



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

M60050.003103  
MCAS EL TORO  
SSIC NO. 5090.3

July 14, 2003

Mr. Steven Malloy, Principal Engineer  
Irvine Ranch Water District  
15600 Sand Canyon Ave  
P.O. Box 57000  
Irvine, CA 92619-7000

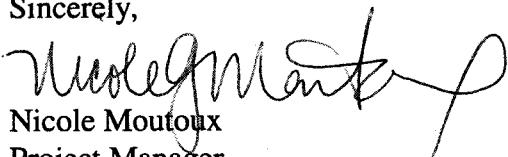
Re: 30% Design Submittal Site 18 and Site 24 Groundwater Remedy, Former Marine Corps  
Air Station, El Toro, dated May, 2003

Dear Mr. Malloy:

EPA has reviewed the 30% Remedial Design documents for Sites 18 and 24 at the Former Marine Corps Air Station, El Toro. In general we find the documents well-written and comprehensive. However, one primary issue must be resolved before the 60% design documents are prepared. We are concerned that blending lesser contaminated groundwater with groundwater that may contain a characteristic hazardous waste may violate not only RCRA but the preference for treatment under CERCLA. Our enclosed comments address this concern more fully.

EPA is available to meet to resolve any outstanding issues. Please call me at (415) 972-3012 if you have questions.

Sincerely,

  
Nicole Moutoux  
Project Manager

Enclosure

cc: Rafat Abbasi, DTSC  
John Broderick, Santa Ana RWQCB  
Bob Woodings, RAB Co-Chair  
Daniel Jung, City of Irvine  
Andy Pizskin, SWDIV  
Karnig Ohannessian, SWDIV ✓  
Herb Levine, EPA  
Thelma Estrada, EPA  
Marcia Rudolph, RAB Sub-Committee Chair

**EPA Comments on the 30% Design Documents for the Irvine Desalter Project  
Former Marine Corps Air Station, El Toro, California,  
May 2003**

**GENERAL COMMENTS:**

1. The Reverse Osmosis (RO) reject water from the Shallow Groundwater Unit (SGU) will likely be a characteristic hazardous waste with trichloroethylene (TCE) concentrations greater than 0.5 milligrams per liter (mg/L). The current design includes mixing the SGU RO reject water with RO reject water from the ET wells, which is much less contaminated. This may constitute treatment by dilution if the SGU RO reject water is a characteristic hazardous waste. Treatment by dilution is not allowed per 40 Code of Regulations (CFR) 268.3.

In addition, if the SGU RO reject water is a characteristic hazardous waste, disposing of it in public sewer system also poses problems. It is not clear that the Orange County Sanitation District's (the sanitation district) National Pollution Discharge Elimination System (NPDES) permit would allow the sanitation district to accept the waste stream. The current sanitation district discharge limit for total toxic organics, of which TCE is a component, is 0.58 mg/L. At the Orange County Stringfellow Acid Waste Pits site, the sanitation district enforces the 0.58 mg/L discharge limit on total toxic organics for treated groundwater discharged to the sewer, and the responsible parties treat the groundwater using granular activated carbon to remove toxic organic compounds. The pretreatment standard under the NPDES regulations would also forbid dilution of the SGU RO reject water in order to meet the pretreatment standard (see 40CFR403.6[d]).

The five CERCLA balancing criteria are: longterm effectiveness and permanence; reduction of toxicity, mobility, or volume through treatment; short-term effectiveness; implementability; and cost - see 40CFR.300.430(f)(1)(i)(B). Disposing of the SGU RO reject water in the public sewer, which is treatment through dilution, is not permanent and does not reduce toxicity, mobility or volume.

Even though the Water District believes that the TCE disposed to the sanitation district would be destroyed in the sanitation district's treatment works, no evidence has been presented indicating that it would be. While the amount of TCE that would enter the sanitation district system from the El Toro groundwater treatment plant is probably not large (less than 500 pounds per year), it is unclear why disposal of this amount of TCE to the environment would be acceptable under the Clean Water Act (CWA) or to the sanitation district.

This is a substantial issue that should be resolved prior to submitting the 60 percent design.

2. The ET-2 extraction well will be installed to a depth of 850 feet below the ground surface. It appears that the well, and presumably extraction well ET-1 could serve as a conduit for vertical migration of contaminated water through their gravel packs. In the 60 percent design submittal, please discuss the depth that contaminated groundwater has penetrated at the locations of ET-1 and ET-2 and whether the wells could serve as vertical conduits in the event that deeper

groundwater has not been impacted by contaminants present in shallow groundwater. If the wells could serve as vertical conduits for contaminant migration, please revise the report to specify that vertical gradient studies will be conducted to evaluate if significant quantities of contaminated groundwater would migrate vertically in the wells.

3. As part of the installation of the new groundwater treatment system, environmental data will be collected. Since this project is subject to CERCLA, the data will need to be collected following procedures provided in a project specific Sampling and Analysis Plan (SAP) with an accompanying Quality Assurance Project Plan (QAPP) outlining the steps to be taken to assure that the collected data is of sufficient quality. These plans should be submitted with the 60 percent design package. Specifically, the SAP/QAPP should address volatilization of volatile organic compounds (VOC) sampled using an air lift pump.

## SPECIFIC COMMENTS

1. **Table 2-3, Action -Specific ARARs for Remedial Action at Sites 24 and 18, Page 2-4:** As the groundwater treatment system will discharge treatment residuals to the sewer, please add the CWA NPDES pretreatment standards for discharge to Publically-Owned Treatment Works (POTWs) to the list of action-specific ARARs.
2. **Table 2-22, Comparison of IDP Concentrate to Title 22 Hazardous Waste Criteria, Page 2-55:** This table indicates that there will be substantial quantities of vinyl chloride in the SGU RO reject water but no *cis*-1,2-dichloroethylene (*cis*-1,2-DCE). Table 2-16 indicates that there is no vinyl chloride in the SGU and very little *cis*-1,2-DCE, of which only 20 percent would be rejected by the RO system. It would be expected that vinyl chloride would pass through the RO membrane at a higher rate than *cis*-1,2-DCE. In addition, it would be odd, but not impossible, to have large quantities of vinyl chloride, but little *cis*-1,2-DCE as both are breakdown products of TCE. Please revise the report to indicate the source of the vinyl chloride in the SGU RO reject water. If vinyl chloride is present in groundwater at substantial concentrations, the calculations in Appendix C for the granular activated carbon (GAC) control of the air stripper air effluent must be revised, and an assessment of risk to human health posed by emissions of vinyl chloride from the air strippers would also need to be performed.
3. **Table 2-22, Comparison of IDP Concentrate to Title 22 Hazardous Waste Criteria, Page 2-55:** As noted previously, neither the CWA nor RCRA would permit dilution to meet discharge standards. Please either delete the comparison of the mixed waste stream concentrations to the Orange County Sanitation District discharge limits from this table, or indicate why neither the CWA nor RCRA is applicable to this project. In addition, the sanitation district has mass loading restrictions as well as concentration limits that must be considered in design of the treatment systems.
4. **Appendix C:** The suggested change-out differential pressures for the cartridge filters is 30 psi (per manufacturers catalogue in Appendix C). 30 psi is equivalent to around 66 feet of head, which is more than the minor head losses assumed in the pump sizing calculation for extraction well ET1 and 75 percent of the assumed minor head losses for extraction

well 75. In the 60 percent design, please provide a more complete list of minor head loss components and assure that all pumps are adequate for the required load.

5. **Drawing D-1, Miscellaneous Pipe Details:** A note on this drawing indicates that trenches less than five feet in depth will not be required to be shored to allow access to the trench by site workers. The California Code of Regulations, Title 8, Section §§1541.1. Requirements for Protective Systems, actually indicates that shoring is not required if, "Excavations are less than 5 feet in depth and examination of the ground by a competent person provides no indication of a potential cave-in." While this may be moot as the trenches as designed will be 6-feet deep, please revise the drawing to indicate that a competent person, preferably a registered civil engineer practicing geotechnical engineering, will approve any unshored trench greater than 4 feet deep prior to allowing site workers to enter the trench.
6. **Contingency Plan:** Currently the construction of ET-2 is to take place during the summer months while school is not in session. Please revise the contingency plan to include additional steps that will be taken should the project be delayed and work have to be conducted while students are present in the schools.
7. **Contingency Plan:** Strong acids and bases will be present at the groundwater treatment plant during startup of the system. Please revise the contingency plan to include contingencies for dealing with releases of these chemicals.