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

ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
(510) 567-6700
FAX (510) 337-9335

January 21, 2009

Mr. Wayne and Lily Chun
Bill Chun Service Station
2301 Santa Clara Avenue
Alameda, CA 94501

NOTICE TO COMPLY

Subject: Fuel Leak Case No. RO0000382 (Geotracker Global ID # T0600100980), Bill Chun Service Station, 2301 Santa Clara Avenue, Alameda, CA 94501

Dear Mr. Chun:

Alameda County Environmental Health (ACEH) staff has reviewed the case file and the reports entitled, "Addendum to the Remedial Action Plan", dated April 25, 2008 and received May 23, 2008 and "Groundwater Monitoring of Hydrocarbons and Revised Remedial Action Plan" dated December 5, 2008, and prepared by Frank Goldman, Environmental Consulting (Goldman). ACEH is concerned with the protracted delays regarding the implementation of the approved interim remediation; a chronology of which is outlined below.

- May 2002 Goldman submits a work plan for groundwater extraction and soil vapor extraction (SVE) testing, in June 2002 ACEH approves the work plan.
- August 2003 results from the groundwater extraction test reported to ACEH.
- September 2003 a "Remedial Action Plan Report (RAP)" is submitted to ACEH by Loftin Associates. The RAP describes the results of SVE and groundwater extraction testing and proposes SVE and groundwater extraction remediation system design.
- December 2003 Goldman submitted a work plan and proposed the installation of 3 additional groundwater extraction wells, well installation report submitted to ACEH in February 2004 and recommends immediate implementation of groundwater extraction and treatment without SVE.
- March 2004 ACEH request the immediate implementations of remediation by SVE and groundwater extraction.
- February 2005, ACEH requested additional vertical and lateral characterization of soil and groundwater, preferential pathway study and interim cleanup. ACEH noted that no progress was made with interim remediation; therefore, ACEH requested a written time schedule for interim remediation.
- March 2005 Goldman proposed additional soil borings and monitoring wells to complete site characterization, and a schedule for interim remediation was also presented. Results from the site characterization were received in July 2005.
- August 2005 ACEH concurs with July 2005 SWI and requires soil vapor sampling.
- October 2005 Goldman submits work plan for soil vapor and indoor air sampling.
- November 2005 ACEH concurs with work plan and requests a human health risk assessment.
- February 2006 Goldman completed soil vapor and indoor are sampling, high concentrations of benzene in soil vapor up to 500,000 ppbv detected.

- February 2006 ACEH finds that site is out of compliance (due to lengthy delays in the implementation of interim remediation) and notifies the Clean Up Fund that measure should be taken to remove your eligibility to the Fund.
- February 2006 through May 2008, Remediation approved by ACEH remains unimplemented.
- May 2008 Goldman submitted an addendum to the remedial action plan (the initial remedial action plan was approved by ACEH in a correspondence dated March 24, 2004). Goldman suggests that the dissolved plume is stable or has diminished in size, is more localized and of lower concentrations than previously existed and proposed a mobile high vacuum dual phase vapor extraction system should be used in place of the SVE and ground water extraction system that was previously approved by ACEH.
- On December 5, 2008 Goldman submits a 3rd remediation alternative of placing oxygen releasing compound (ORC) "socks" in existing monitoring wells throughout the site, suggesting that this method would eliminate the potentially completed exposure pathway (benzene vapor intrusion to indoor air) with respect to regulatory closure.

ACEH does not concur with the two recent alternative remediation proposals. We are concerned with the lack of progress in implementing the approved cleanup method for this site. If further delays in implementing cleanup at this site occur, ACEH will consider referring your case the Alameda County District Attorney for enforcement follow up. Based on ACEH staff review of the documents referenced above, we request that you address the following technical comments, perform the proposed work, and send us the reports requested below. Please provide 72-hour advance written notification to this office (e-mail preferred to steven.plunkett@acgov.org) prior to the start of field activities.

TECHNICAL COMMENTS

1. **Source Area Dissolved Groundwater Contamination.** Goldman states that natural attenuation processes are occurring and that the dissolved plume is stable. Data for the site do not support Goldman's conclusions. Groundwater data collected during the five previous groundwater monitoring events from March 2007 through September 2008 confirm that temporal fluctuations of dissolved phase contamination concentrations is occurring, demonstrating that the dissolved plume is not stable. Table 1 below is a comparison of groundwater analytical data collected from source area monitoring wells.

Table 1. Groundwater Contamination Concentrations in Source Area Wells

Sample Date	Well ID #	Concentration	COC
March 2008	MW-1	45,000 µg/L	TPHg
September 2008	MW-1	8,300 µg/L	TPHg
March 2008	MW-1	9,400 µg/L	Benzene
September 2008	MW-1	2,300 µg/L	Benzene
March 2008	MW-2	37,000 µg/L	TPHg
September 2008	MW-2	6,300 µg/L	TPHg
March 2008	MW-2	10,700 µg/L	Benzene
September 2008	MW-2	3,000 µg/L	Benzene
March 2008	MW-5	16,000 µg/L	TPHg
September 2008	MW-5	740 µg/L	TPHg
March 2008	MW-5	50 µg/L	Benzene
September 2008	MW-5	<0.5 µg/L	Benzene
March 2008	EW-14	1,200 µg/L	TPHg
September 2008	EW-14	12,000 µg/L	TPHg

March 2008	EW-14	340 µg/L	Benzene
September 2008	EW-14	4,000 µg/L	Benzene
March 2008	EW-17	31,000 µg/L	TPHg
September 2008	EW-17	7,500 µg/L	TPHg
March 2008	EW-17	7,600 µg/L	Benzene
September 2008	EW-17	3,200 µg/L	Benzene

Combined, these data clearly establish that the high concentrations of TPHg and benzene are unstable and fluctuate temporally and spatially. Moreover, two successive quarters of groundwater analytical data are not adequate to demonstrate that the dissolved plume is stable or decreasing. More importantly, the high residual concentrations of dissolved phase contamination in the source area warrant the implementation of remediation that was originally approved in March 2004. We require that you implement the remediation plan as approved in the March 2004 directive letter. Please present results from soil and groundwater remediation in the report requested below.

2. **Dissolved Plume Contamination.** Goldman asserts that down gradient of the source area natural attenuation is occurring and the dissolved plume is stable and data for the site do not support Goldman's conclusion ACEH does not concur with the conclusion that the dissolved phase plume is stable. For example, comparison of groundwater analytical data presented in Table 2 below confirms that the downgradient plume is not stable.

Table 2. Groundwater Contamination Concentrations in Downgradient Wells

Sample Date	Well ID #	Concentration	COC
March 2008	EW-13	120,000 µg/L	TPHg
September 2008	EW-13	73,000 µg/L	TPHg
March 2008	EW-13	11,000 µg/L	Benzene
September 2008	EW-13	7,900 µg/L	Benzene
March 2008	MW-11	26,000 µg/L	TPHg
September 2008	MW-11	11,000 µg/L	TPHg
March 2008	MW-11	1,100 µg/L	Benzene
September 2008	MW-11	770 µg/L	Benzene

Furthermore, groundwater data collected during the five previous groundwater monitoring events from March 2007 through September 2008 confirm that temporal fluctuations of dissolved phase contamination concentrations is occurring, demonstrating that the dissolved plume is not stable. As stated above, ACEH requires that you implement the previously approved remediation and send us the reports requested below.

3. **Soil Vapor Contamination and Remediation**. In September 2003, soil vapor sampling was conducted in conjunction with a soil vapor and groundwater extraction pilot test to determine the efficacy of soil vapor extraction as a remedial alternative. Results from the soil vapor sampling detected high concentrations up to 17,000,000 µg/m^3 TPHg and 700,000 µg/m^3 benzene. Consequently, ACEH approved the proposed soil vapor extraction remediation action in a correspondence dated March 2004; however, the remedial action was not implemented. Additionally, ACEH requested indoor air sampling and soil vapor sampling to assess the soil vapor to indoor air migration pathway. Results from the soil vapor sampling completed in January 2006 detected 1,600,000 µg/m^3 benzene in soil vapor form vapor point SG3 beneath the Towata Flower shop. Indoor air sampling inside the flower shop did not detect benzene above laboratory reporting limits.

In May 2008, Goldman recommended a second alternate remedial action using a mobile, high vacuum dual phase (HVDPE) extraction system. The proposed HVDPE intermittent remedial alternative may be effective at

reducing TPHg and benzene contamination in soil vapor, however, the UST Clean Up Fund may not provide reimbursement for the cost of this remedial alternative due to the high costs associated with this transient method. Due to the high levels of contamination present on site and off site, a fixed AS/DPE system would be a more cost effective than the mobile HVDPE unit. Furthermore, extractions wells and air sparging wells have already been installed and previous soil vapor and groundwater extraction test demonstrate that AS/DPE remediation method will effectively remove sorbed and dissolved phase contaminiation in soil and groundwater.

In December 2008, Goldman proposed a third remedial alternative using ORC "socks" placed in wells in both the source area and down gradient of the source area. Goldman believes that the ORC "socks" will result in the reduction of the concentrations of benzene in groundwater beneath the site, to the extent that the potential risk associated with vapor intrusion to indoor air will be eliminated. The technical justification for this approach is not substantiated. ACEH does not concur with ORC "socks" as a remediation method for this site. A large residual mass of non-aqueous phase liquid (NAPL) remains in place beneath the site, and reliance upon natural attenuation processes to clean up residual contamination is not technically justifiable. ORC "socks" placed in wells will not result in the cleanup of contaminated soil, soil vapor or groundwater beneath the site as suggested by Goldman. Rather, ORC "socks" are more likely to result in a slight decrease in concentration of dissolved phase contamination in the sand pack, immediately adjacent to the well, but ORC "socks" will not reduce contamination in soil, groundwater or soil vapor outside of the well sand pack. Moreover, this method is not an appropriate remediation method for the contamination associated with this site. More importantly, ACEH is concerned that high concentration of up to 5,100,000 parts per billion volume (ppbv) TPHg and 700,000 $\mu g/m^3$ benzene detected in soil vapor samples collected on site and up to 1,600,000 $\mu g/m^3$ benzene detected off site have not been addressed. Therefore, ACEH requires that you implement AS/DPE that was originally approved in March 2004.

TECHNICAL REPORT REQUEST

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

- **May 1, 2009** – Interim Remedial Action Report

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

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. Instructions for submission of electronic documents to the Alameda County Environmental Cleanup Oversight Program ftp site are provided on the attached "Electronic Report Upload (ftp) Instructions." Please do not submit reports as attachments to electronic mail.

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. Submission of reports to the Geotracker website does not fulfill the requirement to submit documents to the Alameda County ftp site. In September 2004, the SWRCB adopted regulations that require electronic submittal of information for 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 monitor wells, and other data to the Geotracker database over the Internet. Beginning July 1, 2005, electronic submittal of a complete copy of all necessary reports was required in Geotracker (in PDF format). Please visit the SWRCB website for more information on these requirements (http://www.swrcb.ca.gov/ust/cleanup/electronic_reporting).

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 delays continue to occur 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) 383-1767.

Sincerely,

Steven Plunkett
Hazardous Materials Specialist

Donna L. Drogos, PE
Supervising Hazardous Materials Specialist

cc: Frank Goldman
Environmental Consulting

Ken Mifsud
Alameda County District Attorney's Office

PO Box 59
Sonoma, CA 95476

7677 Oakport Street, Ste.650
Oakland, CA 94621

Ms. Sue Russell
City Of Alameda
2263 Santa Clara Avenue
Alameda, CA 94501

Donna Drogos, Steven Plunkett, File