UST CASE CLOSURE REVIEW SUMMARY REPORT

Agency Information

Agency Name: Santa Clara County Department of Environmental Health (County)	Address: 1555 Berger Drive, Suite 300 San Jose, CA 95112
Agency Caseworker: Aaron Costa	Case No.: 06S1E31F02F

Case Information

USTCF Claim No.: 590	GeoTracker Global ID: T0608500354
Site Name: S&W Company	Site Address: 1607 Terminal Avenue San Jose, CA 95112
Responsible Party: Robin Merritt	Address: Personal Residence
USTCF Expenditures to Date: $992,955	Number of Years Case Open: 27

URL: http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0608500354

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:

An unauthorized release was reported in April 1986. Three gasoline USTs were removed between April and August 1986. Dual phase extraction was conducted between May 1995 and August 1997, which reportedly removed 161 pounds of total petroleum hydrocarbons as gasoline (TPHg) and approximately 3.4 million gallons of contaminated groundwater. Since 1993, twenty-seven groundwater monitoring wells have been installed and monitored. According to groundwater data, water quality objectives have been achieved or nearly achieved for all constituents except benzene.

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 Santa Clara Valley Water District and the San Jose Water Company. 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 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 micrograms per liter (µg/L) and the dissolved concentration of methyl tert-butyl ether (MTBE) is less than 1,000 µg/L.
- Vapor Intrusion to Indoor Air: The case meets Policy Criterion 2b. This case meets Policy Criterion 2b. A site-specific risk assessment of potential exposure to petroleum constituents as a result of vapor intrusion, found that maximum concentrations of petroleum constituents remaining in soil and groundwater will have no significant risk of adversely affecting human health. (Enercon, 2013)
- 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

According to the October 10, 2013, telephone conversation between the Fund staff and County case worker there are no objections to closure.

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.

S&W Company
1607 Terminal Avenue, San Jose
Claim No: 590

April 2014

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. Alameda County Water District has the regulatory responsibility to supervise the abandonment of monitoring wells.

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

4/10/14
Date

Preparded by: Kirk Larson, P.G.

S&W Company
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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]

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.	☒ Yes ☐ No
Have waste discharge requirements or any other orders issued pursuant to Division 7 of the Water Code been issued at this case?	☐ Yes ☒ No
If so, was the corrective action performed consistent with any order?	☐ Yes ☐ No ☒ NA
General Criteria General criteria that must be satisfied by all candidate sites:	
Is the unauthorized release located within the service area of a public water system?	☒ Yes ☐ No
Does the unauthorized release consist only of petroleum?	☒ Yes ☐ No
Has the unauthorized ("primary") release from the UST system been stopped?	☒ Yes ☐ No
Has free product been removed to the maximum extent practicable?	☒ Yes ☐ No ☐ NA

[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

of the applicable characteristics and criteria of scenario 4? If YES, check applicable scenarios: ☐ **1** ☐ **2** ☐ **3** ☐ **4**	
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?	☒ Yes ☐ No ☐ NA
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?	☐ Yes ☐ No ☒ NA
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).	
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)?	☒ Yes ☐ No ☐ NA
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?	☐ Yes ☐ No ☒ NA
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?	☐ Yes ☐ No ☒ NA

Has a conceptual site model that assesses the nature, extent, and mobility of the release been developed?	☒ Yes ☐ No
Has secondary source been removed to the extent practicable?	☒ Yes ☐ No
Has soil or groundwater been tested for MTBE and results reported in accordance with Health and Safety Code Section 25296.15?	☒ Yes ☐ No
Nuisance as defined by Water Code section 13050 does not exist at the Site?	☒ Yes ☐ No
Are there unique site attributes or site-specific conditions that demonstrably increase the risk associated with residual petroleum constituents?	☐ Yes ☒ No
Media-Specific Criteria Candidate sites must satisfy all three of these media-specific criteria: **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:	
Is the contaminant plume that exceeds water quality objectives stable or decreasing in areal extent?	☒ Yes ☐ No ☐ NA
Does the contaminant plume that exceeds water quality objectives meet all of the additional characteristics of one of the five classes of sites?	☒ Yes ☐ No ☐ NA
If YES, check applicable class: ☐ **1** ☒ **2** ☐ **3** ☐ **4** ☐ **5** **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?**	☐ Yes ☐ No ☒ NA
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.	
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.	☐ Yes ☒ No
a. Do site-specific conditions at the release site satisfy all of the applicable characteristics and criteria of scenarios 1 through 3 or all	☐Yes ☐ No ☒ NA

ATTACHMENT 2: SUMMARY OF BASIC CASE INFORMATION (Conceptual Site Model)

Site Location/History

- This Site is a commercial business and is bounded by Highway 101 to the west, a commercial warehouse across Terminal Avenue to the northeast, and commercial warehouses to northwest and southeast.
- A Site map showing the location of the former USTs, monitoring wells, and groundwater level contours is provided at the end of this closure review summary (Enercon, 2013).
- Nature of Contaminants of Concern: Petroleum hydrocarbons only.
- Source: UST system.
- Date reported: April 1986.
- Status of Release: USTs removed.
- Free Product: None reported since 2008.

Tank Information

Tank No.	Size in Gallons	Contents	Closed in Place/ Removed/Active	Date
1	1,000	Gasoline	Removed	April 1986
2	1,000	Gasoline	Removed	August 1986
3	1,000	Gasoline	Removed	August 1986

Receptors

- GW Basin: Santa Clara Valley – Santa Clara.
- Beneficial Uses: Municipal and Domestic Supply (GeoTracker).
- Land Use Designation: Commercial and Industrial.
- Public Water System: Santa Clara Valley Water District and San Jose Water Company.
- 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: 50 feet below ground surface (bgs).
- Minimum Groundwater Depth: 4.35 feet bgs at monitoring well GX132K.
- Maximum Groundwater Depth: 11.32 feet bgs at monitoring well GX-132D.
- Current Average Depth to Groundwater: Approximately 6 feet bgs.
- Saturated Zones(s) Studied: Approximately 5 to 50 feet bgs.
- Appropriate Screen Interval: Yes.
- Groundwater Flow Direction: Northwest with an average gradient of 0.003 feet/foot (December 2012).

Monitoring Well Information

Well Designation	Date Installed	Screen Interval (feet bgs)	Depth to Water (feet bgs) (December 2012)
EW-1	January 1993	10-20	6.49
EW-2	February 1993	10-20	5.20
EW-3	July 1995	8-20	5.96
EW-4	July 1995	8-20	6.02
EW-5	April 2011	7-22	6.65
EW-6	April 2011	7-22	6.48
EW-7	April 2011	7-22	6.70
GX-132A	August 1988	23-43	5.77
GX-132BR	February 2011	7-22	6.65
GX-132C	March 1991	8-23	6.43
GX-132D	August 1991	7-22	6.07
GX-132E	August 1991	7-22	6.47
GX-132F	August 1991	7-22	6.80
GX-132G	November 1991	10-20	5.80
GX-132H	May 1998	24-30	4.87
GX-132I	May 1998	10-25	6.78
GX-132J	May 1998	10-25	6.48
GX-132K	December 1999	30-40	4.86
GX-132L	November 1999	40-50	6.35
GX-132M	December 1999	35-46	5.63
MW-1	August 1991	7-22	6.81
MW-2	November 1991	10-20	6.75
MW-3	October 1994	5-20	7.67
MW-4	October 1994	5-20	6.91
MW-5	November 1995	6-20	6.99
AS-1	January 2012	20-25	6.49

NM: Not measured

Remediation Summary

- Free Product: Free product noted in GX-132A (up to 0.06 feet), GX-132BR (up to 0.99 feet), and GX-132K (up to 0.42 feet). Passive free product removal was conducted between May 2003 and May 2008. None noted since 2008.
- Soil Excavation: Unknown volume.
- In-Situ Soil/Groundwater Remediation: Dual phase extraction was conducted between May 1995 and August 1997, which reportedly removed 161 pounds of TPHg and 3.4 million gallons of contaminated groundwater.

Most Recent Concentrations of Petroleum Constituents in Soil

Constituent	Maximum 0-5 feet bgs [mg/kg and (date)]	Maximum 5-10 feet bgs [mg/kg and (date)]
Benzene	<0.0043 (02/14/13)	<0.005 (02/14/13)
Ethylbenzene	<0.0043 (02/14/13)	<0.005 (02/14/13)
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

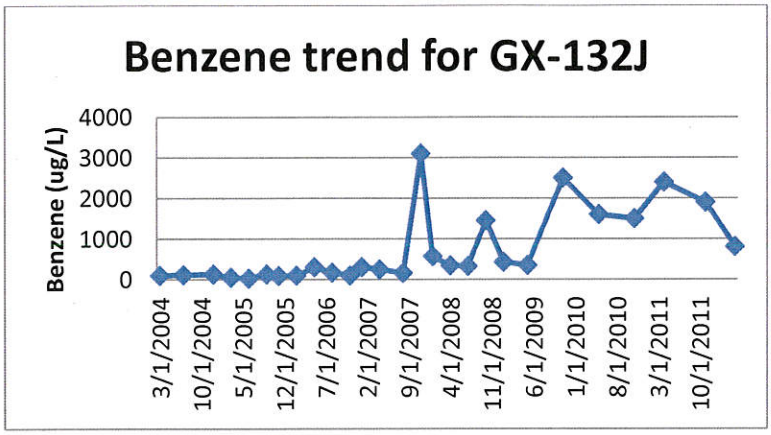
Sample	Sample Date	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-Benzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	TBA (µg/L)
EW-1	12/12/12	300	**72**	3	14	4.7	<1	<10
EW-2	12/13/12	NS	NS	NS	NS	NS	NS	NS
EW-3	12/12/12	570	**15**	0.5	0.7	1.2	<1	<10
EW-4	12/12/12	63	<0.5	<0.5	<0.5	<1	<1	<10
EW-5	12/12/12	97	<0.5	<0.5	<0.5	<1	<1	<10
EW-6	12/12/12	200	**75**	3	8.4	1.3	<1	<10
EW-7	12/13/12	2,000	**700**	18	140	6.4	<1	<10
GX-132A	12/13/12	110	**15**	1.4	3.3	<1	1.9	<10
GX-132BR	12/12/12	12,000	**720**	**200**	**990**	497	<1	<10
GX-132C	12/13/12	1,400	**830**	6.8	5.8	4.1	<1	<10
GX-132D	12/13/12	570	**17**	3.6	1.7	2.2	<1	<10
GX-132E	12/13/12	1,900	**490**	13	4.9	13.5	<1	<10
GX-132F	12/12/12	92	<0.5	<0.5	<0.5	<1	<1	<10
GX-132G	12/13/12	<50	<0.5	<0.5	<0.5	<1	**12**	<10
GX-132H	12/13/12	2,100	**510**	18	180	13	<1	<10
GX-132I	12/12/12	280	**8.4**	0.81	0.54	<1	<1	<10
GX-132J	12/13/12	1,600	**490**	8.4	8.7	3.59	<1	<10
GX-132K	12/13/12	900	**25**	4.3	63	3	<1	<10
GX-132L	12/12/12	<50	<0.5	<0.5	<0.5	<1	<1	<10
GX-132M	12/13/12	<50	**11**	0.54	<0.5	<1	<1	<10
MW-1	12/12/12	390	**49**	0.84	0.52	4.70	<1	<10
MW-3	04/17/12	<50	<0.5	<0.5	<0.5	<1	<1	<4
MW-4	04/17/12	<50	<0.5	<0.5	<0.5	<1	<1	<4
MW-5	12/13/12	51	**19**	<0.5	<0.5	<1	<1	<10
WQOs	**-**	**--**	**1**	**150**	**300**	**1,750**	**5[a]**	**1,200[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, San Francisco Regional Water Quality Control Board (Regional Water Board)
--: Regional Water Board Basin Plan does not have a numeric water quality objective for TPHg
[a]: Secondary maximum contaminant level (MCL)
[b]: California Department of Public Health, Response Level

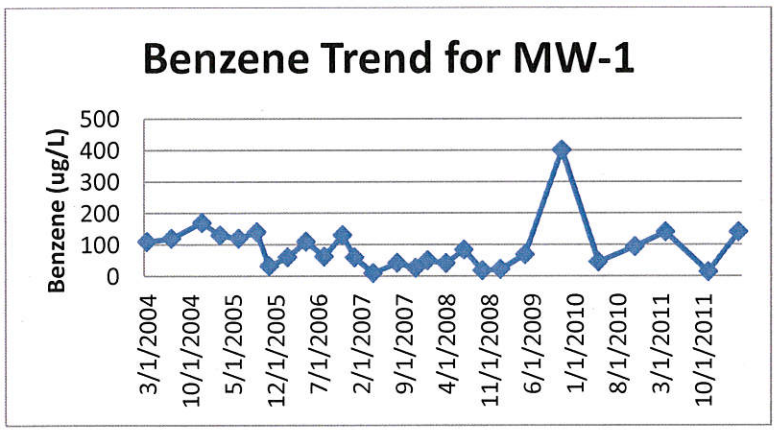
Groundwater Trends

- Groundwater monitoring has been conducted since 1988. Benzene trends are shown below: Source Area (GX-132j), Near Downgradient (MW-1), and Far Downgradient (GX-132i). Far downgradient wells MW-3 and MW-4 have not been impacted by fuel hydrocarbons.

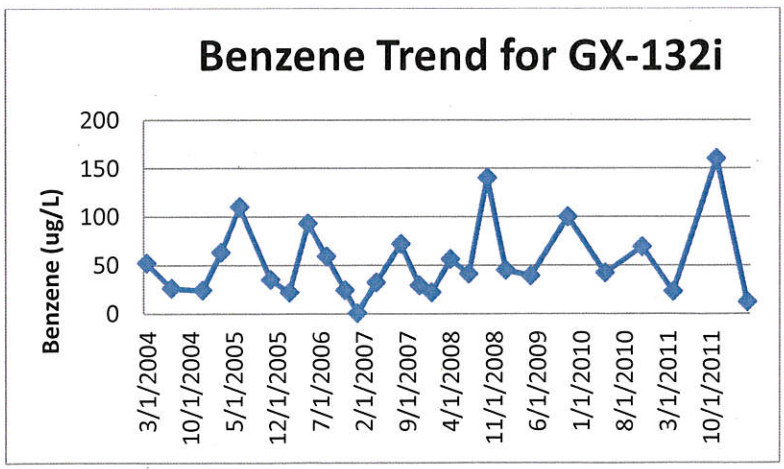
Source Area



Near Downgradient

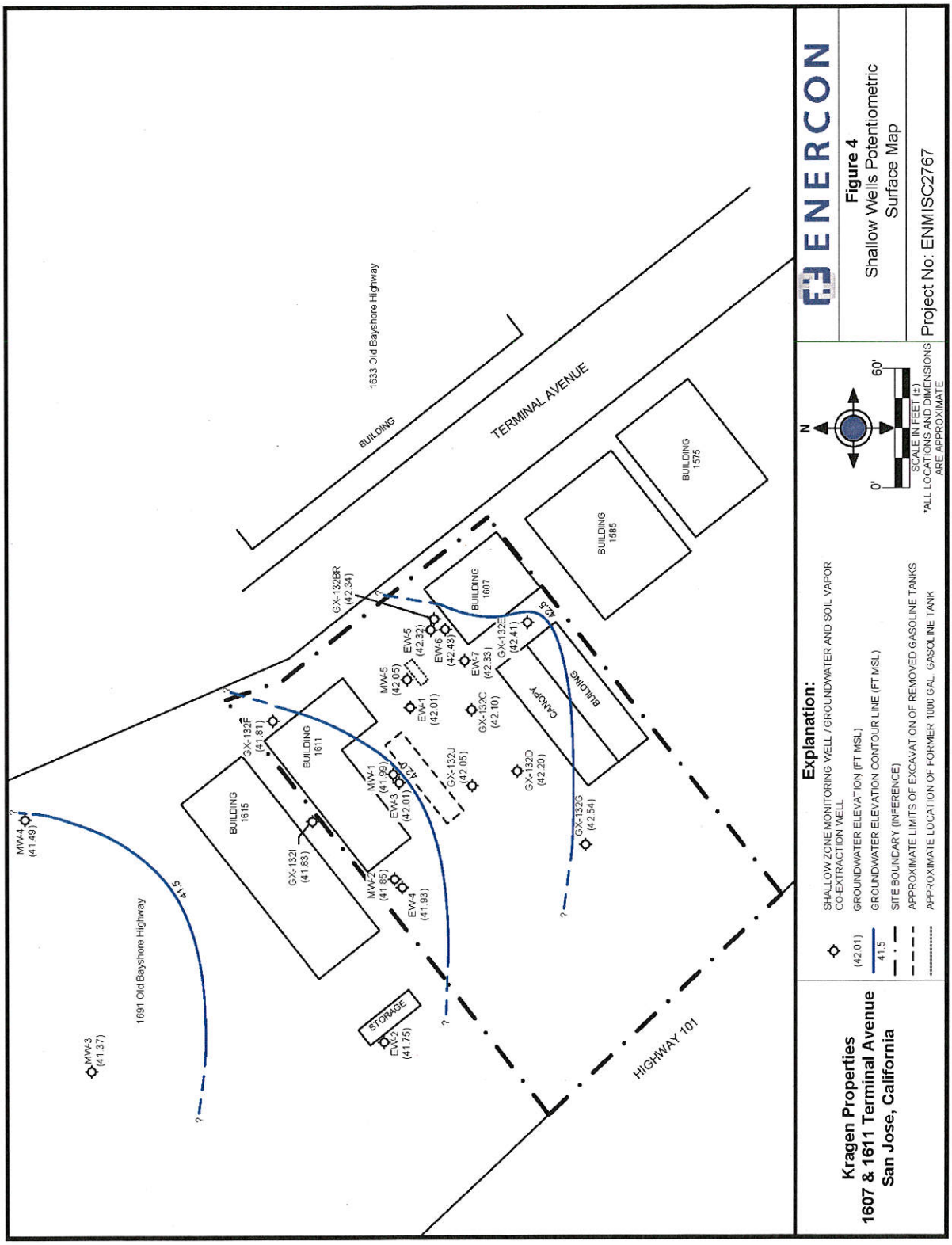


Far Downgradient



Evaluation of Current Risk

- Estimate of Hydrocarbon Mass in Soil: None reported.
- Soil/Groundwater tested for MTBE: Yes, see table above.
- Oxygen Concentrations in Soil Vapor: None reported.
- Plume Length: <250 feet.
- Plume Stable or Decreasing: Yes.
- Contaminated Zone(s) Used for Drinking Water: No.
- Groundwater Risk from Residual Petroleum Hydrocarbons: 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 2b. A professional assessment of site-specific risk from exposure shows that maximum concentrations of petroleum constituents in soil will have no significant risk of adversely affecting human health. A soil vapor survey and human health risk assessment was conducted by Enercon in 2013. Six soil vapor samples were found to be below residential environmental screening levels.
- 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.


1633 Old Bayshore Highway
BUILDING
TERMINAL AVENUE
BUILDING 1575
BUILDING 1585
BUILDING 1607
BUILDING 1611
BUILDING 1615
BUILDING
CANOPY
STORAGE
1691 Old Bayshore Highway
HIGHWAY 101
MW-4 (41.49)
MW-3 (41.37)
MW-1 (41.99)
MW-2 (41.85)
MW-5 (42.05)
EW-1 (42.01)
EW-2 (41.75)
EW-3 (42.01)
EW-4 (41.93)
EW-5 (42.32)
EW-6 (42.43)
EW-7 (42.33)
GX-132BR (42.34)
GX-132C (42.10)
GX-132D (42.20)
GX-132E (42.41)
GX-132F (41.81)
GX-132G (42.54)
GX-132I (41.83)
GX-132J (42.05)
41.5
42.0
42.5
Explanation:
SHALLOW ZONE MONITORING WELL / GROUNDWATER AND SOIL VAPOR CO-EXTRACTION WELL
(42.01) GROUNDWATER ELEVATION (FT MSL)
41.5 GROUNDWATER ELEVATION CONTOUR LINE (FT MSL)
SITE BOUNDARY (INFERENCE)
APPROXIMATE LIMITS OF EXCAVATION OF REMOVED GASOLINE TANKS
APPROXIMATE LOCATION OF FORMER 1000 GAL. GASOLINE TANK
N
0'
60'
SCALE IN FEET (±)
*ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE
ENERCON
Figure 4
Shallow Wells Potentiometric Surface Map
Project No: ENMISC2767
Kragen Properties
1607 & 1611 Terminal Avenue
San Jose, California