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GOVERNOR



MATTHEW RODRIGUEZ  
SECRETARY FOR  
ENVIRONMENTAL PROTECTION

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## State Water Resources Control Board

March 20, 2014

CHEVRON PRODUCTS COMPANY  
ATTN: JOE WATTERSON  
6101 BOLLINGER CANYON RD BLD BR1X #5339  
SAN RAMON, CA 94583

**PRELIMINARY REVIEW SUMMARY REPORT FOR CLAIM NUMBER: 15616;  
SITE ADDRESS: 1600 SISK RD, MODESTO**

The UST Cleanup Fund has completed our review of your claim. A copy of our Review Summary Report, including our recommendations for your site, has been transmitted to your regulatory agency caseworker and we are enclosing a copy for your information. Please note that the Fund's recommendations are based on our review of information contained in the Fund's case files, data currently in the Geotracker database and any other sources of information that were readily available to Fund staff at the time the review was conducted. Consequently, they do not reflect any information that may have recently been submitted by your consultant to the regulatory agency.

The Fund's recommendations, as a result of the review process, do not relieve you of any responsibilities or activities for which you have been directed to conduct by the local regulatory agency responsible for oversight of your case.

If you have any questions regarding the attached information, please call me at (916) 341-5684 or Kirk Larson at (916) 341-5663.

Sincerely,

A handwritten signature in blue ink that reads "Robert Trommer".

Robert Trommer  
Senior Engineering Geologist  
Chief, Technical Review Unit  
Underground Storage Tank Cleanup Fund

Enclosure



## State Water Resources Control Board

### REVIEW SUMMARY REPORT – CONCUR PRELIMINARY REVIEW – MARCH 2014

#### Agency Information

Agency Name: Stanislaus County Environmental Health Department (County)	Address: 3800 Cornucopia Way, Ste. C Modesto, CA 95358
Agency Caseworker: Horacio Ferriz	Case No.: 241

#### Case Information

USTCF Claim No.: 15616	GeoTracker Global ID: T0609900376
Site Name: Chevron #96397	Site Address: 1600 Sisk Road Modesto, CA 95354
Responsible Party: Chevron Environmental Management, Co. Attn: Brian White	Address: 6001 Bollinger Canyon Road San Ramon, CA 94583-2324
USTCF Expenditures to Date: \$0	Number of Years Case Open: 15

URL: [http://geotracker.waterboards.ca.gov/profile\\_report.asp?global\\_id=T0609900376](http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0609900376)

#### 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 does not meet 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)**. Previous Recommendations are included in **Attachment 3: Previous Recommendations**. Highlights of the case follow:

This Site is an active commercial petroleum fueling facility. An unauthorized release was reported in October 1998 following the removal of five USTs (three gasoline, one diesel, and one waste oil). Approximately 355 cubic yards of impacted soil was excavated to a depth of 14 feet and disposed offsite in 1998. Soil vapor extraction and air sparging pilot tests were conducted in June 2011 and determined to be cost effective. Since 1998, eight groundwater monitoring wells have been installed and monitored; four wells have been abandoned. According to groundwater data, water quality objectives have been achieved or nearly achieved.

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 feet of the defined plume boundary. No other water supply wells have been identified within 250 feet of the defined plume boundary in files reviewed. Water is provided to water users near the Site by the Modesto Irrigation 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:** Secondary source has not been removed to the extent practicable. Concentrations of total petroleum hydrocarbons as gasoline (TPHg) in groundwater are currently reported at 130,000 micrograms per liter ( $\mu\text{g/L}$ ) in well C-10 and at 270,000  $\mu\text{g/L}$  in well C-14. Soil vapor extraction and air sparging pilot tests conducted in June 2011 determined those remedial technologies to be cost effective. The case meets the other seven of the 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 the Policy Exclusion for an Active Commercial Petroleum Fueling Facility. Soil vapor evaluation is not required because the Site is an active commercial petroleum fueling facility and the release characteristics do not pose an unacceptable health risk.
- **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 exposure through the direct exposure pathway was performed by Fund staff. The 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. The Site is paved and accidental exposure to site soils is prevented. As an active petroleum fueling facility, any construction worker working at the Site will be prepared for exposure in their normal daily work.

#### Objections to Closure and Responses

According to the Path to Closure page in GeoTracker (dated October 15, 2013), the County opposes closure because:

- Secondary source has not been removed to the extent practicable.  
**RESPONSE:** Fund staff concurs.

#### Determination

Fund staff concurs with the County that the secondary source has not been removed to the extent practicable and that the Site is not currently ready for closure under the Policy.

  
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Kirk Larson, P.G.  
Engineering Geologist  
Technical Review Unit  
(916) 341-5663

3/20/2014  
Date

  
\_\_\_\_\_  
Robert Trommer, C.H.G.  
Senior Engineering Geologist  
Chief, Technical Review Unit  
(916) 341-5684

3/20/14  
Date

**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><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 type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" 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 <input type="checkbox"/> NA</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 checked="" 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 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><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><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input 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><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><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 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 Site is located on the northwest corner of the intersection of Sisk Road and West Briggsmore Avenue and is an active commercial petroleum fueling facility.
- The Site is bounded by an active commercial petroleum fueling facility to the west, parking lot to the north, an active commercial petroleum fueling facility across West Briggsmore Avenue to the east, and an open field across Sisk Road to the south.
- Site maps showing the location of the current and former USTs, monitoring wells, groundwater level contours, and benzene concentrations are provided at the end of this document (Arcadis, 2013).
- Nature of Contaminants of Concern: Petroleum hydrocarbons only.
- Source: UST system.
- Date reported: October 1998.
- Status of Release: USTs removed and replaced.

**Tank Information**

Tank No.	Size in Gallons	Contents	Closed In Place/Removed/Active	Date
1-3	10,000	Gasoline	Removed	October 1998
4	10,000	Diesel	Removed	October 1998
5	1,000	Waste Oil	Removed	October 1998
6	25,000	Gasoline	Active	-
7	15,000	Gasoline	Active	-

**Receptors**

- GW Basin: Santa Clara Valley – Santa Clara.
- Beneficial Uses: Central Valley Regional Water Quality Control Board (Regional Water Board) Basin Plan lists agricultural, municipal, domestic, industrial service and process supply.
- Land Use Designation: Commercial.
- Public Water System: Modesto Irrigation District.
- 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 and intermixed gravel, sand, silt, and clay.
- Maximum Sample Depth: 110 feet below ground surface (bgs).
- Minimum Groundwater Depth: 17.50 feet bgs at monitoring well MW-2.
- Maximum Groundwater Depth: 30.97 feet bgs at monitoring well C-10D.
- Current Average Depth to Groundwater: Approximately 27 feet bgs.
- Saturated Zones(s) Studied: Approximately 20 - 87 feet bgs.
- Appropriate Screen Interval: Yes.

- Groundwater Flow Direction: Southwest to southeast, with an average gradient of 0.001 feet/foot (September 2013).

**Monitoring Well Information**

Well Designation	Date First Sampled	Screen Interval (feet bgs)	Depth to Water (feet bgs) (09/26/13)
C-1	August 1999	20-40	25.95
C-2	August 1999	20-40	26.62
C-7	February 2004	23-33	27.80
C-8D	August 2008	76-81	26.97
C-9	August 2008	30-40	27.41
C-9I	August 2008	57-62	27.50
C-9D	August 2008	75-80	27.35
C-10	August 2008	34-44	27.38
C-10I	August 2008	53-58	27.52
C-10D	August 2008	79-84	26.62
C-11	August 2008	33-43	27.00
C-11I	August 2008	50-55	27.11
C-11D	August 2008	82-87	27.00
C-12	August 2008	32-42	26.52
C-12I	August 2008	58-63	26.77
C-12D	August 2008	82-86	26.68
C-13	August 2008	29-39	27.08
C-13I	August 2008	59-64	26.48
C-13D	August 2008	80-85	26.61
C-14	August 2010	26-36	27.43
C-14I	August 2010	52-57	27.88

**Remediation Summary**

- Free Product: None reported in GeoTracker.
- Soil Excavation: Approximately 355 cubic yards of impacted soil was excavated to a depth of 14 feet and disposed offsite in 1998.
- In-Situ Soil/Groundwater Remediation: A soil vapor extraction and air sparging pilot test were conducted in June 2011 and determined to be a feasible technology at the Site.

**Most Recent Concentrations of Petroleum Constituents In Soil**

Constituent	Maximum 0-5 feet bgs [mg/kg (date) sample-depth]	Maximum 5-10 feet bgs [mg/kg (date) sample-depth]
Benzene	NA	0.010 (08/10/10) C-14I-10'
Ethylbenzene	NA	<0.001 (08/10/10) C-14I-10'
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)	TPHd (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-Benzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	TBA (µg/L)
C-1	09/26/13	<100	<100	<0.5	<0.5	<1	<1	<1	<5
C-2	09/26/13	<100	<100	<0.5	<0.5	<1	<1	<1	<5
C-7	09/26/13	<100	280	16	0.5	<1	0.6	0.6	9
C-8D	09/26/13	1,100	<100	<0.5	<0.5	<1	<1	<1	<5
C-9	09/26/13	<100	<100	<0.5	<0.5	<1	<1	<1	3
C-9I	09/26/13	<100	<100	<0.5	<0.5	<1	<1	<1	<5
C-9D	09/26/13	<100	<100	<0.5	<0.5	<1	<1	<1	<5
C-10	09/26/13	130,000	5,700	7,600	23,000	3,800	17,000	63	590
C-10I	09/26/13	<100	<100	0.5	0.8	<1	<1	<1	<5
C-10D	09/26/13	<100	<100	<0.5	<0.5	<1	<1	<1	<5
C-11	09/26/13	<100	<100	<0.5	<0.5	<1	<1	<1	<5
C-11I	09/26/13	<100	<100	<0.5	<0.5	<1	<1	<1	<5
C-11D	09/26/13	<100	<100	<0.5	<0.5	<1	<1	<1	<5
C-12	09/26/13	92	<100	<0.5	<0.5	<1	<1	24	3
C-12I	09/26/13	<100	<100	<0.5	<0.5	<1	<1	<1	<5
C-12D	09/26/13	<100	<100	<0.5	<0.5	<1	<1	<1	<5
C-13	09/26/13	<100	<100	<0.5	<0.5	<1	<1	<1	<5
C-13I	09/26/13	<100	<100	<0.5	<0.5	<1	<1	<1	<5
C-13D	09/26/13	<100	<100	<0.5	<0.5	<1	<1	<1	<5
C-14	09/26/13	270,000	5,800	11,000	72,000	5,200	25,000	68	250
C-14I	09/26/13	250	<100	9	<0.5	<1	0.9	<1	<5
WQO	-	5	56	0.15	42	29	17	5 <sup>a</sup>	1,200 <sup>b</sup>

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

TPHd: Total petroleum hydrocarbons as diesel

MTBE: Methyl tert-butyl ether

TBA: Tert-butyl alcohol

WQOs: Water Quality Objectives, Regional Water Board Basin Plan

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

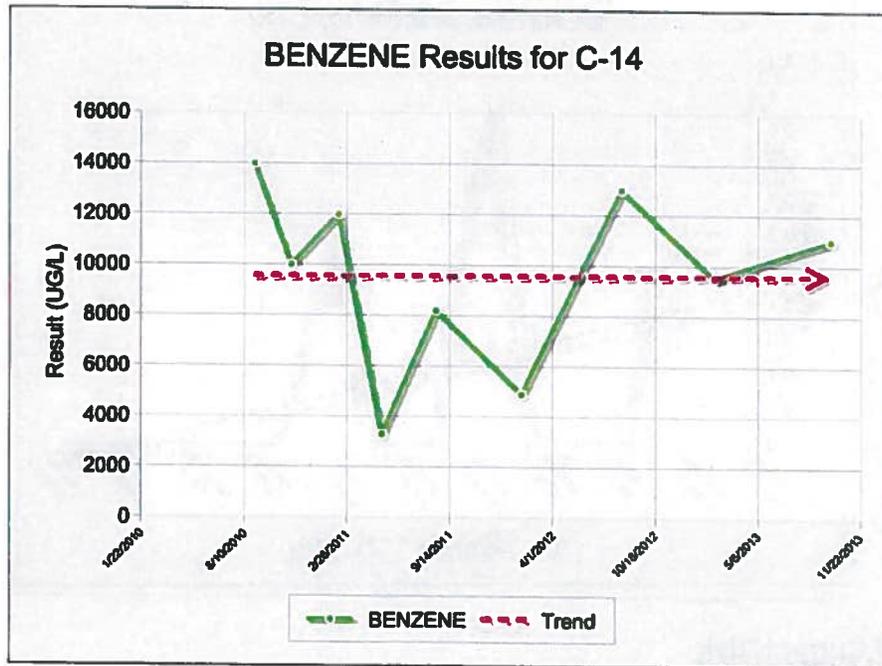
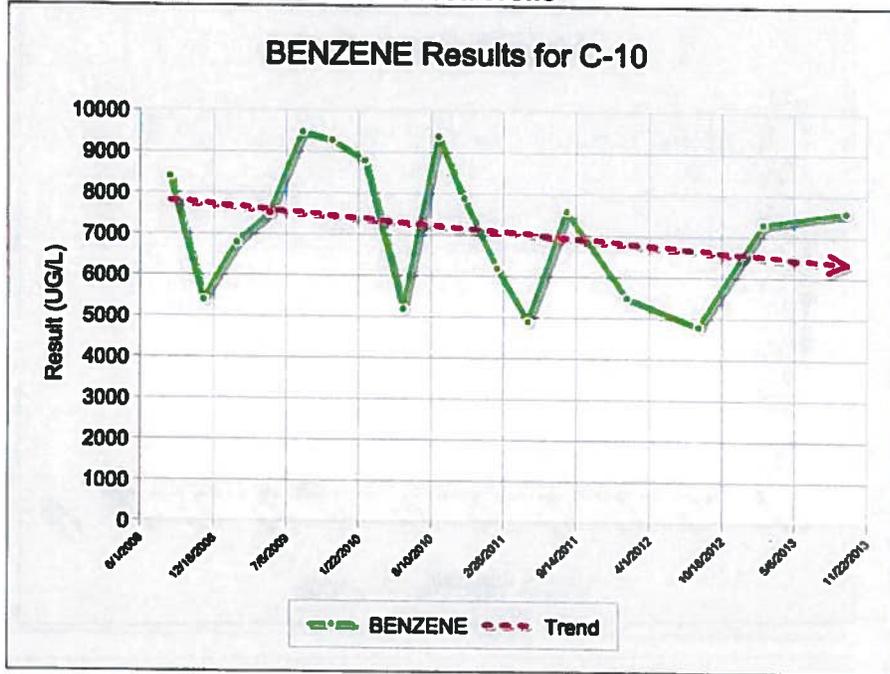
<sup>a</sup>: Secondary maximum contaminant level (MCL)

<sup>b</sup>: California Department of Public Health, Response Level

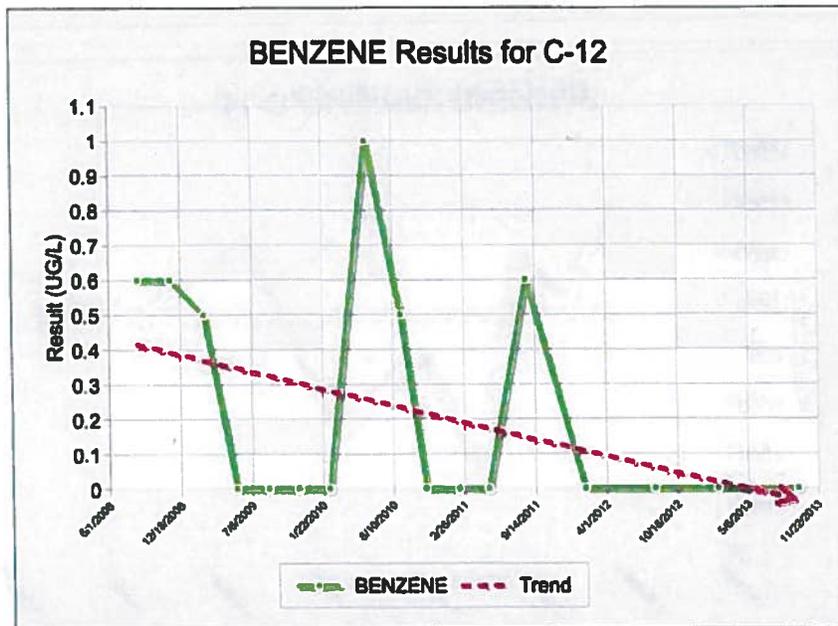
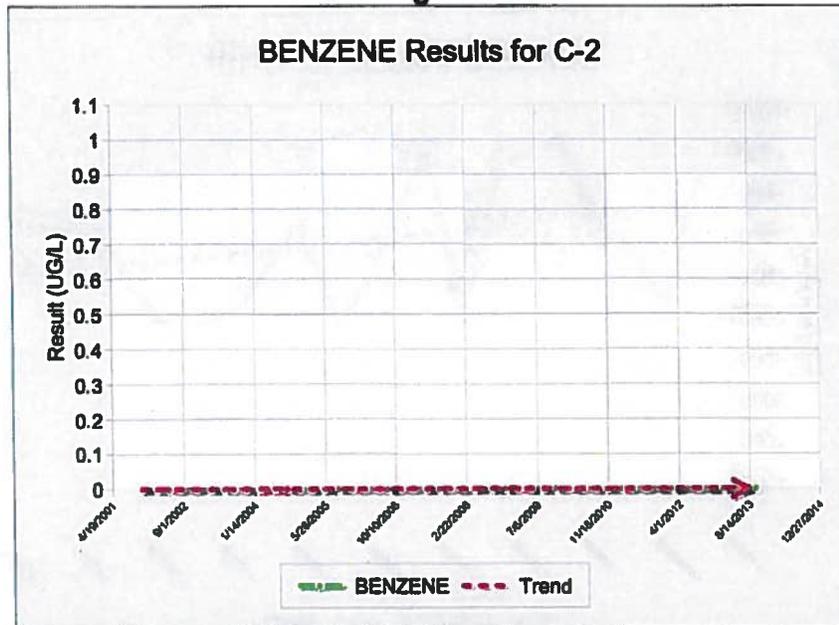
**Groundwater Trends**

- Since 1999, 30 groundwater monitoring wells have been installed and monitored; 21 wells are actively sampled. Benzene trends are shown below: Source Area (C-10 and C-14) and Downgradient (C-2 and C-12).

Source Area Wells



### Near Downgradient Well



### Evaluation of Current Risk

- Estimate of Hydrocarbon Mass in Soil: Approximately 9.2 pounds of benzene and 0.8 pounds of MTBE remaining (Arcadis, 2013).
- Soil/Groundwater tested for MTBE: Yes.
- 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 the Policy Exclusion for an Active Commercial Petroleum Fueling Facility. Soil vapor evaluation is not required because the Site is an active commercial petroleum fueling facility and the release characteristics do not pose an unacceptable health risk.
- **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 exposure through the direct exposure pathway was performed by Fund staff. The 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. The Site is paved and accidental exposure to site soils is prevented. As an active petroleum fueling facility, any construction worker working at the Site will be prepared for exposure in their normal daily work.

