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RESPONSE TO COMMENTS ON DRAFT SOID WASTE MANAGEMENT UNIT 615 (SWMU 615) RCRA FACILITY INVESTIGATION REPORT MCB CAMP LEJEUNE NC
1/20/2016
CH2M HILL

Response to Comments
Draft SWMU 615 RCRA Facility Investigation Report
Marine Corps Base Camp Lejeune, North Carolina

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Introduction

The purpose of this document is to address comments on the Draft SWMU 615 RCRA Facility Investigation (RFI) Report, Marine Corps Base Camp Lejeune (MCB Camp Lejeune), North Carolina. The North Carolina Department of Environmental Quality (NCDEQ) did not have any comments. The United States Environmental Protection Agency (USEPA) comments are listed below. Responses to comments are provided in bold. The SWMU 615 RFI Report will be updated and finalized following acceptance of these responses.

USEPA Comments (dated January 6, 2016)

1. Concentrations were very high in SWMU615-MW03 in April and dropped dramatically in October then remained low in December. The text doesn't provide much explanation other to say that the April results were an anomaly. Are wells located down-gradient of the SWMU 615 wells that may have detected higher VOC concentrations post April 2014? Curious if the VOC contamination is migrating as a slug down-gradient from the building and picked up by other wells. The Navy should provide more explanation for such a dramatic shift in groundwater concentrations.

Two monitoring wells, SWMU615-MW04 and SWMU615-MW06, are located downgradient from SWMU615-MW03. Samples were collected from SWMU615-MW06 in July and October 2014. PCE and TCE were not detected in either sample collected from SWMU615-MW06. The potential for a slug of high concentration PCE to be released near SWMU615-MW03 and migrate rapidly through the shallow aquifer within SWMU 615 is considered unlikely due to the generally moderate hydraulic conductivity and low hydraulic gradient. Using an average hydraulic conductivity of 4.1 ft/day, a gradient of 0.01 ft/ft, and an estimated porosity of 25%, the average linear seepage velocity is approximately 5 feet per month, with a range of 1 to 12 feet per month based on the range of the hydraulic conductivities (1.2 to 9.5 ft/day). This relatively low groundwater flux is consistent with observations in the Surficial aquifer elsewhere at the Base. Such a low seepage velocity would be unlikely to result in PCE concentrations decreasing from 1,300 µg/L to 1.2 J µg/L over a six month period (and confirmed after 8 months). Samples collected downgradient within the approximate timeframe expected for groundwater to travel from SWMU615-MW03 to SWMU615-MW06 did not contain detections of PCE which suggests that the elevated PCE

detection was isolated in time and space to the April 2014 sample from SWMU615-MW03. This will be clarified in the report as follows.

The following sentence will be added to the end of Section 4.3.3:
Using an average hydraulic conductivity of 4.1 ft/day, a gradient of 0.01 ft/ft, and an estimated porosity of 25%, the average linear seepage velocity is approximately 5 feet per month with a range of 1 to 12 feet per month based on the range of the hydraulic conductivities (1.2 to 9.5 ft/day).

And the second paragraph of Section 5.3.2 will be revised as follows:
During the April 2014 sampling, the sample collected from monitoring well SWMU615-MW03 contained elevated concentrations of PCE (1,300 µg/L) and TCE (59 µg/L); and the sample collected from SWMU615-MW03IW contained PCE at 4.4 µg/L. In order to confirm these elevated concentrations, additional samples were collected in October 2014 and December 2014. During the October 2014 sampling, the PCE and TCE concentrations detected in the sample collected from monitoring well SWMU615-MW03 (1.2 J µg/L and 3.3 J µg/L, respectively) and the PCE concentration in the sample from SWMU615-MW03IW (1 U µg/L) were significantly lower than concentrations detected in the April 2014 samples. In the December 2014 sampling, the concentrations of PCE and TCE (1.4 J µg/L and 3.9 J µg/L) in the sample from SWMU615-MW03 were similar to those detected in the October 2014 sampling and again significantly lower than those from the April 2014 sampling. **The lack of PCE detections in samples collected from downgradient monitoring well SWMU615-MW06 within the approximate timeframe (7 months) expected for groundwater to travel from SWMU615-MW03 to SWMU615-MW06 suggests that the elevated PCE detection was isolated in time and space to the April 2014 sample from SWMU615-MW03.** Due to the anomalous nature of the April 2014 sample results from SWMU615-MW03 and MW03IW, the most recent sample results (October 2014 for SWMU615-MW03IW and December 2014 for SWMU615-MW03) were used to characterize the nature and extent of the groundwater contamination.

Comment 2: Also, I saw that indoor air VI sampling was conducted for PCE and were well below NC screening levels, but couldn't locate the PCE concentration detected. Please include the detected concentration.

The VI investigation is summarized in a separate technical memorandum which will be included as an appendix to the RFI Report. The PCE indoor air concentration in the sample collected in April 2013 was 0.07 J ppbv.