ALAMEDA COUNTY HEALTH CARE SERVICES





July 30, 2010

ENVIRONMENTAL HEALTH DEPARTMENT ENVIRONMENTAL PROTECTION 1131 Harbor Bay Parkway, Suite 250 Alameda, CA 94502-6577 (510) 567-6700 FAX (510) 337-9335

Charles Carmel (Sent via E-mail to: charles.carmel@bp.com)
Atlantic Richfield Corporation
P.O. Box 1257

P.O. Box 1257 San Ramon, CA 94583

ALEX BRISCOE, Director

Subject: Fuel Leak Case No. RO0000392 and Geotracker Global ID T0600100114, ARCO #02185, 9800 International Boulevard, Oakland, CA 94603

Dear Mr. Carmel:

This letter transmits the enclosed underground storage tank (UST) case closure letter in accordance with Chapter 6.75 (Article 4, Section 25299.37[h]). The State Water Resources Control Board adopted this letter on February 20, 1997. As of March 1, 1997, the Alameda County Environmental Health (ACEH) is required to use this case closure letter for all UST leak sites. We are also transmitting to you the enclosed case closure summary. These documents confirm the completion of the investigation and cleanup of the reported release at the subject site. The subject fuel leak case is closed.

SITE INVESTIGATION AND CLEANUP SUMMARY

Please be advised that the following conditions exist at the site:

- Residual soil contamination of TPH-g and benzene at concentrations of 5,400 mg/kg and 22 mg/kg, respectively, was left in place near the dispenser island in 1991. A confirmation soil sample located in the vicinity of the contamination collected in July 2008 did not detect hydrocarbon contamination above the laboratory detection limit.
- Residual concentrations of TPH-g and MtBE were was detected in groundwater at concentrations of up to 360 µg/L and 1.8 µg/L, respectively, of which TPH-g exceeds the ESLs where groundwater is a potential drinking water source in a residential land-use risk scenario.

If you have any questions, please call Paresh Khatri at (510) 777-2478. Thank you.

Sincerely,

Donna L. Drogos, P.E.

Division Chief

Enclosures: 1. Remedial Action Completion Certificate

2. Case Closure Summary

CC:

Ms. Cherie McCaulou (w/enc) SF- Regional Water Quality Control Board 1515 Clay Street, Suite 1400

Oakland, CA 94612

Closure Unit (w/enc)

State Water Resources Control Board

UST Cleanup Fund P.O. Box 944212

Sacramento, CA 94244-2120

Paresh Khatri (w/orig enc), D. Drogos (w/enc), T. Le-Khan (w/enc)

ALAMEDA COUNTY HEALTH CARE SERVICES AGENCY



DEPARTMENT OF ENVIRONMENTAL HEALTH
OFFICE OF THE DIRECTOR
1131 HARBOR BAY PARKWAY
ALAMEDA, CA 94502
(510) 567-6777
FAX (510) 337-9135

ALEX BRISCOE, Agency Director

July 30, 2010

Charles Carmel (Sent via E-mail to: charles.carmel@bp.com)
Atlantic Richfield Corporation
P.O. Box 1257
San Ramon, CA 94583

REMEDIAL ACTION COMPLETION CERTIFICATE

Subject: Fuel Leak Case No. RO0000392 and Geotracker Global ID T0600100114, ARCO #02185,

9800 International Boulevard, Oakland, CA 94603

Dear Mr. Carmel:

This letter confirms the completion of a site investigation and remedial action for the underground storage tanks formerly located at the above-described location. Thank you for your cooperation throughout this investigation. Your willingness and promptness in responding to our inquiries concerning the former underground storage tank(s) are greatly appreciated.

Based on information in the above-referenced file and with the provision that the information provided to this agency was accurate and representative of site conditions, this agency finds that the site investigation and corrective action carried out at your underground storage tank(s) site is in compliance with the requirements of subdivisions (a) and (b) of Section 25296.10 of the Health and Safety Code and with corrective action regulations adopted pursuant to Section 25299.3 of the Health and Safety Code and that no further action related to the petroleum release(s) at the site is required.

This notice is issued pursuant to subdivision (h) of Section 25299.37 of the Health and Safety Code.

Please contact our office if you have any questions regarding this matter.

Sincerely

Ariu Levi Director

Alameda County Environmental Health

Agency Name: Alameda County Environmental Health

City/State/Zip: Alameda, CA 94502-6577

CASE CLOSURE SUMMARY LEAKING UNDERGROUND FUEL STORAGE TANK - LOCAL OVERSIGHT PROGRAM

I. AGENCY INFORMATION

Address: 1131 Harbor Bay Parkway
Phone: (510) 777-2478

Date: August 24, 2009

Responsible Staff Person: Paresh Khatri Title: Hazardous Materials Specialist

II. CASE INFORMATION

Site Facility Name: ARCO # 02	185						
Site Facility Address: 9800 Inte	rnational Boulevard, Oakland, California 9	94603					
RB Case No.: 01-0122							
URF Filing Date:	Global ID No.: T0600100114	46-5425-14-3					
Responsible Parties	Addresses		Phone Numbers				
Paul Supple	BP West Coast Products, LLC. P.O. Box 1257 San Ramon, CA 94583	and and	925-275-3801				

Tank I.D. No	Size in Gallons	Contents	Closed In Place/Removed?	Date
1	1x10,000-gallon	Gasoline	Removed	10/30/1991
2	1x 10,000-gallon	Gasoline	Removed	10/30/1991
3	1x 8,000-gallon	Gasoline	Removed	10/30/1991
	Piping		Removed	10/30/1991

III. RELEASE AND SITE CHARACTERIZATION INFORMATION

Cause and Type of Release: Leaking disper	nser					
Site characterization complete? Yes Date Approved By Oversight Agency: 5/12/2008						
Monitoring wells installed? Yes		Number: 10	Proper screened interval? Yes			
Highest GW Depth Below Ground Surface: 6.30 ft bgs (MW-6, 02/25/1998)		Lowest Depth: 14.75 ft bgs (MW-4, 11/93/1992)	Flow Direction: West to southwesterly			
Most Sensitive Current Use: Potential drinki	ing water	source.				

Summary of Production Wells in Vicinity: A $\frac{1}{2}$ mile well survey identified 5 cathodic protection wells, one irrigation well, and two destroyed wells. The five cathodic protection wells (22G1, 22G2, 22R1, 23D1, and 23F2) are between 65 and 120 feet in depth, and the total depth of the irrigation well is 230 feet. No other details of well construction were available. The locations of the wells are illustrated on Figure 10. Well 22G1 is located approximately 1,500 feet cross-gradient of the site and well 22G2 is located approximately 2,000 feet down-gradient of the site. Considering the non-migratory residual concentrations of dissolved phase petroleum hydrocarbons in the groundwater that is confined to the primary source areas at the Site, no water wells, deeper drinking water aquifers, surface water or other sensitive receptors are likely to be impacted.

Are drinking water wells affected? No	Aquifer Name: East Bay Plain Groundwater Basin						
Is surface water affected? No	Nearest SW Name: Arroyo Viejo is approximately 1.1 mile north or up-gradient of the site and San Leandro Creek is approximately 1.1 mile south or down-gradient of the site.						
Off-Site Beneficial Use Impacts (Addresses/Locations): None							
Reports on file? Yes	Where are reports filed? Alameda County Environmental Health						

TREATMENT AND DISPOSAL OF AFFECTED MATERIAL							
Material	Amount (Include Units)	Action (Treatment or Disposal w/Destination)	Date				
Tank	Two 10,000-gallon One 8,000-gallon	Disposal to H & H Ship Company San Francisco, CA	10/30/1991				
Piping	Unknown	Disposal to H & H Ship Company San Francisco, CA	10/30/1991				
Free Product	Unknown		MATERIAL				
Soil	600 cu yards 300 cu yards	BFI Facility Redwood Landfill	10-11/1991				
Groundwater	10,000-gallons	Disposal to H & H Ship Company San Francisco, CA	10-11/1991				

MAXIMUM DOCUMENTED CONTAMINANT CONCENTRATIONS BEFORE AND AFTER CLEANUP

(Please see Attachments for additional information on contaminant locations and concentrations)

	Soil (ppm)	Water (ppb)		
Contaminant	Before	After ¹	Before ⁶	After	
TPH (Gas)	5,400 (L-9, 9.5 ft, 10/30/1991)	<0.50 (B-1 9.5 ft, 7/18/2008)	44,000 (MW-3, 01/14/1993)	360 (MW-6, 06/19/2008)	
TPH (Diesel)	NA	NA	NA	NA	
TPH (Motor Oil)	NA	NA	NA	NA	
TRPH	NA	NA	NA	NA	
Benzene	22 (L-9, 9.5 ft, 10/30/1991)	<0.0010 (B-1 9.5 ft, 7/18/2008)	1,100 (MW-3, 01/14/1993)	<0.5 (06/19/2008)	
Toluene	330 (L-9, 9.5 ft, 10/30/1991)	<0.0010 (B-1 9.5 ft, 7/18/2008)	1,100 (MW-3, 10/19/1992)	<0.50 (06/19/2008)	
Ethylbenzene	120 (L-9, 9.5 ft, 10/30/1991)	<0.0010 (B-1 9.5 ft, 7/18/2008)	2,200 (MW-3, 01/14/1993)	<0.50 (06/19/2008)	
Xylenes	640 (L-9, 9.5 ft, 10/30/1991)	<0.0010 (B-1 9.5 ft, 7/18/2008)	9,600 (MW-3, 01/14/1993)	<0.50 (06/19/2008)	
MTBE	NA ⁵	<0.0010 ⁴ (B-1, 9.5 ft, 7/18/2008)	2,200 ³ (MW-3 08/20/1996)	1.8 ² (MW-10, 06/19/2008)	
Lead	NA	56 (SP(1-4), 11/14/2002)	NA	NA	

¹ Soil samples collected from boring B-1 on July 18, 2008 installed in the vicinity of L-9 did not detect contaminants above the laboratory detection limit.

⁶Free Product as sheen detected in MW-3 on July 24, 1992.

NA - Not analyzed

Site History and Description of Corrective Actions:

ARCO Facility No 2185 is an operational self-service gasoline station and AM/PM Mini-mart located at the southeast corner of International Boulevard (formerly E 14th Street) and 98th Avenue in Oakland, California. The Site is a relatively flat asphalt and concrete-covered lot, except for the vegetation along the southwestern and southeastern property boundaries, at an elevation of approximately 25 feet msl. Topography in the area is nearly flat, sloping very gently towards the west. The land use in the immediate vicinity of the Site is mixed commercial and residential. The Site consists of a service station building and four gasoline underground storage tanks (USTs) with associated piping and dispensers.

In May 1991, ROUX Associates (ROUX) conducted a preliminary tank replacement assessment which included drilling four onsite soil borings and installing two onsite vadose zone wells (VW-1 and VW-2). Locations of borings and wells VW-1 and VW-2 are illustrated on Figure 2. Soil samples were collected at five and ten feet bgs in each of the borings. Laboratory analyses of the samples showed that soil near the existing USTs contained Total Petroleum Hydrocarbons as gasoline (TPH-g) and benzene at concentrations up to 350 and 19 milligrams per kilogram (mg/kg), respectively. In June 1991, ROUX conducted a one-day, vapor-extraction test on vadose wells VW-1 and VW-2. Based on the results of that test, ROUX concluded that vapor extraction would not be a suitable remedial alternative at the Site. Results of the assessment are detailed in the *Preliminary Tank Replacement Assessment*, *ARCO Facility No. 2185*, 9800 E. 14th Street, Oakland, California (ROUX, 8 August 1991). Soil sample analytical results are summarized on Table 1.

In September 1991, ROUX performed a limited subsurface investigation at the Site which included drilling four additional soil borings in the proposed location of the new UST complex, northeast of the original UST complex. Laboratory analysis of the soil samples indicated that samples collected from the borings on the eastern edge of the proposed UST complex

 $^{^2}$ Other VOCs (groundwater µg/L after cleanup): 1.8 µg/L MtBE, < 10 µg/L TBA, <0.5 µg/L DIPE, <0.5 µg/L ETBE, <0.5 µg/L TAME, <0.5 µg/L EDB, <0.5 µg/L 1.2-DCA, <300 µg/L EtOH

³Other VOCs (groundwater ppb before cleanup): 2,200 μg/L MtBE, NA TBA, NA TAME, NA ETBE, NA DIPE ⁴Other VOCs (Soil mg/kg after cleanup): <0.0010 mg/kg MtBE, < 0.010 mg/kg TBA, <0.0020 mg/kg DIPE, <0.0020 mg/kg ETBE, <0.0020 mg/kg TAME, <0.10 mg/kg EtOH

Other VOCs (Soil mg/kg before cleanup): NA MtBE, NA TBA, NA TAME, NA DIPE, NA EtOH

had not been impacted by petroleum hydrocarbons. Hydrocarbons were detected in the samples collected from the borings along the western edge of the proposed UST complex. Results of the investigation were documented in *Limited Subsurface Soil Investigation*, ARCO Facility No. 2185, 9800 E. 14th Street, Oakland, California (ROUX, 22 November, 1991). Boring locations are illustrated on Figure 3 and analytical results are summarized on Table 2.

Between October and November 1991, ROUX observed the excavation and removal of three gasoline USTs and associated product piping from the site. Twelve sidewall soil samples were collected from the former UST cavity and 14 soil samples were collected beneath the product line piping. Former UST cavity soil sample SW-7, collected at 14 feet bgs detected 1,100 mg/kg TPH-g and 5.9 mg/kg benzene. Product line sample Line-9 collected at 9.5 feet bgs contained 5,400 mg/kg TPH-g and 22 mg/kg benzene. Approximately 1,050 cubic yards of soil were excavated and disposed of during tank and product line removal. Water was pumped from the excavation on November 16, 1991 and again on February 5, 1992, totaling approximately 10,000 gallons, which was disposed of during tank removal activities. Details of the tank removal and sampling are documented in *Underground Storage Tank Removal and Soil Sampling, ARCO Facility No. 2185, 9800 E. 14th Street, Oakland, California* (ROUX, 17 June 1992). Sampling locations are illustrated on Figure 4 and analytical results are summarized on Table 2.

In July 1992, RESNA conducted a subsurface investigation at the site which included drilling and installing four ground-water monitoring wells (MW-1 through MW-4). Initial ground-water flow direction was determined to be towards the southwest. Laboratory analysis of soil and groundwater samples from the wells indicated that soil and groundwater immediately down-gradient from the former UST complex and dispenser islands were impacted by petroleum hydrocarbons. Sheen was observed in monitoring well MW-3. Results of the investigation were summarized in *Initial Subsurface Investigation at ARCO Station 2185*, 9800 E. 14th Street, Oakland, California (RESNA, 28 September 1992). Monitoring well locations are illustrated on Figure 5, groundwater flow direction is depicted on Figure 6, and soil and groundwater analytical data is summarized on Tables 2 and 3.

Between January and May 1993, RESNA conducted an initial off-site and additional on-site subsurface investigation which included the drilling and installation of two additional on-site wells (MW-5 and MW-6) and one off-site well (MW-7). Soil samples collected from well MW-7 and well MW-5 (located west of the northern pump island) did not exhibit detectable concentrations of petroleum hydrocarbons. Soil samples from well MW-6, located west of the former UST complex and southwest of the pump islands, exhibited contamination by petroleum hydrocarbons. In addition, petroleum hydrocarbons were detected above laboratory reporting limits in the groundwater sample collected from offsite well MW-7. However, subsequent monitoring at the Site has shown that several chlorinated solvents in the groundwater at MW-7 appear to be responsible for the chromatogram pattern originally quantified as TPH-g. In addition to the characterization, a limited off-site record search and on-site aquifer pumping test were conducted. A review of historical aerial photographs identified two properties on the northwest and southwest corners of the intersection of 98th Avenue and East 14th Street (International Blvd.) as former gasoline service stations. Off-site well MW-7 was installed within 15 feet of a former pump island at the historic service station southwest across East 14th Street from the Site. Results of the investigation were documented in *Initial Off-site and Additional On-site Subsurface Investigation and Pumping Test at ARCO Station 2185*, 9800 East 14th Street, Oakland, California (RESNA, 12 October 1993). Monitoring well locations are illustrated on Figure 7 and soil sample analytical results are summarized on Table 2.

RESNA conducted a step-drawdown test on March 8, 1993. Results indicate that the well could sustain a pumping rate of six gallons per minute. On March 10 and 11, 1993, RESNA conducted an 18 hour pumping and 1 hour recovery test. After 18 hours of pumping and at one hour recovery, 95% recovery had been measured.

In April 1994, RESNA installed one groundwater monitoring well at the site (MW-8). TPH-g was detected at a concentration of 4,800 micrograms per liter (µg/L). According to Broadbent, this well was installed so that the Site could be considered for Alternative Points of Compliance, under the Tentative Resolution of the California Regional Water Quality Control Board's (RWQCB) Basin and Amendment Plan (RWQCB, 20 November 1992). Well MW-8 was originally referred to as MW-10 by RESNA, but its identification was changed by EMCON to MW-8, to maintain chronological consistency with other wells at the site. Details of the well installation were summarized in the letter report *Installation of Compliance Well MW-10, ARCO Service Station 2185, 9800 East 14th Street, Oakland, California* (RESNA, 6 June 1994).

Periodic groundwater monitoring and sampling at the Site was initiated in July 1992. Off-site monitoring wells MW-9 and MW-10 were installed in August 1995 by EMCON (refer to Figure 8). TPH-g and benzene were not detected above the laboratory detection limit in groundwater samples collected from monitoring wells MW-9 or MW-10. Monitoring and sampling activities continued through October 1998. No environmental work has occurred on-site since October 1998. Historic water-level elevations have yielded potentiometric groundwater flow directions usually between the west and southwest at hydraulic gradients ranging from 0.001 ft/ft to 0.01 ft/ft. The maximum TPH-g concentration was detected in well MW-3 at a concentration of 44,000 μ g/L in January 1993. The maximum concentrations of Benzene, Toluene, Ethylbenzene, and Total Xylenes (BTEX) were detected in well MW-3 at 1,100 μ g/L (January 1993), 1,100 μ g/L (October 1992), 2,200 μ g/L (January 1993), and 9,600 μ g/L (January 1993), respectively. The maximum concentration of Methyl tert-butyl ether (MTBE) was also detected in well MW-3 at 2,200 μ g/L (August 1996). The wells have shown a decreasing trend with respect to TPH-g, BTEX, and MTBE concentrations between 1992 and 1998. TPH-g and BTEX have not been

detected above the laboratory reporting limits since 1992 in wells MW-1, MW-4, and MW-9. Historic soil analytical data and ground-water elevations and analytical data are provided in Tables 1 through 4.

On November 12, 2002, URS collected confirmation soil samples during product line and dispenser upgrades. Analytical results did not detect contaminants above the laboratory detection limit for all samples. Samples LS-4 (6 ft bgs) and sample DI-4 (5 ft bgs) were collected in the vicinity of the elevated concentrations detected in soil sample L-9 collected at 9.5 feet bgs in 1991. Although soil samples LS-4 and DI-4 were collected in the vicinity of soil sample L-9, it is likely that the subsequent shallower soil samples collected are indicative of fill material underneath the dispensers and not representative of residual benzene concentrations detected in soil sample L-9 collected at 9.5 feet.

In May and June 2008, Stratus conducted well redevelopment and groundwater monitoring and sampling at the Site. TPH-g was detected in two of the nine wells sampled at concentrations of 98 μ g/L in well MW-3 and 360 μ g/L in well MW-6. MTBE was detected in one of the nine wells sampled at a concentration of 1.8 μ g/L in well MW-10 (see Figure 9). The remaining fuel additives and oxygenates were not detected above their respective laboratory reporting limits in the nine wells sampled (Well MW-1 was paved over and thus inaccessible). Groundwater sample analytical results are summarized on Tables 4 and 5, and Figure 9. On July 18, 2008, Stratus Environmental, under the scope of work proposed by Broadbent and Associates, oversaw the installation of one boring B-1 located in the vicinity of soil sample L-9. Soil samples were collected at 6, 7.5, and 9.5 feet bgs. Soil sample analytical results did not detect TPH-g, BTEX, fuel oxygenates, or lead scavengers above the laboratory detection limit. Analytical results are summarized on Table 6.

Based on the most recent soil investigation, it appears that elevated concentrations of hydrocarbons previously detected have either naturally attenuated or were very limited in their extent. This is evidenced by improved groundwater quality over time at the site, based on periodic groundwater sample analytical results. The groundwater contaminant plume appears defined and stable based on consecutive groundwater sampling events between July 1992 through October 1998. Although no active remediation besides excavation and groundwater pumping from the excavation pit occurred, groundwater sample analytical results have exhibited a stable and/or decreasing trend and confirmation soil samples collected in July 2008 did not detect soil contamination above the laboratory detection limit. Tables A and B compare site concentrations to applicable San Francisco Regional Water Quality Control Board Environmental Screening Levels (ESLs). All recent soil samples are below residential land-use scenario where potentially impacted groundwater is current or potential drinking water resource. TPH-g in groundwater is above the ESL while BTEX and MTBE are below their applicable ESLs.

IV. CLOSURE

Does completed corrective action protect existing beneficial uses per the Regional Board Basin Plan? Yes

Does completed corrective action protect potential beneficial uses per the Regional Board Basin Plan? Yes

Does corrective action protect public health for current land use? Alameda County Environmental Health staff does not make specific determinations concerning public health risk. However, based upon the information available in our files to date, it does not appear that the release would present a significant risk to human health based upon current land use and conditions.

Site Management Requirements: City of Oakland Building Department has been notified that should excavation or development of the property be proposed that may encounter impacted soil or groundwater, Alameda County Environmental Health must be notified as required by Government Code Section 65850.2.2. Case closure for the fuel leak site is granted for the current commercial land use only. If a change in land use to any residential or other conservative land use scenario occurs at this site, Alameda County Environmental Health (ACEH) must be notified, as stated above. ACEH will re-evaluate the case upon receipt of approved development/construction plans. Excavation or construction activities in the areas of residual contamination require planning and implementation of appropriate health and safety procedures by the responsible party (or current property owner) prior to and during excavation construction activities. Therefore, the responsible party or current property owner/developer must submit a soil and groundwater management plan for review prior to any construction activities.

Should corrective action be reviewed if land use changes? Yes

Date Recorded: --Was a deed restriction or deed notification filed? No Number Retained: 12 Monitoring Wells Decommissioned: No Number Decommissioned: 0 List Enforcement Actions Taken: None

List Enforcement Actions Rescinded: --

V. ADDITIONAL COMMENTS, DATA, ETC.

Considerations and/or Variances:

Residual soil contamination of TPH-g and benzene at concentrations of 5,400 mg/kg and 22 mg/kg, respectively, was left in place near the dispenser island in 1991. A confirmation soil sample located in the vicinity of the contamination collected in July 2008 did not detect hydrocarbon contamination above the laboratory detection limit. Therefore, the residual contamination does not appear to pose a significant risk to the current commercial use of the site or to groundwater resources in the area.

Residual concentrations of TPH-g and MtBE were was detected in groundwater at concentrations of up to 360 µg/L and 1.8 µg/L, respectively, of which TPH-g exceeds the ESLs where groundwater is a potential drinking water source in a residential land-use risk scenario. The concentrations of TPH-g are expected to decrease over time as a result of biodegradation and natural attenuation processes. Please note that EDB and EDC were not detected in soil sample collected from boring B-1 installed in July 2008 or groundwater samples collected at the site.

Conclusion

Alarmeda County Environmental Health staff consider that the levels of residual contamination do not pose a significant threat to water resources, public health and safety, and the environment based upon the information available in our files to date. No further investigation or cleanup is necessary. ACEH staff recommend case closure for this site based on the current commercial use of the site.

VI. LOCAL AGENCY REPRESENTATIVE DATA

Title: Hazardous Materials Specialist
Date: August 24, 2009
Title: Supervising Hazardous Materials Specialist
Date: 09/22/09

This closure approval is based upon the available information and with the provision that the information provided to this agency was accurate and representative of site conditions.

VII. REGIONAL BOARD NOTIFICATION

Regional Board Staff Name: Cherle McCaulou	Title: Engineering Geologist
RB Response: Concur, based solely upon information contained in this case closure summary.	Date Submitted to RB: (2/9/09.
Signature: Che Mc Caul	Date: (/5/(0

VIII. MONITORING WELL DECOMMISSIONING

Date Requested by ACEH: 1/7/2010	2010 Date of Well Decommissioning Report: 6/2/2010						
All Monitoring Wells Decommissioned: Yes	Number Decommissioned: 12	Number Retained: Ø					
Reason Wells Retained: No monitoring wells installed or retained.							
.11	Additional requirements for submittal of groundwater data from retained wells: None						
ACEH Concurrence - Signature: AMPLA	£	Date: 67/02/2010					

Attachments:

- 1. Tables A & B (Comparison of residual contamination to applicable ESLs).
- 2. Site Vicinity Map & sampling locations (9 pages).
- 3. Well Survey Map (1 page)
- 4. Cross-sections (5 pages).
- 5. Cumulative Soil and Groundwater Analyses Data (16 pages).
- 6. Boring Logs (28 pages).

This document and the related CASE CLOSURE LETTER & REMEDIAL ACTION COMPLETION CERTIFICATE shall be retained by the lead agency as part of the official site file.

Environmental Impacts in Soil

ARCO #2185

9800 International Boulevard, Oakland, California

Table A. Comparison of Maximum Residual Soil Concentrations at the Site to Relevant Cleanup Standards (mg/kg)

	TPH-g (mg/kg)	TPH-d (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl Benzene (mg/kg)	Xylenes (mg/kg)	MtBE (mg/kg)	EDC [1-2-dichloroethane] (mg/kg)	EDB [1-2-dibromoethane] (mg/kg)	Lead (mg/kg)
Maximum Residual Soil Concentrations at Site in milligrams per kilogram	<0.50 ⁴	-	<0.0010 ⁴	<0.0010 ⁴	<0.0010 ⁴	<0.0010 ⁴	<0.0010	<0.0010	<0.0010	56
RWQCB, Region 2 ESLs ¹	83 ³	83 ³	0.044 ³	2.9 ³	2.3 ²	2.3	0.023 ³	0.00033 ³	0.0045 ³	200 ⁵

¹ Environmental Screening Levels (ESLs); Shallow Soil Screening Level for residential land use where potentially impacted groundwater is current or potential drinking water resource. Shallow soils defined as soils situated <3 meters below the ground surface. Depth to water ranges between 8.8 ft and 15.21 ft bgs.

² Lowest ESL value based on direct exposure scenario. Depth to water ranges between Depth to water ranges between 8.8 ft and 15.21 ft bgs.

³ Lowest ESL value based on groundwater protection (soil leaching). Depth to water ranges between 8.8 ft and 15.21 ft bgs.

⁴ Soil sample L-9 collected at 9.5 feet bgs in October 1991. B-1 installed in July 2008 located in the vicinity of L-9 did not detect TPH-g, BTEX, MTBE, Fuel Oxygenates, or Lead Scavengers above the laboratory detection limit. Depth to water ranges between 6.3 ft and 14.75 ft bgs.

⁵ Lowest ESL value based on urban area ecotoxicity criteria.

Environmental Impacts in Groundwater ARCO #2185

9800 International Boulevard, Oakland, California

Table B. Comparison of Maximum Residual Groundwater Concentrations at the Site to Relevant Cleanup Standards (μg/L)

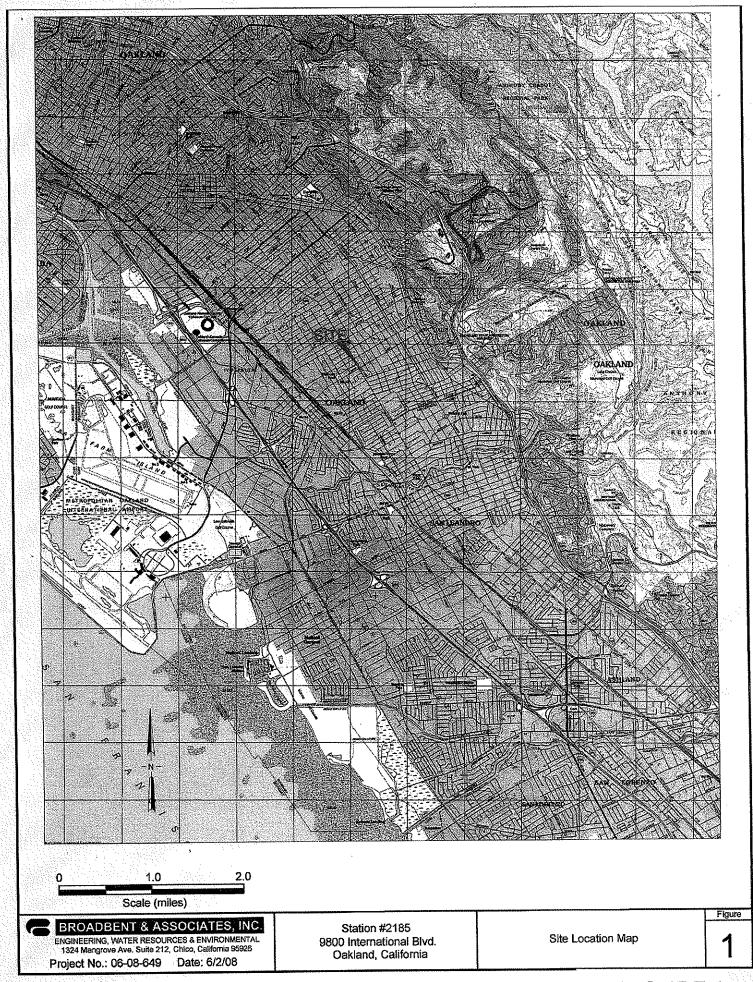
<u> </u>	TPH-g (μg/L)	TPH-d (μg/L)	TPH-ss (μg/L)	Kerosene (μg/L)	Benzene (μg/L)	Toluene (μg/L)	Ethyl Benzene (μg/L)	Xylenes (µg/L)	MTBE (µg/L)	EDC [1-2-dichloroethane] (μg/L)	EDB [1-2-dibromoethane] (μg/L)
Maximum Residual Groundwater Concentrations at Site	360 ⁷	-	-	-	<0.5 ⁷	<0.5 ⁷	<0.5 ⁷	<0.5 ⁷	1.8 ⁷	<0.5 ⁷	<0.5 ⁷
RWQCB Region 2 ESLs ²	100 ¹ 100 ² 210 ³ 210 ⁶	1.0 ¹ 170 ² 1.0 ³ 540 ⁴ 46 ⁶	40 ¹ 40 ² 150 ³ 380,000 ⁴ 130 ⁶	30 ¹ 30 ² 300 ³ 170,000 ⁴ 43 ⁶	20 ¹ 20 ² 1,800 ³ 160,000 ⁴ 100 ⁶	5 ¹ 5 ² 13 ³ 24,000 ⁴ 8,000 ⁶	0.05 ¹ 50,000 ² 0.05 ³ 150 ⁴ 1,400 ⁶	0.5 ¹ 7,000 ² 0.5 ³ 200 ⁴ 2,000 ⁶			
ASTM Tier 1 Standard Human Health RBSL (Benzene)	NA	NA	NA	NA	11,000 ⁴ 23.8 ⁵	32,800	77,500	NA	NA	NA	NA

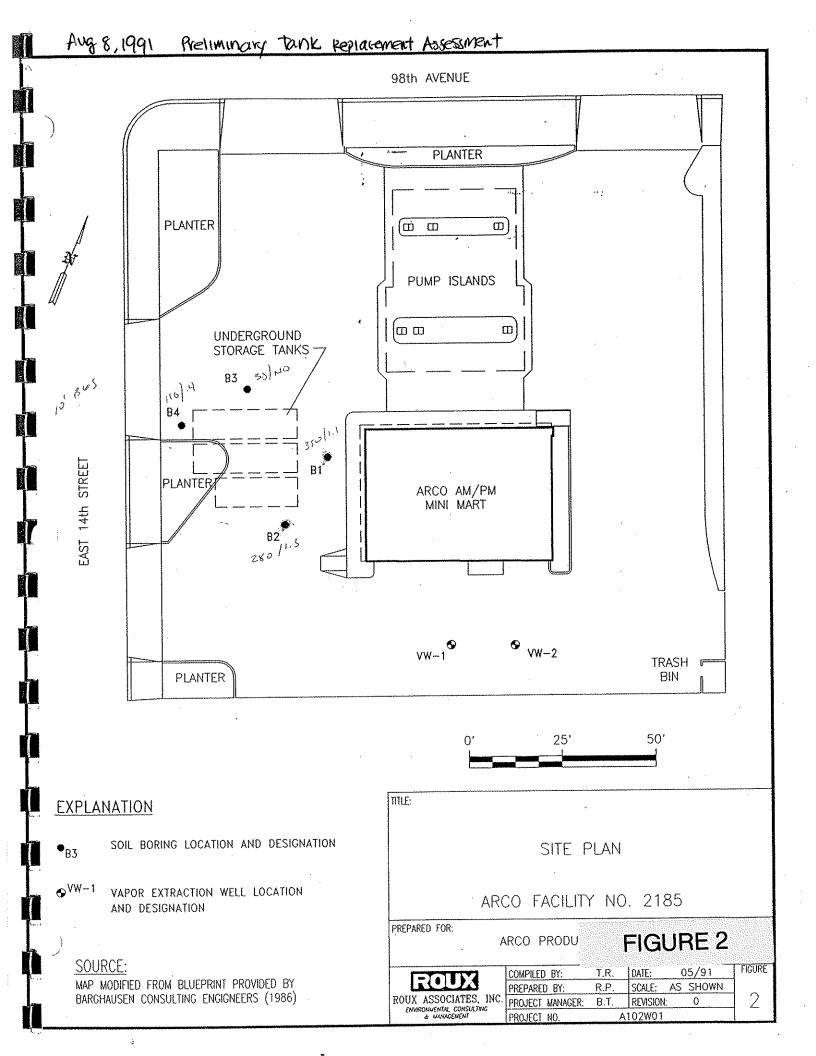
¹ Environmental Screening Levels (ESLs) for impacted subsurface groundwater less than 10 feet, where groundwater IS a current or potential drinking water resource ² Final Groundwater Screening Level, based on ceiling value (taste and odor threshold)

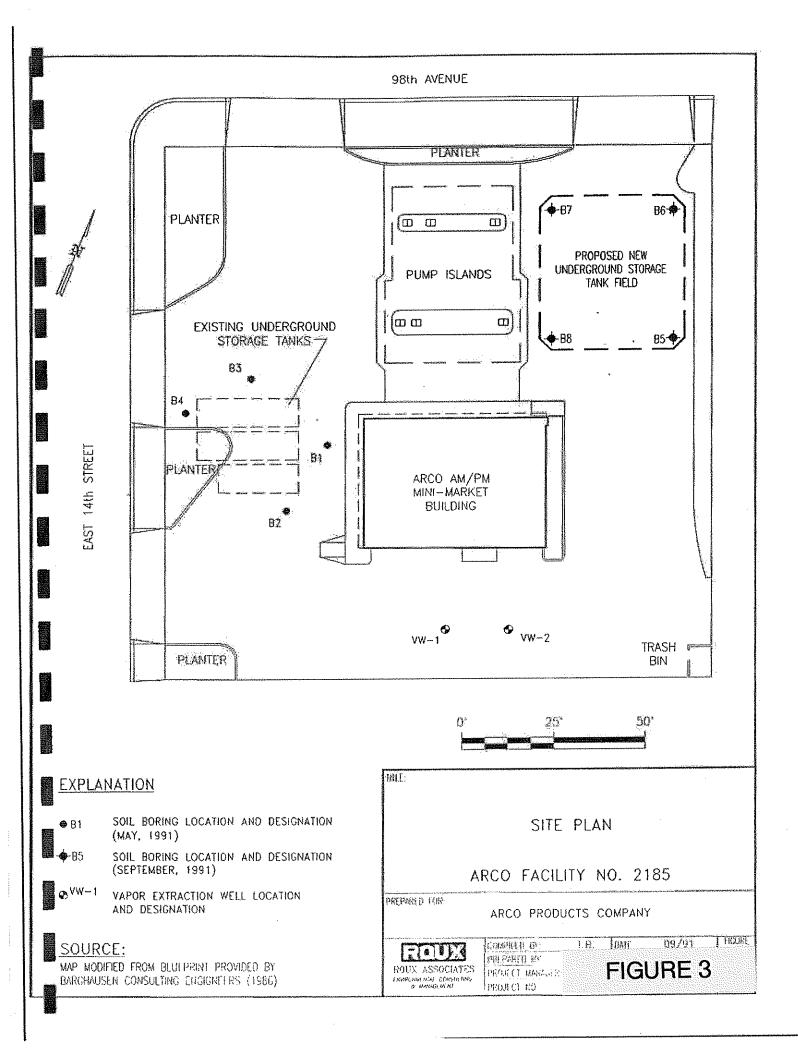
³ Groundwater Screening Level, based on drinking water toxicity

⁴ Groundwater Volatilization to indoor air (residential) Level,
⁵ Groundwater Vapor Intrusion from groundwater to buildings (residential, chronic hazard quotient = 1)
⁶ Final Groundwater Screening Level, based on Aquatic Habitat

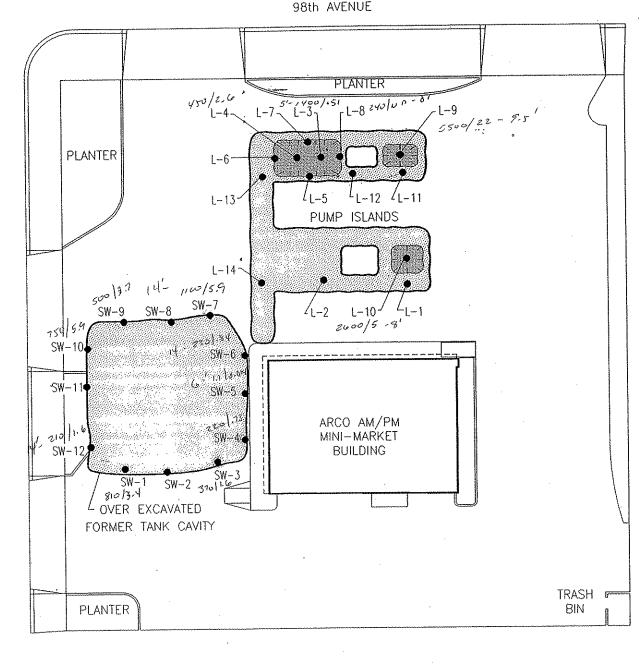
⁷ Sample collected on 06/19/2008.







Natember 25, 1991, Tank & Line Replacement



EXPLANATION



EAST 14th STREET

EXCAVATED AREAS



EXTENDED EXCAVATED AREAS

• SW-11

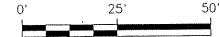
TANK CAVITY SOIL SAMPLE LOCATION AND DESIGNATION.

L−4

PRODUCT LINE TRENCH SOIL SAMPLE LOCATION AND DESIGNATION.

SOURCE:

MAP MODIFIED FROM BLUEPRINT PROVIDED BY . BARCHAUSEN CONSULTING ENGIGNEERS (1986)



TITLE:

LOCATION OF EXCAVATED TANK CAVITY

AND

PRODUCT LINE TRENCH SOIL SAMPLES

ARCO FACILITY NO. 2185

PREPARED FOR:

ARCO PRODUCTS COMPANY

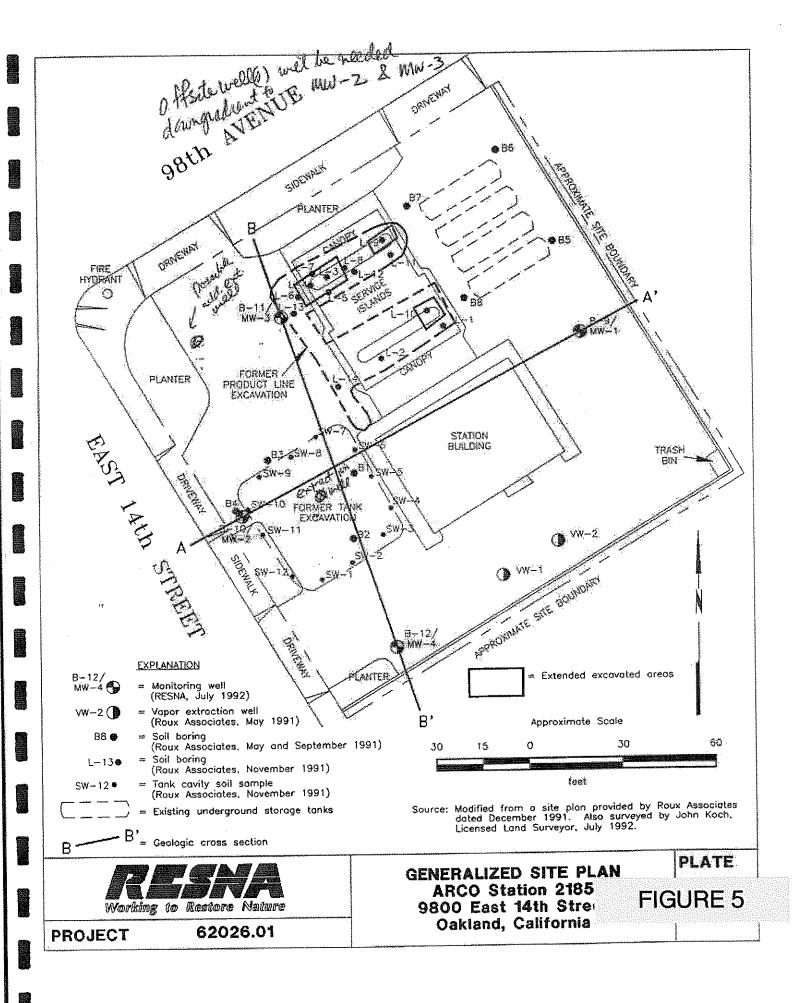


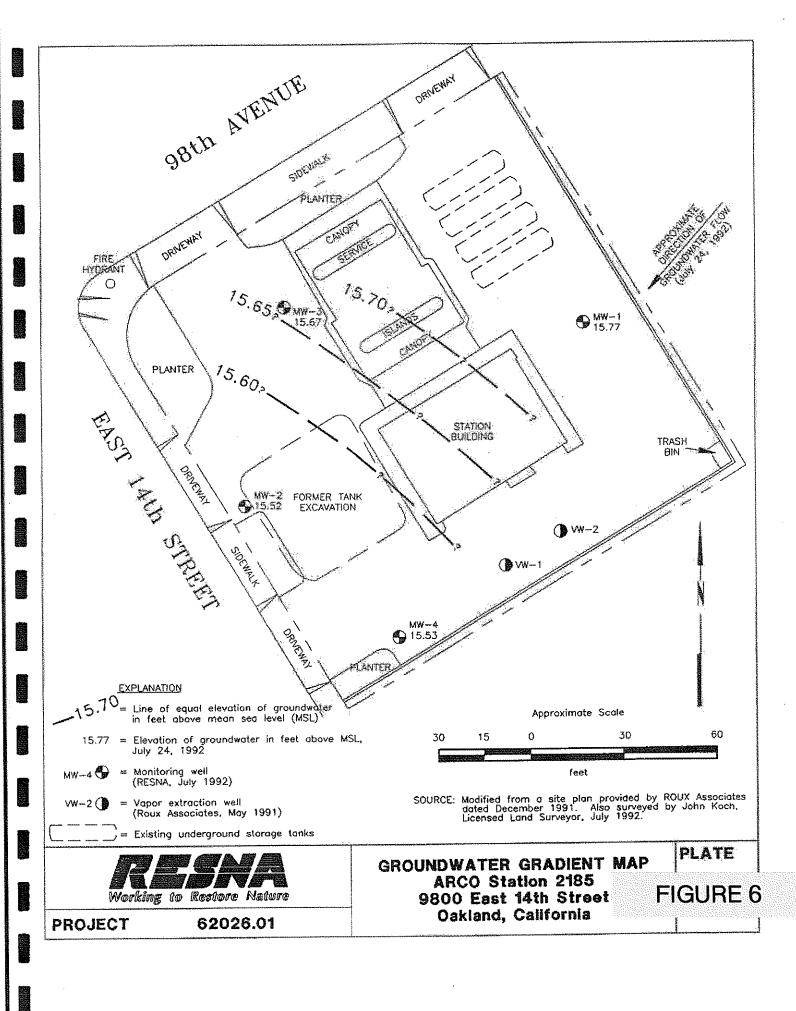
COMPILED BY: G.M.
PREPARED BY:
PROJECT MANAGER:
PROJECT NO.

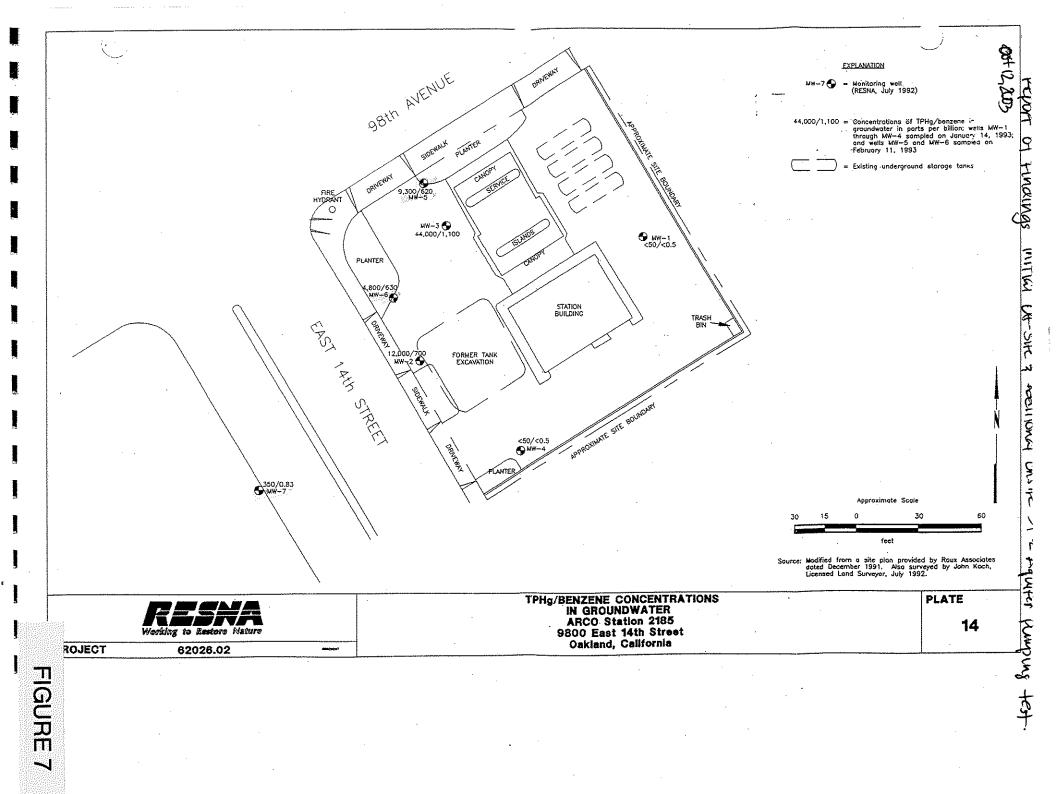
FIGURE 4

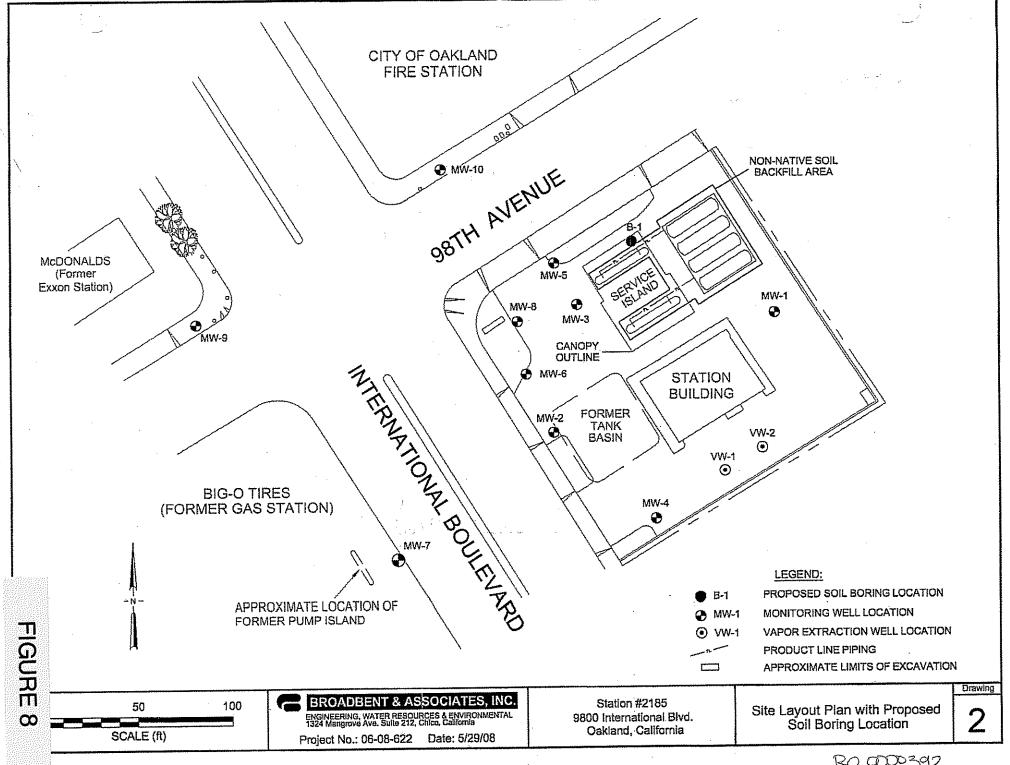
DATE:

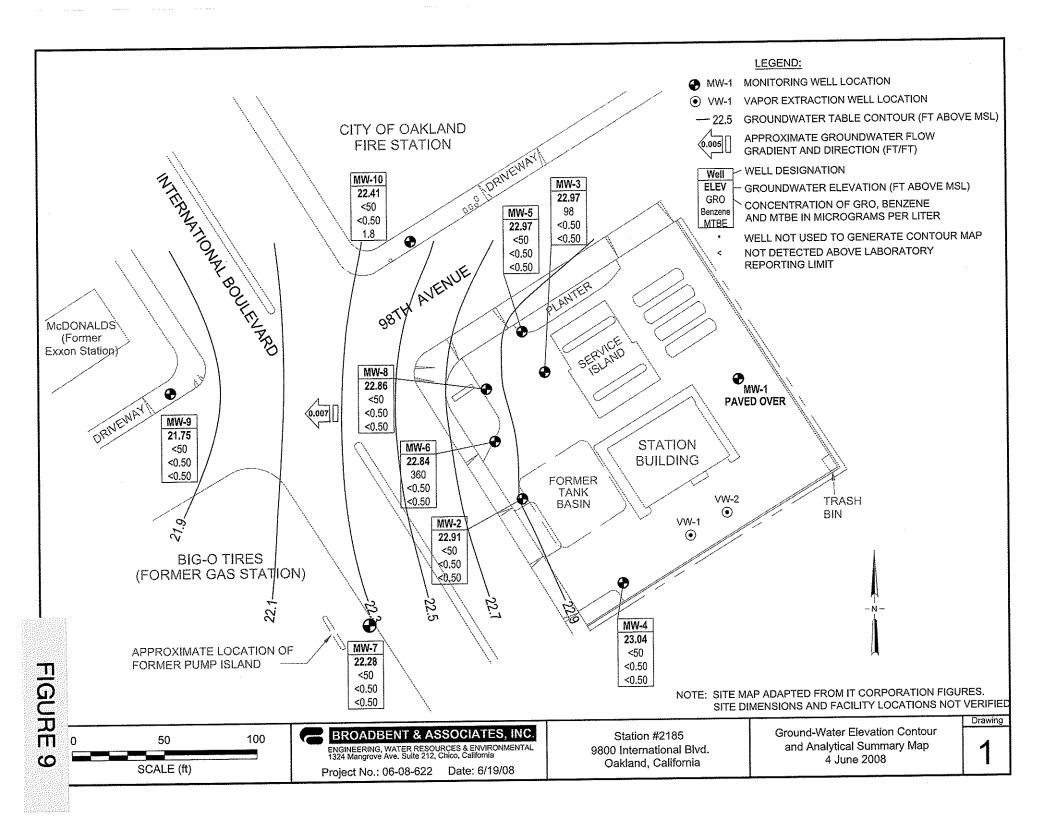
11/91

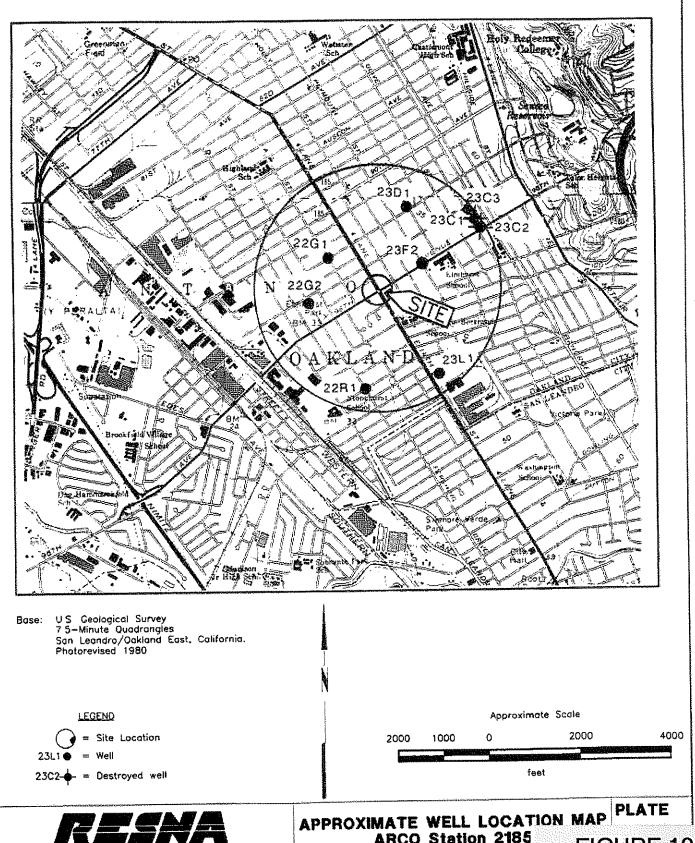












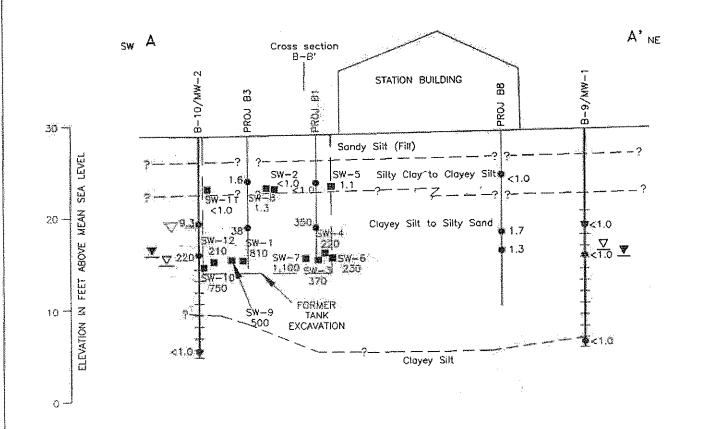
Working to Restore Nature

ARCO Station 2185 9800 East 14th Stre

Oakland, California

FIGURE 10

PROJECT 62026.02



EXPLANATION

SW-10 Approximate Horizontal Scale = Laboratory analyzed tank pit soil sample (projected) showing concentration of TPHg in ppm 1,100 壁 30 60 15 0 Laboratory analyzed soil sample showing concentration of TPHg in ppm 220 feet = Well casing Approximate Vertical Scale = Well screen 10 20 0 ∞ Boring = Initial water level in boring feet = Static water level in well (08/26/92)



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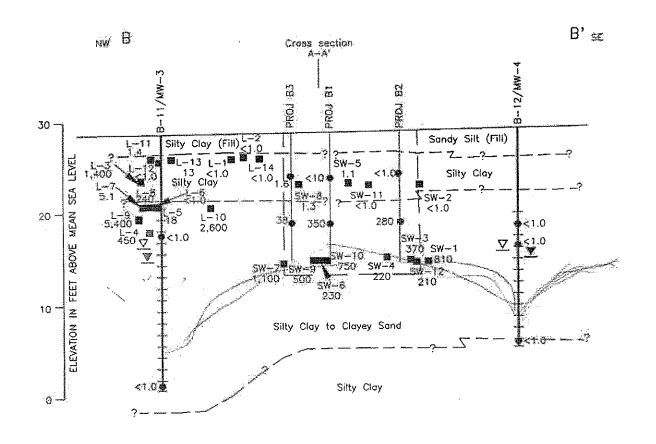
GEOLOGIC CROSS SECTION A-A' ARCO Station 2185 9800 East 14th Street Oakland, California

PLATE

12

PROJECT

62026.01



EXPLANATION

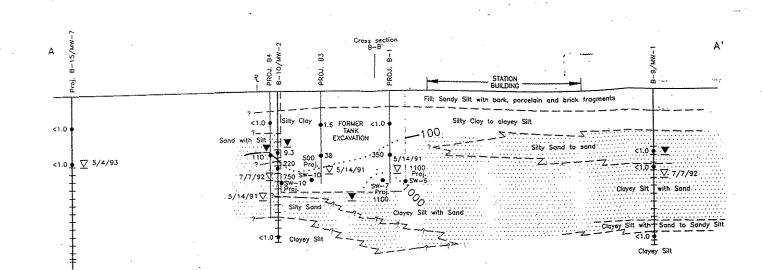
Approximate Horizontal Scale SW-71100 = Laboratory analyzed tank pit soil sample (projected)
showing concentration of TPHg & product line in ppm 30 60 15 0 Laboratory analyzed soil sample showing concentration of TPHg in ppm 350 feet = Well casing Approximate Vertical Scale = Well screen 10 20 - Boring ∇ = Initial water level in boring feet ▼ = Static water level in well (08/26/92)

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62026.01 **PROJECT**

GEOLOGIC CROSS SECTION B-B' ARCO Station 2185 9800 East 14th Street Oakland, California

PLATE 13





_____1000 = tine of equal concentration of TPHg in soil in parts per million (ppm)

<1.0 = Loborotory analyzed soil sample showing concentration of TPHg in ppm

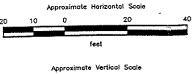
* Well casing

= Well screen

* Boring

✓ = Initial water level in boring
 ✓ = Static water level in well (3/26/93)

 Hydrostratigraphic unit; consists of water bearing sands, silts, and clays with rootholes







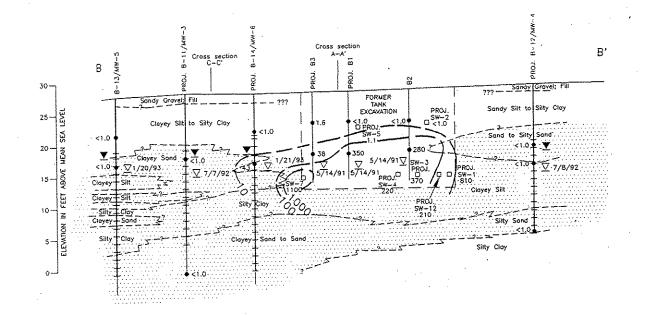
PROJECT

62026.02

620262A

GEOLOGIC CROSS SECTION A-A'
ARCO Station 2185
9800 East 14th Street
Oakland, California

PLATE



EXPLANATION

-1000 - Line of equal concentration of TPHs in soil in parts per million (ppm)

= Laboratory analyzed product line soil sample showing concentration of TPHg in pom

Laboratory analyzed soil sample showing concentration of TPHg in ppm

= Well casing

= Well screen

- Boring

= Initial water level in boring

= Static water level in well (3/26/93)

Hydrostratigraphic unit; consists of water bearing sands, silts, and clays with roothales

Approximate Harizantal Scale



Approximate Vertical Scale



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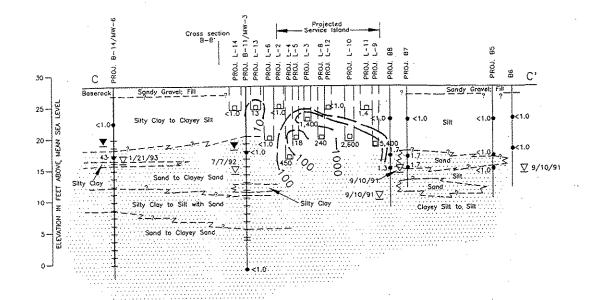
GEOLOGIC CROSS SECTION B-B' ARCO Station 2185 9800 East 14th Street Oakland, California

PLATE

16

PROJECT

62026.02



EXPLANATION

-1000 = Line of equal concentration of TPHg in soil in parts per million (ppm)

L-13 | Loboratory analyzed product line soil sample showing concentration of IPHg in ppm doshed line shows approximate location of product line trenches

<1.0 = Laboratory analyzed soil sample showing concentration of TPHg in ppm

· - Well cosing

= Well screen

= Boring

. = Initial water level in boring

▼ * Static water level in well (3/26/93)

 Hydrostrotigraphic unit; consists of water bearing sands, silts, and clays with rootholes

Approximate Horizontal Scale



Approximate Vertical Scale



RESHA Working to Restore Nature

PROJECT

62026.02

6202620

GEOLOGIC CROSS SECTION C-C' ARCO Station 2185 9800 East 14th Street Oakland, California PLATE

TABLE 1

TABLE 1: Summary of Soil Sample Analytical Data

ARCO Facility No. 2185, 9800 East 14th Street, Oakland, California

Sample		Depth			BTEX D	istinction(1)	
Designation	Date	(feet bgs)	TPH-G(1)	Benzene	Toluene	Ethylbenzene	Xylenes
B1-5	5/14/91	5	ND	0.021	· ND	ND	0.012
B1-10	5/14/91	10	350	1.1	0.65	4.9	19
B2-5	5/14/91	5	, ND	0.034	ND	ND	ND
B2-10	5/14/91	10	280	1.3	0.34	3.4	10
B3-5	5/14/91	5	1.6	0.015	ND	0.021	0.048
B3-10	5/14/91	10	38	ND	0.24	0.31	2
B4-5	5/14/91	5	ND	ND	ND	ND	0.017
B4-10	5/14/91	10	110	0.4	0.2	0.72	0.24

FOOTNOTES:

(1) = Concentrations reported in mg/kg (ppm)

TPH-G =Total Petroleum Fuel Hydrocarbons As Low/Medium Boiling Point Hydrocarbons (USEPA 8015)

BTEX Distinction (USEPA 8020)

ND = Not Detected (For detection limits see laboratory reports, Appendix D)

bgs = below ground surface



Subsurface Investigation and Pumping Test ARCO Station 2185, Oakland, California

October 12, 1993 62026.02

TABLE 2

CUMULATIVE RESULTS OF LABORATORY ANALYSES OF SOIL SAMPLES ARCO Station 2185 Oakland, California (Page 1 of 3)

Sample ID	Depth	TPHg	В	T	E	х
May 1991	1.	····· /	***************************************			
B1-5	5	<1.0	0.021	< 0.0050	< 0.0050	< 0.0050
B1-10	10	350	1.1	0.65	4.9	19
B2-5	5	< 1.0	0.034	< 0.0050	< 0.0050	< 0.0050
B2-10	10	280	1.3	0.34	3.4	10
B3-5	5	1.6	0.015	< 0.0050	0.021	0.048
B3-10	10	38	< 0.050	0.24	.031	2.0
B4-5	5	< 1.0	< 0.0050	< 0.0050	< 0.0050	< 0.0050
B4-10	10	110	0.40	0.20	0.72	0.24
September 1991						
B5-5	5	< 1.0	< 0.0050	< 0.0050	< 0.0050	< 0.0050
BS-11	11	< 1.0	< 0.0050	< 0.0050	< 0.0050	< 0.0050
B5-13	13	< 1.0	< 0.0050	< 0.0050	< 0.0050	< 0.0050
B6-5	5	< 1.0	< 0.0050	< 0.0050	< 0.0050	< 0.0050
B6-10	10	< 1.0	< 0.0050	< 0.0050	< 0.0050	< 0.0050
B7-5	5	< 1.0	< 0.0050	< 0.0050	< 0.0050	<0.0050
B7-11	11	1.7	0.04	0.013	0.0079	0.078
B7-13	13	1.7	0.27	0.0083	0.04	0.028
B8-5	5	<1.0	< 0.0050	< 0.0050	< 0.0050	< 0.0050
B8-11	11	1.7	0.054	0.0094	0.012	0.019
B8-13	13	1.3	0.013	0.0073	0.0053	0.0069
Tank Excavation						p ^
SW-1	14	810	3,4	1.0	13	50
SW-2	6	<1.0	< 0.0050	< 0.0050	< 0.0050	< 0.0050
SW-3	14	370	1.6	17	8.8	53
SW-4	14	220	0.73	1.2	2.8	15
SW-5	6	1.1	0.014	0.0069	0.012	0.034
SW-6	14	230	0.84	2.3	2.4	15
SW-7	14	1100	5.9	28	15	90
SW-8	6	1.3	0.11	0.0054	< 0.0050	0.016
SW-9	14	500	3.7	0.92	7.1	32
SW-10	14	750	5.9	5.3	10	61
SW-11	6	< 1.0	< 0.0050	< 0.0050	< 0.0050	< 0.0050
SW-12	14	210	1.6	0.26	3.2	5.0

See notes on page 3 of 3.



Subsurface Investigation and Pumping Test ARCO Station 2185, Oakland, California

October 12, 1993 62026.02

TABLE 3 CUMULATIVE RESULTS OF LABORATORY ANALYSES OF SOIL SAMPLES ARCO Station 2185 Oakland, California (Page 2 of 3)

Sample ID	Depth	TPHg	В	T	E	X
Product Lines		·····	····			
<u>L-1</u>	3	<1.0	< 0.0050	< 0.0050	< 0.0050	< 0.0050
L-2	3	<1.0	< 0.0050	< 0.0050	< 0.0050	< 0.0050
L-3	5	1,400	0.51	87	55	350
L-4	11	450	2.6	24	8.7	56
L-5	8	18	< 0.0050	0.029	0.042	0.38
L-6	8	<1.0	< 0.0050	< 0.0050	< 0.0050	< 0.0050
L-7	8	5.1	0.032	0.047	0.058	0.13
L-8	8	240	0.17	2.8	2.8	15
L-9	9.5	5,400	22	330	120	· 640
L-10	8	2,600	5	130	53	29
L-11	3	1.4	< 0.0050	0.014	0.012	0.1
L-12	3	<1.0	< 0.0050	< 0.0050	< 0.0050	< 0.0050
L-13	3	13	< 0.0050	0.026	0.05	0.7
L-14	3	< 1.0	< 0.0050	< 0.0050	< 0.0050	< 0.0050
July 1992						
S-10.5-B9 MW-1	10.5	< 1.0	< 0.0050	< 0.0050	< 0.0050	< 0.0050
S-13-B9	13	<1.0	< 0.0050	< 0.0050	< 0.0050	< 0.0050
S-23.5-B9	23.5	< 1.0	< 0.0050	< 0.0050	< 0.0050	< 0.0050
S-9.5-B10	9.5	9.3	0.034	0.023	0.014	0.059
\$-12-B10 MW-Z	12	220	1.1	0.75	5.1	6.3
S-23-B10	23	< 1.0	< 0.0050	<0.0050	< 0.0050	< 0.0050
S-10.5-B11	10.5	<1.0	0.0060	< 0.0050	< 0.0050	< 0.0050
S-29-B11 MW-3	29	< 1.0	< 0.0050	0.015	0.015	0,078
S-10-B12	10	<1.0	< 0.0050	< 0.0050	< 0.0050	< 0.0050
S-13-B12	13	< 1.0	< 0.0050	< 0.0050	< 0.0050	< 0.0050
5-23.5-B12 MW-4	23.5	<1.0	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Composited Stockpile S	ample					
SPA-SPD	NA	<1.0	< 0.0050	< 0.0050	0.010	0.012
Borings January 1993					4.0050	"A 607F2
S-6-B13 / MW \$	6	<1.0	< 0.0050	< 0.0050	< 0.0050	< 0.0050
S-11-B13	11	<1.0	< 0.0050	< 0.0050	< 0.0050	< 0.0050
S-6-B14 /mal6	6	<1.0	< 0.0050	< 0.0050	< 0.0050	< 0.005
S-11.5-B14	11.5	43	0.12	0.062	0.48	0.58

See notes on page 3 of 3.



Subsurface Investigation and Pumping Test ARCO Station 2185, Oakland, California

October 12, 1993 62026.02

TABLE 3 CUMULATIVE RESULTS OF LABORATORY ANALYSES OF SOIL SAMPLES ARCO Station 2185

ARCO Station 2185 Oakland, California (Page 3 of 3)

Sample ID	Depth	ТРНд	В	T	E	<u> </u>
Composited Stock	oile Sample					
0121-SPA-D	NA	14	0.021	0.022	0.10	0.13
Additional analyse with sulfide and cy	s: nondetectable anide, negative	e STLC metals, ex reaction with wat	ccept 0.15 ppm bier.	arium, pH of 7.4	i, flashpoint of 100° C,	nondetectable reactivity
Boring May 1993						
S-5-B15 /MW 7	5	<1.0	< 0.0050	< 0.0050	< 0.0050	< 0.0050
S-10.5-B15	10.5	<1.0	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Composited Stock	oile Sample					
0504-SP(A-D)	NA	< 1.0	< 0.5	< 0.5	<0.5	<0.5
tesults in parts per milli Depth in feet below grou	and surface.			no 10040 J00+E		
Depth in feet below group PHg = Total petroleum s = benzene, T = tolu c = Below indicated lab tA = Not applicable	and surface. hydrocarbons ene, E = eth	ylbenzene, X =	EPA Method 50 total xylenes (EB	80/8020/8015 A Method 8020)/8015)	
Depth in feet below group THg = Total petroleum is = benzene, T = tolus = Below indicated lab IA = Not applicable Sample Identification:	and surface. hydrocarbons ene, E = eth	ylbenzene, X =	total xylenes (EF	'A Method 8020)/8015)	
Depth in feet below group THg = Total petroleum is = benzene, T = tolus = Below indicated lab IA = Not applicable Sample Identification: S-10-B12	and surface. hydrocarbons ene, B = eth oratory reportin	ylbenzene, X =	EPA Method 50: total xylenes (EF SW-1	'A Method 8020	1/8015)	
Pepth in feet below group PHg = Total petroleum is = benzene, T = tolu is = Below indicated lab. IA = Not applicable Sample Identification: S-10-B12	and surface. hydrocarbons hene, E = eth oratory reportin	ylbenzene, X =	total xylenes (EF SW-1	*A Method 8020	mple number	
Pepth in feet below group PHg = Total petroleum is = benzene, T = tolu is = Below indicated lab. IA = Not applicable Sample Identification: S-10-B12	and surface. hydrocarbons hene, E = eth oratory reportin	ylbenzene, X = ng limits.	total xylenes (EF SW-1	*A Method 8020		ple
Pepth in feet below group PHg = Total petroleum is = benzene, T = tolu is = Below indicated lab. IA = Not applicable Sample Identification: S-10-B12	and surface. In hydrocarbons In hydroc	ylbenzene, X = ng limits.	total xylenes (EF SW-1	A Method 8020	mple number	pie
Depth in feet below group THg = Total petroleum B = benzene, T = tolu B = Below indicated lab A = Not applicable Sample Identification: S-10-B12 Bottom Soi B1-5	and surface. Inhydrocarbons hene, E = eth oratory reporting ring number hiple depth in fell sample	ybenzene, X = ng limits.	SW-1	A Method 8020	mple number rmer tank cavity sam omposite sample	pie
Depth in feet below group PHg = Total petroleum B = benzene, T = tolu B = Below indicated labe IA = Not applicable Sample Identification: S-10-B12 Box Soi B1-5 Sar	and surface. Inhydrocarbons hene, E = eth oratory reporting ring number hiple depth in fell sample	ylbenzene, X = ng limits.	SW-1	A Method 8020	mple number rmer tank cavity sam	pie
Depth in feet below group PHg = Total petroleum B = benzene, T = tolu B = Below indicated labe IA = Not applicable Sample Identification: S-10-B12 Box Soi B1-5 Sar	and surface. Inhydrocarbons hene, E = eth oratory reporting ring number hiple depth in fe	ybenzene, X = ng limits.	SW-1	A Method 8020	mple number rmer tank cavity sam omposite sample	pie
Depth in feet below group PHg = Total petroleum is = benzene, T = tolu is = Below indicated lab. IA = Not applicable Sample Identification: S-10-B12 Box Sample Identification: S-10-B12 Box Sample Identification: S-10-B12 Box Sample Identification: Samp	and surface. Inhydrocarbons hene, E = eth oratory reporting ring number hiple depth in fe	ylbenzene, X = ng limits. eet below ground	SW-1	A Method 8020	mple number rmer tank cavity sam omposite sample	pie

Initial Subsurface Investigation ARCO Station 2185, Oakland, California September 28, 1992 62026.01

TABLE 3 RESULTS OF LABORATORY ANALYSES OF GROUNDWATER SAMPLES-TPHg AND BTEX ARCO Station 2185 Oakland, California (Page 1 of 1)

Well	TPHg	В	т	В	x	
<u>MW-1</u> 7-24-92	<50	<0.5	<0.5	<0.5	<0.5	
<u>MW-2</u> 7-24-92	5,900	510	<10 *	370	430	
<u>MW-3</u> 7-24-92	No	ot sampled — sh	een			
<u>MW-4</u> 7-24-92	<50	<0.5	<0.5	<0.5	<0.5	
MCL DWAL		1.0	 100	680	1,750	

Results in parts per billion (ppb).

Total petroleum hydrocarbons as gasoline by EPA Method 5030/8020 DHS LUFT. TPHg =

B = benzene, T = toluene, E = ethylbenzene, X = total xylenes

Below indicated laboratory detection limits. < =

Laboratory raised Method Reporting Limit (MRL) due to high analyte concentration requiring sample dilution.

State Maximum Contaminant Level (California Department of Health Services, October 1990). MCL =

State Recommended Drinking Water Action Level (California Department of Health Services, October 1990). DWAL =



TABLE 4

GROUNDWATER MONITORING DATA ARCO Station 2185 Oakland, California (Page 1 of 1)

Date Well Measured	Well Elevation	Depth to Water	Water Elevation	Floating Product	
MW-1					
7-24-92	29.15	13.38	15.77	None	
8-26-92		13.92	15.23	None	
MW-2					
7-24-92	28.47	12.95	15.52	None	
8-26-92		13.55	14.92	None	
MW-3					
7-24-92	28.57	12.90	15.67	Sheen	
8-26-92		13.51	15.06	None	
MW-4					
7-24-92	29.21	13.68	15.53	None	
8-26-92		14.12	15.09	None	

Measurements in feet. Elevations in feet above mean sea level. Wells surveyed on July 23, 1992 (Benchmark #24/D, near the corner of 98th Avenue [5' feet west of west curb] and East 14th Street [7' feet east of the south curb] in Oakland).



Table 4 Historical Groundwater Analytical Data

ARCO Service Station 2185 9800 East 14th Street, Oakland, California

Date: 11-08-95

-		Water						
	Well	Sample				Plate3	Time at 1	
	Desig-	Field	TPHG	Banzana	Toluene	Ethyl- benzene	Total Xylenes	
	nation	Date	irno	Benzene	i Giuelle	DCHZCHE		
			μg/L	μg/ L	μg/L	μg/ L	μg/L	
	MW-1	07-24-92	<50	<0.5	<0.5	<0.5	<0.5	
	MW-I	10-19-92	<50	<0.5	<0.5	<0.5	<0.5	
	MW-1	01-14-93	ರ0	<0.5	<0.5	<0.5	<0.5	
	MW-1	04-09-93	<50	<0.5	<0.5	<0.5	<0.5	
	MW-1	08-23-93	<50	<0.5	<0.5	<0.5	<0.5	
	MW-1	10-11-93	<50	<0.5	<0.5	<0.5	<0.5	
	MW-1	03-04-94	<50	<0.5	<0,5	<0.5	<0.5	
	MW-1	05-10-94	<50	<0.5	<0.5	<0.5	<0.5	
	MW-1	08-12-94	<50	<0.5	<0.5	<0.5	<0.5	
	MW-I	11-22-94	<50	<0.5	<0.5	<0.5	<0.5	
	MW-1	03-15-95	<50	<0.5	<0.5	<0.5	<0.5	
	MW-1	05-30-95	Not sampled: no					
	MW-1	09-20-95	Not sampled: no	t scheduled for	r chemical anal	ysis		
	MW-2	07-24-92	5900	510	<10	370	430	
	MW-2	10-19-92	4100	110	<10	100	62	
	MW-2	01-14-93	12000	700	10	720	680	
	MW-2	04-09-93	8400	220	<10	480	320	
	MW-2	08-23-93	3700	89	<5	230	150	
	MW-2	10-11-93	2700	50	<2.5	<140	68	
	MW-2	03-04-94	3100	49	<2.5	180	98	
	MW-2	05-10-94	3100	39	<2.5	220	99	
	MW-2	08-12-94	1800	13	<2.5	120	35	
	MW-2	11-22-94	2300	45	<0.5	190	93	
	MW-2	03-15-95	2100	7.4	<2.5	130	39	
	MW-2	05-30-95	1700	3.3	<2.5	120	31	
	MW-2	09-21-95	1200	j	<1	68	16	
	MW-3	07-24-92	Not sampled: w					
	MW-3	10-19-92	42000	740	1100	1500	5700	
	MW-3	01-14-93	44000	1100	840	2200	9600	
	MW-3	04-09-93	21000	33	69	350	1600	
	MW-3	08-23-93	13000	63	21	530	1300	
	MW-3	10-11-93	11000	56	13	530	1200	
	MW-3	03-04-94	17000	50	<10	790	1600	
	MW-3	05-10-94	14000	32	<10	710	1200	
	MW-3	08-12-94	13000	37	<10	640	970	
	MW-3	11-22-94	15000	150	<10	1300	2000	
	MW-3	03-15-95	2000	<2.5	<2.5	88	82	
	MW-3	05-30-95	2000	3.2	<2.5	70	46	
	MW-3	09-21-95	2100	12	ં હ	77	38	

Table 4
Historical Groundwater Analytical Data

ARCO Service Station 2185 9800 East 14th Street, Oakland, California

Date: 11-08-95

Well Desig- nation	Water Sample Field Date	TPHG µg/L	Bonzene pg/L	Toluene μg/L	Ethyl- benzene µg/L	Total Xylones µg/L	
MW-4	07-24-92	<50	<0.5	<0.5	<0.5	<0.5	
MW-4	10-19-92	<50	<0.5	<0.5	<0.5	<0.5	
MW-4	01-14-93	<50	<0.5	<0.5	<0.5	<0.5	
MW-4	04-09-93	<50	<0.5	<0.5	< 0.5	<0.5	
MW-4	08-23-93	<50	<0.5	<0.5	<0.5	<0.5	
MW-4	10-11-93	<50	<0.5	<0.5	<0.5	<0.5	
MW-4	03-04-94	<50	<0.5	<0,5	<0.5	< 0.5	
MW-4	05-10-94	<50	<0,5	<0.5	<0.5	<0.5	
MW-4	08-12-94	<50	<0,5	<0.5	<0.5	<0.5	
MW-4	11-22-94	<50	<0.5	<0.5	<0.5	<0.5	
MW-4	03-15-95	<50	<0.5	<0.5	<0.5	<0.5	
MW-4	05-30-95	Not sampled: no					
MW-4	09-20-95	Not sampled: no	it scheduled for	r chemical anal	lysis		
MW-5	02-11-93	9300	620	<50	890	2200	
MW-5	04-09-93	960	29	<1	100	96	
MW-5	08-23-93	2700	50	<2.5	260	250	
MW-5	10-11-93	840	9	<1	87	41	
MW-5	03-04-94	540	0.9	0.6	16	6.3	
MW-5	05-10-94	1300	11	<2.5	110	68	
MW-5	08-12-94	1500	10	<2.5	110	30	
MW-5	11-22-94	84	1	< 0.5	5	2	
MW-5	03-15-95	170	5.6	< 0.5	17	11	
MW-5	05-30-95	53	0.6	<0.5	4.8	2.8	
MW-5	09-21-95	1500	47	2	120	86	
	· • •		570	•		460	
MW-6	02-11-93	4800	630	<10	490	460	
MW-6	. 04-09-93	13000	880	<10	1000	1000	
MW-6	08-23-93	6300	390	<20	450	390	
MW-6	10-11-93	2900	150	3.4	190	140	
MW-6	03-04-94	5800	320	<5 -™	510	360 650	
мพ-б	05-10-94	11000	470	<i0< td=""><td>880</td><td>650</td><td></td></i0<>	880	650	
MW-6	08-12-94	4400	170	<10	390	210	
MW-6	11-22-94	7300	390	4 5	940	640	•
MW-6	03-15-95	3600	77	4 5	420	180	
MW-6	05-30-95	5000	68	ර	530	250	
MW-6	09-21-95	3300	36	ర	360	120	•

Table 4 Historical Groundwater Analytical Data

ARCO Service Station 2185 9800 East 14th Street, Oakland, California

Date: 11-08-95

Well Desig- nation	Water Sample Field Date	TPHG µg/L	Benzene μg/L	Toluene μg/L	Ethyl- benzene µg/L	Total Xylenes µg/L	
MW-7 MW-7 MW-7 MW-7 MW-7 MW-7 MW-7 MW-7	05-14-93 08-23-93 10-11-93 03-04-94 05-10-94 08-12-94 11-22-94 03-15-95 05-30-95	350 630* 620* 320* 330* 360* <50 150* 110* <400*	0.83 7.3 3.5 <0.5 0.6 <0.5 <0.5 <0.5 <0.5 <0.5	<0.5 <1 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5	<0.5 <1 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5	<0.5 <1 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5	
MW-8 MW-8 MW-8 MW-8 MW-8	08-12-94 11-22-94 03-15-95 05-30-95 09-21-95	5100 2300 280 390 470	12 16 <0.5 <0.5 <0.5	<5 <0.5 <0.5 <0.5 <0.5	470 140 0.7 <2 3	53 4 0.7 1.6 1.2	
MW-9	09-20-95	<50	<0.5	<0.5	<0.5	<0.5	
MW-10	09-21-95	<50	<0.5	<0.5	<0.5	<0.5	

TPHG; total peuroleum hydrocarbons as gasoline
pg/i: micrograms per liter
*: chromatogram does not match the typical gasoline fingerprint

TABLE 5

Historical Groundwater Elevation and Analytical Data Petroleum Hydrocarbons and Their Constituents 1995 - Present*

ARCO Service Station 2185 9800 East 14th Street, Oakland, California

				980	U Easi	14010									
Well Designation	Water Level Field Date	7-7 Top of Casing F Elevation	P. Depth to Water	F. Groundwater is Elevation	Floating Product तु Thickness	S Groundwater S Flaw Direction	Hydraulic S Gradien	Water Sample Field Date	t TPHG	Benzene EPA 8020	Toluane EPA 8020	Ethylbenzene P EPA 8020	Total Xylenes EPA 8020	NTBE F EPA 8020	MTTBE EPA 8340/8260
			8,50	20.65	ND	мw	9.01	03-15-95	<50 Nor sampled; we	<0.5	<0.5	<0,5 or the first ou	<0,5 wier		-•
MW-I	03-15-95	29.15	8.30 10.28	18.87	ND	sw	0.005	05-30-95	Not sampled: we	n sumbicn m	manty, dam.	e the first OU	prier		
MW-1	05-30-95	29.15	11.70	17.45	ND	WSW	0.005	09-20-95	Not sampled: we Not sampled: we	it similarer m	musily deric	o the first ou	enter		
MW-1	09-20-95	29.15	12.12	17.03	ND	WSW	0,004	11-07-95		m sonppas n CO>	دی. کری	<0,5	<0.5	ತ	
MW-1	11-07-95	29.15	8.54	20.61	ND	NW	0.009	02-28-96	<50 Not sampled: we	دري بعر استاستاندا بدر			erter		
MW-I	02-28-96	29.15	10.05	19.10	ND	W	0.007	05-31-96	Not sampled: we Not sampled: we	स स्वक्रमाध्य थ	manij, dan manily, durit	ie ilie lūsi gu	must.		
MW-I	05-30-96	29.15 29.15	11.35	17,80	ND	sw	0.005	08-20-96	Not sampled: we	it sampled a	nnually, durit	ig the first qu	initel		
MW-1	08-20-96	29.15	11.20	17.95	ND	wsw	0,005	11-19-96 03-25-97	~50	d).5	<0.5	40.5	<0.5	থ	**
MW-I	11-19-96 03-25-97	29,15	10.12	19.03	ND	WNW.	0.006	06-17-97	Mor remained We	il sampled a	enually, duric	ng the first qu	meet		¥.
MW-1	05-23-97 06-17-97	29.15	11,27	17.88	ND	W	0.001	08-07-97	Mar ancocket: Wi	all sampled B	snually, duric	ng the first qu	mici		•
MW-I	08-07-97	29,15	[1.83	17.37	ND	SW	0.005 0.004	11-18-97	Not sampled: we	ell sompled a	nountly, duri	ng the first qu	uaricí	_	
MW-I	11-18-97	29,15	11.80	17.35	ND	SW		02-25-98	×573	40.5	<0.5	<0.5	<0.5	હ	**
MW-1	02-25-98	29.15	7.02	22.13	ND	NW	0.011 0.01	05-11-98	Mot sompled W	ell sempled a	mually, dori	ng the first q	unter		
MW-I	05-11-98	29.15	9.17	19,98	ND	WNW		07-29-98	Nat sampled W	ell asmalad D	unqually, duri	ng the first q	nauct		
MW-I	07-29-98	29,15	10.46	18,69	ND	W	0,009 0,009	10-12-98	Not sampled: w	ell sampled r	noually, duri	ing the first q	under		
MW-I	10-12-98	29.15	11,27	17.88	ND	W	U,U(P	10-17-20	110130204						
MW-I	10-12-94						0.01	03-15-95	2100	7.4	42.5	130	39		
	03-15-95	28.47	8.37	20.10	ND	NW		05-30-95	1700	3.3	42.5	120	31		••
MW-2	05-30-95	28.47	9.95	18.52	ND	sw	0.005	09-21-95	1200	1	<1	68	16	ර 	
MW-Z	09-20-95	28.47	11.37	17.10	ND	W5W	0.004	11-07-95	1100	چ	ت	74	1:1	<20	**
MW-2	11-07-95	28.47	11.73	16.74	ND	wsw	0.009	0Z-29-96	2200	<3	්	130	27	<20	
MW-2	02-28-96	28,47	8.12	20.35	ND	NW	0.007	05-31-98	970	⊲	<1	29	3	ර	
MW-Z MW-2	05-30-96	28,47	9,89	18,58	ND	W	0.007	08-20-96	7.7	<1	<1	16	Ī	ح5	
• •	08-20-96	28.47	11.05	17.42	ND	WE	0.005	11-19-96		<1	<l< td=""><td>-46</td><td>3</td><td>ک</td><td></td></l<>	-46	3	ک	
MW-Z MW-2	11-19-96	28.47	10,96	17.51	ND	WSW	0,005	03-25-97	540	<1	<1	<1	<l< td=""><td><6</td><td></td></l<>	<6	
• .	03-75-97	25,47	9,84	18.63	ND	WNW		•		<1	0.9	· [.]	<2	٦	• •
WA-5		28.47	10.99	17.48	ND	W	0,001	06-17-97		<0.5	-0.5	<0.5	<0.5	<3	~-
MW-2	06-17-97	28,47	11,50	16.97	ND	sw	0.005	08-07-97		<0.5	<0,5	دهه	<0.5	්	-
MW-Z	08-07-97	28.47	11.41	17,06	ND	SW	0,004	11-18-97		<0.5	1.1	13	1.4	এ	•
MW-2	11-18-97	28,47	6,33	27_14	ND	NW	0.011	02-25-98		<0.5	<0.5	⊴ 0.5	<0.5	∢	-
MW-2	02-25-98	28.47	8.89	19.58	ND	WNW	0.01	05-11-98 07-29-98		<0.5	0.5	<0.5	1.1	ර	•
MW-2	05-11-98 07-29-98	28.47	10.22	18.25	ND	₩	0.009	10-12-98		<0.5	<0.5	<0.5	<0,5	ت>	-
MW-2	•	28.47	10.95	17.52	ND	w	0.009	111-14-98	, 200						
MW-2	10-12-98	20141													

Table 1
Historical Groundwater Elevation and Analytical Data
Petroleum Hydrocarbons and Their Constituents
1995 - Present*

				980	U Easi	14010		Janian							
Well Designation	Water Level Ffeld Date	Top of Casing Elevation	E Depth to Water	Graundwater G Elevation	Floating Product B. Thickness	Groundwater Groundwater Grow Direction	Hydraulic S Gradient	Wuer Sunple Field Dute	TPHG	E Benzene F EPA 8020	Toluene	Ethylbenzene E EPA 8020	Total Xylenes	* MTHE \$ EPA 8020	MTBE
					ND	NW	0.01	03-15-95	2000	4. 5	<2.5	88 70	H2 46		
MW-3	03-15-95	28.57	8,47	20.10	ND	sw	0.005	05-30-95	2000	3.2	<2.5 <3	77	38	280	
MW-3	05-30-95	28.57	10.03	18.54	ND	wsw	0.005	09-21-95	2100	12	ঝ	120	62		430[1]
MW-3	09-20-95	28.57	11.30	17.27	ND	wsw	0.004	11-07-95	3000	18		160	57	640	•
MW-3	11-07-95	28.57	11,65	16.92	ND	NW	0.009	02-29-96	5100	83	ک	57	15	390	-
MW-3	02-28-96	28.57	8.35	20:22	ND	w/	0.007	05-31-96	2100	41	ن	62	14	2200	
MW-3	05-30-96	28,57	9.77	18.80	ND	sw	0.005	08-20-96	2500	94	25 25	73	22	; 34X 0	-
MW-3	08-20-96	28,57	11.00	17.57	ND	wsw	0.005	11-19-96	2400	84	<0.5	د. حن	ک.(کە ك.(كە	48	•
MW-3	11-19-96	28.57	10,92	17.65	ND	WNW	0,006	03-25-97	<50	<0.5		2	<2	200	-
MW-3	03-25-97	28.57	9.90	18.67	ND	W	0.001	06-17-97	<200	4 2	<2.	ح ح	ح ح	490	1.
MW-3	06-17-97	28.57	10.95	17,62	ND	sw	0.005	OB-07-97	<500	ර	ব	7	<u>a</u>	300	
MW-3	08-07-97	28.57	11.44	17.13	ND	5W	0.004	11-18-97	200	9	2	7	2	370	
MW-3	11-18-97	28,57	11.35	17,22	ND	NW	0.011	02-25-98	250	<2	a	<0.5	<0.5	ته	,
MW-3	02-25-98	28.57	6.98	21.59	ND	WNW	0.01	05-11-98	<50	<0.5	⊲0.5		د.ن.> ک.ن>	51	
MW-3	05-11-98	28.57	9.07	19,50		W	0,009	07-29-98	<50	<0.5	<0.5	<0.5	<0.5	98	,
MW-3	07-29-98	28,57	10,06	18.51	ND	w	0.009	10-12-98	<50	<0.5	<0.5 ⋅	<0.5	₹U.J	,,,	
MW-3	10-12-98	28.57	10.96	17.61	ND	74	Q1045						<0.5		
C-W 193	10-12-20					s rost	0.01	03-15-95	<50	<0.5	<0.5	<0.5			
5 6417 E	03-15-95	29,21	8.69	20.52	ND	NW SW	0.005	05-30-95	Not sampled: v	vell sampled	ounually, due	ing the first (unster		
MW-4	05-30-95	29.21	10,57	18.64	ND	SW WSW	0,005	09-20-95	htne annolecte t	veli somnicti	annually, dus	ang tao tasa c	france		
MW-I	09-20-95	29,21	12.02	17.19	ND		0.004	11-07-95	Not sampled:	vell sample:	amually, du	ong ilse timi (fourer		
MW-I	11-07-95	29,21	12.42	16.79	ND	WSW	0.009	02-28-96	~50	⊲ 0.5	<0.5	<0,3	(0,3	এ	
MW	02-28-96	29.21	8,66	20.55	ND	NW	0.007	05-31-96	Not sampled:	well samplet	annually, du	ring the first o	quarter		
MW-4	05-30-96	29.21	10.34	18.87	ND	W	0,005	08-20-96	Not compled:	well somoits	annunily, du	ring the tust s	fourser		
MW→	08-20-96	29.21	11.67	17,54	ND	sw	-	11-19-96	Not sampled:	well somple:	i annually, du	ung me mer	dranci	~	
MW-4		29.21	11.50	17.71	ИD	WSW	0,005	03-25-97	~50	<0.5	<0.5	ديه	~	ت	
MW-4	11-19-96	29.21	10.42	18.79	ND	WNW	0,006		Not sompled:	well sample	d annually, du	ring the first	danuer		
WW-4	03-25-97		11,60	17.61	ND	₩	100,0	06-17-97	Not sampled:	suell commis	d annually du	ring the first	quarier		
MW-4	06-17-97	29.21	12.17	17.04	ND	sw	0.005	08-07-97	Not sampled:	melt samely	d annually, du	ring the first	quarter		
MW-4	08-07-97	29.21	12.17	17.16	ND	S₩	0.004	11-18-97	 ✓or sambren: 	300) CD>		<0.5	< ∂ 3.5	ك	
MW-	11-18-97	29.21	6.91	22.30	ND	NW	0.011	02-25-98	Not sampled:	لبلته ماجمعه المرن	d nonunity, di	iring the first	quarter		
MW-	02-25-98	29,21	9.45	19.76	ND	WNW	0.01	05-11-98	Not sampled: Not sampled:	well among	o manually di	ucing the first	ounter		
MW-4	05-11-98	29.21	10.80	18.41	ND	W	0.009	07-29-9B	Not sampled: Not sampled:	wen sample	d annually d	ming the first	quarter		
MW-4	07-29-98	29,21		17.63	ND	W	0.009	10-12-98	Not sampled:	well zamine	տ աստապայի բ	0	•		
MW-4	10-12-98	29.21	11,58	1,707	,120										

Table 1
Historical Groundwater Elevation and Analytical Data
Petroleum Hydrocarbons and Their Constituents
1995 - Present*

				980	0 East	14111 5	ueer,	Januar.	·,				····		
Well Designation	Water Level Field Date	Top of Casing Elevation	R Depth to Water	7. Oronnávater 15. Elevation	Floating Product P Thickness	S Groundwater S Flow Direction	Hydraulic S. Cradlen	Water Sumple Freid Date	TPHG LUFT Melhod	Benzene F EPA 8020	Tolucie T EPA 8020	Ta Elhylbenzene F EPA 8020	Total Xylones EPA 8020	MTDE 原 EPA 8020	MTBE EPA 8240/8260
		II-Mar.						03-15-95	170	5.6	<0.5	17	11		
	6 55	28.12	8.47	19.65	ND	NM	0.01 0.005	05-30-95	53	0.6	<i>د</i> ه	4.8	2.8		
MW-5	03-15-95	28,12	9,69	18.43	ND	sw	-	09-21-95	1500	47	2	120	86	70	
MW-S	05-30-95	28.12	10,90	17.22	ND	WSW	0.005	11-07-95	140	4.5	₹05	8.3	16	10	
MW-S	09-20-95	28.12	11.20	16,92	ND	WSW	0,004	02-29-96	866	11	<1	59	29	99	**
MW-5	11-07-95	28.12	8.15	19,97	ND	NA	0,009 0,007	05-31-96	Not sampled: we	ii sampied se	:mi-annually,	during the fir	st and third o	insticis	
MW-5	02•28-96 05•30-76	28.12	9,48	18,64	ND	W	0,005	05-31-96							
MW-5	08-20-96	28.12	10,58	17.54	ND	wz Wzw	0.005	11-19-96	67 Not sampled: we	ili sumpled s	emi-anomally.	during the At	ە مىسى بىمىچ چى كـ0>	් ය	
MW-5 MW-5	11-19-96	28.12	10.50	17.62	ND	wsw wnw	0.006	03-25-97		-0.5	. 13	<:::_L	~~~		
MW-5 MW-5	03-25-97	28.12	9.58	18.54	ND	W	0.001	06-17-97	Not sampled: we	थी उच्चक्रांटर्ज उ	emi-annually.	, during the su	<0.5	د.د.دس	1
MW-5	06-17-97	28.17	10.52	17.60	ND	SW	0.005	08-07-97	ර0	<0.5	<0.5	<0.5 <0.5	<0.5	3	
MW-5	08-07-97	28.12	11,00	17.12	ND ND	sw	0.004	11-18-97	<50	40,5	<0.5	-CJ.2	9	270	
MW-5	11-18-97	28.12	10.93	17.19	ND ND	NW	0.011	02-25-98	370	2	6	<0.5	<0.5	9	
MW-5	02-25-98	28.12	6.75	21.37	ND	WNW	10.0	05-11-98	<0	<0.5	<0.5	<0.5	<0.5	ل	
MW-5	05-11-98	28.12	9,11	19.01	, ND	w	0.009	07-29-98	<50	<0.5	<0.5 <0.5	<0.5	<0.5	3	
MW-5	07-29-98	28.12	9.89	18,23	ND	w	0.009	10-12-98	<50	<0.5	Ø2	€1/.J	-102		
MW-5	10-12-98	28.12	10.52	17.60	MD	•						420	180		
					ND	NW	10.0	03-15-95	3600	77	ර	530	250		
MW-6	03-15-95	27.79	7.75	20,04	ND	SW	0.005	05-30-95	5000	68	حځ	360	120	<30	
MW-6	05-30-95	27.79	9,48	18.31	טא טא	wsw	0.005	09-21-95	3300	36	ح5	410	110	<30	
MW-6	09-20-95	27.79	10.75	17.04	טא מא	WSW	0.004	11-07-95	3500	33	_ <5	410 480	160	30	
MW-6	11-07-95	27.79	11.06	16.73	םא סא	NW	0,009	02-29-96	520	33	<5	480 			
MW-6	02-28-96	27,79	7.86	19.93	ND ND	w	0.007	05-31-96	Nor sampled: v	vell sampled	semi-mouni	y, conng use i 150	115 25 6100 21	<12	
MW-6	05-30-96	27.79	9.35	18.44	ND	sw	0.005	08-20-96	1900	3.4	. <2.5	13U Lateratura			
MW-6	08-20-96	27.79	10.43	17.36	ND	wsw	0.005	11-19-96	Not sampled: 1	well sampled	. 50mi-mmudi	ià' cossos rie :	5 - S	<10	
MW-6	11-19-96	27.79	10,36	17.43	ДŊ	WNW	0.006	03-25-97	1100	<.					
MW-6	03-25-97	27,79	9,35	18.44		W	0.001	06-17-97	Not sampled:	well sampled	i semi-mundi	iy, chiring like		۲دعه به	
MW-6	06-17-97	27.79	10.37	17,42	ND	sw	0,005	08-07-97	53	<0.5	<0.5	40.7	cus 3.5	ر. دع	
MW-G	08-07-97	27.79	10.85		ND	SW	0,004	11-18-97	<50	⊲0.5	<0.5	<0.5 190	-U.> 42	<u>۔</u> ان	
MW-6	11-18-97	27.79	[0.75		ND	NW	0.011	02-25-98	3500	که	18	190	بر ا>	<6	- •
MW-6		27.79	ი.30	- ·	ND ND	WNW	0.01	05-11-98	730	<1	<1 -0.5	<0.5	⊲3,5	<1	
MW-6		27,79	8.55			W	0,009	07-29-98		<0.5	&0.5 &0.⊳	<0.5 <0.5	<0.5	ح.	
MW-6		27.79	9.71			W	0.009	10-12-98		കാ	<0.>	-\u21	-54		
MW-6		27.79	10.37	17.42	HD			14.4	+ 1, 55						

Table 1
Historical Groundwater Elevation and Analytical Data
Petroleum Hydrocarbons and Their Constituents
1995 - Present*

				300	0 2445-	· · · · · ·							***		
Well Designation	Water Level Field Date	्र Top of Casing F Elevation	g. Depin 10 Water	Groundwater F Elevation	Flouting Product R Thickness	S. Groundwater S. Flow Direction	Hydraulic St. Gradient	Water Sample Field Date	TPHG TLUFT Method	Benzene E EPA 8020	Toluene E EPA 8020	Elhylhenzene	Total Xylenes	E NITBE	H H NITBE
						NW	0.01	03-15-95	150**	<0.5	<0.5	<0.5	<0.5 <0.5		**
MW-7	03-15-95	27.88	8.13	19.75	ND	SW.	0,005	05-30-95	110**	<0.5	√ 0.5	<0.5	<0.5 <0.5	<7	
MW-7	05-30-95	27.88	10.14	17.74	ND	wsw	0.005	09-20-95	<400**	<0.8	⊲0.5	<0.5		<20	••
MW-7	09-20-95	27.88	11.52	16.36	ND	wsw	0.004	11-07-95	<500	2	<1	</td <td>ا> دره</td> <td><6</td> <td></td>	ا> دره	<6	
MW-7	11-07-95	27.88	11.70	16.18	ND	WZW	0.009	02-29-96	<300**	<0.5	<0.5	<0.5	<0.5	ر ع	
MW-7	02-28-96	27,88	8.19	19,69	ND	₩.	0.007	05-31-96	<100***	₫ 5	حرر ته	<0.5	<0.5	ර	
MW-7	05-30-96	27.88	9,98	17,90	סא	sw	0.005	08-20-96	ace.	<0.5	<0.5	<0.5		9	
MW-7	08-20-96	27.88	11.15	16.73	ND ND	wsw	0.005	11-19-96	Not sampled: w	ell sampled a	novally, duri	ng ine iusi qu -0.5	<0.5	۵	
MW-7	11-19-96	27.88	10.92	16,96	ND DN	WNW	0,006	03-25-97		-65.5	⊲ಚಿ>	41,	~0.2	_	
₩7	03-25-97	27.88	9.88	18.00	ND	w	0.001	06-17-97	Not sampled: w	eli sanspled n	novelly, deri	og the tast dr	inter		å
MW-7	06-17-97	27.88	11.13	16.75	ND	sw	0.005	08-07-97	Not sampled: w	ell sampled a	snually, dam	ug me mer de	MICI		
MW-7	08-07-97	27.88	11.65	16.23	ND	2M	0.004	11-18-97	Not sampled: W	ell sampled a	movally, den	րջ առագությալ Հ0.5	0,7	14	
MW-7	11-18-97	27.88	11.46	16.42	ND	NW	0,011	02-25-98	<50	<0.5	0,5			• • • • • • • • • • • • • • • • • • • •	
MW-7	02-25-98	27.88	6.35	21.53	עא סא.	www	0.01	05-11-98	Not sampled: 4	rell sampled a	mountly, duri	ng the little	mici		
MW-7	05-11-98	27.88	9,15	18.73	ND.	w	0.009	07-29-98	Not sampled: W	ell sampled a	unually, duri	ng toe rust y	hitter		
MW-7	07-29-98	27.88	10.56	17.32		w	0.009	10-12-98	Not sampled: V	rell sampled:	mountly, dust	ing the that d	HILLET.		
MW-7	10-12-98	27.88	11.22	16.66	ND	57	0.054						0.7		
[48 as s					-17-	NR	NR	03-15-95	280	<0.5	€0.5	0.7	1.6		
MW-8	03-15-95	NR	8.43	NR	ND ND	NR	NR	05-30-95	390	<0.5	ك.05	<u>خ</u> 3	1.2	52	
MW-8	05-30-95	NIL	9,86	NR	םא מא	wsw	0.005	09-21-95	470	<0.5	<0.5	0.6	<0.5	94	
MW-8	09-20-95	28.08	11.07	17.01	ND	WSW	0.004	11-07-95	280	<0.5	<0,5	<0.0	<0.6	32	
MW-8	11-07-95	28,08	11,40	16.6B	ND	WN	0.009	02-29-96	160	<0.5	<0.5	<0.6	<0.5	16	
MW-8	02-28-96	28.08	8.30	19,78	ND	w	0.007	05-31-96	001	د0>	<0.5	<0.5	<0.5	190	
MW-8	05-30-96	28.08	9,68	18,40	DN DN	sw	0,005	08-20-96	140	<0.5	⊲0.5				
MW-8	08-20-96	28,08	10.72	17.36	םא מא	WSW	0.005	11-19-95	Not sampled:	well sampled	semi-annual	ly, during the	< 0.5	38	
MW-8	11-19-96	28,08	10.58	17,50	. אם	WNW	0.006	03-25-97							
	·	28.08	9.73	18.35			0.001	06-17-97	63 Not sampled:	wall sampled	semi-aanual	ly, during us	1921 5087 1101:	390	
MM-8		28.08	10.67	17.41	ND	₩		08-07-97	53	€0.5	<0.5	<0,2	~0.0		••
MW-8		28.08	11.15	16.93	מא	sw	0.005	11-18-97	<500	ব	ර	ර	25	640	
MW-8		28.08	11.05	17.03	ND	S₩	0.004	02-25-98	<50	<0.5	0.7	<0.5	0.9	56	
8-WM		28.08	7,25	20.83	ND	NW	0.011	02-11-98	⊲ 0	<0.5	<0.5	€05	ځڼ⊳	18	21[2]
MW-8		28.08	9,00	19.08	ПD	WNW		07-29-98	.cn	<0.5	<0.5	<0.5	<0.5	19	21[4]
MW-E		28.08	10.03		ND	₩-	0,009	10-12-98		<1	<1	<1	<1	81	••
MW-I		28.0%	10,70		ND	w	0,009	11.17.20					•		
MW-I	10-15-38	20.04													

Table 1
Historical Groundwater Elevation and Analytical Data
Petroleum Hydrocarbons and Their Constituents
1995 - Present*

Well Designation	Water Level Field Date	구 국 Top of Casing F Elevation	A Depth to Water	V-V Groundwaler T Elevation	Floating Product R Thickness	Groundwater S Flow Direction	Hydraulk St. Gradlen	Water Sample Field Date	TPHG P LUFT Method	T EPA 8020	Taluene	Ethylbenzene E EPA 8020	Total Xylenus	MTBE EPA 8020	E EPA 8340/8260
								09-20-95	ئ و	<0.5	<0.5	<0.5	<0.5	<4	
MW-9	09-20-95	27.73	11.67	16.06	ND	WSW	0.005	11-07-95	<0 40	ط0.5	<0.5	<0.5	<i>ڪ</i> 05	<4	
. MW-9	11-07-95	27.73	11.70	16.03	ND	wsw	0.004	02-29-96	⊘ 3	<0.5	<0.5	<0.5	40.5	ර	
MW-9	02-28-96	27.73	9,23	18,50	ND	NW	0.009	05-31-96	⊘ 0	0.6	<0.5	€05	<0.5	<8	
MW-9	05-30-96	27.73	10.50	17.23	ND	W	0,007 0.005	03-30-90 08-20-96	<0	<0.5	ط0.5	<0.5	<0.5	<7	
MW-9	08-20-96	27.73	11,33	16.40	ND	sw	0.005	11-19-96	Not sampled: w	eil somoled t	noually, duric	ng the first qu	алег		
MW-9	11-19-96	27.73	11.20	16.53	ND	WSW	0,005	03-25-97	~50	d).5	<0.5	<0.5	<0.3	<6	
MW-9	03-25-97	27.73	10.41	17.32	ND	WNW W	0.000	06-17-97	Not sampled: W	eli sampled o	enually, duric	ng the first qu	iorice		
MW-9	06-17-97	27,73	11.30	16.43	ND	SW	0.005	08-07-97	Not sampled: w	टी sampled :	nneally, dosi:	ng the first qu	iarier		
MW-9	08-07-97	27.73	11,70	16.03	ND	SW	0.004	11-18-97	<0	<0.5	<0.5	₹ 05	<0.5	্য	
MW-9	11-18-97	27.73	11.42	16.31	ND	SW NW	0.004	02-25-98	<50	<0.5	<0.5	<0,5	<0.5	<8	
MW-9	02-25-98	27.73	8.72	19.01	ND	•	0.01	05-11-98	ح <u>ت</u>	<0.5	<0.5	<0.5	<0.5	5	
MW-9	05-11-98	27.73	10.05	17.68	ND	wnw W	0.009	07-29-98	<50	<0.5	<0,5	<0.5	<0.5	6	
MW-9	07-29-98	27.73	11.04	16.69	ND		0.009	10-12-98	≪0	<0.5	<0.5	d).5	کـ0>	5	
MW-9	10-12-98	27.73	11.55	16.18	DM	W	Office	50-57-20							
1411-2						weentt	0,005	09-21-95	<50	کرہ	<0.5	<0.5	<0.5	এ	
MW-10	09-20-95	27.55	10.65	16.90	ND	wsw	0,004	11-07-95	<50	<0.5	<0,5	<0.5	<0.5	ರ	
MW-10	11-07-95	27.55	10.85	16,70	ND	WSW	8,009	02-29-95	<50	<0.5	<0.5	<0.5	<0.5	ತ	
MW-10	02-28-96	27.55	9.38	18.17	ND	NM	0.007	05-31-96	<50	<0.5	<0.5	<1).5	<0.5	ા	
MW-10	05-30-96	27.55	9,09	17.56	ND	₩ S₩	0.007	08-20-96	<50	<0.5	<0.5	<0.5	<0.5	্	~~
MW-10	08-20-95	27.55	10.47	17.08	ND	WSW	0.005	11-19-96	Not sampled:	vell sampled	assually, dur	ing the first o	juniter		
MW-10	11-19-96	27.55	10.44	17.11	ND	WWW	0.005	03-25-97	<50	<0.5	د له	<0.5	<0.5	্র	
MW-10	03-25-97	27,55	10.02	17.53	ND	wrw W	0.003	06-17-97	Not sempleth	vell sampled	monually, dur	ing the first o	lander		
MW-10	06-17-97	27.55	10.40	17.15	ND	sw	0.005	08-07-97	Not sampled:	well sampled	annually, dur	ing the first o	andet.		
MM-10	08-07-97	27.55	10.75	16,80	ND	SW SW	0.004	11-18-97	Not sampled:	well sampled	annually, dur	ing the first o	וומובר		
MW-10	11-18-97	27.55	10.67	88.51	ND		0.004	02-25-98	<50	<0.5	1.4	<0.5	1.8	12	
MW-10	02-25-98	27,55	9.02	18.53	ND	NW		05-11-98	Not sampled:		annually, du	ring the first o	quarter		
MW-10	05-11-98	27.55	9.63	17.92	מא	WWW	0.01	03-11-90	Not sampled:	well someled	ennually, du	ring the first (quarter		
MW-10	07-29-98	27.55	10.15	17.40	ND	W	0,009		Not sampled:	well sampled	annunily, du	ring the first (quarter		
	10-12-98	27,55	10.55	17,00	ND	W	0.009	10-12-98	Life randiger	erm amuluen	, ,		-		
MW-10	175-77-30	AR4 \$20'41													

Table 1 Historical Groundwater Elevation and Analytical Data Petroleum Hydrocarbons and Their Constituents 1995 - Present*

ARCO Service Station 2185 9800 East 14th Street, Oakland, California

					,										
			i									4i	23		260
Designation	r Level Date	of Castug ation	th 10 Water	nndwaler valion	oring Product ckness	oundwider ow Direction	ydraulic rodieni	Water Sample Ffeld Date	TPHG LUFT Mehoo	Benzene EPA 8020	Toluene EPA 8020	Ethylbenzen EPA 8020	Totul Xylen EPA 8020	MTBE EPA KO2O	MTBE EPA 8340/8
Well	Water	윤 trMSL	itest Dig	5å ∥-MSL	章 章 (ce)	MWN	£5 Wi	5 II	pg/L	μg/L	μg/L	pg/L	µg/L	μg/L	µg∕ī.
		11,11175													

ft-MSL: elevation in feet, relative to mean sea level

MWN: ground-water flow direction and gradient apply to the entire monitoring well network

ft/fi: foot per foot

TPHG: total petroleum hydrocarbons as gasoline, California DHS LUFT Method

pg/L: micrograms per liter

EPA: United States Environmental Protection Agency

MTBE: Methyl test-buryl ether

ND: none detected

NR: not reported; data not available or not measurable

W: west

--: not unalyzed or not applicable

[1]; confirmed by EPA method 8240

^{*:} For previous historical groundwater elevation and analytical data please refer to Fourth Quarter 1995 Groundwater Monitoring Program Results, ARCO Service Station 2185, Oukland, California, (EMCON, February 27, 1996).

^{**:} chromatogram does not match the typical gasoline fingerprint

TABLE 6

Table 1. Summary of Depth-Discrete Soil Sampling Data Atlantic Richfield Company Service Station No. 2185 9800 International Boulevard, Oakland, California (ACEH Case No. RO0000392)

						Laborat	ory Analy	tical Res	ults (mg/k	g)			·	
						Total								
Boring I.D.	Date	GRO	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	DIPE	ETBE	TBA	TAME	Ethanol	EDB	1,2 DCA
				< 0.0010		< 0.0010		< 0.0020	<0.0020	< 0.010	< 0.0020	< 0.10	< 0.0010	<0.0010
B-1 6'	7/18/2008					< 0.0010					< 0.0020	<0.10	< 0.0010	<0.0010
B-1 7.5'	7/18/2008	< 0.50	< 0.0010			ļ							<0.0010	<u> </u>
B-1 9.5'	7/18/2008	< 0.50	< 0.0010	<0.0010	< 0.0010	<0.0010	<0.0010	<0.0020	<0.0020	< 0.010	<0.0020	<0.10	V.0010	~0.0010

EDB = 1,2-Dibromoethane

1,2 DCA = 1,2 Dichloroethane

TAME = Tertiary amyl methyl ether

TBA = Tertiary butyl alcohol

GRO = Gasoline Range Organics, C4-C12

DIPE = Di-isopropyl ether

ETBE = Ethyl tert-butyl ether

MTBE = Methyl tert-butyl ether



Ргоје	ct: ARCO 2185 9800 East 14th Street, Oakland	Log of Well	No. VW-	1	
Date 5	Started: 5/14/91	Total Depth: 10.0-ft	Casing Elev: 2	The second secon	ATD:ft/ft
- 	Completed: 5/14/91	Perforation: 0.020 Slo	ot PVC		O feet To 4.8 feet
-	d By: Jonathan Florez Checked By: T. R.	Pack: # 3 Sand Pack		- Contractor	0 feet To 4 feet
		Seal: Bentonite			feet To 3 feet
	Commission with the second responsible to the second responsibility to the second responsibility	Cement/Bento	room name of the first of the commence of the	IIII from 3	Bara transfer to properly transfer to the same and appropriate an extension to the contract of the Atlanta.
ļ	g Method:HSA	Casing: 2-inch diam	eter PVC D	rill Bit Diamete	0.0
	g Equipment: Mobile B-61	Sampler: N/A	Monitoring e Well	6	
Depth (feet)	LITHOLOGIC DESCRIPTION	J Lithology	Monitoring www. Well Construction E	Blow Counts OVM (som)	REMARKS
	Mottled ofive-black silty CLAY and gravel fill.	CL			
15	Black silty CLAY, trace coarse sand.				The state of the s
<u>Haraponen deliki kelejetetejejez valan kelejenik kuni delikun delikun delikun delikun delikun delikun delikun de</u>	Medium brown clayey SILT, trace fine sand, no odor.	ML.			
1:	Project: A102W01 R	oux Associates			Page 1 of 1



roject: ARCO 2185 9800 East 14th Street, Oakland	Log of Well	No. V	W-2		AP NO.
ate Started:5/14/91	Total Depth: 10.0-ft	Casing Ele	v: 25 fee		ATD:ft/ft
ate Completed: 5/14/91	Perforation: 0.020 St	ot PVC) feet To 4.2 fe
gged By: Jonathan Florez Checked By: T. R.	Pack: #3 Sand Pack				O feet To 4 feet
illing Co: Gregg Drilling Driller:	Seal: Bentonite	man e e conservant e traffé e e e e e e e e e e e e e e e e e e	CENTRE CENTRE	from 4	د معمد بست متمود درد درد درد درد درد درد درد درد درد د
illing Mathod: HSA	Coment/Bento			from 3	
illing Equipment; Mobile B-61	Casing: 2-inch diam	eter PVC	Drd! Bit	Diameter	10.0
LITHOLOGIC DESCRIPTION		Monitorin Well Construction	Sample G	Counts OVM (ppm)	REMARKS
Coarse sand, little gravel fill.			S S		
Black silty CLAY, trace fine sand.	CL.				
5	CL.			rojčini invojek pro-pro-movem proproproproproproproproproproproproprop	Substitution of the control of the c
Light brown to black silty CLAY, trace fine sand, no odor.				October Statement (COV) The Cov (Cov)	AN COLUMN TO THE WAY OF THE BUILDING STATE OF THE STATE O
10				e significações de compressor	
				piecepos es escanaras propriedos de la compresión de la c	1 - Company of the state of the
			THE STATE OF THE PROPERTY OF THE STATE OF TH		A CONTRACTOR AND A CONT
15	Transition of the state of the	Cappy in the Control of the Control			
Project: A102W01 R	oux Associates	i lenimano de la composito de	<u>t.</u>		Page 1 of 1



Project: ARCO 2 9800 Eas	185 st 14th 8	Street, Oakla	nd	I.	og of S	Soil B	oring	No.	I	35		
Logged By: J. Flo r	ez	Checked By:	P. Supple	Date Starte	d: 9/10	/91			Date	Comp	leted: 9/10/9	1
-		ing Company	The second secon	Drill Bit D	iameter:	6.	.5		Tota	Depti	12: 18.0 ft	
Driller: Mi	ke Bram	an		Backfill M	aterial:	Bento	nite (Chips		fco	m 2.0 ft	to 18.0 I
Orilling Method:	Hollow S	teni Auger	and the second s	Sumpler:	Modil	ied Ca	alifor	กเ้อ				ورادان والمراجع المراجع والمراجع والمراجع والمراجع والمراجع
Drilling Equipment:	Mobil	e B-53	and the second section of the section of t	Depth to V	Valor at 1	ime of	Drill	ng:	Not	Appa	irent	
(6e2.)	eta-likea pA 331°C (25 huma 1 agreemphysike 111 maa fa ba	LITHOLOGI	C DESCRIPTI	ON	Litho	ology	Sample	Blow	OVM (mgq)	Recovery (%)	REM	ARKS
SILT, day SILT, day SILT, day SILT, br Coarse gr Clayer, toottets SILT, br Clayer, St damp to Clayer, S	own with cavel. inc to mecovell gradece in T light and resident work with moist; transmist; transm	medium stiff; da gravel. brame brown with the brown with the brown with orange mottling; we with dark brown with dark brown erine sand.	mp; some brown for the property of the propert	g; and fine	March Marc	SW MH ML		6 9 22 6 10 16 17 17 16 10 15 15 20	9.9	78	Insufficient sampler for	recovery from
20		· ·			ericking de pleyer yet en	de la companya de la						
Project:	102W0		· · · · · · · · · · · · · · · · · · ·	Roux As	Sociat	PS		J			Pa	ge 1 of

Depth of boring:	24 feet Diameter of	boring: 10.25 in	nches Date drilled: 07/08/92
Well depth: 24	feet Material type:	Sch 40 PVC	Casing diameter: 4 inches
Screen interval:	9 to 24 feet	Slot size:	0.020-inch
Drilling Company:	Exploration Geoservices	Driller:	John and Dennis
Method Used:	Hollow—Stem Auger		Field Geologist: Erin McLucas
Signat	ure of Registered Profe	ssional:	
	Registration No.: CEG	1463 State:	<u>CA</u>

Depil	Sampli No.	B SWS	P.I.D.	USCS Code	Description	Well Const.
Entertainment of the control of the		THE PROPERTY OF THE PROPERTY O		GW	Aspholt—covered surface. Aspholt (5 inches). Gravel with sand, angular gravel, brown, dry, dense:	
The state of the s		STORES THEORY OF		ML	baserock (7 inches). Sandy silt, brown, damp; medium plasticity, very stiff; brick fragments: fill.	
	i i di ani	1 5		ML:	Clayey slit with gravet, black, damp, medium plasticity, very stiff.	
- 6 -	S5.5	13	0	Secretary of the second		
- 8 -			kalenteria abun-Nasan sakurajun faran	ZM	Silty sand with gravel, fine—grained sand, brown with black mattling, damp, medium dense; rootholes.	
- 10	5-10.5	T 17	and the second s	55	Sand with gravel, medium—grained sand, brown, moist, dense.	
12	S-13	II 3	0	ZZ	Clayey silt with sand, alive to brown, maist to wet, medium plasticity; stiff; reatholes.	
- 14 -	5-155	H 336	0	Project Programments of the Control		100 mm m m m m m m m m m m m m m m m m m
16	Darry in contract of the Contr	6	7			
- 13 -	PORTE TO THE STATE OF THE STATE					
20 -	S-20.5	H 6	0		Silty sand, medium-grained, alive to brown, wet, mediu	
				SM]	dense. (Section continues downward	

Working to Restore Nature

PROJECT: 62026.01

LOG OF BORING B-9/MW-1

ARCO Station 2185 9800 East 14th Street Oakland, California PLATE

	P.I.D.	ML		* 1370 E T
Popularies de la company de la	Villening	• 1.	Clayey silt with sand, olive to brown, moist to wet,	
	ă.	SM	medium plasticity, stiff; roothales. Silty sand, medium—grained sand, alive to brown, wet,	11
1 1	desamateria		medium dense.	
A A CONTRACTOR OF THE CONTRACT	THE PROPERTY OF THE PROPERTY O	ML	Clayey silt with sand, olive to brown, damp, medium plasticity, stiff.	
			Total depth = 24 feet.	
	SISCISSALL	SAMERICA PRESENTATION OF THE PROPERTY OF THE P		A CONTRACTOR OF THE CONTRACTOR
		CENTRAL PROCESSION AND ASSESSION ASS		in the same and th
		War was directed by a state of the state of		
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				A CONTRACTOR OF THE PARTY OF TH
		the state of the s		
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Ranking to Restore Nature

PROJECT 62026.01

LOG OF BORING B-9/MW-1
ARCO Station 2185

ARCO Station 2185 9800 East 14th Street Oakland, California PLATE

Depth of boring: 24 feet Diameter of boring: 10.25 inches Date drilled: 07/07/92 Well depth: 24 feet Material type: Sch 40 PVC Casing diameter: 4 inches Screen interval: 8 to 24 feet Slot size: 0.020—inch Drilling Company: Exploration Geoservices Driller: John and Dennis Method Used: Hollow—Stem Auger Field Geologist: Erin McLucas of Rob Campbell		ches Date drilled: 07/07/92	
Vell depth: 24 feet Material type: Sch 40 PVC Casing diameter: 4 inches Screen interval: 8 to 24 feet Slot size: 0.020—inch Orilling Company: Exploration Geoservices Driller: John and Dennis Method Used: Hollow—Stem- Auger Field Geologist: Erin McLucas an Rob Campbell			
Screen interval:	ell depth: 24 feet Material type: Sch 40 PVC Casing diameter: 4 inches creen interval: 8 to 24 feet Slot size: 0.020—inch cilling Company: Exploration Geoservices Driller: John and Dennis ethod Used: Hollow—Stem Auger Field Geologist: Erin McLucas an Rob Campbell		
Drilling Company:	Exploration Geoservices	Driller:	John and Dennis
Method Used:	Hollow-Stem Auger	A CONTRACTOR OF THE PROPERTY O	Field Geologist: Erin McLucas and
Signati	are of Registered Profes	ssional:	Rob Campbell
	Registration No.: CEG	1463 State:	CA

Depth	Sample No.	Blows	P.I.D.	USCS Code	Description	Well Const.
0 4 6 8	S-5	7.116 3.7	18.5	CH	Asphalt—covered surface. Asphalt (2 inches). Sandy gravel, angular gravel, brown, damp, medium dense: baserock (4 inches). Sandy silt, damp, black, high plasticity, stiff; fragments of bark and porcelain: probable fill. Silty clay with gravel, black, damp, high plasticity, very stiff. Sand with silt, fine—grained, brown, damp, medium dense root fibers and rootholes. Color change to olive with brown mottling at 8—1/2 feet noticeable hydrocarbon odor.	
12.	S-11.5 S-12 S-13.5	6478370	344	MH	Becoming moist at 11 feet. Clayey silt with sand, olive with brown mottling, very moist, high plasticity, stiff; encountered apparent	
16	S-15.5	557	92	SM	free product at 14 feet. Silty sand, medium—grained, olive with brown mottling,	
Newson of the second of the se	S-18.5 S-19	4 7 10	80		wet, medium dense; rootholes.	
20 -	S-20 S-20.5	4 7 9	9.7	ML	Clayey silt with coarse—grained sand lenses, brown, damy to moist, medium plasticity, stiff to very stiff. (Section continues downward	

Working to Restore Nature

PROJECT: 62026.01

LOG OF BORING B-10/MW-2

ARCO Station 2185 9800 East 14th Street Oakland, California PLATE

epth	Sample No.	BLOWS	P.I.D.	USCS Code	Description	Well Cons
	S-22 S-22.5 S-23	B 4710458	0	ML	Clayey silt with coarse—grained sand lenses, brown, damp to moist, medium plasticity, stiff to very stiff.	
-24 –	<u> </u>	ă.			Total depth = 24 feet.	
-26						
-28 -				PAREMENTAL PALLACES		er de standarde
-30				Salianan, en met et en met		
-32	William district and the state of the state			TO THE		
-34				nace e e e e e e e e e e e e e e e e e e		
-36	And the state of t		A THE TRANSPORT OF THE PROPERTY OF THE PROPERT	ygyy gydyddiaddiaddiaddiaddiaddiaddiaddiaddiad		
38-	Sand Acid Acid Acid Acid Acid Acid Acid Aci			A Principal Commission of the		
. 40 🚣						
-42 –	MATERIAL STATES OF THE STATES	Activities of the second se	<u> </u>	** Physical manufacture and the second secon		
44		Section of the second	educate property and all the second and all the sec	Recognition of the second seco		ecidores es esculos aportidos tada
-46		COCCUPATION COLORS	en e			Petarostocardo-cura-es-philibals
48-	Selected Sel	2.000				A CANAL A CALL Sim management server
-50 -	e de la constanta de la consta			·		

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Working	lo :	Kestor	# Na	inte

PROJECT 62026.01

LOG OF BORING B-10/MW-2

ARCO Station 2185

9800 East 14th Street
Oakland, California

PLATE

Depth of boring:	29 feet Diameter of	boring: 10.25 in	ches Date drilled: 07/07/92				
Well depth: 24	feet Material type:	Sch 40 PVC	Casing diameter: 4 inches				
Screen interval:	9 to 24 feet	Slot size:	0.020-inch				
Screen interval: 9 to 24 feet Slot size: 0.020—inch Drilling Company: Exploration Geoservices Driller: John and Dennis Wethod Used: Hollow—Stem Auger Field Geologist: Erin McLucas ar							
Method Used:	Hollow-Stem. Auger		Field Geologist: Erin McLucas and				
Signati	ure of Registered Profe	ssional:	Rob Campbell				
	Registration No.: CEG	<u>1463</u> State:	CA				

Depth	Sample No.	Blows	P.I.D.	USCS Code	Description	Well Const
- O -		· · · · · · · · · · · · · · · · · · ·		CL	Asphalt—covered surface. Asphalt (5 inches). Silty clay, black, damp, medium plasticity, very stiff; brick fragments: fill.	V V V V V V V V V V V V V V V V V V V
2 -	AND THE PROPERTY OF THE PROPER				:	7 0 7 0 7 0 7 0 0 7 0 0 0 0 0 0 0 0 0 0
4 -	S-5.5	47	0		Increasing gravel.	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
8 -	and extensive and property control of the state of the st	giyaygirin A didesa ya digaya ya ya ya dida ka	mpi ye ye ye ye waxaa da d	sc	Clayey sand, fine—grained, light green, damp, medium dense; rootholes, slight hydrocarbon odor.	
	S-10.5	6 7 9	0.2			
12 -		erprofessor expronential processors	288	<u></u>		
16	S-15 S-15.5	6 8 10 6) [CH	Silty clay, gray with brown mottling, moist to wet, high plasticity, very stiff.	
18	S-16.5	7		SP CH	Sand, medium—grained, brown, wet, medium dense; no— ticeable hydrocarbon odor. Silty clay, gray with brown mottling, moist, high plasticity	
20	S-20 S-21 S-21	20	120	MH	very stiff. Silt with clay and coarse—grained sand, brown, wet, high plasticity, stiff.	\bot \Box \bot
	S-21 S-21.5	6 7	0		(Section continues downward)	

7459/4Working to Restore Nature

PROJECT: 62026.01

LOG OF BORING B-11/MW-3

ARCO Station 2185 9800 East 14th Street Oakland, California PLATE

epth	Sample No.	BLOWS	P.I.D.	USCS Code	Description	Well Const
22 -	S-21 S-21.5	4 6 7	0	МН	Silt with clay and coarse—grained sand, brown, wet, high plasticity, stiff.	
	S-22.5 S-23	4 7 8	0	SM	Silty sand, fine-grained, brown, wet, medium dense.	
24 –	S-24.5 S-25	11 12 15	10 13			
- 26 -	S-25.5 S-26.5 S-27	15 7 11 14	0	AND COLLEGE AND CO		
- 28 -	S-28.5	8 13 16	0	SP	Sand, medium—grained, gray, wet, medium dense.	
-30 -				ntinación papagois en el deciminación de la company por el deciminación de la company porte de la company por el deciminación de la company porte de la company porte de la company por el deciminación de la company porte del la company porte de la com	Total depth = 29 feet.	A CONTRACTOR OF THE CONTRACTOR
-32 -				en e		
-34 ~	advigree program to the table to			AND THE PROPERTY OF THE PROPER		
- 36 -	energy and the control of the contro	AND THE PROPERTY OF THE PROPER	A CONTRACTOR CONTRACTO	giałokikacji obky ppómiania		
-38-	gemacka.ettischichtisc		A CONTRACTOR OF THE CONTRACTOR	Lich de de la constante de la		алаа ар разначения принцентальная
- 40 -	123551355535553555555555555555555555555	THE THE PROPERTY OF THE PARTY O				Anamata versita de la compansión de la c
- 42 -			Application of Parameters from 1705 from			
···44 ·		THE TRANSPORT OF THE PARTY OF T	TERRORE SALVENCE SALV			
- 46 ·		enertos Verente Parates de Carlos de	-			of and a section of the section of the section of
-48		THE PARTY STREET, SALES	Walter to the state of the stat			a parameter de la constante de
- 50 -						eliskonine elektrikonine

IE Working	to Restore Natur	
PROJECT	62026.01	

LOG OF BORING B-11/MW-3

ARCO Station 2185
9800 East 14th Street
Oakland, California

PLATE

Depth of boring: 24 feet Diameter of	boring: 10.25 ir	nches Date drilled: 07/08/92
Well depth: 24 feet Material type:	Sch 40 PVC	Casing diameter: 4 inches
Screen interval: 9 to 24 feet	Slot size:	0.020-inch
Drilling Company: Exploration Geoservices	Driller:	John and Dennis
Method Used: Hollow-Stem Auger		Field Geologist: Erin McLucas
Signature of Registered Profe	ssional:	
Registration No.: CEG	1463 State:	CA

Depth	Sampl No.	0	Blows	P.I.D.	USCS Code	Description	Well Const.
			L. P. C.		CL SW	Asphalt cavered surface. Asphalt (3 inches). Sandy gravel, angular gravel, brown, dry, dense: baserock (6 inches). Sondy silt, brown, damp, medium plasticity, very stiff; brick fragments: fill. Silty clay with gravel, black, damp, medium plasticity, very stiff. Silty sand, fine-grained, brown, moist, medium dense.	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$
10	5-10		5 7.7		SF-SM	Sand with silt and grovel, medium—grained sand, alive mottled brown, moist, medium dense; rootholes.	
176	5-13		4 5 7		ML Z	Clayey silt with sand, olive mottled brown, moist to wet, medium plasticity, stiff; rootholes, strong hydrocarbon odar. Becoming wet	
- 113			4 57	Ù			
- 18 - - 20 -	and the state of t	Į	56		SM.	Silty sond, fine—grained, brown with black mottling, wet, medium dense.	
eschaere transmire				Section 1		(Section continues downward)	123

HASSING TO Restore Nature

PROJECT: 62026.01

LOG OF BORING B-12/MW-4

ARCO Station 2185 9800 East 14th Street Oakland, California PLATE

)epth	Sample No.	BLOWS	P.I.D.	USCS Code	Description	Well Const
		ETI.		SM	Silty sand, fine—grained, brown with black mottling, wet, medium dense	
22 -	S-23.5	4 4 5	0		Silty clay with sand, brown, damp to moist, medium plasticity, stiff.	A STATE OF THE STA
- 26				A CONTRACTOR OF THE CONTRACTOR	Total depth = 24 feet.	re environment in the later of the
-28 –				SONORIO MATERIALIMA ANTONIO		Adabased ID-TSC -
:	deleter er e			THE CONTRACT OF THE CONTRACT O		
-30 -	a remogracije calenda je do je d			LANGUAGE CONTROL OF THE PROPERTY OF THE PROPER		
-32 -	ediloceita epita il principali		A CONTRACTOR CONTRACTO			
~34 ~	L		TO THE PERSONAL PROPERTY OF THE PERSONAL PROPE			-
- 36 —	Addition to the state of the st					
-38 -	To a succession of the success			is a green which has been desired to the second		***************************************
-40	incipation of the control of the con			mpa-y-ng-oddatotmiddatistoo		
-42	massarjande i felkököketele.			AFFECT OND AFFECT MEDICAL PROPERTY.		migrature account account processing the state of the sta
-44	the processor and the processo	Treatment of the contract of t		RECOGNICATION OF THE PROPERTY		A State of the late of the lat
- 46			Equation of the second	or and Africa (State of State		e proposocione de l'accestivações de la compressión de la compressión de la compressión de la compressión de l
48			W		Total and the state of the stat	H POST AND THE STATE OF THE STA
-50 -	The second secon		AND	ALL-MATTER.		warrothe Chicked-Goods 1899-97
-50 -	Andrew Commence of the Commenc	,	Name of the state			OCCUPATION AND AND AND AND AND AND AND AND AND AN

Working to Restore Nature

PROJECT 62026.01

LOG OF BORING B-12/MW-4

ARCO Station 2185

ARCO Station 2185 9800 East 14th Street Oakland, California PLATE



roject:	ARCO 2185 9800 East 14th	Log of Soil Boring No. B6												
gged B	y: J. Florez	Date Starte	Date Started: 9/10/91						Date Completed: 9/10/91					
illing C		Checked By: P. Supple	Drill Bit D	iameter:	6.	5		Tota	1 Depth	16.5	ft	***************************************		
iller:	Mike Bran	nan	Backfill Ma	aterial: I	Bentor	nite	Chips	and the second s	fro	m 2.0 ft	to	16.5 ft		
illing N	Icthod: Hollow	Stem Auger	Sampler:	Modifi	ed Ca	tifor	rnia	-	**************************************					
illing E	quipment: Mobi	He B -53	Depth to N	etor at Ti	ime of	Drill	ing: 14.	0 ft	,,					
(feet)	Annual Manager Barrer St. Co. Co. Co. Co. Co. Co. Co. Co. Co. Co	LITHOLOGIC DESCRIPT	NOI	Lithol	logy	Sample	Blow	OVM (ppm)	Recovery (%)	RE	MARK	S		
5	Asphalt and basero Sill, black; soft; of the second secon	man man man familiare and saw one can saw one one one day	ne fine white	M	11.		6 16 20	9.9	67					
10	SILT, brown with sampler contained	red-brown moutling; soft; moist. Spoorly graded fine sand.	Shoe of				5 8 10	9.9	67					
15	SILT, brown with fine sand. Depth of Borchole	red-brown mottling; soft; moist to	damp; little		Service Control of the Control of th		6 8 15	29.9	67	Outside o with wate		r satura		
20				angejanta sia ngigipi siyupanya ma'pi ilipipi ilipipi gipipi siyupanya ngi			Andreas Andreas and Andreas An	eri sa húselúteri siglet krús kala sa úser éterdente ethéristique propositiones	MANAMENTOS TURBUTOS OF SURVEYANTOS PROTESTANDOS PROTESTAN	аптуалення объемня при				



roject:	ARCO 2185 9800 East 14th	Street, Oakland	I	og of So	l Bori	1	B7						
ogged B	y: J. Florez	Checked By: P. Supple	Date Starte	Date Started: 9/10/91					Date Completed: 9/10/91				
rilling (Co: Gregg Dri	lling Company	Drill Bit D	isineter:	6.5		Tota	l Depti	n: 16.5 ft				
riller:	Mike Bran	nan	Backfill M	aterial: Be	entonite	Chips		fro	om 2.0 ft to	14.0 f			
rilling)	Method: Hollow	Stem Auger	Sampler:	Modified	I Calife	rnia	, _{ng} ng pilan n Pandil Gun dinibih M	Arabinda Piredici (PPP)					
rilling f	Squipment: Mob	ile B-53	Depth to V	Vater at Tim	e of Dri	Hing: 14	.0 ft	and the second second					
(feet)	ggy/fighand/10%/14-ak-offer-Annicoland-akkki s.k. s 19 2° 1	LITHOLOGIC DESCRIP	TION	Litholo	Sample	Blow	(mdd)	Recovery (%)	REMA	RKS			
	Asphalt and basero	ck.							And the second s				
and	SILT, black; damp	aga ngan sana naga nasa nasa, tana ngan nasa, ngan nasa, nasa naga habi nasa nasa Pa	r tagy tagy tagy tagy and any of										
5	SILT, dark brown	; soft; dry; little fine sand; little fi	ne gravel.	And the second s	1	5 12 17	29.9	56					
And the state of t	SILT, grey-green;	soft; moist to damp.				10 12 15		33	Insufficient rec				
10	and State Committed Total Total County State Labor.	الله الله الله الله الله الله الله الله	. مو مورسو يو مو مو مرد 	SW.	- Tanan		155000 10500 10500 10500 10500 10500 10500 10500 10500 10500 10500 10500 10500 10500 10500 10500 10500 10500 1						
	SAND, fine to me gravel.	dium, grey-green; very loose; dar	np; and fine		X	10	A COMPANY OF THE PROPERTY OF T	33	Insufficient rec sampler for OV	overy from			
-	SILT, brown with gravel.	red-orange mottling; stiff; damp;	trace fine	MI	¥	6 8 14	189.9	67	-				
15	very loose; wet to		wn mottling;	SP		4 8 12	9.9	67					
	Depth of Borehold	e = 16.5 feet.					Angeleis (A RECORD SECRETARION PROPERTY CONTRACTOR (A CONTRACTOR) And Angeleis (A Contractor) Angeleis (
20 -				**************************************			· · · · · · · · · · · · · · · · · · ·						



Project: ARCO 2185 **B8** Log of Soil Boring No. 9800 East 14th Street, Oakland Date Completed: 9/10/91 Date Started: 9/10/91 Checked By: P. Supple Logged By: J. Florez 19.5 ft Total Depth: Gregg Drilling Company Drill Bit Diameter: Drilling Co: Backfill Material: Bentonite Chips from 2.0 ft 19.5 ft Driller: Mike Braman Modified California Drilling Method: Hollow Stem Auger Sampler: Not Apparent Depth to Water at Time of Drilling: Dritting Equipment: Mobile B-53 Blow Counts OVAN (mgd) Recover (%) Depth (feet) REMARKS LITHOLOGIC DESCRIPTION Lithology Asphalt and baserock. мīL SILT, black; soft; damp. 7 12 29.9 83 SILT, brown with orange mouling; very stiff; damp; some fine white gravel. 56 10 29.9 SILT, grey-green with orange mottling; medium stiff; damp. 15 10 69.9 72 SILT, grey-green with orange mottling; medium stiff; damp to 12 moist; slight hydrocarbon odor .. 16 9.9 50 SILT, brown with orange and dark brown mottling; soft; moist-15 9.9 50 SILT, brown with orange-brown mottling; stiff; moist; trace fine 10 9.9 100 1.5 ft. of ground water in SILT, grey-brown with orange mottling; stiff; moist; trace fine 10 bottom of borchole prior to 10 gravel-sized charcoal present. backfilling Depth of Borehole = 19.5 feet. 20 Page 1 of 1 Roux Associates Project: A102W03

Depth of boring:	31 1/2 feet Diameter of	of boring: 10 inch	nes Date drilled: 1-20-93
Well Depth:	29 feet Material type	: Sch 40 PVC	_Casing diameter: 4 inches
Screen interval: _	9 to 29 feet	Slot size:	0.010-inch
Drilling Company:	Bayland Drilling	Driller: Joh	n and Dwayne
Method Used:	Hollow-Stern Auger		Field Geologist: Erin McLuces
Sign	ature of Registered Profess		and the second s
	Registration No.: CEG 1	463 State: CA	

	epth Sample 80 No. 100		Š O Descript Descript			Description	Well Const.	
0 -					GP	Asphalt (4 inches). Sandy gravel, brown, damp, dense; baserock.		
2	A CONTRACTOR OF THE PARTY OF TH	effizieres estant and post successive efficiency			CL CL	Silty clay, black, damp, medium plasticity, stiff;		
4		X	3			trace sand.		
8 8	S-6		ž		ML	Clayey silt, olive. damp, medium plasticity, stiff;		
10-	S-9.5 S-11	XXX	35712233		sc 💆	Clayey sand, fine—grained, brown, very moist to wet, medium dense;		
12 -		İ	3 4		ML	Clayey silt, olive with brown mottling, wet, medium plasticity, firm;	in the second	
14-					sc	Clayey sand, fine—grained, brown, wet, medium dense;	7 1	
16-	S-16		3 4 5	A CONTRACTOR OF THE CONTRACTOR	ML	Clayey silt, olive with brown mottling, very moist, medium plasticity, firm;		
		H	5 3 5 7	1864234440797935	SC	Clayey sand, fine—grained, olive, wet, medium dense;		
18-		H	7		CL	Silty clay, brown with reddish mottling, very moist to we medium plasticity, stiff;	≥t,	
. 20-				A TOTAL AND A TOTA	sc	Clayey sand, medium—grained, brown, very moist to wet medium dense;		
* <u> </u>	PROGRESS AND THE PROGRE	To be a construction of the construction of th			CL	Silty clay, olive, very moist, medium plasticity, stiff;		
		L.	-	-		(Section continues downwar	<u> </u>	

LOG OF BORING B-13/MW-5 PLATE

ARCO Station 2185
9800 East 14TH Street
Oakland, California

)epth	Sample No.	BLOWS	P.I.D.	USCS Code	Description	Well Const			
Exp(comptycopanes)				CL CL	Silty clay, olive, very moist, medium plosticity, stiff;				
- 55 -				Mary Control of the C	•	Samuel Control of the			
24					and the same the same to the same the same that the same t				
26	S-26	7 10 12		SC	Clayey sand, fine—grained, brown, moist to wet, medium dense;	1			
- 85	A registry of the first state and an analysis					A A A A A A A A A A A A A A A A A A A			
-30 -	S-31	12 17	A TOTAL CONTRACTOR OF THE PROPERTY OF THE PROP	A COLLEGE OF THE COLL		in S			
-32 -		29	***************************************		Total depth = 31 1/2 feet.				
-34 -	A CANADA	-		-		N. C.			
- 36-	Advisor Service Annual Service Annua		·			and the second s			
- 38 -			A de de margina de la composição de la c	COCCOCA FRANCISCO		islamana otto ettera otto e			
- 40-						Se desirable de deser de desirable de la constante de la const			
-42-	The state of the s		1000	A-P-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-					
-44-			Little dates are paint in the many Viville	A CONTRACTOR OF THE PARTY OF TH		and the second s			
- 46	A CONTRACTOR OF THE CONTRACTOR		And the first the manufacture of the manufa	A CONTRACTOR OF THE CONTRACTOR	The property of the latest and the l				
- 48	A man a man and	Andicology of the second secon	- Lander Marie			o manus estados de la composiçõe de la c			
50	S. C.		Charles of the same of the sam	named a part of the part of th					
		The state of the s		JOHN THE STREET					

M Working	19 Restore Nature
PROJECT	62026.02

LOG OF BORING B-13/MW-5

ARCO Station 2185
9800 East 14TH Street
Oakland, California

PLATE

Depth of boring: 30 1/2 feet Diameter of	boring: 10 inches Date drilled: 1-21-93
Well Depth: 28 1/2 feet Material type:	Sch 40 PVC Casing diameter: 4 inches
Screen interval: 8 1/2 to 28 1/2 feet	Slot size: 0.010-inch
Drilling Company: Bayland Drilling	Driller: John and Dwayne
Method Used: Hollow-Stem Auger	Field Geologist: Erin McLucos
Signature of Registered Profession	
Registration No.: CEG 146	3 State: <u>CA</u>

Depth Sample 80 80 80 80		e N P.I.D. US		D. USCS Description				
				•				
0 -				rgençom menende saldibrish distribili ili		Asphalt (4 inches):		
					GP	Sandy grovel, brown, damp, dense; baserock.		
2 -					CL	Silty clay, black, damp, medium plasticity, very stiff;	▽	
4 -		a position of the second			a)doddonanico	increasing gravel.	₽ ₽	
6 -	S-6	X	7 10 15		A control of the cont		2 S S	
	A CANADA MANAGANA MA		13		ML	Clayey silt, damp, brown, medium plasticity, stiff;		
8 -	A commence of the commence of	Skr	5				300	
- 10-	S-10		5) 80 4	anazaman di di mingingga panaki	SP	Sand, fine—grained, very moist, olive, medium dense; hydrocarbon odor.	-	
- 12	S-11.5		6	T. L.	△ Cr	Silty clay, very moist, olive with brown mottling, medium plasticity, stiff; odor.		
	5-13	Н	3		¬SP	Sand, fine-grained with gravel, wet, olive, loose; odor		
- 14			3	erene en de mandement de la composition della co	sc	Clayey sand, very moist, olive with brown mottling; medium dense;		
- 16	S-16	X	135	A. C.				
, 0			5	a la company de marcon	CL	Silty clay, moist to very moist, alive with brown mottling medium plasticity, stiff; wet root holes		
- 18	1			reaction of the first of the fi	ALL ALLEGOY SERVICES			
- 20	S-21		345		sc	Clayey sand, brown with reddish mottling, very moist to wet, loose; root holes.		
		l		_1	<u></u>	(Section continues downwar	d)	

LOG OF BORING B-14/MW-6 PLATE

ARCO Station 2185
9800 East 14TH Street
Oakland, California

epth	Sample No.	3LOWS	F.I.D.	USCS Code	Description	Well Const.
22	Somple No.	3,45	magandaringia ini pada in 19 amerika	\$ 100 miles (100 miles	Clayey sand, brown with reddish mottling, very moist to wet, loase, root holes	
84 -			Transministration of the contract of the contr			
26 -	S-26	3 4 5	American de particular de la companya de la company	And in in its design of the second of the se		1 1 3
28 -		Πġ	· · · · · · · · · · · · · · · · · · ·	THE REAL PROPERTY OF THE PROPE	ofive	
	S-30 E	3			Total depth = 30 1/2 feet.	
36.				The state of the s		
-34 - -36 -	C. G. A. L.	**************************************	-	Andreas and collections of the collection of the		parameter (Afrika) essential de la companione de la comp
- 38 -	CALLED TO THE PROPERTY OF THE				Landard Designation of the Control o	ALL LAND BY DOOR BY THE PROPERTY OF THE PROPER
- 40 -	***************************************		A hard a second	Adding the Land Control of the Contr		Name of the Party of the Land Control of the Party of the Land Control of the Land Con
-42-	A CONTRACTOR OF THE CONTRACTOR			To the second se		Name of the Control o
- 4 3 -			والمستعمل المستعدد والمستعدد والمستعد والمستعدد والمستعد والمستعدد والمستعد	WINDS AND		
- 46	***************************************					
46	Harting and the control of the contr		MAKENDONEN ON PYTOTICES			
-50			A de la composition de la confesión de la conf	Parket of the state of the stat		

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PROJECT

LOG OF BORING B-14/MW-6 PLATE
ARCO Station 2185
9800 East 14TH Street
Oakland, California

Depth of boring: 30-1/4 feet. Diameter of	boring: 8 inches Date drilled:	05/04/93						
Well depth: <u>26 feet</u> Material type:	Sch 40 PVC Casing diameter	2 inches						
Screen interval:11 to 26 feet	Slot size: 0.010-inc	h						
Drilling Company: Exploration Geoservices	Driller: John and Danny	در در از br>در از در						
Method Used: Hollow-Stam Auger	Field Geologist: <u>Ec</u>	in McLucas						
Signature of Registered Professional:								
Registration No.: CEG 1463 State: CA								

Depth	epil Sample No.					Description	Well Const.
2 2					ML ML	Concrete sidewalk (4 inches). Clayey silt, dark brown, damp, medium plasticity, stiff; fill. Clayey silt with coarse sand and fine gravel, black, damp medium plasticity, stiff; roots.	
- 6	5		8 11 26	And the state of t	SC	Clayey sand, fine grained, trace gravel, brown, damp, dense.	7 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
10	S-10.5		14 9 27	anconada e e e e e e e e e e e e e e e e e e	SM □ CL	Silty sand, tan, moist to very moist, dense. Silty clay, grayish—tan with orange mottling, damp, medium plasticity, very stiff; rootholes, blocky	7 0 7 0
12	S-12		13 14 22 11		GL SP	structure. Sand, medium grained, tan, moist to wet, medium dense	
- 14	andersconny with the state of V.		13 21 10 21			Silty clay, grayish—tan with orange mottling, damp to moist with wet rootholes, medium plasticity, very stiff; rootholes, blocky structure.	
- 16	And a construction of the factor of the fact		22 10 22		AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA	Trace sand.	
- 18	To the state of th		25 8 15 22		C.L.	Sandy clay, grayish—tan with orange mottling, damp with wet rootholes, hard; rootholes and blocky structure.	
- 20					CL	Silty clay, grayish—tan with arange mottling, moist with wet rootholes, medium plasticity, very stiff; roothole blacky structure.	s

4	Workin	Marine A	Restore	Nature	
	.pre.amanaatabbase	and resident training	بعقد يقتلنسمسسون و	SECURITY SECURITY	

LOG OF BORING B-15/MW-7

ARCO Station 2185
9800 East 14th Street
Oakland, California

PLATE

PROJECT:

62026.02

epth ⁽	Sample No.	P.I.D. USCS Description		Description	Well Const.	
20	-	B9 15 15		CL	Silty clay, grayish—tan with orange mottling, moist with wet rootholes, medium plasticity, very stiff; rootholes, blocky structure,	A CONTRACTOR OF THE PARTY OF TH
- 24 -	v construction of the state of	12 25 21		S S	Silty sand, gray with orange mottling, very moist with wet rootholes, dense; rootholes and roots.	
-28		23		G	Sandy gravel, fine with coarse sand, gray, wet, very dense.	
-30 -		23 50/ 3			Total Depth = 30-1/4 feet	
-32 -			- A Company of the Co	Parking Control of the Control of th		· Community of the Comm
-34 -	The state of the s			одинеральный дайна XXXII		
- 36 -	manage of the second se			AND PROPERTY OF THE PROPERTY O		-
- 38-	Action of the Control		na a di Nikata (kaka) da a ana di			THE THE PARTY OF T
40-			DATE SCHOOL STREET SCHOOL STREET			NA ANT PROPERTY OF THE PROPERT
-42-	A COSSOS PARTIES AND A COSSO PARTIES	and assessment of profession of materials for Lordes.	And the second s			- The state of the
-44-	STATE OF THE STATE			Account of the state of the sta		- The state of the
- 46-		- Caraca	- mailton activity (Aprilla System) de la mail	The second secon		
- 48 -		PERSONAL LICENSESSES	**************************************			The second secon
- 50 -	Andrews in the state of the sta	49	1464680490077 V	- Carlotte		a

Working 1	ho Arco	nove A	laduse

PROJĖCT

62026.02

LOG OF BORING B-15/MW-7

ARCO Station 2185
9800 East 14th Street
Oakland, California

PLATE 10

Total depth of boring:	25-1/2 feet	Casing diameter:	4 inches
Diameter of boring:	12 inches	Casing material:	Sch 40 PVC
Date drilled:	46-94	Slot size:	0.020-inch
Drilling Company:	Exploration Geoservices	Sand size:	No. 3 Sand
Driller:	Pave	Screen Interval:	8 feet to 23 feet
Drilling method:	Hollow-Stem Auger	Fight Copygist: LAC	Lin Krueger
	ature of Registered Professional:	Mully Mil	with the same of t
~	Registration No.: RG 431.		y Nach Administrati
	A Company and the Company of the Com		

	Somple	Š		uscs	Description	Well Const.			
P.I.D.	No.	Blows	Depth	Code					
				GP	Asphalt (4—6 inches). Sandy gravel, brown, damp, dense; baserock.	v d b			
			- 2	CL	Silty clay, black, damp, medium plasticity, stiff.				
		and the same of th			Sitty clay, black, damp, mediani plasticity, cam-	7 7 7			
		- 6	- 4 -		Clayey silt, trace sand and fine gravel, black, damp, medium				
0	S-5.5	10	- 6	ML	plasticity, very stiff; rootholes.				
Ö	S-7	6810 15 22 8 10 11 5 8 11 4 5 9 3 5 5			with fine gravel brown roothales with orange exidation.				
~] - '	H 10	- 8 -	- ML	Clayey silt with sand, gray to olive, damp, medium plasticity, very				
٥	S-8.5		10	SM	stiff; rootholes. Fine-grained silty sand, gray to olive, damp, medium dense.				
0		11	- 10	*	Clause with trace eard gray damp to moist, medium plasticity,	10-1			
0	S-11	11 g	- 12	$\mathbf{Y}^{-}ML$	stiff abundant rootholes with orange exication, water in				
		6 3 F 7	2	1-	rootholes and along blocky fractures.				
0	S-14.5		14	1					
		月 分	2						
0			. 1	1 .					
0	S-17.5	846	- 18	- SM	Fine—grained silty sand, brown with black and orange mottling, wet, medium dense.				
			= 20	ML	Clayey silt, brown and gray with black mottling, damp to wet along blocky fractures, medium plasticity, stiff.				
0	S-22		- 22		Brown with orange and black mottling, damp to moist; fewer rootholes.				
0	S-23.5		24	SP	Fine—grained sand, tan with orange mottling, wet, dense.				
THE PERSON NAMED OF THE PE	***	111	- 26	44	Total Depth = 25-1/2 feet.				
			1 20						
	in the second		~ 28	1 .					
			- 30			Mark Control of the C			
	of the second se		32	+					
	****	Management	- 34	1	Table 1				
			~ 36						
		and an analysis of the second	- 38	-					
			- 40	1					



PROJECT:

62026.05

LOG OF BORING B-17/MW-10
ARCO Station 2185
9800 East 14th Street
Oakland, California

PLATE

WELL DETAILS



PROJECT NAME ARCO 2185

LOCATION 9800 E. 14th Street, Oakland GROUND SURFACE ELEV. 27.9

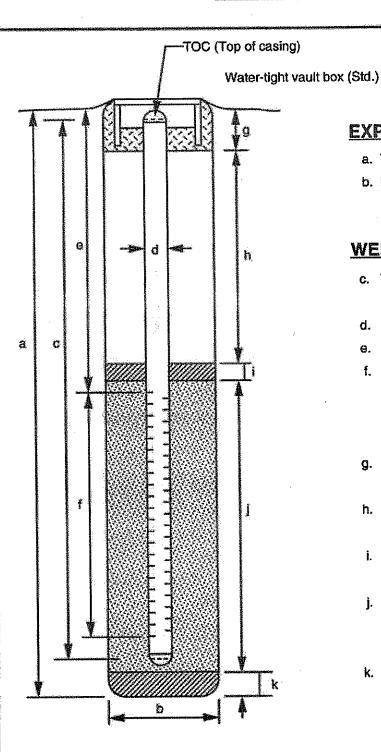
WELL PERMIT NO. 95308 DATUM____

PROJECT NUMBER 0805-130.02 BORING / WELL NO. MW-9

______ TOP OF CASING ELEV. <u>27.73</u>

M.S.L.

INSTALLATION DATE 8/17/95



EXPLORATORY BORING

a. Total depth

23.5 ft.

b. Diameter

8.0 in.

Drilling method Hollow Stem Auger

WELL CONSTRUCTION

c. Total casing length

22.75 ft.

Schedule 40 PVC Material____

d. Diameter

2.0 in. 7.5 ft.

e. Depth to top perforations

14.0 ft.

f. Perforated length

Perforated interval from 7.5 to 21.5 ft.

Machine Slotted Perforation type_

0.020 inch Perforation size___

g. Surface seal

1.0 ft.

Material_

h. Backfill

4.0 ft.

Material___

Cement

2/12 Sand

Concrete

1.5 ft.

i. Seal

Bentonite

Material_ j. Gravel pack

17.0 ft.

Gravel pack interval from 6.5 to _

23.5 ft.

Material___ k. Bottom seal/fill

na

Material_

ft.

Form prepared by R. Davis

LOG OF EXPLORATORY BORING

PROJECT NUMBER: 0805-130.02

BORING NO .: MH-8

PROJECT NAME: ARCO 2185

PAGE: 1 of 2

BY: R. Davis

DATE: 8/17/95

SURFACE ELEVATION: 27.93 14.

RECOVERY TRYIN	0119 (appa)	PENETRA- TION (MMS/11)	GROUND DEFTH MATER IN LEVELS FEET	SEAMPLES LTHACERAPHIC COLUMN	DESCRIPTION	NELL. DETAIL
85%	0	28	10- - ∑ 8/17/85		SANDY CLAY (CL), very dark grayish brown (2.5Y, 3/2); 65-70% medium-plasticity fines; 30-35% fine to coarse sand; trace organic fragments; very stiff; damp; no odor. SILTY CLAY (CL), mottled clive brown and light yellowish brown (2.5Y, 5/4 and 10YR, 6/4); 90-95% low- to medium-plasticity fines; 5-10% fine to coarse sand; very stiff; moist; no odor. CLAYEY SAND (SC), yellowish brown (10YR, 5/4);	
75%	0	36	<u>У</u> вличея		15-30% medium - plasticity fines; 70-85% fine to medium sand; % fines increasing with depth; dense; wet; no odor. CLAY (CL), light olive brown (2.5Y, 5/4); with yellowish brown (10YR, 5/4) mottling; 95% medium-plasticity fines trace to 5% fine sand; blocky structure; very stiff; moist, wet in rootholes and fractures; no product odor.	



REMARKS

Boring drilled with 8-inch-diameter hollow-stem auger equipment. Boring sampled every 5 feet using a 2-inch-diameter modified California split-spoon sampler. Boring completed as a 2-inch-diameter PVC monitoring well. Well construction information is presented in Well Details and shown graphically on this log. See explanation sheet for definition of symbols in Well Detail and Samples columns on this log.

LOG OF EXPLORATORY BORING

PROJECT NUMBER: 0805-130.02

BORING NO .: MW-9

PROJECT NAME: ARCO 2185

PAGE: 2 of 2

BY: R. Davis

DATE: 8/17/95

SURFACE ELEVATION: 27.93 ft.

2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		and the second second second second			A STATE OF THE PROPERTY OF THE	
AECOVERY (11/11)	PIO (ppm)	PEHETRA- TION TIONESTEE	SACUND DEPTH HE LEVELS FEET &	LTHOGRAPHIE	DESCRIPTION	MELL DETAIL
95%	·	T		777	CLAY (CL), continued.	T. T.
	0	45			@20.0-21.5*: as above.	
95%		47	35-		BORING SAMPLED TO 25.0 FEET, REAMED TO 23.5 FEET.	
THE			The state of the s			
			30-	C primitive is the consequence was assured to make the consequence of		annin alla philippi del philippi del prima del constante d
						many principle of the first state of the first stat
		AND THE REAL PROPERTY OF THE P	35-	THE PARTY OF THE P		
		THE PROOF THE STATE OF THE STAT				Note amount of the limit of the
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REMARKS

Boring drilled with 8-inch-diameter hollow-stem auger equipment. Boring sampled every 5 feet using a 2-inch-diameter modified California split-spoon sampler. Boring completed as a 2-inch-diameter PVC monitoring well. Well construction information is presented in Well Details and shown graphically on this log. See explanation sheet for definition of symbols in Well Detail and Samples columns on this log.

WELL DETAILS



ASSOCIATES

PROJECT NAME ARCO 2185

LOCATION 9800 E. 14th Street, Oakland GROUND SURFACE ELEV. 27.9

WELL PERMIT NO.

PROJECT NUMBER 0805-130.02 BORING / WELL NO. MW-10

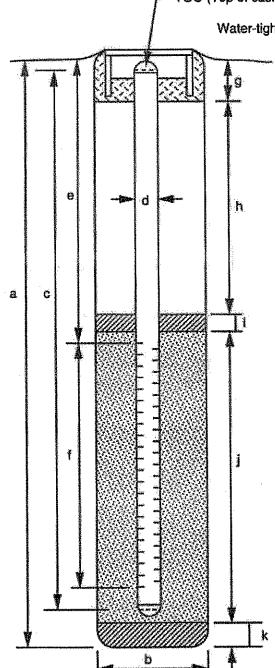
_____ TOP OF CASING ELEV. 27.55

95308 DATUM M.S.L.

INSTALLATION DATE 8/16/95

TOC (Top of casing)

Water-tight vault box (Std.)



EXPLORATORY BORING

a. Total depth

25.0 ft.

b. Diameter

8.0 in.

Drilling method Hollow Stem Auger

WELL CONSTRUCTION

c. Total casing length

e. Depth to top perforations

_23.1__ ft.

Material _____

Schedule 40 PVC 2.0 in.

d. Diameter

<u>8.5</u> ft.

f. Perforated length

14.0 ft.

Perforated interval from 8.5 to 22.5 ft.

Machine Slotted Perforation type_

0.020 inch Perforation size___

g. Surface seal

1.0 ft.

Material ___

Concrete

h. Backfill

4.0 ft.

Material

Cement

i. Seal

1.5 ft.

Bentonite

Material__

18.5 ft.

j. Gravel pack

Material_____

Gravel pack interval from 6.5 to 25.0 ft. 2/12 Sand

k. Bottom seal/fill

na

Material _____

Form prepared by R. Davis

LOG OF EXPLORATORY BORING

PROJECT NUMBER: 0805-130.02

BORING NO .: MW-10

PROJECT NAME: ARCO 2185

PAGE: 1 of 2

8Y: R. Davis

DATE: 8/18/95

SURFACE ELEVATION: 27.93 /t.

RECOVERY	PIO (ppm)	PENE IRA- TION TION	MATER SEEL MATER SECOND	DESCRIPTION	MELL
	imathety-strategy-graph			CONCRETE, sidewalk. SILTY GRAVEL, baserock.	
90%	0	26	5-	CLAY TO SANDY CLAY (CL), black (10YR, 2/1); 75-90% medium- plasticity fines; 10-25% fine to coarse sand; hard; damp; no product odor. @5.5-6.5': 10% fine gravel.	
80%	0	48	- ↓ aneves	@8.5': driller noted tougher drilling conditions. @10.0-10.2': light olive brown (2.5Y, 5/4); 90% medium-plasticity fines; 10% fine sand; moist. CLAYEY SAND (SC), light olive brown (2.5Y, 5/4); 15-25% medium- plasticity fines; 75-85% fine to coarse sand, f:m:c=4:2:1; trace fine gravel; unit coarsens with depth; dense; moist to wet; no odor. CLAY (CL), light olive brown (2.5Y, 5/4);	
80%	0	41	15-	medium-plasticity fines; trace fine sand; very stiff; moist; no product odor. fines; 10% fine sand; moist. CLAYEY SAND (SC), light office brown (2.5Y, 5/4); 35-45% medium- plasticity fines; 55-65% fine to medium sand; medium dense; wet; no odor. CLAY (CL), mottled office brown and yellowish brown (2,5Y, 5/4 and 10YR, 5/3); 95-100% medium-plasticity fines; very stiff; moist, wet in voids; no product odor.	
·			20		



REMARKS

Boring drilled with 8-inch-diameter hollow-stem auger equipment through the existing sidewalk. Boring sampled every 5 feet using a 2-inch-diameter modified California split-spoon sampler. Boring completed as a 2-inch-diameter PVC monitoring well. Well construction information is presented in Well Details and shown graphically on this log. See explanation sheet for definition of symbols in Well Detail and Sample columns on this log.

LOG OF EXPLORATORY BORING

PROJECT NUMBER: 0805-130,02

BORING NO .: MW-10

PROJECT NAME: ARCO 2185

PAGE: 2 of 2

BY: R. Davis

DATE: 8/18/95

SURFACE ELEVATION: 27.93 ft.

RECOVERY (RE/H)	PID (ppin)	PENETRA- TION (DIMS/II)	SROUND DEJ WAIER I LEVELS FE	MZ = SANPLES	OESCRIPTION	DETAIL
65%	0	25	- 2	5-	SANDY CLAY (CL), mottled alive brown and yellowish brown (2.5Y, 5/4 and 10YR, 5/3); 85% medium-plasticity fines; 15% tine to medium sand; very stiff; wet; no product odor. @23.5-25.0': as above. BORING TERMINATED AT TO 25.0 FEET.	
			- 3	5		



REMARKS

Boring drilled with 8-inch-diameter hollow-stem auger equipment through the existing sidewalk. Boring sampled every 5 feet using a 2-inch-diameter modified California split-spoon sampler. Boring completed as a 2-inch-diameter PVC monitoring well. Well construction information is presented in Well Details and shown graphically on this log. See explanation sheet for definition of symbols in Well Detail and Sample columns on this log.

SOIL BORING LOG

Boring No. B-1

Sheet: 1 of 1

Client	ARCO 2185 Date		July 18, 2008		
Address	9800 International Blvd.	Drilling Co.	RSI	rig type: Geoprobe 6600	
	Oakland, Ca.	Driller	Arturo		
Project No.	E2185	Method	Direct Push	borehole diameter: 3"	
Logged By:	Levi Ford	Sampler:	Acetate Liner		
Well Pack	grout: 10 ft. to 0 ft.		West transfer to the second se		

					r	·	·		
	Sample	Blow	Sar	nple	Well	Depth	Lithologic		PID
Туре	No.	Count	Time	Recov.	Details	Scale	Column	Descriptions of Materials and Conditions	(PPM)
		V			Al ve				***************************************
ww		1			THE STATE OF THE S	1			
	***********	ļ			A	2			
		-				3		Airknife to 5' bgs.	
		1							~~~
		ļ				4		**************************************	
		<u> </u>	L		Section 30	5			
_	D 4 01]	4005		A Signary			Clay, CL, black (5Y 2.5/1), low plasticity, moist, 100% clay (5'-7.5')	N/A
S	B-16'		1025		C	6			
						7			
S	B-1 7.5'		1028		Mark Stage		CL .	Silty Clay, CL, dark olive brown (2.5Y 3/3), low plasticity, moist, 90% clay	N/A
		 		 	132	8		10% silt. (7.5'-9')	14/7
	0 4 0 5	ļ	4604	ļ	Carlos M	9		Sandy Clay with trace silt, CL, light olive brown (2.5Y 5/4), low plasticity,	
S	B-1 9.5'		1031		ans and	10		wet, 65% clay, 30% sand, 5% silt. (9'-10')	N/A
				ļ					
					-	12			
		 	 		1	-13			
		ļ			}	14			
					-	15			ļ
					1	'`		***************************************	
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		.]	<u> </u>			17			
]				
	 				1	18			
						19		***************************************	
						_ ₂₀			
	<u></u>	J	.			'I T 🐃			
				Recove	ery	_		Comments: total depth = 10' Borehole located 9.25' from center of fuel dispenser.	
								200 Election location of the original and appendix.	
				Sample	è				
								STRATUS	
								ENVIRONMENTAL, INC.	