



DEPARTMENT OF THE NAVY
SOUTHWEST DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
1220 PACIFIC HIGHWAY
SAN DIEGO, CA 92132-5190

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Ser 06CH.AM/1307
December 19, 2001

Ms. Alana Lee
U.S. Environmental Protection Agency
75 Hawthorne Street, SFD-73
San Francisco, California 94105

Ms. Adriana Constantinescu
Regional Water Quality Control Board
San Francisco Bay Region
1515 Clay Street, Suite 1400
Oakland, California 94612

SUBJECT: EFFECTIVENESS EVALUATION OF THE EAST-SIDE AQUIFER TREATMENT SYSTEM, MOFFETT FEDERAL AIRFIELD, CALIFORNIA

Dear Ms. Lee and Ms. Constantinescu:

As discussed at a previous BRAC Clean-Up Team meeting, the Department of Navy (DoN) plans to evaluate discontinuing continuous operation of the East-Side Aquifer Treatment System (EATS), Moffett Federal Airfield (MFA), California. This evaluation is proposed based on data provided in the *Third quarter 2001 NPDES Report* to compare the effectiveness of the EATS system with other clean-up methods. Data will be collected and evaluated with conclusions provided in subsequent documents to be submitted to the U.S. Environmental Protection Agency (EPA) and Regional Water Quality Control Board, San Francisco Bay Region (RWQCB) for review. The DoN looks forward to working with the EPA and RWQCB on this evaluation.

Background

EATS is currently operated in accordance with the Operable Unit 5 (OU5) Record of Decision (ROD), signed June 28, 1996, and authorization to discharge letter from the RWQCB to operate the system pursuant to the National Pollutant Discharge Elimination System (NPDES) Permit No. CAG912003, Order No. 99-051. The proposed evaluation is in accordance with the OU5 ROD, which states that achieving cleanup standards, the maximum contaminant levels (MCLs), may not be technically feasible, and that if it becomes evident that achieving the standards is not feasible, the selected remedy may be re-evaluated. The ROD specifies MCLs for contaminants of concern (COCs) 1,2-dichloroethane (DCA), 1,2-dichloroethene (DCE), 1,1-DCE, tetrachloroethene (PCE), trichloroethene (TCE), and vinyl chloride.

EATS start-up was on 26 January 1999. EATS consists of five extraction wells (EXW-1 through EXW-5) screened in the A1 aquifer, connected via piping to a treatment system located north of Hangar 3. The treatment system consists of an air stripper and two granular activated carbon (GAC) vessels in series.

Operation of EATS

EATS continues to function as designed, although the efficiency of the system has significantly declined. Through October 2001, over 40 million gallons of groundwater was treated by the EATS system. The calculated average monthly mass of dissolved VOCs removed by EATS is currently less than 0.5 pounds. Although the system is functioning as designed, the efficiency is decreasing since the average dissolved VOC concentrations in 2000 are less than 10 micrograms per liter ($\mu\text{g/L}$) in the monitoring wells and appear to be asymptotic in the extraction wells.

Proposed Evaluation

The performance of EATS will be evaluated based upon graphical and statistical assessment of flowrates, COCs, and mass removal data since the start of operation. Concentration changes since system start up will be compared to more long-term concentration changes from pre-operation data, where available. In addition, chemical concentration data, including natural attenuation parameters, collected during the annual base-wide groundwater sampling event will be considered.

Following evaluation of the analytical data, the individual EATS wells will be shut off in January 2002 to evaluate chemical rebound. The time schedule for sampling will be based on the calculation of seepage velocity. Sufficient time will be allowed for water outside the cone-of-influence of the well to have moved to the well.

An optimum pumping schedule will then be determined, if there is significant rebound. This may include pumping from specific wells and discontinuing pumping from others. If there is no significant rebound, we will assess options for in-situ or passive remediation. Findings and recommendations shall be incorporated into the EATS 5-Year Review Document, to be submitted October 30, 2002.

Summary

At low contaminant concentrations, mass removal by pump and treat is not effective and may never reach the clean-up goals in the OU5 ROD. The DoN proposes turning off the EATS system in January 2002. The DoN will then evaluate the data (including chemical and rebound data from the system and monitoring wells in the area) and alternatives for mitigating the remaining mass of dissolved VOCs.

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The DoN looks forward to working with the EPA and RWQCB to select a more appropriate remedial solution for this site. As always, if you have any questions, please do not hesitate to contact Mary Parker or me in any of the following ways:

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Sincerely,



ANDREA MUCKERMAN
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By direction of the Commander

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