

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

24 June 2008

Mr. Anthony Megliola
Base Closure Manager
Base Realignment and Closure
Marine Corps Air Station El Toro
7040 Trabuco Road
Irvine, CA 92618

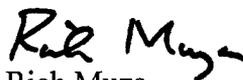
RE: Draft Final Remedial Investigation / Feasibility Study (RI/FS) Report, Operable Unit 2C
-- Anomaly Area 3, Former Marine Corps Air Station (MCAS) El Toro, California

Dear Mr. Megliola:

The U.S. Environmental Protection Agency (EPA) has completed its review of the subject document. EPA has for the most part found that the draft final document addressed and/or incorporated our previous comments. In our review we have identified an issue regarding the vapor intrusion assessment and provide a detailed comment for the Navy's consideration. We have also found a few cases where the response to comments (RTCs) was adequate but the response was not incorporated into the draft final document. We also provide these comments in the attachment.

If you should have any questions, please feel free to call me at 415-972-3349.

Sincerely,



Rich Muza
Remedial Project Manager
Federal Facility and Site Cleanup Branch

cc. Content Arnold, NFECSW SDIEGO
James Callian, NFECSW SDIEGO
Quang Than, DTSC
John Broderick, RWQCB
Bob Woodings, RAB Co-Chair
Marcia Rudolph, RAB Subcommittee Chair

received
7/3/08

**COMMENTS ON THE DRAFT FINAL RI / FS REPORT, OPERABLE UNIT 2C –
ANOMALY AREA 3**

1. Section 8.5.6, General – EPA's previous comment #11 was adequately addressed by inclusion of a vapor intrusion assessment to consider potential indoor air risks arising from off-gasing of soil vapor or ground-water contamination into any future buildings on the site. This VI assessment was performed using EPA's version of the Johnson-Ettinger model and incorporated what appears to be a mix of EPA and Cal/EPA DTSC default values. The risks predicted by this modeling are within the lower end of the Superfund target acceptable risk range. However, because this VI assessment addresses a future exposure scenario, there are inherent uncertainties in the risk estimate; these uncertainties are acknowledged in DTSC's "Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air" (December 2004, Interim Final):

"Making a reasonable prediction for vapor intrusion into future buildings is difficult. Many variables may alter subsurface vapor concentrations and the physical properties of the subsurface in the future, including but not limited to: 1) vapor concentrations in the subsurface may increase, accumulating directly under the foundation of a future building, 2) moisture content of the vadose zone directly under a building may decrease due to the inability of rainwater to infiltrate under the building, and 3) air permeability and moisture content of the subsurface may be altered due to construction activities associated with building construction, thereby altering the subsurface air permeability and significantly increasing the potential for vapor intrusion to indoor air. Additionally, there may be significant variability in the quality of foundation materials as well as the construction quality of future buildings."

Furthermore, construction activities may create preferential vapor migration pathways not addressed by the Johnson-Ettinger model. Although generally useful, the Johnson-Ettinger model does not accurately predict indoor air concentrations at a small percentage of sites. This observation may be due to the existence of preferential pathways for vapor migration through the subsurface and into buildings which are not incorporated into the model. Additional uncertainty with the Johnson-Ettinger model is introduced by the use of soil matrix and ground-water concentrations as the input data for VOCs migrating to indoor air; the use of soil vapor concentration data for input is much preferred for Johnson-Ettinger modeling of the vapor intrusion pathway. For these reasons, EPA recommends that installation, during construction, of a vapor barrier and sub-slab depressurization system be considered for any buildings that might be constructed at the site in the future. A simple, inexpensive vapor barrier/depressurization system is described by the California Integrated Waste Management Board at 72 CCR 21190(g). It is Region 9's experience that adding this type of appropriate engineering control to the design and construction of any future development at a VI site is a prudent and cost-effective way to ensure protection of public health -- and mitigate potential liabilities -- in the face of the uncertainties attendant upon the potential for vapor intrusion in this type of contamination situation. If there is a potential for future construction of buildings at AA-3, EPA recommends that the deed to this property include a requirement for installation of vapor barrier and sub-slab

depressurization systems during construction. Otherwise, EPA recommends that institutional controls be put in place such that there will be no potential for building on this site in the future.

2. Previous EPA Comment #46: Table 13-7 – For Alternative 2 there are conflicting statements made under the criteria “Long-Term Effectiveness and Permanence” and “Reduction of Toxicity, Mobility, or Volume through Treatment” with regard to infiltration potential. It is recommended that this issue be clarified. This previous comment was adequately addressed in the RTCs but the response was not incorporated into the changes made to the table.

3. Previous EPA Comment #47: Table 13-7 – Under the criteria “Reduction of Toxicity, Mobility, or Volume through Treatment”, Alternative 2 is rated “low” which is the same rating as that for the “no action” alternative. However, Alternative 2 would include the installation of landfill gas controls. It is recommended that the assigned rating for Alternative 2 be reconsidered. This previous comment was adequately addressed in the RTCs but the response was not incorporated into the changes made to the table.