ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
ALEX BRISCOE, Acting Director

ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION
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October 14, 2011

Ms. Mary K. Wright *(Sent via e-mail to: ksaveourkids@aol.com)*
Heirs of Mary L. Wright Estate
1829 9th Avenue
Oakland, CA 94606-3019

Subject: Conditional Work Plan Approval for Fuel Leak Case No. RO0003077 and GeoTracker Global ID T10000003190, F&M Auto Service/Gas Station, 1839 Foothill Boulevard, Oakland, CA 94606

Dear Ms. Wright:

Thank you for submitting the Work Plan for Preliminary Soil and Groundwater Monitoring Well Investigation, dated September 2, 2011 prepared by Sierra West Consultants, Inc. (The Work Plan). Based on Alameda County Environmental Health (ACEH) staff review of the referenced document provided that the modifications requested in the technical comments below are addressed and incorporated during the field implementation we generally concur with the proposed scope of work. Submittal of a revised Work Plan is not required unless an alternate scope of work outside that described in the Work Plan and technical comments below is proposed.

We request that you address the following technical comments, perform the proposed work, and send us the technical report requested below. Please provide 72-hour advance written notification to this office (e-mail preferred to: karel.detterman@acgov.org) prior to the start of field activities.

TECHNICAL COMMENTS

1. **Work Plan Comments –** With modifications and clarifications ACEH is in general concurrence with the work proposed in the referenced Work Plan. These modifications and clarifications are:

    a. **Representative Shallow Soil Samples –** The Work Plan proposes hand clearing or using an air knife to a depth of five feet below grade surface (bgs) to clear for subsurface obstructions or utilities. Since ACEH is concerned that the use of an air knife will volatilize target compounds resulting in low-biased analytical results, please clear all boring locations by hand auguring.

    b. **Tank Backfill Material –** The Work Plan describes the UST removal of March 29-April 8, 2011, but a description of the soil types enclosing the USTs was not provided; please include in the upcoming *SCM with Soil and Groundwater Investigation Results* a description of the site soil types found during the UST removal.

    c. **Location of soil borings, monitoring wells, and groundwater gradient –** ACEH generally concurs with the proposed soil boring and monitoring well depths and locations with three exceptions. We request exchanging the locations of MW-1 and B-2 with each other, which will result in the placement of three monitoring wells in the apparent down gradient of the former UST locations. Additionally,

please extend soil boring B-2 now located in the former pit of UST #1 and UST #2 to a total depth of 30 feet below grade. Lastly, please move MW-4 approximately 35-40 feet to the northwest of its current position, to center the well along the Foothill Boulevard property line and across the site from MW-2. This revised well configuration should provide both groundwater gradient information and groundwater quality data points both up- and down- gradient of the three USTpits.

The Work Plan did not include a rationale for the anticipated groundwater gradient direction; please include in the upcoming *SCM with Soil and Groundwater Investigation Results* a discussion of the groundwater gradient and a figure indicating the site groundwater gradient.

d. Location of Soil Sample Collection – ACEH generally concurs with the proposed soil and groundwater sample collection method (direct-push technology) outlined in the Work Plan; however, the Work Plan does not specify the number and the depth of the soil samples proposed to be submitted for analysis. Since the two-fold goal of this investigation is to determine the extent of total petroleum hydrocarbon (TPH) soil contamination and to determine if groundwater contamination is present beneath the site, ACEH requests that soil samples from each of the seven soil borings be collected and submitted for analysis from the capillary fringe, saturated zone, stained interval(s), areas with high PID readings, and the bottom of the soil boring. ACEH requests soil sample collection below or at first encountered groundwater based on indications of contamination (PID detections, odor, staining, or etc.). If visual indications are not encountered, please collect soil samples at or just above the soil – water interface and the bottom of the boring. Please ensure that the analytical results determine the vertical and horizontal extent of TPH impacts at the site.

e. Analysis of Soil & Groundwater – ACEH generally concurs with the proposed analytical suite outlined in the Work Plan; however, because of uncertain historical usage, ACEH requests that the following analysis to be performed on all soil and groundwater samples collected during this investigation:

- Total Petroleum Hydrocarbons (TPH)-Gasoline and TPH-Diesel (TPH-D) by Method 8015M or 8260;
- Oil & Grease (O&G) by Method 418.1 with silica gel clean-up;
- Benzene, Toluene, Ethyl benzene, and Xylenes (BTEX), chlorinated hydrocarbons, ethylene dibromide (EDB), ethylene dichloride (EDC), Methyl Tertiary-Butyl Ether (MTBE), Tert-amyl-methyl ether **(**TAME), Ethyl tert-butyl ether (ETBE), Di-isopropyl ether (DIPE), and t-Butyl alcohol (TBA) by Method 8260;
- Cadmium, chromium, lead, nickel, & zinc by ICAP or AA;
- Polychlorinated biphenyl (PCB), Pentachlorophenol (PCP), polynuclear aromatic hydrocarbon (PNA), Creosote and 1,4-Dioxane by Method 8270.

f. Well Screen Interval and Groundwater Monitoring and Sampling Program – The Work Plan indicates that "depth to groundwater is anticipated to be approximately 15 to 20 feet bgs, and the anticipated screened interval will be 10 to 30 feet bgs". ACEH recommends the use of monitoring wells designed with sand pack intervals of 5 feet or less because a well with a shorter screen interval will be more likely to provide samples representative of depth discrete groundwater conditions. Please note that recently installed wells are required to be sampled on a quarterly basis for a minimum of one year after installation, and that a reduced sampling interval may thereafter be appropriate.

If multiple water-bearing zones are encountered while drilling to 30 feet, it may be necessary to install adjacent soil borings to preclude collection of induced cross contamination created by withdrawing multiple probe rods. Please communicate with ACEH from the field if this situation is encountered and how this modification will be managed. In the future, it may also be necessary to install well clusters,

Continuous Multi-Chamber Tubing wells (CMTs), etc., to appropriately monitor your contamination plume.

2. **Revisions to Tables and Figures –** For future reports including the upcoming *SCM with Soil and Groundwater Investigation Results,* please revise the existing Figure 4, "Soil Sample Concentration Map" and Table 1, "Summary of Soil Analytical Results" to include all sample depths. Please make sure that all sample depths are indicated on all new figures and tables.

3. **Areal Maps -** To help understand the site and vicinity, please also include in all future reports, including the upcoming *SCM with Soil and Groundwater Investigation Results* an extended site map using an aerial photographic base map to depict both the site and immediate vicinity.

4. **Preferential Pathway Study -** As a result of both historic, as well as current, use of groundwater in the Oakland area, ACEH is requesting a preferential pathway study. There are two parts to the study, the location of historic wells and of utility runs. Specifically, the purpose of the preferential pathway study is to locate potential migration pathways and conduits and determine the probability of plume migration along those pathways that might spread contamination. ACEH requests that the study detail the potential migration pathways and potential conduits (wells, utilities, pipelines, etc.) for vertical and lateral migration that may be present in the site and vicinity. Please report your results in the *SCM with Soil and Groundwater Investigation Results* requested below. The results of your study are to contain all information required by California Code of Regulations, Title 23, Division 3, Chapter 16, §2654(b).

   a. **Well Survey -** The well survey is to include a detailed survey of all wells within a ¼ mile radius of the subject site. Please reference both the California Department of Water Resources as well as the Alameda County Public Works Agency because information from these two sources is sufficiently different to warrant inclusion of both in the study.

   b. **Utility Survey -** An evaluation of all utility lines and trenches (including sewers, storm drains, pipelines, trench backfill, etc.) within and near the site and plume area(s) is required as part of the study. Please include maps (and cross-sections when appropriate) to illustrate the location and depth of utility lines and trenches within and near the site and plume areas(s) as part of your study. Please include utility laterals to the site (or vicinity sites when appropriate). Please also utilize the San Francisco Estuary Institute's *Creek & Watershed Map of Oakland & Berkeley,* available online at the Museum of California website (http://museumca.org/search/node/watershed+maps).

5. **Site Conceptual Model -** We anticipate that characterization and remediation work, in addition to what is requested in this letter, will be necessary at your site and down-gradient from your site. Considerable cost savings can be realized if your consultant focuses on developing and refining a viable Site Conceptual Model (SCM) for the project. An SCM is a set of working hypotheses pertaining to all aspects of the contaminant release, including site geology, hydrogeology, release history, residual and dissolved contamination, attenuation mechanisms, pathways to nearby receptors, and likely magnitude of potential impacts to receptors. The SCM is used to identify data gaps that are subsequently filled as the investigation proceeds. As the data gaps are filled, the working hypotheses are modified, and the overall SCM is refined and strengthened. Subsurface investigations continue until the SCM no longer changes as new data are collected. At this point, the SCM is said to be 'validated.' The validated SCM then forms the foundation for developing the most cost-effective corrective action plan to protect existing and potential receptors.

   When performed properly, the process of developing, refining and ultimately validating the SCM effectively guides the scope of the entire site investigation. We have identified, based on our review of existing data, some initial key data gaps in this letter and have described several tasks that we believe will provide important

new data to refine the SCM. We request that your consultant incorporate the results of the new work requested in this letter into their SCM, identify new and/or remaining data gaps, and propose supplemental tasks for future investigations. There may need to be additional phases of investigations, each building on the results of prior work, to validate the SCM. Characterizing the site in this manner will focus the scope of work to address the identified data gaps, which improves the efficiency of the work, and limits the overall costs.

Both industry and the regulatory community endorse the SCM approach. Technical guidance for developing an SCM is presented in *Strategies for Characterizing Subsurface Releases of Gasoline Containing MTBE*, American Petroleum Institute Publication No. 4699 dated February 2000; *Expedited Site Assessment Tools for Underground Storage Tank Sites: A Guide for Regulators,* (EPA 510-B-97-001), prepared by the U.S. Environmental Protection Agency (EPA), dated March 1997; and *Guidelines for Investigation and Cleanup of MTBE and Other Ether-Based Oxygenates, Appendix C,* prepared the State Water Resources Control Board, dated March 27, 2000.

The SCM for this project should incorporate, at a minimum, the following:

a. A concise narrative discussion of the regional geologic and hydrogeologic setting. Include a list of technical references you reviewed, and copies (photocopies are sufficient) of regional geologic maps, groundwater contours, cross-sections, etc.

b. A concise discussion of the on-site and off-site geology, hydrogeology, release history, source zone, plume development and migration, attenuation mechanisms, preferential pathways, and potential threat to down-gradient and above-ground receptors (e.g. contaminant fate and transport). Please include the contaminant volatilization from the subsurface to indoor/outdoor air exposure route (i.e. vapor pathway) in the analysis. Maximize the use of large-scaled graphics (e.g. maps, cross-sections, contour maps, etc.) and conceptual diagrams to illustrate key points. Include a structural contour map (top of unit) and isopach map for the aquitard that is presumed to separate your release from the deeper aquifer(s).

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

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

e. The SCM shall include an analysis of the hydraulic flow system down-gradient from the site. Include rose diagrams for depicting groundwater gradients. The rose diagram shall be plotted on the groundwater contour maps and updated in all future reports submitted for your site. Include an analysis of vertical hydraulic gradients. Please note that these likely change due to seasonal precipitation and groundwater pumping. To evaluate the potential interconnection between shallow and deep aquifers, include hydrographs of hydraulic head in shallow aquifer versus pumping rates from nearby water supply wells.

f. Temporal changes in the plume location and concentrations are also a key element of the SCM. In addition to providing a measure of the magnitude of the problem, these data are often useful to confirm details of the flow system inferred from the hydraulic head measurements. Please include plots of the contaminant plumes on your maps, cross-sections, and diagrams.

g. Summary tables of chemical concentrations in different media (i.e. soil, groundwater, and soil vapor), including well logs, well completion details, boring logs, etc.

h. Other contaminant release sites may exist in the vicinity of your site. Hydrogeologic and contaminant data from those sites may prove helpful in testing certain hypotheses for your SCM. Include a summary of work and technical findings from nearby release sites.

At this juncture, please prepare a SCM as described above, including consideration of preliminary site cleanup goals, and include the results of the SCM in the decision-making process. If data gaps (i.e. potential contaminant volatilization to indoor air or contaminant migration along preferential pathways, etc.) are identified in the SCM, please propose a scope of work to address those data gaps.

TECHNICAL REPORT REQUEST

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

- **January 31, 2012 –** SCM with Soil and Groundwater Investigation Results

Reports are 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) 567-6708 or send me an electronic mail message at karel.detterman@acgov.org.

Sincerely,

Digitally signed by Karel Detterman
DN: cn=Karel Detterman, o, ou, email=karel.detterman@acgov.org, c=US
Date: 2011.10.14 12:12:16 -07'00'

Karel Detterman, PG 5628
Hazardous Materials Specialist

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

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

Marisa Rodarte, Orphan Site Cleanup Fund, State Water Resources Control Board, Division of Financial Assistance Special Program Units, P.O Box 944212,Sacramento, CA 94244-2120
(Sent via electronic mail to mrodarte@waterboards.ca.gov)

Jeff Bensch, Sierra West Consultants, Inc. 4227 Sunrise Blvd., Fair Oaks, CA 95628
(Sent via E-mail to: jbensch@sierra-west.net)

Donna Drogos, ACEH (Sent via E-mail to: donna.drogos@acgov.org)
Karel Detterman, ACEH (Sent via E-mail to: karel.detterman@acgov.org)
GeoTracker, Electronic Case File

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.