

State Water Resources Control Board

UST CASE CLOSURE REVIEW SUMMARY REPORT

Agency Information

Agency Name: Alameda County Environmental Health Department (County)	Address: 1131 Harbor Bay Parkway Alameda, CA 94502-6577
Agency Caseworker: Mark Detterman	Case No.: RO0000337

Case Information

USTCF Claim No.: 3000	Global ID: T0600100249
Site Name: California Linen Supply Co.	Site Address: 989 41st Street, Oakland, CA 94609
Responsible Party: California Linen Supply Co. Attn: Donald J. Miller	Address: 2104 Magnolia Way, Walnut Creek, CA 94595-1619
USTCF Expenditures to Date: \$845,426	Number of Years Case Open: 24

URL: http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0600100249

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 follow:

An unauthorized release was reported in February 1989 following the removal of two gasoline USTs and one fuel oil UST. During the UST removal, the contaminated soil was excavated, transported and disposed. Approximately 15,000 gallons of impacted groundwater were treated. Dual phase extraction operated intermittently between 2006 and 2007 removing a calculated 13,000 pounds of petroleum hydrocarbons. Since 1989, 16 monitoring wells have been installed and monitored intermittently. According to groundwater data, water quality objectives have been achieved for all constituents.

The petroleum release is limited to the shallow soil. According to data available in GeoTracker, there are no California Department of Public Health regulated supply wells or surface water bodies within 250 feet of the site. No other water supply wells have been identified within 250 feet of the site in files reviewed. Water is provided to water users near the Site by the East Bay Municipal Utility District (EBMUD). 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 to mitigate TPHg vapors beneath the site.

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 1. The contaminant plume that exceeds water quality objectives is less than 100 feet in length. There is no free product. The nearest water supply well or surface water body is greater than 250 feet from the defined plume boundary.
- **Indoor Vapor Risk from Residual Petroleum Hydrocarbons:** The case meets Policy Criterion 2a by Scenario 3c. The maximum benzene concentration in groundwater is less than 1,000 µg/L. The minimum depth to groundwater is greater than 5 feet, and is overlain by soil containing less than 100 mg/kg of total petroleum hydrocarbons (TPH), where the oxygen soil vapor concentration is equal to or greater than 4 percent. In addition, risk and hazard analysis completed in 2012 demonstrates that all of the calculated cumulated hazards for all of the samples are less than 1.0 and all of the calculated cumulative risk for all of the samples are less than 1 per million for all of the samples, including the scenario where the highest concentration from each sample are collectively evaluated for a worst-case scenario.
- **Direct Contact Risk from Residual Petroleum Hydrocarbons:** The case meets Policy Criterion 3a. Maximum concentrations in soil are less than those in Policy Table 1 for Commercial/Industrial land use and the concentration limits for a Utility Worker are not exceeded.

Objections to Closure and Responses

The County objects to closure in their May 2012 response to the 2nd 5-Year Review:

- The Site had a soil vapor concentration in one sample at 15,000,000 µg/m³ eight years ago. (parts per billion or 1.5 percent by volume).
RESPONSE: A new soil vapor investigation completed during the summer of 2012 identified no TPHg concentrations in soil vapor as was reported earlier. A risk and hazard analysis completed using the 2012 reported the hazard index was less than 1.0.
- The Site may be located over paleo-channels that have allowed contaminant migration to occur over significant distances.
RESPONSE: The groundwater beneath the site meets water quality objectives' and consequently, the presence of paleo-channels do not increase risk to human health.

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. Alameda County has the regulatory responsibility to supervise the abandonment of monitoring wells.

Lisa Babcock

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

6/5/13

Date

Prepared by: Pat G. Cullen, P.G. 4932

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>Has free product been removed to the maximum extent practicable?</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> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA</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 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</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> <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?</p> <p>If YES, check applicable class: <input checked="" type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input 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 checked="" 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 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>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 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><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

- This case is located on the southern corner of the intersection of 41st Street and Linden Street, in Oakland and is a vacant industrial facility most recently used as a commercial laundry. The surrounding properties include industrial operations to the west, north and east. Residences are located to the south of the Site.
- A Site map showing the location of the former USTs, monitoring wells, and groundwater level contours is provided at the end of this closure review summary (RGA, 2008).
- Nature of Contaminants of Concern: Petroleum hydrocarbons only.
- Source: UST system.
- Date reported: February 1989.
- Status of Release: USTs removed.
- Free Product: Sheen last reported in 2008, but may not have been petroleum hydrocarbons.

Tank Information

Tank No.	Size in Gallons	Contents	Closed in Place/Removed/Active	Date
1	10,000	Gasoline	Removed	February 1989
2	2,500	Fuel Oil	Removed	February 1989
3	550	Gasoline	Removed	February 1989

Receptors

- GW Basin: Santa Clara Valley – East Bay Plain.
- Beneficial Uses: Municipal and Domestic Supply.
- Land Use Designation: Commercial.
- Public Water System: East Bay Municipal Utility District.
- Distance to Nearest Supply Well: According to data available in GeoTracker, there are no public supply wells regulated by California Department of Public Health within 250 feet of the defined plume. No other water supply wells were identified within 250 feet of the defined plume in the files reviewed.
- Distance to Nearest Surface Water: There is no identified surface water within 250 feet of the defined plume.

Geology/Hydrogeology

- Stratigraphy: The soils beneath the Site consist of interbedded clays, sandy silts, silts, and occasional stringers of sandy gravelly clay.
- Maximum Sample Depth: 22.12 feet below ground surface (bgs).
- Minimum Groundwater Depth: 4.28 feet bgs at monitoring well E-8.
- Maximum Groundwater Depth: 24.55 feet bgs at monitoring well E-2.
- Current Average Depth to Groundwater: 9 feet bgs.
- Saturated Zones(s) Studied: Approximately 4-27 feet bgs.
- Appropriate Screen Interval: Yes.
- Groundwater Flow Direction: Southwesterly at a gradient of 0.023. (RGA, May 2008).

Monitoring Well Information

Well Designation	Date Installed	Screen Interval (feet bgs)	Depth to Water (feet bgs) (7/28/2008)
MW-1	1989	NA	8.80
MW-2	1989	NA	9.05
MW-3	1989	NA	Destroyed 2007
MW-4	2/22/2007	NA	10.43
MW-5	2/22/2007	NA	8.32
MW-6	2/22/2007	NA	9.75
MW-7	NA	7-20	9.19
I1	9/7/2006	22-27	9.45
E-1	9/6/2006	5-25	9.42
E-2	9/7/2006	5-25	8.90
E-3	9/7/2006	10-25	10.21
E-4	3/22/2007***	NA	10.44
E-6	9/5/2006	5-25	9.09
E-7	9/7/2006	5-25	NM
E-8	3/22/2007**	NA	8.48
E-9	3/22/2007	NA	8.07

** : Well drilled at ~30 degrees off vertical

*** : Well drilled at ~45 degrees off vertical

Remedial Summary

- Free Product: Sheen last reported in 2008, but may not have been petroleum hydrocarbons.
- Soil Excavation: In June 2008, seven areas were over-excavated to remove residual soil from the Site. A total of 670 tons of affected soil were excavated, transported and disposed offsite.
- In-Situ Soil/Groundwater Remediation: Dual phase extraction (DPE) operated intermittently between October 2006, and April 2007. It was calculated that 13,000 pounds of total petroleum hydrocarbon vapors were removed. During over excavation in June 2008 approximately 15,000 gallons of water were removed from the excavation.

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	ND (18 samples) (8/9/2006)	0.0055 in B-24@10 (8/9/2006)
Ethylbenzene	1.8 in B-41@3 (10/27/2006)	0.013 in B-24@10 (8/9/2006)
Naphthalene	2.5 @ 2.5 (10/27/2006)	ND in B36 @ 7.5 (10/19/2006)
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

Most Recent Concentrations of Petroleum Constituents in Groundwater

Sample	Sample Date	TPHg (µg/L)	TPHd (µg/L)	TPHmo (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)
MW-1	7/29/2008	<50	<50	<250	<0.5	<0.5	<0.5	<0.5	<5
MW-2	4/4/2008	<50	<50	<250	<0.5	<0.5	<0.5	<0.5	<5
MW-4	4/4/2008	<50	<50	<250	<0.5	<0.5	<0.5	<0.5	<5
MW-5	4/3/2008	<50	<50	<250	<0.5	<0.5	<0.5	<0.5	<5
MW-6	4/3/2008	<50	<50	<250	<0.5	<0.5	<0.5	<0.5	<5
MW-7	4/3/2008	<50	<50	<250	<0.5	<0.5	<0.5	<0.5	<5
I1	10/5/2007	<50	<50	<250	<0.5	<0.5	<0.5	<0.5	<5
E-1	4/4/2008	<50	<50	<250	<0.5	<0.5	<0.5	<0.5	<5
E-2	7/29/2008	<50	<50	<250	<0.5	<0.5	<0.5	<0.5	<5
E-3	7/29/2008	<50	<50	<250	<0.5	<0.5	<0.5	<0.5	<5
E-4	7/28/2008	<50	<50	<250	<0.5	<0.5	<0.5	<0.5	<5
E-6	7/29/2008	<50	<50	<250	<0.5	<0.5	<0.5	<0.5	<5
E-7	4/4/2008	<50	<50	<250	<0.5	<0.5	<0.5	<0.5	<5
E-8	7/29/2008	200, ^a	100, ^b	<250	<0.5	0.96	1.7	7.7	<5
E-9	7/28/2008	<50	<50	<250	<0.5	<0.5	<0.5	<0.5	<5
WQOs	-	--	--	1	1	150	700	1,700	5^c

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

TPHd: Total petroleum hydrocarbons as diesel

TPHmo: Total Petroleum Hydrocarbons as motor oil

MTBE: Methyl tert-butyl ether

WQOs: Water Quality Objectives, Region 2 Basin Plan

^a: Laboratory reports this is not a recognizable pattern.

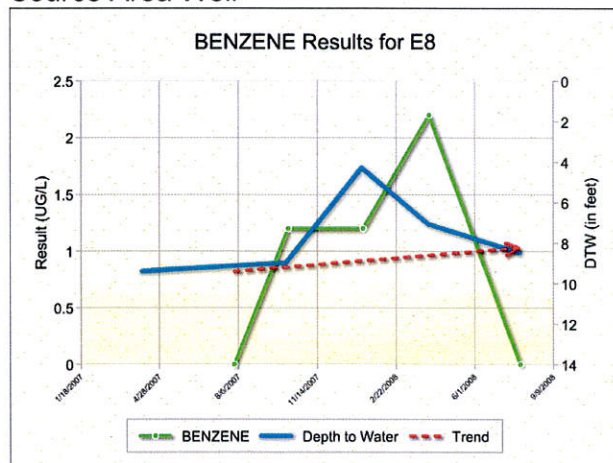
^b: Laboratory reports gasoline range compounds are significant.

^c: Secondary maximum contaminant level (MCL)

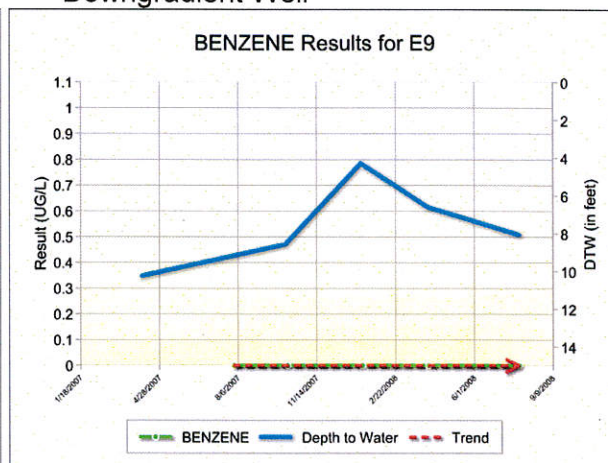
Groundwater Trends

- There are 24 years of irregular groundwater monitoring data for this case.

Source Area Well



Downgradient Well



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: <100 feet long.
- Plume Stable or Decreasing: Yes.
- Contaminated Zone(s) Used for Drinking Water: No.
- Groundwater Risk from Residual Petroleum Hydrocarbons: The case meets Policy Criterion 1 by Class 1. The plume that exceeds water quality objectives is less than 100 feet in length. There is no free product. The nearest water supply well or surface water body is greater than 250 feet from the defined plume boundary.
- Indoor Vapor Risk from Residual Petroleum Hydrocarbons: The case meets Policy Criterion 2a by Scenario 3c. The maximum benzene concentration in groundwater is less than 1,000 µg/L. The minimum depth to groundwater is greater than 5 feet, and the groundwater is overlain by soil containing less than 100 mg/kg of TPH where the oxygen soil vapor concentration is equal to or greater than 4 percent. In addition, risk and hazard analysis results completed in 2012 demonstrates that all of the calculated cumulated hazards for all of the samples are less than 1.0 and all of the calculated cumulative risk for all of the samples are less than 1 per million for all of the samples, including the scenario where the highest concentration from each sample are collectively evaluated for a worst-case scenario.
- Direct Contact Risk from Residual Petroleum Hydrocarbons: The case meets Policy Criterion 3a. Maximum concentrations in soil are less than those in Policy Table 1 for Commercial/Industrial land use and the concentration limits for a Utility Worker are not exceeded.

