STATE OF CALIFORNIA
STATE WATER RESOURCES CONTROL BOARD

ORDER WQ 2013-0119 – UST

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[1]:

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.[2] The name of the Fund claimant, the Fund claim number, the site name and the applicable site address are as follows:

USA Petroleum Corporation
Claim No. 6067
USA Petroleum Station #239
41339 Big Bear Boulevard, Big Bear Lake

Santa Ana Regional Water Quality Control Board

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

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[1] 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.

[2] Unless otherwise noted, all references are to the Health and Safety Code.

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. 6067
USA Petroleum Station #239

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.

Pursuant to section 21080.5 of the Public Resources Code, environmental impacts associated with the adoption of this Order were analyzed in the substitute environmental document (SED) the State Water Board approved on May 1, 2012. The SED concludes that all environmental effects of adopting and implementing the Low threat Closure Policy are less than significant, and environmental impacts as a result of complying with the Policy are no different from the impacts that are reasonably foreseen as a result of the Policy itself. A Notice of Decision was filed August 17, 2012. No new environmental impacts or any additional reasonably foreseeable impacts beyond those that were not addressed in the SED will result from adopting this Order.

The UST case identified above may be the subject of orders issued by the Regional Water Quality Control 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, subdivisions (a) and (b). Pursuant to section 25299.57, subdivision (l) (1), and except in specified circumstances, 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

11/25/13
Date

State Water Resources Control Board

UST CASE CLOSURE REVIEW SUMMARY REPORT

Agency Information

Agency Name: Santa Ana Regional Water Quality Control Board (Regional Water Board)	Address: 3737 Main Street, Suite 500, Riverside, CA 92501
Agency Caseworker: Valerie Jahn-Bull	Case No.: 083601236T

Case Information

USTCF Claim No.: 6067	GeoTracker Global ID: T0607100142
Site Name: USA Petroleum Station #239	Site Address: 41339 Big Bear Blvd. Big Bear Lake, CA 92315
Responsible Party: USA Petroleum Corp. c/o Moller Investment Group, Inc. Attn: Charles Miller	Address: 6591 Collins Drive, #E-11, Moorpark, CA 93021
USTCF Expenditures to Date: $1,308,077	Number of Years Case Open: 23

URL: http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0607100142

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:

This case is an active commercial petroleum fueling facility. An unauthorized release was reported in May 1989 during an environmental investigation. Dual phase extraction conducted from 2005 through 2009 removed approximately 383 pounds of petroleum hydrocarbons in soil, and 1,641,378 gallons of contaminated groundwater. An offsite ozone sparging system also operated at the downgradient site in the same period. To date, 27 monitoring wells have been installed and monitored regularly. According to groundwater data, water quality objectives have been achieved for all constituents except for methyl tert-butyl ether (MTBE).

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 1,000 feet of the defined plume boundary. No other water supply wells have been 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 Big Bear Lake Department of Water and Power. 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 4. The contaminant plume that exceeds water quality objectives is less than 1,000 feet in length. There is no free product. The nearest supply well regulated by the California Department of Public Health or surface water body is greater than 1,000 feet from the defined plume boundary. No other water supply wells have been identified within 1,000 feet of the defined plume boundary. The dissolved concentrations of benzene and MTBE are each less than 1,000 µg/L. The MTBE plume originated from the Site appears detached and is now located at the site across Big Bear Boulevard to the north-northwest. The offsite MTBE plume is stable and is less than 250 feet in length.
- Vapor Intrusion to Indoor Air: The case meets the Policy Exclusion for Active Station. Soil vapor evaluation is not required because the Site is an active commercial petroleum fueling facility. Based on the June 2011 soil assessment, and the groundwater monitoring data, however; the case also 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 and Outdoor Air Exposure: 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. Maximum concentrations in soil from five to ten feet below surface are less than those in Policy Table 1 for Commercial/Industrial or Residential use. Although concentrations in soil from zero to five feet below surface are not available, only MTBE in groundwater has been the concern at the Site. Furthermore, the Site is paved and accidental access to site soils is prevented. As an active gas station, any construction worker working at the Site will be prepared for exposure in their normal daily work.

Objections to Closure and Responses

Currently the Regional Water Board does not appear to object to UST case closure. However:

- The Regional Water Board requests that the Site closure be delayed to allow the ownership of several offsite monitoring wells to be transferred to the responsible party of the Stock Automotive case.
  RESPONSE: While the State Water Board conducts the public notification for closure as required by the Policy, there should be sufficient time to transfer the ownership of the monitoring wells.

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

Lisa Babcock 8/16/13

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

Prepared by: James Young, RCE #60266

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]

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.	☒ Yes ☐ No
Have waste discharge requirements or any other orders issued pursuant to Division 7 of the Water Code been issued at this case?	☒ Yes ☐ No
If so, was the corrective action performed consistent with any order? There was an order issued for this case. The corrective action performed in the past is consistent with that order. Since this case meets applicable case-closure requirements, further corrective action under the order that is not necessary, unless the activity is necessary for case closure.	☒ Yes ☐ No ☐ NA
General Criteria General criteria that must be satisfied by all candidate sites:	
Is the unauthorized release located within the service area of a public water system?	☒ Yes ☐ No
Does the unauthorized release consist only of petroleum?	☒ Yes ☐ No
Has the unauthorized ("primary") release from the UST system been stopped?	☒ Yes ☐ No
Has free product been removed to the maximum extent practicable?	☐ Yes ☐ No ☒ NA

[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

Has a conceptual site model that assesses the nature, extent, and mobility of the release been developed?	☒ Yes ☐ No
Has secondary source been removed to the extent practicable?	☒ Yes ☐ No
Has soil or groundwater been tested for MTBE and results reported in accordance with Health and Safety Code Section 25296.15?	☒ Yes ☐ No
Nuisance as defined by Water Code section 13050 does not exist at the Site?	☒ Yes ☐ No
Are there unique site attributes or site-specific conditions that demonstrably increase the risk associated with residual petroleum constituents?	☐ Yes ☒ No
<u>Media-Specific Criteria</u> Candidate sites must satisfy all three of these media-specific criteria: **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:	
Is the contaminant plume that exceeds water quality objectives stable or decreasing in areal extent?	☒ Yes ☐ No ☐ NA
Does the contaminant plume that exceeds water quality objectives meet all of the additional characteristics of one of the five classes of sites?	☒ Yes ☐ No ☐ NA
If YES, check applicable class: ☐ **1** ☐ **2** ☐ **3** ☒ **4** ☐ **5**	
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?	☐ Yes ☐ No ☒ NA
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.	
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.	☒ Yes ☐ No

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? If YES, check applicable scenarios: ☐ **1** ☐ **2** ☒ **3** ☐ **4**	☒Yes ☐ No ☐ NA
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?	☐ Yes ☐ No ☒ NA
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?	☐ Yes ☐ No ☒ NA
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).	
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)?	☐ Yes ☐ No ☒ NA
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?	☒ Yes ☐ No ☐ NA
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?	☐ Yes ☐ No ☒ NA

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

Site Location/History

- This case is an active commercial petroleum fueling facility.
- The Site is bounded by Georgia Street to the west and Big Bear Boulevard to the north. The surrounding properties are comprised of a residential unit to the south, commercial facilities to the east and north, and Bear Valley Middle School which is located west of the site.
- Site maps showing the locations of the USTs, monitoring wells, offsite ozone sparging wells located at the downgradient site, groundwater level contours, petroleum constituent concentrations in groundwater, the limited MTBE plume that has traveled to the downgradient site, and the larger MTBE plume originated from the Stock Automotive site, are all provided at the end of this closure review summary (Environ Strategy Consultants, Inc., February 2013).
- Nature of Contaminants of Concern: Petroleum hydrocarbons only.
- Source: UST system.
- Date reported: May 1989.
- Status of Release: Release determined stopped after piping upgrade and tank tests passed in 1992 and 1993.
- Free Product: None reported.

Tank Information

Tank No.	Size in Gallons	Contents	Closed in Place/ Removed/Active	Date
1	12,000	Gasoline	Active	--
2	12,000	Gasoline	Active	--
3	12,000	Gasoline	Active	--

Receptors

- GW Basin: Bear Valley.
- Beneficial Uses: Regional Water Board Basin Plan lists Municipal and Domestic Supply and Industrial Process Supply.
- Land Use Designation: None specified. Aerial photo in GeoTracker shows the Site is commercial surrounded by mixed commercial and residential.
- Public Water System: City of Big Bear Lake, Department of Water and Power.
- 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 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 the files reviewed.
- Distance to Nearest Surface Water: There is no identified surface water within 1,000 feet of the defined plume boundary.

Geology/Hydrogeology

- Stratigraphy: The Site is underlain by interbedded and intermixed gravel, sand, silt and clay, predominantly coarse grained sediments.
- Maximum Sample Depth: 20 feet below ground surface (bgs).
- Minimum Groundwater Depth: 0.96 feet bgs at monitoring well PMW-2.
- Maximum Groundwater Depth: 21.32 feet bgs at monitoring well PMW-4.
- Current Average Depth to Groundwater: Approximately 10.53 feet bgs.
- Saturated Zones(s) Studied: Approximately 8 to 20 feet bgs.

- Appropriate Screen Interval: Unknown.
- Groundwater Flow Direction: Northwest with an average gradient of 0.05 feet/foot (November 2012).

Monitoring Well Information

Well Designation	Date Installed	Screen Interval (feet bgs)	Depth to Water (feet bgs) (11/2012)
PMW-1	July 1997	NA	6.53
PMW-2	July 1997	NA	7.10
PMW-3	July 1997	NA	10.84
PMW-4	July 1997	NA	7.78
PMW-5	July 1997	NA	7.93
PMW-6	July 1997	NA	10.02
PMW-7	December 1998	NA	8.44
PMW-8	December 1998	NA	8.36
PMW-9	December 1998	NA	7.69
PMW-10	December 1998	NA	11.16
PMW-11	December 1998	NA	14.88
PMW-12	December 1998	NA	10.38
PMW-13	December 1998	NA	10.37
PMW-14	December 1998	NA	11.36
PMW-15	September 1999	NA	15.06
PMW-16	September 1999	NA	12.31
PMW-17	September 1999	NA	12.15
PMW-18	September 1999	NA	8.15
PMW-19	September 1999	NA	6.24
PMW-20	September 1999	NA	8.69
MW-21-W	September 2003	NA	Not measured
MW-22-W	September 2003	NA	Dry
MW-25-W	October 2005	NA	8.84
MW-26-W	October 2005	NA	8.80
MW-27-W	October 2005	NA	9.17
OS-1s	October 2005	NA	Not measured
OS-1d	October 2005	NA	Not measured
OS-2s	October 2005	NA	Not measured
OS-2d	October 2005	NA	Not measured
OS-3s	October 2005	NA	Not measured
OS-3d	October 2005	NA	Not measured
OS-4s	October 2005	NA	Not measured
OS-4d	October 2005	NA	Not measured
OS-5d	October 2005	NA	Dry
OS-6s	December 2006	NA	Not measured
OS-6d	December 2006	NA	Not measured
OS-7s	December 2006	NA	Not measured
OS-7d	December 2006	NA	Not measured
OS-8s	December 2006	NA	Dry
OS-9s	May 2008	NA	Dry
OS-9d	May 2008	NA	Dry

Remediation Summary

- Free Product: None reported in GeoTracker.
- Soil Excavation: None reported in GeoTracker.
- In-Situ Soil Remediation: An offsite ozone sparging system operated at the downgradient site from 2005 to 2009. A dual phase extraction system operated at the subject Site from 2000 to 2004. Approximately 383 pounds of petroleum hydrocarbons were removed from the subsurface.
- Groundwater Remediation: The offsite ozone sparging system operated at the downgradient site from 2005 to 2009. During the groundwater extraction system operation from 2000 to 2009, approximately 1,641,378 gallons of groundwater were removed.

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	NA	<0.005 (06/09/11)
Ethylbenzene	NA	<0.005 (06/09/11)
Naphthalene	NA	<0.005 (06/09/11)
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)
PMW-1	9/13/12	<50	<1	<5	<5	<5	<1	<10
PMW-2	9/13/12	<50	<1	<5	<5	<5	<1	<10
PMW-3	11/14/12	67.4	<1	<5	<5	<5	**54**	130
PMW-4	9/13/12	<50	<1	<5	<5	<5	**7.6**	<10
PMW-5	9/13/12	<50	<1	<5	<5	<5	<1	<10
PMW-6	11/14/12	<50	<1	<5	<5	<5	**86**	<10
PMW-7	9/13/12	<50	<1	<5	<5	<5	<1	<10
PMW-8	9/13/12	<50	<1	<5	<5	<5	1.2	<10
PMW-9	9/13/12	<50	<1	<5	<5	<5	<1	<10
PMW-10	11/14/12	192	<5	<25	<25	<25	**320**	<50
PMW-11	11/14/12	<50	<1	<5	<5	<5	<1	<10
PMW-12	11/15/12	<50	<1	<5	<5	<5	<1	<10
PMW-13	11/14/12	<50	<1	<5	<5	<5	<1	<10
PMW-14	11/14/12	<50	<1	<5	<5	<5	<1	<10
PMW-15	11/14/12	<50	<1	<5	<5	<5	<1	<10
PMW-16	11/14/12	<50	<1	<5	<5	<5	<1	<10
PMW-17	11/15/12	<50	<1	<5	<5	<5	<1	<10
PMW-18	11/14/12	265	<1	<5	<5	<5	**80**	<10
PMW-19	11/14/12	<50	<1	<5	<5	<5	<1	<10
PMW-20	11/15/12	<50	<1	<5	<5	<5	<1	<10
MW-25-W	11/14/12	<50	<1	<5	<5	<5	**23**	<10
MW-26-W	11/14/12	87.8	<1	<5	<5	<5	**140**	<10
MW-27-W	11/14/12	<50	<1	<5	<5	<5	<1	<10
OS-1s	11/13/12	<50	<1	<5	<5	<5	**40**	10
OS-1d	11/13/12	<50	<1	<5	<5	<5	**37**	32
OS-2s	11/13/12	<50	<1	<5	<5	<5	**32**	<10
OS-2d	11/13/12	<50	<1	<5	<5	<5	**47**	230
OS-3s	11/13/12	80.0	<1	<5	<5	<5	**130**	140
OS-3d	11/13/12	53.6	<1	<5	<5	<5	**81**	240
OS-4s	11/13/12	<50	<1	<5	<5	<5	**52**	<10
OS-4d	11/13/12	57.1	<1	<5	<5	<5	**85**	160
OS-5d	9/12/12	144	<1	<5	<5	<5	**170**	270
OS-6s	11/13/12	308	<5	<25	<25	<25	**410**	<50
OS-6d	11/13/12	287	<5	<25	<25	<25	**430**	<50
OS-7s	11/13/12	256	<5	<25	<25	<25	**420**	<50
OS-7d	11/13/12	<50	<1	<5	<5	<5	**6.1**	<10
OS-8s	3/12/12	<50	<1	<5	<5	<5	1.3	<10
OS-9s	6/4/12	414	<1	<5	<5	<5	**250**	200
OS-9d	9/12/12	164	<1	<5	<5	<5	**160**	70
WQOs		--	**1**	**150**	**300**	**1,750**	**5[a]**	**1,200[b]**

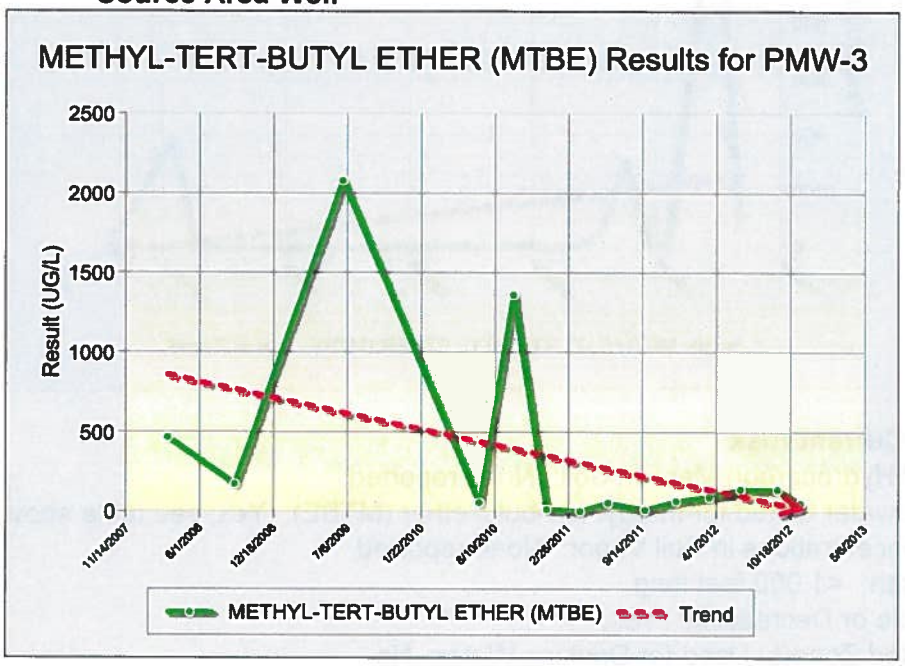
NA: Not Analyzed, Not Applicable or Data Not Available
<: Not detected at or above stated reporting limit
TPHd: Total petroleum hydrocarbons as diesel
TBA: Tert-butyl alcohol
µg/L: Micrograms per liter, parts per billion
TPHg: Total petroleum hydrocarbons as gasoline
MTBE: Methyl tert-butyl ether
WQOs: Water Quality Objectives, Regional Water. Board Basin Plan

[a]: Secondary maximum contaminant level (MCL)
[b]: California Department of Public Health, Response Level
--: Regional Water Board Basin Plan does not have a numeric water quality objective for TPHg

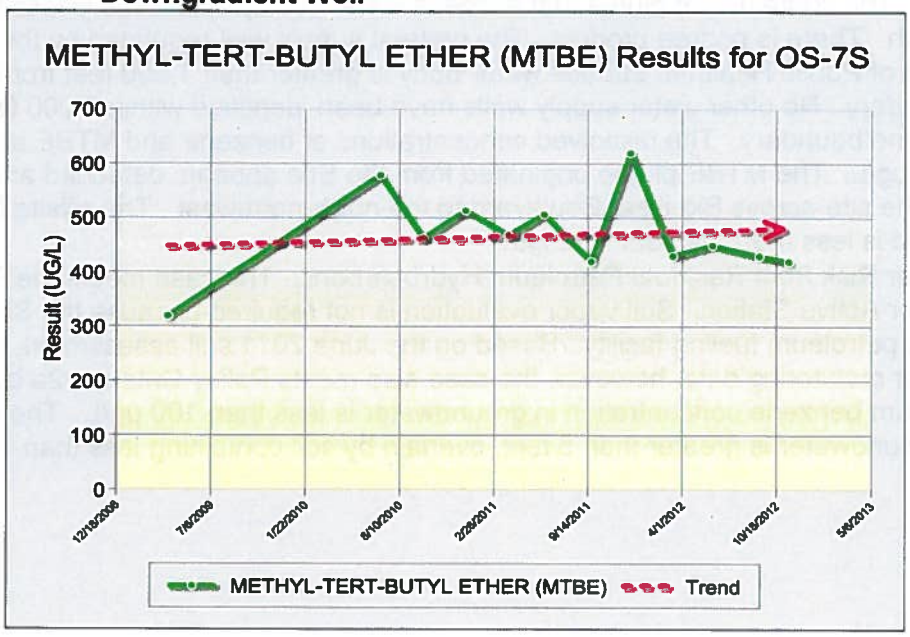
Groundwater Trends

- There are 15 years of irregular groundwater monitoring data for this case. MTBE trends are shown below in the source area monitoring well, PMW-3, the downgradient well, OS-7s, located at the center of the plume at the downgradient site, and monitoring well, MW-22-W, further downgradient at the edge of the MTBE plume:

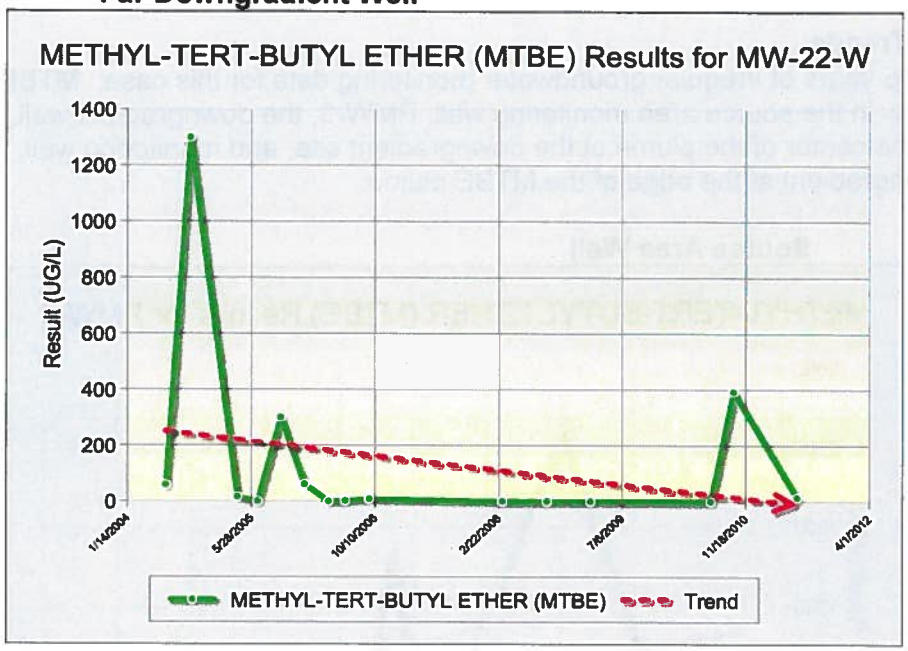
Source Area Well



Downgradient Well



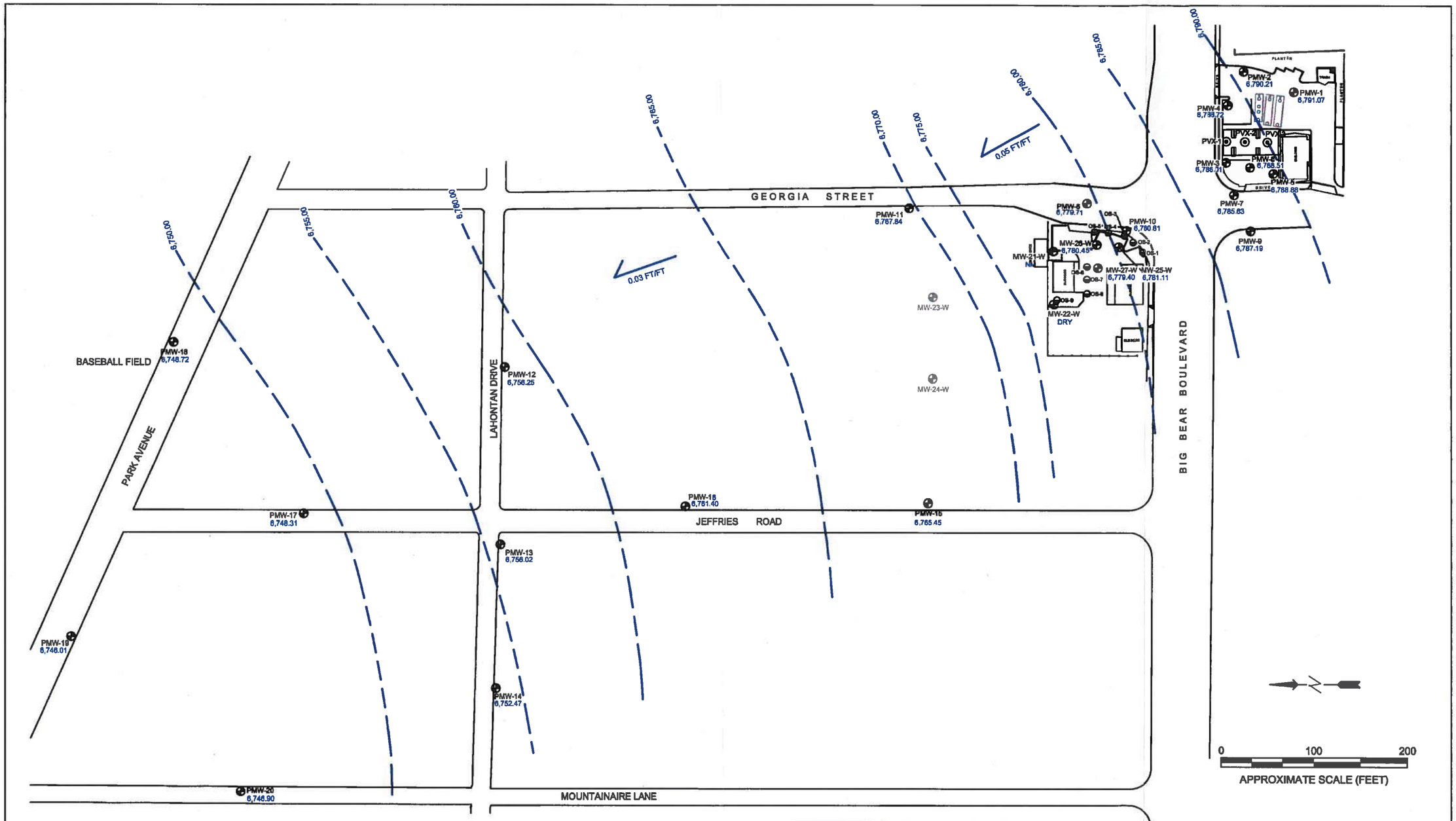
Far Downgradient Well



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: <1,000 feet long.
- 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 4. The contaminant plume that exceeds water quality objectives is less than 1,000 feet in length. There is no free product. The nearest supply well regulated by the California Department of Public Health or surface water body is greater than 1,000 feet from the defined plume boundary. No other water supply wells have been identified within 1,000 feet of the defined plume boundary. The dissolved concentrations of benzene and MTBE are each less than 1,000 µg/L. The MTBE plume originated from the Site appears detached and is now located at the site across Big Bear Boulevard to the north-northwest. The offsite MTBE plume is stable and is less than 250 feet in length.
- Indoor Vapor Risk from Residual Petroleum Hydrocarbons: The case meets the Policy Exclusion for Active Station. Soil vapor evaluation is not required because the Site is an active commercial petroleum fueling facility. Based on the June 2011 soil assessment, and the groundwater monitoring data; however, the case also 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 and Outdoor Air Exposure: 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. Maximum concentrations in soil from five to ten feet below surface are less than those in Policy Table 1 for Commercial/Industrial or Residential use. Although concentrations in soil from zero to five feet below surface are not available, only MTBE in groundwater has been the concern at the Site. Furthermore, the Site is paved and accidental access to site soils is prevented. As an active gas station, any construction worker working at the Site will be prepared for exposure in their normal daily work.



LEGEND:

PMW-1	LOCATION OF MONITORING WELL BY PARK
PVX-1	LOCATION OF DUAL PHASE EXTRACTION WELL
MW-21-W	LOCATION OF MONITORING WELL BY WATERSTONE
OS-1	LOCATION OF OZONE SPARGE WELL
MW-23-W	LOCATION OF ABANDONED MONITORING WELL
NM	NOT MEASURED
	WELLS MEASURED ON 11/13/2012, 11/14/2012, & 11/15/2012
6,752.53	GROUNDWATER ELEVATION IN FEET AMSL
	APPROXIMATE GROUNDWATER CONTOUR IN FEET AMSL
0.06 FT/FT	APPROXIMATE GROUNDWATER FLOW DIRECTION AND MAGNITUDE
*	NOT USED IN CONTOURING

SOURCES: STRATUS JULY 2010
WATERSTONE ENVIRONMENTAL APRIL 2006

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1036 W. Taft Avenue, Suite 200
Orange, California 92865

FIGURE 4

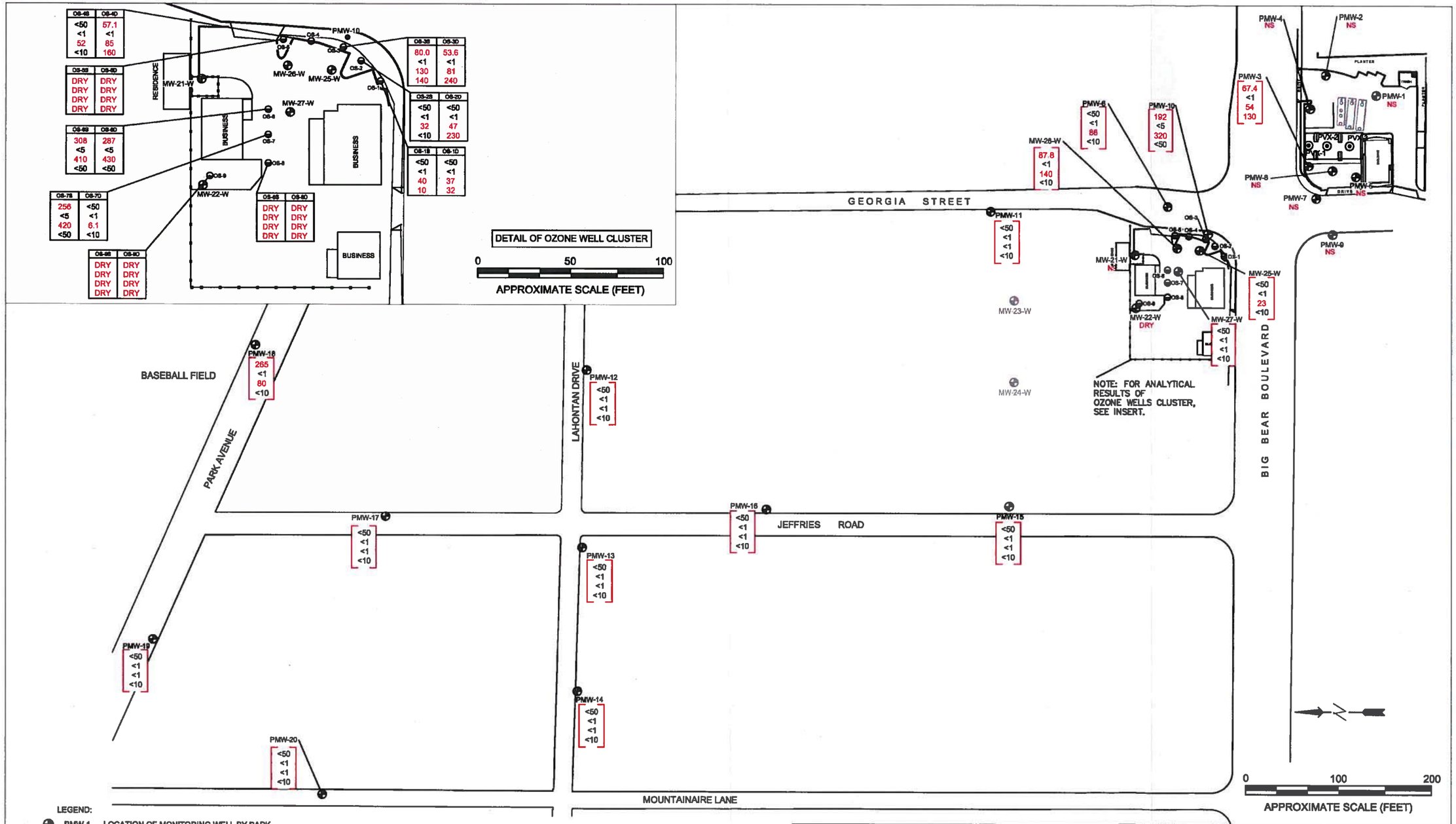
GROUNDWATER CONTOUR MAP

Former USA Service Station No. 239
41339 Big Bear Boulevard
Big Bear Lake, California

DATE 12/27/2012

PROJECT NO. 754

FILE NO. 754F4-GCM



LEGEND:

- PMW-1 LOCATION OF MONITORING WELL BY PARK
- PVX-1 LOCATION OF DUAL PHASE EXTRACTION WELL
- MW-21-W LOCATION OF MONITORING WELL BY WATERSTONE
- OS-1 LOCATION OF OZONE SPARGE WELL
- MW-23-W LOCATION OF ABANDONED MONITORING WELL
- NS NOT SAMPLED

NOTE: WELLS SAMPLED ON 11/13/2012, 11/14/2012, & 11/15/2012.

54.3 TOTAL PETROLEUM HYDROCARBON GASOLINE (TPHg) CONCENTRATION IN µg/L
<1 BENZENE CONCENTRATION IN µg/L
<1 METHYL TERT-BUTYL ETHER (MTBE) CONCENTRATION IN µg/L
220 TERT-BUTYL ALCOHOL (TBA) CONCENTRATION IN µg/L

SOURCES: STRATUS JULY 2010
WATERSTONE ENVIRONMENTAL APRIL 2006

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FIGURE 5

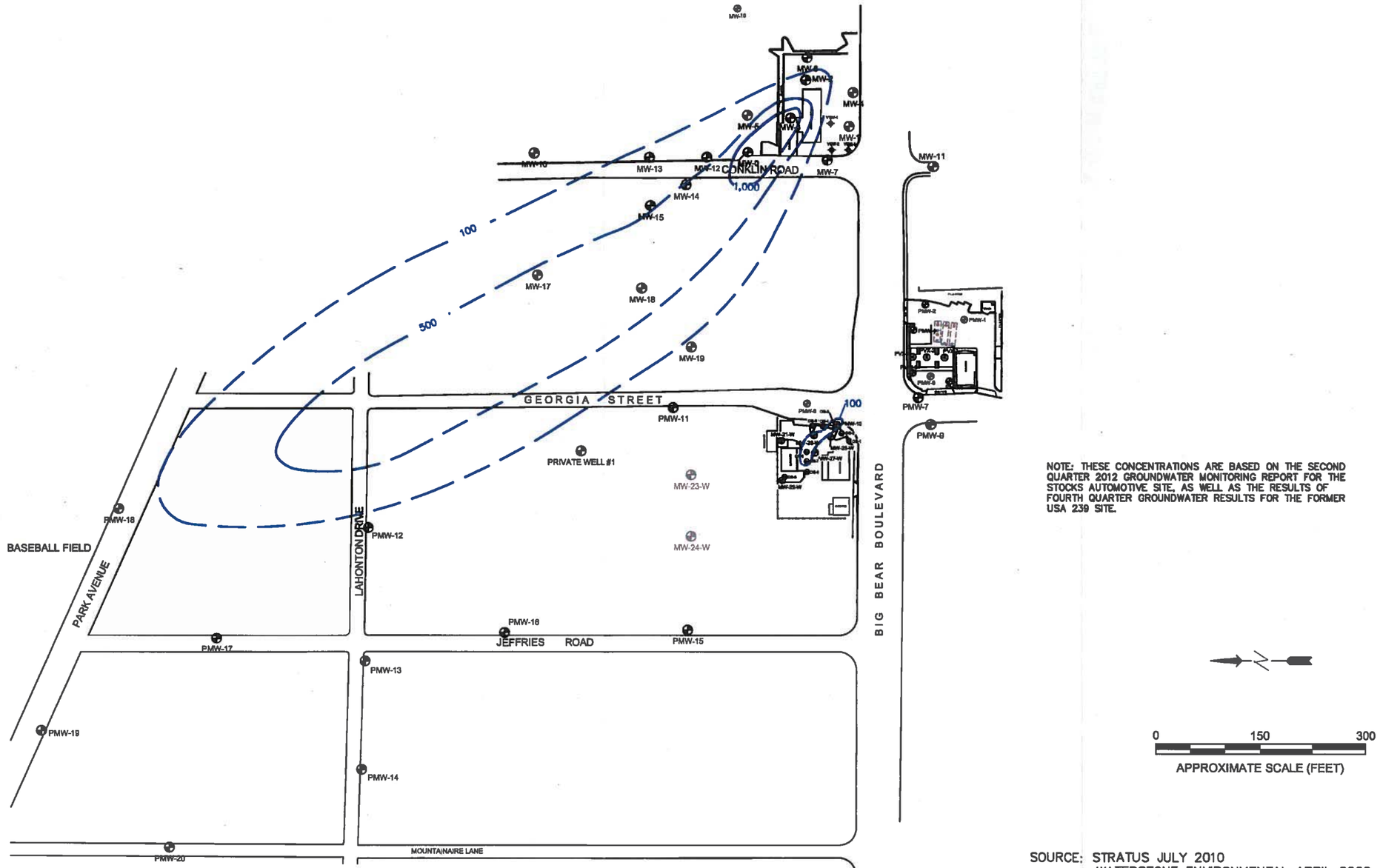
AREA PLAN SHOWING
GROUNDWATER ANALYTICAL RESULTS

Former USA Service Station No. 239
41339 Big Bear Boulevard
Big Bear Lake, California

DATE 12/27/2012

PROJECT NO. 754

FILE NO. 754F5-GAR



NOTE: THESE CONCENTRATIONS ARE BASED ON THE SECOND QUARTER 2012 GROUNDWATER MONITORING REPORT FOR THE STOCKS AUTOMOTIVE SITE, AS WELL AS THE RESULTS OF FOURTH QUARTER GROUNDWATER RESULTS FOR THE FORMER USA 239 SITE.

SOURCE: STRATUS JULY 2010
WATERSTONE ENVIRONMENTAL APRIL 2006
ENVIROMONITORING SERVICES, INC. OCT 2011

LEGEND:

- PMW-1 LOCATION OF MONITORING WELL BY PARK
- PVX-1 LOCATION OF DUAL PHASE EXTRACTION WELL
- MW-21-W LOCATION OF MONITORING WELL BY WATERSTONE
- OS-1 LOCATION OF OZONE SPARGE WELL
- MW-1 LOCATION OF MONITORING WELL
- MW-23-W LOCATION OF ABANDONED MONITORING WELL
- VEW-1 LOCATION OF VAPOR EXTRACTION WELL
- 100 APPROXIMATE METHYL TERT-BUTYL ETHER (MTBE) CONTOUR IN µg/L

environ strategy consultants, inc. es

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Orange, California 92865

FIGURE 6
AREA PLAN
(INCLUDING THE STOCKS AUTOMOTIVE SITE)
SHOWING MTBE CONCENTRATIONS IN GROUNDWATER

Former USA Service Station No. 239
41339 Big Bear Boulevard
Big Bear Lake, California

DATE 01/08/2013

PROJECT NO. 754

FILE NO. 754F6-AP-MTBE