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HEALTH CARE SERVICES
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RO0002587

June 30, 2004

Ms. Suzanne Patton
AC Transit
1600 Franklin Street
Oakland, CA 94612

RE: SWI, SCM and CAP for AC Transit Facility, 1758 Sabre Street, Hayward, CA

Dear Ms. Patton:

This letter follows a review and evaluation of the fuel leak case file for the above referenced site. Such review included: 1) the August 15, 2003 Paradiso Mechanical, Inc. sampling report documenting underground storage tank (UST) closure, piping upgrade, and dispenser replacement activities that occurred during July 2003; 2) the February 19, 2004 Hayward Fire Department report of illicit hydrocarbon discharge from the facility's storm drain system; and, 3) the May 2004 Cameron-Cole storm water system investigation report.

This letter presents a request to complete a Soil and Water Investigation (SWI), update the Site Conceptual Model (SCM), and prepare a Corrective Action Plan (CAP) for the subject site in accordance with California Code of Regulations (CCR), Title 23, Division 3, Chapter 16, Article 11, "Corrective Action Requirements"; State Water Resources Control Board Resolution 9249, "Policies and Procedure for Investigation, Cleanup and Abatement of Discharges Under Water Code Section 13304"; and the Regional Water Quality Control Board (Regional Board) Water Quality Control Plan for the basin.

The following technical comments address investigation and related performance objectives that shall be considered as part of the required SWI, SCM and CAP. **We request that you prepare and submit a work plan for the SWI by August 30, 2004 that addresses each of the following comments.**

TECHNICAL COMMENTS

1. Preferential Pathway Study

   The cited Cameron-Cole report presented the results of a limited study of segments of the storm drain (SD) system initiated to investigate the source of hydrocarbons previously detected in the SD system of a nearby property (Bay Foam, 20273 Mack Street) on or around February 19, 2004. The source of this off-site occurrence was traced back to the subject facility by investigators representing several local agencies. During the course of this study Cameron-Cole also advanced several soil borings and constructed two (2) monitoring wells from which soil and water were collected. Cameron-Cole documents that segments of the SD system located south and southwest of the vehicle wash pad and fueling areas were structurally compromised, allowing entry of hydrocarbon-impacted water present in shallow (~1-2' depth) sub grade materials. The source of these hydrocarbons is unknown at this time.

Consequently, we request the source of these hydrocarbons noted in shallow sub grade materials be determined through an expanded conduit / preferential pathway study. All potential migration pathways and conduits (utilities, storm and sanitary sewer lines, piping and trenches of all sorts, etc.) that may be present on and in vicinity of the site shall be determined. This expanded survey must include, among other components, the submittal of comprehensive map(s) clearly showing: 1) locations and orientations of USTs, product piping and associated piping trenches, 2) pertinent site features and structures, 3) the location and depth of all utility lines and trenches identified in the study, 4) utility/trench slope or grade, flow directions, backfill materials present, and 5) how such characteristics may or may not affect plume dispersal from and across the site. A suitable number of cross-sections depicting the three dimensional relationships of these site features are to be completed.

You shall also identify the presence of all wells within a ½ mile radius of the site (i.e., monitoring and production wells; active, inactive, standby, destroyed, abandoned).

Using the results of the conduit / preferential pathway study, UST operational histories and records, and data from previous investigations at the site, you are to refine the initial *Site Conceptual Model* (SCM) of site conditions. You are to use this refined SCM to determine the appropriate configuration for samplings points in the SWI phase of work at this site. Discuss your analysis and interpretation of the results of the conduit study and explain your rationale for the configuration of sampling points in the SWI work plan.

You may present the requested conduit / preferential pathway study in the pending SWI workplan.

2. Site Conceptual Model

Starting with a critical review of the conduit / preferential pathway study, and data from the previous Cameron-Cole investigation and tank operational records for this site, you are to develop a three-dimensional SCM of site conditions. As you may be aware, an SCM is a set of working hypotheses pertaining to all aspects of the contaminant release, including site geology, hydrogeology, release history, residual and dissolved contamination, attenuation mechanisms, pathways to nearby receptors, and likely impacts to receptors. The SCM is used to identify data gaps that are subsequently filled as the investigation proceeds. As the data gaps are filled, the working hypotheses are modified, and the overall SCM is refined and strengthened. Subsurface investigations continue until the SCM no longer changes as new data are collected. At this point the SCM is considered "validated". The validated SCM forms the foundation for developing the most cost-effective final Corrective Action Plan (CAP).

We have identified, based on review of existing data, what we see as key data gaps and have described in this letter several tasks we believe will provide useful new data in pursuit of refinement to the initial SCM.

Your attention is directed to the cited API Publication No. 4699 as a resource for development of the SCM. Your attention is also directed to the State Water Resources Control Board (SWRCB) "*Guidelines for Investigation and Cleanup of MTBE and Other Ether-Based Oxygenates, Final Draft*", dated March 27, 2000, as well as the June 2002 ChevronTexaco Energy Research and Technology Company technical bulletin entitled "*Mass Flux Estimates to Assist Decision-Making*" to help in

development and strategies for refinement of the SCM, among other related tasks. I can provide copies of any of these documents if you need them.

You are requested to use this initial SCM to help you determine the appropriate configuration for samplings points in the pending SWI phase of work at this site. Please discuss in the SWI workplan your analysis and interpretation of the results of the conduit study and SCM, and explain your rationale for the configuration of proposed sampling points.

3. Contaminant Plume Definition – Soil and Groundwater

The purpose of contaminant plume definition is to determine the *three-dimensional* extent of contamination in soil and groundwater, including a determination of 3-D extent of impacts in the source area(s) and released contaminant mass, and a demarcation of potential geogenic and anthropogenic flow pathways. As you know, measurable free-phase product (FP) was observed floating on apparent groundwater encountered in both UST excavations during the July 2003 tank removal and upgrade projects. FP was also observed within the diesel product-piping trench. Water samples collected from the UST excavations revealed a concentration of Total Petroleum Hydrocarbons as diesel (TPH-d) of up to 1,000,000 parts per billion (ppb), up to 80,000 ppb TPH as gasoline (TPH-g), and up to 76 ppb Benzene, among other fuel components identified. The fuel oxygenate methyl tert-butyl ether (MtBE) was detected in sampled excavation water at a concentration of up to 9.8 ppb. Soil samples collected from the UST excavations revealed up to 1600 parts per million (ppm) TPH-d and 5.4 ppm Benzene, among other fuel components identified. MtBE was detected at a concentration of up to 0.15 ppm in a product piping trench sample, 0.33 ppm in a sample collected below the gasoline dispenser, and 0.64 ppm in a sample (T4) collected from the fuel tank excavation, adjacent to the gasoline UST.

Cameron-Cole advanced ten (10) soil borings during the course of their recent SD system investigation. Two of these borings (S9 and S10) were converted to monitoring wells MW-1 and –2, respectively. Boring SB-1 through SB-8 investigated to depths of 4' bg. Borings SB-9 and –10 were advanced to a depth of 24 and 28' bg, respectively. This work revealed alternating sequences of sandy clay, clayey sand, and silty sand in materials encountered in boring SB-9 and –10 to depths explored.

Saturated sediments were initially encountered in SB-9 in a ~1.5-foot thick clayey sand lens at a depth of ~8.5' bg; saturated sediments were also encountered in 1.5-foot thick silty sand units at approximate depths of 14 and 16.5' bg. Materials encountered in SB-10 were similar to those encountered in SB-9, although it appears moist-to-saturated conditions were not identified until encountering a 5-foot thick silty sand unit at a depth of 12' bg. Well MW-1 was screened between ~12 and 18' bg, while MW-2 was screened between ~17 and 22' bg. Stabilized water in both wells rose to a reported 7.16 and 8.53' bg, respectively.

Further assessment is necessary to better understand site geology and hydrogeology. We therefore request a three-dimensional investigation of both the source area(s) and as transect(s) oriented normal to the trend of apparent or expected groundwater flow. The vertical distribution of impacts is to be determined. Mass-balance calculations are to be completed for the source area(s). Vertical groundwater gradients are also to be determined. The SWI workplan should present your plan to accomplish these tasks.

Conventional investigation techniques and monitoring well networks currently used at fuel leak sites are generally insufficient to adequately characterize fuel releases. It is recommended that your investigation initially incorporate expedited site assessment techniques and borings. The borings are to be continuously cored and logged, with close attention paid to changes in lithologies that might facilitate solute transport (e.g., silty/sandy stringers in otherwise fine grained sediments). The methodology employed should minimize the potential for cross-contamination.

Soil samples should be collected for laboratory analysis at 5 foot intervals, areas of obvious contamination, the soil/groundwater interface, and at each lithologic change noted during boring advancement, at a minimum. Water samples are to be collected at discrete depths to total depth explored. Detailed cross-sections, fence diagrams, structural contours and isopachs, and rose diagrams for groundwater flow (incorporating all historic data), should be subsequently incorporated into the SWI report, as appropriate. Cross-sections should be scaled to clearly illustrate subsurface lithologies, including the locations of stringers and other zones of relatively-higher permeability, particularly in those areas where such zones may be intercepted by buried utilities.

Final well locations and screen depths will be substantially based on the results of the SWI and refined SCM. The monitoring of multiple discrete water-bearing zones with short screened intervals is may be anticipated. Generally, these screened intervals should not be greater than 2-3' in length. We will expect that the SWI Report will propose the locations of such wells, the anticipated well screen depths, their configurations (e.g., well cluster or multi-level), and the reasoning behind the location and configuration of each.

Discuss your proposal for performing this work outlined, above, in the SWI work plan. The updated results of the conduit study, and the SCM, are to be presented and discussed in the SWI work plan to justify your proposed scope of work.

Expedited site assessment tools and methods are a scientifically valid and cost-effective approach to fully define the three-dimensional extent of the plume. Technical protocol for expedited site assessments are provide in the US EPA *"Expedited Site Assessment Tools for Underground Storage Tank Sites: A guide for Regulators"* (EPA 510-B-97-001), dated March 1997.

4. Corrective Action Plan

The purpose of the CAP is to use the information obtained during investigation activities to propose cost-effective **final cleanup objectives and remedial alternatives for both soil and groundwater impacts,** that will adequately protect human health and safety, the environment, eliminate nuisance conditions, and protect water resources.

A final CAP for the soil and groundwater impacts caused by an unauthorized release at the site will be requested upon completion of the SWI in accordance with the schedule specified below. The CAP shall address at least two technically and economically feasible methods to restore and protect beneficial uses of water and to meet the cleanup objectives for each contaminant established in the CAP. The CAP must propose verification monitoring to confirm completion of corrective actions and evaluate CAP implementation effectiveness.

5. Quarterly Sampling, Monitoring, and Reporting

   The current well network is to be sampled, monitored, and reports submitted, following a quarterly schedule.

TECHINCAL REPORT REQUEST

Please submit technical reports according to, or otherwise comply with, the following schedule:

August 30, 2004 – Work plan for Soil and Water Investigation

90 Days from Date of Approval of Soil and Water Investigation Work Plan – Soil and Water Investigation Report (which incorporates all data generated during completion of SWI, and provides a proposal for the installation of new monitoring wells)

90 Days after Submittal of Soil and Water Investigation Completion Report - Corrective Action Plan

July 15, 2004 – Quarterly Report for the Second Quarter 2004

October 15, 2004 – Quarterly Report for the Third Quarter 2004

January 15, 2005 – Quarterly Report for the Fourth Quarter 2004

April 15, 2005 – Quarterly Report for the First Quarter 2005

These reports and work plans are being requested pursuant to the Regional Board's authority under Section 13267(b) of the California Water Code. **Each technical report shall include conclusions and recommendations for the next phases of work required at the site should more appear necessary to refine the SCM.** We request that all required work be performed in a prompt and timely manner, as suggested by the noted schedule, above. Revisions to this schedule shall be requested in writing with appropriate justification for anticipated delays.

The California Business and Professions Code (Sections 6735, 6835, and 7835.1) requires that all work plans and technical reports containing professional geologic or engineering evaluations and/or judgments be completed under the direction of an appropriately-registered or certified professional. This registered or certified professional shall sign and wet stamp all such reports and work plans.

All reports and work plans are to be submitted under cover, signed under penalty of perjury, by the Responsible Party(ies) who have taken a lead role in compliance with corrective action directives.

AGENCY OVERSIGHT

If it appears as though significant delays are occurring or reports are not submitted as requested, we will consider referring your case to the Regional Board or other appropriate agency, including the Alameda County

District Attorney, for possible enforcement follow up. Enforcement follow up may include administrative action or monetary penalties of up to $10,000 per day for each day of violation of the California Health and Safety Code, Division 20, Chapter 6.76.

If you have any questions, I can be reached at (510) 567-6783.

Sincerely,

Scott O. Seery, R.G., CHMM
Senior Hazardous Materials Specialist

c: Roger Brewer, RWQCB
Dave Charter, SWRCB UST Fund
Hugh Murphy, Hayward Fire Department
Sheree Christensen, Dept. of Fish and game, P.O. Box 4314, Hayward, CA 94540
Brad Wright, Cameron-Cole, 101 W. Atlantic Ave., Bldg. 90, Alameda, CA 94501