63)" MCB Camp Lejeune, North Carolina, Contract Task Number 0304, was prepared for LANTNAVFACENGCOM by Baker Environmental, Inc. and forwarded to the Navy Environmental Health Center on 16 May 1995. The document was dated 10 May 1995.
2. The method for the review is to compare the health and safety plan (HASP) to federal requirements under OSHA regulations and to Department of the Navy requirements under the "Navy/Marine Corps Installation Restoration Manual" (see references (a) and (b) above). We noted deviations and/or differences in the plan from these two primary references. A list of acronyms used in our comments is included as Attachment (1).
3. The points of contact for review of the HASP are Ms. Mary Ann Simmons, Industrial Hygienist, or Mr. Carlton Davis, Physical Science Technician, who may be reached at (804) 444-7575, or DSN 564-7575, extensions 402 or 335 respectively.

### Specific Comments:

1. Page 3-5, Section 3.4, "Chemical Hazards":

Comment: The last sentence states that MSDSs are provided for each chemical listed in Table 3-1. The location of Table 3-1 is not readily apparent.

Recommendation: Indicate that Table 3-1 is found in a tab entitled "Tables" at the end of the plan. Conversely, place Table 3-1 in this section. The same recommendation is made for the other tables located behind this tab.

2. Page 4-2, Section 4.4, "Buddy System":

Comment: This section states that for high-hazard activities a third person will be located in the support zone to act as an observer or rescue person. There is no mention of the availability of emergency equipment he would need to act in a rescue capacity.

Recommendation: If this third person is anticipated for this work, include a requirement that emergency rescue equipment and PPE will be available.

Enclosure (1)

3. Page 5-1, Section 5.0, "Exposure Monitoring":

Comment: Chemicals, other than those measurable by a PID, are listed on Table 3-1, "Toxicological Properties of Chemicals RI/FS Site 63 MCB Camp Lejeune."

Recommendation: Additional sampling methods, such as using a direct reading dust monitor, need to be included. For example, PCBs, metals and pesticides cannot be detected by the PID and are all listed in Table 3-1.

4. Page 5-1, Section 5.4, "Equipment Calibration":

Comment: This section states that the PID will be calibrated daily before use in accordance with manufacturer's requirements.

Recommendation: We recommend calibrating all monitoring equipment before and after each period of use in accordance with good industrial hygiene practice and according to the manufacturer's directions.

5. Page 5-1, Section 5.5, "Monitoring Documentation":

Comment: Weather conditions can have an effect on monitoring equipment and results.

Recommendation: We recommend including weather information (temperature and humidity) as part of the monitoring documentation.

6. Page 6-1, Section 6.1, "Levels of Protection":

Comment: A level of protection was not assigned for personnel decontaminating heavy equipment.

Recommendation: Include an appropriate PPE assignment for these personnel.

7. Page 7-1, Section 7.0, "Decontamination Procedures":

Comments:

a. There are no provisions listed for containerizing and properly disposing of used decontamination liquids.

b. A task-hazard analysis is not included for heavy equipment decontamination.

Recommendation: Include this information in the final HASP.

## ACRONYMS

ACGIH:	American Conference of Governmental Industrial Hygienists
AG:	Acid Gas
ANSI:	American National Standards Institute
ATSDR:	Agency for Toxic Substances and Disease Registry
BBP:	Bloodborne Pathogen Program
CPR:	Cardiopulmonary Resuscitation
CRZ:	Contamination Reduction Zone
EIC:	Engineer-in-Charge
EMS:	Emergency Medical Service
EPA:	Environmental Protection Agency
EZ:	Exclusion Zone
HASP:	Health and Safety Plan
HDV:	Hepatitis D Virus
HIV:	Human Immunodeficiency Virus
IDLH:	Immediately Dangerous to Life and Health
LEPC:	Local Emergency Planning Committee
MSDS:	Material Safety Data Sheet
NIOSH:	National Institute for Occupational Safety and Health
NOSC:	Navy On-Scene Coordinator
NOSCDR:	Navy On-Scene Commander
OSHA:	Occupational Safety and Health Administration
OV:	Organic Vapor
PCB:	Polychlorinated Biphenyl
PEL:	Permissible Exposure Limit
PID:	Photoionization Device
PPE:	Personal Protective Equipment
PPM:	Parts Per Million
SCDA:	Self Contained Breathing Apparatus
SOP:	Standard Operating Procedure
STEL:	Short Term Exposure Limit
TLV:	Threshold Limit Value