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Western Division
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900 Commodore Way, Building 101
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CLEAN Contract No. N62474-88-D-5086
Contract Task Order No. 0024

Re: Conceptual Approach to Building 29 Tank Area Investigation

Dear Mr. Chao:

This letter describes PRC's conceptual approach to conducting investigations at the Building 29 tank area. PRC previously recommended that the tanks located in this area be removed from the Phase II tank removal schedule and that the area be further investigated to define the need for source control measures. In response to this recommendation, the regulatory agencies overseeing the Naval Air Station (NAS) Moffett Field Remedial Investigation/Feasibility Study (RI/FS) activities requested that a conceptual approach for these investigations be prepared. This letter describes the conceptual approach and includes (1) background information on the site, (2) the investigation objectives, (3) description of the proposed activities to be conducted, and (4) an estimated schedule for conducting the investigations.

Building 29 Tank Area Background Information

Several activities were conducted by other contractors in areas around Building 29 to locate underground tanks and to characterize the contaminants present in the soils and ground water. Document reviews, interviews, site reconnaissance, and geophysical surveys were performed in attempts to accurately locate the underground tanks in this area. Although most of the results are inconclusive, some information was obtained indicating the presence of two clusters of underground tanks. This information includes irregularities in the subsurface identified during geophysical surveys and an unmarked sketch showing tanks in the area. It is believed that the first cluster includes six 10,000-gallon tanks and the second cluster includes five 25,000-gallon tanks.

In June, PRC dug trenches in the areas where these clusters were estimated to be and identified a tank at each of the two estimated cluster locations. The tops of the two tanks were found at 12 and 8 feet below the surface. These discoveries support the belief that two tank clusters are present and that they are in close proximity to existing structures.

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During the trenching work, strong hydrocarbon odors were detected in the area. A composite soil sample was collected from the excavated material to determine disposal requirements and the analysis results indicated the presence of Total Petroleum Hydrocarbons at 1800 part per million (ppm). Xylene at 1.5 ppm was the only volatile organic found in the sample. This is consistent with the belief that tanks in this area were used to store fuel products.

Remedial Investigations conducted under the Installation Restoration Program (IRP) were previously conducted and remain ongoing in the areas surrounding Building 29. This area is defined as Site 9 in the NAS Moffett Field RI/FS. Phase I investigations included ground water, soil, and soil gas analysis. The results indicate the presence of fuel components and chlorinated solvents in the area. Phase II work ongoing in the area involves additional ground-water and soil sampling to better define potential contaminant sources in the area. The Phase I Characterization Report for Site 9 and data from Phase II activities are not yet available.

Tank Investigation Objectives

The objectives for further investigation of the Building 29 tank area are as follows:

(1) Confirm the number and location of tanks in the area and the location of piping associated with each tank cluster.

(2) Confirm and assess the impacts of releases from these tanks on surrounding soils and ground water.

(3) Determine an appropriate method of closure for the tanks and associated piping.

Proposed Investigation Activities

PRC proposes a ground-penetrating radar (GPR) geophysical survey of the area to determine the number of tanks in each cluster and their approximate locations. In addition, the survey will attempt to provide information on piping runs associated with each tank cluster. PRC believes that additional geophysical work can provide better results than previous geophysical surveys because of new information known about the area.

Geophysical methods that rely on the measurement of electric or magnetic fields are highly influenced by the presence of cultural features such as buildings or fences; therefore, these methods are probably not appropriate for the area. A directional method, relatively independent of electromagnetic field measurements, such as GPR is expected to be an appropriate survey method. Although, a recent GPR survey performed by Spectrum Environmental Subsurface Investigations (Spectrum) was not effective in accurately locating USTs and the associated piping, PRC feels the approach that was used can be improved to provide better results.

PRC has reviewed logs from soil borings advanced in the area and observations made by field geologists during recent trenching activities. This review indicates the presence of sandy silts and moderately stiff clays in the subsurface. Standardized values for the electrical conductivity and relative effective permittivity of such materials under both saturated and unsaturated conditions suggest that the transducer center frequency used in

the Spectrum survey was too low to achieve adequate resolution of the tanks and piping. Furthermore, PRC's experience in performing GPR surveys indicate that a higher frequency transducer should provide adequate resolution and depth of penetration to effectively map the USTs and associated piping in the area.

PRC proposes to survey the area using Geophysical Survey Systems, Inc. continuous profiling GPR equipment with a 500 MHz center frequency transducer. Although a lesser depth of penetration will be achieved, this transducer should provide higher resolution profiles of the subsurface than the 300 MHz transducer previously used. PRC believes that the Spectrum GPR survey was ineffective because of a lack of profiling resolution, not because of a lack of penetration depth as reported in their February 1990 letter to the Navy.

Following completion of the geophysical survey, PRC will plan for additional field investigations in the area to define the impacts of releases from these tanks on the surrounding soils and ground water. Existing data from the Phase I and II RI/FS work for Site 9 will be reviewed. This information, along with the results of the geophysical work, will be used to identify data gaps and plan additional work. Sampling of each tank will be performed to determine its contents. Although the tanks are likely to contain ground water, the chemical constituents present in the samples will provide information on the previous contents of the tanks. This information will also be used to select the analytical parameters for further assessment of inferred releases from the tanks.

A field work plan will be prepared prior to initiating the field work activities for the investigation. The work plan will summarize the results of the background data review, geophysical survey, and tank contents sample analyses. The rationale for additional field activities will be provided along with a description of the locations for all sampling. Field and analytical procedures will be designed to follow the approved Work Plan, the Sampling and Analysis Plan, and the Quality Assurance Program Plans prepared by IT Corporation for the RI/FS activities at NAS Moffett Field, dated May 1988.

Field investigations will likely include soil-gas surveys, soil borings, well installation, and soil and ground-water sampling and analysis. The results of the soil gas surveys will augment existing RI/FS data to determine additional soil boring and monitoring well placement. The focus of the soils and ground water investigations will be the A aquifer to evaluate vertical and horizontal migration. However, investigation of deeper aquifers will be considered to evaluate vertical movement of contaminants into lower zones.

The results of the investigation activities at the Building 29 tank area will be used to assess the need for source control actions. This assessment will include evaluating tank closure options. The two options to be assessed are abandonment in-place and removal. In addition, source control options to prevent continued contaminant migration due to releases from these tanks will be addressed. The results of these source control assessments will be presented in the Action Memorandum for Site 9 proposed in the Federal Facilities Agreement (FFA) dated April 25, 1990.

Investigation Schedule

A detailed schedule for conducting the investigations will be prepared as part of the field work plan. A preliminary schedule describing the primary activities identified in this letter is shown below. The preliminary schedule conforms to the source control schedule for Site 9 as described in the proposed FFA.

The preliminary schedule for the Building 29 tank area investigations is as follows:

Task	Estimated Completion Date
Geophysical Survey	August 31, 1990
Tank Contents Sampling	September 28, 1990
Field Work Plan	October 26, 1990
Field Investigations	December 30, 1990
Draft Action Memorandum	March 1, 1991

Please call me at (415) 543-4880 if you have any questions regarding this letter or comments.

Sincerely,

Thomas Adkisson
Project Manager

TA/lln

cc: Lewis Mitani, EPA
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Admin