

STATE OF CALIFORNIA  
STATE WATER RESOURCES CONTROL BOARD

ORDER WQ 2013-0020-UST

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**In the Matter of Underground Storage Tank Case Closure**

**Pursuant to Health and Safety Code Section 25299.39.2 and the Low Threat  
Underground Storage Tank Case Closure Policy**

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**BY THE EXECUTIVE DIRECTOR<sup>1</sup>:**

Pursuant to Health and Safety Code section 25299.39.2, the Manager of the Underground Storage Tank Cleanup Fund (Fund) recommends closure of the underground storage tank (UST) case at the site listed below.<sup>2</sup> The name of the Fund claimant, the Fund claim number, the site name and the applicable site address are as follows:

**RAS-CO Manufacturing Co.**

**Claim No. 10081**

**RAS-CO Manufacturing Co.**

**413 West Sunset Boulevard, Hayward**

**Alameda County Health Care Services Agency**

**I. STATUTORY AND PROCEDURAL BACKGROUND**

Section 25299.39.2 directs the Fund manager to review the case history of claims that have been active for five years or more (five-year review), unless there is an objection from the UST owner or operator. This section further authorizes the Fund Manager to make recommendations to the State Water Resources Control Board (State Water Board) for closure of a five-year-review case if the UST owner or operator approves. In response to a recommendation by the Fund Manager, the State Water Board, or in certain cases the State Water Board Executive Director, may close a case or require the closure of a UST case. Closure of a UST case is appropriate where the corrective action ensures the protection of

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<sup>1</sup> State Water Board Resolution No. (2012-0061) delegates to the Executive Director the authority to close or require the closure of any UST case if the case meets the criteria found in the State Water Board's Low Threat Underground Storage Tank Case Closure Policy adopted by State Water Board Resolution No. 2012-0016.

<sup>2</sup> Unless otherwise noted, all references are to the Health and Safety Code.

human health, safety, and the environment and where the corrective action is consistent with:

- 1) Chapter 6.7 of Division 20 of the Health and Safety Code and implementing regulations;
- 2) Any applicable waste discharge requirements or other orders issued pursuant to Division 7 of the Water Code; 3) All applicable state policies for water quality control; and 4) All applicable water quality control plans.

The Fund Manager has completed a five-year review of the UST case identified above, and recommends that this case be closed. The recommendation is based upon the facts and circumstances of this particular UST case. A UST Case Closure Review Summary Report has been prepared for the case identified above and the bases for determining compliance with the Water Quality Control Policy for Low-Threat Underground Storage Tank Case Closures (Low-Threat Closure Policy or Policy) are explained in the Case Closure Review Summary Report.

#### **A. Low-Threat Closure Policy**

In State Water Board Resolution No. 2012-0016, the State Water Board adopted the Low Threat Closure Policy. The Policy became effective on August 17, 2012. The Policy establishes consistent statewide case closure criteria for certain low-threat petroleum UST sites. In the absence of unique attributes or site-specific conditions that demonstrably increase the risk associated with residual petroleum constituents, cases that meet the general and media-specific criteria in the Low-Threat Closure Policy pose a low threat to human health, safety and the environment and are appropriate for closure under Health and Safety Code section 25296.10. The Policy provides that if a regulatory agency determines that a case meets the general and media-specific criteria of the Policy, then the regulatory agency shall notify responsible parties and other specified interested persons that the case is eligible for case closure. Unless the regulatory agency revises its determination based on comments received on the proposed case closure, the Policy provides that the agency shall issue a closure letter as specified in Health and Safety Code section 25296.10. The closure letter may only be issued after the expiration of the 60-day comment period, proper destruction or maintenance of monitoring wells or borings, and removal of waste associated with investigation and remediation of the site.

Health and Safety Code section 25299.57, subdivision (l)(1) provides that claims for reimbursement of corrective action costs that are received by the Fund more than 365 days after the date of a closure letter or a Letter of Commitment, whichever occurs later, shall not be reimbursed unless specified conditions are satisfied. A Letter of Commitment has already been issued on the claim subject to this order and the respective Fund claimant, so the 365-day

timeframe for the submittal of claims for corrective action costs will start upon the issuance of the closure letter.

## II. FINDINGS

Based upon the UST Case Closure Review Summary Report prepared for the case attached hereto, the State Water Board finds that corrective action taken to address the unauthorized release of petroleum at the UST release site identified as:

### **Claim No. 10081**

#### **RAS-CO Manufacturing Co.**

ensures protection of human health, safety and the environment and is consistent with Chapter 6.7 of Division 20 of the Health and Safety Code and implementing regulations, the Low-Threat Closure Policy and other water quality control policies and applicable water quality control plans.

Pursuant to the Low-Threat Closure Policy, notification has been provided to all entities that are required to receive notice of the proposed case closure, a 60-day comment period has been provided to notified parties, and any comments received have been considered by the Board in determining that the case should be closed.

The UST case identified above may be the subject of orders issued by the Regional Water Quality Control Water Board (Regional Water Board) pursuant to Division 7 of the Water Code. Any orders that have been issued by the Regional Water Board pursuant to Division 7 of the Water Code, or directives issued by a Local Oversight Program agency for this case should be rescinded to the extent they are inconsistent with this Order.

## III. ORDER

**IT IS THEREFORE ORDERED** that:

- A. The UST case identified in Section II of this Order, meeting the general and media-specific criteria established in the Low-Threat Closure Policy, be closed in accordance with the following conditions and after the following actions are complete. Prior to the issuance of a closure letter, the Fund claimant is ordered to:

1. Properly destroy monitoring wells and borings unless the owner of real property on which the well or boring is located certifies that the wells or borings will be maintained in accordance with local or state requirements;
  2. Properly remove from the site and manage all waste piles, drums, debris, and other investigation and remediation derived materials in accordance with local or state requirements; and
  3. Within six months of the date of this Order, submit documentation to the regulatory agency overseeing the UST case identified in section II of this Order that the tasks in subparagraphs (1) and (2) have been completed.
- B. The tasks in subparagraphs (1) and (2) of Paragraph (A) are ordered pursuant to Health and Safety Code section 25296.10 and failure to comply with these requirements may result in the imposition of civil penalties pursuant to Health and Safety Code section 25299 subdivision (d)(1). Penalties may be imposed administratively by the State Water Board or Regional Water Board.
- C. Within 30 days of receipt of proper documentation from the Fund claimant that requirements in subparagraphs (1) and (2) of Paragraph (A) are complete, the regulatory agency that is responsible for oversight of the UST case identified in Section II of this Order shall notify the State Water Board that the tasks have been satisfactorily completed.
- D. Within 30 days of notification from the regulatory agency that the tasks are complete pursuant to Paragraph (C), the Deputy Director of the Division of Financial Assistance shall issue a closure letter consistent with Health and Safety Code, section 25296.10, subdivision (g) and upload the closure letter and UST Case Closure Review Summary Report to GeoTracker.
- E. As specified in Health and Safety Code section 25299.39.2 subdivision (a) (2), corrective action costs incurred after a recommendation of closure shall be limited to \$10,000 per year unless the Board or its delegated representative agrees that corrective action in excess of that amount is necessary to meet closure requirements, or additional corrective actions are necessary pursuant to section 25296.10 subdivision (a) and (b). Pursuant to section 25299.57, subdivision (l) (1), and except in specified circumstances,

RAS-CO Manufacturing Co.

all claims for reimbursement of corrective action costs must be received by the Fund within 365 days of issuance of the closure letter in order for the costs to be considered.

- F. Any Regional Water Board or Local Oversight Program Agency directive or order that directs corrective action or other action inconsistent with case closure for the UST case identified in Section II is rescinded, but only to the extent the Regional Water Board order or Local Oversight Program Agency directive is inconsistent with this Order.

Thomas Howard  
Executive Director

5/13/13  
Date

## State Water Resources Control Board

### UST CASE CLOSURE REVIEW SUMMARY REPORT

#### Agency Information

Agency Name: Alameda County Health Care Services Agency (County)	Address: 1131 Harbor Bay Parkway Alameda, CA 94502
Agency Caseworker: Mark Detterman	Case No.: RO0000164

#### Case Information

USTCF Claim No.: 10081	Global ID: T0600101947
Site Name: RAS-CO Manufacturing Co.	Site Address: 413 West Sunset Bl., Hayward, CA 94541
Responsible Party (RP): RAS-CO Mfg. Co., Attn: Karniel Lang	Address: 413 West Sunset Bl., Hayward, CA 94541
USTCF Expenditures to Date: \$34,789	Number of Years Case Open: 18

URL: [http://geotracker.waterboards.ca.gov/profile\\_report.asp?global\\_id=T0600101947](http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0600101947)

#### 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:

The Site is located at 413 West Sunset Boulevard in Hayward and is occupied by the RAS-CO Manufacturing Company building and yard as well as a house and garage. Two USTs were removed in November 1994 and over-excavation of affected soil to a depth of 21 feet. In 1999, one monitoring well was installed in the source area and sampled. Groundwater analytical results report non-detect concentrations of contaminants in groundwater.

The petroleum release was limited to the shallow soil and groundwater. No detectable concentrations of contaminants remain in the groundwater. There are no public supply wells regulated by the California Department of Public Health (CDPH) located within 250 feet of the Site. An on-Site domestic irrigation well (Ag Well) is located approximately 50 west of the former UST excavation. A door-to-door well survey was conducted by ERS in 2012. No additional water supply wells have been identified within 250 feet of the former source area. In 1996 a concentration of 1,200 micrograms per liter ( $\mu\text{g/L}$ ) of methyl tert-butyl ether (MTBE) was reported in the on-site domestic irrigation well. Subsequent sampling in 1999 and 2010 showed no detections of any constituents including MTBE in either the source area well or the on-site domestic irrigation well. 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 groundwater are not threatened. Water is provided to water users near the Site by the East Bay Municipal Utilities District (EBMUD). Additional corrective action will not likely change the conceptual model. The corrective action performed is protective of human health, safety, and the environment.

### Rationale for Closure under the Policy

- General Criteria: The case meets all eight Policy general criteria.
- Groundwater Specific Criteria: There are not sufficient mobile constituents (leachate, vapors, or light non-aqueous liquids [LNAPL]) to cause groundwater to exceed the groundwater criteria in this Policy.
- Vapor Intrusion to Indoor Air: The case meets Policy Criterion 2a. Site-specific conditions at the release site satisfy all of the characteristics and criteria of Scenario 3. Benzene concentrations are less than 100 milligrams per kilogram (mg/kg) in the upper 10 feet of soil (the bioattenuation zone) and groundwater reports benzene concentrations less than 100 micrograms per liter ( $\mu\text{g/L}$ ).
- Direct Contact and Outdoor Air Exposure: The case meets Policy Criterion 3a. Maximum concentrations in soil are less than those in Policy Table 1 and the concentration limits for Utility Worker are satisfied. 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 Response

The County objects to UST case closure for this case because:

- Lateral and vertical extent of contamination is undetermined; onsite domestic irrigation well is possibly impacted but screen interval is undetermined.  
RESPONSE: Concentrations in groundwater in both the source area well (MW-1) and the onsite domestic irrigation well are at non-detect levels. There is no groundwater contaminant plume at the Site; this is a soils-only case.
- Site Characterization has not been completed; potential risks and threats have not been fully evaluated.  
RESPONSE: Further characterization is unnecessary. There is no groundwater contaminant plume. Shallow soil concentrations are non-detect.
- Well survey and conduit survey have not been conducted.  
RESPONSE: A well and conduit survey was issued in May 2012 and is available on GeoTracker. There are not sufficient mobile constituents to cause groundwater to exceed the groundwater criteria; thus, nearby wells are not threatened. This is a soils-only case.
- Onsite domestic irrigation well is a possible receptor; additional work is needed to determine if other vicinity residential/agricultural wells exist.  
RESPONSE: In 1996 a concentration of 1,200 micrograms per liter ( $\mu\text{g/L}$ ) of methyl tert-butyl ether (MTBE) was reported in the domestic irrigation well. Subsequent sampling in 1999 and 2010 showed no detections of any constituents including MTBE. Also, no concentrations of the constituents of concern have been reported in monitoring well MW-1, located in the former source area. There are no additional wells identified within 250 feet from the former source area. There are not sufficient mobile constituents to cause groundwater to exceed the groundwater criteria; thus, nearby wells are not threatened. This is a soils-only case.
- Responsible Party has not responded to requests for work or Notice of Violation.  
RESPONSE: The case meets the Policy criteria for closure. Additional work is not necessary.

- Site not claimed in Geotracker, so well data are not uploaded. Well not surveyed to Geotracker standards.

**RESPONSE:** Review of GeoTracker shows that Site has been claimed. Available data are sufficient for an appropriate site conceptual model. Further data collection is not necessary.

**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 significant risks 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 has the regulatory responsibility to supervise the abandonment of monitoring wells.

*Lisa Babcock*

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

*2/25/13*

**Date**

**Prepared by: Roger Hoffmore, P.G.**



**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>If so, was the corrective action performed consistent with any order?</b></p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA</p>
<p><b>General Criteria</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><b>Does the unauthorized release consist only of petroleum?</b></p> <p><b>Has the unauthorized (“primary”) release from the UST system been stopped?</b></p> <p><b>Has free product been removed to the maximum extent practicable?</b></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><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>

<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 secondary source been removed to the extent practicable?</b></p> <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 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 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 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><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input 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><input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA</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><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><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA</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><input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA</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 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

- The Site is located at 413 West Sunset Boulevard in Hayward.
- The Site is occupied by the RAS-CO Manufacturing Company building and yard as well as a house and garage. The Site is bounded by residences to the south, west and north and by Interstate Highway 880 to the east.
- The USTs were removed in November 1994 and over-excavation of affected soil occurred in the following months. In 1999, one monitoring well was installed and sampled.
- Site map showing the location of the former USTs and wells MW-1 and Ag Well is provided at the end of this closure review summary (Environmental Risk Specialties Corporation [ERS], 2011).
- Nature of Contaminants of Concern: Gasoline.
- Source: UST system.
- Date reported: November 1994.
- Status of Release: USTs removed.
- Free Product: None reported.

### Tank Information

Tank No.	Size in Gallons	Contents	Closed in Place/ Removed/Active	Date
1	500	Gasoline	Removed	November 1994
2	250	Gasoline	Removed	November 1994

### Receptors

- GW Basin: Santa Clara Valley – East Bay Plain.
- Beneficial Uses: Agricultural Supply, Municipal, and Domestic Supply.
- Land Use Designation: Residential.
- Public Water System: East Bay Municipal Utilities District (EBMUD).
- Distance to Nearest Supply Well: According to data available in GeoTracker, there are no public supply wells regulated by CDPH within 250 feet of the defined plume boundary. An on-Site domestic irrigation well (Ag Well) is located approximately 50 west of the former UST excavation. A door-to-door well survey was conducted by ERS in 2012. No additional wells have been identified within 250 feet of the defined plume boundary in files reviewed.
- Distance to Nearest Surface Water: No surface water identified within 250 feet of the defined plume boundary.

### Geology/Hydrogeology

- Stratigraphy: The Site is underlain by sandy clay, fine-grained sands and silts to approximately 30 feet bgs.
- Maximum Sample Depth: 30 feet below ground surface (bgs).
- Minimum Groundwater Depth: 21.38 feet bgs at the Ag Well.
- Maximum Groundwater Depth: 23.06 feet bgs at the Ag Well.
- Current Average Depth to Groundwater: ~23 feet bgs.
- Saturated Zones(s) Studied: 18 - 28 feet bgs.
- Appropriate Screen Interval: Yes.

- Groundwater Flow Direction: Regional groundwater flow is towards the west to northwest, generally towards San Francisco Bay. Monitoring wells MW-1 and Ag Well are located approximately 10 feet west and 60 feet west of the former excavation, respectively, and groundwater levels within these wells are consistent with regional data.

**Monitoring Well Information**

Well Designation	Date Installed	Screen Interval (feet bgs)	Depth to Water (feet bgs) (12/16/10)
MW-1	June 1999	18-28	22.59
Ag Well	NA	NA	23.06

**Remediation Summary**

- Free Product: None reported.
- Soil Excavation: Impacted soil (approximately 230 cubic yards) was removed to a depth of 21 feet bgs, remediated to non-detect levels, and reused on-Site as approved by County.
- In-Situ Soil/Groundwater Remediation: None reported.

**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	<0.005 (10/03/95)	<0.005 (10/03/95)
Ethylbenzene	<0.005 (10/03/95)	<0.005 (10/03/95)
Naphthalene	NA	NA
PAHs	NA	NA

\*: Values reported for stockpiled soil which reported non-detect concentrations prior to use as backfill  
 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)	Ethylbenzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	TBA (µg/L)
MW-1	12/16/10	<50	<0.005	<0.005	<0.005	<0.005	<0.50	<10
Ag Well	12/16/10	<50	<0.005	<0.005	<0.005	<0.005	<0.50	<10
<b>WQOs</b>	-	<b>50</b>	<b>1</b>	<b>300</b>	<b>700</b>	<b>1,750</b>	<b>5</b>	<b>12</b>

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, Region 2 Basin Plan

### Groundwater Trends

- Available data reports non-detect concentrations in groundwater, although Ag Well was reported to have MTBE in one sample in 1996. There is no groundwater plume.

### Evaluation of Current Risk

- Estimate of Hydrocarbon Mass in Soil: None reported.
- Soil/Groundwater tested for MTBE: Yes, see table above.
- Plume Length: No plume.
- Plume Stable or Degrading: No plume.
- Contaminated Zone(s) Used for Drinking Water: No.
- Oxygen Concentrations in Soil Vapor: None reported.
- Groundwater Risk from Residual Petroleum Hydrocarbons: There are not sufficient mobile constituents (leachate, vapors, or light non-aqueous liquids [LNAPL]) to cause groundwater to exceed the groundwater criteria in this Policy.
- Indoor Vapor Risk from Residual Petroleum Hydrocarbons: The case meets Policy Criterion 2a. Site-specific conditions at the release site satisfy all of the characteristics and criteria of scenario 3. Benzene concentrations are less than 100 mg/kg in the upper 10 feet of soil (the bioattenuation zone) and groundwater reports benzene concentrations less than 100 µg/L.
- 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 and the concentration limits for Utility Worker are satisfied. 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.

