

State Water Resources Control Board

UST CASE CLOSURE REVIEW SUMMARY REPORT

Agency Information

Agency Name: Los Angeles Regional Water Quality Control Board (Region Board)	Address: 320 W. 4 <sup>th</sup> Street, Suite 200 Los Angeles, CA 90013
Agency Caseworker: Ahmad J. Lamma	Case No.: R-24089

Case Information

USTCF Claim No.: 12321	Global ID: T0603705432
Site Name: United Oil #21	Site Address: 12030 East Rosecrans Avenue, Norwalk, CA 90650
Responsible Party: United Oil Company, Attn: Jeff Appel	Address: 17311 South Main Street, Gardena, CA 90248
USTCF Expenditures to Date: \$889,345	Number of Years Case Open: 16

URL: [http://geotracker.waterboards.ca.gov/profile\\_report.asp?global\\_id=T0603705432](http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0603705432)

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 December 1996 following the removal of six USTs and installation of three USTs. Since 1998, ten groundwater monitoring wells have been installed and monitored intermittently. Approximately 420 tons of contaminated soil were excavated and disposed offsite. Soil vapor extraction and air sparging removed 350 pounds of total petroleum hydrocarbons as gasoline (TPHg). According to groundwater data, water quality objectives (WQO) have been achieved for all constituents except for TPHg, benzene, methyl tert-butyl ether (MTBE) and tert-butyl alcohol (TBA). Concentration trends for all constituents of concern are decreasing in the source area.

The petroleum release is limited to the shallow soil and groundwater. No public supply well regulated by the California Department of Public Health (CDPH) or surface water body is located 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 files reviewed. Water is provided to water users near the Site by the City of Norwalk. 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 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 WQO is less than 250 feet in length. No free product is present. 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.
- Vapor Intrusion to Indoor Air: The case meets the Policy Exclusion for Active Station. Soil vapor evaluation is not required because Site is an active commercial petroleum fueling facility.
- 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 and the concentration limits for a 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.

#### Objection to Closure and Response

The Regional Board does not object to 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. Los Angeles 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: Hari Patel

**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><u>General Criteria</u></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><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>

<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 a conceptual site model that assesses the nature, extent, and mobility of the release been developed?</b></p> <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 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 checked="" 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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA</p>
<p><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><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</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 type="checkbox"/> 3 <input type="checkbox"/> 4</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><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><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><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><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><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 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

- The Site is located at 12030 East Rosecrans Avenue in Norwalk and is an active commercial fueling facility.
- This Site is bounded by East Rosecrans Avenue to the north, Funston Avenue to the west, a business to the east and residences to the south. The nearby land use is mixed residential and commercial.
- Site map showing the location of the current and former USTs, monitoring wells, and groundwater level contours is provided at the end of this closure review summary.
- Nature of Contaminants of Concern: Petroleum hydrocarbons only.
- Source: UST system.
- Date reported: December 1996.
- Status of Release: USTs replaced.
- Free Product: None Reported.

### Tank Information

Tank No.	Size in Gallons	Contents	Closed in Place/ Removed/Active	Date
1	10,000	Gasoline	Removed	December 1996
2	10,000	Gasoline	Removed	December 1996
3	6,000	Diesel	Removed	December 1996
4	6,000	Gasoline	Removed	December 1996
5	6,000	Gasoline	Removed	December 1996
6	6,000	Gasoline	Removed	December 1996
7	6,000	Gasoline	Active	---
8	6,000	Gasoline	Active	---
9	6,000	Gasoline	Active	---

### Receptors

- GW Basin: Coastal Plain of Los Angeles - Central.
- Beneficial Uses: Municipal and Domestic Supply (Basin Plan).
- Land Use Designation: Aerial photography indicates the Site is an active commercial gas station.
- Public Water System: City of Norwalk.
- Distance to Nearest Supply Well: No public supply well regulated by the CDPH is located 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 files reviewed.
- Distance to Nearest Surface Water: There are no surface water bodies within 1,000 feet of the define plume boundary.

**Geology/Hydrogeology**

- Stratigraphy: The Site is underlain by interbedded and intermixed sand and silty clay.
- Maximum Sample Depth: 60 feet below ground surface (bgs)
- Minimum Groundwater Depth: 39.80 feet bgs at monitoring well MW-6.
- Maximum Groundwater Depth: 43.71 feet bgs at monitoring well MW-7.
- Current Average Depth to Groundwater: Approximately 43 feet bgs.
- Saturated Zones(s) Studied: Approximately 35 - 60 feet bgs.
- Appropriate Screen Interval: Yes.
- Groundwater Flow Direction: Variable, west to north with an average gradient of 0.025 to 0.005 feet/foot.

**Monitoring Well Information**

Well Designation	Date Installed	Screen Interval (feet bgs)	Depth to Water (feet bgs) (5/4/2012)
MW-1	December 1998	25 - 60	43.10
MW-2	December 1998	25 - 60	43.17
MW-3	December 1998	25 - 60	42.65
MW-4	December 1998	25 - 60	42.94
MW-5	September 2000	25 - 60	42.41
MW-6	February 2002	25 - 60	41.55
MW-7	September 2000	25 - 60	42.71
MW-8	September 2000	25 - 60	43.03
MW-9	October 2002	25 - 60	41.87
MW-10	October 2002	25 - 60	42.65

**Remediation Summary**

- Free Product: None reported in GeoTracker.
- Soil Excavation: Approximately 420 tons of contaminated soil were removed and disposed offsite in 1996.
- In-Situ Soil/Groundwater Remediation: Soil vapor extraction and air sparging were conducted between July 2005 and September 2005, which removed 350 pounds of TPHg.

**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	<0.002 (10/2002)	<0.002 (10/2002)
Ethylbenzene	<0.002 (10/2002)	<0.002(10/2002)
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

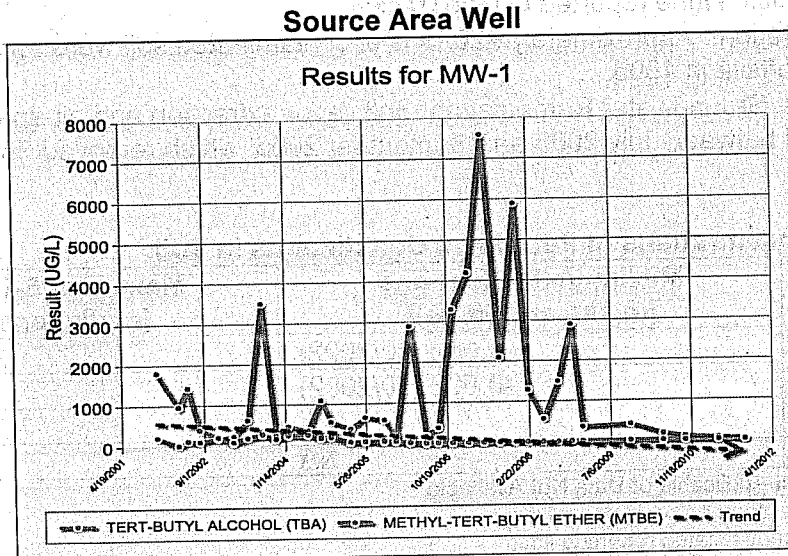
**Most Recent Concentrations of Petroleum Constituents in Groundwater**

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)
MW-1	10/10/11	<100	<1	<1	<1	<2	9.8	57.4
MW-2	10/10/11	<100	<1	<1	<1	<2	5.9	20.1
MW-3	10/10/11	<100	<1	<1	<1	<2	11.1	786
MW-4	05/04/12	129	16	<1	1.5	5.2	34.1	2,470
MW-5	10/10/11	<100	<1	<1	<1	<2	4.4	575
MW-6	10/10/11	<100	<1	<1	<1	<2	1.9	<20
MW-7	10/10/11	<100	<1	<1	<1	<2	17	26.5
MW-8	10/10/11	<100	<1	<1	<1	<2	3.1	<20
MW-9	10/10/11	<100	<1	<1	<1	<2	<2	<20
MW-10	05/04/12	148	18.6	<1	<1	6.4	64.4	2,250
<b>WQOs</b>	-	<b>50</b>	<b>1</b>	<b>150</b>	<b>300</b>	<b>1,750</b>	<b>5</b>	<b>1,200<sup>a</sup></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, Region 4 Basin Plan  
<sup>a</sup>: California Department of Public Health, Response Level

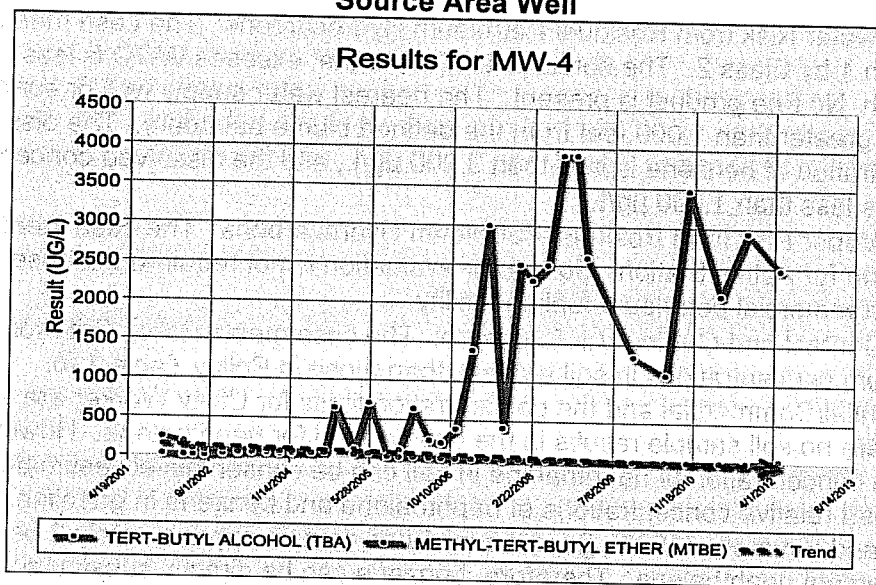
**Groundwater Trends**

- There are 14 years of groundwater monitoring data for this case. MTBE and TBA concentrations linger in and near the source area, but concentrations trends are decreasing. MTBE and TBA trends are shown below: Source Area (MW-1 and MW-4) and Downgradient (MW-9).

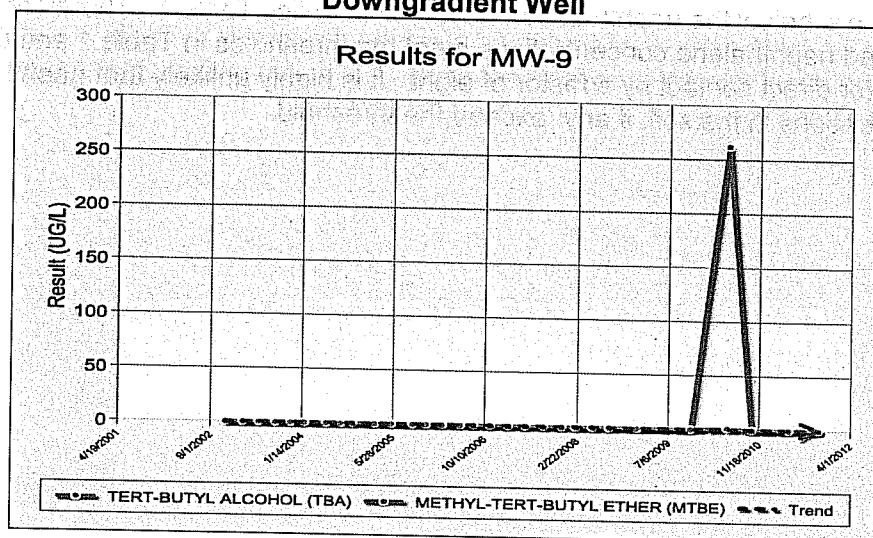




**Source Area Well**



**Downgradient Well**



**Evaluation of Current Risk**

- Estimate of Hydrocarbon Mass in Soil: GeoTracker information show an estimate of 4,800 pounds of TPHg.
- Soil/ Groundwater tested for MTBE: Yes, see table above.
- Oxygen Concentrations in Soil Vapor: None reported.
- Plume Length: <250 feet long.
- Plume Stable or Degrading: 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 WQO is less than 250 feet in length. No free product is present. 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 the Policy Exclusion for Active Station. Soil vapor evaluation is not required because Site is an active commercial petroleum fueling facility.
- 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 Residential/Commercial 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 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.

