

State Water Resources Control Board

UST CASE CLOSURE REVIEW SUMMARY REPORT

Agency Information

Agency Name: Regional Water Quality Control Board – Los Angeles Region (Region 4)	Address: 320 W. 4 <sup>th</sup> Street, Suite 200 Los Angeles, CA 90013
Agency Caseworker: Gregg Kwey	Case No.: I-09896

Case Information

USTCF Claim No.: 4681	Global ID: T0603703514
Site Name: Chevron #9-5868	Site Address: 14240 East Firestone Boulevard, La Mirada, CA 90638
Responsible Party: Chevron Products Company, Attn: Joe Watterson	Address: 6101 Bollinger Canyon Road; Bldg. BR1X#5339, San Ramon, CA 94583
USTCF Expenditures to Date: \$902,472	Number of Years Case Open: 26

URL: [http://geotracker.waterboards.ca.gov/profile\\_report.asp?global\\_id=T0603703514](http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0603703514)

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 Low-Threat Policy. This case meets all of the required criteria of the Low-Threat Policy. A summary evaluation of compliance with the Low-Threat Policy is shown in **Attachment 1: Compliance with State Water Board Policies and State Law**. The Conceptual Site Model (CSM) upon which the evaluation of the case has been made is described in **Attachment 2: Summary of Basic Case Information**. Highlights of the case follow:

An unauthorized leak was reported in December 1985 during fuel system integrity testing. Three 10,000-gallon gasoline USTs and one waste oil UST had been removed in June 1985. Since 1985, 15 groundwater monitoring wells have been installed at the Site. A total of 142 tons of contaminated soil have been excavated and disposed off-site. Soil vapor extraction (SVE) was performed at the Site and removed more than 79,000 pounds of total petroleum hydrocarbons as gasoline (TPHg). Groundwater pump and treat was performed at the Site from October 2003 and January 2006. Approximately 0.6 gallons of free product and 42,906 gallons of groundwater have been pumped treated and discharged.

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 (CDPH) regulated supply wells within 250 feet of the defined plume boundary. No other water supply wells or surface water bodies have been identified within 250 feet of the defined plume boundary in the files reviewed. Water is provided to water users near the Site by Suburban Water Systems – La Mirada. 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 constituents are limited, stable and 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 – 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 and the nearest water supply well or surface water body is greater than 250 feet from the defined plume boundary.
- Vapor Intrusion to Indoor Air – Policy Exclusion for Active Station – Soil vapor evaluation is not required because 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 sites 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 Regional Board, in the GeoTracker Closure Review (dated 10/20/2009), objects because:

- Groundwater contaminant concentrations exceed water quality objectives.  
**RESPONSE:** The case meets all Policy criteria and does not pose a significant risk to human health.

February 2013

**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.

**Fund Manager Recommendation for Closure**

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

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

2/25/13  
Date

Prepared by: Hari Patel

**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.<sup>1</sup>**

<p><b>Is corrective action consistent with Chapter 6.7 of the Health and Safety Code and implementing regulations?</b>          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><b>Have waste discharge requirements or any other orders issued pursuant to Division 7 of the Water Code been issued at this case?</b></p>	<p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>
<p><b>If so, was the corrective action performed consistent with any order?</b></p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA</p>
<p><b><u>General Criteria</u></b>          General criteria that must be satisfied by all candidate sites:</p> <p><b>Is the unauthorized release located within the service area of a public water system?</b></p> <p><b>Does the unauthorized release consist only of petroleum?</b></p> <p><b>Has the unauthorized ("primary") release from the UST system been stopped?</b></p> <p><b>Has free product been removed to the maximum extent practicable?</b></p> <p><b>Has a conceptual site model that assesses the nature, extent, and mobility of the release been developed?</b></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> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>

<sup>1</sup> 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](http://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/2012/rs2012_0016atta.pdf)

<p><b>Has secondary source been removed to the extent practicable?</b></p> <p><b>Has soil or groundwater been tested for MTBE and results reported in accordance with Health and Safety Code Section 25296.15?</b></p> <p><b>Nuisance as defined by Water Code section 13050 does not exist at the site?</b></p> <p><b>Are there unique site attributes or site-specific conditions that demonstrably increase the risk associated with residual petroleum constituents?</b></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><b><u>Media-Specific Criteria</u></b>        Candidate sites must satisfy all three of these media-specific criteria:</p> <p><b>1. Groundwater:</b>        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><b>Is the contaminant plume that exceeds water quality objectives stable or decreasing in areal extent?</b></p> <p><b>Does the contaminant plume that exceeds water quality objectives meet all of the additional characteristics of one of the five classes of sites?</b></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><b>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?</b></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><b>2. Petroleum Vapor Intrusion to Indoor Air:</b>        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><b>Is the site an active commercial petroleum fueling facility?</b>        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><b>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?</b></p> <p>If YES, check applicable scenarios: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4</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><b>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?</b></p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA</p>
<p><b>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?</b></p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA</p>
<p><b>3. Direct Contact and Outdoor Air Exposure:</b>                  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><b>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)?</b></p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA</p> <p><b>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?</b></p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA</p> <p><b>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?</b></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 Site is located on the southeast corner of Valley View Avenue and Firestone Boulevard.
- The Site is an active commercial station and is bounded by commercial facilities all around.
- In January 1986 contamination identified during fuel system integrity testing was reported.
- Fifteen groundwater monitoring wells have been installed and monitored irregularly.
- Site map showing the location of the current USTs and monitoring wells is provided at the end of this closure review summary (Wayne Perry, 2012).
- Nature of Contaminants of Concern: Petroleum hydrocarbons only.
- Source: UST system.
- Date reported: January 1986.
- Status of release: USTs removed.
- Free Product: Free product found in groundwater monitoring wells MW-3 (up to 0.1 foot), MW-4, MW-7 and MW-9 (0.04). Free product recovery was conducted between February 1989 and February 1991. Free product was last observed in July 1994 in MW-3 at 0.06 feet thickness.

**Tank Information**

Tank No.	Size in Gallons	Contents	Closed in Place/ Removed/Active	Date
1-3	10,000	Gasoline	Removed	June 1985
4	Unknown	Waste Oil	Removed	June 1985
5-7	10,000	Gasoline	Removed	May 2003
8	10,000	Diesel	Removed	May 2003
9	550	Waste Oil	Removed	May 2003
10-12	10,000	Gasoline	Active	--
13	10,500	Diesel	Active	--

**Receptors**

- GW Basin: Coastal Plain Of Los Angeles - Central.
- Beneficial Uses: Municipal, Industrial and Agricultural.
- Land Use Designation: Aerial photograph available on GeoTracker suggests commercial land use in the vicinity of the Site.
- Public Water System: Yes; Suburban Water Systems – La Mirada.
- Distance to Nearest Supply Well: According to data available in GeoTracker, there are no public water supply wells regulated by CDPH within 250 feet of the plume. No other water supply wells were identified within 250 feet of the defined plume in the files reviewed.
- Distance to Nearest Surface Water: No identified surface water bodies within 250 feet of the plume.

**Geology/Hydrogeology**

- Stratigraphy: The Site is underlain by clayey silt, silt, fine-grained silty sand and fine- to medium-grained sand to 25' below ground surface (bgs) and is underlain by the Bellflower aquiclude to a depth of 60 feet bgs.
- Maximum Sample Depth: 35 feet below ground surface.
- Minimum Groundwater Depth: 7.55 feet bgs.
- Maximum Groundwater Depth: 30.49 feet bgs.
- Current Average Depth to Groundwater: Approximately 16 feet bgs.

- Saturated Zones(s) Studied: 7 - 40 bgs.
- Appropriate Screen Interval: Yes.
- Groundwater Flow Direction: Historically ranging from northwesterly to southwesterly. Most recent data (November 2011) reports groundwater flow to the west.

**Monitoring Well Information**

Well Designation	Date Installed	Screen Interval (feet bgs)	Depth to Groundwater (feet bgs) (11/22/2011)
MW-1	1986	8-25	16.30
MW-2	1986	8-25	14.74
MW-3	1986	8-25	15.30
MW-5	1986	5-30	16.69
MW-6	1986	5-30	15.06
MW-7	1988	5-30	15.39
MW-8	1988	5-30	15.76
MW-9	1988	5-30	16.01
MW-10	1990	5-35	NM
MW-11	1990	5-35	NM
MW-12	1990	5-35	NM
MW-13	1990	5-40.5	18.47
MW-14	1997	5-30	17.43
MW-15	2003	5-35	26.86
MW-3A	2007	5-25	16.47

NM: Not Measured

**Remedial Summary**

- Free Product: Free product historically found in groundwater monitoring wells MW-3 (up to 0.1 foot), MW-4, MW-7 and MW-9 (0.04). Free product recovery was conducted between February 1989 and February 1991. Free product was last observed in July 1994 in MW-3 at 0.06 feet thickness.
- Soil Excavation: 142 tons of impacted soil were removed and disposed off-site in June 2000.
- In-Situ Soil Remediation: Soil vapor extraction (SVE) was conducted from September 1995 to April 1996, and again from September 2003 to August 2005 removing over 79,000 pounds of TPHg.
- Groundwater Remediation: Groundwater extraction conducted from October 2003 to January 2006 and removed 0.6 gallons of free product and 42,906 gallons of contaminated water.

**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	2 (01/12/90)	0.093 (05/21/07)
Ethylbenzene	41 (03/97)	0.021 (05/21/07)
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)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	TBA (µg/L)
MW-1	9/12/12	ND<50	ND<110	ND<1	ND<1	ND<1	ND<1	1	ND<5
MW-2	9/12/12	230	110	ND<1	ND<1	ND<1	ND<1	5	45
MW-3	9/12/12	1300	4700	6	0.5	5	ND<1	6	110
MW-3A	9/12/12	170	ND<100	2	ND<1	4	ND<1	1	73
MW-5	9/12/12	1800	1200	15	5	3	6	74	76
MW-6	9/12/12	95	130	ND<1	ND<1	ND<1	ND<1	ND<1	ND<5
MW-7	9/12/12	4100	540	17	20	ND<10	40	8	ND<2
MW-8	9/12/12	370	210	2	ND<1	ND<1	ND<1	2	79
MW-9	9/12/12	220	120	2	ND<1	ND<1	ND<1	1	43
MW-10	9/12/12	360	830	ND<1	ND<1	ND<1	ND<1	4	44
MW-11	9/12/12	360	730	1	ND<1	ND<1	ND<1	13	69
MW-12	9/12/12	610	160	ND<1	ND<1	ND<1	ND<1	2	29
MW-13	9/12/12	ND<50	ND<100	ND<1	ND<1	ND<1	ND<1	ND<1	ND<5
MW-14	9/12/12	ND<50	ND<100	ND<1	ND<1	ND<1	ND<1	ND<1	ND<5
MW-15	9/12/12	ND<50	ND<100	ND<1	ND<1	ND<1	ND<1	ND<1	ND<5
<b>WQOs</b>	-	50 <sup>a</sup>	100 <sup>b</sup>	1	150	300	1750	5 <sup>c</sup>	1200 <sup>d</sup>

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

MTBE: Methyl tert-butyl ether

TBA: Tert-butyl alcohol

WQOs: Water Quality Objectives, Region 4 Basin Plan

<sup>a</sup>: Typical laboratory reporting limit

<sup>b</sup>: Taste and odor threshold

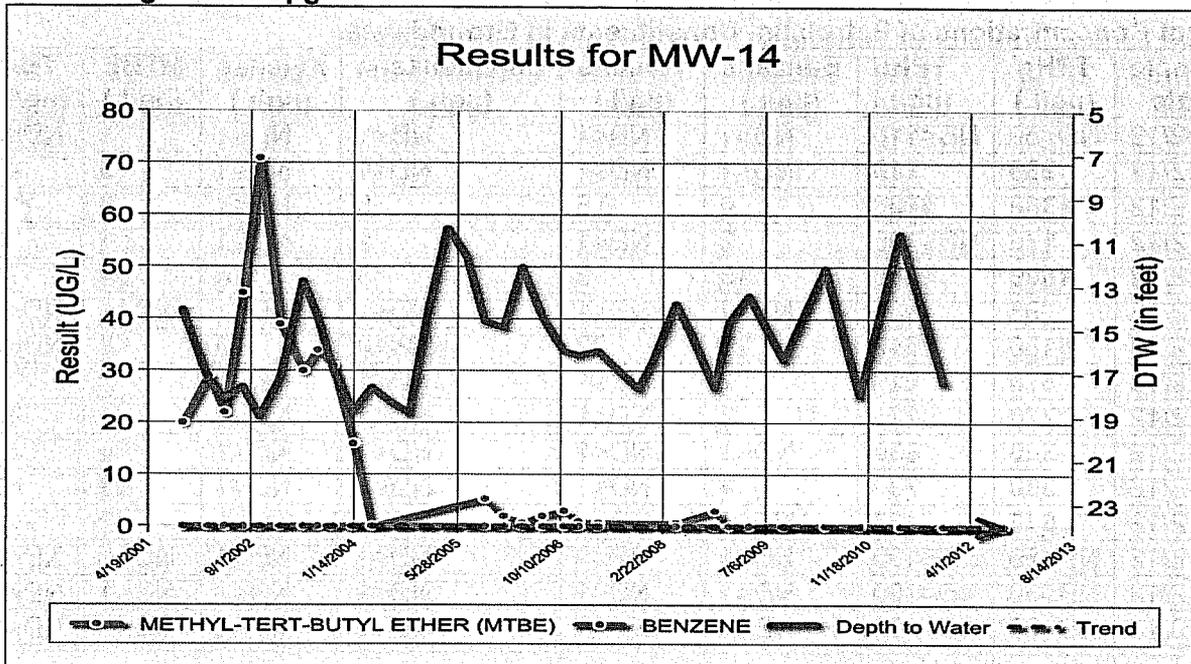
<sup>c</sup>: Secondary maximum contaminant level (MCL)

<sup>d</sup>: California Department of Public Health, Response Level

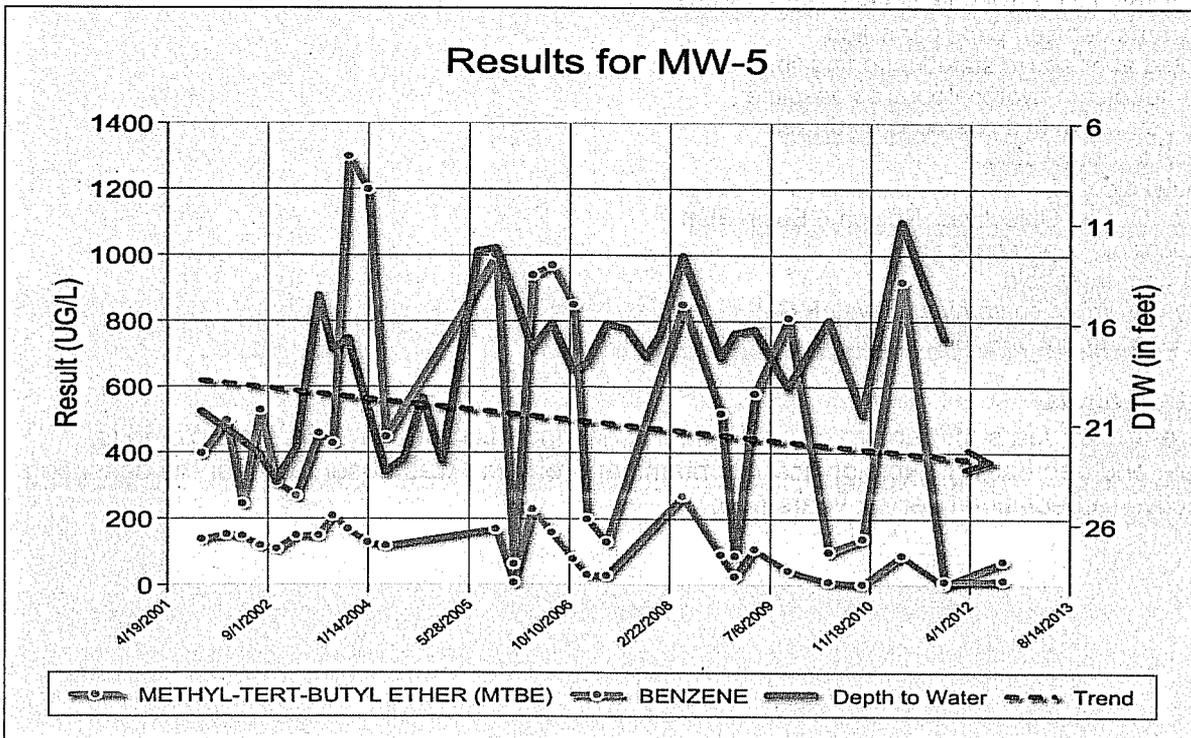
**Groundwater Trends**

- There are 26 years of irregular groundwater monitoring data for this case. The plume is stable and decreasing. No significant contaminant rebound was observed after the cessation of active remediation over six years ago.

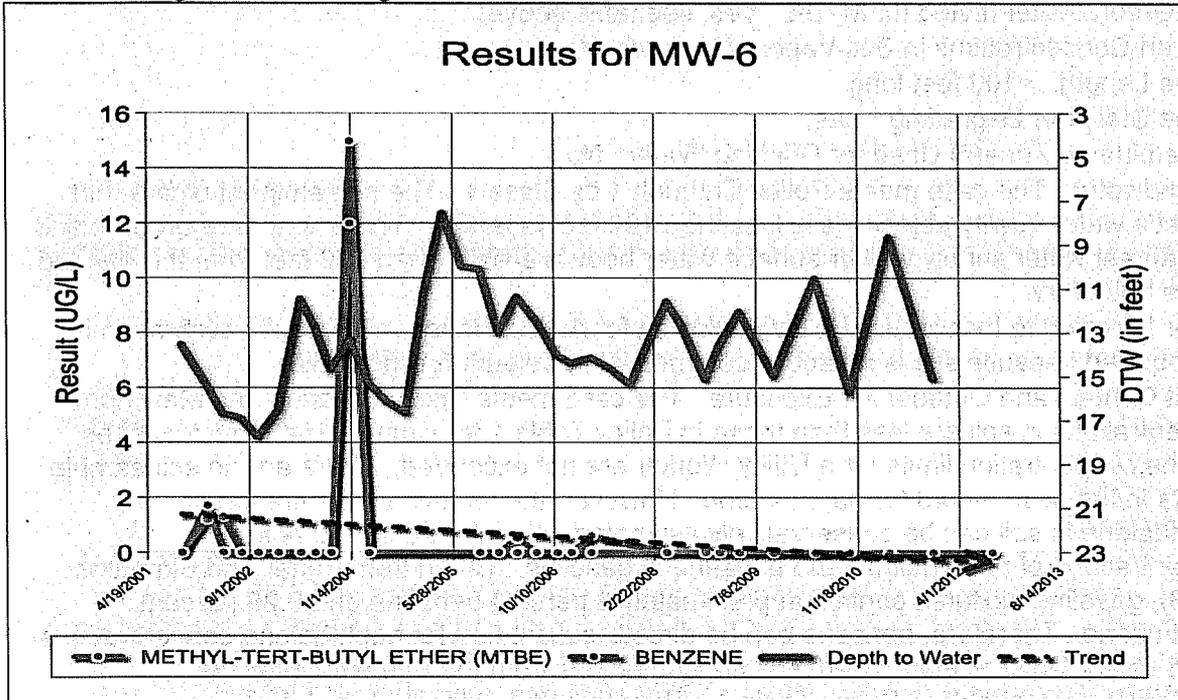
**Crossgradient/Upgradient well**



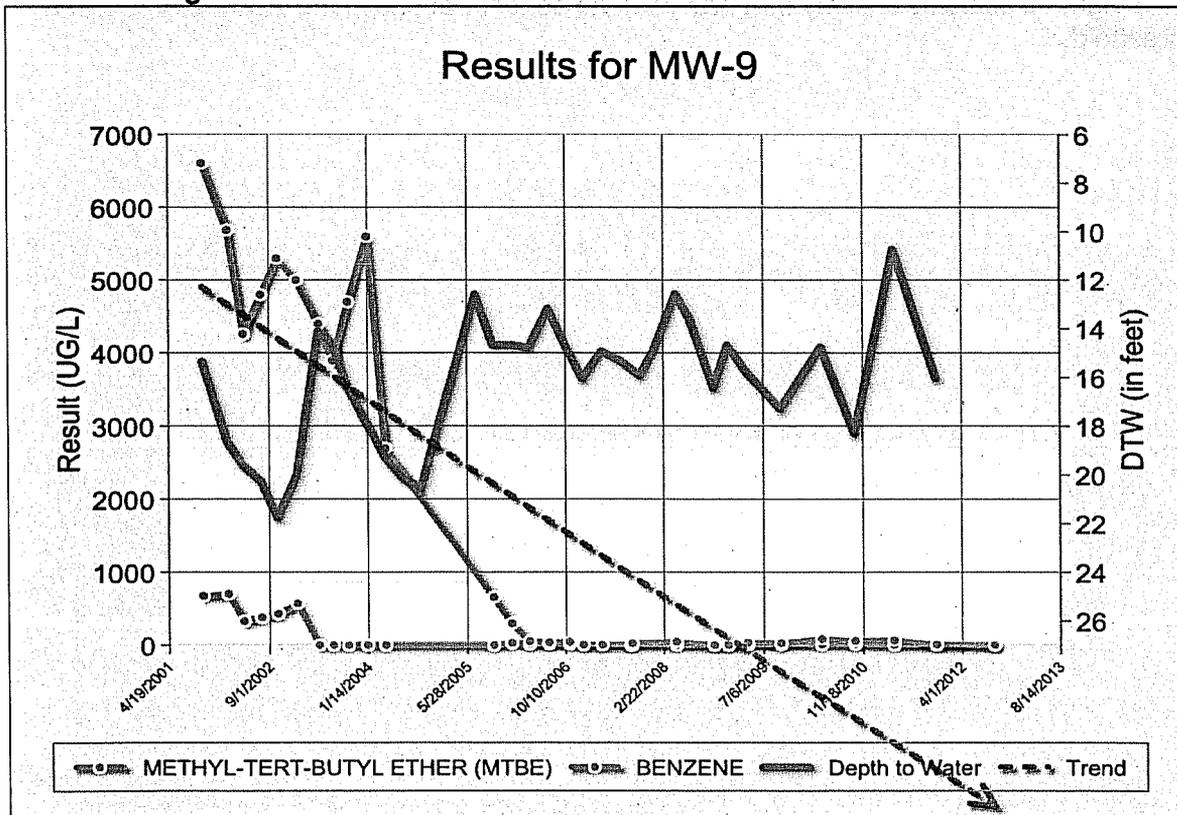
**Source Area Well**



Downgradient/crossgradient well

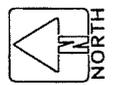
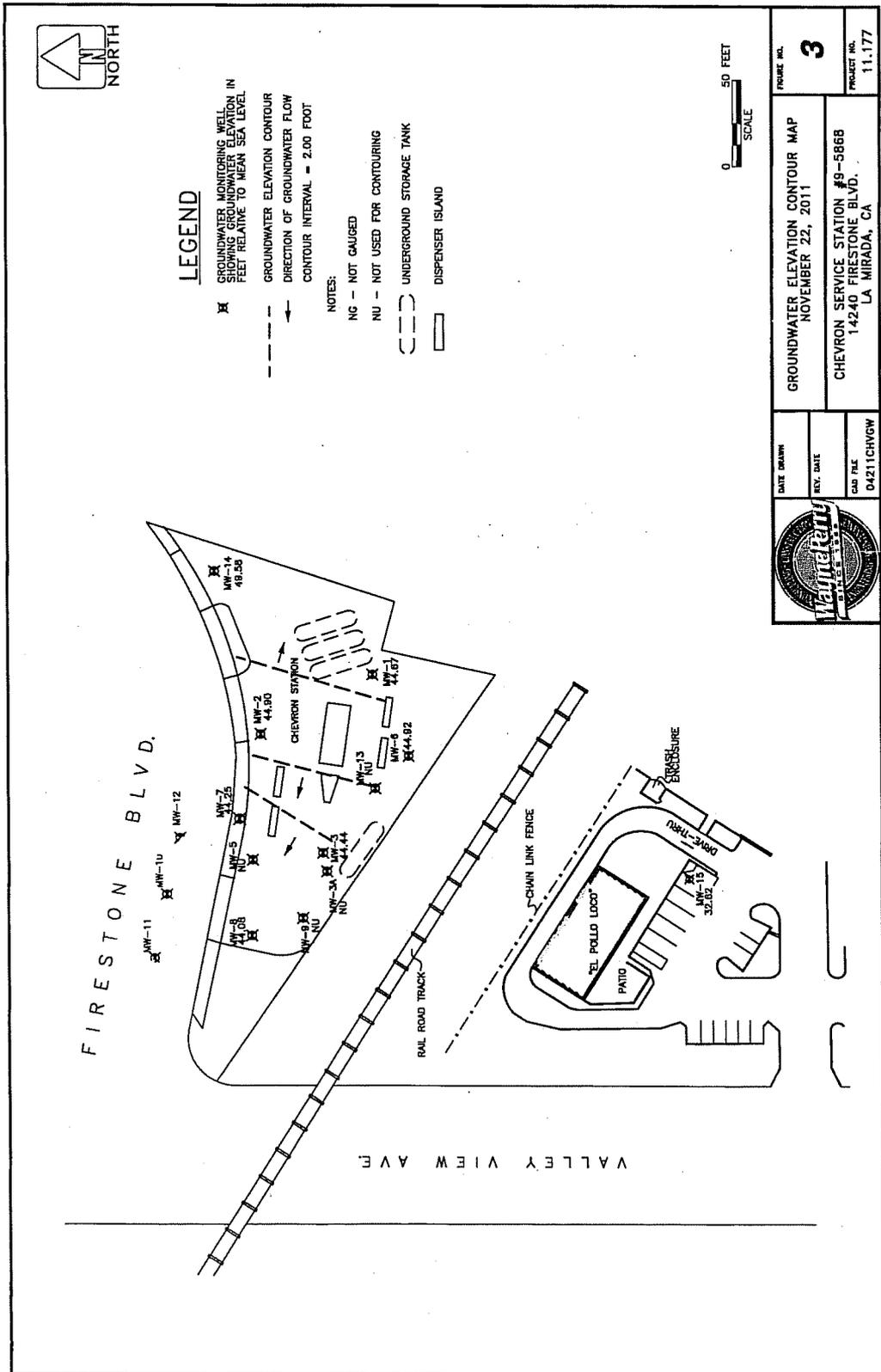


Downgradient well



### Evaluation of Current Risk

- Estimate of Hydrocarbon Mass in Soil: Not reported. More than 79,000 pounds removed.
- Soil/ Groundwater tested for MTBE: Yes, see table above.
- Oxygen Concentrations in Soil Vapor: None reported.
- Plume Length: <100 feet long.
- Plume Stable or Degrading: Yes.
- Contaminated Zone(s) Used for Drinking Water: No.
- Groundwater: 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 and the nearest water supply well or surface water body is greater than 250 feet from the defined plume boundary.
- Vapor Intrusion to Indoor Air: Policy Exclusion for Active Station – Soil vapor evaluation is not required because 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 sites 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.



**LEGEND**

- ☒ GROUNDWATER MONITORING WELL SHOWING GROUNDWATER ELEVATION IN FEET RELATIVE TO MEAN SEA LEVEL
  - GROUNDWATER ELEVATION CONTOUR
  - DIRECTION OF GROUNDWATER FLOW
  - CONTOUR INTERVAL = 2.00 FOOT
- NOTES:
- NG - NOT GAUGED
  - NU - NOT USED FOR CONTOURING
  - UNDERGROUND STORAGE TANK
  - ▭ DISPENSER ISLAND



DATE DRAWN	REV. DATE	FORM NO.
		<b>3</b>
GROUNDWATER ELEVATION CONTOUR MAP NOVEMBER 22, 2011		PROJECT NO.
CHEVRON SERVICE STATION #9-5868 14240 FIRESTONE BLVD. LA MIRADA, CA		11,177
CAD FILE	04211CHVGW	

