

State Water Resources Control Board

UST CASE CLOSURE REVIEW SUMMARY REPORT

Agency Information

Agency Name: Orange County Health Care Agency (County)	Address: 1241 East Dyer Road, Suite 120 Santa Ana, CA 92705
Agency Caseworker: Denamarie Baker	Case No.: 87UT226

Case Information

USTCF Claim No.: 5462	Global ID: T0605900556
Site Name: Mobil #18-HDR	Site Address: 3195 Harbor Boulevard Costa Mesa, CA 92626
Responsible Party: ExxonMobil Oil Corporation	Address: 18685 Main Street Suite 101 PMB 101 Huntington Beach CA 92648-1719
USTCF Expenditures to Date: \$1,490,000	Number of Years Case Open: 25

URL: http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0605900556

Summary

The Low-Threat Underground Storage Tank Case Closure Policy (Policy) contains general and media-specific criteria, and cases that meet those criteria are appropriate for closure pursuant to the Policy. This case meets all of the required criteria of the Policy. A summary evaluation of compliance with the Policy is shown in **Attachment 1: Compliance with State Water Board Policies and State Law**. The Conceptual Site Model upon which the evaluation of the case has been made is described in **Attachment 2: Summary of Basic Case Information (Conceptual Site Model)**. Highlights of the case follow:

An unauthorized release was reported in November 1987 following the removal of USTs (three gasoline and one waste oil). In 2008, the remaining USTs (three gasoline and one waste oil) were excavated and removed. Reportedly, 752 tons of affected soils were excavated and removed in 1987. An additional 205 tons and 1,695 tons of affected soils were removed in 1994 and 2011, respectively. Soil vapor extraction was conducted intermittently between 1992 and 2011, which removed 10,145 pounds of total petroleum hydrocarbons as gasoline (TPHg). Dual phase extraction was conducted in 2000 and 2003, which removed 500 pounds of TPHg and 1,350 gallons of contaminated groundwater. Groundwater extraction was conducted between 1995 and 1996, which removed approximately 404,000 gallons of contaminated groundwater. In 2011, all the onsite monitoring wells were destroyed and the buildings at the Site demolished while all the offsite wells were retained for monitoring purposes. The Site is currently an empty lot awaiting commercial redevelopment. Water quality objectives have been achieved or nearly achieved for all contaminants.

The petroleum release is limited to the soil and shallow groundwater. According to data available in GeoTracker, there are no supply wells regulated by the California Department of Public Health or surface water bodies within 250 of the defined plume boundary. No other water supply wells have been identified within 250 feet of the defined plume boundary in the files reviewed. Water is provided to

water users near the Site by the Mesa Water District. The affected groundwater is not currently being used as a source of drinking water, and it is highly unlikely that the affected groundwater will be used as a source of drinking water in the foreseeable future. Other designated beneficial uses of impacted groundwater are not threatened and it is highly unlikely that they will be, considering these factors in the context of the site setting. Remaining petroleum hydrocarbon constituents are limited, and stable, and concentrations are decreasing. Corrective actions have been implemented and additional corrective actions are not necessary. Any remaining petroleum hydrocarbon constituents do not pose a significant risk to human health, safety or the environment.

Rationale for Closure under the Policy

- General Criteria: The case meets all eight Policy general criteria.
- Groundwater Specific Criteria: The case meets Policy Criterion 1 by Class 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 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 and Outdoor Air Exposure: This case meets Policy Criterion 3b. Although no document titled "Risk Assessment" was found in the files reviewed, a professional assessment of site-specific risk from potential exposure to residual soil contamination found that maximum concentrations of petroleum constituents remaining in soil will have no significant risk of adversely affecting human health. Approximately 1,700 tons of hydrocarbon affected soils were excavated, removed, and replaced with clean fill in 2011. Excavation depths varied from 3 feet below ground surface (bgs) to 20 feet bgs in the former gasoline UST and dispenser locations and approximately 10.5 feet bgs in the former waste oil UST location.

Objections to Closure and Responses

The County has not responded to the Responsible Party's June 2012 request for closure.

RESPONSE: Adequate information shows the case satisfies all of the Policy criteria.

Determination

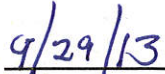
Based on the review performed in accordance with Health & Safety Code Section 25299.39.2 subdivision (a), the Fund Manager has determined that closure of the case is appropriate.

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



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



Date

Prepared by: Ramesh Sundareswaran

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>Media-Specific Criteria 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>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>If YES, check applicable class: <input checked="" type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input 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 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>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>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>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. 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 type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" 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>

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

Site Location/History

- This case is an empty lot which is to be redeveloped for commercial use and is bounded by a fast food restaurant and a commercial petroleum fueling facility to the north, a commercial petroleum fueling facility to the to the east, a commercial building to the south, and a convenience store to the west.
- 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 (Cardno, 2012).
- Nature of Contaminants of Concern: Petroleum hydrocarbons only.
- Source: UST system.
- Date reported: November 1987.
- Status of Release: USTs removed.
- Free Product: None reported.

Tank Information

Tank No.	Size in Gallons	Contents	Closed in Place/ Removed/Active	Date
1	6,000	Gasoline	Removed	1987
2	8,000	Gasoline	Removed	1987
3	10,000	Gasoline	Removed	1987
4	285	Waste oil	Removed	1987
5	12,000	Gasoline	Removed	2008
6-7	10,000	Gasoline	Removed	2008
8	1000	Waste oil	Removed	2008

Receptors

- GW Basin: Coastal Plain of Orange County.
- Beneficial Uses: Municipal and Domestic Supply (GeoTracker).
- Land Use Designation: Commercial.
- Public Water System: Mesa Water District.
- Water District: Metropolitan Water District of Southern California.
- Distance to Nearest Supply Well: According to data available in GeoTracker, there are no public supply wells regulated by the California Department of Public Health within 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 gravel, sand, silt and clay.
- Maximum Sample Depth: 63 feet bgs.
- Minimum Groundwater Depth: 19.65 feet bgs at monitoring well MW6A.
- Maximum Groundwater Depth: 41.32 feet bgs at monitoring well MW16B.
- Current Average Depth to Groundwater: Approximately 28 feet bgs.
- Saturated Zones(s) Studied: Approximately 20 - 75 feet bgs.
- Appropriate Screen Interval: Yes.

- Groundwater Flow Direction: Southwest in the upper and lower zones with a hydraulic gradient of 0.01 feet per foot.

Monitoring Well Information

Well Designation	Date Installed	Screen Interval (feet bgs)	Depth to Water (feet bgs) (03/12/13)
MW5A	October 1993	30 - 36	21.48
MW5B	October 1993	40 - 46	21.43
MW6A	October 1993	30 - 36	20.55
MW6B	October 1993	40 - 46	20.66
MW7	1995	37 - 42	26.26
MW10A	1995	30 - 35	Inaccessible
MW10B	1995	42 - 47	Inaccessible
MW15A	August 2004	30 - 35	26.31
MW15B	August 2004	40 - 44	26.33
MW16A	August 2004	30 - 35	29.75
MW16B	August 2004	39 - 44	29.81
MW18	May 2008	38 - 42	27.31
SB7	February 2011	60 - 75	35.98
SB9	February 2011	45 - 55	36.83
SB12	February 2011	45 - 55	37.37

Remediation Summary

- Free Product: None reported in GeoTracker.
- Soil Excavation: 752 tons of affected soils were excavated and removed in 1987. An additional 205 tons and 1,695 tons of affected soils were removed in 1994 and 2011, respectively.
- In-Situ Soil/Groundwater Remediation: Soil vapor extraction was conducted intermittently between 1992 and 2011, which removed 10,145 pounds of TPHg. Dual phase extraction was conducted in 2000 and 2003, which removed 500 pounds of TPHg and 1,350 gallons of contaminated groundwater. Groundwater extraction was conducted between 1995 and 1996, which removed approximately 404,000 gallons of contaminated groundwater.

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	NA*	<0.5(09/07/11)
Ethylbenzene	NA*	0.057 (09/07/11)
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

*: Approximately 1695 tons of affected soils were excavated and removed during site redevelopment in 2011. Excavation depths varied from 3 feet bgs to 20 feet bgs in the former gasoline UST and dispenser locations.

**: Excavation depth in the former waste oil UST location in 2011 was 10.5 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)
MW5A	03/12/13	<50	1.86	2.54	0.547	1.89	2.25	<10
MW5B	03/12/13	<50	<1	0.645	<1	0.64	0.253	<10
MW6A	03/12/13	128	30.9	19	2.69	8.99	2.53	<10
MW6B	03/12/13	<50	0.231	0.983	<1	0.966	0.462	<10
MW7	03/12/13	<50	<1	<1	<1	<1	3.13	31.6
MW10A	03/01/12	<50	<1	<1	<1	<1	0.56	<10
MW10B	03/01/12	<50	<1	<1	<1	<1	<2	<10
MW15A	03/12/13	<50	<1	<1	<1	<1	0.672	<10
MW15B	03/12/13	<50	<1	<1	<1	<1	<2	21.6
MW16A	03/12/13	<50	<1	<1	<1	<1	0.136	<10
MW16B	03/12/13	168	<1	<1	<1	<1	2.81	6.86
MW18	03/12/13	328	<1	<1	<1	<1	3.08	37.2
SB7	03/12/13	<50	1.9	2.47	0.561	1.97	25.2	<10
SB9	03/12/13	<50	<1	<1	<1	<1	5.28	4.14
SB12	03/12/13	<50	<1	<1	<1	<1	0.209	<10
WQOs	-	--	1	150	300	1,700	5^a	1,200^b

NA: Not Analyzed, Not Applicable or Data Not Available

µg/L: Micrograms per liter, parts per billion

<: Not detected at or above stated reporting limit

TPHg: Total petroleum hydrocarbons as gasoline

MTBE: Methyl tert-butyl ether

TBA: Tert-butyl alcohol

WQOs: Water Quality Objectives, Regional Water Quality Control Board (Regional Water Board) Basin Plan

--: Regional Water Board Basin Plan does not have a numeric water quality objective for TPHg

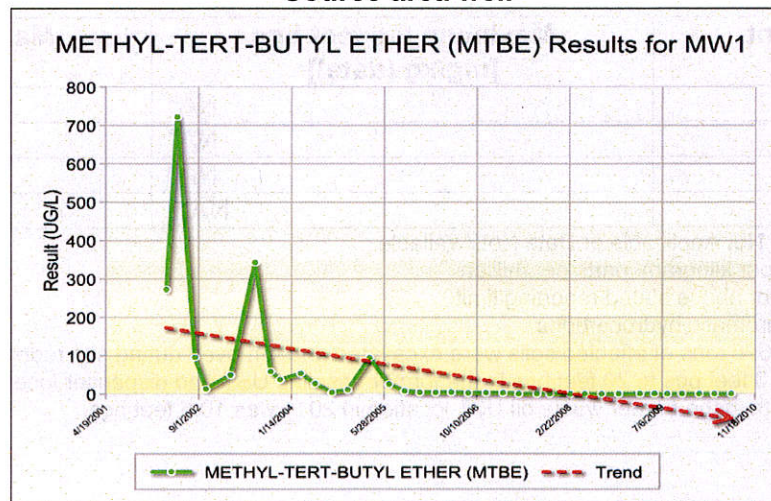
^a: Secondary maximum contaminant level (MCL)

^b: California Department of Public Health, Response Level

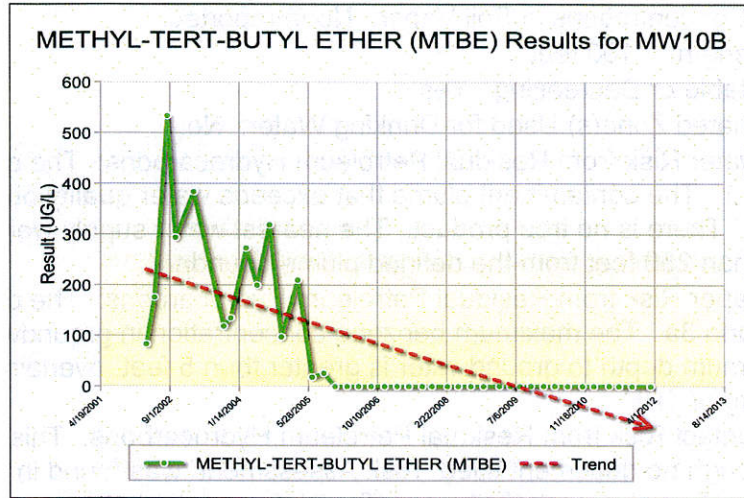
Groundwater Trends

- There are 19 years of groundwater monitoring data for this case. MTBE trends are shown below: Source Area (MW1), Near Downgradient (MW10B), and Far Downgradient (SB7 and SB9).

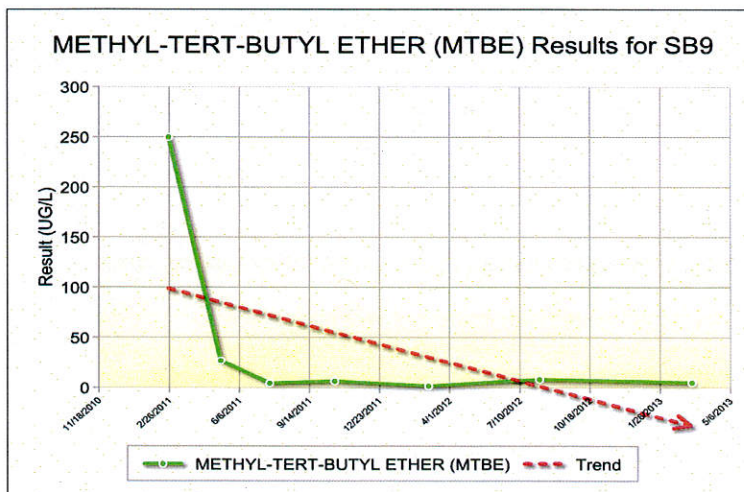
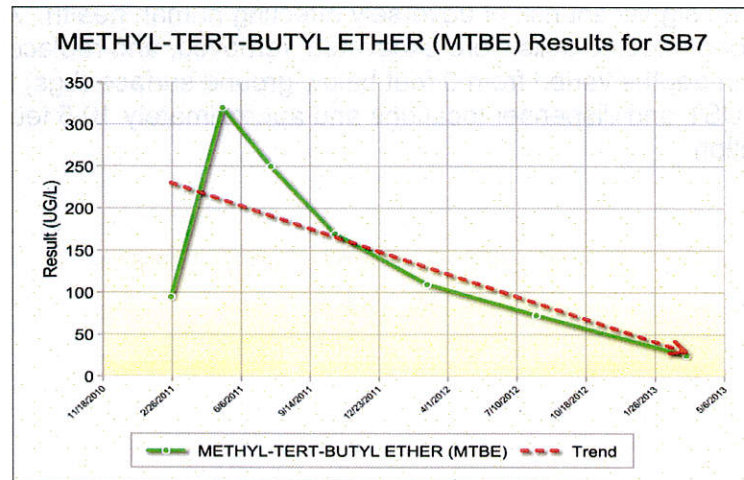
Source area well



Near Downgradient Well



Far Downgradient Wells



Evaluation of Current Risk

- Estimate of Hydrocarbon Mass in Soil: None reported.
- Soil/ Groundwater tested for methyl tert-butyl ether (MTBE): Yes, see table above.
- 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 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.
- 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: This case meets Policy Criterion 3b. Although no document titled "Risk Assessment" was found in the files reviewed, a professional assessment of site-specific risk from potential exposure to residual soil contamination found that maximum concentrations of petroleum constituents remaining in soil will have no significant risk of adversely affecting human health. Approximately 1,700 tons of hydrocarbon affected soils were excavated, removed, and replaced with clean fill in 2011. Excavation depths varied from 3 feet below ground surface (bgs) to 20 feet bgs in the former gasoline UST and dispenser locations and approximately 10.5 feet bgs in the former waste oil UST location.

