

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.: RO0000056

Case Information

USTCF Claim No.: 10630	Global ID: T0600101108
Site Name: Chevron #21-1283/Express Auto	Site Address: 3810 Broadway Oakland, CA 94611
Responsible Party #1: Gerald Friedkin	Address: 300 Grand Avenue Oakland, CA 94610
Responsible Party #2: Chevron EMC Attn: Ms. Kelly Esters	Address: 6101 Bollinger Canyon Rd., Room 5323, San Ramon, CA 94583
Responsible Party #3: Express Auto Clinic Attn: Mr. Joe Zadik	Address: 8255 San Leandro Street Oakland, CA 94621
USTCF Expenditures to Date: \$76,151	Number of Years Case Open: 21

URL: http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0600101108

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:

The Site is an active commercial petroleum fueling and automobile repair facility. A 550-gallon waste oil UST was removed and an unauthorized leak was reported in May 1991. An unknown volume of impacted soil was excavated during the removal of the UST. Additional excavation of approximately 1,400 cubic yards of impacted soil was performed in February to March 2000. The excavation in the source area extended to a depth of 22 feet below ground surface (bgs) and was backfilled with clean fill (approximately 800 pounds of oxygen release compound mixed with soil was placed in the bottom of the excavation). According to groundwater data, water quality objectives have been achieved or nearly achieved for all constituents except for benzene and methyl tert-butyl ether (MTBE).

The petroleum release is limited to the shallow soil and groundwater. According to data available in GeoTracker, there are no supply wells regulated by the California Department of Public Health or surface water bodies 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. Water is provided to water users near the Site by East Bay Municipal Utilities 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 declining. 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 2. 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 or surface water body is greater than 1,000 feet from the defined plume boundary. The dissolved concentration of benzene is less than 3,000 µg/L, and the dissolved concentration of MTBE is less than 1,000 µg/L.
- Vapor Intrusion to Indoor Air: Policy Exclusion for Active Station. Soil vapor evaluation is not required because the Site is an active commercial petroleum fueling facility.
- 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 use, and the concentration limits for a Utility Worker are not exceeded. There are no soil sample results in the case record for naphthalene. However, the relative concentration of naphthalene in soil can be conservatively estimated using the published relative concentrations of naphthalene and benzene in gasoline. Taken from Potter and Simmons (1998), gasoline mixtures contain approximately 2 percent benzene and 0.25 percent naphthalene. Therefore, benzene can be directly substituted for naphthalene concentrations with a safety factor of eight. Benzene concentrations from the Site are below the naphthalene thresholds in Policy Table 1. Therefore, the estimated naphthalene concentrations meet the thresholds in Table 1 and the Policy criteria for direct contact by a factor of eight. It is highly unlikely that naphthalene concentrations in the soil, if any, exceed the threshold.

Objections to Closure and Responses

The County, as documented in the Closure Review located on the 09-42 Case Review page in GeoTracker (dated 4/15/2010) objects to UST case closure for this case because:

- Site characterization is not complete and contamination is not defined.
RESPONSE: Concentrations in soil and groundwater are defined to low to non-detect levels.
- Source control is feasible and needed to reduce offsite migration and reduce source mass.
RESPONSE: No free product has been documented in site wells since 2000. The secondary source has been removed to the extent practicable. The petroleum hydrocarbon plume is stable or decreasing.
- Soil vapor risks are not identified.
RESPONSE: The Site is an active commercial petroleum fueling facility. Remaining maximum concentrations in soil are less than those in Policy Table 1 for both Commercial/Industrial and Residential land uses. Remaining petroleum hydrocarbon constituents do not pose a significant risk to human health.

- Designated beneficial uses of groundwater at the Site (municipal and domestic supply) need to be protected.

RESPONSE: Water is provided to water users near the Site by East Bay Municipal Utilities 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.

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

3/22/13

Date

Prepared by: Roger Hoffmore, P.G. 7660

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>General Criteria 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? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Does the unauthorized release consist only of petroleum? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Has the unauthorized (“primary”) release from the UST system been stopped? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Has free product been removed to the maximum extent practicable? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA</p> <p>Has a conceptual site model that assesses the nature, extent, and mobility of the release been developed? <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 checked="" 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 checked="" type="checkbox"/> Yes <input 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 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><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 at the northeast corner of the intersection of Broadway and 38th Street in Oakland and is an active commercial petroleum fueling and automobile repair facility.
- Current site features include a station building, automobile repair building, fuel dispenser islands, and a UST complex.
- The Site is bounded on the northwest by Broadway, to the southwest by 38th Street, to the southeast by residential apartments, and to the northeast by commercial and residential buildings. On the far side of Broadway and 38th Streets is the Kaiser Hospital complex.
- Site maps showing the location of the USTs, monitoring wells, groundwater level contours, and contaminant concentrations are provided at the end of this closure review summary (ARCADIS, 2013).
- Nature of Contaminants of Concern: Petroleum hydrocarbons only.
- Source: UST system.
- Date reported: May 1991.
- Status of Release: USTs removed.
- Free Product: Free product was last reported in monitoring well MW-2, MW-3 and MW-8 in 2000.

Tank Information

Tank No.	Size in Gallons	Contents	Closed in Place/Removed/Active	Date
1	6,000	Unknown	Removed	February 1980
2	6,000	Unknown	Removed	February 1980
3	6,000	Unknown	Removed	February 1980
4	6,000	Unknown	Removed	February 1980
5	550	Waste Oil	Removed	May 1991

Receptors

- GW Basin: Santa Clara Valley – East Bay Plain.
- Beneficial Uses: The San Francisco Regional Water Quality Control Board (Regional Water Board) Basin Plan lists Municipal and Domestic Supply.
- Land Use Designation: Commercial.
- Public Water System: East Bay Municipal Water 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 1,000 feet of the defined plume. No other water supply wells were identified within 1,000 feet of the defined plume boundary in the files reviewed.
- Distance to Nearest Surface Water: There is no identified surface water within 1,000 feet of the defined plume boundary.

Geology/Hydrogeology

- Stratigraphy: The Site is underlain primarily by unconsolidated fill material overlying sandy silts and clays, interbedded with well sorted sands and silty sands (ARCADIS, 2012).
- Maximum Sample Depth: 35 feet below ground surface (bgs).
- Minimum Groundwater Depth: 14.00 feet bgs at monitoring well MW-9.

- Maximum Groundwater Depth: 34.24 feet bgs at monitoring well MW-11.
- Current Average Depth to Groundwater: Approximately 20 feet bgs.
- Saturated Zones(s) Studied: Approximately 14 - 40 feet bgs.
- Appropriate Screen Interval: Yes.
- Groundwater Flow Direction: Groundwater flow direction varies considerably, ranging among north, west and south. Groundwater mounding and groundwater depressions related to offsite dewatering (on the Kaiser property during construction) have also been observed (ARCADIS, 2012). Predominant groundwater flow direction is currently to the west (ARCADIS, 2013).

Monitoring Well Information

Well Designation	Date Installed	Screen Interval (feet bgs)	Depth to Water (feet bgs) (12/28/2012)
MW-1	October 1991	24-34	NM
MW-4	October 1995	26-36	19.30
MW-5B	May 2002	10-30	20.52
MW-6	September 1996	10-35	21.39
MW-7	September 1996	10-35	19.18
MW-9	September 1996	10-35	17.37
MW-10	September 1996	10-35	19.19
MW-11	August 2000	15-40	25.55
MW-12	May 2002	10-30	19.60

NM: Not measured

Remediation Summary

- Free Product: Free product was last reported in monitoring well MW-2, MW-3, and MW-8 in 2000.
- Soil Excavation: An unknown volume of impacted soil was excavated during the removal of the waste oil UST in 1991. Additional excavation of approximately 1,400 cubic yards of petroleum hydrocarbon impacted soil was performed at the Site in February to March 2000 and extended in the source area to a depth of 22 feet bgs and was backfilled with clean fill. Approximately 800 pounds of oxygen release compound mixed with soil was placed in the bottom of the excavation.
- In-Situ Soil/Groundwater Remediation: None reported.

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	<0.002 (06/29/12)	<2 (07/02/12)
Ethylbenzene	<0.002 (06/29/12)	0.57 (07/02/12)
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

Most Recent Concentrations of Petroleum Constituents in Groundwater

Sample	Sample Date	TPHg (µg/L)	TPHd (µg/L)	Benzene (µg/L)	Ethyl-Benzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	TBA (µg/L)
MW-4	12/28/12	<50	90	<0.5	<0.5	<1.0	0.55	<10
MW-5B	12/28/12	72	61	<0.5	<0.5	<1.0	14	<10
MW-6	12/28/12	2,100	100	460	13	9.9	<2.5	58
MW-7	12/28/12	<50	<48	<0.5	<0.5	<1.0	<0.5	<10
MW-9	12/28/12	<50	<48	<0.5	<0.5	<1.0	43	16
MW-10	12/28/12	340	100	<0.5	<0.5	<1.0	<0.5	<10
MW-11	12/28/12	<50	<48	<0.5	<0.5	<1.0	<0.5	<10
MW-12	12/28/12	3,900	120	850	34	29	<5.0	<100
WQOs	-	--	--	1	700	1,750	5^a	1,200^b

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 w/ silica gel clean-up

MTBE: Methyl tert-butyl ether

TBA: Tert-butyl alcohol

WQOs: Water Quality Objectives, Regional Water Board except where indicated

--: Regional Water Board Basin Plan has no numeric WQO for TPHg and TPHd

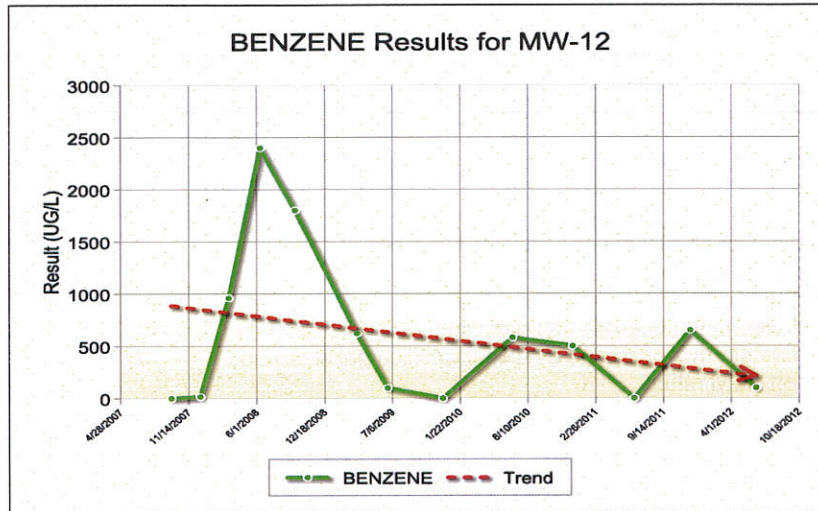
^a: Secondary maximum contaminant level (MCL)

^b: California Department of Public Health, Response Level

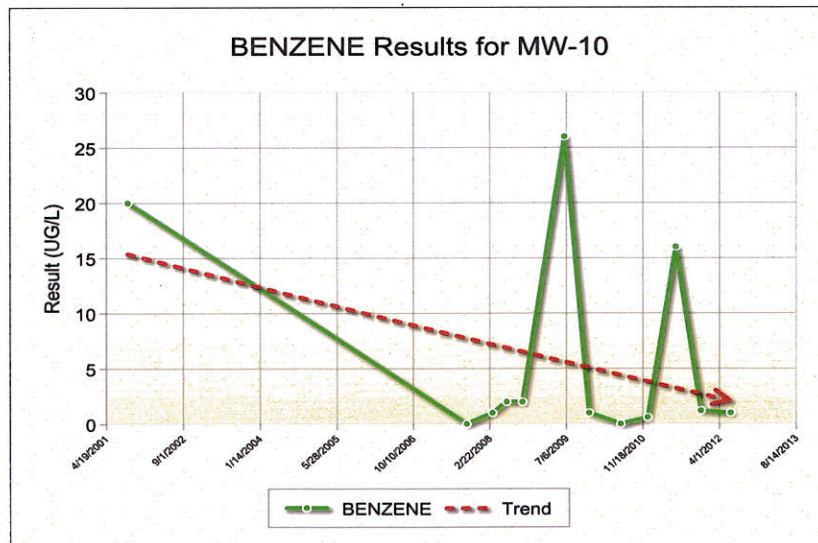
Groundwater Trends

- There are 21 years of groundwater monitoring data for this case. Benzene trends remain high and decreasing in the source area (MW-5B and MW-12). MTBE exceeds water quality objectives and are decreasing north of the plume (MW-5B and MW-7). Site shows effects of groundwater mounding northeast of Site. Benzene trends are shown below:

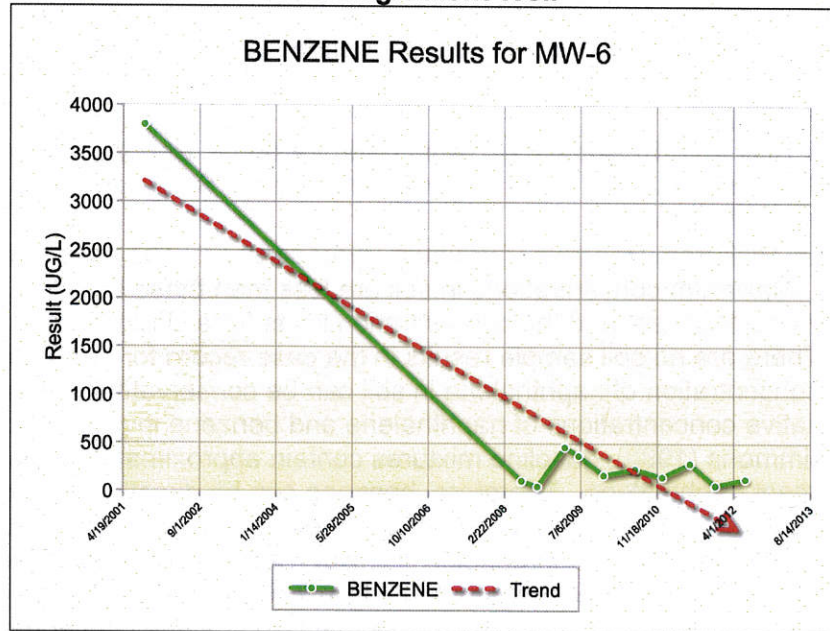
Source Area Well



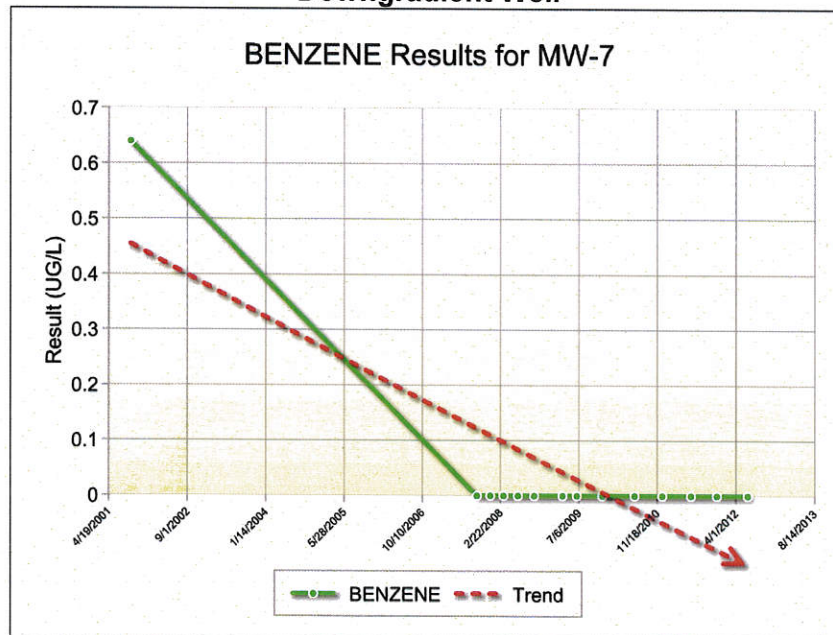
Downgradient Well



Downgradient Well



Downgradient Well



Evaluation of Current Risk

- Estimate of Hydrocarbon Mass in Soil: None reported.
- Soil/ Groundwater tested for MTBE: Yes, see table above.
- Oxygen Concentrations in Soil Vapor: None reported.
- Plume Length: <250 feet long.
- Plume Stable or Degrading: Yes.

- Contaminated Zone(s) Used for Drinking Water: No.
- Groundwater Risk from Residual Petroleum Hydrocarbons: The case meets Policy Criterion 1 by Class 2. 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 or surface water body is greater than 1,000 feet from the defined plume boundary. The dissolved concentration of benzene is less than 3,000 µg/L, and the dissolved concentration of MTBE is less than 1,000 µg/L.
- Indoor Vapor Risk from Residual Petroleum Hydrocarbons: Policy Exclusion for Active Station. Soil vapor evaluation is not required because the Site is an active commercial petroleum fueling facility.
- 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 use, and the concentration limits for a Utility Worker are not exceeded. There are no soil sample results in the case record for naphthalene. However, the relative concentration of naphthalene in soil can be conservatively estimated using the published relative concentrations of naphthalene and benzene in gasoline. Taken from Potter and Simmons (1998), gasoline mixtures contain approximately 2 percent benzene and 0.25 percent naphthalene. Therefore, benzene can be directly substituted for naphthalene concentrations with a safety factor of eight. Benzene concentrations from the Site are below the naphthalene thresholds in Policy Table 1. Therefore, the estimated naphthalene concentrations meet the thresholds in Table 1 and the Policy criteria for direct contact by a factor of eight. It is highly unlikely that naphthalene concentrations in the soil, if any, exceed the threshold.

