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Response to Comments
Non-Time Critical Removal Action Work Plan for Site 35, OU 10
MCB Camp Lejeune, North Carolina
May 2007

Introduction

The purpose of this document is to address comments associated with the Non-Time Critical Removal Action (NTCRA) Work Plan for Site 35, Operable Unit 10 at Marine Corps Base Camp Lejeune, North Carolina. The North Carolina Department of Environment and Natural Resources (NCDENR) provided the comments. Responses to comments are provided in bold type. U.S. Environmental Protection Agency (EPA) and MCB Camp Lejeune Environmental Management Division (EMD) had no comments.

North Carolina Department of Environment and Natural Resources
Comments on the NTCRA Work Plan for
Site 35, Operable Unit No. 10
Marine Corps Base
Camp Lejeune, North Carolina

Specific Comments

1. The last paragraph under Section 2.3 on page 2-3, Nature and Extent of Contamination, States that the "wide spread presence of Cis-DCE across the target area at concentrations greater than those of TCE provides evidence that degradation is naturally occurring. I concur; however, if the concentrations of Cis-DCE remain the same or increase after ERD treatment (stalling of the degradation pathway), we may need to inoculate with appropriate bacteria to help the degradation process proceed to non-toxic ethene.

Noted. Overall contaminant concentrations (TCE and daughter products) will be monitored and updates will be provided to the Partnering Team. If at a point the results are deemed by the Partnering Team to not be sufficient, additional actions could be taken (ie, bioaugmentation, pH adjustment, additional substrate injection, etc.). The current conditions of the site would have to be evaluated to determine the best approach. This is suggested in Section 3.1, 5th paragraph.

2. Paragraph 1 of Section 3.1, states that the rational for selecting ERD injections using DPT is presented in the Site 35 Building G522 EE/CA. The proper rational for this choice does not appear to be in the EE/CA or this document. Please provide the rational in this NTCRA Work Plan (include technical and other details of why we chose to consider Chemical Oxidation (ChemOx) and Enhanced Reductive Dechlorination (ERD) and the fact that we eliminated permanganate due to the high NOD at the Site and the fact that permanganate had very little impact at the Site 35 Pilot Study Area treatment completed in January 2004.)

This work plan is intended to be a concise document presenting the implementation of the study and not a detailed decision document. A short explanation as to why ERD substrate injections were chosen for this NTCRA will be provided in the Action Memorandum (the decision document under a NTCRA).

3. The paragraph on page 2-4 states that: "the southern plume is centered on borings 35-IS117, 35-IS118 and monitoring well MW30IW. These borings are actually on the boundary of the plume, except for MW30IW, rather than on the center of the plume. It appears based on this plume delineation map that additional monitoring wells are necessary in order to properly define and monitor the plume following injection. Additional wells are necessary in order to define the heterogenaity and optimize the injection design locations. Additional wells are needed in the northern and southern plume at the southwest and northwest ends of each plume. Therefore, it is recommended that 4 additional monitoring wells be installed with the 5 additional wells proposed in this Work plan.

The locations for monitoring wells were proposed based on the ability to monitor the effects of the ERD substrate injections. As the contamination was delineated during DPT investigation activities, no additional monitoring wells were proposed for purposes of delineating the plume. A groundwater sample will be collected from the injection location situated northwest of IS100 and analyzed for VOCs (EPA Method 8260B) prior to injecting the ERD substrate.

Northern Plume

Location Relative to Plume	**Monitoring Wells**
Upgradient	MW37, MW37IW, MW29, MW29IW
Sidegradient	MW83IW
Downgradient	MW10, MW10IW, MW03DW, MW84IW
Within Plume	MW82IW

Southern Plume

Location Relative to Plume	**Monitoring Wells**
Upgradient	MW38, MW38IW
Downgradient	MW85IW, MW86IW
Within Plume	MW30, MW30IW, MW30DW

4. This NTCRA Work Plan needs to have a map or figure with the Geoprobes and monitoring wells concentration data included on the map for this review. Also provide a map that includes the estimated plume concentration gradients on the proposed injection well layout. As you know this removal action document includes a design that is based on this data. Without the data, the proposed injection probe locations are meaningless.

A figure showing DPT groundwater and monitoring well data will be added to the report. Additionally, figures showing the TCE concentration gradient in the 20 to 37 ft bgs and 37 to 47 ft bgs intervals will be added.

5. Figure 2-1 has a yellow site boundary that does not include the NTCRA target treatment area. This is confusing and misleading. If the original boundary is in this location, the new boundaries should be re-defined for the purpose of this NTCRA. The EE/CA shows the plume boundary extending to site 89. This same boundary would be appropriate for the NTCRA Work Plan.

Agreed. The site boundary will be removed from the figure.

6. A yellow site boundary symbol is included in the legend of Figure 2-7 but the boundary is not shown on the Figure. Please make appropriate corrections.

The yellow site boundary symbol will be removed from the legend.

7. Figure 2-3 and 2-4 show the geology and the monitoring wells in the area of the proposed injection probes. Many of the monitoring wells, especially the intermediate and deep wells, show the screened intervals bridging the cemented sands and the River Bend formation. It seems, based on previous experience at site 89 and 93 that the cemented sands are less permeable and act as an aquitard to the contaminants. Please include figures of the proposed injection wells in cross sections of the aquifer. What aquifer(s) do we plan on injecting the ERD substraight into?

The cross-section figures will be updated to show the proposed injection borings. The ERD substrate will be injected into the intermediate aquifer, primarily the River Bend formation, where the DPT groundwater sampling indicated contamination.

8. The last paragraph on page 4-4 states that, at the completion of the field effort, the Field Team Leader (FTL) will contact the Remedial Action Contractor (RAC) to have the Investigation Derived Waste (IDW) containers removed from the Site. This needs to be completed as soon as possible after the work is completed. Preferably within thirty days of the start of work. IDW removal should be completed for all listed or characteristic hazardous waste with proper disposal within a maximum of 90 days from the start of work.

Noted. As various phases of the field activities (well installation, ERD injections, groundwater monitoring) are completed, the FTL will notify the Base RAC to remove the IDW containers from the site.