ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
ALEX BRISCOE, Director

ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
(510) 567-6700
FAX (510) 337-93

December 13, 2012

Denis Brown
Shell Oil Products US
20945 S. Wilmington Ave.
Carson, CA 90810-1039

Douglas and Mary Safreno (*Sent via E-mail to: dmsafreno@sbcglobal.net*)
1627 Vineyard Avenue
Pleasanton, CA 94566-6389

Subject: Case File Review for Fuel Leak Case No. RO0000360 and GeoTracker Global ID T0600101259, Shell#13-5782, 4212 First Street, Pleasanton, CA 94566

Dear Mr. Brown and Mr. and Ms. Safreno:

Alameda County Environmental Health (ACEH) staff has reviewed the fuel leak case file for the above-referenced site including the recently submitted documents entitled, "*Subsurface Investigation Report*," dated October 3, 2012 and "*Air Sparge and Soil Vapor Extraction and Dual-Phase Extraction Pilot Test Reports,"* dated October 30, 2012 (Pilot Test Report). Both reports were prepared on Shell's behalf by Conestoga-Rovers & Associates (CRA).

The Subsurface Investigation Report presents results from eight soil vapor samples collected on September 5, 2012. During the September 5, 21012 sampling event, TPHg, benzene, ethylbenzene, and xylenes were not detected in soil vapor at concentrations above their reporting limits. Toluene was detected at concentrations up to 53 micrograms per cubic meter. Based on these soil vapor sampling results, we concur that no further soil vapor investigation is necessary.

The Pilot Test Report presents results from an air sparging (AS)/soil vapor extraction (SVE) pilot test that was performed by sparging air into well AS-1 and extracting soil vapors from well SVE-5 and a dual-phase extraction (DPE) pilot test that was conducted using wells EW-1 and EW-2. Based on the results of the pilot tests, CRA concluded that AS/SVE and DPE were not prudent, cost effective, or environmentally sustainable remedial technologies. The Pilot Test Report also concludes that the case meets the conditions for closure under the State Water Resources Control Board's Low-Threat Closure Policy.

As discussed in the technical comments below, ACEH does not concur with either of these conclusions. We request that you review the technical comments below and submit a Corrective Action Plan no later than February 27, 2013.

We have also attached a set of comments on the CAP that were submitted to ACEH by Tamalpais Environmental Consultants on behalf of the current property owner (see attachment).

TECHNICAL COMMENTS

1. **State Water Resources Control Board Low-Threat Closure Policy.** ACEH has evaluated the site using the general and media-specific criteria in the State Water Resources Control Board low-threat Closure Policy (LTCP) and find that the site does not meet the criteria for closure under the LTCP. Specifically, the site does not meet the general criteria for a conceptual site model (CSM) as discussed in technical comment 2, the general criteria for secondary source removal as discussed in technical comment 3, and groundwater media-specific criteria as discussed in technical comment 5.

2. **Lateral Delineation of Groundwater Impacts.** The extent of the plume northeast of the site has not been delineated. Two monitoring wells were proposed for the area northeast of the site on the opposite side of Vineyard Avenue to complete downgradient plume delineation. Well installations were attempted but were abandoned due to the presence of utilities near the planned locations. No additional attempts to complete downgradient delineation to the northeast were attempted. A review of historical soil data indicates that the highest concentration of benzene detected in soil (65 milligrams per kilogram) was detected in a soil sample collected at a depth of 35 feet bgs from boring SB-5. Boring SB-5 is located northeast of the former USTs. No soil or groundwater samples have been collected north or northeast of SB-5 to complete horizontal delineation. Due to this data gap, the site does not meet the CSM general criteria for an assessment of the extent of soil and groundwater contamination.

3. **Secondary Source Removal.** Remedial actions at the site have been limited to removal of 40 cubic yards of soil from dispenser and piping replacement, mobile groundwater extraction in 2007, and pilot tests in 2007, 2010, and 2012. Groundwater concentrations remain elevated indicating that a secondary source remains at the site. As discussed in technical comment 6 below, remedial action to remove the secondary source may be feasible. Therefore, the site does not meet the general criteria in the LTCP for secondary source removal.

4. **Plume Stability and Predicted Time to Reach Environmental Screening Levels.** Since the Pilot Test Report refers to the October 24, 2011, "*Corrective Action Plan*," (CAP), which recommended a monitored natural attenuation alternative, we have again reviewed the CAP. The CAP only considered an MNA alternative and presents limited discussion of other remedial alternatives. We believe the CAP presents an overly narrow review of alternatives. In addition, the calculation of the estimated time for groundwater concentrations to reach Environmental Screening Levels (ESL) is not valid. Based on projections of concentration trends for wells MW-1, MW-2, and MW-4, the CAP uses a linear trend line to estimate the time required to reach an ESL for benzene, MTBE, and TBA. However, the trend lines appear to be started at higher points on the graph which result in a downward trend for various lengths of time. As a result, the estimates are biased low and in several cases, there is no downward trend or evidence of plume stability. We have attached the graph for MW-1 as an example. For MTBE, a trend line was drawn through only the last four data points to establish a downward trend when a review of the long-term concentrations shows a steady increase in MTBE concentrations since 2003. Not only is the 4-point trend line not valid, the concentration of MTBE does not appear to be decreasing in MW-1, which is the downgradient well for the site. A second example is the graph for MW-2 (attached) in which a trend line was established using the last seven data points on the graph. Clearly, there has been a significant increase in MTBE

concentrations in MW-2 since 2000. If the shortened trend line for MW-2 were accurate, the concentrations of MTBE should be approximately 600 micrograms per liter (µg/L) in May 2012. The actual concentration of MTBE in groundwater from well MW-2 on May 23, 2012 was 3,000 µg/L. In general, the predicted times to reach ESLs in the CAP are not valid and do not support a natural attenuation alternative.

5. **Groundwater Media-Specific Criteria.** The site does not meet any of the groundwater specific criteria for case closure in the LTCP based on the following:
    - The plume is greater than 250 feet in length.
    - The plume does not appear to be stable or decreasing for a minimum of five years.
    - The nearest existing water supply well is less than 1.000 feet from the site.
    - The dissolved concentration of MTBE is greater than 1,000 µg/L.
    - The property owner is not willing to accept a deed restriction.

6. **Feasibility of Site Remediation.** The Pilot Test Report concludes that AS/SVE and DPE are not effective remedial technologies for the site and recommends natural attenuation based at least in part on low recovery rates for benzene and MTBE. Removal rates for TPHg using AS/SVE range from 35.9 to 85 pounds per day. For MPE, the averaged TPHg removal rate ranged from 3.83 to 21.5 pounds per day. Therefore, removal of petroleum hydrocarbon mass is feasible. The Pilot Test Report does not consider whether removal of mass would stabilize the plume and accelerate the rate of natural attenuation for all compounds including benzene and MTBE. We believe that source area remediation appears to be both feasible and necessary to restore water quality within an acceptable time frame.

7. **Future Actions.** We request that you submit a Corrective Action Plan that addresses the technical comments above no later than March 7, 2013

TECHNICAL REPORT REQUEST

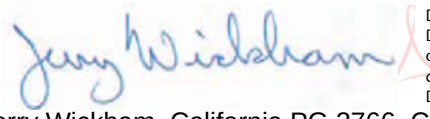
Please submit technical reports to Alameda County Environmental Health (Attention: Jerry Wickham), according to the following schedule:

- **March 7, 2013** – Corrective Action Plan

- **45 days following the end of second and fourth quarter** – Semi-annual Monitoring Report

If you have any questions, please call me at (510) 567-6791 or send me an electronic mail message at jerry.wickham@acgov.org. Case files can be reviewed online at the following website: http://www.acgov.org/aceh/index.htm.

Sincerely,



Jerry Wickham, California PG 3766, CEG 1177, and CHG 297
Senior Hazardous Materials Specialist

Attachments: Comments on Corrective Action Plan dated December 4, 2012 (prepared by Tamalpais Environmental Consultants)
MW-1 Benzene, MTBE, and TBA Concentrations and Groundwater Elevations versus Time from October 24, 2011 CAP
MW-2 MTBE Concentrations and Groundwater Elevations versus Time from October 24, 2011 CAP
Responsible Party(ies) Legal Requirements/Obligations

Enclosure: ACEH Electronic Report Upload (ftp) Instructions

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

Colleen Winey (QIC 8021), Zone 7 Water Agency, 100 North Canyons Pkwy, Livermore, CA 94551 (*Sent via E-mail to: cwiney@zone7water.com*)

Peter Schaefer, Conestoga-Rovers & Associates, 5900 Hollis Street, Suite A
Emeryville, CA 94608 (*Sent via E-mail to: pschaefer@craworld.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*)

GeoTracker, eFile

Tamalpais
Environmental
Consultants

December 4, 2012

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

Subject: Comments on Air Sparge and Soil Vapor Extraction and Dual-Phase Extraction Pilot Test Reports submitted by Conestoga-Rovers & Associates, 4212 First Street, Pleasanton, California.

Dear Mr. Wickham:

Tamalpais Environmental Consultants (TEC) has prepared this letter on behalf of the property owners of 4212 First Street in Pleasanton. The purpose of this letter is to provide comments to the Alameda County Environmental Health (ACEH) agency related to the Air Sparge and Soil Vapor Extraction and Dual-Phase Extraction Pilot Test Report, submitted by Conestoga-Rovers & Associates (CRA), dated October 30, 2012. We encourage the ACEH to consider the following comments and require remediation activities for the existing impacts at the property (Site). TEC was able to review a copy of the draft CRA report prior to submission and provided similar comments that were not included in the final CRA report.

Comment 1: Remediation is Appropriate

The State Water Resources Control Board (SWRCB) has recently updated the Low-Threat Underground Storage Tank Case Closure Policy that establishes criteria to evaluate whether remediation is appropriate for underground storage tank (UST) sites in California. There are several criteria for low-threat closure that do not appear to be met by the conditions of the Site and it would be appropriate to implement some type of remediation.

Secondary Source

A residual mass of petroleum hydrocarbon exists in the subsurface at the Site. Based on concentrations of soil vapor collected during the 2012 pilot test, CRA estimated that petroleum hydrocarbons could be recovered at a rate of between 36 to 85 pounds per day. In the previous remediation pilot test, Delta Environmental reported that 286 pounds of petroleum hydrocarbons were recovered over a 5-day period. There could be thousands of additional pounds of petroleum hydrocarbons that could be readily recovered by soil vapor extraction (SVE). While current shallow soil vapor concentrations are relatively

low, this residual mass of petroleum hydrocarbons in the deeper soil vapor could act as a source of petroleum hydrocarbons to shallow soil vapor or to groundwater. The low-threat closure policy indicates that the removal of a secondary source is required to the extent practicable.

Detections of MTBE

MTBE is specifically identified in the low-threat closure criteria as a contaminant of concern. MTBE was detected during the May 2012 monitoring event at 3,400 µg/L in Well MW-1, 3,000 µg/L in Well MW-2, and 4,900 µg/L in Well MW-4. The low rate of MTBE degradation would seem to indicate that some type of additional remediation or monitoring is warranted.

Comment 2: Remediation is Technically Viable

The current and previous pilot test reports indicate that significant mass removal can be accomplished using well established soil and groundwater treatment technologies. The majority of the recoverable mass appears to be in soil vapor, which is in contact and equilibrium with impacted soil. There are no significant physical or infrastructure limitations that would prevent the installation of a remediation system capable of removing impacted soil vapor.

The SVE pilot test was aggressive in the use of a 25 horsepower pump connected to a single extraction well. High vacuums and flows were induced, which showed good indications of influence in surrounding wells. Lower vacuums and flows may be sufficient to remove the majority of the impacts in the shallow soil vapor while generating lower treatment volumes and less noise.

CRA identified several challenges in implementing groundwater remediation with air sparging (AS) or dual-phase extraction (DPE). These technologies have a variety of advantages and disadvantages to address impacted groundwater at the Site. The enhanced petroleum hydrocarbon recovery observed by CRA during both the AS and DPE pilot tests indicate the potential for recovery of at least a portion of the compounds present in groundwater through enhanced recovery with SVE. Either technology could lower the mass of petroleum hydrocarbons in groundwater.

Comment 3: Necessity for Deed Restriction

One of the criteria included in the low-threat closure policy is the willingness of the property owner to accept a deed restriction prior to closure. The property owner is not willing to accept a deed restriction. The previous CAP submitted by CRA in October 2011 erroneously indicated that the contract with the owners includes "specific restrictions on site development to commercial uses excluding child day care, elder care,

or other similar sensitive uses." The contract is limited to the period of operation of the service station and does not limit the long-term development of the property as described in the CAP. While the service station is now likely to operate for several more years, the assumption that this property could not be used for any sensitive uses is inappropriate. The site owner is willing to cooperate with a site closure that does not require any deed restriction and that will leave the property in condition reasonably appropriate to future development for any potential legal use, unaffected by whatever residual contamination is deemed acceptable for the site closure.

We appreciate your consideration of these comments as you prepare your response to the Pilot Test Reports submitted for the property. The owners of the property believe that the operators of the service station have a responsibility to ensure that the Site has not been significantly impacted by the historical operation of the service station. If you have any questions regarding the information provided, please contact Aaron O'Brien at (415) 456-5084.

Sincerely,

Aaron O'Brien, PE, CHMM
President

cc: Douglas & Mary Safreno
Jim Frassetto, Miller, Starr & Regalia
Peter Schaefer, Conestoga, Rovers & Associates

Predicted Time to Reach Environmental Screening Levels (ESL) in Well MW-1

Shell-branded Service Station, 4212 First Street, Pleasanton, California

$y = b\,e^{ax}$ **===>** $x = \ln(y/b) / a$

where: y = concentration in µg/L, a = decay constant
b = concentration at time (x), x = time (x) in days

	Constituent	Benzene	Methyl tert-Butyl Ether (MTBE)	Tert-Butyl Alcohol (TBA)
Given				
ESL :	y	1	5	12
Constant:	b	7.00E+02	2.65E+09	3.23E+03
Constant:	a	-6.98E-05	-3.35E-04	-3.32E-05
Starting date for current trend:		2/12/2003	5/13/2010	8/22/2007
Calculate				
Attenuation Half Life (years):	(-ln(2)/a)/365.25	27.19	5.66	57.16
Estimated Date to Reach ESL:	(x = ln(y/b) / a)	Dec 2156	Mar 2064	Jun 2361

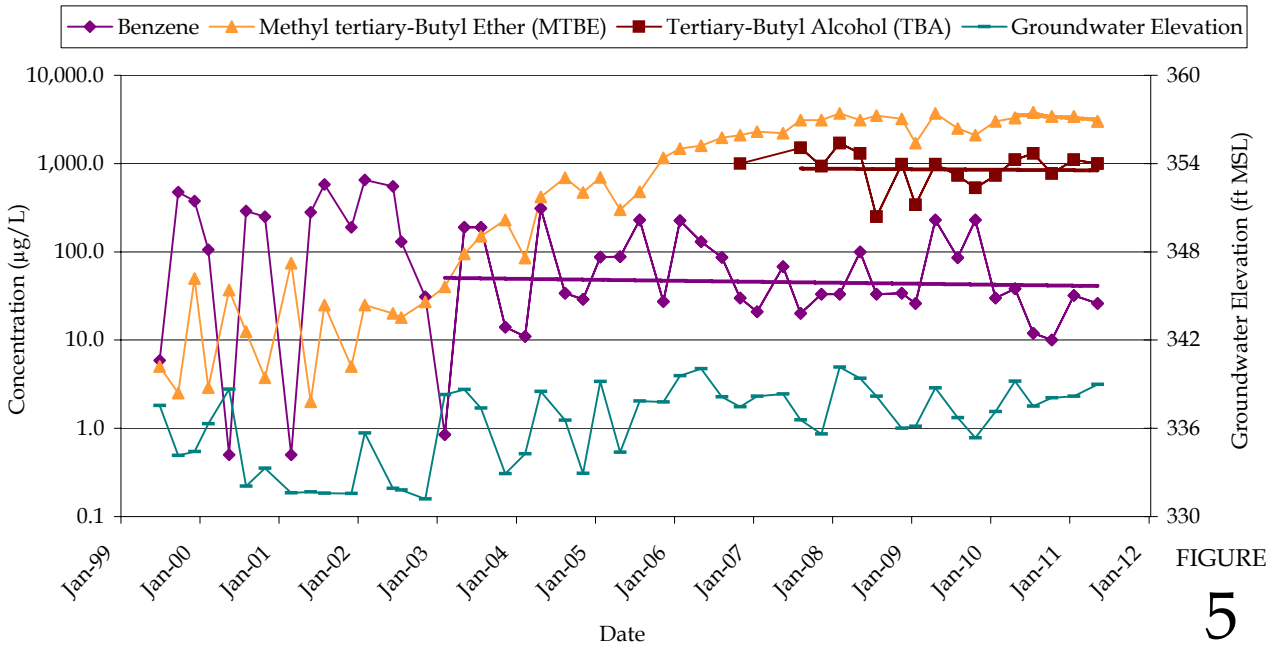


FIGURE 5

Shell-branded Service Station
4212 First Street
Pleasanton, California

CONESTOGA-ROVERS & ASSOCIATES

MW-1:
Benzene, MTBE, and TBA Concentrations and Groundwater Elevations versus Time

Predicted Time to Reach Environmental Screening Levels (ESL) in Well MW-2

Shell-branded Service Station, 4212 First Street, Pleasanton, California

$y = b\,e^{ax}$ **===>** $x = \ln(y/b) / a$

where: y = concentration in µg/L, a = decay constant
b = concentration at time (x), x = time (x) in days

	Constituent	Methyl tert-Butyl Ether (MTBE)
Given		
ESL :	y	5
Constant:	b	4.03E+34
Constant:	a	-1.78E-03
Starting date for current trend:		11/9/2009
Calculate		
Attenuation Half Life (years):	(-ln(2)/a)/365.25	1.07
Estimated Date to Reach ESL:	(x = ln(y/b) / a)	Jan 2020

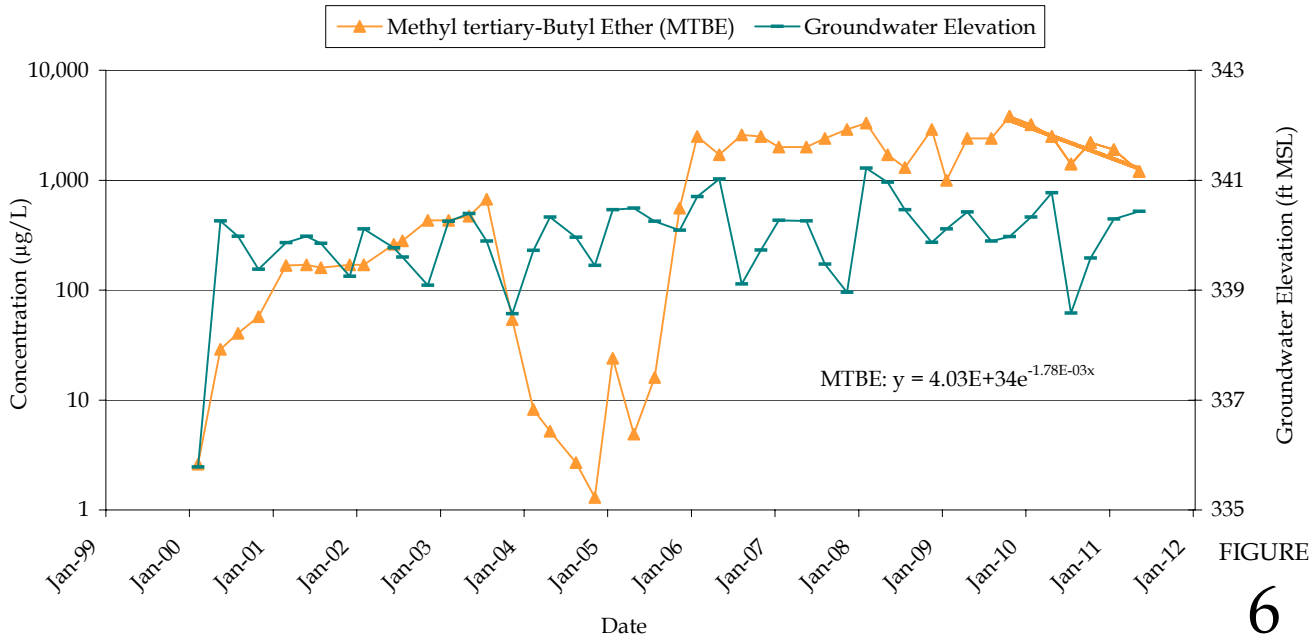


FIGURE 6

Shell-branded Service Station
4212 First Street
Pleasanton, California

CONESTOGA-ROVERS & ASSOCIATES

MW-2:
MTBE Concentrations and
Groundwater Elevations versus Time

Attachment 1

Responsible Party(ies) Legal Requirements/Obligations

REPORT/DATA REQUESTS

These reports/data are being requested pursuant to Division 7 of the California Water Code (Water Quality), Chapter 6.7 of Division 20 of the California Health and Safety Code (Underground Storage of Hazardous Substances), and Chapter 16 of Division 3 of Title 23 of the California Code of Regulations (Underground Storage Tank Regulations).

ELECTRONIC SUBMITTAL OF REPORTS

ACEH's Environmental Cleanup Oversight Programs (Local Oversight Program [LOP] for unauthorized releases from petroleum Underground Storage Tanks [USTs], and Site Cleanup Program [SCP] for unauthorized releases of non-petroleum hazardous substances) require submission of reports in electronic format pursuant to Chapter 3 of Division 7, Sections 13195 and 13197.5 of the California Water Code, and Chapter 30, Articles 1 and 2, Sections 3890 to 3895 of Division 3 of Title 23 of the California Code of Regulations (23 CCR). Instructions for submission of electronic documents to the ACEH FTP site are provided on the attached "Electronic Report Upload Instructions."

Submission of reports to the ACEH FTP site is in addition to requirements for electronic submittal of information (ESI) to the State Water Resources Control Board's (SWRCB) Geotracker website. In April 2001, the SWRCB adopted 23 CCR, Division 3, Chapter 16, Article 12, Sections 2729 and 2729.1 (Electronic Submission of Laboratory Data for UST Reports). Article 12 required electronic submittal of analytical laboratory data submitted in a report to a regulatory agency (effective September 1, 2001), and surveyed locations (latitude, longitude and elevation) of groundwater monitoring wells (effective January 1, 2002) in Electronic Deliverable Format (EDF) to Geotracker. Article 12 was subsequently repealed in 2004 and replaced with Article 30 (Electronic Submittal of Information) which expanded the ESI requirements to include electronic submittal of any report or data required by a regulatory agency from a cleanup site. The expanded ESI submittal requirements for petroleum UST sites subject to the requirements of 23 CCR, Division, 3, Chapter 16, Article 11, became effective December 16, 2004. All other electronic submittals required pursuant to Chapter 30 became effective January 1, 2005. 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, 7835, 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, late 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 SCP)	**REVISION DATE:** July 25, 2012
	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 (petroleum UST and SCP) 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 .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 ://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 .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.