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MCAS EL TORO  
SSIC #5090.3

July 10, 2001

Mr. Dean Gould  
BRAC Environmental Coordinator  
Marine Corps Air Station El Toro  
Base Realignment and Closure  
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### DRAFT TECHNICAL MEMORANDUM, REPLACEMENT WELL INSTALLATION AND GROUNDWATER EVALUATION, MARINE CORPS AIR STATION (MCAS) EL TORO

Dear Mr. Gould:

The Department of Toxic Substances Control (DTSC) reviewed the above document dated June 2001. The technical memorandum summarizes construction and sampling of fifteen new groundwater monitoring wells. Since the initial installation of groundwater monitoring wells at MCAS El Toro, groundwater levels have risen. As a result, the screened intervals on some wells are currently submerged beneath the water table. In three letters, dated April 24, May 19 and June 12, 2000, the Department of the Navy (DON) proposed to install these fifteen new groundwater monitoring wells to replace existing wells with submerged screened intervals.

After review of the document, DTSC has the following comments.

1. Section 2.2, Groundwater Sampling: The second sentence in the second paragraph states, "Prior to sample collection, each well was purged using either a dedicated low-flow bladder pump or potable Grundfos submersible pump."

Please identify the purge method used for each well in the document.

2. Section 2.2, Groundwater Sampling: The third sentence in the second paragraph states, "During purging, groundwater was extracted at a flow rate ranging from 1 to 2.5 gallons per minute (gpm), . . ."

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Table C-1, Groundwater Purging and Stabilization Parameter Summary, indicates that purge rates ranged from 0.35 to 2.5 gpm. Please clarify this in the text. Additionally, please include the purging and stabilization parameter logs as an appendix to the technical memorandum.

3. Section 2.2, Groundwater Monitoring: The second paragraph states, "... Monitoring well 18\_BGMW18A went dry after purging approximately 30 gallons." The associated well boring log indicates that the lithology across the upper screen length consists of a poorly graded sand layer from approximately 114 to 129 feet below ground surface (bgs). The lithology adjacent to the lower portion of the screen is composed mostly of silty sand, silty clay, and clay.

DTSC recommends placing a low-flow bladder pump at approximately 130 feet bgs and conducting low-flow purge rate tests. The test can be used to determine if the purge rate can be reduced to equal the rate of recharge so that the well will not go dry during purging.

4. Section 4.2, Recommendations: The recommendations include additional sampling to confirm the results and conclusions presented in the technical memorandum. This will include comparison studies between the original monitoring wells and the associated replacement wells.

When conducting comparison studies between wells, the same groundwater purging method should be used. Please identify the purge method used for each well and include copies of the groundwater purging and stabilization parameter logs, and analytical reports with the associated report that will present the results.

5. Table C-1, Groundwater Purging and Stabilization Parameter Summary: The table indicates that the turbidity was high during purging and stabilization measurements for wells 12\_DBMW48A (17.21 nephelometric turbidity units (NTUs)) and 18\_BGMW18A (870 NTUs). Additionally, the turbidity for wells 03\_UGMW26A (6.29 NTUs) and 04\_DGMW66A (7.21 NTUs) slightly exceeded the preferred turbidity level of less than 5 NTUs.

To reduce the turbidity, DTSC recommends the use of low-flow purging for these wells. The pump inlet should be placed adjacent to the most permeable sand layer. Then drawdown should be measured during purging and the purge rate should be adjusted to minimize drawdown.

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6. Table C-1, Groundwater Purging and Stabilization Parameter Summary: Please include measurements of groundwater drawdown in each well during purging, particularly for the wells purged using the low-flow technique, in Table C-1.

If you have any questions, please contact me at (714) 484-5395.

Sincerely,



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