

State Water Resources Control Board

UST CASE CLOSURE REVIEW SUMMARY REPORT

Agency Information

Agency Name: Santa Barbara County Fire Dept. Fire Prevention Division	Address: 1430 Mission Drive Solvang, CA 93463
Agency Caseworker: Mr. Steven Nailor	Case No.: 90083

Case Information

USTCF Claim No.: 15938	Global ID: T0608324329
Site Name: Santa Barbara American Fuel & Gas	Site Address: 2234 De La Vina Street Santa Barbara, CA 93105
Responsible Party: Jack Haddad	Address: (private residence)
USTCF Expenditures to Date: \$1,152,635	Number of Years Case Open: 13

URL: http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0608324329

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 currently operated as a service station. An unauthorized leak was reported in March 2000. In 1999, three gasoline USTs, one waste oil UST, and approximately 221 tons of impacted soil were removed from the Site. In 2006, an additional 54 tons of impacted soil were removed. A dual phase remediation system operated between October 2006 and May 2008; and was discontinued due to low influent contaminant concentrations. A total of 21 monitoring wells have been installed and monitored throughout the life of the project. According to groundwater data, water quality objectives (WQO) have been achieved for all constituents except methyl tert-butyl ether (MTBE) in one near source area well.

The petroleum release is limited to the shallow soil and groundwater. No public supply well regulated by the California Department of Public Health (CDPH) or surface water body is located within 250 feet of the defined plume boundary. No other water supply wells were identified to lie within 250 feet of the defined plume boundary in files reviewed. Water is provided to water users near the Site by the City of Santa Barbara Public Works Department. 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 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 WQO 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 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 Residential and Commercial/Industrial use, as applicable, 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

As of July 19, 2012 (via directive), the County requests the following be completed prior to UST case closure:

- One additional round of groundwater monitoring since the last event was performed in the first quarter 2009.
RESPONSE: It is not necessary to collect additional samples. Documented levels of contamination meet or nearly meet WQOs and meet the Policy criteria. In addition, concentrations will continue to attenuate over time.
- Confirmation borings to confirm successful remediation at the Site.
RESPONSE: There are not sufficient mobile constituents (leachate, vapors, or light non-aqueous liquids) to cause groundwater to exceed the groundwater criteria in this Policy. It is not necessary to collect additional soil samples, as evidenced by the lack of detectable petroleum hydrocarbon constituents in 19 of the 21 monitoring wells onsite.

Santa Barbara American Fuel & Gas
2234 De La Vina Street, Santa Barbara
Claim No. 15938

March 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.

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. Santa Barbara 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 case 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 site?</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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input 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?</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. 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 case 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 2234 De La Vina Street in Santa Barbara. The nearest cross street is West Pueblo Street. The Site is currently operated as an active commercial petroleum fueling facility and automotive repair facility with two USTs and two dispenser islands.
- Site maps showing the location of the USTs, the 21 monitoring wells, and groundwater level contours are provided at the end of this closure review summary (PW Environmental [PW], 2009).
- Nature of Contaminants of Concern: Petroleum hydrocarbons only.
- Source: UST system.
- Date reported: March 2000.
- Status of Release: USTs replaced.
- Free-Phase Hydrocarbons: Historically noted in MW-2 and MW-10. No free product noted since May 2007 (MW-2).

Tank Information

Tank No.	Size in Gallons	Contents	Closed in Place/Removed/Active	Date
1	10,000	Gasoline	Removed	2/3/1999
2	10,000	Gasoline	Removed	2/3/1999
3	4,000	Gasoline	Removed	2/3/1999
4	550	Waste Oil	Removed	2/3/1999
5	10,000	Gasoline	Active	
6	10,000	Gasoline	Active	

Receptors

- GW Basin: Santa Barbara.
- Beneficial Uses: Agricultural Supply, Industrial Process Supply, Industrial Service Water Supply, Municipal and Domestic Supply. Source: California Regional Water Quality Control Board, Central Coast, Region 3, Basin Plan (Regional Water Board)
- Land Use Designation: Commercial.
- Public Water System: City of Santa Barbara Public Works Department.
- Distance to Nearest Supply Well: According to data available in GeoTracker, there are no public supply wells regulated by CDPH within 250 feet of the Site.
- Distance to Nearest Surface Water: There is no identified surface water within 250 feet of the Site. Mission Creek lies 2,000 feet west of the Site.
- Sensitive Receptor Survey: A Sensitive Receptor Survey Report was prepared by PW Environmental (PW) in December 2003. No wells and no surface water within 250 feet of the Site were reported. PW reported the location of various nearby utilities but concluded that there appeared to be a low likelihood that the identified utilities could serve as conduits for contamination associated with the Site.

Geology/Hydrogeology

- Stratigraphy: The Site is underlain by sandy silt, silty sand, sand, clayey sand, and sandy clay. Sandstone cobbles have been encountered between 30 to 45 feet below ground surface (bgs) and 65 to 80 feet bgs.
- Maximum Sample Depth: 90 feet bgs.
- Minimum Groundwater Depth: 53.20 bgs at monitoring well MW-13.
- Maximum Groundwater Depth: 74.26 feet bgs at monitoring well MW-19.
- Current Average Depth to Groundwater: ~63 feet bgs.
- Saturated Zones(s) Studied: ~58 – 85 feet bgs.
- Appropriate Screen Interval: Yes.
- Groundwater Flow Direction: Predominately to the east to southeast with an average gradient of 0.023 feet/foot (ft/ft).

Monitoring Well Information

Well Designation	Date Installed	Screen Interval (feet bgs)	Depth to Water (feet bgs) (4/1/09)
MW-1	1/16/02	58 – 78	66.72
MW-2	1/16/02	58 – 78	66.91
MW-3	1/17/02	58 – 78	66.56
MW-4	1/23/02	54 – 74	66.56
MW-5	6/24/03	59 – 75	64.56
MW-6	6/24/03	66 – 80	64.50
MW-7	6/25/03	59 – 74	66.05
MW-8	6/26/03	59 – 74	66.30
MW-9	6/25/03	58 – 74	67.57
MW-10	6/29/03	59 – 74	No Access
MW-11	2/11/04	50 – 70	Dry
MW-12	2/11/04	62 – 82	69.15
MW-13	2/10/04	54 – 70	61.02
MW-14	2/10/04	63 – 78	64.45
MW-15	5/3/05	65 – 85	65.08
MW-16	5/5/05	60 – 80	61.32
MW-17	5/5/05	60 – 80	70.03
MW-18	5/4/05	53 – 73	62.74
MW-19	5/4/05	60 – 80	74.26
MW-20	1/24/06	54 – 74	60.97
MW-21	1/25/06	55 – 75	64.21

Remediation Summary

- Free Product: Free product has been identified in monitoring wells MW-2 and MW-10. No free product noted since May 2007 (MW-2), although most recent samples were 2008 or 2009.
- Soil Excavation: Approximately 221 tons of impacted soil generated during the UST removal were transported off-site to a recycling facility in February 1999. Approximately 54 tons of impacted soil were transported off-site and disposed in July 2006, performed in conjunction with the installation of the remediation system.

- In-Situ Soil/Groundwater Remediation: Dual phase extraction was conducted between October 2006 and May 2008 and was terminated due to low influent concentrations.

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)] (under USTs)	Maximum 5-10 feet bgs [mg/kg (date)] (all locations other than under USTs)
Benzene	0.088 (01/17/02)	6.16 (02/03/99)	<0.002 (2002 & 2005)
Ethylbenzene	0.039 (01/17//02)	21.6 (02/03/99)	<0.002 (2002 & 2005)
Naphthalene	NA	NA	NA
PAHs	NA	NA	NA

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

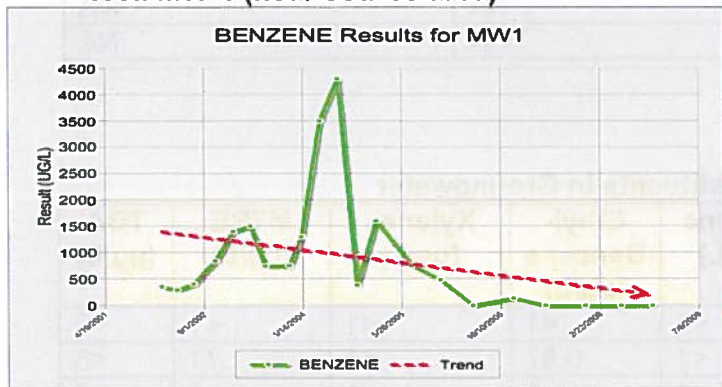
Sample	Sample Date	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl- Benzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	TBA (µg/L)
MW-1	11/12/08	100	<1	<1	<1	<1	<1	<5
MW-2	11/12/08	51.6	<1	<1	0.87	<1	1.71	<5
MW-3	04/02/09	<100	<1	<1	<1	<1	<1	<5
MW-4	11/12/08	<100	<1	<1	<1	<1	<1	<5
MW-5	04/02/09	<100	<1	<1	<1	<1	<1	<5
MW-6	04/02/09	<100	<1	<1	<1	<1	<1	<5
MW-7	04/01/09	<100	<1	<1	<1	<1	<1	<5
MW-8	04/02/09	<100	<1	<1	<1	<1	<1	<5
MW-9	11/12/08	<100	<1	<1	<1	<1	<1	<5
MW-10	11/12/08	<100	<1	<1	<1	<1	7.79	<5
MW-11	08/19/08	<100	<1	<1	<1	<1	<1	<5
MW-12	04/01/09	<100	<1	<1	<1	<1	<1	<5
MW-13	04/02/09	<100	<1	<1	<1	<1	<1	<5
MW-14	04/01/09	<100	<1	<1	<1	<1	<1	<5
MW-15	04/01/09	<100	<1	<1	<1	<1	<1	<5
MW-16	04/02/09	<100	<1	<1	<1	<1	<1	<5
MW-17	04/02/09	<100	<1	<1	<1	<1	<1	<5
MW-18	04/02/09	<100	<1	<1	<1	<1	<1	<5
MW-19	11/10/08	<100	<1	<1	<1	<1	<1	<5
MW-20	04/02/09	<100	<1	<1	<1	<1	<1	<5
MW-21	04/01/09	<100	<1	<1	<1	<1	<1	<5
WQOs	-	--	1	150	680	1,750	5	1,200^a

µg/L: micrograms per liter, parts per billion
 <: Not detected at or above stated reporting limit
 NS: Not sampled
 TPHg: Total petroleum hydrocarbons as gasoline
 MTBE: Methyl tert-butyl ether
 TBA: Tert-butyl alcohol
 WQOs: Water Quality Objectives, Regional Water Board, Basin Plan
 --: Regional Water Board, Basin Plan does not have numeric WQO values for TPHg
^a: California Department of Public Health, Response Level

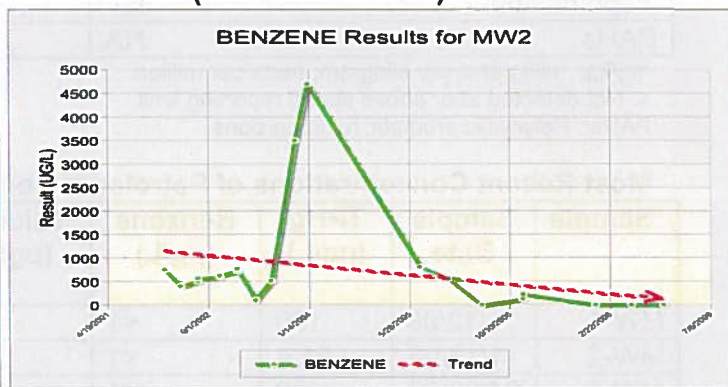
Groundwater Trends

There are approximately six to eleven years of groundwater monitoring data from the 21 monitoring wells for this site on GeoTracker. No analytical data have been uploaded since the April 2009 sampling event. The following graphs show analytical data for two of the originally most impacted groundwater monitoring wells, MW-1 and MW-2, as well as downgradient wells MW-10, and MW-11. The concentration trends at these wells show a delineated and decreasing plume.

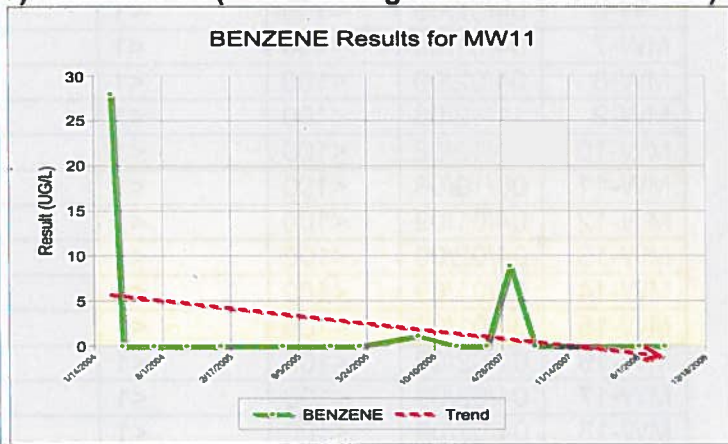
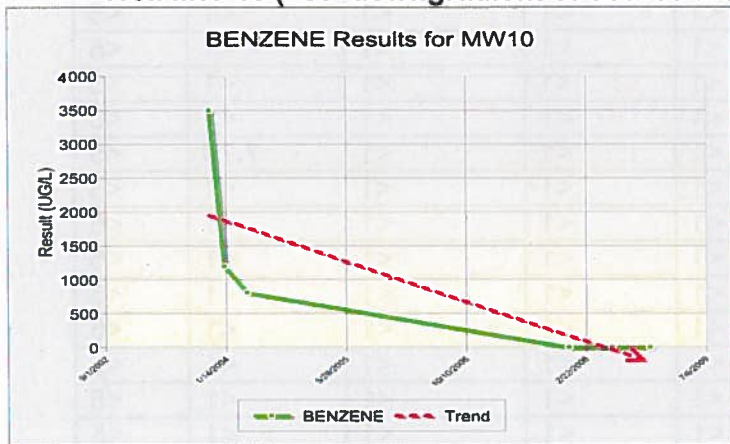
Well MW-1 (near source area)



Well MW-2 (near source area)

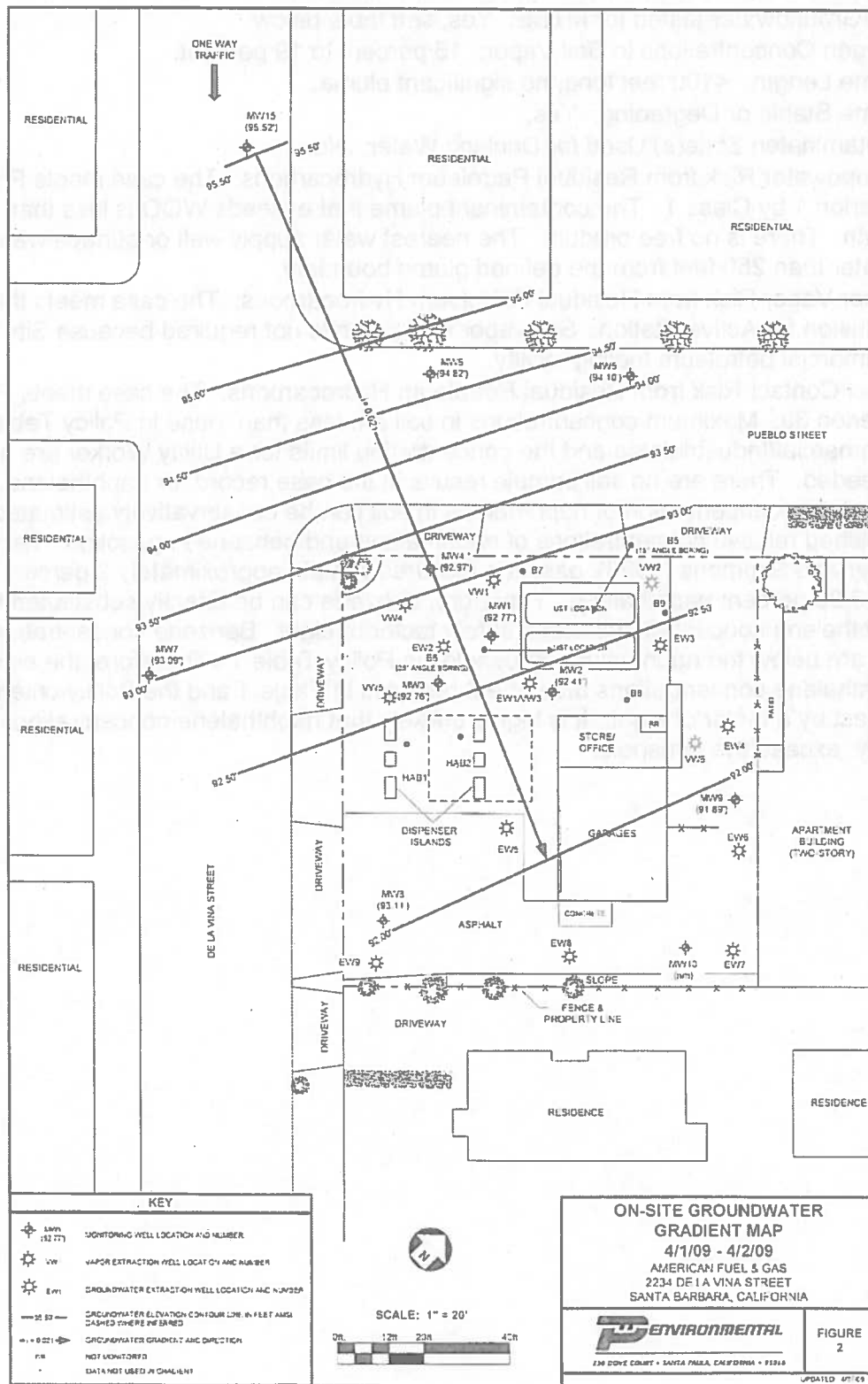


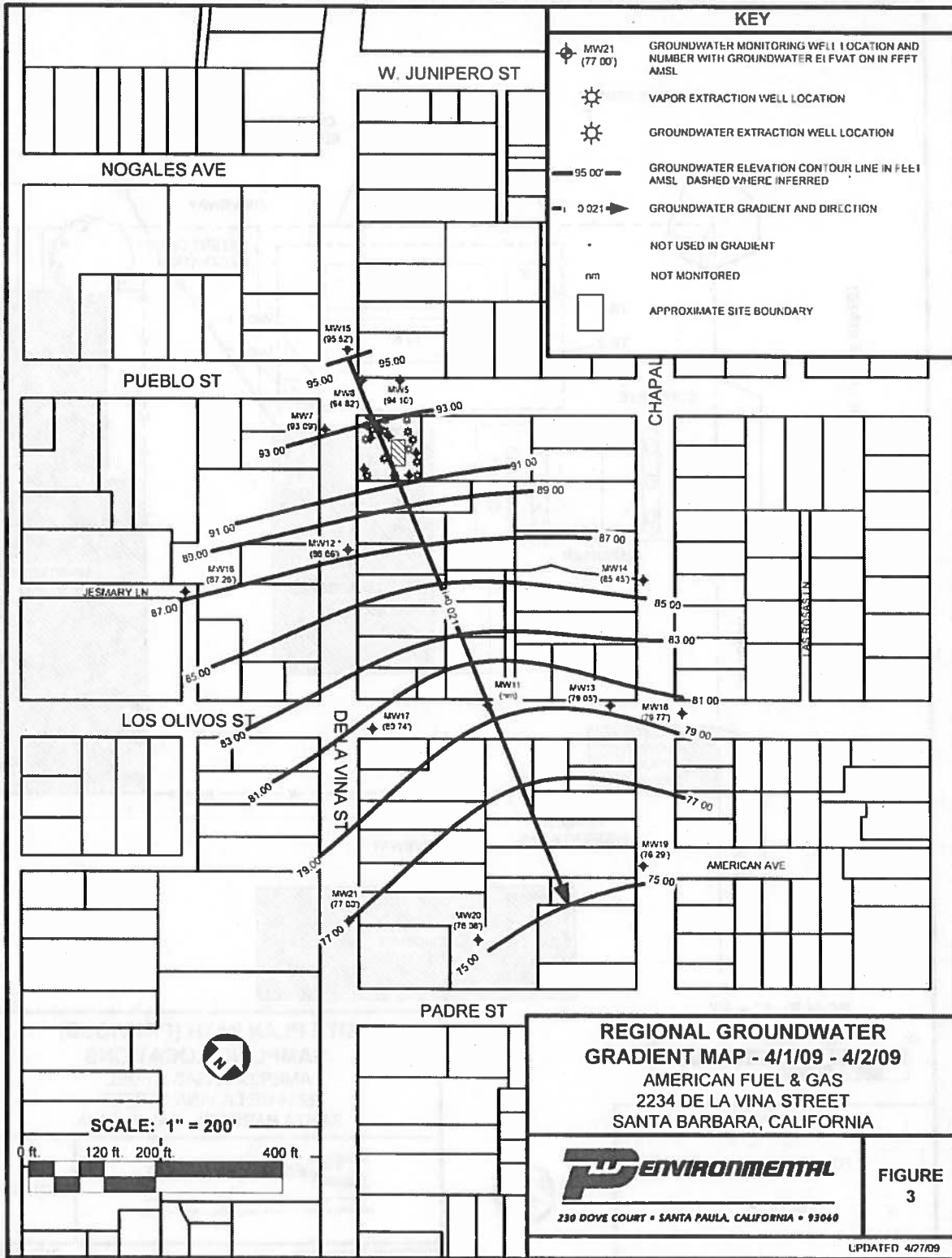
Well MW-10 (~60' downgradient of source area) Well MW-11 (~450' downgradient of source area)

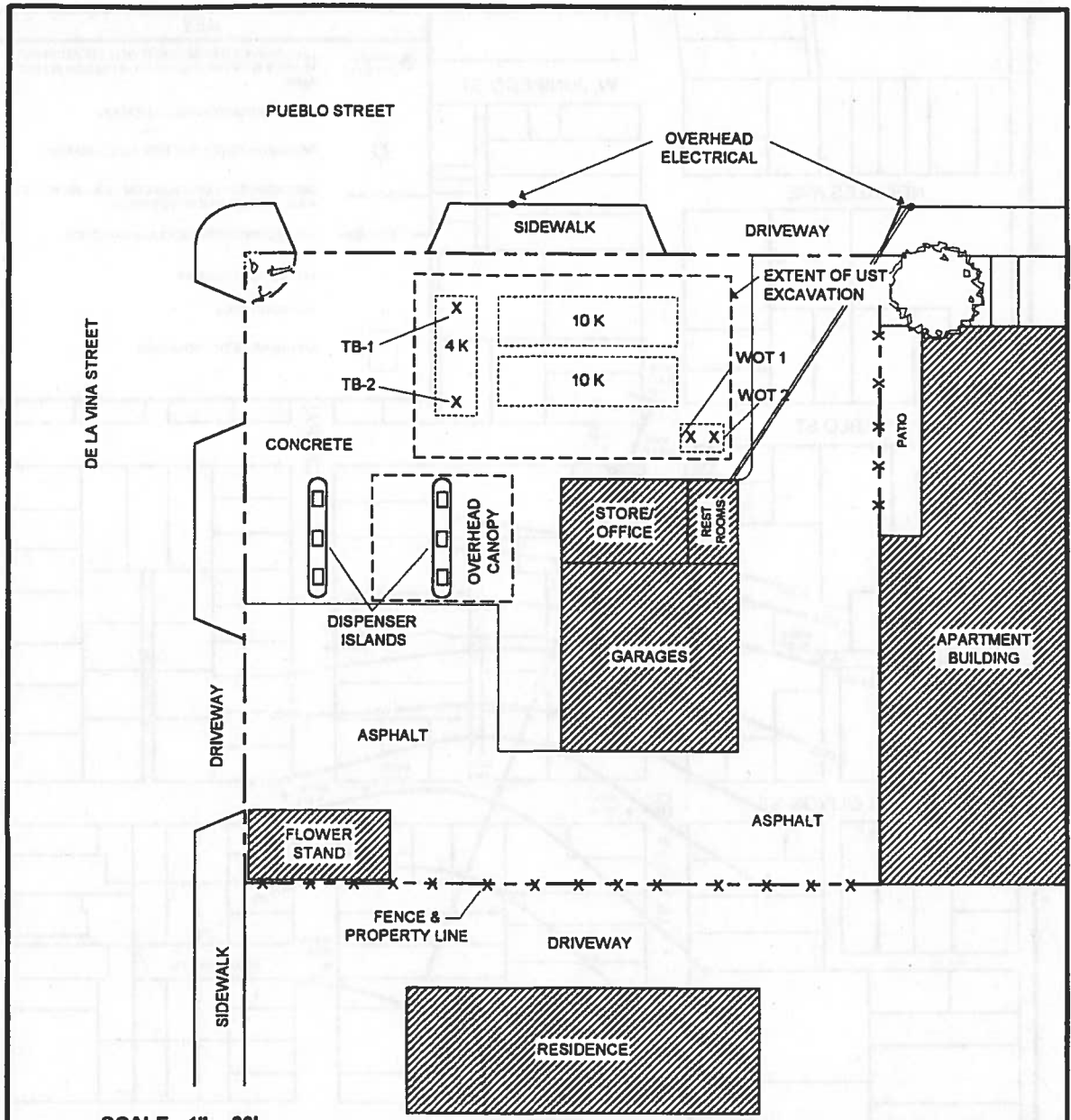


Evaluation of Current Risk

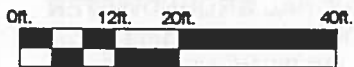
- Estimate of Hydrocarbon Mass in Soil: None reported.
- Soil/Groundwater tested for MTBE: Yes, see table below.
- Oxygen Concentrations in Soil Vapor: 15 percent to 19 percent.
- Plume Length: <100 feet long, no significant plume.
- Plume Stable or Degrading: Yes.
- Contaminated Zone(s) Used for Drinking Water: No.
- Groundwater Risk from Residual Petroleum Hydrocarbons: The case meets Policy Criterion 1 by Class 1. The contaminant plume that exceeds WQO 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 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.







SCALE: 1" = 20'



KEY	
	FORMER UST LOCATION (4)
X	SAMPLE LOCATIONS (4)



SITE PLAN WITH (PREVIOUS) SAMPLING LOCATIONS
 AMERICAN GAS & FUEL
 2234 DE LA VINA STREET
 SANTA BARBARA, CALIFORNIA



328 DOVE COURT • SANTA PAULA, CALIFORNIA • 92668

FIGURE 2

REVISED BY: Ted Vandervort

DATE: 08/28/01