

## State Water Resources Control Board

### UST CASE CLOSURE REVIEW SUMMARY REPORT

#### Agency Information

Agency Name: Los Angeles Regional Water Quality Control (Regional Water Board)	Address: 320 West 4 <sup>th</sup> Street, Suite 200 Los Angeles, CA 90013
Agency Caseworker: Noman Chowdhury	Case No.: 906700361

#### Case Information

USTCF Claim No.: 16395	GeoTracker Global ID: T0603701573
Site Name: Gemini's Property Development	Site Address: 11212 South Norwalk Blvd Santa Fe Springs, CA 90670
Responsible Party: Waterwell Supply, Inc.	Address: 11234 South Norwalk Blvd., Santa Fe Springs, CA 90670
USTCF Expenditures to Date: \$720,705	Number of Years Case Open: 15

URL: [http://geotracker.waterboards.ca.gov/profile\\_report.asp?global\\_id=T0603701573](http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0603701573)

#### 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:

This case is an empty lot in a commercial land use area. An unauthorized release was reported in June 1998 following the removal of two 3,000-gallon gasoline USTs. Soil vapor extraction was conducted between January 2007 and October 2012, and reportedly removed 150,744 pounds of total petroleum hydrocarbons as gasoline (TPHg). Since 2002, four groundwater monitoring wells have been installed and intermittently monitored. According to groundwater data obtained in 2008, 2009 and 2012, water quality objectives have been achieved or nearly achieved for all constituents of concern, except benzene in source area monitoring wells MW-1 and MW-4.

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 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 the City of Santa Fe Springs Water 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.

FELICIA MARCUS, CHAIR | THOMAS HOWARD, EXECUTIVE OFFICER

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Remaining petroleum hydrocarbon constituents are limited and stable. 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.
- Indoor Vapor Risk from Residual Petroleum Hydrocarbons: The case meets Policy Criterion 2a by Scenario 3b. The maximum benzene concentration in groundwater is less than 1,000 µg/L. The minimum depth to groundwater is greater than 10 feet, overlain by soil containing less than 100 mg/kg of TPH.
- 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 Regional Water Board has no objections to case closure (telephone conversation with Dr. Yue Rong on March 11, 2013).

#### **Determination**

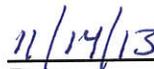
Based on the review performed in accordance with Health & Safety Code Section 25299.39.2 subdivision (a), the Fund Manager has determined that closure of the case is appropriate.

#### **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. The City of Long Beach has the regulatory responsibility to supervise the abandonment of monitoring wells.



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

  
\_\_\_\_\_  
Date

Prepared by: Abdul Karim Yusufzai

**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><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><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p><b>Does the unauthorized release consist only of petroleum?</b></p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p><b>Has the unauthorized ("primary") release from the UST system been stopped?</b></p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p><b>Has free product been removed to the maximum extent practicable?</b></p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA</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><b>Has secondary source been removed to the extent practicable?</b></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 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 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 type="checkbox"/> 1 <input checked="" 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>                  If YES, check applicable scenarios: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input checked="" type="checkbox"/> 3 <input type="checkbox"/> 4</p>	<p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input 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><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><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><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><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 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**

- This case is an empty lot and is bounded by residences across Norwalk Boulevard to the west, an empty lot to the north, and businesses to the east and south.
- Site map showing the location of the monitoring wells, former USTs and groundwater level contours is provided at the end of this closure review summary (Signal GeoScience, December 2008).
- Nature of Contaminants of Concern: Petroleum hydrocarbons only.
- Source: UST system.
- Date reported: June 1998.
- Status of Release: USTs removed.
- Free Product: None reported.

**Tank Information**

Tank No.	Size in Gallons	Contents	Closed in Place/Removed/Active	Date
1,2	3,000	Gasoline	Removed	May 1999

**Receptors**

- GW Basin: Coastal Plain of Los Angeles - Central.
- Beneficial Uses: Regional Water Board Basin Plan lists Agricultural, Municipal and Domestic, and Industrial Supply, and Industrial Service.
- Land Use Designation: Aerial photograph available on GeoTracker indicates mixed residential and commercial land use in the vicinity of the Site.
- Public Water System: City of Santa Fe Springs Water Department.
- Distance to Nearest Supply Well: According to data available in GeoTracker, there are no public supply wells regulated by the California Department of Public Health within 1,000 feet of the defined plume boundary. 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 by interbedded and intermixed sand, silt, and clay.
- Maximum Sample Depth: Approximately 100 feet below ground surface (bgs).
- Minimum Groundwater Depth: 83.6 feet bgs at monitoring well MW-4.
- Maximum Groundwater Depth: 95.4 feet bgs at monitoring well MW-4.
- Current Average Depth to Groundwater: Unknown. Groundwater levels have varied from 80 feet bgs to 94 feet bgs since monitoring began in 2002 and ended in 2009 when the monitoring wells became dry.
- Saturated Zones(s) Studied: Approximately 84 - 97 feet bgs.
- Appropriate Screen Interval: Groundwater levels have lowered to where well MW-4 is the only well that occasionally has water.
- Groundwater Flow Direction: Historically south to south-southwest with an average gradient of 0.005 feet/foot.

**Monitoring Well Information**

Well Designation	Date Installed	Screen Interval (feet bgs)	Depth to Water (feet bgs)
MW-1	March 2002	NA - 94	92.62 (12/04/08)
MW-2	March 2002	NA - 94	93.71 (03/03/09)
MW-3	March 2002	NA - 94	93.75 (03/03/09)
MW-4	March 2002	NA - 97	95.89 (12/04/08)

**Remediation Summary**

- Free Product: None noted in GeoTracker.
- Soil Excavation: USTs excavation soil stockpile was sampled and verified to be clean.
- In-Situ Soil Remediation: Soil vapor extraction conducted between January 2007 and September 2012, which removed 150,744 pounds of TPHg. Remediation was terminated in September 2012 because contaminant removal rates had reached asymptotic levels.
- Groundwater Remediation: None conducted.

**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	<0.001 (3/31/10)	<0.001 (3/31/10)
Ethylbenzene	<0.001 (3/31/10)	<0.001 (3/31/10)
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)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-Benzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	TBA (µg/L)
MW-1	12/04/08	1,620	383.5	10.1	39.0	10.5	<1	<10
MW-2	3/04/09	<100	<0.5	<0.5	<0.5	<0.5	<1	<10
MW-3	3/04/09	<100	<0.5	<0.5	<0.5	<0.5	<1	<10
MW-4	6/29/12	2,769	65	0.6	<0.5	2.3	<1	<10
<b>WQOs</b>		--	<b>1</b>	<b>150</b>	<b>300</b>	<b>1,750</b>	<b>5<sup>a</sup></b>	<b>1,200<sup>b</sup></b>

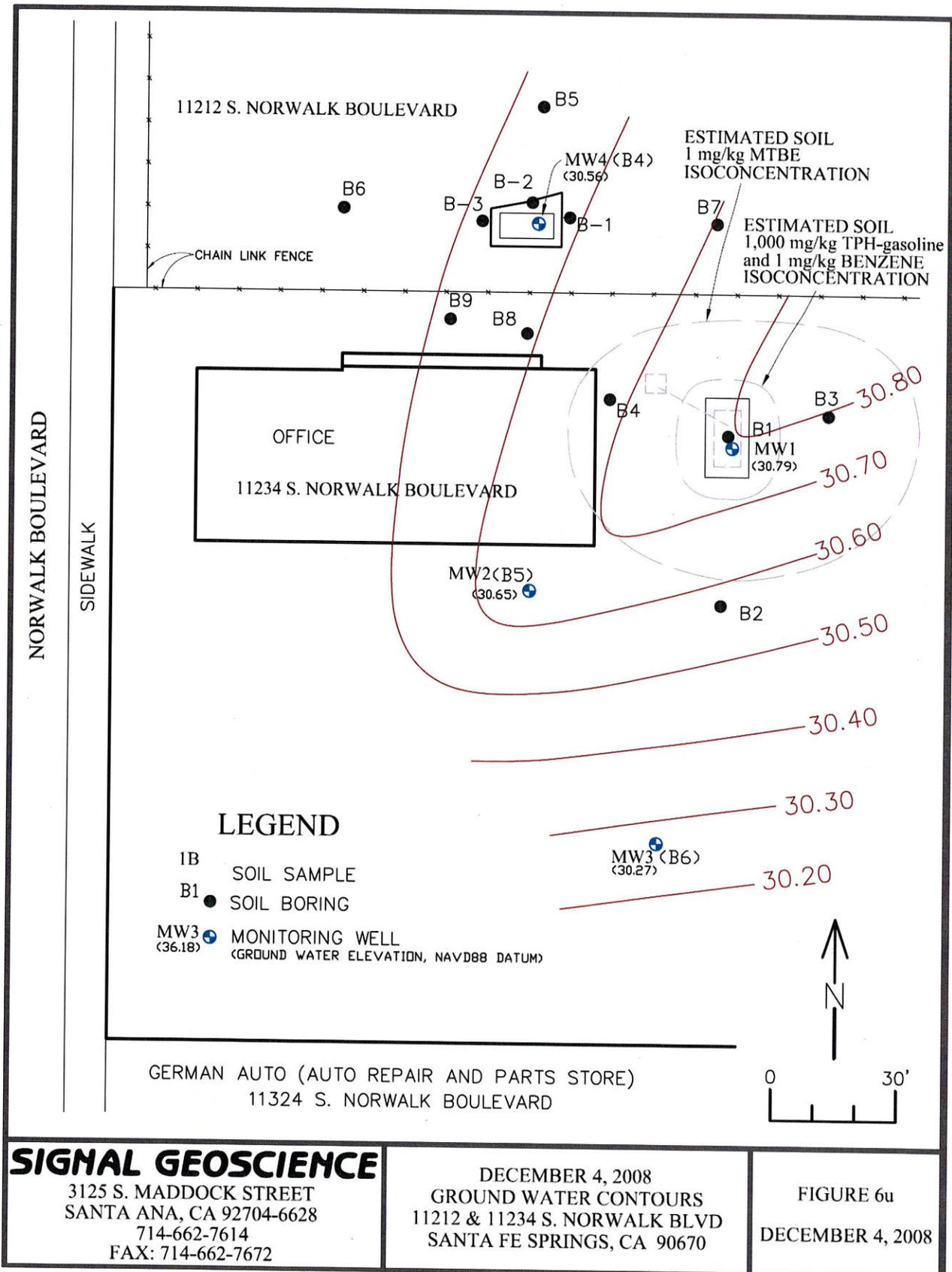
NA: Not Analyzed, Not Applicable or Data Not Available  
 µg/L: Micrograms per liter, parts per billion  
 <: Not detected at or above stated reporting limit  
 TPHg: Total petroleum hydrocarbons as gasoline  
 MTBE: Methyl tert-butyl ether  
 TBA: Tert-butyl alcohol  
 WQOs: Water Quality Objectives, Regional Water Board Basin Plan  
 --: Regional Water Board Basin Plan does not have a numeric water quality objective for TPHg  
<sup>a</sup>: Secondary maximum contaminant level (MCL)  
<sup>b</sup>: California Department of Public Health, Response Level

### Groundwater Trends

- Groundwater monitoring was conducted between 2002 and 2008, until the monitoring wells became dry. Current trends are not available.

### Evaluation of Current Risk

- Estimate of Hydrocarbon Mass in Soil: None reported.
- Soil/Groundwater tested for methyl tert-butyl ether (MTBE): Yes, see table above.
- Oxygen Concentrations in Soil Vapor: None reported.
- Plume Length: Less than 250 feet based on the historical data.
- Plume Stable or Decreasing: Yes.
- Contaminated Zone(s) Used for Drinking Water: No.
- 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.
- Indoor Vapor Risk from Residual Petroleum Hydrocarbons: The case meets Policy Criterion 2a by Scenario 3b. The maximum benzene concentration in groundwater is less than 1,000 µg/L. The minimum depth to groundwater is greater than 10 feet, overlain by soil containing less than 100 mg/kg of TPH.
- 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.



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DECEMBER 4, 2008  
 GROUND WATER CONTOURS  
 11212 & 11234 S. NORWALK BLVD  
 SANTA FE SPRINGS, CA 90670

FIGURE 6u  
 DECEMBER 4, 2008

