UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

March 10, 1997

OFFICE OF THE
REGIONAL ADMINISTRATOR

Ms. Darlene Ige
Department of the Navy
Pacific Division
Naval Facilities Engineering Command
(Makalapa, HI)
Pearl Harbor, Hawaii 96860-7300

Re: Draft Final Phase II Remedial Investigation Sampling and Analysis Plan for the Red Hill Oily Waste Disposal Facility at the Fleet & Industrial Supply Center, Pearl Harbor

Dear Darlene:

The U.S. Environmental Protection Agency (EPA) has received the Draft Final Phase II Remedial Investigation (RI) Sampling and Analysis Plan (SAP) for the Red Hill Oily Waste Disposal Facility at the Fleet & Industrial Supply Center (FISC), Pearl Harbor, dated January 1997. We have reviewed the aforementioned document and the Navy's responses to our December 3, 1996 comments. The Navy's responses addressed most of our concerns, except for the enclosed comments which were not fully addressed. The final version of the Phase II RI SAP for the Red Hill Oily Waste Disposal Facility should have the replacement pages addressing the enclosed comments.

Also, it appears that focusing on the groundwater should address any further concerns about the site. The Navy did indicate the existing replacement monitoring wells (completed in the perched zone) will be sampled prior to installing the basal aquifer wells. It is recommended that the Navy forward these results to EPA prior to mobilizing in the field. If significant contamination is present in the perched zone, it would be important to address the perched zone during drilling of the basal wells, since the basal wells are located at the perimeter of the site.

If you have any questions, please contact Xuan-Mai Tran at (415) 744-2386.

Sincerely,

Xuan Mai

for Lewis Mitani
Remedial Project Manager

Enclosure

107844

cc: Mike Miyasaka, DOH
Donald Gruber, URS

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COMMENTS ON DRAFT FINAL PHASE II REMEDIAL INVESTIGATION SAMPLING AND ANALYSIS PLAN AND QUALITY ASSURANCE PROJECT PLAN FOR RED HILL OIL WASTE DISPOSAL FACILITY FISC PEARL HARBOR OAHU, HAWAII

EPA's December 3, 1996 comments are presented in bold type, and evaluations of the Navy's response to comments are presented in normal type.

FIELD SAMPLING PLAN:

Specific Comment No. 16A, Section 4.1.1, Data Quality Objectives:

This section does not discuss the procedures by which data quality will be evaluated, nor does it discuss how data acceptance will be determined. Rather, only project objectives are stated. A discussion of the data quality goals should be presented, and should include, but not be limited to, the following:

- **Precision, accuracy, and completeness objectives for field screening results, off-site confirmation analyses, and offsite analyses;**
- **Statements of comparability and representativeness should be provided for all procedures; and**
- **Acceptable false positive and false negative error rates for onsite field screening data (relative to offsite confirmation data) should be addressed.**

The FSP should at least reference the various data quality indicators that will be used to assess data quality[1]. The details of the proposed data quality assessment could be presented in the QAPP and referenced by this section of the FSP.

This comment has been partially addressed. Section 1.2 of the QAPP states that precision goals are presented in Table 1.2-4 of the QAPP. However, Table 1.2-4 includes accuracy goals for matrix spike/matrix spike duplicate (MS/MSD) and laboratory control samples (LCS) but does not include precision goals as relative percent difference (RPD). Section 1.2 includes statements of comparability and representativeness. However, the discussion regarding acceptable false positive and false negative error rates (**i.e., acceptable percentages**) for immunoassay analysis as presented in Section 5.3 of the FSP should be clarified. The discussion (see page 5-2) relating false negative rates to two times the limit of detection and false positive rate at 0.5 times the limit of detection should be expanded.

[1] The use of single- or double-blind performance evaluation should be considered as key data quality indicators of accuracy.

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Section 4.0 of the FSP provides site-specific information for five steps of the seven step DQO process. It is recommended that step six, Specify Tolerable Limits on Decision Errors, be addressed in this section for each site.

QUALITY ASSURANCE PROJECT PLAN:

Specific Comment No. 1C, Section 1.1, Project Background:

This section should address the proposed use of TPH immunoassay test kits that are mentioned in the FSP. In particular, the method for estimating the precision and accuracy of the field test kits should be addressed. The procedure for evaluating the confirmation results should also be addressed along with the number of false positive and negative results that can be tolerated given the ensuing decisions that will be made at the site.

This comment has been partially addressed. The response to this comment states that Section 1.3 describes the proposed immunoassay field testing procedures and compares them to the laboratory methods. Section 1.3 provides only limited information regarding calibration, PES analysis for estimation of accuracy, and other QC procedures. Section 1.3 does not specifically address estimation of field precision, it is recommended that field duplicate analysis be performed to address this concern.

It should be noted, however, that section 6.1, Field Quality Control Checks, proposes the use of field duplicates but not PES, therefore, it is recommended that these two sections (1.3 and 6.1) be revised to reflect both types of QC samples (i.e., field duplicates and PES.)

Specific Comment No. 7, Page 1-6, Table 1.2-2:

This section presents only detection limits, and should actually address the estimated quantitation limits that are planned for data collection. In general, Section 1.2 should provide some discussion of the higher quantitation limits which would be expected for the field screening method relative to the offsite confirmatory method. This sensitivity issue relates directly to a discussion of an appropriate confirmation frequency, which should be addressed somewhere in the SAP.

This comment has been adequately addressed. However, the 100 mg/kg detection limit specified in Table 1.2-2 for TPH by EPA Method 4030 is inconsistent with the 500 mg/kg detection limit specified in Section 5.3 of the FSP, Immunoassay Analysis. Also, note that the detection limit for total dissolved solids (TDS) in Table 1.2-2 should be 10 mg/L instead of 10 μg/L.

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Specific Comment No. 10A, Pages 1-7 and 1-8, Table 1.2-3, Data Quality Objectives:

QA objectives are not presented in this table for many target compounds. It is recommended that precision and accuracy goals be established based on the sampling design and the decisions that will be made with the data. This is especially true for compounds of potential concern discussed in Appendix A of the FSP.

This comment has been partially addressed. Accuracy goals are provided in Table 1.2-4, but precision goals are not included.

Additionally, there are discrepancies concerning target analyte lists among sections of text and tables of the FSP and QAPP. The following identify some of these specific discrepancies:

> [QAPP Table 1.2-1, Soil and Water Matrix - Analytical Methods; Table 1.2-2, Laboratory Reporting Limits] Tables 1.2-1 and 1.2-2 list specific metals, including mercury.
>
> [QAPP Table 1.2-4, Analytical Quality Assurance Objectives] Table 1.2-4 does not include mercury, though it does include other specific metals.
>
> [QAPP Table 6.1-1, Soil and Waste Matrix - Summary of Field Sampling Requirements; FSP Table 4.4-1, Groundwater Sampling And Analysis Summary - Perched Aquifer; FSP Table 4.4-3, Groundwater Sampling and Analysis Summary - Basal Aquifer; FSP Table 4.5-2, Groundwater Sampling Summary] QAPP Table 6.1-1 and FSP Tables 4.4-1, 4.4-3, and 4.5-2 do not include general chemistry parameters like total alkalinity, TDS, surfactants, chloride, and fluoride (as proposed in section 1.1 of the QAPP.)

Specific Comment No. 10B, Pages 1-7 and 1-8, Table 1.2-3, Data Quality Objectives:

Pages 1-7, and 1-8, Table 1.2-3, Laboratory Control Samples. It is recommended that analytical accuracy be monitored through the use of independent single- or double-blind spikes (i.e., performance evaluation [PE] samples). Preferably, PE sample would be coordinated by a government official, but could also be implemented by the "CTO Senior QA/QC Reviewer." PE sample accuracy objectives would be included in the "LCS" column of Table 1.2-3.

This comment has not been adequately addressed. The response to this comment states that one PE sample will be submitted and analyzed for volatile organic compounds (VOCs) during the project to evaluate accuracy. Since the main focus of the analytical effort is TPH/TFH analyses, it is not clear why PE samples are only to be submitted for VOC analysis. PE samples should be submitted for all analytical parameters.

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Specific Comment No. 13, Page 4.1:

The calibration and analytical procedures that will be used for the immunoassay test kits should be discussed in the section, or the appropriate SOP should be referenced. Several immunoassay test kit SOPs developed by EPA Region 9 have been provided for reference when addressing this concern.

This comment has not been adequately addressed. The response to this comment references Sections 1.4 and 4.0 of QAPP. Neither of these sections discuss calibration of the immunoassay test kits other than to reference the manufacturer's instructions. The manufacturer and calibration and QC instructions for each test kit to be used should be attached to the QAPP.

Specific Comment No. 14, Page 6-1:

It is recommended that some form of standard reference material be used to evaluate both the field and laboratory results for TPH in soil (e.g., a PE sample). This will allow for a comparison for on-site screening and off-site confirmation analysis.

This comment has not been satisfactorily addressed. The response to this comment states that duplicate field screening and laboratory analyses will be performed to evaluate the accuracy of the results and that a performance evaluation (PE) sample will be included in the program. However, while duplicate analyses provide information regarding the precision of analysis, it does not provide accuracy information. Section 6.2 indicates that the PE samples will be submitted for laboratory analysis for VOCs, but does not indicate that a PE sample will be submitted for field screening analysis of TPH/TFH.

Specific Comment No. 17, Page 8-1:

Currently, it is not clear what will be done at the site regarding systems and performance audits. This section should be revised to include a discussion of the systems and performance audits that are planned for subject plan. The use of site specific performance audits are recommended.

This comment has been partially addressed. The response to this comment states that the text has been modified in response to this comment. Although Section 8 indicates that one field audit is proposed during the project, discussion is limited to referencing four standard operating procedures (SOPs), for laboratory management, assessment program, laboratory and data management audits, and data quality corrective actions. **It is recommended that the text be revised to provide for audit reports to be submitted to EPA Region 9.**

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