

State Water Resources Control Board

UST CASE CLOSURE REVIEW SUMMARY REPORT

Agency Information

Agency Name: Central Valley Regional Water Quality Control Board, Fresno (Regional Water Board)	Address: 1685 E Street, Fresno, CA 93706
Agency Caseworker: John Whiting	Case No.: 5T15000170

Case Information

USTCF Claim No.: 3665	Global ID: T0602993705
Site Name: Coy Shockley's Exxon	Site Address: 2340 High Street, Delano, CA 93215
Responsible Party: Coy Shockley	Address: (Private address)
USTCF Expenditures to Date: \$208,555	Number of Years Case Open: 24

URL: http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0602993705

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**. Highlights of the case follow:

This case was transferred from Kern County Environmental Health to the Regional Water Board in 2011 for regulatory oversight. An unauthorized release was reported in May 1989 following the repair of a product line leak near the pump island. Since 1992, eleven monitoring wells have been installed and monitored though all but one well (MW-10) are currently dry. Reportedly, 220 pounds of total petroleum hydrocarbons as gasoline (TPH-g) were removed during a 40-hour soil vapor extraction pilot test. According to groundwater data, water quality objectives have been achieved or nearly achieved for all constituents before the groundwater wells went dry.

The petroleum release is limited to the soil and shallow 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 250 feet of the defined plume boundary. No other water supply wells have been identified within 250 feet of the defined plume boundary in files reviewed. Water is provided to water users near the Site by the City of Delano Public Works. The affected groundwater is not currently being used as a source of drinking water, and it is highly unlikely that the affected groundwater will be used as a source of drinking water in the foreseeable future. Other designated beneficial uses of impacted groundwater are not threatened, and it is highly unlikely that they will be, considering these factors in the context of the site setting. Remaining petroleum hydrocarbon constituents are limited and stable, and concentrations are decreasing. Corrective actions have been implemented and additional corrective actions are not necessary. Any remaining petroleum hydrocarbon constituents do not pose a significant risk to human health, safety or the environment.

Rationale for Closure under the Policy

- General Criteria: The case meets all eight Policy general criteria.
- Groundwater Specific Criteria: The case meets Policy Criterion 1 by Class 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.
- Vapor Intrusion to Indoor Air: The case meets the 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 land 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 Response

The Regional Water Board objects to UST case closure for this case because:

- The extent of contamination is not currently defined.
RESPONSE: The extent of groundwater contamination and lack of significant groundwater concentrations of fuel hydrocarbons was established years before site monitoring wells went dry. Newly installed source area monitoring MW-10 does not contain detectable fuel hydrocarbons. This case meets all policy criteria.
- In a January 2012 letter, the Regional Water Board directed the Responsible Party to conduct soil vapor extraction to reduce the source area hydrocarbon mass prior to initiating closure activities. This case meets all policy criteria.

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 significant risks 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. The Kern County Environmental Health Division has the regulatory responsibility to supervise the abandonment of monitoring wells.



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



Date

Prepared by: Kirk Larson, P.G.

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 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>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><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. 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 a commercial petroleum fueling facility and is bounded by a business across High Street to the west, a commercial petroleum fueling facility across County Road J44 to the north, and an empty lot to the east and south.
- Eleven monitoring wells have been installed and monitored since 1992. Ten wells were dry as of March 2012, only MW-10 could be sampled.
- A Site map showing the location of monitoring wells, soil confirmation borings, and site features is provided at the end of this closure summary (Vier, 2011).
- Nature of Contaminants of Concern: Petroleum hydrocarbons only.
- Source: UST system.
- Date reported: May 1989.
- Status of Release: USTs removed.

Tank Information

Tank No.	Size in Gallons	Contents	Closed in Place/Removed/Active	Date
1-3	8,000	Gasoline & Diesel	Removed	1999
4-6	8,000	Gasoline & Diesel	Active	Not applicable

Receptors

- GW Basin: San Joaquin Valley- Kern County.
- Beneficial Uses: Regional Water Board Basin Plan lists Agricultural, Municipal and Domestic Supply.
- Land Use Designation: Commercial.
- Public Water System: City of Delano Public Works.
- Distance to Nearest Supply Well: According to data available in GeoTracker, there is no California Department of Public Health regulated public supply wells were identified within 250 feet of the defined plume boundary. No other water supply wells within 250 feet of the defined plume boundary were identified in the files reviewed.
- Distance to Nearest Surface Water: No surface water features were identified within 250 feet of the defined plume boundary.

Geology/Hydrogeology

- Stratigraphy: The Site is underlain by interbedded and intermixed sand, silt, and clay.
- Maximum Sample Depth: 80 feet below ground surface (bgs).
- Minimum Groundwater Depth: 61.71 feet bgs at monitoring well MW-8.
- Maximum Groundwater Depth: >96 feet bgs.
- Current Average Depth to Groundwater: Approximately 90 feet bgs.
- Saturated Zones(s) Studied: Approximately 65-96 feet bgs.
- Groundwater Flow Direction: Variable, southwest to southeast.

Monitoring Well Information

Well Designation	Date Installed	Screen Interval (feet bgs)	Depth to Water (feet bgs) (08/31/12)
MW-1A	November 2002	52-72	Dry
MW-2	September 1992	47-72	Dry
MW-3	September 1992	47-72	Dry
MW-4	September 1996	47-72	Dry
MW-5	April 2001	47-72	Dry
MW-6A	July 2006	55-75	Dry
MW-7	June 1997	58-73	Dry
MW-8	June 1997	58-73	Dry
MW-9	March 2007	47-72	Dry
MW-10	June 2008	66-96	89.53
MW-11	June 2008	66-96	Dry

Remediation Summary

- Free Product: None reported in GeoTracker.
- Soil Excavation: An unknown volume of impacted soil was excavated, disposed off-site, and replace with clean fill in 1999.
- In-Situ Soil Remediation: Soil vapor extraction pilot test was conducted in January 2010 for 40 hours, which removed approximately 220 pounds of TPHg.
- Groundwater Remediation: None reported.

Most Recent Concentrations of Petroleum Constituents in Soil

Constituent	Maximum 0-5 feet bgs [mg/kg (Date)]	Maximum 5-10 feet bgs [mg/kg (Date)]
Benzene	<0.02 (08/08/11)	0.25 (08/08/11)
Ethylbenzene	8.3 (08/08/11)	110 (08/08/11)
Naphthalene	NA	<0.005 (04/12/10)
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)	Ethyl-Benzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)
MW-1A	09/25/06	<5.6	<15	2.7	5.4	<0.24	8.0	1.4
MW-2	12/16/03	<15	<40	<0.22	<0.32	<0.31	<0.4	<0.16
MW-3	12/16/03	<15	<40	<0.22	<0.32	<0.31	<0.4	<0.18
MW-4	06/23/04	<15	<40	<0.22	<0.32	<0.31	<0.4	<0.18
MW-5	06/23/04	<15	<60	<0.22	<0.32	<0.31	<0.4	<0.18
MW-6	09/17/08	<50	<100	<0.5	<0.5	<0.5	<0.1	<5
MW-7	06/29/05	<15	<60	<0.22	<0.32	<0.31	<0.4	<0.18
MW-8	03/25/08	<15	63	<1	<5	<5	<5	<1
MW-9	11/21/05	<100	<1,000	<1	<5	<5	<5	<1
MW-10	08/31/12	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5
MW-11	10/30/10	<50	<100	<1	<5	<5	<5	<1
WQOs	-	5	56	0.15	42	29	17	5

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

WQOs: Water Quality Objectives, Regional Water Board Basin Plan

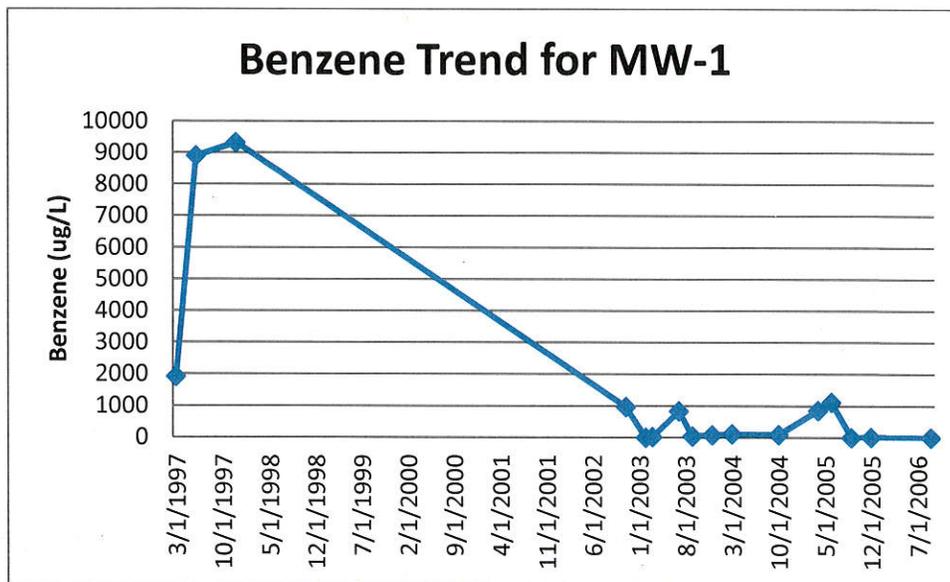
*The sample date is the last date water was measurable

Note: Ten wells were dry as of March 2012, only MW-10 could be sampled

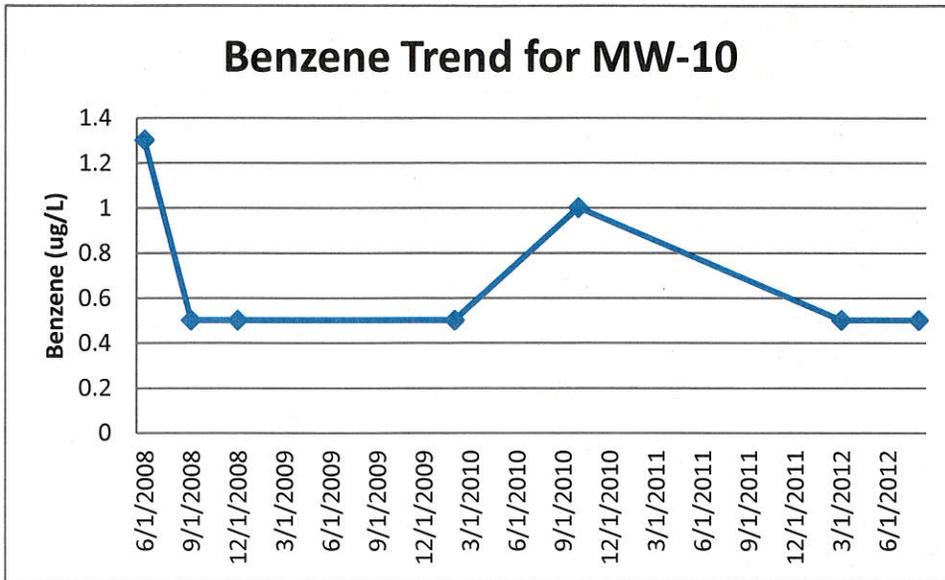
Groundwater Trends:

- There are 20 years of groundwater monitoring data for this Site. Ten wells were dry as of March 2012, only MW-10 could be sampled. Benzene trends for well are shown below: Source area (MW-1 [dry after 2006] and MW-10) and Downgradient (MW-8 [dry after 2008]).

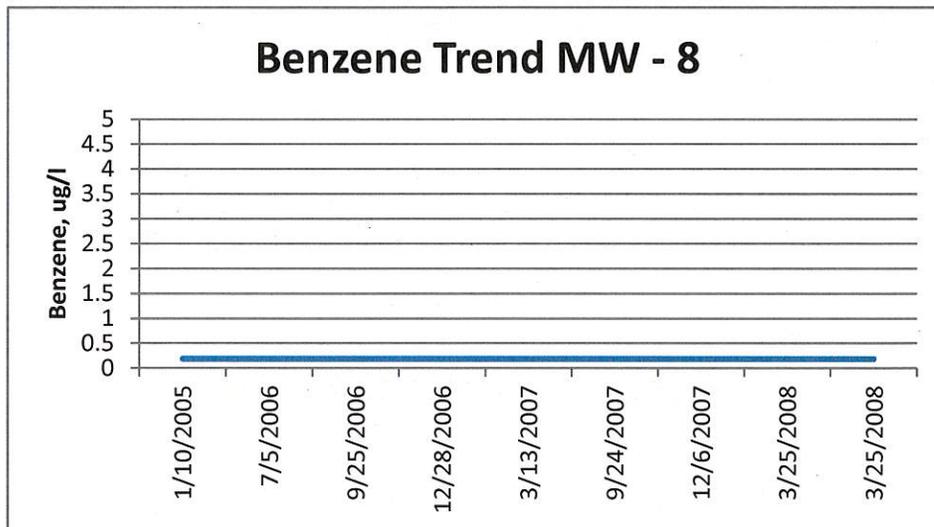
Source Area Well



Source Area Well



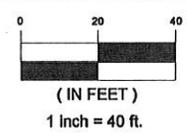
Downgradient Well



Evaluation of Current Risk

- Estimate of Hydrocarbon Mass in Soil: None reported.
- Soil/Groundwater tested for methyl tert-butyl ether (MTBE): Yes.
- Plume Length: <100 feet.
- Plume Stable or Decreasing: Yes.
- Contaminated Zone(s) Used for Drinking Water: No, minimal water available in Site wells.
- Oxygen Concentrations in Soil Vapor: None reported.
- Groundwater Risk from Residual Petroleum Hydrocarbons: 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 the Policy Exclusion for Active Station. Soil vapor evaluation is not required because 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 land 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.



LEGEND		COY AND JUNE SHOCKLEY		
⊕	GROUNDWATER MONITORING WELL	LUCKY 7 FOOD MART 2340 HIGH STREET DELANO, CALIFORNIA FIGURE 3 - GROUNDWATER ELEVATION MAP	<i>VEIR Corp</i>	
###.#	GROUNDWATER ELEVATION (FEET ABOVE MSL)			
###.#—	GROUNDWATER CONTOUR (FEET ABOVE MSL)			
		↙ DIRECTION OF GROUNDWATER FLOW		

REVISED: SEPTEMBER 28, 2012 MRM