State Water Resources Control Board

UST CASE CLOSURE REVIEW SUMMARY REPORT

Agency Information

Agency Name: Los Angeles Regional Water Quality Control Board (Regional Water Board)	Address: 320 West 4th Street, Suite 200, Los Angeles, CA 90013
Agency Caseworker: Ahmad Lamma	Case No.: R-26162

Case Information

USTCF Claim No.: 15546	GeoTracker Global ID: T0603705535
Site Name: Foster Gas	Site Address: 13400 Woodruff Avenue, Bellflower, CA 90706
Responsible Party (1): Vasken Artinian	Address: 2217 Observatory Avenue Los Angeles, CA 90027
Responsible Party (2): Fadi Atmi	Address: 13400 Woodruff Avenue, Bellflower, CA 90706
USTCF Expenditures to Date: $945,000	Number of Years Case Open: 14

URL: http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0603705535

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 January 1999 following the discovery of soil contamination during a 1998 site investigation. Soil vapor extraction conducted between November 2008 and April 2012 removed an estimated 93,484 pounds of petroleum hydrocarbon vapor. Air sparging was conducted from November 2008 through January 2009. To date a total of 10 monitoring wells have been installed and sampled regularly. According to the most recent groundwater data (June 2012), water quality objectives have been achieved for all constituents.

The petroleum release is limited to the soil and shallow groundwater. According to data available in GeoTracker, there are no supply wells regulated by 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 Park Water Company. 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.
- 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.
- 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/Industrial use, and the concentration limits for a Utility Worker are not exceeded. There are no soil sample results in the case record for naphthalene. However, the relative concentration of naphthalene in soil can be conservatively estimated using the published relative concentrations of naphthalene and benzene in gasoline. Taken from Potter and Simmons (1998), gasoline mixtures contain approximately 2 percent benzene and 0.25 percent naphthalene. Therefore, benzene can be directly substituted for naphthalene concentrations with a safety factor of eight. Benzene concentrations from the Site are below the naphthalene thresholds in Policy Table 1. Therefore, the estimated naphthalene concentrations meet the thresholds in Table 1 and the Policy criteria for direct contact by a factor of eight. It is highly unlikely that naphthalene concentrations in the soil, if any, exceed the threshold.

Objections to Closure and Responses

In an e-mail sent to Fund staff on April 9, 2013, the Regional Water Board does not object to 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 — 6/26/13

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

Prepared by: Mark Owens, PE C66804

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
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
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

[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

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
Media-Specific Criteria 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 located at 13400 Woodruff Avenue in Bellflower and is an active commercial petroleum fueling facility.
- The Site is bounded by residences across Woodruff Avenue to the west, a library and businesses across Foster Road to the north, a parking lot to the east and businesses to the south.
- Soil sampling, requested by the Los Angeles Department of Public Works in 1998, revealed petroleum hydrocarbon contamination at the Site. Subsequently, Site investigation activities were initiated in 2001.
- A Site map showing the location of the USTs, monitoring wells and MTBE concentrations is provided at the end of this closure review summary (GeoEnviro Services, Inc., 2011).
- Nature of Contaminants of Concern: Petroleum hydrocarbons only.
- Source: UST system.
- Date reported: January 1999.
- Status of Release: USTs removed.
- Free Product: None reported.

Tank Information

Tank No.	Size in Gallons	Contents	Closed in Place/ Removed/Active	Date
1,2	NA	Waste Oil	Removed	NA
3	10,000	Gasoline	Active	-
4,5	8,000	Gasoline	Active	-

NA: Not applicable or data not available

Receptors

- GW Basin: Coastal Plain of Los Angeles – Central.
- Beneficial Uses: The Regional Water Basin Plan lists domestic and municipal supply in the deeper aquifers.
- Land Use Designation: Aerial photograph available on GeoTracker indicates commercial land use in the vicinity of the Site.
- Public Water System: Park Water Company, Downey, CA, 800-727-5987.
- 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 layers of very fine-grained to medium-grained sand, silty sand, clay, silty clay, silt, clayey silt, and sandy silt.
- Maximum Sample Depth: 56.5 feet below ground surface (bgs).
- Minimum Groundwater Depth: 32.40 feet bgs at monitoring well MW-3.
- Maximum Groundwater Depth: 55.45 feet bgs at monitoring well MW-1.
- Current Average Depth to Groundwater: Approximately 45 feet bgs.

- Saturated Zones(s) Studied: Approximately 25 to 55 feet bgs.
- Appropriate Screen Interval: Yes.
- Groundwater Flow Direction: Generally to the northwest with a gradient ranging from 0.001 feet per foot (ft/ft) to 0.200 ft/ft.

Monitoring Well Information

Well Designation	Date Installed	Screen Interval (feet bgs)	Depth to Water (feet bgs) (6/26/2012)
MW-1	August 2001	25-55	54.56
MW-2	August 2001	25-55	Dry
MW-3	August 2001	25-55	54.63
MW-4	August 2001	25-55	54.71
MW-5	September 2002	25-55	Dry
MW-6	September 2002	25-55	--
MW-7	September 2002	25-55	40.46
MW-8	April 2007	23-53	38.11
MW-9	April 2007	21-51	41.05
MW-10	April 2007	23-53	38.92

Remediation Summary

- Free Product: None reported.
- Soil Excavation: None reported.
- In-Situ Soil Remediation: Soil vapor extraction conducted between November 2008 and April 2012 removed an estimated 93,484 pounds of petroleum hydrocarbon vapor.
- Groundwater Remediation: Air sparging was conducted from November 2008 through January 2009.

Most Recent Concentrations of Petroleum Constituents in Soil

Constituent	Maximum 0-5 feet bgs [mg/kg and (date)]	Maximum 5-10 feet bgs [mg/kg and (date)]
Benzene	<0.005 (6/11/2012)	<0.005 (6/11/2012)
Ethylbenzene	<0.005 (6/11/2012)	<0.005 (6/11/2012)
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

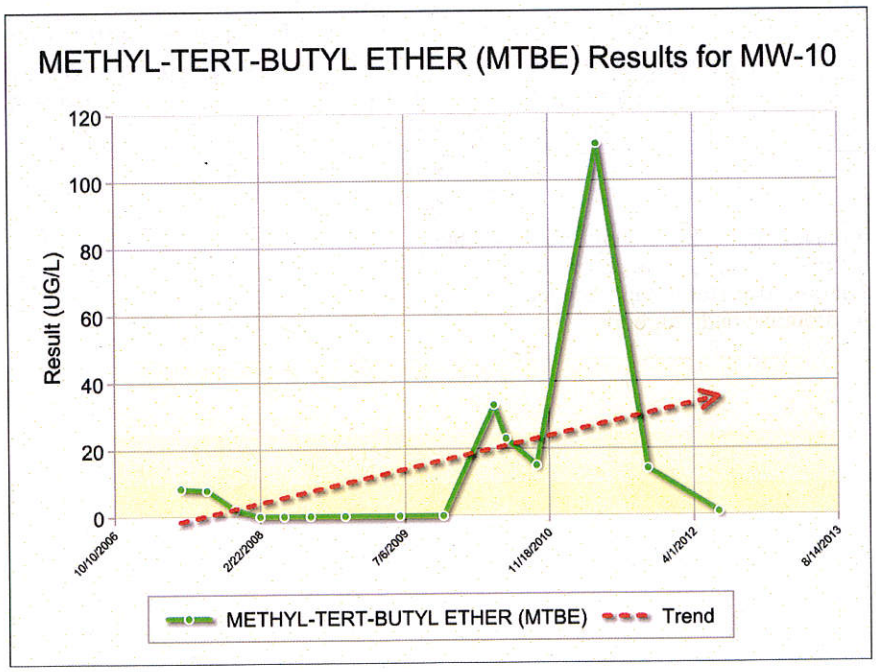
Most Recent Concentrations of Petroleum Constituents in Groundwater

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	6/26/12	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0
MW-2	10/25/11	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0
MW-3	10/25/11	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0
MW-4	6/26/12	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0
MW-5	10/25/11	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0
MW-6	10/25/11	--	--	--	--	--	--	--
MW-7	6/26/12	<50	0.5	2.1	<0.5	2.4	<0.5	<5.0
MW-8	6/26/12	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0
MW-9	6/26/12	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0
MW-10	6/26/12	<50	<0.5	<0.5	<0.5	<0.5	1.0	110
WQOs		--	**1**	**150**	**300**	**1,750**	**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
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
[a]: Secondary maximum contaminant level (MCL)
[b]: California Department of Public Health, Response Level

Groundwater Trends

- For the last several years of groundwater monitoring, monitoring well MW-10 is the only well where MTBE was detected.



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 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 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 Active Station. Soil vapor evaluation is not required because the Site is an active commercial petroleum fueling facility.
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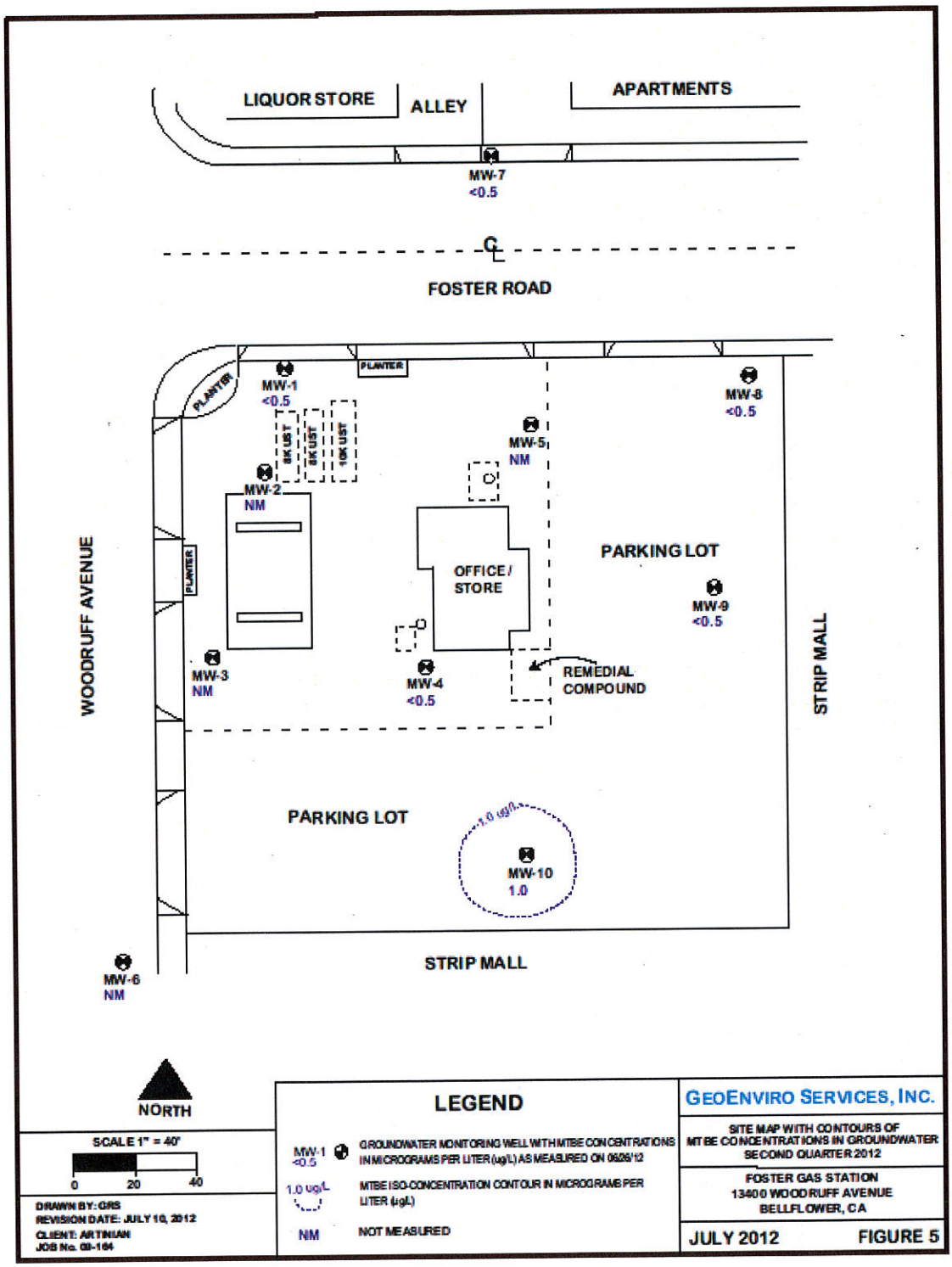
LIQUOR STORE
ALLEY
APARTMENTS
MW-7
<0.5
FOSTER ROAD
PLANTER
MW-1
<0.5
8K UST
8K UST
10K UST
MW-8
<0.5
MW-5
NM
MW-2
NM
OFFICE / STORE
PARKING LOT
MW-9
<0.5
WOODRUFF AVENUE
MW-3
NM
MW-4
<0.5
REMEDIAL COMPOUND
STRIP MALL
PARKING LOT
1.0 ug/L
MW-10
1.0
STRIP MALL
MW-6
NM
NORTH
SCALE 1" = 40'
0
20
40
DRAWN BY: GRS
REVISION DATE: JULY 10, 2012
CLIENT: ARTINIAN
JOB No. 09-164
LEGEND
MW-1 <0.5 GROUNDWATER MONITORING WELL WITH MTBE CONCENTRATIONS IN MICROGRAMS PER LITER (ug/L) AS MEASURED ON 06/26/12
1.0 ug/L MTBE ISO-CONCENTRATION CONTOUR IN MICROGRAMS PER LITER (ug/L)
NM NOT MEASURED
GEOENVIRO SERVICES, INC.
SITE MAP WITH CONTOURS OF MTBE CONCENTRATIONS IN GROUNDWATER SECOND QUARTER 2012
FOSTER GAS STATION
13400 WOODRUFF AVENUE
BELLFLOWER, CA
JULY 2012
FIGURE 5