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## IRVINE RANCH WATER DISTRICT

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October 8, 1996

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Base Realignment and Closure  
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Subject: Evaluation of Draft Final OU-1 Interim Action Feasibility Study Report  
Addendum and Draft Phase II Feasibility Study Report OU-2A - Site 24

Irvine Ranch Water District has reviewed the subject documents and Orange County Water District's preliminary comments on MCAS El Toro OU-1 Draft Final RI/FS Report (letter dated September 3, 1996). Irvine Ranch Water District shares Orange County Water District's concerns with the new "natural attenuation" alternatives analysis and the supporting model. Furthermore, the new alternatives (7A, 7B, and 8) evaluated in the OU-1 Interim Action Feasibility Study Addendum are not as effective as the two alternatives (2A and 6A) from the Interim Action Feasibility Study based on estimated mass removal, clean-up time and plume area. IRWD does not support the natural attenuation process for the remedial action for the regional groundwater plume.

It is our understanding that of the alternatives for remediation of the TCE source area, Alternatives 9 and 10 correspond respectively to Alternatives 2A and 6A and Alternative 11 corresponds to the natural attenuation process (Alternatives 7A, 7B, and 8). Due to the concern with the natural attenuation approach, IRWD can not support the preferred Alternative 11 for the remedial action for the TCE source area.

It appears that the improved performance predicted for Alternative 11 over Alternatives 9 and 10 in the shallow groundwater unit is due to the assumptions in the modeling that result in the TCE laden water migrating into the lower shallow groundwater unit and intermediate zone which act as aquitards. IRWD questions the validity of the model with respect to the vertical migration of contaminants into the lower shallow groundwater unit and the intermediate zone. It has been stated elsewhere that the use of solvents such as TCE ended in around 1975. Presumably TCE contaminated water has flowed from the source area to the principal aquifer for well over 20 years without any appreciable vertical migration into the lower shallow groundwater unit or the intermediate zone below the source area. Yet, the groundwater modeling results for Alternative 1 (no action) show significant vertical migration into the lower shallow groundwater unit and the intermediate zone after 10 years. The model predictions are not consistent with the historical data.

It also appears that the evaluation of the alternatives based on length and area of plume were done using inconsistent aquifer units. Alternatives 9 and 11 measurements were in the upper shallow groundwater unit where the measurements for Alternative 10 were in the intermediate zone since the shallow groundwater units had been dewatered after 20 years. If consistent units were used the Alternative 10 length and area of plume would have been the lowest at zero. One can postulate that if the lower shallow groundwater unit and intermediate zone were assumed to be more effective aquitards that the effectiveness of Alternative 10 would be greatly increased to be comparable to Alternative 11.

A couple of additional observations on the modeling of the regional TCE plume in the principal aquifer in the OU-2A Feasibility Study are offered. First the present TCE distribution used in the model (Figure D3-2) appears to smaller in size and have lower concentrations than the TCE concentrations reported in Figure 1-15. Figure D3-2 has a maximum iso-concentration line of 5 ug/L where Figure 1-15 has a maximum iso-concentration line of 25 ug/L. Also assuming that the amount of extraction equals the amount of injection for the source are clean up in Alternative 11, one would expect the principal aquifer regional TCE plume to behave approximately the same in Alternative 1 (no action) as in Alternative 11 with its natural attenuation do nothing approach for the regional TCE plume. The plume for the Alternative 1 modeling behaves as one would expect, but the plume for the Alternative 11 modeling for some inexplicable reason migrates to the southern no flow boundary.

IRWD appreciates the opportunity to review and comment on the subject documents. IRWD supports the Irvine Desalter project and urges the Navy to make every effort to negotiate an equitable settlement with Orange County Water District so the project can move forward.

Yours truly,



Robert R. McVicker  
Principal Engineer

cc: Roy Herndon, Orange County Water District  
Marcia Rudolph, MCAS El Toro Restoration Advisory Board Community Co-Chair