

State of California

Department of Health Services

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MCAS EL TORO

SSIC #5090.3

**M e m o r a n d u m**

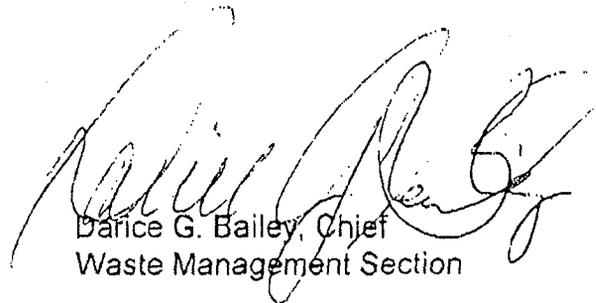
Date: October 27, 2000

To: Ms. Triss Chesney  
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From: Environmental Management Branch  
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Subject: Review of Reply to DTSC Review, August 29, 2000 of Draft Sampling and Analysis Plan for Phase 2 Sampling of Radionuclides in Groundwater at Former MCAS El Toro, July 17, 2000

Attached are The Department of Health Services' (DHS) comments on the subject report. This review was performed by Ms. Deirdre Dement and Mr. Kurt Jackson, Associate Health Physicists, in support of the Interagency Agreement between DTSC and DHS. If you have any questions concerning this review, or if you need additional information, please contact Ms. Dement at (916) 324-1378.



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Department of Health Services  
(DHS)

*Review of Reply to DTSC Review, August 29, 2000 of Draft Sampling and  
Analysis Plan for Phase 2 Sampling of Radionuclides in Groundwater at Former MCAS  
El Toro, July 17, 2000*

October 27, 2000

DTSC Resource Planning Form # 502

The following comments and questions are in response to the request from Ms. Triss Chesney of the Department of Toxic Substances Control to review the Navy's reply to DHS comments, received by fax on October 17, 2000. This document was reviewed by Deirdra Dement and Kurt Jackson of DHS.

General Comments:

1. DHS appreciates the detailed replies and encourages that the reply information and, where applicable, additional information in response to the items below is included in the final sampling and analysis plan. DHS has reviewed the reply to our previous comments and has the following responses to the reply items.
2. DHS concurs that, if the explanation provided in the reply to General Comment 2 is correct, then the general mineral and metals data may be less important than we previously believed, for the purpose of determining whether or not the uranium was anthropogenic. However, our intent was to encourage the applicable stakeholders to consider the need for general minerals and metals data to support this study or other work being done at El Toro. Based on our discussions with DTSC, it is our understanding that general minerals and metals data may not have been adequately analyzed or reported in recent annual groundwater reports. There may be a need to show that elevated naturally occurring uranium levels found in the groundwater are consistent with existing groundwater conceptual model(s), which will need to be supported by sufficient general minerals and metals data. The methods being used to collect groundwater and the volumes collected for this study may be sufficient to allow later metals analysis, however, some general minerals analytes have holding times or preservation requirements that differ from uranium or metals samples. Therefore, some of these analytes probably could not be determined from the archived samples collected for isotopic uranium analysis.
3. The sampling plan should include references that support the claim, stated under the reply to DHS' 8/29/00 General Comment 2, that the long residence time of uranium in the Oak Ridge isotope separators means that all uranium produced in the last 50 years, whether enriched or depleted, is contaminated with U-236.

DHS review of the document, *Reply to DTSC Review, August 29, 2000 of Draft Sampling and Analysis Plan for Phase 2 Sampling of Radionuclides in Groundwater At Former MCAS El Toro, July 17, 2000*  
October 27, 2000

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4. In addition to providing the information for the prior comment, please specify whether the military used depleted or enriched uranium prior to the presence of irradiated uranium containing U-236 in the isotope separators. In other words, could there be any depleted or enriched uranium that wouldn't be contaminated with U-236?
5. The following questions and comments cover some of the information that should be included in the sampling and analysis revision. It would help to explain selection of this analytical method and the use of U-236 detection to answer the questions related to presence of depleted or enriched uranium in groundwater at El Toro:
  - a. For depleted or enriched uranium, the ratio of U-236 to other uranium isotopes apparently varies depending on the source and history of the uranium.
  - b. The sampling and analysis plan should specify the U-236 detection and reporting limits for the method being used.
  - c. If sample results show U-236 levels to be below the reporting limits, it appears that one may conclude that less than some fraction of the uranium in the groundwater came from depleted or enriched uranium, which contain U-236.
  - d. The sampling and analysis plan should explain the significance of groundwater analytical results when U-236 concentrations are below the reporting limits. Regarding the fraction of the uranium in groundwater that may have come from depleted or enriched uranium, what conclusions, if any, may be drawn from U-236 results below the reporting limit? How will U-236 results below the reporting limit be used along with other uranium isotope results to reach conclusions regarding the sources of uranium in groundwater? In general, the sampling and analysis plan should explain how the results would be used.
6. The intent of DHS' 8/29/00 General Comment 3 was to emphasize that applicable stakeholders need to review the written analysis procedure(s) and the specified information available from LLNL, especially since the method being used is not a certified analytical method. The results or conclusions of this review should be included and utilized in the revision of the sampling and analysis plan.
7. Regarding DHS' 8/29/00 Specific Comments 5 and 6, DHS recommends inclusion of applicable references and the LLNL reply information in the sampling and analysis plan so that the methods to be used for calculation of reported results and associated uncertainties are clear to stakeholders.