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1:37 pm, Sep 09, 2011
Alameda County
Environmental Health

Olivia Skance
Team Lead
Marketing Business Unit

**Chevron Environmental
Management Company**
6101 Bollinger Canyon Road
San Ramon, CA 94583
Tel (925) 790-6521

September 8, 2011

Alameda County Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Re: Chevron Facility # 9-4612

Address: 3616 San Leandro Street, Oakland, California

I have reviewed the attached report titled Work Plan for Additional Investigation and dated September 8, 2011.

I agree with the conclusions and recommendations presented in the referenced report. The information in this report is accurate to the best of my knowledge and all local Agency/Regional Board guidelines have been followed. This report was prepared by Conestoga-Rovers & Associates, upon whose assistance and advice I have relied.

This letter is submitted pursuant to the requirements of California Water Code Section 13267(b)(1) and the regulating implementation entitled Appendix A pertaining thereto.

I declare under penalty of perjury that the foregoing is true and correct.

Sincerely,

Olivia Skance
Project Manager

Enclosure: Report



**CONESTOGA-ROVERS
& ASSOCIATES**

10969 Trade Center Drive
Rancho Cordova, California 95670
Telephone: (916) 889-8900 Fax: (916) 889-8999
www.CRAworld.com

September 8, 2011

Reference No. 611996

Mr. Mark Detterman, P.G., C.E.G.
Alameda County Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Re: Work Plan for Additional Investigation
Former Chevron Service Station 9-4612
3616 San Leandro Street
Oakland, California
Case No. RO0000233

Dear Mr. Detterman:

Conestoga-Rovers & Associates (CRA) has prepared this *Work Plan for Additional Investigation* on behalf of Chevron Environmental Management Company (Chevron) for the site referenced above. CRA previously submitted the February 2, 2009 *Case Closure Request*, in which case closure was recommended based on low-risk conditions. In a letter dated June 30, 2011 (Attachment A), Alameda County Environmental Health (ACEH) requested additional investigation to evaluate deeper groundwater quality downgradient of the site. An evaluation of potential offsite, upgradient contributions to the impacts at the site was also suggested. To address these issues, CRA proposes the drilling of four additional exploratory borings using cone penetrometer testing (CPT) technology to evaluate the lithology, the presence of water-bearing zones, and to collect groundwater samples. An additional boring is also planned, near previous boring SB-1, to further evaluate the lithology and groundwater quality in this area. Presented below are the site description and background and the proposed scope of work.

SITE DESCRIPTION AND BACKGROUND

The site is located on the northwest corner of the intersection of San Leandro Street and 37th Avenue in Oakland, California (Figure 1). The site consists of two parcels owned by separate private parties; a building occupies the northwestern parcel, and the southeastern parcel is a paved parking lot. The building is currently occupied by Appliance Parts & Equipment Distributors. Surrounding land use is mixed commercial and residential. The site is bounded by a single-family residence to the northwest, a Bay Area Rapid Transit (BART) parking lot and elevated tracks to the northeast, 37th Avenue to the southeast, and San Leandro Street to the southwest (Figure 2). A Shell fuel pipeline (reportedly no longer used) is present beneath the southwest side of San Leandro Street.

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The site was occupied by a Chevron service station from approximately 1967 (reported date of construction) through 1976. Former station facilities included a station building with two hydraulic hoists, two 10,000-gallon underground storage tanks (USTs) and one 5,000-gallon UST, a 1,000-gallon used-oil UST, and two dispenser islands (Figure 2). The station was demolished and all aboveground and belowground facilities were removed in 1976. The site remained a vacant lot until the existing building was constructed in 1988.

Environmental investigation has been ongoing since 1988 and has included the installation of groundwater monitoring wells VH-1 and MW-2 through MW-4 and soil vapor wells VP-1 through VP-4; the drilling of exploratory borings SB-1 through SB-4, GP-1 through GP-3, and HA-1 through HA-3; and the collection of soil vapor samples VB-1 and VB-2. Remedial activities have consisted of the placement of Oxygen Release Compound® (ORC) in wells VH-1, MW-2, and MW-3 in 1999. A summary of the environmental work is included as Attachment B. The approximate well, boring, and sample locations are presented on Figure 2.

Based on consistent detections of total petroleum hydrocarbons as diesel (TPHd) and methyl tertiary butyl ether (MTBE) in groundwater, as well as TPH as gasoline (TPHg) in well MW-3 on the upgradient side of the site, it appears that an offsite source(s) is contributing to the impacts beneath the site. A documented fuel release with MTBE contamination (Tony's Express Auto Service at 3609 International Boulevard; Case No. RO0000265) is located approximately 750 feet northeast (upgradient) of the site. Service stations also appear to have formerly been located upgradient of the site on the southwest corner of East 14th Street and 37th Avenue as well as the northwest corner of East 12th Street and 37th Avenue. In addition, the property adjacent to the northeast of the site was a former Western Pacific/Union Pacific railroad line where petroleum hydrocarbons have been detected in soil and groundwater and remediation was performed prior to redevelopment with the existing BART parking lot.

Site Geology and Hydrogeology

Based on previous investigations, the site is underlain primarily by clay beneath the asphalt or concrete and near-surface fill. In most of the borings, a coarse-grained layer of sand or gravel was encountered at approximately 7 to 10 feet below grade (fbg), and groundwater was generally encountered within this layer. However, in boring SB-1, drilled in 1995, groundwater was not encountered within this layer, but at approximately 15 fbg within an additional sandy layer encountered at 14 fbg; a 3-foot-thick layer of silt was present between the two sandy layers. In boring SB-2, drilled adjacent to SB-1 in 2008, groundwater was encountered at approximately 10.5 fbg within a coarse-grained layer encountered at 10 fbg. In the boring for well VH-1 in 1988, groundwater was not encountered until approximately 22.5 fbg. Therefore, there may be one or two shallow water-bearing zones beneath the site. Based on the monitoring data in VH-1 and nearby well data on the Department of Water Resources (DWR) website, it appears groundwater levels have raised several feet over the last 20 years or so.



In the June 30, 2011 letter, ACEH requested additional site investigation to evaluate deeper groundwater quality downgradient of the site; an assessment of upgradient impacts was also suggested (Technical Comment 1). Therefore, we propose four exploratory borings to address these concerns. It is our opinion that further evaluation of the lithology and groundwater quality in the area of previous boring SB-1 is also warranted; thus, an additional boring is also proposed in this area. The borings will be drilled using CPT technology to provide detailed information on the lithology and the presence of any water-bearing zones. This information will then be used to confirm intervals for the collection of groundwater samples.

Also in the June 30, 2011 letter, the reinstatement of groundwater monitoring, which had been temporarily suspended while the case was reviewed, on an annual basis was requested as well as analysis of the sample collected from MW-3 for the standard waste oil constituents (Technical Comments 2 and 3). Please note that these requests have been addressed and the results will be presented in the upcoming groundwater monitoring report.

PROPOSED SCOPE OF WORK

To evaluate deeper groundwater quality downgradient of the site, two exploratory borings will be drilled in the southwestern portion of San Leandro Street. The borings will be located upgradient of the fuel pipeline in an attempt to minimize the detection of any possible impacts due to this line. To evaluate upgradient groundwater quality, two borings will be drilled on the northeast side of the site. As previously discussed, the fifth boring will be located in the area of previous boring SB-1. At each location, initial borings will be advanced using the CPT to obtain electronic information on the lithology and the presence of water-bearing zones. Based on the CPT information, groundwater samples will be collected from borings adjacent to the initial borings using a Hydropunch sampling device. The proposed boring locations are shown on Figure 2. The details of the proposed investigation are presented below.

Permits and Notifications

CRA will obtain all necessary permits for the proposed borings prior to beginning field operations. A minimum of 72 hours written notification will be given to ACEH prior to initiation of drilling activities.

Health and Safety Plan

CRA will prepare a site-specific health and safety plan (HASP) to inform site workers of known hazards and to provide health and safety guidance. The plan will be reviewed and signed by all site workers and visitors and will be kept onsite during field activities.



Underground Utility Clearance

At least 48 hours prior to the start of drilling activities, CRA will mark the proposed boring locations in the field and will notify Underground Service Alert (USA) to clear the proposed locations with public utility companies. A private utility locator will also be retained to additionally clear the boring locations of utility lines prior to drilling. Each location will be cleared to approximately 8 fbg for underground utilities using a hand auger or air-knife in accordance with Chevron safety protocols.

Drilling

As described above, the borings will first be advanced to approximately 8 fbg using a hand auger or air-knife to confirm utility clearance. The borings will then be advanced to their total proposed depths using the CPT rig. The proposed depth of the borings is 30 fbg. The final locations and depths of the borings will be based on field conditions. CRA's standard field procedures are included as Attachment C.

Soil Sampling

Based on the objectives of this investigation, the drilling technology to be used, and the historical soil sample analytical results, we do not plan to collect any soil samples.

Groundwater Sampling and Laboratory Analysis

If encountered and based on the CPT results, grab-groundwater samples will be collected from the encountered water-bearing zone(s) using a Hydropunch sampling device. At a minimum, samples will be collected from the deeper zone, if present. CRA's standard field procedures are included as Attachment C. The groundwater samples will be collected in the appropriate laboratory-supplied containers, labeled, placed in an ice-chilled cooler, and transported under chain-of-custody to a state-certified analytical laboratory for analysis. The groundwater samples will be analyzed for:

- TPHg and TPHd by EPA Method 8015
- Benzene, toluene, ethylbenzene, and xylenes (BTEX) and MTBE by EPA Method 8260B

As diesel fuel does not appear to have been stored or dispensed at the site, the detections may be due to weathered gasoline, natural organic matter, or an offsite source. Thus, prior to TPHd analysis, we plan to have the laboratory use a stringent silica gel cleanup procedure (10 gram mass column cleanup that includes the use of capric acid as a reverse surrogate to validate the removal of polar hydrocarbons) on the samples. This method has been shown to be more effective in removing polar non-hydrocarbon interferences. The samples will also be analyzed for TPHd without using this method to provide baseline data.



**CONESTOGA-ROVERS
& ASSOCIATES**

September 8, 2011

5

Reference No. 611996

Investigation-Derived Waste

Any waste generated during drilling activities will be temporarily stored onsite in properly labeled 55-gallon steel drums, and sampled for disposal purposes. Once profiled, the drums will be removed from the site for disposal at an appropriately-permitted facility.

Report Preparation

After receipt of the final analytical results, CRA will prepare and submit an investigation report. The report will include a description of the field activities, a site plan showing the boring locations, tabulated analytical results, boring logs and CPT results, copies of the analytical reports and chain-of-custody documentation, and our conclusions and recommendations.

SCHEDULE AND CLOSING

Regarding implementation of the proposed scope of work, we have reviewed the State Water Resources Control Board's (SWRCB) July 14, 2011 *Low-Threat UST Closure Policy* (policy) which aims to establish low-threat petroleum site closure criteria thus preserving resources for mitigation of releases that pose a greater threat to human health or the environment; and it is our opinion that this site would fit the low-threat criteria as described. We understand the policy is scheduled for potential implementation in February 2012. Therefore, we propose to forego implementation of this scope of work until the policy is finalized and the site can be reviewed against the new criteria to evaluate if the work remains warranted. Upon establishment of the final criteria, we would request a meeting with ACEH to review the site.

We appreciate your assistance on this project and look forward to your reply. Please contact Mr. James Kiernan at (916) 889-8917 if you have any questions or need any additional information.

Sincerely,

CONESTOGA-ROVERS & ASSOCIATES

James P. Kiernan, P.E.

JK/cm/8
Encl.





**CONESTOGA-ROVERS
& ASSOCIATES**

September 8, 2011

6

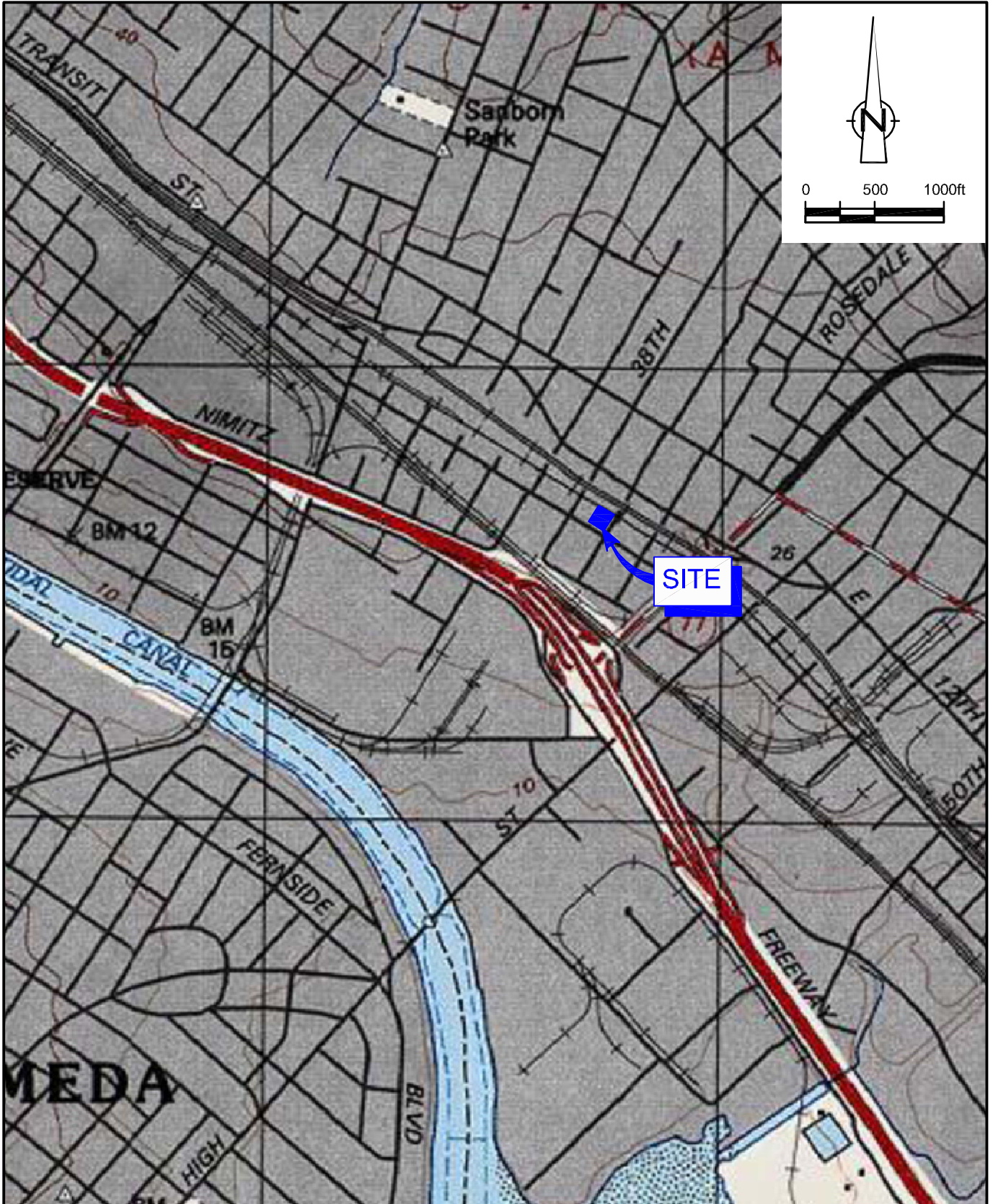
Reference No. 611996

Figure 1 Vicinity Map
Figure 2 Site Plan and Proposed Boring Locations

Attachment A ACEH Letter Dated June 30, 2011
Attachment B Summary of Environmental Investigation and Remediation
Attachment C Standard Field Procedures

cc: Ms. Olivia Skance, Chevron (*electronic copy only*)
 Mr. Leonard Ratto, Ratto Land Company
 Mr. Terry McIlraith, Vivian McIlraith Trust

FIGURES

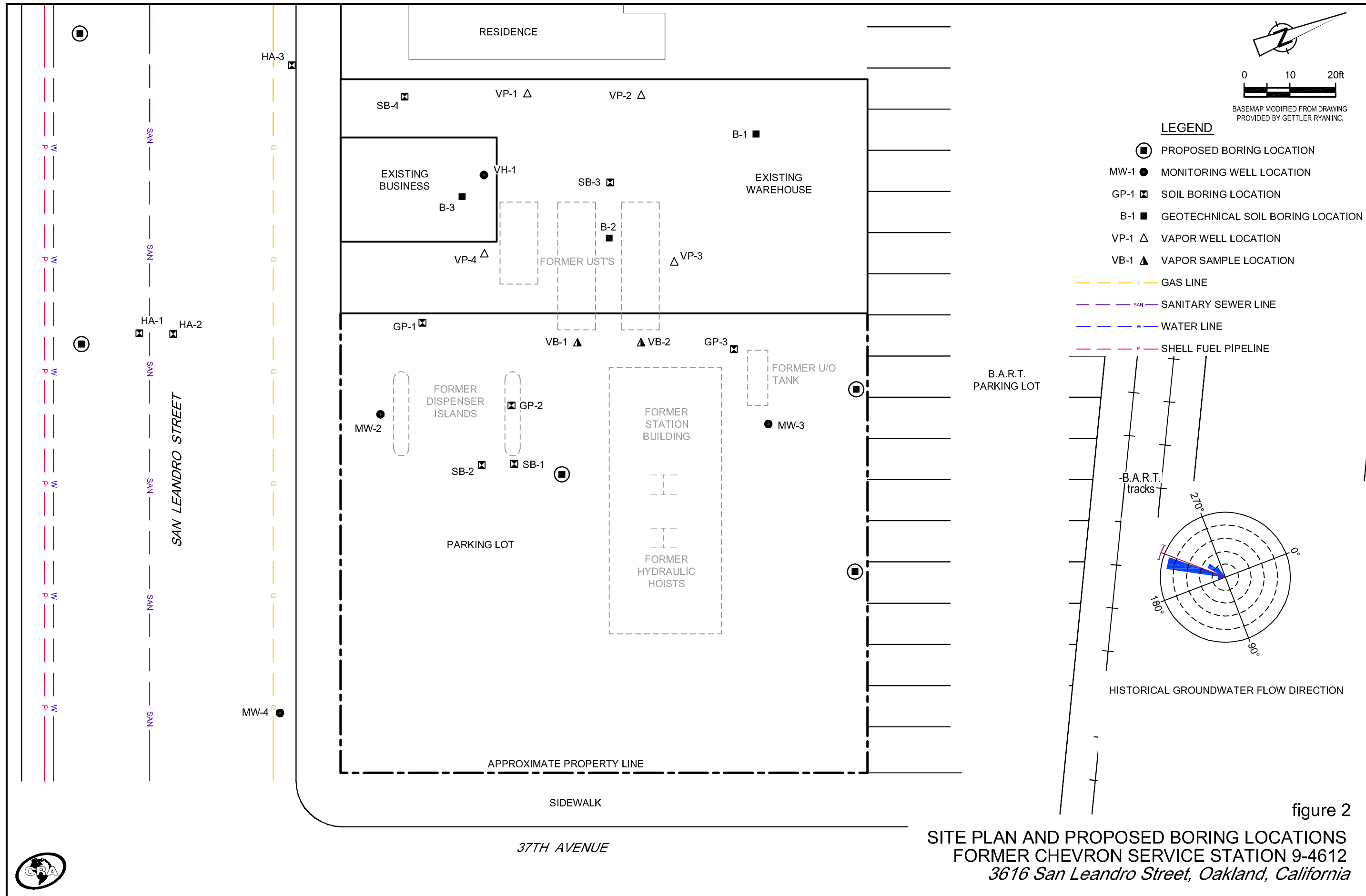


SOURCE: TOPOI MAPS.

figure 1

VICINITY MAP
 FORMER CHEVRON SERVICE STATION 9-4612
 3616 San Leandro Street, Oakland, California





ATTACHMENT A

ACEH LETTER DATED JUNE 30, 2011



June 30, 2011

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

Ms. Stacie H. Frerichs
Chevron Environmental Management
6001 Bollinger Canyon Rd K2256
PO Box 6012
San Ramon, CA 94583-2324
(sent via electronic mail to staciehf@chevron.com)

Mr. John Ratto
Ratto Land Company
P.O. Box 6104
Oakland, CA 94603-0104

Ms. Vivian McIlraith
Vivian L. McIlraith Trust
407 Castello Road
Lafayette, CA 94549

Subject: Request for Data Gap Work Plan, Fuel Leak Case No. RO0000233 (Global ID # T0600100333), Chevron #9-4612, 3616 San Leandro Street, Oakland, 94601

Dear Ms. Frerichs, Mr. Ratto, and Ms McIlraith:

Alameda County Environmental Health (ACEH) staff has reviewed the case file for the above referenced site including the report entitled, *Case Closure Request*, dated February 2, 2009. The report was submitted on your behalf by Conestoga-Rovers & Associates (CRA). Case review has identified a number of data gaps that indicate that this case cannot proceed to closure at this time.

As discussed further in the technical comments below, this fuel leak case cannot be closed at this time. This decision is subject to appeal to the State Water Resources Control Board (SWRCB), pursuant to Section 25299.39(b) of the Health and Safety Code (Thompson-Richter Underground Storage Tank Reform Act - Senate Bill 562). Please contact Mr. George Lockwood in the SWRCB Underground Storage Tank Program at (916) 341-5752 or GLockwood@waterboards.ca.gov for information regarding the appeal process.

Based on the review of the case file and the referenced report ACEH requests that you address the following technical comments and send us the documents requested below.

TECHNICAL COMMENTS

1. **Contaminant Underflow Migration or the Depth of Residual Soil & Groundwater Contamination**
– ACEH is concerned that contaminant migration beneath and downgradient of the site is utilizing deeper water-bearing granular zones not adequately characterized to allow an understanding of any associated downgradient health risks. This is based on the following observations:
 - a. The depth to groundwater as encountered at the time of drilling in February 1988 in geotechnical bore holes B-1 to B-3 and the depth noted for “strong gasoline odor” (14 feet and 20 feet below grade surface [bgs], respectively).
 - b. The depth of groundwater as encountered at the time of drilling in August 1988 in monitoring well VH-1 (22.5 feet bgs). Two soil samples collected from this well bore at 20.5 and 25.5 feet bgs appear to help define “at depth” soil concentrations at this location.
 - c. The depth of groundwater as encountered at the time of drilling in August 1995 in soil bore SB-1 (approximately 15 to 19 feet bgs), the near lack of PID detections above that depth, the low PID detections (40 PID units) at 21 feet bgs, the low concentrations in soil (16 mg/kg TPHg <0.005 mg/kg benzene) at 21 feet bgs, and the elevated concentration in the grab

groundwater collected thereafter (21,000µg/l TPHg, 240 µg/l benzene). Groundwater was specifically not encountered in SB-1 in the silty sand at a depth between approximately 10 and 12 feet bgs, comparable to the depth of groundwater sampling in bore SB-2 installed in May 2008 and stated to define the lateral extent of groundwater impacts at SB-1.

- d. The depth of groundwater as encountered at the time of drilling in February 1993 in well bore MW-2 (approximately 8.5 feet bgs), the lack of detectable soil concentrations at the depths of 5 and 10 feet bgs, and the elevated PID detections at depths of 15 and 19 feet bgs (2,800 and 1,050 PID units respectively) without analysis of soil samples.
- e. The depth of (ground) water as encountered at the time of drilling in March 2002 of soil bores HA-1 to HA-3 (7 to 8 feet bgs) used to investigate potential utility conduits, and the non-detectable concentrations in the grab groundwater samples. The shallowness of these grab groundwater samples renders the elevated PID detections in well MW-2 (and grab groundwater in SB-1) undefined.

These lines of evidence can be interpreted at least two ways. CRA has suggested that both MTBE and TPHd (the later at MW-3) appear to be from offsite sources, in part pointing to either a gasoline release site approximately 700 feet upgradient with elevated MTBE concentrations in downgradient wells (Tony's express Auto Service, T0600101680 or RO0000265) or the adjacent BART parking lot with apparently low hydrocarbon concentrations (Fruitvale Transit Village, SL0600154423), while also acknowledging an onsite contribution. An alternate interpretation, while not discounting potential upgradient sources in part, also accounts for drought induced drawdown of groundwater at the time of a release, consistent with deeper groundwater apparently encountered previously at the site and indications of contamination below groundwater. Onsite, groundwater concentrations increase downgradient and suggest that an evaluation of the offsite downgradient contaminant load beneath the depth explored by HA-1 to HA-3 is warranted. While not discussed in the sensitive receptor survey, the downgradient neighborhood appears to consist of a mixed commercial and residential community (*Site Conceptual Model*, December 14, 2000, Delta Environmental Consultants). It may also be appropriate as a part of this characterization, to quantify the upgradient contribution to the site contaminant load, currently limited to well MW-3 in the vicinity of the former used oil UST, contaminants that could potentially be confused with an onsite source. ACEH requests submittal of a work plan to address these data gaps by the date identified below.

2. **Motor Oil Constituents** – Well MW-3 was installed adjacent to the former used oil UST, but both soil and groundwater do not appear to have been analyzed for typical used oil constituents as defined by existing guidelines. A range of footnotes contained in groundwater monitoring reports for well MW-3, including the most recent, indicate unidentified hydrocarbons, unidentified hydrocarbons <C16, unidentified hydrocarbons C9 – C17, atypical #2 fuel / diesel eluting before and later than typical #2 fuel, and etc. These footnotes can indicate both non-fuel compounds as well as hydrocarbons heavier than diesel range, as could be expected adjacent to a former used oil UST. Please collect and submit groundwater samples for the standard used oil constituents (TPHmo, halogenated solvents, the five metals, and PCBs, by standard analytical methods) during the next scheduled groundwater monitoring event, and submit the results in the associated groundwater monitoring report. Please additionally provide an interpretation of any non-fuel related compounds detected.
3. **Groundwater Monitoring** – Please place the subject site on an annual groundwater monitoring basis utilizing the second quarter of the year for the initial resumed groundwater monitoring event. Please continue with the same analytical suite previously utilized, except for well MW-3 as noted above. Please submit the report by the date identified below.

TECHNICAL REPORT REQUEST

Please submit the following deliverables and technical reports to ACEH (Attention: Mark Detterman), according to the following schedule:

- **September 9, 2011** – Data Gap Work Plan
- **September 16, 2011** – Annual Groundwater Monitoring 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.

Should you have any questions, please contact me at (510) 567--6876 or send me an electronic mail message at mark.detterman@acgov.org.

Sincerely,



Digitally signed by Mark E.
Detterman
DN: cn=Mark E. Detterman, o, ou,
email, c=US
Date: 2011.06.30 15:55:06 -07'00'

Mark E. Detterman, PG, CEG
Senior Hazardous Materials Specialist

Enclosures: Attachment 1 – Responsible Party (ies) Legal Requirements / Obligations
Electronic Report Upload (ftp) Instructions

cc: James Kiernan, 10969 Trade Center Drive, Suite 106, Rancho Cordova, CA 95670
(sent via electronic mail to jkiernan@croworld.com)

Donna Drogos, ACEH, (sent via electronic mail to donna.drogos@acgov.org)
Mark Detterman, ACEH, (sent via electronic mail to mark.detterman@acgov.org)
Geotracker, e-File

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.

ATTACHMENT B

SUMMARY OF ENVIRONMENTAL INVESTIGATION AND REMEDIATION

**SUMMARY OF ENVIRONMENTAL INVESTIGATION AND REMEDIATION
FORMER CHEVRON STATION 9-4612
3616 SAN LEANDRO STREET, OAKLAND, CA**

September 1976 Station Demolition

All aboveground and underground station facilities including three fuel underground storage tanks (USTs), a used-oil UST, and two dispenser islands were removed. No soil samples were collected during the UST removals.

February 1988 Geotechnical Investigation

Rogers/Pacific advanced geotechnical borings B-1 through B-3 in the western portion of the site for a proposed warehouse. A strong gasoline odor reportedly was observed at approximately 20 feet below grade (fbg) in the borings, but no soil samples were collected for chemical analysis.

August 1988 Well Installation

Vonder Haar Hydrogeology (VHH) installed groundwater monitoring well VH-1. Soil samples collected at 20.5 and 25.5 fbg from the well boring contained up to 0.042 milligrams per kilogram (mg/kg) benzene and 6 mg/kg lead, but no total petroleum hydrocarbons as gasoline (TPHg). Details of this investigation were presented in VHH's letter report dated September 16, 1988.

February 1993 Well Installations

Groundwater Technology, Inc. (GTI) installed monitoring wells MW-2 and MW-3. Soil samples collected at 5 and 10 fbg from the borings contained no TPHg or benzene, toluene, ethylbenzene, and xylenes (BTEX). GTI also reviewed Department of Water Resources (DWR) records to evaluate the presence of wells within ½ mile of the site; 52 monitoring and test wells were identified within the search radius. Details of this investigation were presented in GTI's *Additional Environmental Assessment Report* dated April 12, 1993.

August 1995 Well Installation and Subsurface Investigation

GTI advanced onsite boring SB-1 and installed monitoring well MW-4 in San Leandro Street to the south of the site. Soil samples collected from borings SB-1 at 21.5 fbg and MW-4 at 16.5 and 21.5 fbg contained up to 16 mg/kg TPHg, but no benzene. A groundwater sample collected from SB-1 contained 21,000 micrograms per liter (µg/L) TPHg and 240 µg/L benzene. Details of this investigation were presented in GTI's *Additional Site Assessment Report* dated September 29, 1995.

February 1999 Soil Vapor investigation

Gettler-Ryan Inc. (G-R) collected soil vapor samples VB-1 and VB-2 at 3 fbg adjacent to the east of the former fuel USTs. The two samples were analyzed for volatile organic compounds (VOCs). The compounds detected in the samples included up to 9 micrograms per cubic meter (µg/m³) benzene and 3.6 µg/m³ trichloroethene (TCE). Details of this investigation were presented in G-R's *Limited Soil Vapor Survey Report* dated March 31, 1999.

July 2001 and March 2002 Subsurface Investigation

In July 2001, G-R advanced borings GP-1, GP-2, and GP-3. Two soil samples collected from each boring (6 to 9 fbg) contained no TPHg, BTEX, or methyl tertiary butyl ether (MTBE). In March 2002, GR advanced borings HA-1, HA-2, and HA-3 in San Leandro Street. Borings HA-1 and HA-2 were located adjacent to a sanitary sewer line, and boring HA-3 was located adjacent to a gas line. Soil (5 fbg) and groundwater samples collected from each boring contained no TPHg, benzene, or MTBE. Details of the investigations were presented in G-R's *Additional Site Investigation Report* dated May 3, 2002.

June 2002 Risk-Based Corrective Action (RBCA) Evaluation

Delta Environmental Consultants, Inc. (Delta) performed a Tier 2 RBCA evaluation for the site to evaluate if residual hydrocarbons in soil and groundwater posed a risk to human health (residential land use scenario) or the environment. The residual concentrations did not exceed the Site-Specific Target Levels (SSTLs) with the exception of the groundwater ingestion pathway. However, since groundwater was neither currently utilized as a drinking water source, nor was it expected to be used as a drinking water source in the future, and the site commercial use, it was concluded that no further work was warranted. Details of the evaluation were presented in Delta's *Risk-Based Corrective Action Evaluation* dated June 13, 2002.

2003 Offsite Source Survey

G-R reviewed ACEH files pertaining to two nearby fuel releases (Guy's Service Station at 3820 San Leandro Street and Tony's Express Auto Services at 3609 International Boulevard) to evaluate if they may be a source of contamination beneath the site. Tony's Express Auto Services was located approximately 750 feet northeast (upgradient) of the site and MTBE was detected in the two furthest downgradient wells at this facility. As the service station at the site ceased operation in 1976, prior to the use of MTBE in California, it was concluded that the Tony's facility may be the source of the MTBE in the site wells. The results of the investigation were presented in Delta's *Offsite Source Evaluation Report* dated January 17, 2003.

May and June 2008 Subsurface Investigation and Soil Vapor Survey

CRA advanced borings SB-2 through SB-4. Soil samples collected at depths of 4, 8, and 12 fbg from each boring only contained up to 0.001 mg/kg MTBE (two samples). Grab-groundwater samples collected from the borings contained up to 71 µg/L TPHg (one sample), 350 µg/L TPH as diesel (TPHd) (one sample), and 13 µg/L MTBE, but no benzene. CRA also installed and sampled soil vapor wells VP-1 through VP-4. Soil samples collected at depths of 4, 8, 11.5, and/or 12 fbg from the borings only contained up to 0.0005 mg/kg MTBE (one sample). The soil vapor samples contained up to 4,500 µg/m³ TPHg and 1,200 µg/m³ TPHd. Benzene (8.2 µg/m³) was only detected in sample VP-1. The detected soil vapor concentrations did not exceed the applicable screening levels for residential land use (most conservative). Details of this investigation were presented in CRA's *Subsurface and Soil Vapor Sampling Report*, dated August 25, 2008.

ATTACHMENT C
STANDARD FIELD PROCEDURES

Conestoga-Rovers & Associates

STANDARD FIELD PROCEDURES FOR CONE PENETROMETER TESTING AND SAMPLING

This document describes Cambria Environmental Technology's standard field methods for Cone Penetrometer Testing (CPT) and direct-push soil and groundwater sampling. These procedures are designed to comply with Federal, State and local regulatory guidelines.

Use of CPT for logging and soil and groundwater sampling requires separate borings. Typically an initial boring is advanced to estimate soil and groundwater characteristics as described below. To collect soil samples a separate boring must be advanced using a soil sampling device. If groundwater samples are collected, another separate boring must be advanced using a groundwater sampling device. Specific field procedures are summarized below.

Cone Penetrometer Testing (CPT)

Cone Penetrometer Testing is performed by a trained geologist or engineer working under the supervision of a California Professional Geologist (PG) or a Certified Engineering Geologist (CEG). Cone Penetrometer Tests (CPT) are carried out by pushing an integrated electronic piezocone into the subsurface. The piezocone is pushed using a specially designed CPT rig with a force capacity of 20 to 25 tons. The piezocones are capable of recording the following parameters:

- Tip Resistance (Q_c)
- Sleeve Friction (F_s)
- Pore Water Pressure (U)
- Bulk Soil Resistivity (ρ) - with an added module

A compression cone is used for each CPT sounding. Piezocones with rated load capacities of 5, 10 or 20 tons are used depending on soil conditions. The 5 and 10 ton cones have a tip area of 10 sq. cm. and a friction sleeve area of 150 sq. cm. The 20 ton cones have a tip area of 15 sq. cm. and a friction sleeve area of 250 sq. cm. A pore water pressure filter is located directly behind the cone tip. Each of the filters is saturated in glycerin under vacuum pressure prior to penetration. Pore Pressure Dissipation Tests (PPDT) are recorded at 5 second intervals during pauses in penetration. The equilibrium pore water pressure from the dissipation test can be used to identify the depth to groundwater.

The measured parameters are printed simultaneously on a printer and stored on a computer disk for future analysis. All CPTs are carried out in accordance with ASTM D-3441. A complete set of baseline readings is taken prior to each sounding to determine any zero load offsets.

The inferred stratigraphic profile at each CPT location is included on the plotted CPT logs. The stratigraphic interpretations are based on relationships between cone bearing (Q_c) and friction ratio (R_f). The friction ratio is a calculated parameter (F_s/Q_c) used in conjunction with the cone bearing to identify the soil type. Generally, soft cohesive soils have low cone bearing pressures and high friction ratios. Cohesionless soils (sands) have high cone bearing pressures and low friction ratios. The classification of soils is based on correlations developed by Robertson et al (1986). It is not always possible to clearly identify a soil type based on Q_c and R_f alone. Correlation with existing soils information and analysis of pore water pressure measurements should also be used in determining soil type.

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CPT and sampling equipment are steam-cleaned or washed prior to work and between borings to prevent cross-contamination. Sampling equipment is washed between samples with trisodium phosphate or an equivalent EPA-approved detergent. Groundwater samples are decanted into appropriate containers supplied by the analytic laboratory. Samples are labeled, placed in protective foam sleeves, stored on crushed ice at or below 4° C, and transported under chain-of-custody to the laboratory.

After the CPT probes are removed, the borings are filled to the ground surface with cement grout poured or pumped through a tremie pipe.

Objectives

Soil samples are collected to characterize subsurface lithology, assess whether the soils exhibit obvious hydrocarbon or other compound vapor odor or staining, estimate groundwater depth and quality and to submit samples for chemical analysis.

Soil Classification/Logging

All soil samples are classified according to the Unified Soil Classification System by a trained geologist or engineer working under the supervision of a California Professional Geologist (PG) or a Certified Engineering Geologist (CEG). The following soil properties are noted for each soil sample:

- Principal and secondary grain size category (i.e., sand, silt, clay or gravel)
- Approximate percentage of each grain size category,
- Color,
- Approximate water or separate-phase hydrocarbon saturation percentage,
- Observed odor and/or discoloration,
- Other significant observations (i.e., cementation, presence of marker horizons, mineralogy), and
- Estimated permeability.

Soil Sampling

Soil samples are collected from borings driven using hydraulic push technologies. A minimum of one and one half ft of the soil column is collected for every five ft of drilled depth. Additional soil samples can be collected near the water table and at lithologic changes. Samples are collected using samplers lined with polyethylene or brass tubes driven into undisturbed sediments at the bottom of the borehole. The ground surface immediately adjacent to the boring is used as a datum to measure sample depth. The horizontal location of each boring is measured in the field relative to a permanent on-site reference using a measuring wheel or tape measure.

Drilling and sampling equipment is steam-cleaned or washed prior to drilling and between borings to prevent cross-contamination. Sampling equipment is washed between samples with trisodium phosphate or an equivalent EPA-approved detergent.

Sample Storage, Handling and Transport

Sampling tubes chosen for analysis are trimmed of excess soil and capped with Teflon⁷ tape and plastic end caps. Soil samples are labeled and stored at or below 4°C on either crushed or dry ice, depending upon local regulations. Samples are transported under chain-of-custody to a State-certified analytic laboratory.

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Field Screening

After a soil sample has been collected, soil from the remaining tubing is placed inside a sealed plastic bag and set aside to allow hydrocarbons to volatilize from the soil. After ten to fifteen minutes, a portable photoionization detector measures volatile hydrocarbon vapor concentrations in the bag's headspace, extracting the vapor through a slit in the plastic bag. The measurements are used along with the field observations, odors, stratigraphy, and groundwater depth to select soil samples for analysis.

Grab Groundwater Sampling

Groundwater samples are collected from the open borehole using bailers, advancing disposable Tygon⁷ tubing into the borehole and extracting groundwater using a diaphragm pump, or using a hydro-punch style sampler with a bailer or tubing. The groundwater samples are decanted into the appropriate containers supplied by the analytic laboratory. Samples are labeled, placed in protective foam sleeves, stored on crushed ice at or below 4° C, and transported under chain-of-custody to the laboratory.

Duplicates and Blanks

Blind duplicate water samples are usually collected only for monitoring well sampling programs, at a rate of one blind sample for every 10 wells sampled. Laboratory-supplied trip blanks accompany samples collected for all sampling programs to check for cross-contamination caused by sample handling and transport. These trip blanks are analyzed if the internal laboratory quality assurance/quality control (QA/QC) blanks contain the suspected field contaminants. An equipment blank may also be analyzed if non-dedicated sampling equipment is used.

Grouting

If the borings are not completed as wells, the borings are filled to the ground surface with cement grout poured or pumped through a tremie pipe.