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Atlantic Richfield Company

Chuck Carmel
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August 30, 2013

Re: Conceptual Site Model and Case Closure Request
Atlantic Richfield Company Station #6113
785 East Stanley Boulevard, Livermore, California
ACEH Case #RO0000393

"I declare, that to the best of my knowledge at the present time, that the information and/or recommendations contained in the attached document are true and correct.

Submitted by,



Chuck Carmel
Project Manager

Attachment

CONCEPTUAL SITE MODEL AND CASE CLOSURE REQUEST

Atlantic Richfield Company Station No. 6113
785 East Stanley Boulevard
Livermore, California

Prepared for

Mr. Chuck Carmel
Operations Project Manager
Atlantic Richfield Company
P.O. Box 1257
San Ramon, California 94583

Prepared by



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August 30, 2013

Project No. 06-82-637



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August 30, 2013

Project No. 06-82-637

Atlantic Richfield Company
P.O. Box 1257
San Ramon, CA 94583
Submitted via ENFOS

Attn.: Mr. Chuck Carmel

Re: Conceptual Site Model and Case Closure Request, Atlantic Richfield Company Station No. 6113, 785 East Stanley Boulevard, Livermore, California; ACEH Case No. RO0000393; Geo Tracker Global ID # T0600100111

Dear Mr. Carmel:

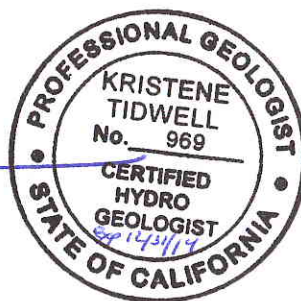
Broadbent & Associates, Inc. (Broadbent) is pleased to submit this *Conceptual Site Model and Case Closure Request* for Atlantic Richfield Company Station No. 6113 located at 785 East Stanley Boulevard in Livermore, California (Site). This document was prepared in order to evaluate this Site for case closure under the *Low Threat Underground Storage Tank Case Closure Policy* (LTCP; CSWRCB, 2012). After completion of the CSM and comparing the current Site conditions to the LTCP, case closure is recommended.

Should you have questions or require additional information, please do not hesitate to contact us at (530) 566-1400.

Sincerely,
BROADBENT & ASSOCIATES, INC.

Jason Duda
Project Scientist

Kristene Tidwell, P.G., C.H.G.
Senior Geologist



Enclosures

cc: Mr. Jerry Wickham, Alameda County Environmental Health (Submitted via ACEH ftp site)
Electronic copy uploaded to GeoTracker

CONCEPTUAL SITE MODEL AND CASE CLOSURE REQUEST

Atlantic Richfield Company Station No. 6113
785 East Stanley Boulevard, Livermore, California
Fuel Leak Case No. RO0000393

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CONCEPTUAL SITE MODEL AND CASE CLOSURE REQUEST

Atlantic Richfield Company Station No. 6113
785 East Stanley Boulevard, Livermore, California
Fuel Leak Case No. RO0000393

1.0 INTRODUCTION

On behalf of the Atlantic Richfield Company– (ARC, a BP affiliated company) Broadbent & Associates, Inc. (Broadbent) has prepared this *Conceptual Site Model and Case Closure Request* (CSM and CCR) for the Atlantic Richfield Company (ARCO) Station No. 6113 (herein referred to as Station No. 6113), located at 785 East Stanley Boulevard in Livermore, California (Site). This CSM and CCR was prepared in order to evaluate the Site's eligibility to be closed under the California State Water Resources Control Board's (CSWRCB) *Low Threat Underground Storage Tank Case Closure Policy* (LTCP; CSWRCB, 2012). This CSM and CCR includes discussions on the Site background and previous environmental activities, regional and Site geology and hydrogeology, and justification for case closure.

1.1 Site Setting

The Site is an active ARC-branded service station located at the southwestern corner of Murrieta Avenue and East Stanley Avenue in Livermore, California. The land use in the immediate vicinity of the Site is mixed commercial and residential. Current structures at the Site include one 20,000-gallon and one 22,000-gallon underground storage tanks (USTs), three fuel dispenser islands with a total of six dispensers, and a station building. The majority of the Site is paved with asphalt and concrete. The location of the Site is presented in Drawing 1. A Site Plan that shows current and former well locations is provided as Drawing 2. A Groundwater Elevation Contour Map presenting the most current groundwater data (April 2013) is provided as Drawing 3.

The Site is bounded by the four-lane East Stanley Boulevard to the north, the four lane Murrieta Boulevard to the east, and the Arroyo Bike Trail to the south and west. The Arroyo Bike Trail continues Across East Stanley Boulevard, to the north. Located across Murrieta Boulevard, to the east, is a Shell-branded service station. The adjacent Shell Station #13-5037 is a closed leaking UST case, ACEH Fuel Leak Case No. RO0000121 / GeoTracker Global ID No. T0600101277. The Arroyo Mocho Creek is located directly to the south and east of the bike trail, and is approximately 150 feet from the Site.

1.2 Site Background

The Site has operated as a gasoline fueling station since the environmental case was open in 1989. The Site is likely to remain a service station for the foreseeable future. A detailed history of previous Site activities is presented in Appendix A. Historic soil and groundwater data are presented in Appendix B. Copies of available soil boring and monitoring well construction logs are provided in Appendix C.

1.3 Document Purpose and Organization

The purpose of this document is to summarize and present current Site conditions in the form of a CSM and evaluate these conditions and data gathered for Site closure based on the LTCP. The following section presents justification for closure based on the CSM. The CSM is presented as Table 1. Tables 2 and 3 present historical and current groundwater analytical data. Table 4 summarizes historic biodegradation parameter data. Table 5 summarizes historical and current groundwater gradients.

In order to evaluate Site conditions against the LTCP, each category in the policy has been individually evaluated using the data presented in the CSM (Table 1). These evaluations are presented in the following sections.

2.0 JUSTIFICATION FOR SITE CLOSURE

As indicated in Section 1.3 above, the Site was evaluated for Closure based on comparing data presented in the CSM (Table 1) against the LTCP (CSWRCB, 2012). Closure criteria in the LCTP are organized into the following categories:

- General Criteria
- Media Specific Criteria-Groundwater
- Media Specific Criteria – Petroleum Vapor Intrusion to Indoor Air
- Media Specific Criteria – Direct Contact and Outdoor Air Exposure

The following sections present the details of the evaluation.

2.1 General Criteria

The general criteria relates to the Site use, presence of free product, petroleum sources, and completeness of the Site understanding. As evidenced in the data presented in the CSM, a sufficiently good understanding of Site conditions, on- and offsite receptors, and Site history has been established. These general criteria and a discussion on how the Site is consistent with these criteria are presented below.

The unauthorized release is located within the service area of a public water system

The Site is located within the California Water Service Company service area.

The unauthorized release consists only of petroleum

The release at the Site occurred in the area of the UST basin and near the eastern dispensers. Additionally, all analytical data collected to date has shown no indication of any other contaminant releases other than petroleum (Tables 2, Table 3, and Appendix B). The Site has been a retail service station since 1989 and there is no evidence that any other activities have occurred at the Site which may have caused non-petroleum releases.

The unauthorized release has been stopped

The USTs, product piping, product dispensers, and waste oil tank where the releases occurred have been removed and replaced; thereby, removing the leak sources (Table 1; Appendix A).

Free product has been removed to the maximum extent practicable

Free product has not been measured in Site wells since 1993. As free product has not been observed for 20 years, removal of the free product has been completed to the maximum extent practicable.

A conceptual site model (CSM) that assesses the nature, extent, and mobility of the release has been developed

A CSM has been prepared for this Site and is presented as Table 1.

Secondary source has been removed to the extent practical

Soils around the former UST complex, dispensers and product piping have been over-excavated. Approximately 1,425 cubic tons of petroleum impacted soil were over-excavated and disposed of offsite in 2001 (Table 1; Cambria, 2001).

Soil and groundwater have been tested for MTBE and results reported in accordance with Health and Safety Code 25296.15

Soil and groundwater samples collected have been analyzed for methyl tert-butyl ether (MTBE). Historical MTBE analytical data are included in Tables 2 and 3 and Appendix B.

Nuisance as defined by the Water Code section 13050 does not exist at this site

A nuisance as defined by the water code does not exist at this Site.

2.2 Media-Specific Criteria - Groundwater

The LTCP lists four scenarios for groundwater plumes. According to the petroleum plume sizes indicated in Drawings 4 through 6, the plume is over 100 feet in length; therefore, does not apply to the first scenario. Current benzene concentrations slightly above maximum levels for scenarios 2 through 4 (3,000 ug/L). Free product has not been observed at the Site since 1993. The nearest water supply well and the San Francisco Bay are over 2,000 feet away, as presented in the CSM (Table 1). A former sensitive receptor survey indicated that no domestic or water supply wells were located within a 2000-foot radius of the Site. The closest surface water is the Arroyo Mocho Creek, located approximately 150 feet southeast of the Site.

The proximity of the Arroyo Mocho Creek makes the Site ineligible for closure under the LTCP groundwater categories 1 through 4. However, category 5 states:

The regulatory agency determines, based on an analysis of site specific conditions that under current and reasonably anticipated near-term future scenarios, the contaminant plume poses a low threat to human health and safety and to the environment and water quality objectives will be achieved within a reasonable time frame.

Although the Arroyo Mocho is within 250 feet of the Site, it is located in the upgradient direction. Groundwater gradient direction has consistently been calculated to the north or northwest since 1995 (Table 5). Furthermore, several monitoring wells are present between this creek and the former source area, (wells MW-2, MW-8; see Drawing 2) and petroleum compounds have consistently not been detected in these wells since 1995. Petroleum concentrations in source area wells appear stable to decreasing (Appendix D), and it is highly unlikely that migration of hydrocarbons will impact this creek in the future. Therefore, impacted groundwater is not considered a threat to potential drinking water or to surface water.

2.3 Media Specific Criteria – Petroleum Vapor Intrusion to Indoor Air

The Site is an active service station, and therefore the LTCP considers that petroleum vapors from onsite fueling activities are a far greater risk than those associated with exposure to vapors from historic petroleum releases. Some migration of MTBE offsite has occurred (Drawing 6). However, concentrations above cleanup levels do not extend significantly past the edge of Stanley Boulevard. There are no vapor intrusion risks to offsite buildings. This Site data meets the criteria for closure according to the LTCP.

2.4 Media Specific Criteria – Direct Contact and Outdoor Air Exposure

One soil boring was advanced at the Site in 2001 prior to the installation of MW-13, and soil samples were collected from this location (near former source areas; Appendix B). Soil samples collected during this investigation did not contain benzene, and the maximum concentration of ethylbenzene was observed at 0.0058 mg/kg. However, no samples above 5.5 feet bgs were collected during this investigation. The most representative soil samples collected from 0 to 5 feet bgs were collected in 2000 during UST and piping/dispenser replacement activities. During these activities, the highest concentrations of benzene and ethylbenzene detected in confirmation soil samples at 4.5 feet bgs were 0.00918 mg/kg and 0.0222 mg/kg, respectively. These concentrations are well below the values listed in Table 1 of the LTCP. Table A below summarizes these results. Locations of the soil samples collected, as well as further historical data, are presented in Appendix B.

Table A: Representative Maximum Concentrations of Benzene and Ethylbenzene in Soil Samples - 0 to 5 feet bgs and 5 to 10 feet bgs

| Sample Identification and Depth | Sample Date | Benzene (mg/kg) | Ethylbenzene (mg/kg) |
|-----------------------------------|-------------|-----------------|----------------------|
| MW-13 @ 5.5' | 11/9/2001 | <0.0050 | 0.0058 |
| DP-4 @ 4.5' | 12/6/2000 | <0.0050 | 0.0222 |
| Pipe-6 @ 4.5' | 12/6/2000 | 0.00918 | <0.0050 |
| LTCP Maximum* - 0-5/5-10 feet bgs | | 8.2/12 | 89/134 |

*Under a commercial/industrial exposure setting
mg/kg = milligrams per kilogram

Soil samples collected from 2000/2001 (mentioned above) were not analyzed for naphthalene or poly-aromatic hydrocarbons (PAHs). However, soil samples from the waste oil tank removal in 1989 were analyzed for these compounds. Naphthalene was not detected in any soil samples collected. PAHs were detected in shallow soil samples from the waste oil tank excavation (5 feet bgs and 7.5 feet bgs). However, these locations were over-excavated. Additional confirmation samples collected at 8.5 feet bgs indicated, in general, that the majority of contaminants had been removed. However, additional PAH analysis was not conducted. Based on the age of these samples, and the fact that the areas impacted by PAHs were over-excavated, PAHs are not considered present at the Site.

Based on the data presented herein and in Appendix B, remaining petroleum concentrations in soil appear to be within acceptable levels for closure under the LTCP.

2.5 Recommendation for Case Closure

As presented above and in the attached CSM table (Table 1), this Site appears to meet all applicable criteria for case closure under the LTCP. Over 20 years of groundwater monitoring data has shown that petroleum hydrocarbons exhibit a stable-to-decreasing trend at the Site. Adequate Site characterization both on- and off-Site, evaluation of receptors, historical descriptions, and technical analysis have been performed at the Site and in this document to support a recommendation for case closure. We hereby recommend that a determination of No Further Action be made for this Site. Upon concurrence of this recommendation from the ACEH, closure activities including well decommissioning should be carried out.

3.0 REFERENCES

Cambria Environmental Technology, Inc., 19 March 2001. *Underground Storage Tank, Piping Removal, And Well Abandonment Report, ARCO Service Station 6113, 785 East Stanley Boulevard, Livermore, CA.*

State Water Resources Control Board, 2012. *Low-Threat Underground Storage Tank Case Closure Policy, August 17.*

DRAWINGS

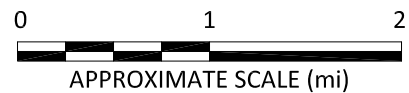
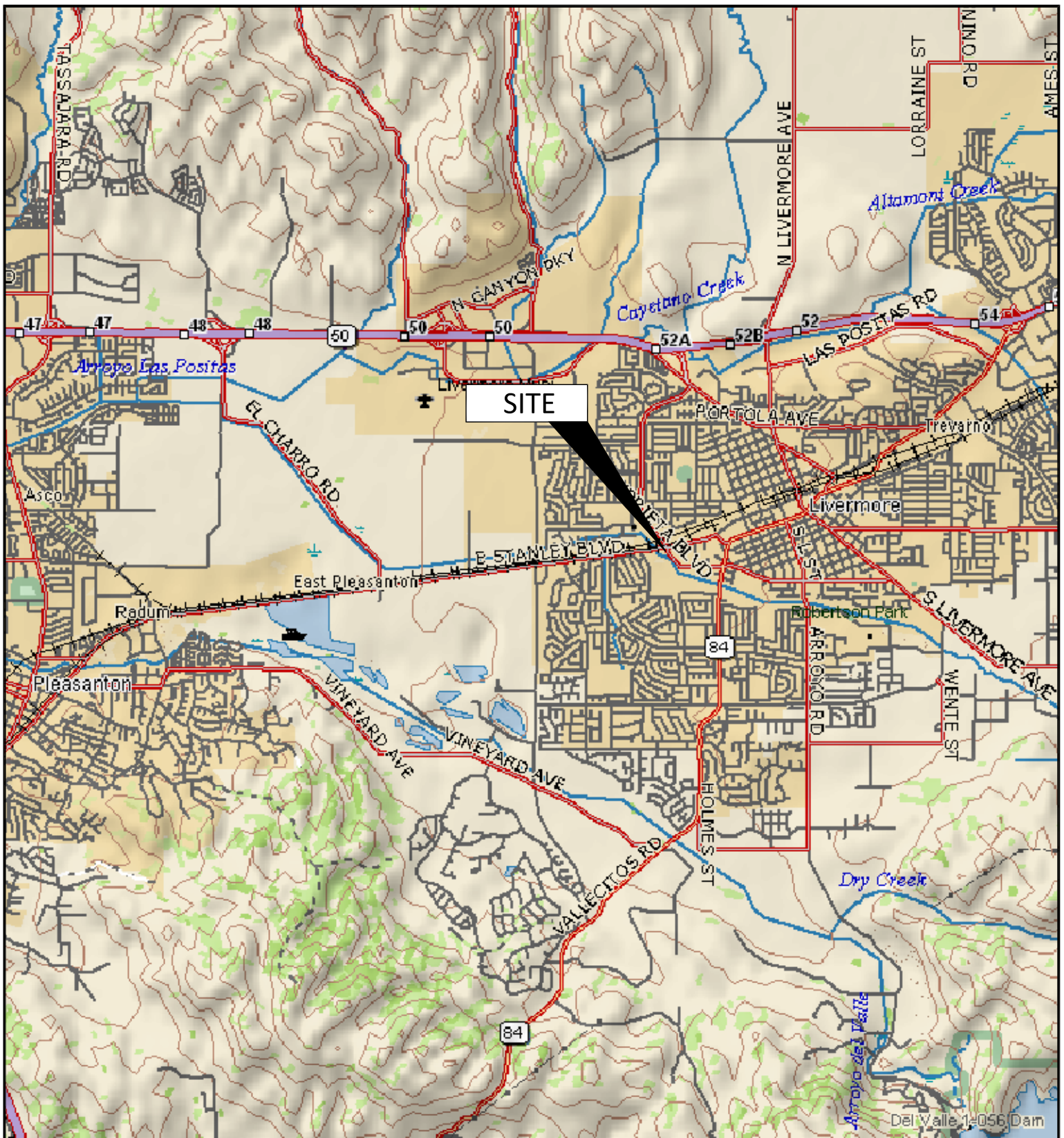


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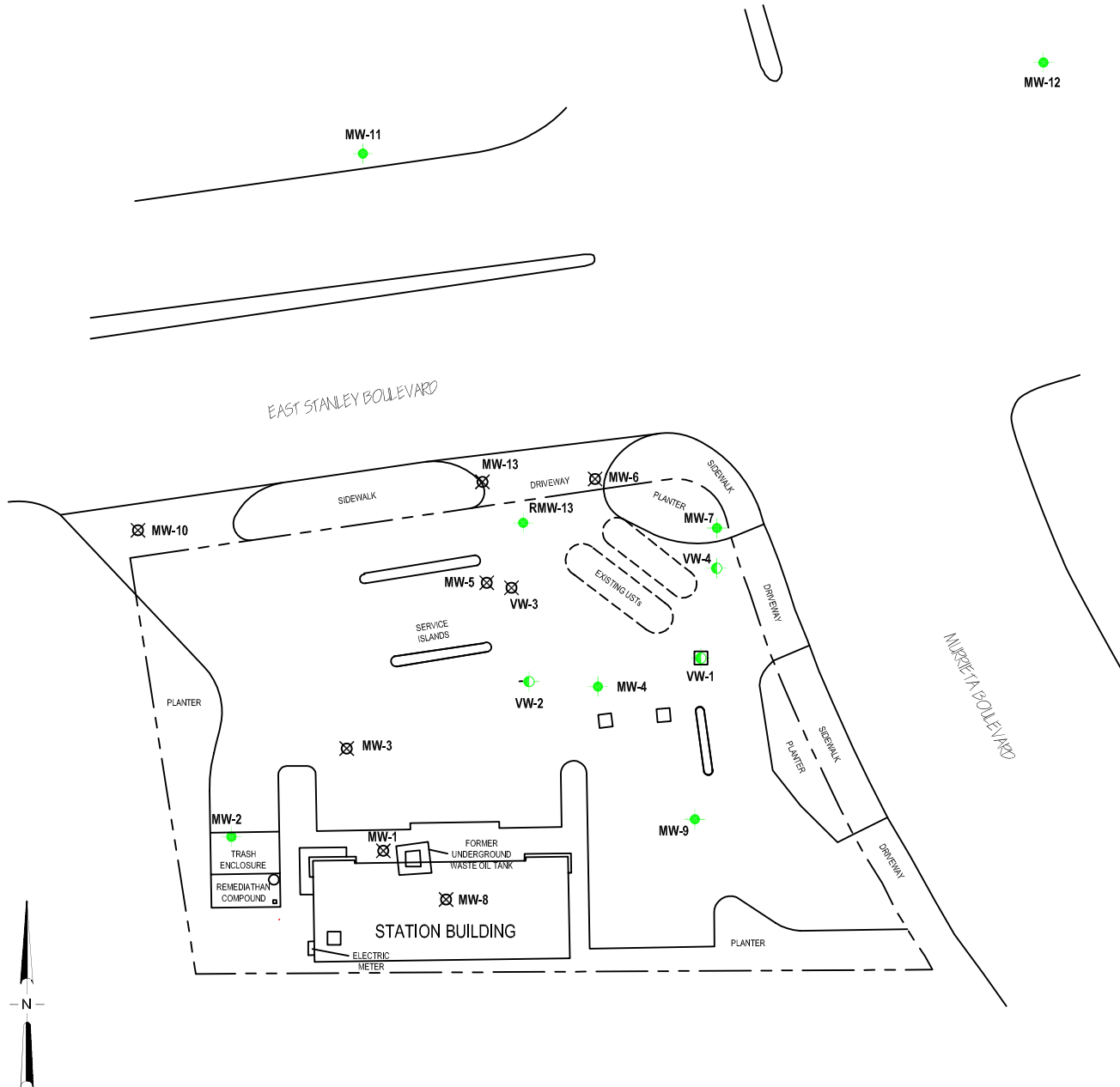
1370 Ridgewood Dr., Suite 5
Chico, California 95973
Project No.: 06-82-637 Date: 12/4/2012

Station #6113
785 East Stanley Boulevard
Livermore, California

Site Location Map

Drawing

1



LEGEND

- Monitoring well
- | Vapor extraction well
- ⊗ Abandoned well

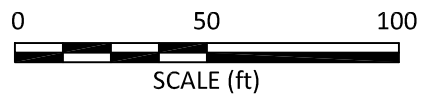
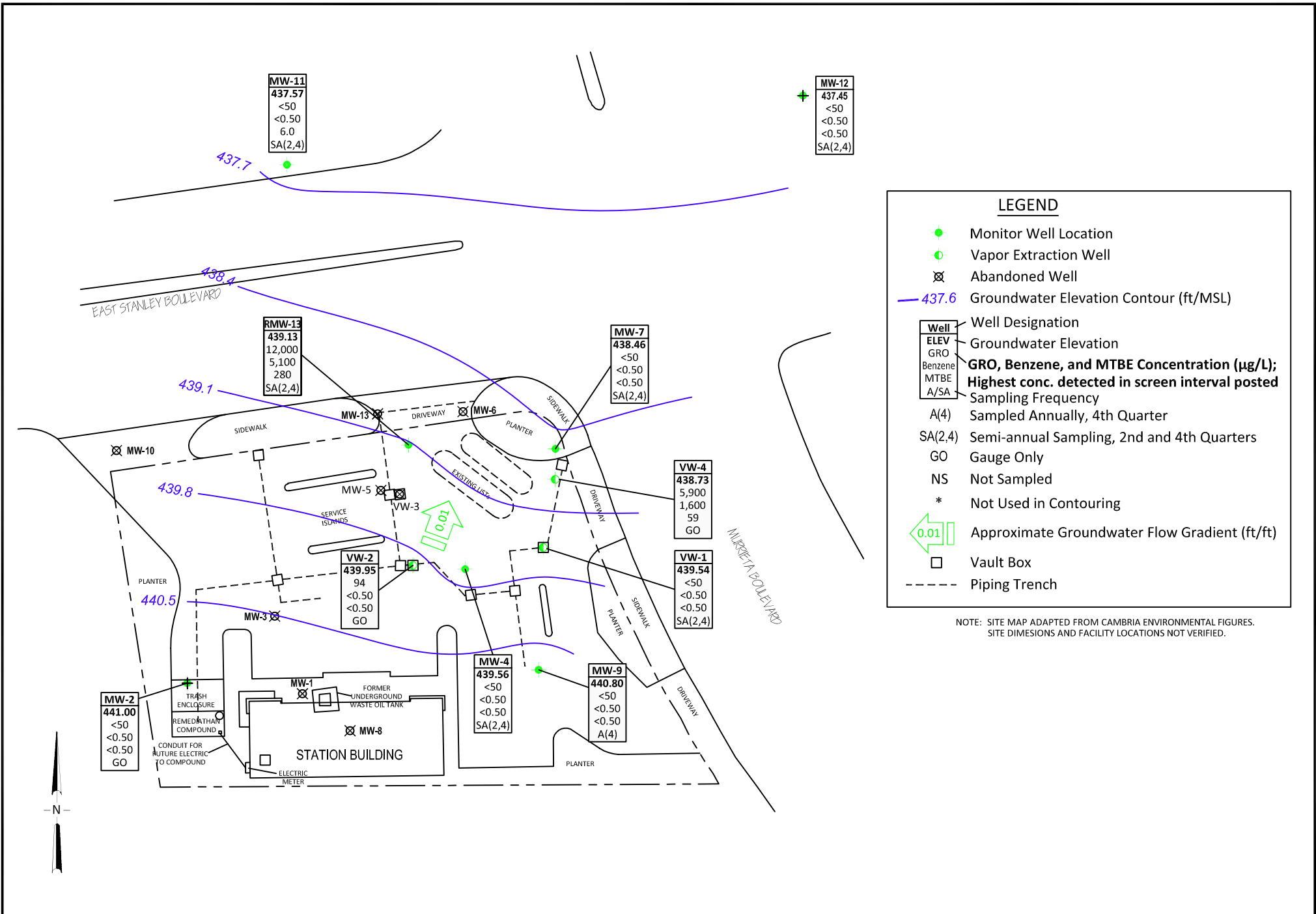
NOTE: SITE MAP ADAPTED FROM CAMBRIA ENVIRONMENTAL FIGURES. SITE DIMENSIONS AND FACILITY LOCATIONS NOT VERIFIED.



BROADBENT & ASSOCIATES, INC.
ENGINEERING, WATER RESOURCES & ENVIRONMENTAL
1324 Mangrove Ave, Suite 212, Chico, California 95926
Project No.: 06-82-637 Date: 11/3/2010

Station #6113
785 East Stanley Boulevard
Livermore, California

Site Map with Former and Current
Well Locations



BROADBENT
 1370 Ridgewood Dr., Suite 5
 Chico, California 95973
 Project No.: 06-82-637 Date: 7/19/2013

Station #6113
 785 East Stanley Boulevard
 Livermore, California

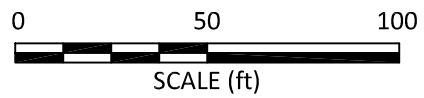
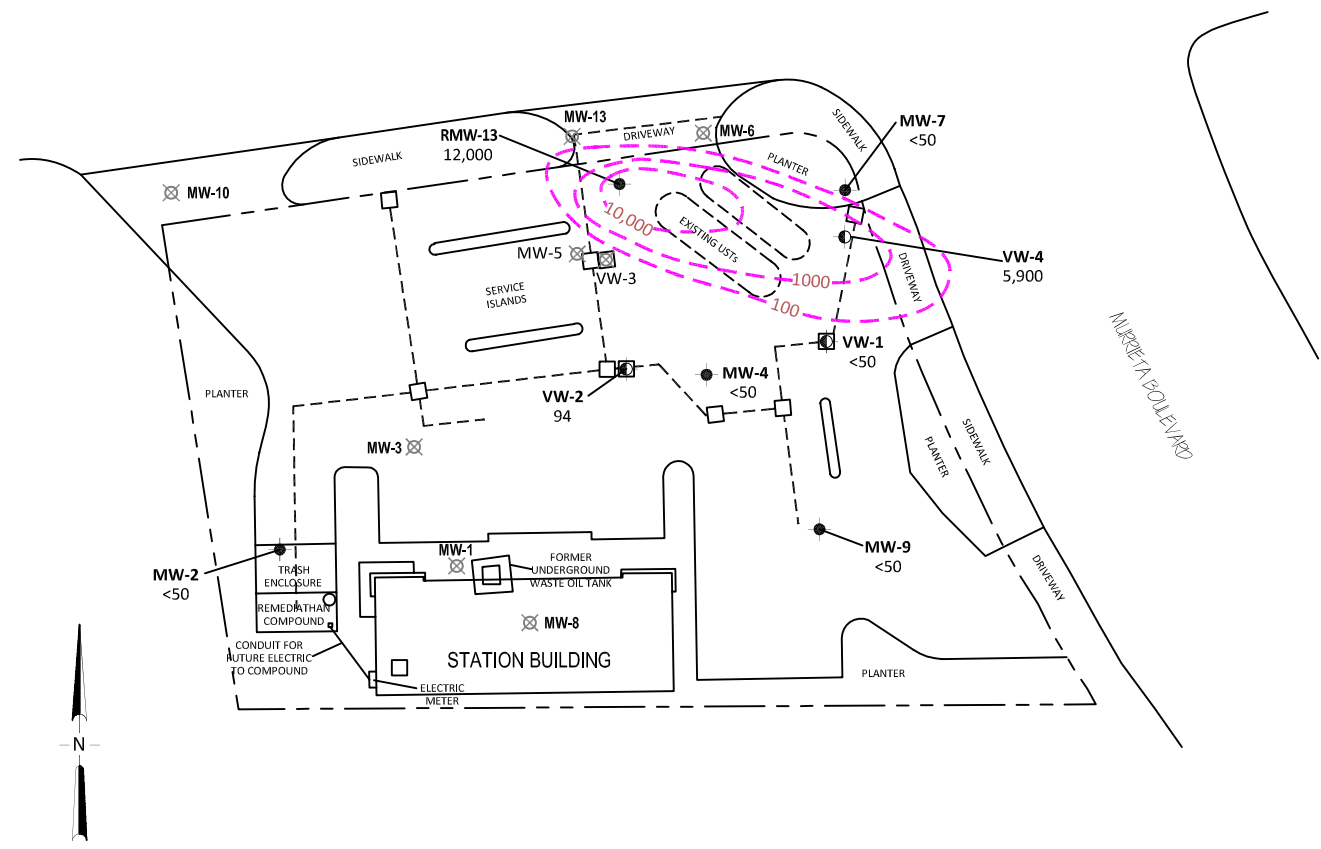
Groundwater Elevation Contour
 and Analytical Summary Map
 April 9-10, 2013

Drawing
3

LEGEND

- Monitor Well Location
- ⊕ Vapor Extraction Well
- ⊗ Abandoned Well
- Vault Box
- - - Piping Trench
- MW-12 <50 Well Designation
- GRO Concentration (μg/L)
- GRO Isoconcentration Contour (μg/L)

NOTE: SITE MAP ADAPTED FROM CAMBRIA ENVIRONMENTAL FIGURES. SITE DIMENSIONS AND FACILITY LOCATIONS NOT VERIFIED.



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Chico, California 95973
Project No.: 06-82-637 Date: 7/19/2013

Station #6113
785 East Stanley Boulevard
Livermore, California

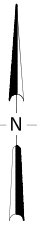
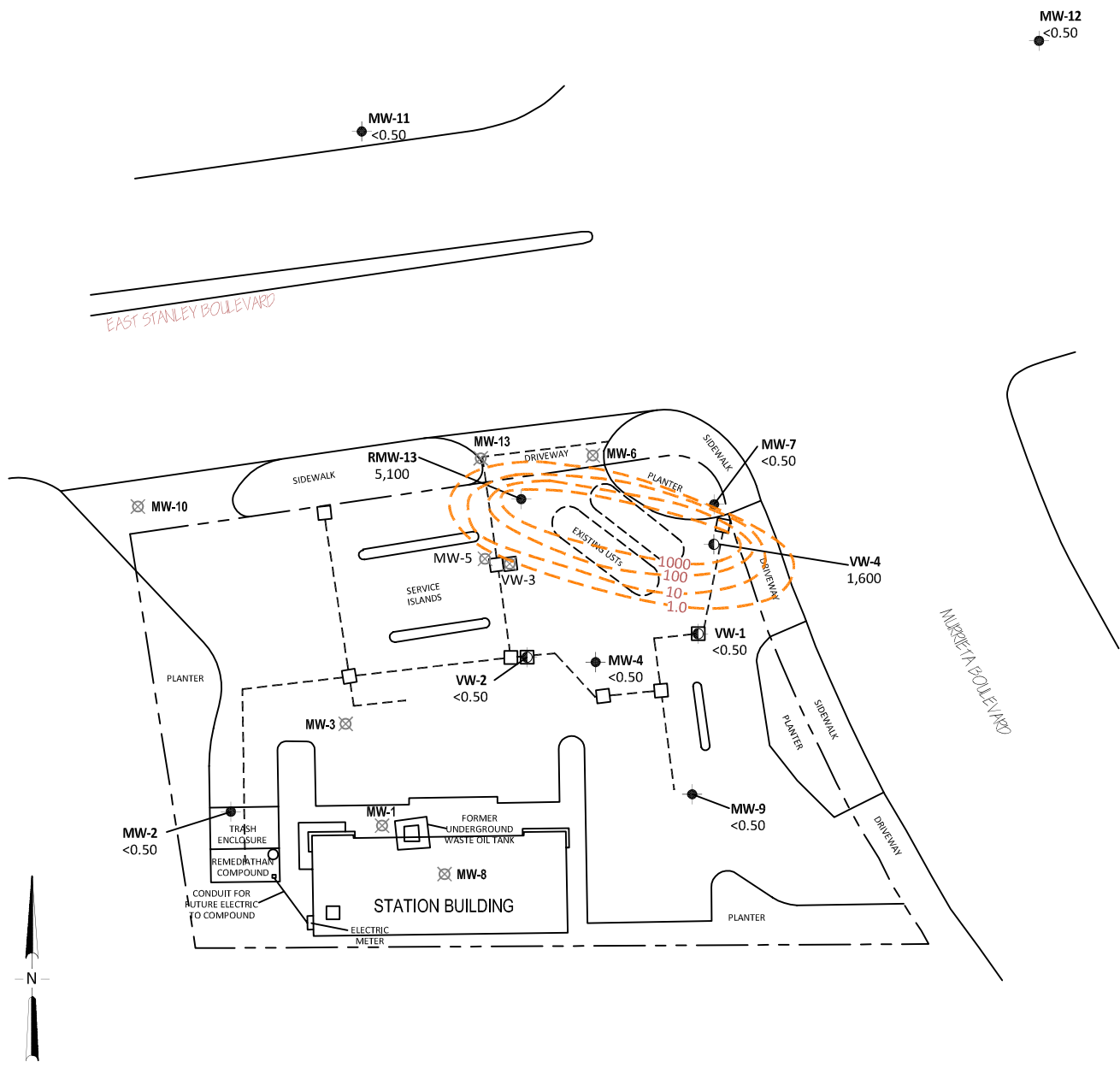
GRO Isoconcentration
Contour Map-
April 2013

Drawing
4

LEGEND

- Monitor Well Location
- ⊕ Vapor Extraction Well
- ⊗ Abandoned Well
- Vault Box
- - - Piping Trench
- MW-12 <0.50 Well Designation
- <0.50 GRO Concentration (μg/L)
- GRO Isoconcentration Contour (μg/L)

NOTE: SITE MAP ADAPTED FROM CAMBRIA ENVIRONMENTAL FIGURES. SITE DIMENSIONS AND FACILITY LOCATIONS NOT VERIFIED.

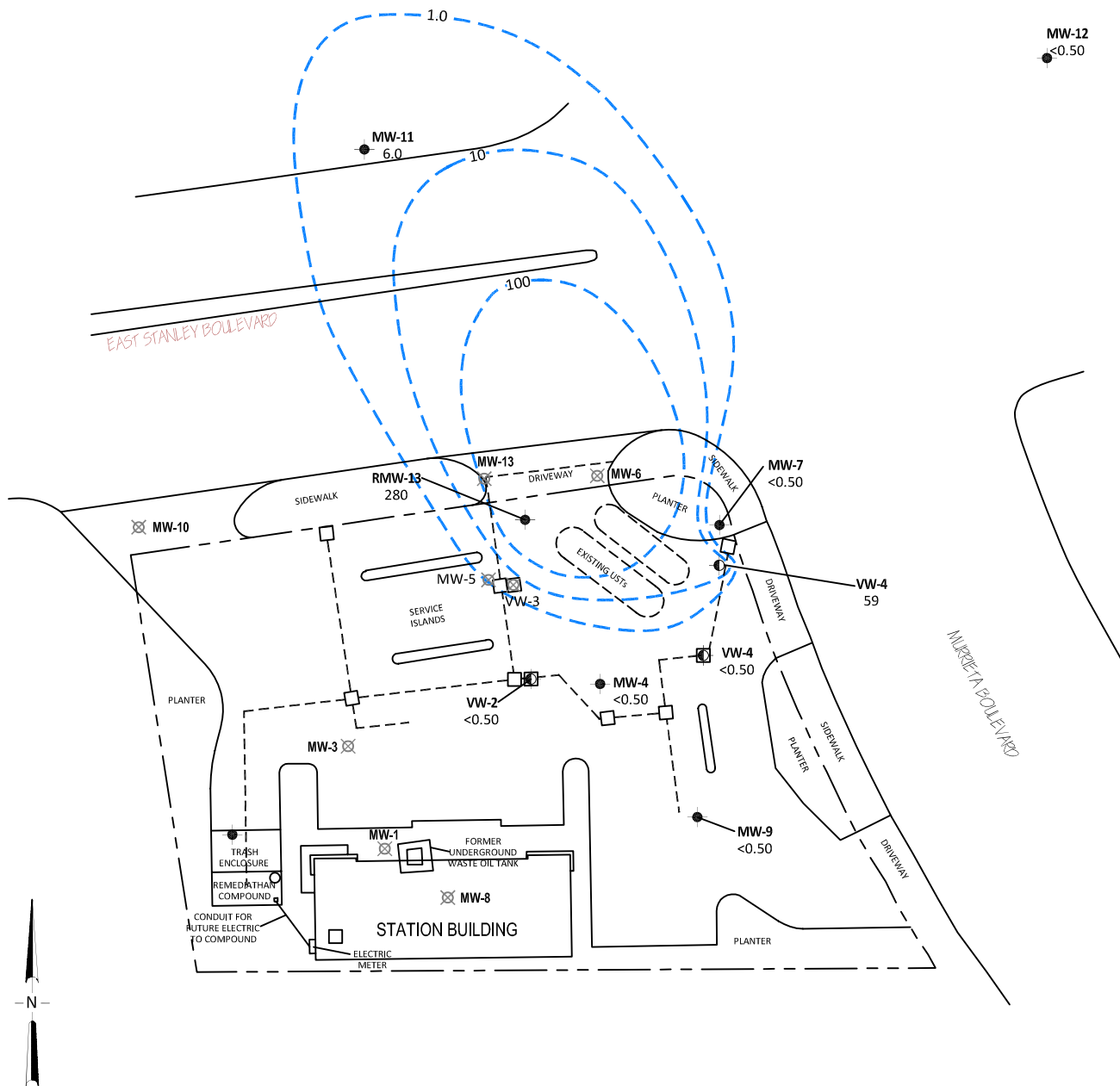


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Project No.: 06-82-637 Date: 7/19/2013

Station #6113
785 East Stanley Boulevard
Livermore, California

Benzene Isoconcentration
Contour Map-
April 2013

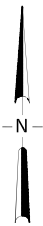
Drawing
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LEGEND

- Monitor Well Location
- Vapor Extraction Well
- ⊗ Abandoned Well
- Vault Box
- Piping Trench
- MW-12 <0.50 Well Designation
- MTBE Concentration (µg/L)
- MTBE Isoconcentration Contour (µg/L)

NOTE: SITE MAP ADAPTED FROM CAMBRIA ENVIRONMENTAL FIGURES. SITE DIMENSIONS AND FACILITY LOCATIONS NOT VERIFIED.




BROADBENT
 1370 Ridgewood Dr., Suite 5
 Chico, California 95973
 Project No.: 06-82-637 Date: 7/19/2013

Station #6113
 785 East Stanley Boulevard
 Livermore, California

MTBE Isoconcentration
 Contour Map-
 April 2013

Drawing
6

MW-12 ●

MW-11 ●

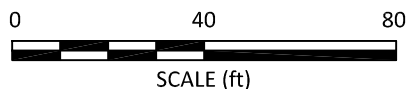
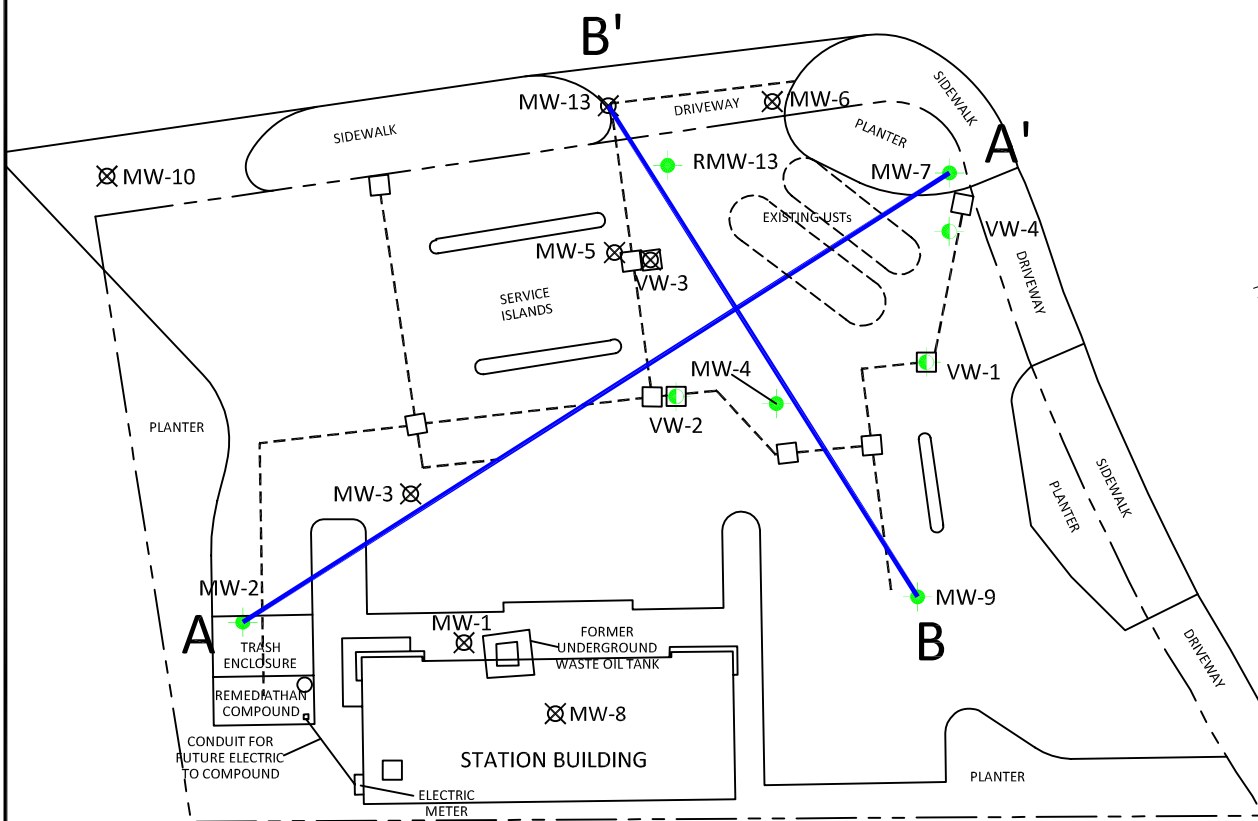
EAST STANLEY BOULEVARD

MURRIETA BOULEVARD

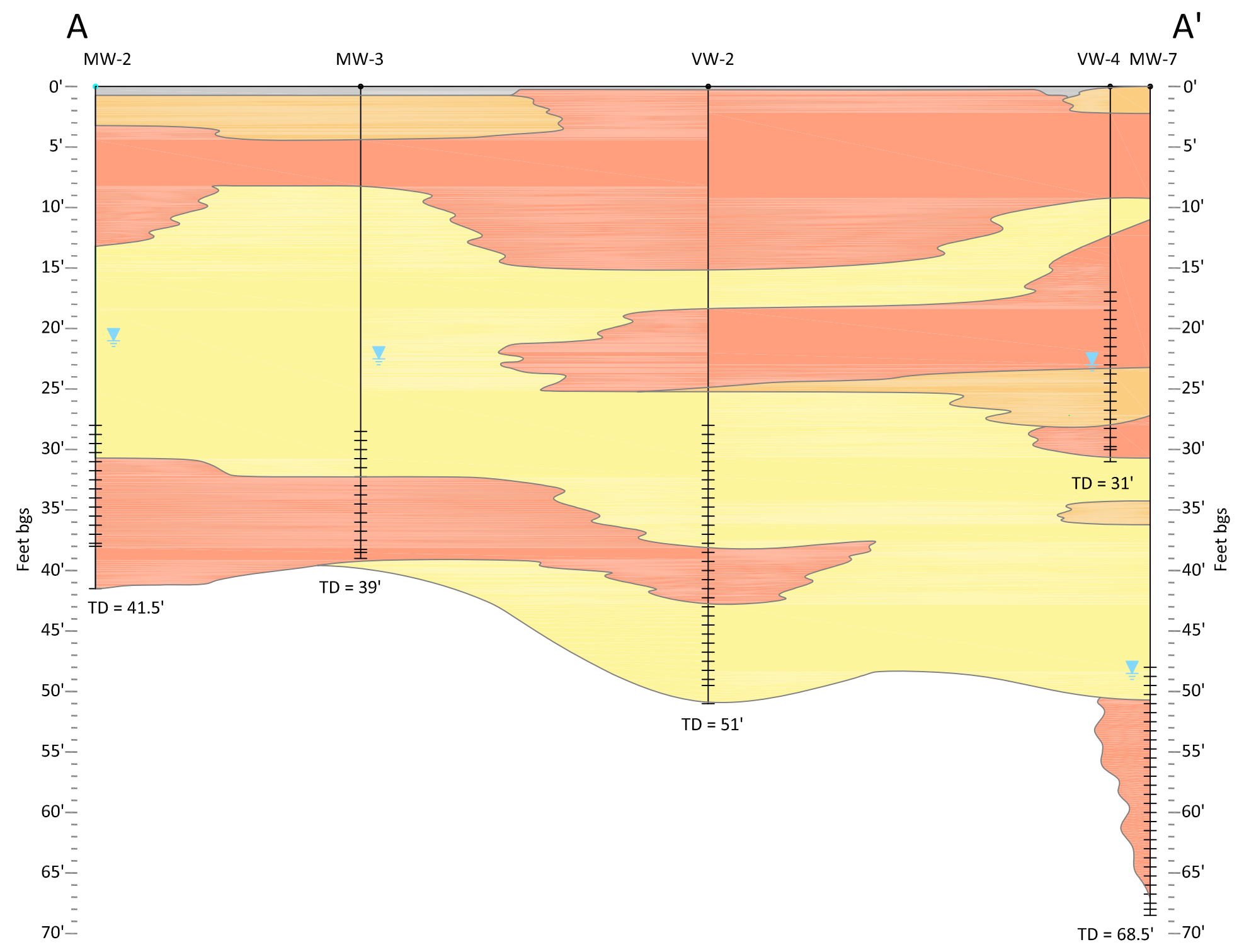
B'

A'

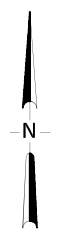
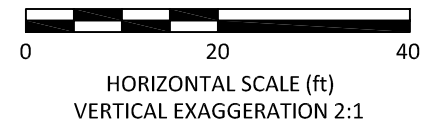
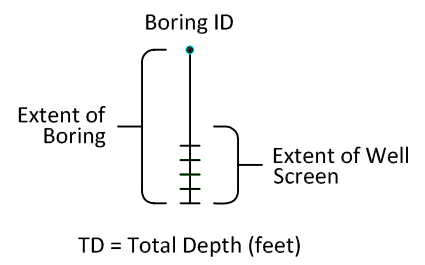
B

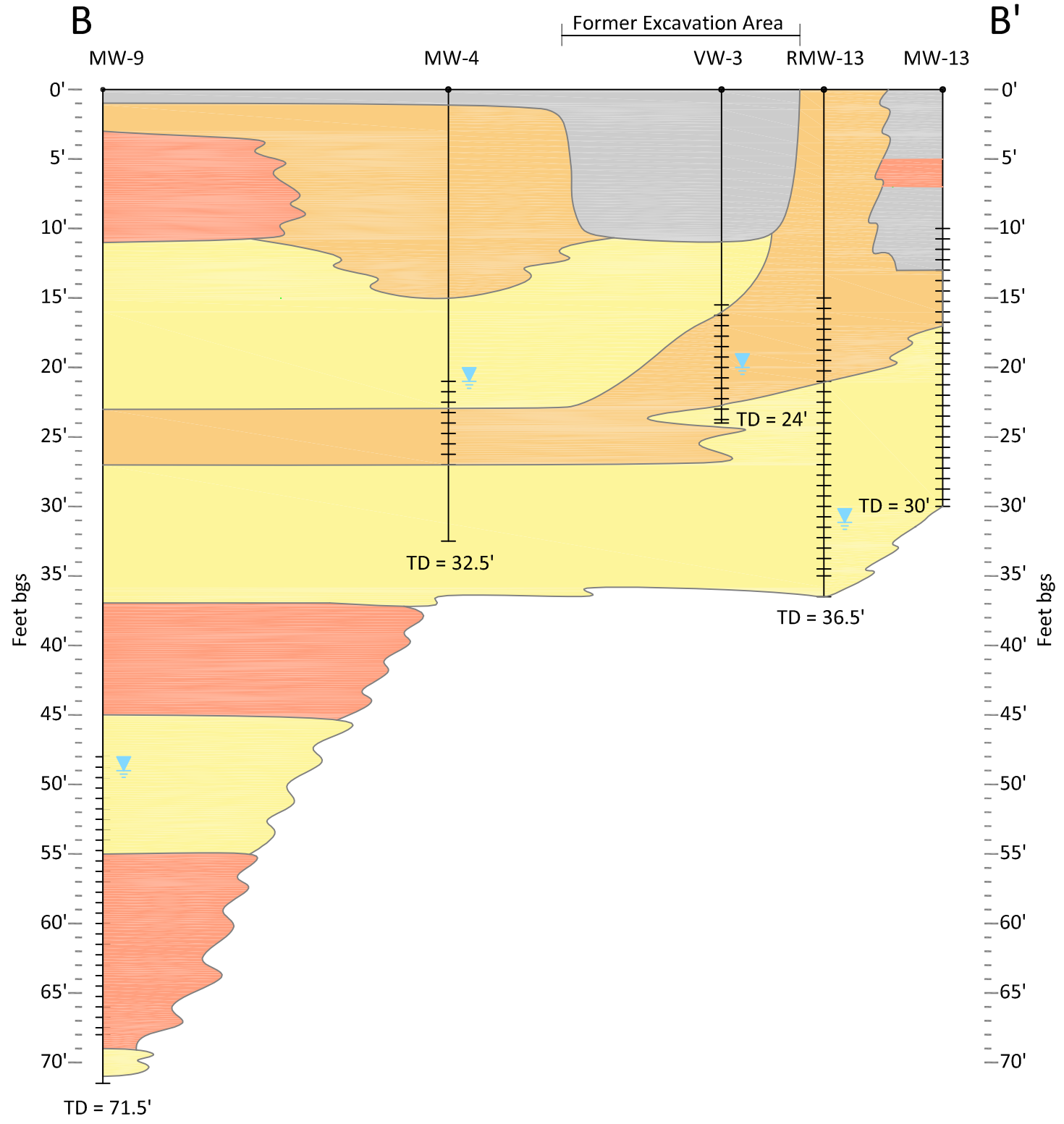






| LEGEND | |
|--------|--------------------------------|
| ● | Monitor Well Location |
| ● | Vapor Extraction Well Location |
| ⊗ | Abandoned Well Location |
| --- | Piping Trench |
| — | Cross Section Location |




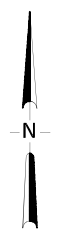
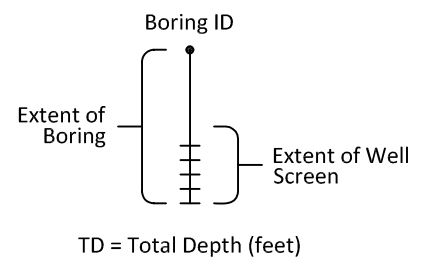
-  Asphalt/Backfill
-  Gravels
-  Sands
-  Silts/Clays
-  Groundwater Elevation, April 9-10, 2013





-  Asphalt/Backfill
-  Gravels
-  Sands
-  Silts/Clays

 Groundwater Elevation, April 9-10, 2013



TABLES

TABLE 1

CONCEPTUAL SITE MODEL

Atlantic Richfield Company Station No. 6113
 785 East Stanley Boulevard
 Livermore, California

| CSM Element | CSM Sub-Element | Description | Data Gap | How to Address |
|--------------------------|-----------------|--|----------|----------------|
| Geology and Hydrogeology | Regional | <p>According to the <i>California Groundwater, Bulletin 118</i>, the Site is located within Livermore Valley, which lies about 40 miles east of San Francisco and 30 miles southwest of Stockton within a structural trough of the Diablo Range. The groundwater basin extends from the Pleasanton Ridge east to the Altamont Hills (about 14 miles) and from the Livermore Upland north to the Orinda Upland (about 3 miles). Some geologic structures restrict the lateral movement of groundwater, but the general groundwater gradient is to the west, then south towards Arroyo de la Laguna. Elevations within the basin range are about 600 ft in the east, near the Altamont Hills, to about 280 ft in the southwest, where Arroyo de la Laguna flows into Sunol Groundwater Basin. Average annual precipitation ranges from 16 inches on the valley floor to more than 20 inches along the southeast and northwest basin margins.</p> <p>The entire floor of Livermore Valley and portions of the upland areas on all sides of the valley overlie groundwater-bearing materials. The materials are continental deposits from alluvial fans, outwash plains, and lakes. They include valley-fill materials, the Livermore Formation, and the Tassajara Formation. Under most conditions, the valley-fill and Livermore sediments yield adequate to large quantities of groundwater to all types of wells. The quality of water produced from these rocks ranges from poor to excellent, with most waters in the good to excellent range.</p> | None | NA |
| | Site | <p>The Site elevation is approximately 460 feet above mean sea level, where regional topography slopes to the west (USGS Topographic Map, Livermore Quadrangle – 7.5 Minute Series). The topography of the surrounding area is characterized by the Livermore valley and surrounding mountains. The regional surface and groundwater flow is generally to the west, towards Arroyo de la Laguna and eventually the San Francisco Bay. The historical groundwater flow direction at the Site has been generally to the northeast (Table 5). The hydraulic gradient has ranged from 0.008 to 0.070 ft/ft since 1995 (Table 5). Historical depth to groundwater measurements have varied significantly and ranged from approximately 10.97 to 64.21 ft bgs (Table 2). Depth to groundwater within the last five years in Site wells has ranged from 15.77 to 43.34 ft bgs.</p> <p>The Site is typically underlain by silty sand, sand with clay, and clayey silt to depths of approximately 18 to 20 ft bgs. Geologic cross sections (Drawings 8 and 9) indicate silty sand and silty gravel lenses are present from approximately 18 to 24 ft bgs. Sandy clays, sandy silts, and silty sands are</p> | None | NA |

TABLE 1**CONCEPTUAL SITE MODEL**

Atlantic Richfield Company Station No. 6113
 785 East Stanley Boulevard
 Livermore, California

| CSM Element | CSM Sub-Element | Description | Data Gap | How to Address |
|--------------------------------------|--|--|----------|----------------|
| Geology and Hydrogeology (continued) | Site (continued) | encountered at depths of approximately 24 to 40 ft bgs beneath the Site. The lens of sandy clays, sandy silts, and silty sands is underlain by silty gravels, which extend to the total explored depth of all borings. First encountered groundwater in soil varied significantly at approximate depths ranging between 13 and 59 ft bgs. Boring logs and historical geologic cross-sections are presented in Appendix C and current geologic cross-sections are provided as Drawings 7 through 9. | | |
| Surface Water Bodies | | <p>Surface water bodies include Arroyo Valley, Arroyo Mocho, and Arroyo las Positas as principal streams, with Alamo Creek, South San Ramon Creek, and Tassajara Creek as minor streams. The nearest surface water body to the Site is Arroyo Mocho Creek, located adjacent to the south and east sides (upgradient) of the Site. All streams converge on the west side of the basin to form Arroyo de la Laguna, which flows south and joins Alameda Creek in Sunol Valley.</p> <p>The closest surface water body to the Site is the Arroyo Mocho Creek, located approximately 150 feet to the south and southeast of the Site.</p> | None | NA |
| Nearby Wells | | <p>In 1991, a Sensitive Receptor Survey was carried out to identify the presence of water wells within a half mile radius of the Site. Based on the review, no water supply wells were located within a half-mile radius from the Site.</p> <p>A current well survey has not been performed at the Site. However, the plume is almost entirely limited to onsite, with concentrations in downgradient well MW-12 being below the laboratory reporting limits since its installation in 1993, with the exception of three minor detections (GRO at 150 µg/L, benzene at 20 µg/L, and MTBE at 1.4 µg/L; Drawing 2) and minor, recent concentrations of MTBE in well MW-11. Petroleum compounds generally exhibit stable-to-decreasing trends. Concentration trend graphs are included in Appendix D.</p> | None | NA |
| Constituents of Concern | Light-Non Aqueous Phase Liquid (LNAPL) | Measureable LNAPL was detected at the Site in well MW-6 between September 11, 1992 and November 4, 1993. Historically, LNAPL has been detected in monitoring well MW-6 at a maximum thickness of 0.04 ft (September 11, 1992). Measurable LNAPL has not been observed in any groundwater monitoring well since November 4, 1993. | None | NA |

TABLE 1**CONCEPTUAL SITE MODEL**

Atlantic Richfield Company Station No. 6113
 785 East Stanley Boulevard
 Livermore, California

| CSM Element | CSM Sub-Element | Description | Data Gap | How to Address |
|-------------------------------------|-------------------------|---|----------|----------------|
| Constituents of Concern (continued) | Gasoline Range Organics | <p>Historically, concentrations of GRO have been detected in monitoring wells MW-4, MW-7, RMW-13, VW-1, VW-2, and VW-4; and former wells MW-5, MW-6, MW-13, and VW-3, located near the existing USTs in the northeastern corner of the Site. GRO concentrations have been sporadically detected in wells MW-2 and MW-12; and former wells MW-1, MW-3, and MW-10. GRO concentrations have not been detected in onsite wells MW-9 and offsite well MW-11; and former onsite well MW-8. The historical maximum detected concentration of GRO was reported in well RMW-13 at 63,000 µg/L in April 12, 2010. The maximum detected concentration within the last four monitoring events was reported in well RMW-13 at 15,000 µg/L, indicating a strong decreasing GRO trend over time.</p> <p>Based on recent and historical data, the GRO plume has been delineated and appears small, with impacts not currently extending offsite. A GRO isoconcentration contour map for the most recent groundwater monitoring and sampling event (2Q13) is presented as Drawing 4. GRO concentration trend graphs for select Site wells are included in Appendix D. Source area concentrations are represented by graphs for wells RMW-13 and VW-4, which both exhibit a strong decreasing trend for GRO (Appendix D). GRO impacts have not historically been significantly reported in offsite wells MW-11 and MW-12.</p> | None | NA |
| | Benzene | <p>Historically, concentrations of benzene have been detected in monitoring wells MW-4, MW-7, RMW-13, VW-1, and VW-4; and former wells MW-5, MW-6, MW-13, and VW-3, located near the existing USTs in the northeastern corner of the Site. Benzene concentrations have been sporadically detected in wells MW-2, MW-9, MW-11, and MW-12; and former wells MW-1 and MW-3. Benzene concentrations have not been detected in onsite well VW-2; and former onsite wells MW-8 and MW-10. The historical maximum concentration of benzene was reported in former well VW-3 at 9,450 µg/L on November 29, 2000. This well was abandoned in 2001. The maximum detected concentration within the last four monitoring events was reported in well RMW-13 at 6,000 µg/L, indicating a decreasing benzene trend over time.</p> <p>Based on recent and historical data, the benzene plume has been delineated and appears small, with impacts not extending offsite. A benzene isoconcentration contour map for the most recent groundwater monitoring and sampling event (2Q13) is presented as Drawing 5. Benzene concentration trend graphs for select wells are included in Appendix D.</p> | None | NA |

TABLE 1**CONCEPTUAL SITE MODEL**

Atlantic Richfield Company Station No. 6113
 785 East Stanley Boulevard
 Livermore, California

| CSM Element | CSM Sub-Element | Description | Data Gap | How to Address |
|-------------------------------------|--------------------------------|--|----------|----------------|
| Constituents of Concern (continued) | Methyl tert-butyl ether (MTBE) | <p>Historically, concentrations of MTBE have been detected in monitoring wells MW-4, MW-7, MW-11, RMW-13, VW-1, and VW-4; and former wells MW-5, MW-6, MW-13, and VW-3, located near the existing USTs in the northeastern corner of the Site. MTBE concentrations have been sporadically detected in wells MW-2, MW-9, and MW-12; and former well MW-3. MTBE concentrations have not been detected in onsite well VW-2; and former onsite wells MW-1, MW-8, and MW-10. The historical maximum MTBE concentration was reported in well VW-3 at 44,700 µg/L on August 29, 2000. This well was abandoned in 2001. The maximum detected concentration within the last four monitoring events was reported in well RMW-13 at 460 µg/L, indicating a strong decreasing MTBE trend over time. In all monitoring wells, except monitoring wells RMW-13 and VW-4, current concentrations of MTBE did not exceed 7 µg/L, indicating that MTBE in groundwater has almost completely degraded.</p> <p>Based on recent and historical data, the MTBE plume has been delineated and appears small, with impacts not significantly extending offsite. An MTBE isoconcentration contour map for the most recent groundwater monitoring and sampling event (2Q13) is presented as Drawing 6. Based on this drawing, the extent of MTBE is defined in all directions, with the exception of well MW-11 (Appendix D). However, the concentration of MTBE in this well has decreased by nearly an order of magnitude since 2003, and is currently only slightly above the MCL for MTBE of 5.0 ug/L. Based on the observed decreasing trends, the extent of petroleum compounds is predominately limited to onsite. Decreasing trends indicate that the concentrations will continue to degrade over time.</p> | None | NA |
| Potential Sources | Onsite | <p>The exact release source and volume released at the Site is unknown; however, it is assumed that the source was the former UST, dispensers, and former waste oil tank complex, located at the northeastern and southwestern portion of the Site, respectively. These assumptions are supported by historical data including proximity to historical free product and higher dissolved-phase petroleum hydrocarbon concentrations. Additional areas of documented soil contamination occurred beneath product pipelines, particularly the northern portion of the Site. An unknown amount of residual petroleum hydrocarbon contamination is presently bound within the soil matrix in these areas, and dissolved in groundwater beneath and downgradient of the Site. A fluctuating groundwater table has likely caused a contaminant smear zone where the residual hydrocarbon mass remains. However, the trends for the residual petroleum compounds in groundwater indicate that the remaining concentrations in this smear zone have degraded over time and are impacting the groundwater</p> | None | NA |

TABLE 1

CONCEPTUAL SITE MODEL

Atlantic Richfield Company Station No. 6113
 785 East Stanley Boulevard
 Livermore, California

| CSM Element | CSM Sub-Element | Description | Data Gap | How to Address |
|-------------------------------|--------------------|---|----------|----------------|
| Potential Sources (continued) | Onsite (continued) | <p>beneath the Site to a far lesser degree than in the past, and will continue to degrade over time (Appendix D).</p> <p>In January 2001, Cambria oversaw the removal and replacement of three USTs, associated underground piping, and dispenser islands at the Site. Soil samples were collected from beneath the product piping, dispenser islands and USTs. Hydrocarbon impacted soil was observed in several of the soil samples collected with the highest concentrations observed at the bottom of the UST excavation at approximately 17 to 18 ft bgs. Approximately 1,425 tons of soil was removed and disposed of during the excavation activities. Based on the observations during these station upgrades and the proximity of historical and current higher petroleum concentrations in groundwater, it appears that the onsite hydrocarbon source was the former USTs and dispensers.</p> <p>The removal and replacement of the storage and dispensing system was conducted to stop the potential release. The UST removal and replacement activities were documented in the <i>Underground Storage Tank, Piping Removal, And Well Abandonment Report, ARCO Service Station 6113</i> (Cambria, 2001).</p> | | |
| | Offsite | <p>An active Shell service station is located just east of the Site at 809 Stanley Boulevard in Livermore, California. Three gasoline USTs and one waste oil UST were removed from the southern portion of the site on November 10 and 11, 1986. TPH and BTEX were not detected in six soil samples collected during the tank removal. Following the November 1986 tank removal, three new gasoline USTs were installed in a new excavation in the northern portion of the site.</p> <p>From 2001 to 2007, groundwater and soil investigations were carried out at this Shell site in order to determine if petroleum hydrocarbons from former or then current operations were impacting groundwater or soil. Petroleum hydrocarbons were detected in soil samples collected during a Site investigation in 2006. The Site was closed in September 2008. The Closure letter from the ACEH noted that 1,400 mg/kg of TPHg and 2.7 total xylenes were remaining in soil.</p> <p>Due the minimal petroleum compounds noted in soil and groundwater samples at this adjacent Shell site, its location in relation to the Site (cross/downgradient direction) and the fact that the Shell site is</p> | None | NA |

TABLE 1**CONCEPTUAL SITE MODEL**

Atlantic Richfield Company Station No. 6113
 785 East Stanley Boulevard
 Livermore, California

| CSM Element | CSM Sub-Element | Description | Data Gap | How to Address |
|--|-------------------------------|---|----------|----------------|
| Potential Sources (continued) | Offsite (continued) | closed, it is unlikely that this adjacent Shell station is an offsite source. No other offsite sources have been identified. | | |
| Nature and Extent of Environmental Impacts | Extent in Soil | <p>Soil contamination appears defined and limited to onsite. Based on historical data, the highest concentrations of GRO and benzene were detected at the northeastern portion of the Site, between the UST complex and the dispensers. The highest concentrations were consistently reported at approximately 20.5 to 26 ft bgs, which is consistent with the capillary fringe zone at the Site. The highest GRO concentration (3,490 mg/kg) was detected below the UST complex. A soil vapor extraction system was installed onsite; however, did not operate due to an increase in groundwater elevation which submerged the soil vapor extraction well screen intervals. In 2001, the former USTs, dispenser islands, and associated piping were removed and replaced. Soil was defined laterally to non-detect for all petroleum compounds to the north (MW-11/B-18), northeast (MW-12/B-19), south (MW-8/B-9 and B-15), southwest (MW-1/B-1, MW-2/B-2, and MW-3/B-3), and west (MW-10/B-17). Further definition to the east was not possible due to the presence of an adjacent Shell station.</p> <p>Since the sources have been removed and these concentrations were representative of overall concentrations at the time of sampling, it is likely that these concentrations have further attenuated over the last 20 years. In boring B-7 (MW-7), maximum GRO, benzene, and ethylbenzene concentrations in soil were 21 mg/kg, 0.43 mg/kg, and 0.35 mg/kg, respectively, in 1992. Since that time, petroleum impact in groundwater has decreased and is below the laboratory reporting limits in well MW-7. Based on data and observations from current groundwater conditions, soil at the Site appears to be adequately defined.</p> | None | NA |
| | Extent in Shallow Groundwater | The current groundwater monitoring network at the Site includes source area wells (MW-4, MW-7, RMW-13, VW-1, VW-2, and VW-4); upgradient well (MW-2); crossgradient wells (MW-9 and MW-11); and downgradient well (MW-12). Isoconcentration maps for the most recent groundwater monitoring and sampling event (2Q13) for GRO, benzene, and MTBE are included as Drawings 4 through 6, respectively. Based on these drawings, the extent of petroleum compounds is defined in all directions, with the exception of MTBE in well MW-11 (Graph D-1, Appendix D). However, the | None | NA |

TABLE 1**CONCEPTUAL SITE MODEL**

Atlantic Richfield Company Station No. 6113
 785 East Stanley Boulevard
 Livermore, California

| CSM Element | CSM Sub-Element | Description | Data Gap | How to Address |
|--|---|---|----------|----------------|
| Nature and Extent of Environmental Impacts (continued) | Extent in Shallow Groundwater (continued) | concentration of MTBE in this well has decreased by nearly an order of magnitude since 2003, and is currently only slightly above the MCL for MTBE of 5.0 ug/L. Considering the observed decreasing trend and the current low concentrations, the extent of MTBE in groundwater is sufficiently defined in all directions. Based on the observed decreasing trends, the extent of petroleum compounds is predominately limited to onsite. Decreasing trends indicate that the concentrations will continue to degrade over time. | | |
| | Extent in Deeper Groundwater | The extent of environmental impact in deeper groundwater has not been investigated at the Site. However, due to the nature of petroleum being less dense than water, as it is prevalent with the groundwater surface and the current low concentrations detected in Site wells, it is unlikely deeper petroleum impacts are present at the Site. Additionally, current concentrations are so low that deeper zone petroleum impacts are unlikely. A review of the neighboring Shell site indicated that vertical characterization has not been conducted at that site. Based on petroleum characteristics, vertical characterization is not considered a data gap, even though no deeper groundwater samples have been collected. | None | NA |
| | Extent in Soil Vapor | The extent of environmental impact in soil vapor has not been investigated at the Site. It is possible that higher petroleum impacts are present near the former source areas. However, based on current concentrations of petroleum compounds in groundwater monitoring wells at the Site and their location (an active service station), soil vapor assessment is not warranted at the Site. Additionally, the LTCP states that the exposure from current fueling operations represents a greater risk than any associated with potential groundwater or soil vapor exposure (CSWRCB, 2012). | None | NA |
| Migration Pathways | Potential Conduits | A potential transmissive conduit study has not been performed on Site. Thus, there is a potential for sewer and/or storm drains to be located along East Stanley Boulevard and Murrieta Boulevard. Sewer and storm drains generally tend to be shallow (above 10 ft bgs), and depth to groundwater within the last five years at the Site has been between 15.77 to 43.34 ft bgs; therefore, contaminant migration in groundwater through the utility trenches is not possible. In addition, groundwater monitoring well MW-12, located across East Stanley and Murrieta Boulevard and downgradient of the Site, has not contained hydrocarbon concentrations above laboratory reporting limits since its installation in 1993, | None | NA |

TABLE 1**CONCEPTUAL SITE MODEL**

Atlantic Richfield Company Station No. 6113
 785 East Stanley Boulevard
 Livermore, California

| CSM Element | CSM Sub-Element | Description | Data Gap | How to Address |
|--------------------------------|--------------------------------|--|----------|----------------|
| Migration Pathways (continued) | Potential Conduits (continued) | with the exception of three minor detections (GRO at 150 µg/L, benzene at 20 µg/L, and MTBE at 1.4 µg/L). Furthermore, the hydrocarbon plumes have significantly decreased over time and will continue to decrease on Site, thus alleviating significant concerns regarding migration of higher levels of contaminants through the utility trenches. | | |
| Potential Receptors | Onsite | No onsite water supply wells or surface water bodies exist. The only potential onsite receptor would be onsite workers exposed to gasoline vapors. However, the exposure from current fueling operations represents a greater risk than any associated with potential groundwater or soil vapor exposure (CSWRCB, 2012). | None | NA |
| | Offsite | <p>As discussed above, the nearest surface water bodies are the Arroyo Valley, Arroyo Mocho Creek, and Arroyo las Positas as principal streams, with Alamo Creek, South San Ramon Creek, and Tassajara Creek as minor streams. The Arroyo Mocho Creek is the closest surface water body to the Site, located approximately 150 feet to the south and west. This creek is not considered a potential receptor due to its location (upgradient of the Site) and the presence of monitoring wells between this creek and the source area at the Site that have a documented history of no petroleum impacts.</p> <p>Results of a receptor survey noted above indicate no active domestic or municipal supply wells were identified within a half mile radius of the Site.</p> <p>Since the plume is almost entirely limited to onsite, based on concentrations in offsite (downgradient) well MW-12 being below the laboratory reporting limits since its installation in 1993, with the exception of three minor detections (GRO at 150 µg/L, benzene at 20 µg/L, and MTBE at 1.4 µg/L), these offsite receptors are not anticipated to be affected. Additionally, overall concentrations trends for Site wells are decreasing, indicating plume size is shrinking. Concentration trend graphs are included in Appendix D.</p> | None | NA |

TABLE 1

CONCEPTUAL SITE MODEL

Atlantic Richfield Company Station No. 6113
785 East Stanley Boulevard
Livermore, California

Notes:

ACEH = Alameda County Environmental Health

bgs = below ground surface

BTEX = benzene, toluene, ethylbenzene, xylenes

Cambria = Cambria Environmental Technology, Inc.

CRA = Conestoga-Rovers & Associates

CSM = Conceptual Site Model

CSWRCB = California State Water Resources Control Board

ft = foot

ft/ft = foot per foot

mg/kg = milligrams per kilogram

mg/m³ = milligrams per cubic meter

MTBE = Methyl tert-butyl Ether

GRO = Gasoline Range Organics

NA = Not Applicable

No. = Number

UST = Underground Storage Tank

µg/L = micrograms per liter

All report references are included in Section 3 of the preceding report

Table 2. Summary of Groundwater Monitoring Data: Relative Water Elevations and Laboratory Analyses

ARCO Service Station #61113, 785 East Stanley Blvd., Livermore, CA

| Well ID and Date Monitored | P/NP | TOC (feet) | Top of Screen (ft bgs) | Bottom of Screen (ft bgs) | DTW (feet) | Water Level Elevation (feet) | Concentrations in µg/L | | | | | | DO (mg/L) | pH | Footnote |
|----------------------------|------|------------|------------------------|---------------------------|------------|------------------------------|------------------------|---------|---------|---------------|---------------|-------|-----------|----|----------|
| | | | | | | | GRO/TPHg | Benzene | Toluene | Ethyl-Benzene | Total Xylenes | MTBE | | | |
| MW-1 | | | | | | | | | | | | | | | |
| 3/23/1995 | -- | 457.04 | 29.00 | 44.00 | 14.12 | 442.92 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 5/31/1995 | -- | | 29.00 | 44.00 | 14.45 | 442.59 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 8/31/1995 | -- | | 29.00 | 44.00 | 17.12 | 439.92 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 11/28/1995 | -- | | 29.00 | 44.00 | 16.34 | 440.70 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | -- | -- | |
| 2/22/1996 | -- | | 29.00 | 44.00 | 13.23 | 443.81 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 5/23/1996 | -- | | 29.00 | 44.00 | 14.02 | 443.02 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 8/8/1996 | -- | | 29.00 | 44.00 | 16.13 | 440.91 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 11/7/1996 | -- | | 29.00 | 44.00 | 17.28 | 439.76 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | -- | -- | |
| 3/27/1997 | -- | | 29.00 | 44.00 | 14.91 | 442.13 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 5/19/1997 | -- | | 29.00 | 44.00 | 16.47 | 440.57 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 5/18/1998 | -- | | 29.00 | 44.00 | 14.69 | 442.35 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 11/2/1998 | -- | | 29.00 | 44.00 | 25.94 | 431.10 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | -- | -- | |
| 6/4/1999 | -- | | 29.00 | 44.00 | 17.38 | 439.66 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 11/11/1999 | P | | 29.00 | 44.00 | 18.63 | 438.41 | <50 | <0.5 | <0.5 | <0.5 | <1 | <3 | 1.03 | -- | |
| 6/20/2000 | -- | | 29.00 | 44.00 | 17.09 | 439.95 | -- | -- | -- | -- | -- | -- | 3.1 | -- | e |
| 8/29/2000 | -- | | 29.00 | 44.00 | 18.20 | 438.84 | -- | -- | -- | -- | -- | -- | 2.66 | -- | e |
| 11/29/2000 | P | | 29.00 | 44.00 | 20.30 | 436.74 | <50.0 | <0.500 | <0.500 | <0.500 | 1.36 | <2.50 | 0.71 | -- | |
| 5/2/2001 | -- | | 29.00 | 44.00 | 22.39 | 434.65 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 8/15/2001 | -- | | 29.00 | 44.00 | 24.97 | 432.07 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 10/5/2001 | P | | 29.00 | 44.00 | 25.09 | 431.95 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <2.5 | 0.78 | -- | |
| 1/21/2002 | -- | | 29.00 | 44.00 | 24.58 | 432.46 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 4/26/2002 | -- | | 29.00 | 44.00 | 24.19 | 432.85 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 10/7/2002 | -- | | 29.00 | 44.00 | 20.13 | 436.91 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 1.8 | -- | |
| 05/01/2003 | -- | | 29.00 | 44.00 | 17.98 | 439.06 | -- | -- | -- | -- | -- | -- | -- | -- | r |
| 10/27/2005 | -- | 459.41 | 29.00 | 44.00 | 18.45 | 440.96 | -- | -- | -- | -- | -- | -- | -- | -- | |
| 04/12/2006 | -- | | 29.00 | 44.00 | 15.18 | 444.23 | -- | -- | -- | -- | -- | -- | -- | -- | |
| 10/31/2006 | -- | | 29.00 | 44.00 | 19.18 | 440.23 | -- | -- | -- | -- | -- | -- | -- | -- | |
| 4/19/2007 | -- | | 29.00 | 44.00 | 23.20 | 436.21 | -- | -- | -- | -- | -- | -- | -- | -- | |
| 10/16/2007 | -- | | 29.00 | 44.00 | 38.28 | 421.13 | -- | -- | -- | -- | -- | -- | -- | -- | |
| 4/24/2008 | -- | | 29.00 | 44.00 | 25.97 | 433.44 | -- | -- | -- | -- | -- | -- | -- | -- | |

Table 2. Summary of Groundwater Monitoring Data: Relative Water Elevations and Laboratory Analyses
ARCO Service Station #6113, 785 East Stanley Blvd., Livermore, CA

| Well ID and Date Monitored | P/NP | TOC (feet) | Top of Screen (ft bgs) | Bottom of Screen (ft bgs) | DTW (feet) | Water Level Elevation (feet) | Concentrations in µg/L | | | | | | DO (mg/L) | pH | Footnote |
|----------------------------|------|------------|------------------------|---------------------------|------------|------------------------------|------------------------|---------|---------|---------------|---------------|-------|-----------|----|----------|
| | | | | | | | GRO/TPHg | Benzene | Toluene | Ethyl-Benzene | Total Xylenes | MTBE | | | |
| MW-1 Cont. | | | | | | | | | | | | | | | |
| 6/18/2008 | -- | 459.41 | 29.00 | 44.00 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | k |
| MW-2 | | | | | | | | | | | | | | | |
| 3/23/1995 | -- | 457.74 | 28.00 | 38.00 | 14.15 | 443.59 | -- | -- | -- | -- | -- | -- | -- | -- | |
| 5/31/1995 | -- | | 28.00 | 38.00 | 14.67 | 443.07 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 8/31/1995 | -- | | 28.00 | 38.00 | 17.24 | 440.50 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 11/28/1995 | -- | | 28.00 | 38.00 | 16.40 | 441.34 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | -- | -- | |
| 2/22/1996 | -- | | 28.00 | 38.00 | 13.55 | 444.19 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 5/23/1996 | -- | | 28.00 | 38.00 | 14.29 | 443.45 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 8/8/1996 | -- | | 28.00 | 38.00 | 16.19 | 441.55 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 11/7/1996 | -- | | 28.00 | 38.00 | 17.50 | 440.24 | 65 | 0.6 | 7.4 | 2.1 | 12 | 5 | -- | -- | |
| 3/27/1997 | -- | | 28.00 | 38.00 | 15.32 | 442.42 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 5/19/1997 | -- | | 28.00 | 38.00 | 16.62 | 441.12 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 5/18/1998 | -- | | 28.00 | 38.00 | 15.12 | 442.62 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 11/2/1998 | -- | | 28.00 | 38.00 | 26.66 | 431.08 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | -- | -- | |
| 6/4/1999 | -- | | 28.00 | 38.00 | 17.74 | 440.00 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 11/11/1999 | P | | 28.00 | 38.00 | 18.75 | 438.99 | <50 | <0.5 | <0.5 | <0.5 | <1 | <3 | 0.82 | -- | |
| 6/20/2000 | -- | | 28.00 | 38.00 | 17.21 | 440.53 | -- | -- | -- | -- | -- | -- | 2.6 | -- | e |
| 8/29/2000 | -- | | 28.00 | 38.00 | 18.25 | 439.49 | -- | -- | -- | -- | -- | -- | 2.65 | -- | e |
| 11/29/2000 | P | | 28.00 | 38.00 | 20.69 | 437.05 | <50.0 | <0.500 | 0.581 | 0.827 | 4.38 | <2.50 | 0.88 | -- | |
| 5/2/2001 | -- | | 28.00 | 38.00 | 22.69 | 435.05 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 8/15/2001 | -- | | 28.00 | 38.00 | 25.15 | 432.59 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 10/5/2001 | P | | 28.00 | 38.00 | 25.22 | 432.52 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <2.5 | 0.8 | -- | |
| 1/21/2002 | -- | | 28.00 | 38.00 | 24.70 | 433.04 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 4/26/2002 | -- | | 28.00 | 38.00 | 24.53 | 433.21 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 10/7/2002 | -- | | 28.00 | 38.00 | 19.45 | 438.29 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 1.5 | -- | |
| 05/01/2003 | -- | | 28.00 | 38.00 | 18.18 | 439.56 | -- | -- | -- | -- | -- | -- | -- | -- | r |
| 10/27/2005 | -- | 460.07 | 28.00 | 38.00 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | t |
| 04/12/2006 | -- | | 28.00 | 38.00 | 15.30 | 444.77 | -- | -- | -- | -- | -- | -- | -- | -- | |
| 10/31/2006 | -- | | 28.00 | 38.00 | 19.48 | 440.59 | -- | -- | -- | -- | -- | -- | -- | -- | |
| 4/19/2007 | -- | | 28.00 | 38.00 | 23.85 | 436.22 | -- | -- | -- | -- | -- | -- | -- | -- | |

Table 2. Summary of Groundwater Monitoring Data: Relative Water Elevations and Laboratory Analyses
ARCO Service Station #6113, 785 East Stanley Blvd., Livermore, CA

| Well ID and Date Monitored | P/NP | TOC (feet) | Top of Screen (ft bgs) | Bottom of Screen (ft bgs) | DTW (feet) | Water Level Elevation (feet) | Concentrations in µg/L | | | | | | DO (mg/L) | pH | Footnote |
|----------------------------|----------|------------|------------------------|---------------------------|--------------|------------------------------|------------------------|-----------------|-----------------|-----------------|----------------|-----------------|------------|-------------|---------------|
| | | | | | | | GRO/TPHg | Benzene | Toluene | Ethyl-Benzene | Total Xylenes | MTBE | | | |
| MW-2 Cont. | | | | | | | | | | | | | | | |
| 10/16/2007 | -- | 460.07 | 28.00 | 38.00 | 36.78 | 423.29 | -- | -- | -- | -- | -- | -- | -- | -- | |
| 4/24/2008 | -- | | 28.00 | 38.00 | 26.38 | 433.69 | -- | -- | -- | -- | -- | -- | -- | -- | |
| 10/15/2008 | -- | | 28.00 | 38.00 | 37.21 | 422.86 | -- | -- | -- | -- | -- | -- | -- | -- | |
| 4/28/2009 | -- | | 28.00 | 38.00 | 33.30 | 426.77 | -- | -- | -- | -- | -- | -- | -- | -- | |
| 11/9/2009 | -- | | 28.00 | 38.00 | 21.87 | 438.20 | -- | -- | -- | -- | -- | -- | -- | -- | |
| 4/12/2010 | -- | | 28.00 | 38.00 | 18.53 | 441.54 | -- | -- | -- | -- | -- | -- | -- | -- | |
| 11/4/2010 | -- | | 28.00 | 38.00 | 19.31 | 440.76 | -- | -- | -- | -- | -- | -- | -- | -- | |
| 5/18/2011 | -- | | 28.00 | 38.00 | 17.72 | 442.35 | -- | -- | -- | -- | -- | -- | -- | -- | |
| 10/20/2011 | -- | | 28.00 | 38.00 | 18.26 | 441.81 | -- | -- | -- | -- | -- | -- | -- | -- | |
| 4/11/2012 | -- | | 28.00 | 38.00 | 21.71 | 438.36 | -- | -- | -- | -- | -- | -- | -- | -- | |
| 10/10/2012 | -- | | 28.00 | 38.00 | 21.57 | 438.50 | -- | -- | -- | -- | -- | -- | -- | -- | |
| 4/9/2013 | -- | | 28.00 | 38.00 | 19.07 | 441.00 | -- | -- | -- | -- | -- | -- | -- | -- | |
| 4/9/2013 | P | | 28.00 | 38.00 | -- | -- | <50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | 3.8 | 7.30 | Top |
| 4/9/2013 | P | | 28.00 | 38.00 | -- | -- | <50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | 3.9 | 7.28 | Middle |
| 4/9/2013 | P | | 28.00 | 38.00 | -- | -- | <50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | 4.1 | 7.31 | Bottom |
| MW-3 | | | | | | | | | | | | | | | |
| 3/23/1995 | -- | 456.97 | 28.50 | 38.50 | 14.13 | 442.84 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 5/31/1995 | -- | | 28.50 | 38.50 | 14.46 | 442.51 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 8/31/1995 | -- | | 28.50 | 38.50 | 17.06 | 439.91 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 11/28/1995 | -- | | 28.50 | 38.50 | 16.27 | 440.70 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | -- | -- | |
| 2/22/1996 | -- | | 28.50 | 38.50 | 13.14 | 443.83 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 5/23/1996 | -- | | 28.50 | 38.50 | 13.95 | 443.02 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 8/8/1996 | -- | | 28.50 | 38.50 | 16.03 | 440.94 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 11/7/1996 | -- | | 28.50 | 38.50 | 17.26 | 439.71 | <50 | <0.5 | 0.9 | <0.5 | 1.5 | <3 | -- | -- | |
| 3/27/1997 | -- | | 28.50 | 38.50 | 14.85 | 442.12 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 5/19/1997 | -- | | 28.50 | 38.50 | 16.40 | 440.57 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 5/18/1998 | -- | | 28.50 | 38.50 | 14.66 | 442.31 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 11/2/1998 | -- | | 28.50 | 38.50 | 25.85 | 431.12 | <1,000 | <10 | <10 | <10 | <10 | 1,700 | -- | -- | |
| 6/4/1999 | -- | | 28.50 | 38.50 | 17.35 | 439.62 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 11/11/1999 | P | | 28.50 | 38.50 | 18.58 | 438.39 | <50 | <0.5 | <0.5 | <0.5 | <1 | <3 | 0.79 | -- | |

Table 2. Summary of Groundwater Monitoring Data: Relative Water Elevations and Laboratory Analyses

ARCO Service Station #6113, 785 East Stanley Blvd., Livermore, CA

| Well ID and Date Monitored | P/NP | TOC (feet) | Top of Screen (ft bgs) | Bottom of Screen (ft bgs) | DTW (feet) | Water Level Elevation (feet) | Concentrations in µg/L | | | | | | DO (mg/L) | pH | Footnote |
|----------------------------|------|------------|------------------------|---------------------------|------------|------------------------------|------------------------|---------|---------|---------------|---------------|-------|-----------|------|----------|
| | | | | | | | GRO/TPHg | Benzene | Toluene | Ethyl-Benzene | Total Xylenes | MTBE | | | |
| MW-3 Cont. | | | | | | | | | | | | | | | |
| 6/20/2000 | -- | 456.97 | 28.50 | 38.50 | 17.03 | 439.94 | -- | -- | -- | -- | -- | -- | 2.8 | -- | e |
| 8/29/2000 | -- | | 28.50 | 38.50 | 18.25 | 438.72 | -- | -- | -- | -- | -- | -- | 3.39 | -- | e |
| 11/29/2000 | -- | | 28.50 | 38.50 | 20.27 | 436.70 | <50.0 | <0.500 | <0.500 | 1.08 | 3.34 | <2.50 | 0.67 | -- | |
| 5/2/2001 | -- | | 28.50 | 38.50 | 22.33 | 434.64 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 8/15/2001 | -- | | 28.50 | 38.50 | 25.03 | 431.94 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 10/5/2001 | P | | 28.50 | 38.50 | 25.17 | 431.80 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <2.5 | 0.79 | -- | |
| 1/21/2002 | -- | | 28.50 | 38.50 | 24.79 | 432.18 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 4/26/2002 | -- | | 28.50 | 38.50 | 24.27 | 432.70 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 10/7/2002 | -- | | 28.50 | 38.50 | 20.20 | 436.77 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 1.2 | -- | |
| 05/01/2003 | -- | | 28.50 | 38.50 | 18.27 | 438.70 | -- | -- | -- | -- | -- | -- | -- | -- | c, e |
| 10/03/2003 | P | | 28.50 | 38.50 | 20.07 | 436.90 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 5.2 | 7.3 | d |
| 04/06/2004 | -- | 459.32 | 28.50 | 38.50 | 17.24 | 442.08 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 10/28/2004 | P | | 28.50 | 38.50 | 19.38 | 439.94 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 8.1 | 7.3 | |
| 04/13/2005 | -- | | 28.50 | 38.50 | 16.02 | 443.30 | -- | -- | -- | -- | -- | -- | -- | -- | |
| 10/27/2005 | -- | | 28.50 | 38.50 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | t |
| 04/12/2006 | -- | | 28.50 | 38.50 | 15.12 | 444.20 | -- | -- | -- | -- | -- | -- | -- | -- | |
| 10/31/2006 | P | | 28.50 | 38.50 | 19.14 | 440.18 | 400 | 5.5 | <0.50 | 5.5 | 9.6 | 22 | -- | 7.64 | |
| 4/19/2007 | -- | | 28.50 | 38.50 | 23.07 | 436.25 | -- | -- | -- | -- | -- | -- | -- | -- | |
| 10/16/2007 | -- | | 28.50 | 38.50 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | f |
| 4/24/2008 | -- | | 28.50 | 38.50 | 25.65 | 433.67 | -- | -- | -- | -- | -- | -- | -- | -- | |
| 9/10/2008 | -- | | 28.50 | 38.50 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | k |
| MW-4 | | | | | | | | | | | | | | | |
| 3/23/1995 | -- | 456.55 | 21.00 | 27.00 | 15.39 | 441.16 | 210 | 2.1 | 0.6 | 0.8 | 2.1 | -- | -- | -- | |
| 5/31/1995 | -- | | 21.00 | 27.00 | 15.32 | 441.23 | 190 | 1.6 | <0.5 | 0.7 | 0.9 | -- | -- | -- | |
| 8/31/1995 | -- | | 21.00 | 27.00 | 17.86 | 438.69 | 160 | 1.2 | 0.7 | <0.5 | <2 | <3 | -- | -- | |
| 11/28/1995 | -- | | 21.00 | 27.00 | 17.18 | 439.37 | 150 | 0.7 | <0.5 | 0.7 | 1.4 | <3 | -- | -- | |
| 2/22/1996 | -- | | 21.00 | 27.00 | 14.80 | 441.75 | 100 | <0.5 | <0.5 | <0.6 | 0.8 | <3 | -- | -- | |
| 5/23/1996 | -- | | 21.00 | 27.00 | 14.43 | 442.12 | 86 | <0.5 | <0.5 | <0.5 | <0.7 | <3 | -- | -- | |
| 8/8/1996 | -- | | 21.00 | 27.00 | 16.80 | 439.75 | 98 | <0.5 | <0.5 | <0.5 | 1.3 | <3 | -- | -- | |
| 11/7/1996 | -- | | 21.00 | 27.00 | 17.90 | 438.65 | 140 | <0.5 | <0.5 | <0.9 | 1.3 | <3 | -- | -- | |

Table 2. Summary of Groundwater Monitoring Data: Relative Water Elevations and Laboratory Analyses

ARCO Service Station #6113, 785 East Stanley Blvd., Livermore, CA

| Well ID and Date Monitored | P/NP | TOC (feet) | Top of Screen (ft bgs) | Bottom of Screen (ft bgs) | DTW (feet) | Water Level Elevation (feet) | Concentrations in µg/L | | | | | | DO (mg/L) | pH | Footnote |
|----------------------------|------|------------|------------------------|---------------------------|------------|------------------------------|------------------------|---------|---------|---------------|---------------|-----------|-----------|------|----------|
| | | | | | | | GRO/TPHg | Benzene | Toluene | Ethyl-Benzene | Total Xylenes | MTBE | | | |
| MW-4 Cont. | | | | | | | | | | | | | | | |
| 3/27/1997 | -- | 456.55 | 21.00 | 27.00 | 15.22 | 441.33 | <50 | 1.1 | <0.5 | <0.5 | 1.6 | <3 | -- | -- | |
| 5/19/1997 | -- | | 21.00 | 27.00 | 16.98 | 439.57 | 62 | <0.5 | <0.5 | <0.5 | 0.6 | <3 | -- | -- | |
| 5/18/1998 | -- | | 21.00 | 27.00 | 14.99 | 441.56 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | 64 | -- | -- | |
| 11/2/1998 | -- | | 21.00 | 27.00 | 25.29 | 431.26 | 74 | <0.5 | <0.5 | <0.5 | <0.5 | 96 | -- | -- | |
| 6/4/1999 | P | | 21.00 | 27.00 | 17.95 | 438.60 | 100 | <0.5 | <0.5 | <0.5 | <0.5 | 38 | -- | -- | |
| 11/11/1999 | P | | 21.00 | 27.00 | 19.25 | 437.30 | 88 | <0.5 | <0.5 | <0.5 | <1 | 10 | 0.77 | -- | |
| 6/20/2000 | -- | | 21.00 | 27.00 | 17.79 | 438.76 | <50.0 | <0.500 | <0.500 | <0.500 | <0.500 | 62.3 | -- | -- | q |
| 6/20/2000 | P | | 21.00 | 27.00 | 17.79 | 438.76 | <50.0 | <0.500 | <0.500 | <0.500 | <0.500 | 82.4 | 1.3 | -- | |
| 8/29/2000 | P | | 21.00 | 27.00 | 18.90 | 437.65 | 56 | <0.500 | <0.500 | <0.500 | <0.500 | 47.9 | 0.97 | -- | |
| 11/29/2000 | P | | 21.00 | 27.00 | 20.50 | 436.05 | <50.0 | <0.500 | <0.500 | <0.500 | <0.500 | 9.88/10.4 | 0.59 | -- | s |
| 5/2/2001 | -- | | 21.00 | 27.00 | 22.65 | 433.90 | <50.0 | <0.500 | <0.500 | <0.500 | <0.500 | 59.4/68.4 | -- | -- | s |
| 5/2/2001 | P | | 21.00 | 27.00 | 22.65 | 433.90 | <50.0 | <0.500 | <0.500 | <0.500 | <0.500 | 61.1/70.9 | 0.74 | -- | q, s |
| 8/15/2001 | -- | | 21.00 | 27.00 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | f |
| 10/5/2001 | -- | | 21.00 | 27.00 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | f |
| 1/21/2002 | -- | | 21.00 | 27.00 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | f |
| 4/26/2002 | P | | 21.00 | 27.00 | 20.15 | 436.40 | 110 | <0.50 | <0.50 | <0.50 | <0.50 | 150 | 0.21 | -- | |
| 10/7/2002 | P | | 21.00 | 27.00 | 20.76 | 435.79 | 96 | <0.50 | <0.50 | 0.54 | <0.50 | 260 | 1.0 | -- | a |
| 05/01/2003 | P | | 21.00 | 27.00 | 19.67 | 436.88 | 120 | 1.3 | <0.50 | <0.50 | <0.50 | 86 | 1.7 | -- | c |
| 10/03/2003 | P | | 21.00 | 27.00 | 20.23 | 436.32 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 22 | 13.5 | 6.8 | d |
| 04/06/2004 | P | 458.88 | 21.00 | 27.00 | 18.13 | 440.75 | 96 | <0.50 | <0.50 | <0.50 | <0.50 | 17 | 1.6 | 6.8 | |
| 10/28/2004 | P | | 21.00 | 27.00 | 20.02 | 438.86 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 4.5 | 1.2 | 6.7 | |
| 04/13/2005 | P | | 21.00 | 27.00 | 16.68 | 442.20 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 2.8 | 0.8 | 6.7 | |
| 10/27/2005 | P | | 21.00 | 27.00 | 19.05 | 439.83 | 400 | 14 | <0.50 | 11 | 1.8 | 22 | 1.0 | 6.9 | |
| 04/12/2006 | P | | 21.00 | 27.00 | 15.47 | 443.41 | 100 | <0.50 | <0.50 | <0.50 | <0.50 | 1.9 | 1.6 | 7.2 | |
| 10/31/2006 | P | | 21.00 | 27.00 | 19.67 | 439.21 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | -- | 7.63 | |
| 4/19/2007 | NP | | 21.00 | 27.00 | 22.72 | 436.16 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 2.92 | 7.36 | |
| 10/16/2007 | -- | | 21.00 | 27.00 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | f |
| 4/24/2008 | -- | | 21.00 | 27.00 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | f |
| 10/15/2008 | -- | | 21.00 | 27.00 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | f |
| 4/28/2009 | -- | | 21.00 | 27.00 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | f |

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ARCO Service Station #6113, 785 East Stanley Blvd., Livermore, CA

| Well ID and Date Monitored | P/NP | TOC (feet) | Top of Screen (ft bgs) | Bottom of Screen (ft bgs) | DTW (feet) | Water Level Elevation (feet) | Concentrations in µg/L | | | | | | DO (mg/L) | pH | Footnote |
|----------------------------|----------|------------|------------------------|---------------------------|--------------|------------------------------|------------------------|-----------------|-----------------|-----------------|----------------|-----------------|------------|-------------|----------|
| | | | | | | | GRO/TPHg | Benzene | Toluene | Ethyl-Benzene | Total Xylenes | MTBE | | | |
| MW-4 Cont. | | | | | | | | | | | | | | | |
| 11/9/2009 | NP | 458.88 | 21.00 | 27.00 | 22.73 | 436.15 | 270 | 4.6 | <0.50 | <0.50 | <0.50 | 3.1 | -- | -- | x (GRO) |
| 4/12/2010 | P | | 21.00 | 27.00 | 19.25 | 439.63 | 1,200 | 2.0 | <0.50 | <0.50 | <0.50 | 2.7 | 0.81 | 6.87 | |
| 11/4/2010 | P | | 21.00 | 27.00 | 20.40 | 438.48 | 330 | <0.50 | <0.50 | <0.50 | <0.50 | 1.7 | 0.44 | 6.5 | x (GRO) |
| 5/18/2011 | P | | 21.00 | 27.00 | 17.84 | 441.04 | 290 | <0.50 | <0.50 | <0.50 | <0.50 | 1.2 | 1.04 | 7.1 | x (GRO) |
| 10/20/2011 | P | | 21.00 | 27.00 | 19.33 | 439.55 | 120 | <0.50 | <0.50 | <0.50 | <0.50 | 0.59 | 0.95 | 7.23 | x (GRO) |
| 4/11/2012 | P | | 21.00 | 27.00 | 21.33 | 437.55 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 0.59 | 0.22 | 7.11 | |
| 10/10/2012 | P | | 21.00 | 27.00 | 21.50 | 437.38 | <50 | <0.50 | <0.50 | <0.50 | <1.0 | 0.51 | 1.39 | 7.29 | |
| 4/9/2013 | P | | 21.00 | 27.00 | 19.32 | 439.56 | <50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | 3.8 | 7.13 | |
| MW-5 | | | | | | | | | | | | | | | |
| 3/23/1995 | -- | 455.84 | 43.00 | 63.00 | 13.97 | 441.87 | 68 | 4.2 | 3.4 | 2.3 | 12 | -- | -- | -- | |
| 5/31/1995 | -- | | 43.00 | 63.00 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | g |
| 8/31/1995 | -- | | 43.00 | 63.00 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | g |
| 11/28/1995 | -- | | 43.00 | 63.00 | 16.46 | 439.38 | 960 | 41 | 24 | 38 | 210 | <5 | -- | -- | |
| 2/22/1996 | -- | | 43.00 | 63.00 | 13.34 | 442.50 | -- | -- | -- | -- | -- | -- | -- | -- | f |
| 5/23/1996 | -- | | 43.00 | 63.00 | 14.36 | 441.48 | 7,100 | 440 | 180 | 270 | 1,700 | <50 | -- | -- | |
| 8/8/1996 | -- | | 43.00 | 63.00 | 16.38 | 439.46 | -- | -- | -- | -- | -- | -- | -- | -- | f |
| 11/7/1996 | -- | | 43.00 | 63.00 | 17.26 | 438.58 | 5,600 | 230 | 86 | 210 | 1,100 | <80 | -- | -- | |
| 3/27/1997 | -- | | 43.00 | 63.00 | 15.95 | 439.89 | -- | -- | -- | -- | -- | -- | -- | -- | f |
| 5/19/1997 | -- | | 43.00 | 63.00 | 16.64 | 439.20 | 7,600 | 480 | 140 | 400 | 1,200 | <40 | -- | -- | |
| 5/18/1998 | -- | | 43.00 | 63.00 | 14.75 | 441.09 | 990 | 46 | 13 | 45 | 180 | 4 | -- | -- | |
| 11/2/1998 | -- | | 43.00 | 63.00 | 27.83 | 428.01 | 14,000 | 690 | 140 | 550 | 2,200 | 100 | -- | -- | |
| 6/4/1999 | P | | 43.00 | 63.00 | 17.47 | 438.37 | 8,300 | 690 | 370 | 90 | 440 | 1,400 | -- | -- | |
| 11/11/1999 | P | | 43.00 | 63.00 | 18.80 | 437.04 | 18,000 | 900 | 190 | 1,100 | 3,200 | 72 | 0.86 | -- | |
| 6/20/2000 | P | | 43.00 | 63.00 | 17.14 | 438.70 | 10,200 | 618 | 122 | 832 | 2,020 | <50.0 | 1.6 | -- | |
| 8/29/2000 | P | | 43.00 | 63.00 | 18.60 | 437.24 | 12,300 | 436 | 166 | 711 | 2,120 | 517 | 0.79 | -- | |
| 11/29/2000 | P | | 43.00 | 63.00 | 20.57 | 435.27 | 26,000 | 491 | 149 | 1,090 | 3,810 | 671/<20.0 | 0.51 | -- | s |
| 5/2/2001 | -- | | 43.00 | 63.00 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | k |
| MW-6 | | | | | | | | | | | | | | | |
| 3/23/1995 | -- | 454.93 | 48.00 | 68.00 | 13.38 | 441.55 | <50 | 1.5 | <0.5 | <0.5 | 0.9 | -- | -- | -- | |

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|----------------------------|------|------------|------------------------|---------------------------|------------|------------------------------|------------------------|---------|---------|---------------|---------------|-------------|-----------|-----|----------|
| | | | | | | | GRO/TPHg | Benzene | Toluene | Ethyl-Benzene | Total Xylenes | MTBE | | | |
| MW-6 Cont. | | | | | | | | | | | | | | | |
| 5/31/1995 | -- | 454.93 | 48.00 | 68.00 | 13.96 | 440.97 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | -- | -- | -- | |
| 8/31/1995 | -- | | 48.00 | 68.00 | 16.71 | 438.22 | 150 | 9 | 1.8 | 4 | 12 | <3 | -- | -- | |
| 11/28/1995 | -- | | 48.00 | 68.00 | 15.65 | 439.28 | <50 | 0.6 | <0.5 | <0.5 | 0.8 | <3 | -- | -- | |
| 2/22/1996 | -- | | 48.00 | 68.00 | 12.53 | 442.40 | <50 | 1.9 | <0.5 | 0.8 | 2.1 | <3 | -- | -- | |
| 5/23/1996 | -- | | 48.00 | 68.00 | 13.24 | 441.69 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | -- | -- | |
| 8/8/1996 | -- | | 48.00 | 68.00 | 16.65 | 438.28 | <50 | 0.5 | <0.5 | <0.5 | 0.5 | <3 | -- | -- | |
| 11/7/1996 | -- | | 48.00 | 68.00 | 16.65 | 438.28 | 110 | 5.3 | 1.3 | 3.1 | 6.6 | <3 | -- | -- | |
| 3/27/1997 | -- | | 48.00 | 68.00 | 14.25 | 440.68 | <50 | 2.3 | <0.5 | 0.9 | 3.5 | 4 | -- | -- | |
| 5/19/1997 | -- | | 48.00 | 68.00 | 15.87 | 439.06 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | -- | -- | |
| 5/18/1998 | -- | | 48.00 | 68.00 | 14.00 | 440.93 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | -- | -- | |
| 11/2/1998 | -- | | 48.00 | 68.00 | 24.95 | 429.98 | <50 | 1.2 | <0.5 | <0.5 | <0.5 | 3 | -- | -- | |
| 6/4/1999 | P | | 48.00 | 68.00 | 16.68 | 438.25 | 310 | 41 | 3.8 | 11 | 19 | 33 | -- | -- | |
| 11/11/1999 | P | | 48.00 | 68.00 | 16.12 | 438.81 | <50 | 0.5 | <0.5 | <0.5 | <1 | <3 | 0.92 | -- | |
| 6/20/2000 | P | | 48.00 | 68.00 | 16.63 | 438.30 | <50.0 | <0.500 | <0.500 | <0.500 | <0.500 | 17.3 | 1.9 | -- | |
| 8/29/2000 | -- | | 48.00 | 68.00 | 17.91 | 437.02 | <50.0 | <0.500 | <0.500 | <0.500 | <0.500 | <2.50 | -- | -- | q |
| 8/29/2000 | P | | 48.00 | 68.00 | 17.91 | 437.02 | <50.0 | <0.500 | 0.551 | <0.500 | <0.500 | <2.50 | 1.67 | -- | |
| 11/29/2000 | P | | 48.00 | 68.00 | 20.30 | 434.63 | <50.0 | <0.500 | <0.500 | <0.500 | 1.03 | <2.50 | 0.79 | -- | |
| 5/2/2001 | P | | 48.00 | 68.00 | 22.20 | 432.73 | 3,230 | 1,300 | 33.6 | 89.4 | 136 | 1,810/2,310 | 0.95 | -- | s |
| 8/15/2001 | P | | 48.00 | 68.00 | 27.95 | 426.98 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 21/25 | 0.63 | -- | s |
| 10/5/2001 | P | | 48.00 | 68.00 | 28.05 | 426.88 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <2.5 | 0.85 | -- | |
| 1/21/2002 | P | | 48.00 | 68.00 | 26.81 | 428.12 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <5.0 | 0.91 | -- | |
| 4/26/2002 | P | | 48.00 | 68.00 | 26.27 | 428.66 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 17 | 0.75 | -- | |
| 10/7/2002 | P | | 48.00 | 68.00 | 20.05 | 434.88 | 60 | 13 | 1.7 | 1.7 | 3.5 | 8 | 2.8 | -- | a |
| 05/01/2003 | P | | 48.00 | 68.00 | 17.62 | 437.31 | <50 | 5.4 | <0.50 | 0.63 | 1.3 | 12 | 1.6 | -- | c |
| 10/03/2003 | P | | 48.00 | 68.00 | 19.62 | 435.31 | 80 | 2.6 | <2.5 | <2.5 | <2.5 | 120 | 5.1 | 6.9 | d |
| 04/06/2004 | P | 457.24 | 48.00 | 68.00 | 16.88 | 440.36 | <2,500 | <25 | <25 | <25 | <25 | 1,700 | 4.1 | 7.0 | |
| 10/28/2004 | P | | 48.00 | 68.00 | 19.20 | 438.04 | 3,200 | <25 | <25 | <25 | <25 | 3,100 | 6.8 | 6.9 | |
| 04/13/2005 | P | | 48.00 | 68.00 | 15.15 | 442.09 | <5,000 | <50 | <50 | <50 | <50 | 3,900 | 3.9 | 7.0 | |
| 10/27/2005 | P | | 48.00 | 68.00 | 18.12 | 439.12 | <5,000 | <50 | <50 | <50 | <50 | 2,900 | 3.15 | 7.0 | |
| 04/12/2006 | P | | 48.00 | 68.00 | 15.32 | 441.92 | <5,000 | <50 | <50 | <50 | <50 | 3,400 | 4.3 | 7.6 | |

Table 2. Summary of Groundwater Monitoring Data: Relative Water Elevations and Laboratory Analyses

ARCO Service Station #6113, 785 East Stanley Blvd., Livermore, CA

| Well ID and Date Monitored | P/NP | TOC (feet) | Top of Screen (ft bgs) | Bottom of Screen (ft bgs) | DTW (feet) | Water Level Elevation (feet) | Concentrations in µg/L | | | | | | DO (mg/L) | pH | Footnote |
|----------------------------|------|------------|------------------------|---------------------------|------------|------------------------------|------------------------|---------|---------|---------------|---------------|------------|-----------|-------|-------------|
| | | | | | | | GRO/TPHg | Benzene | Toluene | Ethyl-Benzene | Total Xylenes | MTBE | | | |
| MW-6 Cont. | | | | | | | | | | | | | | | |
| 10/31/2006 | P | 457.24 | 48.00 | 68.00 | 18.85 | 438.39 | 2,700 | <25 | <25 | <25 | <25 | 3,400 | -- | 10.36 | u, v |
| 4/19/2007 | P | | 48.00 | 68.00 | 22.25 | 434.99 | 970 | <25 | <25 | <25 | <25 | 2,200 | 5.54 | 10.52 | v |
| 10/16/2007 | P | | 48.00 | 68.00 | 37.17 | 420.07 | 2,700 | 240 | <25 | 50 | 55 | 2,600 | 4.56 | 10.26 | v, w (MTBE) |
| 4/24/2008 | P | | 48.00 | 68.00 | 24.55 | 432.69 | 15,000 | 5,300 | 200 | 620 | 470 | 4,200 | 2.15 | 6.90 | |
| 9/10/2008 | -- | | 48.00 | 68.00 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | k |
| MW-7 | | | | | | | | | | | | | | | |
| 3/23/1995 | -- | 454.92 | 48.00 | 68.00 | 13.29 | 441.63 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | -- | -- | -- | |
| 5/31/1995 | -- | | 48.00 | 68.00 | 13.72 | 441.20 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | -- | -- | -- | |
| 8/31/1995 | -- | | 48.00 | 68.00 | 16.53 | 438.39 | <50 | <0.5 | <0.5 | <0.5 | 1.2 | <3 | -- | -- | |
| 11/28/1995 | -- | | 48.00 | 68.00 | 15.50 | 439.42 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | -- | -- | |
| 2/22/1996 | -- | | 48.00 | 68.00 | 12.30 | 442.62 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | -- | -- | |
| 5/23/1996 | -- | | 48.00 | 68.00 | 13.02 | 441.90 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | -- | -- | |
| 8/8/1996 | -- | | 48.00 | 68.00 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | m |
| 11/7/1996 | -- | | 48.00 | 68.00 | 16.50 | 438.42 | <50 | <0.5 | <0.5 | <0.5 | 0.8 | <3 | -- | -- | |
| 3/27/1997 | -- | | 48.00 | 68.00 | 14.22 | 440.70 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | -- | -- | |
| 5/19/1997 | -- | | 48.00 | 68.00 | 15.74 | 439.18 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | -- | -- | |
| 5/18/1998 | -- | | 48.00 | 68.00 | 13.82 | 441.10 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | -- | -- | |
| 11/2/1998 | -- | | 48.00 | 68.00 | 24.80 | 430.12 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | 4 | -- | -- | |
| 6/4/1999 | P | | 48.00 | 68.00 | 16.55 | 438.37 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | -- | -- | |
| 11/11/1999 | P | | 48.00 | 68.00 | 18.02 | 436.90 | <50 | <0.5 | <0.5 | <0.5 | <1 | <3 | 1.03 | -- | |
| 6/20/2000 | P | | 48.00 | 68.00 | 16.50 | 438.42 | <50.0 | <0.500 | <0.500 | <0.500 | <0.500 | <2.50 | 1.3 | -- | |
| 8/29/2000 | P | | 48.00 | 68.00 | 17.80 | 437.12 | <50.0 | <0.500 | <0.500 | <0.500 | <0.500 | <2.50 | 1.67 | -- | |
| 11/29/2000 | P | | 48.00 | 68.00 | 19.61 | 435.31 | <50.0 | <0.500 | <0.500 | <0.500 | <0.500 | <2.50 | 0.51 | -- | |
| 5/2/2001 | P | | 48.00 | 68.00 | 22.05 | 432.87 | <50.0 | <0.500 | <0.500 | <0.500 | <0.500 | <2.50/2.66 | 0.9 | -- | s |
| 8/15/2001 | P | | 48.00 | 68.00 | 27.55 | 427.37 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <2.5 | 0.84 | -- | |
| 10/5/2001 | P | | 48.00 | 68.00 | 27.59 | 427.33 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <2.5 | 0.62 | -- | |
| 1/21/2002 | P | | 48.00 | 68.00 | 26.50 | 428.42 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 15/21 | 0.65 | -- | s |
| 4/26/2002 | P | | 48.00 | 68.00 | 26.22 | 428.70 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 18 | 0.61 | -- | |
| 10/7/2002 | -- | | 48.00 | 68.00 | 20.04 | 434.88 | <50 | 1.2 | <0.50 | <0.50 | 0.77 | 41 | 4.8 | -- | |
| 05/01/2003 | P | | 48.00 | 68.00 | 17.47 | 437.45 | <50 | <0.50 | <0.50 | <0.50 | 0.5 | 43 | 2.7 | -- | c |

Table 2. Summary of Groundwater Monitoring Data: Relative Water Elevations and Laboratory Analyses

ARCO Service Station #6113, 785 East Stanley Blvd., Livermore, CA

| Well ID and Date Monitored | P/NP | TOC (feet) | Top of Screen (ft bgs) | Bottom of Screen (ft bgs) | DTW (feet) | Water Level Elevation (feet) | Concentrations in µg/L | | | | | | DO (mg/L) | pH | Footnote |
|----------------------------|----------|------------|------------------------|---------------------------|--------------|------------------------------|------------------------|-----------------|-----------------|-----------------|----------------|-----------------|------------|-------------|---------------|
| | | | | | | | GRO/TPHg | Benzene | Toluene | Ethyl-Benzene | Total Xylenes | MTBE | | | |
| MW-7 Cont. | | | | | | | | | | | | | | | |
| 10/03/2003 | P | 454.92 | 48.00 | 68.00 | 19.55 | 435.37 | <50 | <1.0 | <1.0 | <1.0 | <1.0 | 49 | 5.7 | 7.1 | d |
| 04/06/2004 | P | 457.17 | 48.00 | 68.00 | 16.60 | 440.57 | <50 | <0.50 | <0.50 | <0.50 | 0.75 | 0.76 | 0.7 | 7.0 | |
| 10/28/2004 | P | | 48.00 | 68.00 | 19.17 | 438.00 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 14 | 6.7 | 6.9 | |
| 04/13/2005 | P | | 48.00 | 68.00 | 14.84 | 442.33 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 1.7 | 2.3 | 6.9 | |
| 10/27/2005 | P | | 48.00 | 68.00 | 17.38 | 439.79 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 2.3 | 2.16 | 7.0 | |
| 04/12/2006 | P | | 48.00 | 68.00 | 14.84 | 442.33 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 1.1 | 3.0 | 7.2 | |
| 10/31/2006 | P | | 48.00 | 68.00 | 18.74 | 438.43 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | -- | 7.55 | |
| 4/19/2007 | P | | 48.00 | 68.00 | 22.11 | 435.06 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 4.37 | 7.60 | |
| 10/16/2007 | P | | 48.00 | 68.00 | 37.23 | 419.94 | 140 | 68 | 6.8 | <0.50 | 5.0 | 24 | 4.87 | 8.02 | |
| 4/24/2008 | P | | 48.00 | 68.00 | 24.47 | 432.70 | <50 | <0.50 | 0.99 | <0.50 | <0.50 | 22 | 1.96 | 7.24 | |
| 10/15/2008 | P | | 48.00 | 68.00 | 43.40 | 413.77 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 8.2 | 2.31 | 7.14 | |
| 4/28/2009 | P | | 48.00 | 68.00 | 32.13 | 425.04 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 3.78 | 6.93 | |
| 11/9/2009 | P | | 48.00 | 68.00 | 22.15 | 435.02 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 1.3 | 6.8 | |
| 4/12/2010 | P | | 48.00 | 68.00 | 18.49 | 438.68 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | -- | 7.55 | |
| 11/4/2010 | P | | 48.00 | 68.00 | 19.90 | 437.27 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 0.59 | 4.15 | 8.4 | |
| 5/18/2011 | P | | 48.00 | 68.00 | 16.96 | 440.21 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 3.9 | 4.45 | 10.6 | |
| 10/20/2011 | P | | 48.00 | 68.00 | 18.38 | 438.79 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 4.37 | 9.02 | |
| 4/11/2012 | P | | 48.00 | 68.00 | 20.66 | 436.51 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 0.33 | 7.50 | |
| 10/10/2012 | P | | 48.00 | 68.00 | 21.01 | 436.16 | <50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | 5.87 | 8.92 | |
| 4/10/2013 | -- | | 48.00 | 68.00 | 18.71 | 438.46 | -- | -- | -- | -- | -- | -- | -- | -- | |
| 4/10/2013 | P | | 48.00 | 68.00 | -- | -- | <50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | 7.3 | 8.30 | Top |
| 4/10/2013 | P | | 48.00 | 68.00 | -- | -- | <50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | 3.0 | 7.55 | Middle |
| 4/10/2013 | P | | 48.00 | 68.00 | -- | -- | <50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | 3.2 | 7.51 | Bottom |
| MW-8 | | | | | | | | | | | | | | | |
| 3/23/1995 | -- | 456.97 | 47.00 | 67.00 | 11.55 | 445.42 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 5/31/1995 | -- | | 47.00 | 67.00 | 12.37 | 444.60 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 8/31/1995 | -- | | 47.00 | 67.00 | 15.68 | 441.29 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 11/28/1995 | -- | | 47.00 | 67.00 | 14.15 | 442.82 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | -- | -- | |
| 2/22/1996 | -- | | 47.00 | 67.00 | 10.97 | 446.00 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 5/23/1996 | -- | | 47.00 | 67.00 | 11.90 | 445.07 | -- | -- | -- | -- | -- | -- | -- | -- | e |

Table 2. Summary of Groundwater Monitoring Data: Relative Water Elevations and Laboratory Analyses

ARCO Service Station #6113, 785 East Stanley Blvd., Livermore, CA

| Well ID and Date Monitored | P/NP | TOC (feet) | Top of Screen (ft bgs) | Bottom of Screen (ft bgs) | DTW (feet) | Water Level Elevation (feet) | Concentrations in µg/L | | | | | | DO (mg/L) | pH | Footnote |
|----------------------------|------|------------|------------------------|---------------------------|------------|------------------------------|------------------------|---------|---------|---------------|---------------|-------|-----------|----|----------|
| | | | | | | | GRO/TPHg | Benzene | Toluene | Ethyl-Benzene | Total Xylenes | MTBE | | | |
| MW-8 Cont. | | | | | | | | | | | | | | | |
| 8/8/1996 | -- | 456.97 | 47.00 | 67.00 | 13.85 | 443.12 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 11/7/1996 | -- | | 47.00 | 67.00 | 15.08 | 441.89 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | -- | -- | |
| 3/27/1997 | -- | | 47.00 | 67.00 | 12.96 | 444.01 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 5/19/1997 | -- | | 47.00 | 67.00 | 14.35 | 442.62 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 5/18/1998 | -- | | 47.00 | 67.00 | 12.97 | 444.00 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 11/2/1998 | -- | | 47.00 | 67.00 | 26.01 | 430.96 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | -- | -- | |
| 6/4/1999 | -- | | 47.00 | 67.00 | 15.53 | 441.44 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 11/11/1999 | P | | 47.00 | 67.00 | 16.67 | 440.30 | <50 | <0.5 | <0.5 | <0.5 | <1 | <3 | 1.01 | -- | |
| 6/20/2000 | -- | | 47.00 | 67.00 | 15.29 | 441.68 | -- | -- | -- | -- | -- | -- | 2.4 | -- | e |
| 8/29/2000 | -- | | 47.00 | 67.00 | 16.59 | 440.38 | -- | -- | -- | -- | -- | -- | 3.37 | -- | e |
| 11/29/2000 | P | | 47.00 | 67.00 | 19.80 | 437.17 | <50.0 | <0.500 | <0.500 | <0.500 | 0.772 | <2.50 | 1.35 | -- | |
| 5/2/2001 | -- | | 47.00 | 67.00 | 22.12 | 434.85 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 8/15/2001 | -- | | 47.00 | 67.00 | 27.63 | 429.34 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 10/5/2001 | P | | 47.00 | 67.00 | 27.65 | 429.32 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <2.5 | 1.07 | -- | |
| 1/21/2002 | -- | | 47.00 | 67.00 | 26.73 | 430.24 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 4/26/2002 | -- | | 47.00 | 67.00 | 26.39 | 430.58 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 10/7/2002 | -- | | 47.00 | 67.00 | 18.43 | 438.54 | <50 | <0.50 | <0.50 | <0.50 | 0.86 | <0.50 | 4.2 | -- | |
| 05/01/2003 | -- | | 47.00 | 67.00 | 16.47 | 440.50 | -- | -- | -- | -- | -- | -- | -- | -- | r |
| 10/27/2005 | -- | | 47.00 | 67.00 | 17.14 | 439.83 | -- | -- | -- | -- | -- | -- | -- | -- | |
| 04/12/2006 | -- | | 47.00 | 67.00 | 14.08 | 442.89 | -- | -- | -- | -- | -- | -- | -- | -- | |
| 10/31/2006 | -- | | 47.00 | 67.00 | 18.12 | 438.85 | -- | -- | -- | -- | -- | -- | -- | -- | |
| 4/19/2007 | -- | | 47.00 | 67.00 | 22.39 | 434.58 | -- | -- | -- | -- | -- | -- | -- | -- | |
| 10/16/2007 | -- | | 47.00 | 67.00 | 38.18 | 418.79 | -- | -- | -- | -- | -- | -- | -- | -- | |
| 4/24/2008 | -- | | 47.00 | 67.00 | 25.43 | 431.54 | -- | -- | -- | -- | -- | -- | -- | -- | |
| 6/18/2008 | -- | | 47.00 | 67.00 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | k |
| MW-9 | | | | | | | | | | | | | | | |
| 3/23/1995 | -- | 456.18 | 48.00 | 68.00 | 13.18 | 443.00 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 5/31/1995 | -- | | 48.00 | 68.00 | 12.66 | 443.52 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 8/31/1995 | -- | | 48.00 | 68.00 | 14.40 | 441.78 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 11/28/1995 | -- | | 48.00 | 68.00 | 14.26 | 441.92 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | -- | -- | |

Table 2. Summary of Groundwater Monitoring Data: Relative Water Elevations and Laboratory Analyses

ARCO Service Station #61113, 785 East Stanley Blvd., Livermore, CA

| Well ID and Date Monitored | P/NP | TOC (feet) | Top of Screen (ft bgs) | Bottom of Screen (ft bgs) | DTW (feet) | Water Level Elevation (feet) | Concentrations in µg/L | | | | | | DO (mg/L) | pH | Footnote |
|----------------------------|------|------------|------------------------|---------------------------|------------|------------------------------|------------------------|---------|---------|---------------|---------------|-------|-----------|------|----------|
| | | | | | | | GRO/TPHg | Benzene | Toluene | Ethyl-Benzene | Total Xylenes | MTBE | | | |
| MW-9 Cont. | | | | | | | | | | | | | | | |
| 2/22/1996 | -- | 456.18 | 48.00 | 68.00 | 12.05 | 444.13 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 5/23/1996 | -- | | 48.00 | 68.00 | 12.07 | 444.11 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 8/8/1996 | -- | | 48.00 | 68.00 | 14.12 | 442.06 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 11/7/1996 | -- | | 48.00 | 68.00 | 15.42 | 440.76 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | -- | -- | |
| 3/27/1997 | -- | | 48.00 | 68.00 | 13.01 | 443.17 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 5/19/1997 | -- | | 48.00 | 68.00 | 14.60 | 441.58 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 5/18/1998 | -- | | 48.00 | 68.00 | 12.60 | 443.58 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 11/2/1998 | -- | | 48.00 | 68.00 | 25.08 | 431.10 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 6/4/1999 | P | | 48.00 | 68.00 | 15.87 | 440.31 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | -- | -- | |
| 11/11/1999 | P | | 48.00 | 68.00 | 17.02 | 439.16 | <50 | <0.5 | <0.5 | <0.5 | <1 | <3 | 0.96 | -- | |
| 6/20/2000 | -- | | 48.00 | 68.00 | 15.54 | 440.64 | -- | -- | -- | -- | -- | -- | 2.1 | -- | e |
| 8/29/2000 | -- | | 48.00 | 68.00 | 16.81 | 439.37 | -- | -- | -- | -- | -- | -- | 2.59 | -- | e |
| 11/29/2000 | P | | 48.00 | 68.00 | 18.81 | 437.37 | <50.0 | <0.500 | <0.500 | <0.500 | <0.500 | <2.50 | 0.81 | -- | |
| 5/2/2001 | -- | | 48.00 | 68.00 | 22.09 | 434.09 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 8/15/2001 | -- | | 48.00 | 68.00 | 27.59 | 428.59 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 10/5/2001 | -- | | 48.00 | 68.00 | 27.63 | 428.55 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <2.5 | -- | -- | q |
| 10/5/2001 | P | | 48.00 | 68.00 | 27.63 | 428.55 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <2.5 | 0.93 | -- | |
| 1/21/2002 | -- | | 48.00 | 68.00 | 26.77 | 429.41 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 4/26/2002 | -- | | 48.00 | 68.00 | 26.41 | 429.77 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 10/7/2002 | P | | 48.00 | 68.00 | 18.85 | 437.33 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 2.6 | -- | |
| 05/01/2003 | -- | | 48.00 | 68.00 | 17.84 | 438.34 | -- | -- | -- | -- | -- | -- | -- | -- | c, e |
| 10/03/2003 | P | | 48.00 | 68.00 | 18.69 | 437.49 | <50 | 1.1 | 0.57 | <0.50 | <0.50 | <0.50 | 4.9 | 6.8 | d |
| 04/06/2004 | -- | 458.55 | 48.00 | 68.00 | 16.08 | 442.47 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 10/28/2004 | P | | 48.00 | 68.00 | 18.35 | 440.20 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 6.8 | 6.9 | |
| 04/13/2005 | -- | | 48.00 | 68.00 | 14.09 | 444.46 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 10/27/2005 | P | | 48.00 | 68.00 | 17.41 | 441.14 | <50 | 0.51 | <0.50 | <0.50 | <0.50 | 1.4 | 2.56 | 7.0 | |
| 04/12/2006 | -- | | 48.00 | 68.00 | 14.18 | 444.37 | -- | -- | -- | -- | -- | -- | -- | -- | |
| 10/31/2006 | P | | 48.00 | 68.00 | 17.97 | 440.58 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | -- | 7.46 | |
| 4/19/2007 | -- | | 48.00 | 68.00 | 22.37 | 436.18 | -- | -- | -- | -- | -- | -- | -- | -- | |
| 10/16/2007 | P | | 48.00 | 68.00 | 37.75 | 420.80 | <50 | 0.83 | <0.50 | <0.50 | <0.50 | <0.50 | 1.27 | 7.59 | |

Table 2. Summary of Groundwater Monitoring Data: Relative Water Elevations and Laboratory Analyses

ARCO Service Station #6113, 785 East Stanley Blvd., Livermore, CA

| Well ID and Date Monitored | P/NP | TOC (feet) | Top of Screen (ft bgs) | Bottom of Screen (ft bgs) | DTW (feet) | Water Level Elevation (feet) | Concentrations in µg/L | | | | | | DO (mg/L) | pH | Footnote |
|----------------------------|-----------|------------|------------------------|---------------------------|--------------|------------------------------|------------------------|-----------------|-----------------|-----------------|----------------|-----------------|------------|-------------|---------------|
| | | | | | | | GRO/TPHg | Benzene | Toluene | Ethyl-Benzene | Total Xylenes | MTBE | | | |
| MW-9 Cont. | | | | | | | | | | | | | | | |
| 4/24/2008 | -- | 458.55 | 48.00 | 68.00 | 24.89 | 433.66 | -- | -- | -- | -- | -- | -- | -- | -- | |
| 10/15/2008 | P | | 48.00 | 68.00 | 44.16 | 414.39 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 1.14 | 7.08 | |
| 4/28/2009 | -- | | 48.00 | 68.00 | 32.61 | 425.94 | -- | -- | -- | -- | -- | -- | -- | -- | |
| 11/9/2009 | P | | 48.00 | 68.00 | 20.69 | 437.86 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 3.33 | 6.82 | |
| 4/12/2010 | -- | | 48.00 | 68.00 | 17.29 | 441.26 | -- | -- | -- | -- | -- | -- | -- | -- | |
| 11/4/2010 | P | | 48.00 | 68.00 | 18.62 | 439.93 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 4.73 | 6.8 | |
| 5/18/2011 | -- | | 48.00 | 68.00 | 15.83 | 442.72 | -- | -- | -- | -- | -- | -- | -- | -- | |
| 10/20/2011 | P | | 48.00 | 68.00 | 17.30 | 441.25 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 4.87 | 7.96 | |
| 4/11/2012 | P | | 48.00 | 68.00 | 19.75 | 438.80 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 0.99 | 7.45 | |
| 10/10/2012 | P | | 48.00 | 68.00 | 19.93 | 438.62 | <50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | 1.70 | 7.68 | |
| 4/10/2013 | -- | | 48.00 | 68.00 | 17.75 | 440.80 | -- | -- | -- | -- | -- | -- | -- | -- | |
| 4/10/2013 | P | | 48.00 | 68.00 | -- | -- | <50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | 6.2 | 7.31 | Top |
| 4/10/2013 | P | | 48.00 | 68.00 | -- | -- | <50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | 5.3 | 7.42 | Middle |
| 4/10/2013 | P | | 48.00 | 68.00 | -- | -- | <50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | 3.9 | 7.70 | Bottom |
| MW-10 | | | | | | | | | | | | | | | |
| 3/23/1995 | -- | 456.85 | 32.00 | 52.00 | 14.86 | 441.99 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 5/31/1995 | -- | | 32.00 | 52.00 | 15.63 | 441.22 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 8/31/1995 | -- | | 32.00 | 52.00 | 14.40 | 442.45 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 11/28/1995 | -- | | 32.00 | 52.00 | 17.24 | 439.61 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | -- | -- | |
| 2/22/1996 | -- | | 32.00 | 52.00 | 14.30 | 442.55 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 5/23/1996 | -- | | 32.00 | 52.00 | 14.93 | 441.92 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 8/8/1996 | -- | | 32.00 | 52.00 | 17.20 | 439.65 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 11/7/1996 | -- | | 32.00 | 52.00 | 18.25 | 438.60 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | -- | -- | |
| 3/27/1997 | -- | | 32.00 | 52.00 | 15.77 | 441.08 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 5/19/1997 | -- | | 32.00 | 52.00 | 17.38 | 439.47 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 5/18/1998 | -- | | 32.00 | 52.00 | 15.47 | 441.38 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 11/2/1998 | -- | | 32.00 | 52.00 | 26.94 | 429.91 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | -- | -- | |
| 6/4/1999 | -- | | 32.00 | 52.00 | 17.19 | 439.66 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 11/11/1999 | P | | 32.00 | 52.00 | 19.35 | 437.50 | <50 | <0.5 | <0.5 | <0.5 | <1 | <3 | 0.68 | -- | |
| 6/20/2000 | -- | | 32.00 | 52.00 | 17.92 | 438.93 | -- | -- | -- | -- | -- | -- | 2.9 | -- | e |

Table 2. Summary of Groundwater Monitoring Data: Relative Water Elevations and Laboratory Analyses

ARCO Service Station #6113, 785 East Stanley Blvd., Livermore, CA

| Well ID and Date Monitored | P/NP | TOC (feet) | Top of Screen (ft bgs) | Bottom of Screen (ft bgs) | DTW (feet) | Water Level Elevation (feet) | Concentrations in µg/L | | | | | | DO (mg/L) | pH | Footnote |
|----------------------------|------|------------|------------------------|---------------------------|------------|------------------------------|------------------------|---------|---------|---------------|---------------|-------|-----------|------|----------|
| | | | | | | | GRO/TPHg | Benzene | Toluene | Ethyl-Benzene | Total Xylenes | MTBE | | | |
| MW-10 Cont. | | | | | | | | | | | | | | | |
| 8/29/2000 | -- | 456.85 | 32.00 | 52.00 | 19.15 | 437.70 | -- | -- | -- | -- | -- | -- | 1.54 | -- | e |
| 11/29/2000 | P | | 32.00 | 52.00 | 21.30 | 435.55 | <50.0 | <0.500 | <0.500 | <0.500 | <0.500 | <2.50 | 0.95 | -- | |
| 5/2/2001 | -- | | 32.00 | 52.00 | 29.95 | 426.90 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 8/15/2001 | -- | | 32.00 | 52.00 | 30.74 | 426.11 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 10/5/2001 | P | | 32.00 | 52.00 | 30.95 | 425.90 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <2.5 | 0.89 | -- | |
| 1/21/2002 | -- | | 32.00 | 52.00 | 28.97 | 427.88 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 4/26/2002 | -- | | 32.00 | 52.00 | 28.50 | 428.35 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 10/7/2002 | -- | | 32.00 | 52.00 | 21.15 | 435.70 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 3.0 | -- | |
| 05/01/2003 | -- | | 32.00 | 52.00 | 18.90 | 437.95 | -- | -- | -- | -- | -- | -- | -- | -- | c, e |
| 10/03/2003 | P | | 32.00 | 52.00 | 20.64 | 436.21 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 2.4 | 7.1 | d |
| 04/06/2004 | -- | 459.20 | 32.00 | 52.00 | 17.99 | 441.21 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 10/28/2004 | P | | 32.00 | 52.00 | 20.27 | 438.93 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 5.9 | 7.1 | |
| 04/13/2005 | -- | | 32.00 | 52.00 | 16.25 | 442.95 | -- | -- | -- | -- | -- | -- | -- | -- | e |
| 10/27/2005 | P | | 32.00 | 52.00 | 19.03 | 440.17 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 3.38 | 7.2 | |
| 04/12/2006 | -- | | 32.00 | 52.00 | 14.95 | 444.25 | -- | -- | -- | -- | -- | -- | -- | -- | |
| 10/31/2006 | P | | 32.00 | 52.00 | 20.20 | 439.00 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | -- | 7.30 | |
| 4/19/2007 | -- | | 32.00 | 52.00 | 24.00 | 435.20 | -- | -- | -- | -- | -- | -- | -- | -- | |
| 10/16/2007 | NP | | 32.00 | 52.00 | 38.99 | 420.21 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 2.20 | 7.36 | |
| 4/24/2008 | -- | | 32.00 | 52.00 | 26.62 | 432.58 | -- | -- | -- | -- | -- | -- | -- | -- | |
| 9/10/2008 | -- | | 32.00 | 52.00 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | k |
| MW-11 | | | | | | | | | | | | | | | |
| 3/23/1995 | -- | 455.07 | 38.00 | 45.00 | 17.34 | 437.73 | -- | -- | -- | -- | -- | -- | -- | -- | |
| 5/31/1995 | -- | | 38.00 | 45.00 | 16.68 | 438.39 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | -- | -- | -- | |
| 8/31/1995 | -- | | 38.00 | 45.00 | 20.20 | 434.87 | -- | -- | -- | -- | -- | -- | -- | -- | h |
| 11/28/1995 | -- | | 38.00 | 45.00 | 17.80 | 437.27 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | -- | -- | |
| 2/22/1996 | -- | | 38.00 | 45.00 | 15.97 | 439.10 | -- | -- | -- | -- | -- | -- | -- | -- | h |
| 5/23/1996 | -- | | 38.00 | 45.00 | 15.50 | 439.57 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | -- | -- | |
| 8/8/1996 | -- | | 38.00 | 45.00 | 17.77 | 437.30 | -- | -- | -- | -- | -- | -- | -- | -- | h |
| 11/7/1996 | -- | | 38.00 | 45.00 | 17.45 | 437.62 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | -- | -- | |
| 3/27/1997 | -- | | 38.00 | 45.00 | 15.77 | 439.30 | -- | -- | -- | -- | -- | -- | -- | -- | h |

Table 2. Summary of Groundwater Monitoring Data: Relative Water Elevations and Laboratory Analyses

ARCO Service Station #6113, 785 East Stanley Blvd., Livermore, CA

| Well ID and Date Monitored | P/NP | TOC (feet) | Top of Screen (ft bgs) | Bottom of Screen (ft bgs) | DTW (feet) | Water Level Elevation (feet) | Concentrations in µg/L | | | | | | DO (mg/L) | pH | Footnote |
|----------------------------|------|------------|------------------------|---------------------------|------------|------------------------------|------------------------|---------|---------|---------------|---------------|-------|-----------|------|---------------------|
| | | | | | | | GRO/TPHg | Benzene | Toluene | Ethyl-Benzene | Total Xylenes | MTBE | | | |
| MW-11 Cont. | | | | | | | | | | | | | | | |
| 5/19/1997 | -- | 455.07 | 38.00 | 45.00 | 16.80 | 438.27 | <50 | 1.1 | 4.5 | <0.5 | 2.2 | <3 | -- | -- | |
| 5/18/1998 | -- | | 38.00 | 45.00 | 15.38 | 439.69 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | -- | -- | |
| 11/2/1998 | -- | | 38.00 | 45.00 | 24.15 | 430.92 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | -- | -- | |
| 6/4/1999 | P | | 38.00 | 45.00 | 18.39 | 436.68 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | -- | -- | |
| 11/11/1999 | P | | 38.00 | 45.00 | 18.62 | 436.45 | <50 | <0.5 | <0.5 | <0.5 | <1 | <3 | 1.01 | -- | |
| 6/20/2000 | P | | 38.00 | 45.00 | 17.82 | 437.25 | <50.0 | 0.631 | <0.500 | <0.500 | <0.500 | <2.50 | 4.1 | -- | |
| 8/29/2000 | -- | | 38.00 | 45.00 | 19.50 | 435.57 | -- | -- | -- | -- | -- | -- | -- | -- | h |
| 11/29/2000 | P | | 38.00 | 45.00 | 20.60 | 434.47 | <50.0 | <0.500 | <0.500 | <0.500 | 1.63 | <2.50 | 0.97 | -- | |
| 5/2/2001 | P | | 38.00 | 45.00 | 22.42 | 432.65 | <50.0 | <0.500 | <0.500 | <0.500 | <0.500 | <2.50 | 1.04 | -- | |
| 8/15/2001 | -- | | 38.00 | 45.00 | 27.41 | 427.66 | -- | -- | -- | -- | -- | -- | -- | -- | h |
| 10/5/2001 | P | | 38.00 | 45.00 | 27.59 | 427.48 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <2.5 | 1.05 | -- | |
| 1/21/2002 | -- | | 38.00 | 45.00 | 26.75 | 428.32 | -- | -- | -- | -- | -- | -- | -- | -- | h |
| 4/26/2002 | P | | 38.00 | 45.00 | 26.50 | 428.57 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <2.5 | 0.47 | -- | |
| 10/7/2002 | -- | | 38.00 | 45.00 | 20.79 | 434.28 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 1.0 | 1.4 | -- | |
| 05/01/2003 | P | | 38.00 | 45.00 | 20.55 | 434.52 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 1.5 | 3.2 | -- | c |
| 10/03/2003 | P | | 38.00 | 45.00 | 20.58 | 434.49 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 3.1 | 3.0 | 7.1 | d |
| 04/06/2004 | P | 457.40 | 38.00 | 45.00 | 17.52 | 439.88 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 14 | 5.1 | 6.7 | |
| 10/28/2004 | P | | 38.00 | 45.00 | 20.32 | 437.08 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 29 | 1.3 | 7.2 | |
| 04/13/2005 | P | | 38.00 | 45.00 | 16.20 | 441.20 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 3.7 | 2.8 | 7.0 | |
| 10/27/2005 | P | | 38.00 | 45.00 | 21.98 | 435.42 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 21 | 1.04 | 7.2 | |
| 04/12/2006 | -- | | 38.00 | 45.00 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | Well inaccessible m |
| 10/31/2006 | -- | | 38.00 | 45.00 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 4/19/2007 | P | | 38.00 | 45.00 | 22.38 | 435.02 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 12 | 7.11 | 7.57 | |
| 10/16/2007 | P | | 38.00 | 45.00 | 37.11 | 420.29 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 6.6 | 0.60 | 7.57 | |
| 4/24/2008 | P | | 38.00 | 45.00 | 26.10 | 431.30 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 17 | 1.83 | 7.26 | |
| 10/15/2008 | -- | | 38.00 | 45.00 | 43.34 | 414.06 | -- | -- | -- | -- | -- | -- | -- | -- | |
| 4/28/2009 | P | | 38.00 | 45.00 | 32.85 | 424.55 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 5.3 | 5.89 | 7.23 | |
| 11/9/2009 | P | | 38.00 | 45.00 | 22.99 | 434.41 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 12 | 0.72 | 7.0 | |
| 4/12/2010 | P | | 38.00 | 45.00 | 21.14 | 436.26 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 10 | 2.03 | 7.25 | |
| 11/4/2010 | P | | 38.00 | 45.00 | 20.62 | 436.78 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 9.9 | 1.64 | 6.9 | |

Table 2. Summary of Groundwater Monitoring Data: Relative Water Elevations and Laboratory Analyses

ARCO Service Station #6113, 785 East Stanley Blvd., Livermore, CA

| Well ID and Date Monitored | P/NP | TOC (feet) | Top of Screen (ft bgs) | Bottom of Screen (ft bgs) | DTW (feet) | Water Level Elevation (feet) | Concentrations in µg/L | | | | | | DO (mg/L) | pH | Footnote |
|----------------------------|----------|------------|------------------------|---------------------------|--------------|------------------------------|------------------------|-----------------|-----------------|-----------------|----------------|-----------------|------------|-------------|---------------|
| | | | | | | | GRO/TPHg | Benzene | Toluene | Ethyl-Benzene | Total Xylenes | MTBE | | | |
| MW-11 Cont. | | | | | | | | | | | | | | | |
| 5/18/2011 | P | 457.40 | 38.00 | 45.00 | 19.17 | 438.23 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 7.8 | 4.28 | -- | lw |
| 10/20/2011 | P | | 38.00 | 45.00 | 19.58 | 437.82 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 6.9 | 0.95 | 7.84 | |
| 4/11/2012 | P | | 38.00 | 45.00 | 21.58 | 435.82 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 5.6 | 0.30 | 7.54 | |
| 10/10/2012 | P | | 38.00 | 45.00 | 22.02 | 435.38 | <50 | <0.50 | <0.50 | <0.50 | <1.0 | 4.2 | 1.58 | 7.75 | |
| 4/9/2013 | -- | | 38.00 | 45.00 | 19.83 | 437.57 | -- | -- | -- | -- | -- | -- | -- | -- | |
| 4/9/2013 | P | | 38.00 | 45.00 | -- | -- | <50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | 7.4 | 7.86 | Top |
| 4/9/2013 | P | | 38.00 | 45.00 | -- | -- | <50 | <0.50 | <0.50 | <0.50 | <1.0 | 5.0 | 4.0 | 7.45 | Middle |
| 4/9/2013 | P | | 38.00 | 45.00 | -- | -- | <50 | <0.50 | <0.50 | <0.50 | <1.0 | 6.0 | 3.9 | 7.37 | Bottom |
| MW-12 | | | | | | | | | | | | | | | |
| 3/23/1995 | -- | 455.04 | 18.00 | 34.50 | 15.54 | 439.50 | -- | -- | -- | -- | -- | -- | -- | -- | h |
| 5/31/1995 | -- | | 18.00 | 34.50 | 15.66 | 439.38 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | -- | -- | -- | |
| 8/31/1995 | -- | | 18.00 | 34.50 | 18.23 | 436.81 | -- | -- | -- | -- | -- | -- | -- | -- | h |
| 11/28/1995 | -- | | 18.00 | 34.50 | 17.53 | 437.51 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | -- | -- | |
| 2/22/1996 | -- | | 18.00 | 34.50 | 14.45 | 440.59 | -- | -- | -- | -- | -- | -- | -- | -- | h |
| 5/23/1996 | -- | | 18.00 | 34.50 | 14.88 | 440.16 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | -- | -- | |
| 8/8/1996 | -- | | 18.00 | 34.50 | 17.30 | 437.74 | -- | -- | -- | -- | -- | -- | -- | -- | h |
| 11/7/1996 | -- | | 18.00 | 34.50 | 18.30 | 436.74 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | -- | -- | |
| 3/27/1997 | -- | | 18.00 | 34.50 | 15.69 | 439.35 | -- | -- | -- | -- | -- | -- | -- | -- | h |
| 5/19/1997 | -- | | 18.00 | 34.50 | 17.41 | 437.63 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | -- | -- | |
| 5/18/1998 | -- | | 18.00 | 34.50 | 15.21 | 439.83 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | -- | -- | |
| 11/2/1998 | -- | | 18.00 | 34.50 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | m |
| 6/4/1999 | -- | | 18.00 | 34.50 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | m |
| 11/11/1999 | -- | | 18.00 | 34.50 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | m |
| 6/20/2000 | -- | | 18.00 | 34.50 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | m |
| 8/29/2000 | -- | | 18.00 | 34.50 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | m |
| 11/29/2000 | -- | | 18.00 | 34.50 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | m |
| 5/2/2001 | -- | | 18.00 | 34.50 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | m |
| 8/15/2001 | -- | | 18.00 | 34.50 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | m |
| 10/5/2001 | -- | | 18.00 | 34.50 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | m |
| 1/21/2002 | -- | | 18.00 | 34.50 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | m |

Table 2. Summary of Groundwater Monitoring Data: Relative Water Elevations and Laboratory Analyses

ARCO Service Station #6113, 785 East Stanley Blvd., Livermore, CA

| Well ID and Date Monitored | P/NP | TOC (feet) | Top of Screen (ft bgs) | Bottom of Screen (ft bgs) | DTW (feet) | Water Level Elevation (feet) | Concentrations in µg/L | | | | | | DO (mg/L) | pH | Footnote | |
|----------------------------|-----------|------------|------------------------|---------------------------|--------------|------------------------------|------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-------------|---------------|------------|
| | | | | | | | GRO/TPHg | Benzene | Toluene | Ethyl-Benzene | Total Xylenes | MTBE | | | | |
| MW-12 Cont. | | | | | | | | | | | | | | | | |
| 4/26/2002 | -- | 455.04 | 18.00 | 34.50 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | m | |
| 10/7/2002 | -- | | 18.00 | 34.50 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | m | |
| 05/01/2003 | -- | | 18.00 | 34.50 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | c, m | |
| 10/03/2003 | -- | | 18.00 | 34.50 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | m | |
| 04/06/2004 | P | 457.37 | 18.00 | 34.50 | 18.14 | 439.23 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 2.4 | 6.4 | | |
| 10/28/2004 | P | | 18.00 | 34.50 | 20.66 | 436.71 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 1.7 | 6.8 | | |
| 04/13/2005 | P | | 18.00 | 34.50 | 16.25 | 441.12 | <50 | <0.50 | <0.50 | <0.50 | 0.55 | <0.50 | 1.9 | 7.5 | | |
| 10/27/2005 | P | | 18.00 | 34.50 | 19.77 | 437.60 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 1.81 | 7.0 | | |
| 04/12/2006 | P | | 18.00 | 34.50 | 16.08 | 441.29 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 2.6 | 7.2 | | |
| 10/31/2006 | -- | | 18.00 | 34.50 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | | |
| 4/19/2007 | NP | | 18.00 | 34.50 | 22.34 | 435.03 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 4.66 | 7.28 | | |
| 10/16/2007 | -- | | 18.00 | 34.50 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | f | |
| 4/24/2008 | -- | | 18.00 | 34.50 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | m | |
| 10/15/2008 | -- | | 18.00 | 34.50 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | f | |
| 4/28/2009 | NP | | 18.00 | 34.50 | 32.21 | 425.16 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 1.4 | 7.68 | 6.63 | | |
| 11/9/2009 | NP | | 18.00 | 34.50 | 23.74 | 433.63 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | -- | -- | | |
| 4/12/2010 | NP | | 18.00 | 34.50 | 19.93 | 437.44 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | -- | 7.18 | | |
| 11/4/2010 | NP | | 18.00 | 34.50 | 21.53 | 435.84 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 0.96 | 7.0 | | |
| 5/18/2011 | NP | | 18.00 | 34.50 | 18.40 | 438.97 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 2.93 | -- | z | |
| 10/20/2011 | NP | | 18.00 | 34.50 | 20.25 | 437.12 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 0.87 | 7.94 | | |
| 4/11/2012 | P | | 18.00 | 34.50 | 22.27 | 435.10 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 1.19 | 7.17 | | |
| 10/10/2012 | P | | 18.00 | 34.50 | 22.50 | 434.87 | <50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | 2.34 | 7.57 | | |
| 4/9/2013 | -- | | 18.00 | 34.50 | 19.92 | 437.45 | -- | -- | -- | -- | -- | -- | -- | -- | | |
| 4/9/2013 | P | | 18.00 | 34.50 | -- | -- | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | 4.0 | 7.26 | Top |
| 4/9/2013 | P | | 18.00 | 34.50 | -- | -- | <50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | 4.1 | 7.26 | Bottom | |
| MW-13 | | | | | | | | | | | | | | | | |
| 1/21/2002 | P | NS | -- | -- | 24.61 | -- | 15,000 | 160 | 68 | 1,700 | 3,200 | 4,900/5,200 | 0.71 | -- | | |
| 4/26/2002 | P | | -- | -- | 24.20 | -- | 17,000 | 98 | <100 | 1,700 | 3,400 | 1,600 | 0.6 | -- | | |
| 10/7/2002 | -- | | -- | -- | 20.12 | -- | 14,000 | 510 | <50 | 2,200 | 2,300 | 2,800 | 0.8 | -- | b | |
| 05/01/2003 | P | | -- | -- | 17.82 | -- | 21,000 | 230 | <50 | 1,900 | 2,300 | 1,600 | 1.9 | -- | c | |

Table 2. Summary of Groundwater Monitoring Data: Relative Water Elevations and Laboratory Analyses

ARCO Service Station #6113, 785 East Stanley Blvd., Livermore, CA

| Well ID and Date Monitored | P/NP | TOC (feet) | Top of Screen (ft bgs) | Bottom of Screen (ft bgs) | DTW (feet) | Water Level Elevation (feet) | Concentrations in µg/L | | | | | | DO (mg/L) | pH | Footnote |
|----------------------------|------|------------|------------------------|---------------------------|------------|------------------------------|------------------------|---------|---------|---------------|---------------|-------------|-----------|------|----------|
| | | | | | | | GRO/TPHg | Benzene | Toluene | Ethyl-Benzene | Total Xylenes | MTBE | | | |
| MW-13 Cont. | | | | | | | | | | | | | | | |
| 10/03/2003 | P | NS | -- | -- | 19.91 | -- | 19,000 | 570 | 55 | 1,900 | 2,300 | 2,400 | 0.8 | 6.9 | d |
| 04/06/2004 | P | 457.91 | -- | -- | 17.14 | 440.77 | 15,000 | 470 | 35 | 1,600 | 1,300 | 1,800 | 2.0 | 6.7 | |
| 10/28/2004 | P | | -- | -- | 18.83 | 439.08 | 18,000 | 350 | <25 | 1,900 | 1,800 | 1,800 | 0.8 | 6.7 | |
| 04/13/2005 | P | | -- | -- | 15.23 | 442.68 | 9,700 | 110 | <25 | 860 | 280 | 920 | 0.9 | 6.9 | |
| 10/27/2005 | P | | -- | -- | 18.45 | 439.46 | 11,000 | 120 | 12 | 1,500 | 450 | 580 | 0.75 | 6.8 | |
| 04/12/2006 | P | | -- | -- | 15.06 | 442.85 | 4,700 | 65 | <10 | 450 | 69 | 470 | 1.2 | 6.8 | |
| 10/31/2006 | P | | -- | -- | 19.06 | 438.85 | 15,000 | 150 | <25 | 1,700 | 400 | 710 | -- | 6.87 | |
| 4/19/2007 | NP | | -- | -- | 22.21 | 435.70 | 14,000 | 60 | <25 | 1,800 | 640 | 330 | 1.44 | 7.09 | |
| 10/16/2007 | -- | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | f |
| 4/24/2008 | NP | | -- | -- | 24.68 | 433.23 | 1,400 | 4.5 | 1.1 | 9.4 | 15 | 49 | 2.78 | 7.25 | |
| 9/10/2008 | -- | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | k |
| RMW-13 | | | | | | | | | | | | | | | |
| 4/12/2010 | NP | 458.03 | 15.00 | 35.00 | 18.50 | 439.53 | 63,000 | 7,800 | 200 | 1,600 | 6,400 | 1,500 | 2.47 | 7.21 | y |
| 11/4/2010 | NP | | 15.00 | 35.00 | 18.83 | 439.20 | 31,000 | 4,000 | <120 | 1,700 | 2,500 | 390 | 1.01 | 7.40 | |
| 5/18/2011 | NP | | 15.00 | 35.00 | 17.43 | 440.60 | 26,000 | 4,700 | <50 | 1,700 | 2,200 | 380 | 2.34 | 7.3 | |
| 10/20/2011 | NP | | 15.00 | 35.00 | 18.25 | 439.78 | 560 | 1,100 | <20 | 550 | 620 | 55 | 0.84 | 7.54 | |
| 4/11/2012 | P | | 15.00 | 35.00 | 20.64 | 437.39 | 13,000 | 3,100 | <0.50 | 820 | 790 | 280 | 0.18 | 7.10 | x |
| 10/10/2012 | P | | 15.00 | 35.00 | 21.10 | 436.93 | 15,000 | 6,000 | 62 | 1,300 | 670 | 460 | 1.09 | 7.26 | |
| 4/10/2013 | -- | | 15.00 | 35.00 | 18.90 | 439.13 | -- | -- | -- | -- | -- | -- | -- | -- | |
| 4/10/2013 | P | | 15.00 | 35.00 | -- | -- | 10,000 | 4,600 | <50 | 1,300 | 400 | 270 | 2.5 | 7.34 | Top |
| 4/10/2013 | P | | 15.00 | 35.00 | -- | -- | 12,000 | 5,100 | 53 | 1,300 | 460 | 280 | 2.7 | 7.86 | Bottom |
| VW-1 | | | | | | | | | | | | | | | |
| 8/29/2000 | P | NS | 24.00 | 45.00 | 17.40 | -- | 2,360 | 27.6 | 11.6 | 26.3 | 33.2 | 110 | 4.47 | -- | |
| 11/29/2000 | P | | 24.00 | 45.00 | 18.75 | -- | <50.0 | <0.500 | <0.500 | <0.500 | <0.500 | <2.50 | 0.46 | -- | |
| 5/2/2001 | -- | | 24.00 | 45.00 | 21.59 | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 8/15/2001 | P | | 24.00 | 45.00 | 24.62 | -- | 1,200 | 6.3 | 4.3 | 1.7 | 1.3 | 20/17 | -- | -- | s |
| 8/15/2001 | -- | | 24.00 | 45.00 | 24.62 | -- | 1,200 | 6.2 | 4.1 | 1.8 | 1.1 | 20/17 | -- | -- | q |
| 10/5/2001 | P | | 24.00 | 45.00 | 24.75 | -- | 1,500 | 140 | 55 | 28 | 82 | 610/660 | 0.71 | -- | s |
| 1/21/2002 | P | | 24.00 | 45.00 | 24.59 | -- | 6,700 | 810 | 350 | 270 | 1,100 | 2,600/3,400 | 0.69 | -- | s |

Table 2. Summary of Groundwater Monitoring Data: Relative Water Elevations and Laboratory Analyses

ARCO Service Station #6113, 785 East Stanley Blvd., Livermore, CA

| Well ID and Date Monitored | P/NP | TOC (feet) | Top of Screen (ft bgs) | Bottom of Screen (ft bgs) | DTW (feet) | Water Level Elevation (feet) | Concentrations in µg/L | | | | | | DO (mg/L) | pH | Footnote |
|----------------------------|-----------|------------|------------------------|---------------------------|--------------|------------------------------|------------------------|-----------------|-----------------|-----------------|----------------|-----------------|------------|-------------|---------------|
| | | | | | | | GRO/TPHg | Benzene | Toluene | Ethyl-Benzene | Total Xylenes | MTBE | | | |
| VW-1 Cont. | | | | | | | | | | | | | | | |
| 1/21/2002 | -- | NS | 24.00 | 45.00 | 24.59 | -- | 8,000 | 770 | 320 | 96 | 1,100 | 2,500/3,200 | -- | -- | q, s |
| 4/26/2002 | P | | 24.00 | 45.00 | 24.27 | -- | 370 | 26 | 2.1 | 6.6 | 1.7 | 48 | 0.5 | -- | |
| 4/26/2002 | -- | | 24.00 | 45.00 | 24.27 | -- | 350 | 24 | 1.6 | 5.9 | 1.6 | 45 | -- | -- | q |
| 10/7/2002 | P | | 24.00 | 45.00 | 19.20 | -- | 410 | 25 | 2.2 | 8 | 4.3 | 88 | 1.7 | -- | b |
| 05/01/2003 | P | | 24.00 | 45.00 | 16.60 | -- | 240 | 6.4 | <0.50 | 3.3 | 1.3 | 36 | 1.7 | -- | c |
| 10/03/2003 | P | | 24.00 | 45.00 | 18.82 | -- | 180 | 1.5 | <0.50 | 0.69 | <0.50 | 12 | 1.1 | 7.3 | d |
| 04/06/2004 | P | 457.08 | 24.00 | 45.00 | 15.78 | 441.30 | 300 | 2.2 | <0.50 | 3.0 | 1.3 | 13 | 2.4 | 7.2 | |
| 10/28/2004 | P | | 24.00 | 45.00 | 18.33 | 438.75 | 210 | <0.50 | <0.50 | 0.67 | <0.50 | <0.50 | 1.2 | 7.1 | |
| 04/13/2005 | P | | 24.00 | 45.00 | 14.02 | 443.06 | 740 | 1.8 | <0.50 | 3.6 | 1.1 | 9.6 | 2.4 | 7.1 | |
| 10/27/2005 | P | | 24.00 | 45.00 | 17.65 | 439.43 | 1,500 | 78 | 73 | 36 | 81 | 13 | 1.64 | 7.3 | |
| 04/12/2006 | P | | 24.00 | 45.00 | 13.89 | 443.19 | 230 | 1.4 | <0.50 | 2.2 | 0.76 | 1.6 | 1.4 | 7.3 | |
| 10/31/2006 | P | | 24.00 | 45.00 | 17.87 | 439.21 | 80 | <0.50 | <0.50 | 2.3 | 0.82 | <0.50 | -- | 7.76 | |
| 4/19/2007 | P | | 24.00 | 45.00 | 21.09 | 435.99 | 250 | 1.6 | <0.50 | 4.7 | 1.3 | 3.0 | 1.15 | 7.66 | |
| 10/16/2007 | NP | | 24.00 | 45.00 | 37.10 | 419.98 | 12,000 | 2,300 | 1,900 | 860 | 2,800 | 150 | 2.65 | 7.61 | |
| 4/24/2008 | NP | | 24.00 | 45.00 | 24.40 | 432.68 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 4.5 | 4.95 | 7.47 | |
| 10/15/2008 | -- | | 24.00 | 45.00 | 43.07 | 414.01 | -- | -- | -- | -- | -- | -- | -- | -- | |
| 4/28/2009 | NP | | 24.00 | 45.00 | 31.06 | 426.02 | 3,500 | 140 | 2.8 | 25 | 4.0 | 19 | 6.38 | 7.02 | |
| 11/9/2009 | P | | 24.00 | 45.00 | 21.12 | 435.96 | 230 | 1.8 | <0.50 | <0.50 | <0.50 | 1.1 | 2.28 | 6.95 | x (GRO) |
| 4/12/2010 | P | | 24.00 | 45.00 | 17.27 | 439.81 | 410 | 0.80 | <0.50 | <0.50 | <0.50 | <0.50 | 3.38 | 7.21 | |
| 11/4/2010 | P | | 24.00 | 45.00 | 18.65 | 438.43 | 160 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 1.15 | 6.9 | x (GRO) |
| 5/18/2011 | P | | 24.00 | 45.00 | 15.77 | 441.31 | 69 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 0.71 | 7.5 | x (GRO) |
| 10/20/2011 | P | | 24.00 | 45.00 | 17.44 | 439.64 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 1.77 | 7.89 | |
| 4/11/2012 | P | | 24.00 | 45.00 | 19.74 | 437.34 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 2.02 | 7.50 | |
| 10/10/2012 | P | | 24.00 | 45.00 | 19.90 | 437.18 | <50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | 1.39 | 7.82 | |
| 4/10/2013 | -- | | 24.00 | 45.00 | 17.54 | 439.54 | -- | -- | -- | -- | -- | -- | -- | -- | |
| 4/10/2013 | P | | 24.00 | 45.00 | -- | -- | <50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | 3.1 | 7.60 | Top |
| 4/10/2013 | P | | 24.00 | 45.00 | -- | -- | <50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | 3.2 | 7.59 | Middle |
| 4/10/2013 | P | | 24.00 | 45.00 | -- | -- | <50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | 3.0 | 7.63 | Bottom |
| VW-2 | | | | | | | | | | | | | | | |
| 8/29/2000 | -- | NS | 28.00 | 49.50 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | g |

Table 2. Summary of Groundwater Monitoring Data: Relative Water Elevations and Laboratory Analyses

ARCO Service Station #6113, 785 East Stanley Blvd., Livermore, CA

| Well ID and Date Monitored | P/NP | TOC (feet) | Top of Screen (ft bgs) | Bottom of Screen (ft bgs) | DTW (feet) | Water Level Elevation (feet) | Concentrations in µg/L | | | | | | DO (mg/L) | pH | Footnote | |
|----------------------------|----------|------------|------------------------|---------------------------|--------------|------------------------------|------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-------------|---------------------|------------|
| | | | | | | | GRO/TPHg | Benzene | Toluene | Ethyl-Benzene | Total Xylenes | MTBE | | | | |
| VW-2 Cont. | | | | | | | | | | | | | | | | |
| 11/29/2000 | -- | NS | 28.00 | 49.50 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | g | |
| 5/2/2001 | -- | | 28.00 | 49.50 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | | |
| 10/5/2001 | -- | | 28.00 | 49.50 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | g | |
| 1/21/2002 | -- | | 28.00 | 49.50 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | g | |
| 4/26/2002 | -- | | 28.00 | 49.50 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | m | |
| 10/7/2002 | -- | | 28.00 | 49.50 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | g | |
| 05/01/2003 | -- | | 28.00 | 49.50 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | C, g | |
| 10/03/2003 | -- | | 28.00 | 49.50 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | Well inaccessible g | |
| 04/06/2004 | -- | 458.64 | 28.00 | 49.50 | 16.96 | 441.68 | -- | -- | -- | -- | -- | -- | -- | -- | | |
| 10/28/2004 | -- | | 28.00 | 49.50 | 19.35 | 439.29 | -- | -- | -- | -- | -- | -- | -- | -- | | |
| 04/13/2005 | -- | | 28.00 | 49.50 | 15.51 | 443.13 | -- | -- | -- | -- | -- | -- | -- | -- | | |
| 10/27/2005 | -- | | 28.00 | 49.50 | 18.50 | 440.14 | -- | -- | -- | -- | -- | -- | -- | -- | | |
| 04/12/2006 | -- | | 28.00 | 49.50 | 14.92 | 443.72 | -- | -- | -- | -- | -- | -- | -- | -- | | |
| 10/31/2006 | -- | | 28.00 | 49.50 | 19.01 | 439.63 | -- | -- | -- | -- | -- | -- | -- | -- | | |
| 4/19/2007 | -- | | 28.00 | 49.50 | 22.52 | 436.12 | -- | -- | -- | -- | -- | -- | -- | -- | | |
| 10/16/2007 | -- | | 28.00 | 49.50 | 38.58 | 420.06 | -- | -- | -- | -- | -- | -- | -- | -- | | |
| 4/24/2008 | -- | | 28.00 | 49.50 | 24.91 | 433.73 | -- | -- | -- | -- | -- | -- | -- | -- | | |
| 10/15/2008 | -- | | 28.00 | 49.50 | 43.31 | 415.33 | -- | -- | -- | -- | -- | -- | -- | -- | | |
| 4/28/2009 | -- | | 28.00 | 49.50 | 32.56 | 426.08 | -- | -- | -- | -- | -- | -- | -- | -- | | |
| 11/9/2009 | -- | | 28.00 | 49.50 | 22.38 | 436.26 | -- | -- | -- | -- | -- | -- | -- | -- | | |
| 4/12/2010 | -- | | 28.00 | 49.50 | 18.50 | 440.14 | -- | -- | -- | -- | -- | -- | -- | -- | | |
| 11/4/2010 | -- | | 28.00 | 49.50 | 19.87 | 438.77 | -- | -- | -- | -- | -- | -- | -- | -- | | |
| 5/18/2011 | -- | | 28.00 | 49.50 | 16.94 | 441.70 | -- | -- | -- | -- | -- | -- | -- | -- | | |
| 10/20/2011 | -- | | 28.00 | 49.50 | 18.54 | 440.10 | -- | -- | -- | -- | -- | -- | -- | -- | | |
| 4/11/2012 | -- | | 28.00 | 49.50 | 20.97 | 437.67 | -- | -- | -- | -- | -- | -- | -- | -- | | |
| 10/10/2012 | -- | | 28.00 | 49.50 | 21.07 | 437.57 | -- | -- | -- | -- | -- | -- | -- | -- | | |
| 4/10/2013 | -- | | 28.00 | 49.50 | 18.69 | 439.95 | -- | -- | -- | -- | -- | -- | -- | -- | | |
| 4/10/2013 | P | | 28.00 | 49.50 | -- | -- | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | 3.3 | 7.45 | Top |
| 4/10/2013 | P | | 28.00 | 49.50 | -- | -- | 94 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | 3.0 | 7.56 | Middle | |
| 4/10/2013 | P | | 28.00 | 49.50 | -- | -- | 87 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | 3.4 | 7.54 | Bottom | |

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ARCO Service Station #6113, 785 East Stanley Blvd., Livermore, CA

| Well ID and Date Monitored | P/NP | TOC (feet) | Top of Screen (ft bgs) | Bottom of Screen (ft bgs) | DTW (feet) | Water Level Elevation (feet) | Concentrations in µg/L | | | | | | DO (mg/L) | pH | Footnote |
|----------------------------|------|------------|------------------------|---------------------------|------------|------------------------------|------------------------|---------|---------|---------------|---------------|---------------|-----------|-----|----------|
| | | | | | | | GRO/TPHg | Benzene | Toluene | Ethyl-Benzene | Total Xylenes | MTBE | | | |
| VW-3 | | | | | | | | | | | | | | | |
| 8/29/2000 | P | NS | 15.50 | 24.00 | 17.93 | -- | 25,400 | 3,540 | 10,600 | 1,280 | 43,000 | 44,700 | -- | -- | |
| 11/29/2000 | P | | 15.50 | 24.00 | 19.75 | -- | 54,200 | 9,450 | 1,870 | 2,350 | 9,400 | 12,300/15,100 | 0.47 | -- | s |
| 5/2/2001 | -- | | 15.50 | 24.00 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | k |
| VW-4 | | | | | | | | | | | | | | | |
| 8/29/2000 | -- | NS | 17.00 | 30.00 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | g |
| 11/29/2000 | -- | | 17.00 | 30.00 | 19.45 | -- | 36,100 | 3,700 | 206 | 1,850 | 7,890 | 6,430/8,460 | -- | -- | q, s |
| 11/29/2000 | P | | 17.00 | 30.00 | 19.45 | -- | 37,500 | 4,510 | 206 | 2,100 | 9,030 | 6,770/7,880 | 0.42 | -- | s |
| 5/2/2001 | -- | | 17.00 | 30.00 | 21.66 | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 8/15/2001 | -- | | 17.00 | 30.00 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 10/5/2001 | -- | | 17.00 | 30.00 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | f |
| 1/21/2002 | -- | | 17.00 | 30.00 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | f |
| 4/26/2002 | -- | | 17.00 | 30.00 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | f |
| 10/7/2002 | -- | | 17.00 | 30.00 | 19.25 | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 05/01/2003 | -- | | 17.00 | 30.00 | 17.29 | -- | -- | -- | -- | -- | -- | -- | -- | -- | c |
| 10/03/2003 | P | | 17.00 | 30.00 | 19.10 | -- | 48,000 | 3,300 | 1,700 | 3,600 | 21,000 | 1,600 | 10.5 | 6.7 | d, n |
| 04/06/2004 | -- | 456.99 | 17.00 | 30.00 | 18.05 | 438.94 | -- | -- | -- | -- | -- | -- | -- | -- | |
| 10/28/2004 | -- | | 17.00 | 30.00 | 18.71 | 438.28 | -- | -- | -- | -- | -- | -- | -- | -- | |
| 04/13/2005 | -- | | 17.00 | 30.00 | 14.62 | 442.37 | -- | -- | -- | -- | -- | -- | -- | -- | |
| 10/27/2005 | -- | | 17.00 | 30.00 | 18.00 | 438.99 | -- | -- | -- | -- | -- | -- | -- | -- | |
| 04/12/2006 | -- | | 17.00 | 30.00 | 14.42 | 442.57 | -- | -- | -- | -- | -- | -- | -- | -- | |
| 10/31/2006 | -- | | 17.00 | 30.00 | 18.30 | 438.69 | -- | -- | -- | -- | -- | -- | -- | -- | |
| 4/19/2007 | -- | | 17.00 | 30.00 | 20.91 | 436.08 | -- | -- | -- | -- | -- | -- | -- | -- | |
| 10/16/2007 | -- | | 17.00 | 30.00 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | f |
| 4/24/2008 | -- | | 17.00 | 30.00 | 23.40 | 433.59 | -- | -- | -- | -- | -- | -- | -- | -- | |
| 10/15/2008 | -- | | 17.00 | 30.00 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | f |
| 4/28/2009 | -- | | 17.00 | 30.00 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | f |
| 11/9/2009 | -- | | 17.00 | 30.00 | 21.65 | 435.34 | -- | -- | -- | -- | -- | -- | -- | -- | |
| 4/12/2010 | -- | | 17.00 | 30.00 | 17.80 | 439.19 | -- | -- | -- | -- | -- | -- | -- | -- | |
| 11/4/2010 | -- | | 17.00 | 30.00 | 19.13 | 437.86 | -- | -- | -- | -- | -- | -- | -- | -- | |
| 5/18/2011 | -- | | 17.00 | 30.00 | 16.67 | 440.32 | -- | -- | -- | -- | -- | -- | -- | -- | |

Table 2. Summary of Groundwater Monitoring Data: Relative Water Elevations and Laboratory Analyses
ARCO Service Station #6113, 785 East Stanley Blvd., Livermore, CA

| Well ID and Date Monitored | P/NP | TOC (feet) | Top of Screen (ft bgs) | Bottom of Screen (ft bgs) | DTW (feet) | Water Level Elevation (feet) | Concentrations in µg/L | | | | | | DO (mg/L) | pH | Footnote |
|----------------------------|----------|------------|------------------------|---------------------------|--------------|------------------------------|------------------------|--------------|-----------|---------------|---------------|-----------|------------|-------------|----------|
| | | | | | | | GRO/TPHg | Benzene | Toluene | Ethyl-Benzene | Total Xylenes | MTBE | | | |
| VW-4 Cont. | | | | | | | | | | | | | | | |
| 10/20/2011 | -- | 456.99 | 17.00 | 30.00 | 18.25 | 438.74 | -- | -- | -- | -- | -- | -- | -- | -- | |
| 4/11/2012 | -- | | 17.00 | 30.00 | 20.08 | 436.91 | -- | -- | -- | -- | -- | -- | -- | -- | |
| 10/10/2012 | -- | | 17.00 | 30.00 | 20.52 | 436.47 | -- | -- | -- | -- | -- | -- | -- | -- | |
| 4/9/2013 | P | | 17.00 | 30.00 | 18.26 | 438.73 | 5,900 | 1,600 | 44 | 510 | 60 | 59 | 2.5 | 7.17 | |

Symbols & Abbreviations:

-- = Not analyzed/applicable/measured/available
< = Not detected at or above specified laboratory reporting limit
DO = Dissolved oxygen
DTW = Depth to water in ft bgs
GRO = Gasoline range organics
GWE = Groundwater elevation measured in ft
mg/L = Milligrams per liter
MTBE = Methyl tert-butyl ether
NP = Well not purged prior to sampling
P = Well purged prior to sampling
TOC = Top of casing measured in ft
TPH-g = Total petroleum hydrocarbons as gasoline
µg/L = Micrograms per liter

Footnotes:

a = Hydrocarbon pattern is present in the requested fuel quantitation range but does not resemble the pattern of the requested fuel
b = Chromatogram Pattern: C6-C10
c = TPH-g, benzene, toluene, ethylbenzene, and total xylenes (BTEX), and MTBE analyzed using EPA Method 8260B beginning second quarter 2003 (05/01/03)
d = This sample was analyzed 3 days after the EPA recommended holding time. The results may still be useful for their intended purpose
e = Well sampled annually in the fourth quarter
f = Well dry
g = Well inaccessible
h = Well sampled semi-annually in second and fourth quarters
k = Well abandoned
m = Unable to locate well
n = Sheen in well
q = Duplicate sample
r = Well removed from sampling schedule
s = Original sample analyzed by 8021B and confirmation by 8260
t = Bolts securing well box cover stripped at head. Unable to sample well
u = Hydrocarbon result partly due to individ. peak(s) in quant. range
v = pH measurement is believed to be erroneous
w = Sample > 4x spike concentration
x = Quantitation of unknown hydrocarbon(s) in sample based on gasoline
y = Replacement well for abandoned wells MW-6 and MW-13 installed on 3/11/2010, and surveyed on 4/23/2010
z = pH probe malfunctioned, pH measurement not collected

Notes:

Beginning in the second quarter 2003 (05/01/03) TPH-g and BTEX were analyzed using EPA Method 8260B, and MTBE was analyzed by EPA Method 8260B beginning in fourth quarter 2002. Prior to 05/01/03, TPH-g was analyzed by EPA Method 8015; BTEX by EPA Method 8021B (EPA method 8020 before 11/11/99); and MTBE by EPA Method 8021B. (EPA method 8020 before 11/11/99). Any MTBE detection by 8021B was confirmed by EPA Method 8260 beginning third quarter 2000 (08-29-00 results).

Beginning in the fourth quarter 2003, the laboratory modified the reported analyte list. TPH-g was changed to GRO. The resulting data may be impacted by the potential of non-TPH-g analytes within the requested fuel range resulting in a higher concentration being reported.

Beginning in the second quarter 2004, the carbon range for GRO was changed from C6-C10 to C4-C12.

Wells were resurveyed to NAVD '88 datum by URS Corporation on March 8, 2004.

Values for DO and pH were obtained through field measurements. DO measured by lab in 2Q 2013.

GRO analysis was completed by EPA method 8260B (C4-C12) for samples collected from the time period April 2006 through February 4, 2008. The analysis for GRO was changed to EPA method 8015B (C6-C12) for samples collected from the time period February 5, 2008 through the present.

The data within this table collected prior to April 2006 was provided to Broadbent & Associates, Inc. by Atlantic Richfield Company and their previous consultants. Broadbent & Associates, Inc. has not verified the accuracy of this information.

During the Second Quarter 2013 groundwater monitoring event wells were purged with a low-flow peristaltic pump and sampled from multiple screen intervals, consisting of the top, middle and/or bottom of the well screen, on a one-time basis for comparison purposes.

Table 3. Summary of Fuel Additives Analytical Data
ARCO Service Station #6113, 785 East Stanley Blvd., Livermore, CA

| Well ID and Date Monitored | Concentrations in µg/L | | | | | | | | Footnote |
|-------------------------------|------------------------|-----|-------|-------|-------|-------|---------|-------|----------|
| | Ethanol | TBA | MTBE | DIPE | ETBE | TAME | 1,2-DCA | EDB | |
| MW-1 | | | | | | | | | |
| 11/28/1995 | -- | -- | <3 | -- | -- | -- | -- | -- | |
| 11/7/1996 | -- | -- | <3 | -- | -- | -- | -- | -- | |
| 11/2/1998 | -- | -- | <3 | -- | -- | -- | -- | -- | |
| 11/11/1999 | -- | -- | <3 | -- | -- | -- | -- | -- | |
| 11/29/2000 | -- | -- | <2.50 | -- | -- | -- | -- | -- | |
| 10/5/2001 | -- | -- | <2.5 | -- | -- | -- | -- | -- | |
| 10/7/2002 | <40 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| MW-2 | | | | | | | | | |
| 11/28/1995 | -- | -- | <3 | -- | -- | -- | -- | -- | |
| 11/7/1996 | -- | -- | 5 | -- | -- | -- | -- | -- | |
| 11/2/1998 | -- | -- | <3 | -- | -- | -- | -- | -- | |
| 11/11/1999 | -- | -- | <3 | -- | -- | -- | -- | -- | |
| 11/29/2000 | -- | -- | <2.50 | -- | -- | -- | -- | -- | |
| 10/5/2001 | -- | -- | <2.5 | -- | -- | -- | -- | -- | |
| 10/7/2002 | <40 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 4/9/2013 | <150 | <10 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | Top |
| 4/9/2013 | <150 | <10 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | Middle |
| 4/9/2013 | <150 | <10 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | Bottom |
| MW-3 | | | | | | | | | |
| 11/28/1995 | -- | -- | <3 | -- | -- | -- | -- | -- | |
| 11/7/1996 | -- | -- | <3 | -- | -- | -- | -- | -- | |
| 11/2/1998 | -- | -- | 1,700 | -- | -- | -- | -- | -- | |
| 11/11/1999 | -- | -- | <3 | -- | -- | -- | -- | -- | |
| 11/29/2000 | -- | -- | <2.50 | -- | -- | -- | -- | -- | |
| 10/5/2001 | -- | -- | <2.5 | -- | -- | -- | -- | -- | |
| 10/7/2002 | <40 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 10/03/2003 | <100 | <20 | <0.50 | <1.0 | <1.0 | <1.0 | <0.50 | <0.50 | a |
| 10/28/2004 | <100 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 10/31/2006 | <300 | <20 | 22 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| MW-4 | | | | | | | | | |

Table 3. Summary of Fuel Additives Analytical Data
ARCO Service Station #6113, 785 East Stanley Blvd., Livermore, CA

| Well ID and Date Monitored | Concentrations in µg/L | | | | | | | | Footnote |
|-------------------------------|------------------------|------|-----------|-------|-------|-------|---------|-------|----------|
| | Ethanol | TBA | MTBE | DIPE | ETBE | TAME | 1,2-DCA | EDB | |
| MW-4 Cont. | | | | | | | | | |
| 8/31/1995 | -- | -- | <3 | -- | -- | -- | -- | -- | |
| 11/28/1995 | -- | -- | <3 | -- | -- | -- | -- | -- | |
| 2/22/1996 | -- | -- | <3 | -- | -- | -- | -- | -- | |
| 5/23/1996 | -- | -- | <3 | -- | -- | -- | -- | -- | |
| 8/8/1996 | -- | -- | <3 | -- | -- | -- | -- | -- | |
| 11/7/1996 | -- | -- | <3 | -- | -- | -- | -- | -- | |
| 3/27/1997 | -- | -- | <3 | -- | -- | -- | -- | -- | |
| 5/19/1997 | -- | -- | <3 | -- | -- | -- | -- | -- | |
| 5/18/1998 | -- | -- | 64 | -- | -- | -- | -- | -- | |
| 11/2/1998 | -- | -- | 96 | -- | -- | -- | -- | -- | |
| 6/4/1999 | -- | -- | 38 | -- | -- | -- | -- | -- | |
| 11/11/1999 | -- | -- | 10 | -- | -- | -- | -- | -- | |
| 6/20/2000 | -- | -- | 62.3 | -- | -- | -- | -- | -- | |
| 6/20/2000 | -- | -- | 82.4 | -- | -- | -- | -- | -- | |
| 8/29/2000 | -- | -- | 47.9 | -- | -- | -- | -- | -- | |
| 11/29/2000 | -- | -- | 9.88/10.4 | -- | -- | -- | -- | -- | |
| 5/2/2001 | -- | -- | 59.4/68.4 | -- | -- | -- | -- | -- | |
| 5/2/2001 | -- | -- | 61.1/70.9 | -- | -- | -- | -- | -- | |
| 4/26/2002 | -- | -- | 150 | -- | -- | -- | -- | -- | |
| 10/7/2002 | <400 | <200 | 260 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | |
| 05/01/2003 | <100 | 25 | 86 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 10/03/2003 | <100 | <20 | 22 | <1.0 | <1.0 | <1.0 | <0.50 | <0.50 | a |
| 04/06/2004 | <100 | <20 | 17 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 10/28/2004 | <100 | <20 | 4.5 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 04/13/2005 | <100 | <20 | 2.8 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 10/27/2005 | <100 | <20 | 22 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 04/12/2006 | <300 | <20 | 1.9 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | b |
| 10/31/2006 | <300 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 4/19/2007 | <300 | <20 | <0.50 | <0.50 | <0.50 | 0.66 | <0.50 | <0.50 | |
| 11/9/2009 | <300 | 12 | 3.1 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 4/12/2010 | <300 | <10 | 2.7 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 11/4/2010 | <300 | <10 | 1.7 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |

Table 3. Summary of Fuel Additives Analytical Data
ARCO Service Station #6113, 785 East Stanley Blvd., Livermore, CA

| Well ID and Date Monitored | Concentrations in µg/L | | | | | | | | Footnote |
|-------------------------------|------------------------|---------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|----------|
| | Ethanol | TBA | MTBE | DIPE | ETBE | TAME | 1,2-DCA | EDB | |
| MW-4 Cont. | | | | | | | | | |
| 5/18/2011 | <300 | <10 | 1.2 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 10/20/2011 | <300 | <10 | 0.59 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 4/11/2012 | <300 | <10 | 0.59 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 10/10/2012 | <150 | <10 | 0.51 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 4/9/2013 | <150 | <10 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| MW-5 | | | | | | | | | |
| 11/28/1995 | -- | -- | <5 | -- | -- | -- | -- | -- | |
| 5/23/1996 | -- | -- | <50 | -- | -- | -- | -- | -- | |
| 11/7/1996 | -- | -- | <80 | -- | -- | -- | -- | -- | |
| 5/19/1997 | -- | -- | <40 | -- | -- | -- | -- | -- | |
| 5/18/1998 | -- | -- | 4 | -- | -- | -- | -- | -- | |
| 11/2/1998 | -- | -- | 100 | -- | -- | -- | -- | -- | |
| 6/4/1999 | -- | -- | 1,400 | -- | -- | -- | -- | -- | |
| 11/11/1999 | -- | -- | 72 | -- | -- | -- | -- | -- | |
| 6/20/2000 | -- | -- | <50.0 | -- | -- | -- | -- | -- | |
| 8/29/2000 | -- | -- | 517 | -- | -- | -- | -- | -- | |
| 11/29/2000 | -- | -- | 671/<20.0 | -- | -- | -- | -- | -- | |
| MW-6 | | | | | | | | | |
| 8/31/1995 | -- | -- | <3 | -- | -- | -- | -- | -- | |
| 11/28/1995 | -- | -- | <3 | -- | -- | -- | -- | -- | |
| 2/22/1996 | -- | -- | <3 | -- | -- | -- | -- | -- | |
| 5/23/1996 | -- | -- | <3 | -- | -- | -- | -- | -- | |
| 8/8/1996 | -- | -- | <3 | -- | -- | -- | -- | -- | |
| 11/7/1996 | -- | -- | <3 | -- | -- | -- | -- | -- | |
| 3/27/1997 | -- | -- | 4 | -- | -- | -- | -- | -- | |
| 5/19/1997 | -- | -- | <3 | -- | -- | -- | -- | -- | |
| 5/18/1998 | -- | -- | <3 | -- | -- | -- | -- | -- | |
| 11/2/1998 | -- | -- | 3 | -- | -- | -- | -- | -- | |
| 6/4/1999 | -- | -- | 33 | -- | -- | -- | -- | -- | |
| 11/11/1999 | -- | -- | <3 | -- | -- | -- | -- | -- | |

Table 3. Summary of Fuel Additives Analytical Data
ARCO Service Station #6113, 785 East Stanley Blvd., Livermore, CA

| Well ID and Date Monitored | Concentrations in µg/L | | | | | | | | Footnote |
|-------------------------------|------------------------|--------|-------------|-------|-------|-------|---------|-------|----------|
| | Ethanol | TBA | MTBE | DIPE | ETBE | TAME | 1,2-DCA | EDB | |
| MW-6 Cont. | | | | | | | | | |
| 6/20/2000 | -- | -- | 17.3 | -- | -- | -- | -- | -- | |
| 8/29/2000 | -- | -- | <2.50 | -- | -- | -- | -- | -- | |
| 8/29/2000 | -- | -- | <2.50 | -- | -- | -- | -- | -- | |
| 11/29/2000 | -- | -- | <2.50 | -- | -- | -- | -- | -- | |
| 5/2/2001 | -- | -- | 1,810/2,310 | -- | -- | -- | -- | -- | |
| 8/15/2001 | -- | -- | 21/25 | -- | -- | -- | -- | -- | |
| 10/5/2001 | -- | -- | <2.5 | -- | -- | -- | -- | -- | |
| 1/21/2002 | -- | -- | <5.0 | -- | -- | -- | -- | -- | |
| 4/26/2002 | -- | -- | 17 | -- | -- | -- | -- | -- | |
| 10/7/2002 | <40 | <20 | 8 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 05/01/2003 | <100 | <20 | 12 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 10/03/2003 | <500 | <100 | 120 | <5.0 | <5.0 | <5.0 | <2.5 | <2.5 | a |
| 04/06/2004 | <5,000 | <1,000 | 1,700 | <25 | <25 | <25 | <25 | <25 | |
| 10/28/2004 | <5,000 | <1,000 | 3,100 | <25 | <25 | <25 | <25 | <25 | |
| 04/13/2005 | <10,000 | <2,000 | 3,900 | <50 | <50 | <50 | <50 | <50 | |
| 10/27/2005 | <10,000 | <2,000 | 2,900 | <50 | <50 | <50 | <50 | <50 | b |
| 04/12/2006 | <30,000 | <2,000 | 3,400 | <50 | <50 | <50 | <50 | <50 | b |
| 10/31/2006 | <15,000 | <1,000 | 3,400 | <25 | <25 | <25 | <25 | <25 | b |
| 4/19/2007 | <15,000 | <1,000 | 2,200 | <25 | <25 | <25 | <25 | <25 | |
| 10/16/2007 | <15,000 | <1,000 | 2,600 | <25 | <25 | <25 | <25 | <25 | c (MTBE) |
| 4/24/2008 | <6,000 | 1,500 | 4,200 | <10 | <10 | <10 | <10 | <10 | |
| MW-7 | | | | | | | | | |
| 8/31/1995 | -- | -- | <3 | -- | -- | -- | -- | -- | |
| 11/28/1995 | -- | -- | <3 | -- | -- | -- | -- | -- | |
| 2/22/1996 | -- | -- | <3 | -- | -- | -- | -- | -- | |
| 5/23/1996 | -- | -- | <3 | -- | -- | -- | -- | -- | |
| 11/7/1996 | -- | -- | <3 | -- | -- | -- | -- | -- | |
| 3/27/1997 | -- | -- | <3 | -- | -- | -- | -- | -- | |
| 5/19/1997 | -- | -- | <3 | -- | -- | -- | -- | -- | |
| 5/18/1998 | -- | -- | <3 | -- | -- | -- | -- | -- | |
| 11/2/1998 | -- | -- | 4 | -- | -- | -- | -- | -- | |

Table 3. Summary of Fuel Additives Analytical Data
ARCO Service Station #6113, 785 East Stanley Blvd., Livermore, CA

| Well ID and Date Monitored | Concentrations in µg/L | | | | | | | | Footnote |
|-------------------------------|------------------------|---------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|------------|
| | Ethanol | TBA | MTBE | DIPE | ETBE | TAME | 1,2-DCA | EDB | |
| MW-7 Cont. | | | | | | | | | |
| 6/4/1999 | -- | -- | <3 | -- | -- | -- | -- | -- | |
| 11/11/1999 | -- | -- | <3 | -- | -- | -- | -- | -- | |
| 6/20/2000 | -- | -- | <2.50 | -- | -- | -- | -- | -- | |
| 8/29/2000 | -- | -- | <2.50 | -- | -- | -- | -- | -- | |
| 11/29/2000 | -- | -- | <2.50 | -- | -- | -- | -- | -- | |
| 5/2/2001 | -- | -- | <2.50/2.66 | -- | -- | -- | -- | -- | |
| 8/15/2001 | -- | -- | <2.5 | -- | -- | -- | -- | -- | |
| 10/5/2001 | -- | -- | <2.5 | -- | -- | -- | -- | -- | |
| 1/21/2002 | -- | -- | 15/21 | -- | -- | -- | -- | -- | |
| 4/26/2002 | -- | -- | 18 | -- | -- | -- | -- | -- | |
| 10/7/2002 | <40 | <20 | 41 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 05/01/2003 | <100 | <20 | 43 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 10/03/2003 | <200 | <40 | 49 | <2.0 | <2.0 | <2.0 | <1.0 | <1.0 | a |
| 04/06/2004 | <100 | <20 | 0.76 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 10/28/2004 | <100 | <20 | 14 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 04/13/2005 | <100 | <20 | 1.7 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 10/27/2005 | <100 | <20 | 2.3 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | b |
| 04/12/2006 | <300 | <20 | 1.1 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | b |
| 10/31/2006 | <300 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | b |
| 4/19/2007 | <300 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 10/16/2007 | <300 | <20 | 24 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 4/24/2008 | <300 | <10 | 22 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 10/15/2008 | <300 | <10 | 8.2 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 4/28/2009 | <300 | <10 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | d |
| 11/9/2009 | <300 | <10 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 4/12/2010 | <300 | <10 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 11/4/2010 | <300 | <10 | 0.59 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 5/18/2011 | <300 | <10 | 3.9 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 10/20/2011 | <300 | <10 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 4/11/2012 | <300 | <10 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 10/10/2012 | <150 | <10 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 4/10/2013 | <150 | <10 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | Top |

Table 3. Summary of Fuel Additives Analytical Data
ARCO Service Station #6113, 785 East Stanley Blvd., Livermore, CA

| Well ID and Date Monitored | Concentrations in µg/L | | | | | | | | Footnote |
|----------------------------|------------------------|-----|-------|-------|-------|-------|---------|-------|----------|
| | Ethanol | TBA | MTBE | DIPE | ETBE | TAME | 1,2-DCA | EDB | |
| MW-7 Cont. | | | | | | | | | |
| 4/10/2013 | <150 | <10 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | Middle |
| 4/10/2013 | <150 | <10 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | Bottom |
| MW-8 | | | | | | | | | |
| 11/28/1995 | -- | -- | <3 | -- | -- | -- | -- | -- | |
| 11/7/1996 | -- | -- | <3 | -- | -- | -- | -- | -- | |
| 11/2/1998 | -- | -- | <3 | -- | -- | -- | -- | -- | |
| 11/11/1999 | -- | -- | <3 | -- | -- | -- | -- | -- | |
| 11/29/2000 | -- | -- | <2.50 | -- | -- | -- | -- | -- | |
| 10/5/2001 | -- | -- | <2.5 | -- | -- | -- | -- | -- | |
| 10/7/2002 | <40 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| MW-9 | | | | | | | | | |
| 11/28/1995 | -- | -- | <3 | -- | -- | -- | -- | -- | |
| 11/7/1996 | -- | -- | <3 | -- | -- | -- | -- | -- | |
| 6/4/1999 | -- | -- | <3 | -- | -- | -- | -- | -- | |
| 11/11/1999 | -- | -- | <3 | -- | -- | -- | -- | -- | |
| 11/29/2000 | -- | -- | <2.50 | -- | -- | -- | -- | -- | |
| 10/5/2001 | -- | -- | <2.5 | -- | -- | -- | -- | -- | |
| 10/5/2001 | -- | -- | <2.5 | -- | -- | -- | -- | -- | |
| 10/7/2002 | <40 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 10/03/2003 | <100 | <20 | <0.50 | <1.0 | <1.0 | <1.0 | <0.50 | <0.50 | a |
| 10/28/2004 | <100 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 10/27/2005 | <100 | <20 | 1.4 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | b |
| 10/31/2006 | <300 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | b |
| 10/16/2007 | <300 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 10/15/2008 | <300 | <10 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 11/9/2009 | <300 | <10 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 11/4/2010 | <300 | <10 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 10/20/2011 | <300 | <10 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 4/11/2012 | <300 | <10 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 10/10/2012 | <150 | <10 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |

Table 3. Summary of Fuel Additives Analytical Data
ARCO Service Station #6113, 785 East Stanley Blvd., Livermore, CA

| Well ID and Date Monitored | Concentrations in µg/L | | | | | | | | Footnote |
|-------------------------------|------------------------|-----|-------|-------|-------|-------|---------|-------|----------|
| | Ethanol | TBA | MTBE | DIPE | ETBE | TAME | 1,2-DCA | EDB | |
| MW-9 Cont. | | | | | | | | | |
| 4/10/2013 | <150 | <10 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | Top |
| 4/10/2013 | <150 | <10 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | Middle |
| 4/10/2013 | <150 | <10 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | Bottom |
| MW-10 | | | | | | | | | |
| 11/28/1995 | -- | -- | <3 | -- | -- | -- | -- | -- | |
| 11/7/1996 | -- | -- | <3 | -- | -- | -- | -- | -- | |
| 11/2/1998 | -- | -- | <3 | -- | -- | -- | -- | -- | |
| 11/11/1999 | -- | -- | <3 | -- | -- | -- | -- | -- | |
| 11/29/2000 | -- | -- | <2.50 | -- | -- | -- | -- | -- | |
| 10/5/2001 | -- | -- | <2.5 | -- | -- | -- | -- | -- | |
| 10/7/2002 | <40 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 10/03/2003 | <100 | <20 | <0.50 | <1.0 | <1.0 | <1.0 | <0.50 | <0.50 | a |
| 10/28/2004 | <100 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 10/27/2005 | <100 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 10/31/2006 | <300 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | b |
| 10/16/2007 | <300 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| MW-11 | | | | | | | | | |
| 11/28/1995 | -- | -- | <3 | -- | -- | -- | -- | -- | |
| 5/23/1996 | -- | -- | <3 | -- | -- | -- | -- | -- | |
| 11/7/1996 | -- | -- | <3 | -- | -- | -- | -- | -- | |
| 5/19/1997 | -- | -- | <3 | -- | -- | -- | -- | -- | |
| 5/18/1998 | -- | -- | <3 | -- | -- | -- | -- | -- | |
| 11/2/1998 | -- | -- | <3 | -- | -- | -- | -- | -- | |
| 6/4/1999 | -- | -- | <3 | -- | -- | -- | -- | -- | |
| 11/11/1999 | -- | -- | <3 | -- | -- | -- | -- | -- | |
| 6/20/2000 | -- | -- | <2.50 | -- | -- | -- | -- | -- | |
| 11/29/2000 | -- | -- | <2.50 | -- | -- | -- | -- | -- | |
| 5/2/2001 | -- | -- | <2.50 | -- | -- | -- | -- | -- | |
| 10/5/2001 | -- | -- | <2.5 | -- | -- | -- | -- | -- | |
| 4/26/2002 | -- | -- | <2.5 | -- | -- | -- | -- | -- | |

Table 3. Summary of Fuel Additives Analytical Data
ARCO Service Station #6113, 785 East Stanley Blvd., Livermore, CA

| Well ID and Date Monitored | Concentrations in µg/L | | | | | | | | Footnote |
|-------------------------------|------------------------|---------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-------------------|
| | Ethanol | TBA | MTBE | DIPE | ETBE | TAME | 1,2-DCA | EDB | |
| MW-11 Cont. | | | | | | | | | |
| 10/7/2002 | <40 | <20 | 1.0 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 05/01/2003 | <100 | <20 | 1.5 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 10/03/2003 | <100 | <20 | 3.1 | <1.0 | <1.0 | <1.0 | <0.50 | <0.50 | a |
| 04/06/2004 | <100 | <20 | 14 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 10/28/2004 | <100 | <20 | 29 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 04/13/2005 | <100 | <20 | 3.7 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 10/27/2005 | <100 | <20 | 21 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 04/12/2006 | -- | -- | -- | -- | -- | -- | -- | -- | Well inaccessible |
| 4/19/2007 | <300 | <20 | 12 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 10/16/2007 | <300 | <20 | 6.6 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 4/24/2008 | <300 | <10 | 17 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 4/28/2009 | <300 | <10 | 5.3 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | d |
| 11/9/2009 | <300 | <10 | 12 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 4/12/2010 | <300 | <10 | 10 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 11/4/2010 | <300 | <10 | 9.9 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 5/18/2011 | <300 | <10 | 7.8 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 10/20/2011 | <300 | <10 | 6.9 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 4/11/2012 | <300 | <10 | 5.6 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 10/10/2012 | <150 | <10 | 4.2 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 4/9/2013 | <150 | <10 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | Top |
| 4/9/2013 | <150 | <10 | 5.0 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | Middle |
| 4/9/2013 | <150 | <10 | 6.0 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | Bottom |
| MW-12 | | | | | | | | | |
| 11/28/1995 | -- | -- | <3 | -- | -- | -- | -- | -- | |
| 5/23/1996 | -- | -- | <3 | -- | -- | -- | -- | -- | |
| 11/7/1996 | -- | -- | <3 | -- | -- | -- | -- | -- | |
| 5/19/1997 | -- | -- | <3 | -- | -- | -- | -- | -- | |
| 5/18/1998 | -- | -- | <3 | -- | -- | -- | -- | -- | |
| 04/06/2004 | <100 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 10/28/2004 | <100 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 04/13/2005 | <100 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |

Table 3. Summary of Fuel Additives Analytical Data
ARCO Service Station #6113, 785 East Stanley Blvd., Livermore, CA

| Well ID and Date Monitored | Concentrations in µg/L | | | | | | | | Footnote |
|-------------------------------|------------------------|---------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|---------------|
| | Ethanol | TBA | MTBE | DIPE | ETBE | TAME | 1,2-DCA | EDB | |
| MW-12 Cont. | | | | | | | | | |
| 10/27/2005 | <100 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 04/12/2006 | <300 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | b |
| 4/19/2007 | <300 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 4/28/2009 | <300 | <10 | 1.4 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | d |
| 11/9/2009 | <300 | <10 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 4/12/2010 | <300 | <10 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 11/4/2010 | <300 | <10 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 5/18/2011 | <300 | <10 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 10/20/2011 | <300 | <10 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 4/11/2012 | <300 | <10 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 10/10/2012 | <150 | <10 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 4/9/2013 | <150 | <10 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | Top |
| 4/9/2013 | <150 | <10 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | Bottom |
| MW-13 | | | | | | | | | |
| 1/21/2002 | -- | -- | 4,900/5,200 | -- | -- | -- | -- | -- | |
| 4/26/2002 | -- | -- | 1,600 | -- | -- | -- | -- | -- | |
| 10/7/2002 | <4,000 | <2,000 | 2,800 | <50 | <50 | <50 | <50 | <50 | |
| 05/01/2003 | <10,000 | <2,000 | 1,600 | <50 | <50 | <50 | <50 | <50 | |
| 10/03/2003 | <10,000 | <2,000 | 2,400 | <100 | <100 | <100 | <50 | <50 | a |
| 04/06/2004 | <5,000 | <1,000 | 1,800 | <25 | <25 | <25 | <25 | <25 | |
| 10/28/2004 | <5,000 | <1,000 | 1,800 | <25 | <25 | <25 | <25 | <25 | |
| 04/13/2005 | <5,000 | <1,000 | 920 | <25 | <25 | <25 | <25 | <25 | |
| 10/27/2005 | <2,000 | <400 | 580 | <10 | <10 | <10 | <10 | <10 | |
| 04/12/2006 | <6,000 | <400 | 470 | <10 | <10 | <10 | <10 | <10 | b |
| 10/31/2006 | <15,000 | <1,000 | 710 | <25 | <25 | <25 | <25 | <25 | b |
| 4/19/2007 | <15,000 | <1,000 | 330 | <25 | <25 | <25 | <25 | <25 | |
| 4/24/2008 | <300 | 14 | 49 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| RMW-13 | | | | | | | | | |
| 4/12/2010 | <75,000 | <2,500 | 1,500 | <120 | <120 | <120 | <120 | <120 | |
| 11/4/2010 | <75,000 | <2,500 | 390 | <120 | <120 | <120 | 130 | <120 | |

Table 3. Summary of Fuel Additives Analytical Data
ARCO Service Station #6113, 785 East Stanley Blvd., Livermore, CA

| Well ID and Date Monitored | Concentrations in µg/L | | | | | | | | Footnote |
|-------------------------------|------------------------|------------------|-------------|---------------|---------------|---------------|---------------|---------------|---------------|
| | Ethanol | TBA | MTBE | DIPE | ETBE | TAME | 1,2-DCA | EDB | |
| RMW-13 Cont. | | | | | | | | | |
| 5/18/2011 | <30,000 | <1,000 | 380 | <50 | <50 | <50 | <50 | <50 | |
| 10/20/2011 | <12,000 | <400 | 55 | <20 | <20 | <20 | <20 | <20 | |
| 4/11/2012 | <30,000 | <1,000 | 280 | <50 | <50 | <50 | <50 | <50 | |
| 10/10/2012 | <15,000 | <1,000 | 460 | <50 | <50 | <50 | <50 | <50 | |
| 4/10/2013 | <15,000 | <1,000 | 270 | <50 | <50 | <50 | <50 | <50 | Top |
| 4/10/2013 | <15,000 | <1,000 | 280 | <50 | <50 | <50 | <50 | <50 | Bottom |
| VW-1 | | | | | | | | | |
| 8/29/2000 | -- | -- | 110 | -- | -- | -- | -- | -- | |
| 11/29/2000 | -- | -- | <2.50 | -- | -- | -- | -- | -- | |
| 8/15/2001 | -- | -- | 20/17 | -- | -- | -- | -- | -- | |
| 8/15/2001 | -- | -- | 20/17 | -- | -- | -- | -- | -- | |
| 10/5/2001 | -- | -- | 610/660 | -- | -- | -- | -- | -- | |
| 1/21/2002 | -- | -- | 2,600/3,400 | -- | -- | -- | -- | -- | |
| 1/21/2002 | -- | -- | 2,500/3,200 | -- | -- | -- | -- | -- | |
| 4/26/2002 | -- | -- | 48 | -- | -- | -- | -- | -- | |
| 4/26/2002 | -- | -- | 45 | -- | -- | -- | -- | -- | |
| 10/7/2002 | <80 | <40 | 88 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | |
| 05/01/2003 | <100 | <20 | 36 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 10/03/2003 | <100 | <20 | 12 | <1.0 | <1.0 | <1.0 | <0.50 | <0.50 | a |
| 04/06/2004 | <100 | <20 | 13 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 10/28/2004 | <100 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 04/13/2005 | <100 | <20 | 9.6 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 10/27/2005 | <100 | <20 | 13 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 04/12/2006 | <300 | <20 | 1.6 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | b |
| 10/31/2006 | <300 | <20 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | b |
| 4/19/2007 | <300 | <20 | 3.0 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 10/16/2007 | <15,000 | <1,000 | 150 | <25 | <25 | <25 | <25 | <25 | b |
| 4/24/2008 | <300 | <10 | 4.5 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 4/28/2009 | <300 | <10 | 19 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | d |
| 11/9/2009 | <300 | <10 | 1.1 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 4/12/2010 | <300 | <10 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |

Table 3. Summary of Fuel Additives Analytical Data
ARCO Service Station #6113, 785 East Stanley Blvd., Livermore, CA

| Well ID and Date Monitored | Concentrations in µg/L | | | | | | | | Footnote |
|-------------------------------|------------------------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-------------------|
| | Ethanol | TBA | MTBE | DIPE | ETBE | TAME | 1,2-DCA | EDB | |
| VW-1 Cont. | | | | | | | | | |
| 11/4/2010 | <300 | <10 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 5/18/2011 | <300 | <10 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 10/20/2011 | <300 | <10 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 4/11/2012 | <300 | <10 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 10/10/2012 | <150 | <10 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| 4/10/2013 | <150 | <10 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | Top |
| 4/10/2013 | <150 | <10 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | Middle |
| 4/10/2013 | <150 | <10 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | Bottom |
| VW-2 | | | | | | | | | |
| 10/03/2003 | -- | -- | -- | -- | -- | -- | -- | -- | Well inaccessible |
| 4/10/2013 | <150 | <10 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | Top |
| 4/10/2013 | <150 | <10 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | Middle |
| 4/10/2013 | <150 | <10 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | Bottom |
| VW-3 | | | | | | | | | |
| 8/29/2000 | -- | -- | 44,700 | -- | -- | -- | -- | -- | |
| 11/29/2000 | -- | -- | 12,300/15,100 | -- | -- | -- | -- | -- | |
| VW-4 | | | | | | | | | |
| 11/29/2000 | -- | -- | 6,430/8,460 | -- | -- | -- | -- | -- | |
| 11/29/2000 | -- | -- | 6,770/7,880 | -- | -- | -- | -- | -- | |
| 10/03/2003 | <100,000 | <20,000 | 1,600 | <1,000 | <1,000 | <1,000 | <500 | <500 | a |
| 4/9/2013 | <6,000 | <400 | 59 | <20 | <20 | <20 | <20 | <20 | |

Symbols & Abbreviations:

-- = Not analyzed/applicable/measured/available

< = Not detected at or above specified laboratory reporting limit

1,2-DCA = 1,2-Dichloroethane

DIPE = Diisopropyl ether

EDB = 1,2-Dibromoethane

ETBE = Ethyl tert-butyl ether

MTBE = Methyl tert-butyl ether

TAME = tert-Amyl methyl ether

TBA = tert-Butyl alcohol

µg/L = Micrograms per Liter

Footnotes:

a = This sample was analyzed 3 days after the EPA recommended holding time. The results may still be useful for their intended purpose

b = Calibration verification for ethanol was within method limits but outside contract limits

c = Sample >4x spike concentration

d = Calibrtn. verif. recov. Below method CL for TAME

Notes:

All volatile organic compounds analyzed using EPA Method 8260B.

Note: The data within this table collected prior to April 2006 was provided to Broadbent & Associates, Inc. by Atlantic Richfield Company and their previous consultants. Broadbent & Associates, Inc. has not verified the accuracy of this information.

During the Second Quarter 2013 groundwater monitoring event wells were purged with a low-flow peristaltic pump and sampled from multiple screen intervals, consisting of the top, middle and/or bottom of the well screen, on a one-time basis for comparison purposes.

Table 4. Bio-Degradation Parameters
ARCO Service Station #6113, 785 East Stanley Blvd., Livermore, CA

| Well ID and Date Monitored | Concentrations in mg/L | | | | | | | | | | ORP (mV) | pH | Temp (F) | Conductivity (µS/cm) | Footnote | |
|----------------------------|------------------------|--------------|-----------|--------------|---------------|---------------|----------|-----------------|--------------|-------|----------|------|----------|----------------------|----------|--|
| | Dissolved Oxygen | Nitrate as N | Manganese | Ferrous Iron | Sulfate (SO4) | Dissolved CO2 | Methane | Ortho-Phosphate | Nitrite as N | TKN | | | | | | |
| MW-1 | | | | | | | | | | | | | | | | |
| 11/11/1999 | 1.03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 6/20/2000 | 3.1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 8/29/2000 | 2.66 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 11/29/2000 | 0.71 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 10/5/2001 | 0.78 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 10/7/2002 | 1.8 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| MW-2 | | | | | | | | | | | | | | | | |
| 11/11/1999 | 0.82 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 6/20/2000 | 2.6 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 8/29/2000 | 2.65 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 11/29/2000 | 0.88 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 10/5/2001 | 0.8 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 10/7/2002 | 1.5 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 4/9/2013 | 3.8 | <0.11 | 0.10 | <0.10 | 56 | 41 | <0.00099 | <0.50 | <0.15 | <0.50 | 149 | 7.30 | 69.48 | 670 | Top | |
| 4/9/2013 | 3.9 | <0.11 | 0.071 | <0.10 | 56 | 39 | <0.00099 | <0.50 | <0.15 | <0.50 | 138 | 7.28 | 69.60 | 659 | Middle | |
| 4/9/2013 | 4.1 | <0.11 | 0.038 | <0.10 | 55 | 39 | <0.00099 | <0.50 | <0.15 | <0.50 | 125 | 7.31 | 72.46 | 638 | Bottom | |
| MW-3 | | | | | | | | | | | | | | | | |
| 11/11/1999 | 0.79 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 6/20/2000 | 2.8 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 8/29/2000 | 3.39 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 11/29/2000 | 0.67 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 10/5/2001 | 0.79 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 10/7/2002 | 1.2 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 10/03/2003 | 5.2 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.3 | -- | -- | -- | |
| 10/28/2004 | 8.1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.3 | -- | -- | -- | |
| 10/31/2006 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.64 | -- | -- | -- | |
| MW-4 | | | | | | | | | | | | | | | | |
| 11/11/1999 | 0.77 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 6/20/2000 | 1.3 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |

Table 4. Bio-Degradation Parameters
ARCO Service Station #6113, 785 East Stanley Blvd., Livermore, CA

| Well ID and Date Monitored | Concentrations in mg/L | | | | | | | | | | ORP (mV) | pH | Temp (F) | Conductivity (µS/cm) | Footnote | |
|----------------------------|------------------------|--------------|-----------|--------------|---------------|---------------|----------|-----------------|--------------|-------|----------|------|----------|----------------------|----------|--|
| | Dissolved Oxygen | Nitrate as N | Manganese | Ferrous Iron | Sulfate (SO4) | Dissolved CO2 | Methane | Ortho-Phosphate | Nitrite as N | TKN | | | | | | |
| MW-4 Cont. | | | | | | | | | | | | | | | | |
| 8/29/2000 | 0.97 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 11/29/2000 | 0.59 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 5/2/2001 | 0.74 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 4/26/2002 | 0.21 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 10/7/2002 | 1.0 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 05/01/2003 | 1.7 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 10/03/2003 | 13.5 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.8 | -- | -- | |
| 04/06/2004 | 1.6 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.8 | -- | -- | |
| 10/28/2004 | 1.2 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.7 | -- | -- | |
| 04/13/2005 | 0.8 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.7 | -- | -- | |
| 10/27/2005 | 1.0 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.9 | -- | -- | |
| 04/12/2006 | 1.6 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.2 | -- | -- | |
| 10/31/2006 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.63 | -- | -- | |
| 4/19/2007 | 2.92 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.36 | -- | -- | |
| 4/12/2010 | 0.81 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.87 | -- | -- | |
| 11/4/2010 | 0.44 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.5 | -- | -- | |
| 5/18/2011 | 1.04 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.1 | 64.94 | 868 | |
| 10/20/2011 | 0.95 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.23 | -- | -- | |
| 4/11/2012 | 0.22 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.11 | 64.70 | 972 | |
| 10/10/2012 | 1.39 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 38 | 7.29 | 72.32 | 780 | |
| 4/9/2013 | 3.8 | <0.11 | 5.1 | <0.10 | 48 | 74 | <0.00099 | <0.50 | <0.15 | <0.50 | 171 | 7.13 | 68.77 | 730 | | |
| MW-5 | | | | | | | | | | | | | | | | |
| 11/11/1999 | 0.86 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 6/20/2000 | 1.6 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 8/29/2000 | 0.79 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 11/29/2000 | 0.51 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| MW-6 | | | | | | | | | | | | | | | | |
| 11/11/1999 | 0.92 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 6/20/2000 | 1.9 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |

Table 4. Bio-Degradation Parameters
ARCO Service Station #6113, 785 East Stanley Blvd., Livermore, CA

| Well ID and Date Monitored | Concentrations in mg/L | | | | | | | | | | ORP (mV) | pH | Temp (F) | Conductivity (µS/cm) | Footnote |
|----------------------------|------------------------|--------------|-----------|--------------|---------------|---------------|---------|-----------------|--------------|-----|----------|-------|----------|----------------------|----------|
| | Dissolved Oxygen | Nitrate as N | Manganese | Ferrous Iron | Sulfate (SO4) | Dissolved CO2 | Methane | Ortho-Phosphate | Nitrite as N | TKN | | | | | |
| MW-6 Cont. | | | | | | | | | | | | | | | |
| 8/29/2000 | 1.67 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 11/29/2000 | 0.79 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 5/2/2001 | 0.95 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 8/15/2001 | 0.63 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 10/5/2001 | 0.85 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 1/21/2002 | 0.91 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 4/26/2002 | 0.75 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 10/7/2002 | 2.8 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 05/01/2003 | 1.6 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 10/03/2003 | 5.1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.9 | -- | -- | |
| 04/06/2004 | 4.1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.0 | -- | -- | |
| 10/28/2004 | 6.8 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.9 | -- | -- | |
| 04/13/2005 | 3.9 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.0 | -- | -- | |
| 10/27/2005 | 3.15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.0 | -- | -- | |
| 04/12/2006 | 4.3 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.6 | -- | -- | |
| 10/31/2006 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 10.36 | -- | -- | |
| 4/19/2007 | 5.54 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 10.52 | -- | -- | |
| 10/16/2007 | 4.56 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 10.26 | -- | -- | |
| 4/24/2008 | 2.15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.90 | -- | -- | |
| MW-7 | | | | | | | | | | | | | | | |
| 11/11/1999 | 1.03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 6/20/2000 | 1.3 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 8/29/2000 | 1.67 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 11/29/2000 | 0.51 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 5/2/2001 | 0.9 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 8/15/2001 | 0.84 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 10/5/2001 | 0.62 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 1/21/2002 | 0.65 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 4/26/2002 | 0.61 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 10/7/2002 | 4.8 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |

Table 4. Bio-Degradation Parameters
ARCO Service Station #6113, 785 East Stanley Blvd., Livermore, CA

| Well ID and Date Monitored | Concentrations in mg/L | | | | | | | | | | ORP (mV) | pH | Temp (F) | Conductivity (µS/cm) | Footnote | |
|----------------------------|------------------------|--------------|-----------|--------------|---------------|---------------|----------|-----------------|--------------|-------|----------|-------|----------|----------------------|----------|--|
| | Dissolved Oxygen | Nitrate as N | Manganese | Ferrous Iron | Sulfate (SO4) | Dissolved CO2 | Methane | Ortho-Phosphate | Nitrite as N | TKN | | | | | | |
| MW-7 Cont. | | | | | | | | | | | | | | | | |
| 05/01/2003 | 2.7 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 10/03/2003 | 5.7 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.1 | -- | -- | |
| 04/06/2004 | 0.7 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.0 | -- | -- | |
| 10/28/2004 | 6.7 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.9 | -- | -- | |
| 04/13/2005 | 2.3 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.9 | -- | -- | |
| 10/27/2005 | 2.16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.0 | -- | -- | |
| 04/12/2006 | 3.0 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.2 | -- | -- | |
| 10/31/2006 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.55 | -- | -- | |
| 4/19/2007 | 4.37 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.60 | -- | -- | |
| 10/16/2007 | 4.87 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.02 | -- | -- | |
| 4/24/2008 | 1.96 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.24 | -- | -- | |
| 10/15/2008 | 2.31 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.14 | -- | -- | |
| 4/28/2009 | 3.78 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.93 | -- | -- | |
| 11/9/2009 | 1.3 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.8 | -- | -- | |
| 4/12/2010 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.55 | -- | -- | |
| 11/4/2010 | 4.15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.4 | -- | -- | |
| 5/18/2011 | 4.45 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 10.6 | 64.76 | 420 | |
| 10/20/2011 | 4.37 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.02 | -- | -- | |
| 4/11/2012 | 0.33 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -32.7 | 7.50 | 65.60 | 396 | |
| 10/10/2012 | 5.87 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 79 | 8.92 | 70.39 | 536 | |
| 4/10/2013 | 7.3 | 0.51 | 0.029 | <0.10 | 34 | 1.6 | <0.00099 | <0.50 | <0.15 | <0.50 | 85 | 8.30 | 86.2 | 532 | Top | |
| 4/10/2013 | 3.0 | 0.47 | 0.29 | <0.10 | 36 | 37 | <0.00099 | <0.50 | <0.15 | <0.50 | 80 | 7.55 | 84.51 | 516 | Middle | |
| 4/10/2013 | 3.2 | 0.46 | 1.2 | <0.10 | 36 | 28 | 0.083 | <0.50 | <0.15 | <0.50 | 74.5 | 7.51 | 78.98 | 574 | Bottom | |
| MW-8 | | | | | | | | | | | | | | | | |
| 11/11/1999 | 1.01 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 6/20/2000 | 2.4 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 8/29/2000 | 3.37 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 11/29/2000 | 1.35 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 10/5/2001 | 1.07 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 10/7/2002 | 4.2 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |

Table 4. Bio-Degradation Parameters
ARCO Service Station #6113, 785 East Stanley Blvd., Livermore, CA

| Well ID and Date Monitored | Concentrations in mg/L | | | | | | | | | | ORP (mV) | pH | Temp (F) | Conductivity (µS/cm) | Footnote | |
|----------------------------|------------------------|--------------|-----------|--------------|---------------|---------------|----------|-----------------|--------------|-------|----------|------|----------|----------------------|----------|--|
| | Dissolved Oxygen | Nitrate as N | Manganese | Ferrous Iron | Sulfate (SO4) | Dissolved CO2 | Methane | Ortho-Phosphate | Nitrite as N | TKN | | | | | | |
| MW-9 | | | | | | | | | | | | | | | | |
| 11/11/1999 | 0.96 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 6/20/2000 | 2.1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 8/29/2000 | 2.59 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 11/29/2000 | 0.81 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 10/5/2001 | 0.93 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 10/7/2002 | 2.6 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 10/03/2003 | 4.9 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.8 | -- | -- | |
| 10/28/2004 | 6.8 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.9 | -- | -- | |
| 10/27/2005 | 2.56 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.0 | -- | -- | |
| 10/31/2006 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.46 | -- | -- | |
| 10/16/2007 | 1.27 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.59 | -- | -- | |
| 10/15/2008 | 1.14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.08 | -- | -- | |
| 11/9/2009 | 3.33 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.82 | -- | -- | |
| 11/4/2010 | 4.73 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.8 | -- | -- | |
| 10/20/2011 | 4.87 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.96 | -- | -- | |
| 4/11/2012 | 0.99 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 12 | 7.45 | 63.77 | 480 | |
| 10/10/2012 | 1.70 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7 | 7.68 | 69.89 | 529 | |
| 4/10/2013 | 6.2 | 0.31 | <0.020 | <0.10 | 36 | 27 | <0.00099 | <0.50 | <0.15 | <0.50 | 161 | 7.31 | 78.01 | 501 | Top | |
| 4/10/2013 | 5.3 | 0.34 | <0.020 | <0.10 | 36 | 27 | <0.00099 | <0.50 | <0.15 | <0.50 | 155 | 7.42 | 73.42 | 530 | Middle | |
| 4/10/2013 | 3.9 | 0.43 | <0.020 | <0.10 | 36 | 26 | <0.00099 | <0.50 | <0.15 | <0.50 | 136 | 7.70 | 70.41 | 551 | Bottom | |
| MW-10 | | | | | | | | | | | | | | | | |
| 11/11/1999 | 0.68 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 6/20/2000 | 2.9 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 8/29/2000 | 1.54 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 11/29/2000 | 0.95 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 10/5/2001 | 0.89 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 10/7/2002 | 3.0 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 10/03/2003 | 2.4 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.1 | -- | -- | |
| 10/28/2004 | 5.9 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.1 | -- | -- | |
| 10/27/2005 | 3.38 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.2 | -- | -- | |

Table 4. Bio-Degradation Parameters
ARCO Service Station #6113, 785 East Stanley Blvd., Livermore, CA

| Well ID and Date Monitored | Concentrations in mg/L | | | | | | | | | | ORP (mV) | pH | Temp (F) | Conductivity (µS/cm) | Footnote |
|----------------------------|------------------------|--------------|-----------|--------------|---------------|---------------|----------|-----------------|--------------|-------|----------|------|----------|----------------------|----------|
| | Dissolved Oxygen | Nitrate as N | Manganese | Ferrous Iron | Sulfate (SO4) | Dissolved CO2 | Methane | Ortho-Phosphate | Nitrite as N | TKN | | | | | |
| MW-10 Cont. | | | | | | | | | | | | | | | |
| 10/31/2006 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.30 | -- | -- | |
| 10/16/2007 | 2.20 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.36 | -- | -- | |
| MW-11 | | | | | | | | | | | | | | | |
| 11/11/1999 | 1.01 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 6/20/2000 | 4.1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 11/29/2000 | 0.97 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 5/2/2001 | 1.04 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 10/5/2001 | 1.05 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 4/26/2002 | 0.47 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 10/7/2002 | 1.4 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 05/01/2003 | 3.2 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 10/03/2003 | 3.0 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.1 | -- | -- | |
| 04/06/2004 | 5.1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.7 | -- | -- | |
| 10/28/2004 | 1.3 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.2 | -- | -- | |
| 04/13/2005 | 2.8 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.0 | -- | -- | |
| 10/27/2005 | 1.04 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.2 | -- | -- | |
| 4/19/2007 | 7.11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.57 | -- | -- | |
| 10/16/2007 | 0.60 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.57 | -- | -- | |
| 4/24/2008 | 1.83 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.26 | -- | -- | |
| 4/28/2009 | 5.89 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.23 | -- | -- | |
| 11/9/2009 | 0.72 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.0 | -- | -- | |
| 4/12/2010 | 2.03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.25 | -- | -- | |
| 11/4/2010 | 1.64 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.9 | -- | -- | |
| 5/18/2011 | 4.28 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 66.92 | 746 | |
| 10/20/2011 | 0.95 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.84 | -- | -- | |
| 4/11/2012 | 0.30 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -50.9 | 7.54 | 65.17 | 693 | |
| 10/10/2012 | 1.58 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 105 | 7.75 | 70.16 | 618 | |
| 4/9/2013 | 7.4 | <0.11 | <0.020 | <0.10 | 27 | 12 | <0.00099 | <0.50 | <0.15 | <0.50 | 183 | 7.86 | 68.00 | 628 | Top |
| 4/9/2013 | 4.0 | <0.11 | <0.020 | <0.10 | 26 | 33 | <0.00099 | <0.50 | <0.15 | <0.50 | 200 | 7.45 | 69.71 | 631 | Middle |
| 4/9/2013 | 3.9 | <0.11 | <0.020 | <0.10 | 26 | 34 | <0.00099 | <0.50 | <0.15 | <0.50 | 194 | 7.37 | 70.29 | 633 | Bottom |

Table 4. Bio-Degradation Parameters
ARCO Service Station #6113, 785 East Stanley Blvd., Livermore, CA

| Well ID and Date Monitored | Concentrations in mg/L | | | | | | | | | | ORP (mV) | pH | Temp (F) | Conductivity (µS/cm) | Footnote | |
|----------------------------|------------------------|--------------|-----------|--------------|---------------|---------------|----------|-----------------|--------------|-------|----------|------|----------|----------------------|----------|--|
| | Dissolved Oxygen | Nitrate as N | Manganese | Ferrous Iron | Sulfate (SO4) | Dissolved CO2 | Methane | Ortho-Phosphate | Nitrite as N | TKN | | | | | | |
| MW-12 | | | | | | | | | | | | | | | | |
| 04/06/2004 | 2.4 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.4 | -- | -- | | |
| 10/28/2004 | 1.7 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.8 | -- | -- | | |
| 04/13/2005 | 1.9 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.5 | -- | -- | | |
| 10/27/2005 | 1.81 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.0 | -- | -- | | |
| 04/12/2006 | 2.6 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.2 | -- | -- | | |
| 4/19/2007 | 4.66 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.28 | -- | -- | | |
| 4/28/2009 | 7.68 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.63 | -- | -- | | |
| 4/12/2010 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.18 | -- | -- | | |
| 11/4/2010 | 0.96 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.0 | -- | -- | | |
| 5/18/2011 | 2.93 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 63.32 | 643 | | |
| 10/20/2011 | 0.87 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.94 | -- | -- | | |
| 4/11/2012 | 1.19 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 46.1 | 7.17 | 63.95 | 547 | | |
| 10/10/2012 | 2.34 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 104 | 7.57 | 67.31 | 557 | | |
| 4/9/2013 | 4.0 | <0.11 | 0.42 | <0.10 | 39 | 37 | <0.00099 | <0.50 | <0.15 | <0.50 | 190 | 7.26 | 70.56 | 558 | Top | |
| 4/9/2013 | 4.1 | 0.25 | 0.78 | <0.10 | 37 | 36 | <0.00099 | <0.50 | <0.15 | <0.50 | 189 | 7.26 | 76.23 | 512 | Bottom | |
| MW-13 | | | | | | | | | | | | | | | | |
| 1/21/2002 | 0.71 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | | |
| 4/26/2002 | 0.6 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | | |
| 10/7/2002 | 0.8 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | | |
| 05/01/2003 | 1.9 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | | |
| 10/03/2003 | 0.8 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.9 | -- | -- | | |
| 04/06/2004 | 2.0 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.7 | -- | -- | | |
| 10/28/2004 | 0.8 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.7 | -- | -- | | |
| 04/13/2005 | 0.9 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.9 | -- | -- | | |
| 10/27/2005 | 0.75 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.8 | -- | -- | | |
| 04/12/2006 | 1.2 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.8 | -- | -- | | |
| 10/31/2006 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.87 | -- | -- | | |
| 4/19/2007 | 1.44 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.09 | -- | -- | | |
| 4/24/2008 | 2.78 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.25 | -- | -- | | |

Table 4. Bio-Degradation Parameters
ARCO Service Station #6113, 785 East Stanley Blvd., Livermore, CA

| Well ID and Date Monitored | Concentrations in mg/L | | | | | | | | | | ORP (mV) | pH | Temp (F) | Conductivity (µS/cm) | Footnote | |
|----------------------------|------------------------|--------------|-----------|--------------|---------------|---------------|---------|-----------------|--------------|-------|----------|------|----------|----------------------|----------|--|
| | Dissolved Oxygen | Nitrate as N | Manganese | Ferrous Iron | Sulfate (SO4) | Dissolved CO2 | Methane | Ortho-Phosphate | Nitrite as N | TKN | | | | | | |
| RMW-13 | | | | | | | | | | | | | | | | |
| 4/12/2010 | 2.47 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.21 | -- | -- | | |
| 11/4/2010 | 1.01 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.40 | -- | -- | | |
| 5/18/2011 | 2.34 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.3 | 63.68 | 1,190 | | |
| 10/20/2011 | 0.84 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.54 | -- | -- | | |
| 4/11/2012 | 0.18 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -90.8 | 7.10 | 65.33 | 1,294 | | |
| 10/10/2012 | 1.09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -91 | 7.26 | 75.61 | 1,140 | | |
| 4/10/2013 | 2.5 | 0.12 | 6.6 | 0.40 | 0.90 | 190 | 5.2 | <0.50 | <0.15 | <0.50 | -74 | 7.34 | 79.75 | 1,130 | Top | |
| 4/10/2013 | 2.7 | 0.17 | 6.7 | 1.0 | 0.59 | 190 | 5.4 | <0.50 | <0.15 | <0.50 | -80 | 7.86 | 81.09 | 1,160 | Bottom | |
| VW-1 | | | | | | | | | | | | | | | | |
| 8/29/2000 | 4.47 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | | |
| 11/29/2000 | 0.46 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | | |
| 10/5/2001 | 0.71 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | | |
| 1/21/2002 | 0.69 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | | |
| 4/26/2002 | 0.5 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | | |
| 10/7/2002 | 1.7 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | | |
| 05/01/2003 | 1.7 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | | |
| 10/03/2003 | 1.1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.3 | -- | -- | | |
| 04/06/2004 | 2.4 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.2 | -- | -- | | |
| 10/28/2004 | 1.2 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.1 | -- | -- | | |
| 04/13/2005 | 2.4 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.1 | -- | -- | | |
| 10/27/2005 | 1.64 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.3 | -- | -- | | |
| 04/12/2006 | 1.4 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.3 | -- | -- | | |
| 10/31/2006 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.76 | -- | -- | | |
| 4/19/2007 | 1.15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.66 | -- | -- | | |
| 10/16/2007 | 2.65 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.61 | -- | -- | | |
| 4/24/2008 | 4.95 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.47 | -- | -- | | |
| 4/28/2009 | 6.38 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.02 | -- | -- | | |
| 11/9/2009 | 2.28 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.95 | -- | -- | | |
| 4/12/2010 | 3.38 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.21 | -- | -- | | |
| 11/4/2010 | 1.15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.9 | -- | -- | | |

Table 4. Bio-Degradation Parameters
ARCO Service Station #6113, 785 East Stanley Blvd., Livermore, CA

| Well ID and Date Monitored | Concentrations in mg/L | | | | | | | | | | ORP (mV) | pH | Temp (F) | Conductivity (µS/cm) | Footnote | |
|----------------------------|------------------------|--------------|-----------|--------------|---------------|---------------|----------|-----------------|--------------|-------|----------|-------|----------|----------------------|----------|--|
| | Dissolved Oxygen | Nitrate as N | Manganese | Ferrous Iron | Sulfate (SO4) | Dissolved CO2 | Methane | Ortho-Phosphate | Nitrite as N | TKN | | | | | | |
| VW-1 Cont. | | | | | | | | | | | | | | | | |
| 5/18/2011 | 0.71 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.5 | 64.04 | 879 | |
| 10/20/2011 | 1.77 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.89 | -- | -- | |
| 4/11/2012 | 2.02 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -82.7 | 7.50 | 64.27 | 819 | |
| 10/10/2012 | 1.39 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -101 | 7.82 | 69.09 | 576 | |
| 4/10/2013 | 3.1 | <0.11 | 4.7 | <0.10 | 42 | 21 | 0.011 | <0.50 | <0.15 | <0.50 | -35 | 7.60 | 74.89 | 649 | Top | |
| 4/10/2013 | 3.2 | <0.11 | 3.1 | <0.10 | 42 | 21 | 0.025 | <0.50 | <0.15 | <0.50 | -64 | 7.59 | 73.65 | 638 | Middle | |
| 4/10/2013 | 3.0 | <0.11 | 3.0 | <0.10 | 40 | 21 | 0.043 | <0.50 | <0.15 | <0.50 | -56 | 7.63 | 73.81 | 625 | Bottom | |
| VW-2 | | | | | | | | | | | | | | | | |
| 4/10/2013 | 3.3 | <0.11 | 1.8 | <0.10 | 36 | 32 | <0.00099 | <0.50 | <0.15 | <0.50 | -39 | 7.45 | 78.04 | 655 | Top | |
| 4/10/2013 | 3.0 | <0.11 | 3.4 | <0.10 | 40 | 22 | 0.051 | <0.50 | <0.15 | <0.50 | -80 | 7.56 | 76.93 | 679 | Middle | |
| 4/10/2013 | 3.4 | <0.11 | 3.2 | <0.10 | 41 | 22 | 0.13 | <0.50 | <0.15 | <0.50 | -39 | 7.54 | 73.47 | 681 | Bottom | |
| VW-3 | | | | | | | | | | | | | | | | |
| 11/29/2000 | 0.47 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| VW-4 | | | | | | | | | | | | | | | | |
| 11/29/2000 | 0.42 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| 10/03/2003 | 10.5 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.7 | -- | -- | |
| 4/9/2013 | 2.5 | <0.11 | 6.9 | 0.10 | 0.67 | 170 | 3.8 | <0.50 | <0.15 | <0.50 | -60 | 7.17 | 72.19 | 971 | | |

Symbols & Abbreviations:

CO₂ = Carbon Dioxide

N = Nitrogen

TKN = Total Kjeldahl Nitrogen

Notes:

DO measured by lab.

Table 5. Historical Groundwater Gradient - Direction and Magnitude
ARCO Service Station #6113, 785 East Stanley Blvd., Livermore, CA

| Date Measured | Approximate Gradient Direction | Approximate Gradient Magnitude (ft/ft) |
|----------------------|---------------------------------------|---|
| 3/23/1995 | Northwest | 0.035 |
| 5/31/1995 | North-Northwest | 0.028 |
| 8/31/1995 | North-Northwest | 0.03 |
| 11/28/1995 | North-Northwest | 0.025 |
| 2/22/1996 | North-Northwest | 0.031 |
| 5/23/1996 | North-Northwest | 0.025 |
| 8/8/1996 | North | 0.019 |
| 11/7/1996 | North-Northeast | 0.019 |
| 3/27/1997 | North-Northwest | 0.021 |
| 5/19/1997 | North | 0.019 |
| 5/18/1998 | North | 0.02 |
| 11/2/1998 | North | 0.02 |
| 6/4/1999 | North | 0.02 |
| 11/11/1999 | North | 0.03 |
| 6/20/2000 | North-Northeast | 0.014 |
| 8/29/2000 | North-Northeast | 0.013 |
| 11/29/2000 | North-Northwest | 0.026 |
| 5/2/2001 | Northeast | 0.026 |
| 8/15/2001 | Northeast | 0.047 |
| 10/5/2001 | Northeast | 0.031 |
| 1/21/2002 | Northeast | 0.033 |
| 4/26/2002 | Northeast | 0.031 |
| 10/7/2002 | Northeast | 0.017 |
| 5/1/2003 | North-Northeast | 0.011 |
| 10/3/2003 | North-Northeast | 0.016 |
| 4/6/2004 | North-Northeast | 0.013 |
| 10/28/2004 | North-Northeast | 0.014 |
| 4/13/2005 | North-Northwest | 0.02 |
| 10/27/2005 | North-Northwest | 0.01 to 0.03 |
| 4/12/2006 | Northeast | 0.01 |
| 10/31/2006 | Northeast | 0.014 |
| 4/19/2007 | Northeast | 0.013 |
| 10/16/2007 | Northeast | 0.031 |
| 4/24/2008 | North-Northwest | 0.013 |
| 10/15/2008 | Northeast | 0.070 |
| 4/28/2009 | Northeast | 0.008 |
| 11/9/2009 | Northeast | 0.02 |
| 4/12/2010 | North-Northeast | 0.03 |
| 11/4/2010 | Northeast | 0.01 |
| 5/18/2011 | North | 0.02 |
| 10/20/2011 | North-Northeast | 0.01 |
| 4/11/2012 | North-Northeast | 0.02 |
| 10/10/2012 | North-Northeast | 0.01 |
| 4/9-10/2013 | North-Northeast | 0.01 |

Table 5. Historical Groundwater Gradient - Direction and Magnitude
ARCO Service Station #6113, 785 East Stanley Blvd., Livermore, CA

| Date Measured | Approximate Gradient Direction | Approximate Gradient Magnitude (ft/ft) |
|---------------|--------------------------------|--|
|---------------|--------------------------------|--|

Notes:

The data within this table collected prior to April 2006 was provided to Broadbent & Associates, Inc. by Atlantic Richfield Company and their previous consultants. Broadbent & Associates, Inc. has not verified the accuracy of this information

APPENDIX A

Summary of Previous Site Activities

Previous Environmental Activities at Site

On January 26, 1989, Pacific Environmental Group, Inc. (Pacific) oversaw the removal of the 280 gallon waste oil tank from the southern portion of the property, behind the location of the former station building. Soil samples WO-1, WO-2, WOSW-N, and WOSW-N2 were collected from beneath the waste oil tank location at depths ranging between 5 and 8.5 feet (ft) below ground surface (bgs). Based on analytical results from these soil samples, over-excavation was performed within the tank cavity to a depth of 8.5 ft bgs, where analytical data was not reported above laboratory limits. The amount of soil removed during excavation activities was not reported. A summary of analytical results and sampling locations from this investigation are provided in Appendix B.

In September 1989, three soil borings (B-1 through B-3) were advanced onsite (Applied GeoSystems, 1989). The three soil borings were then converted into three groundwater monitoring wells (MW-1 through MW-3, respectively). Soil samples collected from the three boring (B-1 through B-3) did not contain concentrations of total petroleum hydrocarbons as gasoline (TPHg), total petroleum hydrocarbons as diesel (TPHd), total oil and grease (TOG), volatile organic compounds (VOC), and semi-volatile organic compounds (SVOC).

In February 1991, a soil boring (B-4) was advanced downgradient of the former waste oil tank location and converted into groundwater monitoring well MW-4. Three soil samples were collected from boring B-4 between 14.5 and 29 ft bgs and analyzed for benzene, toluene, ethylbenzene, total xylenes (BTEX), TPHg, TPHd, and TOG. Soil sample concentrations were not detected above the laboratory reporting limits, with the exception of one minor detection of benzene at 0.008 parts per million (ppm).

In 1991, a well survey from the Alameda County Flood Control and Water Conservation District – Zone 7 was conducted to determine the presence of water supply wells within one half mile radius from the Site. Based on the results of the survey, nine destroyed water supply wells were located within one half mile radius from the Site. The nine destroyed water supply wells range in depths between 115 and 658 ft bgs (Applied GeoSystems, 1991).

In June and August 1992, eight soil borings (B-5 through B-12) were advanced to further delineate the extent of the waste oil hydrocarbon extent in soil and groundwater (RESNA Industries, Inc.; RESNA, 1992). Five of the soil borings (B-5 through B-7, B-9, and B-11) were converted into groundwater monitoring wells (MW-5 through MW-9, respectively). Two of the soil borings (B-8 and B-12) were converted into two vapor extraction wells (VW-1 and VW-2, respectively), in order to evaluate the feasibility of vapor extraction as a soil remediation alternative. The majority of gasoline hydrocarbons in soil appear to be in the area of the underground storage tank (UST) at depths between approximately 15 and 45 ft bgs. Historical soil sampling results are provided in Appendix B.

In August 1992, RESNA conducted a vapor extraction test (VET) on Site utilizing VW-1, VW-2, and MW-5 as extraction wells and MW-3, MW-4, MW-5, MW-6, MW-7, and MW-9 as observation wells. Two potential soil zones for remedial efforts were identified during drilling and testing activities: Zone A comprised of low permeable silty clays, silty sands, and gravelly silts and clays occurring between approximately 20 and 50 ft bgs; and Zone B comprised of permeable sandy gravel below approximately 50 ft bgs. Hydrocarbon concentrations obtained from the laboratory analyses of vapor samples suggest that residual hydrocarbon contamination was present within the vicinity of the gasoline USTs. The VET indicated that the estimated radius of influence (ROI) was approximately 15 to 20 ft for wells VW-1 and

VW-2 screened within Zone A and approximately 75 ft within Zone B. RESNA concluded that soil vapor extraction would be a viable remedial method based on the results of the VET.

Between December 1992 and March 1993, Roux Associates oversaw the removal and replacement of the underground product piping at the Site (Roux Associates, 1993). Soil samples collected (L1 through L10) after removal activities indicated the minor presence of hydrocarbon impacted soil (below 14 milligrams per kilogram [mg/kg] of TPHg), with the exception of soil from sample L9 (210 mg/kg of TPHg). The area where L9 was collected was further excavated to a depth of 6 ft bgs and resampled (L11). Hydrocarbons were not detected above laboratory reporting limits in soil sample L11. Approximately 288 cubic yards of soil were disposed of at the Browning Ferris Industries Class III landfill in Livermore, California. During construction activities, underground infrastructure for the planned Site vapor and groundwater treatment system were also installed. Soil sample locations and analytical data are provided in Appendix B.

In March 1993, RESNA installed one onsite groundwater monitor well (MW-10) within boring B-17 and two off-site groundwater monitor wells (MW-11 and MW-12) within borings B-18 and B-19, respectively. Twelve soil samples were collected and analyzed for TPHg and BTEX from borings B-17 through B-19 (RESNA, 1993b). Hydrocarbon concentrations were not detected above the laboratory reporting limit for any samples. Soil boring logs are provided in Appendix C.

In June 1993, three soil borings (B-13 through B-15) were advanced for use with the interim soil remediation system at the Site. Two additional vapor extraction wells (VW-3 and VW-4) were installed within borings B-13 and B-14, respectively. Hydrocarbon impacted soil was not encountered in boring B-15, therefore, a vapor extraction well was not installed in this well. Historical soil sampling are provided in Appendix B. Soil boring logs are provided in Appendix C.

In July 1993, RESNA submitted a *Remedial Action Plan* that proposed the design and installation of a vapor extraction system as an interim remedial measure (RESNA, 1993a). The report also stated that future air sparge pilot testing would be conducted following installation of one air sparge well. RESNA stated that if the results of the pilot test were favorable, air sparge would be incorporated into the remediation system design. If results were unfavorable, a groundwater extraction and treatment system would be installed at the Site. A report documenting installation of an air sparge well or completion of air sparge pilot testing was not located.

In December 1993, RESNA oversaw the installation of a soil vapor extraction (SVE) system on-site. Due to an increase in groundwater elevations which submerged the SVE well screen intervals, the SVE system was not activated.

In December 2000, Cambria Environmental Technology, Inc. (Cambria) oversaw the abandonment of wells VW-3 and MW-5 in preparation for UST, dispenser island, and underground piping replacement (Cambria, 2001). Abandonment of these wells was necessary due to their proximity to the UST complex and dispenser islands.

In January 2001, Cambria oversaw the removal and replacement of three USTs (two 12,000 gallon and one 10,000 gallon fiberglass), associated underground piping, and dispenser islands at the Site. The three USTs were replaced with two new fiberglass USTs (one 20,000 gallon and one 22,000 gallon) and installed in the existing tank cavity. Soil samples were collected from beneath the product piping, dispenser islands, and former USTs. Hydrocarbon impacted soil was observed in several of the soil samples collected with the highest concentrations observed at the bottom of the UST excavation at

approximately 17 to 18 ft bgs. The maximum TPHg concentration was detected in sample EX-5 at 3,490 mg/kg. Approximately 1,425 tons of soil was removed and disposed during the excavation activities. Sampling locations and laboratory analytical data are provided in Appendix B.

In November 2001, Cambria oversaw the installation of replacement groundwater monitor well MW-13. Soil analytical data is provided in Appendix B. Boring logs are provided in Appendix C.

In 2006, URS oversaw the installation of a bio-sparge system on-site in accordance with a settlement agreement between Northern California River Watch and Atlantic Richfield Company. Mobile air injection events were initiated on wells MW-4, MW-13, and VW-1 at a frequency of approximately twice per month.

Wells MW-1 and MW-8 were properly abandoned in June 2008 and wells MW-3, MW-6, MW-10, and MW-13 were properly abandoned in September 2008. Abandonment of the wells were necessary prior to initiation of construction activities associated with the scheduled station raze and rebuild. Abandonment of wells MW-1 and MW-8 were required as these wells were within the footprint of the new station building. Abandonment of wells MW-6, MW-10, and MW-13 were necessary to allow for the widening of East Stanley Boulevard and abandonment of MW-3 was completed as the well was within the construction demolition area of the Property. Operation of the bio-sparge system was also discontinued in September 2008 in advance of station raze and rebuild activities. During raze and rebuild activities the remediation compound was relocated on the site and existing remediation system piping was extended to the new compound. Raze and rebuild construction activities were completed in 2009.

On March 11 2010, Broadbent & Associates, Inc. (Broadbent) oversaw the installation of well RMW-13, which serves as a replacement for previously abandoned wells MW-6 and MW-13 (Broadbent, 2010). Four soil samples were collected during drilling activities ranging in depths between 14.5 and 31.0 ft bgs. The maximum concentration of gasoline range organics (GRO) was observed at 21.0 ft bgs at 1,900 mg/kg. Soil analytical data are provided in Appendix B. Boring logs are provided in Appendix C.

To date, a total of 18 groundwater monitoring and vapor extraction wells have been installed at the Site and in the Site vicinity. These include 14 groundwater monitoring wells, 12 of which are on-site (MW-1 through MW-10, MW-13, and RMW-13) and two off-site (MW-11 and MW-12). Four on-site vapor extraction wells (VW-1 through VW-4) have been installed on-site. Wells MW-1, MW-3, MW-5, MW-6, MW-10, MW-13, and VW-3 have been abandoned. A quarterly groundwater monitoring program was initiated at the Site in June 1990 and is ongoing with a modified sampling schedule. Since the first quarter of 1997, the monitoring program at the Site began operating on a semi-annual basis. Currently, wells MW-2, MW-4, MW-7, MW-9, MW-11, MW-12, RMW-13, VW-1, VW-2, and VW-4 are monitored semi-annually (second and fourth quarters) and wells MW-4, MW-7, MW-11, MW-12, RMW-13, and VW-1 are sampled semi-annually (second and fourth quarters), while well MW-9 is sampled annually (fourth quarter). Groundwater analytical data is provided in Tables 2 through 5.

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Broadbent & Associates, Inc., 14 May 2010. *Replacement Well Installation and Second Quarter 2010 Ground-Water Monitoring Report, Atlantic Richfield Company Station No. 6113, 785 East Stanley Boulevard, Livermore, CA.*

Cambria Environmental Technology, Inc., 19 March 2001. *Underground Storage Tank, Piping Removal, And Well Abandonment Report, ARCO Service Station 6113, 785 East Stanley Boulevard, Livermore, CA.*

Pacific Environmental Group, Inc., 25 April 1989. *Waste Oil Tank Removal Report for ARCO Service Station No. 6113, 785 East Stanley Boulevard, Livermore, CA.*

RESNA Industries Inc., 21 December 1992. *Additional Subsurface Investigation and Vapor Extraction Test at ARCO Station 6113, 785 East Stanley Boulevard, Livermore, CA.*

RESNA Industries Inc., 15 July 1993a. *Remedial Action Plan for Interim Soil and Groundwater Remediation at ARCO Station 6113, 785 E. Stanley Boulevard, Livermore, CA.*

RESNA Industries Inc., 16 August 1993b. *Site Status Update for ARCO Station 6113, 785 East Stanley Blvd, Livermore, CA.*

ROUX Associates, 7 May 1993. *Underground Piping Removal and Soil Sampling, ARCO Facility No. 6113, 785 East Stanley Boulevard, Livermore, CA.*

APPENDIX B

Historic Site Data

Table 2
Historical Groundwater Elevation Data
Summary Report

ARCO Service Station 6113
785 East Stanley Boulevard, Livermore, California

Date: 02-10-95
Project Number: 0805-134.01

| Well Designation | Water Level Field Date | TOC | Depth to Water | Ground- Water Elevation | Floating Product Thickness | Ground- Water Flow Direction | Hydraulic Gradient |
|---------------------|---------------------------------|--------|---|-------------------------------|----------------------------------|---------------------------------------|-----------------------|
| | | ft-MSL | feet | ft-MSL | feet | MWN | |
| MW-1 | 09-20-89 | 457.04 | 21.03 | 436.01 | ND | NR | NR |
| MW-1 | 10-12-89 | 457.04 | 19.64 | 437.40 | ND | NR | NR |
| MW-1 | 06-21-90 | 457.04 | 21.72 | 435.32 | ND | NR | NR |
| MW-1 | 09-20-90 | 457.04 | 19.79 | 437.25 | ND | NR | NR |
| MW-1 | 12-18-90 | 457.04 | 19.28 | 437.76 | ND | NR | NR |
| MW-1 | 02-21-91 | 457.04 | 22.45 | 434.59 | ND | NR | NR |
| MW-1 | 03-20-91 | 457.04 | 19.87 | 437.17 | ND | NR | NR |
| MW-1 | 04-10-91 | 457.04 | 19.42 | 437.62 | ND | NR | NR |
| MW-1 | 05-20-91 | 457.04 | 25.95 | 431.09 | ND | NR | NR |
| MW-1 | 06-20-91 | 457.04 | 32.55 | 424.49 | ND | NR | NR |
| MW-1 | 07-25-91 | 457.04 | 38.22 | 418.82 | ND | NR | NR |
| MW-1 | 08-13-91 | 457.04 | 40.74 | 416.30 | ND | NR | NR |
| MW-1 | 09-12-91 | 457.04 | 43.16 | 413.88 | ND | NR | NR |
| MW-1 | 10-22-91 | 457.04 | DRY | DRY | ND | DRY | DRY |
| MW-1 | 11-13-91 | 457.04 | DRY | DRY | ND | DRY | DRY |
| MW-1 | 12-21-91 | 457.04 | DRY | DRY | ND | DRY | DRY |
| MW-1 | 01-18-92 | 457.04 | DRY | DRY | ND | DRY | DRY |
| MW-1 | 02-21-92 | 457.04 | DRY | DRY | ND | DRY | DRY |
| MW-1 | 03-19-92 | 457.04 | 36.16 | 420.88 | ND | NR | NR |
| MW-1 | 04-24-92 | 457.04 | 38.14 | 418.90 | ND | NR | NR |
| MW-1 | 05-20-92 | 457.04 | 40.74 | 416.30 | ND | NR | NR |
| MW-1 | 06-29-92 | 457.04 | DRY | DRY | ND | DRY | DRY |
| MW-1 | 07-28-92 | 457.04 | DRY | DRY | ND | DRY | DRY |
| MW-1 | 08-26-92 | 457.04 | DRY | DRY | ND | DRY | DRY |
| MW-1 | 09-11-92 | 457.04 | DRY | DRY | ND | DRY | DRY |
| MW-1 | 10-29-92 | 457.04 | DRY | DRY | ND | DRY | DRY |
| MW-1 | 11-11-92 | 457.04 | DRY | DRY | ND | DRY | DRY |
| MW-1 | 12-14-92 | 457.04 | Not surveyed: inaccessible due to construction activities | | | | |
| MW-1 | 01-27-93 | 457.04 | 30.10 | 426.94 | ND | NR | NR |
| MW-1 | 02-26-93 | 457.04 | 24.72 | 432.32 | ND | NR | NR |
| MW-1 | 03-30-93 | 457.04 | 20.87 | 436.17 | ND | NR | NR |
| MW-1 | 04-30-93 | 457.04 | 19.46 | 437.58 | ND | NR | NR |
| MW-1 | 05-14-93 | 457.04 | 19.27 | 437.77 | ND | NR | NR |
| MW-1 | 06-17-93 | 457.04 | 19.21 | 437.83 | ND | NR | NR |
| MW-1 | 07-27-93 | 457.04 | 19.95 | 437.09 | ND | NR | NR |
| MW-1 | 08-30-93 | 457.04 | 20.72 | 436.32 | ND | NR | NR |
| MW-1 | 11-04-93 | 457.04 | 20.61 | 436.43 | ND | NR | NR |
| MW-1 | 03-25-94 | 457.04 | 17.54 | 439.50 | ND | NR | NR |
| MW-1 | 06-02-94 | 457.04 | 21.30 | 435.74 | ND | NR | NR |
| MW-1 | 09-16-94 | 457.04 | 19.98 | 437.06 | ND | N | 0.014 |
| MW-1 | 11-29-94 | 457.04 | 19.12 | 437.92 | ND | N | 0.025 |

Table 2
 Historical Groundwater Elevation Data
 Summary Report

ARCO Service Station 6113
 785 East Stanley Boulevard, Livermore, California

Date: 02-10-95
 Project Number: 0805-134.01

| Well Designation | Water Level Field Date | TOC Elevation ft-MSL | Depth to Water feet | Ground- Water Elevation ft-MSL | Floating Product Thickness feet | Ground- Water Flow Direction MWN | Hydraulic Gradient foot/foot |
|---------------------|---------------------------------|----------------------------|---|---|--|--|------------------------------------|
| MW-2 | 09-20-89 | 457.74 | 20.67 | 437.07 | ND | NR | NR |
| MW-2 | 10-12-89 | 457.74 | 18.98 | 438.76 | ND | NR | NR |
| MW-2 | 06-21-90 | 457.74 | 21.88 | 435.86 | ND | NR | NR |
| MW-2 | 09-20-90 | 457.74 | 19.90 | 437.84 | ND | NR | NR |
| MW-2 | 12-18-90 | 457.74 | 19.32 | 438.42 | ND | NR | NR |
| MW-2 | 02-21-91 | 457.74 | 23.02 | 434.72 | ND | NR | NR |
| MW-2 | 03-20-91 | 457.74 | 20.01 | 437.73 | ND | NR | NR |
| MW-2 | 04-10-91 | 457.74 | 19.81 | 437.93 | ND | NR | NR |
| MW-2 | 05-20-91 | 457.74 | 26.62 | 431.12 | ND | NR | NR |
| MW-2 | 06-20-91 | 457.74 | 33.15 | 424.59 | ND | NR | NR |
| MW-2 | 07-25-91 | 457.74 | 37.10 | 420.64 | ND | NR | NR |
| MW-2 | 08-13-91 | 457.74 | 37.20 | 420.54 | ND | NR | NR |
| MW-2 | 09-12-91 | 457.74 | DRY | DRY | ND | DRY | DRY |
| MW-2 | 10-22-91 | 457.74 | DRY | DRY | ND | DRY | DRY |
| MW-2 | 11-13-91 | 457.74 | DRY | DRY | ND | DRY | DRY |
| MW-2 | 12-21-91 | 457.74 | DRY | DRY | ND | DRY | DRY |
| MW-2 | 01-18-92 | 457.74 | DRY | DRY | ND | DRY | DRY |
| MW-2 | 02-21-92 | 457.74 | DRY | DRY | ND | DRY | DRY |
| MW-2 | 03-19-92 | 457.74 | 35.82 | 421.92 | ND | NR | NR |
| MW-2 | 04-24-92 | 457.74 | 36.64 | 421.10 | ND | NR | NR |
| MW-2 | 05-20-92 | 457.74 | 37.23 | 420.51 | ND | NR | NR |
| MW-2 | 06-29-92 | 457.74 | DRY | DRY | ND | DRY | DRY |
| MW-2 | 07-28-92 | 457.74 | DRY | DRY | ND | DRY | DRY |
| MW-2 | 08-26-92 | 457.74 | DRY | DRY | ND | DRY | DRY |
| MW-2 | 09-11-92 | 457.74 | DRY | DRY | ND | DRY | DRY |
| MW-2 | 10-29-92 | 457.74 | DRY | DRY | ND | DRY | DRY |
| MW-2 | 11-11-92 | 457.74 | DRY | DRY | ND | DRY | DRY |
| MW-2 | 12-14-92 | 457.74 | Not surveyed: inaccessible due to construction activities | | | | |
| MW-2 | 01-27-93 | 457.74 | 32.87 | 424.87 | ND | NR | NR |
| MW-2 | 02-26-93 | 457.74 | Not surveyed: inaccessible due to construction activities | | | | |
| MW-2 | 03-30-93 | 457.74 | 20.47 | 437.27 | ND | NR | NR |
| MW-2 | 04-30-93 | 457.74 | 19.02 | 438.72 | ND | NR | NR |
| MW-2 | 05-14-93 | 457.74 | 18.65 | 439.09 | ND | NR | NR |
| MW-2 | 06-17-93 | 457.74 | 18.21 | 439.53 | ND | NR | NR |
| MW-2 | 07-27-93 | 457.74 | 17.95 | 439.79 | ND | NR | NR |
| MW-2 | 08-30-93 | 457.74 | 18.43 | 439.31 | ND | NR | NR |
| MW-2 | 11-04-93 | 457.74 | 19.73 | 438.01 | ND | NR | NR |
| MW-2 | 03-25-94 | 457.74 | 17.26 | 440.48 | ND | NR | NR |
| MW-2 | 06-02-94 | 457.74 | 21.23 | 436.51 | ND | NR | NR |
| MW-2 | 09-16-94 | 457.74 | 19.64 | 438.10 | ND | N | 0.014 |
| MW-2 | 11-29-94 | 457.74 | 18.89 | 438.85 | ND | N | 0.025 |

Table 2
Historical Groundwater Elevation Data
Summary Report

ARCO Service Station 6113
785 East Stanley Boulevard, Livermore, California

Date: 02-10-95
Project Number: 0805-134.01

| Well Designation | Water Level Field Date | TOC Elevation ft-MSL | Depth to Water feet | Ground- Water Elevation ft-MSL | Floating Product Thickness feet | Ground- Water Flow Direction MWN | Hydraulic Gradient foot/foot |
|---------------------|---------------------------------|----------------------------|---|---|--|--|------------------------------------|
| MW-3 | 09-20-89 | 456.97 | 20.98 | 435.99 | ND | NR | NR |
| MW-3 | 10-12-89 | 456.97 | 19.66 | 437.31 | ND | NR | NR |
| MW-3 | 06-21-90 | 456.97 | 21.72 | 435.25 | ND | NR | NR |
| MW-3 | 09-20-90 | 456.97 | 19.72 | 437.25 | ND | NR | NR |
| MW-3 | 12-18-90 | 456.97 | 19.21 | 437.76 | ND | NR | NR |
| MW-3 | 02-21-91 | 456.97 | 22.36 | 434.61 | ND | NR | NR |
| MW-3 | 03-20-91 | 456.97 | 19.79 | 437.18 | ND | NR | NR |
| MW-3 | 04-10-91 | 456.97 | 19.35 | 437.62 | ND | NR | NR |
| MW-3 | 05-20-91 | 456.97 | 25.86 | 431.11 | ND | NR | NR |
| MW-3 | 06-20-91 | 456.97 | 32.45 | 424.52 | ND | NR | NR |
| MW-3 | 07-25-91 | 456.97 | 38.06 | 418.91 | ND | NR | NR |
| MW-3 | 08-13-91 | 456.97 | 38.40 | 418.57 | ND | NR | NR |
| MW-3 | 09-12-91 | 456.97 | DRY | DRY | ND | DRY | DRY |
| MW-3 | 10-22-91 | 456.97 | DRY | DRY | ND | DRY | DRY |
| MW-3 | 11-13-91 | 456.97 | DRY | DRY | ND | DRY | DRY |
| MW-3 | 12-21-91 | 456.97 | DRY | DRY | ND | DRY | DRY |
| MW-3 | 01-18-92 | 456.97 | DRY | DRY | ND | DRY | DRY |
| MW-3 | 02-21-92 | 456.97 | DRY | DRY | ND | DRY | DRY |
| MW-3 | 03-19-92 | 456.97 | 36.03 | 420.94 | ND | NR | NR |
| MW-3 | 04-24-92 | 456.97 | 37.92 | 419.05 | ND | NR | NR |
| MW-3 | 05-20-92 | 456.97 | DRY | DRY | ND | DRY | DRY |
| MW-3 | 06-29-92 | 456.97 | DRY | DRY | ND | DRY | DRY |
| MW-3 | 07-28-92 | 456.97 | DRY | DRY | ND | DRY | DRY |
| MW-3 | 08-26-92 | 456.97 | DRY | DRY | ND | DRY | DRY |
| MW-3 | 09-11-92 | 456.97 | DRY | DRY | ND | DRY | DRY |
| MW-3 | 10-29-92 | 456.97 | DRY | DRY | ND | DRY | DRY |
| MW-3 | 11-11-92 | 456.97 | DRY | DRY | ND | DRY | DRY |
| MW-3 | 12-14-92 | 456.97 | Not surveyed: inaccessible due to construction activities | | | | |
| MW-3 | 01-27-93 | 456.97 | 30.36 | 426.61 | ND | NR | NR |
| MW-3 | 02-26-93 | 456.97 | 24.96 | 432.01 | ND | NR | NR |
| MW-3 | 03-30-93 | 456.97 | 21.45 | 435.52 | ND | NR | NR |
| MW-3 | 04-30-93 | 456.97 | 19.43 | 437.54 | ND | NR | NR |
| MW-3 | 05-14-93 | 456.97 | 19.37 | 437.60 | ND | NR | NR |
| MW-3 | 06-17-93 | 456.97 | 19.38 | 437.59 | ND | NR | NR |
| MW-3 | 07-27-93 | 456.97 | 20.10 | 436.87 | ND | NR | NR |
| MW-3 | 08-30-93 | 456.97 | 20.98 | 435.99 | ND | NR | NR |
| MW-3 | 11-04-93 | 456.97 | 20.91 | 436.06 | ND | NR | NR |
| MW-3 | 03-25-94 | 456.97 | 17.57 | 439.40 | ND | NR | NR |
| MW-3 | 06-02-94 | 456.97 | 21.30 | 435.67 | ND | NR | NR |
| MW-3 | 09-16-94 | 456.97 | 20.03 | 436.94 | ND | N | 0.014 |
| MW-3 | 11-29-94 | 456.97 | 19.13 | 437.84 | ND | N | 0.025 |

Table 2
 Historical Groundwater Elevation Data
 Summary Report

ARCO Service Station 6113
 785 East Stanley Boulevard, Livermore, California

Date: 02-10-95
 Project Number: 0805-134.01

| Well Designation | Water Level Field Date | TOC Elevation ft-MSL | Depth to Water feet | Ground-Water Elevation ft-MSL | Floating Product Thickness feet | Ground-Water Flow Direction MWN | Hydraulic Gradient foot/foot |
|------------------|------------------------|-------------------------|---|----------------------------------|------------------------------------|------------------------------------|---------------------------------|
| MW-4 | 02-21-91 | 456.55 | 22.01 | 434.54 | ND | NR | NR |
| MW-4 | 03-20-91 | 456.55 | 20.31 | 436.24 | ND | NR | NR |
| MW-4 | 04-10-91 | 456.55 | 19.55 | 437.00 | ND | NR | NR |
| MW-4 | 05-20-91 | 456.55 | 25.24 | 431.31 | ND | NR | NR |
| MW-4 | 06-20-91 | 456.55 | DRY | DRY | ND | DRY | DRY |
| MW-4 | 07-25-91 | 456.55 | DRY | DRY | ND | DRY | DRY |
| MW-4 | 08-13-91 | 456.55 | DRY | DRY | ND | DRY | DRY |
| MW-4 | 09-12-91 | 456.55 | DRY | DRY | ND | DRY | DRY |
| MW-4 | 10-22-91 | 456.55 | DRY | DRY | ND | DRY | DRY |
| MW-4 | 11-13-91 | 456.55 | DRY | DRY | ND | DRY | DRY |
| MW-4 | 12-21-91 | 456.55 | DRY | DRY | ND | DRY | DRY |
| MW-4 | 01-18-92 | 456.55 | DRY | DRY | ND | DRY | DRY |
| MW-4 | 02-21-92 | 456.55 | DRY | DRY | ND | DRY | DRY |
| MW-4 | 03-19-92 | 456.55 | DRY | DRY | ND | DRY | DRY |
| MW-4 | 04-24-92 | 456.55 | DRY | DRY | ND | DRY | DRY |
| MW-4 | 05-20-92 | 456.55 | DRY | DRY | ND | DRY | DRY |
| MW-4 | 06-29-92 | 456.55 | DRY | DRY | ND | DRY | DRY |
| MW-4 | 07-28-92 | 456.55 | DRY | DRY | ND | DRY | DRY |
| MW-4 | 08-26-92 | 456.55 | DRY | DRY | ND | DRY | DRY |
| MW-4 | 09-11-92 | 456.55 | DRY | DRY | ND | DRY | DRY |
| MW-4 | 10-29-92 | 456.55 | DRY | DRY | ND | DRY | DRY |
| MW-4 | 11-11-92 | 456.55 | DRY | DRY | ND | DRY | DRY |
| MW-4 | 12-14-92 | 456.55 | Not surveyed; inaccessible due to construction activities | | | | |
| MW-4 | 01-27-93 | 456.55 | DRY | DRY | ND | DRY | DRY |
| MW-4 | 02-26-93 | 456.55 | 23.60 | 432.95 | ND | NR | NR |
| MW-4 | 03-30-93 | 456.55 | 20.87 | 435.68 | ND | NR | NR |
| MW-4 | 04-30-93 | 456.55 | 19.73 | 436.82 | ND | NR | NR |
| MW-4 | 05-14-93 | 456.55 | 19.75 | 436.80 | ND | NR | NR |
| MW-4 | 06-17-93 | 456.55 | 19.69 | 436.86 | ND | NR | NR |
| MW-4 | 07-27-93 | 456.55 | 20.40 | 436.15 | ND | NR | NR |
| MW-4 | 08-30-93 | 456.55 | 21.10 | 435.45 | ND | NR | NR |
| MW-4 | 11-04-93 | 456.55 | 21.60 | 434.95 | ND | NR | NR |
| MW-4 | 03-25-94 | 456.55 | 18.59 | 437.96 | ND | NR | NR |
| MW-4 | 06-02-94 | 456.55 | 21.41 | 435.14 | ND | NR | NR |
| MW-4 | 09-16-94 | 456.55 | 20.51 | 436.04 | ND | N | 0.014 |
| MW-4 | 11-29-94 | 456.55 | 19.77 | 436.78 | ND | N | 0.025 |

Table 2
Historical Groundwater Elevation Data
Summary Report

ARCO Service Station 6113
785 East Stanley Boulevard, Livermore, California

Date: 02-10-95
Project Number: 0805-134.01

| Well Designation | Water Level Field Date | TOC Elevation ft-MSL | Depth to Water feet | Ground-Water Elevation ft-MSL | Floating Product Thickness feet | Ground-Water Flow Direction MWN | Hydraulic Gradient foot/foot | |
|------------------|------------------------|-------------------------|---|----------------------------------|------------------------------------|------------------------------------|---------------------------------|--|
| MW-5 | 06-29-92 | 455.84 | 50.53 | 405.31 | ND | NR | NR | |
| MW-5 | 07-28-92 | 455.84 | 54.92 | 400.92 | ND | NR | NR | |
| MW-5 | 08-26-92 | 455.84 | 59.58 | 396.26 | ND | NR | NR | |
| MW-5 | 09-11-92 | 455.84 | 60.88 | 394.96 | ND | NR | NR | |
| MW-5 | 10-29-92 | 455.84 | DRY | DRY | ND | DRY | DRY | |
| MW-5 | 11-11-92 | 455.84 | DRY | DRY | ND | DRY | DRY | |
| MW-5 | 12-14-92 | 455.84 | Not surveyed: inaccessible due to construction activities | | | | | |
| MW-5 | 01-27-93 | 455.84 | 29.08 | 426.76 | ND | NR | NR | |
| MW-5 | 02-26-93 | 455.84 | 23.56 | 432.28 | ND | NR | NR | |
| MW-5 | 03-30-93 | 455.84 | 20.32 | 435.52 | ND | NR | NR | |
| MW-5 | 04-30-93 | 455.84 | 19.57 | 436.27 | ND | NR | NR | |
| MW-5 | 05-14-93 | 455.84 | 19.29 | 436.55 | ND | NR | NR | |
| MW-5 | 06-17-93 | 455.84 | 18.66 | 437.18 | ND | NR | NR | |
| MW-5 | 07-27-93 | 455.84 | 20.16 | 435.68 | ND | NR | NR | |
| MW-5 | 08-30-93 | 455.84 | Not surveyed: | | | | | |
| MW-5 | 11-04-93 | 455.84 | 21.05 | 434.79 | ND | NR | NR | |
| MW-5 | 03-25-94 | 455.84 | 17.95 | 437.89 | ND | NR | NR | |
| MW-5 | 06-02-94 | 455.84 | 21.32 | 434.52 | ND | NR | NR | |
| MW-5 | 09-16-94 | 455.84 | 20.41 | 435.43 | ND | N | 0.014 | |
| MW-5 | 11-29-94 | 455.84 | 19.72 | 436.12 | ND | N | 0.025 | |
| | | | | | | | | |
| MW-6 | 06-29-92 | 454.93 | 49.72 | 405.21 | ND | NR | NR | |
| MW-6 | 07-28-92 | 454.93 | 54.63 | 400.30 | ND | NR | NR | |
| MW-6 | 08-26-92 | 454.93 | 59.45 | 395.48 | ND | NR | NR | |
| MW-6 | 09-11-92 | 454.93 | ^60.73 | ^394.20 | 0.04 | NR | NR | |
| MW-6 | 10-29-92 | 454.93 | 62.14 | 392.79 | ND | NR | NR | |
| MW-6 | 11-11-92 | 454.93 | ^62.42 | ^392.51 | 0.03 | NR | NR | |
| MW-6 | 12-14-92 | 454.93 | Not surveyed: inaccessible due to construction activities | | | | | |
| MW-6 | 01-27-93 | 454.93 | Not surveyed: inaccessible due to construction activities | | | | | |
| MW-6 | 02-26-93 | 454.93 | 22.73 | 432.20 | ND | NR | NR | |
| MW-6 | 03-30-93 | 454.93 | 19.53 | 435.40 | ND | NR | NR | |
| MW-6 | 04-30-93 | 454.93 | 18.76 | 436.17 | ND | NR | NR | |
| MW-6 | 05-14-93 | 454.93 | ^19.19 | ^435.74 | 0.01 | NR | NR | |
| MW-6 | 06-17-93 | 454.93 | 18.54 | 436.39 | ND | NR | NR | |
| MW-6 | 07-27-93 | 454.93 | 19.47 | 435.46 | ND | NR | NR | |
| MW-6 | 08-30-93 | 454.93 | ^20.33 | ^434.60 | 0.01 | NR | NR | |
| MW-6 | 11-04-93 | 454.93 | ^20.33 | ^434.60 | 0.01 | NR | NR | |
| MW-6 | 03-25-94 | 454.93 | 17.13 | 437.80 | ND | NR | NR | |
| MW-6 | 06-02-94 | 454.93 | 20.45 | 434.48 | ND | NR | NR | |
| MW-6 | 09-16-94 | 454.93 | 19.62 | 435.31 | ND | N | 0.014 | |
| MW-6 | 11-29-94 | 454.93 | 18.89 | 436.04 | ND | N | 0.025 | |

Table 2
Historical Groundwater Elevation Data
Summary Report

ARCO Service Station 6113
785 East Stanley Boulevard, Livermore, California

Date: 02-10-95
Project Number: 0805-134.01

| Well Designation | Water Level Field Date | TOC Elevation ft-MSL | Depth to Water feet | Ground- Water Elevation ft-MSL | Floating Product Thickness feet | Ground- Water Flow Direction MWN | Hydraulic Gradient foot/foot | |
|---------------------|---------------------------------|----------------------------|---|---|--|--|------------------------------------|--|
| | | | | | | | | |
| MW-7 | 06-29-92 | 454.92 | 49.57 | 405.35 | ND | NR | NR | |
| MW-7 | 07-28-92 | 454.92 | 54.60 | 400.32 | ND | NR | NR | |
| MW-7 | 08-26-92 | 454.92 | 59.60 | 395.32 | ND | NR | NR | |
| MW-7 | 09-11-92 | 454.92 | 60.74 | 394.18 | ND | NR | NR | |
| MW-7 | 10-29-92 | 454.92 | 62.23 | 392.69 | ND | NR | NR | |
| MW-7 | 11-11-92 | 454.92 | 62.69 | 392.23 | ND | NR | NR | |
| MW-7 | 12-14-92 | 454.92 | Not surveyed: inaccessible due to construction activities | | | | | |
| MW-7 | 01-27-93 | 454.92 | 27.97 | 426.95 | ND | NR | NR | |
| MW-7 | 02-26-93 | 454.92 | 22.57 | 432.35 | ND | NR | NR | |
| MW-7 | 03-30-93 | 454.92 | 19.29 | 435.63 | ND | NR | NR | |
| MW-7 | 04-30-93 | 454.92 | 18.79 | 436.13 | ND | NR | NR | |
| MW-7 | 05-14-93 | 454.92 | 18.35 | 436.57 | ND | NR | NR | |
| MW-7 | 06-17-93 | 454.92 | 18.36 | 436.56 | ND | NR | NR | |
| MW-7 | 07-27-93 | 454.92 | 19.49 | 435.43 | ND | NR | NR | |
| MW-7 | 08-30-93 | 454.92 | 20.26 | 434.66 | ND | NR | NR | |
| MW-7 | 11-04-93 | 454.92 | 20.33 | 434.59 | ND | NR | NR | |
| MW-7 | 03-25-94 | 454.92 | 16.91 | 438.01 | ND | NR | NR | |
| MW-7 | 06-02-94 | 454.92 | 20.31 | 434.61 | ND | NR | NR | |
| MW-7 | 09-16-94 | 454.92 | 19.47 | 435.45 | ND | N | 0.014 | |
| MW-7 | 11-29-94 | 454.92 | 18.73 | 436.19 | ND | N | 0.025 | |
| | | | | | | | | |
| MW-8 | 06-29-92 | 456.97 | 50.40 | 406.57 | ND | NR | NR | |
| MW-8 | 07-28-92 | 456.97 | 55.79 | 401.18 | ND | NR | NR | |
| MW-8 | 08-26-92 | 456.97 | 60.79 | 396.18 | ND | NR | NR | |
| MW-8 | 09-11-92 | 456.97 | 61.97 | 395.00 | ND | NR | NR | |
| MW-8 | 10-29-92 | 456.97 | 63.51 | 393.46 | ND | NR | NR | |
| MW-8 | 11-11-92 | 456.97 | 64.21 | 392.76 | ND | NR | NR | |
| MW-8 | 12-14-92 | 456.97 | Not surveyed: inaccessible due to construction activities | | | | | |
| MW-8 | 01-27-93 | 456.97 | 25.57 | 431.40 | ND | NR | NR | |
| MW-8 | 02-26-93 | 456.97 | 19.86 | 437.11 | ND | NR | NR | |
| MW-8 | 03-30-93 | 456.97 | 16.69 | 440.28 | ND | NR | NR | |
| MW-8 | 04-30-93 | 456.97 | 15.83 | 441.14 | ND | NR | NR | |
| MW-8 | 05-14-93 | 456.97 | 15.79 | 441.18 | ND | NR | NR | |
| MW-8 | 06-17-93 | 456.97 | 15.79 | 441.18 | ND | NR | NR | |
| MW-8 | 07-27-93 | 456.97 | 16.80 | 440.17 | ND | NR | NR | |
| MW-8 | 08-30-93 | 456.97 | 17.37 | 439.60 | ND | NR | NR | |
| MW-8 | 11-04-93 | 456.97 | 17.60 | 439.37 | ND | NR | NR | |
| MW-8 | 03-25-94 | 456.97 | 15.04 | 441.93 | ND | NR | NR | |
| MW-8 | 06-02-94 | 456.97 | 18.43 | 438.54 | ND | NR | NR | |
| MW-8 | 09-16-94 | 456.97 | 17.02 | 439.95 | ND | N | 0.014 | |
| MW-8 | 11-29-94 | 456.97 | 16.83 | 440.14 | ND | N | 0.025 | |

Table 2
Historical Groundwater Elevation Data
Summary Report

ARCO Service Station 6113
785 East Stanley Boulevard, Livermore, California

Date: 02-10-95
Project Number: 0805-134.01

| Well Designation | Water Level Field Date | TOC Elevation ft-MSL | Depth to Water feet | Ground-Water Elevation ft-MSL | Floating Product Thickness feet | Ground-Water Flow Direction MWN | Hydraulic Gradient foot/foot | |
|------------------|------------------------|-------------------------|---|----------------------------------|------------------------------------|------------------------------------|---------------------------------|--|
| MW-9 | 06-29-92 | 456.18 | 50.29 | 405.89 | ND | NR | NR | |
| MW-9 | 07-28-92 | 456.18 | 55.53 | 400.65 | ND | NR | NR | |
| MW-9 | 08-26-92 | 456.18 | 60.62 | 395.56 | ND | NR | NR | |
| MW-9 | 09-11-92 | 456.18 | 61.67 | 394.51 | ND | NR | NR | |
| MW-9 | 10-29-92 | 456.18 | 63.17 | 393.01 | ND | NR | NR | |
| MW-9 | 11-11-92 | 456.18 | 63.68 | 392.50 | ND | NR | NR | |
| MW-9 | 12-14-92 | 456.18 | Not surveyed; inaccessible due to construction activities | | | | | |
| MW-9 | 01-27-93 | 456.18 | 26.48 | 429.70 | ND | NR | NR | |
| MW-9 | 02-26-93 | 456.18 | Not surveyed; inaccessible due to construction activities | | | | | |
| MW-9 | 03-30-93 | 456.18 | 17.77 | 438.41 | ND | NR | NR | |
| MW-9 | 04-30-93 | 456.18 | 17.01 | 439.17 | ND | NR | NR | |
| MW-9 | 05-14-93 | 456.18 | 16.55 | 439.63 | ND | NR | NR | |
| MW-9 | 06-17-93 | 456.18 | 16.68 | 439.50 | ND | NR | NR | |
| MW-9 | 07-27-93 | 456.18 | 17.77 | 438.41 | ND | NR | NR | |
| MW-9 | 08-30-93 | 456.18 | 18.74 | 437.44 | ND | NR | NR | |
| MW-9 | 11-04-93 | 456.18 | 18.72 | 437.46 | ND | NR | NR | |
| MW-9 | 03-25-94 | 456.18 | 15.78 | 440.40 | ND | NR | NR | |
| MW-9 | 06-02-94 | 456.18 | 19.03 | 437.15 | ND | NR | NR | |
| MW-9 | 09-16-94 | 456.18 | 17.84 | 438.34 | ND | N | 0.014 | |
| MW-9 | 11-29-94 | 456.18 | 17.32 | 438.86 | ND | N | 0.025 | |
| | | | | | | | | |
| MW-10 | 03-30-93 | 456.85 | 21.33 | 435.52 | ND | NR | NR | |
| MW-10 | 04-30-93 | 456.85 | 20.51 | 436.34 | ND | NR | NR | |
| MW-10 | 05-14-93 | 456.85 | 20.26 | 436.59 | ND | NR | NR | |
| MW-10 | 06-17-93 | 456.85 | 20.30 | 436.55 | ND | NR | NR | |
| MW-10 | 07-27-93 | 456.85 | 20.29 | 436.56 | ND | NR | NR | |
| MW-10 | 08-30-93 | 456.85 | 22.19 | 434.66 | ND | NR | NR | |
| MW-10 | 11-04-93 | 456.85 | 22.11 | 434.74 | ND | NR | NR | |
| MW-10 | 03-25-94 | 456.85 | 18.84 | 438.01 | ND | NR | NR | |
| MW-10 | 06-02-94 | 456.85 | 22.40 | 434.45 | ND | NR | NR | |
| MW-10 | 09-16-94 | 456.85 | 21.25 | 435.60 | ND | N | 0.014 | |
| MW-10 | 11-29-94 | 456.85 | 20.50 | 436.35 | ND | N | 0.025 | |

Table 2
Historical Groundwater Elevation Data
Summary Report

ARCO Service Station 6113
785 East Stanley Boulevard, Livermore, California

Date: 02-10-95
Project Number: 0805-134.01

| Well Designation | Water Level Field Date | TOC Elevation ft-MSL | Depth to Water feet | Ground-Water Elevation ft-MSL | Floating Product Thickness feet | Ground-Water Flow Direction MWN | Hydraulic Gradient foot/foot |
|------------------|------------------------|-------------------------|------------------------|----------------------------------|------------------------------------|------------------------------------|---------------------------------|
| MW-11 | 03-30-93 | 455.07 | 20.78 | 434.29 | ND | NR | NR |
| MW-11 | 04-30-93 | 455.07 | 20.71 | 434.36 | ND | NR | NR |
| MW-11 | 05-14-93 | 455.07 | 20.01 | 435.06 | ND | NR | NR |
| MW-11 | 06-17-93 | 455.07 | 20.18 | 434.89 | ND | NR | NR |
| MW-11 | 07-27-93 | 455.07 | 21.31 | 433.76 | ND | NR | NR |
| MW-11 | 08-30-93 | 455.07 | 21.09 | 433.98 | ND | NR | NR |
| MW-11 | 11-04-93 | 455.07 | 21.40 | 433.67 | ND | NR | NR |
| MW-11 | 03-25-94 | 455.07 | 18.28 | 436.79 | ND | NR | NR |
| MW-11 | 06-02-94 | 455.07 | 21.78 | 433.29 | ND | NR | NR |
| MW-11 | 09-16-94 | 455.07 | 20.98 | 434.09 | ND | N | 0.014 |
| MW-11 | 11-29-94 | 455.07 | 20.67 | 434.40 | ND | N | 0.025 |
| | | | | | | | |
| MW-12 | 03-30-93 | 455.04 | 21.33 | 433.71 | ND | NR | NR |
| MW-12 | 04-30-93 | 455.04 | 20.23 | 434.81 | ND | NR | NR |
| MW-12 | 05-14-93 | 455.04 | 19.97 | 435.07 | ND | NR | NR |
| MW-12 | 06-17-93 | 455.04 | 20.00 | 435.04 | ND | NR | NR |
| MW-12 | 07-27-93 | 455.04 | 20.94 | 434.10 | ND | NR | NR |
| MW-12 | 08-30-93 | 455.04 | 21.79 | 433.25 | ND | NR | NR |
| MW-12 | 11-04-93 | 455.04 | 21.95 | 433.09 | ND | NR | NR |
| MW-12 | 03-25-94 | 455.04 | 18.74 | 436.30 | ND | NR | NR |
| MW-12 | 06-02-94 | 455.04 | 22.21 | 432.83 | ND | NR | NR |
| MW-12 | 09-16-94 | 455.04 | 21.62 | 433.42 | ND | N | 0.014 |
| MW-12 | 11-29-94 | 455.04 | 20.82 | 434.22 | ND | N | 0.025 |

TOC = Top of casing
ft-MSL = Elevation in feet, relative to mean sea level
MWN = Ground-water flow direction and gradient apply to the entire monitoring well network
ND = None detected
NR = Not reported; data not available
DRY = Dry well; groundwater was not detected
N = North
^ = Groundwater elevation (GWE) and depth to water (DTW) adjusted to include 80 percent of the floating product thickness (FPT):
[GWE = (TOC - DTW) + (FPT x 0.8)]

Table 3
 Historical Groundwater Analytical Data
 (TPHG, BTEX, and TRPH)

ARCO Service Station 6113
 785 East Stanley Boulevard, Livermore, California

Date: 02-10-95
 Project Number: 0805-134.01

| Well Designation | Water Sample Field Date | TPHG ppb | Benzene ppb | Toluene ppb | Ethylbenzene ppb | Total Xylenes ppb | TOG or TRPH ppb |
|------------------|-------------------------|-----------------------|----------------|----------------|---------------------|----------------------|--------------------|
| MW-1 | 09-20-89 | 80 | 3 | 1 | 0.7 | 1 | <5000 |
| MW-1 | 06-21-90 | <20 | <0.5 | 0.66 | <0.5 | <0.5 | 13000 |
| MW-1 | 09-20-90 | <50 | <0.5 | 1 | <0.5 | 1.8 | <5000 |
| MW-1 | 12-18-90 | <50 | <0.5 | 1.8 | <0.5 | 1.7 | NA |
| MW-1 | 02-21-91 | <50 | 1.2 | 2.3 | <0.5 | 2.2 | NA |
| MW-1 | 05-20-91 | <30 | <0.3 | <0.3 | <0.3 | <0.3 | NA |
| MW-1 | 08-13-91 | Not sampled: dry well | | | | | |
| MW-1 | 11-13-91 | Not sampled: dry well | | | | | |
| MW-1 | 03-19-92 | 400 | <3.5 | <1.2 | <0.8 | <1.0 | NA |
| MW-1 | 06-29-92 | Not sampled: dry well | | | | | |
| MW-1 | 09-11-92 | Not sampled: dry well | | | | | |
| MW-1 | 11-12-92 | Not sampled: dry well | | | | | |
| MW-1 | 03-30-93 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | NA |
| MW-1 | 05-14-93 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | 120000 |
| MW-1 | 08-30-93 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | 900 |
| MW-1 | 11-04-93 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | 2900 |
| MW-1 | 03-25-94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <600 |
| MW-1 | 06-02-94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <500 |
| MW-1 | 09-16-94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <500 |
| MW-1 | 11-29-94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <500 |
| | | | | | | | |
| MW-2 | 09-20-89 | <50 | <0.5 | <0.5 | <0.5 | 1 | <5000 |
| MW-2 | 06-21-90 | <20 | <0.5 | <0.5 | <0.5 | <0.5 | <5000 |
| MW-2 | 09-20-90 | <50 | <0.5 | 0.7 | <0.5 | 1.4 | <5000 |
| MW-2 | 12-18-90 | <50 | 0.6 | 1.5 | <0.5 | 1.9 | <5000 |
| MW-2 | 02-21-91 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <5000 |
| MW-2 | 05-20-91 | <30 | <0.3 | <0.3 | <0.3 | <0.3 | <75000 |
| MW-2 | 08-13-91 | Not sampled: dry well | | | | | |
| MW-2 | 11-13-91 | Not sampled: dry well | | | | | |
| MW-2 | 03-19-92 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | NA |
| MW-2 | 06-29-92 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | NA |
| MW-2 | 09-11-92 | Not sampled: dry well | | | | | |
| MW-2 | 11-12-92 | Not sampled: dry well | | | | | |
| MW-2 | 03-30-93 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | NA |
| MW-2 | 05-14-93 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | NA |
| MW-2 | 08-30-93 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | NA |
| MW-2 | 11-04-93 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | NA |
| MW-2 | 03-25-94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | NA |
| MW-2 | 06-02-94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | NA |
| MW-2 | 09-16-94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | NA |
| MW-2 | 11-29-94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | NA |

Table 3
Historical Groundwater Analytical Data
(TPHG, BTEX, and TRPH)

ARCO Service Station 6113
785 East Stanley Boulevard, Livermore, California

Date: 02-10-95
Project Number: 0805-134.01

| Well Designation | Water Sample Field Date | TPHG ppb | Benzene ppb | Toluene ppb | Ethylbenzene ppb | Total Xylenes ppb | TOG or TRPH ppb |
|------------------|-------------------------|-----------------------|----------------|----------------|---------------------|----------------------|--------------------|
| MW-3 | 09-20-89 | 170 | 8.9 | 0.6 | 1.1 | <1 | <5000 |
| MW-3 | 06-21-90 | <20 | <0.5 | 1 | <0.5 | <0.5 | 10000 |
| MW-3 | 09-20-90 | <50 | <0.5 | 1 | <0.5 | 1.9 | <5000 |
| MW-3 | 12-18-90 | <50 | <0.5 | 1.7 | <0.5 | 2 | <5000 |
| MW-3 | 02-21-91 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <5000 |
| MW-3 | 05-20-91 | 97 | 1.3 | 1.1 | 6.2 | 8.4 | <75000 |
| MW-3 | 08-13-91 | Not sampled: dry well | | | | | |
| MW-3 | 11-13-91 | Not sampled: dry well | | | | | |
| MW-3 | 03-19-92 | 220 | <1.1 | <1.9 | <0.6 | <0.8 | <5000 |
| MW-3 | 06-29-92 | Not sampled: dry well | | | | | |
| MW-3 | 09-11-92 | Not sampled: dry well | | | | | |
| MW-3 | 11-12-92 | Not sampled: dry well | | | | | |
| MW-3 | 03-30-93 | 200* | <4.0 | <0.5 | <0.5 | <0.5 | NA |
| MW-3 | 05-14-93 | 72* | <3.0 | <0.5 | <0.5 | <0.5 | NA |
| MW-3 | 08-30-93 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | NA |
| MW-3 | 11-04-93 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | NA |
| MW-3 | 03-25-94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | NA |
| MW-3 | 06-02-94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | NA |
| MW-3 | 09-16-94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | NA |
| MW-3 | 11-29-94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | NA |
| MW-4 | 02-21-91 | 3500 | 410 | 7.6 | 30 | 47 | <5000 |
| MW-4 | 05-20-91 | 1400 | 150 | 6 | 4.4 | 3.1 | <75000 |
| MW-4 | 08-13-91 | Not sampled: dry well | | | | | |
| MW-4 | 11-13-91 | Not sampled: dry well | | | | | |
| MW-4 | 03-19-92 | Not sampled: dry well | | | | | |
| MW-4 | 06-29-92 | Not sampled: dry well | | | | | |
| MW-4 | 09-11-92 | Not sampled: dry well | | | | | |
| MW-4 | 11-12-92 | Not sampled: dry well | | | | | |
| MW-4 | 03-31-93 | 680 | 110 | 5.2 | 3 | 7.4 | NA |
| MW-4 | 05-14-93 | 1200 | 200 | 6.2 | 15 | 9.2 | NA |
| MW-4 | 08-30-93 | 620 | 22 | 0.9 | 3.6 | 2.1 | NA |
| MW-4 | 11-04-93 | 320 | 11 | <0.5 | 1.3 | 0.9 | NA |
| MW-4 | 03-25-94 | 480 | 5.4 | <0.5 | 1.6 | 1.7 | NA |
| MW-4 | 06-02-94 | 270 | 4.2 | <0.5 | 1 | <1.7 | NA |
| MW-4 | 09-16-94 | 250 | 1 | <0.5 | <0.6 | <1 | NA |
| MW-4 | 11-29-94 | 280 | 1.8 | <0.5 | <1.2 | <0.8 | NA |

Table 3
 Historical Groundwater Analytical Data
 (TPHG, BTEX, and TRPH)

ARCO Service Station 6113
 785 East Stanley Boulevard, Livermore, California

Date: 02-10-95
 Project Number: 0805-134.01

| Well Designation | Water Sample Field Date | TPHG ppb | Benzene ppb | Toluene ppb | Ethylbenzene ppb | Total Xylenes ppb | TOG or TRPH ppb |
|------------------|-------------------------|--|----------------|----------------|---------------------|----------------------|--------------------|
| MW-5 | 06-29-92 | 8900 | 1700 | 640 | 310 | 1100 | NA |
| MW-5 | 09-11-92 | 13000 | 2200 | 1500 | 130 | 930 | NA |
| MW-5 | 11-12-92 | Not sampled: dry well | | | | | |
| MW-5 | 03-31-93 | 9700 | 1700 | 430 | 220 | 880 | NA |
| MW-5 | 05-14-93 | 9800 | 1300 | 820 | 270 | 1100 | NA |
| MW-5 | 08-30-93 | Not sampled: well inaccessible | | | | | |
| MW-5 | 11-04-93 | 41000 | 3500 | 3100 | 890 | 5400 | NA |
| MW-5 | 03-25-94 | 780 | 36 | 1.5 | 4.8 | 5.7 | NA |
| MW-5 | 06-02-94 | 500 | 25 | 7.4 | 6 | 33 | NA |
| MW-5 | 09-16-94 | 1500 | 370 | 28 | 110 | 120 | NA |
| MW-5 | 11-29-94 | 1100 | 280 | 11 | 82 | 31 | NA |
| MW-6 | 06-29-92 | 8600 | 1800 | 460 | 52 | 450 | NA |
| MW-6 | 09-11-92 | Not sampled: well contained floating product | | | | | |
| MW-6 | 11-12-92 | Not sampled: well contained floating product | | | | | |
| MW-6 | 03-31-93 | Not sampled: well contained floating product | | | | | |
| MW-6 | 05-14-93 | Not sampled: well contained floating product | | | | | |
| MW-6 | 08-30-93 | Not sampled: well contained floating product | | | | | |
| MW-6 | 11-04-93 | Not sampled: well contained floating product | | | | | |
| MW-6 | 03-25-94 | 530 | <2.5 | <2.5 | <2.5 | 4.6 | NA |
| MW-6 | 06-02-94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | NA |
| MW-6 | 09-16-94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | NA |
| MW-6 | 11-29-94 | <50 | 1.3 | <0.5 | <0.5 | <0.5 | NA |
| MW-7 | 06-29-92 | 270 | 38 | 3.7 | 1.1 | 4.4 | NA |
| MW-7 | 09-11-92 | 420 | 20 | 0.7 | <0.5 | <0.5 | NA |
| MW-7 | 11-12-92 | 470 | 31 | 1 | <0.5 | 0.8 | NA |
| MW-7 | 03-31-93 | 190 | 20 | 1 | <0.5 | <0.5 | NA |
| MW-7 | 05-14-93 | 170 | 17 | 0.6 | <0.5 | 0.5 | NA |
| MW-7 | 08-30-93 | <50 | 1.8 | <0.5 | <0.5 | 0.5 | NA |
| MW-7 | 11-04-93 | <50 | 6.6 | <0.5 | <0.5 | 0.8 | NA |
| MW-7 | 03-25-94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | NA |
| MW-7 | 06-02-94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | NA |
| MW-7 | 09-16-94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | NA |
| MW-7 | 11-29-94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | NA |

Table 3
 Historical Groundwater Analytical Data
 (TPHG, BTEX, and TRPH)

ARCO Service Station 6113
 785 East Stanley Boulevard, Livermore, California

Date: 02-10-95
 Project Number: 0805-134.01

| Well Designation | Water Sample Field Date | TPHG ppb | Benzene ppb | Toluene ppb | Ethylbenzene ppb | Total Xylenes ppb | TOG or TRPH ppb |
|------------------|-------------------------|-------------|----------------|----------------|---------------------|----------------------|--------------------|
| MW-8 | 06-29-92 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <500 |
| MW-8 | 09-11-92 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <500 |
| MW-8 | 11-12-92 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | NA |
| MW-8 | 03-30-93 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | NA |
| MW-8 | 05-14-93 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | NA |
| MW-8 | 08-30-93 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | NA |
| MW-8 | 11-04-93 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | NA |
| MW-8 | 03-25-94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | NA |
| MW-8 | 06-02-94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | NA |
| MW-8 | 09-16-94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | NA |
| MW-8 | 11-29-94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | NA |
| MW-9 | 06-29-92 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | NA |
| MW-9 | 09-11-92 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | NA |
| MW-9 | 11-12-92 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | NA |
| MW-9 | 03-31-93 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | NA |
| MW-9 | 05-14-93 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | NA |
| MW-9 | 08-30-93 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | NA |
| MW-9 | 11-04-93 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | NA |
| MW-9 | 03-25-94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | NA |
| MW-9 | 06-02-94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | NA |
| MW-9 | 09-16-94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | NA |
| MW-9 | 11-29-94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | NA |
| MW-10 | 03-31-93 | 230* | <0.5 | <0.5 | <1 | 0.6 | NA |
| MW-10 | 05-14-93 | 440* | <10 | <0.6 | <0.9 | <0.5 | NA |
| MW-10 | 08-30-93 | 280* | <4 | <0.5 | <1.3 | 0.6 | NA |
| MW-10 | 11-04-93 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | NA |
| MW-10 | 03-25-94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | NA |
| MW-10 | 06-02-94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | NA |
| MW-10 | 09-16-94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | NA |
| MW-10 | 11-29-94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | NA |

Table 3
 Historical Groundwater Analytical Data
 (TPHG, BTEX, and TRPH)

ARCO Service Station 6113
 785 East Stanley Boulevard, Livermore, California

Date: 02-10-95
 Project Number: 0805-134.01

| Well Designation | Water Sample Field Date | TPHG ppb | Benzene ppb | Toluene ppb | Ethyl- benzene ppb | Total Xylenes ppb | TOG or TRPH ppb |
|------------------|-------------------------|-------------|----------------|----------------|--------------------------|-------------------------|--------------------------|
| MW-11 | 03-31-93 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | NA |
| MW-11 | 05-14-93 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | NA |
| MW-11 | 08-30-93 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | NA |
| MW-11 | 11-04-93 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | NA |
| MW-11 | 03-25-94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | NA |
| MW-11 | 06-02-94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | NA |
| MW-11 | 09-16-94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | NA |
| MW-11 | 11-29-94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | NA |
| | | | | | | | |
| MW-12 | 03-31-93 | 150 | 20 | <0.5 | <0.5 | <0.5 | NA |
| MW-12 | 05-14-93 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | NA |
| MW-12 | 08-30-93 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | NA |
| MW-12 | 11-04-93 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | NA |
| MW-12 | 03-25-94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | NA |
| MW-12 | 06-02-94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | NA |
| MW-12 | 09-16-94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | NA |
| MW-12 | 11-29-94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | NA |

TPHG = Total petroleum hydrocarbons as gasoline
 TOG = Total oil and grease measured by EPA Method 5520 C&F
 TRPH = Total recoverable petroleum hydrocarbons measured by EPA Method 418.1
 ppb = Parts per billion or micrograms per liter (µg/l)
 NA = Not analyzed
 * = Chromatogram does not match the typical gasoline fingerprint.

Table 4
 Historical Groundwater Analytical Data
 (VOCs, TPHD, and Metals)

ARCO Service Station 6113
 785 East Stanley Boulevard, Livermore, California

Date: 02-10-95
 Project Number: 0805-134.01

| Well Designation | Water Sample Field Date | Total VOCs ppb | TPHD ppb | Cadmium by EPA 6010 ppb | Chromium by EPA 6010 ppb | Lead by EPA 7421 ppb | Zinc by EPA 6010 ppb | Nickel by EPA 6010 ppb |
|------------------|-------------------------|-----------------------|-------------|----------------------------|-----------------------------|-------------------------|-------------------------|---------------------------|
| MW-1 | 09-20-89 | NA | <50 | NA | NA | NA | NA | NA |
| MW-1 | 06-21-90 | NA | <100 | NA | NA | NA | NA | NA |
| MW-1 | 09-20-90 | NA | <50 | NA | NA | NA | NA | NA |
| MW-1 | 12-18-90 | NA | <5000 | NA | NA | NA | NA | NA |
| MW-1 | 02-21-91 | NA | <5000 | NA | NA | NA | NA | NA |
| MW-1 | 05-20-91 | NA | <75000 | NA | NA | NA | NA | NA |
| MW-1 | 08-13-91 | Not sampled: dry well | | | | | | |
| MW-1 | 11-13-91 | Not sampled: dry well | | | | | | |
| MW-1 | 03-19-92 | NA | NA | NA | NA | NA | NA | NA |
| MW-1 | 06-29-92 | Not sampled: dry well | | | | | | |
| MW-1 | 09-11-92 | Not sampled: dry well | | | | | | |
| MW-1 | 11-12-92 | Not sampled: dry well | | | | | | |
| MW-1 | 03-30-93 | NA | NA | NA | NA | NA | NA | NA |
| MW-1 | 05-14-93 | NA | NA | NA | NA | NA | NA | NA |
| MW-1 | 08-30-93 | NA | NA | NA | NA | NA | NA | NA |
| MW-1 | 11-04-93 | NA | NA | NA | NA | NA | NA | NA |
| MW-1 | 03-25-94 | NA | NA | NA | NA | NA | NA | NA |
| MW-1 | 06-02-94 | NA | NA | NA | NA | NA | NA | NA |
| | | | | | | | | |
| MW-2 | 09-20-89 | NA | <50 | NA | NA | NA | NA | NA |
| MW-2 | 06-21-90 | NA | <100 | NA | NA | NA | NA | NA |
| MW-2 | 09-20-90 | NA | <50 | NA | NA | NA | NA | NA |
| MW-2 | 12-18-90 | NA | NA | NA | NA | NA | NA | NA |
| MW-2 | 02-21-91 | NA | NA | NA | NA | NA | NA | NA |
| MW-2 | 05-20-91 | NA | NA | NA | NA | NA | NA | NA |
| MW-2 | 08-13-91 | Not sampled: dry well | | | | | | |
| MW-2 | 11-13-91 | Not sampled: dry well | | | | | | |
| MW-2 | 03-19-92 | NA | NA | NA | NA | NA | NA | NA |
| MW-2 | 06-29-92 | NA | NA | NA | NA | NA | NA | NA |
| MW-2 | 09-11-92 | Not sampled: dry well | | | | | | |
| MW-2 | 11-12-92 | Not sampled: dry well | | | | | | |
| MW-2 | 03-30-93 | NA | NA | NA | NA | NA | NA | NA |
| MW-2 | 05-14-93 | NA | NA | NA | NA | NA | NA | NA |

Table 4
 Historical Groundwater Analytical Data
 (VOCs, TPHD, and Metals)

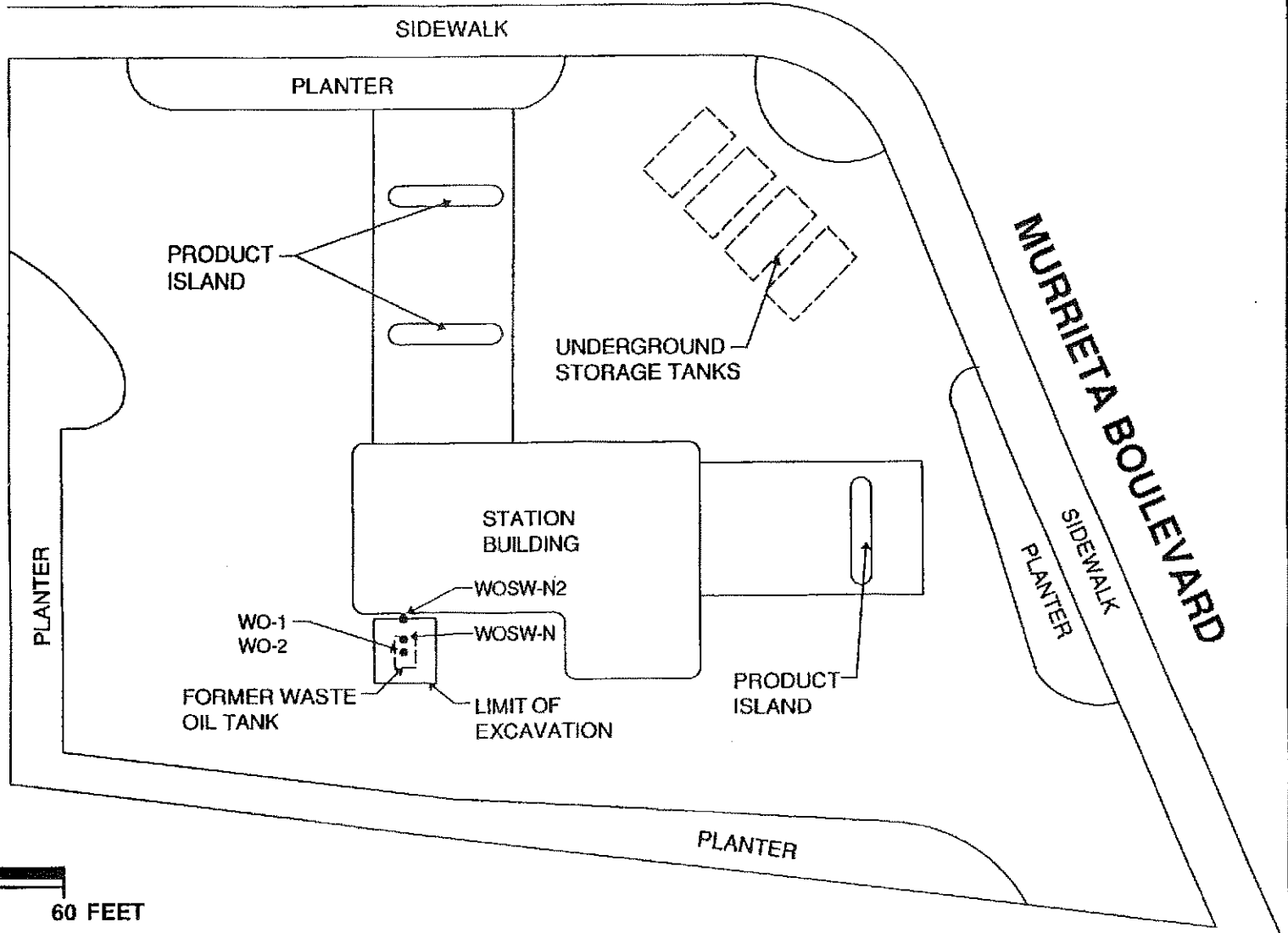
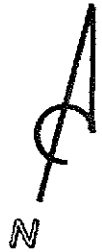
ARCO Service Station 6113
 785 East Stanley Boulevard, Livermore, California

Date: 02-10-95
 Project Number: 0805-134.01

| Well Designation | Water Sample Field Date | Total VOCs ppb | TPHD ppb | Cadmium by EPA 6010 ppb | Chromium by EPA 6010 ppb | Lead by EPA 7421 ppb | Zinc by EPA 6010 ppb | Nickel by EPA 6010 ppb |
|------------------|-------------------------|-----------------------|-------------|----------------------------|-----------------------------|-------------------------|-------------------------|---------------------------|
| MW-3 | 09-20-89 | NA | <50 | NA | NA | NA | NA | NA |
| MW-3 | 06-21-90 | NA | <100 | NA | NA | NA | NA | NA |
| MW-3 | 09-20-90 | NA | <50 | NA | NA | NA | NA | NA |
| MW-3 | 12-18-90 | NA | NA | NA | NA | NA | NA | NA |
| MW-3 | 02-21-91 | NA | NA | NA | NA | NA | NA | NA |
| MW-3 | 05-20-91 | NA | NA | NA | NA | NA | NA | NA |
| MW-3 | 08-13-91 | Not sampled: dry well | | | | | | |
| MW-3 | 11-13-91 | Not sampled: dry well | | | | | | |
| MW-3 | 03-19-92 | NA | <50 | NA | NA | NA | NA | NA |
| MW-3 | 06-29-92 | Not sampled: dry well | | | | | | |
| MW-3 | 09-11-92 | Not sampled: dry well | | | | | | |
| MW-3 | 11-12-92 | Not sampled: dry well | | | | | | |
| MW-3 | 03-30-93 | NA | NA | NA | NA | NA | NA | NA |
| MW-3 | 05-14-93 | NA | NA | NA | NA | NA | NA | NA |
| | | | | | | | | |
| MW-4 | 02-21-91 | NA | NA | NA | NA | NA | NA | NA |
| MW-4 | 05-20-91 | NA | NA | NA | NA | NA | NA | NA |
| MW-4 | 08-13-91 | Not sampled: dry well | | | | | | |
| MW-4 | 11-13-91 | Not sampled: dry well | | | | | | |
| MW-4 | 03-19-92 | Not sampled: dry well | | | | | | |
| MW-4 | 06-29-92 | Not sampled: dry well | | | | | | |
| MW-4 | 09-11-92 | Not sampled: dry well | | | | | | |
| MW-4 | 11-12-92 | Not sampled: dry well | | | | | | |
| MW-4 | 03-31-93 | NA | NA | NA | NA | NA | NA | NA |
| MW-4 | 05-14-93 | NA | NA | NA | NA | NA | NA | NA |
| | | | | | | | | |
| MW-8 | 06-29-92 | ND | <50 | <3 | 1780 | 143 | 1310 | 5100 |
| MW-8 | 09-11-92 | NA | <50 | 13 | 3580 | 308 | 2620 | 10300 |
| MW-8 | 11-12-92 | NA | NA | 28 | 3440 | 221 | 2550 | 9840 |
| MW-8 | 03-30-93 | NA | NA | NA | NA | NA | NA | NA |
| MW-8 | 05-14-93 | NA | NA | NA | NA | NA | NA | NA |
| | | | | | | | | |
| MW-9 | 11-12-92 | NA | NA | 10 | 1080 | 101 | 859 | 3070 |
| MW-9 | 03-31-93 | NA | NA | NA | NA | NA | NA | NA |
| MW-9 | 05-14-93 | NA | NA | NA | NA | NA | NA | NA |

VOCs = Halogenated volatile organic compounds by EPA Method 5030/601
 TPHD = Total petroleum hydrocarbons as diesel by EPA Method 3510/California DHS LUFT Method
 ppb = Parts per billion or micrograms per liter (µg/l)
 NA = Not analyzed
 ND = Not detected (31 compounds tested for VOCs were nondetectable)

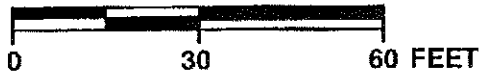
EAST STANLEY BOULEVARD



LEGEND

WO-1 • SOIL SAMPLE LOCATION AND DESIGNATION

SCALE



PACIFIC ENVIRONMENTAL GROUP, INC.

ARCO SERVICE STATION #6113
785 East Stanley Boulevard and Murrieta Boulevard
Livermore, California

SITE MAP

FIGURE:
2

PROJECT:
330-53.01

TABLE 1

Summary of Analytical Results
Low Boiling Hydrocarbons, High Boiling Hydrocarbons, Oil & Grease
Soil Samples From Waste Oil Tank Excavation
Results in Parts per Million - Dry Soil Basis

| Sample | Depth (ft.) | <u>Low Boiling Hydrocarbons</u> | <u>High Boiling Hydrocarbons</u> | | <u>Oil & Grease</u> |
|---------|-------------|---------------------------------|----------------------------------|------|-------------------------|
| | | Gasoline | Diesel | Oil | |
| W0-1 | 7 1/2 | <5. | 160.* | 60. | 660. |
| W0-2 | 8 1/2 | NT | <10. | <10. | <10. |
| WOSW-N | 5 | <5. | 490.* | 790. | 1,700. |
| WOSW-N2 | 7 | NT | 30.* | 800. | 1,100. |

NT = Not tested.

* = Chromatographic pattern of compounds detected and calculated as diesel does not match that of the diesel standard used for calibration.

highlighted samples taken after additional soil excavation on 2/3/89

TABLE 2

Summary of Analytical Results
 Volatile Organic Compounds, Semi-volatile Organic Compounds, Metals
 Soil Samples from Waste Oil Tank Excavation
 Results in Parts per Million - Dry Soil Basis

| | <u>W0-1</u> | <u>WOSW-N</u> | <u>Designated Level*</u> |
|--|-------------|---------------|--------------------------|
| <u>Volatile Organic Compounds</u> | ND | ND | |
| <u>Semi-volatile Organic Compounds</u> | | | |
| Phenanthrene | 14. | 15. | 28,000. |
| Anthracene | 3.9 | 3.5 | 28,000. |
| Flouranthene | 21. | 15. | 42. |
| Pyrene | 19. | 13. | 28,000. |
| Benzo(a)anthracene | 7.2 | 5.0 | not established |
| Chrysene | 7.2 | 5.0 | 28,000. |
| Benzo(b)flouranthene | 4.4 | ND | 28,000. |
| Benzo(k)flouranthene | 4.4 | ND | 28,000. |
| Benzo(a)pyrene | ND | 3.4 | 28,000. |
| All other tested compounds | ND | ND | |
| <u>Metals</u> | | | |
| Cadmium | ND | ND | 100. |
| Chromium | 35. | 61. | 500. |
| Lead | 18. | 16. | 500. |
| Zinc | 36. | 43. | 200,000. |

ND = None detected. See enclosed Certified Analytical Report for detection limits.

* = Levels to protect drinking water when compounds occur in a solid, for a hypothetical "average" site. Converted to parts per million. Source: "Water Quality Goals and Hazardous and Designated Levels for Chemical Constituents," California Regional Water Quality Control Board (prepared by Jon Marshack), September 1986.

Additional Subsurface Investigation and VET
ARCO Station 6113, Livermore, California

December 21, 1992
69028.07

TABLE 3
CUMULATIVE RESULTS OF LABORATORY ANALYSES OF SOIL SAMPLES
ARCO Station 6113
785 East Stanley Boulevard
Livermore, California
(Page 1 of 3)

| Sample | B | T | E | X | TPHg | TPHd | TOG |
|-----------------------|--------|--------|--------|--------|-------|------|-----|
| <u>September 1989</u> | | | | | | | |
| S-14½-B1 | <0.005 | <0.005 | <0.005 | <0.005 | <1.0 | <10 | <30 |
| S-34½-B1 | <0.005 | <0.005 | <0.005 | <0.005 | <1.0 | <10 | <30 |
| S-44½-B1 | <0.005 | <0.005 | <0.005 | <0.005 | <1.0 | <10 | <30 |
| S-19-B2 | <0.005 | <0.005 | <0.005 | <0.005 | <1.0 | <10 | <50 |
| S-34-B2 | <0.005 | <0.005 | <0.005 | <0.005 | <1.0 | <10 | <50 |
| S-41-B2 | <0.005 | <0.005 | <0.005 | <0.005 | <1.0 | <10 | <50 |
| S-14-B3 | <0.005 | <0.005 | <0.005 | <0.005 | <1.0 | <10 | <50 |
| S-34-B3 | <0.005 | <0.005 | <0.005 | <0.005 | <1.0 | <10 | <50 |
| S-37½-B3 | <0.005 | <0.005 | <0.005 | <0.005 | <1.0 | <10 | <50 |
| <u>February 1991</u> | | | | | | | |
| S-14½-B4 | <0.005 | <0.005 | <0.005 | <0.005 | <1.0 | <10 | <50 |
| S-19½-B4 | <0.005 | <0.005 | <0.005 | <0.005 | <1.0 | <10 | <50 |
| S-29-B4 | 0.008 | <0.005 | <0.005 | <0.005 | <1.0 | <10 | <50 |
| S-0221-SP(A-D) | <0.005 | <0.005 | <0.005 | <0.005 | <1.0 | <10 | NA |
| <u>June 1992</u> | | | | | | | |
| S-10½-B5 | <0.005 | <0.005 | <0.005 | <0.005 | <1.0 | NA | NA |
| S-20½-B5 | 1.4 | 2.0 | 13 | 67 | 1,200 | NA | NA |
| S-30½-B5 | 1.1 | 0.30 | 1.1 | 6.0 | 150 | NA | NA |
| S-40½-B5 | 17 | 32 | 14 | 150 | 230 | NA | NA |
| S-50½-B5 | 0.012 | <0.005 | <0.005 | <0.005 | <1.0 | NA | NA |
| S-10½-B6 | <0.005 | <0.005 | <0.005 | <0.005 | <1.0 | NA | NA |
| S-20½-B6 | <0.005 | <0.005 | <0.005 | <0.005 | <1.0 | NA | NA |
| S-30½-B6 | 0.45 | 0.079 | 0.035 | 0.15 | 23 | NA | NA |
| S-45½-B6 | 0.70 | 0.021 | <0.005 | <0.005 | 1.9 | NA | NA |
| S-50½-B6 | 0.056 | <0.005 | <0.005 | 0.006 | <1.0 | NA | NA |
| S-10½-B7 | <0.005 | <0.005 | <0.005 | <0.005 | <1.0 | NA | NA |
| S-20½-B7 | 0.43 | 1.3 | 0.35 | 2.5 | 21 | NA | NA |
| S-30½-B7 | 0.094 | 0.20 | <0.005 | 0.023 | 1.6 | NA | NA |
| S-40½-B7 | 0.009 | <0.005 | <0.005 | <0.005 | <1.0 | NA | NA |
| S-50½-B7 | <0.005 | <0.005 | <0.005 | <0.005 | <1.0 | NA | NA |
| S-10½-B8 | <0.005 | <0.005 | <0.005 | <0.005 | <1.0 | NA | NA |
| S-20½-B8 | <0.005 | 0.22 | 0.42 | 2.1 | 68 | NA | NA |
| S-30½-B8 | 0.043 | <0.005 | <0.005 | <0.005 | <1.0 | NA | NA |
| S-45½-B8 | 0.022 | <0.005 | <0.005 | <0.005 | 1.1 | NA | NA |

See notes on Page 3 of 3.

Additional Subsurface Investigation and VET
ARCO Station 6113, Livermore, California

December 21, 1992
69028.07

TABLE 3
CUMULATIVE RESULTS OF LABORATORY ANALYSES OF SOIL SAMPLES
ARCO Station 6113
785 East Stanley Boulevard
Livermore, California
(Page 2 of 3)

| Sample | B | T | E | X | TPHg | TPHd | TOG |
|--------------------|--------|--------|--------|--------|------|------|-----|
| S-8½-B9 | <0.005 | <0.005 | <0.005 | <0.005 | <1.0 | <1.0 | <30 |
| S-20½-B9 | <0.005 | <0.005 | <0.005 | <0.005 | <1.0 | <1.0 | 74 |
| S-30½-B9 | <0.005 | <0.005 | <0.005 | <0.005 | <1.0 | <1.0 | <30 |
| S-40½-B9 | <0.005 | <0.005 | <0.005 | <0.005 | <1.0 | <1.0 | <30 |
| S-50½-B9 | <0.005 | <0.005 | <0.005 | <0.005 | <1.0 | <1.0 | <30 |
| S-10-B10 | <0.005 | <0.005 | <0.005 | <0.005 | <1.0 | <1.0 | <30 |
| S-20-B10 | <0.005 | <0.005 | <0.005 | <0.005 | <1.0 | <1.0 | <30 |
| S-30-B10 | <0.005 | <0.005 | <0.005 | <0.005 | <1.0 | <1.0 | <30 |
| S-45-B10 | <0.005 | <0.005 | <0.005 | <0.005 | <1.0 | <1.0 | 77 |
| S-55-B10 | <0.005 | <0.005 | <0.005 | <0.005 | <1.0 | <1.0 | <30 |
| S-10½-B11 | <0.005 | <0.005 | <0.005 | <0.005 | <1.0 | NA | NA |
| S-20½-B11 | <0.005 | <0.005 | <0.005 | <0.005 | <1.0 | NA | NA |
| S-30½-B11 | <0.005 | <0.005 | <0.005 | <0.005 | 5.7 | NA | NA |
| S-40½-B11 | <0.005 | <0.005 | <0.005 | <0.005 | <1.0 | NA | NA |
| S-50½-B11 | <0.005 | <0.005 | <0.005 | <0.005 | <1.0 | NA | NA |
| S-55½-B11 | <0.005 | <0.005 | <0.005 | <0.005 | <1.0 | NA | NA |
| S-0615-SP1(A-D) | <0.005 | <0.005 | <0.005 | <0.005 | <1.0 | NA | NA |
| S-0615-SP2(A-D) | 0.014 | 0.037 | 0.054 | 0.45 | 24 | NA | NA |
| <u>August 1992</u> | | | | | | | |
| S-10-B12 | <0.005 | <0.005 | <0.005 | <0.005 | <1.0 | NA | NA |
| S-20-B12 | <0.005 | <0.005 | <0.005 | <0.005 | <1.0 | NA | NA |
| S-30-B12 | <0.005 | <0.005 | <0.005 | <0.005 | <1.0 | NA | NA |
| S-40-B12 | 0.59 | 0.60 | 1.3 | 2.0 | 110 | NA | NA |
| S-50-B12 | <0.005 | <0.005 | <0.005 | <0.005 | <1.0 | NA | NA |
| S-0804-SP(A-D) | <0.005 | 0.011 | 0.030 | 0.066 | 2.6 | NA | NA |

See notes on Page 3 of 3.

Additional Subsurface Investigation and VET
ARCO Station 6113, Livermore, California

December 21, 1992
69028.07

TABLE 3
CUMULATIVE RESULTS OF LABORATORY ANALYSES OF SOIL SAMPLES
ARCO Station 6113
785 East Stanley Boulevard
Livermore, California
(Page 3 of 3)

| Sample | Cadmium | Chromium | Lead | Nickel | Zinc | VOC |
|--|---------|----------|---------|--------|------|-----|
| <u>June 1992</u> | | | | | | |
| S-8½-B9 | <0.010 | <0.010 | <0.0050 | 0.051 | 0.47 | ND* |
| S-50½-B9 | <0.010 | <0.010 | <0.0050 | 0.098 | 0.57 | ND* |
| S-10-B10 | <0.010 | <0.010 | <0.0050 | 0.13 | 0.44 | ND* |
| S-55-B10 | <0.010 | <0.010 | <0.0050 | 0.063 | 0.75 | ND* |
| Background average concentrations in soil (ppm) ^{1,2} | | | | | | |
| | 0.06 | 100 | 11.5 | 74 | 50 | — |

Results in parts per million (ppm).

<: Results reported as less than the detection limit.

NA: Not Analyzed

TPHg: Total petroleum hydrocarbons as gasoline by EPA method 5030/8015/8020.

TPHd: Total petroleum hydrocarbons as diesel by EPA method 3550/8015.

B: Benzene, T: Toluene, E: Ethylbenzene, X: Total Xylene isomers

BTEX: Analyzed by EPA method 5030/8015/8020.

TOG: Total Oil and Grease by Standard Method 5520 E&F.

VOCs = Halogenated volatile organics.

NA = Compound not analyzed for.

ND = Compound not detected.

* = 37 compounds were tested

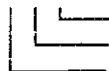
¹Lindsay, W.L. 1979. Chemical Equilibria in Soil. John Wiley & Sons.

²Scot, L.M. December 1991. Background Metal Concentrations in Soils in Northern Santa Clara County, California". M.S. Thesis, University of San Francisco.

Composite soil sample S-0615-SP2(A-D) consists of four soil samples taken from stockpiled soil.

Sample designation:

S-55-B11

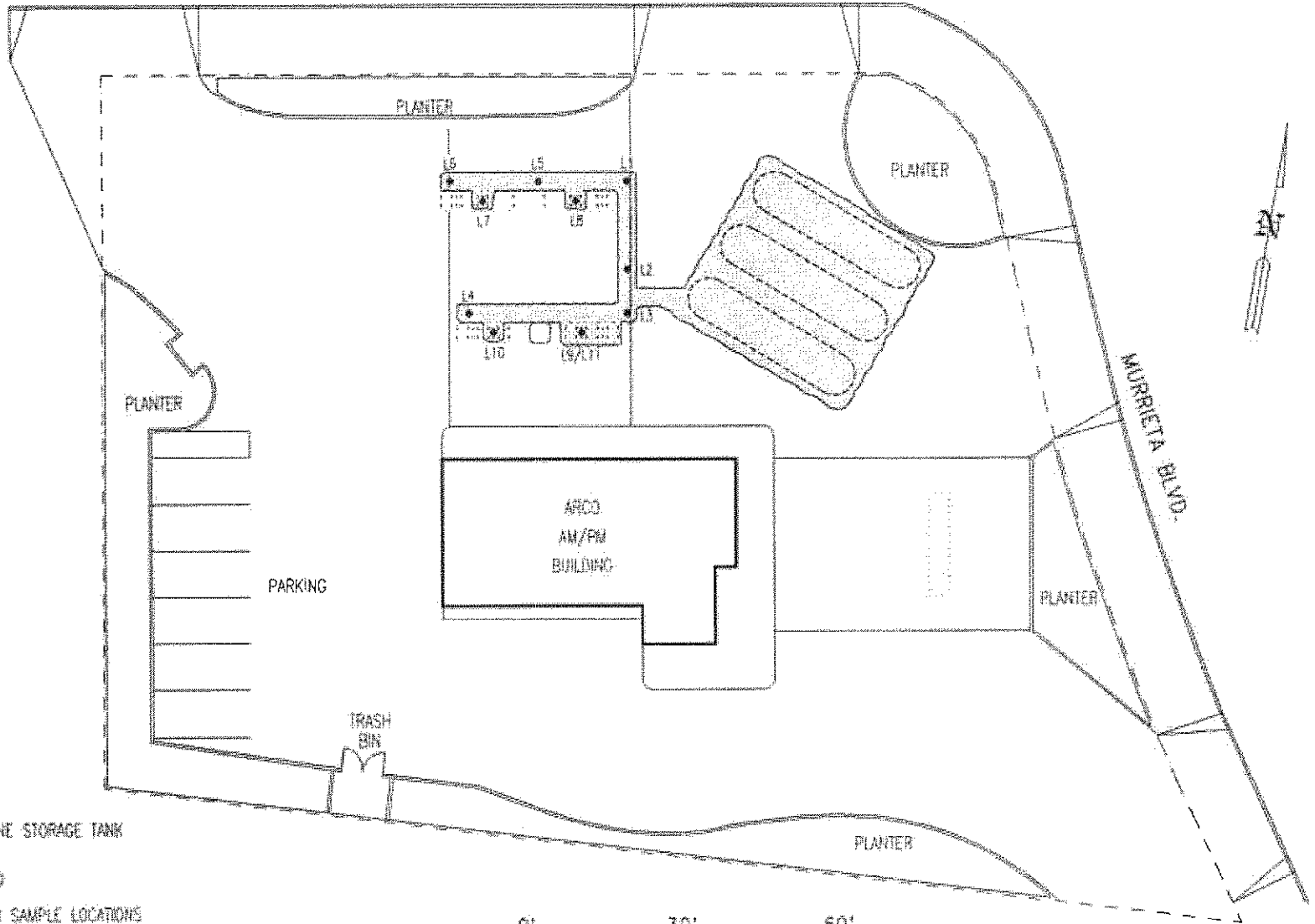


Boring number





Sample depth in feet below ground surface

Soil sample

EAST STANLEY BLVD.



EXPLANATION:

-  UNDERGROUND GASOLINE STORAGE TANK
-  REMOVED PUMP ISLAND
-  PRODUCT LINE TRENCH SAMPLE LOCATIONS
-  EXCAVATED AREA



SOURCE:
 MAP MODIFIED FROM BLUEPRINT PROVIDED BY
 WATSON WEST, INC. SEPTEMBER 1992.



| | | | |
|---------------|----------|---------------|--------------------------|
| COMPILED BY: | T.R. | PREPARED FOR: | ARCO Products Company |
| PREPARED BY: | R.P. | TITLE: | LOCATION OF SOIL SAMPLES |
| PROJECT MNGR. | P.S. | | ARCO FACILITY NO. 6113 |
| DATE: | 03/93 | | |
| SCALE: | AS SHOWN | | |
| PROJECT NO. | A154W01 | | |
| FILE NAME: | ARS113XX | | |

FIGURE

3

TABLE 1: Summary of Soil Analyses: Product Line Trenches
 ARCO Facility No. 6113, Livermore, California

| Sample Designation | Date | Depth (feet bgs) | TPH-G | BTEX Distinction | | | | Lead |
|-----------------------|----------|---------------------|-------|------------------|---------|--------------|---------|------|
| | | | | Benzene | Toluene | Ethylbenzene | Xylenes | |
| L1 | 12/11/92 | 4.0 | ND | 0.010 | 0.019 | 0.0081 | 0.059 | 2.5 |
| L2 | 12/11/92 | 4.0 | 14 | 0.063 | 0.42 | 0.28 | 2.0 | 5.7 |
| L3 | 12/11/92 | 4.0 | ND | ND | 0.0057 | ND | 0.033 | 2.7 |
| L4 | 12/11/92 | 4.0 | ND | 0.0095 | 0.011 | 0.0052 | 0.031 | 12 |
| L5 | 12/11/92 | 4.0 | ND | 0.0069 | 0.010 | ND | 0.028 | 5.4 |
| L6 | 12/11/92 | 4.0 | ND | 0.064 | 0.13 | ND | 0.13 | 7.9 |
| L7 | 12/11/92 | 3.5 | 7.0 | 0.59 | 1.6 | 0.15 | 1.1 | 6.9 |
| L8 | 12/11/92 | 3.5 | 1.3 | 0.035 | 0.019 | 0.0054 | 0.052 | 4.4 |
| L9 | 12/11/92 | 4.0 | 210 | ND | 3.5 | 3.6 | 23 | 11 |
| L10 | 12/11/92 | 3.5 | 1.0 | ND | 0.0079 | ND | 0.017 | 15 |
| L11 | 12/16/92 | 6.0 | ND | ND | ND | ND | ND | 3.3 |

FOOTNOTES

All concentrations reported in mg/kg (ppm)

TPH-G = Total Purgeable Petroleum Hydrocarbons (USEPA Method 8015)

BTEX Distinction (USEPA Method 8020)

Lead = Total Lead (USEPA Method 7421)

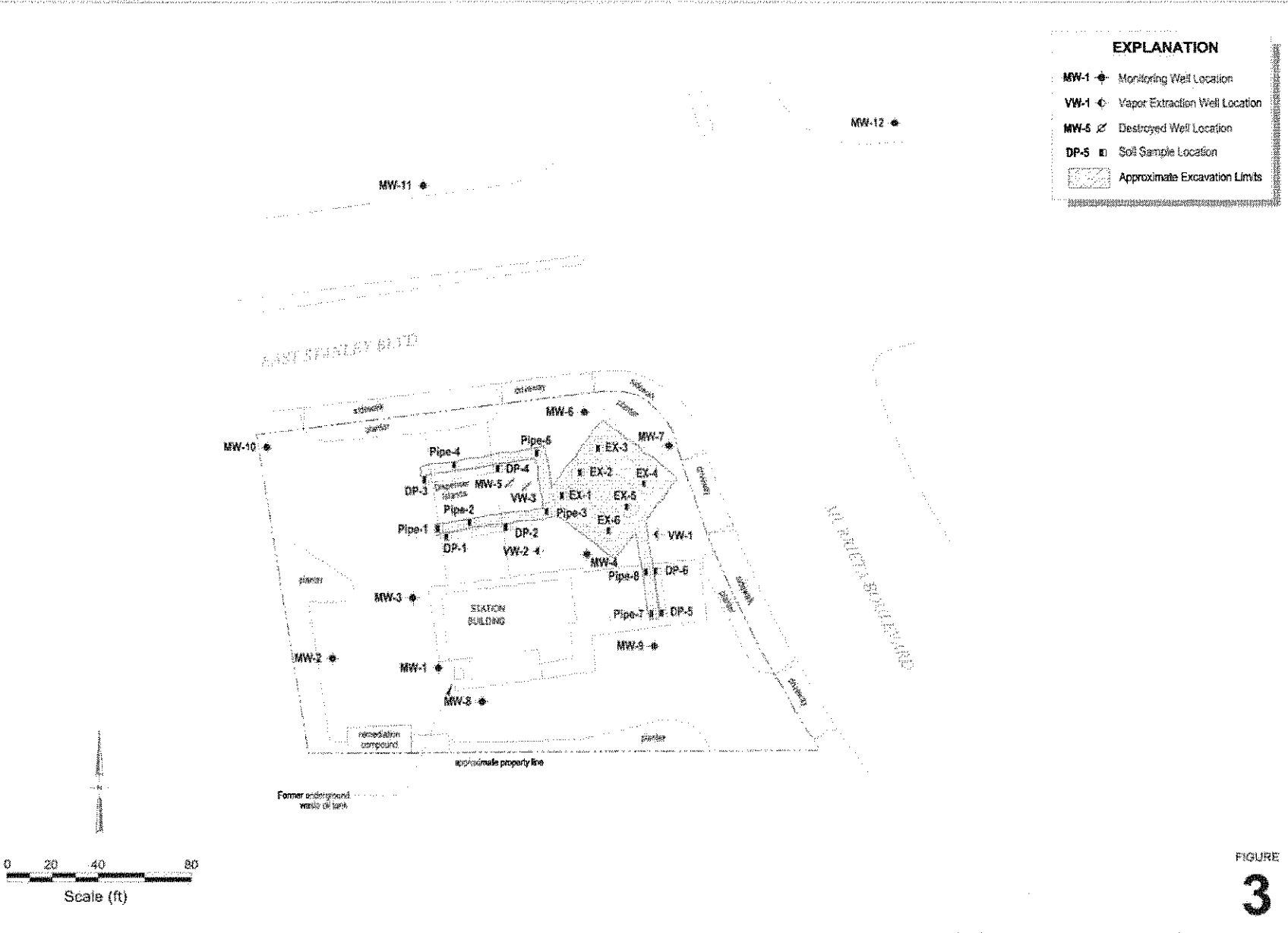
ND = Not Detected (for detection limits see laboratory reports in Appendix B)

bgs = Below ground surface

10/1/01

EXPLANATION

- MW-1 Monitoring Well Location
- VW-1 Vapor Extraction Well Location
- MW-5 Destroyed Well Location
- DP-5 Soil Sample Location
- Approximate Excavation Limits



UST Excavation Areas and Sampling Locations



ARCO Service Station 6113
785 East Stanley Boulevard
Livermore, California

FIGURE
3

Table 1
UST Removal Compliance Sampling Results

ARCO Service Station 6113
785 East Stanley Boulevard, Livermore, California

| Sample ID | Date Sampled | Depth Sampled (fbg) | TPHg (mg/kg) | Benzene (mg/kg) | Toulene (mg/kg) | Ethyl-benzene (mg/kg) | Xylene (mg/kg) | MTBE (mg/kg) | Lead (mg/kg) |
|-----------|--------------|---------------------|--------------|-----------------|-----------------|-----------------------|----------------|--------------|--------------|
| DP-1 | 12/6/00 | 4.5 | 1.57 | <0.00500 | 0.00694 | <0.00500 | 0.0124 | <0.0250 | <10.4 |
| DP-2 | 12/6/00 | 4.5 | 5.00 | <0.00500 | 0.0102 | <0.00500 | 0.0332 | 0.0268 | <10.1 |
| DP-3 | 12/6/00 | 4.5 | 1.40 | <0.00500 | 0.00710 | <0.00500 | 0.0126 | <0.0250 | 22.9 |
| DP-4 | 12/6/00 | 4.5 | 6.80 | <0.00500 | 0.00568 | 0.0222 | 0.0241 | <0.0250 | <9.71 |
| DP-5 | 12/6/00 | 4.5 | 1.40 | <0.00500 | 0.0173 | 0.00522 | 0.0355 | 0.133 | <9.27 |
| DP-6 | 12/6/00 | 4.5 | 1.05 | <0.00500 | <0.00500 | <0.00500 | <0.00500 | <0.0250 | <9.27 |
| Pipe-1 | 12/6/00 | 4.5 | <1.00 | <0.00500 | <0.00500 | <0.00500 | 0.00624 | <0.0250 | 10.9 |
| Pipe-2 | 12/6/00 | 4.5 | <1.00 | <0.00500 | <0.00500 | <0.00500 | <0.00500 | <0.0250 | <9.71 |
| Pipe-3 | 12/6/00 | 4.5 | <1.00 | <0.00500 | <0.00500 | <0.00500 | 0.00848 | <0.0250 | <10.0 |
| Pipe-4 | 12/6/00 | 4.5 | <1.00 | <0.00500 | 0.00536 | <0.00500 | 0.0102 | <0.0250 | 15.1 |
| Pipe-6 | 12/6/00 | 4.5 | <1.00 | 0.00918 | 0.0326 | <0.00500 | 0.0193 | 0.0610 | <9.90 |
| Pipe-7 | 12/6/00 | 4.5 | <1.00 | <0.00500 | <0.00500 | <0.00500 | <0.00500 | <0.0250 | <9.90 |
| Pipe-8 | 12/6/00 | 4.5 | <1.00 | <0.00500 | <0.00500 | <0.00500 | <0.00500 | <0.0250 | <9.27 |
| EX-1 | 1/8/01 | 17.5 | 3.030 | 2.74 | 9.85 | 33.7 | 297 | 11.8 | <9.81 |
| EX-2 | 1/8/01 | 18.0 | 2.930 | 2.74 | 10.7 | 37.4 | 225 | <6.25 | <9.90 |

Table 1
UST Removal Compliance Sampling Results

ARCO Service Station 6113
785 East Stanley Boulevard, Livermore, California

| Sample ID | Date Sampled | Depth Sampled (fbg) | TPHg (mg/kg) | Benzene (mg/kg) | Toulene (mg/kg) | Ethyl-benzene (mg/kg) | Xylene (mg/kg) | MTBE (mg/kg) | Lead (mg/kg) |
|-----------|--------------|---------------------|------------------|-----------------|-----------------|-----------------------|----------------|-----------------|--------------|
| EX-3 | 1/8/01 | 18.0 | 1,480 | <0.500 | 8.86 | 8.33 | 16.8 | 5.42 | <10.0 |
| EX-4 | 1/8/01 | 18.0 | 295 | <0.500 | 0.846 | 1.66 | 10.1 | 2.72 | <10.0 |
| EX-5 | 1/8/01 | 18.0 | 3,490 | <1.25 | <1.25 | 22.8 | 39.8 | <6.25 | <9.62 |
| EX-6 | 1/8/01 | 18.5 | 1.36 | <0.00500 | <0.00500 | 0.00906 | 0.0242 | 0.471 | <9.71 |

Notes

fbg = feet below grade
mg/kg = milligrams per kilogram

TPHg = total petroluem hydrocarbons as gasoline
TPHd = total petroluem hydrocarbons as diesel
MTBE = methyl tert butyl ether

**Table 3
Soil Analytical Results**

November 9, 2001

**ARCO Service Station No. 6113
785 East Stanley Boulevard, Livermore, California**

| Sample ID | Sample Depth (fbg) | TPHg (mg/kg) | Benzene (mg/kg) | Toulene (mg/kg) | Ethyl-benzene (mg/kg) | Xylene (mg/kg) | MTBE (mg/kg) |
|------------------|---------------------------|---------------------|------------------------|------------------------|------------------------------|-----------------------|---------------------|
| MW-13 5.5' | 5.5 | <1.0 | <0.0050 | 0.0068 | 0.0058 | 0.046 | <0.050 |
| MW-13 10.5' | 10.5 | <1.0 | <0.0050 | <0.0050 | <0.0050 | <0.0050 | 0.28 |
| MW-13 15.5' | 15.5 | 13 | <0.010 | <0.010 | 0.045 | 0.30 | <0.10 |

Notes

fbg = feet below grade

mg/kg = milligrams per kilogram

TPHg = total petroluem hydrocarbons as gasoline

MTBE = methyl tertiary butyl ether by EPA Method 8020

**Table 1. Summary of Soil Sample Analytical Data
Station #6113, 785 East Stanley Boulevard, Livermore, CA**

| Soil Boring Identification* | Sample ID | Date Collected | GRO (mg/kg) | Benzene (mg/kg) | Toluene (mg/kg) | Ethylbenzene (mg/kg) | Xylenes (mg/kg) | MTBE (mg/kg) | TBA (mg/kg) | Comments |
|-----------------------------|-----------------|----------------|-------------|-----------------|-----------------|----------------------|-----------------|--------------|-------------|----------|
| RMW-13 | RMW13@14.5-15.0 | 3/11/2010 | <0.50 | 0.001 | <0.0010 | 0.0037 | 0.0054 | 0.0018 | 0.12 | |
| | RMW13@21.0-21.5 | 3/11/2010 | 1,900 | 2.1 | 0.13 | 22 | 52 | 0.15 | <1.0 | |
| | RMW13@25.5-26.0 | 3/11/2010 | 160 | 0.98 | <0.1 | 2.0 | 3.3 | 0.28 | <1.0 | |
| | RMW13@31.0-31.5 | 3/11/2010 | 63 | 0.54 | <0.1 | 0.32 | 0.25 | <0.1 | <1.0 | |

Abbreviations & Symbols:

* = See Drawing 2 for soil boring location

GRO: Gasoline range organics

Calscience Environmental Laboratories, Inc.: GRO(C6-C12)

GRO analyzed using EPA method 8015B

MTBE: Methyl tert-butyl ether

TBA: Tert-butyl alcohol

Benzene, toluene, ethylbenzene, total xylenes, MTBE, and TBA analyzed using EPA method 8260B

mg/kg = Milligrams per kilogram

Notes:

1,2-dibromoethane (EDB), 1,2-dichloroethane (1,2 DCA), Di-isopropyl ether (DIPE), ethyl tert-butyl ether (ETBE), ter-amyl methyl ether (TAME), and ethanol were not detected at or above their respective laboratory reporting limit.

The number after @ in Sample ID denotes the depth range at which the sample was collected in feet bgs (i.e., RMW13@14.5-15.0 was collected between 14.5 and 15.0 feet bgs).



SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

RESNA

3315 Almaden Expwy., Suite 34
San Jose, CA 95118
Attention: Joel Coffman

Project: Arco 6113, Livermore

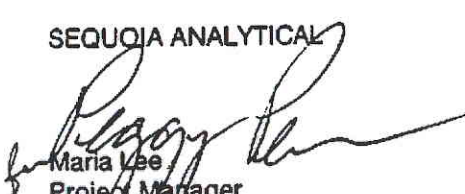
Enclosed are the results from 12 soil samples received at Sequoia Analytical on March 25, 1993. The requested analyses are listed below:

| | | | |
|---------|------------------|---------|--------------------|
| 3CD0901 | Soil, S-15.5-B17 | 3/24/93 | EPA 5030/8015/8020 |
| 3CD0902 | Soil, S-20-B17 | 3/24/93 | EPA 5030/8015/8020 |
| 3CD0903 | Soil, S-30.5-B17 | 3/24/93 | EPA 5030/8015/8020 |
| 3CD0904 | Soil, S-35-B17 | 3/24/93 | EPA 5030/8015/8020 |
| 3CD0905 | Soil, S-10-B18 | 3/24/93 | EPA 5030/8015/8020 |
| 3CD0906 | Soil, S-20-B18 | 3/24/93 | EPA 5030/8015/8020 |
| 3CD0907 | Soil, S-30-B18 | 3/24/93 | EPA 5030/8015/8020 |
| 3CD0908 | Soil, S-35-B18 | 3/24/93 | EPA 5030/8015/8020 |
| 3CD0909 | Soil, S-45-B18 | 3/24/93 | EPA 5030/8015/8020 |
| 3CD0910 | Soil, S-10-B19 | 3/24/93 | EPA 5030/8015/8020 |
| 3CD0911 | Soil, S-15-B19 | 3/24/93 | EPA 5030/8015/8020 |
| 3CD0912 | Soil, S-35.5-B19 | 3/24/93 | EPA 5030/8015/8020 |

Please contact me if you have any questions. In the meantime, thank you for the opportunity to work with you on this project.

Very truly yours,

SEQUOIA ANALYTICAL


Maria Lee
Project Manager



SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

| | | |
|-------------------------------|---|------------------------|
| RESNA | Client Project ID: Arco 6113, Livermore | Sampled: Mar 24, 1993 |
| 3315 Almaden Expwy., Suite 34 | Sample Matrix: Soil | Received: Mar 25, 1993 |
| San Jose, CA 95118 | Analysis Method: EPA 5030/8015/8020 | Reported: Apr 7, 1993 |
| Attention: Joel Coffman | First Sample #: 3CD0901 | |

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

| Analyte | Reporting Limit mg/kg | Sample I.D. 3CD0901 S-15.5-B17 | Sample I.D. 3CD0902 S-20-B17 | Sample I.D. 3CD0903 S-30.5-B17 | Sample I.D. 3CD0904 S-35-B17 | Sample I.D. 3CD0905 S-10-B18 | Sample I.D. 3CD0906 S-20-B18 |
|------------------------|--------------------------|--------------------------------------|------------------------------------|--------------------------------------|------------------------------------|------------------------------------|------------------------------------|
| Purgeable Hydrocarbons | 1.0 | N.D. | N.D. | N.D. | N.D. | N.D. | N.D. |
| Benzene | 0.0050 | N.D. | N.D. | N.D. | N.D. | N.D. | N.D. |
| Toluene | 0.0050 | N.D. | N.D. | N.D. | N.D. | N.D. | N.D. |
| Ethyl Benzene | 0.0050 | N.D. | N.D. | N.D. | N.D. | N.D. | N.D. |
| Total Xylenes | 0.0050 | N.D. | N.D. | N.D. | N.D. | N.D. | N.D. |
| Chromatogram Pattern: | | -- | -- | -- | -- | -- | -- |

Quality Control Data

| | | | | | | |
|---|---------|---------|---------|---------|---------|---------|
| Report Limit Multiplication Factor: | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Date Analyzed: | 3/31/93 | 3/31/93 | 3/31/93 | 3/31/93 | 3/30/93 | 3/30/93 |
| Instrument Identification: | GCHP-7 | GCHP-7 | GCHP-7 | GCHP-7 | GCHP-7 | GCHP-6 |
| Surrogate Recovery, %: (QC Limits = 70-130%) | 77 | 87 | 87 | 89 | 82 | 89 |

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL

[Signature]
 Maria Lee
 Project Manager



SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
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RESNA
3315 Almaden Expwy., Suite 34
San Jose, CA 95118
Attention: Joel Coffman

Client Project ID: Arco 6113, Livermore
Sample Matrix: Soil
Analysis Method: EPA 5030/8015/8020
First Sample #: 3CD0907

Sampled: Mar 24, 1993
Received: Mar 25, 1993
Reported: Apr 7, 1993

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

| Analyte | Reporting Limit mg/kg | Sample I.D. 3CD0907 S-30-B18 | Sample I.D. 3CD0908 S-35-B18 | Sample I.D. 3CD0909 S-45-B18 | Sample I.D. 3CD0910 S-10-B19 | Sample I.D. 3CD0911 S-15-B19 | Sample I.D. 3CD0912 S-35.5-B19 |
|------------------------|-----------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|--------------------------------------|
| Purgeable Hydrocarbons | 1.0 | N.D. | N.D. | N.D. | N.D. | N.D. | N.D. |
| Benzene | 0.0050 | N.D. | N.D. | N.D. | N.D. | N.D. | N.D. |
| Toluene | 0.0050 | N.D. | N.D. | N.D. | N.D. | N.D. | N.D. |
| Ethyl Benzene | 0.0050 | N.D. | N.D. | N.D. | N.D. | N.D. | N.D. |
| Total Xylenes | 0.0050 | N.D. | N.D. | N.D. | N.D. | N.D. | N.D. |
| Chromatogram Pattern: | | .. | .. | .. | .. | .. | .. |

Quality Control Data

| | | | | | | |
|---|---------|---------|---------|---------|---------|---------|
| Report Limit Multiplication Factor: | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Date Analyzed: | 3/30/93 | 3/31/93 | 3/31/93 | 3/31/93 | 3/31/93 | 3/31/93 |
| Instrument Identification: | GCHP-7 | GCHP-7 | GCHP-7 | GCHP-7 | GCHP-7 | GCHP-7 |
| Surrogate Recovery, %: (QC Limits = 70-130%) | 105 | 87 | 95 | 85 | 92 | 90 |

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL

Maria Lee
Project Manager



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RESNA
3315 Almaden Expwy., Suite 34
San Jose, CA 95118
Attention: Joel Coffman

Client Project ID: Arco 6113, Livermore
Matrix: Soil

QC Sample Group: 3CD0901 - 012

Reported: Apr 7, 1993

QUALITY CONTROL DATA REPORT

| ANALYTE | Benzene | Toluene | Ethyl-Benzene | Xylenes |
|--------------------------|------------|------------|---------------|------------|
| Method: | EPA 8020 | EPA 8020 | EPA 8020 | EPA 8020 |
| Analyst: | R.Geckler | R.Geckler | R.Geckler | R.Geckler |
| Conc. Spiked: | 0.20 | 0.20 | 0.20 | 0.60 |
| Units: | mg/kg | mg/kg | mg/kg | mg/kg |
| LCS Batch#: | GBLK033193 | GBLK033193 | GBLK033193 | GBLK033193 |
| Date Prepared: | 3/31/93 | 3/31/93 | 3/31/93 | 3/31/93 |
| Date Analyzed: | 3/31/93 | 3/31/93 | 3/31/93 | 3/31/93 |
| Instrument I.D.#: | GCHP-7 | GCHP-7 | GCHP-7 | GCHP-7 |
| LCS % Recovery: | 95 | 105 | 110 | 110 |
| Control Limits: | 60-140 | 60-140 | 60-140 | 60-140 |

| MS/MSD | Batch #: | 3CD0903 | 3CD0903 | 3CD0903 | 3CD0903 |
|---|----------|---------|---------|---------|---------|
| Date Prepared: | | 3/31/93 | 3/31/93 | 3/31/93 | 3/31/93 |
| Date Analyzed: | | 3/31/93 | 3/31/93 | 3/31/93 | 3/31/93 |
| Instrument I.D.#: | | GCHP-7 | GCHP-7 | GCHP-7 | GCHP-7 |
| Matrix Spike % Recovery: | | 85 | 95 | 100 | 103 |
| Matrix Spike Duplicate % Recovery: | | 85 | 100 | 100 | 100 |
| Relative % Difference: | | 0.0 | 5.1 | 0.0 | 3.3 |

Quality Assurance Statement: All standard operating procedures and quality control requirements have been met.

SEQUOIA ANALYTICAL

Maria Lee
Project Manager

Please Note:

The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation and analytical methods employed for the samples. The LCS % recovery data is used for validation of sample batch results. Due to matrix effects, the QC limits for MS/MSD's are advisory only and are not used to accept or reject batch results.



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RESNA
3315 Almaden Expwy., Suite 34
San Jose, CA 95118
Attention: Joel Coffman

Client Project ID: Arco 6113, Livermore
Matrix: Soil

QC Sample Group: 3CD0901 - 12

Reported: Apr 7, 1993

QUALITY CONTROL DATA REPORT

| ANALYTE | Benzene | Toluene | Ethyl-Benzene | Xylenes |
|--------------------------|------------|------------|---------------|------------|
| Method: | EPA 8020 | EPA 8020 | EPA 8020 | EPA 8020 |
| Analyst: | R.Geckler | R.Geckler | R.Geckler | R.Geckler |
| Conc. Spiked: | 0.20 | 0.20 | 0.20 | 0.60 |
| Units: | mg/kg | mg/kg | mg/kg | mg/kg |
| LCS Batch#: | GBLK033093 | GBLK033093 | GBLK033093 | GBLK033093 |
| Date Prepared: | 3/30/93 | 3/30/93 | 3/30/93 | 3/30/93 |
| Date Analyzed: | 3/30/93 | 3/30/93 | 3/30/93 | 3/30/93 |
| Instrument I.D.#: | GCHP-7 | GCHP-7 | GCHP-7 | GCHP-7 |
| LCS % Recovery: | 105 | 110 | 125 | 120 |
| Control Limits: | 60-140 | 60-140 | 60-140 | 60-140 |

| MS/MSD Batch #: | 3CC4405 | 3CC4405 | 3CC4405 | 3CC4405 |
|---|---------|---------|---------|---------|
| Date Prepared: | 3/30/93 | 3/30/93 | 3/30/93 | 3/30/93 |
| Date Analyzed: | 3/30/93 | 3/30/93 | 3/30/93 | 3/30/93 |
| Instrument I.D.#: | GCHP-7 | GCHP-7 | GCHP-7 | GCHP-7 |
| Matrix Spike % Recovery: | 100 | 110 | 115 | 112 |
| Matrix Spike Duplicate % Recovery: | 100 | 115 | 120 | 115 |
| Relative % Difference: | 0.0 | 4.4 | 4.3 | 2.9 |

Quality Assurance Statement: All standard operating procedures and quality control requirements have been met.

SEQUOIA ANALYTICAL

Maria Lee
Project Manager

Please Note:

The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation and analytical methods employed for the samples. The LCS % recovery data is used for validation of sample batch results. Due to matrix effects, the QC limits for MS/MSD's are advisory only and are not used to accept or reject batch results.

3CD0901.RES <4>

APPENDIX C

Soil Boring and Well Construction Logs

Total depth of boring: 46 feet Diameter of boring: 6 inches Date drilled: 9-14-89

Casing diameter: 2 inches Length: 44 feet Slot size: 0.020-inch

Screen diameter: 2 inches Length: 15 feet Material type: Sch 40 PVC

Drilling Company: Exploration Geoservices Driller: Mike & Curtis

Method Used: Hollow-Stem Auger Field Geologist: George & Bill

Signature of Registered Professional: _____

Registration No.: _____ State: CA

| Depth | Sample No. | Blows | P.I.D. | USCS Code | Description | Wall Const. |
|------------------------------|------------|----------------|--------|-----------|---|-------------|
| 0 | | | | | | |
| 2 | | | | GM/SM | Silty sand and gravel, brown, damp, loose. | |
| 4 | | | | GC | Clayey gravel with some cobbles, yellow-brown, damp, dense. | |
| 6 | S-5 | 36 50 | 0 | | | |
| 8 | | | | | | |
| 10 | S-10 | 50 | 0 | | Clayey coarse sand and gravel. | |
| 12 | | | | | | |
| 14 | S-14.5 | 50 | 0 | ML | Clayey silt with minor gravel, abundant caliche, yellow-brown, damp to moist, low plasticity, hard. | |
| 16 | | | | | | |
| 18 | | | | | | |
| 20 | S-19.5 | 23 40 50 | 0 | | Some sand, brown, low plasticity, very stiff to hard. | |
| (Section continues downward) | | | | | | |



PROJECT NO. **69028-2**

LOG OF BORING B-1/MW-1

ARCO Service Station No. 6113
785 East Stanley Boulevard
Livermore, California

PLATE

P - 4

| Depth | Sample No. | BLOW | P.L.D. | USCS Code | Description | Well Const. |
|-------|------------|----------------|--------|-----------|--|-------------|
| -22 | | | | ML ▽ | Clayey silt with some sand and gravel, brown, low plasticity, very stiff to hard. | |
| -24 | | | | | | |
| -26 | S-24.5 | 16 32 32 | 0 | | | |
| -28 | | | | | Clayey silt with trace sand, yellow-brown, moist, medium plasticity, very stiff to hard. | |
| -30 | S-29.5 | 36 50 | 0 | | | |
| -32 | | | | | | |
| -34 | S-34.5 | 50 | 0 | SC ▽ | Clayey sand with some gravel, trace sand, yellow-brown, moist, low plasticity, dense. | |
| -36 | | | | | | |
| -38 | | | | | | |
| -40 | S-39.5 | 20 28 50 | 0 | | Clayey, medium to fine sand, yellow-brown, wet, low plasticity, medium dense. | |
| -42 | | | | | | |
| -44 | | | | CL | Silty clay with trace sand, yellow-brown, damp to moist, medium plasticity, stiff to hard. | |
| -46 | S-44.5 | 26 42 50 | 0 | | | |
| -48 | | | | | Total Depth = 46 feet. | |
| -50 | | | | | | |



PROJECT NO. 69028-2

LOG OF BORING B-1/MW-1 PLATE

ARCO Service Station No. 6113
785 East Stanley Boulevard
Livermore, California

P - 5

Total depth of boring: 40 feet Diameter of boring: 6 inches Date drilled: 9-13-89
 Casing diameter: 2 inches Length: 10 feet Slot size: 0.020-inch
 Screen diameter: 2 inches Length: 38 feet Material type: Sch 40 PVC
 Drilling Company: Exploration Geoservices Driller: Mike & Curtis
 Method Used: Hollow-Stem Auger Field Geologist: George & Bill

Signature of Registered Professional: _____
 Registration No. _____ State: CA

| Depth | Sample No. | Blows | P.I.D. | USCS Code | Description | Well Const. |
|------------------------------|------------|----------|--------|-----------|---|-------------|
| 0 | | | | | Asphalt (9 inches). | |
| 2 | | | | GM/SM | Silty sand, some gravel, brown, damp, loose. | |
| 4 | S-4 | 50 | 0 | GC | Clayey gravel, light brown, damp, very dense. | |
| 6 | | | | | | |
| 8 | | | | | Clayey gravel, some cobbles, trace sand, damp, very dense. | |
| 10 | S-9 | 26 50 | 0 | GP | Coarse sand and gravel with some silt and clay brown, damp, medium to very dense. | |
| 12 | | | | | | |
| 14 | S-14 | 50 | 0 | ML | Clayey silt, yellow-brown, damp, low plasticity, hard. | |
| 16 | | | | | | |
| 18 | | | | | | |
| 20 | S-19 | 50 | 0 | | Clayey silt with sand. | |
| (Section continues downward) | | | | | | |



PROJECT NO. **69028-2**

LOG OF BORING B-2/MW-2
 ARCO Service Station No. 6113
 785 East Stanley Boulevard
 Livermore, California

PLATE

P - 6

| Depth | Sample No. | BLOW | P.I.D. | USCS Code | Description | Well Const. |
|-------|------------|----------------|--------|-----------|---|-------------|
| -22 | | | | ML | Clayey silt with sand, yellow-brown, damp, low plasticity, hard. | |
| -24 | S-24 | 15 40 30 | 0 | | Clayey silt, trace sand, yellow-brown, damp, very stiff. | |
| -26 | | | | | | |
| -28 | S-29 | 50 | 0 | | Clayey silt, some gravel. | |
| -30 | | | | | | |
| -32 | | | | GC | Clayey gravel with sand, light brown, moist, dense to very dense. | |
| -34 | S-34 | 40 50 | 0 | | | |
| -36 | | | | | Wet. | |
| -38 | | | | CL | | |
| -40 | S-39 | 30 50 | 0 | | Silty clay, light brown, damp, very stiff. | |
| -42 | S-41 | 42 45 50 | 0 | | | |
| -44 | | | | | Total Depth = 41-1/2 feet. | |
| -46 | | | | | | |
| -48 | | | | | | |
| -50 | | | | | | |



Applied GeoSystems

PROJECT NO. 69028-2

LOG OF BORING B-2/MW-2 PLATE

ARCO Service Station No. 6113
785 East Stanley Boulevard
Livermore, California

P - 7

Total depth of boring: 39 feet **Diameter of boring:** 6 inches **Date drilled:** 9-14-89
Casing diameter: 2 inches **Length:** 10 feet **Slot size:** 0.020-inch
Screen diameter: 2 inches **Length:** 38-1/2 feet **Material type:** Sch 40 PVC
Drilling Company: Exploration Geoservices **Driller:** Mike & Curtis
Method Used: Hollow-Stem Auger **Field Geologist:** George Williams

Signature of Registered Professional: _____
Registration No.: _____ **State:** CA

| Depth | Sample No. | Blows | P.L.D. | USCS Code | Description | Well Const. |
|-------|------------|----------------|--------|-----------|--|-------------|
| 0 | | | | | Asphalt (9 inches). | |
| 2 | | | | GM/SM | Silty fine sand and gravel, brown, damp, loose. | |
| 4 | | | | GP | Gravel and cobbles, some fine sand and silt, brown, damp, loose. | |
| 8 | | | | ML | Clayey silt, some coarse sand, yellow-brown, damp, low plasticity, very stiff. | |
| 10 | S-9 | 40 24 29 | 0 | | | |
| 14 | S-14 | 30 50 | 0 | | | |
| 18 | | | | | | |
| 20 | S-19 | 50 | 0 | CL/GC | Silty clayey, gravel with pebbles, yellow-brown, damp, loose. | |

(Section continues downward)



PROJECT NO. 69028-2

LOG OF BORING B-3/MW-3
ARCO Service Station No. 6113
785 East Stanley Boulevard
Livermore, California

PLATE
P - 8

| Depth | Sample No. | SHAFT | P.I.D. | USCS Code | Description | Well Const. |
|-------|------------|----------------|--------|-----------|--|-------------|
| | | | | CL/CC | Silty clayey, gravel with pebbles, yellow-brown, damp, loose. | |
| -22 | | | | ML ▽ | Clayey silt with fine sand, yellow-brown, damp, low plasticity, soft. | |
| -24 | S-24 | 20 25 92 | 0 | | | |
| -26 | | | | | | |
| -28 | | | | | | |
| -30 | S-29 | 30 50 | 0 | | Trace fine sand and gravel, stiff. | |
| -32 | | | | ▽ GC | Clayey gravel with sand, brown, moist, low plasticity, very to medium dense. | |
| -34 | S-34 | 50 40 25 | 0 | | Wet. | |
| -36 | | | | | | |
| -38 | S-37.5 | 20 90 50 | 0 | CL | Silty clay, brown, moist, low plasticity, very stiff to hard. | |
| -40 | | | | | Total Depth = 39 feet. | |
| -42 | | | | | | |
| -44 | | | | | | |
| -46 | | | | | | |
| -48 | | | | | | |
| -50 | | | | | | |



PROJECT NO. 69028-2

LOG OF BORING B-3/MW-3

ARCO Service Station No. 6113
785 East Stanley Boulevard
Livermore, California

PLATE

P - 9

Depth of boring: 32-1/2 feet Diameter of boring: 10 inches Date drilled: 2-14-91
 Well depth: 27 feet Material type: Sch 40 PVC Casing diameter: 4 inches
 Screen Interval: 21 to 27 feet Slot size: 0.020-inch
 Drilling Company: Exploration GeoServices Driller: John Collins
 Method Used: Hollow-Stem Auger Field Geologist: Marc & Ken
 Signature of Registered Professional: _____
 Registration No.: CE 044600 State: CA

| Depth | Sample No. | Blows | P.I.D. | USCS Code | Description | Well Const. |
|-------|------------|----------------|--------|-----------|--|-------------|
| 0 | | | | | Asphalt (4 inches). | |
| 2 | | | | SM | Silty sand with gravel, brown, damp, loose: Fill. | |
| 4 | S-4 | 18 50/2" | 0 | SW | Sandy gravel, subangular to subrounded gravel to 6 inch, brown, damp, very dense. | |
| 6 | | | | | Gravel composed of chert and sandstone. | |
| 8 | | | | | | |
| 10 | S-9 | 25 50/4" | 0 | | | |
| 12 | | | | | | |
| 14 | S-14.5 | 17 30 40 | 24 | SM | Silty sand, some gravel, gray, damp, dense; noticeable product odor. | |
| 16 | | | | CL | Sandy clay, some gravel, gray mottled with brown, damp, low to medium plasticity; noticeable product odor. | |
| 18 | | | | | | |
| 20 | S-19.5 | 33 50/6" | 5 | | Gray-brown, moist. | |

(Section continues downward)



PROJECT: 69028-4

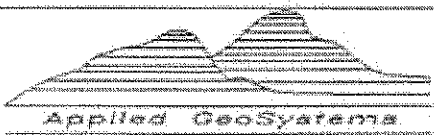
LOG OF BORING

B-4/MW-4
 ARCO Service Station 6113
 785 East Stanley Boulevard
 Livermore, California

PLATE

4

| Depth | Sample No. | BLOWS | P.I.D. | USCS Code | Description | Well Const. |
|-------|------------|----------------|--------|-----------|---|-------------|
| 22 | | | | CL | Sandy clay, some gravel, gray-brown, moist, low to medium plasticity, hard. | |
| 24 | S-24.5 | 8 8 14 | 0 | SM | Silty sand, brown, very moist, dense. | |
| 26 | | | | SC | Clayey sand, brown, wet, dense. | |
| 28 | S-29 | 28 34 50 | 0 | CL | Sandy clay, gray mottled with brown, moist, low to medium plasticity, very stiff. | |
| 30 | S-30.5 | 19 3 35 | 0 | CH | Silty clay, brown mottled with gray, damp, high plasticity, very stiff. | |
| 32 | | | | | | |
| 34 | | | | | Total Depth = 32-1/2 feet. | |
| 36 | | | | | | |
| 38 | | | | | | |
| 40 | | | | | | |
| 42 | | | | | | |
| 44 | | | | | | |
| 46 | | | | | | |
| 48 | | | | | | |
| 50 | | | | | | |

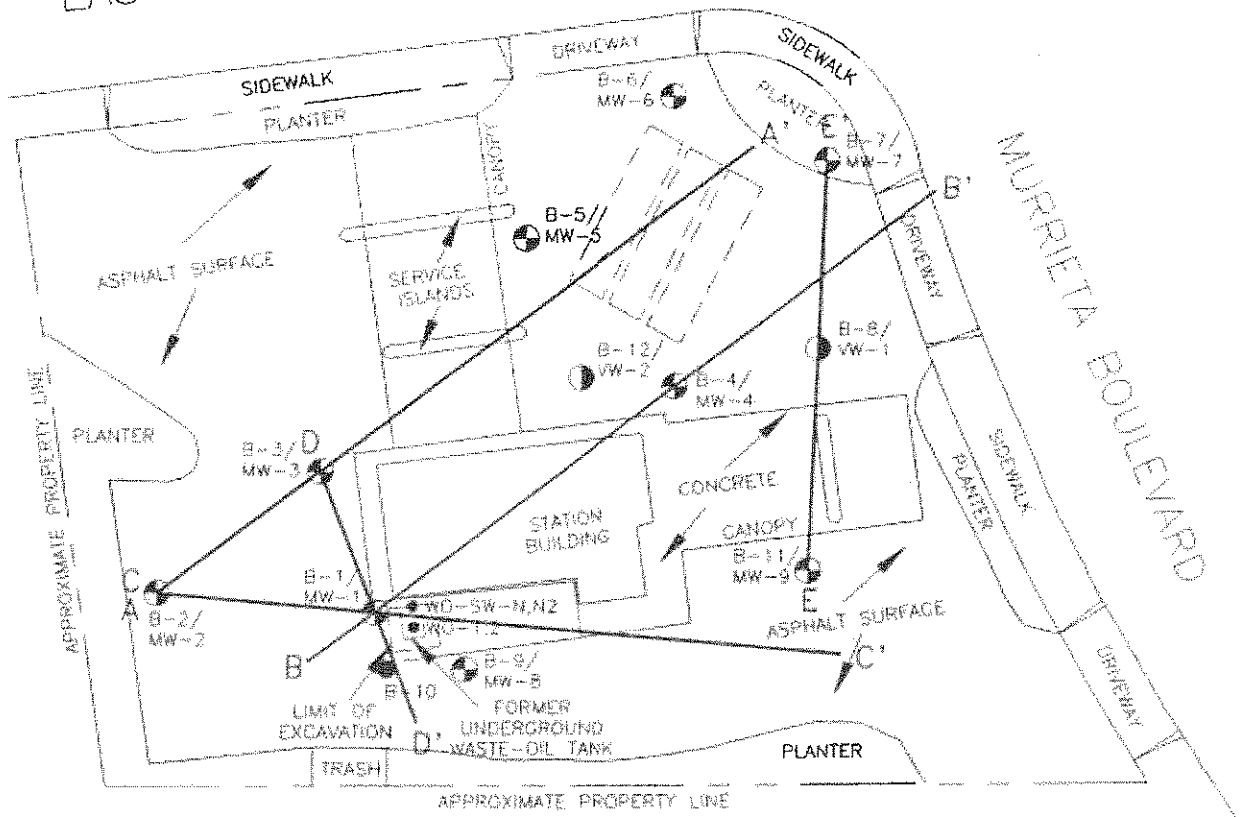


PROJECT 69028-4

LOG OF BORING B-4/MW-4
 ARCO Service Station 6113
 785 East Stanley Boulevard
 Livermore, California

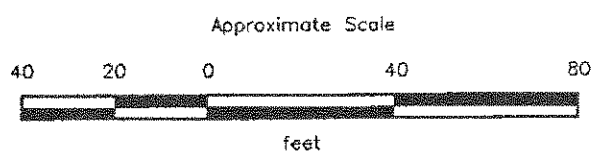
PLATE
 5

EAST STANLEY BOULEVARD



EXPLANATION

- B-11/
MW-9 = Boring/monitoring well
(RESNA, 09/89, 02/91, and 06/92)
- B-12/
VW-2 = Boring/vapor extraction well
(RESNA, 06/92)
- B-10 = Boring
(RESNA, 06/92)
- WO-SW-N,N2 = Soil sample collected by Pacific (1989)
- E — E' = Geologic cross section
- = Existing gasoline-storage tanks



Source: Modified from plan supplied by Ron Archer, Civil Engineer Inc., October 1988.

RESNA
Working to Restore Nature

PROJECT: 69028.07

GENERALIZED SITE PLAN
ARCO Service Station 6113
785 East Stanley Boulevard
Livermore, California

PLATE
2

Depth of boring: 64 feet Diameter of boring: 10 inches Date drilled: 06/08/92

Well depth: 63 feet Material type: Sch 40 PVC Casing diameter: 4 inches

Screen interval: 43 to 63 feet Slot size: 0.020-inch

Drilling Company: HEW Drilling Driller: Casto and Marcelino

Method Used: Hollow-Stem Auger Field Geologist: Barbara Sieminski

Signature of Registered Professional: [Signature]

Registration No.: RCE 044600 State: CA

| Depth | Sample No. | Blows | P.I.D. | USCS Code | Description | Well Const. |
|-------|------------|----------------|--------|-----------|--|-------------|
| 0 | | | | | Asphalt. | |
| | | | | GW | Asphalt (4 inches). | |
| | | | | GC | Sandy gravel, brown, damp, dense: baserock. | |
| 2 | | | | SP | Clayey gravel with sand and cobbles, brown, damp, dense. | |
| | | | | SP | Color change to gray. | |
| | | | | GW | Medium- to coarse-grained sand, brown, damp, dense. | |
| 4 | | | | GW | Sandy gravel, grayish-brown, damp to moist, medium dense. | |
| 6 | S-5.5 | 5 10 8 | 0 | | | |
| 10 | S-10.5 | 8 25 25 | 0 | | Dense. | |
| 14 | | | | ML | Gravelly silt with clay, brown, damp, low plasticity, very stiff. | |
| 16 | S-15.5 | 10 15 20 | 193 | GW/GC | Sandy gravel with clay, gray, damp, dense; obvious product odor. | |
| 20 | S-20.5 | 3 4 6 | 295 | ML | Clayey silt, brown mottled with gray, low plasticity, stiff; obvious product odor. | |

(Section continues downward)



PROJECT: 69028.07

LOG OF BORING B-5/MW-5
 ARCO Station 6113
 785 East Stanley Boulevard
 Livermore, California

PLATE
4

| Depth | Sample No. | BLOWS | P.I.D. | USCS Code | Description | Well Const. |
|-------|------------|------------|--------|-----------|--|-------------|
| | | | | GC | Clayey gravel with sand, brown mottled with gray, moist, dense, obvious product odor. | |
| -52 | | | | SC | Clayey sand, medium-grained, brown mottled with gray, moist to wet, dense, obvious product odor. | |
| -54 | | | | GW/GC | Sandy gravel with clay, brown, wet, very dense. | |
| -56 | S-55.5 | 25 50/4 | 57 | | | |
| -60 | S-60.5 | 22 50/5 | 45 | | With cobbles. | |
| -64 | S-63.5 | 24 50/5 | 3 | | | |
| | | | | | Total depth = 64 feet. | |
| -66 | | | | | | |
| -68 | | | | | | |
| -70 | | | | | | |
| -72 | | | | | | |
| -74 | | | | | | |
| -76 | | | | | | |
| -78 | | | | | | |
| -80 | | | | | | |

RESNA
Working to Restore Nature

PROJECT 69028.07

LOG OF BORING B-5/MW-5
ARCO Station 6113
785 East Stanley Boulevard
Livermore, California

PLATE
6

Depth of boring: 69 feet Diameter of boring: 10 inches Date drilled: 06/09/92

Well depth: 68 feet Material type: Sch 40 PVC Casing diameter: 4 inches

Screen interval: 48 to 68 feet Slot size: 0.020-inch

Drilling Company: HEW Drilling Driller: Casto and Marcelino

Method Used: Hollow-Stem Auger Field Geologist: Barbara Sieminski

Signature of Registered Professional: [Signature]

Registration No.: RCE 044600 State: CA

| Depth | Sample No. | Blows | P.I.D. | USCS Code | Description | Well Const. |
|-------|------------|----------------|--------|-----------|--|-------------|
| 0 | | | | | Asphalt. | |
| | | | | GP | Asphalt (4 inches). Sandy gravel, gray, damp, dense: baserock. | |
| 2 | | | | GC | Clayey gravel, brown, damp, dense. | |
| 4 | | | | GW | Sandy gravel with cobbles, grayish-brown, moist, medium dense. | |
| 6 | S-5.5 | 10 11 15 | 8 | | | |
| 10 | S-10.5 | 3 6 10 | 0 | CL | Sandy clay, trace fine gravel, dark brown, damp, low to medium plasticity, stiff. | |
| 14 | | | | ML | Gravelly silt with sand, brown, damp, low plasticity, very stiff. | |
| 16 | S-15.5 | 8 11 15 | 0 | | | |
| 18 | | | | ML | Clayey silt with sand, brown mottled with gray, damp, low plasticity, very stiff; noticeable product odor. | |
| 20 | S-20.5 | 6 7 10 | 33 | | | |

(Section continues downward)



PROJECT: 69028.07

LOG OF BORING B-6/MW-6
ARCO Station 6113
785 East Stanley Boulevard
Livermore, California

PLATE

7

| Depth | Sample No. | BLOWS | P.I.D. | USCS Code | Description | Well Const. |
|-------|------------|----------------|--------|-----------|--|-------------|
| 22 | | | | ML | Clayey silt with sand, brown mottled with gray, damp, low plasticity, very stiff; noticeable product odor. | |
| 24 | | | | SC | Clayey sand, brown, moist, loose; obvious product odor. | |
| 26 | S-25.5 | 3 6 8 | 65 | CL | Sandy clay, brown mottled with gray, damp, low to medium plasticity, stiff; obvious product odor. | |
| 28 | | | | | | |
| 30 | S-30.5 | 3 4 7 | 441 | ML | Clayey silt with clayey sand lenses, brown mottled with gray, damp, low plasticity, stiff; obvious product odor. | |
| 32 | | | | | | |
| 34 | | | | SC | Clayey sand, fine-grained, brown, moist, loose; obvious product odor. | |
| 36 | S-35.5 | 4 6 9 | 282 | ML | Clayey silt with sand, brown mottled with gray, damp, low plasticity, stiff; obvious product odor. | |
| 38 | | | | | | |
| 40 | S-40.5 | 3 6 8 | 92 | | Increasing clay. | |
| 42 | | | | CL | Silty clay, brown, damp, medium plasticity, stiff. | |
| 44 | | | | | | |
| 46 | S-45.5 | 4 5 11 | 26 | ML | Clayey silt, brown, damp, low plasticity, very stiff; noticeable product odor. | |
| 48 | | | | ML | Gravelly silt, brown, moist, low plasticity, hard; noticeable product odor. | |
| 50 | S-50.5 | 24 27 28 | 430 | GC | Clayey gravel with sand, brown, moist to wet, very dense; obvious product odor. | |

(Section continues downward)



PROJECT 69028.07

LOG OF BORING B-6/MW-6
 ARCO Station 6113
 785 East Stanley Boulevard
 Livermore, California

PLATE
 8

| Depth | Sample No. | BLOWS | P.L.D. | USCS Code | Description | Well Const. |
|-------|------------|------------------|--------|-----------|---|-------------|
| | | | | ML | Gravelly silt, brown, moist, low plasticity, hard. | |
| -52 | | | | GC | Clayey gravel with sand, brown, moist to wet, very dense: obvious product odor. | |
| -54 | | | | CW/GC | Sandy gravel with clay, brown, wet, very dense. | |
| -56 | S-55.5 | 20 50/4 | 34 | | | |
| -58 | | | | GC | Clayey gravel with sand, brown, wet, dense. | |
| -60 | S-60.5 | 7 23 15 | 10 | | | |
| -62 | | | | | | |
| -64 | | | | | | |
| -66 | S-65.5 | 22 50 38 | 3 | | Very dense. | |
| -68 | S-68.5 | 17 40 50/3 | 0 | | | |
| -70 | | | | | Total depth = 69 feet. | |
| -72 | | | | | | |
| -74 | | | | | | |
| -76 | | | | | | |
| -78 | | | | | | |
| -80 | | | | | | |



PROJECT 69028.07

LOG OF BORING B-6/MW-6
 ARCO Station 6113
 785 East Stanley Boulevard
 Livermore, California

PLATE
 9

Depth of boring: 68-1/2 feet Diameter of boring: 10 inches Date drilled: 06/10/92

Well depth: 68 feet Material type: Sch 40 PVC Casing diameter: 4 inches

Screen interval: 48 to 68 feet Slot size: 0.020-inch

Drilling Company: HEW Drilling Driller: Costo, Marcelino, and Louis

Method Used: Hollow-Stem Auger Field Geologist: Barbara Sieminski

Signature of Registered Professional: [Signature]

Registration No.: RCE 044600 State: CA

| Depth | Sample No. | Blows | P.I.D. | USCS Code | Description | Well Const. |
|-------|------------|---------------|--------|-----------|---|-------------|
| 0 | | | | SM | Silty sand, brown, damp, loose: fill. | |
| 2 | | | | GW | Sandy gravel, brown, damp, dense. | |
| 6 | S-5.5 | 7 24 15 | 0 | | | |
| 10 | S-10.5 | 10 6 8 | 0 | CL | Sandy clay, dark brown, damp, low to medium plasticity, stiff. | |
| 16 | S-15.5 | 5 11 22 | 0 | GC | Clayey gravel with sand, brown, damp, dense. Color change to grayish-brown; increasing sand. | |
| 20 | S-20.5 | 7 21 28 | 511 | | Moist; obvious product odor. | |

(Section continues downward)



LOG OF BORING B-7/MW-7
 ARCO Station 6113
 785 East Stanley Boulevard
 Livermore, California

PLATE
 10

PROJECT: 69028.07

| Depth | Sample No. | BLOWS | P.I.D. | USCS Code | Description | Well Const. |
|-------|------------|----------------|--------|-----------|---|-------------|
| 22 | | | | GC | Clayey gravel with sand, grayish-brown, moist, dense; obvious product odor. | |
| 24 | | | | SC | Clayey sand, fine-grained, grayish-brown, moist, loose; obvious product odor. | |
| 26 | S-25.5 | 3 4 5 | 502 | | Increasing clay. | |
| 28 | | | | CL | Sandy clay, brown mottled with gray, damp, low to medium plasticity, stiff; obvious product odor. | |
| 30 | S-30.5 | 6 7 11 | 86 | | | |
| 32 | | | | ML | Clayey silt, brown mottled with gray, damp, low plasticity, very stiff; noticeable product odor. | |
| 34 | | | | SC | Clayey sand, fine-grained, brown mottled with gray, moist, medium dense. | |
| 36 | S-35.5 | 3 5 8 | 31 | | | |
| 38 | | | | ML | Clayey silt with sand and fine gravel, brown mottled with gray, damp to moist, low plasticity, stiff. | |
| 40 | S-40.5 | 5 6 9 | 21 | | No gravel. | |
| 42 | | | | CL | Silty clay, brown, damp, medium plasticity, firm. | |
| 44 | | | | | | |
| 46 | S-45.5 | 3 4 8 | 0 | | | |
| 48 | | | | ML | Clayey silt, brown, damp, low plasticity, stiff. | |
| 48 | | | | ML | Gravelly silt, brown, damp, low plasticity, hard. | |
| 50 | S-50.5 | 21 27 48 | 60 | | | |
| | | | | GC | Clayey gravel with sand, brown, moist, very dense. | |

(Section continues downward)



PROJECT 69028.07

LOG OF BORING B-7/MW-7
 ARCO Station 6113
 785 East Stanley Boulevard
 Livermore, California

PLATE
 11

| Depth | Sample No. | BLOWS | P.I.D. | USCS Code | Description | Well Const. |
|-------|------------|----------------|--------|-----------|--|-------------|
| | | | | ML | Gravelly silt, brown, damp, low plasticity, hard | |
| | | | | GC | Clayey gravel with sand, brown, moist, very dense. | |
| 52 | | | | | | |
| 54 | | | | | | |
| 55.6 | S-55.6 | 28 40 48 | 16 | ▽ = | Wet. | |
| 58 | | | | | | |
| 60 | S-60.6 | 20 32 27 | 2 | | increasing sand. | |
| 62 | | | | | | |
| 64 | | | | | | |
| 65.5 | S-65.5 | 28 50 | 5'-0" | | | |
| 66 | | | | | | |
| 68 | S-68 | 50 | 1'-0" | | | |
| | | | | | Total depth = 68-1/2 feet. | |
| 70 | | | | | | |
| 72 | | | | | | |
| 74 | | | | | | |
| 76 | | | | | | |
| 78 | | | | | | |
| 80 | | | | | | |



PROJECT 69028.07

LOG OF BORING B-7/MW-7
 ARCO Station 6113
 785 East Stanley Boulevard
 Livermore, California

PLATE
 12

Depth of boring: 46-1/2 feet Diameter of boring: 10 inches Date drilled: 06/15/92

Well depth: 45 feet Material type: Sch 40 PVC Casing diameter: 4 inches

Screen interval: 25 to 45 feet Slot size: 0.100-inch

Drilling Company: HEW Drilling Driller: Costo, Marcelino, and Louis

Method Used: Hollow-Stem Auger Field Geologist: Barbara Sieminski

Signature of Registered Professional: [Signature]

Registration No. RCE 044600 State: CA

| Depth | Sample No. | Blows | P.I.D. | USCS Code | Description | Well Const. |
|-------|------------|----------------|--------|-----------|---|-------------|
| 0 | | | | | Asphalt. | |
| | | | | GP | Asphalt (4 inches). | |
| | | | | SM | Sandy gravel, gray dry, dense; baserock. | |
| 2 | | | | GW | Silty sand, brown, damp, loose. | |
| 4 | | | | | Sandy gravel with cobbles, grayish-brown, damp, medium dense. | |
| 6 | S-5.5 | 8 11 8 | 0 | | | |
| 10 | S-10.5 | 7 8 10 | 0 | CL | Sandy clay, dark brown, damp, low to medium plasticity, very stiff. | |
| 14 | | | | GW/GC | Sandy gravel with clay, brown, damp, dense. | |
| 16 | S-15.5 | 19 21 17 | 3 | | | |
| 20 | S-20.5 | 13 19 23 | 572 | | Color change to gray; obvious product odor. | |

(Section continues downward)



PROJECT: 69028.07

LOG OF BORING B-8/VW-1
 ARCO Station 6113
 785 East Stanley Boulevard
 Livermore, California

PLATE
 13

| Depth | Sample No. | BLOWS | P.I.D. | USCS Code | Description | Well Const. |
|-------|------------|----------------|--------|-----------|--|-------------|
| 22 | | | | GW/GC | Sandy gravel with clay, gray, damp, dense; obvious product odor. | |
| 24 | | | | ML | Clayey silt with sand, grayish-brown with dark gray mottling, damp, low plasticity, stiff; obvious product odor. | |
| 26 | S-25.5 | 2 8 7 | 550 | | | |
| 28 | | | | | | |
| 30 | S-30.5 | 8 9 12 | 276 | | Color change to brown mottled with orange and gray; increasing sand. | |
| 32 | | | | | | |
| 34 | | | | ML | Sandy silt, brown mottled with orange, damp, low plasticity, stiff; obvious product odor. | |
| 36 | S-35.5 | 7 12 16 | 50 | CL | Silty clay, reddish-brown, damp, medium plasticity, very stiff; obvious product odor. | |
| 38 | | | | GC | Clayey gravel with sand, grayish-brown, moist, dense. | |
| 40 | S-40.5 | 15 21 23 | 193 | | | |
| 42 | | | | | | |
| 44 | | | | ML | Clayey silt, brown mottled gray, damp, low to medium plasticity, stiff; obvious product odor. | |
| 46 | S-45.5 | 3 6 6 | 212 | | | |
| 48 | | | | | Total depth = 46-1/2 feet. | |
| 50 | | | | | | |

RESNA
Working to Restore Nature

PROJECT 69028.07

LOG OF BORING B-8/VW-1
ARCO Station 6113
785 East Stanley Boulevard
Livermore, California

PLATE
14

Depth of boring: 68-1/2 feet Diameter of boring: 10 inches Date drilled: 06/11/92
 Well depth: 67 feet Material type: Sch 40 PVC Casing diameter: 4 inches
 Screen interval: 47 to 67 feet Slot size: 0.020-inch
 Drilling Company: HEW Drilling Driller: Casto, Marcelino, and Louis
 Method Used: Hollow-Stem Auger Field Geologist: Barbara Sieminski
 Signature of Registered Professional: [Signature]
 Registration No.: RCE 044600 State: CA

| Depth | Sample No. | Blows | P.I.D. | USCS Code | Description | Well Const. |
|-------|------------|---------------|--------|-----------|--|-------------|
| 0 | | | | | Asphalt. | |
| | | | | GP | Asphalt (4 inches). | |
| | | | | SM | Sandy gravel, gray dry, dense; baserock. | |
| 2 | | | | | Silty sand with gravel, brown, damp, loose. | |
| | | | | GW | Sandy gravel with cobbles, grayish-brown, damp, medium dense. | |
| 4 | | | | | | |
| 6 | S-5.5 | 5 10 15 | 0 | | | |
| 8 | S-8.5 | 8 14 29 | 0 | | | |
| 10 | S-10 | 8 12 9 | 0 | | | |
| 12 | | | | | | |
| 14 | | | | | | |
| 16 | S-15.5 | 9 11 17 | 0 | ML | Clayey silt, brown, damp, low to medium plasticity, very stiff. | |
| 18 | | | | ML | Sandy silt, brown mottled with orange, damp, low plasticity, very stiff. | |
| 20 | S-20.5 | 6 12 16 | 0 | | | |

(Section continues downward)



PROJECT: 69028.07

LOG OF BORING B-9/MW-8
 ARCO Station 6113
 785 East Stanley Boulevard
 Livermore, California

PLATE
 15

| Depth | Sample No. | BLOWS | P.I.D. | USCS Code | Description | Well Const. |
|-------|------------|---------------------|--------|-----------|---|-------------|
| 22 | | | | ML | Sandy silt, brown mottled with orange, damp, low plasticity, very stiff. | |
| 24 | | | | | | |
| 25.5 | S-25.5 | 9 13 17 | 0 | | With plant roots, hard. | |
| 28 | | | | | | |
| 30 | | | | SM | Silty sand with gravel, brown, damp, medium dense. | |
| 30.5 | S-30.5 | 14 27 47 | 0 | GC | Clayey gravel, brown mottled with orange, damp, very dense. | |
| 32 | | | | | | |
| 34 | | | | | | |
| 35.5 | S-35.5 | 14 25 27 | 0 | | With sand. No water after waiting 10 minutes | |
| 36 | | | | | | |
| 38 | | | | ML | Clayey silt with clayey sand lenses, brown, damp to moist, low to medium plasticity, stiff. | |
| 40 | | | | | | |
| 40.5 | S-40.5 | 5 6 9 | 0 | CL | Sandy clay, reddish-brown, damp, medium plasticity, very stiff. | |
| 42 | | | | | | |
| 44 | | | | | | |
| 45.5 | S-45.5 | 4 5 8 | 0 | ML | Increasing sand. Clayey silt, brown, damp, low to medium plasticity, stiff. | |
| 46 | | | | | | |
| 48 | | | | GC | Clayey gravel with sand, brown, moist to wet, very dense. | |
| 50 | | | | | | |
| 50.5 | S-50.5 | 26 37 50 1/4" | 0 | | | |

(Section continues downward)



PROJECT 69028.07

LOG OF BORING B-9/MW-8
ARCO Station 6113
785 East Stanley Boulevard
Livermore, California

PLATE
16

| Depth | Sample No. | BLOWS | P.I.D. | USCS Code | Description | Well Const. |
|-------|------------|----------------|--------|-----------|---|-------------|
| 52 | | | | GC | Clayey gravel with sand, brown, moist to wet, very dense. | |
| 54 | | | | | | |
| 56 | S-55.5 | 27 47 50 | 0 | | Increasing sand, wet. | |
| 58 | | | | | | |
| 60 | S-60.5 | 17 32 35 | 0 | | | |
| 62 | | | | | | |
| 64 | | | | | | |
| 66 | S-65.5 | 15 27 43 | 0 | | | |
| 68 | S-67.5 | 22 37 41 | 0 | | | |
| | | | | | Total depth = 68-1/2 feet. | |
| 70 | | | | | | |
| 72 | | | | | | |
| 74 | | | | | | |
| 76 | | | | | | |
| 78 | | | | | | |
| 80 | | | | | | |

RESNA
Working to Restore Nature

PROJECT 69028.07

LOG OF BORING B-9/MW-8
ARCO Station 6113
785 East Stanley Boulevard
Livermore, California

PLATE

17

Depth of boring: 60-1/2 feet Diameter of boring: 8 inches Date drilled: 06/08/92

Well depth: N/A Material type: N/A Casing diameter: N/A

Screen interval: N/A Slot size: N/A

Drilling Company: HEW Drilling Driller: Casto and Marcelino

Method Used: Hollow-Stem Auger Field Geologist: Barbara Sieminski

Signature of Registered Professional: [Signature]

Registration No. RCE 044600 State: CA

| Depth | Sample No. | Blows | P.I.D. | USCS Code | Description | Well Const. |
|-------|------------|----------------|--------|-----------|--|-------------|
| 0 | | | | | Asphalt. | |
| | | | | GP | Asphalt (4 inches). | ▽▽▽▽ |
| | | | | SM | Sandy gravel, gray, dry, dense; baserock. | ▽▽▽▽ |
| 2 | | | | | Silty sand with gravel, brown, damp, loose. | ▽▽▽▽ |
| | | | | GW | Sandy gravel with cobbles, grayish-brown, damp, dense. | ▽▽▽▽ |
| 4 | | | | | | ▽▽▽▽ |
| | S-5 | 8 15 16 | 0 | | | ▽▽▽▽ |
| 6 | | | | | | ▽▽▽▽ |
| 8 | | | | | | ▽▽▽▽ |
| | S-10 | 50 26 27 | 0 | | Very dense. | ▽▽▽▽ |
| 10 | | | | | | ▽▽▽▽ |
| 12 | | | | | | ▽▽▽▽ |
| | | | | ML | Clayey silt, brown, damp, low to medium plasticity, hard. | ▽▽▽▽ |
| 14 | | | | | | ▽▽▽▽ |
| | S-15 | 10 15 18 | 0 | | | ▽▽▽▽ |
| 16 | | | | | | ▽▽▽▽ |
| 18 | | | | | | ▽▽▽▽ |
| | | | | ML | Sandy silt, brown mottled with orange, damp, low plasticity, very stiff. | ▽▽▽▽ |
| 20 | | | | | | ▽▽▽▽ |
| | S-20 | 7 11 15 | 0 | | | ▽▽▽▽ |
| | | | | | | ▽▽▽▽ |

(Section continues downward)



PROJECT: 69028.07

LOG OF BORING B-10
 ARCO Station 6113
 785 East Stanley Boulevard
 Livermore, California

PLATE
 18

| Depth | Sample No. | BLOWS | P.I.D. | USCS Code | Description | Well Const. |
|-------|------------|----------------|--------|-----------|--|-------------|
| | | | | ML | Sandy silt, brown mottled with orange, damp, low plasticity, very stiff. | |
| -22 | | | | | | |
| -24 | S-25 | 9 15 28 | 0 | | Increasing sand, trace gravel, hard. | |
| -26 | | | | | | |
| -28 | | | | | | |
| -30 | S-30 | 10 17 30 | 0 | GC | Increasing gravel. Clayey gravel with sand, brown mottled with orange, damp, dense. | |
| -32 | | | | | | |
| -34 | S-35 | 13 16 23 | 0 | | Increasing sand, moist. | |
| -36 | | | | | | |
| -38 | | | | CL | Sandy clay, brown, damp to moist, low to medium plasticity, very stiff. | |
| -40 | S-40 | 5 10 11 | 0 | | | |
| -42 | | | | | | |
| -44 | S-45 | 5 7 15 | 0 | ML | Clayey silt, brown, moist, low plasticity, stiff. | |
| -46 | | | | GC | Clayey gravel with sand, brown, moist, medium dense. | |
| -48 | | | | | | |
| -50 | S-50 | 18 46 48 | 0 | | Increasing sand, moist to wet, very dense. | |

(Section continues downward)



PROJECT 69028.07

LOG OF BORING B-10
 ARCO Station 6113
 785 East Stanley Boulevard
 Livermore, California

PLATE
 19

| Depth | Sample No. | BLOWS | P.I.D. | USCS Code | Description | Well Const. |
|-------|----------------------------|-------|--------|-----------|---|-------------|
| 52 | | | | GC | Clayey gravel with sand, brown, moist to wet, very dense. | ▽▽▽▽ |
| 54 | S-55 | 27 | 0 | | | ▽▽▽▽ |
| | | 47 | | | | ▽▽▽▽ |
| 56 | | 50 | 4" | | | ▽▽▽▽ |
| 58 | | | | | Wet. | ▽▽▽▽ |
| | | 50 | | ▽ | | ▽▽▽▽ |
| 60 | S-60 | 30 | 0 | | | ▽▽▽▽ |
| | | 38 | | | | ▽▽▽▽ |
| 62 | Total depth = 60-1/2 feet. | | | | | |
| 64 | | | | | | |
| 66 | | | | | | |
| 68 | | | | | | |
| 70 | | | | | | |
| 72 | | | | | | |
| 74 | | | | | | |
| 76 | | | | | | |
| 78 | | | | | | |
| 80 | | | | | | |



PROJECT 69028.07

LOG OF BORING B-10
 ARCO Station 6113
 785 East Stanley Boulevard
 Livermore, California

PLATE
 20

Depth of boring: 71-1/2 feet Diameter of boring: 10 inches Date drilled: 06/12/92

Well depth: 68 feet Material type: Sch 40 PVC Casing diameter: 4 inches

Screen interval: 48 to 68 feet Slot size: 0.020-inch

Drilling Company: HEW Drilling Driller: Costo, Marcelino, and Louis

Method Used: Hollow-Stem Auger Field Geologist: Barbara Sieminski

Signature of Registered Professional: [Signature]

Registration No.: RCE 044600 State: CA

| Depth | Sample No. | Blows | P.I.D. | USCS Code | Description | Well Const. |
|-------|------------|----------------|--------|-----------|---|-------------|
| 0 | | | | | Asphalt. | |
| | | | | GP | Asphalt (4 inches). | |
| | | | | SM | Sandy gravel, gray, dry, dense; baserock. | |
| 2 | | | | GW | Silty sand, dark brown, damp, loose. | |
| 4 | | | | | Sandy gravel with cobbles, grayish-brown, damp, very dense. | |
| 6 | S-5.5 | 17 21 25 | 0 | | | |
| 10 | S-10.5 | 5 6 7 | 0 | CL | Sandy clay, trace gravel, dark brown, damp, medium plasticity, stiff. | |
| 16 | S-15.5 | 9 17 19 | 0 | ML | Clayey silt with sand, trace gravel, brown mottled with orange, damp, low plasticity, hard. | |
| 20 | S-20.5 | 7 9 14 | 0 | ML | Sandy silt, grayish-brown, damp, low plasticity, very stiff. | |

(Section continues downward)



LOG OF BORING B-11/MW-9
 ARCO Station 6113
 785 East Stanley Boulevard
 Livermore, California

PLATE
 21

PROJECT: 69028.07

| Depth | Sample No. | BLOWS | P.I.D. | USCS Code | Description | Well Const. |
|-------|------------|----------------|--------|-----------|---|-------------|
| 22 | | | | ML | Sandy silt, grayish-brown, damp, low plasticity, very stiff. | |
| 24 | | | | SC | Clayey sand with sandy silt lenses, grayish-brown, damp, medium dense. | |
| 26 | S-25.5 | 4 8 11 | 0 | | | |
| 28 | | | | ML | Clayey silt with clayey sand lenses, brown mottled with gray, damp, low plasticity, very stiff. | |
| 30 | S-30.5 | 5 7 11 | NM | | Noticeable product odor. | |
| 32 | | | | | | |
| 34 | | | | ML | Sandy silt with gravel, orange-brown, damp, low plasticity, very stiff. | |
| 36 | S-35.5 | 7 16 36 | NM | | | |
| 38 | | | | GC | Clayey gravel, brown mottled with gray and orange, damp, very dense; noticeable product odor. | |
| 40 | S-40.5 | 22 30 25 | NM | | Increasing sand, becoming moist. | |
| 42 | | | | | | |
| 44 | | | | | Becoming very moist. No water after waiting 10 minutes. | |
| 46 | S-45.5 | 17 10 14 | NM | CL | Sandy clay, reddish-brown, damp, medium plasticity, very stiff. | |
| 48 | | | | | | |
| 50 | S-50.5 | 9 10 11 | NM | ML | Clayey silt, brown, damp, low to medium plasticity, very stiff. | |

(Section continues downward)



PROJECT 69028.07

LOG OF BORING B-11/MW-9
 ARCO Station 6113
 785 East Stanley Boulevard
 Livermore, California

PLATE
 22

| Depth | Sample No. | BLOWS | P.I.D. | USCS Code | Description | Well Const. |
|-------|---|----------------|--------|-----------|---|-------------|
| 52 | | | | ML | Clayey silt, brown, damp, low to medium plasticity, very stiff. | |
| 54 | | | | ML | Gravelly silt with clay, brown, moist, medium plasticity, hard. | |
| 56 | S-55.5 | 17 43 47 | NM | GC | Clayey gravel with sand, brown, wet, very dense. | |
| 58 | | | | | | |
| 60 | S-60.5 | 15 23 27 | NM | GW/GC | Sandy gravel with clay, brown, wet, very dense. | |
| 62 | | | | | | |
| 64 | | | | | | |
| 66 | S-65.5 | 14 28 42 | NM | | Increasing sand. | |
| 68 | | | | CL | Silty clay, brown, damp, medium plasticity, very stiff. | |
| 70 | S-71 | 7 8 10 | NM | | | |
| 72 | Total depth = 71-1/2 feet. NM = Not measured due to OVM malfunction. | | | | | |
| 74 | | | | | | |
| 76 | | | | | | |
| 78 | | | | | | |
| 80 | | | | | | |



PROJECT 69028.07

LOG OF BORING B-11/MW-9
 ARCO Station 6113
 785 East Stanley Boulevard
 Livermore, California

PLATE

23

Depth of boring: 51 feet Diameter of boring: 12 inches Date drilled: 08/04/92
 Well depth: 49-1/2 feet Material type: Sch 40 PVC Casing diameter: 4 inches
 Screen interval: 28 to 49-1/2 feet Slot size: 0.100-inch
 Drilling Company: Exploration Geoservices Driller: Dave and Fred
 Method Used: Hollow-Stem Auger Field Geologist: Barbara Sieminski

Signature of Registered Professional: *[Signature]*
 Registration No. RCE 044600 State: CA

| Depth | Sample No. | Blows | P.I.D. | USCS Code | Description | Well Const. |
|-------|------------|-------|--------|-----------|--|-------------|
| 0 | | | | | Asphalt (4 inches). | |
| | | | | GP | Sandy gravel, gray, damp, dense; baserock. | |
| 2 | | | | GW-GM | Sandy gravel with silt and cobbles, brown, damp, dense; cobbles up to 4 inch diameter. | |
| 4 | S-5 | 13 | 0 | | | |
| | | 16 | | | | |
| 6 | | 19 | | | | |
| 8 | | | | | | |
| 10 | S-10 | 30 | 0 | | | |
| | | 18 | | | | |
| | | 31 | | | | |
| 12 | | | | | | |
| 14 | S-15 | 13 | 0 | GC | Clayey gravel with sand, brown with gray mottling, damp, very dense. | |
| | | 50 | | | | |
| 16 | | | | CL | Sandy clay, brown, damp, low plasticity, stiff. | |
| 18 | | | | | | |
| 20 | S-20 | 18 | 4 | GW-GC | Sandy gravel with clay, brown, damp, very dense. | |
| | | 28 | | | | |
| | | 32 | | | | |

(Section continues downward)



LOG OF BORING B-12/VW-2
 ARCO Station 1319
 785 East Stanley Boulevard
 Livermore, California

PLATE
 24

PROJECT: 69028.07

| Depth | Sample No. | BLOWS | P.I.D. | USCS Code | Description | Well Const. |
|-------|------------|-------|--------|-----------|--|-------------|
| | | | | CW-GC | Sandy gravel with clay, brown, damp, very dense. | |
| 22 | | | | | | |
| 24 | S-25 | 5 | 3 | SC | Clayey sand, brown mottled gray, damp, medium dense. | |
| | | 7 | | | | |
| 26 | | 8 | | CL | Sandy clay with clayey sand lenses, brown mottled gray, damp, low plasticity, stiff. | |
| 28 | | | | | | |
| 30 | S-30 | 13 | 2 | ML | Clayey silt with sand, brown mottled gray, damp, low plasticity, hard. | |
| | | 18 | | | | |
| | | 22 | | | | |
| 32 | | | | | | |
| 34 | S-35 | 11 | 46 | ML | Gravelly silt with sand and clay, orange-brown mottled gray, damp, low plasticity, hard; obvious product odor. | |
| | | 16 | | | | |
| 36 | | 20 | | | | |
| 38 | | | | | | |
| 40 | S-40 | 18 | 1416 | GC | Clayey gravel with sand, brown mottled with gray, moist, very dense; obvious product odor. | |
| | | 24 | | | | |
| | | 30 | | | | |
| 42 | | | | | | |
| 44 | S-45 | 8 | 46 | CL | Gravelly clay, orange-brown, damp, low plasticity, hard; obvious product odor. | |
| | | 14 | | | | |
| 46 | | 25 | | | | |
| 48 | | | | | | |
| 50 | S-50 | 8 | 96 | | Decreasing gravel. | |
| | | 14 | | | | |
| | | 18 | | | | |
| | | | | | Total depth = 51 feet | |

RESNA
Working to Restore Nature

PROJECT 69028.07

LOG OF BORING B-12/VW-2
ARCO Station 6113
785 East Stanley Boulevard
Livermore, California

PLATE
25

Total depth of boring: 24 feet
 Diameter of boring: 12 inches
 Date drilled: 6-16-93
 Drilling Company: Exploration Geoservices
 Driller: John
 Drilling method: Hollow-Stem Auger

Casing diameter: 4 inches
 Casing material: Sch 40 PVC
 Slot size: 0.10-inch
 Sand size: 3/8" pea gravel
 Screen interval: 15-1/2 feet to 24 feet
 Field Geologist: Zbigniew Ignatowicz

Signature of Registered Professional: _____
 Registration No.: CEC 1463 State: CA

| Depth | Sample No. | Blows | P.I.D. | USCS Code | Description | Well Const. |
|-------|------------|-------|--------|-----------|---|-------------|
| 2 | | | | | Pea gravel backfill. | |
| 4 | | | | | | |
| 6 | | 6 | | | | |
| 8 | | | | | | |
| 10 | | 7 | | | | |
| 12 | S-11 | 10 | 10.5 | ML | Gravelly silt, dark olive-gray, damp, low plasticity, very stiff to hard; fine gravel ~10%. | |
| 14 | | 14 | 14.3 | | Fine gravel, color change to dark greenish-gray; rootlets. | |
| 16 | S-16 | 21 | 21.8 | | | |
| 18 | | 26 | 26.2 | GW | Sandy gravel, coarse-grained sand, fine gravel, greenish-gray, damp, very dense. | |
| 20 | S-20.5 | 30 | | | | |
| 22 | | 31 | | | | |
| 24 | S-23.5 | 32 | 1096 | | | |
| | | 22 | | | | |
| | | 27 | 2800 | CL | Silty clay, ~10% fine-grained sand, olive-brown, moist, low to medium plasticity, hard. | |
| | | | | | Total Depth = 14 feet. | |
| 26 | | | | | | |
| 28 | | | | | | |
| 30 | | | | | | |
| 32 | | | | | | |
| 34 | | | | | | |
| 36 | | | | | | |
| 38 | | | | | | |
| 40 | | | | | | |



LOG OF BORING B-13/VW-3
 ARCO Station 6113
 785 East Stanley Boulevard
 Livermore, California

PLATE
 4

PROJECT: 69028.07

Total depth of boring: 31 feet
 Diameter of boring: 12 inches
 Date drilled: 6-16-93
 Drilling Company: Exploration Geoservices
 Driller: John
 Drilling method: Hollow-Stem Auger

Casing diameter: 4 inches
 Casing material: Sch 40 PVC
 Slot size: 0.10-inch
 Sand size: 3/8" pea gravel
 Screen Interval: 17 feet to 30 feet
 Field Geologist: Zbigniew Ignatowicz

Signature of Registered Professional: _____
 Registration No.: CEG 1463 State: CA

| Depth | Sample No. | Blows | P.I.D. | USCS Code | Description | Well Const. |
|-------|------------|----------------|--------|-----------|---|-------------|
| 2 | | | | | Pea gravel backfill. | |
| 4 | | | | GW | Sandy gravel, coarse-grained sand, fine to coarse gravel, dark brown, damp, very dense. | |
| 6 | S-5.5 | 30 50 | | | | |
| 8 | | | | | | |
| 10 | S-11 | 15 24 26 | 129 | CL/CH | Silty clay, very dark grayish-brown, damp, medium to high plasticity, hard. | |
| 14 | S-14.5 | 6 9 9 | 49.8 | | Moist, yellow-orange oxidation stains. | |
| 16 | | | | | | |
| 18 | S-17 | 50/6 | 45.6 | GW | Sandy gravel, dark gray, moist, very dense. | |
| 20 | | | | | | |
| 22 | S-23 | 50/3 | | | Wet. | |
| 24 | | | | | | |
| 26 | | | | | | |
| 28 | S-28 | 23 25 18 | 2570 | SC | Clayey sand, fine-grained, dark olive-gray, wet, dense. | |
| 30 | S-30.5 | 12 18 | 230 | CL | Silty clay, olive, moist, medium plasticity, stiff. | |
| 32 | | | | | Total Depth = 31 feet. | |
| 34 | | | | | | |
| 36 | | | | | | |
| 38 | | | | | | |
| 40 | | | | | | |



PROJECT: 69028.07

LOG OF BORING B-14/VW-4
 ARCO Station 6113
 785 East Stanley Boulevard
 Livermore, California

PLATE
 5

Total depth of boring: 31-1/2 feet
 Diameter of boring: 12 inches
 Date drilled: 6-16-93
 Drilling Company: Exploration Geoservices
 Driller: John
 Drilling method: Hollow-Stem Auger

Casing diameter: NA
 Casing material: NA
 Slot size: NA
 Sand size: NA
 Screen Interval: NA
 Field Geologist: Zbigniew Ignatowicz

Signature of Registered Professional: _____
 Registration No.: CEG 1463 State: CA

| Depth | Sample No. | Blows | P.I.D. | USCS Code | Description | Well Const |
|-------|------------|----------------|--------|-----------|---|------------|
| 2 | | | | | Steel box. | ▽▽▽▽ |
| 4 | | | | GW | Sandy gravel, grayish-brown, slightly damp, dense. | ▽▽▽▽ |
| 6 | S-6 | 15 21 29 | 6.1 | | | ▽▽▽▽ |
| 10 | S-10.5 | 25 50/8 | 7.0 | | | ▽▽▽▽ |
| 16 | S-15.5 | 27 56/3 | 17.8 | ML | Sandy silt, with some gravel, dark grayish-brown, damp, low plasticity, hard. | ▽▽▽▽ |
| 18 | | | | CL | Gravelly clay, olive, damp, medium plasticity, hard. | ▽▽▽▽ |
| 20 | S-20.5 | 35 50/2 | 21.4 | | | ▽▽▽▽ |
| 24 | | | | CL | Sandy clay, dark greenish-gray, very moist, medium plasticity, hard. | ▽▽▽▽ |
| 26 | S-26 | 11 18 25 | 34.2 | | | ▽▽▽▽ |
| 30 | S-31 | 13 31 18 | 28.6 | | | ▽▽▽▽ |
| 32 | | | | | Total Depth = 31-1/2 feet. | |
| 34 | | | | | | |
| 36 | | | | | | |
| 38 | | | | | | |
| 40 | | | | | | |



LOG OF BORING B-15
 ARCO Station 6113
 785 East Stanley Boulevard
 Livermore, California

PLATE
 6

PROJECT: 69028.07

Depth of boring: 54 1/2 feet Diameter of boring: 10 inches Date drilled: 03/24/93

Well depth: 52 feet Material type: Sch 40 PVC Casing diameter: 4 inches

Screen interval: 32 to 52 feet Slot size: 0.020-inch

Drilling Company: Exploration GeoServices Driller: John and Dennis

Method Used: Hollow-Stem Auger Field Geologist: Barbara Sieminski

Signature of Registered Professional: _____

Registration No.: CEG 1463 State: CA

| Depth | Sample No. | Blows | P.I.D. | USCS Code | Description | Well Const. |
|-------|------------|----------|--------|-----------|--|-------------|
| 0 | | | | | Asphalt (4 inches) | |
| | | | | GP | Sandy gravel, gray, damp, dense; baserock | |
| 2 | | | | SP | Sandy, medium- to coarse-grained, brown, damp, dense | |
| 4 | | | | GP | Sandy gravel, brown, damp, very dense. | |
| 6 | S-5.5 | 34 50 | 6" | | | |
| 10 | | 50 | 5" | | With cobbles. | |
| 14 | | | | ML | Clayey silt with sand, light brown mottled orange, damp, low plasticity, hard. | |
| 16 | S-15.5 | 24 50 | 4" | | | |
| 18 | | | | GW-GC | Sandy gravel with clay, brown, damp, very dense. | |
| 20 | S-20 | 50 | 5" | | Increasing clay. | |

(Section continues downward)



PROJECT: 69028.11

LOG OF BORING B-17/MW-10
 ARCO Station 6113
 785 East Stanley Boulevard
 Livermore, California

PLATE
 4

| Depth | Sample No. | BLOWS | P.I.D. | USCS Code | Description | Well Const. |
|-------|------------|-------------------------|--------|-----------|---|-------------|
| | | 50/6" | 5 | GW-GC | Increasing clay. | |
| 22 | | | | ML | Gravelly silt with clay, brown, damp, low plasticity, very stiff | |
| 24 | | | | | | |
| 26 | S-25.5 | 10/6" | 6 | CL | Sandy clay, brown, moist, medium plasticity, very stiff | |
| 28 | | | | | | |
| 30 | S-30.5 | 11/6" | 7 | ML | Sandy silt with clay, trace gravel, grayish-brown mottled orange, moist, low plasticity, hard | |
| 32 | | | | | | |
| 34 | S-35 | 10/6" | 8 | SC | Clayey sand with fine gravel, brown, moist, medium dense. | |
| 36 | | | | ML | Sandy silt, brown, moist, low plasticity, hard. | |
| 38 | | | | GC | Clayey gravel, brown, wet, very dense. | |
| 40 | S-40 | 26/6" 30/6" 50/6" | 4.5 | | | |
| 42 | | | | GP | Sandy gravel, brown, wet, very dense. | |
| 44 | | | | | | |
| 46 | S-45.5 | 23/6" 50/6" | 0 | | | |
| 48 | | | | | | |
| 50 | | 50/6" | | | | |

(Section continues downward)



PROJECT 69028.11

LOG OF BORING B-17/MW-10
 ARCO Station 6113
 785 East Stanley Boulevard
 Livermore, California

PLATE
 5

| Depth | Sample No. | BLOWS | P.I.D. | USCS Code | Description | Well Const. |
|-------|------------|-------|--------|-----------|---------------------------------------|-------------|
| 52 | | | | GP | Sandy gravel, brown, wet, very dense. | |
| 54 | | | | | Total depth = 54 1/2 feet. | |
| 56 | | | | | | |
| 58 | | | | | | |
| 60 | | | | | | |
| 62 | | | | | | |
| 64 | | | | | | |
| 66 | | | | | | |
| 68 | | | | | | |
| 70 | | | | | | |
| 72 | | | | | | |
| 74 | | | | | | |
| 76 | | | | | | |
| 78 | | | | | | |
| 80 | | | | | | |

RESNA
Working to Restore Nature

PROJECT 69028.11

LOG OF BORING B-17/MW-10
ARCO Station 6113
785 East Stanley Boulevard
Livermore, California

PLATE
6

Depth of boring: 47 1/2 feet Diameter of boring: 8 inches Date drilled: 03/23/93
 Well depth: 45 feet Material type: Sch 40 PVC Casing diameter: 2 inches
 Screen interval: 38 to 45 feet Slot size: 0.020-inch
 Drilling Company: Exploration GeoServices Driller: John and Dennis
 Method Used: Hollow-Stem Auger Field Geologist: Barbara Sieminski

Signature of Registered Professional: _____

Registration No.: CEG 1463 State: CA

| Depth | Sample No. | Blows | P.I.D. | USCS Code | Description | Well Const. |
|-------|------------|----------------|--------|-----------|---|-------------|
| 0 | | | | GW-GC | Sandy gravel with clay, damp, brownish-gray, very dense | |
| 2 | | | | GC | Clayey gravel with sand, brown, damp, very dense | |
| 4 | S-5 | 21 25 25 | 0 | GW-GC | Sandy gravel with clay and cobbles, dark brown, damp, very dense; gravel up to 3" diameter. | |
| 6 | | | | | | |
| 8 | | | | | | |
| 10 | S-10 | 11 33 31 | 0 | | Decreasing clay; color change to grayish-brown. | |
| 12 | | | | | | |
| 14 | S-15 | 48 33 35 | 2 | | | |
| 16 | | | | | | |
| 18 | | | | ML | Clayey silt with sand, trace fine gravel, light brown mottled gray, damp, low plasticity, hard. | |
| 20 | S-20 | 16 36 50 | 5" | | | |

(Section continues downward)

RESNA
Working to Restore Nature

LOG OF BORING B-18/MW-11
 ARCO Station 6113
 785 East Stanley Boulevard
 Livermore, California

PLATE

7

PROJECT: 69028.11

| Depth | Sample No. | SOFT BLOWS | P.I.D. | USCS Code | Description | Well Const. | | |
|-------|------------|------------|--------|-----------|---|-------------|---|---|
| 20 | | 26 | 5 | ML | Clayey silt with sand, trace fine gravel, light brown mottled gray, damp, low plasticity, hard. | | | |
| 22 | | 30 | 5 | G | | | | |
| 24 | S-25 | 15 | 0 | SC | Clayey sand, fine-grained, brown, moist, medium dense. | | | |
| 26 | | 26 | | ML | | | Sandy silt with clay, light brown, moist, low plasticity, hard. | |
| 28 | S-30 | 12 | 0 | SC | Clayey sand, fine-grained, brown, moist, medium dense. | | | |
| 30 | | | | 17 | | | ML | Clayey silt with sand, light brown, damp, low to medium plasticity, hard. |
| 32 | | | | 22 | | | | |
| 34 | S-35 | 7 | 0 | | Increasing clay. | | | |
| 36 | | 17 | | | | | | |
| 38 | | 18 | | | | | | |
| 40 | S-40 | 8 | 0 | SC | Clayey sand, fine-grained, brown, moist, medium dense. | | | |
| 42 | | 14 | | | | | | |
| 44 | | 26 | | | | | | |
| 46 | S-45 | 13 | 0 | GL | Silty clay with sand, brown, damp, medium plasticity, hard. | | | |
| 48 | | 28 | | | | | | |
| 50 | | 28 | 0 | | | | | |
| 52 | | 15 | | | | | | |
| 54 | 28 | | | | | | | |
| 56 | 40 | | | | | | | |
| | | | | | Total depth = 47 1/2 feet. | | | |

RESNA
Working to Restore Nature

PROJECT 69028.11

LOG OF BORING B-18/MW-11
ARCO Station 6113
785 East Stanley Boulevard
Livermore, California

PLATE

8

Depth of boring: 37 1/2 feet Diameter of boring: 8 inches Date drilled: 03/23/93
 Well depth: 34 1/2 feet Material type: Sch 40 PVC Casing diameter: 2 inches
 Screen interval: 18 to 34 1/2 feet Slot size: 0.020-inch
 Drilling Company: Exploration GeoServices Driller: John and Dennis
 Method Used: Hollow-Stem Auger Field Geologist: Barbara Sieminski
 Signature of Registered Professional: _____
 Registration No.: CEG 1463 State: CA

| Depth | Sample No. | Blows | P.I.D. | USCS Code | Description | Well Const. |
|-------|------------|----------------|--------|-----------|--|-------------|
| 0 | | | | GW | Sandy gravel, brown, damp, very dense. | |
| 2 | | | | GC | Clayey gravel, dark brown, damp, very dense. | |
| 4 | | | | GW-GC | Sandy gravel with clay, damp, very dense. | |
| 6 | | 23 25 30 | 0 | | | |
| 8 | | | | CL | Sandy clay, trace fine gravel, brown, damp, medium plasticity, hard. | |
| 10 | S-10 | 11 16 21 | 0 | | | |
| 12 | | | | ML | Gravelly silt with sand, grayish-brown, damp, low plasticity, hard. | |
| 14 | | | | | | |
| 16 | S-15 | 15 18 22 | 0 | | | |
| 18 | | | | GW-GC | Sandy gravel with clay, brown, moist, very dense. | |
| 20 | | 50/5'0 | | | | |

(Section continues downward)



PROJECT: 69028.11

LOG OF BORING B-19/MW-12
 ARCO Station 6113
 785 East Stanley Boulevard
 Livermore, California

PLATE

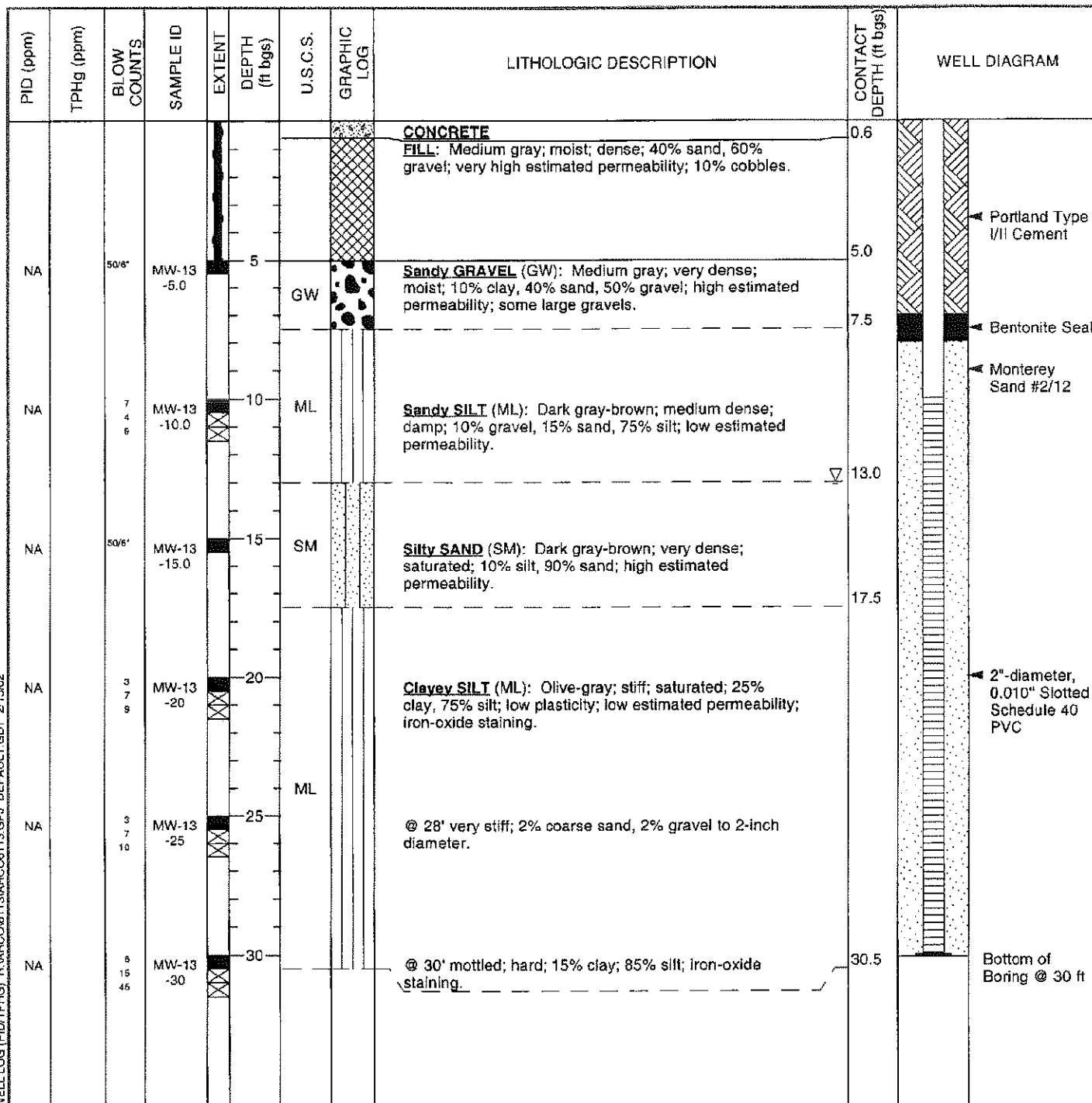
9



Cambria Environmental Technology, Inc.
 1144 - 65th St.
 Oakland, CA 94608
 Telephone: (510) 420-0700
 Fax: (510) 420-9170

BORING/WELL LOG

| | | | |
|-----------------|--|------------------------------------|-----------------------|
| CLIENT NAME | ARCO | BORING/WELL NAME | MW-13 |
| JOB/SITE NAME | ARCO 6113 | DRILLING STARTED | 09-Nov-01 |
| LOCATION | 785 East Stanley Blvd., Livermore | DRILLING COMPLETED | 09-Nov-01 |
| PROJECT NUMBER | 438-1611 | WELL DEVELOPMENT DATE (YIELD) | NA |
| DRILLER | V&W Drilling | GROUND SURFACE ELEVATION | |
| DRILLING METHOD | Hollow-stem auger | TOP OF CASING ELEVATION | NA |
| BORING DIAMETER | 8" | SCREENED INTERVAL | 10 to 30 ft bgs |
| LOGGED BY | Matt Meyers | DEPTH TO WATER (First Encountered) | 13.0 ft (09-Nov-01) ▽ |
| REVIEWED BY | Ron Scheele | DEPTH TO WATER (Static) | NA ▽ |
| REMARKS | Hand Augered to 5' below ground surface. | | |



WELL LOG (PID/TPHg): H:\ARCO\6113\ARCO6113.GPJ DEFAULT.GDT 2/15/02



PROJECT NAME: ARCO 6113 SITE ADDRESS: 785 E. Stanley Blvd. Livermore, CA
 PROJECT NUMBER: 06-82-637 LEGAL DESC: _____ APN: _____
 LOGGED BY: Eric Farrar FACILITY ID OR WAIVER: _____ NOI NUMBER: _____
 DATE: 3/11/2010 START: 1045 DRILLING COMPANY: Cascade DRILLER: Tory Salazer
 WELLID: RMW-13 STOP: 1345 DRILLING METHOD: Hollow Stem Auger SAMPLE METHOD: Split Spoon

| DEPTH (FEET) | MONITOR WELL CONSTRUCTION DIAMETER: 4" | SAMPLE ID | PID | MOISTURE | | | COLOR | | | CONSISTENCY | | | GRAIN SIZE | CLASSIFICATION | REMARKS & ODORS |
|--------------|--|---------------------|---------------------|-----------|--------------------------------|-----------------------|-------|--|--|-------------|--|---|---|----------------|-----------------|
| | | | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | |
| 14 | | | RMW13@ 14.5-15.0 | 7.1 ppm | Damp | Gray -green | | | | | | | Silty sand with gravel to 1/2", iron oxide staining | | |
| 16 | | | | | | | | | | | | | | | |
| 18 | | | | | | | | | | | | | | | |
| 20 | | | RMW13@ 21.0-21.5 | 1,052 ppm | Moist | Lt. brown to brown | Soft | | | | | | Silty clay with little gravel to 1/2", lt. brown to brown, clay 30% chert with some sand at 20' | | |
| 22 | | | | | | | | | | | | | | | |
| 24 | | | | | | | | | | | | | | | |
| 26 | | RMW13@ 25.5-26.0 | 150 ppm | Damp | Lt. brown to brown /gray | Stiff | | | | | | Silty clay, clay to 90% | | | |
| 28 | | | | | | | | | | | | | | | |
| 30 | | | | | | | | | | | | | | | |
| 32 | | RMW13@ 31.0-31.5 | 87.8 ppm | | Brown /gray | Soft | | | | | | Silt with some clay, fine, clay to 40%, iron oxide staining | | | |
| 34 | | | | | | | | | | | | | | | |
| 36 | | | 335 ppm | | Iron oxide with gray | Semi- loose | | | | | | Silty sand, poorly sorted, fine to 1/4", weathered | | | |
| 38 | | | | | | | | | | | | | | | |
| 40 | | | | | | | | | | | | | | | |

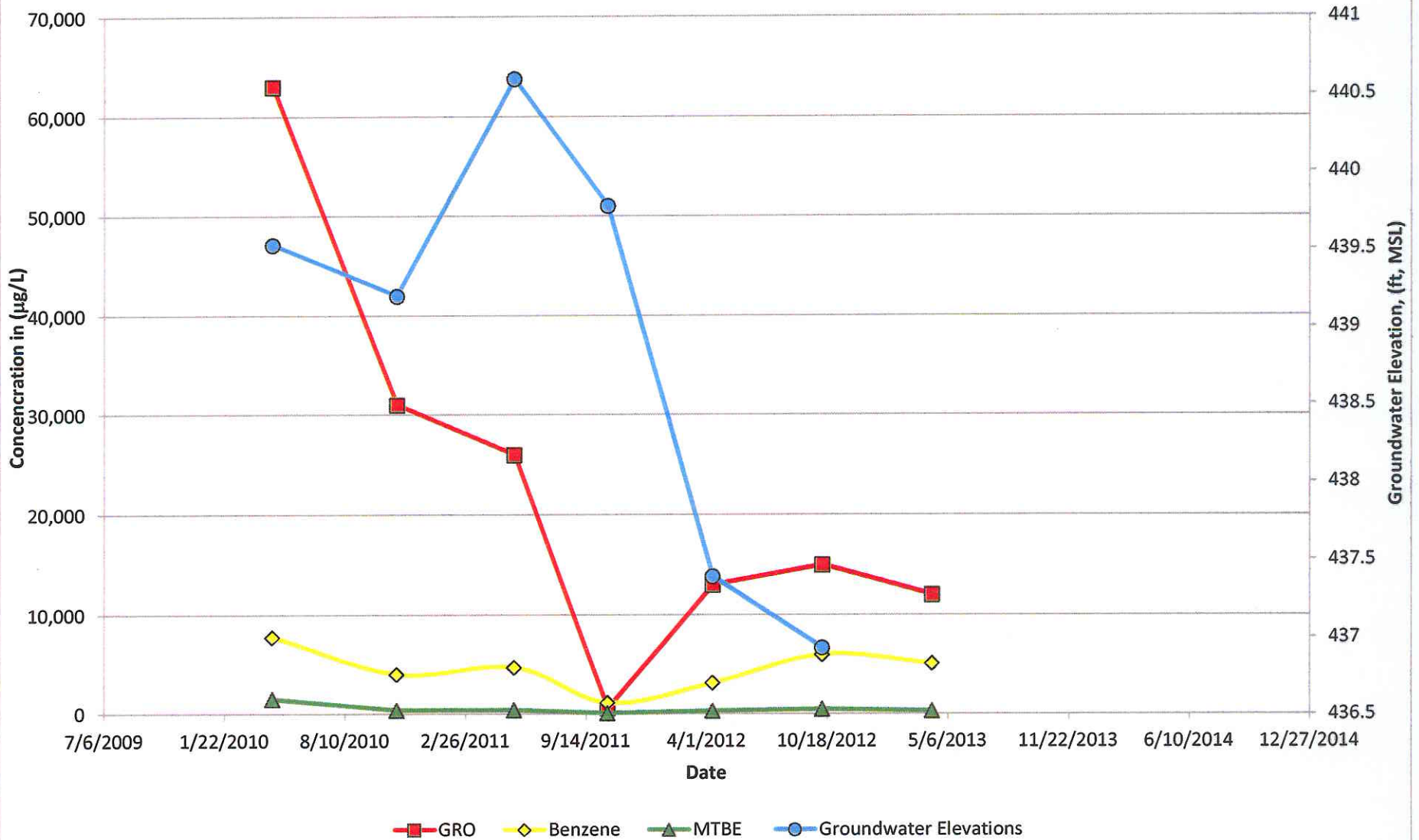
TOTAL BORING DEPTH: 36.5' PAGE NO: 1 OF 1 ESTIMATED GROUND WATER DEPTH: 31.15'

THIS SUMMARY APPLIES ONLY AT THIS LOCATION AND AT THE TIME OF LOGGING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THIS DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

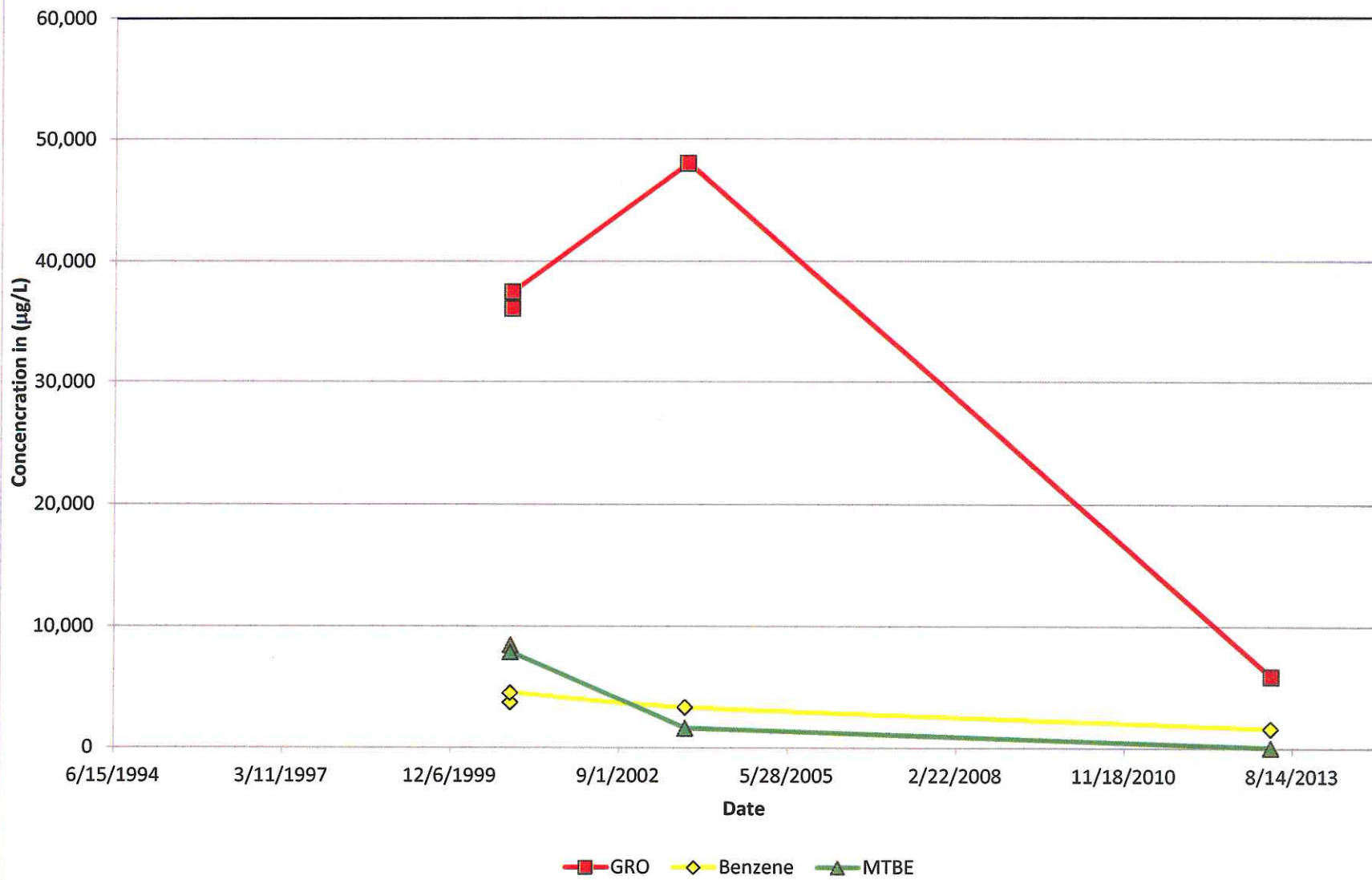
APPENDIX D

Petroleum Compound Concentration Trend Graphs – Select Wells

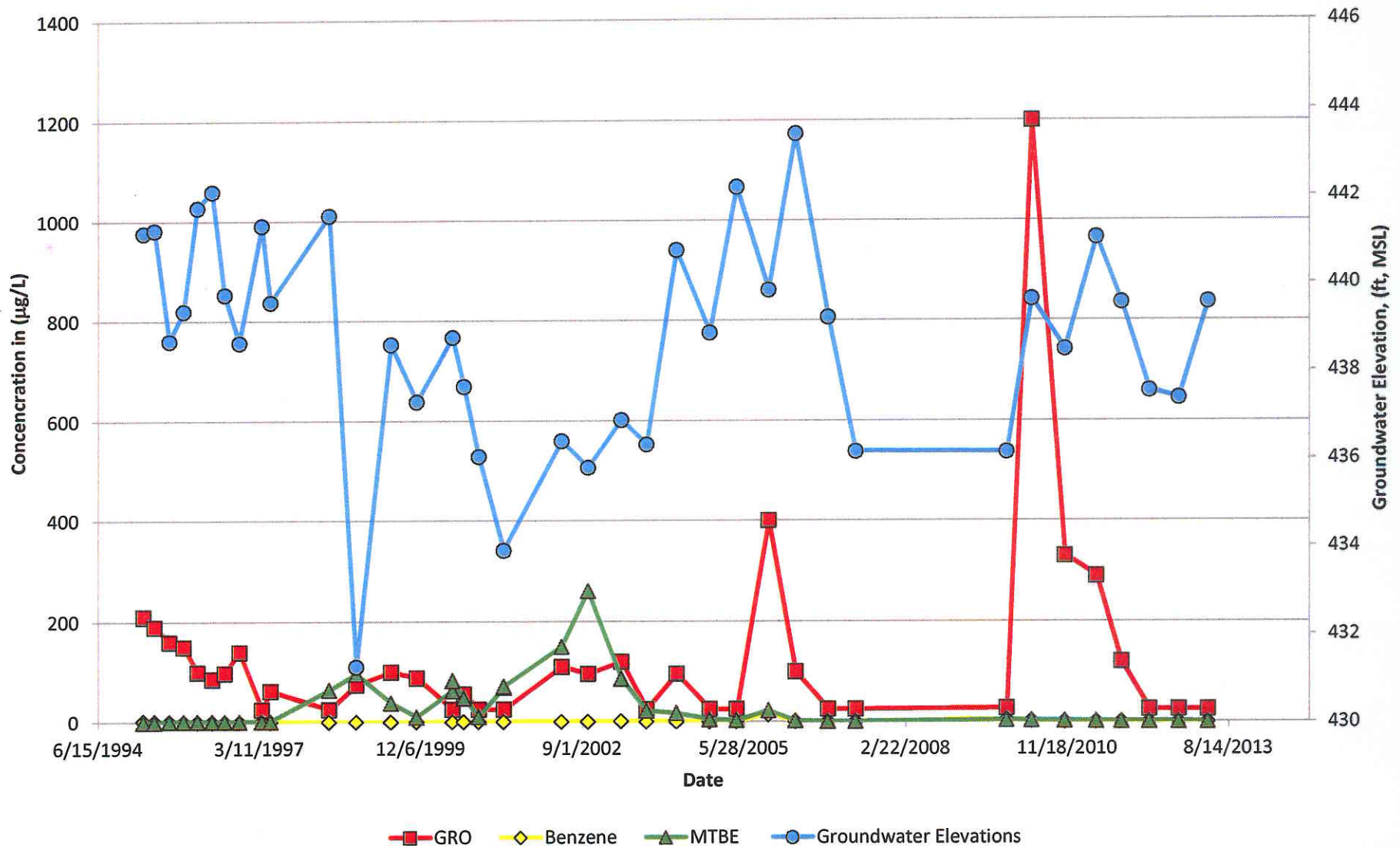
Graph D-1
RMW-13 Concentrations and Groundwater Elevation vs Time
ARC Station #6113
785 East Stanley Boulevard, Livermore, Ca



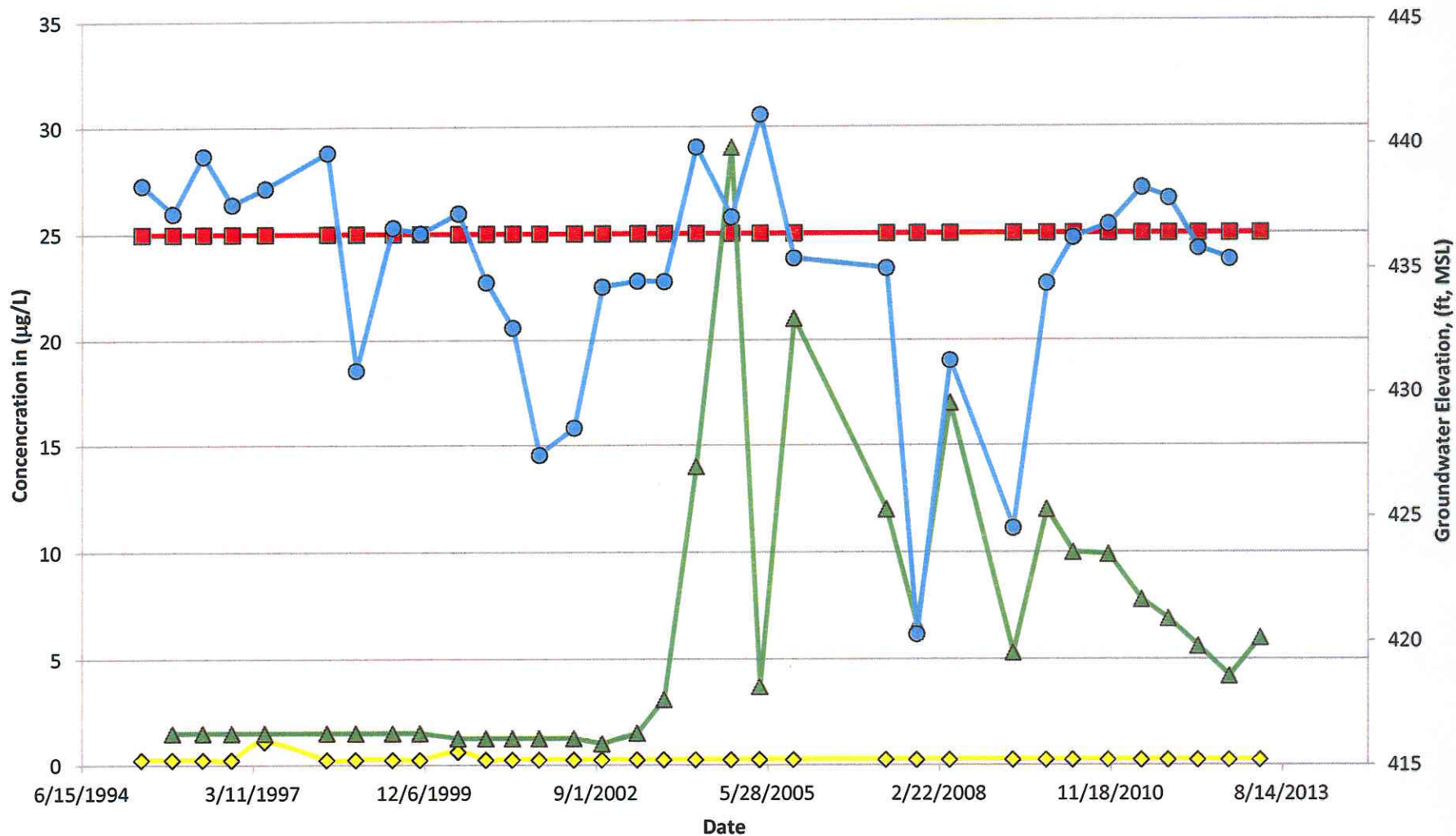
Graph D-2
VW-4 Concentrations and Groundwater Elevation vs Time
ARC Station #6113
785 East Stanley Boulevard, Livermore, Ca



Graph D-3
MW-4 Concentrations and Groundwater Elevation vs Time
ARC Station #6113
785 East Stanley Boulevard, Livermore, Ca



Graph D-4
MW-11 Concentrations and Groundwater Elevation vs Time
ARC Station #6113
785 East Stanley Boulevard, Livermore, Ca



■ GRO
 ◇ Benzene
 ▲ MTBE
 ● Groundwater Elevations