

Memo

To: Andy Piszkin
From: Karnig Ohannessian
CC:
Date: April 1, 2003
Re: Response to RWQCB Comments Regarding Site 24 Vadose Zone Closure Report

Attached is the response to comments (RTCs) table that I emailed to John Broderick of the California Regional Water Quality Control Board, Santa Ana Region (RWQCB) on 27 February 2003 regarding RWQCB comments dated December 16, 2002 on the Draft Final Site Closure Report, Vadose Zone Remediation, IRP Site 24, Volatile Organic Compounds Source Area, Former MCAS El Toro (June 2002). The RTCs reflect the responses that we have worked out with John, who has agreed with our approach. John is working on a concurrence letter. This documents finalization of the Draft Final report pursuant to the MCAS El Toro Federal Facility Agreement.

Document Title:

(1) Draft Final Site Closure Report, Vadose Zone Remediation IRP Site 24, Volatile Organic Compounds Source Area, Former MCAS El Toro

Reviewers: John Broderick, SLIC/DoD/AGT Section, CRWQCB Dated: December 16, 2002

Comment No	Section/ Page No.	Comment	Response
GENERAL COMMENTS			
1.	general	<p>Your first Remedial Action Objective (Section 1.3) is to reduce volatile organic compound (VOC) concentrations in the soil within the contaminant source area, and thereby prevent further degradation of the shallow groundwater quality. The entire focus of this report is the evaluation of the soil vapor extraction (SVE) system and VOC concentrations measured in vapor extraction wells. This is an appropriate step; However, the closure report has no discussion or presentation concerning the effectiveness of this remedial action on VOC concentrations in groundwater beneath the source area. The purpose of applying this remedial action to contaminated soils at depths two feet below ground surface is to achieve the contaminant-specific cleanup standards (i.e, the standards for VOC removal that have been specified for this site) in the underlying groundwater. In order to gauge the effectiveness of this SVE system, you must discuss its effect on groundwater quality.</p>	<p>The Navy agrees that the effect of SVE on groundwater quality should continue to be evaluated as part of the groundwater remedy selected in the OU1 (Site 18) and OU2A (Site 24) <i>Final Record of Decision</i> (June 2002). Consistent with previous commitments by the Navy, an evaluation of the use of SVE to complement the groundwater remedy in the source area (Site 24) will be performed. Details on this evaluation will be presented in the upcoming <i>Pre-Design Investigation Work Plan for the Shallow Groundwater Unit Remediation</i>.</p> <p>Further, the Navy will continue to evaluate trends in VOC groundwater concentrations as the Site 18/24 groundwater remedial design progresses and as routine groundwater monitoring data are collected. Strategies for evaluating anomalous VOC levels or suspected source areas may be addressed in a long-term monitoring plan or O&M plan for the final remedy.</p> <p>Finally, Section 3.1.5 of the <i>Draft Final Site Closure Report</i> provides a discussion of trends in groundwater in the vicinity of the SVE system. Plots of concentration trends are presented in Appendix G. The closure report states that a general decrease in groundwater concentrations has occurred during the soil remediation phase. However, more recent groundwater monitoring data from two Site 24 wells (24EX3OB1 and 24EX6OB2) show fluctuating or increasing TCE concentrations, reinforcing the Navy's commitment to evaluate the potential benefit of additional SVE to enhance remediation of the source-area capillary fringe and saturated zone that is expected to be exposed by dewatering during implementation of the pre-design investigation and final groundwater remedy.</p>

Document Title:

(1) Draft Final Site Closure Report, Vadose Zone Remediation IRP Site 24, Volatile Organic Compounds Source Area, Former MCAS El Toro

Reviewers: John Broderick, SLIC/DoD/AGT Section, CRWQCB Dated: December 16, 2002

Comment No	Section/ Page No.	Comment	Response
2.	general	<p>Based on our review of your groundwater monitoring reports for sampling events prior to and after operation of this SVE system, it appears that there has been some reduction of contaminant concentrations in groundwater as a result of this remedial action. However, it also appears that there has been insufficient sampling at individual monitoring wells to allow a trend analysis or statistical evaluation of the contaminant concentrations. We normally require three types of information for SVE remedies when evaluating a site for closure: (1) system operation data; (2) analytical results indicating the contaminant concentrations in groundwater; and (3) confirmation soil sampling and analytical results. Prior to implementation of this SVE system, the Navy requested that the regulatory agencies agree to waive the requirement for confirmation borings. The Navy also requested regulatory concurrence on the target cleanup levels for soil vapor concentrations at the site. When a SVE system does not meet the expected mass removal and contaminant concentration reduction goals, the system should be evaluated for effectiveness. It is possible that the SVE system, as currently configured, may no longer be optimal for this site. Specific soil horizons or geological characteristics may not respond to the technology as anticipated. Fine-grained horizons or variations in moisture content may impede, or cause irregularities in, vapor flow patterns in the subsurface. In such cases, it is commonly necessary to reconfigure the vapor extraction locations and restart the system. Considering the capital expense involved in constructing this system, the size of the contaminant source area, and the depth to groundwater, it is advisable to ensure that the system has removed all available contaminants before dismantling it.</p>	<p>The basic elements required for the SVE closure report, with the exception of confirmation soil sampling, have been included. As previously discussed with the BCT, soil gas sampling in lieu of soil samples was used for confirmation. The soil gas results clearly demonstrate that the remedial action objectives for the vadose zone have been achieved. In addition, the efficacy of the SVE system to remove any residual mass in the fine-grained soils was evaluated in two ways. Prior to system shut down a Pnelog evaluation was conducted on selected SVE wells. As discussed in Section 3.1.4 of the report, elevated VOC concentrations were detected only within 2-3 feet of groundwater. These elevated concentration are attributable to off-gassing from groundwater. The evaluation did not detect fine-grained soils in the intermediate or shallow zones.</p> <p>To further evaluate whether there were diffusion limited soil lenses, two rebound tests were conducted. The first rebound test was conducted as part of the well deactivation sequence and the second was conducted as part of confirmation sampling. For the confirmation sampling event, the system was shut down for a minimum of seven months and soil gas sampling results did not detect an exceedance of the target clean-up goals, again demonstrating that vadose zone remedial objectives had been met.</p> <p>Current groundwater conditions and VOC concentration trends will continue to be monitored and evaluated by the Navy and discussed in one or more of the future Site 18/24 groundwater remedial design documents. The groundwater remedy will be implemented and refined based on the latest available data. As stated above in response to comment no. 1, the Navy is planning to evaluate SVE enhancement during the upcoming pre-design investigation for the final groundwater remedy. However, the vadose zone closure report will not be revised to include more recent groundwater monitoring data (approximately 2 years after confirmation soil gas sampling).</p> <p>Following issuance of the final vadose zone closure report, the Navy will begin planning for the decommissioning and removal of the large inactive SVE system and aboveground piping that are still on-site. The underground well infrastructure will remain in place and used for evaluation of SVE enhancement using smaller portable SVE equipment.</p>