

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
Agency Caseworker: Mark Detterman	Case No: RO0000374

Case Information

USTCF Claim No.: 12999/15058	Global ID: T0600101374
Site Name: Chevron #21-1285/Cal Gas	Site Address: 15595 Washington Avenue, San Lorenzo, CA 94608
Responsible Party: Mehdi Mohammadian	Address: P O Box 415, Talmage, CA 95481 / Enviro Soil Tech, 131 Tully Rd., San Jose, CA 95111
USTCF Expenditures to Date: \$365,703	Number of Years Case Open: 26 Years

URL: http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0600101374

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 Site Information (Conceptual Site Model)**. Highlights of the case follow:

This site is an active service station. In 1986 Texaco removed four USTs, excavated contaminated soil, and installed three groundwater monitoring wells. A leak was reported in March 1993. In 1998 and 2007, seven additional monitoring wells were installed to assess potential offsite migration to a residential area. No active remediation has been conducted. According to the latest groundwater data, water quality objectives have been achieved for all constituents except for TPHg at one well on site.

The petroleum release is limited to the shallow soil and groundwater. According to data available in GeoTracker, there are no California Department of Public Health regulated supply wells within 1,000 feet of the defined plume boundary. Water is provided to water users near the Site by the East Bay Municipal Utility District. 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, stable and concentrations are declining.

Corrective action has been implemented and additional corrective actions are not necessary. Any remaining petroleum hydrocarbon constituents do not pose significant risk to human health, safety or the environment.

Rationale for Closure under the Low-Threat Policy

- General Criteria – The case meets all eight Policy general criteria.
- Groundwater Specific Criteria – The case meets Policy Criterion 1 by Class 5. The contaminant plume that exceeds water quality objectives is less than 250 feet in length. According to data available in GeoTracker, although there are no California Department of Public Health regulated supply wells within 1,000 feet of the defined plume boundary, San Lorenzo Creek, a concrete-lined storm water channel, is located 600 feet northwest of the defined plume boundary. The contaminant plume that exceeds water quality objectives is stable and the remaining contaminant mass has expanded to the distance from the release where attenuation exceeds migration. Therefore, it is highly unlikely the contaminant plume will ever reach the creek. The concrete-lined channel further diminishes the likelihood of potential impact from the plume. Based on the analysis of site specific conditions, 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.
- Vapor Intrusion to Indoor Air – The case meets Policy Criterion 2a by Scenario 3a. The maximum benzene concentration in groundwater is less than 100 µg/L. The minimum depth to groundwater is greater than 5 feet, overlain by soil containing less than 100 mg/kg of TPH. The site specific groundwater data also show that groundwater concentrations in the area beneath the apartment buildings west of the Site have achieved water quality objectives.
- Direct Contact and Outdoor Air Exposure – The case meets Policy Criterion 3a. Maximum concentrations in soil are less than those in Policy Table 1 for Commercial/Industrial and Residential use, and the concentration limits for a Utility Worker are not exceeded.

Objections to Closure

The County objected to UST case closure for this case because:

- The Cleanup Fund has not considered residual contamination in soil or soil vapor.
RESPONSE
Very little to no fuel oxygenate(s) or BTEX petroleum fuel contamination has been noted at the Site. Concentrations are expected to continue to decline over time to below water quality objectives. Both the residual soil impact and soil vapor have been considered, and as stated in this summary report they meet all Policy Criteria for case closure and do not pose a significant risk to human health and the environment.
- There are unregistered domestic supply wells nearby.
RESPONSE
There is one well identified at approximately 185 feet cross-gradient from the site release point. The County has informed the well owner and the well is no longer used.

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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

6/26/13

Date

Prepared by: Walter Bahm

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>Has a conceptual site model that assesses the nature, extent, and mobility of the release been developed?</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 type="checkbox"/> No <input checked="" type="checkbox"/> NA</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 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 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 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>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><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>

<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 type="checkbox"/> No <input checked="" 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

- The Site is located on the northwest corner of Washington Avenue and Via Enrico Street, in San Lorenzo, California, and is currently an active commercial petroleum fueling facility.
- The Site has one single story building. The former USTs were located at the center portion of the property south of the pump islands.
- The property is located in an area of commercial and residential development. Several apartment buildings are across the street to the west. Commercial land-use surrounds the remainder of the Site.
- Ten monitoring wells were installed and monitored regularly.
- Site map showing the location of the Site facilities, monitoring wells, and groundwater level contours is included at the end of this summary.
- Nature of Contaminants of Concern: Petroleum hydrocarbons only.
- Source: UST system.
- Date reported: March 30, 1993
- Status of Release: USTs removed and replaced.
- Free Product: None reported

Tank Information

Tank No.	Size in Gallons	Contents	Closed in Place/ Removed/Active?	Date
1	10,000	Gasoline	Removed	11/1986
2	10,000	Gasoline	Removed	11/1986
3	10,000	Gasoline	Removed	11/1986
4	280	Waste Oil	Removed	11/1986
5	10,000	Gasoline	Installed	02/1987
6	10,000	Gasoline	Installed	02/1987
7	10,000	Gasoline	Installed	02/1987
8	500	Waste Oil	Installed	02/1987

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, P.O. Box 24055, Oakland, CA 94623
- Distance to Nearest Supply Well: According to data available in GeoTracker, there are no California Department of Public Health regulated supply wells within 1,000 feet of the defined plume boundary.
- Distance to Nearest Surface Water: San Lorenzo Creek, a concrete-lined storm water channel, is located approximately 600 feet northwest of the defined plume boundary.

Geology/Hydrogeology

- Stratigraphy: The soil beneath the Site consists of interbedded layers of gravelly silty sands, silty clays, clayey silts, sandy clays and silty clays.
- Maximum Sample Depth: 31 feet below ground surface (bgs).

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- Minimum Groundwater Depth: 6.13 feet bgs in well STMW-8.
- Maximum Groundwater Depth: 12.50 feet bgs in well STMW-10.
- Current Average Depth to Groundwater: 8.55 feet bgs.
- Saturated Zones(s) Studied: 5 to 23 feet bgs.
- Appropriate Screen Interval: Yes, with the exception of MW-4 and MW-5.
- Groundwater Flow Direction: Generally westerly with some northwest and southwest components depending upon which wells are being used for the calculation.

Monitoring Well Information

Well Designation	Date Installed	Screen Interval (feet bgs)	Depth To Water (11/14/2012)
MW-1	1986	5-15	8.80
MW-2	1986	5-15	7.65
MW-3	1986	5-15	8.45
MW-4	August 1998	10-20	9.40*
MW-5	August 1998	10-20	8.41*
STMW-6	April 2007	7-22	7.64
STMW-7	April 2007	7-22	8.93
STMW-8	April 2007	8-23	7.81
STMW-9	April 2007	7-22	8.57
STMW-10	April 2007	7-22	9.87

* Well screen submerged

Remediation Action

- Free Product: None reported in the files reviewed.
- Soil Excavation: Soil excavation reported during UST removal.
- In-Situ Soil and Groundwater Remediation: Air sparging/soil vapor extraction was proposed in addition to over excavation in the highly affected area and not approved by the County.

Most Recent Concentrations of Petroleum Constituents in Soil

Constituent	Maximum 0-5 ft. bgs. [mg/kg and date]	Maximum 5-10 ft. bgs [mg/kg and date]
Benzene	<0.005 (10/24/2006)	<0.005 (10/24/2006)
Ethylbenzene	<0.005 (10/24/2006)	<0.005 (10/24/2006)
Naphthalene	<0.005 (10/24/2006)	0.86 (10/24/2006)
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)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	TBA (µg/L)
MW-1	11/14/2012	<50	<1	<1	<1	<2	0.63	<10
MW-2	11/14/2012	<50	<1	<1	<1	<2	<1	<10
MW-3	11/14/2012	<50	<1	<1	<1	<2	0.69	<10
MW-4	11/14/2012	<50	<1	<1	<1	<2	<1	<10
MW-5	11/14/2012	1,080	0.32 ^J	0.3 ^J	2.3	<2	2.8	42.7
STMW-6	11/14/2012	<50	<1	<1	<1	<2	0.94	<10
STMW-7	11/14/2012	<50	<1	<1	<1	<2	<1	<10
STMW-8	11/14/2012	<50	<1	<1	<1	<2	<1	<10
STMW-9	11/14/2012	<50	<1	<1	<1	<2	<1	<10
STMW-10	11/14/2012	<50	<1	<1	<1	<2	<1	<10
WQOs	-	50¹	1	150	700	1,750	5	1,200²

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

TBA: Tert-butyl alcohol

WQOs: Water Quality Objectives, Region 2 Basin Plan

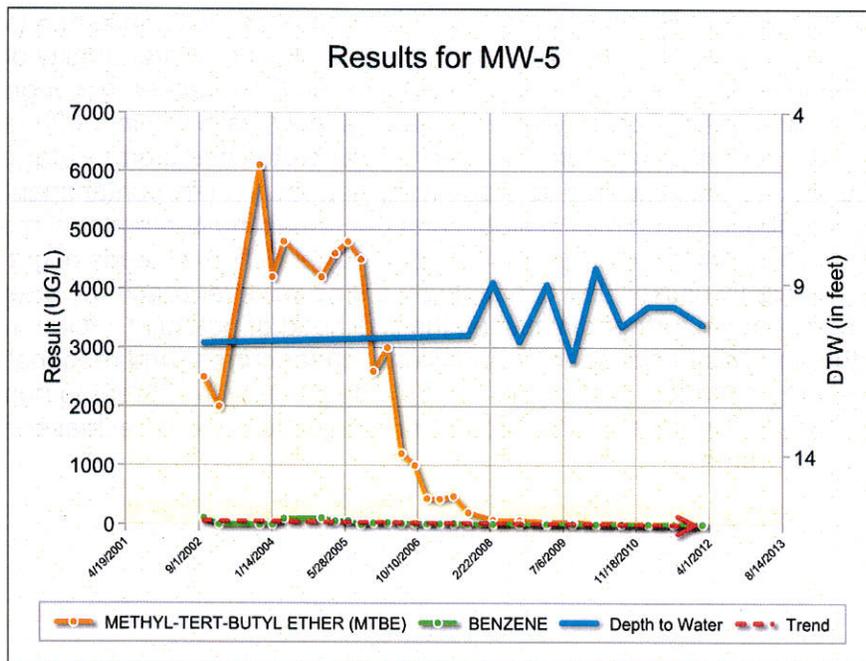
^J: Estimated value.

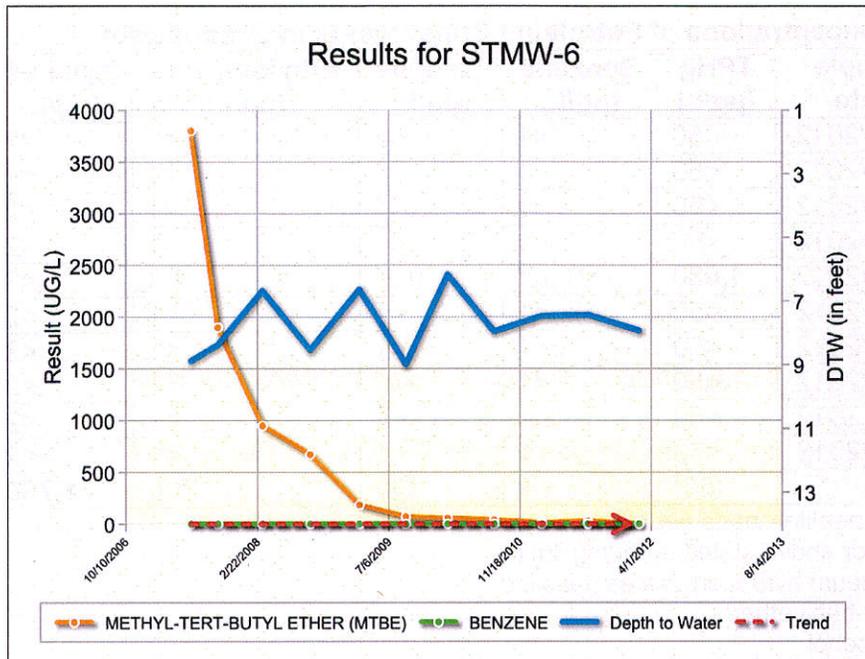
¹: Typical laboratory detection limit.

²: California Department of Environmental Health, Response Level.

Groundwater Trends:

The graphs below present benzene and MTBE concentration trends plotted against water levels for Site wells MW-5 in the source area, and STMW-6 downgradient.





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.
- Groundwater Risk from Residual Petroleum Hydrocarbons: The case meets Policy Criterion 1 by Class 5. The contaminant plume that exceeds water quality objectives is less than 250 feet in length. According to data available in GeoTracker, although there are no California Department of Public Health regulated supply wells within 1,000 feet of the defined plume boundary, San Loranzo Creek, a concrete-lined storm water channel, is located 600 feet northwest of the defined plume boundary. The contaminant plume that exceeds water quality objectives is stable and the remaining contaminant mass has expanded to the distance from the release where attenuation exceeds migration. Therefore, it is highly unlikely the contaminant plume will ever reach the creek. The concrete-lined channel further diminishes the likelihood of potential impact from the plume. Based on the analysis of site specific conditions, 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.

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- Indoor Vapor Risk from Residual Petroleum Hydrocarbons: The case meets Policy Criterion 2a by Scenario 3a. The maximum benzene concentration in groundwater is less than 100 µg/L. The minimum depth to groundwater is greater than 5 feet, overlain by soil containing less than 100 mg/kg of TPH. The site specific groundwater data also show that groundwater concentrations in the area beneath the apartment buildings west of the Site have achieved water quality objectives.
- 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 and Residential use, and the concentration limits for a Utility Worker are not exceeded.

