# ALAMEDA COUNTY HEALTH CARE SERVICES AGENCY

DEPARTMENT OF ENVIRONMENTAL HEALTH LOCAL OVERSIGHT PROGRAM (LOP) For Hazardous Materials Releases 1131 HARBOR BAY PARKWAY, SUITE 250 ALAMEDA, CA 94502 (510) 567-6700 FAX (510) 337-9335

REBECCA GEBHART, Interim Director

November 30, 2017

Mr. Kevin Brown Urban Designs, LLC 1201 Pine Street, #151 Oakland, CA 94612

(Sent via electronic mail to: KB@hollidaydevelopment.com)

Subject: Conditional Approval of the Soil and Groundwater Management Plan for Site Cleanup Program

Case No. RO0003269 and GeoTracker Global ID T10000011072, 800 Cedar Street Property

located at 800 Pine Street (formerly Cedar Street), Oakland, CA 94601

Dear Mr. Brown:

I would like to take this opportunity to introduce myself, I am the case worker for the subject Site Cleanup Program (SCP) case. As you know, on October 6, 2017 Alameda County Department of Environmental Health (ACDEH) received a *Request for Preliminary Site Review for Voluntary Remedial Action Agreement* application from Urban Designs, LLC (Urban Design) for the subject site. During our preliminary review, ACDEH met with your development team on November 7, 2017 to discuss the proposed redevelopment project and historic environmental investigations conducted at and in the vicinity of the site under the California Department of Toxic Substances Control (DTSC) (Phoenix 800 Property, Envirostor ID 01330037) and ACDEH Fuel Leak Case No. RO0000417. On November 21, 2017 Urban Design entered into a *Voluntary Remedial Action Program Agreement* with ACDEH, with concurrence from the DTSC, to provide regulatory oversight for the proposed redevelopment project.

ACDEH understands Urban Design is working with the City of Oakland to fast track the entitlement and building permit approvals. ACDEH also understands that the site is currently vacant with a concrete surface covering the majority of the property. Redevelopment of the site is proposed to be completed in phases with the first phase consisting of construction of modular housing for permanent homeless supportive units, however, no conceptual site plans have been developed to date.

Due to the presence of soil and groundwater contamination at the site from past historic land use as a commercial iron foundry, corrective actions may be necessary to safely prepare the site for redevelopment. Potential corrective actions currently identified by Urban Design's environmental consultants include: (1) on-site consolidation of lead-contaminated soil; (2) capping lead impacted soil on-site beneath building foundations, hardscape and/or clean fill; (3) installation of vapor mitigation barriers beneath building foundations to mitigate risk to building occupants from vapor intrusion to indoor air; and (4) installation of trench plugs in utility trenches where required to mitigate vapor migration. ACDEH notes that additional corrective actions for soil and groundwater may be necessary and will depend on the site-specific development plans, residual soil and groundwater contamination, and human health risk analysis.

Mr. Brown RO0003269 November 30, 2017, Page 2

Subsequent to the November 7, 2017 meeting Urban Design submitted the following documents to ACDEH for review:

- Soil and Groundwater Management Plan, 800 Cedar Street, Oakland, 0772.R2 DRAFT1, (draft SGMP) electronically received on November 20, 2017, prepared by P&D Environmental, Inc. (P&D) with revised Figure 2 received electronically on November 24, 2017;
- Subsurface Investigation Potential Cross Contamination Letter, (Cross Contamination Letter) dated November 20, prepared by P&D; and
- Project Schedule entitled *The Phoenix ACDEH Environmental Approvals Schedule*, (Gantt Chart) received electronically on November 13, 2017, prepared by Holliday Development.

Based on our review of the above listed documents, ACDEH requests that you address the following comments and submit the requested deliverables to the State Water Resources Control Board's GeoTracker website and ACDEH ftp site (Attention: Drew York) in accordance with the compliance schedule provided below and the *Electronic Report Upload (ftp) Instructions* and *File Naming Conventions* which are included as Attachments 1 and 2 respectively. ACDEH requests email notification verifying the requested deliverables have been uploaded to the requisite databases (e-mail preferred to: andrew.york@acgov.org).

#### **COMMENTS & DELIVERABLES**

1. <u>SGMP</u> – Due to soil and groundwater contamination at the site, ACDEH requested preparation of the SGMP as a condition of approval of permit issuance by Alameda County Department of Public Works for geotechnical investigations at the site to support the proposed redevelopment. Based on our current understanding of the site, ACDEH generally concurs with the protocols for soil and groundwater management during ground disturbing activities presented in the draft SGMP. Therefore, ACDEH has no objections to Urban Design proceeding with the geotechnical work reviewed by P&D in the Cross Contamination Letter and described in Item 2 below. Although the SGMP establishes a decision-making structure to assist the construction team in the identification and management of contaminated media during site redevelopment activities, no other ground disturbing activities may be conducted at the site including but not limited to investigation, demolition, and grading activities until further authorized by ACDEH.

Please note in accordance with the SGMP, the property and improvement owner, Holliday Development, is responsible for overseeing implementation of the SGMP throughout site development related activities involving subsurface work. A copy of the SGMP must be present at the site at all times. Because the SGMP is based on the current understanding of subsurface conditions, if during site investigations, development of the site conceptual model (SCM) or ground disturbing activities, additional subsurface contamination is identified, an SGMP Addendum must be submitted to ACDEH for approval.

Please finalize the draft SGMP and upload the completed document to GeoTracker website and ACDEH ftp site, by **December 1, 2017** (File to be named RO0003269\_SMP\_R\_yyyy-mm-dd).

2. Proposed Geotechnical Investigation - Based on our review of the Cross Contamination Letter, ACDEH understands that the pending subsurface geotechnical investigation consists of cone penetrometer testing (CPTs) borings and will likely include as many as four CPTs borings to a depth of 50 feet below ground surface (bgs) and six CPTs to a depth of 30 feet bgs. In the Cross

Contamination Letter, P&D concludes that the proposed geotechnical investigation will not cause cross contamination at the site and that procedures will be implemented to seal the CPT borings and reduce the risk of the installation of preferential pathways. Therefore at this time, ACDEH has no objections to Urban Design proceeding with the geotechnical investigation provided Holliday Development & Rockridge Geotechnical, Inc. ensure that the geotechnical work is conducted in accordance with SGMP. Please provide a 72-hour advanced written notification to this office (e-mail preferred to: <a href="mailto:andrew.york@acgov.org">andrew.york@acgov.org</a>) prior to the start of field activities in accordance with the approved SGMP.

- 3. City of Oakland and ACDEH Meeting Request ACDEH understands the importance of the proposed redevelopment project as part of assisting the current homeless situation in Alameda County. As discussed in the November 7, 2017 meeting, due to the aggressive redevelopment schedule proposed for this site, ACDEH requests that you coordinate a meeting with Urban Design, the City of Oakland, and ACDEH to discuss time sensitive and schedule-critical submissions and reviews in order to expedite the permitting and approval process. Please propose a meeting date and time for early to mid-December 2017. Based on availability, alternative dates and times may be proposed by ACDEH staff.
- 4. Revision to Project Schedule It is important to communicate to the permitting agencies (ACDEH and the City of Oakland) the status of agency approvals including but not limited to: project entitlement, building department approvals, and site remediation in order to facilitate agency coordination during the approval process. As discussed in our November 7, 2017 meeting, a realistic time frame for ACDEH review is 60 days, however, ACDEH has communicated that faster response times will be conducted for this project.
  - <u>Gantt Chart Revision</u> In order for all parties to understand project timelines and goals, in addition to the development of a realistic timeframe for approvals/permitting, ACDEH requests revisions to the project Gantt Chart. ACDEH requests that you include additional action items and dates for the phased redevelopment of the site including but not limited to the City of Oakland phases of the entitlement process and building permit issuance as well as remedial investigation work plan(s), field investigations, remedial action plan reviews, fact sheet distribution and public notification, site grading, site demolition, construction activities, and occupancy. The schedule must include sufficient time for ACDEH to review documents and allow for revisions to address ACDEH comments.

Please submit the revised project schedule to ACDEH (via email to: <a href="mailto:andrew.york@acgov.org">andrew.york@acgov.org</a>) and the City of Oakland, prior to the interagency project meeting discussed above, to facilitate discussion during the meeting.

5. Site Conceptual Model and Data Gap Analysis Work Plan - As discussed on November 7, 2017, ACDEH requests submittal of a SCM and data gap analysis work plan to understand the extent of contamination at the site. Please submit the SCM in a tabular format that highlights the major SCM elements and associated data gaps. Please see Attachment 3, Site Conceptual Model Requisite Elements in Tabular form including Preferential Pathway and Sensitive Receptor Survey and Attachment 4 Sample Well Survey and Tables.

The SCM must include comprehensive figures and tables with the tabular SCM summarizing all historic soil, groundwater, and soil gas data. Do not append historic tables prepared by multiple consultants. Additionally, please note that when preparing summary tables of current and historical soil, groundwater, soil gas analytical results, report the actual detected limits for all Non-Detected (ND) results. Do not use "ND" on the tables. Comprehensive figures (plan and cross section views) must show lithology (including fill), groundwater depths, historic site infrastructure including but not limited to buildings, subsurface structures (i.e., sumps, vaults, former underground storage tanks; (USTs), historical UST system appurtenances, etc.), and details of proposed redevelopment plans. Please include an extended site map with bar scale using an aerial photographic base map illustrating both the site and the immediate vicinity to facilitate an understanding of the site and surrounding receptors.

In order to expedite ACDEH's review of the SCM, we request draft documents be submitted (via email to <a href="mailto:andrew.york@acgov.org">andrew.york@acgov.org</a>) for review two weeks prior to a meeting with ACDEH, Urban Design and your environmental consultants to discuss the elements of the SCM and data gap analysis and potential remedial actions. Please contact me to schedule a meeting time **two weeks in advance** and include the confirmed meeting date in the revised Gantt Chart.

- 6. Remedial Action Plan (RAP) A RAP will be required to be submitted for review and approval prior to commencement of site redevelopment activities. Due to Urban Designs proposed aggressive schedule, and the absence of site redevelopment plans and a comprehensive SCM and data gap analysis, Urban Design may choose to submit a RAP that includes a scope of work for additional remedial design field investigation, a tool kit of potential corrective actions for the site, and conceptual site development plans. As discussed above, potential corrective actions currently identified by Urban Design's environmental consultants include:
  - Consolidation of on-site lead-contaminated soil;
  - Capping lead impacted soil on-site beneath building foundations, hardscape and/or clean fill;
  - Installation of vapor mitigation barriers beneath building foundations to mitigate risk to building occupants from vapor intrusion to indoor air; and
  - Installation of trench plugs in utility trenches where required to mitigate vapor migration.

Please note that these proposed remedial actions/mitigation measures will require a Land Use Covenant and long term site management plan and annual reporting to ensure that the remedies remain protective of human health. ACDEH notes that additional corrective actions/mitigation measures may need to be included in the alternatives presented in the RAP and will depend on conceptual development plans, and the initial SCM and human health risk analysis.

This proposed path would allow a requisite 30-day public participation/response period for the RAP to commence concurrently with remedial investigation, and preparation of remedial design and site redevelopment plans. Under this option, a Remedial Action Implementation Plan (RAIP) will be required to be submitted presenting the results of the investigation, an updated SCM, details of the remedial actions/mitigation measures selected from the tool kit of alternatives presented in the RAP, and the approved Building Permit plan set incorporating the remedial actions/mitigation measures. Please note, that if additional remedial actions/mitigation measures are required that were not presented in the RAP, an additional 30-day public comment period will be required.

The date of submittal of the RAP, Fact Sheet for 30-day public comment period, and RAIP will be determined by ACDEH in a subsequent directive letter based on dates provided by Urban Designs revised Gantt Chart.

7. GeoTracker and Alameda County ftp Database Compliance – Currently, site data and documents are maintained in two separate electronic databases – ACDEH's File Transfer Protocol (FTP) site and the State Water Resources Control Board's (SWRCB) GeoTracker website. Both databases act as repositories for Portable Document Format (PDF) files of regulatory directives and reports, but only GeoTracker has the functionality to store electronic compliance data in Electronic Deliverable Format (EDF) 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.

A review of the SWRCB's GeoTracker database indicates that this site is not in compliance with the State's electronic submittal requirements. Additionally, submission of PDF copies of all reports including but not limited to phase 1 & 2s, site investigation reports, and investigation reports conducted under DTSC have not been uploaded to Alameda County's ftp. As a result, ACDEH requests Urban Design upload all historical environmental documents related to the subject site including but not limited the missing soil, groundwater, and vapor analytical data, documents and reports, maps, and boring logs to GeoTracker. See Attachment 1 regarding electronic submittal requests to GeoTracker and the ftp site. Additional information regarding SWRCB's GeoTracker website. Please upload complete PDF copies of all reports related to the subject site including DTSC site investigations to ACDEH ftp site. Notification of, and a list of, the documents uploaded to GeoTracker and the Alameda County ftp site can be emailed to my attention. File naming conventions for Alameda County's ftp site is included in Attachment 2. Please upload all submittals to GeoTracker and ACDEH's ftp by **December 15, 2017**.

Thank you for your cooperation. ACDEH looks forward to working with you and your redevelopment team to advance the case toward closure. If you have any questions, please call me at (510) 639-1276 or send me an email message at <a href="mailto:andrew.york@acgov.org">andrew.york@acgov.org</a>.

Sincerely,

Drew J. York

Senior Hazardous Materials Specialist

Dilan Roe, PE, C73703

Chief - Land Water Division

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Encl.: Attachment 1 – Responsible Party (ies) Legal Requirement/Obligations

Electronic Report Upload (ftp) Instructions

Attachment 2 – Electronic File Naming Conventions

Attachment 3 – Site Conceptual Model Requisite Elements

Attachment 4 - Sample Well Survey and Table

cc: David Schenker, Holliday Development (Sent via E-mail to: <a href="mailto:david@hollidaydevelopment.com">david@hollidaydevelopment.com</a>)

Paul H. King, P&D Environmental, Inc. (Sent via E-mail to: pdking0000@aol.com)

Tom Graf, Graf Con (Sent via E-mail to: tom@grafcon.com)

Sabrina Landreth, City of Oakland (Sent via E-mail to: slandreth@oaklandnet.com)

Claudia Cappio, City of Oakland (Sent via E-mail to: ccappio@oaklandnet.com)

Dilan Roe, ACDEH, Chief Land, and Water Division (Sent via E-mail to: dilan.roe@acgov.org)

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

Drew York, ACDEH (Sent via E-mail to: andrew.york@acgov.org)

Electronic File, GeoTracker



#### 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. (<a href="https://www.waterboards.ca.gov/water\_issues/programs/ust/electronic\_submittal/">https://www.waterboards.ca.gov/water\_issues/programs/ust/electronic\_submittal/</a>)

#### **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.
- <u>Do not</u> 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.
   <u>Documents with password protection will not be accepted.</u>
- 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 <a href="mailto:loptoxic@acgov.org">.loptoxic@acgov.org</a>
  - 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.



	REVISION DATE: June 15, 2011
Alameda County Environmental Cleanup Oversight Programs (LOP and SLIC)	PREVIOUS REVISIONS:  March 26, 2009  April 29, 2008  January 17, 2008  December 28, 2006
	ISSUE DATE: June 16, 2006
<b>SECTION:</b> Miscellaneous Administrative Topics & Procedures	SUBJECT: File Names for Electronic Reports

Format: REPORT\_NAME\_R\_YYYY-MM-DD Ex: SWI\_R\_VOL1\_2006-05-25

LOP and SLIC INCOMING REPORTS AND LETTERS				
Document Name	Abbreviation File Name= Abbreviation + Date (yyyy-mm-dd)			
Abandoned Well Information	ABWELLINF_R			
Addendum	ADEND_R (added after report name)			
Additional Information Report	ADD_R			
Analytical Reports (Loose data sheets not in report)	ANALYT_R			
Case File Scanned By OFD	CASE_FILE			
Cleanup and Abatement Report	CAO_R			
Conduit Study/Well Search/Sensitive Receptor	COND_WELL_R			
Corrective Action Plan (CAP)	CAP_R			
Correspondence	CORRES			
Court Injunctions	INJ_L			
DWR Confidential Well Logs (Report containing)	report name_R_CONFIDENTIAL_YYYY-MM-DD (Ex: SWI_R_CONFIDENTIAL_YYYY-MM-DD)			
DWR Well Completion Report-Confidential (Loose well logs)	DWR_WELL_CONFIDENTIAL_YYYY-MM-DD (Date of Well Log)			
ESI/DAR	ESI_R			
Excavation Report	EX_R			
Extension Request Letter	EXT_RQ_L			
Feasibility Study	FEASSTUD_R			
Groundwater Monitoring Report	GWM_R			
Interim Remedial Action Plan	IRAP_R			
Interim Remediation Results (Also includes Pilot Test Reports, Vapor Mitigation Reports, Soil Management Reports, Free Product Removal Reports, & Dual-Phase Extraction Reports)	IR_R			

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Lawsuit	LAWSUIT_R
Migration Control Report	MIG_R
Miscellaneous Report	MISC_R
Miscellaneous Sample Report (analytical results)	MISC_SAMP_R
Notification Letter	NOT_L
NPDES Miscellaneous Reports	NPDES_R
Pay for Performance	PFP_R
Petition	PETITION_R
Phase 1 Environmental Assessment Report	PHASE1_R
Preliminary Site Assessment Report/Phase 2	PSA_R
Remedial Action Plan	RAP_R
Remedial Design & Implementation Plan	RDIP_R
Remediation Progress Report	REM_R
Request for Closure	RFC(_L or _R)
Risk Assessment Report	RISK_R
Risk Based Corrective Action	RBCA_R
SB2004 LOC	LOC_L
Site Conceptual Model	SCM_R
Site Health & Safety Plan	SFTY_PLAN_R
Site Management	SITE_MANAGE_R_
Site Summary Report	SITE_SUM_R
Soil and Water Investigation Report (Include soil gas/vapor reports, cross section, indoor, additional site investigation, well installation)	SWI_R
Soil Disposal Report	SOIL_DSPL_R
Source Area Characterization	SOURCAREA_R
State Information	STATE_INFO (no date)
Status Report	STAT_R
Tank/Tank System Removal Report	TNK_R
Tentative Order Report	TENT_R
Unauthorized Release Form	URF_R
UST Sampling Report	UST_SAMP_R
USTCF 5 Year Review	USTCF_5YR
Well Construction Report (limited to water supply wells)	WELL_CST_R
Well Decommissioning Report (well destruction/abandonment)	WELL_DCM_R
Work Plan	WP_R
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## **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:
  - 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.)
  - 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 <u>do not upload the DWR well logs to Geotracker</u>. 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 Element	Description	Data Gap Item #	Resolution
Geology and Hydrogeology Regional	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:  • 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.  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.	None	NA

Table 4-1
Site Conceptual Model (Continued)

CSM Element	CSM Sub- Element	Description	Data Gap Item #	Resolution
Geology and Hydrogeology	Site	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).  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).	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 $\mu$ g/L), located near former Tank #3, and sample GP3 (79,800 $\mu$ g/L), located adjacent to former Tank #1 may indicate the potential for the presence of light non-aqueous phase liquid (LNAPL) to be present.	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		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.  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.	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		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	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)

		one conceptual model (continued)	1	
CSM Element	CSM Sub- Element	Description	Data Gap Item #	Resolution
		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.		
Risk Evaluation		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.  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.  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.		

Table 4-1
Site Conceptual Model (Continued)

CSM Element	CSM Sub- Element	Description	Data Gap Item #	Resolution
		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.		



Table 5-1
Data Gaps Summary and Proposed Investigation

Item	Data Gap Item #	Proposed Investigation	Rationale	Analyses
1	Groundwater flow direction and gradient is unknown.  There are only grab groundwater data points; there are no monitoring wells on site.  There are no upgradient groundwater sample locations.  The current groundwater data sets are 7 and 9 years old and may not be representative of current site conditions.	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.  Soil samples will be collected at 12 feet, 15 feet, and 20 feet bgs. Additional samples may be collected based on professional judgment.	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.  Wells will be installed as follows:  At the source area associated with UST #3.  Downgradient of the site to the northwest, near the billboard.  At the source area associated with USTs 1 and 2.  Upgradient of the site adjacent to the ramp and pit.  Adjacent to prior soil boring S4 (prior BTEX detections).  Soil samples will be collected during well installation to further characterize subsurface soil contamination.  Northern (off-site, downgradient) grab groundwater samples (far side of MLK, sidewalk): three borings.	Soil: TPH-g, BTEX, EDB, EDC.  Soil samples from MW-1 will also be analyzed for PAHs.  Groundwater: Natural attenuation parameters [COD, Fe(2+), Dissolved Gases (methane)] at selected locations (2).  BTEX, TPH-g

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

Item	Data Gap Item #	Proposed Investigation	Rationale	Analyses
2	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.	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.	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.	TPH-g, BTEX, EDB, EDC.  Boring SB-4 (on sidewalk of MLK near UST 1): PAHs

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 µg/kg] or BTEX [<5.0 µg/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



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

Well No./	Well Owner	Well Address		Total Well	Date	Distance/Direction from	ı Well Use
Figure ID		Street	City	Depth (ft) Installed Site (ft) (approx)	Site (ft) (approx)		
1	Private	20036 Anita Avenue Lake Chabot Road	Castro Valley	51	2/19/1953	1,400 N	Domestic
	Eden Township	1,000' south of					
2	Hospital	Williams	Castro Valley	150	9/30/ <i>9</i> 53	2,000 NW	Test well
	Eden Township	Eden Township					
3	Hospital	Hospital	Castro Valley	250	9/9/1952	2,000 NW	Domestic
	Eden Township	Eden Township					
4	Hospital	Hospital	Castro Valley	60	7/1 7/1957	2,000 NW	Cooling system return
5	Sam Wallace	Tyee Court	Castro Valley		7/3/1953	1,400 S-SW	Domestic



