

State Water Resources Control Board

UST CASE CLOSURE REVIEW SUMMARY REPORT

Agency Information

Agency Name: North Coast Regional Water Quality Control Board (Regional Water Board)	Address: 5550 Skyline Blvd., Suite A Santa Rosa, CA 95403
Agency Caseworker: Beth Lamb	Case No.: 1TSO860

Case Information

USTCF Claim No.: 17913	Global ID: T0609712875
Site Name: E & M Electric	Site Address: 12 Matheson Street, Healdsburg, CA 95448
Responsible Party: Paul Deas	Address: 126 Mill Street, Healdsburg, CA 95448
USTCF Expenditures to Date: \$369,473	Number of Years Case Open: 10

URL: http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0609712875

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:

One 1,500-gallon gasoline UST was removed in May 1989. An unauthorized release was reported in July 2003. Approximately 2,000 tons of contaminated soil was excavated. No active remediation has been conducted. Since 2003, eight monitoring wells have been installed and monitored. According to groundwater data, water quality objectives have been achieved or nearly achieved for all constituents.

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 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. The Foss Creek Culvert is located along the east boundary of the Site, approximately 50 feet east (upgradient) from the former UST. Water is provided to water users near the Site by the City of Healdsburg 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. 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 Risk from Residual Petroleum Hydrocarbons: The case meets Policy Criterion 1 by Class 5. The nearest water supply well is greater than 250 feet from the defined plume boundary. The Foss Creek Culvert is located along the east boundary of the Site, approximately 50 feet east (upgradient) from the former UST. Water samples results collected in 2004 from the culvert upstream and downstream of the Site indicated no impacts. Otherwise, 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 regulatory agency determines, based on an analysis of site specific conditions, which under current and reasonably anticipated near-term future scenarios, the contaminant plume poses a low threat to human health and safety and to the environment and water quality objectives will be achieved within a reasonable time frame.
- Indoor Vapor Risk from Residual Petroleum Hydrocarbons: The case meets Policy Criterion 2a by Scenario 3a. The maximum benzene concentration in groundwater is less than 100 micrograms per liter ($\mu\text{g/L}$). The minimum depth to groundwater is greater than 5 feet, overlain by soil containing less than 100 milligrams per kilogram (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 land use and the concentration limits for a Utility Worker are not exceeded.

Objections to Closure and Responses

In a January 25, 2013 phone conversation, the Regional Water Board stated they had no objection to UST case 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.

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. Sonoma County has the regulatory responsibility to supervise the abandonment of monitoring wells.



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

12/4/13

Date

Prepared by: Annette Poteracki

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 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>Have waste discharge requirements or any other orders issued pursuant to Division 7 of the Water Code been issued at this case?</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 type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" 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><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA</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><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA</p> <p>If YES, check applicable class: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input checked="" 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 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><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</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><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA</p> <p>If YES, check applicable scenarios: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input checked="" type="checkbox"/> 3 <input type="checkbox"/> 4</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 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 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

- This Site is currently a parking lot and is bounded by a parking lot across West Matheson Street to the north, a commercial complex to the east and south, and a parking lot across the Foss Creek Parkway to the west.
- 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 (EBA Engineering, 2012).
- Nature of Contaminants of Concern: Petroleum hydrocarbons only.
- Source: UST system.
- Date reported: July 2003.
- Status of Release: USTs removed.

Tank Information

Tank No.	Size in Gallons	Contents	Closed in Place/ Removed/Active	Date
1	1,500	Gasoline	Removed	May 1989

Receptors

- GW Basin: Santa Rosa Valley - Healdsburg Area.
- Beneficial Uses: Regional Water Board Basin Plan lists agricultural, municipal, domestic, groundwater recharge, and water quality enhancement.
- Land Use Designation: Commercial.
- Public Water System: City of Healdsburg Water Department.
- Distance to Nearest Supply Well: According to data available in GeoTracker, there is no public supply well 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: Foss Creek, a concrete lined culvert, is 50 feet east (upgradient) of the former USTs.

Geology/Hydrogeology

- Stratigraphy: The Site is underlain by sandy/silty gravel interbedded with narrow clay and sand lenses.
- Maximum Sample Depth: 20.5 feet below ground surface (bgs).
- Minimum Groundwater Depth: 4.51 feet bgs at monitoring well MW-2C.
- Maximum Groundwater Depth: 11.56 feet bgs at monitoring well MW-1C.
- Current Average Depth to Groundwater: Approximately 6 feet bgs.
- Saturated Zones(s) Studied: Approximately 5 - 25 feet bgs.
- Appropriate Screen Interval: Yes.
- Groundwater Flow Direction: Generally southwest, varies from west to southeast. Hydraulic gradient fluctuates between 0.002 to 0.03 feet/foot.

Monitoring Well Information

Well Designation	Date Installed	Screened Interval (feet bgs)	Depth to Water (feet bgs) (03/16/12)
MW-1	August 2004	10-25	7.07
MW-1C	August 2004	10-20	6.75
MW-2	August 2004	10-22	6.07
MW-2C	August 2004	10-20	5.08
MW-3	August 2004	10-25	5.97
MW-3C	August 2004	10-20	5.86
MW-4	July 2007	6-20	5.93
MW-5	July 2007	6-20	NM

NM : Not measured

Remediation Summary

- Free Product: None reported on GeoTracker.
- Soil Excavation: Approximately 2,000 tons of impacted soil was removed and disposed offsite.
- In-Situ Soil/Groundwater Remediation: None reported in GeoTracker.

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	0.0052 (12/16/03)	0.033 (12/16/03)
Ethylbenzene	<0.0050 (12/16/03)	0.021 (12/16/03)
Naphthalene*	<0.0050 (12/16/03)	0.34 (12/16/03)
PAHs	NA	NA

*Naphthalene results provided by EBA Engineering from laboratory results in 2003 report of findings. Site was former coal gas plant (1878 to 1900) and the presence of naphthalene appeared related to this former site use.

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 ² (µg/L)	TBA ² (µg/L)
MW-1	03/16/12	189	27.8	3.14	2.83	12.82	<1	<20
MW-1C	07/06/10	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<10
MW-2	03/16/12	487	<1	<1	1.81	<1	<2.5	<50
MW-2C	07/06/10	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<10
MW-3	03/23/11	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<10
MW-3C	12/04/08	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<10
MW-4	03/23/11	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<10
MW-5	03/23/11	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<10
WQOs	-	--	1	150	680	1,750	5	1,200¹

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 has no numeric water quality objective for TPHg

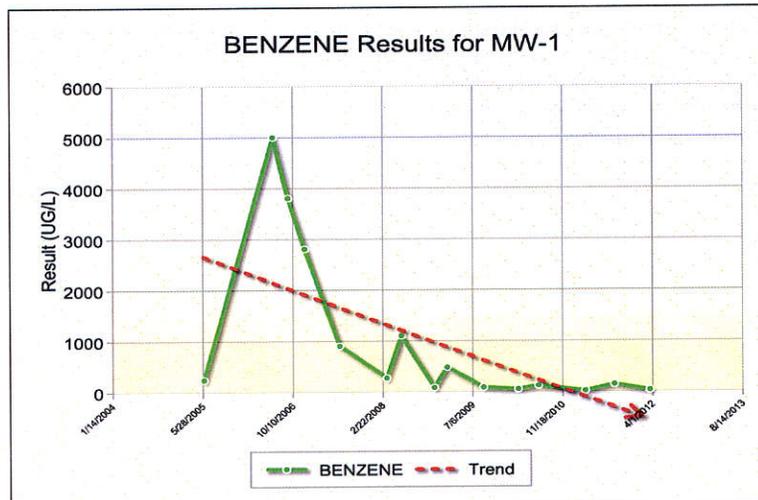
¹: California Department of Public Health, Response Level

²: Analytical results from 12/04/08, last sampled

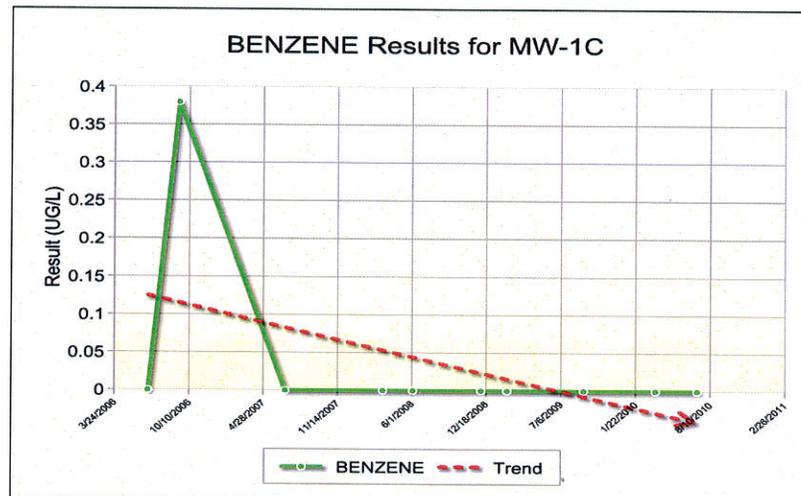
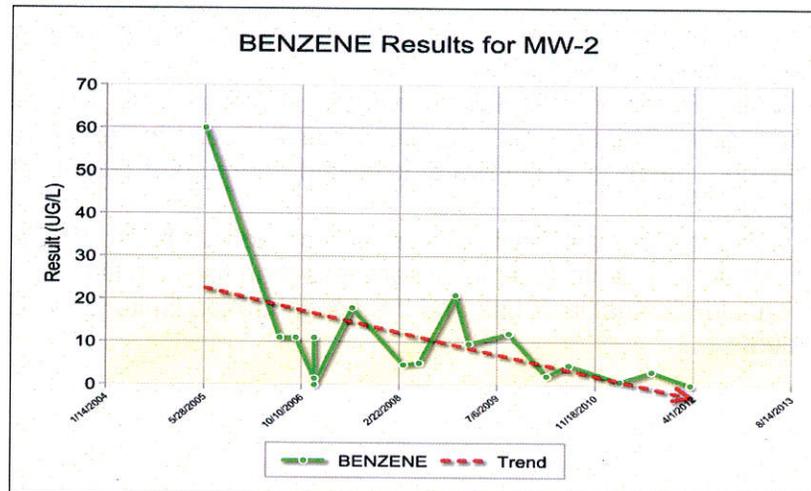
Groundwater Trends

- There are 9 years of intermittent groundwater monitoring data for this case. Benzene trends are shown below: Crossgradient (MW-1) and Downgradient (MW-2 and MW-1C).

Crossgradient Well



Downgradient Well

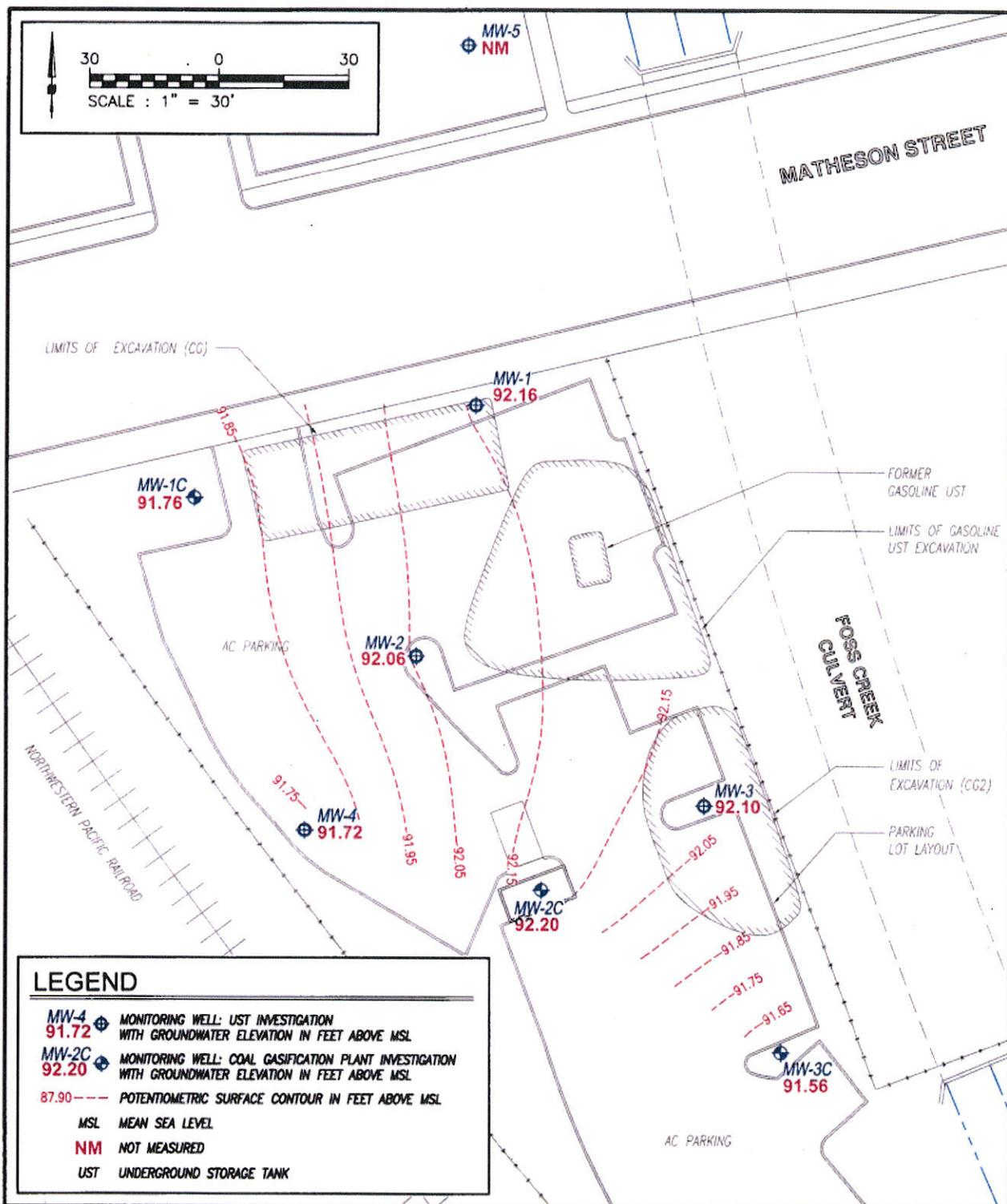


Evaluation of Current Risk

- Estimate of Hydrocarbon Mass in Soil: Estimated 320 pounds remain in soil between seven and eleven feet bgs and two pounds remain dissolved in groundwater (EBA Engineering, April 2011).
- Soil/Groundwater tested for methyl tert-butyl ether (MTBE): Yes, not analyzed since December 2008.
- Oxygen Concentrations in Soil Vapor: None reported.
- Plume Length: <100 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 5. The nearest water supply well is greater than 250 feet from the defined plume boundary. The Foss Creek Culvert is located along the east boundary of the Site, approximately 50 feet east (upgradient) from the former UST. Water samples results collected in 2004 from the culvert upstream and downstream of the Site indicated no impacts. Otherwise, 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 regulatory

agency determines, based on an analysis of site specific conditions, which under current and reasonably anticipated near-term future scenarios, the contaminant plume poses a low threat to human health and safety and to the environment and water quality objectives will be achieved within a reasonable time frame.

- Indoor Vapor Risk from Residual Petroleum Hydrocarbons: The case meets Policy Criterion 2a by Scenario 3a. The maximum benzene concentration in groundwater is less than 100 µg/L. The minimum depth to groundwater is greater than 5 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 land use and the concentration limits for a Utility Worker are not exceeded.



POTENTIOMETRIC SURFACE MAP
MARCH 16, 2012
 12 MATHESON STREET
 HEALDSBURG, CALIFORNIA

FIGURE
2
 03-1057

