

State Water Resources Control Board

UST CASE CLOSURE REVIEW SUMMARY REPORT

Agency Information

Agency Name: San Mateo County LOP	Address: 2000 Alameda De Las Pulgas, San Mateo, CA 94403
Agency Caseworker: Marc Mullaney	Case No: 110035

Case Information

USTCF Claim No.: 3222	Global ID: T0608100055
Site Name: L C Smith Trust	Site Address: 1620 South Delaware Street San Mateo, CA 94402
Responsible Party: L.C. Smith Trust B Attn: Jeff Atkinson, L.C. Smith Properties	Address: 1620 South Delaware Street, San Mateo, CA 94402
USTCF Expenditures to Date: \$538,263	Number of Years Case Open: 28

URL: http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0608100055

Summary

The Low-Threat Underground Storage Tank (UST) Case Closure Policy (Policy) contains general and media-specific criteria, and cases that meet those criteria are appropriate for closure pursuant to the Policy. This case meets all of the required criteria of the Policy. A summary evaluation of compliance with the Policy is shown in **Attachment 1: Compliance with State Water Board Policies and State Law**. The Conceptual Site Model upon which the evaluation of the case has been made is described in **Attachment 2: Summary of Basic Case Information (Conceptual Site Model)**. Highlights of the case review follow:

The case is a former commercial petroleum fueling facility and former auto repair facility. A self-serve car wash business has operated at the Site since 1999. An unauthorized release was reported in January 1985. The USTs (four gasoline, one waste oil) were removed in 1986. A soil vapor and groundwater extraction and treatment system was operated at the Site from October 2000 to October 2001. From September 2003 to September 2004 a dual-phase extraction system was operated at the Site. Since 1989, eight groundwater monitoring wells have been installed and regularly monitored. Six of the eight wells remain. According to groundwater data, water quality objectives have been achieved for all constituents except for benzene, methyl tert-butyl ether (MTBE), and 1,2-dichloroethane (1,2-DCA).

The petroleum release is limited to the shallow groundwater and soil. According to data available in GeoTracker, there are no supply wells regulated by California Department of Public Health within 1,000 feet of the defined plume boundary. No other water supply wells have been identified within 1,000 feet of the defined plume boundary in files reviewed. A drainage ditch, located adjacent to the northwestern side of the property, flows towards the San Francisco Bay. No domestic wells have been identified. Water is provided to water users near the Site by the California Water Service - San Mateo. The affected groundwater is not currently being used as a source of drinking water, and it is highly unlikely that the affected groundwater will be used as a

source of drinking water in the foreseeable future. Other designated beneficial uses of impacted groundwater are not threatened, and it is highly unlikely that they will be, considering these factors in the context of the site setting. Remaining petroleum hydrocarbon constituents are limited and stable, and concentrations are decreasing. Corrective actions have been implemented and additional corrective actions are not necessary. Any remaining petroleum hydrocarbon constituents do not pose a significant risk to human health, safety or the environment.

Rationale for Closure under the Policy

- General Criteria – The case meets all eight Policy general criteria.
- Groundwater Specific Criteria – The case meets Policy Criterion 1 by Class 5. The regulatory agency determines, based on an analysis of site specific conditions, which under current and reasonably anticipated near-term future scenarios, the contaminant plume poses a low threat to human health and safety and to the environment and water quality objectives will be achieved within a reasonable time frame. The case would have met the criteria for a Class 2 except an unlined drainage ditch is located along the northwest (crossgradient) property line. The contaminant plume that exceeds water quality objectives is less than 250 feet in length. There is no free product. The nearest water supply well is greater than 1,000 feet from the defined plume boundary. The dissolved concentration of benzene is less than 3,000 micrograms per liter ($\mu\text{g/L}$), and the dissolved concentration of MTBE is less than 1,000 $\mu\text{g/L}$. An unlined drainage ditch is located along the northwest (crossgradient) edge of the property.
- Vapor Intrusion to Indoor Air – This case meets Policy Criterion 2b. A professional assessment of site-specific risk from exposure through the vapor intrusion pathway to indoor air shows that maximum concentrations of petroleum constituents in soil will have no significant risk of adversely affecting human health. A Tier 2 Risk-Based Corrective Action was prepared by Brunsing Associates in 2006. Brunsing Associates Inc. noted that the only potentially significantly exposed population at the Site are car wash workers. These workers spend most of their time outdoors and there are no full time employees at the Site. The only enclosed structure at the Site is the storage room, therefore indoor air inhalation is not a complete pathway. The County has expressed concerns with the accuracy of the data used in the Risk-Based Corrective Action and has requested that the responsible party correct errors in the report. Never the less, the Fund agrees with the observation that there are no indoor air receptors at the Site.
- Direct Contact and Outdoor Air Exposure – This case meets Policy Criterion 3b. A site-specific risk assessment of potential exposure to residual soil contamination (Brunsing Associates, 2006 and 2008) found that maximum concentrations of petroleum constituents remaining in soil will have no significant risk of adversely affecting human health.

Objections to Closure and Responses

In an email dated April 26, 2013, the County case worker, Marc Mullaney, P.G., communicated that he did not believe that further characterization of groundwater was needed at the Site.

Determination

Based on the review performed in accordance with Health & Safety Code Section 25299.39.2 subdivision (a), the Fund Manager has determined that closure of the case is appropriate.

Recommendation for Closure

Based on available information, residual petroleum hydrocarbons at the Site do not pose a significant risk to human health, safety, or the environment, and the case meets the requirements of the Policy. Accordingly, the Fund Manager recommends that the case be closed. The State Water Board is conducting public notification as required by the Policy. San Mateo County has the regulatory responsibility to supervise the abandonment of monitoring wells.



Lisa Babcock, P.G. 3939, C.E.G. 1235



Date

Prepared by: Walter Bahm, P.E.

ATTACHMENT 1: COMPLIANCE WITH STATE WATER BOARD POLICIES AND STATE LAW

The case complies with the State Water Resources Control Board policies and state law. Section 25296.10 of the Health and Safety Code requires that sites be cleaned up to protect human health, safety, and the environment. Based on available information, any residual petroleum constituents at the site do not pose significant risk to human health, safety, or the environment.

The case complies with the requirements of the Low-Threat Underground Storage Tank (UST) Case Closure Policy as described below.¹

<p>Is corrective action consistent with Chapter 6.7 of the Health and Safety Code and implementing regulations? The corrective action provisions contained in Chapter 6.7 of the Health and Safety Code and the implementing regulations govern the entire corrective action process at leaking UST sites. If it is determined, at any stage in the corrective action process, that UST site closure is appropriate, further compliance with corrective action requirements is not necessary. Corrective action at this site has been consistent with Chapter 6.7 of the Health and Safety Code and implementing regulations and, since this case meets applicable case-closure requirements, further corrective action is not necessary, unless the activity is necessary for case closure.</p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>Have waste discharge requirements or any other orders issued pursuant to Division 7 of the Water Code been issued at this case?</p>	<p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>
<p>If so, was the corrective action performed consistent with any order?</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA</p>
<p><u>General Criteria</u> General criteria that must be satisfied by all candidate sites:</p> <p>Is the unauthorized release located within the service area of a public water system?</p> <p>Does the unauthorized release consist only of petroleum?</p> <p>Has the unauthorized (“primary”) release from the UST system been stopped?</p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>

¹ Refer to the Low-Threat Underground Storage Tank Case Closure Policy for closure criteria for low-threat petroleum UST sites.

http://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/2012/rs2012_0016atta.pdf

<p>Has free product been removed to the maximum extent practicable?</p> <p>Has a conceptual site model that assesses the nature, extent, and mobility of the release been developed?</p> <p>Has secondary source been removed to the extent practicable?</p> <p>Has soil or groundwater been tested for MTBE and results reported in accordance with Health and Safety Code Section 25296.15?</p> <p>Nuisance as defined by Water Code section 13050 does not exist at the site?</p> <p>Are there unique site attributes or site-specific conditions that demonstrably increase the risk associated with residual petroleum constituents?</p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>
<p><u>Media-Specific Criteria</u> Candidate sites must satisfy all three of these media-specific criteria:</p> <p>1. 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:</p> <p>Is the contaminant plume that exceeds water quality objectives stable or decreasing in areal extent?</p> <p>Does the contaminant plume that exceeds water quality objectives meet all of the additional characteristics of one of the five classes of sites? If YES, check applicable class: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input checked="" type="checkbox"/> 5</p> <p>For sites with releases that have not affected groundwater, do mobile constituents (leachate, vapors, or light non-aqueous phase liquids) contain sufficient mobile constituents to cause groundwater to exceed the groundwater criteria?</p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA</p>
<p>2. Petroleum Vapor Intrusion to Indoor Air: The site is considered low-threat for vapor intrusion to indoor air if site-specific conditions satisfy all of the characteristics of one of the three classes of sites (a through c) or if the exception for active commercial fueling facilities applies.</p> <p>Is the site an active commercial petroleum fueling facility? Exception: Satisfaction of the media-specific criteria for petroleum vapor intrusion to indoor air is not required at active commercial petroleum fueling facilities, except in cases where release characteristics can be reasonably believed to pose an unacceptable health risk.</p>	<p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>

<p>a. Do site-specific conditions at the release site satisfy all of the applicable characteristics and criteria of scenarios 1 through 3 or all of the applicable characteristics and criteria of scenario 4? If YES, check applicable scenarios: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4</p> <p>b. Has a site-specific risk assessment for the vapor intrusion pathway been conducted and demonstrates that human health is protected to the satisfaction of the regulatory agency?</p> <p>c. As a result of controlling exposure through the use of mitigation measures or through the use of institutional or engineering controls, has the regulatory agency determined that petroleum vapors migrating from soil or groundwater will have no significant risk of adversely affecting human health?</p>	<p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA</p>
<p>3. Direct Contact and Outdoor Air Exposure: The site is considered low-threat for direct contact and outdoor air exposure if site-specific conditions satisfy one of the three classes of sites (a through c).</p> <p>a. Are maximum concentrations of petroleum constituents in soil less than or equal to those listed in Table 1 for the specified depth below ground surface (bgs)?</p> <p>b. Are maximum concentrations of petroleum constituents in soil less than levels that a site specific risk assessment demonstrates will have no significant risk of adversely affecting human health?</p> <p>c. As a result of controlling exposure through the use of mitigation measures or through the use of institutional or engineering controls, has the regulatory agency determined that the concentrations of petroleum constituents in soil will have no significant risk of adversely affecting human health?</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA</p>

ATTACHMENT 2: SUMMARY OF BASIC CASE INFORMATION (Conceptual Site Model)

Site Location/History

- The site is bound to the south by Garvey Way, to the northeast by South Delaware Street, to the southwest and southeast by a U.S. Post Office parking lot and facility, and to the northwest by a drainage ditch.
- The site was a service station from approximately the 1950's until the USTs and dispensers were removed in 1986. The service station building operated as an automotive repair facility until the building was removed and replaced with a car wash facility in 1999.
- The site is located in a commercial/light industrial neighborhood of San Mateo.
- Site maps showing the location of the former USTs, monitoring wells, groundwater elevations, and contaminant concentrations are provided at the end of this review summary (Brunsing Associates, Inc., 2012).
- Nature of Contaminants of Concern: Petroleum hydrocarbons only.
- Source: UST system.
- Date reported: January 1985.
- Status of Release: USTs removed.

Tank Information

Tank No.	Size in Gallons	Contents	Closed in Place/ Removed/Active?	Date
1	2,000	gasoline	removed	1986
2	2,000	gasoline	removed	1986
3	2,000	gasoline	removed	1986
4	10,000	gasoline	removed	1986
5	500	waste oil	removed	1986

Receptors

- Groundwater Basin: Santa Clara Valley-San Mateo Plain.
- Beneficial Uses: San Francisco Regional Water Quality Control Board (Regional Water Board) Basin Plan lists municipal and industrial uses and potentially beneficial for agricultural uses.
- Land Use Designation: Commercial and industrial.
- Public Water System: Water is provided to water users by the California Water Service - San Mateo.
- Distance to Nearest Supply Well: According to data available in GeoTracker, there are no water supply wells regulated by the California Department of Public Health within 1,000 feet of the Site.
- Distance to Nearest Surface Water: An unlined drainage ditch adjacent to the Site to the northwest flows northeasterly towards the San Francisco Bay. The next nearest surface water is San Mateo Creek, approximately 2,200 feet north-northwest of the site.

Geology/Hydrogeology

- Stratigraphy: The lithology at the site and the nearby surrounding area consists primarily of interbedded, discontinuous layers of bay muds, clay, silt, silty and gravelly sand.
- Maximum Sample Depth: 26 feet below ground surface (bgs).

- Minimum Groundwater Depth: 1.74 bgs at monitoring well B-1.
- Maximum Groundwater Depth: 8.5 feet bgs at monitoring well B-5.
- Current Average Depth to Groundwater: Approximately 8 feet bgs.
- Saturated Zones(s) Studied: Approximately 2.5 - 16 bgs.
- Appropriate Screen Interval: Yes.
- Groundwater Flow Direction: Groundwater gradient is essentially flat, but trends slightly to the southeast or northwest, due to tidal variations caused by the proximity of sea level and San Francisco Bay (Brunsing, 2012).

Monitoring Well Information

Well Designation	Date Installed	Screen Interval (feet bgs)	Depth to Water (feet bgs) 8/7/2012
B-3	October 1984	5 to 15	7.47
B-4	October 1984	5 to 15	-
B-5	June 2005	-	5.6
B-6	June 2005	-	9.1
MW-1	December 1997	5 to 15	12.5
MW-2	September 2001	5 to 15	5.95

Remediation Summary

- Free Product: Approximately 200 gallons of free product were reportedly removed during the UST excavation. After the installation of monitoring well B-2 in October 1984 approximately 18 inches of free product were measured in the well. Free product was also noted in wells B-1, B-3 and B-4. Free product has not been reported since 1986.
- Soil Excavation: The gasoline UST excavation was approximately 10 feet deep. The quantity of soil removed is unknown.
- In-Situ Soil/Groundwater Remediation: From October 2000 to October 2001 a soil vapor extraction with a groundwater extraction and treatment system was operated at the site. This system was operated as a dual-phase extraction system from September 2003 to September 2005. Approximately 4.4 pound of total petroleum hydrocarbons as gasoline (TPHg) were reportedly extracted via groundwater extraction and dual-phase extraction.

Most Recent Concentrations of Petroleum Constituents in Soil

Constituent	Maximum 0-5 feet bgs. [mg/kg and (date)]	Maximum 5-10 feet bgs [mg/kg and (date)]
Benzene	2.36 (12/7/05)	0.0844 (12/8/05)
Ethylbenzene	14.6 (12/7/05)	0.030 (12/7/05)
Naphthalene	NA	NA
PAHs*	NA	NA

NA: Not Analyzed, Not Applicable or Data Not Available

mg/kg: Milligrams per kilogram, parts per million

<: Not detected at or above stated reporting limit

PAHs: Polycyclic aromatic hydrocarbons

*: Sampling and analysis for PAH is only necessary where soil is affected by either waste oil or bunker C oil

Most Recent Concentrations of Petroleum Constituents in Groundwater

Sample	Sample Date	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	1,2-DCA (µg/L)
B-3	6/8/2012	<50	<0.50	<0.50	<0.50	<0.50	2.21	1.88
B-4	6/8/2012	<50	8.38	<0.50	<0.50	<0.50	1.3	<0.5
B-5	6/8/2012	<50	<1.0	<1.0	<1.0	<1.0	3.04	9.62
B-6	6/8/2012	100	316	<0.50	<2.5	<0.50	9.88	20.6
MW-1	6/8/2012	<50	<0.50	<0.50	<0.50	<0.50	<1	<0.5
MW-2	6/8/2012	210	10.1	<0.50	<0.50	<0.50	4.79	8.07
WQOs	-	--	1	150	700	1,750	5	0.5^a

NA: Not Analyzed, Not Applicable or Data Not Available

µg/L: Micrograms per liter, parts per billion

<: Not detected at or above stated reporting limit

TPHg: Total petroleum hydrocarbons as gasoline

MTBE: Methyl tert-butyl ether

1,2-DCA: 1,2-dichloroethane

WQOs: Water Quality Objectives, Regional Water Board Basin Plan

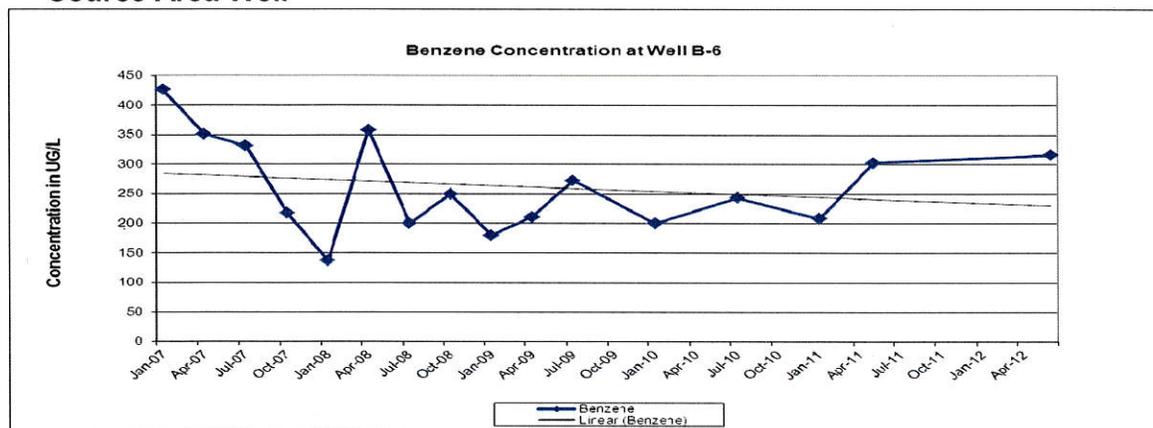
--: Regional Water Board Basin Plan does not have a numeric water quality value for TPHg

^a: Primary maximum contaminant level (MCL)

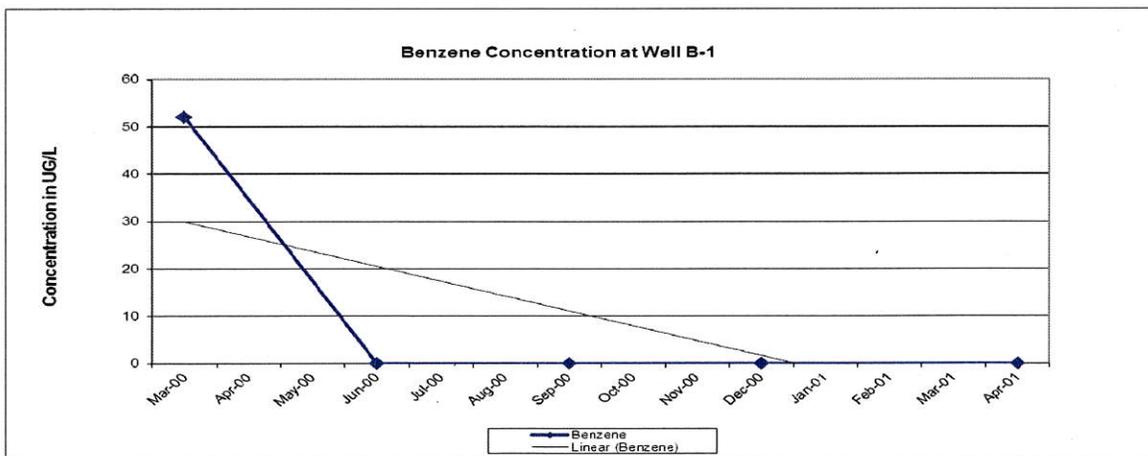
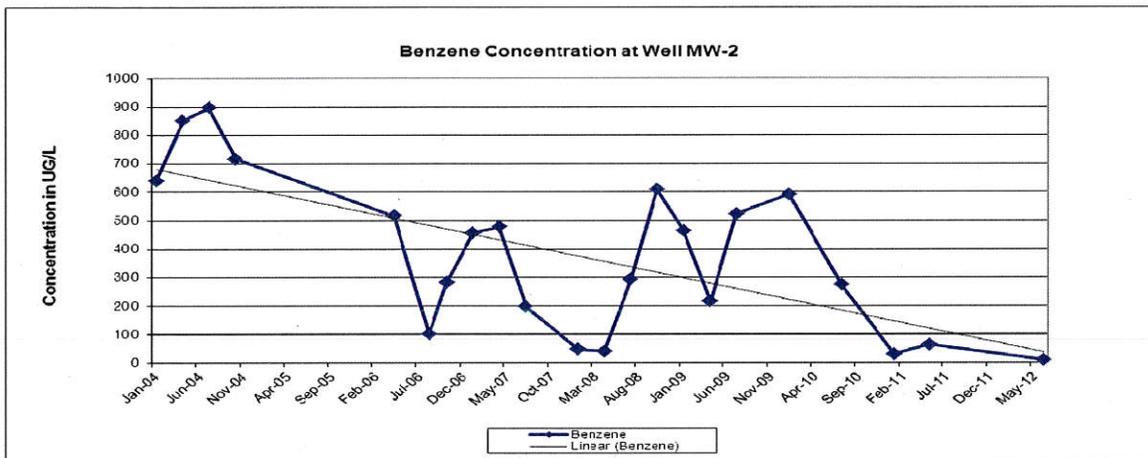
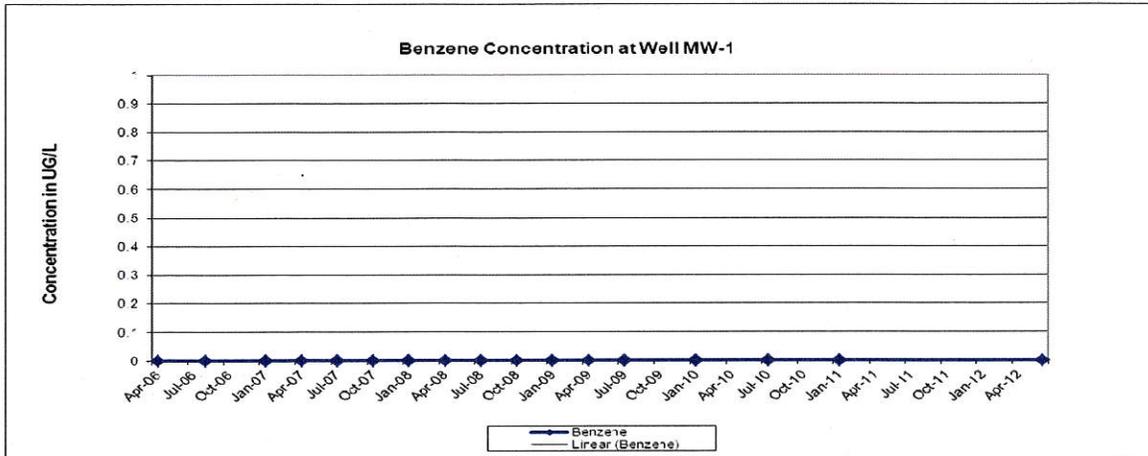
Groundwater Trends

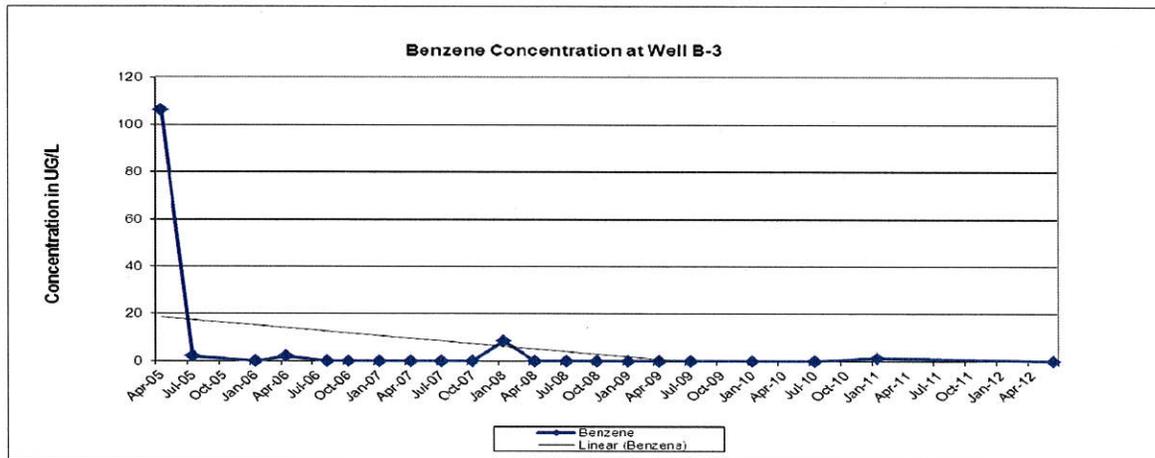
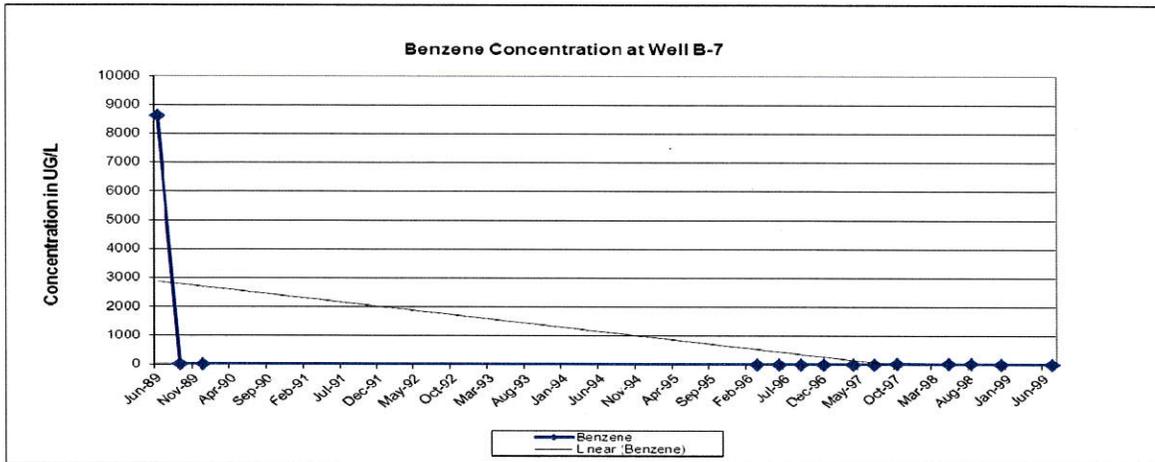
- Since 1989, eight groundwater monitoring wells have been installed (B-1, B-3 through B-7, MW-1 and MW-2) regularly monitored. Six of the eight wells remain (B-3 through B-6, MW-1 and MW-2). Benzene trends of select wells are shown below:

Source Area Well

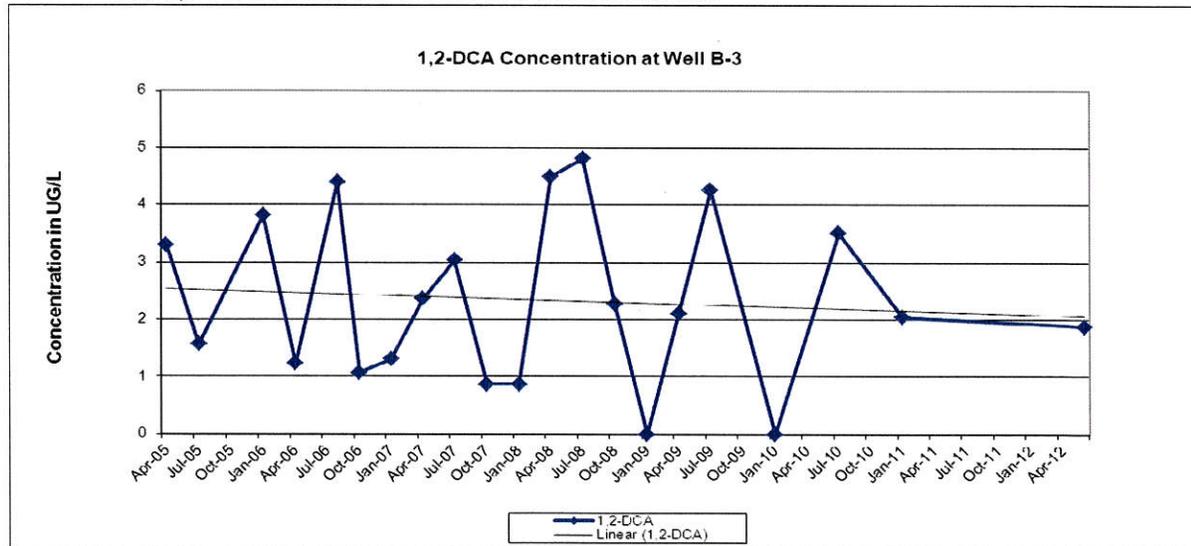


Perimeter Wells



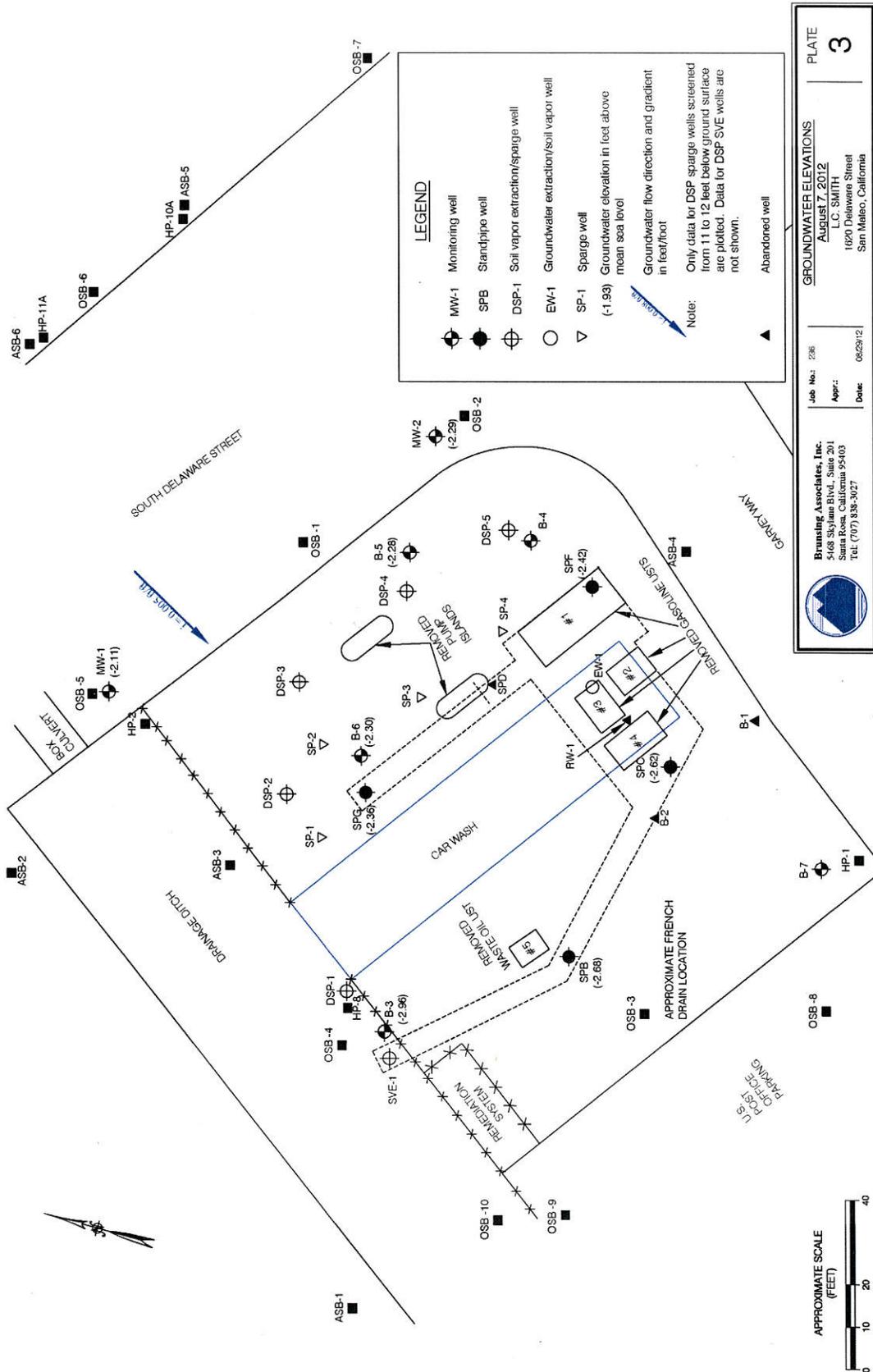


- The 1,2-DCA trend for well B-3 is shown below:



Evaluation of Current Risk

- Estimate of Hydrocarbon Mass in Soil: None reported.
- Soil/Groundwater tested for methyl tert-butyl ether (MTBE): Yes, see table above.
- Oxygen Concentrations in Soil Vapor: None reported.
- Plume Length: <250 feet long.
- Plume Stable or Decreasing: Yes.
- Contaminated Zone(s) Used for Drinking Water: No.
- Risk-Based Corrective Action: A Tier 2 Risk-Based Corrective Action evaluation reported that the only pathway that posed a potential risk was exposure to benzene by direct ingestion of groundwater from the source area (Brunsing Associates, Inc., 2006). Water is provided to water users near the Site by California Water Service - San Mateo. The affected groundwater is not currently being used as a source of drinking water, and it is highly unlikely that the affected groundwater will be used as a source of drinking water in the foreseeable future. Other designated beneficial uses of impacted groundwater are not threatened, and it is highly unlikely that they will be, considering these factors in the context of the site setting. The County has expressed concerns with the accuracy of the data used in the Risk-Based Corrective Action and has requested that the responsible party correct errors in the report. Never the less, the Fund agrees with the observation that there are no indoor air receptors at the Site.
- Groundwater Specific Criteria – The case meets Policy Criterion 1 by Class 5. The regulatory agency determines, based on an analysis of site specific conditions, which under current and reasonably anticipated near-term future scenarios, the contaminant plume poses a low threat to human health and safety and to the environment and water quality objectives will be achieved within a reasonable time frame. The case would have met the criteria for a Class 2 except an unlined drainage ditch is located along the northwest (crossgradient) property line. The contaminant plume that exceeds water quality objectives is less than 250 feet in length. There is no free product. The nearest water supply well is greater than 1,000 feet from the defined plume boundary. The dissolved concentration of benzene is less than 3,000 micrograms per liter ($\mu\text{g/L}$), and the dissolved concentration of MTBE is less than 1,000 $\mu\text{g/L}$. An unlined drainage ditch is located along the northwest (crossgradient) edge of the property.
- Vapor Intrusion to Indoor Air – This case meets Policy Criterion 2b. A professional assessment of site-specific risk from exposure through the vapor intrusion pathway to indoor air shows that maximum concentrations of petroleum constituents in soil will have no significant risk of adversely affecting human health. A Tier 2 Risk-Based Corrective Action was prepared by Brunsing Associates in 2006. Brunsing Associates Inc. noted that the only potentially significantly exposed population at the Site are car wash workers. These workers spend most of their time outdoors and there are no full time employees at the Site. The only enclosed structure at the Site is the storage room, therefore indoor air inhalation is not a complete pathway. The County has expressed concerns with the accuracy of the data used in the Risk-Based Corrective Action and has requested that the responsible party correct errors in the report. Never the less, the Fund agrees with the observation that there are no indoor air receptors at the Site.
- Direct Contact and Outdoor Air Exposure – This case meets Policy Criterion 3b. A site-specific risk assessment of potential exposure to residual soil contamination (Brunsing Associates, 2006 and 2008) found that maximum concentrations of petroleum constituents remaining in soil will have no significant risk of adversely affecting human health.

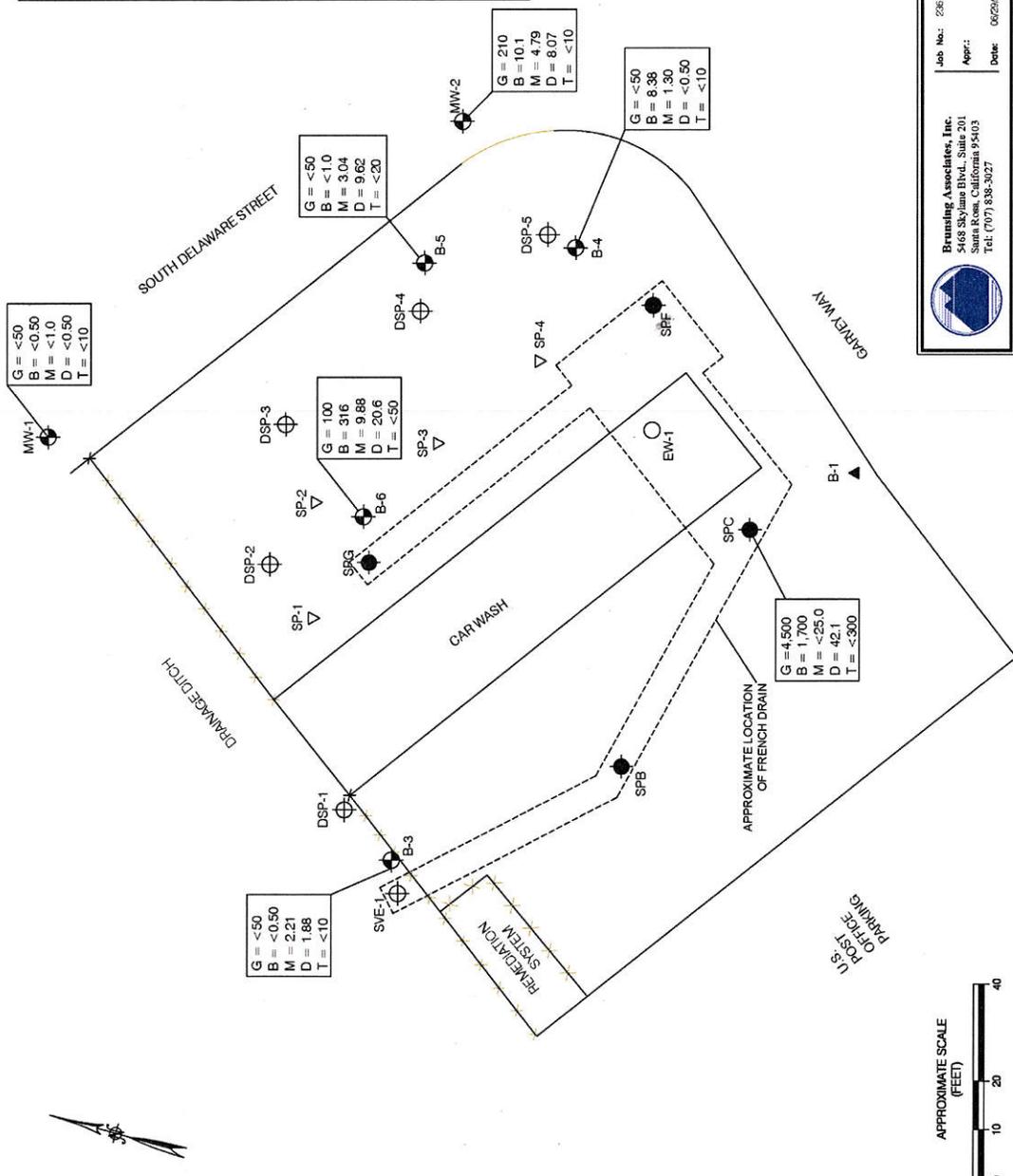


LEGEND

- MW-1 Monitoring well
- SPB Standpipe well
- DSP-1 Soil vapor extraction/sparge well
- EW-1 Groundwater extraction/soil vapor well
- SP-1 Sparge well
- G TPH as gasoline concentration in micrograms per liter ($\mu\text{g/L}$)
- B Benzene concentration in $\mu\text{g/L}$
- M Methyl tert butyl ether concentration in $\mu\text{g/L}$
- D 1,2-dichloroethane concentration in $\mu\text{g/L}$
- T Tert - butyl alcohol in $\mu\text{g/L}$

Note: Only data for DSP sparge wells screened from 11 to 12 feet below ground surface are plotted. Data for DSP SVE wells are not shown.

▲ Abandoned well
 < Less than the laboratory reporting limit



CONCENTRATIONS IN GROUNDWATER

Job No.: 236
 Date: 06/26/2012

Appr.: L. C. SMITH
 1620 Delaware Street
 San Mateo, California

PLATE 4

Brumling Associates, Inc.
 5468 Skyway Blvd., Suite 201
 San Ramon, California 94503
 Tel: (925) 936-3027