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HEALTH CARE SERVICES
AGENCY
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December 29, 2008

Mr. Edward Simas
Xtra Oil Company
2307 Pacific Avenue
Alameda, CA 94552

Subject: Fuel Leak Case No. RO0000285 (Global ID #T0600101254), Xtra Oil, 3495 Castro Valley Blvd, Castro Valley, CA 94546

Dear Mr. Simas:

Alameda County Environmental Health (ACEH) staff has reviewed the case file for the above referenced site and the document entitled "Recommendations for Additional Soil Borings and Grab Groundwater Sampling" and "Groundwater Monitoring Well Installation Report" received September 17, 2008 and February 8, 2008, respectively and prepared by P & D Environmental (P & D). Results from the February 2008 monitoring well installation indicate that high levels of dissolved phase contamination are present in groundwater collected from monitoring well MW-6, located approximately 300 feet down gradient of your site, at concentrations of up to 88,000 µg/L TPHg and 6,100 µg/L benzene. As a result, P & D has proposed the installation of four off site transects, with a total of 39 soil borings, to evaluate the existence of course grain sediments (possible paleo-stream channels) which may be acting as preferential pathways for the migration of dissolved phase contamination down gradient of your site. However, prior to consideration of the proposed recommendations for the installation of transects and soil borings, ACEH requires that you submit the site conceptual model previous requested in correspondence dated May 29, 2006.

Interim source area remediation by means of groundwater extraction to remove residual separate phase hydrocarbon contamination and limit offsite plume migration appears to have had limited success. Consequently, P & D has proposed a feasibility study to assess which interim remediation alternatives may be effective at reducing the high levels of petroleum hydrocarbon pollution in soil and groundwater beneath your site. ACEH concurs with the recommendations from P & D that a feasibility study should be prepared to address free product removal and dissolved phase plume migration control.

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. **Soil Vapor Sampling**. Analytical data collected to date have detected high levels of adsorbed phase TPHg and benzene contamination in soil samples from onsite well MW-4 at concentrations of up to 1,600 mg/kg and 18 mg/kg, respectively. Groundwater samples collected after well installation detected high levels of dissolved phase contamination up to 210,000 µg/L TPHg and 48,000 µg/L benzene. Furthermore, during the most recent

groundwater monitoring event groundwater was not collected from MW-4 due to the presence of "free product". Recent groundwater analytical data collected from onsite well MW-3 in July 2008 also detected high levels of contamination up to 63,000 µg/L TPHg and 24,000 µg/L benzene.

Groundwater analytical data collected from off-site, down gradient well MW-6 (July 2008) detected high concentrations of up to 88,000 µg/L TPHg and 6,100 µg/L benzene. In addition to the dissolved phase plume contaminant definition data gap in your recommendations, an additional data gap requiring evaluation is the soil vapor pathway. Therefore, to assess the potential risk associated with vapor intrusion and evaluate the potential for volatilization of contamination from the sorbed phase and dissolved phase we request that you prepare a work plan to evaluate the vapor intrusion pathway. ACEH request that you perform soil vapor sampling in accordance with the January 2003 DTSC "Advisory for Active Soil Gas Investigations." Please submit the work plan according to the schedule outlined below.

2. **Site Conceptual Model.** In a directive letter from ACEH dated May 29, 2006 we requested that you prepare a Site Conceptual Model for your site. To date we have not received the previously requested SCM. This is not an extension of the due date for the submission of a SCM. Previously requested reports for your site are late.

We anticipate that additional site characterization and future remediation work, in addition to what is requested in this letter, 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, which improves 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 of regional geologic maps, groundwater contours, detailed cross-sections, etc.
b. A concise discussion of the on-site and off-site geology, hydrogeology, release history, source area, 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.

c. Identification and listing of specific data gaps that require further investigation during subsequent phases of work.

d. Proposed activities to investigation and fill data gaps identified above.

e. 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, including groundwater monitoring reports. Include an analysis of vertical hydraulic gradients and/or tidal influence that may affect groundwater elevations at the site.

f. 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.

g. Summary tables of chemical concentrations in different media (i.e. soil, groundwater, and soil vapor), including well logs, well completion details, boring logs, etc. When preparing figures and tables please use units specific to soil and groundwater (ie, mg/kg (soil) and micrograms/liter (groundwater) and report all soil and groundwater analytical data at laboratory detection limits.

h. 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.

Prepare a site conceptual model (SCM) as described above, including developing and/or identifying site cleanup levels and cleanup goals, in accordance with the San Francisco Regional Water Quality Control Board Basin Plan and appropriate ESL guidance for all COCs and for the appropriate groundwater designation., and include the results of the SCM in the decision-making process. Please note that 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. If data gaps (i.e. extent of groundwater contaminant plume or contaminant migration along preferential pathways, etc.) are identified in the SCM, please include a work plan to address those data gaps. Please submit the SCM and work plan by the date specified below.

3. **Interim Remediation Feasibility Study**. Interim remediation by groundwater extraction, performed to remove residual separate phase contamination in the source area and limit offsite plume migration appears to have had limited success. In particular, residual "free product" was recently detected in source area monitoring well MW-4 in July 2008, which indicates that the effectiveness of groundwater extraction for free product removal is

questionable.. High levels of dissolved phase TPHg and benzene contamination were detected during recent groundwater sampling (July 2008) in onsite well MW-3 at concentrations up to 63,000 µg/L and 24,000 µg/L, respectively. Furthermore, soil analytical data collected during the installation of well MW-4 detected contamination at concentrations of up to 1,600 mg/kg TPHg and 18 mg/kg benzene. Combined, the above mentioned issues warrant the preparation feasibility study. Therefore, we request that you prepare a feasibility study to evaluate active remediation measures to remove free product in soil and groundwater and to control plume migration. In addition, please evaluate if groundwater extraction has been effective for dissolved plume migration control. Please present the feasibility study according to the schedule outlined below.

4. **Site Figures and Maps**. Please prepare extended site maps using aerial photos as base maps which show the location of down gradient residences, buildings and other facilities that may be pertinent. Please present the figures and maps in the site conceptual model requested below.

TECHNICAL REPORT REQUEST

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

- **February 28 , 2009 –** Site Conceptual Model with Soil Vapor Sampling Work Plan
- **March 30, 2009 –** Feasibility Study for Interim Remediation

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) 383-1767 or send me an electronic mail message at steven.plunkett@acgov.org.

Sincerely,

Steven Plunkett
Hazardous Materials Specialist

Donna L. Drogos, PE
Supervising Hazardous Materials Specialist

cc: Paul King
P & D Environmental
55 Santa Clara Avenue
Oakland, CA 94610

Donna Drogos, Steven Plunkett ACEH, File