

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
DAVID J. KEARS, Agency Director



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ENVIRONMENTAL PROTECTION
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September 11, 2008

Mr. Ian Robb
Chevron Environmental Management
6001 Bollinger Canyon Rd K2256
PO Box 6012
San Ramon, CA 94583-2324

Mr. Patrick Elwood
College Square Associates
1345 Grand Avenue
Oakland, CA 94610-1000

San Francisco Property Mgmt.
1375 Sutter Street, Suite 308
San Francisco, CA 94109-5466

Subject: Fuel Leak Case No. RO0000466 (Global ID # T06019752694), Chevron #20-9339/College Square, 5940 College Ave, Oakland CA

Dear Mr. Robb:

Alameda County Environmental Health (ACEH) staff has reviewed the case file for the above referenced site and the documents entitled "Monitoring Well Installation Report dated February 20, 2001 and prepared by Delta Environmental Consultants, Inc (Delta). Soil sampling conducted during the well installation did not collect a soil samples below 4.5 feet bgs, which is above the depth of UST invert, leaving the vertical extent of contamination in the source area undefined. In addition, a previous investigation completed in September 1999 did not collect soil samples, but grab groundwater samples collected from the soil borings detected 190,000 parts per billion (ppb) TPHg, 3,500 ppb benzene and 1,100 ppb MtBE downgradient of the source area. The lack of soil data downgradient of the site, combined with the high levels of dissolved phase petroleum hydrocarbon contamination indicates that the horizontal extent of contamination beneath your site is undefined.

Based on ACEH staff review of the case file, we request that you address the following technical comments and send us the reports described below. Please provide 72-hour advance written notification to this office (e-mail preferred to <mailto:steven.plunkett@acgov.org>) prior to the start of field activities.

TECHNICAL COMMENT

- 1. Contaminant Source Area Characterization Results.** Based on our review of the soil borings SB-1 to SB-4 and groundwater analytical data, elevated concentrations of TPHg, benzene and MtBE were detected in groundwater; however, no soil analysis was performed. Soil samples collected following the UST and dispenser removals. However, the depths of the samples collected are unknown. Prior to conducting active remediation, the contaminant source area(s) must be adequately characterized. Please propose a work plan to address the above-mentioned concerns (i.e. define the lateral and vertical extent of contamination). Please include the work plan in the SCM requested below.
- 2. Dissolved Contaminant Plume Characterization.** According to Delta, the extent of the dissolved plume remains undefined and additional monitoring and sampling is required to assess flow direction and evaluate plume configuration. Furthermore, it appears that contamination from your site may be impacting the site located at 5930 College Ave. (Sheaff's Garage, local ID #0000377). Please prepare extended site maps, which utilize aerial photos as base maps for your site, and accurately depict neighboring structures and site features

in relation to the groundwater contaminant plume for all future reports. Please propose additional groundwater characterization to define the extent of contamination to east and south and submit a work plan.

3. **Vertical Plume Characterization.** In addition to defining the lateral extent of the hydrocarbon contaminant plume, including the MtBE contaminant plume, vertical plume characterization has not been completed. Based on a review of the case file, it appears that the vertical extent of the contaminant plume is unknown. We request that you collect depth discrete groundwater samples or install multi-level monitoring wells, monitoring well clusters, or systems capable of monitoring multiple depths to adequately characterize the groundwater contaminant plume. Please propose a scope of work to vertically define the groundwater contaminant plume and submit a work plan in the report requested below.
4. **Preferential Pathway Study.** The purpose of the preferential pathway study is to locate potential migration pathways and conduits and determine the probability of the NAPL and/or plume encountering preferential pathways and conduits that could spread contamination. The preferential pathway study should detail the potential migration pathways and potential conduits (wells, utilities, pipelines, etc.) for vertical and lateral migration that may be present in the vicinity of the site. We request that you re-submit the preferential pathway study and include the results in the SCM. Please include maps and data tables to support your analysis. The results of your study shall contain all information required by California Code of Regulations, Title 23, Division 3, Chapter 16, §2654(b).

a. Utility Survey

An evaluation of all utility lines and trenches (including sewers, storm drains, pipelines, trench backfill, etc.) within and near the site and plume area(s) is required as part of your study. Please include maps and cross-sections illustrating the location and depth of all utility lines and trenches within and near the site and plume areas(s) as part of your study.

b. Well Survey

The preferential pathway study shall include a detailed well survey of all wells (monitoring and production wells: active, inactive, standby, decommissioned (sealed with concrete), abandoned (improperly decommissioned or lost); and dewatering, drainage, and cathodic protection wells) within a ¼ mile radius of the subject site. As part of your well survey, please perform a background study of the historical land uses of the site and properties in the vicinity of the site. Use the results of your background study to determine the existence of unrecorded/unknown (abandoned) wells, which can act as contaminant migration pathways at or from your site. Please review and submit copies of historical maps, such as Sanborn maps, aerial photographs, etc., when conducting the background study.

5. **Site Conceptual Model (SCM).** We anticipate that additional site characterization work will be necessary at and down-gradient from your site. Considerable cost savings can be realized if your consultant focuses on developing and refining a viable Site Conceptual Model (SCM) for the project. A 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 magnitude of potential 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 said to be 'validated.' The validated SCM then forms the foundation for developing the most cost-effective corrective action plan to protect existing and potential receptors.

When performed properly, the process of developing, refining and ultimately validating the SCM effectively guides the scope of the entire site investigation. We have identified, based on our review of existing data, some initial key data gaps in this letter and have described several tasks that we believe will provide important new data to refine the SCM. We request that your consultant incorporate the results of the new work requested in this letter into their SCM, identify new and/or remaining data gaps, and propose supplemental tasks for future investigations. There may need to be additional phases of investigations, each building on the results of prior work, to validate the SCM. Characterizing the site in this manner will focus the scope of work to address the identified data gaps, improving the efficiency of the work, and limit its overall costs.

Both industry and the regulatory community endorse the SCM approach. Technical guidance for developing SCMs is presented in Strategies for Characterizing Subsurface Releases of Gasoline Containing MTBE, American Petroleum Institute Publication No. 4699 dated February 2000; 'Expedited Site Assessment Tools for Underground Storage Tank Sites: A Guide for Regulators' (EPA 510-B-97-001), prepared by the U.S. Environmental Protection Agency (EPA), dated March 1997; and 'Guidelines for Investigation and Cleanup of MTBE and Other Ether-Based Oxygenates, Appendix C,' prepared the State Water Resources Control Board, dated March 27, 2000.

The SCM for this project is to incorporate, but not limited to, the following:

- a. A concise narrative discussion of the regional geologic and hydrogeologic setting. Include a list of technical references you reviewed, and copies (photocopies are sufficient) of regional geologic maps, groundwater contours, cross-sections, etc.
- b. A concise discussion of the on-site and off-site geology, hydrogeology, release history, source zone, plume development and migration, attenuation mechanisms, preferential pathways, and potential threat to down-gradient and above-ground receptors (e.g. contaminant fate and transport). Please include the contaminant volatilization from the subsurface to indoor/outdoor air exposure route (i.e. vapor pathway) in the analysis. Maximize the use of large-scaled graphics (e.g. maps, cross-sections, contour maps, etc.) and conceptual diagrams to illustrate key points. Include a structural contour map (top of unit) and isopach map for the aquitard that is presumed to separate your release from the deeper aquifer(s).
- c. Identification and listing of specific data gaps that require further investigation during subsequent phases of work and propose a scope of work to acquire data to address the identified data gaps.
- d. The SCM shall include an analysis of the hydraulic flow system at down-gradient from the site. Include rose diagrams for depicting groundwater gradients. The rose diagram shall be plotted on the groundwater contour maps and updated in all future reports submitted for your site. Include an analysis of vertical hydraulic gradients. Please note that these likely change due to seasonal precipitation and groundwater pumping.
- e. Temporal changes in the plume location and concentrations are also a key element of the SCM. In addition to providing a measure of the magnitude of the problem, these data are often useful to confirm details of the flow system inferred from the hydraulic head measurements. Please include plots of the contaminant plumes on your maps, cross-sections, and diagrams.
- f. Summary tables of chemical concentrations in different media (i.e. soil, groundwater, and soil vapor), including well logs, well completion details, boring logs, etc.

- g. Other contaminant release sites may exist in the vicinity of your site. Hydrogeologic and contaminant data from those sites may prove helpful in testing certain hypotheses for your SCM. Include a summary of work and technical findings from nearby release sites, if applicable.

Please prepare a site conceptual model (SCM) as described above, including developing and/or identifying site cleanup goals, and include the results of the SCM in the decision-making process. If data gaps (i.e. vertical and lateral extent of contamination, potential contaminant volatilization to indoor air, or contaminant migration along preferential pathways, etc.) are identified in the SCM, please include a work plan to address those data gaps.

Once site characterization is completed and all identified data gaps have been addressed, a Feasibility Study, should be prepared in accordance with California Code of Regulations, Title 23, Division 3, Chapter 16, §2725(f), which evaluates at least three cost-effective remedial approaches, not including the no action and monitored natural attenuation remedial alternatives, having likelihood of attaining site cleanup objectives.

TECHNICAL REPORT REQUEST

Please submit technical reports to Alameda County Environmental Health (Attention: Mr. Steven Plunkett), according to the following schedule:

- **December 30, 2008** – Site Conceptual Model with Preferential Pathway Study

These reports are being requested pursuant to California Health and Safety Code Section 25296.10. 23 CCR Sections 2652 through 2654, and 2721 through 2728 outline the responsibilities of a responsible party in response to an unauthorized release from a petroleum UST system, and require your compliance with this request.

ELECTRONIC SUBMITTAL OF REPORTS

ACEH's Environmental Cleanup Oversight Programs (LOP and SLIC) require submission of reports in electronic form. The electronic copy replaces paper copies and is expected to be used for all public information requests, regulatory review, and compliance/enforcement activities. Instructions for submission of electronic documents to the Alameda County Environmental Cleanup Oversight Program FTP site are provided on the attached "Electronic Report Upload Instructions." Submission of reports to the Alameda County FTP site is an addition to existing requirements for electronic submittal of information to the State Water Resources Control Board (SWRCB) Geotracker website. In September 2004, the SWRCB adopted regulations that require electronic submittal of information for all groundwater cleanup programs. For several years, responsible parties for cleanup of leaks from underground storage tanks (USTs) have been required to submit groundwater analytical data, surveyed locations of monitoring wells, and other data to the Geotracker database over the Internet. Beginning July 1, 2005, these same reporting requirements were added to Spills, Leaks, Investigations, and Cleanup (SLIC) sites. Beginning July 1, 2005, electronic submittal of a complete copy of all reports for all sites is required in Geotracker (in PDF format). Please visit the SWRCB website for more information on these requirements (http://www.swrcb.ca.gov/ust/electronic_submittal/report_rqmts.shtml).

PERJURY STATEMENT

All work plans, technical reports, or technical documents submitted to ACEH must be accompanied by a cover letter from the responsible party that states, at a minimum, the following: "I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge." This letter must be signed by an officer or legally authorized representative of your company. Please include a cover letter satisfying these requirements with all future reports and technical documents submitted for this fuel leak case.

PROFESSIONAL CERTIFICATION & CONCLUSIONS/RECOMMENDATIONS

The California Business and Professions Code (Sections 6735, 6835, and 7835.1) requires that work plans and technical or implementation reports containing geologic or engineering evaluations and/or judgments be performed under the direction of an appropriately registered or certified professional. For your submittal to be considered a valid technical report, you are to present site specific data, data interpretations, and recommendations prepared by an appropriately licensed professional and include the professional registration stamp, signature, and statement of professional certification. Please ensure all that all technical reports submitted for this fuel leak case meet this requirement.

UNDERGROUND STORAGE TANK CLEANUP FUND

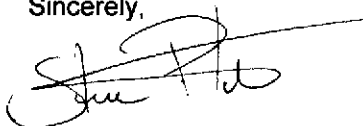
Please note that delays in investigation, later reports, or enforcement actions may result in your becoming ineligible to receive grant money from the state's Underground Storage Tank Cleanup Fund (Senate Bill 2004) to reimburse you for the cost of cleanup.

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 County District Attorney, for possible enforcement actions. California Health and Safety Code, Section 25299.76 authorizes enforcement including administrative action or monetary penalties of up to \$10,000 per day for each day of violation.

If you have any questions, please call me at (510) 383-1761 or send me an electronic mail message at steven.plunkett@acgov.org.

Sincerely,



Steven Plunkett
Hazardous Materials Specialist



Donna Drogos, PE
Supervising Hazardous Materials Specialist

cc: Laura Genin
CRA
5900 Hollis Street, Suite A
Emeryville, CA 94608

Donna Drogos, ACEH, Steven Plunkett ACEH; File