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**UNITED STATES MARINE CORPS**

MARINE CORPS BASE

PSC Box 20004

Camp Lejeune, North Carolina 28542-0004

IN REPLY REFER TO:

6286

BEMD

27 SEP 2000

Mr. Kirk Stevens  
Commander Atlantic Division  
Naval Facilities Engineering Command  
Code 1823  
1510 Gilbert Street  
Norfolk, Virginia 23511-2699

Dear Mr. Stevens:

The Installation Restoration Division has received and reviewed the Draft Engineering Evaluation/Cost Analysis Field Investigation Project Plans, Site 89, Operable Unit 16 and the Prefinal V.2, Record of Decision, Operable Unit No. 6. The comments are contained in the enclosures.

If you require further information, please contact Mr. Thomas Burton, Installation Restoration Division, Environmental Management Department, at (910) 451-5068.

Sincerely,

**SCOTT A. BREWER, PE**  
Deputy Assistant Chief of Staff  
Environmental Management  
In Direction of  
The Commanding General

- Enclosures: 1. Comments on Draft Engineering Evaluation/Cost Analysis Field Investigation Project Plans, Site 89, Operable Unit 16  
2. Comments on Prefinal V.2, Record of Decision, Operable Unit No. 6

## COMMENTS ON SITE 89 EE/CA

### 1. Section 2.0, Page 2-1.

This section discusses the contaminant 1122-TCA which is an incorrect abbreviation for Tetrachlorethane. Please correct through out Section 2.

### 2. Section 2.1, Page 2-1.

The 7<sup>th</sup> sentence has multiple grammatical errors. Please correct.

### 3. Section 2.2, Page 2-3, 1<sup>st</sup> Paragraph.

The second sentence discusses "little to and silt." I am not sure what is being described here. Please correct or explain.

### 3a. Section 2.2, Page 2-3, 2<sup>nd</sup> Paragraph.

The last sentence states that, "the Castle Hayne aquifer is controlled more by the New River, as flow is westerly." The New River is east of Site 89.

### 3b. Section 2.2, Page 2-3, 4<sup>th</sup> Paragraph.

The second sentence lists 1122-TCA and 1,1,2-Tetrachloroethane (112-TCA). Again, please correct chemical notation.

### 3c. Section 2.2, Page 2-3, Last Paragraph.

The paragraph incorrectly locates the drainage ditch on the western side of the DRMO lot. The ditch is located on the eastern side of the DRMO lot. The concentrations in the surface water and sediment in the drainage ditch are exactly the same. Is this correct?

### 4. Section 3.3, Page 3-2, Soil Investigation.

This section also discusses the use of a Membrane Interface Probe/conductivity probe (MIP). This is the first time that I have heard of this device. More info on this equipment should be provided prior to its implementation at this site. This section then states that in addition to the 20 direct push borings advanced for the MIP, you are proposing 25 auger borings to verify the results. So in a sense we will be paying double for the soil investigation phase of this effort. As this is a high priority site with a high remediation price tag already, this may not be the site where we want to start using and verifying new and innovative technologies. Please explain what information will be provided to us from the use of this technology that would be unavailable from the use of an auger boring.

### 5. Section 3.3, Page 3-2, Groundwater Investigation.

This section proposes the advancement of two well clusters, which include a shallow and intermediate well. How come we are not sinking a deep water well?

### 6. Section 3.3, Page 3-3, IDW.

Grammatical errors. Please correct.

**7. Section 3.0, Figure 3-1.**

The TCRA will identify the source areas of contamination in the soils. With this information we can better propose the locations of the borings and wells to do the investigative phase of the EE/CA. We should wait until IT provides the information before finalizing this map.

**8. Section 5.0, Figure 5-1.**

This figure identifies the work schedule of the EE/CA but gives no indication of the months in which it is proposed. I see holidays identified but have no indication of the time of year. Please elaborate.

**Sampling and Analysis Plan**

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

The second paragraph identifies the SOPs that the work will be in accordance with. I see no mention of North Carolina Department of Environment and Natural Resources. Please include.

**Section 4.3, Page 4-2**

Grammatical error. Please correct.

**Appendices**

I see no inclusion of a SOP for the MIP work. Is there some guidance to doing these tests? How are they to be performed?

## COMMENTS ON OU6 ROD

### **1. Declaration, Page ix, Site 36, 2<sup>nd</sup> Bullet**

The LUCIP statement "prohibiting the future use of or drawing from the aquifers (surficial and Castle Hayne) within 1,000 feet of the identified groundwater plume" is a blanket statement used for IR sites that have groundwater contamination. The 1000-foot buffer as it extends to the west, south, and east of the GW plume is fine, however, extending the buffer, and aquifer use controls, to the north across Brinson Creek and onto private property is not within Camp Lejeune's authority. The purpose of the Temporary Well Investigation north of Brinson Creek was: (1) to verify that Site 36 contamination had not migrated beneath Brinson Creek and (2) identify groundwater flow patterns in the area north of Brinson Creek. This information (the fact that Brinson Creek acts as a hydraulic barrier) provides the scientific basis to limit the aquifer use controls to Camp Lejeune property. Text in the ROD, the LUCIP, and CAP should provide this justification for limiting the aquifer use controls to Camp Lejeune property rather than using the blanket statement with the 1000-foot buffer. This statement is repeated several times throughout the section of the ROD, the LUCIP, and CAP for Site 36. Also, the aquifer use control maps should be modified to enclose the area by drawing a solid red line along the Camp Lejeune property boundary (along Brinson Creek).

Please insert the text, which justifies limiting the aquifer use control boundary to Camp Lejeune property into the ROD, LUCIP, CAP, and modify the appropriate maps.

### **Site 36**

### **2. Section 2.1, Page 4, 3<sup>rd</sup> Paragraph, last sentence.**

This section states that less than 5% of base's waste hydrocarbons were disposed of at this site. That is satisfactory. The next sentence states that we disposed of the remaining waste oil on roads or directly into storm drains. That statement is unnecessary. Please remove this sentence.

### **3. Section 2.3, Page 7.**

This section discusses the preferred alternative for Site 36. Please include a statement that the preferred alternative includes a recordation of a notice at the Onslow County Courthouse. Also, the aquifer use control statement only includes the surficial aquifer; however, the statement in the Declaration section includes both the surficial and Castle Hayne aquifers. Please correct the discrepancy.

### **4. Section 2.4.3, Page 8, 2<sup>cd</sup> Paragraph, 3<sup>rd</sup> sentence.**

Grammatical error. The elevation data was used to "generate" potentiometric maps. Please correct.

### **5. Section 2.5, Page 11, 1<sup>st</sup> Paragraph, last Sentence.**

Grammatical error. Lead concentrations does not indicate "a" history of dumping. Please correct.

**6. Figure 36-1 and Figure 36-2.**

The estimated extent of plume on Figure 36-2 extends beyond the "approximate site boundary." Please extend the approximate site boundary to be inclusive.

**Site 43**

**7. Section 3.2, TCRA, Page 19, last sentence.**

Grammatical error. Smoothing the surface of any large impressions or holes that may have been created during the removal of the old "tank vehicle in any other debris." Please verify exactly what is being stated here.

**Site 54**

**8. Section 5.3, pg 30.**

Grammatical Error - Incomplete Sentence. Completion of the operational and engineering control design requirements, including conversion of the existing burn pit to a fully lined new facility where clean fuels will be used as an accelerant. Please correct.

**9. Figure 54-2.**

The plume surrounding 54-GW12 falls outside of the approximate site boundary. Please correct.

**10. Section 6.1.1, pg 40, paragraph 1.**

Note that the 1000-foot buffer is bounded by Brinson Creek to the North and East. Please justify.

**LUCIP Site 36**

**11. Page 2, Site Boundary Identification.**

The first paragraph states that Fig 1 is the boundary of all controlled portions of the site (i.e. no areas subject to land "and water" use controls lie outside of this boundary). The Site boundary is the extent of all contamination and controls that have been identified for that site. Please correct.

The second paragraph states that Fig 2 is the boundary of Land Use Restrictions. Why is the boundary identified on this map outside of Fig 1 The Site Boundary map? Please correct.

**12. Page 3, Aquifer Use Controls.**

The 1000-foot buffer is drawn around areas of known "groundwater" contamination. These controls are to remain in place until it can be demonstrated that "groundwater" contaminants no longer remain on site. Please correct.

**13. Figure 1 and Figure 5.**

The boundary should be extended along Brinson Creek to enclose the areas.

## LUCIP Site 54

### **14. Page 2, Site Boundary Identification.**

The first paragraph states that Fig 1 is the boundary of all controlled portions of the site (i.e. no areas subject to land "and water" use controls lie outside of this boundary). The site boundary is the extent of all contamination and controls that have been identified for that site. Please correct.

The second paragraph states that the POL contaminated soils are "likely" to be removed. The contaminated soils will be removed. Please correct.

## CAP Sites 36 and 54

### **15. Section 2.1, pg 3, paragraph 1.**

The sentence concerning remaining oils should be omitted. See comment #2.

### **16. Section 2.3.3, Page 6.**

Grammatical error. The second sentence states that the closest wells being on the order 2600 feet away. Please correct.

### **17. Section 2.4.1.3.**

Brinson Creek may be preventing Site 36 contamination from migrating onto private property north of Brinson Creek (which is actually up gradient of Brinson Creek), however, Site 36 GW contaminants are in fact migrating down gradient and discharging into Brinson Creek. This paragraph leaves the impression that contamination is not migrating off site at all. The paragraph states, "It appears that Brinson Creek is preventing contaminants detected at Site 36 from migrating down gradient and off-site." Not true. Please revise.

### **18. Section 3.1.1 e, pg 16-17.**

See previous comment.

### **19. Section 3.1.1 f, pg 17.**

The surficial aquifer groundwater at Site 36 discharges into the surface water at Brinson Creek. Please correct.

### **20. Section 3.1.1 g, pg 17, paragraph 2.**

Grammatical Error. "major cautions" should read major cat ions. Please correct.