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U.S. Environmental Protection Agency
Region IV
Atlanta Federal Center
Attn: Ms. Gena Townsend
Waste Management Division
Federal Facilities Branch
61 Forsyth Street SE
Atlanta Georgia 30303-3104

SUBJECT: RESPONSE TO COMMENTS FOR THE FOLLOWING DOCUMENTS; DRAFT FOCUSED REMEDIAL INVESTIGATION REPORT, OPERABLE UNIT 17 (SITES 90, 91 AND 92), MARINE CORPS BASE, CAMP LEJEUNE, NORTH CAROLINA, AND DRAFT SUPPLEMENTAL GROUNDWATER INVESTIGATION REPORT FOR SITES 90, 91 AND 92, MARINE CORPS BASE, CAMP LEJEUNE, NORTH CAROLINA

Dear Ms. Townsend:

This letter serves as a transmittal letter for the attached response to comments for the subject reports as attached.

If you should have any questions, please do not hesitate to call me at (757) 322-8422.

Sincerely,

K. A. STEVENS
Remedial Program Manager
Installation Restoration Section
(South)
Environmental Programs Branch
Environmental Division
By direction of the Commander

Attachments

Response to Comments Submitted by Ms. Gena Townsend of United States Environmental Protection Agency, Region IV, Dated March 5, 1998 to the Draft Focused Remedial Investigation Report, Operable Unit No. 17 (Sites 90, 91 and 92), Marine Corps Base Camp Lejeune, North Carolina.

General Comments:

1. A few sentences have been added to the paragraph providing rationale for excluding surface soil from the Focused RI and why the RI was focused. In essence, the purpose of the Focused RI was to determine if contamination exists near the source in the subsurface soils and groundwater in the vicinity of the sites. The investigation was "focused" on subsurface soils and groundwater in the source area. If contamination was discovered during the first phase of the Focused RI, then a second phase was planned which would complete any data gaps in the first phase. This was outlined in the project plans submitted for Operable Unit No. 17 (Sites 90, 91 and 92) and agreed to by USEPA Region IV and NC DENR. Surface soils were not part of this initial phase and therefore were not sampled.

2. There are figures illustrating groundwater flow (potentiometric surface) and analytical results (see Sections 2.0 and 4.0 of the report for each site). No surface water bodies exist within the study area of Site 90 or 91, therefore there are no maps showing surface water flow direction. A general surface topography map showing the area around all three sites has been added to Section 1.0 of the report for each site.

   Site 92 is located on a peninsula separating Courthouse Bay from the New River. The direction of flow for Courthouse Bay is tidal and therefore is not predominantly in one direction. However, the predominant direction of flow for the New River will be included in the drawings for the final version.

   Figures showing contaminant isoconcentration lines for each of the sites would not be appropriate because the limited number of sampling points would not present an accurate picture of the areal extent of the plume.

3. The reason for not sampling these surface water bodies was because these investigations were "focused" RIs. Therefore, as stated in general comment number 1, the purpose was to determine if subsurface soils and groundwater in the vicinity of the source area was contaminated. If contamination was detected, then a second phase was planned which would complete any data gaps in the first phase. This approach was outlined in the project plans submitted for Sites 90, 91, and 92 and agreed to by USEPA and NC DENR.

4. The text will be clarified.

5. Organic parameters were omitted from this discussion because the discussion was centered on naturally occurring inorganic elements. Further, organics are considered to be site related unless detected in blanks or if they are common laboratory contaminants. Comparison of analytical results against RBC values is provided in the risk section of the RI for each site.

6. Agreed. The SSL for soil to groundwater has been added as screening criteria to Table 6-1 (Site 90 and 91) and Table 5-1 (Site 92), and the COPC selection has been re-performed. However, a DAF of 20 was used because this number is recommended by USEPA Soil Screening Guidance

(USEPA, 1994). At most sites, this adjustment will more accurately reflect a contaminant's threat to groundwater than assuming a DAF of 1. Also, in recent calculations completed for Camp Lejeune (specifically, Site 89), a DAF of 20 was recommended by North Carolina and successfully applied for this type of screening. No contaminants detected at Sites 90 and 91 were above the applicable SSL. At Site 92, two detections of acetone exceeded the SSL. Acetone has been listed as a COPC for Site 92 on Table 5-1.

7. The source of bis(2-ethylhexyl)phthalate in the soil sample is uncertain. The text referring to sampling materials as a possible source has been deleted for each site. This contaminant was considered in the qualitative risk assessments for Sites 90, 91 and 92, but discounted as a Contaminant of Potential Concern (COPC) because concentrations were less than the Region III residential Risk Based Concentration (RBC).

8. See response to general comment number 7.

Specific Comments:

1. An explanation has been added to Table 2-1 in the final report for the dashed lines.

2. The text has been changed to correct the typographical error.

3. When the monitoring wells were originally installed during the CSA, the water table may have been much lower. Due to seasonal variation in the water table, it appears that less than 2 feet of screen extends above the water table at the time of measurement.

4. As stipulated in the work plans, all soil samples were collected just above the water table. Therefore, due to the borings close proximity to each other (less than 5 feet), it would be redundant to collect analytical samples from both borings. As far as the different termination depth of the borings is concerned, the soil samples would have been collected at the same depth regardless of the boring's termination depth. A note has been added to Table 3-1.

5. The water levels have been placed on the test boring logs as noted.

Risk Assessment
General Comments:

1. Baker believes the qualitative risk assessments performed for Sites 90, 91, and 92 are sufficient for the purposes of the Focused RI. However, the introductory paragraph may be misleading. Text will be added to Section 5.0 to further explain the purpose and objectives of the qualitative risk assessments for Sites 90, 91, and 92.

2. Decontamination practices conducted in the field for Sites 90, 91, and 92 were conducted in accordance with USEPA Region IV decontamination procedures. As per the recommended procedures, the following protocol were followed:

    a. Clean with tap water and soap using a brush if necessary to remove particulate matter and surface films. Equipment may be steam cleaned (soap and high pressure hot water) as an alternative to brushing. Sampling equipment that is steam cleaned should be placed on

racks or saw horses at least two feet above the floor of the decontamination pad. PVC or plastic items should not be steam cleaned.

b. Rinse thoroughly with distilled water.

c. Rinse thoroughly with analyte free water.

d. Rinse thoroughly with pesticide-grade isopropanol.

e. Rinse thoroughly with organic/analyte free water. If organic/analyte free water is not available, equipment should be allowed to completely dry.

Since organic/analyte free water was not available, the sampling equipment was allowed to air dry. Therefore, Baker does not believe that level of sample quality and reliability has been reduced.

3. The mobile laboratory was utilized for obtaining quick-turn VOC analytical data for the purpose of determining temporary well placement. Only ten percent of the samples collected were sent to the fixed base laboratory for confirmatory analysis. In general, the VOCs detected by both laboratories were similar. Although it is agreed that the use of the mobile laboratory data in a baseline risk assessment is questionable, it was felt that the data was of sufficient quality for this qualitative risk assessment (i.e., screening of data against RBCs and discussing exceednces).

4. The analytical methods used for the initial investigations and the CSA are required by NC DENR for UST sites. However, these methods were not appropriate for the Focused RI since they do not require the same level of data quality as CLP or Method 8240. A comparison of the list of compounds detected in each of the methods used for the CSA and the Focused RI would illustrate that although the detection levels differ, the contaminants detected in the CSA that may cause adverse human health or environmental risk, are included in both CLP or Method 8240. Additional text will be added to the Focused RI Report stating this information.

5. At the time the report was written (August, 1997), MCB, Camp Lejeune was beginning to add information collected from all UST and RI wells into a GIS database. Therefore, a unique name was given to each of the more than 1500 monitoring wells at the base. The table does list the "original" well name and its corresponding "new" well name. A statement as to the reason for the change in monitoring well names will be included in the final version of this document.

6. Agreed. The SSL for soil to groundwater has been added as screening criteria to Table 6-1 (Site 90) and 91) and Table 5-1 (Site 92), and the COPC selection has been re-performed. No contaminants detected at Sites 90 and 91 were above the applicable SSL. At Site 92, two detections of acetone exceeded the SSL. Acetone has been listed as a COPC for Site 92 on Table 5-1.

7. Agreed. The uncertainties analyses for all sites will be expanded to include discussions on the uncertainty relating to the spatial locations of the samples, different analytical methodologies, screening parameters, and blank contamination.

8. Agreed. The columns for HA and MCL will be removed and the MCB Camp Lejeune groundwater background values will be included in Tables 5-2 and 5-3 for all sites. However, the mobile lab data

and fixed lab data will not be combined.

9. As stated in earlier results, Baker does not believe that the detections of acetone and chloroform in subsurface soil and groundwater samples implicate that the quality of the data and the qualitative risk assessments is questionable.

Specific Comments:

1. The CSA data will not be included in the risk assessment. Please refer to response to Risk Assessment General Comment No. 4.

2. Agreed. However, as stated in the Risk Assessment Guidance for Superfund (USEPA, 1989), if a blank cannot be associated with a specific analytical batch, then compare the blank data with the results from the entire sample data set.

3. Reference to secondary MCLs will be removed from text.

4. Agreed. The paragraph will be re-written. Also, please refer to response to General Comment No. 6 and Risk Assessment General Comment No. 2 .

5. Agreed. The paragraph will be deleted.

6. Please refer to responses to General Comment No. 7 and Risk Assessment General Comment No. 2 .
7. Please refer to response to General Comment No. 7 and Risk Assessment General Comment No. 3.

8. This section is titled "Findings of the Focused Remedial Investigation". Therefore, the discussion within this section does not refer to the CSA.

9. Agreed. This paragraph has been removed from Section 5.2.2.1 for each site.

10. As stated in the second paragraph of Section 5.2.2.5, COPCs were not chosen based on comparison to state and federal criteria. However, references to these criteria will be removed from text and tables for all sites to avoid further confusion.

11. Agreed. The last sentence of the paragraph has been deleted. Bis(2-ethylhexyl)phthalate was not retained as a COPC.

12. Section 5.5 states that no COPCs were retained for Site 90 subsurface soil. This section does state that tetrachloroethene was retained as a groundwater COPC. Concerning chloroform, please refer to response to General Comment No. 7.

13. The text has been modified to correct the discrepancy.

14. All nine samples submitted for confirmatory analysis were analyzed for CLP volatiles, semivolatiles, pesticides and PCBs, TSS, TDS and inorganics. The results for PAHs in groundwater are presented on Table 4-8 (semivolatile list). Not that no PAHs were detected in confirmatory groundwater samples.

15. As per the request, the text will be modified to include a table depicting the compounds detected in each of the lists and there detections limits. Additionally, text will be added to discuss any impact that the different lists have on the investigation.

16. Please refer to response to General Comment No. 6 and Risk Assessment General Comment No. 2.

Response to Comments submitted by Gena D. Townsend of the United States Environmental Protection Agency, dated April 11, 2000, to the Draft Supplemental Groundwater Investigation Report for Sites 90, 91, and 92 - Marine Corps Base Camp Lejeune, North Carolina.

Specific Comments:

1. A Final Supplemental Groundwater Investigation Report will not be issued, but rather, the information from this report is being included as a part of the Final Focused RI that is being prepared by Baker. This sentence will not be included in the Final Focused RI.

2. The groundwater flow directions have been added to the figures in the Final Focused Remedial Investigation Report.

3. In July 2000, three temporary wells were installed at Site 90 around MW04 to delineate the extent of trichloroethene in order to determine whether or not additional work will be required. The installation of these wells and results of sample analysis will be discussed in the Final Focused RI.

4. MW16 at Site 91 was sampled under the Camp Lejeune Long Term Monitoring (LTM) program for the first time in July 2000. The results of this sampling even are not yet available. This well will be monitored under the LTM program to determine if these concentrations decrease, migrate, or were a one time occurrence. Dichlorobenzene and trichlorobenzene, which were detected in MW16 in 1999, may or may not be associated with the underground storage tanks that were removed in March 1993. This will be monitored through the LTM program. Monitoring will continue until contaminant concentrations are below the applicable groundwater standard for each contaminant of concern.