



ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION
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June 9, 2011

Mr. Thomas Bauhs (Sent via E-mail to: tbauhs@chevron.com)
Chevron Environmental Management Company
6001 Bollinger Canyon Road
San Ramon, CA 94583-2324

Mr. Eric Uranga (Sent via E-mail to: ejuranga@ci.livermore.ca.us)
City of Livermore Economic Development
1052 S. Livermore Ave.
Livermore, CA 94550

Subject: Draft Corrective Action Plan for Fuel Leak Case No. RO0002908 and GeoTracker Global ID T0600196622, Miller Square Park, 2259 First Street, Livermore, CA 94550

Dear Mr. Bauhs and Mr. Uranga:

Alameda County Environmental Health (ACEH) staff has reviewed the fuel leak case file for the above referenced site including the most recently submitted document entitled, "*Draft Corrective Action Plan, Former Texaco Station, 30-7233, 2259 First Street, Livermore, California,*" dated May 3, 2011 (CAP). The CAP, which was prepared on behalf of Chevron by Conestoga-Rovers & Associates (CRA), is inadequate in scope, presents unsupported and questionable conclusions regarding the feasibility of remedial alternatives, and is generally biased in promoting a monitored natural attenuation (MNA) alternative. Due to the inadequacies of the CAP, which are discussed in detail in the technical comments below, the CAP is not acceptable in its current form.

The CAP concludes with little supporting information that all active remedial alternatives considered are not feasible and that only monitored natural attenuation is viable. Active remediation is ongoing at several nearby sites with similar conditions. It appears that active remediation was not given fair and serious consideration. The conclusions regarding the feasibility of active remedial alternatives are flawed and unconvincing as discussed in the technical comments below.

The CAP concludes that soil vapor extraction and air sparging cannot be adequately evaluated because the site is not fully characterized. The conclusion that the site is not fully characterized is both unexpected and untimely since ACEH has requested since April 2009 that remedial alternatives be evaluated for the site. It is not clear why Chevron and CRA would delay submittal of the CAP for two years and then conclude that the site is not characterized. There has been ample time and opportunity to conduct whatever characterization activities are needed to complete site characterization and evaluate remedial alternatives. To illustrate this point, please see the Chronology of Recent Site Activities.

CHRONOLOGY OF RECENT SITE ACTIVITIES

- September 2003. Fugro West, Inc. conducts an investigation of soil and groundwater on behalf of the City of Livermore Engineering Division. Elevated concentrations of fuel hydrocarbons were detected in groundwater and lead was detected at an elevated concentration in shallow soil from Mill Square Park. ACEH discovered these results in February 2007 as an attachment to a drilling

permit. Reporting of these results is a regulatory requirement that apparently was not met by the City of Livermore.

- September 2005. Removal of a previously unknown UST.
- August 2006. A geophysical investigation located two additional suspected USTs.
- September and October 2006. Five soil borings were advanced in the vicinity of the former dispenser islands and suspected USTs. The borings were terminated at 40 feet bgs without encountering groundwater or getting beyond the vertical extent of contamination even though the June 26, 2006 Work Plan proposed advancing borings to first encountered groundwater or approximately 10 feet below the deepest identified indication of hydrocarbon impacts.
- December 22, 2006. Cambria Environmental Technology, Inc. submits the results of the September and October 2006 investigation in a report entitled, "*Subsurface Investigation Report.*" The Report recommends abandoning the two suspected USTs in place until site redevelopment activities occur.
- June 2007. At the direction of ACEH and Livermore-Pleasanton Fire Department, the two additional USTs and piping were removed.
- July 20, 2007. Site Investigation Workplan
- October 2, 2007. Revised Site Investigation Workplan. The Work Plan proposes delaying evaluation of potential future vapor intrusion until the site is redeveloped.
- October 29, 2007. Revised Site Investigation Workplan.
- February 2008. Subsurface investigation that included two CPT borings, three soil vapor probes, and 11 soil borings was completed. The CPT borings were planned to go to 80 feet bgs to define the vertical extent of contamination but due to miscommunication with field staff were limited to 55 feet bgs.
- March 27, 2008. Subsurface Investigation Report and Well Installation Workplan
- May 9, 2008. ACEH Directive Letter requests additional horizontal and vertical delineation of the extent of contamination.
- July 9, 2008. Soil Boring Workplan proposes advancing soil borings for horizontal and vertical delineation prior to installing monitoring wells to assure that the wells are best located for monitoring of the plume.
- December 17, 2008. Chevron and CRA request a schedule extension from January 6, 2009 to March 6, 2009, which is approved by ACEH.
- March 5, 2009. Subsurface Investigation Report is submitted. However, planned boring CPT6 was not advanced due to access issues with an off-site property owner. The Report did not include conclusions or recommendations because CPT6 was not advanced.
- April 3, 2009. ACEH directive letter requests a Pilot Test Work Plan or Draft Corrective Action Plan. Based on the crossgradient location of CPT6, ACEH indicates that CPT6 may not be required. ACEH requests a Pilot Test Work Plan or Draft CAP to begin site cleanup by June 10, 2009. The Pilot Test Work Plan is to include plans for groundwater monitoring to evaluate the effectiveness of site cleanup.
- June 10, 2009. Chevron and CRA submit a document entitled, "*Pilot Test Work Plan or Draft Corrective Action Plan.*" However, the document only proposes the installation of four monitoring wells and one year of monitoring. No pilot tests, data collection to evaluate remedial alternatives, or site cleanup is proposed.
- August 4, 2009 ACEH Directive Letter. ACEH indicates that based on the nature and extent of contamination, remedial action will be required for the site. ACEH does not object to the collection of additional data that are necessary for the more effective or more efficient

development of feasible remedial alternatives for the site. However, the data collection must be necessary for and focused towards the development of remedial alternatives. ACEH requests that Chevron and CRA review and discuss specific possible remedial options for the site. For each remedial option, any additional data collection that is necessary for evaluation of the remedial options is to be identified.

- September 28, 2009. A Revised Work Plan is submitted. However, the Revised Work Plan only proposes the installation and monitoring of four monitoring wells. The Closing section of the Revised Work Plan indicates, "We appreciate ACEH's desire to accelerate site remediation. Chevron also has a strong desire to address this situation, but in order to implement the most effective solution, sufficient data must be collected to make an informed remedial decision. We will review remedial options once we have collected the data proposed herein."
- November 6, 2009. ACEH rejects the September 28, 2009 Revised Work Plan because it does not address ACEH's technical comments.
- January 6, 2009. Revised Work Plan is submitted.
- January 29, 2010. ACEH approves the Revised Work Plan.
- June 3, 2010. Well Installation Report is submitted. Chevron and CRA propose monitoring for four consecutive quarters before evaluating the data to assess the need for additional work.
- July 26, 2010. ACEH indicates that four quarters of data are not needed before developing and assessing remedial alternatives and requests that a Pilot Test Work Plan or Draft Corrective Action Plan be submitted no later than October 15, 2010.
- October 12 2010. Chevron and CRA submit a Response to Technical Comments. The Response indicates that CRA believes it is necessary to understand seasonal groundwater and hydrocarbon fluctuations prior to performing remedial pilot testing or evaluating potential remedial alternatives. Submittal of a Pilot Test Work Plan or Draft CAP by May 1, 2011 is proposed.
- November 15, 2010. ACEH Directive Letter. ACEH does not agree that delaying evaluation of remedial alternatives for four quarters is necessary but reluctantly agrees to an extension to May 3, 2001 for submittal of a Pilot Test Work Plan or Draft CAP. ACEH requests assurance that no further delays occur in the submittal.
- May 3, 2011. Chevron and CRA submit the "*Draft Corrective Action Plan.*" .

FUTURE ACTIONS

The May 3, 2011 Draft CAP is inadequate in scope, presents unsupported and questionable conclusions regarding the feasibility of remedial alternatives, and is generally biased in promoting a monitored natural attenuation (MNA) alternative. The installation of two additional monitoring wells and two years of monitoring is proposed before considering any active remedial alternatives. There is no valid reason for this proposed two to three year delay. The continued series of delays in considering active remediation must be stopped to allow the case to move to cleanup.

Therefore, we request one of the two courses of action outlined below:

1. **Work Plan to Address Data Gaps.** If there are legitimate data gaps or reasons that you are unable to evaluate active remedial alternatives, please specifically identify those data gaps and propose investigation activities to address them. Please focus the proposed activities on the data needed to complete site characterization and evaluate active remedial alternatives. Please

consider the use of continuous methods such as a Membrane Interface Probe to provide a detailed delineation of the extent of contamination within both the shallow and deep water-bearing zones. Limiting the investigation to well installation and monitoring of MNA parameters is not acceptable. **The Work Plan is to be submitted no later than August 10, 2011.**

- 2. Pilot Test Work Plan or Revised Draft CAP.** If there are no data gaps that prevent evaluation of active remedial alternatives, please submit a Pilot Test Work Plan or Revised Draft CAP. A Revised Draft CAP must address the technical comments below and provide an objective evaluation of active remedial alternatives. **The Pilot Test Work Plan or Revised Draft CAP is to be submitted no later than August 10, 2011.**

TECHNICAL COMMENTS

- 1. Dissolved Oxygen (DO) and Oxygen Reduction Potential (ORP) Data.** The CAP includes graphs of DO and ORP versus petroleum hydrocarbon concentrations in various wells and concludes from an inverse relationship that active biodegradation is occurring. The DO and ORP data were measured once in the field prior to purging. It is not clear that the water quality parameters are representative or were stable at the time of measurement prior to purging. In attempting to compare these measurements to data from previous sampling events, we noted that DO and ORP were not measured during previous sampling events. Given that only one DO and ORP measurement of uncertain accuracy appears to have been collected, the validity of the conclusions based on a single measurement is also uncertain.
- 2. Depletion of Electron Acceptors in Shallow Zone.** The CAP concludes that anaerobic biodegradation is occurring in the core of the shallow plume (MW-7 and MW-8) based on an inverse relationship between nitrate and sulfate concentrations and petroleum hydrocarbons concentrations. We concur that anaerobic biodegradation utilizing nitrate and sulfate appears to have taken place but the current and more significantly the future rate is not clear. In the Summary of Alternatives section, the CAP uses the inverse relationship between nitrate and sulfate concentrations and petroleum hydrocarbons concentrations to infer that MNA is a feasible alternative for restoring groundwater quality. Given that groundwater quality has not been restored within the past 50 years and that the electron acceptors are now depleted, it is difficult to comprehend how anaerobic biodegradation processes would now restore water quality within a reasonable time period. Instead, it would appear that with the electron acceptors depleted, the biodegradation processes would occur at lower rates in the future and would require source treatment or augmentation at a minimum to restore water quality.
- 3. Petroleum Hydrocarbon Concentrations in Deep Water-Bearing Zone.** In Section 4.4 – Remedial Alternatives Discussion and Approach, the CAP proposes that remediation should focus on shallow water-bearing zone because dissolved petroleum hydrocarbons were not detected or were detected at concentrations less than drinking water ESLs during the most recent sampling event. Elevated concentrations of TPHg, TPHd, and BTEX have been detected in soil and grab groundwater samples collected from the deep water-bearing zone and have also been detected in groundwater from the deep wells during previous events. The apparent decreases in concentrations noted in groundwater from the deep wells appear suspect. It seems highly unlikely that petroleum hydrocarbons would initially be detected at elevated concentrations in three deep wells but then disappear from the lower

water-bearing zone after the monitoring wells were installed. We request that you propose modified groundwater sampling methods or additional investigation to evaluate whether the groundwater sampling data are representative.

4. **Focus of Remediation.** As discussed in technical comment 3, further evaluation is needed to determine whether the focus of remediation can be limited to the shallow water-bearing zone.
5. **Feasibility of In-Situ Chemical Oxidation (ISCO).** The CAP concludes that ISCO is not feasible due to the potential for fugitive vapors to enter the adjacent building and the potential exothermic reactions beneath the building. No supporting information is provided to indicate how this conclusion was reached. No possible mitigation measures are mentioned such as controlling reactions by controlling injection volumes and rates, various types of slow release oxidants, and the fact that the treatment zone would be more than 20 feet below ground surface. We do not understand how ISCO would be dismissed as not feasible without consideration of any techniques to control, monitor, or mitigate the perceived threats. We reject this analysis based on its incompleteness and lack of technical merit.
6. **Inability to Evaluate Soil Vapor Extraction with Air Sparging (SVE/AS).** The CAP indicates that the site is not fully characterized and therefore, the equipment required for SVE/AS cannot be adequately evaluated. It is not clear what data gaps this statement refers to and why these data gaps would not be addressed in a pilot test. Please specifically identify those data gaps and propose investigation or pilot test activities to address them.
7. **Feasibility of Soil Vapor Extraction with Air Sparging (SVE/AS).** SVE/AS is not considered viable because the CAP reports that the City of Livermore will not allow a system to be placed in the park. No reason is given as to why a remediation system would not be permitted. The City of Livermore is a responsible party for this site and must, at a minimum, cooperate to investigate and cleanup the site. We reject the analysis regarding SVE/AS based on the lack of any apparent reason that a system cannot be installed.
8. **Proposed Off-Site Investigation.** The CAP recommends installing two shallow groundwater monitoring wells and sampling them for two years before considering active remediation. This proposal is entirely unacceptable. Monitoring wells are not an effective method for defining plume extent. As discussed on pages 3 and 4 of this letter, we request that you either submit a Work Plan to address data gaps to complete site characterization and evaluate active remedial alternatives or submit a Pilot Test Work Plan or Revised Draft CAP. Please consider the use of continuous methods such as a Membrane Interface Probe to provide a detailed delineation of the extent of contamination within both the shallow and deep water-bearing zone.
9. **Groundwater Monitoring.** The most recent groundwater monitoring report entitled, "First Quarter 2011 Groundwater Monitoring and Sampling Report," dated April 9, 2011 recommends reducing the sampling frequency to semiannual during the first and third quarters. We have no objection to this recommendation at this time. More frequent sampling may be required during pilot test or site cleanup activities or following the installation of additional monitoring wells.

Responsible Parties
RO0002908
June 9, 2011
Page 6

TECHNICAL REPORT REQUEST

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

- **August 10, 2011** – Work Plan to Address Data Gaps or Pilot Test Work Plan or Revised Draft Corrective Action Plan
- **October 28, 2011** – Semi-Annual Groundwater Monitoring Report – Third Quarter 2011

If you have any questions, please call me at (510) 567-6791 or send me an electronic mail message at jerry.wickham@acgov.org.

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: Cheryl Dizon, QIC 80201, Zone 7 Water Agency, 100 North Canyons Parkway
Livermore, CA 94551 (Sent via E-mail to: cdizon@zone7water.com)

Danielle Stefani, Livermore-Pleasanton Fire Department, 3560 Nevada Street
Pleasanton, CA 94566 (Sent via E-mail to: DStefani@lpfire.org)

John Rigter, Livermore-Pleasanton Fire Department, 3560 Nevada Street
Pleasanton, CA 94566 (Sent via E-mail to: jrigter@lpfire.org)

Brandon Wilken, Conestoga-Rovers & Associates, 5900 Hollis Street, Suite A
Emeryville, CA 94608 (Sent via E-mail to: BWilken@croworld.com)

Kiersten Hoey, Conestoga-Rovers & Associates, 5900 Hollis Street, Suite A
Emeryville, CA 94608 (Sent via E-mail to: Khoey@croworld.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)
Mark Detterman, ACEH (Sent via E-mail to: mark.detterman@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.