

RESPONSE TO COMMENTS ON

**NAS MOFFETT FIELD
DRAFT ADDITIONAL PETROLEUM SITES INVESTIGATION
FIELD WORK PLAN**

JANUARY 21, 1994

This report presents point-by-point responses to San Francisco Bay Regional Water Quality Control Board (RWQCB), U.S. Environmental Protection Agency (EPA), and California Environmental Protection Agency Department of Toxic Substances Control (DTSC) comments on the Draft Additional Petroleum Sites Investigation Field Work Plan dated December 17, 1993. This field work plan was submitted by PRC Environmental Management, Inc. (PRC) for Naval Air Station (NAS) Moffett Field, California. Ms. Elizabeth J. Adams of RWQCB submitted comments in a memorandum dated December 31, 1993. Mr. Michael D. Gill of EPA submitted comments in a memorandum dated January 10, 1994. Mr. C. Joseph Chou of DTSC submitted comments in a memorandum dated January 13, 1994.

Comments from Ms. Elizabeth Adams, RWQCB

GENERAL COMMENTS

Comment 1: The objective of the additional field work included in this work plan is to characterize the soils and groundwater at the various tank and sump sites, with the ultimate goal of obtaining closure of the sites from the State of California. The Tri-Regional Board guidelines state that all soil and groundwater samples must be analyzed in a State-certified laboratory in order to comply with Chapter 10 of Title 23 of the California Code of Regulations. In addition, as stated on page 6 of the Tri-Regional Guidelines, laboratory analyses are required for all closure decisions. For these reasons RWQCB staff can not accept the proposed analysis plan in which only one third of the samples are sent to a certified laboratory and the majority of the samples are analyzed with the "Geoprobe® close support analytical laboratory" (CSAL). On-site analysis is generally acceptable where screening level data are appropriate; such as for determining placement of monitoring walls, or during excavation projects where rough estimates of the soil concentrations are utilized to guide the project. During the Site 12 project, on-site laboratory analyses were conducted to determine

excavation areas. There was no direct correlation between the off-site and on-site laboratory results. Though a rough estimation of the differences in the two analyses were used for excavation purposes, the on-site lab results were almost always less than the results from the off-site certified laboratory. At many of the tanks and sump sites included in this work plan there is little or no data to determine site characterization. As stated in the work plan text, "existing soil data are too sparse to define contaminated soil to the extent necessary for corrective action." In order to close these sites or make decisions regarding further investigation, certified laboratory analysis will be required.

Response: The draft field work plan called for the use of California-certified laboratories for all soil samples collected in areas that had not been previously investigated, and for all groundwater samples. However, to expedite agreement on any remediation and eventual closure, the field work plan has been modified to state that all soil and groundwater samples will be analyzed by a California-certified laboratory.

Comment 2: Screening level groundwater samples can be used to help place monitor wells, but not for final characterization. In areas where the soil contamination is above 100 parts per million (ppm) total petroleum hydrocarbons (TPH), at least one monitor well must be installed within ten feet of the source area, in the downgradient direction, in order to comply with State guidelines and properly characterize the site.

Response: The intent has been to install wells within 10 feet downgradient of the source area if soil contamination is above 100 ppm TPH as per state guidelines (RWQCB 1990). This plan of action is now stated explicitly in Section 4.3 of the revised field work plan.

Comment 3: In general, rationale for soil sampling locations is not included the sites. Brief rationale should be included in the text to support the placement of the borings and "hydropunch" sampling locations.

Response: A brief rationale for the selection of sampling locations was provided in Sections 4.2.1 and 4.3.1 in the original field work plan. However, to improve the overall clarity of the report, more detailed rationales are now included in these sections for sampling locations at Sites 15 and 19.

Comment 4: Soil borings and water samples collected at oil/water separators should be analyzed for oil and grease to determine if long-chain hydrocarbons, common in waste oils, are present. Analysis for only extractable hydrocarbons will not pick up the longer chained hydrocarbons.

Response: Tables 1 and 2 of the field work plan have been modified to include the total recoverable petroleum hydrocarbons (TRPH) as oil and grease analysis for samples taken at oil/water separator sumps (Sumps 59 and 63).

SPECIFIC COMMENTS

Comment 5: Page 2, Section 2.0. The status of Site 12 should be included in the overview of the purpose and scope of the work plan. Site 12 is a petroleum contaminated site, and though it will not be included in this field effort, it should be noted for clarification.

Response: Section 2.0 of the revised field work plan now includes the status of Site 12.

Comment 6: Page 6, Section 4.2. Analytical results from the "support analysis laboratory" can not be used for site characterization purposes. Regulatory decisions regarding corrective actions or closure of sites must be based on analytical results from a State-certified laboratory, as stated in the general comments.

Response: A California-certified laboratory will be used for all sample analyses, as indicated above in the response to General Comment 1.

Comment 7: Page 10, Paragraph 1. The text states that Sumps 25 and 58 were scheduled to be removed in the fall of 1993, but to date these sumps have not been removed. The text should include a proposed schedule for the removal of these sumps since sampling directly under and around the sumps will be obtained after excavation.

It would be beneficial if removal of these sumps could coincide with this field effort so that characterization of the soil and groundwater can be complete and decisions regarding corrective action or closure can be determined as soon as possible.

Response: Section 4.2.1 of the field work plan has been modified to include the current proposed schedule for the removal of Sumps 25 and 58. However, the current sump removal schedule does not coincide with this field investigation.

Comment 8: Page 10, Site 15. Please note in the text that National Aeronautics and Space Administration (NASA) will be removing Sump 64. Please include the status of efforts to locate Sump 65 in this section. If the location of Sump 65 has not been determined yet, field work should include some efforts to find the sump. Rationale should be included for the placement of the soil borings on Figure 6, especially since the location of the sump is unknown.

Response: Section 4.2.1 of the revised plan now states that NASA will remove Sump 64. An investigation by the Staff Civil Engineer Office of NAS Moffett Field has revealed the exact location and identity of Sump 65. Though originally thought to be a neutralizing tank south of the battery locker, Sump 65 is actually a sanitary sewer manhole chamber (east of the locker) used as an acid neutralizing "sump." More detail of this history is provided in Section 4.2.1 of the revised plan.

Comment 9: Page 14, Figure 7. Please include rationale for the soil sampling location at Tank 2, especially boring #GPT2-4 which is a substantial distance (greater than 10 feet as defined in the Tri-Regional Guidelines) from the source area.

Response: Figure 7 was incomplete and did not show existing wells. Soil data collected at well W07-20 indicate petroleum contamination northeast of Tank 2, and therefore GPT2-4 was located to further investigate the extent of soil contamination in that direction. The revised plan includes a modified Figure 7 that will clarify the sampling rationale. The petroleum sites characterization report (PRC 1993) includes soil and groundwater data collected at this site to further aid in the evaluation of sample locations.

Comment 10: Page 15, Figure 8. Data presented in the Petroleum Characterization Report showed the highest concentrations of diesel at Tank 43, 2,000 ppm and 1,400 ppm, in soil samples from the south and west excavation walls. Therefore, the rationale for placement of the proposed soil borings is not clear. The borings are very far away from the source area, boring #GP43-1 is over 50 feet away from the source area, and

they are all placed to the north and northeast, which does not address the extent of the residual contamination found to the south and the west of the excavation area.

Borings need to be included in the work plan to address the contamination in the south and west wall of the excavation.

Response: Section 4.2.1 of the work plan has been modified to include the sampling rationale and soil sample locations to better characterize the extent of petroleum contamination to the south and west of the Tank 43 excavation area.

Comment 11: Page 15, Figure 9. As stated in the RWQCB comments on the Draft Installation Restoration Program Petroleum Sites (and Wastewater Tanks and Sumps) Corrective Action Plan, October 1993, groundwater data needs to be collected at Tank 53 since there are no groundwater data for the area where significant soil contamination has been found. This work plan should include sampling of groundwater in the area for several reasons, such as the groundwater elevation is very high and easily impacted by soil contamination, groundwater movement may be locally affected by the drain and drainage area and the highest soil contamination appears to be near the drain area.

Please provide rationale for the placement of the soil borings at Tank 53. Sample point 23 showed the highest concentration of petroleum-related contamination in past investigations and the extent of soil contamination to the east of this sampling point has not been defined. This area needs to be better characterized to define the extent of the potential impact from overland flow of petroleum products spilled in the area.

Response: Though well W53-1 is within 10 feet downgradient of the Tank 53 excavation, Section 4.3.1 of the work plan and Figure 9 have been revised to include groundwater samples below the area of known soil contamination. In addition, more soil samples will be collected east of previous locations. Rationale for the selection of these sampling locations is also provided in Section 4.2.1.

Comment 12: Page 19, Table 1. Soil samples at Tank 59 must also be analyzed for oil and grease.

Response: Tables 1 and 2 of the plan have been revised to include TRPH as oil and grease analyses of soil and water samples at Sump 59.

Comment 13: Page 21, Section 4.3. HydroPunch® samples should be collected within upper portions of water bearing zones, not "near the water table." The use of on-site sample analysis, with verification samples sent to an off-site laboratory, is appropriate for HydroPunch® samples used to screen groundwater contamination and for determining monitor well placement. However, sites where soil contamination is above 100 ppm, a monitoring well must be installed to document the water quality over time as required by the Tri-Regional Guidelines. Screening level data such as HydroPunch® can not be used as the only data to determine closure at a site. RWQCB staff encourage the Navy to install monitoring wells during this field effort to avoid delays in determining complete site characterization.

Response: The text of Section 4.3 has been modified to state that HydroPunch® samples will be collected in the "upper portion of water bearing zones." And as indicated in the response to General Comment 2 above, monitoring wells will be installed as necessary per state guidelines.

Comment 14: Page 23, Site 15. Coordination with the regulatory agencies should be an ongoing effort during the field work. The Navy and regulatory agencies will need to confer and agree on what levels of groundwater contamination are "significant" and warrant the installation of a monitoring well. If soil samples show concentrations above 100 ppm TPH then, at a minimum, one monitoring well in the documented downgradient direction will be required.

Response: Groundwater analytical results will be reviewed by Navy, RWQCB, EPA, and DTSC staff as soon as they are available, so that a decision can be made in the field regarding installation of monitoring wells.

Comment 15: Page 23, Site 19. Groundwater samples need to be collected within contaminated soil areas at Tank 53 as described in comment #11.

Response: Section 4.3.1 of the work plan and Figure 9 have been revised to include the collection of groundwater samples below the contaminated soil region at former Tank 53.

Comment 16: Page 26, Table 2. Groundwater samples at Sump 59 should be analyzed for oil and grease since the sump handles waste oils.

Response: The work plan has been revised to include analysis of TRPH as oil and grease for the groundwater sample at Sump 59.

Comments from Mr. Michael Gill, EPA

GENERAL COMMENT

Comment 1: The concept of using field sampling as a primary screening and sample collection tool is one that EPA is encouraging sites to use, as this speeds up the turnaround time and helps to reduce costs with little added risk. But for closure situations where little or no data are available, as is the case for certain tanks and sumps at these sites, EPA agrees with the State in their Tri-Regional Guidelines. These guidelines state that data must be analyzed by a State-certified lab in order to approve the sites for closure. These labs will ensure that QA/QC [quality assurance and quality control] methods are followed and produce high data quality. The Navy should review the soil sampling summary's Certified Lab column in Table 1 and update it based on requirements of these guidelines.

Response: The draft field work plan called for the use of California-certified laboratories for all soil samples in areas that had not been previously investigated. However, to expedite agreement on any remediation and eventual closure, the field work plan will be modified to state that all soil and groundwater samples will be analyzed by a California-certified laboratory.

SPECIFIC COMMENTS

Comment 1: Figure 8, Page 15. The "Final IRP Petroleum Sites (and Wastewater Tanks and Sumps) Characterization Report" of October 1, 1993 (page 74) says that an area of TPH contamination may exist in the area southwest of former Tank 43. Yet, Figure 8 shows proposed soil sample locations to be collected north/northeast/west of the Tank 43 area. Please explain this discrepancy.

Response: Figure 8 has been modified to include two additional soil sampling locations near the southern and western sides of the former Tank 43.

Comment 2: Section 4.2.1, Page 23, Paragraph 1. The groundwater sampling locations for Site 5 cover only the area around the Tank 12 spill area. Once again, a discrepancy exists between this document and the Characterization Report. The Characterization Report states (page 70) that in addition to around Tanks 12 and 13, the groundwater around Tank 26 and near Tanks 4 and 5 may have been affected by petroleum releases. Yet these additional areas are not to be sampled at all. Please explain.

Response: Figure 10 on page 22 of the original field work plan indicates that groundwater samples have been proposed to investigate numerous areas other than around Tanks 12 and 13. In addition to the Tanks 12 and 13 area, samples are planned downgradient of Tanks 4, 5, 6, 7, 8, and 9, as well as downgradient of the operating fuel station and near a suspected fuel line leak near Tank 10. No new wells or groundwater samples are proposed near former Tank 26 since wells W05-06 and FP05-08 are located immediately downgradient of this point and provide adequate characterization. However, for improved clarity Section 4.3 of the field work plan has been modified to specify which HydroPunch® samples are intended to investigate specific tanks, and to provide an update on the sampling status of existing wells.

Comment 3: Section 4.2.1, Page 23, Paragraph 2. The text says that if "samples indicate significant groundwater contamination, then downgradient wells will also be installed within 10 feet of the source sumps". Please clarify what significant means.

Response: Analytical data indicating the concentration of contaminants in groundwater samples will be available before any monitoring wells are installed. The Navy will notify EPA and RWQCB personnel when data are available, and a determination can be made at that time.

EDITORIAL COMMENTS

Comment 1: Section 4.3.2, Page 23-25. This brief summary of well installation and development procedures is a helpful description and is appreciated.

Comment 2: It is also appreciated that Plate 1 was put on regular copy paper, as blueprint paper tends to fade over time. Please continue this practice.

Comments from Mr. C. Joseph Chou, DTSC

GENERAL COMMENTS

Comment 1: In general, the Geoprobe® is widely used as an effective tool for soil gas survey of large contaminated areas. However, soil and groundwater samples collected with the Geoprobe® should be analyzed at an off-site laboratory to meet the specific data quality objective. The selected laboratory must be certified or accredited by the Environmental Laboratory Accreditation Program of the California Environmental Protection Agency Department of Toxic Substances Control to perform hazardous waste testing.

Response: As indicated in the responses to RWQCB and EPA comments above, all soil and groundwater samples will be analyzed by a California-certified laboratory.

SPECIFIC COMMENTS

Comment 1: Page 6, 3rd Paragraph. It is mentioned that approximately one third of the soil samples will be sent to a State-certified laboratory, the rest will be analyzed on-site. In fact, as listed in Table 1, more than half of the samples (30 of 57) are to be analyzed off-site. Therefore, instead of using this arbitrary number "one third," site specific condition should be considered in determining the number of soil samples needed to define the extent of contamination.

Response: The text and Table 1 have been modified to indicate that all samples will be analyzed by a California-certified laboratory.

Comments 2: Page 28, 1st Paragraph. Please note that some of the references in the basewide QAPjP [quality assurance project plan] (1992) have been updated:

1. Laboratory Data Validation Functional Guidelines for Evaluating Organic Analyses, USEPA, 1990.

2. Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analyses, USEPA, 1990.
3. Statement of Work for Organic Analyses Multi-Media Multi-Concentration, USEPA, 1991.
4. Statement of Work for Organic Analyses Multi-Media Multi-Concentration, USEPA, 1991.

Response: The updated references in the basewide QAPjP have been noted. Thank you.

Comment 3: Page 21, 3rd Paragraph. Most of groundwater samples will be collected by HydroPunch® in this investigation. However, if contaminants are observed, additional monitoring wells may be required.

Response: As indicated in the responses to RWQCB comments, additional wells may be installed contingent on soil and groundwater sample analysis results.

REFERENCES

PRC Environmental Management, Inc. (PRC) 1993. Final Installation Restoration Program Petroleum Sites (and Wastewater Tanks and Sumps) Characterization Report. NAS Moffett Field, California. October.

RWQCB 1990. Tri-Regional Board Staff Recommendations for Preliminary Evaluation and Investigation of Underground Tank Sites. San Francisco Bay, Central Valley, and North Coast Regional Water Quality Control Boards. August.