State Water Resources Control Board

UST CASE CLOSURE REVIEW SUMMARY REPORT

Agency Information

Agency Name: Central Valley Regional Water Quality Control Board, Fresno (Regional Water Board)	Address: 1685 E Street, Fresno, CA 93706
Agency Caseworker: Kenneth Jones	Case No.: 5T24000233

Case Information

USTCF Claim No.: 2839	Global ID: T0604700097
Site Name: Merced Nissan	Site Address: 100 West Main Street, Merced, CA 95340
Responsible Party: Merced Nissan	Address: 100 West Main Street, Merced, CA 95340
USTCF Expenditures to Date: $1,034,675	Number of Years Case Open: 23

URL: http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0604700097

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 leak was reported in March 1989 following the removal of three USTs. Soil vapor extraction and air sparging were conducted intermittently between April 2005 and July 2010 for a total of 22,114 hours, which removed approximately 566 pounds of total petroleum hydrocarbons as gasoline (TPHg). Soil vapor extraction was shut-down due to diminished returns. According to groundwater data, water quality objectives have been achieved for all constituents except TPHg, benzene, and methyl tert-butyl ether (MTBE).

The petroleum release is limited to the shallow soil and groundwater. According to data available in GeoTracker, there is no California Department of Public Health regulated supply wells or surface water bodies within 250 feet of the defined plume boundary. No other water supply wells have been identified within 250 feet of the defined plume boundary in files reviewed. Water is provided to water users near the Site by the City of Merced. 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 a significant risk to human health, safety or the environment.

Rationale for Closure under the Policy

- General Criteria: The case meets all eight Policy general criteria.
- Groundwater Specific Criteria: The case meets Policy Criterion 1 by Class 1. The contaminant plume that exceeds water quality objectives is less than 100 feet in length. There is no free product. The nearest water supply well or surface water body is greater than 250 feet from the defined plume boundary.
- Vapor Intrusion to Indoor Air: The case meets Policy Criterion 2b. A professional site-specific risk assessment demonstrates that human health is protected. Soil vapor extraction and air sparging were conducted intermittently between April 2005 and July 2010 for a total of 22,114 hours and were terminated due to diminished returns. The reduction in mass is evident in the reduction of groundwater contamination beneath the source area. In addition, no buildings that could concentrate vapors lie above residual soil or groundwater contamination.
- Direct Contact and Outdoor Air Exposure: The case meets Policy Criterion 3b. Constituents in soil are less than levels that a site-specific risk assessment demonstrates will have no significant risk of adversely affecting human health. The Site is paved and accidental access to site soils is prevented. Any construction worker entering the Site will be prepared for exposure in their normal daily work.

Objections to Closure and Responses

The Regional Board directed the Responsible Party to conduct additional groundwater monitoring in their September 12, 2011 letter.
RESPONSE: Further groundwater monitoring will not alter the conceptual site model. The case meets the Policy criteria.

Determination

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

Recommendation for Closure

Based on available information, residual petroleum hydrocarbons at the Site do not pose 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. Merced County has the regulatory responsibility to supervise the abandonment of monitoring wells.

Lisa Babcock — 5/7/13

Lisa Babcock, P.G. 3939, C.E.G. 1235 — **Date**

Prepared by: Kirk Larson, P.G. 6535

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
Has a conceptual site model that assesses the nature, extent, and mobility of the release been developed?	☒ Yes ☐ No

[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

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 of the applicable characteristics and criteria of scenario 4?	☐Yes ☐ No ☒ NA

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

ATTACHMENT 1: SUMMARY OF BASIC CASE INFORMATION (Conceptual Site Model)

Site Location/History

- The Site is a paved parking lot and is bounded by businesses across H Street to the west, businesses across West Main Street to the north, and businesses to the east and south. The surrounding land use is commercial.
- Nine monitoring wells have been installed and monitored regularly since 1991.
- A Site map showing the location of the former USTs, monitoring wells and groundwater level measurements is provided at the end of this review summary (Apex Envirotech, 2012).
- Nature of Contaminants of Concern: Petroleum hydrocarbons only.
- Source: UST system.
- Date reported: March 1989.
- Status of Release: USTs removed.
- Free Product: None reported.

Tank Information

Tank No.	Size in Gallons	Contents	Closed in Place/ Removed/Active	Date
1	100	Waste Oil	Removed	May 1989
2	1,000	Waste Oil	Removed	May 1989
3	Unknown	Gasoline	Removed	Unknown

Receptors

- GW Basin: San Joaquin Valley - Merced.
- Beneficial Uses: Regional Water Board Basin Plan lists Municipal and Domestic Supply.
- Land Use Designation: Aerial photograph available on GeoTracker suggests commercial land use in the vicinity of the Site.
- Public Water System: City of Merced, Public Works.
- Distance to Nearest Supply Well: According to data available in GeoTracker, there are no public supply wells regulated by California Department of Public Health within 250 feet of the defined plume boundary. No other water supply wells were identified within 250 feet of the defined plume boundary in the files reviewed.
- Distance to Nearest Surface Water: There is no identified surface water within 250 feet of the defined plume boundary.

Geology/Hydrogeology

- Stratigraphy: The Site is underlain by interbedded and intermixed sand, silt and clay; predominantly fine grained.
- Maximum Sample Depth: 46 feet below ground surface (bgs).
- Minimum Groundwater Depth: 31.15 feet bgs at monitoring well MW-7.
- Maximum Groundwater Depth: 33.21 feet bgs at monitoring well MW-6.
- Current Average Depth to Groundwater: 33 feet bgs.
- Saturated Zones(s) Studied: Approximately 31-65 feet bgs.
- Groundwater Flow Direction: Variable, west southwest with an average gradient of 0.0019 feet/foot (August 2012).

Monitoring Well Information

Well Designation	Date Installed	Screen Interval (feet bgs)	Depth to Water (feet bgs) (08/17/2012)
MW-1	July 1991	35-65	32.91
MW-2	June 1996	24-44	32.86
MW-3	June 1996	24-44	32.76
MW-4	June 1996	24-44	32.53
MW-5	June 1996	24-44	33.08
MW-6	January 2004	35-65	33.21
MW-7	January 2004	35-65	32.34
MW-8	January 2004	35-65	32.81
MW-9	February 2004	35-65	32.77

Remediation Summary

- Free Product: No free product is documented in GeoTracker.
- Soil Excavation: Unknown.
- In-Situ Soil/Groundwater Remediation: Soil vapor extraction and air sparging were conducted intermittently between April 2005 and July 2010, total of 22,114 hours, which removed approximately 566 pounds of TPHg. Soil vapor extraction was shut-down due to diminished returns.

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	NA	NA
Ethylbenzene	NA	NA
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
*No analytical soil data between 0 – 10 feet bgs

Most Recent Concentrations of Petroleum Constituents in Groundwater

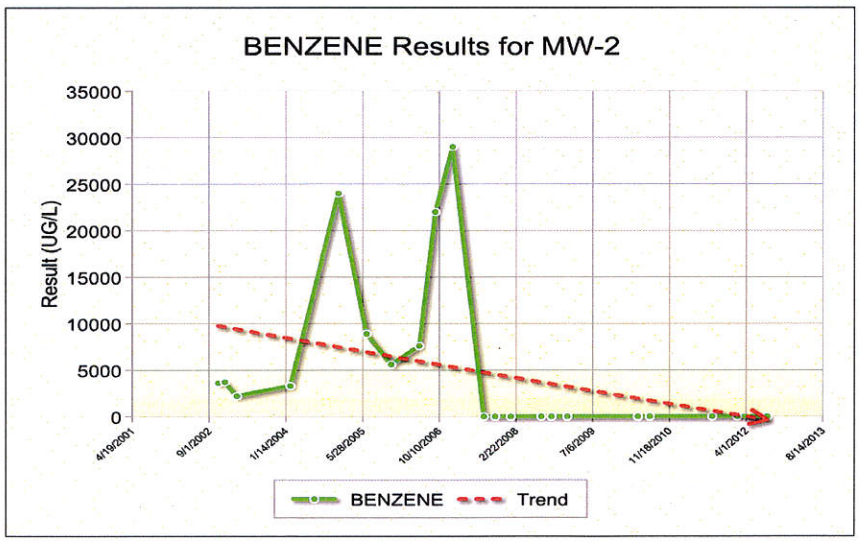
Sample	Sample Date	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-Benzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	TBA (µg/L)
MW-1	08/17/2012	**<50**	<0.5	<0.5	<0.5	<0.5	<0.5	<5
MW-2	08/17/2012	**<50**	<0.5	<0.5	<0.5	<0.5	1	<5
MW-3	08/17/2012	**<50**	<0.5	<0.5	<0.5	<0.5	3.4	<5
MW-4	08/17/2012	**<50**	<0.5	<0.5	<0.5	<0.5	<0.5	<5
MW-5	08/17/2012	**310**	**8.2**	<0.5	<0.5	<0.5	**17**	<5
MW-6	08/17/2012	**<50**	<0.5	<0.5	<0.5	<0.5	<0.5	<5
MW-7	08/17/2012	**<50**	<0.5	<0.5	<0.5	<0.5	<0.5	<5
MW-8	08/17/2012	**<50**	<0.5	<0.5	<0.5	<0.5	<0.5	<5
MW-9	08/17/2012	**<50**	<0.5	<0.5	<0.5	<0.5	<0.5	<5
WQOs	-	**5**	**0.15**	**42**	**29**	**17**	**5**	**1,200[a]**

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
[a]: California Department of Public Health, Response Level

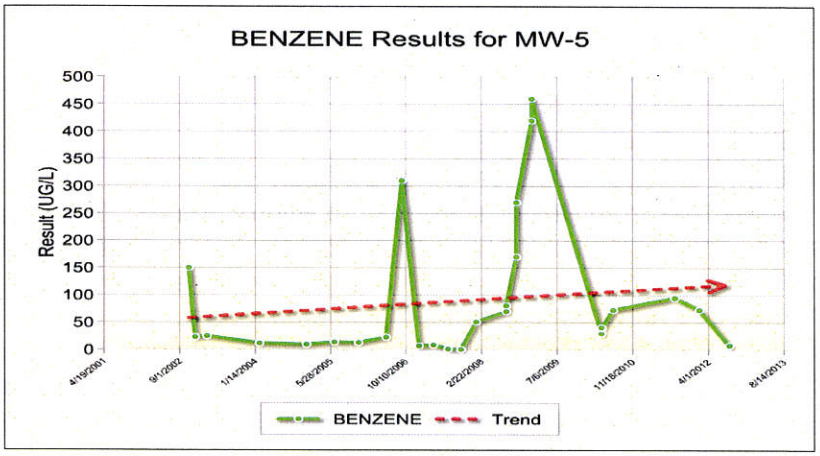
Groundwater Trends

- There are more than 21 years of groundwater monitoring data for this Site. Benzene trends are shown below: Source Area (MW-2), Near Source Area (MW-5), Near Downgradient (MW-9), and Far Downgradient (MW-7).

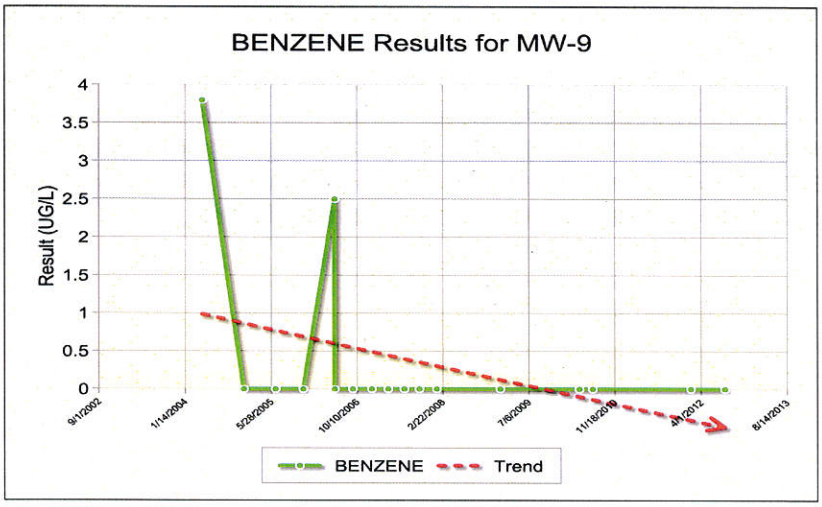
Source Area Well



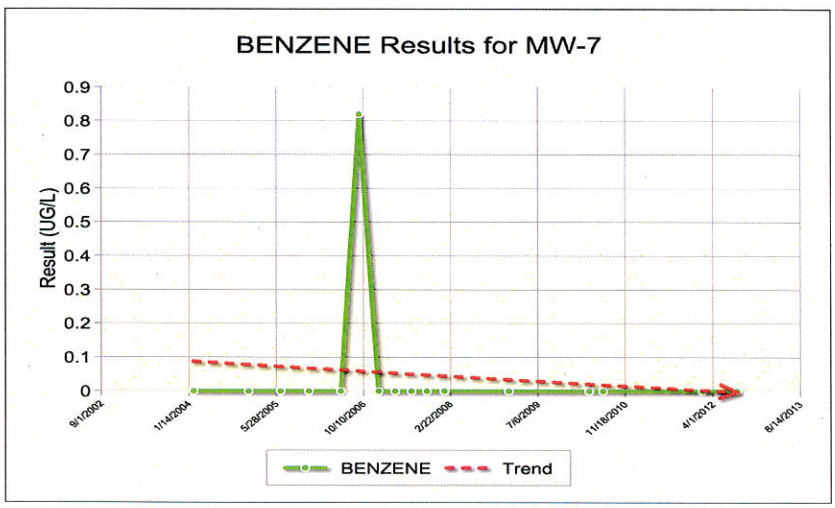
Near Source Area Well



Near Downgradient Well

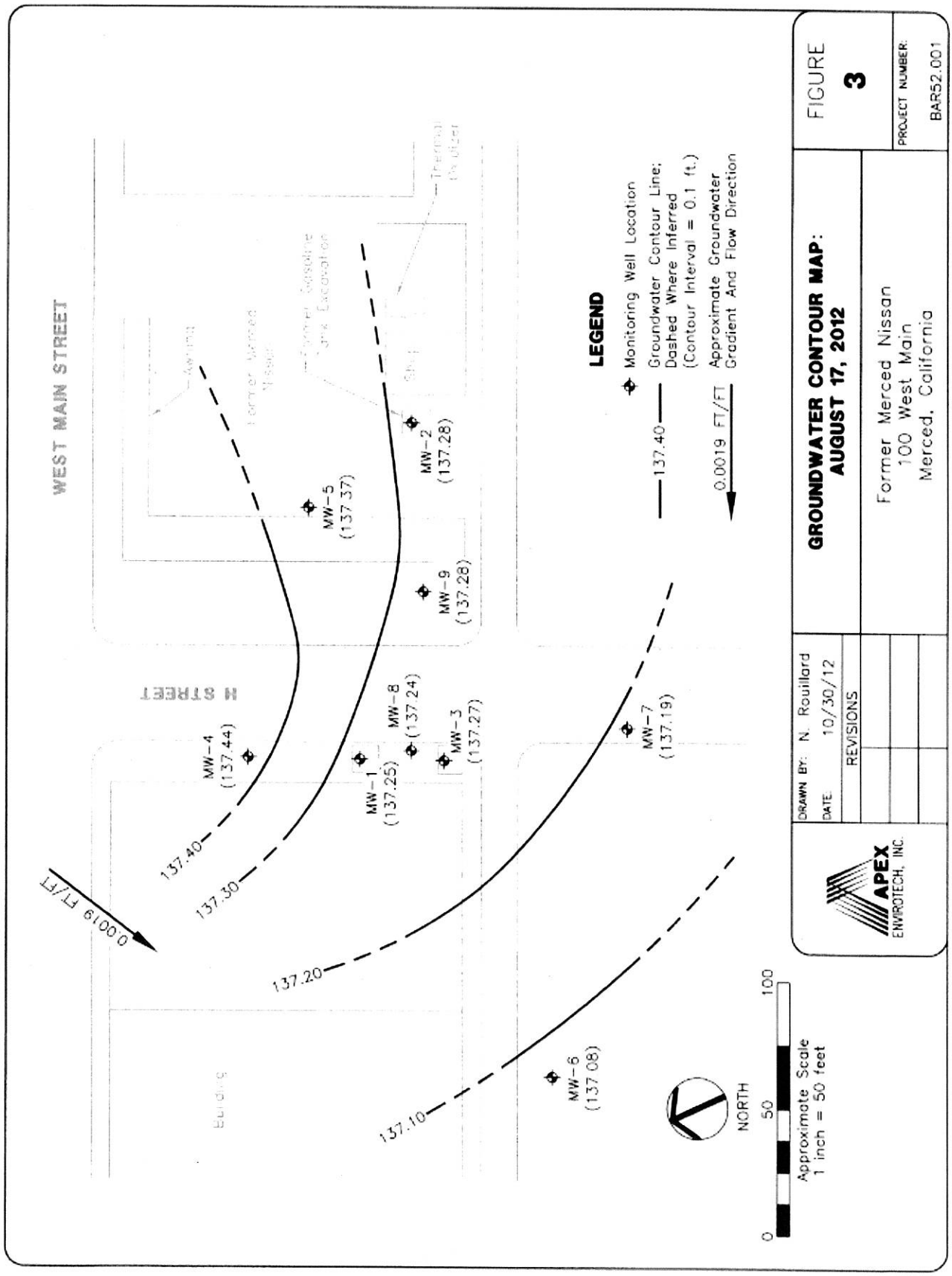


Far Downgradient Well



Evaluation of Current Risk

- Estimate of Hydrocarbon Mass in Soil: Unknown.
- Soil/ Groundwater tested for MTBE: Yes, see table above.
- Oxygen Concentrations in Soil Vapor: None reported.
- Plume Length: <100 feet long.
- 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 1. The contaminant plume that exceeds water quality objectives is less than 100 feet in length. There is no free product and 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 Policy Criterion 2b. A professional site-specific risk assessment demonstrates that human health is protected. Soil vapor extraction and air sparging were conducted intermittently between April 2005 and July 2010 for a total of 22,114 hours and were terminated due to diminished returns. The reduction in mass is evident in the decrease of groundwater contamination beneath the source area. In addition, no buildings that could concentrate vapors lie above residual soil or groundwater contamination.
- Direct Contact Risk from Residual Petroleum Hydrocarbons: The case meets Policy Criterion 3b. Constituents in soil are less than levels that a site-specific risk assessment demonstrates will have no significant risk of adversely affecting human health. The Site is a paved parking area and accidental access to site soils is prevented. Any construction worker entering the Site will be prepared for exposure in their normal daily work.


WEST MAIN STREET
N STREET
LEGEND
Monitoring Well Location
137.40
Groundwater Contour Line; Dashed Where Inferred (Contour Interval = 0.1 ft.)
0.0019 FT/FT
Approximate Groundwater Gradient And Flow Direction
MW-1 (137.25)
MW-2 (137.28)
MW-3 (137.27)
MW-4 (137.44)
MW-5 (137.37)
MW-6 (137.08)
MW-7 (137.19)
MW-8 (137.24)
MW-9 (137.28)
137.40
137.30
137.20
137.10
0.0019 FT/FT
NORTH
0
50
100
Approximate Scale
1 inch = 50 feet
Building
Awning
Former Service Island
Former Gasoline Tank Excavation
Shed
Trench (In Use)
DRAWN BY: N. Rouillard
DATE: 10/30/12
REVISIONS
APEX ENVIROTECH, INC.
GROUNDWATER CONTOUR MAP: AUGUST 17, 2012
Former Merced Nissan
100 West Main
Merced, California
FIGURE 3
PROJECT NUMBER: BAR52.001