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

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August 20, 2008

Mr. Ian Robb
6001 Bollinger Canyon Road K2256 B
PO Box 6012
San Ramon, CA 94583-2324

Mr. Rene Boisvert
Boulevard Equity Group
484 Lake Park Ave #246
Oakland, CA 94610-2730

Terrella Sadler
618 Brooklyn Avenue
Oakland, CA 94606-1004

Subject: Fuel Leak Case No. RO0000454 (Global ID # T0600102230), Chevron #20-6145/Signal SS, 800 Center Street, 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 "Feasibility Study and Corrective Action Plan (FS/CAP)" dated November 2, 2007. The FS/CAP recommends the use of air sparging (AS) as the chosen remedial alternative. While AS is an effective remedial technology, CRA has not presented a discussion regarding the potential affects that may result as consequence of AS. For example, AS could induce vapor migration in the vadoze zone, which would need additional engineering controls -such as vapor extraction- to mitigate. Furthermore, AS used in conjunction with soil vapor extraction (SVE) would be a more effective remedial option at this site. ACEH does not agree with the scope of work as proposed in the FS/CAP.

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.

TECHNICAL COMMENTS

1. **Soil and Groundwater Contamination at Depth.** In April 2007, CRA installed monitoring wells screened at discrete depths to determine the extent of vertical contamination beneath the site. Petroleum hydrocarbon contamination was detected in soil and groundwater at depths of up to 75 feet bgs. Of particular concern are high levels of TPHg and benzene detected in monitoring wells MW-9, MW-10, MW-12, MW-13, MW-14 MW-16 and MW-17 at concentrations of up to 16,000 ppb TPHg, and 550 ppb benzene at 60 feet bgs. However, no discussion has been presented in either the FS/CAP or SCM to address groundwater contamination at depths greater than 30 feet bgs. Please discuss your plan to mitigate/control contamination below 30 feet and present your conclusions in the report requested below.

2. **CAP Recommendation for Air Sparging.** The CAP recommends a remedial alternative consisting of air sparging (AS) without the use of soil vapor extraction (SVE). Our review of AS indicate that once remediation via AS has been implemented, dissolved phase and sorbed phase contamination below the water table will volatlize, resulting in the creation of vapor phase contamination in the vadoze zone. Once the sorbed and dissolved phase contamination has been remobililzed, AS alone will not result in the recovery of the newly created vapor phase contamination. Additionally, CRA states in the CAP that site lithology is marginally feasible, the use of SVE combined with AS is an effective remedial option, contamination mass remaining in soil and groundwater is limited and SVE/AS is not a cost effective remedial option. ACEH does not agree with the assertion that site lithology is marginally feasible for the use of SVE or that residual mass in soil and groundwater is limited.

and groundwater is limited and SVE/AS is not a cost effective remedial option. ACEH does not agree with the assertion that site lithology is marginally feasible for the use of SVE or that residual mass in soil and groundwater is limited.
Our review of soil boring logs indicates that site lithology (silty sand) is conducive to the successful application of SVE/AS. Moreover, residual mass in the source area has been documented during post over-excavation soil confirmation sampling. For example over-excavation side wall sample SW-4 collected at 10 feet bgs detected TPHg, benzene and MtBE at concentrations of 18,000 ppm, 91 ppm and 150 ppm, respectively. Therefore, we request that you prepare an updated FS/CAP to include SVE combined with AS. Please present the upated FS/CAP according to the schedule below. Additionally, the CAP will be made available for public comment and address the cleanup levels and cleanup goals for all constituents of concern at the site.

Public participation is a requirement for the Corrective Action Plan (CAP) process. Therefore, upon approval of a CAP, ACEH require that potentially affected or concerned members of the public who live or own property in the surrounding area of the proposed remediation described in the CAP be notified. Public comments on the proposed remediation will be accepted for a 30-day period.

3. **Soil Vapor Sampling.** High levels of TPHg were detected in soil vapor sample VP-5 at concentrations of up to 2,100,000 parts per billion volume (ppbv). In addition, soil analytical data from soil boring G-27, which is approximately 7 feet away, detected high levels of TPHG, and benzene in soil up to 10,000 mg/kg and 58 mg/kg, respectively. Furthermore, Isobutane, which is used to evaluate the reliability of sampling equipment, was detected at concentrations of up to 13,000 ppbv, indicating that soil gas data may be negatively biased and actual concentrations may be higher. Benzene was not detected above laboratory reporting limits; however, reporting limits were increased due to the unusually high concentration of TPHg detected.

   Given the high residual concentrations of benzene in soil throughout the site (up to 91 ppm), please address if the sampling locations were sufficient to evaluate the site for residential use. Please discuss in detail the possible negative bias -due to breakthrough of isobutene- of soil vapor data collected from VP-5 and what may have lead to or caused the failure of the soil vapor sampling equipment. Please present your discussion and conclusions in the report requested below.

4. **Environmental Screening Levels and Remediation Goals**. Considering the high residual benzene concentrations in soil (up to 92 mg/kg) and TPHg in soil vapor (2,100,000 ppbv), please address whether sampling distribution were sufficient to assess this site for unrestricted residential use. CRA's has proposed using the ESLs as soil and groundwater cleanup levels for the site. However, the ESLs used in the FS/CAP are for sites where groundwater is not a current or potential drinking water source. ACEH is unaware of any changes in the Basin Plan that have lead to the de-designation of this location as potential drinking water source.

   The CAP should include contamination cleanup levels and cleanup goals for all COCs and for the appropriate groundwater designation. Soil cleanup levels should ultimately (within a reasonable timeframe) achieve water quality objectives (cleanup goals) for groundwater in accordance with San Francisco Regional Water Quality Control Board Basin Plan. Please propose appropriate cleanup levels and cleanup goals in accordance with 23 CCR Section 2725, 2726, and 2727 in the FS/CAP. Please include your anticipated time frame for meeting the cleanup levels and goal.

5. **Quarterly Groundwater Monitoring and Reporting**. Quarterly groundwater monitoring and sampling reports prepared by Gettler-Ryan do not contain any discussion or evaluation of data. In the future, quarterly groundwater monitoring reports must contain an analysis of monitoring activities including a discussion of the results and any conclusions and recommendations regarding monitoring activities on an annual basis. Additionally, please include rose diagrams for groundwater flow direction in QMRs.

6. **Vapor Migration Control Using Liquid Boot**. CRA acknowledges that AS will result in hydrocarbon vapor production and increased soil vapor concentrations in the vadoze zone. Subsequently, CRA has discussed the use of a geotextile/liquid boot in conjunction with the installation of perforated piping beneath the liquid boot/membrane to mitigate vapor migration beneath the site. Liquid boot was developed for use as a waterproofing and its intended use is as a fluid/water vapor migration barrier. It is unclear how the proposed waterproofing compound will act as a "vapor barrier" to mitigate soil vapor contamination beneath the site. To our knowledge, it has not been clearly demonstrated that liquid boot is a legitimate soil vapor mitigation/migration technique. Therefore, ACEH does not concur with the use of liquid boot as a vapor mitigation measure.

7. **Verification Sampling and Monitoring of Soil and Groundwater**. After site remediation has been completed and contamination concentrations have been reduced by SVE/AS, verification sampling of soil and groundwater will be required.

TECHNICAL REPORT REQUEST

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

- **October 30, 2008** – Updated Feasibility Study and Corrective Action Plan

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: Charlotte Evans
CRA
5900 Hollis Street, Suite A
Emeryville, CA 94608

Leroy Griffin
Oakland Fire Department
250 Frank H. Ogawa Plaza, Ste. 3341
Oakland, CA 94612-2032 (sent via electronic mail to lgriffin@oaklandnet.com)

Donna Drogos, ACEH), Steven Plunkett ACEH, File