SILVANI, SILVANI & SILVANI
5825 OLD SCHOOL ROAD
PLEASANTON, CA 94588

RECEIVED
By Alameda County Environmental Health at 3:17 pm, Jun 12, 2014

May 19, 2014

Karel Detterman, P.G.
Alameda Country Health Agency
Division of Environmental Protection
1131 Harbor Bay Parkway, 2nd Floor
Alameda, CA 94502

SUBJECT: PERJURY STATEMENT

FORMER CALIFORNIA GLASS COMPANY
155 98TH AVENUE
OAKLAND, CA 94603
FLC # RO0003126

Dear Ms. Detterman:

The information and/or recommendations contained in the attached document or report are true and correct to the best of my knowledge, information and belief after due and reasonable inquiry. I declare under penalty of perjury that the foregoing is true and correct.

Thank you for your cooperation and assistance on this project. If you have any questions, feel free to contact me at 510-701-4446.

Sincerely,

Marc Silvani
Responsible Party

TEC Environmental
a division of **Technology, Engineering, & Construction, Inc.**
262 Michelle Court • So. San Francisco, CA 94080-6201 • www.tecenvironmental.com
Tel: (650) 616-1200 • Fax: (650) 616-1244 • Contractor's Lic. #762034

June 11, 2014

Ms. Karel Detterman, P.G.
Alameda County Health Agency
Division of Environmental Protection
1131 Harbor Bay Parkway, 2nd Floor
Alameda, CA 94502

SUBJECT: DATA GAP INVESTIGATION WORKPLAN

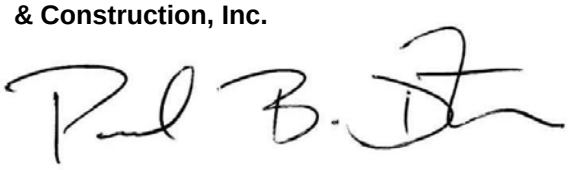
SITE: FORMER CALIFORNIA GLASS COMPANY
155 98th AVENUE
OAKLAND, CALIFORNIA 94603
FLC # RO0003126

Dear Ms. Detterman:

On behalf of Silvani, Silvani & Silvani (property owners), Technology, Engineering & Construction, Inc. has prepared this *Data Gap Investigation Workplan* for the above-referenced site.

Thank you for your cooperation and assistance on this project. If you have any questions or concerns, please contact the undersigned at (650) 222-0890.

Sincerely,
Technology, Engineering & Construction, Inc.



Paul B. Dotson, PG
Project Manager

cc: Mr. Marc Silvani, 625 Swainland Road, Oakland, CA 94611-1185

DATA GAP INVESTIGATION WORK PLAN

FORMER CALIFORNIA GLASS COMPANY
155 98TH AVENUE
OAKLAND, CALIFORNIA 94603

FLC #: RO0003126

PREPARED FOR:

SILVANI, SILVANI & SILVANI
AND
ALAMEDA COUNTY HEALTH AGENCY

PREPARED BY:

TECHNOLOGY, ENGINEERING & CONSTRUCTION, INC.

WORK PLAN DATE:

JUNE 11, 2014

TEC ENVIRONMENTAL

TABLE OF CONTENTS

1.0 INTRODUCTION

On behalf of Silvani, Silvani & Silvani (property owner) Technology, Engineering & Construction, Inc. (TEC) has prepared this Data Gap Investigation Workplan for the former California Glass Company located at 155 98th Avenue, Oakland, California. The site is the location of an apparent subsurface release of petroleum hydrocarbons related to former gasoline underground storage tanks (USTs); tanks were removed from different locations of the site in 1994 and 2009. This workplan has been completed in accordance with the Alameda County Environmental Health (ACEH) directive letter dated April 11, 2014.

This document has been prepared to collect data to fill data gaps that prevent the site from meeting the State Water Resources Control Board's Low Threat Underground Storage Tank Case Closure Policy. Data gaps were identified by evaluating the current Site Conceptual Model (SCM, Attachment A). A summary of the identified data gaps is included in Attachment B. A vicinity map and site map are provided as Figures 1 and 2, respectively.

2.0 SITE DESCRIPTION

The site is located on 98th Avenue near the intersection with Kitty Lane in Oakland, California. The site is occupied by a large building with paved surfaces around the perimeter. Two generations of USTs have been used at the site, one located near the southwest corner of the bulding (southern tank pit, removed in 1994) and another near the middle of the western side of the building (northern tank pit, removed in 2009). TEC does not have information about the USTs removed in 1994 other than the tank closure case number (RO869) and a Remedial Action Completion Certification was issued 1996. The USTs removed in 2009 were an 8,000-gallon gasoline storage tank and a 12,000-gallon diesel storage tank. Based on historical aerial photographs, the dispersner for the USTs removed in 2009 were located on top of the tank pit. Site features, including former tank locations, are shown on Figure 2.

The surrounding topography is flat and the site is approximately 12 feet above mean sea level. The site is situated in a mixed commercial/industrial area and is currently used as a warehouse and distribution center.

Groundwater was encountered at approximately 9.5 ft below surface grade (ft bsg) during the March 2009 tank removal. Based on a Geotracker review, groundwater occurs at similar depths at other sites near the property.

3.0 ENVIRONMENTAL BACKGROUND

A historical timeline of relevant activities at the subject site and a summary of chemicals of concern (COCs) are presented below.

3.1 Site Timeline

1994 USTs located in the southern tank pit removed (ACEH case number RO869).

1996 Remedial Action Completion Certification issued for RO869.

March 2009 One 8,000-gallon gasoline UST and one 1,2,000-gallon diesel UST removed from the site. Soil samples collected from the tank pit sidewalls did not contain petroleum hydrocarbons above laboratory reporting limits. A grab groundwater sample collected from the tank pit contained fuel-related compounds above current Environmental Screening Limits (ESLs). The excavated soil (pea gravel) from the tank removal project was reinstalled in the excavation pit, compacted, and leveled. In addition, approximately 289 cubic yards of imported fill was used to fill the excavation and was compacted to grade minus 8 inches to allow room for paving.

3.2 Chemicals of Concern

Chemicals of concern (COCs) for the site include petroleum hydrocarbons as gasoline (TPHg) and as diesel (TPHd), benzene, toluene, ethylbenzene, and xylenes (BTEX compounds), and naphthalene.

Historical soil and groundwater analytical data are summarized in Table 1.

4.0 SCOPE OF WORK

In order to meet requirements of the LTCP, TEC proposes to complete the Data Gap Items described in Attachment B. Procedures for completing these tasks are described below.

4.1 PROCEDURES

TEC will advance six soil borings (B-1 through B-6) for collection of grab groundwater and soil samples. In addition, a permanent soil vapor monitoring point will be installed between the tank pit located near the middle of the building on the south side of the property and the building to evaluate possible soil vapor intrusion. Proposed boring locations are shown on Figure 2.

4.1.1 Pre-Field Activities

TEC will complete the following tasks prior to field mobilization:

- As required by the Occupational Health and Safety Administration (OSHA), and by the California OSHA, TEC will prepare a site-specific Health and Safety Plan prior to the commencement of fieldwork. The plan will be reviewed and signed by field staff and contractors before beginning field operations, and will be in the possession of TEC personnel while conducting activities at the site.

- TEC will obtain a drilling permit from the Alameda County Public Works Agency (ACPWA) prior to commencing fieldwork.

- More than 48 hours prior to the initiation of fieldwork, TEC personnel will mark the soil boring locations with white paint and contacted Underground Service Alert of Northern California (USA). Additionally, a private subsurface utility locator will complete a survey of the proposed soil boring locations to identify any subsurface utilities and obstructions.

4.1.2 Soil Boring and Sampling

Prior to drilling, all borings will be cleared to 5 ft bsg using a hand auger. After clearing, each boring will be advanced to a total depth of at least 15 ft bsg using a direct push technology (DPT) drill rig equipped with Macrocore (or similar) rods lined with acetate sleeves. Soil cores will be collected from each boring in the acetate sleeves. The lithology of each boring will be viewed continuously and logged in accordance with the Unified Soil Classification System. Soil samples will be collected from shallow soil (1 to 5 ft bsg) and deep soil (5 to 10 ft bsg) by cutting an approximately 6-inch length of the acetate sleeve, capping each end, properly labeling the sample and placing it in an ice chest with ice. Splits of each soil sample will be screened for volatile organic compounds (VOCs) by sealing the soil within a plastic bag, placing the bag in a warm location allowing volatiles to accumulate in the bag headspace, and screening the headspace for VOCs using a calibrated PID. Soil samples from each boring will selected for submittal for laboratory analysis based on PID results and field observations. Observations (unusual odor or staining), sample IDs and PID readings will be recorded on the boring logs.

After reaching total boring depth, the drill rods will be extracted approximately 5 feet to allow groundwater to enter the boring and a temporary ¾-inch diameter PVC casing will be installed for grab groundwater collection. Depth to water will be measured in each casing using a properly decontaminated electric oil/water interface probe to determine if free-product is present following groundwater equilibration. Grab groundwater samples will be collected from the temporary PVC casing using a properly decontamined steel bailer or new, disposable plastic bailers and transferred to laboratory prepared and supplied sample containers, which will be stored in an insulated container with ice pending shipment to a California State-certified laboratory for analysis.

All grab groundwater and selected soil samples will be submitted for laboratory analysis under chain-of-custody documentation and analyzed for TPHd by EPA Method 8015M and TPHg, BTEX compounds, and fuel oxygenates, including di-isopropyl ether (DIPE), ethyl tert-butyl ether (ETBE), methyl-tert butyl ether (MTBE), tertiary-amyl methyl ether (TAME), and tert-butyl alcohol (TBA), and naphthalene by EPA Method 8260B.

All non-disposable sampling materials, including drill rods, steel bailers and the oil/water interface probe, will be cleaned using either a steam cleaner or a phosphate-free detergent and triple rinsed with potable water. Dedicated disposable sampling materials, including acetate liners and temporary casings, will be used for each boring. Borings will be backfilled following sample collection in accordance with California and County of Alameda regulations.

4.2 Soil Vapor Sampling

Should soil sample results indicate the soil vapor to indoor air may be a risk near the northern tank pit, soil vapor sampling will be completed by installing a permanent soil vapor sampling probe (SVP-1) at the location shown on Figure 2. A pilot boring will be advanced to approximately 5 ft bsg for installation of the sample probe. Because soil vapor recovery rates are dependent upon soil type and the composition of shallow soil at the site is not known, the construction of the soil vapor point will be determined following soil boring activities. The soil vapor sampling point will be constructed in accordance with the Department of Toxic Substances Control's Final Vapor Intrusion Guidance dated October 2011.

In necessary, a contingency soil vapor sampling point will be installed between the southern tank pit and the building.

4.3 Electronic Laboratory Data Submittal

All report documents and data, including boring logs, an updated site map, well data, and laboratory analytical reports, will be submitted in electronic format to GeoTracker, the California online geospatial database. This workplan will be converted to PDF format and submitted as a GEO_REPORT file. In addition, this workplan will be uploaded to the ACEH ftp site using the required naming convention.

5.0 LIMITATIONS

Our services consist of professional opinions, conclusions, and recommendations made today in accordance with generally accepted engineering principles and practices. This warranty is in lieu of all other warranties either expressed or implied. Technology, Engineering & Construction Inc.'s liability is limited to the dollar amount of the work performed.

Thank you for your cooperation and assistance with this project. If you have any questions or concerns, please contact the undersigned at (650) 222-0890.

Sincerely,
Technology, Engineering
& Construction, Inc.

Reviewed by:

Paul B. Dotson, PG # 8237
Professional Geologist

TABLES

Table 1
Summary of Soil and Groundwater Analytical Results
California Glass Company
155 98th Avenue
Oakland, California

Sample ID	Sample Matrix	Date Sampled	Sample Depth (ft bsg)	TPHd	TPHg	Benzene	Toluene	Ethylbenzene	Xylene	MTBE	DIPE	ETBE	TAME	TBA
				(mg/kg)		(mg/kg)								
			[1]*ESL:*	*110*	*770*	*0.044*	*29*	*33*	*23*	*0.023*	*NA*	*NA*	*NA*	*0.075*
			[2]*ESL:*	*110*	*1,000*	*1.2*	*93*	*4.7*	*11*	*84*	*NA*	*NA*	*NA*	*110*
Stock Pile (Comp 1- 4)	Soil	3/11/2009	N/A	35	0.45[x]	<0.01	<0.01	<0.01	<0.015	<0.01	<0.01	<0.01	<0.01	<0.05
NW	Soil	3/11/2009	10	3.36[y]	1.9[y]	<0.01	<0.01	0.03	0.14	<0.01	<0.01	<0.01	<0.01	<0.05
NE	Soil	3/11/2009	10	<2	<0.1	<0.01	<0.01	<0.01	<0.015	<0.01	<0.01	<0.01	<0.01	<0.05
SW	Soil	3/11/2009	10	<2	<0.1	<0.01	<0.01	<0.01	<0.015	<0.01	<0.01	<0.01	<0.01	<0.05
SE	Soil	3/11/2009	10	5.32	<0.1	<0.01	<0.01	<0.01	<0.015	<0.01	<0.01	<0.01	<0.01	<0.05

Sample ID	Sample Matrix	Date Sampled	Sample Depth (ft bsg)	TPHd	TPHg	Benzene	Toluene	Ethylbenzene	Xylene	MTBE	DIPE	ETBE	TAME	TBA
				(µg/L)		(µg/L)								
			[3]*ESL:*	*NA*	*NA*	*27*	*95,000*	*310*	*3,700*	*9,900*	*NA*	*NA*	*NA*	*NA*
			[4]*ESL:*	*100*	*100*	*1*	*40*	*30*	*20*	5	*NA*	*NA*	*NA*	*12*
			[5]*ESL:*	*640*	*500*	*27*	*130*	*43*	*100*	*1,800*	*NA*	*NA*	*NA*	*18,000*
Pit Water	Groundwater	3/11/2009	9	**8,790[z]**	**25,000**	**1,050**	**4,300**	**889**	**5,020**	<22	<22	<22	<22	<440

Abbreviations:
TPHd = total petroleum hydrocarbons quantified as diesel
TPHg = total petroleum hydrocarbon quantified as gasoline
Pb = lead
MTBE = methyl tert-butyl ether
DIPE = diisopropyl ether
ETBE = ethyl tert-butyl ether
TAME = tert-amyl methyl ether
TBA = tert-butyl alcohol
mg/kg = milligrams per kilogram
µg/L = micrograms per liter
NA = not appliable; an ESL has not been established
ft bsg = feet below surface grade

Notes:
TPHd analyzed by EPA Method 8015B, Pb analyzed by EPA Method 6010B; all other compounds analyzed by EPA Method 8260B
Stock Pile (Comp 1 - 4) = soil stockpile sample, collected from four locations and composited into a single sample for analysis
Soil samples collected from each corner of the open UST excavation pit (sample ID corresponds to pit location)
x = Not typical gasoline, reported value due to heavy amount of hydrocarbons (C5 - C12 range) quantified as gasoline
y = Although gasoline constituents present, result does not resemble typical gasoline. Reported value includes significant portion of heavy hydrocarbon (C5 - C12 range) quantified as gasoline
z = Not typical diesel, hydrocarbons within diesel range (possibly aged diesel) quantitiated as diesel
< = Concentration less than laboratory reporting limits

ESL : Environmental Screening Level established by California Water Quality Control Board, San Francisco Bay Region: *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater* ; revised December 2013
[1] = Environmental Screening Level for deep soil (>3 meters bgs), commercial/industrial area, groundwater is a current or potential drinking water resource, Table C-2
[2] = Environmental Screening Level for deep soil (>3 meters bgs), commercial/industral area, groundwater is not a current or potential drinking water resource, Table D-2
[3] = Environmental Screening Level for groundwater, evaluation of potential vapor intrusions, Table E-1
[4] = Environmental Screening Level for groundwater, groundwater is a current or potential drinking water resource, Table F-1a
[5] = Environmental Screening Level for groundwater, groundwater is not a current or potential drinking water resource, Table F-1b

FIGURES

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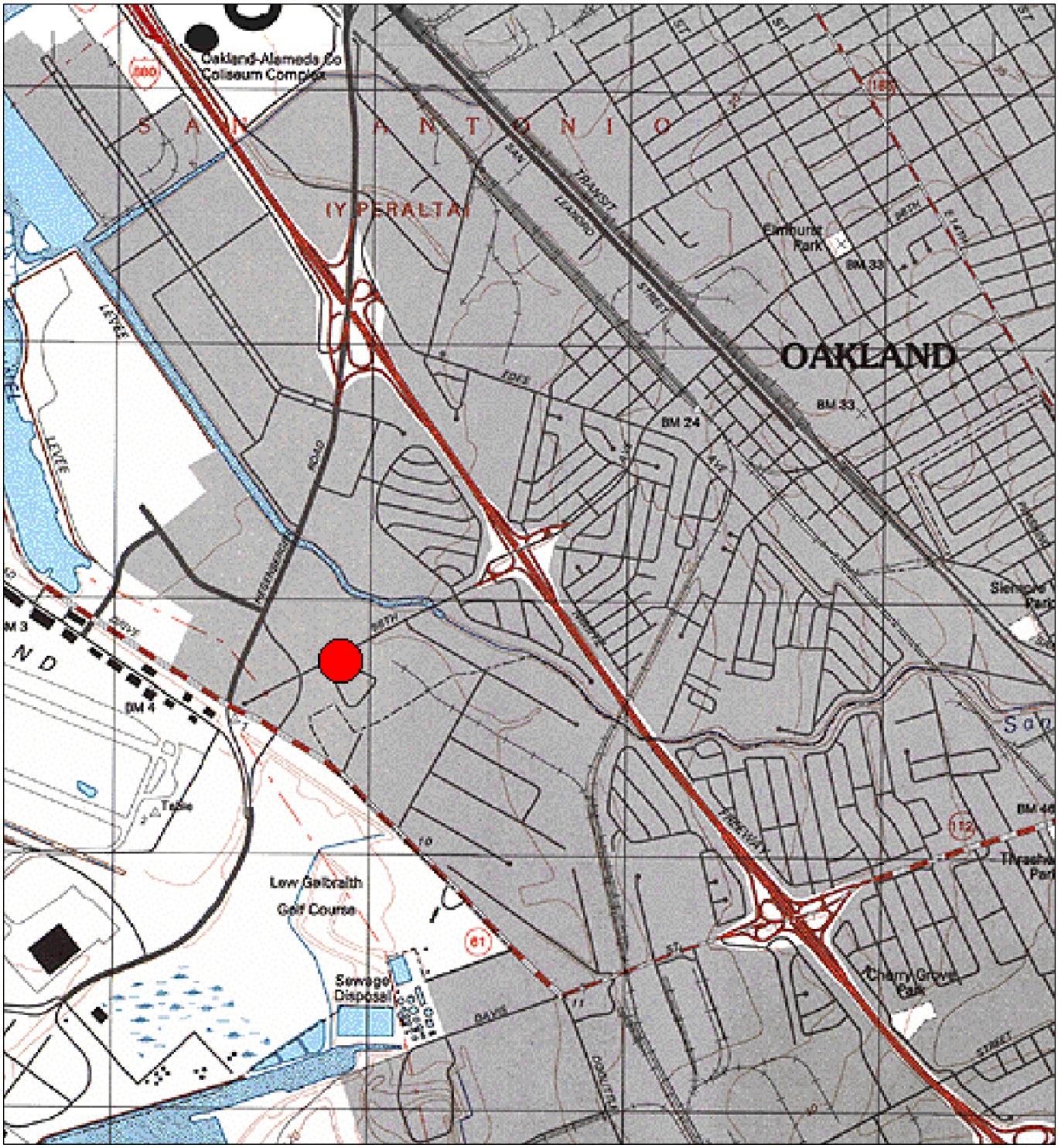
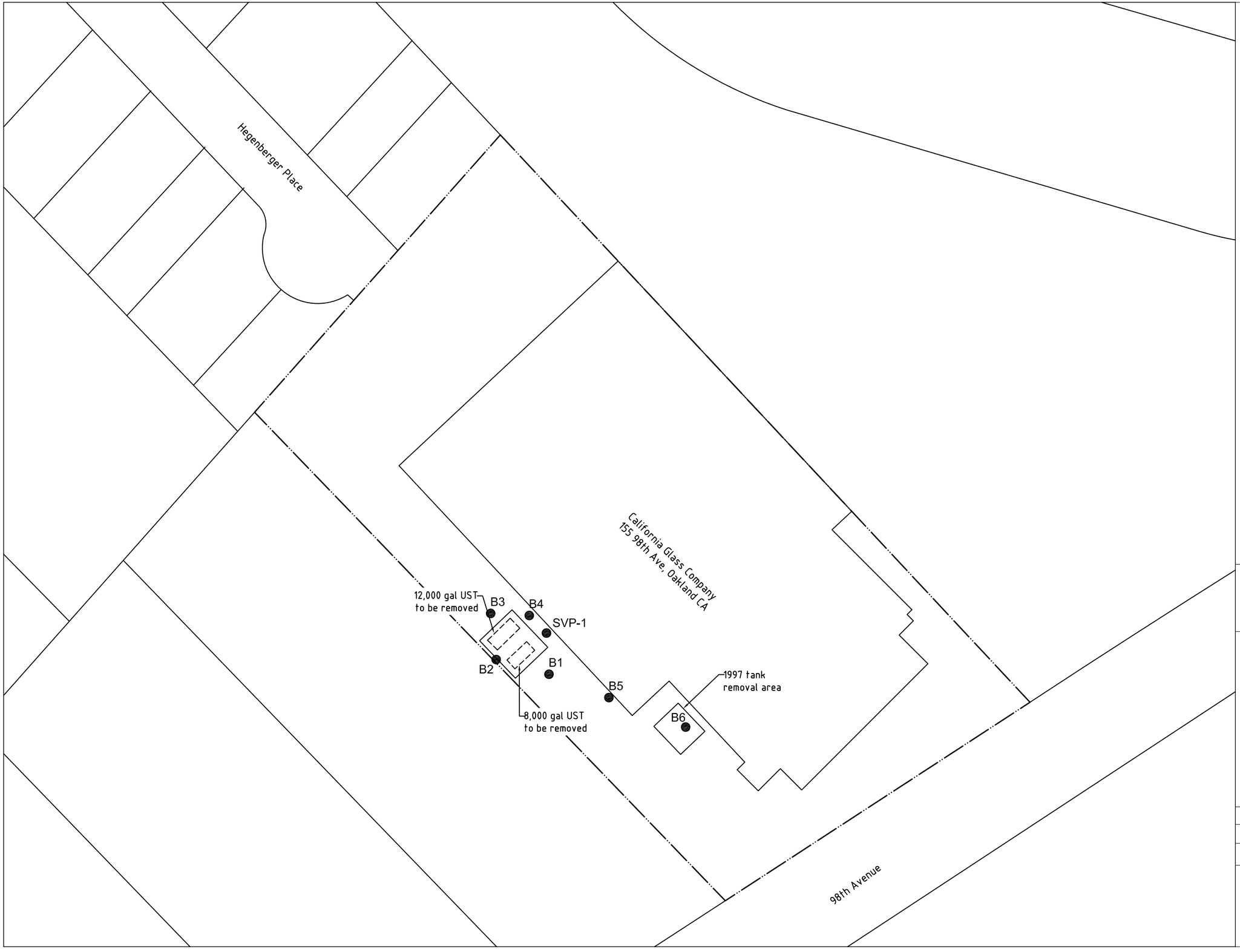


0 1/2 1Mile

0 1,000m

N	● Site Location	**California Glass Company** 155 98th Avenue Oakland, California	**FIGURE** **1**	**TITLE** **Vicinity Map**
	Map By: TOPO!			
	Date: 01/05/2009			
	Drafted By: LC	TEC ACCUTITE 262 Michelle Court So. San Francisco, CA 94080 Main: (650) 616-1200 Fax: (650) 616-1244		



Former California Glass Company
155 98th Avenue
Oakland, California

FIGURE
2

Site Map

Revision:	
Date:	5/15/2014
Drafted By:	RD

TEC ACCUTITE
262 Michelle Court
So. San Francisco, CA 94080
Main: (650) 616-1200
Fax: (650) 616-1244

ATTACHMENT A

SITE CONCEPTUAL MODEL

Attachment A
Site Conceptual Model

CSM Element	CSM Sub-Element	Description	Data Gap Item #	Resolution
Geology and Hydrogeology	Regional	**Geology**: According to the East Bay Plain Groundwater Basin Beneficial Use Evaluation Report, the Site is located within the Oakland Sub-Area of the East Bay Plain of the San Francisco Basin. The Oakland Sub- Area contains a sequence of alluvial fans. The alluvial fill thickness ranges from 300 to 700 feet deep. Quaternary age bay mud composed of unconsolidated plastic clay and silty clay rich in organic material with some lenses of silt and sand overlay the alluvial fans. **Hydrogeology**: Throughout most of the Alameda County portion of the East Bay Plain, from Hayward north to Albany, water level contours show that the general direction of ground-water flow is from east to west or from the Hayward Fault to the San Francisco Bay. Ground-water flow direction generally correlates to topography. Flow direction and velocity are also influenced by buried stream channels that typically are oriented in an east to west direction. In the southern end of the study area however, near the San Lorenzo Sub-Area, the direction of flow may not be this simple. According to information presented in East Bay Plain Groundwater Basin Beneficial Use Evaluation Report, the small set of water level measurements available seemed to show that the ground water in the upper aquifers may be flowing south, with the deeper aquifers, the Alameda Formation, moving north.	None	NA
Geology and Hydrogeology	Site	**Geology**: Explored sites nearby show primarily imported fill (sand with some minor clay and shells included). **Hydrogeology**: Groundwater is at 9 -10 feet below surface grade and with elevations near mean sea level.	None	NA

Attachment A
Site Conceptual Model

CSM Element	CSM Sub-Element	Description	Data Gap Item #	Resolution
Surface Water Bodies		San Leandro Creek is within 250 feet to the north. San Francisco Bay lies to the west of the site about 11,000 feet away. Inlets from the Bay are within 3,300 feet to the northwest and 5,500 feet to the south.		NA
Nearby Wells		Results of the soil and groundwater investigation will be evaluated to determine if a sensitive receptor survey is required.	None	NA
Release Source and Volume		There is no known release from the tanks removed in March 2009. They were subject to current leak detection standards and no leaks were reported. The tanks were intact when removed. Historical photographic data shows that the pumps for these tanks were located above the tanks. Therefore, investigation of potential leaks from this possible source will be covered by tank investigation activities. There may have been a release from the former tanks removed from the site in 1994 or from tanks at other sites in the area, most of which were not remediated or investigated beyond tank removal. As described below, methyl-tertiary butyl ether (MTBE) was not detected above laboratory reporting limits in the grab groundwater sample collected following tank removal in 2009. Although the installation date and use history of the tanks, the construction (double-walled fiberglass) of the tanks removed in 2009 indicates they were in use during the period MTBE was commonly used as a fuel additive. Therefore, the lack of detectable MTBE in the groundwater suggests these tanks are not the source of petroleum hydrocarbons detected in the 2009 tank removal groundwater sample.	#2	To identify a possible release on this site seven soil borings will be made: one on each side of the tank pit, one between the tank pit and the building (for soil vapor sampling), one in the pit of the former tanks on site, and one between the two tank pits. Step out borings will be added if indicated by the results of these initial borings.
LNAPL		LNAPL has not been observed at the site. However, the only sub surface area that has been explored is the tank pit of the tanks	#1	See *Petroleum Hydrocarbons in*

Attachment A
Site Conceptual Model

CSM Element	CSM Sub-Element	Description	Data Gap Item #	Resolution
		removed in 2009.		*Groundwater* below.
Source Removal Activities		The tanks were removed in March 2009. The tanks were double wall fiberglass and had no visible holes or damage.	#1 & 3	Source removal will be addressed if indicated by the results of the boring investigations.
Contaminants of Concern		COCs for the site include petroleum hydrocarbons as gasoline (TPHg), diesel (THPd), benzene, ethylbenzene, and MTBE. Samples were not analyzed for naphthalene and it has not been eliminated as a COC.	#1, 2, 3, 4	See items below.
Petroleum Hydrocarbons in Soil		Four soil samples were collected from the tank pit during tank removal. The samples were collected from the four corners of the pit at a depth of 10 fbg. All of the samples were non detect except for the following: southeast corner (SE) TPHd 5.32 mg/kg; northwest corner (NE) 3.36 mg/kg TPHd, 1.9 mg/kg TPHg, 30 mg/kg ethylbenzene, 140 mg/kg xylene. The samples were not analyzed for naphthalene.	#1 & 3	Two soil samples will be collected from each of the borings described above.
Petroleum Hydrocarbons in Groundwater		One sample was collected from groundwater in the pit during tank removal. The laboratory analysis showed: 8,790 µg/L TPHd, 25,000 µg/L TPHg, 1,050 µg/L benzene, 4,300 µg/L toluene, 889 µg/L ethylbenzene, and 5,020 µg/L xylene. MTBE was below detection limits.	#3 & 4	A grab groundwater sample will be collected at each of the seven borings described above as well as any step out borings.
Petroleum Hydrocarbons		Soil vapor samples have not been collected at the site.	#5 & 6	Should soil sample results indicate that

Attachment A
Site Conceptual Model

CSM Element	CSM Sub-Element	Description	Data Gap Item #	Resolution
in Soil Vapor				soil vapor intrusion may be a risk, one permanent vapor monitoring point will be installed between the tank pit and the building. Additional points will be added if indicated by the results of the sol borings. These points will be sampled multiple times to assess for seasonal variations.
Risk Evaluation		Once the necessary data has been collected, it can be evaluated based on the LTCP criteria.	#2	Risk will be assessed if the site does not meet LTCP criteria.

ATTACHMENT B

DATA GAP IDENTIFICATION SUMMARY AND PROPOSED INVESTIGATION

Attachment B
Data Gap Identification Summary and Proposed Investigation

Item	Data Gap Item #	Proposed Investigation	Rationale	Analyses
1	LTCP General Criteria d (Free Product)	The seven point sampling plan will check for the presence of free product.	The borings are planned for the most likely places to encounter free product if it originates from an onsite source.	Free product will be detected by a field instrument during data and sample collection from each boring.
2	LTCP General Criteria e (Site Conceptual Model)	The seven point sampling plan will develop the data necessary to address the data gaps and thus further develop the SCM.	More data is needed for a comprehensive SCM. Presently, only the data from tank removal activities are available.	See other individual data gap items.
3	LTCP General Criteria f (Secondary Source Has Been Removed to the Extent Possible)	The seven point boring plan will develop the data necessary to determine if a secondary source exists.	More data is needed for a comprehensive SCM. Presently, only the data from tank removal activities are available	Soil samples from each boring will be analyzed for TPHg/d, BTEX, fuel oxygenates and naphthalene.

Attachment B
Data Gaps Summary and Proposed Investigation (Continued)

Item	Data Gap Item #	Proposed Investigation	Rationale	Analyses
4	LTCP Media Specific Criteria for Groundwater	A groundwater sample will be collected from each of the seven borings.	The borings are planned for the most likely places to encounter contaminates that originate from an onsite source.	Groundwater will be analyzed for TPHg/d, BTEX, fuel oxygenates and naphthalene.
5	LTCP Media Specific Criteria for Vapor Intrusion to Indoor Air	Permanent vapor intrusion points will be installed based on results of the boring investigation.	At least one vapor sampling point will be installed between the tank pit and the building. A seasonal sampling plan will be developed to account for associated variability.	Soil vapor samples will be analyzed for TPHg/d, BTEX, fuel oxygenates, and naphthalene.
6	LTCP Media Specific Criteria for Direct Contact and Outdoor Air Criteria	Seven point boring plan will identify contaminates in soil and groundwater.	The borings are planned for the most likely places to encounter contaminates that originate from an onsite source.	See items 4 and 5.