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May 12, 1987

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Naval Facilities Engineering Command
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PERIMETER INVESTIGATION PLAN OF ACTION, USMC EL TORO; PRELIMINARY DRAFT REPORT

Dear Mr. Cerini:

We have completed our review of the Perimeter Investigation Plan of Action, Preliminary Draft Report, dated April, 1987, prepared by James M. Montgomery, Consulting Engineers, Inc. This draft report was developed as part of the Verification Step Confirmation Study for the United States Marine Corps Air Stations, Tustin and El Toro, California. This study was initiated as part of the Navy Assessment and Control of Installation Pollutants (NACIP) program for the two USMC facilities.

In June, 1985, Orange County Water District detected trichloroethylene (TCE) in several agricultural supply wells owned by The Irvine Company. These wells are designated TIC 35, TIC 47 and TIC 55, and are located on or near the El Toro Air Station. The objective of the perimeter investigation is to determine whether this TCE contamination is a result of previous waste generation and/or disposal activities at the El Toro facility. In order to meet this objective, the proposed investigation includes the study of potential on and off-site sources, the collection of additional hydrogeological data, and the development of a model to describe the potential path of pollutant migration. This information will then be utilized to optimize the locations of monitoring wells at various depths to characterize the level of TCE contamination of the respective aquifers.

Conceptually, we support this plan of action and believe the proposed study will yield valuable data on the possible sources and fate of the apparent subsurface TCE contamination. In general, the plan of action appears to present a comprehensive methodology for meeting the objectives of the study. As a verification step, we recognize that the findings of the ground water sampling program will be highly dependent on the eventual locations of the monitoring wells. In this respect, we agree that it is important to install the wells at strategic locations with the highest probability of encountering any TCE contamination that may exist in the underlying aquifers. As a means of identifying these locations, we support the proposed ground water modeling work.

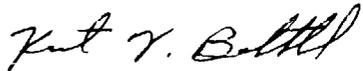
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Should the final (or interim) results of the proposed verification study indicate a significant ground water impact or threat to water quality attributable to the historic or current uses of TCE at the El Toro facility, Board staff will immediately require a proposal for complete characterization in order to expedite any necessary remedial activity. Board staff believes such action, if necessary, is appropriate to minimize the further migration of contaminants and protect any threatened ground waters.

Attached is a list of our specific comments on the preliminary draft report. These comments represent items which we believe warrant either clarification or additional justification. These comments are referenced by page number.

Should you have any questions, please call me or Steven Overman of our Pollutant Investigation Section.

Sincerely,



Kurt V. Berchtold, Chief
Pollutant Investigation Section

Attachment: Comments, Perimeter Investigation Plan of Action,
Preliminary Draft Report

cc: USMC El Toro, Facilities Management Department -
Cheryl M. Churchman
Naval Energy and Environmental Support Activity -
Steven E. Eikenberry
Orange County Water District - James Reilly
Orange County Health Care Agency - John Hills
State Department of Health Services, Los Angeles - Scott Simpson
The Irvine Company - Sat Tamaribuchi

SDO:kyb

PERIMETER INVESTIGATION PLAN OF ACTION
VERIFICATION STEP CONFIRMATION STUDY - USMC TUSTIN AND EL TORO

COMMENTS

1. (1-1) All sampling will be confined to the El Toro facility.

One of the stated objectives of the confirmation study is to maximize the opportunity to intercept the plume(s) which may have originated at MCAS El Toro and may have contributed to the contamination at the TIC wells (2-4). Based on the regional ground water gradient, the hypothetical capture zones for the TIC wells (Fig. 2-3) and the locations of potential TCE source areas at the air station, the report presents hypothetical plumes of contamination (Fig. 2-5). Although hypothetical, these plumes clearly extend off-site and Board staff believes it is inappropriate to a priori specify that all monitoring wells will be located within the boundaries of the air station without considering the results of further source investigations and more specific modeling efforts.

2. (2-9) TCE will be the only contaminant modeled.

Since PCE is a more recently used solvent, the modeling of TCE is believed to be conservative when approximating plume widths and maximum contaminant travel distance. If the proposed source investigations indicate a significant potential for PCE contamination, then PCE should be modeled as well. In either case, any information or analytical results on PCE gathered during the investigation should be included in the final report.

3. (2-14) Stream Recharge Investigation

The proposed study includes an evaluation of the on-site surface water streams as one of the potential contaminant transport mechanisms. The streams will be surveyed for the installation of monitoring wells at likely recharge areas.

Since the recharge of surface water would generate a vertical pathway for contaminants through the soil column, contaminants may be detectable in the soil. Therefore, soil samples should be collected during the installation of the monitoring wells for analysis for TCE/PCE.

While some sampling is to be done in these areas, it is required that soil samples be collected. They will be collected in the field. If any further work should be done by the field, soil samples will be collected. They will have samples at a distance

4. (3-1) Packer testing program

Packer testing will be performed on the TIC 55 well to determine whether volatile organic compounds are present in the particular ground water aquifers. We agree that this testing is important to characterize the aquifers and provide information for the model and the determination of monitoring well depths. In this respect, and since the focus of the study is also on the TIC 35 and TIC 47 wells, we believe this testing program should not be limited to TIC 55. We request that you work with The Irvine Company to include TIC 35 and TIC 47 in this testing program.

5. (3-1) Use of a centrifugal pump during packer testing

The proposed packer testing program includes the use of a centrifugal pump to collect the ground water samples from the isolated water-producing zones. Since these pumps heavily aerate the ground water, the analytical results for the various water-producing strata can only be compared in a relative sense. This raises the question of the consideration of samples that may yield non-detectable results. Although the focus of the study is to verify any contamination, these samples should not be used to characterize an aquifer as unaffected.

Are any other sampling methods available as a means of obtaining more representative ground water samples during the packer testing? The results from an air-driven bladder pump may be more representative, if it can be incorporated into the testing equipment, although we realize that these pumps generally have a depth limit. The proposal should include a review of the other sampling methods to add further justification for the use of the centrifugal pump.

6. (3-12) Waste management

The drill cuttings and well development water have a potential for contamination by TCE or PCE and are subject to proper disposal requirements. For the drill cuttings, a TCE level lower than the Total Threshold Limit Concentration (TTLC) of 2,040 mg/kg may exclude it from classification as a hazardous waste, but may not be acceptable for on-site disposal. Appropriate disposal options for these wastes will be evaluated based on sampling of the material. For the wastewater, a more specific description of the "field test method" is required.

7. (4-2) Time schedule

Since the investigation is highly dependent on the results of the modeling work, a report on this phase should be prepared and delivered to the concerned agencies. The preparation and delivery of this report should be included in the time schedule.

The time schedule should include a review period for the draft final report and a date for the delivery of the final report.

Following the delivery of the final report, the time schedule should include a schedule for the initiation of any additional verification or characterization work that may be necessary based on the results of the investigation.

will have progress meetings during the time we are working on this project will prepare a report at the conclusion of this evaluation. Will provide req. agencies 30 days to review report before final is prepared.

Is any other data available that Montgomery can use?