



August 11, 2017

Rashid Ghafoor (Sent via e-mail to: rashidz1@aol.com)
226 Havenwood Circle
Pittsburg, CA 94567

Subject: Fuel Leak Case No. RO0002931 and GeoTracker Global ID T0600174667, Shore Acres
Gas, 403 E. 12th St., Oakland, CA 94606

Dear Mr. Ghafoor:

Alameda County Department of Environmental Health (ACDEH) staff has reviewed the case file including the August 1, 2016 *Fourth Quarter 2015 Groundwater Monitoring and Remediation System Evaluation Report* (Evaluation Report) and the *Third Quarter 2016 Groundwater Monitoring and Rebound Report* (Rebound Report) dated December 29, 2016, prepared and submitted on your behalf by Environmental Compliance Group, LLC (ECG). Both reports and the case file have been evaluated in conjunction with the State Water Resources Control Board's (SWRCBs) Low Threat Underground Storage Tank Case Closure Policy (LTCP) adopted by the SWRCB on May 1, 2012 for the closure of leaking petroleum underground storage tank (UST) sites. The Policy applies to petroleum UST sites subject to Chapter 6.7 of the Health and Safety Code. The Policy establishes both general and media-specific criteria. If the general and applicable media-specific criteria are satisfied, then the leaking UST case is generally considered to present a low threat to human health, safety, and the environment.

ACDEH understands that the site is currently leased to a Hand Car Wash business, which started operation in January 2015. The Hand Car Wash facility is comprised of an existing site trailer and numerous portable canopies arranged on the paved site. ACDEH understands that redevelopment is not currently under consideration and commercial property usage will continue.

Site Background

Three USTs were removed in August 2009. The UST removal was documented in the September 2009 *Underground Storage Tank Removal at 403 East 12th Street Oakland California* (UST Report) prepared by Wright Environmental Services, Inc., on your behalf.

The UST Report described the removal of three pump islands and associated piping, two 12,000 gallon USTs used for gasoline storage and one 12,000 gallon UST previously used for diesel storage in August 2009. The USTs had been installed in 1982, were placed out of service in July 2008 when the USTs were emptied, of product, cleaned, sealed, and placed under temporary closure with a permit from the Oakland Fire Department. As described in the UST Report, fuel system piping was removed from Pump Islands designated 1 and 2. Pump Island 3 was excavated, but not found to contain fuel system piping; however did contain two large diameter pipes thought to be associated with abandoned utilities from prior uses. The former pump islands trenches were backfilled with clean imported fill.

After the three USTs were removed, the UST Report notes that evidence of gross contamination was found from the top of each UST, approximately 4 feet below ground surface (bgs) to two feet below the bottom of each UST (approximately 14 feet bgs). Soil contamination was also observed around each turbine and fill riser directly below the concrete pavement. Following the UST removal, the UST excavation was first backfilled with TPH-impacted soil previously removed and stockpiled from the excavation, then covered with plastic. The balance of excavation, above the plastic, was backfilled with imported fill, then paved with asphalt concrete.

ACDEH approved a Feasibility Study/Corrective Action Plan (FS/CAP) on February 7, 2013 and upon completion of the 30-day public notification period, ACDEH approved implementation of the CAP on March 22, 2013. A portable Dual Phase Extraction System (DPE) was operated at the site periodically from April 30, 2014 through April 2016, followed by one year of groundwater rebound monitoring. The data presented in the Rebound Report and the Remediation Report indicates that the chosen CAP was not effective in advancing the case to closure and it is likely the DPE's ineffectiveness was due in part to the presence of the secondary source. At the present time it is not appropriate to resume DPE operation due to the failure to remove secondary source to the extent practicable as required by the LTCP. Alternative corrective actions will likely be requested to be evaluated in the future, including, but not limited to, removal of the secondary source.

ACDEH has determined that the site does not meet the LTCP General Criteria d (Free Product Removal), e (Site Conceptual Model), f (Secondary Source Removal), Media-Specific Criteria for Groundwater, Media-Specific Criteria for Vapor Intrusion to Indoor Air, and the Media-Specific Criteria for Direct Contact. Site-specific details are provided in the following Technical Comments.

To continue progress on the path to closure, ACDEH requests preparation of a Data Gap Investigation Work Plan that is supported by a Site Conceptual Model (SCM) to address the data gaps listed in the following technical comments.

TECHNICAL COMMENTS

- 1. LTCP General Criteria d (Free Product) –** The LTCP requires free product to be removed to the extent practicable at release sites where investigations indicate the presence of free product by removing in a manner that minimizes the spread of the unauthorized release into previously uncontaminated zones by using recovery and disposal techniques appropriate to the hydrogeologic conditions at the site, and that properly treats, discharges, or disposes of recovery byproducts in compliance with applicable laws. Additionally, the LTCP requires that abatement of free product migration be used as a minimum objective for the design of any free product removal system.

The *Technical Justification for Vapor Intrusion (VI) Media Specific Criteria* (Technical Justification Paper) included with the LTCP provides criteria for direct and indirect evidence of the presence of light non-aqueous phase liquid (LNAPL) or free product in soil and groundwater. The Rebound Report provided direct evidence of free product observed in MW-5. Indirect evidence, as described in the LTCP Technical Justification Paper includes groundwater concentrations of benzene, toluene, ethylbenzene, or xylenes (BTEX) and/or Total Petroleum Hydrocarbon as gasoline (TPHg) greater than 20,000 micrograms per liter (ug/L). Well MW-1 detected 20,000 ug/L TPHg, MW-5 detected 10,000 ug/L TPHg, and MW-6 detected 7,700 ug/L TPHg. Please present a strategy in the Data Gap Work Plan described in Technical Comment 7 below to collect sufficient data to satisfy the LTCP General Criteria d (Free Product Removal) criteria.

- 2. General Criteria f – Secondary Source Has Been Removed to the Extent Practicable –** “Secondary source” is defined as petroleum-impacted soil or groundwater located at or immediately beneath the point of release from the primary source. Unless site attributes prevent secondary source removal (e.g. physical or infrastructural constraints exist whose removal or relocation would be technically or economically infeasible), petroleum-release sites are required to undergo secondary source removal to the extent practicable as described in the policy. “To the extent

practicable” means implementing a cost-effective corrective action which removes or destroys-in-place the most readily recoverable fraction of source-area mass. It is expected that most secondary mass removal efforts will be completed in one year or less. Following removal or destruction of the secondary source, additional removal or active remedial actions shall not be required by regulatory agencies unless (1) necessary to abate a demonstrated threat to human health or (2) the groundwater plume does not meet the definition of low threat as described in this policy.

The UST Report provides documentation of the existence of three pump islands at the site and that the UST excavation was backfilled with TPH-impacted soil, precluding compliance with General Criteria f. Please add the location of the third pump island to all figures in all future reports. Please present a strategy in the Data Gap Work Plan described in Technical Comment 7 below to collect sufficient data to determine if secondary source has been removed to the extent practicable to satisfy the LTCP General Criteria f.

- 3. LTCP Media Specific Criteria for Groundwater** – To satisfy the media-specific criteria for groundwater, the contaminant plume that exceeds water quality objectives must be stable or decreasing in areal extent, and meet all of the additional characteristics of one of the five classes of sites listed in the policy.

ACDEH's review of the case files indicates that insufficient data and analysis has been presented to assess compliance with Media Specific Criteria for Groundwater. The rose diagram included in the Rebound Report indicates that the prevalent groundwater gradient direction on site is to the southeast and several residences and commercial business are located downgradient of the site. Free product is present in MW-5, and benzene was detected at 1,400 ug/L in MW-1 and has fluctuated between 4,500 ug/L to 530 ug/L since June 2011. Wells EW-4 and MW-2 detected TPHg and benzene and are located in the down gradient portion of the property proximal to the southeastern property boundary, and indicate that the plume length is unknown. Currently it is unknown if free product has migrated southeast and downgradient off site.

As requested in ACDEH's February 18, 2016 Directive Letter, the Evaluation Report provided a brief description of the surface drains connected to the sanitary sewer to dispose of water generated by the hand car wash. Please locate all site drains on all site figures commencing with submittal of the Data Gap Work Plan and SCM described in Technical Comment 7.

Please present a strategy in the Data Gap Work Plan described in Technical Comment 7 below to collect sufficient data to satisfy the LTCP Media Specific Criteria for Groundwater criteria.

- 4. LTCP Media Specific Criteria for Vapor Intrusion to Indoor Air** – The LTCP describes conditions, including bioattenuation (unsaturated) zones, which if met will assure that exposure to petroleum vapors in indoor air will not pose unacceptable health risks to human occupants of existing or future site buildings, and adjacent parcels. Appendices 1 through 4 of the LTCP criteria illustrate four potential exposure scenarios and describe characteristics and criteria associated with each scenario.

ACDEH's review of the case files indicates that insufficient data and analysis has been presented to assess compliance with Media Specific Criteria for Vapor Intrusion to Indoor Air. As previously mentioned, the rose diagram indicates the prevalent groundwater gradient direction is to the

southeast and benzene was detected at 1,400 ug/L in MW-1. Additionally, naphthalene concentrations in shallow soil, 0 to 5 feet and 5 to 10 feet below ground surface (bgs) intervals across the site and groundwater are unknown as naphthalene has not been included in the list of analytes. ACDEH notes that benzene and naphthalene are both contaminants that the LTCP uses to assess risk from vapor intrusion to indoor air. In accordance with the LTCP, since benzene is detected between 100 ug/L and 1,000 ug/L in groundwater, the bioattenuation zone must be greater than 10 feet thick. Review of the site's boring logs indicate a bioattenuation zone greater than 5 feet bgs but less than 10 feet bgs, and indicates the potential for vapor intrusion to indoor air to the neighboring residences and business. As previously requested in Technical Comment 5 of ACDEH's February 18, 2016 Directive Letter, ACDEH requests preparation of a Data Gap Work Plan to assess potential vapor intrusion to indoor air of the on-site trailer and adjacent downgradient businesses and residences. Please present a strategy as described in Technical Comment 7 below to collect sufficient data to satisfy the Media Specific Criteria for Vapor Intrusion to Indoor Air. Please ensure that your strategy is consistent with the field sampling protocols described in the Department of Toxic Substances Control's (DTSC's) *Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air (Vapor Intrusion Guidance) (October 20011)* and DTSC's *Advisory Active Soil Gas Investigations (July 2015)*. Consistent with the guidance, ACDEH requires installation of permanent vapor wells to assess temporal and seasonal variations in soil gas concentrations.

5. **LTCP Media Specific Criteria for Direct Contact and Outdoor Air Criteria** – The LTCP describes conditions where direct contact with contaminated soil or inhalation of contaminants volatilized to outdoor air poses a low threat to human health. According to the policy, release sites where human exposure may occur satisfy the media-specific criteria for direct contact and outdoor air exposure and shall be considered low-threat if the maximum concentrations of petroleum constituents in soil are less than or equal to those listed in Table 1 for the specified depth bgs. Alternatively, the policy allows for a site specific risk assessment that demonstrates that maximum concentrations of petroleum constituents in soil will have no significant risk of adversely affecting human health, or controlling exposure through the use of mitigation measures, or institutional or engineering controls.

ACDEH's review of the case files indicates that insufficient data and analysis has been presented to assess compliance with Media Specific Direct Contact and Outdoor Air Criteria. Naphthalene concentrations in shallow soil, 0 to 5 feet and 5 to 10 feet below ground surface (bgs) intervals across the site are unknown as analysis for naphthalene has not been included in historic site investigations.

Please present a strategy in the Data Gap Work Plan described in Technical Comment 7 below to collect sufficient data to satisfy the LTCP Media Specific Criteria for Direct Contact and Outdoor Air Criteria.

6. **LTCP General Criteria e (Site Conceptual Model)** – According to the LTCP, the SCM is a fundamental element of a comprehensive site investigation. The SCM establishes the source and attributes of the unauthorized release, describes all affected media (including soil, groundwater, and soil vapor as appropriate), describes local geology, hydrogeology and other physical site characteristics that affect contaminant environmental transport and fate, and identifies all confirmed and potential contaminant receptors (including water supply wells, surface water bodies, structures

and their inhabitants). The SCM is relied upon by practitioners as a guide for investigative design and data collection. All relevant site characteristics identified by the SCM shall be assessed and supported by data so that the nature, extent and mobility of the release have been established to determine conformance with applicable criteria in this policy.

To facilitate review, ACDEH requests the SCM be presented in a tabular format that highlights the major SCM elements and associated data gaps, which need to be addressed to progress the site to case closure under the LTCP. Please see Attachment A, *Site Conceptual Model Requisite Elements in Tabular Format*.

As a part of the SCM, please perform a Sensitive Receptor Study to determine if sensitive receptors are present within a radius of 1,500 feet of the site. ACDEH acknowledges that the well survey performed in 2011 using the Department of Water Resources (DWR) well data base, but requests review of Alameda County Public Works Agency (ACPWA) well data base for a complete inventory of vicinity water supply wells. The ACPWA and DWR data bases provide considerably different results that warrant review of both data bases. ACDEH requests the identification and location on a site vicinity figure all active, inactive, decommissioned, and abandoned (improperly decommissioned or lost) wells including irrigation, water supply, industrial, dewatering, and cathodic protection wells within a 1,500-foot radius of the site. Please be aware that well locations are not confidential, however well construction details are and must not be included with the requested report. Additionally, please identify on the same figure beneficial resources and other sensitive receptors including, but not limited to, surface water bodies, schools, hospitals, day care centers, elder care facilities, etc. Please plot the numbered well locations on an aerial photography-based figure and provide a table listing the same numbered well locations and information similar to the example provided in Attachment B, *Sample Well Survey Figure and Table*. Please include the SCM with the Data Gap Work Plan described in Technical Comment 7 below to satisfy the LTCP General Criteria e Site Conceptual Model.

7. **Data Gap Investigation Work Plan and Site Conceptual Model** – Please prepare a Data Gap Work Plan and Site Conceptual Model to address the technical comments listed above. Please support the scope of work in the Data Gap Work Plan with a focused SCM and Data Quality Objectives (DQOs) that relate the data collection to each LTCP criteria. Please specify which scenario within each General and Media-Specific Criteria the sampling strategy is intended to apply to so that ACDEH can verify the appropriateness of the proposed sample locations.
8. **Groundwater Monitoring Analyses** - ACDEH's July 26, 2017 Directive Letter provided a submittal schedule for semiannual groundwater monitoring and sampling reports and the schedule is consolidated below in the Technical Report Request Section. Because one of the USTs was used to store diesel, ACDEH requests the following analyses for all groundwater samples collected from the six site monitoring wells (MW-1 through MW-6) and four extraction wells (EW-1, EW-2, EW-3, EW-4) for the 2nd Half 2017, 1st Half of 2018, and 2nd Half of 2018 semiannual groundwater monitoring and sampling events.

Please note going forward, any and all proposed changes to the groundwater monitoring and sampling program, including sampling periodicity and changes to groundwater sample analyses, must be approved in writing by ACDEH prior to implementation. Non-compliance with ACDEH Directive Letters jeopardizes Underground Storage Tank Cleanup Fund (USTCF) reimbursement.

Please submit the semiannual groundwater and sampling reports by the dates provided in the Technical Request Section below:

- Total Petroleum Hydrocarbons (TPH)-Gasoline and TPH-Diesel (TPH-D) by EPA Method 8015B;
 - Benzene, toluene, ethylbenzene, and xylenes (BTEX), naphthalene, 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) and fuel oxygenates by EPA Method 8260B.
- 9. Request for information** - The ACDEH case file for the subject site contains only the electronic files listed on our web site at <http://www.acgov.org/aceh/lop/ust.htm>. Please review it to ensure that all reports and other documents and communications have been provided to ACDEH. You are requested to submit electronic copies of missing boring logs for EW-3 and EW-4, and off-site soil borings SB-10 through SB-21 and their respective ACPWA permits for this property by the date specified in the Technical Report Request Section below. ACDEH requests e-mail notification of the documents uploaded to Geotracker by the date listed below.
- 10. Electronic Submittal of Information (ESI) Compliance** - Site data and documents are maintained in two separate electronic databases – ACDEH's ftp site and the SWRCB's GeoTracker database. Both databases act as repositories for regulatory directives and reports; however, only GeoTracker has the functionality to store electronic compliance data including analytical laboratory data for soil, vapor and water samples, monitoring well depth-to-water measurements, and surveyed location and elevation data for permanent sampling locations. Although the SWRCB is responsible for the overall operation and maintenance of the GeoTracker System, ACDEH, as lead regulatory agency, is responsible to ensure the GeoTracker database is complete and accurate for sites regulated under ACDEH's Environmental Cleanup Oversight Programs (SWRCB March 2011 document entitled *Electronic Reporting Roles and Responsibilities*).

A review of the case file and the State's GeoTracker database indicates that the site is not in compliance with California Code of Regulations, Title 23, Division 3, Chapter 16, Article 12, Sections 2729 and 2729.1, stating that beginning September 1, 2001, all analytical data, including monitoring well samples, submitted in a report to a regulatory agency as part of the UST or LUST program, must be transmitted electronically to the SWRCB GeoTracker system via the internet. In September 2004, the SWRCB adopted regulations that require electronic submittal of information for all groundwater cleanup programs, including the Site Cleanup Program (SCP) cases. Beginning July 1, 2005, electronic submittal of a complete copy of all reports for all sites was required in GeoTracker. At present missing data and documents include, but may not be limited to, EDF submittals, depth to groundwater data (GEO_WELL files), well data (GEO_XY, and GEO_Z files), work plans, and older reports (GEO_REPORT files).

Please upload requisite documents to GeoTracker. See Attachment 1 and the State's GeoTracker website for further details. ACDEH requests e-mail notification of, and a list of, the documents uploaded to Geotracker. Please upload all submittals to GeoTracker and to ACDEH's ftp website by the date specified below.

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Please be aware that failure to comply with Geotracker requirements jeopardizes reimbursement from the USTCF.

TECHNICAL REPORT REQUEST

ACDEH's July 26, 2017 Directive Letter provided a submittal schedule for semiannual groundwater monitoring and sampling reports and the schedule is consolidated below with the data gap work plan and SCM requested in this Directive Letter. Please upload technical reports to the ACDEH ftp site (Attention: Karel Detterman), and to the State Water Resources Control Board's Geotracker website, in accordance with the following specified file naming convention and schedule:

- **August 11, 2017:** Semiannual Groundwater Monitoring and Sampling Report, 1st Half 2017
File to be named: RO2931_GWM_R_YYYY-MM-DD
- **September 9, 2017:** Boring logs and ACPWA permits for EW-3, EW-4, off-site borings SB-10 through SB-21
File to be named: RO2931_MISC_R_YYYY-MM-DD
- **October 9, 2017:** Data Gap Investigation Work Plan and Site Conceptual Model
File to be named: RO2931_WP_SCM_R_YYYY-MM-DD
- **November 30, 2017:** Semiannual Groundwater Monitoring and Sampling Report, 2nd Half 2017
File to be named: RO2931_GWM_R_YYYY-MM-DD
- **May 31, 2018:** Semiannual Groundwater Monitoring and Sampling Report, 1st Half 2018
File to be named: RO2931_GWM_R_YYYY-MM-DD
- **November 30, 2018:** Semiannual Groundwater Monitoring and Sampling Report, 2nd Half 2018
File to be named: RO2931_GWM_R_YYYY-MM-DD

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.

Thank you for your cooperation. Should you have any questions or concerns regarding this correspondence or your case, please send me an e-mail message at: karel.detterman@acgov.org or call me at (510) 567-6708.

Sincerely,

Karel Detterman, PG
Hazardous Materials Specialist

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

Attachment A, Site Conceptual Model Requisite Elements in Tabular Format

Attachment B, Sample Well Survey Figure and Table

cc: Drew Van Allen, Environmental Compliance Group, LLC, 270 Vintage Drive, Turlock, CA 95382
(Sent via E-mail to: ecg.ust@gmail.com)

Dilan Roe, ACDEH, (Sent via E-mail to: dilan.roe@acgov.org)

Karel Detterman, ACDEH, (Sent via E-mail to: karel.detterman@acgov.org)

Paresh Khatri, ACDEH, (Sent via E-mail to: paresh.khatri@acgov.org)

GeoTracker, eFile

Attachment 1

Responsible Party(ies) Legal Requirements / Obligations

REPORT REQUESTS

These reports are being requested pursuant to California Health and Safety Code Section 25296.10. 23 CCR Sections 2652 through 2654, and 2721 through 2728 outline the responsibilities of a responsible party in response to an unauthorized release from a petroleum UST system, and require your compliance with this request.

ELECTRONIC SUBMITTAL OF REPORTS

Alameda County Department of Environmental Health's (ACDEH) Environmental Cleanup Oversight Programs, Local Oversight Program (LOP) and Site Cleanup Program (SCP) 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 File Transfer Protocol (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 SCP 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 (http://www.waterboards.ca.gov/water_issues/programs/ust/electronic_submittal/) for more information on these requirements.

ACKNOWLEDGEMENT STATEMENT

All work plans, technical reports, or technical documents submitted to ACDEH must be accompanied by a cover letter from the responsible party that states, at a minimum, the following: "I have read and acknowledge the content, recommendations and/or conclusions contained in the attached document or report submitted on my behalf to ACDEH's FTP server and the SWRCB's GeoTracker website." 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 6731, 6735, and 7835) 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 licensed 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 case meet this requirement. Additional information is available on the Board of Professional Engineers, Land Surveyors, and Geologists website at: <http://www.bpelsg.ca.gov/laws/index.shtml>.

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: December 1, 2016
	ISSUE DATE: July 5, 2005
	PREVIOUS REVISIONS: October 31, 2005; December 16, 2005; March 27, 2009; July 8, 2010, July 25, 2010; May 15, 2014, November 29, 2016
SECTION: Miscellaneous Administrative Topics & Procedures	SUBJECT: Electronic Report Upload (ftp) Instructions


The Alameda County Environmental Cleanup Oversight Programs (LOP 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 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) Open File Explorer using the Windows  key + E keyboard shortcut.
 - i) Note: Netscape, Safari, and Firefox browsers will not open the FTP site as they are NOT being supported at this time.
 - b) On the address bar, type in ftp://alcoftp1.acgov.org.
 - c) Enter your User Name and Password. (Note: Both are Case Sensitive)
 - d) Click Log On.
 - e) Open "My Computer" on your computer and navigate to the file(s) you wish to upload to the ftp site.
 - f) 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 A

Site Conceptual Model Requisite Elements

The site conceptual model (SCM) is an essential decision-making and communication tool for all interested parties during the site characterization, remediation planning and implementation, and closure process. A SCM is a set of working hypotheses pertaining to all aspects of the contaminant release, including site geology, hydrogeology, release history, residual and dissolved contamination, attenuation mechanisms, pathways to nearby receptors, and likely magnitude of potential impacts to receptors.

The SCM is initially used to characterize the site and identify data gaps. As the investigation proceeds and the data gaps are filled, the working hypotheses are modified, and the overall SCM is refined and strengthened until it is said to be "validated". At this point, the focus of the SCM shifts from site characterization towards remedial technology evaluation and selection, and later remedy optimization, and forms the foundation for developing the most cost-effective corrective action plan to protect existing and potential receptors.

For ease of review, Alameda County Environmental Health (ACEH) requests utilization of tabular formats to (1) highlight the major SCM elements and their associated data gaps which need to be addressed to progress the site to case closure (see Table 4-1 of attached example), and (2) highlight the identified data gaps and proposed investigation activities (see Table 5-1 of the attached example). ACEH requests that the tables presenting the SCM elements, data gaps, and proposed investigation activities be updated as appropriate at each stage of the project and submitted with work plans, feasibility studies, corrective action plans, and requests for closures to support proposed work, conclusions, and/or recommendations.

The SCM should incorporate, but is not limited to, the topics listed below. Please support the SCM with the use of large-scaled maps and graphics, tables, and conceptual diagrams to illustrate key points. Please include an extended site map(s) utilizing an aerial photographic base map with sufficient resolution to show the facility, delineation of streets and property boundaries within the adjacent neighborhood, downgradient irrigation wells, and proposed locations of transects, monitoring wells, and soil vapor probes.

- a. Regional and local (on-site and off-site) geology and hydrogeology. Include a discussion of the surface geology (e.g., soil types, soil parameters, outcrops, faulting), subsurface geology (e.g., stratigraphy, continuity, and connectivity), and hydrogeology (e.g., water-bearing zones, hydrologic parameters, impermeable strata). Please 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), cross sections, soil boring and monitoring well logs and locations, and copies of regional geologic maps.
- b. Analysis of the hydraulic flow system in the vicinity of the site. Include rose diagrams for depicting groundwater gradients. The rose diagram shall be plotted on groundwater elevation contour maps and updated in all future reports submitted for your site. Please address changes due to seasonal precipitation and groundwater pumping, and evaluate the potential interconnection between shallow and deep aquifers. Please include an analysis of vertical hydraulic gradients, and effects of pumping rates on hydraulic head from nearby water supply wells, if appropriate. Include hydraulic head in the different water bearing zones and hydrographs of all monitoring wells.
- c. Release history, including potential source(s) of releases, potential contaminants of concern (COC) associated with each potential release, confirmed source locations, confirmed release locations, and existing delineation of release areas. Address primary leak source(s) (e.g., a tank, sump, pipeline, etc.) and secondary sources (e.g., high-

Site Conceptual Model Requisite Elements (continued)

concentration contaminants in low-permeability lithologic soil units that sustain groundwater or vapor plumes). Include local and regional plan view maps that illustrate the location of sources (former facilities, piping, tanks, etc.).

- d. Plume (soil gas and groundwater) development and dynamics including aging of source(s), phase distribution (NAPL, dissolved, vapor, residual), diving plumes, attenuation mechanisms, migration routes, preferential pathways (geologic and anthropogenic), magnitude of chemicals of concern and spatial and temporal changes in concentrations, and contaminant fate and transport. Please refer to the *Preferential Pathway and Sensitive Preceptor Study* description on the next page. Please include three-dimensional plume maps for groundwater and two-dimensional soil vapor plume plan view maps to provide an accurate depiction of the contaminant distribution of each COC.
- e. Summary tables of chemical concentrations in different media (i.e., soil, groundwater, and soil vapor). Please include applicable environmental screening levels on all tables. Include graphs of contaminant concentrations versus time.
- f. Current and historic facility structures (e.g., buildings, drain systems, sewer systems, underground utilities, etc.) and physical features including topographical features (e.g., hills, gradients, surface vegetation, or pavement) and surface water features (e.g. routes of drainage ditches, links to water bodies). Please include current and historic site maps.
- g. Current and historic site operations/processes (e.g., parts cleaning, chemical storage areas, manufacturing, etc.).
- h. Other contaminant release sites in the vicinity of the site. Hydrogeologic and contaminant data from those sites may prove helpful in testing certain hypotheses for the SCM. Include a summary of work and technical findings from nearby release sites, including the two adjacent closed LUFT sites, (i.e., Montgomery Ward site and the Quest Laboratory site).
- i. Land uses and exposure scenarios on the facility and adjacent properties. Include beneficial resources (e.g., groundwater classification, wetlands, natural resources, etc.), resource use locations (e.g., water supply wells, surface water intakes), subpopulation types and locations (e.g., schools, hospitals, day care centers, etc.), exposure scenarios (e.g. residential, industrial, recreational, farming), and exposure pathways, and potential threat to sensitive receptors. Include an analysis of the contaminant volatilization from the subsurface to indoor/outdoor air exposure route (i.e., vapor pathway). Please include copies of Sanborn maps and aerial photographs, as appropriate. Please refer to the *Preferential Pathway and Sensitive Preceptor Study* description on the next page.
- j. Identification and listing of specific data gaps that require further investigation during subsequent phases of work. Proposed activities to investigate and fill data gaps identified.

Preferential Pathway and Sensitive Receptor Study

Please conduct a study as a part of the SCM requested in order to (1) locate potential anthropogenic migration pathways on and in the vicinity of the site that could spread contamination through vertical and lateral migration, and (2) identify exposure scenarios and sensitive receptors that are linked to site contamination through these preferential pathways. The results of your study shall contain all information required by California Code of Regulations, Title 23, Division 3, Chapter 16, §2654(b) including but not limited to the following components, as applicable to the site:

- a. **Utility Survey** - An evaluation of all existing subsurface utility lines, laterals, and trenches including sewers, electrical, fiber optic cable, cable, water, storm drains, trench backfill, etc. within and near the site and plume area(s). Please include an evaluation of shallow utilities associated with current and historical site operations/processes including UST systems, remediation systems, parts cleaning, sumps, etc.
- b. **Updated Well Survey** – ACEH requests that well data sources (Alameda County Public Works Agency [ACPWA] and Department of Water Resources [DWR]) be reviewed for more recently installed vicinity water supply wells. ACEH requests the identification of all active, inactive, standby, decommissioned (sealed with concrete), unrecorded, and abandoned (improperly decommissioned or lost) wells including monitoring, remediation, irrigation, water supply, industrial, livestock, dewatering, and cathodic protection wells within a ¼-mile radius of the subject site. Please inspect all available Well Completion Reports filed with the DWR and ACPWA in your survey, and perform a background study of the historical land uses of the site and properties in the vicinity of the site. Use the results of your background study to determine the existence of unrecorded/unknown (abandoned) wells, which can act as contaminant migration pathways at or from your site.
- c. **Land Uses and Exposure Scenarios on the Facility and Adjacent Properties** – The surrounding land use appears to be predominately agricultural; however, redevelopment of the site as a service station has been planned. Consequently, the identification of existing and future land use on and in the vicinity of the site is requested, including:
 - o Beneficial resources (e.g., groundwater classification, wetlands, surface water bodies, natural resources, etc.)
 - o Subpopulation types and locations (e.g., schools, hospitals, day care centers, elder care facilities, etc.)
 - o Exposure scenarios (e.g. residential, industrial, recreational, farming) and exposure pathways including those identified in the Low Threat Underground Storage Tank Case Closure Policy General Criteria h – Nuisance Conditions, and Media-Specific Criteria for Groundwater, Vapor Intrusion to Indoor Air, and Direct Contact and Outdoor Air Exposure
- d. **Planned Development** – Future development activities are planned in the vicinity of the site. Please include an analysis of new utility corridors, building foundations, wells, and/or development activities that could significantly alter contaminant migration (i.e., covering of large areas of the site with pavement, etc.).

Please synthesize this information and discuss your analysis and interpretation of the results of the preferential pathway and sensitive receptor study and incorporate into the requested SCM. Please provide the following supporting documentation and data as applicable:

- Copies of current and historical maps, such as site maps, Sanborn maps, aerial photographs, etc., used when conducting the background study.
- DWR well logs, marked as confidential, uploaded to Alameda County Environmental Health's ftp site. For confidentiality purposes do not upload the DWR well logs to Geotracker. The well logs will be placed in our confidential file and will be available only to internal staff for review.
- Table with details of the well search findings including Map ID corresponding to well location on map, State Well ID, Well Owner ID, approximate distance from the site, direction from the site, use, installation date, depth (feet below ground surface [bgs]), screened interval (feet bgs), sealed interval (feet bgs), diameter (inches), and well location address.
- Maps and geologic cross-sections illustrating historical groundwater elevations and flow directions (rose diagram) at the site. Synthesize the data requested above and include the location and depth of all utility lines, trenches, UST pits and piping trenches, wells, surface water bodies, foundational elements, surface covering types (pavement, landscaped, etc.) within and near the site and plume area(s), and the location of potential receptors.

**Table 4-1
Site Conceptual Model**

CSM Element	CSM Sub-Element	Description	Data Gap Item #	Resolution
Geology and Hydrogeology	Regional	<p>As described by URS (2004), the lithology encountered in the subsurface beneath the Site during drilling activities consisted predominantly of a brown to greenish-gray silty clay with sand and gravel. The primary stratigraphic units at the Site are listed below, with the approximate ranges of depth (bgs) each unit was encountered across the Site:</p> <ul style="list-style-type: none"> • 0 to 5 feet bgs: The surface soil typically consisted of very dark-brown clay to dark-gray gravel fill, depending on whether the boring was in the vacant vegetated parcel (dark-brown clay), at 3860 MLK Jr. Way; or beneath the asphalt and concrete surfaces at the Lucky's Auto Body parcel at 3884 MLK Jr. Way (gravel fill). • 5 to 20 feet bgs: very dark-brown silty clay grades to a greenish-gray silty clay and brown silty clay and gravelly clay. <p>Groundwater was encountered in direct-push boreholes at an average depth of 17.2 feet bgs, with depths ranging from 16.2 to 19.6 feet bgs. This groundwater depth is not considered a stabilized groundwater depth, because it was not measured from appropriately constructed monitoring wells.</p>	None	NA

**Table 4-1
Site Conceptual Model (Continued)**

CSM Element	CSM Sub-Element	Description	Data Gap Item #	Resolution
Geology and Hydrogeology	Site	<p>Regional groundwater in the Oakland area generally follows topography, from areas of higher elevation in the east toward lower elevation in the west and southwest. The groundwater flow direction in the vicinity of the Site is to the west towards San Francisco Bay (Arcadis, 2012).</p> <p>URS reviewed groundwater investigation reports from the ARCO #4931 station at 731 West MacArthur Boulevard, approximately 1,000 feet southwest of the Site (Arcadis, 2012). The depth to water in the groundwater monitoring wells at the ARCO site ranged from approximately 3.2 to 10.8 feet bgs (approximately 52.2 to 43 feet elevation).</p>	1. There are no monitoring wells on site so that the local groundwater flow direction and gradient is not known.	Five groundwater wells are to be installed at the site.
Surface Water Bodies		The closest surface water body is the San Francisco Bay, which is 1.5 miles west of the site.		
Nearby Wells		The State Water Resource Quality Control Board (RWQCB) Geotracker GAMA website provides the locations of water supply wells proximal to the site. The nearest supply well is located approximately 2 miles southwest of the site. There are multiple monitoring wells in the vicinity of the site including those at the Arco services station at 781 West MacArthur Blvd., and Dollar Cleaners, 4860 – 4868 Telegraph Avenue, Oakland.	2.	NA
Release Source and Volume		The three prior gasoline USTs (two 650-gallon and one 500-gallon) are considered the main source of the release of fuel hydrocarbons that have been detected in soil and groundwater beneath the Site. Tanks #1 and #2 were both observed to have one or more holes from corrosion at the time of removal. Although no holes were observed in Tank #3 during removal, the integrity of the tank was questionable as it split into two pieces along the weld during removal. Soil surrounding the tanks was stained green and was noted to have strong petroleum hydrocarbon odors. The release from the Tanks at the Site was discovered on January 5, 1995 during tank removal activities. The volume of the release is not known.	5. & 6. Additional soil and groundwater data is required in the source areas.	See data gaps table. Additional soil borings will be advanced in the source areas. Groundwater monitoring wells will be installed.

**Table 4-1
Site Conceptual Model (Continued)**

CSM Element	CSM Sub-Element	Description	Data Gap Item #	Resolution
		The area around the ramps and pit in the southern area of the site is considered a potential source area.		
LNAPL		There are currently no groundwater monitoring wells located at the Site. Although light non-aqueous phase liquids were not observed during grab groundwater sampling activities, concentrations of TPH-g in sample G2 (22,000 µg/L), located near former Tank #3, and sample GP3 (79,800 µg/L), located adjacent to former Tank #1 may indicate the potential for the presence of light non-aqueous phase liquid (LNAPL) to be present.	1. Need monitoring wells at the site.	Monitoring wells (5) to be installed.
Source Removal Activities		Soil that was excavated from the UST pits during tank removal activities was returned to the excavation after the collection of soil samples for chemical analysis. There is no information regarding the quality of the soil that was placed back in the UST excavations. As such, with the exception of the removal of the USTs themselves, there have been no other source removal activities conducted at the Site.	2., 5.,6. Soil contamination at depth (12-foot bgs and deeper) is not well characterized. Since the site is to be excavated to approximately 12 feet bgs for the construction of a parking garage, additional shallow soil sampling is not required.	Ten soil borings are proposed, as discussed in the data gaps table.
Contaminants of Concern		Based on the historical investigations conducted at the Site, BTEX, cis-1,2-dichloroethene (cis-1,2-DCE), 1,2-dichloroethane (1,2-DCA) and TPH-g are present in groundwater above their respective MCLs and/or ESLs. However, based on correspondence from the ACEHSD, the contaminants of concern (COCs) for the site are BTEX, and TPH-g. These COCs are present above the screening levels primarily in the northern corner of the Site, near the location of the former USTs. Benzene and TPH-g are also present in groundwater above their MCLs and ESLs in the southern portion of the Site in the vicinity of the truck ramp and pit adjacent to the	4.	

**Table 4-1
Site Conceptual Model (Continued)**

CSM Element	CSM Sub-Element	Description	Data Gap Item #	Resolution
		former shop building, and in the northwestern area of the Site.		
Petroleum Hydrocarbons in Soil		<p>Of the 58 samples analyzed from the two investigations, eight samples from seven borings exceeded their respective screening criteria. These samples were typically the deepest sample from the boring, ranging from 8.0 to 14.0 feet bgs. This is consistent with releases from a UST as opposed to a surface spill or release. Based on the historical investigation data, BTEX and TPH-g are the contaminants present in soil at concentrations exceeding their respective screening criteria. The contaminants are present mainly in soil at the location of former Tanks #1 through #3, and to a lesser extent, near the former fuel pump island in the northern corner of the Site.</p> <p>The lateral extent of contamination exceeding the screening criteria appears to be limited to the area around the former USTs. Soil concentration in all the samples from boring GP3 and S10, located in the sidewalk by Martin Luther King Jr. Way near former Tank #1 and Tank #2 are below their respective screening criteria. There is no additional data from around former Tank #3. Given the nature of the petroleum hydrocarbon (mainly light fraction gasoline), the vertical extent of contamination beneath and in close proximity to the former tanks is likely limited to the lowest level of groundwater fluctuation.</p>	4. & 7. Additional soil sampling is required to better define the vertical extent of contamination. Redevelopment will include excavation of the entire site to a depth of 12 feet bgs for the construction of an underground parking garage.	Additional soil borings to be advanced, as described in the data gaps table.
Petroleum Hydrocarbons in Groundwater		<p>During the two subsurface investigations conducted at the Site, a total of 15 grab groundwater samples were collected and analyzed for TPH-g and BTEX. The results of the analyses are summarized in Table 2-2. Concentration of TPH-g and/or BTEX exceeded their respective screening criteria in ten of the 15 samples analyzed. Similar to the soil sampling results, the highest concentrations were detected beneath or in close proximity to the former USTs. However, TPH-g and benzene were detected in one Site boring (G7) exceeding their respective screening criteria near the southern corner of the Site. There are no permanent monitoring wells located at the Site. As such, the groundwater flow direction across</p>	8. There are no monitoring wells on site.	Five monitoring wells will be installed, as described in the data gaps table and in the work plan.

**Table 4-1
Site Conceptual Model (Continued)**

CSM Element	CSM Sub-Element	Description	Data Gap Item #	Resolution
		<p>the Site cannot be evaluated. This has been defined as a significant data gap. The scope of work presented in this work plan includes the installation of four groundwater monitoring wells at the Site.</p>		
Risk Evaluation		<p>The Site is a former auto body and car wash facility. The Site is currently vacant, and with the exception of a billboard located in the northwest corner of the Site, has no structures and is covered with either asphalt or concrete foundations from former buildings located at the Site. The Site is zoned for residential and current plans are to redevelop the Site for residential use. However, there may be some commercial use on the ground level. This preliminary CSM assumes that development would consist of an underground parking garage; store fronts and residential units at ground level; and second story residential units.</p> <p>The CSM identifies the primary source; impacted media; release mechanism(s); secondary source(s); exposure route; potential receptors (residential, commercial/industrial worker, and construction worker), and an assessment of whether the exposure route/pathway is potentially complete, incomplete, or insignificant. Potential exposure routes that have been evaluated include incidental ingestion, dermal contact, dust inhalation, and vapor inhalation.</p> <p>For direct contact with contaminated soil, the exposure route for incidental ingestion, dermal contact, and dust inhalation for a residential and commercial/industrial worker are considered incomplete. These exposure routes for the construction worker are considered a potentially complete pathway, depending on the nature of the work. For volatilization from soil to outdoor air, vapor inhalation is the potential exposure pathway. Given dilution effects that take place outdoors, this exposure pathway is considered incomplete for all three potential receptors. For indoor air, this exposure pathway is considered potentially complete for all three potential receptors.</p>		

**Table 4-1
Site Conceptual Model (Continued)**

CSM Element	CSM Sub-Element	Description	Data Gap Item #	Resolution
		<p>For leaching of contaminants from soil to groundwater, the ingestion and dermal pathways for groundwater are considered incomplete, except for the construction worker, as shallow groundwater is not utilized as a drinking water source at the Site. For the construction worker, incidental ingestion and dermal contact is a potentially complete pathway. For volatilization from groundwater to outdoor air, the exposure pathway is considered insignificant due to dilution effects that take place outdoors. For indoor air, volatilization from groundwater to indoor air is considered a potentially complete pathway.</p>		

**Table 5-1
Data Gaps Summary and Proposed Investigation**

Item	Data Gap Item #	Proposed Investigation	Rationale	Analyses
1	<p>Groundwater flow direction and gradient is unknown.</p> <p>There are only grab groundwater data points; there are no monitoring wells on site.</p> <p>There are no upgradient groundwater sample locations.</p> <p>The current groundwater data sets are 7 and 9 years old and may not be representative of current site conditions.</p>	<p>Install five groundwater monitoring wells, as described in the work plan. Wells will be constructed of 2-inch-diameter Schedule 40 PVC well casing, total depth up to 25 feet bgs; the screened interval will be determined based on observations of groundwater levels during field work. The well screen will consist of 5 to 10 feet of 0.010-inch well screen.</p> <p>Soil samples will be collected at 12 feet, 15 feet, and 20 feet bgs. Additional samples may be collected based on professional judgment.</p>	<p>The wells will be located to provide up- and downgradient control for the shallow groundwater plume. They will enable water level data to be collected to allow the groundwater flow direction and gradient to be calculated.</p> <p>Wells will be installed as follows:</p> <p>At the source area associated with UST #3.</p> <p>Downgradient of the site to the northwest, near the billboard.</p> <p>At the source area associated with USTs 1 and 2.</p> <p>Upgradient of the site adjacent to the ramp and pit.</p> <p>Adjacent to prior soil boring S4 (prior BTEX detections).</p> <p>Soil samples will be collected during well installation to further characterize subsurface soil contamination.</p> <p>Northern (off-site, downgradient) grab groundwater samples (far side of MLK, sidewalk): three borings.</p>	<p>Soil: TPH-g, BTEX, EDB, EDC.</p> <p>Soil samples from MW-1 will also be analyzed for PAHs.</p> <p>Groundwater: Natural attenuation parameters [COD, Fe(2+), Dissolved Gases (methane)] at selected locations (2).</p> <p>BTEX, TPH-g</p>

**Table 5-1
Data Gaps Summary and Proposed Investigation (Continued)**

Item	Data Gap Item #	Proposed Investigation	Rationale	Analyses
2	<p>The soil data set does not adequately characterize the contamination (if any) that may remain on site after the excavation to approximately 11 to 12 feet bgs for the underground parking structure. The current soil data sets are 7 and 9 years old and may not be representative of current site conditions. Lithology below is not adequately characterized.</p>	<p>Ten soil borings will be drilled to a total depth of 20 feet bgs. Soil samples will be collected at 12 feet, 15 feet, and 20 feet bgs from soil borings SB-4 through SB-10. Soil samples will not be collected from soil borings SB-1, SB-2, and SB-3 which are located across MLK north of the site, as there is no reason to suspect an off-site soil contamination source in this area. Borings will be logged using the Unified Soil Classification System. Grab groundwater samples will be collected from the first encountered groundwater at each soil boring.</p>	<p>Soil samples will be collected starting at 12 feet bgs. Shallow soil on site is to be excavated for disposal during the construction of the underground parking garage. Excavation will be conducted to a depth of about 12 feet bgs. Soil borings will be located as shown in the work plan figure: Source area borings: At the former locations of USTs 1, 2 and 3. One boring north of the site on the side walk of MLK Way. One boring between USTs 1 and 2 and the pump island (potential leakage from conveyance piping). One boring at the approximate location of UST 3 (in addition to the soil samples to be collected from the monitoring well to be installed at this location). One boring in the vicinity of the ramps and pit in the southern portion of the site (in addition to soil samples to be collected from the monitoring well in this area). Step out borings: Step out boring SB-5 to be completed proximal to the UST #3 source area. GP4 Area: Benzene was previously detected at 25,000 µg/kg at location GP4 (Carver, 2006). Two step-out borings will be completed in this area to further characterize soils at depth.</p>	<p>TPH-g, BTEX, EDB, EDC.</p> <p>Boring SB-4 (on sidewalk of MLK near UST 1): PAHs</p>

**Table 5-1
Data Gaps Summary and Proposed Investigation (Continued)**

Item	Data Gap Item #	Proposed Investigation	Rationale	Analyses
3	There is no data on the presence and usage of wells in the vicinity of the site.	Obtain a well survey.	Identify irrigation and other wells in the site vicinity.	N/A
4	PAHs are potential COCs at the northern boundary of the site.	See soil borings – Item 2. PAHs will be analyzed at select locations as described in Item 2.	Item 2	Item 2
5	There is a potential source area in the vicinity of the ramps and pit.	A monitoring well will be installed in this area. It will also serve as the upgradient well for the site. See Item 2. A soil boring will also be completed in this area.	Item 2	Item 2
6	Determine size and contents of the three USTs that were removed from the site	Review prior reports.	Tanks #1 and #2 were identified as 650-gallon gasoline tanks. Tank #3 was a 500-gallon gasoline tank [Tank Removal Report – 1995]. Tanks #2 and #3 were observed to be badly deteriorated with holes due to corrosion.	NA
7	Confirm whether TPH-g and BTEX were detected during construction of the adjacent residential unit	Review prior reports.	The URS site investigation conducted in 2004 found no detections of TPH-g [$<1,000 \mu\text{g}/\text{kg}$] or BTEX [$<5.0 \mu\text{g}/\text{kg}$] in the borings completed to 14 feet bgs.	NA

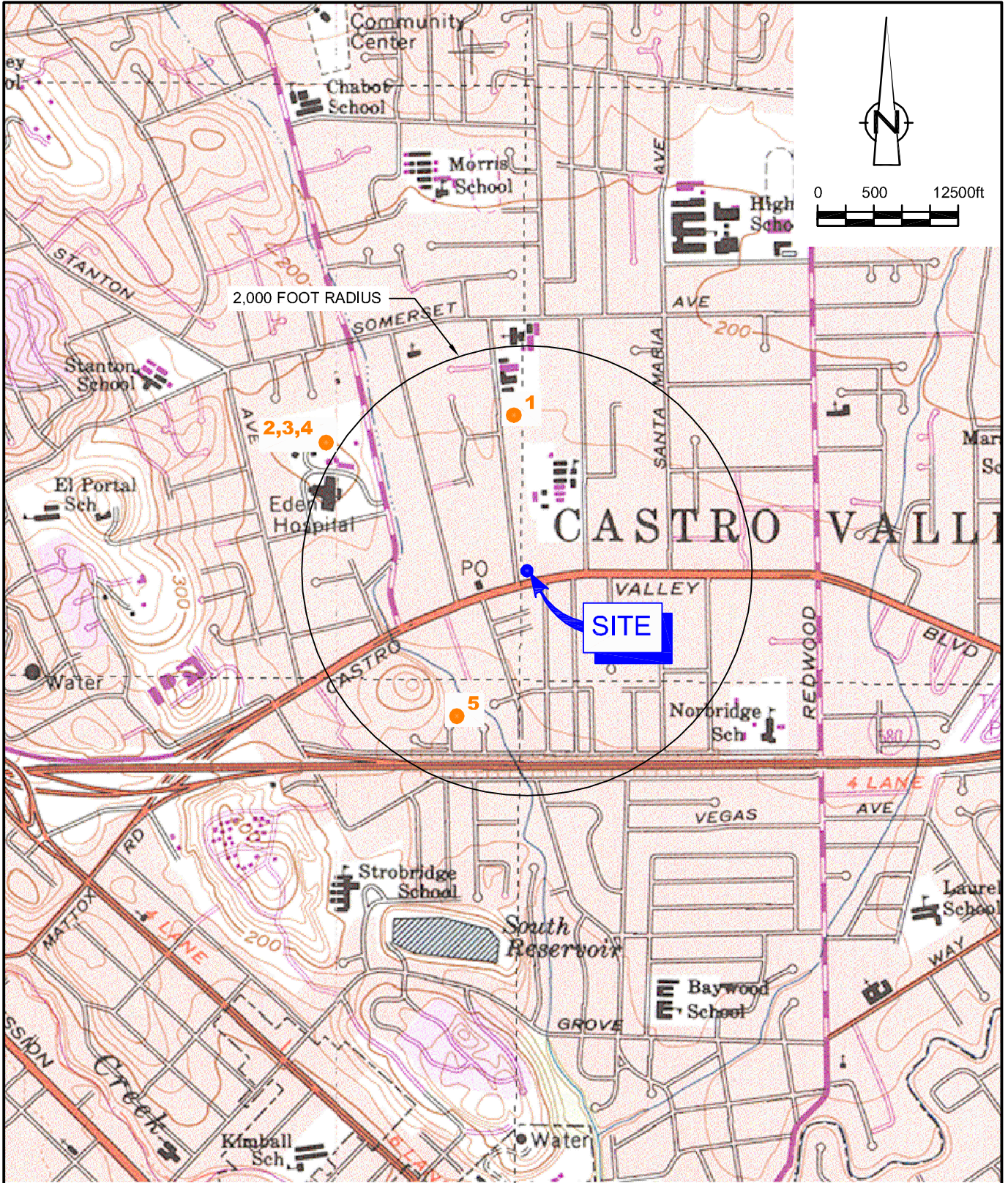
**Table 5-1
Data Gaps Summary and Proposed Investigation (Continued)**

Item	Data Gap Item #	Proposed Investigation	Rationale	Analyses
8	Review data from the nearby service stations (Arco)	Review prior reports.	The former Arco station (731 West MacArthur Blvd.) is about 0.5 miles crossgradient of the 3884 MLK site. The BTEX levels are lower than those at the subject site; the Arco site does not appear to be contributing to on site TPH or BTEX contamination. Groundwater elevation data from this site was used to calculate groundwater flow direction, since there are currently no wells at the 3884 MLK site.	NA

ATTACHMENT B

**WELL SURVEY RESULTS
 CHEVRON STATION 9-6991
 2920 CASTRO VALLEY BOULEVARD
 CASTRO VALLEY, CALIFORNIA**

<i>Well No./ Figure ID</i>	<i>Well Owner</i>	<i>Well Address Street</i>	<i>City</i>	<i>Total Well Depth (ft)</i>	<i>Date Installed</i>	<i>Distance/Direction from Site (ft) (approx)</i>	<i>Well Use</i>
1	Private	20036 Anita Avenue Lake Chabot Road	Castro Valley	51	2/19/1953	1,400 N	Domestic
2	Eden Township Hospital	1,000' south of Williams	Castro Valley	150	9/30/1953	2,000 NW	Test well
3	Eden Township Hospital	Eden Township Hospital	Castro Valley	250	9/9/1952	2,000 NW	Domestic
4	Eden Township Hospital	Eden Township Hospital	Castro Valley	60	7/11/1952	2,000 NW	Cooling system return
5	Sam Wallace	Tyee Court	Castro Valley	52	7/3/1953	1,400 S-SW	Domestic



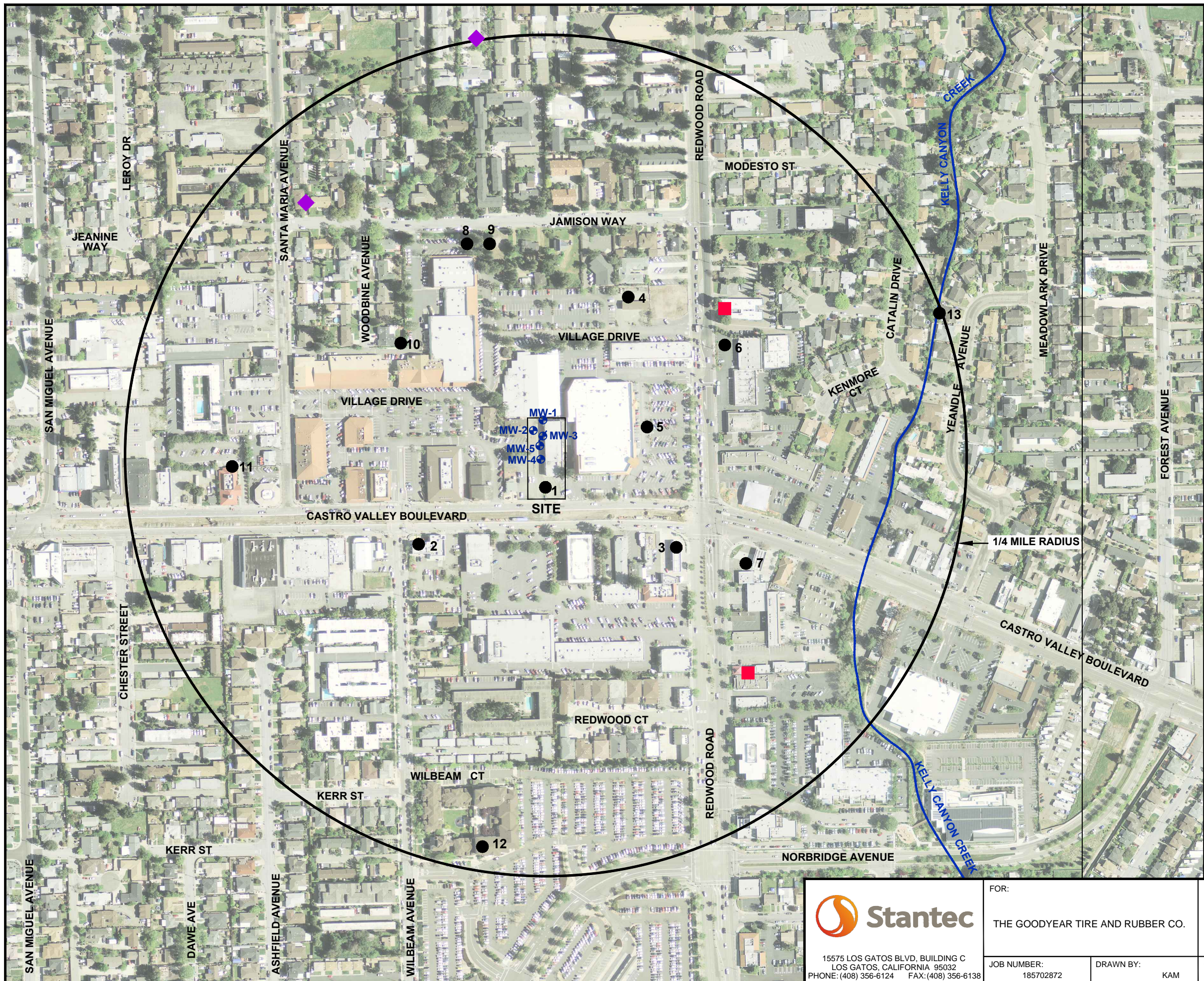
SOURCE: TOPO! MAPS.

LEGEND

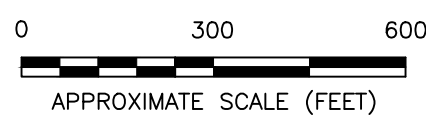
- APPROXIMATE WELL LOCATION




WELL SURVEY MAP
CHEVRON SERVICE STATION 9-6991
2920 CASTRO VALLEY BOULEVARD
Castro Valley, California



- LEGEND:**
- PROPERTIES WITH WELLS WITHIN 1/4-MILE OF SITE
 - MEDICAL OFFICES WITHIN 1/4-MILE OF SITE
 - ◆ SCHOOLS WITHIN 1/4-MILE OF SITE
 - ⊕ ACTIVE GROUNDWATER MONITORING WELL LOCATION
 - ⊕ DESTROYED GROUNDWATER MONITORING WELL LOCATION



 15575 LOS GATOS BLVD, BUILDING C LOS GATOS, CALIFORNIA 95032 PHONE: (408) 356-6124 FAX: (408) 356-6138	FOR:		WELL & SENSITIVE RECEPTOR SURVEY GOODYEAR DEX #9578 3430 CASTRO VALLEY BOULEVARD CASTRO VALLEY, CALIFORNIA		FIGURE:
	THE GOODYEAR TIRE AND RUBBER CO.				
JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:	
185702872	KAM	KM	GM	01/08/15	