



Atlantic Richfield Company  
(a BP affiliated company)

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15 May 2007

Re: Initial Site Conceptual Model Report  
Former BP Station # 11124  
3315 High Street  
Oakland, California  
ACEH Case # RO0000239

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

Submitted by:

Paul Supple  
Environmental Business Manger

**RECEIVED**

8:23 am, May 16, 2007

Alameda County  
Environmental Health



**INITIAL SITE CONCEPTUAL MODEL REPORT**

Former BP Station #11124  
3315 High Street  
Oakland, California

**Prepared for:**

Mr. Paul Supple  
Environmental Business Manager  
Atlantic Richfield Company  
P.O. Box 1257  
San Ramon, California 94583

**Prepared by:**

BROADBENT & ASSOCIATES, INC.  
1324 Mangrove Ave., Suite 212  
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15 May 2007

Project No. 06-08-652

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15 May 2007

Project No. 06-08-652

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

Attn.: Mr. Paul Supple

**Re: Initial Site Conceptual Model Report, Former BP Station #11124  
3315 High Street, Oakland, California; ACEH Case #RO0000239**

Dear Mr. Supple:

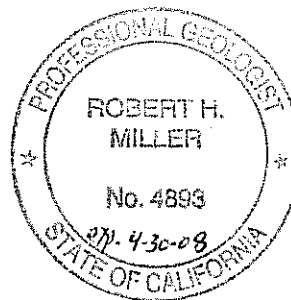
Broadbent & Associates, Inc. (BAI) is pleased to submit this *Initial Site Conceptual Model Report* for Former BP Station #11124 (herein referred to as Station #11124) located at 3315 High Street, Oakland California (Site). This report was prepared in accordance with correspondence with Mr. Steven Plunkett of Alameda County Environmental Health (ACEH) dated 4 April 2007.

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

Sincerely,  
BROADBENT & ASSOCIATES, INC.

Thomas A. Venus  
Senior Engineer, P.E.

Robert H. Miller, P.G., C.HG.  
Principal Hydrogeologist



Enclosures

cc: Mr. Steven Plunkett, Alameda County Environmental Health (Submitted via ACEH ftp site)  
Ms. Shelby Lathrop, ConocoPhillips (Submitted via WebXtender)  
Electronic copy uploaded to GeoTracker

**INITIAL SITE CONCEPTUAL MODEL REPORT**  
**Former BP Service Station No. 11124**  
**3315 High Street, Oakland, California**  
**Fuel Leak Case No. RO0000239**

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## 1.0 INTRODUCTION

On behalf of the Atlantic Richfield Company, RM - a BP affiliated company, Broadbent & Associates, Inc. (BAI) has prepared this Initial Site Conceptual Model Report (SCM) for the Former BP Service Station No. 11124, located at 3315 High Street, Oakland, California (Site). A Site Location Map is provided as Drawing 1. This SCM was prepared in response to the 4 April 2007 request from Mr. Steven Plunkett of the Alameda County Environmental Health (ACEH). This SCM includes discussions on the site background and previous investigations, regional and Site geology and hydrogeology, preferential pathways, sensitive receptors, risk assessment and cleanup objectives. Tables, figures, and appendices referenced within the SCM are provided following the conclusion of the document's text.

Item	Evaluation Criteria	Comments/Discussion
<b>2.0</b>	<b>SITE BACKGROUND</b>	
2.1	Site Background	The Site was operated as a Mobil-brand service station prior to 1989, when it was transferred to BP. BP operated the Site as a service station until it was transferred to TOSCO in 1994, then ConocoPhillips, which operated the Site as a 76-branded service station until 2004.
2.2	Previous Environmental Activities	<p>According to the <i>Due Diligence Site Assessment Report</i> (Secor, 12/2004), four steel USTs were removed from the Site and replaced in 1986: one 10,000 gallon, one 8,000 gallon, and one 6,000 gallon used for storing gasoline, and one 280 gallon waste-oil tank. Sheen was noted on the ground water present within the UST excavation. Petroleum hydrocarbons were not detected in the soil samples collected from the excavation area.</p> <p>In July 1990, the dispenser islands and product piping were replaced. Total petroleum hydrocarbons as gasoline (TPHg), benzene, toluene, ethylbenzene, and total xylenes were detected above laboratory reporting limits in the soil samples collected beneath the removed dispenser islands.</p> <p>On 2 December 2004, Secor observed the removal of facility structures by Fuller Excavating of Sacramento, California. According to the <i>UST Removal and Facility Soil Sampling Report</i> (Secor, 8/3/2005), the facility included one 12,000 gallon and two 10,000 gallon gasoline USTs, one 1,000 gallon waste-oil UST, three hydraulic lifts, one clarifier, four fuel dispensers, and product lines. The USTs and product lines appeared to be in good condition, with no holes or cracks noted during removal. Several soil and ground-water samples collected during the excavation were found to contain petroleum hydrocarbons and oxygenates.</p>
<b>3.0</b>	<b>HYDROCARBON SOURCE</b>	
3.1	Identify/Describe Release Source and Volume	The exact release source and volume released is unknown.

Item	Evaluation Criteria	Comments/Discussion
3.2	Discuss Steps Taken to Stop Release	Removal and replacement of underground petroleum storage and dispensing infrastructure.
<b>4.0 SITE CHARACTERIZATION</b>		
4.1	Current Site Use/Status	The site is currently a non-operational service station formerly owned by BP. The current property owner is in the process of obtaining the necessary permitting to operate an independent service station on the Site.
4.2	Soil Definition Status	<p>Impacted soil has been encountered during facility removal activities, soil borings, and monitor well installation. During soil boring activities in 1991 by Resna, oil and grease detections were observed above laboratory reporting limits at a maximum of 120 mg/kg at a depth of ten ft bgs in the west corner of the Site (B-1, B-2A, B-2B and B-3).</p> <p>A soil sample located beneath the oil/water separator (OWS-1) was collected in 1996 by Pacific Environmental Group following the separator's removal. TPHg concentrations were detected at a maximum of 970 mg/kg at approximately 0.5 ft below the bottom of the excavation.</p> <p>Secor advanced four soil borings on 21 April 2004 (SB-1 thru SB-4). SB-1, SB-2 and SB-3 were located around the north and southwest perimeter of the dispenser islands and USTs. SB-4 was located directly southwest of the onsite building. TPHg concentrations were detected at a maximum concentration of 99 mg/kg in boring SB-3 at approximately five ft bgs. Benzene was detected above laboratory reporting limits in boring SB-4 approximately 10 ft bgs, at a concentration of 0.011 mg/kg. MTBE was observed at a maximum concentration of 0.034 mg/kg in SB-4 at approximately 10 feet bgs.</p> <p>On 2 December 2004, Secor observed the excavation and removal of the facility structures (dispenser islands, USTs, product lines, clarifiers and hydraulic lifts). Soil samples were collected from numerous locations within the excavation area (See Drawing 2). TPHg was detected at a concentration of 160 mg/kg in boring PL-4 at approximately four ft bgs. Benzene concentrations reached a maximum of 0.033 mg/kg in boring PL-3 at approximately four ft bgs. MTBE was detected above laboratory reporting limits in boring SW-4 at a concentration of 0.0096 mg/kg, approximately 5.5 ft bgs.</p> <p>URS Corporation completed a soil and water investigation on 20 and 21 February 2006. This investigation consisted of five soil borings, SB-1 through SB-5 (See Drawing 2). Gasoline Range Organics (GRO) were detected above</p>

Item	Evaluation Criteria	Comments/Discussion
		<p>laboratory reporting limits at a maximum concentration of 62 mg/kg in SB-2 at approximately 15 ft bgs. Benzene was detected above laboratory reporting limits at a maximum concentration of 0.11 mg/kg in SB-3 at approximately 15 ft bgs. MTBE was detected at a maximum concentration of 0.09 mg/kg in SB-1 at approximately 23.5 ft bgs.</p> <p>On 12 December 2006, Stratus Environmental, Inc. assisted with the installation of monitor wells MW-5 and MW-6. Soil samples were collected during the boring of these two wells. GRO were detected above laboratory reporting limits at approximately 11 ft bgs in boring MW-6 at 56 mg/kg. Diesel Range Organics (DRO) were detected in each sample collected and reached a maximum concentration of 9.5 mg/kg in boring MW-6 at approximately 11 ft bgs. Benzene was detected in boring MW-6 approximately 11 ft bgs at a concentration of 0.41 mg/kg. MTBE concentrations above laboratory reporting limits were detected at a maximum concentration of 0.22 mg/kg in boring MW-5 at approximately 11 ft bgs.</p> <p>Historic soil data is provided in Appendix A. Soil boring logs are provided in Appendix B.</p>
4.3	Separate Phase Hydrocarbons Status	No separate-phase hydrocarbons have been reported at the Site in collected ground-water samples since sheen was observed in the open UST excavation in 1986.
4.4	Ground-Water Definition Status (GRO)	TPHg/GRO has been detected above laboratory reporting limits in wells MW-1, MW-2, MW-5 and MW-6. The highest concentrations were reported in wells MW-5 (880 µg/L) and MW-6 (86 µg/L), which are located south of the former dispenser islands and USTs. Results of ground-water sampling and laboratory analysis are summarized in Table 1. GRO concentrations are included in the map of ground-water concentrations provided as Drawing 3.
4.5	GRO Plume Stability and Concentration Trends	TPHg/GRO concentrations in the ground water have been detected above laboratory reporting limits in wells MW-2 and MW-1 prior to the installation of wells MW-5 and MW-6 in 2006. The highest concentrations onsite were reported within wells MW-5 and MW-6 to the south of the former dispenser islands and USTs at concentrations of 0.880 µg/L and 0.086 µg/L, respectively. TPHg/GRO concentrations have not been observed in well MW-2 since First Quarter 1993. The concentrations observed in well MW-1 have not exceeded 0.055 µg/L. Drawing 4 depicts the TPHg/GRO iso-concentration contours map of the site for First Quarter 2007.

Item	Evaluation Criteria	Comments/Discussion
4.6	Ground-Water Definition Status (BTEX)	Minor BTEX concentrations in the ground-water have been observed in wells MW-1, MW-2, and MW-4 in the past. However, BTEX has not been detected above laboratory reporting limits in the wells onsite (MW-1 through MW-6) since 1992.
4.7	BTEX Plume Stability and Concentration Trends	BTEX concentrations above laboratory reporting limits have not been observed onsite within the last 15 years.
4.8	Ground-Water Definition Status (MTBE)	MTBE was not analyzed for during ground-water sampling prior to 2004. MTBE concentrations above laboratory reporting limits have been observed in wells MW-1, MW-4, MW-5 and MW-6. MTBE was reported in well MW-4 at a concentration of 0.016 µg/L during the Third Quarter 2006 sampling event. Wells MW-5 and MW-6 were installed on 12 December 2006 by Stratus and sampled for the first time during First Quarter 2007. MTBE concentrations observed in wells MW-5 and MW-6 during this event were 1.4 µg/L and 0.088 µg/L, respectively. Results of ground-water sampling and laboratory analysis for MTBE are summarized in Table 2.
4.9	MTBE Plume Stability and Concentration Trends	MTBE concentrations in ground-water are confined to the area directly south and east of the former facility structures based on observations of the laboratory analyses performed on samples from wells MW-1, MW-5 and MW-6. The highest concentrations have been detected in wells MW-5 and MW-6, which lie southeast and south, respectively, of the former dispenser islands and USTs. Observed concentrations in well MW-1 have steadily decreased since 2006. Drawing 5 depicts the MTBE iso-concentration contours map for First Quarter 2007.
4.10	Ground-Water Flow Direction, Depth and Gradient Trends	Ground water is typically seven to ten ft bgs. Historically, the ground-water gradient has ranged from 0.006 ft/ft to 0.022 ft/ft. Based on ground-water elevation data, the ground-water flow direction has varied between north and southwest to southeast. Historic ground-water flow directions and gradients are provided in Table 3.
4.11	Regional Geology	According to the <i>East Bay Plain Groundwater Basin Beneficial Use Evaluation Report</i> (California Regional Water Quality Control Board – San Francisco Bay Region/SFRWQCB, June 1999), the Site is located within the San Leandro Sub-Area, near the northern boundary of the San Lorenzo Sub-Area, in the East Bay Plain of the San Francisco Basin. These Sub-Areas share the same hydrogeologic characteristics, yet are separated by the junction of the surface trace between the San Leandro and



Item	Evaluation Criteria	Comments/Discussion
		San Lorenzo alluvial fans. These Sub-Areas consist primarily of alluvial fan sediments with the distinction of the Yerba Buena Mud extending west into the San Leandro and San Lorenzo Sub-Areas, unlike the northern Sub-Areas. The Yerba Buena Mud forms a major aquitard between the shallow and deep aquifers throughout much of southwestern area of the East Bay Plain. The San Leandro and San Lorenzo Sub-Areas alluvial fans are finer grained and produce less groundwater than the Niles Cone basin to the south.
4.12	Topography	The site is about 140 feet above mean sea level and the local topography slopes to the south/southwest.
4.13	Stratigraphy	Sediments encountered at the Site consist primarily of clays and silts with traces of sand and gravel, extending from the ground surface to the total depth investigated, approximately 35 ft bgs. Boring logs are provided in Appendix B. A geologic cross-section between MW-1 in the northeast to MW-2 in the southwest is provided as Drawing 6.
4.14	Preferential Pathway Analysis	BAI has no record of a formal utility survey of the Site and surrounding area. Therefore, it is unknown whether utility trenches within and near the Site and current plume area could be serving as preferential pathways for contaminant migration above or below the ground-water table.
4.15	Other Pertinent Issues	Unknown at this time.
<b>5.0</b>	<b>REMEDICATION STATUS</b>	
5.1	Remedial Actions Taken	As mentioned previously, each of the USTs have been removed from the Site, along with the other facilities associated with an active service station (dispenser islands, product lines, etc.). Numerous soil borings and monitor wells have also been installed to delineate and monitor the extent of contamination and migration.
5.2	Areas Remediated	Remedial action has taken place in the immediate vicinity of the USTs and dispenser islands. Monitor wells and investigative borings have been installed onsite to the east, west and south.
5.3	Remediation Effectiveness	The removal of the facility structures has substantially removed onsite contaminant sources. However, no remedial action has occurred to address the already present contamination within the Site's soil and ground water.
<b>6.0</b>	<b>WELL AND SENSITIVE RECEPTOR SURVEY</b>	
6.1	Designated Beneficial Water Use	According to the <i>East Bay Plain Groundwater Basin Beneficial Use Evaluation Report</i> , the majority of East Bay Plain Cities (except the City of Hayward) do not have "any

Item	Evaluation Criteria	Comments/Discussion
		plans to develop local ground-water resources for drinking water purposes, because of existing or potential saltwater intrusion, contamination, or poor or limited quantity.” The SFRWQCB’s basin plan denotes existing beneficial uses of municipal and domestic supply (MUN), industrial process supply (PROC), industrial service supply (IND), and agricultural supply (AGR) for the East Bay Plain ground-water basin.
6.2	Shallow Ground Water Use	See above.
6.3	Deep Ground Water Use	See above.
6.4	Well Survey Results	A request for release of confidential well construction logs was requested from ACEH on 4/23/2007 for forwarding to California Department of Water Resources and Alameda County Public Works. BAI has not yet received the requested well survey results at this time. Well survey results will be forwarded to ACEH under separate cover.
6.5	Likelihood of Impact to Wells	Unknown at this time.
6.6	Likelihood of Impact to Surface Water	No ephemeral or perennial streams are known to be located in the vicinity of the Site. The Tidal Canal between the San Leandro Bay and the Oakland Inner Harbor is located approximately one-quarter mile southwest of the Site. The likelihood of contamination at the Site to impact this surface water body is remote.
<b>7.0</b>	<b>RISK ASSESSMENT</b>	
7.1	Site Conceptual Exposure Model	The Site is currently a non-operational service station formerly owned by BP. The current property owner is in the process of obtaining the necessary permitting to operate an independent service station on the Site. Public access to the Site is prevented by chained-link fencing; however, environmental professionals performing sampling or other relevant activities are on-site temporarily. Review of historical data indicates that the majority of soil and ground-water contamination associated with the Site is present in the area of the former dispenser island, piping runs, and UST complex. Soil and ground-water contamination is also present in the immediate area of the former used-oil tank and the oil-water separator/hydraulic lift. The extent of soil and ground-water contamination associated with the Site has not been delineated in the down-gradient direction.
7.2	Exposure Pathways	Potential exposure pathways associated with this Site include human inhalation, ingestion, and absorption risks. The likelihood of vapor migration has not been verified by a soil-gas investigation. However, the soil concentrations present

Item	Evaluation Criteria	Comments/Discussion
		<p>would seem unlikely to present a viable exposure pathway of concern.</p> <p>Direct exposure through ingestion and/or absorption is possible to environmental professionals during routine ground-water sampling and/or other investigative activities. However, appropriate training and PPE will decrease the risk of potential exposure to these workers.</p> <p>It is also noted that the majority of soil and ground-water contamination associated with this Site is located along Porter and High Streets, away from the station buildings, where employees would be present for extended periods. Soil and ground-water contamination also appears to be present in the area of the former used-oil UST. In addition, customers would not be present for extended periods if the station should reopen, and would be congregating in open-air areas.</p>
7.3	Risk Assessment Status	A formal Risk Assessment has not been performed for this Site. It is recommended that appropriate investigations should be performed to determine if a formal Risk Assessment should be conducted (i.e., sensitive receptor survey).
7.4	Identified Human Exceedances	Human exceedances are unknown at this time.
7.5	Identified Ecological Exceedances	Ecological exceedances are unknown at this time.
<b>8.0</b>	<b>ADDITIONAL RECOMMENDED DATA OR TASKS</b>	
	<p>As a means of updating this Initial Site Conceptual Model, the following tasks are recommended:</p> <ul style="list-style-type: none"> <li>• Conduct a sensitive receptor survey;</li> <li>• Conduct an underground utility survey/preferential pathway evaluation;</li> <li>• Monitor ground-water concentrations in new wells MW-5 and MW-6; and</li> <li>• Conduct characterization activities to delineate the extent of off-site soil and ground-water contamination (if required).</li> </ul>	
<b>9.0</b>	<b>PROPOSED SCHEDULE</b>	
	<ul style="list-style-type: none"> <li>• Prepare sensitive receptor survey by 15 July 2007;</li> <li>• Conduct underground utility survey/preferential pathway evaluation by 15 August 2007.</li> </ul>	

## 10.0 CLOSURE

The findings presented in this document are based upon: observations of field personnel from previous consultants, the points investigated, and results of laboratory tests performed by various

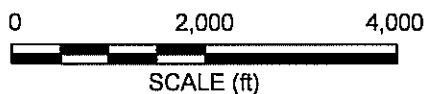
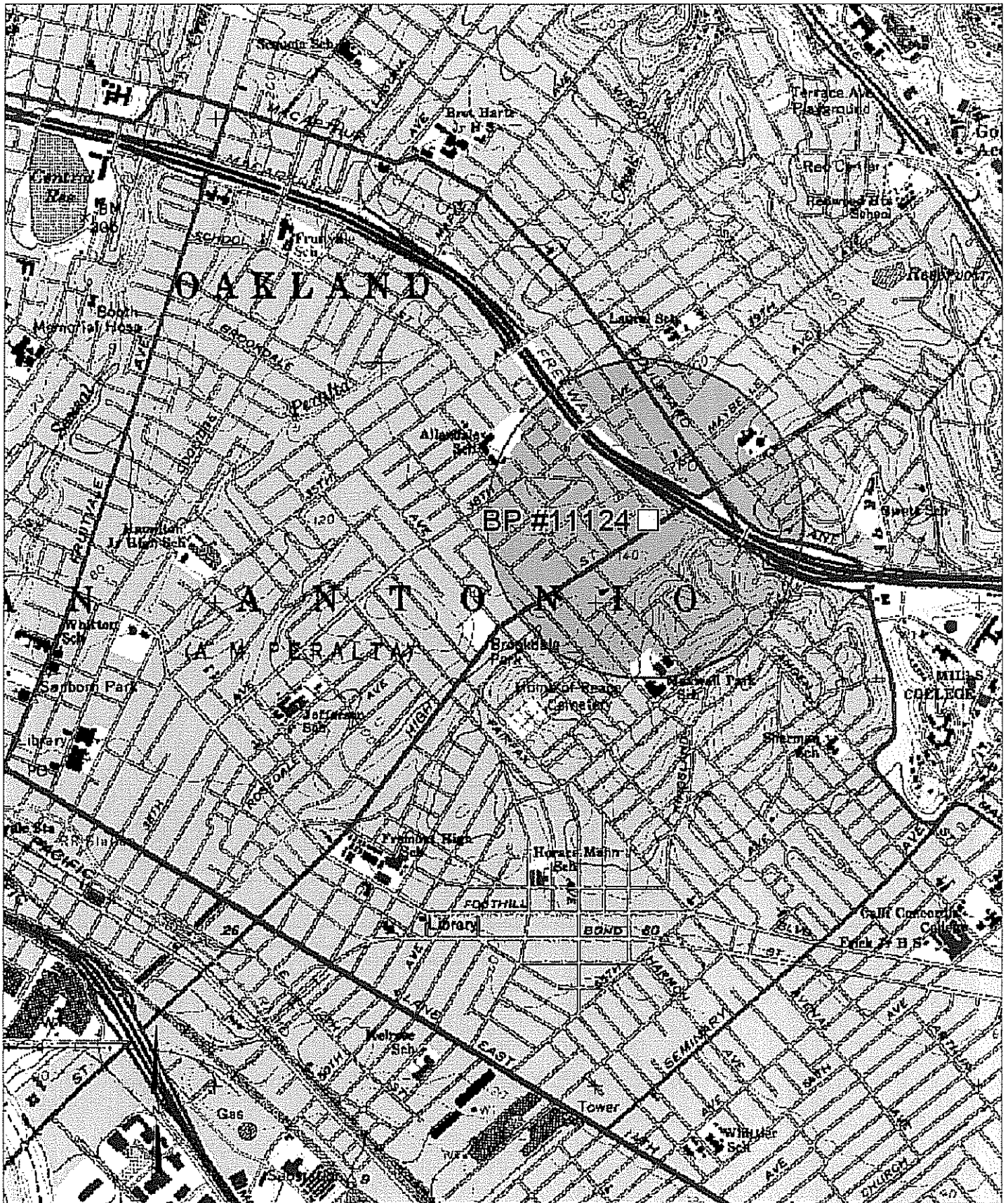
laboratories. Our services were performed in accordance with the generally accepted standard of practice at the time this document was written. No other warranty, expressed or implied was made. This report has been prepared for the exclusive use of BP. It is possible that variations in soil or ground-water conditions could exist beyond points explored in this investigation. Also changes in site conditions could occur in the future due to variations in rainfall, temperature, regional water usage, or other factors.

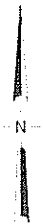
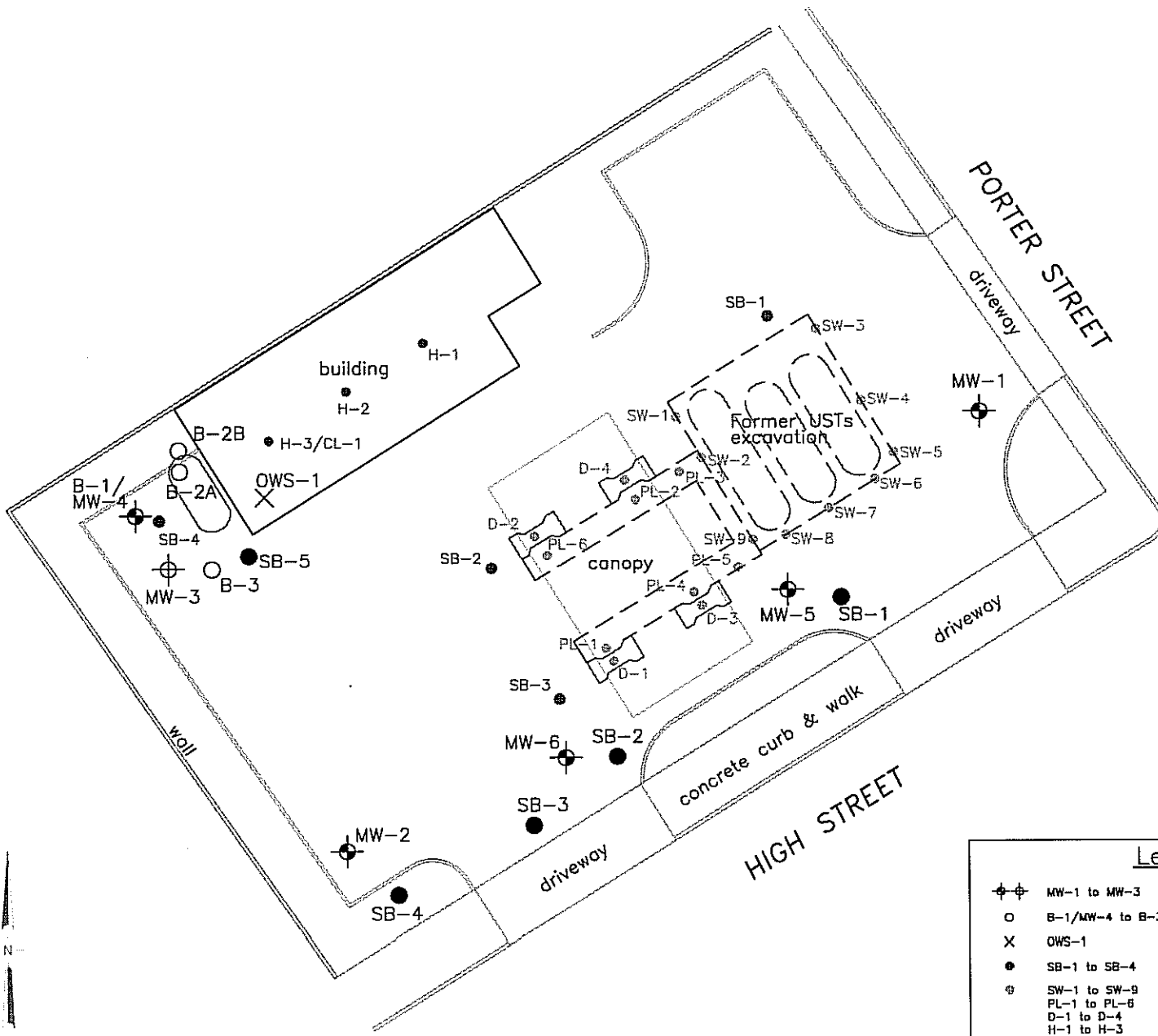
## 11.0 REFERENCES

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- American Society of Testing & Materials, 2003. *Standard Guide for Developing Conceptual Site Models for Contaminated Sites*. Designation E 1689-95 (Reapproved 2003).
- Broadbent & Associates, Inc., 10 April 2007. *Soil and Ground-Water Investigation Report, Former BP Station #11124, 3315 High Street, Oakland, California*. Prepared for Atlantic Richfield Company.
- Broadbent & Associates, Inc., 10 April 2007. *Soil and Ground-Water Investigation Report, Former BP Station #11124, 3315 High Street, Oakland, California*. Prepared for Atlantic Richfield Company.
- California Regional Water Quality Control Board, San Francisco Bay Region, June 1999. East Bay Plain groundwater Basin Beneficial Use Evaluation Report.
- Hwang, Don (Alameda County Environmental Health), 23 December 2005. *Fuel Leak Case No. RO0000239, BP Station #11124, 3315 High Street, Oakland, CA*. Letter to Mr. Kyle Christie, Atlantic Richfield Co. (a BP affiliated company).
- Secor, 14 December 2004. *Due Diligence Site Assessment Report, 3315 High Street, Oakland, California*. Letter report to Mr. Andrew Stow (ConocoPhillips). Forwarded to Mr. Robert Schultz, Alameda County Environmental Health on 4 February 2005.
- Secor, 3 August 2005. *UST Removal and Facility Soil Sampling Report, 76 Service Station #11124, 3315 High Street, Oakland, CA*. Letter report to Mr. Keith Matthews (City of Oakland Fire Department), on behalf of ConocoPhillips.
- Onishi, Lynelle (URS Corporation), 12 January 2006. *Request for Extension of Soil and Water Investigation Report Due Date, Former BP Service Station #11124, 3315 High Street, Oakland, California, Fuel Leak Case No. RO0000239*. Letter to Mr. Don Hwang (Alameda County Environmental Health).
- US EPA, March 1997. *Expedited Site Assessment Tools for Underground Storage Tank Sites – A Guide for Regulators*. EPA 510-B-97-001.

## DRAWINGS

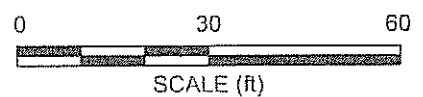
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- 2 - Site Plan
- 3 - Ground-Water Elevation Contours Map – 13 March 2007
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- 5 - MTBE Iso-Concentration Contours Map – 13 March 2007
- 6 - Geologic Cross-Section





NOTE: SITE MAP ADAPTED FROM STRATUS ENVIRONMENTAL, INC FIGURES. SITE DIMENSIONS AND FACILITY LOCATIONS NOT VERIFIED.

Legend		
⊕	MW-1 to MW-3	KAPREALIAN ENGINEERING (7/1986)
○	B-1/MW-4 to B-3	RESNA, INC. (5/1991)
X	OWS-1	PACIFIC ENVIRONMENTAL (12/1996)
●	SB-1 to SB-4	SECDR (4/2004)
⊗	SW-1 to SW-9 PL-1 to PL-6 D-1 to D-4 H-1 to H-3	SECDR (12/2004)
⊙	SB-1 to SB-5	URS CORPORATION (2/2006)
⊕	MW-5 to MW-6	STRATUS ENVIRONMENTAL (12/2006)

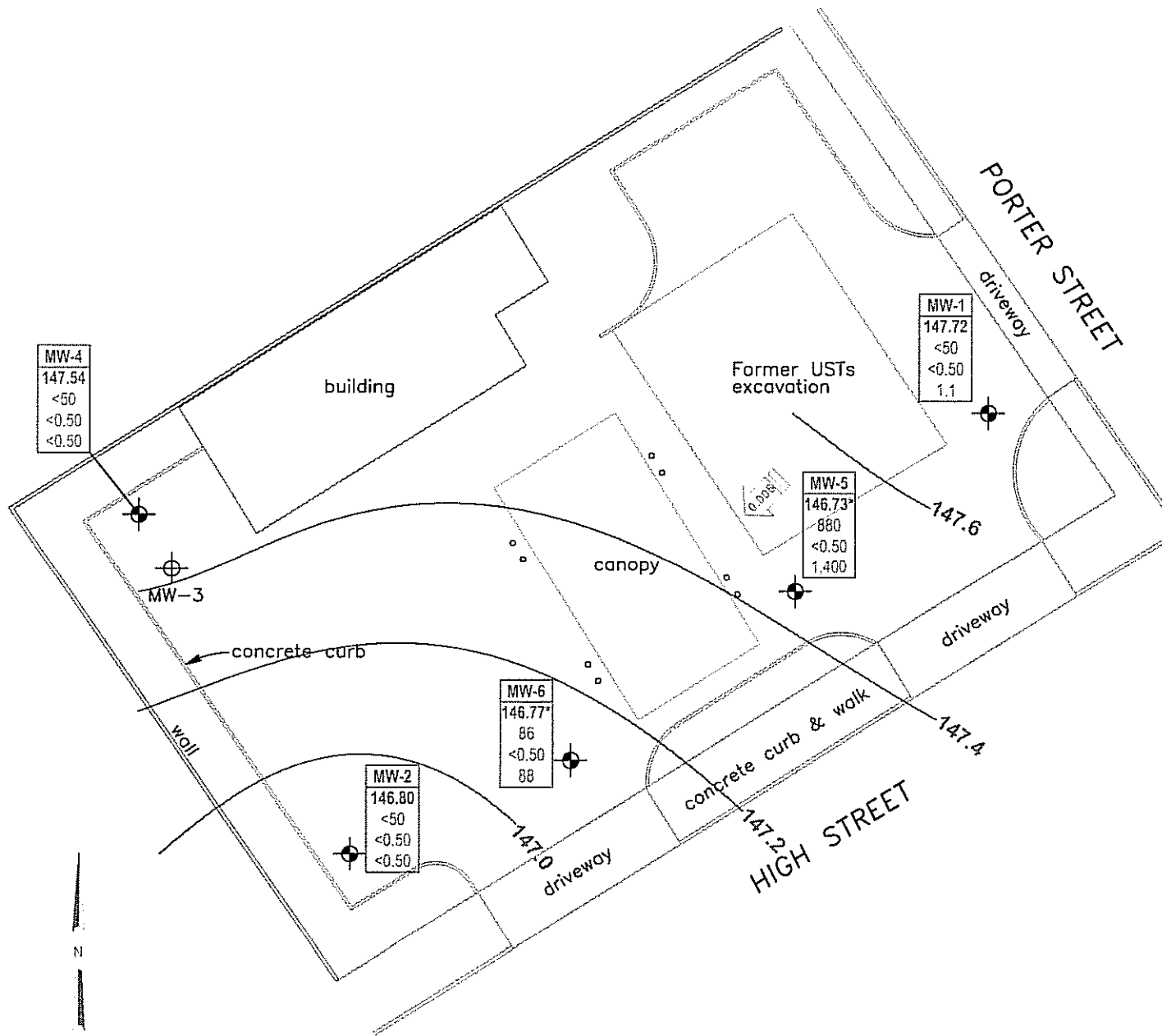


**BROADBENT & ASSOCIATES, INC.**  
 ENGINEERING, WATER RESOURCES & ENVIRONMENTAL  
 1324 Mangrove Ave. Suite 212 Chico, CA  
 Project No.: 06-08-652 Date: 02/15/07

Former Station #11124  
 3315 High Street  
 Oakland, California

SITE MAP

Drawing  
**2**



MW-4
147.54
<50
<0.50
<0.50

MW-3

MW-2
146.80
<50
<0.50
<0.50

MW-6
146.77
86
<0.50
88

MW-5
146.73
880
<0.50
1,400

MW-1
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<0.50
1.1

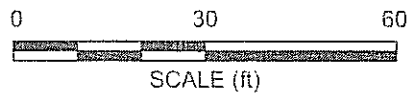
**LEGEND**

- Ground-water monitoring well
- Abandoned monitoring well

Well	Well Designation
ELEV	Ground-water elevation (ft MSL)
GRO	GRO. Benzene & MTBE concentrations (µg/L)
Benzene	
MTBE	

- 147.0 Ground-water elevation (ft MSL)
- Elevation not used in contours
- < Not detected at or above laboratory reporting limits
- Ground-water flow direction and gradient (ft/ft)

NOTE: SITE MAP ADAPTED FROM STRATUS ENVIRONMENTAL, INC FIGURES. SITE DIMENSIONS AND FACILITY LOCATIONS NOT VERIFIED.



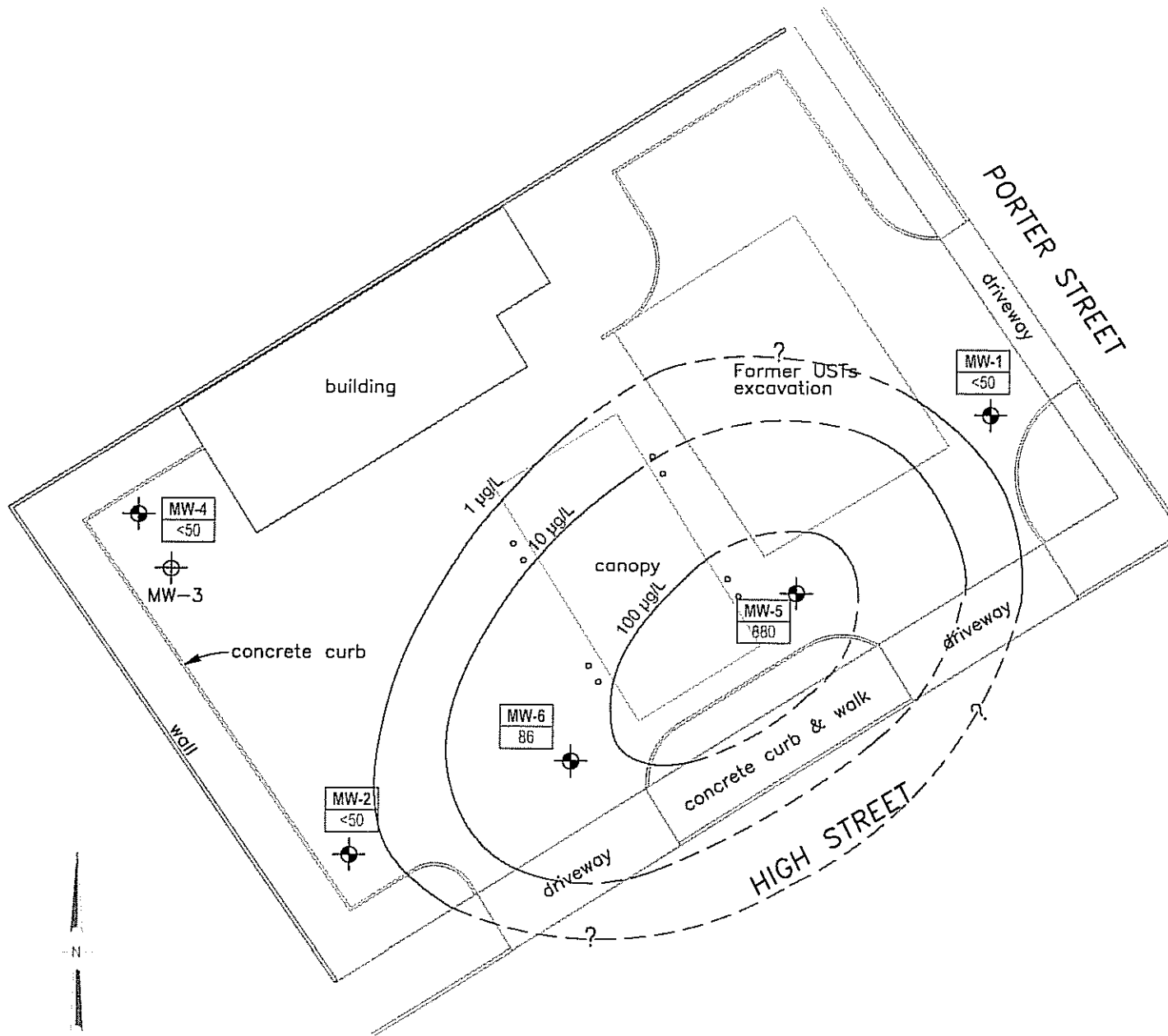
**BROADBENT & ASSOCIATES, INC.**  
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 1324 Mangrove Ave., Suite 212 Chico, CA  
 Project No.: 06-08-652 Date: 4/6/07

Former Station #11124  
 3315 High Street  
 Oakland, California

Ground-Water Elevation Contours  
 and Analytical Summary Map  
 13 March 2007

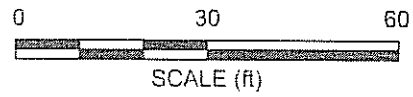
Drawing  
**3**





LEGEND							
	Ground-water monitoring well						
	Abandoned monitoring well						
<table border="1"><tr><td>Well</td><td>—</td><td>Well Designation</td></tr><tr><td>GRO</td><td>—</td><td>GRO concentration (µg/L)</td></tr></table>	Well	—	Well Designation	GRO	—	GRO concentration (µg/L)	
Well	—	Well Designation					
GRO	—	GRO concentration (µg/L)					
<	Not detected at or above laboratory reporting limits						

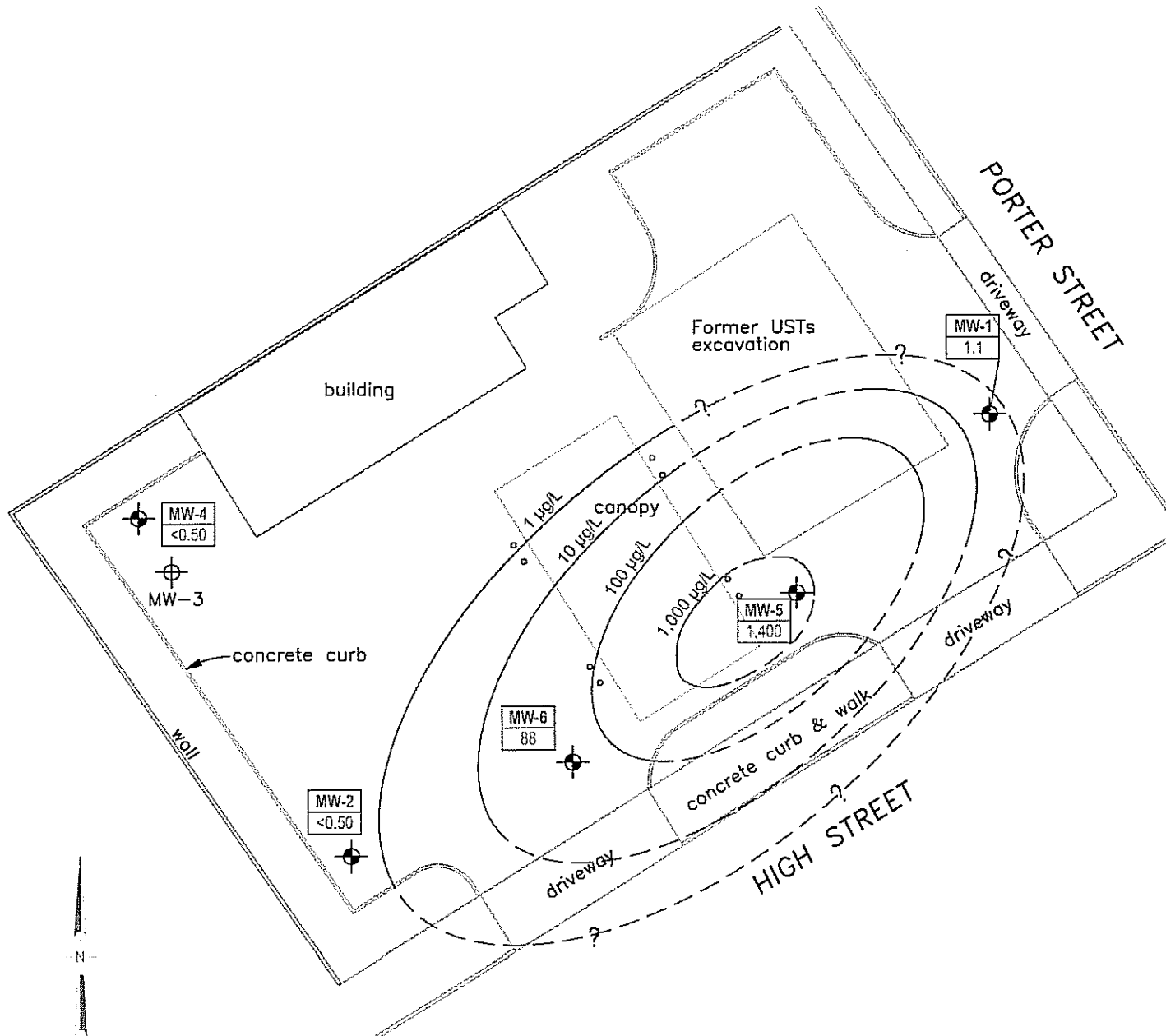
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 1324 Mangrove Ave. Suite 212 Chico, CA  
 Project No.: 06-08-652 Date: 4/6/07

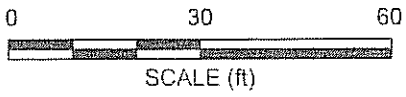
Former Station #11124  
 3315 High Street  
 Oakland, California

GRO Iso-Concentration Contours  
 13 March 2007



LEGEND					
	Ground-water monitoring well				
	Abandoned monitoring well				
<table border="1"><tr><td>Well</td><td>Well Designation</td></tr><tr><td>MTBE</td><td>MTBE concentration (µg/L)</td></tr></table>	Well	Well Designation	MTBE	MTBE concentration (µg/L)	
Well	Well Designation				
MTBE	MTBE concentration (µg/L)				
<	Not detected at or above laboratory reporting limits				

NOTE: SITE MAP ADAPTED FROM STRATUS ENVIRONMENTAL, INC FIGURES. SITE DIMENSIONS AND FACILITY LOCATIONS NOT VERIFIED.



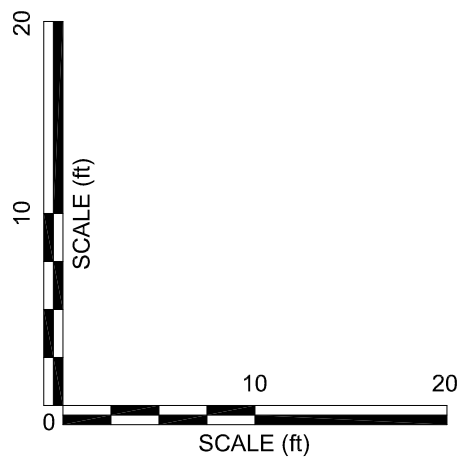
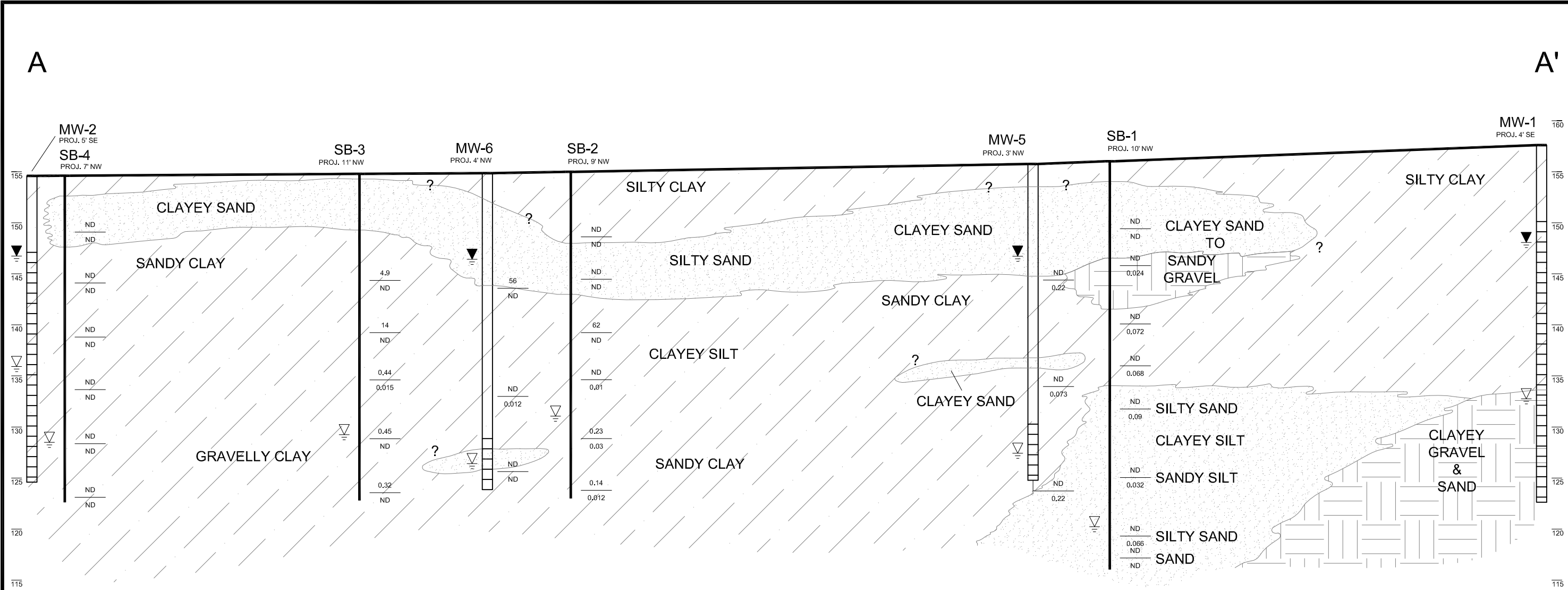
**BROADBENT & ASSOCIATES, INC.**  
ENGINEERING, WATER RESOURCES & ENVIRONMENTAL  
1324 Mangrove Ave, Suite 212 Chico, CA  
Project No.: 06-08-652 Date: 5/14/07

Former Station #11124  
3315 High Street  
Oakland, California

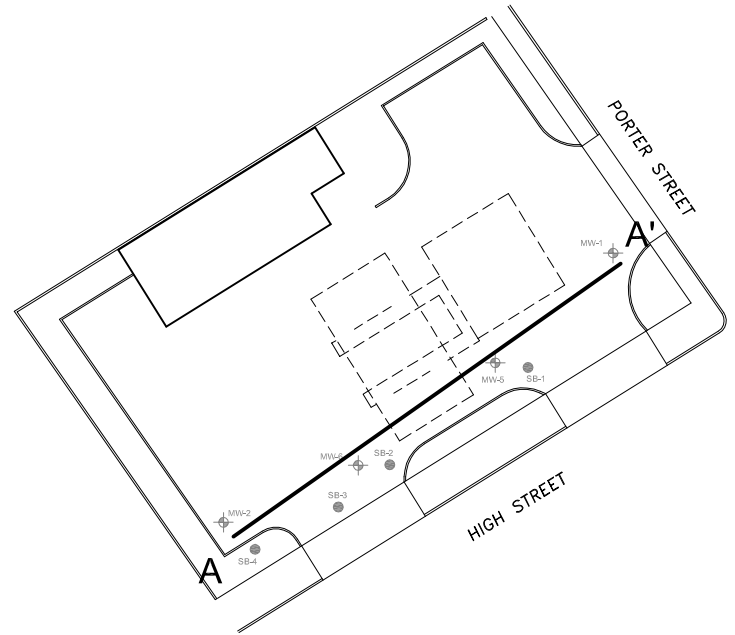
MTBE Iso-Concentration Contours  
13 March 2007

Drawing

5



- LEGEND**
- GRO LABORATORY ANALYZED SOIL SAMPLE
  - MTBE SHOWING CONCENTRATION IN mg/kg
  - WELL SCREEN
  - INITIAL WATER LEVEL WHEN DRILLED
  - STATIC WATER LEVEL, 3/13/2007



Geologic Cross Section

Former Station #11124  
3315 High Street  
Oakland, California

**BROADBENT & ASSOCIATES, INC.**  
ENGINEERING, WATER RESOURCES & ENVIRONMENTAL  
1324 Mangrove Ave., Suite 212, Chico, CA  
Project No.: 06-08-652 Date: 5/15/2007

## TABLES

- 1 - Summary of Ground-Water Monitoring Data
- 2 - Summary of Fuel Additives Analytical Data
- 3 - Historical Ground-Water Flow Direction and Gradient (with Rose Diagram)

**Table 1. Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses**  
**Station #11124, 3315 High St., Oakland, CA**

Well and Sample Date	P/NP	Footnote	TOC Elevation (feet msl)	DTW (feet bgs)	Product Thickness (feet)	Water Level Elevation (feet msl)	Concentrations in (µg/L)					DO (mg/L)	Lab	pH	DRO/TPHd (µg/L)	TOG (µg/L)	
							GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes						MtBE
<b>MW-1</b>																	
10/19/2004	P		154.99	10.50	--	144.49	<50	<0.50	<0.50	<0.50	<0.50	14	0.96	SEQM	6.9	--	--
01/13/2005	P		154.99	9.00	--	145.99	<50	<0.50	<0.50	<0.50	<0.50	33	2.5	SEQM	6.4	--	--
02/24/2006	P	c	154.99	10.42	--	144.57	55	<0.50	<0.50	<0.50	<0.50	51	--	SEQM	6.8	--	--
5/30/2006	P		154.99	10.94	--	144.05	50	<0.50	<0.50	<0.50	<0.50	58	--	SEQM	6.6	--	--
8/28/2006	P		154.99	10.61	--	144.38	50	<0.50	<0.50	<0.50	<0.50	<0.50	--	TAMC	7.0	--	--
11/2/2006	P		154.99	10.83	--	144.16	<50	<0.50	<0.50	<0.50	<0.50	9.8	1.40	TAMC	6.99	--	--
2/6/2007	P	d	157.34	9.88	--	147.46	<50	<0.50	<0.50	<0.50	<0.50	11	2.76	TAMC	7.10	--	--
3/13/2007	P		157.34	9.62	--	147.72	--	--	--	--	--	--	2.63	TAMC	7.30	<48	--
<b>MW-2</b>																	
10/19/2004	--	b	152.02	9.45	--	142.57	--	--	--	--	--	--	--	--	--	--	--
01/13/2005	P		152.02	6.43	--	145.59	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.47	SEQM	6.4	--	--
02/24/2006	P		152.02	7.88	--	144.14	<50	<0.50	<0.50	<0.50	<0.50	<0.50	--	SEQM	6.7	--	--
5/30/2006	P		152.02	7.98	--	144.04	<50	<0.50	<0.50	<0.50	<0.50	<0.50	--	SEQM	6.7	--	--
8/28/2006	P		152.02	9.38	--	142.64	<50	<0.50	<0.50	<0.50	<0.50	<0.50	--	TAMC	6.7	--	--
11/2/2006	--		152.02	9.85	--	142.17	--	--	--	--	--	--	--	--	--	--	--
2/6/2007	P	d	154.35	8.40	--	145.95	<50	<0.50	<0.50	<0.50	<0.50	<0.50	5.10	TAMC	7.02	--	--
3/13/2007	P		154.35	7.55	--	146.80	--	--	--	--	--	--	4.83	TAMC	7.17	52	--
<b>MW-4</b>																	
10/19/2004	P		152.77	9.55	--	143.22	<50	<0.50	<0.50	<0.50	<0.50	<0.50	0.82	SEQM	7.0	--	--
01/13/2005	--	a	152.77	--	--	--	--	--	--	--	--	--	--	--	--	--	--
02/24/2006	P		152.77	7.86	--	144.91	<50	<0.50	<0.50	<0.50	<0.50	<0.50	--	SEQM	7.1	--	--
5/30/2006	P		152.77	8.04	--	144.73	<50	<0.50	<0.50	<0.50	<0.50	<0.50	--	SEQM	6.9	--	--
8/28/2006	P		152.77	9.36	--	143.41	<50	<0.50	<0.50	<0.50	<0.50	16	--	TAMC	6.5	--	--
11/2/2006	P		152.77	9.92	--	142.85	<50	<0.50	<0.50	<0.50	<0.50	<0.50	2.23	TAMC	6.79	--	--
2/6/2007	P	d	155.10	8.40	--	146.70	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.43	TAMC	7.10	--	--
3/13/2007	P		155.10	7.56	--	147.54	--	--	--	--	--	--	2.53	TAMC	7.18	<49	--
<b>MW-5</b>																	
3/13/2007	P	d	155.45	8.72	--	146.73	880	<0.50	<0.50	<0.50	<0.50	1,400	1.84	TAMC	7.36	<48	--

Table 1. Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses

Station #11124, 3315 High St., Oakland, CA

Well and Sample Date	P/NP	Footnote	TOC Elevation (feet msl)	DTW (feet bgs)	Product Thickness (feet)	Water Level Elevation (feet msl)	Concentrations in (µg/L)					DO (mg/L)	Lab	pH	DRO/TPHd (µg/L)	TOG (µg/L)	
							GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes						MtBE
MW-6																	
3/13/2007	P	d	154.59	7.82	-	146.77	86	<0.50	<0.50	<0.50	<0.50	88	192	TAMC	7.21	<48	-

**ABBREVIATIONS AND SYMBOLS:**

--- = Not analyzed/measured/applicable  
< = Not detected at or above laboratory reporting limit  
DO = Dissolved oxygen  
ft bgs = Feet below ground surface  
ft MSL = Feet above mean sea level  
DTW = Depth to water in ft bgs  
GRO = Gasoline range organics  
GWE = Groundwater elevation in ft MSL  
mg/L = Milligrams per liter  
MTBE = Methyl tert-butyl ether  
NP = Well not purged prior to sampling  
P = Well purged prior to sampling  
TOC = Top of casing in ft MSL  
TPH-g = Total petroleum hydrocarbons as gasoline  
µg/L = Micrograms per liter  
SEQM = Sequoia Analytical Morgan Hill (Laboratory)

**FOOTNOTES:**

a = Well inaccessible.  
b = Well is dry.  
c = Hydrocarbon result for GRO partly due to individual peak(s) in quantitative range.  
d = Well survey by Morrow Surveying on 12/27/2006.

**NOTES:**

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

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

Values for DO and pH were obtained through field measurements.

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

Table 2. Summary of Fuel Additives Analytical Data

Station #11124, 3315 High St., Oakland, CA

Well and Sample Date	Concentrations in (µg/L)								Comments
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
<b>MW-1</b>									
10/19/2004	<100	<20	14	<0.50	<0.50	<0.50	<0.50	<0.50	
01/13/2005	<100	<20	33	<0.50	<0.50	<0.50	<0.50	<0.50	
02/24/2006	<300	<20	51	<0.50	<0.50	<0.50	<0.50	<0.50	
5/30/2006	<300	<20	58	<0.50	<0.50	<0.50	<0.50	<0.50	
8/28/2006	<300	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
11/2/2006	<300	<20	9.8	<0.50	<0.50	<0.50	<0.50	<0.50	
2/6/2007	<300	<20	11	<0.50	<0.50	<0.50	<0.50	<0.50	
<b>MW-2</b>									
01/13/2005	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
02/24/2006	<300	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
5/30/2006	<300	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
8/28/2006	<300	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
2/6/2007	<300	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
<b>MW-4</b>									
10/19/2004	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
02/24/2006	<300	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
5/30/2006	<300	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
8/28/2006	<300	<20	16	<0.50	<0.50	<0.50	<0.50	<0.50	
11/2/2006	<300	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
2/6/2007	<300	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
<b>MW-5</b>									
3/13/2007	<3,000	<200	1,400	<5.0	<5.0	6.5	<5.0	<5.0	
<b>MW-6</b>									
3/13/2007	<300	<20	88	<0.50	<0.50	<0.50	<0.50	<0.50	



**ABBREVIATIONS AND SYMBOLS:**

TBA = tert-Butyl alcohol

MTBE = Methyl tert-butyl ether

DIPE = Di-isopropyl ether

ETBE = Ethyl tert-butyl ether

TAME = tert-Amyl methyl ether

1,2-DCA = 1,2-Dichloroethane

EDB = 1,2-Dibromomethane

µg/L = micrograms per liter

< = Not detected at or above laboratory reporting limit

**NOTES:**

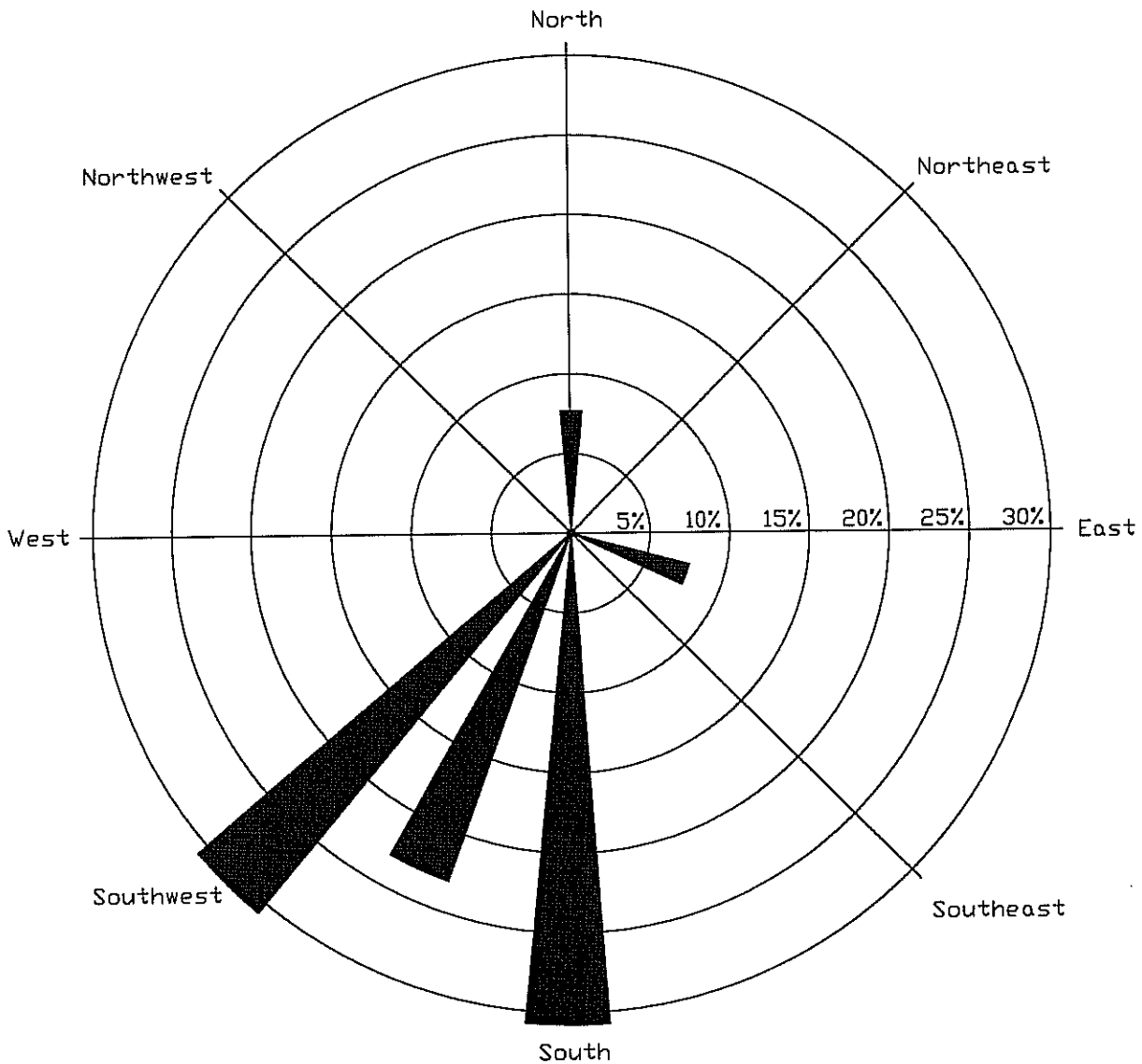
All fuel oxygenate compounds are analyzed using EPA Method 8260B.

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

**Table 3  
 Historical Ground-Water Direction and Gradient  
 Former BP #11124  
 3315 High Street, Oakland. CA**

Date Sampled	Approximate Flow Direction	Approximate Hydraulic Gradient
11/12/1990	—	—
7/15/1991	Southwest	0.0174
10/15/1991	Southwest	0.0182
1/15/1992	South-Southwest	0.014
4/17/1992	South	0.014
9/30/1992	South-Southwest	0.018
12/17/1992	North	0.01
3/15/1993	South	0.007
10/19/2004	South-Southwest	0.022
1/13/2005	—	—
2/24/2006	Southeast	0.01
5/30/2006	East-Southeast	0.007
8/28/2006	South	0.012
11/2/2006	South	0.013
3/13/2007	Southwest	0.006

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



APPENDIX A

Historical Soil and Ground-Water Data



# SEQUOIA Analytical Laboratory

2549 Middlefield Road  
Redwood City, CA 94063 • (415) 364-9222

Kaprealian Engineering, Inc.  
535 Main Street, Suite 309  
Martinez, CA 94553  
Attn: Mardo Kaprealian, P.E.  
President

Date Sampled: 7/10/86  
8/4/86  
Date Received: 8/4/86  
Date Reported: 8/26/86

<u>Sample Number</u>	<u>Sample Description</u>	<u>Detection Limit</u>	<u>Total Hydrocarbons</u>
		ppm	ppm
6080106	MW-1, 15½-16 feet	1	< 1
6080107	MW-2, 15½-16 feet	1	< 1
6080108	MW-3, 15½-16 feet	1	< 1

NOTE: Analysis was performed using EPA methods 5020 and 8015.

SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton  
Laboratory Director

sls

January 30, 1992  
BP Facility No. 11124, Oakland, California

**RESNA**

TABLE 3  
CUMULATIVE RESULTS OF ANALYSES OF SOIL SAMPLES  
BP Facility No. 11124  
3315 High Street  
Oakland, California  
(page 1 of 3)

Sample ID	Sample Date	TPHg	TPHd	Benzene	Toluene	Ethyl-benzene	Total Xylenes
S-5-B1	05/13/91	<1	<10	<0.005	<0.005	<0.005	<0.005
S-15-B1	05/13/91	<1	<10	<0.005	<0.005	<0.005	<0.005
S-10-B2	05/14/91	<1	<10	<0.005	0.011*	<0.005	<0.005
S-18-B2	05/14/91	<1	<10	<0.005	0.006*	<0.005	<0.005
S-10-B3	05/14/91	<1	<10	<0.005	0.010*	<0.005	<0.005
S-17-B3	05/14/91	<1	<10	<0.005	0.007*	<0.005	<0.005
S-0514-1ABCD	05/14/91	<1	<10	<0.005	0.040*	0.030*	0.140*

See notes on page 3 of 3

January 30, 1992  
BP Facility No. 11124, Oakland, California

TABLE 3  
CUMULATIVE RESULTS OF ANALYSES OF SOIL SAMPLES  
BP Facility No. 11124  
3315 High Street  
Oakland, California  
(page 2 of 3)

Sample ID	Sample Date	Cadmium	Chromium	Lead	Nickel	Zinc
S-5-B1	05/13/91	NR	NR	NR	NR	NR
S-15-B1	05/13/91	NR	NR	NR	NR	NR
S-10-B2	05/14/91	16	23	16	65	55
S-18-B2	05/14/91	15	27	16	57	51
S-10-B3	05/14/91	11	24	10	41	48
S-17-B3	05/14/91	11	22	11	52	43
S-0514- 1ABCD	05/14/91	11	27	14	42	53

See notes on page 3 of 3

January 30, 1992  
 BP Facility No. 11124, Oakland, California

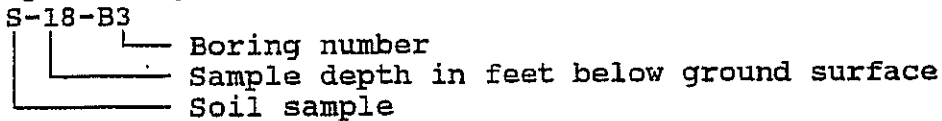


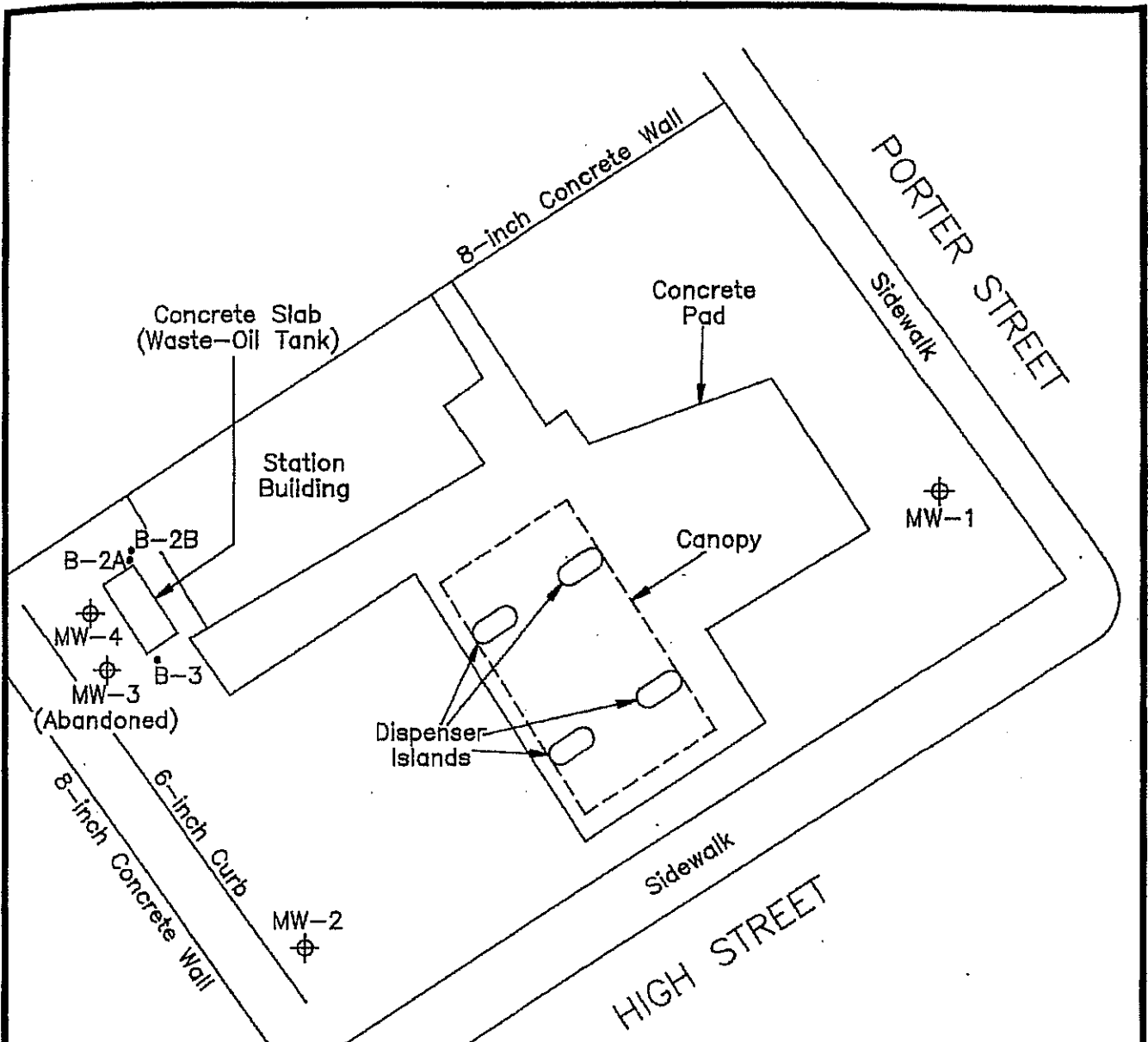
TABLE 3  
 CUMULATIVE RESULTS OF ANALYSES OF SOIL SAMPLES  
 BP Facility No. 11124  
 3315 High Street  
 Oakland, California  
 (page 3 of 3)

Sample ID	Sample Date	O&G	Purgeable Organic Compounds	PCB's	Semi-VOC	Phenan.
S-5-B1	05/13/91	<50	ND	ND	ND	ND
S-15-B1	05/13/91	<50	ND	ND	ND	ND
S-10-B2	05/14/91	120	ND	ND	ND	ND
S-18-B2	05/14/91	<50	ND	ND	ND	ND
S-10-B3	05/14/91	<50	ND	ND	ND	ND
S-17-B3	05/14/91	<50	ND	ND	ND	ND
S-0514-1ABCD	05/14/91	120	ND	ND	ND	2

Results in parts per million (ppm)  
 TPHg = Total petroleum hydrocarbons as gasoline  
 TPHd = Total petroleum hydrocarbons as diesel  
 PCB's = Polychlorobiphenyls  
 O&G = Oil and Grease  
 Semi-VOC = Semi-volatile organic compounds  
 Phenan. = Phenanthrene  
 NR = Not Requested  
 ND = No compounds detected above the laboratory detection limits  
 < = Below detection limit of method of analysis used  
 \* = Sample results reported from purgeable organic analyses

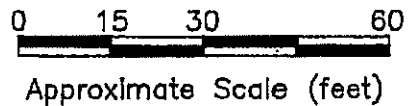
Sample designation:





EXPLANATION:

- B-2B Soil Boring
- MW-4
- ⊕ Monitoring Well



Map Modified From Survey Provided  
By Earl L. Gray.

	<b>GENERALIZED SITE PLAN</b> <b>BP Facility No. 1124</b> <b>3315 High Street</b> <b>Oakland, California</b>		<b>PLATE</b>  <b>2</b>
	<b>PROJECT NO. 30061-2</b>	<small>FILE NO.</small> <b>0081B2A</b>	



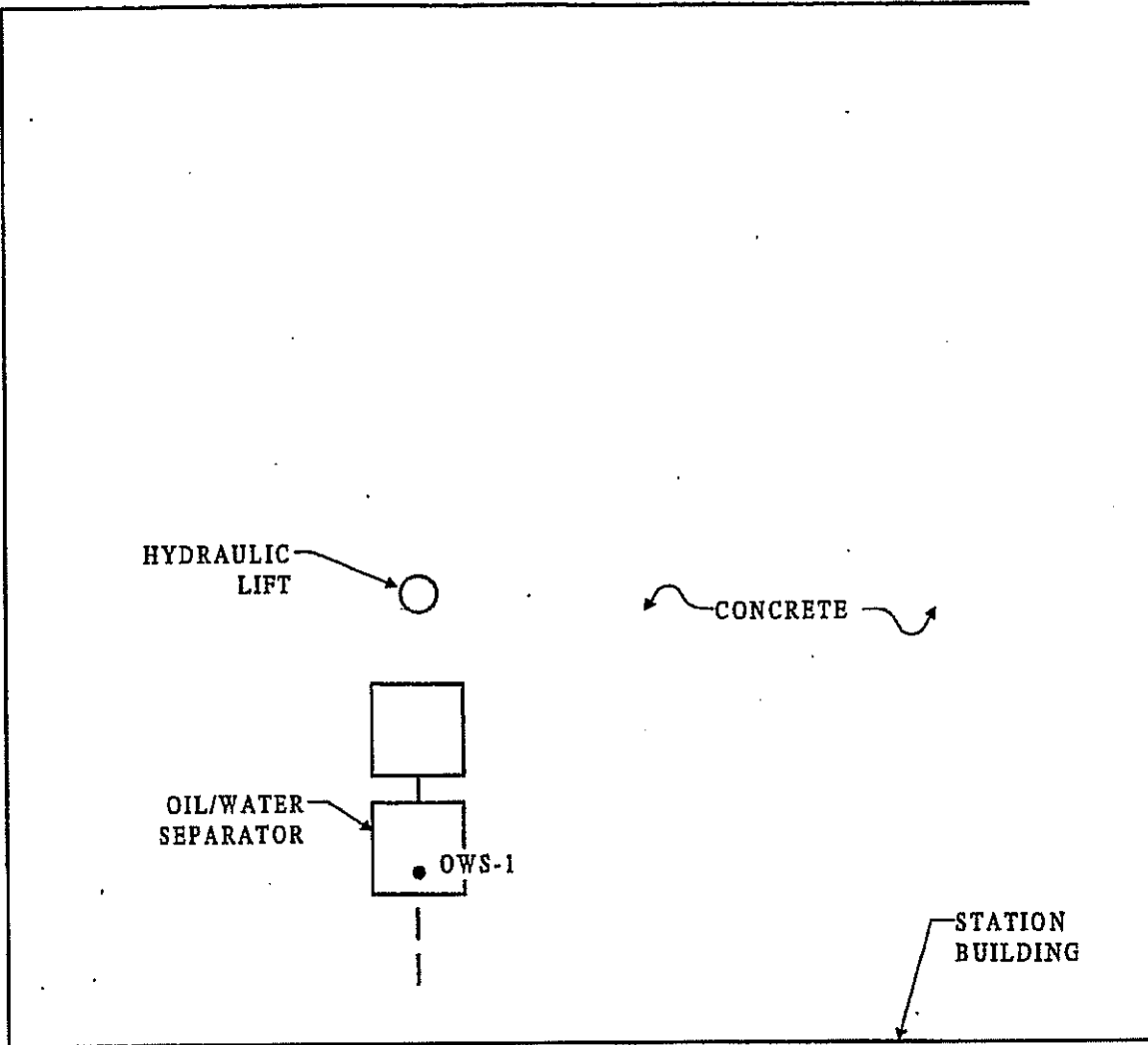
Table 1  
**Soil Analytical Data**  
**Oil/Water Separator**  
**Total Petroleum Hydrocarbons**  
 (TPH as Gasoline, BTEX Compounds, TPH as Diesel, TRPH, and HVOCs)

Tosco Service Station 11124  
 3315 High Street  
 Oakland, California

Sample ID	Sample Depth (feet)	Date Sampled	TPH as Gasoline (ppm)	Benzene (ppm)	Toluene (ppm)	Ethyl-benzene (ppm)	Total Xylenes (ppm)	TPH as Diesel (ppm)	TRPH (ppm)	Tetrachloro-methane (PCE) (ppm)	Methylene Chloride (ppm)	1,1-Dichloro-ethane (ppm)	Chloro-benzene (ppm)	1,2-Dichloro-benzene (ppm)
OWS-1, 0.5'	0.5	12/12/96	970 a	ND b	0.8	20	90	45 c	220	1	8.3	ND	0.77	9.2
OWS-1, 2'	2	12/12/96	750 a	ND b	0.6	16	73	150 d	120	0	2.6	0.05	0.13	1.7

TRPH = Total recoverable petroleum hydrocarbons  
 HVOCs = Halogenated volatile organic compounds  
 ppm = Parts per million  
 ND = Not detected at a concentration above the laboratory method reporting limit.

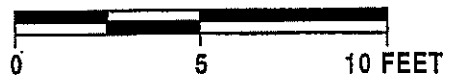
a. The sample contains components eluting in the gasoline range that were quantified as gasoline. The chromatogram does not match the typical gasoline fingerprint.  
 b. The method reporting limit (MRL) is elevated due to high analyte concentration requiring sample dilution.  
 c. Quantified as diesel. The sample contained components that elute in the diesel range, but the chromatogram did not match the typical fingerprints. The patterns were similar to mineral spirits. The sample also contained a heavy oil at 61 ppm.  
 d. Quantified as diesel. The sample contained components that elute in the diesel range, but the chromatogram did not match the typical fingerprints. The patterns were similar to mineral spirits. The sample also contained a heavy oil at 1,400 ppm.



**LEGEND**

OWS-1 ● SOIL SAMPLE LOCATION AND DESIGNATION

**SCALE**



304/015/Sitemap5.vsd



PACIFIC  
ENVIRONMENTAL  
GROUP, INC.

TOSCO SERVICE STATION 11124  
3315 High Street  
Oakland, California

SITE MAP

FIGURE:  
1  
PROJECT:  
304-015.1A

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER SAMPLING  
 BP OIL COMPANY SERVICE STATION NO. 11124  
 3315 HIGH STREET, OAKLAND, CALIFORNIA

ALISTO PROJECT NO. 10-020

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (b) (Feet)	GROUNDWATER ELEVATION (Feet)	TPH-G (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	TOG (ppb)	LAB
MW-1	08/18/86	154.99	10.10	144.89	ND<50	ND<1.0	ND<1.0	ND<1.0	ND<1.0	--	--
MW-1	11/12/90	154.99	11.42	143.57	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--
MW-1	07/15/91	154.99	10.66	144.33	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--
MW-1	10/15/91	154.99	11.67	143.32	ND<50	ND<0.5	0.8	0.6	0.8	ND<5000	--
MW-1	01/15/92	154.99	10.03	144.96	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5000	--
MW-1	04/17/92	154.99	10.31	144.68	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5000	--
MW-1	09/30/92	154.99	11.64	143.35	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5000	ANA
MW-1	12/17/92	154.99	9.92	145.07	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5000	ANA
QC-1 (c)	12/17/92	--	--	--	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	ANA
MW-1	03/15/93	154.99	10.22	144.77	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5000	PAGE
MW-1	04/21/93	154.99	10.20	144.79	--	--	--	--	2.1	--	--
MW-2	08/18/86	152.02	10.00	142.02	ND<50	ND<1.0	ND<1.0	ND<1.0	ND<1.0	--	--
MW-2	11/12/90	152.02	10.94	141.08	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--
MW-2	07/15/91	152.02	9.87	142.15	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--
MW-2	10/15/91	152.02	11.16	140.86	ND<50	ND<0.5	0.7	ND<0.5	1.5	ND<5000	--
MW-2	01/15/92	152.02	8.81	143.21	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5000	--
MW-2	04/17/92	152.02	8.41	143.61	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5000	--
MW-2	09/30/92	152.02	11.13	140.89	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5000	ANA
MW-2	12/17/92	152.02	8.16	143.86	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5000	ANA
MW-2	03/15/93	152.02	7.70	144.32	180	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5000	PAGE
MW-2	04/21/93	152.02	7.75	144.27	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	PAGE
QC-2 (c)	04/21/93	--	--	--	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	PAGE
MW-3	08/18/86	--	9.60	--	ND<50	ND<1.0	ND<1.0	ND<1.0	ND<1.0	--	--
MW-3 (d)	11/12/90	--	--	--	--	--	--	--	--	--	--

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER SAMPLING  
 BP OIL COMPANY SERVICE STATION NO. 11124  
 3315 HIGH STREET, OAKLAND, CALIFORNIA

ALISTO PROJECT NO. 10-020

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (b) (Feet)	GROUNDWATER ELEVATION (Feet)	TPH-G (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	TOG (ppb)	LAB
MW-4	07/15/91	152.77	9.62	143.15	ND<50	ND<0.5	ND<0.5	ND<0.5	0.8	—	—
MW-4	10/15/91	152.77	11.30	141.47	ND<50	ND<0.5	0.7	0.6	1.1	ND<5000	—
MW-4	01/15/92	152.77	8.81	143.96	ND<50	ND<0.5	2.7	ND<0.5	ND<0.5	ND<5000	—
MW-4	04/17/92	152.77	8.20	144.57	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5000	—
MW-4	09/30/92	152.77	11.33	141.44	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	5200	ANA
QC-1 (c)	09/30/92	152.77	11.33	141.44	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	—	ANA
MW-4	12/17/92	152.77	8.15	144.62	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5000	ANA
MW-4	03/15/93	152.77	7.88	144.89	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5000	PACE
QC-1 (c)	03/15/93	—	—	—	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	—	PACE
MW-4	04/21/93	152.77	7.61	145.16	—	—	—	—	—	—	—
QC-2 (e)	09/30/92	—	—	—	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	—	ANA
QC-2 (e)	12/17/92	—	—	—	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	—	ANA
QC-2 (e)	03/15/93	—	—	—	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	—	PACE

ABBREVIATIONS:

TPH-G Total petroleum hydrocarbons as gasoline  
 B Benzene  
 T Toluene  
 E Ethylbenzene  
 X Total xylenes  
 TOG Total oil and grease  
 ppb Parts per billion  
 ND Not detected above reported detection limits  
 — Not analyzed/measured  
 ANA Anametrix, Inc.  
 PACE Pace, Inc.

NOTES:

- (a) Casing elevations surveyed to the nearest 0.01 foot relative to mean sea level.  
 (b) Groundwater elevations in feet above mean sea level.  
 (c) Blind duplicate.  
 (d) Monitoring well destroyed.  
 (e) Travel blank.

**Table 1**  
**Soil Analytical Data**  
**76 Service Station 2611124**  
**3315 High Street**  
**Oakland, California**

Sample Name	Sample Depth (feet)	Date Sampled	PID Reading (ppm)	EPA Method 8260B							EPA 1664A	EPA 6010B	
				TPHg (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	MTBE (mg/kg)	Oxygenates (mg/kg)	Oil and Grease (mg/kg)	Total Lead (mg/kg)	
SB1-5'	5	04/21/04	0	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	ND	-	-
SB1-14'	14	04/21/04	0	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	ND	-	-
SB2-5'	5	04/21/04	0	<1.0	<0.50	<0.50	<0.50	<0.50	0.0066	ND	-	-	
SB2-10'	10	04/21/04	76	89	<0.50	<0.50	<0.60	<0.50	<0.50	ND	-	-	
SB3-5'	5	04/21/04	513	99	<0.50	<0.50	<0.50	0.62	<0.50	ND	-	-	
SB3-10'	10	04/21/04	37	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	ND	-	-	
SB4-5'	5	04/21/04	6	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	ND	<50	4.0	
SB4-10'	10	04/21/04	0	1.4	0.011	<0.0050	0.0055	0.011	0.034	0.079a	<50	4.9	

**Notes:**

PID = photoionization detector

TPHg = total petroleum hydrocarbons as gasoline

MTBE = methyl tertiary butyl ether

Oxygenates = di-isopropyl ether (DIPE), tertiary butyl alcohol (TBA), tertiary amyl methyl ether (TAME), ethyl tertiary butyl ether (ETBE), ethylene dibromide (EDB), ethanol, 1,2-dichloroethane (1,2-DCA)

- = not analyzed

< = less than the stated laboratory method reporting limit

ND = Not detected above laboratory method reporting limit. See laboratory analytical report for specific reporting limits.

mg/kg = milligrams per kilogram

a = TBA

**Table 2**  
**Groundwater Analytical Data**  
**76 Service Station 2611124**  
**3315 High Street**  
**Oakland, California**

Sample Name	Date Sampled	EPA Method 8260B							EPA 1664A	EPA 6010B
		TPHg (ug/l)	Benzene (ug/l)	Toluene (ug/l)	Ethylbenzene (ug/l)	Total Xylenes (ug/l)	MTBE (ug/l)	Oxygenates (ug/l)	Oil and Grease (ug/l)	Lead (ug/l)
MW-A	04/21/04	62	<0.50	<0.50	<0.50	<1.0	23	ND	-	-
MW-B	04/21/04	55	<0.50	<0.50	<0.50	<1.0	<0.50	ND	2,000	<5.0

**Notes:**  
 TPHg = total petroleum hydrocarbons as gasoline  
 MTBE = methyl tertiary butyl ether  
 ug/l = micrograms per liter  
 -- = not analyzed  
 < = less than the stated laboratory method reporting limit  
 ND = Not detected at or above the laboratory method reporting limit. See laboratory analytical report for specific reporting limits.  
 Oxygenates = di-isopropyl ether (DIPE), tertiary butyl alcohol (TBA), tertiary amyl methyl ether (TAME), ethyl tertiary butyl ether (ETBE), ethylene dibromide (EDB), ethanol, and 1,2-dichloroethane (1,2-DCA)

**Table 1**  
**Soil Analytical Data**

76 Service Station 11124  
3316 High Street  
Oakland, California

Sample Name	Sample Depth (feet)	Date Sampled	TPHg (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	MIBE (mg/kg)	TBA (mg/kg)	VOCs 2-Chlorotoluene (mg/kg)	SVOCs (mg/kg)	PCBs (mg/kg)	TPHd (mg/kg)	Total Oil and Grease (mg/kg)	Total Lead (mg/kg)
Soil samples collected from the sidewalls of the Waste Oil UST Complex															
WO-1@4'	4	12/02/04	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005 <sup>1</sup>	<0.010	--	--	--	<1.0	<50	11
WO-2@4'	4	12/02/04	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005 <sup>1</sup>	<0.010	--	--	--	<1.0	<50	5.6
Soil samples collected from the sidewalls of the Gasoline UST Complex															
SW-1@5.5	5.5	12/02/04	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005 <sup>1</sup>	<0.010	--	--	--	<1.0	--	6.0
SW-2@5.5	5.5	12/02/04	<1.0	0.0056	0.021	<0.005	0.014	<0.005 <sup>1</sup>	<0.010	--	--	--	<1.0	--	7.9
SW-3@5.5	5.5	12/02/04	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005 <sup>1</sup>	<0.010	--	--	--	<1.0	--	2.2
SW-4@5.5	5.5	12/02/04	<1.0	<0.005	<0.005	<0.005	<0.005	0.0096	0.025	--	--	--	<1.0	--	6.0
SW-5@5.5	5.5	12/02/04	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005 <sup>1</sup>	<0.010	--	--	--	<1.0	--	3.0
SW-6@5.5	5.5	12/02/04	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005 <sup>1</sup>	<0.010	--	--	--	<1.0	--	5.2
SW-7@5.5	5.5	12/02/04	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005 <sup>1</sup>	<0.010	--	--	--	<1.0	--	6.9
SW-8@5.5	5.5	12/02/04	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005 <sup>1</sup>	<0.010	--	--	--	<1.0	--	4.0
SW-9@5.5	5.5	12/02/04	<1.0	<0.005	0.11	0.059	0.29	<0.005 <sup>1</sup>	<0.010	--	--	--	22	--	6.0
Soil samples collected beneath fuel dispensers and product lines															
PL-1@3	3	12/02/04	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005 <sup>1</sup>	<0.010	--	--	--	<1.0	--	4.8
PL-2@4	4	12/02/04	<1.0	<0.005	0.0097	0.0056	0.021	<0.005 <sup>1</sup>	<0.010	--	--	--	<1.0	--	4.4
PL-3@4	4	12/02/04	<1.0	0.033	0.12	0.031	0.073	<0.005 <sup>1</sup>	<0.010	--	--	--	<1.0	--	7.4
PL-4@4	4	12/02/04	160	<0.50	<0.50	<0.50	<0.50	<0.50 <sup>1</sup>	<2.5	--	--	--	3.3	--	6.3
PL-5@5.5	5.5	12/02/04	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005 <sup>1</sup>	<0.010	--	--	--	<1.0	--	2.9
PL-6@5.5	5.5	12/02/04	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005 <sup>1</sup>	<0.010	--	--	--	<1.0	--	5.0
D-1@3	3	12/02/04	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005 <sup>1</sup>	<0.010	--	--	--	<1.0	--	5.2
D-2@3	3	12/02/04	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005 <sup>1</sup>	<0.010	--	--	--	<1.0	--	5.0
D-3@3	3	12/02/04	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005 <sup>1</sup>	<0.010	--	--	--	<1.0	--	5.2
D-4@4.5	4.5	12/02/04	<1.0	0.0063	0.011	0.0072	0.039	<0.005 <sup>1</sup>	<0.010	--	--	--	<1.0	--	7.4
Soil samples collected beneath hoists and clarifier															
H-1@6	6	12/02/04	--	--	--	--	--	--	--	--	--	--	--	136	--
H-2@6	6	12/02/04	--	--	--	--	--	--	--	--	--	--	--	814	--
H-3/CL-3@6	6	12/02/04	--	--	--	--	--	--	--	0.045 <sup>2</sup>	ND <sup>3</sup>	ND <sup>3</sup>	--	168	--

TPHg = Total petroleum hydrocarbons as gasoline

MIBE = Methyl tert-butyl ether

-- = not analyzed

mg/kg = milligrams per kilograms

1 = Soil samples were analyzed for fuel oxygenates (Ethanol, DIPE, TAME, EtBE, EDB, and 1,2-DCA) and all were reported as ND.

2 = Sample analyzed for full scan VOCs. All were reported as not detected with the exception of 2-Chlorotoluene.

3 = SVOCs and PCBs. All were reported as not detected at or above the laboratory reporting limit.

**Table 2**  
**Groundwater Analytical Data**

78 Service Station 11124  
3315 High Street  
Oakland, California

Sample Name	Date Sampled	TPHg (ppb)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Total Xylenes (ppb)	MIBE (ppb)	TPHd (ppb)	Total Oil and Grease (mg/L)	Dissolved Lead (mg/L)
Water samples collected from the Waste Oil and Gasoline UST Complexes										
WO(W)	12/2/2004	<50	<0.50	<0.50	<0.50	1.0	<0.50*	1,100	<5.0	<0.005
UST(W)	12/2/2004	8,300	210	1,000	240	1,400	<5.0*	990	—	<0.005

TPHg = Total petroleum hydrocarbons as gasoline

MIBE = Methyl tert-butyl ether

— = not analyzed

mg/kg = milligrams per kilograms

\* = Groundwater samples analyzed for DIPE, TBA, Etbe, TAME, 1,2-DCA, EDB, and Ethanol and all were reported as not detected.



**Table 3  
Soil Analytical Data  
Metals Analysis**

76 Service Station 11124  
3315 High Street  
Oakland, California

Sample Name	Date Sampled	Arsenic (mg/kg)	Barium (mg/kg)	Chromium (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
H-3/CL-3@6	12/2/2004	3.9	46	36	10	20	9.5	84	27	48

MIBE = methyl tert-butyl ether  
\* samples analyzed for CAM 17 Metals. Data included in analytical report.  
mg/kg = micrograms per kilogram

**Table 4**  
**Soil Analytical Data**  
**Stockpiled Soil**

75 Service Station 11124  
 3315 High Street  
 Oakland, California

Sample Name	Date Sampled	TPHg (mg/kg)	Benzene (mg/kg)	Xylenes (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	MIBE (mg/kg)	TPHd (mg/kg)	Total Oil and Grease (mg/kg)	TPH Motor Oil (mg/kg)	VOC's (mg/kg)	SVOC's (mg/kg)	PCBs (mg/kg)	Total Lead (mg/kg)
SP-1(A,B,C,D)	12/2/2004	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005	2.0	--	--	--	--	--	8.1
SP-2(A,B,C,D)	12/2/2004	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005	2.0	--	--	--	--	--	4.5
SP-3(A,B,C,D)	12/2/2004	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005	1.9	<50	<50	ND	ND	ND	2.0

MIBE = methyl tert-butyl ether  
 mg/kg = micrograms per kilogram

Table 1

Soil Analytical Data  
Former BP #11124  
3315 High Street, Oakland, CA

Soil Sample ID	Sample Depth (feet bgs)	Date Sampled	GRO (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg) *	Xylenes (mg/kg)	TBA (mg/kg)	MTBE (mg/kg)	Lead (mg/kg)	DRO (ug/L)	Oil and Grease (mg/kg)
SB-1 (6.5-7.0')	6.5	02/20/06	ND<0.094	ND<0.0047	ND<0.0047	ND<0.0047	ND<0.0047	ND<0.019	ND<0.0047	NA	NA	NA
SB-1 (10-10.5')	10.0	02/20/06	ND<0.093	ND<0.0046	ND<0.0046	ND<0.0046	ND<0.0046	ND<0.019	0.024	NA	NA	NA
SB-1 (15.5-16')	15.5	02/20/06	ND<0.091	ND<0.0046	ND<0.0046	ND<0.0046	ND<0.0046	ND<0.018	0.072	NA	NA	NA
SB-1 (19.5-20')	19.5	02/20/06	ND<0.50	ND<0.025	ND<0.025	ND<0.025	ND<0.025	ND<0.10	0.068	NA	NA	NA
SB-1 (23.5-24')	23.5	02/20/06	ND<0.10	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	0.09	NA	NA	NA
SB-1 (30-30.5')	30.0	02/20/06	ND<0.092	ND<0.0046	ND<0.0046	ND<0.0046	ND<0.0046	ND<0.018	0.032	NA	NA	NA
SB-1 (35.5-36')	35.5	02/20/06	ND<0.093	ND<0.0046	ND<0.0046	ND<0.0046	ND<0.0046	ND<0.019	0.066	NA	NA	NA
SB-1 (37.5-38')	37.5	02/20/06	ND<0.10	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.050	NA	NA	NA
SB-2 (6.5-7')	6.0	02/20/06	ND<0.096	ND<0.0048	ND<0.0048	ND<0.0048	ND<0.0048	ND<0.019	ND<0.0048	NA	NA	NA
SB-2 (10-10.5')	10.0	02/20/06	ND<5.0	ND<0.10	ND<0.10	ND<0.10	ND<0.10	ND<10	ND<0.050	NA	NA	NA
SB-2 (15-15.5')	15.0	02/20/06	62	ND<0.25	ND<0.25	0.69	1.7	ND<25	ND<0.12	NA	NA	NA
SB-2 (19.5-20')	19.5	02/20/06	ND<0.086	ND<0.0043	ND<0.0043	0.0045	0.0091	ND<0.017	0.01	NA	NA	NA
SB-2 (25-25.5')	25.0	02/20/06	0.23	0.0068	ND<0.0047	0.0096	0.022	ND<0.019	0.03	NA	NA	NA
SB-2 (30-30.5')	30.0	02/20/06	0.14	ND<0.0042	ND<0.0042	0.0047	0.012	ND<0.017	0.012	NA	NA	NA
SB-3 (10-10.5')	10.0	02/20/06	4.9	ND<0.024	ND<0.024	ND<0.024	ND<0.024	ND<0.098	ND<0.024	NA	NA	NA
SB-3 (15-15.5')	15.0	02/20/06	14	0.11	ND<0.050	0.13	0.45	ND<5	ND<0.025	NA	NA	NA
SB-3 (19.5-20')	19.5	02/20/06	0.44	0.0053	ND<0.0044	0.013	0.027	ND<0.017	0.015	NA	NA	NA
SB-3 (25-25.5')	25.0	02/20/06	0.45	0.013	ND<0.0044	0.021	0.062	ND<0.017	ND<0.0044	NA	NA	NA
SB-3 (30-30.5')	30.0	02/20/06	0.32	ND<0.0045	ND<0.0045	0.013	0.039	ND<0.018	ND<0.0045	NA	NA	NA

Table 1

Soil Analytical Data  
Former BP #11124  
3315 High Street, Oakland, CA

Soil Sample ID	Sample Depth (feet bgs)	Date Sampled	GRO (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	TBA (mg/kg)	MTBE (mg/kg)	Lead (mg/kg)	DRO (ug/L)	Oil and Grease (mg/kg)
SB-4 (5-5.5')	5.0	02/21/06	ND<0.092	ND<0.0046	ND<0.0046	ND<0.0046	ND<0.0046	ND<0.018	ND<0.0046	NA	NA	NA
SB-4 (10-10.5')	10.0	02/21/06	ND<0.093	ND<0.0046	ND<0.0046	ND<0.0046	ND<0.0046	ND<0.019	ND<0.0046	NA	NA	NA
SB-4 (15-15.5')	15.0	02/21/06	ND<0.092	ND<0.0046	ND<0.0046	ND<0.0046	ND<0.0046	ND<0.018	ND<0.0046	NA	NA	NA
SB-4 (20-20.5')	20.0	02/21/06	ND<0.097	ND<0.0048	ND<0.0048	ND<0.0048	ND<0.0048	ND<0.019	ND<0.0048	NA	NA	NA
SB-4 (25-25.5')	25.0	02/21/06	ND<0.098	ND<0.0049	ND<0.0049	ND<0.0049	ND<0.0049	ND<0.020	ND<0.0049	NA	NA	NA
SB-4 (30-30.5')	30.0	02/21/06	ND<0.098	ND<0.0049	ND<0.0049	ND<0.0049	ND<0.0049	ND<0.020	ND<0.0049	NA	NA	NA
SB-5 (6-6.5')	6.0	02/21/06	ND<0.092	ND<0.0046	ND<0.0046	ND<0.0046	ND<0.0046	ND<0.018	ND<0.0046	NA	26	ND<5.0
SB-5 (10-10.5')	10.0	02/21/06	ND<0.093	ND<0.0046	ND<0.0046	ND<0.0046	ND<0.0046	ND<0.019	ND<0.0046	NA	9.5	ND<5.0
SB-5 (15-15.5')	15.0	02/21/06	ND<0.096	ND<0.0048	ND<0.0048	ND<0.0048	ND<0.0048	ND<0.019	ND<0.0048	NA	ND<1.0	ND<5.0
SB-5 (23.5-24')	23.5	02/21/06	ND<0.095	ND<0.0048	ND<0.0048	ND<0.0048	ND<0.0048	ND<0.019	ND<0.0048	NA	1.9	ND<5.0

**Table 1**

**Soil Analytical Data**  
Former BP #11124  
3315 High Street, Oakland, CA

Notes: All Samples analyzed by EPA Method 8260B. Di-isopropyl ether, 1,2-dibromoethane, 1,2-dichloroethane, ethyl tertiary butyl ether, tertiary amyl methyl ether and ethanol were not detected at or above their respective laboratory reporting limit.

Total lead analyzed by EPA Method 6000/7000 series for soil disposal purposes.

bgs = below ground surface

GRO = Gasoline range organics

TBA = tert-butyl alcohol

MTBE = Methyl tert-butyl ether

DRO = Diesel Range Organics

mg/kg = milligrams per kilogram

ND< = Not detected at or above stated laboratory reporting limit

NA = Not analyzed

Table 2

**Soil Boring Groundwater Analytical Data**  
Former BP #11124  
3315 High Street, Oakland, CA

Sample ID	DTW or Hydropunch screen interval (feet bgs)	Date Sampled	GRO (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	TBA (ug/L)	MTBE (ug/L)	DRO (ug/L)	Oil and Grease (ug/L)
SB-1 @ 19.4'	34.5	02/20/06	120	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<40	110	NA	NA
SB-2 @ 8.8'	23	02/20/06	1,300	60	ND<1.0	63	79	ND<40	120	NA	NA
SB-3 @ 19.2'	24.5	02/20/06	450	30	ND<0.50	42	66	ND<20	ND<0.50	NA	NA
SB-4 13.2'	25	02/21/06	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<20	ND<0.50	NA	NA
SB-5 10.7'	25	02/21/06	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<20	ND<0.50	72	ND<1100

Table 2

Soil Boring Groundwater Analytical Data

Former BP #11124

3315 High Street, Oakland, CA

Notes: All Samples analyzed by EPA Method 8260B. Di-isopropyl ether, 1,2-dibromoethane, 1,2-dichloroethane, ethyl tertiary butyl ether, tertiary amyl methyl ether and ethanol were not detected at or above their respective laboratory reporting limit.  
Total lead analyzed by EPA Method 6000/7000 series for soil disposal purposes.

DTW = Depth to water

bgs = below ground surface

GRO = Gasoline range organics

TBA = tert-butyl alcohol

MTBE = Methyl tert-butyl ether

DRO = Diesel Range Organics

ug/L = micrograms per liter

ND< = Not detected at or above stated laboratory reporting limit

NA = Not analyzed

APPENDIX B

Soil Boring and Well Construction Logs





1333 Broadway, Suite 800  
Oakland, California 94612

# LOG OF BORING

Borehole ID: SB-1

Total Depth: 40 feet bgs.

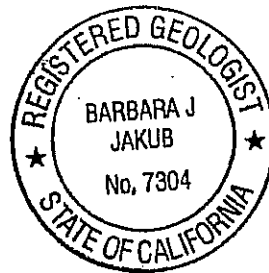
PROJECT INFORMATION		DRILLING INFORMATION	
Project: Former BP Site #11124		Drilling Company: Gregg Drilling and Testing, Inc.	
Site Location: 3315 High Street, Oakland, CA		Driller: Paul Rogers	
Project Manager: Lynelle Onishi		Type of Drilling Rig: Geoprobe	
PG: Barbara Jakub		Drilling Method: 2" Direct Push	
Geologist: Andrew Fowler		Sampling Method: Continuous	
Job Number: 38487462.0013001		Date(s) Drilled: 2/20/2006	

BORING INFORMATION	
Groundwater Depth: 19.4 feet bgs.	Boring Location: Adjacent to former UST cavity
Air Knife or Hand Auger Depth: 5.0 feet bgs.	Boring Diameter: 2"
Coordinates: X                      Y	Boring Type: Exploratory

Depth (ft bgs)	Symbol	Lithologic Description	USCS	PID (ppm)	Time & Sample ID	Recovery	Comments
0		ASPHALT: 4" Asphalt					
0 - 2		SANDY CLAY: Dark grayish brown (2.5Y 4/2), stiff, dry, 55% clay, 40% medium to fine sand, 5% silt, medium plasticity.	CL				Boring grouted with neat Portland Cement. Top 3" finished to grade with cement.
2 - 4		CLAYEY SAND: Dark grayish brown (2.5Y 4/2), loose, dry, 45% fine to coarse sand, 30% clay, 20% fine to coarse angular gravel up to 25 mm diameter, 5% silt.	SP				
4 - 6							Top 5' logged from hand auger / airknife cuttings.
6 - 8		SANDY CLAY: Light olive brown (2.5Y 5/3), soft, dry, 50% clay, 35% coarse angular quartz sand, 10% fine angular gravel, 5% silt, medium plasticity, iron staining.	CL	1.6	0930 SB-1 6.5'-7'		
8 - 10		CLAYEY SILT: Light yellowish brown (10YR 6/4), soft, moist, 80% silt, 20% clay, medium plasticity.	ML				
10 - 12		SANDY GRAVEL: Dark yellowish brown (10YR 4/4), dense, dry to moist, 50% angular gravel, 35% coarse sand, 15% clay, iron staining.	GP	1.6	0945 SB-1 10'-10.5'		
12		@11 feet bgs: Drilling resistance encountered					
14 - 16		SANDY CLAY: Light olive brown (2.5Y 5/3), dense, dry, 50% clay, 35% coarse quartz sand, 15% silt, medium to high plasticity, iron staining.	CL	2.0	1000 SB-1 15.5'-16'		
16 - 18							
18 - 20		@18 feet bgs: Same as above with minor gravel. 50% clay, 35% fine to coarse sand, 10% silt, 5% fine gravel.			1250 SB-1 19.4' water sample		
20 - 22				4.2	1015 SB-1 19.5'-20'		Static water level 19.40 feet bgs
22		SILTY SAND: Light olive brown (2.5Y 5/3), soft, dry, 55% fine to medium sand, 30% silt, 15% clay, low plasticity, iron staining.	SM				

Depth (ft bgs)	Symbol	Lithologic Description	USCS	PID (ppm)	Time & Sample I.D.	Recovery	Comments
24				2.6	1020 SB-1 23.5'-24'		
26		CLAYEY SILT: Yellowish brown (10YR 5/4), stiff, dry to moist, 65% silt, 20% clay, 15% coarse rounded sand, medium plasticity, no iron staining.	ML				
28		SANDY SILT@28.5 feet bgs: Sand content increase. 60% silt, 25% coarse rounded sand, 15% clay.		1.8	1040 SB-1 30'-30.5'		
30							
32							
34		SANDY SILT: Yellowish brown (10YR 5/4), soft, wet, 65% silt, 25% fine to medium sand, 10% clay, low plasticity.					
36					1050 SB-1 35.5'-36'		▽ First water encountered at 34.5 feet bgs during drilling
38		SILTY SAND: Yellowish brown (10YR 5/4), soft, saturated, 55% sand, 30% silt, 15% clay.	SM	1.4	1110 SB-1 37.5'-38'		
40		SAND: Light yellowish brown (2.5Y 6/3), very dense, dry, 95% well sorted fine sand, 5% clay, low plasticity.	SP				





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### LOG OF BORING

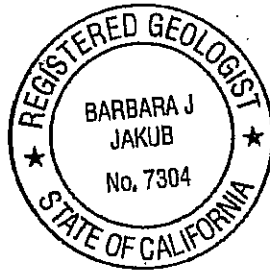
Borehole ID: SB-2

Total Depth: 32 feet bgs

PROJECT INFORMATION		DRILLING INFORMATION	
Project: Former BP Site #11124		Drilling Company: Gregg Drilling and Testing, Inc.	
Site Location: 3315 High Street, Oakland, CA		Driller: Paul Rogers	
Project Manager: Lynelle Onishi		Type of Drilling Rig: Geoprobe	
PG: Barbara Jakub		Drilling Method: 2" Direct Push	
Geologist: Andrew Fowler		Sampling Method: Continuous	
Job Number: 38487462.0013001		Date(s) Drilled: 2/20/2006	
BORING INFORMATION			
Groundwater Depth: 8.8 feet bgs		Boring Location: Adjacent to former dispenser islands	
Air Knife or Hand Auger Depth: 5.0 feet bgs.		Boring Diameter: 2"	
Coordinates: X                      Y		Boring Type: Exploratory	

Depth (ft bgs)	Symbol	Lithologic Description	USCS	PID (ppm)	Time & Sample ID	Recovery	Comments
0		ASPHALT: 4" Asphalt					
0 - 2		SILTY CLAY: Dark greenish gray (Gley 1 4/10Y), hard, dry, 80% clay, 20% silt, low plasticity.	CL				Boring grouted with neat Portland Cement. Top 3" finished to grade with cement.
3.5		@ 3.5 feet bgs: 80% clay, 15% silt, <5% sand					
5		@5 feet bgs: 70% clay, 25% silt, 5% coarse angular sand					Top 5' logged from hand auger / airknife cuttings.
7		@7 feet bgs: 2-inch layer of coarse angular gravel		0.5	1135 SB-2 6.5'-7'		
8 - 12		SILTY SAND: Dark yellowish brown (10YR 4/4), medium stiff, dry, 60% fine to medium angular sand, 30% silt, 10% clay, Iron staining.	SM		1300 SB-2 8.8' water sample		Static water level 8.80 feet bgs
10				29.4	1145 SB-2 10'-10.5'		
12 - 18		CLAYEY SILT: Yellowish brown (10YR 5/4), stiff, dry, 75% silt, 25% clay, medium plasticity.	ML				
16				46.7	1150 SB-2 15'-15.5'		
18 - 22		SANDY SILT: Yellowish brown (10YR 5/4), very stiff, dry, 55% silt, 35% medium to coarse angular sand, 10% clay, medium to high plasticity.					
20				1.1	1200 SB-2 19.5'-20'		
22							

Depth (ft bgs)	Symbol	Lithologic Description	USCS	PID (ppm)	Time & Sample I.D.	Recovery	Comments
24	█	CLAYEY SILT: Yellowish brown (10YR 5/4), stiff, moist, 45% silt, 30% medium to coarse angular sand, 25% clay, medium to high plasticity. @24 feet bgs: 2-inch layer of coarse angular gravel up to 25mm diameter, moist.	CL	1.0	1215 SB-2 25'-25.5'	█	First water encountered at 23 feet bgs during drilling
26		SANDY CLAY: Yellowish brown (10YR 5/4), stiff, dry, 55% clay, 35% coarse angular sand, 10% silt, medium plasticity.					
28							
30				0.2	1220 SB-2 30'-30.5'		
32							





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# LOG OF BORING

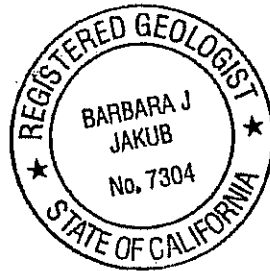
Borehole ID: SB-3

Total Depth: 32 feet bgs

PROJECT INFORMATION		DRILLING INFORMATION	
Project: Former BP Site #11124		Drilling Company: Gregg Drilling and Testing, Inc.	
Site Location: 3315 High Street, Oakland, CA		Driller: Paul Rogers	
Project Manager: Lynelle Onishi		Type of Drilling Rig: Geoprobe	
PG: Barbara Jakub		Drilling Method: 2" Direct Push	
Geologist: Andrew Fowler		Sampling Method: Continuous	
Job Number: 38487462.0013001		Date(s) Drilled: 2/20/2006	
BORING INFORMATION			
Groundwater Depth: 19.2 feet bgs		Boring Location: Adjacent to High Street property entrance	
Air Knife or Hand Auger Depth: 5.0 feet bgs.		Boring Diameter: 2"	
Coordinates: X                      Y		Boring Type: Exploratory	

Depth (ft bgs)	Symbol	Lithologic Description	USCS	PID (ppm)	Time & Sample ID	Recovery	Comments
0		ASPHALT: 4" Asphalt	SP				
0-2		SAND: Light olive brown (2.5Y 5/3), dry, 90% very fine sand, 10% clay, <1% silt, non plastic.	SP				Boring grouted with neat Portland Cement. Top 3" finished to grade with cement.
2-4		CLAYEY SAND @ 2.5 feet bgs: color change: Dark greenish gray (Gley 1 4/10Y), dry, 80% fine to coarse sand, 15% clay, 5% fine gravel, <1% silt, low plasticity. @ 3 feet bgs: 65% fine to coarse sand, 25% clay, 10% fine gravel, <1% silt, low plasticity.	SC				
4-6		@4.5 feet bgs: Cobbles, increased clay, fine to coarse sand, moderate odor.					
6-8		SANDY CLAY: Dark greenish gray (Gley 1 4/10Y), damp, 50% clay, 30% sand, 20% silt, medium plasticity, very strong odor, no cobbles.	CL				Top 5' logged from hand auger / airknife cuttings.
8-10		SANDY SILT: Dark yellowish brown (10YR 4/4), stiff, dry, 65% silt, 20% fine to medium sand, 15% clay, medium plasticity.	ML				
10-14		@10 to 14 feet bgs: moderate hydrocarbon odor.		89.6	1320 SB-3 10'-10.5'		
14-16		SILTY CLAY: Dark yellowish brown (10YR 4/4), stiff, dry, 60% silt, 30% clay, 10% sand, medium to high plasticity.	CL				
16-18		No Recovery @17 feet bgs: Drilling resistance encountered.		71.9	1330 SB-3 15'-15.5'		
18-20					1430 SB-3 19.2' water sample		
20-22		GRAVELLY CLAY: Yellowish brown (10YR 5/4), very stiff, dry, 40% clay, 25% fine angular gravel, 25% medium to coarse angular sand, 10% silt, medium plasticity.	CL	6.8	1340 SB-3 19.5'-20'		Static water level 19.20 feet bgs
22		CLAYEY SILT: Moist, clayey silt zone	ML				
		GRAVELLY CLAY: Yellowish brown (10YR 5/4), very stiff, dry, 40% clay, 25% fine angular gravel, 25% medium to coarse angular sand, 10% silt, medium plasticity.	CL				

Depth (ft bgs)	Symbol	Lithologic Description	USCS	PI/D (ppm)	Time & Sample I.D.	Recovery	Comments
24 26 28 30 32		<p>@24.5 feet bgs: Wet.</p> <p>GRAVELLY CLAY: Yellowish brown (10YR 5/4), stiff, wet, 40% clay, 40% fine angular gravel, 15% silt, 5% sand, medium plasticity.</p>		4.8	1355 SB-3 25'-25.5'		 First water encountered at 24.5 feet bgs during drilling
				0.6	1410 SB-3 30'-30.5'		





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**LOG OF BORING**

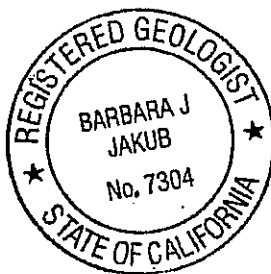
Borehole ID: SB-4

Total Depth: 32 feet bgs

PROJECT INFORMATION		DRILLING INFORMATION	
Project: Former BP Site #11124		Drilling Company: Gregg Drilling and Testing, Inc.	
Site Location: 3315 High Street, Oakland, CA		Driller: Paul Rogers	
Project Manager: Lynelle Onishi		Type of Drilling Rig: Geoprobe	
PG: Barbara Jakub		Drilling Method: 2" Direct Push	
Geologist: Jacob Henry		Sampling Method: Continuous	
Job Number: 38487462.0013001		Date(s) Drilled: 2/21/2006	
BORING INFORMATION			
Groundwater Depth: 13.2 feet bgs		Boring Location: SW corner of site.	
Air Knife or Hand Auger Depth: 5.0 feet bgs.		Boring Diameter: 2"	
Coordinates: X                      Y		Boring Type: Exploratory	

Depth (ft bgs)	Symbol	Lithologic Description	USCS	PID (ppm)	Time & Sample ID	Recovery	Comments
0		ASPHALT: 4" Asphalt					
0.5		CLAY: Olive brown, dry, 90% clay, 10% silt, low plasticity.	CL				Boring grouted with neat Portland Cement. Top 3" finished to grade with cement.
1.5		SILTY CLAY: Olive brown, dry, 60% clay, 20% silt, 15% sand, 5% gravel, low plasticity.	SC				
5.0		CLAYEY SAND: Light olive brown (2.5Y 4/3), loose, dry, 65% fine to coarse sand, 30% clay, 10% silt, <5% sub-angular to sub-rounded gravel clasts up to 0.5" diameter. @ 5 feet bgs: damp.		1.6	0841 SB-4 5'-5.5'		
8.0		GRAVEL: Olive brown (2.5Y 4/3), loose, dry, fine subangular gravel, fine to coarse sand.	GP				
10.0		SANDY CLAY: Light olive brown (2.5Y 5/4), very dense, dry, very fine to medium sand, minor fine gravel, low to medium plasticity.	CL		2.2	0845 SB-4 10'-10.5'	
13.2		@13 feet bgs: Decreased sand, no gravel.					Static water level 13.20 feet bgs
14.0		@14 feet bgs: Increased clay and silt content.					
15.0		@15 feet bgs: Gray mottling (2.5Y 5/1)		1.7	0852 SB-4 15'-15.5'		
18.0		@18 feet bgs: Increase in very fine to medium sand content, minor decrease in clay, minor decrease in silt, fine gravels.					
20.0		@21.5 feet bgs: Increased very fine to medium sand.					
22.0		@22 feet bgs: Color change to very dark brown (2.5Y 3/2)		1.9	0906 SB-4 20'-20.5'		

Depth (ft bgs)	Symbol	Lithologic Description	USCS	PID (ppm)	Time & Sample I.D.	Recovery	Comments
24		@23 feet bgs: Increased sand content (very fine to medium).					
26		@25 feet bgs: As above - damp, increasing coarse sand, coarse sand grains moist and sub-angular to sub-rounded.		1.4	0915 SB-4 25'-25.5'		∇ First water encountered at 25 feet bgs during drilling
28		@27 feet bgs: Increased sand (very fine to medium). Moist.					
30		@29 feet bgs: Sandy stringer (possibly SC). Wet.					
32		@31 feet bgs: Damp - very hard very fine to coarse sand, minor fine gravel.		1.2	0928 SB-4 30'-30.5'		







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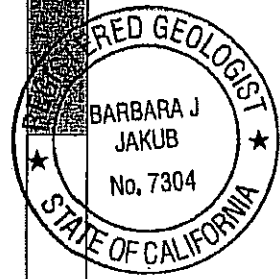
# LOG OF BORING

Borehole ID: SB-5

Total Depth: 25 feet bgs

PROJECT INFORMATION		DRILLING INFORMATION	
Project: Former BP Site #11124		Drilling Company: Gregg Drilling and Testing, Inc.	
Site Location: 3315 High Street, Oakland, CA		Driller: Paul Rogers	
Project Manager: Lynelle Onishi		Type of Drilling Rig: Geoprobe	
PG: Barbara Jakub		Drilling Method: 2" Direct Push	
Geologist: Jacob Henry		Sampling Method: Continuous	
Job Number: 38487462.0013001		Date(s) Drilled: 2/21/2006	
BORING INFORMATION			
Groundwater Depth: 10.7 feet bgs.		Boring Location: Adjacent to former waste-oil tank	
Air Knife or Hand Auger Depth: 5.0 feet bgs.		Boring Diameter: 2"	
Coordinates: X                      Y		Boring Type: Exploratory	

Depth (ft bgs)	Symbol	Lithologic Description	USCS	PID (ppm)	Time & Sample ID	Recovery	Comments
0		ASPHALT: 4" Asphalt					
0-2		CLAY: Dark greenish gray, dry, 90% clay, 10% silt, low to medium plasticity.	CL				Boring grouted with neat Portland Cement. Top 3" finished to grade with cement.
2-4		SILTY CLAY: Dark greenish gray, dry, 70% clay, 25% silt, 5% very fine to fine sand, minor coarse sand.	ML				
4-6		CLAYEY SILT WITH SAND: Light olive brown, dry, 55% silt, 35% clay, 10% very fine to medium sand minor coarse sand, organic material, low plasticity.					
6-8		SANDY CLAYEY SILT: Light olive brown, dry, 55% silt, 25% clay, 20% very fine to medium sand, minor sub-angular to angular coarse sand, organic material, low plasticity.	CL	2.2	1003 SB-5 6'-6.5'		Top 5' logged from hand auger / air/knife cuttings.
8-10		CLAY: Light olive brown, very dense, dry, very fine to medium sand, black organic material, (2.5Y 5/6) mottling. @8 feet bgs: Increased coarse sand (sub-angular to sub-rounded) @8.5 feet bgs: Decreased coarse sand		1.9	1014 SB-5 10'-10.5'		Static water level 10.70 feet bgs
10-12		@ 12 feet bgs: Increase in silt content, lithology is crumbly			1100 SB-5 10.7' water sample		
12-14		@13 feet bgs: 2-inch wet zone		3.5	1018 SB-5 15'-15.5'		
14-16		@16.5 feet bgs: Increased very fine to fine sand					
16-18		@17 feet bgs: 2-inch wet zone					
18-20		@17.5 feet bgs: Decreased sand content, very hard					
20-22		@18 feet bgs: Increased very fine to medium sub-angular sand					
22-24		@18.5 feet bgs: 2-inch wet zone					
24-25		@19 feet bgs: Decreased sand content					
25		@19.5 feet bgs: Dry, very hard.					
25		No Recovery					
24		SANDY CLAY: Light olive brown (2.5Y 5/3), very hard, dry, very fine to coarse sand, low plasticity.	CL	2.8	1054 SB-5 23.5'-24'		





MOBIL OIL CORPORATION  
OAKLAND, CALIFORNIA

MW-1

Well completed to 35.0 feet in depth with 2-inch Class 160 PVC casing, flush-threaded joints. Screen (.020-inch slot) set from 7.0 to 35.0 feet. 6 X 12 Monterey sand placed from 5.5 to 35.0 feet, bentonite pellets placed from 5.0 to 5.5 feet, and concrete seal placed from 0 to 5.0 feet.

25'

RIG Hollow Stem		SURFACE ELEVATION -----		LOGGED BY JCW				
DEPTH TO GROUNDWATER As noted		BORING DIAMETER 8"		DATE DRILLED 7/29/86				
DESCRIPTION AND CLASSIFICATION			DEPTH (FEET)	SAMPLER	UNCONFINED COMPRESSIVE STRENGTH (KSP)	WATER CONTENT (%)	DRY DENSITY (PCF)	PENETRATION RESISTANCE (BLOWS/FT.)
DESCRIPTION AND REMARKS	COLOR	CONSIST.						
ASPHALT, BASE ROCK AND FILL								
SILTY CLAY with rock fragments; dry	tan	stiff	CL	5				
Cobbles; damp								
Grading to clayey gravel; damp	tan to brown		CL GC	10				
GRAVELLY CLAY, with some fine sand; damp to moist No product odor	tan to light brown	stiff	CL	15				
Increasing clay at 17 feet, moist; no product odor				20				
				EXPLORATORY BORING LOG				
				MOBIL OIL CORPORATION HIGH STREET, OAKLAND				
				PROJECT NO.	DATE	BORING NO.		
				H182-21	8/86	MW-1		

ST  
to  
BS

WELL RIG <b>Hollow Stem</b>	SURFACE ELEVATION <b>----</b>	LOGGED BY <b>JCW</b>
DEPTH TO GROUNDWATER <b>As Noted</b>	BORING DIAMETER <b>8"</b>	DATE DRILLED <b>7/29/86</b>

DESCRIPTION AND CLASSIFICATION				DEPTH (FEET)	SAMPLER	UNCONFINED COMPRESSIVE STRENGTH (KSF)	WATER CONTENT (%)	DRY DENSITY (PCF)	PENETRATION RESISTANCE (BLOWS/FT.)
DESCRIPTION AND REMARKS	COLOR	CONSIST.	SOIL TYPE						
GRAVELLY CLAY (CONTD)	light brown	stiff to very stiff	CL						
CLAYEY GRAVEL; wet, no product odor	light brown	dense	GC	25			▽		
CLAYEY SAND; grading to sandy clay	light brown	medium dense	SC	35					
TOTAL DEPTH = 35.0 feet									

<b>EXPLORATORY BORING LOG</b>		
MOBIL OIL CORPORATION HIGH STREET, OAKLAND		
PROJECT NO. H182-21	DATE 8/86	BORING NO. NW-1

MOBIL OIL CORPORATION  
OAKLAND, CALIFORNIA

MW-2

Well completed to 30.0 feet in depth with 2-inch Class 160 PVC casing, flush-threaded joints. Screen (.020-inch slot) set from 7.0 to 30.0 feet. 6 X 12 Monterey sand placed from 5.0 to 30.0 feet, bentonite pellets placed from 4.5 to 5.0 feet, and concrete seal placed from 0 to 4.5 feet.

23'

DRILL RIG Hollow Stem		SURFACE ELEVATION ---		LOGGED BY JCW					
DEPTH TO GROUNDWATER As Noted		BORING DIAMETER 8"		DATE DRILLED 7/30/86					
DESCRIPTION AND CLASSIFICATION				DEPTH (FEET)	SAMPLER	UNCONFINED COMPRESSIVE STRENGTH (KSF)	WATER CONTENT (%)	DRY DENSITY (PCF)	PENETRATION RESISTANCE (BLOWS/FT.)
DESCRIPTION AND REMARKS	COLOR	CONSIST.	SOIL TYPE						
ASPHALT AND BASE ROCK									
SILTY CLAY with rock fragments; dry	tan	stiff	CL						
Large rock fragments				5					
Damp; no product odor	moist tan to gray to brown								
Decreasing rock fragments				10					
Slightly sandy No product odor			CL-SC	15					
CLAYEY GRAVEL	light brown	dense	GC	20					
				EXPLORATORY BORING LOG					
				MOBIL OIL CORPORATION HIGH STREET, OAKLAND					
				PROJECT NO.		DATE		BORING NO.	
				H182-21		8/86		MW-2	

J.P.R.



WELL RIG Hollow Stem		SURFACE ELEVATION ----		LOGGED BY JCW					
DEPTH TO GROUNDWATER As Noted		BORING DIAMETER 8"		DATE DRILLED 7/30/86					
DESCRIPTION AND CLASSIFICATION				DEPTH (FEET)	SAMPLER	UNCONFINED COMPRESSIVE STRENGTH (KSF)	WATER CONTENT (%)	DRY DENSITY (PCF)	PENETRATION RESISTANCE (BLOWS/FT.)
DESCRIPTION AND REMARKS	COLOR	CONSIST.	SOIL TYPE						
CLAYEY GRAVEL (CONTD)	light brown to tan	dense	GC						
Large gravel		dense to very dense		25					
TOTAL DEPTH = 30.0 feet				30					
				EXPLORATORY BORING LOG					
				MOBIL OIL CORPORATION HIGH STREET, OAKLAND					
				PROJECT NO.		DATE		BORING	
				H182-21		8/86		NO. MW-2	

MOBIL OIL CORPORATION  
OAKLAND, CALIFORNIA

MW-3

Well completed to 30.0 feet in depth with 2-inch Class 160 PVC casing, flush-threaded joints. Screen (.020-inch slot) set from 7.0 to 30.0 feet. 6 X 12 Monterey sand placed from 5.0 to 30.0 feet, bentonite pellets placed from 4.5 to 5.0 feet, and concrete seal placed from 0 to 4.5 feet.



WELL RIG Hollow Stem		SURFACE ELEVATION ----		LOGGED BY JCW						
DEPTH TO GROUNDWATER As Noted		BORING DIAMETER 8"		DATE DRILLED 7/30/86						
DESCRIPTION AND CLASSIFICATION				DEPTH (FEET)	SAMPLER	UNCONFINED COMPRESSIVE STRENGTH (KSI)	WATER CONTENT (%)	DRY DENSITY (PCF)	PENETRATION RESISTANCE (BLOWS/FT.)	
DESCRIPTION AND REMARKS	COLOR	CONSIST.	SOIL TYPE							
ASPHALT AND BASE ROCK										
SILTY CLAY with rock fragments; dry	tan to brown	stiff	CL- GC	5						
Large rock fragments										
Decreasing rock fragments										
SILTY CLAY, damp No product odor	tan to gray	stiff	CL	10						
		very stiff		15						
				20						
Wet; no product odor										
<b>EXPLORATORY BORING LOG</b>										
MOBIL OIL CORPORATION HIGH STREET, OAKLAND										
PROJECT NO.			DATE		BORING NO.					
H182-21			8/86		NO. MW-3					

DRILL RIG Hollow Stem			SURFACE ELEVATION -----			LOGGED BY JCW				
DEPTH TO GROUNDWATER As Noted			BORING DIAMETER 8"			DATE DRILLED 7/30/86				
DESCRIPTION AND CLASSIFICATION					DEPTH (FEET)	SAMPLER	UNCONFINED COMPRESSIVE STRENGTH (KSF)	WATER CONTENT (%)	DRY DENSITY (PCF)	PENETRATION RESISTANCE (BLOWS/FT.)
DESCRIPTION AND REMARKS	COLOR	CONSIST.	SOIL TYPE							
SILTY CLAY (CONTD)	tan to gray	very stiff	CL	25						
CLAYEY GRAVEL; wet			light brown							
SILTY CLAY	light brown	very stiff to hard	CL	30						
CLAYEY GRAVEL	light brown	dense to very dense	GC							
TOTAL DEPTH = 30.0 feet										
					EXPLORATORY BORING LOG					
					MOBIL OIL CORPORATION HIGH STREET, OAKLAND					
					PROJECT NO.		DATE		BORING NO.	
					H182-21		8/86		MW-3	

Total depth of boring: 30-1/2 ft. Diameter of boring: 8 in. Date drilled: 5/13/91  
 Casing diameter: 2 in. Length: 15 ft. Slot size: 0.020 in.  
 Screen diameter: 2 in. Length: 15 ft. Material type: PVC  
 Drilling Company: Kvillhaug Driller: Mike and Cliff  
 Method Used: Hollow-stem Auger Field Geologist: C. Avila

Signature of Registered Professional: \_\_\_\_\_  
 Registration No.: 4313 State: Calif.

DEPTH	SAMPLE NO.	BLOWS	P.I.D.	USCS CODE	DESCRIPTION	WELL CONST.
0					Asphalt	
2						
4	S-5	40		SM	Silty sand with some gravel, medium- to coarse-grained sand and coarse gravel, light brown, damp, dense.	
6						
8						
10	S-10	23		CL	Clay with some silt, light brown, damp, medium plasticity, very stiff.	
12						
14	S-15	24		ML	Silt with some clay and trace gravel, light brown, damp, slight plasticity, very stiff.	
16						
18						
20	S-20	38			Silt with some fine- to coarse-grained sand and coarse gravel, wet, hard.	
(section continues downward)						

S1  
 1S-30

**RESNA**

PROJECT NO. 30061-2

FILE NO. 0061B4A

**LOG OF BORING: B-1/MW-4**  
 BP Facility No. 11124  
 3315 High Street  
 Oakland, California

PLATE  
**4**

DEPTH	SAMPLE NO.	BLOWS	P.I.D.	USCS CODE	DESCRIPTION	WELL CONST.
20	S-20	38		ML	Silt with some fine- to coarse-grained sand and coarse gravel, wet, hard.	[Patterned]
22						
24	S-25	20				
26						
28	S-28	37			Silt with some fine- to medium-grained sand, trace coarse gravel and clay, light brown, wet, very stiff.	[Patterned]
30	S-30	37				
32						
34						
36					Total depth = 30-1/2 feet. Ground water encountered at 19-1/2 feet. Boring terminated to construct monitoring well.	[Blank]
38						
40						
42						
44						
46						
48						
50						



**LOG OF BORING, B-1/MW-4**  
**BP Facility No. 11124**  
**3315 High Street**  
**Oakland, California**

**PLATE**  
**5**

**PROJECT NO. 30081-2**      **FILE NO. 0081B4B**

Total depth of boring: 18-1/2 ft Diameter of boring: 8 in. Date drilled: 5/14/91

Casing diameter: N/A Length: N/A Slot size: N/A

Screen diameter: N/A Length: N/A Material type: N/A

Drilling Company: Kvllhaug Driller: Mike & Cliff

Method Used: Hollow-stem Auger Field Geologist: Claudio

Signature of Registered Professional: \_\_\_\_\_

Registration No.: 4313 State: Calif.

DEPTH	SAMPLE NO.	SAOTE	P.I.D.	USCS CODE	DESCRIPTION	WELL CONST.
0					Asphalt	
2						Dotted pattern
4	S-5	33	0 ppmv	SM	Sandy silt with some gravel, medium-to coarse-grained sand and coarse gravel, light brown, damp, hard.	
6						
8						
10	S-10	26	0 ppmv		Clayey silt with trace of sand, fine-to medium-grained sand, light brown, damp, slight plasticity, very stiff.	
12						
14	S-15	30	0 ppmv	ML	Silt with some clay and a trace of fine-grained sand, light brown, damp, slight plasticity, very stiff.	
16						
18	S-18	24	0 ppmv		Silt with some gravel and a trace of clay, coarse gravel, light brown, very moist, very stiff.	
20					Total depth = 18-1/2 feet. Boring backfilled with cement/bentonite slurry.	



**PROJECT NO. 30061-2**

FILE NO. 0061BSA

**LOG OF BORING, B-2B**  
**BP Facility No. 1124**  
**3315 High Street**  
**Oakland, California**

**PLATE**  
**6**

Total depth of boring: 17-1/2 ft Diameter of boring: 8 in. Date drilled: 5/14/91  
 Casing diameter: N/A Length: N/A Slot size: N/A  
 Screen diameter: N/A Length: N/A Material type: N/A  
 Drilling Company: Kvllhaug Driller: Mike & Cliff  
 Method Used: Hollow-stem Auger Field Geologist: Claudia

Signature of Registered Professional: \_\_\_\_\_  
 Registration No.: 4313 State: Calif.

DEPTH	SAMPLE NO.	SHAFT B	P.I.D.	USCS CODE	DESCRIPTION	WELL CONST.
0					Asphalt	
2						[Patterned]
4	S-5	28	0 ppmv	ML	Silt with trace sand and gravel, medium-to coarse-grained sand and coarse gravel, light brown, damp, very stiff.	
6						
8						
10	S-10	26	0 ppmv		(trace of clay)	
12						
14	S-15	43	0 ppmv	SW	Sand with some gravel and trace silt, medium-to coarse-grained sand and coarse gravel, light brown, damp, dense.	
16	S-20	26	0 ppmv	ML	Silt with some sand and trace fine-grained sand and coarse gravel, light brown, damp, very stiff.	
18					Total depth = 17-1/2 feet. Boring backfilled with cement/bentonite slurry.	
20						

**RESNA**  
 PROJECT NO. 30061-2

FILE NO.  
0061B6A

**LOG OF BORING, B-3**  
 BP Facility No. 11124  
 3315 High Street  
 Oakland, California

PLATE  
**7**

SOIL BORING LOG

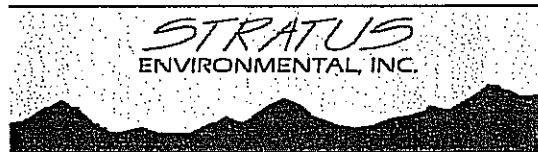
Boring No. MW-5

Sheet 1 of 2

Client Former BP Station #11124 Date 12/12/2006  
 Address 3315 High Street Drilling Company Woodward Drilling rig type: Mobile Drill B-57  
Oakland, California Driller Jason/Chris  
 Project No. E-11124-01 Method Hollow Stem Auger hole diam.: 8"  
 Logged By: Scott Bittlinger  
 Well Pack sand: 23 ft. to 30 ft. Well Construction casing: PVC screen interval: 25'-30'  
bent.: 20 ft. to 23 ft. casing diam.: 2" screen slot size: 0.02"  
grout: 0 ft. to 20 ft. Depth to GW:  first encountered groundwater  static groundwater

Sample		Blow	Sample		Well Constru ct.	Depth Scale	LITHO COLUMN	Descriptions of Materials and Conditions	PID (PPM)
Type	No.	Count	Time	Recov.					
						1	Asphalt surface		
						2			
						3	fine grained fill soil with construction debris (bricks, rocks, concrete)		
						4			
						5			
		3				6	SC CLAYEY SAND, strong brown, 65% fine to coarse grained sand, 35% clayey fines, moist	1	
S	MW5-6	8	10:26	90		7			
						8			
						9			
						10			
		4				11	SC CLAYEY SAND, strong brown, 56% fine to coarse grained sand, 45% clayey fines, moist (10'-11')	2	
S	MW5-11	11	10:36	100		12			
		14				13	CL SANDY CLAY, light olive brown, 85% clayey fines, 15% predominately fine grained sand, trace coarse grained sand, dry (11'-11.5')		
						14			
						15			
		5				16	CL CLAY with SAND, dark yellowish brown, 85-90% clay, trace silt, 10-15% fine to coarse grained sand, dry	2	
S	MW5-16	13	10:53	100		17			
		9				18			
						19			
						20	SC		

Comments: Sampled to 31.5' bgs, drilled to 30' bgs to complete well.



SOIL BORING LOG

Boring No. MW-5

Sheet 2 of 2

Client	<u>Former BP Station #11124</u>	Date	<u>12/12/2006</u>
Address	<u>3315 High Street</u> <u>Oakland, California</u>	Drilling Company	<u>Woodward Drilling</u> rig type: <u>Mobile Drill B-57</u>
Project No.	<u>E-11124-01</u>	Driller	<u>Jason/Chris</u>
Logged By:	<u>Scott Blitinger</u>	Method	<u>Hollow Stem Auger</u> hole diam.: <u>8"</u>

Sample		Blow Count	Sample		Well Construct.	Depth Scale	LITHO COLUMN	Descriptions of Materials and Conditions	PID (PPM)
Type	No.		Time	Recov.					
		4			▽	2 1	SC	CLAYEY SAND 20'-20.4', dark yellowish brown, 65% fine to coarse grained sand, 35% clayey fines, moist	
S	MW5-21	9				2 2	CL	CLAY, light olive brown with iron oxide stains, <4% fine to coarse grained sand, trace silt, moist (20.4'-21.5')	2
		20	11:00	100		2 3			
						2 4			
						2 5			
		7				2 6	CL	CLAY, dark yellowish brown, trace silt, <2% fine to coarse grained sand, moist	0
S	MW5-26	10				2 7			
		13	11:10	100		2 8			
						2 9			
						3 0			
		8			3 1	CL	CLAY, dark yellowish brown, trace silt, <2% fine to coarse grained sand, moist	0	
S	MW5-31	8							
		12	11:35	100					

Comments: Groundwater first observed between 25' and 30' bgs. Prior to selecting screening interval, the augers used to advance the borehole were retracted from 30' to 26' bgs. Approximately 0.8' of groundwater recharge into the borehole was measured within approximately 2 minutes; Stratus subsequently selected a screening interval of 25' to 30' bgs for the well.



SOIL BORING LOG

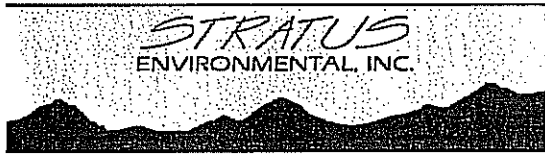
Boring No. MW-6

Sheet 1 of 2

Client	<u>Former BP Station #11124</u>	Date	<u>12/12/2006</u>
Address	<u>3315 High Street</u> <u>Oakland, California</u>	Drilling Company	<u>Woodward Drilling</u> rig type: <u>Mobile Drill B-57</u>
Project No.	<u>E-11124-01</u>	Driller	<u>Jason/Chris</u>
Logged By:	<u>Scott Bittinger</u>	Method	<u>Hollow Stem Auger</u> hole diam.: <u>8"</u>
Well Pack	<u>sand: 23 ft. to 30 ft.</u> <u>bent.: 20 ft. to 23 ft.</u> <u>grout: 0 ft. to 20 ft.</u>	Well Construction	<u>casing: PVC</u> screen interval: <u>25'-30'</u> <u>casing diam.: 2"</u> screen slot size: <u>0.02"</u>
		Depth to GW:	<u>▽ first encountered groundwater</u> <u>▽ static groundwater</u>

Sample Type	Sample No.	Blow Count	Sample Time	Sample Recov.	Well Construc. ct.	Depth Scale	LITHO COLUMN	Descriptions of Materials and Conditions	PID (PPM)
						1		Asphalt surface	
						2			
						3		fine grained fill soil with construction debris (bricks, rocks, concrete)	
						4			
						5			
		9				6	SC	CLAYEY SAND with GRAVEL, dark gray, 40% clayey fines, 50% fine to coarse grained sand, 10% gravel (pieces exceed 2" in diameter), moist	3
S	MW6-6	20	13:47	90		7			
						8			
						9			
						10			
		7				11	SC	CLAYEY SAND 10'-11.3', dark yellowish brown, 65-70% fine to coarse grained sand, 30-35% clayey fines, moist	
S	MW6-11	13	13:55	100		12	CL	CLAY with SAND 11.3'-11.5', dark yellowish brown, 90-95% clayey fines, 5-10% fine to coarse grained sand, dry	174
						13			
						14			
						15			
		12				16	CL	SANDY CLAY, dark yellowish brown, 85% clayey fines, 15% fine to coarse grained sand, moist	1
S	MW6-16	14	14:00	70		17			
						18			
						19			
						20			

Comments: Sampled to 29' bgs, drilled to 30' bgs to complete well.



**SOIL BORING LOG**

Boring No. MW-6

Sheet 2 of 2

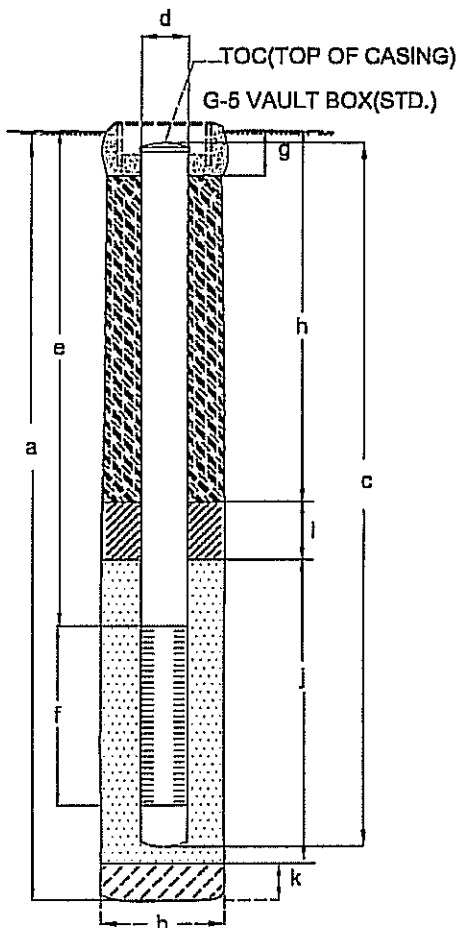
Client Former BP Station #11124 Date 12/12/2006  
 Address 3315 High Street Drilling Company Woodward Drilling rig type: Mobile Drill B-57  
Oakland, California Driller Jason/Chris  
 Project No. E-11124-01 Method Hollow Stem Auger hole diam.: 8"  
 Logged By: Scott Blitinger






Sample		Blow Count	Sample		Well Construct	Depth Scale	LITHO COLUMN	Descriptions of Materials and Conditions	PID (PPM)
Type	No.		Time	Recov.					
		5			▽	2 1	CL	CLAY with SAND, dark yellowish brown, 5-8% fine to medium grained sand, trace silt, trace manganese oxide staining, moist	0
		6				2 2			
S	MW6-21	10	14:10	100		2 3			
						2 4			
						2 5			
		4				2 6	CL	SANDY CLAY, dark yellowish brown, 15-20% fine to coarse grained sand, trace fine gravel, moist	0
S	MW6-26	15	14:20	100		2 7			
		3				2 8	SC	CLAYEY SAND 27.5'-28.6', 77% fine grained sand, 3% coarse grained sand, 20% clayey fines, damp	0
S	MW6-28	6	14:30	100		2 9			
		16				3 0	CL	CLAY 28.6'-29', dark yellowish brown, 3-5% fine to coarse grained sand, moist	0
					3 1				

# WELL DETAILS

PROJECT NUMBER: U11124  
 PROJECT NAME: Former BP Station no. 11124  
 LOCATION: 3315 High Street, Oakland, California  
 WELL PERMIT NO.: W2006-1009

BORING/WELL NO.: MW-5  
 TOP OF CASING ELEV.: \_\_\_\_\_  
 GROUND SURFACE ELEV.: \_\_\_\_\_  
 DATUM: \_\_\_\_\_  
 INSTALLATION DATE: December 12, 2006



- |   |           |   |             |
|---|-----------|---|-------------|
|  | BENTONITE |  | CONCRETE    |
|  | CEMENT    |  | SAND        |
|   |           |  | PERFORATION |

NOT TO SCALE

## EXPLORATORY BORING

a. TOTAL DEPTH 30 ft.  
 b. DIAMETER 8 in.  
 DRILLING METHOD Hollow stem auger

## WELL CONSTRUCTION

c. TOTAL CASING LENGTH 30 ft.  
 MATERIAL Schedule 40 PVC  
 d. DIAMETER 2 in.  
 e. DEPTH TO TOP PERFORATIONS 25 ft.  
 f. PERFORATED  
 INTERVAL FROM 25 TO 30 ft.  
 PERFORATION TYPE Slotted Screen  
 PERFORATION SIZE 0.02 in.  
 g. SURFACE SEAL 0 to 1 ft.  
 SEAL MATERIAL Concrete  
 h. BACKFILL 1 to 20 ft.  
 BACKFILL MATERIAL Neat Cement  
 i. SEAL 20 to 23 ft.  
 SEAL MATERIAL Bentonite  
 j. FILTER PACK 23 to 30 ft.  
 FILTER PACK MATERIAL #3 Sand  
 k. BOTTOM SEAL \_\_\_\_\_ ft.  
 SEAL MATERIAL NA

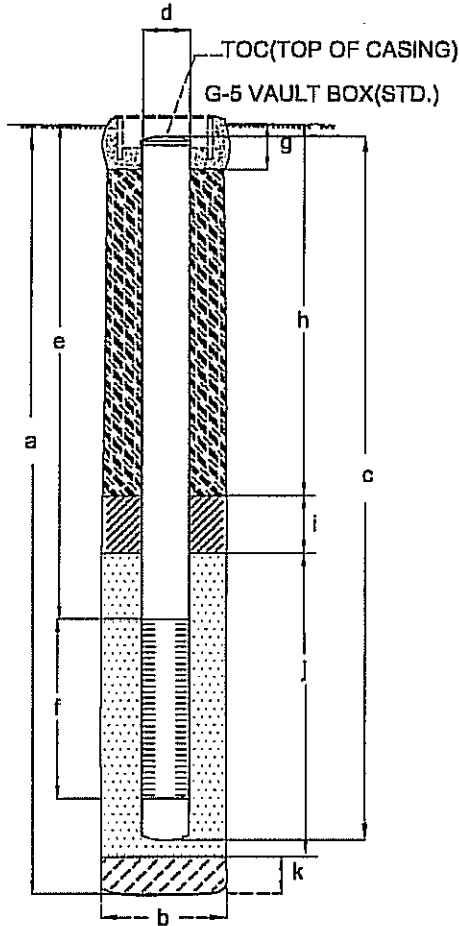
PREPARED BY \_\_\_\_\_ DATE \_\_\_\_\_






REVIEWED BY \_\_\_\_\_ DATE \_\_\_\_\_

# WELL DETAILS

PROJECT NUMBER: U11124  
 PROJECT NAME: Former BP Station no. 11124  
 LOCATION: 3315 High Street, Oakland, California  
 WELL PERMIT NO.: W2006-1010

BORING/WELL NO.: MW-6  
 TOP OF CASING ELEV.: \_\_\_\_\_  
 GROUND SURFACE ELEV.: \_\_\_\_\_  
 DATUM: \_\_\_\_\_  
 INSTALLATION DATE: December 12, 2006



- |   |   |
|---|---|
|  BENTONITE |  CONCRETE    |
|  CEMENT    |  SAND        |
|   |  PERFORATION |

NOT TO SCALE

## EXPLORATORY BORING

a. TOTAL DEPTH 30 ft.  
 b. DIAMETER 8 in.  
 DRILLING METHOD Hollow stem auger

## WELL CONSTRUCTION

c. TOTAL CASING LENGTH 30 ft.  
 MATERIAL Schedule 40 PVC  
 d. DIAMETER 2 in.  
 e. DEPTH TO TOP PERFORATIONS 25 ft.  
 f. PERFORATED  
 INTERVAL FROM 25 TO 30 ft.  
 PERFORATION TYPE Slotted Screen  
 PERFORATION SIZE 0.02 in.  
 g. SURFACE SEAL 0 to 1 ft.  
 SEAL MATERIAL Concrete  
 h. BACKFILL 1 to 20 ft.  
 BACKFILL MATERIAL Neat Cement  
 i. SEAL 20 to 23 ft.  
 SEAL MATERIAL Bentonite  
 j. FILTER PACK 23 to 30 ft.  
 FILTER PACK MATERIAL #3 Sand  
 k. BOTTOM SEAL \_\_\_\_\_ ft.  
 SEAL MATERIAL NA

PREPARED BY \_\_\_\_\_ DATE \_\_\_\_\_

REVIEWED BY \_\_\_\_\_ DATE \_\_\_\_\_