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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

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San Francisco, Ca. 94105-3901

Western Division
Naval Facilities Engineering Command
David Song (09AR1DS)
900 Commodore Drive
San Bruno, CA 94066-2402

19 APR 94

Subject: **Draft Final Treatability Study Work Plan, Operable Unit I, Site IR-3 (Parcel E Oil Reclamation Ponds)**

Dear Mr. Song:

As per our conversation on April 11, 1994, the U.S. Environmental Protection Agency (EPA) is providing written comment on the Draft Final Treatability Study Work Plan, Operable Unit I, Site IR-3 and the Navy's responses to the agency's comments on the draft document. Initially some confusion existed regarding the exact nature of the technology which the Navy was proposing to study at IR-3. The Navy's responses to EPA's initial comments helped to clarify the misunderstandings.

Enclosed are comments submitted by our consultant. A draft of these were sent to you via facsimile during the week of April 4, 1994. In addition, EPA's Office of Research and Development offers the following two comments.

1. Surfactants frequently get clogged in the GC/MS column during the analysis for residual petroleum. As such, it is imperative that the Navy ensure that an approximate 100% analytical efficiency is obtained by performing appropriate QA/QC procedures with every column reading.
2. The Work Plan should provide reasonable stopping stages to allow for review of the study's progress. The Work Plan should at least include a brief review period before initiating Task 5.0 of the Work Plan.

It is our expectation that the final Work Plan will reflect the comments provide here and in the enclosure. If you have any questions or would like to arrange a conference call with the reviewers, please call me at (415) 744-2409.

Sincerely,

Alydda Mangelsdorf
Remedial Project Manager

Enclosure

cc: Raymond Raymos, WESTDIV
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**Comments on the Navy's Draft Final Treatability Study Work Plan
Operable Unit I, Site IR-3 and the Navy's Response to
Agency Comments on the Navy's
Draft Treatability Study Work Plan
Operable Unit I, Site IR-3**

1. The long term effectiveness of this injection/extraction remediation system must be addressed by reference to previous studies and/or experience. The possibility and potential impacts of channelling in heterogeneous fill, i.e., debris (plate 1-3), must be discussed in the work plan.
2. The Navy should revise the work plan text as indicated in their response to Bechtel's specific comment number 3.
3. The work plan for pilot-scale testing must explicitly address anticipated effects of tidally influenced ground water level fluctuations and measures that will be used to counter or correct for these fluctuations.
4. In response to Bechtel's specific comment number 10 the Navy specifies that surfactants will be tested at their respective, manufacturer provided, critical micelle concentrations (CMCs). The manufacturer provided CMCs were likely determined in pure water, not salty ground water. If the Navy wishes to have surfactants present in these tests at concentrations sufficient to form micelles, they will have to determine the CMC for each surfactant in ground water from the site. A CMC determined in pure water is not applicable to salty ground water.
5. The Navy should quantitatively specify acceptable recovery efficiencies. How will the success or failure of this testing be determined? Quantitative measures of success should be provided.
6. As previously commented, Task 5.0 should be deleted from the work plan. A separate work plan describing field testing should be prepared, if necessary, after Agency review of the bench-scale test results.
7. EPA guidance clearly states treatability studies shall use sound statistical techniques including analysis of variance testing to evaluate the effects of different treatment regimes. A statistical test plan should be developed and incorporated in the work plan.