ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
ALEX BRISCOE, Director

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ENVIRONMENTAL PROTECTION
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September 8, 2011

Lily A. Chun Trust
c/o Wayne Chun
265 Heron Drive
Pittsburg, CA 94565
(*Sent via E-mail to: wayne.chun@sbcglobal.net*)

Subject: Case File Review for Fuel Leak Case No. RO0000382 and GeoTracker Global ID T0600100980, Bill Chun Service Station, 2301 Santa Clara Avenue, Alameda, CA 94501

To Lily A. Chun Trust:

Alameda County Environmental Health (ACEH) staff has reviewed the case file for the above referenced site including the most recent report entitled, "*Groundwater Monitoring of Hydrocarbons Related to the Former Underground Storage Tanks at the Former Bill Chun Service Station at 2301 Santa Clara Avenue, Alameda, CA 94501,"* dated August 8, 2011 (Monitoring Report). The Monitoring Report recommends closing the site and abandoning the wells. This recommendation is clearly inadequate given the site conditions and previous review of the site by ACEH and the State Water Resources Control Board.

A petition to close this site was submitted to the State Water Resources Control Board on July 8, 2009. In correspondence dated October 8, 2009, ACEH provided explanations as why case closure was not justified. In correspondence dated June 22, 2011, the State Water Resources Control Board concluded that the petition fails to raise substantial issues and refused to review the request for case closure.

Previous site investigation activities have shown that a significant mass of petroleum hydrocarbons remains at the site and has migrated to the east beneath an adjacent commercial and residential building. Sol vapor sampling at the adjacent property has detected volatile organic compounds (VOCs) at highly elevated concentrations that exceed applicable screening levels for potential vapor intrusion to indoor air. Indoor air sampling in the adjacent building has detected VOCs at concentrations that exceed indoor air screening levels. This site requires both additional investigation and remediation which are discussed in the technical comments below. We request that you address the following technical comments, perform the requested work, and send us the reports requested below.

TECHNICAL COMMENTS

1. **Corrective Action.** Corrective action is required to treat the significant mass of petroleum hydrocarbons remaining at this site. Dual-phase extraction was previously proposed but not implemented for this site. The most recent suggestion to place ORC socks is clearly inadequate and inefficient for this site. Please see technical comment 7 below regarding the placement of ORC socks in wells MW2 and MW-7. We request that you prepare a Draft Corrective Action Plan (Draft CAP) that meets the provisions of section 2725 of the UST regulations (CCR, Title 23, Chapter 16, section 2600, et seq.) and includes the following minimum information:

    - Proposed cleanup goals and the basis for cleanup goals.
    - Summary of site characterization data.
    - Receptor information including likely future land use scenarios, adjacent land use and sensitive receptors, and potential groundwater receptors.
    - Evaluation of a minimum of three active remedial alternatives including discussion of feasibility, cost effectiveness, estimated time to reach cleanup goals, and limitations for each remedial alternative.
    - Detailed description of proposed remediation including performance monitoring during implementation.
    - Post-remediation monitoring and confirmation sampling.
    - Schedule for implementation of cleanup.

    Public participation is a requirement for the Corrective Action Plan process. Therefore, we request that you submit a Draft CAP for ACEH review. Upon ACEH approval of a Draft CAP, ACEH will notify potentially affected members of the public who live or own property in the surrounding area of the proposed remediation described in the Draft CAP. Public comments on the proposed remediation will be accepted for a 30-day period.

2. **Elevated Concentration of VOCs in Soil Vapor and Potential Vapor Intrusion.** On January 30, 2006, soil vapor samples (SG-1 through SG-5) were collected from probes installed on the adjacent property east of the site. Four of the probes were installed around the outside of the building which consists of a flower shop on the first floor and a residence on the second floor. One probe was installed through the floor of the flower shop. Benzene was detected at a concentration of 1,600,000 micrograms per cubic meter ($\mu g/m^3$) in the soil gas sample collected below the floor of the flower shop (SG-3) which exceeds the Environmental Screening Level [ESL] (San Francisco Bay Regional Water Quality Control Board 2008) for commercial land use of 180 $\mu g/m^3$ by over three orders of magnitude. Chloroform, 1,2-dichloroethane, and toluene were also detected in soil gas sample SG-3 at concentrations exceeding ESLs for potential vapor intrusion under commercial and residential land use. A second soil gas sample (SG-4) contained 1,300 $\mu g/m^3$ of benzene which also exceeds the ESL for commercial land use. However, this result was not considered significant in the report entitled, "*Field Investigation Report for Indoor Air and Soil Gas Sampling of Hydrocarbons Related to the Former Underground Storage Tanks at the Former Bill Chun Service Station," dated* February 16, 2006 and prepared by Franklin J. Goldman Environmental and Hydrogeological Consulting. Benzene was detected in two indoor air samples collected from the second floor residence at concentrations of 2.3 and 2.5 $\mu g/m^3$, respectively, which significantly exceed the residential screening level for benzene in indoor air of 0.084 $\mu g/m^3$. The 2006 Goldman report suggested that the vapors

in the second floor residence may not be associated with the subsurface contamination but did not propose any further investigation to verify this conclusion. Benzene was not detected in indoor air samples from the first floor; however, the reporting limit for the indoor air samples was 1.6 µg/m^3, which significantly exceeds the indoor air screening level for commercial land use of 0.14 µg/m^3. Without discussion of the reporting limit, the Goldman report concluded that since benzene was not detected, there was no health risk inside the flower shop. In addition, napthalene was apparently not included as an analyte for the indoor air samples. It is clear that a more rigorous approach that includes indoor air sampling sub-slab soil vapor sampling, and soil vapor sampling is necessary to evaluate the potential for vapor intrusion to the adjacent commercial and residential building. We request that you submit plans to evaluate the potential for vapor intrusion to indoor air in the Corrective Action Plan requested below.

3. **Groundwater Flow Directions.** The August 8, 2011 Monitoring Report presents a Figure 1 entitled, "Lines of equal groundwater level elevation April 22, 2011," which shows gradients ranging from 0.7 to 13 percent. Water level elevations from wells that are screened in different zones are included in the contour map. Because these water levels are from different vertical intervals, they are not comparable. Presenting these water levels on the same figure and contouring them presents a distorted picture of the actual hydraulic gradient. As a result, the gradients shown on Figure 1 are unrealistic and not representative of actual conditions. Future presentations of hydraulic gradient maps must present accurate and representative data.

4. **Conditions of Monitoring Wells and Data Quality.** Numerous groundwater monitoring well surface completions were repaired or replaced on June 15, 2011 to prevent uncontrolled surface water runoff from entering the wells and to prevent unauthorized access to the wells. The potential for surface runoff to enter several monitoring wells raises questions regarding the reliability of the data collected from these wells and the claims made regarding decreases in concentrations that were based on these data. We also note that well MW-7 was damaged by a construction contractor on November 16, 1995, causing the well to become filled with approximately 11 feet of soil and a passive recovery bailer to become lodged in the bottom of the well. Nevertheless, data from this well was used in an attempt to establish a trend line for future groundwater concentrations in the August 8, 2011 Monitoring Report. The collection of reliable data is fundamental to evaluation of this site. In order to assure the integrity of future groundwater monitoring data, we request the following:
    - Inspection of all groundwater monitoring and extraction wells to assure the integrity of all well casings, caps, and well boxes.
    - Sounding of the total depth of all wells with a comparison to the construction data and an estimation of the amount of sediment in the bottom of the wells.
    - Redevelopment of monitoring and extraction wells where necessary due to sediment accumulation.
    - Notes on the proximity of any features that would discharge water to the area of the well such as the downspout from a gutter, outdoor faucet, sprinklers, or other irrigation features. Any evidence of ponding or surface water flow in the area of the well head is to be noted.
    - Evaluation of the quality of data collected from the monitoring well network.
    - Recommendations regarding repair, replacement, or additions to the monitoring well network.
    - Measurement of water levels and free product in all wells.

- Purging and sampling of all monitoring and extraction wells using a low flow sampling method for comparison to previous purging and sampling using a bailer.
- To avoid any potential conflict of interest, we request that the above items be conducted by a qualified independent third party who is a professional licensed geologist or engineer and is not associated with the current consultant for the site. To verify the independence of the third party, please submit the name and qualifications of the independent third party to ACEH for concurrence.

Please presents plans to conduct the above in the Well Inspection and Groundwater Sampling Work Plan requested below. To assure the integrity of future data, we recommend that the Underground Storage Tank Cleanup Fund (USTCF) not reimburse the costs for any future groundwater monitoring until the above actions have been completed and approved by ACEH.

5. **Historic Groundwater Flow Directions.** We note that groundwater monitoring reports submitted prior to August 8, 2011 Monitoring Report indicated groundwater flow directions to the north or northeast. Groundwater monitoring reports submitted by Franklin J. Goldman from September 2000 to the present indicate that the groundwater flow directions range from the south to east. The cause for this apparent change in groundwater flow directions does not appear to have been evaluated. We request that the independent third party selected to implement the tasks and evaluation requested in technical comment 2 also review and evaluate the discrepancy between historic and more recent groundwater flow directions.

6. **Surveying of Monitoring Wells.** The tops of the well casings for MW-6, MW-8, MW-9, and MW-10 were cut down to remove cracked and degraded casing tops. The August 8, 2011 Monitoring Report indicates that re-surveying of the wells is not necessary. We request that all wells in which the top of casing has been altered be re-surveyed to provide accurate information.

7. **ORC Socks.** On August 8, 2011, oxygen releasing compound (ORC) socks were placed in monitoring wells MW-2 and MW-7 for passive remediation without approval of ACEH. Due to the significant mass of petroleum hydrocarbons in the source area, the attempted use of ORC socks is clearly ineffective and not cost effective. We recommend that the USTCF not reimburse any costs for the use of ORC socks at this site.

8. **Extent of Groundwater Contamination to North.** During a site investigation in 1995, total petroleum hydrocarbons as gasoline (TPHg) and benzene were detected in a grab groundwater sample (P6) collected northeast of the site at concentrations of 22,000 and 8,600 micrograms per liter (µg/L), respectively. Sampling location P6 was located in an asphalt driveway northeast of the site. Given the uncertainties in the groundwater flow directions and groundwater monitoring data discussed in technical comments 3 and 5, it is not clear whether existing data are sufficient to assess the extent of contamination to the north. Further evaluation of the extent of contamination may be required pending completion of the actions requested in technical comments 4 and 5.

9. **Existing Building at Northeast End of Property Parcel.** An existing building with a crawl space is located at the northeast end of the property parcel (referred to as the "Former Pythion Fellowship Building" in historic reports for the site). Benzene was detected at a concentration of 0.36 milligrams per kilogram in a soil sample collected at a depth of 8.5-9.0 feet bgs in boring BK, which is immediately east of the building. Benzene was detected in groundwater at a concentration of 2,100

µg/L in a grab groundwater sample collected from boring BJ, which is also immediately east of the building. Please include plans to evaluate the potential for vapor intrusion to indoor air for this building in the Draft CAP requested below.

10. **Fill and Rubble in Shallow Soils.** The Report entitled, "*Field Investigation Report for Indoor Air and Soil Gas Sampling of Hydrocarbons Related to the Former Underground Storage Tanks at the Former Bill Chun Service Station," dated* February 16, 2006 and prepared by Franklin J. Goldman Environmental and Hydrogeological Consulting, indicates that "since the building is very old, and fill soils and rubble have been encountered in subsurface soil excavations, there may be numerous migratory pathways not yet accounted for." In the Draft CAP requested below, please provide further description of where and when fill soils and rubble have been encountered at the site.

11. **Sewer Line from Chun Property to Flower Shop.** A sewer line is described as extending from the "Chun garages to beneath the Flower Shop" (Report entitled, "*Offsite Towata Investigation,*" dated July 10, 2005 by Frank Goldman). In the Draft CAP requested below, please present an evaluation of the sewer line and other utilities as potential preferential pathways or present plans to conduct this evaluation.

12. **Analytical Data Tables.** Table 2 of the August 8, 2011 Monitoring Report presents only TPHg and benzene data, is difficult to use, and does not include all historic groundwater monitoring. Please improve future historic analytic data tables by showing all relevant analytical results, clearly showing which data goes with each well, showing all historical data, and avoiding the use of highlighting that covers an entire table.

13. **Groundwater Concentration Trend Lines.** The August 8, 2011 Monitoring Report presents four figures showing groundwater concentrations, water level elevations, and trend lines, which the Monitoring Report references as supporting a conclusion that water quality objectives will be attained with a reasonable period of time. The graphs and trend lines do not provide a valid basis for predicting future groundwater concentrations for the following reasons:
    - The trend lines include data that exceed the effective solubility range for gasoline. Free product has been observed in wells MW-7 and EW-13. The concentrations measured in samples from these wells are affected by the incorporation of free phase product in the samples. These data cannot be used in a trend line to infer future dissolved phase concentrations.
    - Figures 4 and 5 have trend lines based on concentrations in two separate wells. Trend lines should be restricted to dissolved phase concentrations for a single well.
    - Well MW-7 was damaged by a construction contractor on November 16, 1995, causing the well to become filled with approximately 11 feet of soil and a passive recovery bailer to become lodged in the bottom of the well. Data from this well should not be used to try to predict future groundwater concentrations.
    - The graphs do not show all data collected for the wells.

    All future technical reports must present and interpret the collected data in a balanced manner without apparent bias towards supporting a particular conclusion.

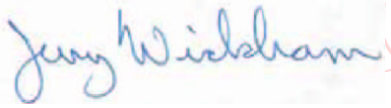
TECHNICAL REPORT REQUEST

Please submit technical reports to Alameda County Environmental Health (Attention: Jerry Wickham), according to the following schedule:

- **October 21, 2011** – Well Inspection and Groundwater Sampling Work Plan
- **November 10, 2011** – Draft Corrective Action Plan

If you have any questions, please call me at (510) 567-6791 or send me an electronic mail message at jerry.wickham@acgov.org. Online case files are available for review at the following website: http://www.acgov.org/aceh/index.htm.

Sincerely,



Jerry Wickham, California PG 3766, CEG 1177, and CHG 297
Senior Hazardous Materials Specialist

Attachment: Responsible Party(ies) Legal Requirements/Obligations

Enclosure: ACEH Electronic Report Upload (ftp) Instructions

cc: Sue Russell, City of Alameda Economic Development, 2263 Santa Clara Avenue, Room 120, Alameda, CA 94501-4477 (*Sent via E-mail to: srussell@ci.alameda.ca.us*)

Frank Goldman, Environmental and Hydrogeological Consulting, P.O. Box 224, Roseville, CA 95661 (*Sent via E-mail to: fjgoldmanchg@yahoo.com*)

Donna Drogos, ACEH (*Sent via E-mail to: donna.drogos@acgov.org*)
Jerry Wickham, ACEH (*Sent via E-mail to: jerry.wickham@acgov.org*)

GeoTracker, eFile

Attachment 1

Responsible Party(ies) Legal Requirements / Obligations

REPORT REQUESTS

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.waterboards.ca.gov/water_issues/programs/ust/electronic_submittal/).

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.

Alameda County Environmental Cleanup Oversight Programs (LOP and SLIC)	**REVISION DATE:** July 20, 2010
	ISSUE DATE: July 5, 2005
	PREVIOUS REVISIONS: October 31, 2005; December 16, 2005; March 27, 2009; July 8, 2010
SECTION: Miscellaneous Administrative Topics & Procedures	**SUBJECT:** Electronic Report Upload (ftp) Instructions

The Alameda County Environmental Cleanup Oversight Programs (LOP and SLIC) require submission of all reports in electronic form to the county's ftp site. Paper copies of reports will no longer be accepted. The electronic copy replaces the paper copy and will be used for all public information requests, regulatory review, and compliance/enforcement activities.

REQUIREMENTS

- **Please do not submit reports as attachments to electronic mail.**
- Entire report including cover letter must be submitted to the ftp site as **a single portable document format (PDF) with no password protection**.
- It is **preferable** that reports be converted to PDF format from their original format, (e.g., Microsoft Word) rather than scanned.
- **Signature pages and perjury statements must be included and have either original or electronic signature.**
- **Do not password protect the document**. Once indexed and inserted into the correct electronic case file, the document will be secured in compliance with the County's current security standards and a password. **Documents with password protection will not be accepted**.
- Each page in the PDF document should be rotated in the direction that will make it easiest to read on a computer monitor.
- Reports must be named and saved using the following naming convention:

  RO#_Report Name_Year-Month-Date (e.g., RO#5555_WorkPlan_2005-06-14)

Submission Instructions

1) Obtain User Name and Password
   a) Contact the Alameda County Environmental Health Department to obtain a User Name and Password to upload files to the ftp site.
      i) Send an e-mail to deh.loptoxic@acgov.org
   b) In the subject line of your request, be sure to include **"ftp PASSWORD REQUEST"** and in the body of your request, include the **Contact Information, Site Addresses**, and the **Case Numbers (RO# available in Geotracker) you will be posting for**.

2) Upload Files to the ftp Site
   a) Using Internet Explorer (IE4+), go to ftp://alcoftp1.acgov.org
      (i) Note: Netscape, Safari, and Firefox browsers will not open the FTP site as they are NOT being supported at this time.
   b) Click on Page located on the Command bar on upper right side of window, and then scroll down to Open FTP Site in Windows Explorer.
   c) Enter your User Name and Password. (Note: Both are Case Sensitive.)
   d) Open "My Computer" on your computer and navigate to the file(s) you wish to upload to the ftp site.
   e) With both "My Computer" and the ftp site open in separate windows, drag and drop the file(s) from "My Computer" to the ftp window.

3) Send E-mail Notifications to the Environmental Cleanup Oversight Programs
   a) Send email to deh.loptoxic@acgov.org notify us that you have placed a report on our ftp site.
   b) Copy your Caseworker on the e-mail. Your Caseworker's e-mail address is the entire first name then a period and entire last name @acgov.org. (e.g., firstname.lastname@acgov.org)
   c) The subject line of the e-mail must start with the RO# followed by **Report Upload**. (e.g., Subject: RO1234 Report Upload) If site is a new case without an RO#, use the street address instead.
   d) If your document meets the above requirements and you follow the submission instructions, you will receive a notification by email indicating that your document was successfully uploaded to the ftp site.