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DEPARTMENT OF THE NAVY

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JUN 08 1998

United States Environmental Protection Agency, Region IV
Attn.: Ms. Gena Townsend
Atlanta Federal Center
Waste Management Division, Federal Facilities Branch
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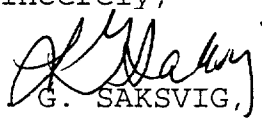
Re: MCB Camp Lejeune
Draft Focused RI Report, Operable Unit No. 16
(Site 89 & 93)
Response to Comments

Dear Ms. Townsend:

Attached are Navy/Marine Corps responses to your comments on the above-referenced document. These comments will be incorporated into the final version of the document as indicated in the responses.

Please direct any questions to Ms. Katherine Landman at (757) 322-4818.

Sincerely,


L. G. SAKSVIG, P.E.

Head

Installation Restoration Section
(South)

Environmental Programs Branch

Environmental Division

By direction of the Commander

Attachment

Copy to:

NC DEHNR (Mr. Dave Lown)

MCB Camp Lejeune (Mr. Mick Senus)

Baker Environmental, Inc. (Mr. Matt Bartman)

Activity Admin Record File

Quality Performance ... Quality Results

**Response to Comments Submitted by USEPA Region IV
on the Draft Remedial Investigation Report CTO-0356
Operable Unit No. 16 (Sites 89 and 93)
MCB Camp Lejeune North Carolina**

General Comments

1. Building STC-867 will be identified on the figure. Important landmarks such as the identification of roads, the location of Edwards Creek, and the Defense Reauthorization and Marketing Office (DRMO) have been indicated on the figure. The contaminant plume at Site 89 is large enough such that a small scale map is required to show the entire area.
2. The sites in question were initially assessed during UST investigations. Based upon these findings it was understood by the relevant parties that the contaminants of concern were VOCs in the subsurface (i.e., subsurface soil and groundwater). Therefore, characterization of surface soil was not necessary. In addition, a large majority of the "potential source" areas of the former motor pool were covered by asphalt and hardpack gravel during construction of the DRMO. This would prohibit the collection of surface soil samples. The text will be amended to include the rationale for not including surface soil.
3. The initial UST investigations characterized the petroleum contamination at the site and identified the primary contaminants of concern as VOCs. Section 2.2.2 will be revised to include the rationale for not including TPH in the analytical effort.
4. The screens of the shallow monitoring wells were set approximately two feet above the watertable encountered during drilling as identified on the boring logs. However, water levels were noted to rise to the top of the screened section, or slightly above in some of the shallow wells after development and sampling activities were completed. The text will be revised.

The majority of the identified contamination at OU No. 16 are VOCs found in the shallow and intermediate groundwater zones, approximately 20 to 60 feet below ground surface. Therefore, free phase liquids are not expected at the site. However, future groundwater elevation data may be compared to the elevations of the screened sections of the wells.

5. Nineteen groundwater samples were collected for TCL volatiles during the Phase II investigation. The discrepancy in the text will be corrected.

The previous investigations at Sites 89 and 93, identified VOCs as the contaminant of concern, therefore, only one sample was analyzed for TCL pesticides/PCBs. The text will be amended to include this information.

6. Chloroform will not be included as a common laboratory contaminant. The text will be revised to reflect this change. However, chloroform will be evaluated as a blank contaminant using the 5x rule.
7. The detections of carbon disulfide in the soil samples have been noted in the text with complete results provided in the appendices. Results are not discussed as part of the site contamination because detection of carbon disulfide is not site related. Explanation as to why they are believed to not be site related will be provided.

8. The well cluster at former UST location (IR89-MW03) exhibits significant levels of VOCs. One potential source of this contamination is the former UST. Therefore, this portion of the DRMO is considered to be one of the significant source areas of contamination at the site. However, for the sake of completing a thorough investigation, it was assumed that the current DRMO area has been impacted by past practices including former motor pool maintenance. It is possible that other portions of the DRMO area have contributed to the contamination. Monitoring well IR89-MW05 is not close to the former UST area, however, it is in close proximity to the DRMO. This supports the assumption that the existing contamination is a result of something more than just the former UST area. This will be further clarified in the text.
9. Although, the former UST appears to have introduced contaminants to the groundwater, based upon the site history it was not considered to be the only potential source area. The objective of the investigation at Site 93 was not prepared with the intention of limiting the study area to the former UST, but was completed with emphasis placed on defining the limits of groundwater contamination in the entire area. The presence of contamination in an area hydraulically upgradient of the former UST is certainly of importance however, it is not unexpected as Camp Geiger has been host to various operations over the years which may have had unfavorable impact to the groundwater. The investigation at Site 93 was expanded outward from the area of Building TC-941 using on-site screening to identify the limits of groundwater contamination. Constituents present in monitoring well IR93-TW07 may not be a result of the former UST, however, temporary and permanent monitoring wells were used to define the limits of groundwater contamination in this portion of Camp Geiger.
10. Monitoring well cluster IR89-MW05 is located at the end of F Street, immediately west of the DRMO facility. This permanent monitoring well cluster was installed at this location based upon results of the temporary well installation. Although the well location is west of the former UST and DRMO Area, it is considered to be part of the Site 89 contaminant plume. Site 93 monitoring wells located west and northwest of this well help to define the contaminant plume and Site 89. Additional explanations concerning plume geometry and the extent of contamination will be provided in the final report.

Specific Comments

1. The legends for Figures 1-3, 2-2, and 2-6 will be corrected.
2. Twelve duplicate samples were collected during the Phase II investigation will be provided. This information will be provided in the final report.
3. Prior to scoping the investigation at OU No. 16 it was understood that the contaminant of concern at the sites were VOCs. Therefore, it was not necessary to perform a full organic analysis of all of the samples. This will be clarified in the text and Tables 2-13, 2-14, 2-15, and 2-17.
4. The column titled Purge Volume (gals.) on tables 2-7 through 2-10 provides information concerning the amount of water removed for each well.
5. The yellow line on Figure 2-3 depicts the location of the DRMO fence. The legend will be amended as appropriate.

6. Figures 2-3, 2-7, and 2-8 are "Typical" well construction diagram. The pertinent dimensions of casing diameter, well screen diameter, and slot size have been included. Other dimensions such as depths and screen lengths are specific to each individual well. These are included on the boring logs/well construction records in the appendix.
7. The 5 foot contour on the figure is mistakenly labeled as 15 feet. It will be corrected as recommended.
8. Sampling locations will be identified on Figure 4-1 and 4-2 for Sites 89 and 93, respectively.

RISK ASSESSMENT

General Comments

1. Text will be added to discuss the comparability of the mobile and fixed lab data, as well as the rationale for the inclusion of the mobile lab data in the risk assessment calculations. This discussion will include the methodology used to complete the mobile lab analysis along with information relating to the method quantitation limits and QA/QC level. This data, although generated in a mobile lab, was not screening. A USEPA approved method was used to complete the analysis and under the former DQO policy this data would be considered Level III, which can be used for risk assessment.
2. The text will be revised to follow the criteria for selecting COPCs that are given in the Region IV guidance document.
3. Surface soil was not addressed in the Project Plans for the investigation of these sites. Operable Unit 16 (Sites 89 and 93) is an industrialized area that is predominantly covered with either asphalt or hard-pack gravel. As a result, there is no direct exposure pathway with which to evaluate surface soil. This rationale will be presented in the text to explain the exclusion of surface soil from the human health risk assessment.
4. The text will be revised to clarify the COPC selection paragraphs.
5. The maximum detected concentrations of bis(2-ethylhexyl)phthalate in the groundwater at both Sites 89 and 93 (150 and 130 ug/L) were comparable to that detected in the blank (120 ug/L). This maximum concentration was detected in a rinsate collected from tubing used for groundwater sampling and was compared to groundwater samples only. Also, it is very unlikely that bis(2-ethylhexyl)phthalate is a site related contaminant. Therefore, based on these reasons bis(2-ethylhexyl)phthalate is considered a lab contaminant and will not be selected as a COPC for Site 93 or Site 89.
6. Based on Region IV guidance, all of the carcinogenic PAHs will be re-included as COPCs if one is retained as a COPC based on exceedance of criteria. The appropriate text, tables, and calculations will be revised accordingly.
7. The receptors that were evaluated in the BRA (current resident, future resident, and future construction worker) are conservative estimates of potential risk. There was no risk estimated for the current resident and future construction worker. The recreational user and the maintenance worker, which have less conservative exposure parameters, would not show unacceptable risk.

Therefore, the maintenance worker and recreational user will not be included in this risk assessment.

8. The RGOs will not be presented in the risk assessment. These are presented in the Feasibility Study (FS) Report for Operable Unit 16.
9. The text stating that pesticides detected in the sediment are not site-related contaminants will be removed from this section. Section 7.0 will only present potential ecological risks at the site, regardless of the source of contamination.
10. The assessment endpoint will be revised. However, bioaccumulation factors will not be addressed in the assessment endpoint because of the high uncertainty involved in predicting fish tissue concentrations from contaminants in the sediment. As noted, pesticides detected in the sediment are the primary ecological contaminant of concern at the site. Although pesticides have high bioaccumulation factors, these factors are based on surface water concentrations and not sediment concentrations. Therefore, bioconcentration of pesticides in fish will be qualitatively addressed in the uncertainty analysis.
11. The measurement endpoint will be revised. However, bioaccumulation factors will not be incorporated into the endpoint. Please refer to the response to Comment No. 10.

A figure presenting the potential ecological exposure pathway at the site will be added to Section 7.1.4.

The text in Section 7.1.7 on Page 7-6 will be revised to state the measurement endpoints identified.

Section 8.0 will be revised to incorporate a qualitative discussion of the potential impact of bioaccumulation factors on aquatic receptors inhabiting the site.

Specific Comments

1. The text in the soil section of the Executive Summary will be changed to Human Health Region III RBCs as suggested. The remaining references to Region III RBCs will be changed as well.
2. On occasion, potable water is added to the borehole during well installation but not during decontamination procedures. Potable water is required during some monitoring well installations to induce a static head on the well and/or to prevent the well rising or prevent "running sands" from entering the borehole. Although adding potable water is not preferred, in some cases it is necessary to complete the borehole. The presence of chloroform in some samples is probably a result of water being added to the borehole during some well installations. The references to chloroform as a common lab contaminant will be corrected.
3. RAGS, page 5-16, section 5-5, second paragraph states that if it is not possible to associate equipment rinsates, field blanks, and/or trip blanks with specific environmental samples, then it is acceptable to compare the blank data with results from the entire sample data set. In the case of the Sites 89 and 93 analytical data sets, the blanks may not have been associated with their specific lot due to the fact that the sample delivery groups (SDGs) may have been broken up at the laboratory. For this report, blanks were sorted based on media sampled (i.e., an equipment rinsate taken from

PE tubing was associated with groundwater samples only). In this way, the blank data was associated with specific samples. The text will be modified to clarify the use of the blank data.

4. The text will be amended to include the screening of soil contaminants with soil to groundwater SSLs.
5. The text will be corrected to reflect that the discussion on sampling procedure can be found in Section 2.0.
6. This paragraph will be rewritten to clarify the reference to the geometric mean of a log-normal data set.
7. The paragraph will be rewritten to clarify the use of the log-normal 95% UCL versus the maximum detected concentration.
8. The use of the maximum detected concentration for the groundwater exposure concentration will not be changed for this report. Concentrations of volatiles in most permanent wells exceeded state or federal criteria. Although the use of the maximum concentration may be an over-estimate of the risk from exposure to groundwater, given the elevated levels detected it is still reasonable and protective. The approach recommended in the Region IV guidance will be taken into consideration for future BRAs.
9. The exposed skin area of the construction worker will be changed to 5,800 cm².
10. Based on the results of the groundwater risk calculations, it is felt that the outcome of the BRA would not change using the procedure (estimating exposure due to showering) recommended in the Region IV guidance. Therefore, the use of the Foster and Chrostowski model will not be changed for this BRA. However, the recommended procedure will be considered in future BRAs.
11. Based on the results of the groundwater risk calculations, it is felt that the outcome of the BRA would not change with the addition of the inhalation (VOCs in groundwater) pathway to the future residential child scenario. However, inhalation of VOCs from exposure to hot bathtub water is recognized as a valid exposure pathway for this scenario and will be considered in future BRAs.
12. Table 6-13 will be referenced in Section 6.4.1.
13. The sentence cited in the comment will be re-written. The word "risk" will be replaced with "effect." Also, the term "noncarcinogenic risk" will be replaced with "noncarcinogenic effect" throughout the document.
14. Target organ analyses will be included in discussions of risk results involving HI values greater than one.
15. The comment is noted and will be included in the section discussing the uncertainty of the derivation of the iron RFD (Section 6.6.5).
16. The unit for surface water ingestion will be corrected, and the appropriate text, tables, and calculations will be re-checked for the correct units.