

State Water Resources Control Board

UST CASE CLOSURE SUMMARY

Agency Information

Agency Name: San Mateo County- Heath System (County)	Address: 2000 Alameda de las Pulgas, Suite 100, San Mateo, CA 94403
Agency Caseworker: Marc Mullaney	Case No.: 110032

Case Information

USTCF Claim No.: 6283	Global ID: T0608100446
Site Name: Honda of San Mateo	Site Address: 101 East 25 th Avenue, San Mateo, CA 94403 (Site)
Petitioners: John Dimascio & John O'Hara	Address: P.O. Box 6391 San Mateo, CA 94403
USTCF Expenditures to Date: \$144,140	Number of Years Case Open: 24

URL: http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0608100446

Summary

The Low-Threat Underground Storage Tank 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 Site 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 Conceptual Site Model of the Site follow:

The release at this Site was discovered when the USTs were removed in June 1988. The Site previously distributed burner oils and diesel oil and is currently a motorcycle sales/ service outlet. There are no USTs currently on-site. A 70-foot wide railroad right of way with two active tracks is located 200 feet northeast, down-gradient. During the 1988 and 1998 UST removals, approximately 155 to 170 cubic yards (cy) of contaminated soil were removed. Soil sampling conducted in 1998 and 1999 indicated elevated levels of petroleum constituents located immediately next to the former USTs. Petroleum constituents were not detected in the off-site soil borings and the off-site down-gradient monitoring well (MW) MW-5. Due to intermittent free product, product recovery could only be accomplished using oil skimmer and oil absorbent pads from 2002 to 2006. In 2012, petroleum sheen was removed by purging.

The petroleum release is limited to the shallow soil and groundwater. The affected groundwater is not currently being used as a source of drinking water or for any other designated beneficial use, and it is highly unlikely that the affected groundwater will be used as a source of drinking water or any other

beneficial use in the foreseeable future. Public supply wells are usually constructed with competent sanitary seals. Production intervals are in deeper protected aquifers. Remaining petroleum constituents are limited, stable, and declining. Remedial actions have been implemented and further remediation would be ineffective and expensive. Additional assessment/monitoring will not likely change the conceptual model. Remaining petroleum constituents do not pose significant risk to human health, safety, or the environment.

Rationale for Closure under the Policy

- General Criteria – Site meets all eight general criteria under the Policy.
- Groundwater – Site meets the Policy Groundwater-Specific Class “3”.
- Petroleum Vapor Intrusion to Indoor Air – Site meets the Policy Class “b”. A site-specific risk assessment for the vapor intrusion pathway was conducted and demonstrates that human health is protected.
- Direct Contact and Outdoor Air Exposure – Site meets the Policy Class “a”. Maximum concentrations of petroleum constituents in soil are less than or equal to those listed in Table 1 of the Policy. The estimated naphthalene concentrations in soil meet the thresholds in Table 1 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

County staff objected to UST case closure because:

1. Free product has not been properly delineated and removed to the extent practicable.

Response: Measurable free product at this Site is intermittent; therefore, consistent removal techniques are ineffective and costly. Cost effective free product removal cannot be performed because the free product does not exist in a readily removable state. During the most recent groundwater monitoring event in April 2012, it was reported that product sheen was no longer present in well MW-4 after removing 12.6 gallons of water on April 17, 2012 and 15 gallons of water on April 20, 2012. Therefore, free product has been removed to the extent practicable.

2. The Site appears to not be properly delineated and has missed one key historical operational area (pump house).

Response: Given the Site low permeable soils, lithology, hydrology, and the length of time since the release was discovered, contamination migration has been adequately investigated and assessed. Five monitoring wells and sixteen soil borings have been constructed at the Site. Monitoring well MW-2 was removed as part of the UST excavation activities in 1998. Groundwater monitoring has been conducted at the Site since 1990.

Based on the information available in the record, soil boring GP-8 was drilled in the immediate proximity of the former pump house. Soil samples collected in 1999 showed that elevated levels of total petroleum hydrocarbons as diesel (TPHd) and total petroleum hydrocarbons as gasoline (TPHg) were detected in the boring GP-8 at 10 feet below ground surface (bgs); however,

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concentrations of TPHd and TPHg were both non-detect at 18 feet bgs. Benzene, toluene, ethylbenzene, and xylenes (BTEX) were not detected in any of the soil samples from the boring GP-8. The groundwater investigation conducted in 1999 identified low level of TPHg and non-detectable level of benzene from the boring GP-8.

3. The monitoring wells are not in appropriate position to demonstrate that groundwater plumes are stable to decreasing.

Response: According to information available in the record, groundwater flows northeasterly. Five monitoring wells were installed on-site and off-site. Monitoring wells MW-4 and MW-5 have been appropriately designated as the on-site down-gradient and off-site down-gradient wells, respectively. The concentration trends are stable and petroleum constituents are non-detect in monitoring well MW-5; therefore, the plumes are stable in size.

4. Monitoring well MW-4 was not properly constructed and the well screen may be submerged.

Response: According to information available in the record, well MW-4 was constructed with the screen interval from 8.5 feet bgs to 18.5 feet bgs and the top of the sand pack at 7 feet bgs. The depth to groundwater at the time of the well construction was approximately 11 feet bgs. Historical depths to water measured in well MW-4 showed that the well screen was submerged on a few occasions. However, information from the record indicates that the aquifer conditions may be confined. Although free product thickness measurements may be unreliable during periods when the well screen is submerged, there is adequate information during other periods to demonstrate that any remaining free product is intermittent, and therefore, consistent product removal techniques are ineffective and costly.

On April 17, 2012, a downhole video camera was used to verify screen interval lengths, the integrity of well construction, and the absence of sediment in the bottom of the wells and the well screens. The screen interval reported during video survey for well MW-4 was approximately from 9 feet bgs to 18 feet bgs. The video logs showed well casing intact and well screen relatively free of silt and debris.

Based on the above information, it appears that well MW-4 was properly completed at the time of construction and that the well is properly managed.

San Francisco Bay Regional Water Quality Control Board (Regional Water Board) Response to the Petition

The Regional Water Board does not agree with case closure for this Site.

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Recommendation for Closure

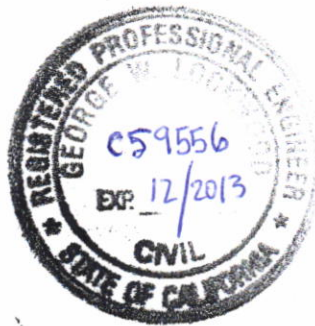
The corrective action performed at this Site ensures the protection of human health, safety, environment, and is consistent with Chapter 6.7 of the Health and Safety Code and implementing regulations, applicable state policies for water quality control and the applicable water quality control plan, and case closure is recommended.

Prepared By: Trinh Pham
Trinh Pham
Water Resource Control Engineer

4/15/2013
Date

Reviewed By: George Lockwood
George Lockwood, PE#59556
Senior Water Resource Control Engineer

4/15/2013
Date



ATTACHMENT 1: COMPLIANCE WITH STATE WATER BOARD POLICIES AND STATE LAW

The site 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 site 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.

<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 (WQOs) 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 WQOs stable or decreasing in areal extent?</p> <p>Does the contaminant plume that exceeds WQOs meet all of the additional characteristics of one of the five classes of sites?</p> <p>If YES, check applicable class: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input checked="" 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 <input type="checkbox"/> 5</p>	<p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input 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 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>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 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 INFORMATION (Conceptual Site Model)

Site Location/History

- The Site is located on the northeast corner of Palm Avenue and 25th Avenue. The Site is currently a motorcycle sales and service outlet.
- Nature of Contaminants of Concern: Petroleum hydrocarbons only.
- Primary Source of Release: UST System.
- Discovery Date: June 1988.
- Release Type: Petroleum².
- Over the course of corrective actions at the Site, 5 groundwater monitoring wells and 16 soil borings have been completed.
- Free product: Intermittent oil sheen/droplets observed in well MW-4.

Table A: USTs

Tank No.	Size in Gallons	Contents	Status	Date
1	600	Gasoline or Diesel	Removed	June 1988
2	600	Gasoline or Diesel	Removed	June 1988
3	3,000	Diesel	Removed	June 1988
4	3,000	Diesel	Removed	June 1988
5	3,000	Diesel	Removed	June 1988
6	6,000	Diesel	Removed	June 1988
7	6,000	Diesel	Removed	June 1988
8	3,000	Diesel	Removed	June 1988
9	3,000	Diesel	Removed	June 1988
10	5,000	Diesel	Removed	June 1988
11	500	Diesel	Removed	December 1998
12	5,000	Diesel	Removed	December 1998
13	8,500	Diesel	Removed	December 1998

Receptors

- Groundwater Basin: South Bay Groundwater Basin (San Mateo Plain Sub-Basin).
- Groundwater Beneficial Uses: Municipal and domestic water supply (MUN), industrial service water supply (IND), industrial process water supply (PRO), and agricultural water supply (AGR).
- Designated Land Use: Commercial and light industrial.
- Public Water System: California Water Service Company.
- Distance to Nearest Supply Wells: Greater than 1,000 feet.
- Distance to Nearest Surface Waters: Laurel Creek and San Mateo Creek are both greater than 1,000 feet.

² "Petroleum" means crude oil, or any fraction thereof, which is liquid at standard conditions of temperature and pressure, which means at 60 degrees Fahrenheit and 14.7 pounds per square inch absolute. (Health & Saf. Code, § 25299.2.)

Geology/Hydrogeology

- Maximum Groundwater Depth: ~ 7 feet bgs.
- Minimum Groundwater Depth: ~ 6 feet bgs.
- Geology: Unconsolidated fine sands, silts, and clays with occasional thin beds of coarse sand underlain by San Francisco Bay Mud.
- Hydrology: The groundwater flow direction is to the northeast.

Corrective Actions

- Thirteen USTs and approximately 155-170 cy of contaminated soil were removed in 1988 and 1998.
- Product recovery using oil skimmer and oil absorbent pads was performed from 2002 to 2006.
- Product sheen removal by purging was conducted in 2012.

Table B: Concentrations of Petroleum Constituents in Soil

Constituent	Maximum 0-5 feet bgs (mg/kg)	Maximum 5-10 feet bgs (mg/kg)
Benzene	<0.1	<0.25
Ethylbenzene	<0.1	4.6
Naphthalene	Not Analyzed	Not Analyzed
PAHs*	Not Analyzed	Not Analyzed

*Poly-aromatic hydrocarbons as benzo(a)pyrene toxicity equivalent

Table C: April 2012 Groundwater Sampling Results

Well No.	TPHd (µg/L)	TPHg (µg/L)	Benzene (µg/L)	MTBE ¹ (µg/L)
MW-1	<100	<100	1.5	<2
MW-3	<100	<100	<0.5	<2
MW-4	9,000	310	<0.5	<2
MW-5	<100	<100	<0.5	<2
WQO	100²	5³	1⁴	5⁴

¹ Methyl tert-butyl ether

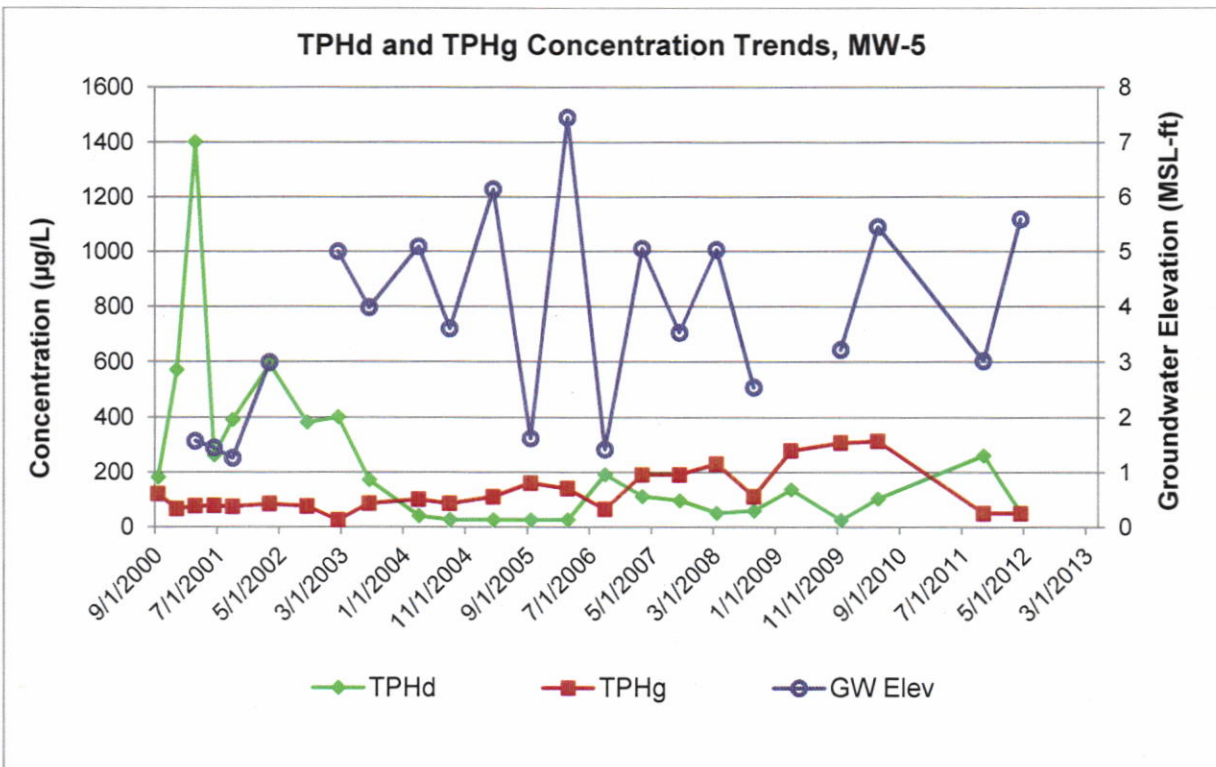
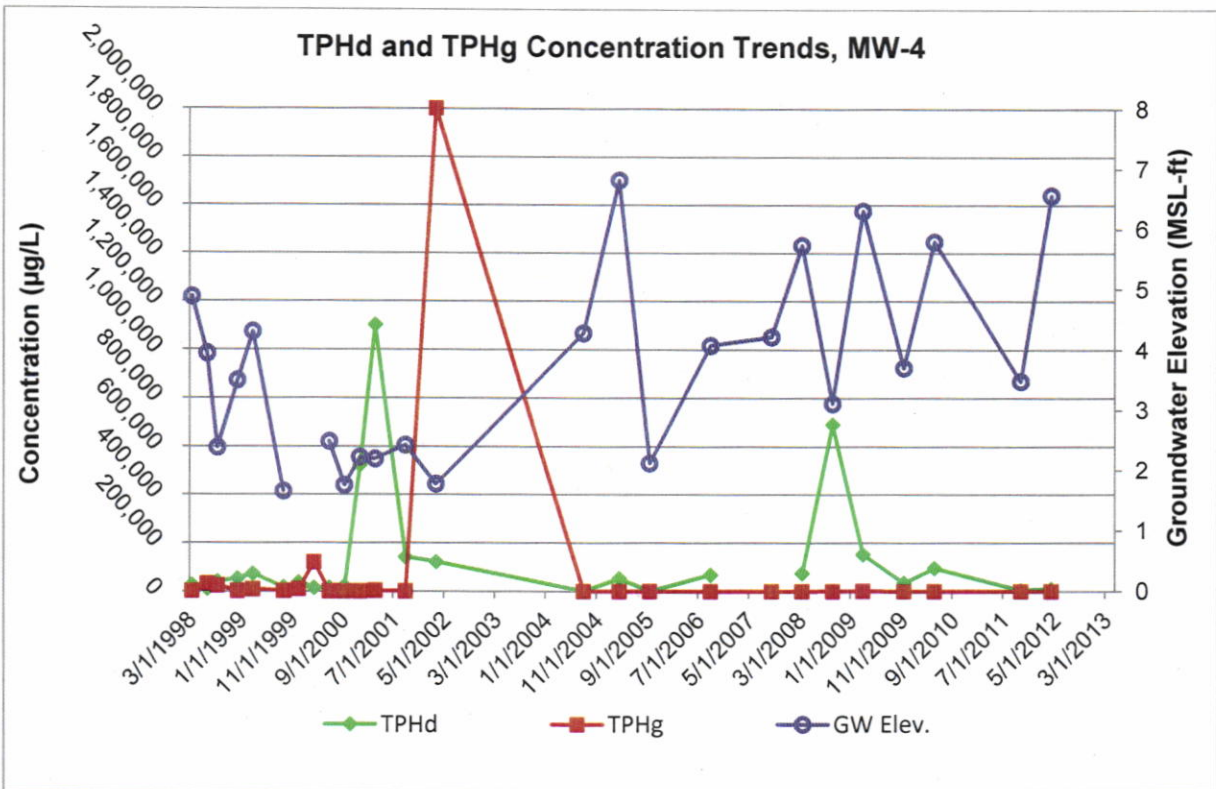
² Taste and odor threshold (USEPA Health Advisory)

³ Taste and odor threshold (McKee and Wolf)

⁴ WQOs included in the San Francisco Bay Regional Water Quality Control Board's Basin Plan

Groundwater Trends

Reported TPHd and TPHg concentrations in groundwater have demonstrated stable or decreasing trends over time in the on-site and off-site down-gradient wells.

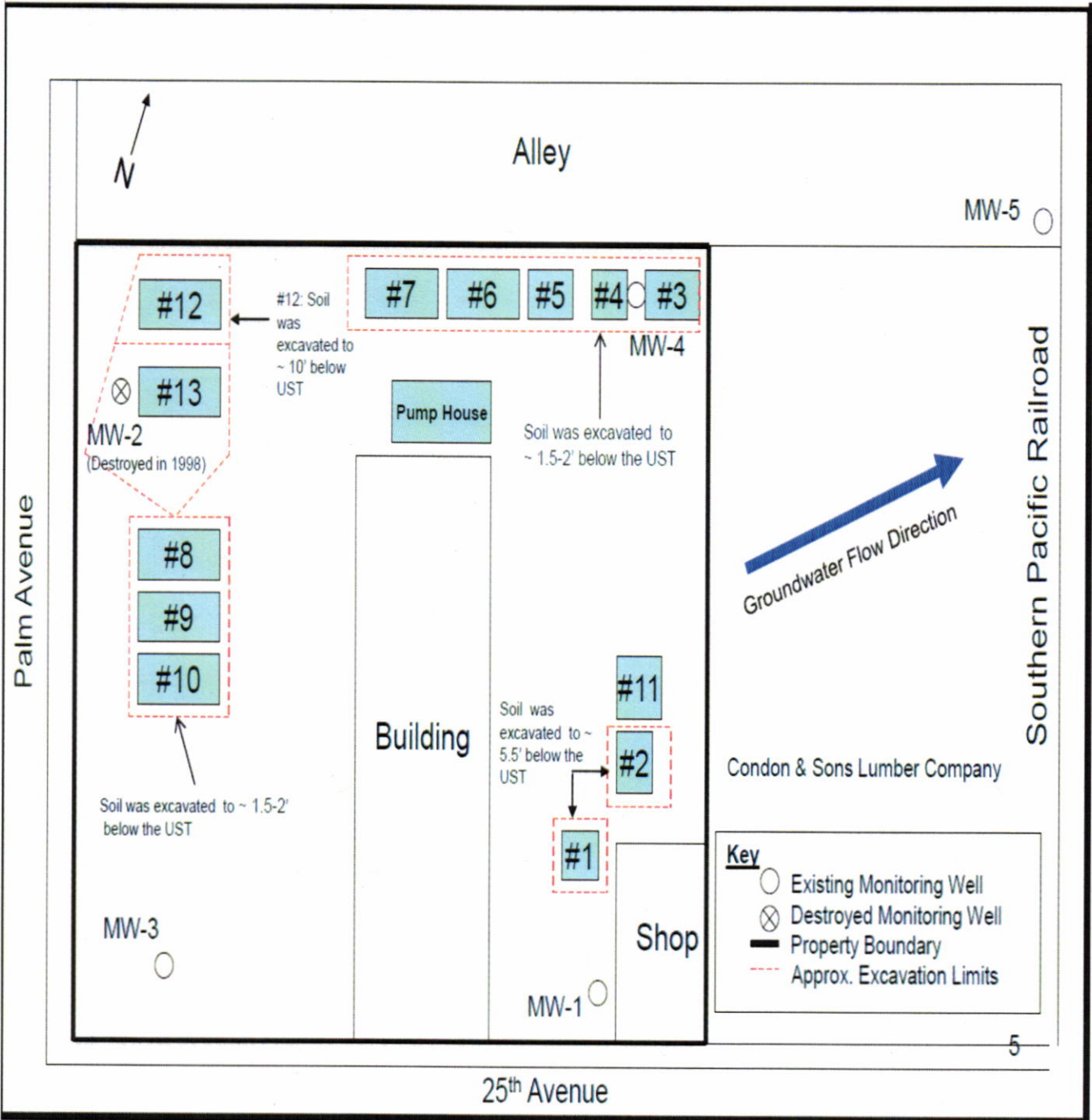


Evaluation of Risk Criteria

- Maximum Petroleum Constituent Plume Length above WQOs: TPHd and TPHg groundwater plumes are both approximately 100 feet.
- Petroleum Constituent Plume Determined Stable or Decreasing: Yes.
- Soil/Groundwater Sampled for MTBE: Yes, see Table C above.
- Residual Petroleum Constituents Pose Significant Risk to the Environment: No.
- Residual Petroleum Constituents Pose Significant Vapor Intrusion Risk to Human Health: No. Petroleum constituents most likely to pose a threat for vapor intrusion were removed during soil excavation and over-excavation. The vapor intrusion risk is not a concern for this Site because:
 - The intermittent oil sheen/droplets from TPHd at this Site do not have volatile organic components.
 - Even though TPHg was detected in well MW-4, benzene has not been detected in this well since 2009.
 - Low permeable soils would limit any vapor movement.
 - Scenario 1 of the low-threat vapor-intrusion criteria described in the Policy only applies to unweathered LNAPL. The release at this Site and available soil data are not recent.
 - Site conditions demonstrate that the residual petroleum constituents in soil and groundwater are protective of human health.
- Residual Petroleum Constituents Pose a Nuisance³ at the Site: No.
- Residual Petroleum Constituents in Soil Pose Significant Risk of Adversely Affecting Human Health: No.
- Residual Petroleum Constituents Pose Significant Direct Contact and Outdoor Air Exposure to Human Health: No. Maximum concentrations of petroleum constituents in soil are less than or equal to those listed in Table 1 of the Policy. 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 concentrations can be directly substituted for naphthalene concentrations with a safety factor of eight. Benzene concentrations from the Site are below the naphthalene thresholds in Table 1 of the Policy. Therefore, estimated naphthalene concentrations meet the thresholds in Table 1 for direct contact by a factor of eight. It is highly unlikely that naphthalene concentrations in the soil, if any, exceed the threshold.

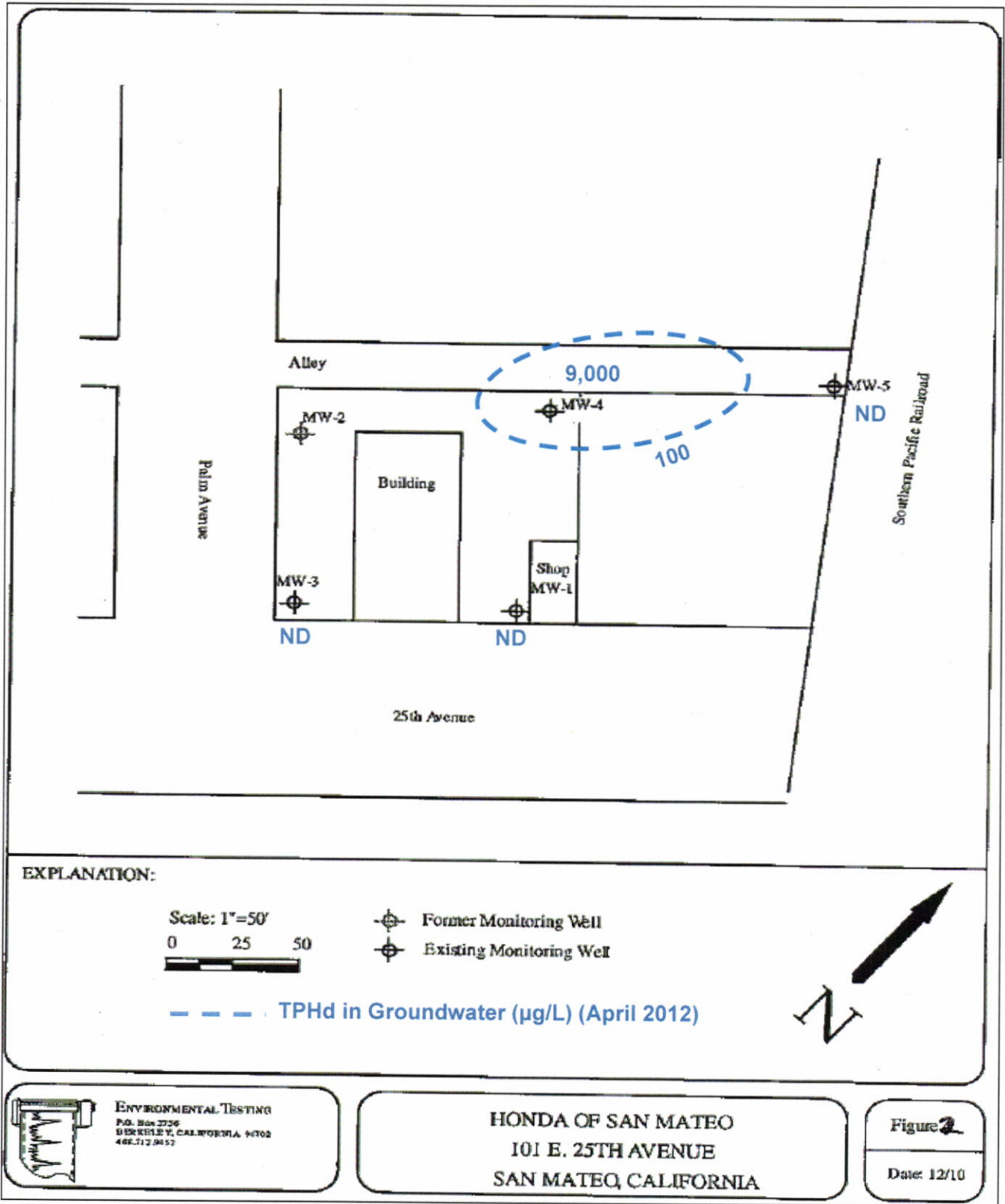
³ Nuisance as defined in California Water Code, section 13050, subdivision (m).

SITE PLAN



Note: The Site Plan is not to scale.

TPHd IN GROUNDWATER ($\mu\text{g/L}$) (APRIL 2012)



TPHg IN GROUNDWATER ($\mu\text{g/L}$) (APRIL 2012)

