BROADBENT & ASSOCIATES, INC.
ENGINEERING, WATER RESOURCES & ENVIRONMENTAL

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Transmittal

Date: 8 September 2006

Project: 06-08-656

To: Alameda County Health Care Services
Environmental Health Services
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Attention: Mr. Steven Plunkett
Hazardous Materials Specialist

We are sending by:
- x Regular Mail
- ___ Special Delivery
- ___ Air Mail
- ___ Airborne Express
- ___ Carrier
- ___ Other _____

The following:
- x Enclosed
- ___ Separately

Quantity:	Description:
1	Nitrate/Sulfate Feasibility Study Work Plan Former BP Service Station #11133 2220 98th Avenue, Oakland, California ACHCS Fuel Leak Case No.RO0000403 (URS letter work plan to Ms. Donna Dragos/ACEH, dated 8 July 2005)

Comments:

Steven,
Looking over my notes again from our 8/17/06 meeting I noticed that I was to provide you with a complete copy of the enclosed work plan (I had provided a partial copy at the meeting). My apologies for the delay. Herewith, please find enclosed a copy of the document. An electronic PDF copy of the document is also being sent to your attention at steven.plunkett@acgov.org.
Regards,

Sent by:

Tom Venus, PE
Senior Engineer

Copies to:

URS

July 8, 2005

Ms. Donna Dragos
Hazardous Material Specialist
Alameda County Health Care Services
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

SUBJECT: Nitrate/Sulfate Feasibility Study Work Plan
Former BP Service Station #11133
2220 98th Avenue, Oakland, California
ACHCS Fuel Leak Case No. RO0000403

Dear Ms. Dragos:

URS Corporation (URS) has prepared this *Nitrate/Sulfate Feasibility Study Work Plan (Work plan)* on behalf of Atlantic Richfield Company (RM - a BP affiliated company), for above mentioned site (the Site, Figure 1). This Work plan was prepared in response to the May 11, 2005 letter from the Alameda County Health Care Services (ACHCS) to RM (Attachment A). The work plan delineates the procedure that will be followed during the nitrate/sulfate injection feasibility study.

1.0 SITE BACKGROUND

The Site is a fenced lot containing an inactive former service station located at the northern corner of 98th Avenue and Bancroft Avenue in Oakland, California (Figure 1). The land use in the immediate vicinity of the Site is mixed commercial and residential. BP acquired the facility from Mobil Oil Corporation in 1989. In August 1994, BP transferred the property to TOSCO Marketing Company (TOSCO, now ConocoPhilips) and has not operated the facility since that time. TOSCO ceased gasoline retail operations at the Site in 1998.

The Site consists of a service station building, a restroom building, a canopy, former dispenser islands, and a remediation system and associated compound. The Site is covered with asphalt or concrete surfacing except for planters along the northern, eastern and parts of the western property boundaries and areas where the former underground storage tanks (USTs), product piping and dispensers were removed in October 1998 (Figure 2).

To date, a total of twenty-three groundwater monitoring and extraction wells have been installed at the Site and in the Site vicinity (Figure 2). These include thirteen groundwater monitoring wells, seven of which are on-site (MW-1, MW-2, MW-3, AW-1, AW-5, AW-6, and RW-1), and six are off-site (AW-2, AW-3, AW-4, AW-7, AW-8, and AW-9). Well RW-1 is a dual extraction and monitoring well. There are eight on-site vapor extraction wells (VW-1 through VW-3 and VEW-4 through VEW-8) and one off-site extraction well (VEW-9).

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1.1 SITE GEOLOGY AND HYDROLOGY

The Site is typically underlain by clay, silty clay, and clayey silt to depths of approximately 18 to 20 feet. The cross sections show a silty sand lens at approximately three to four feet bgs and several silty sand and silty gravel lenses from approximately 13 to 17 feet bgs. Sandy clays, sandy silts, and silty sands are encountered at depths of approximately 19 to 40 feet bgs beneath the Site. The silty to clayey sand lens tapers to the south and is not encountered in down-gradient well AW-4, which consists of silty clays to 35 feet bgs. The lens of sandy clays, sandy silts, and silty sands is underlain by silty clays, which extend to the total explored depth of all borings.

2.0 SCOPE OF WORK

The purpose of the feasibility study is to evaluate: the effectiveness of nitrate/sulfate injections as a remedial approach for the Site; the effect of the injections on the Site conditions; and to provide a basis for design parameters for long-term application. The nitrate and sulfate feasibility study will be conducted using a portable nitrate and sulfate injection system that will be transported to the Site. The feasibility study will consist of three injection events that will be conducted every three weeks followed by 60 days of groundwater monitoring. Details regarding the pre-field activities, the system configuration, the system operation, the field monitoring activities and the groundwater-sampling program are discussed below.

2.1 Pre-field Activities

Prior to initiating field activities, URS personnel will prepare a Site-specific Health and Safety Plan (HASP) for use on-site. URS will perform a Site visit to assess the conditions at the Site. URS has contacted the Regional Water Quality Control Board (RWQCB) to determine if additional permits are required for the nitrate/sulfate injections. No permits were required by the RWQCB for nitrate/sulfate injections.

2.2 System Configuration

The portable injection system is composed of a holding tank for the aqueous solution, a pump, nitrogen cylinders and associated piping and hosing. The system is also equipped with flow regulating valves, pressure gauges and regulators to measure and control the flow rate of the solution and the pressure applied at the injection point.

2.2.1 Injection Point

The injection system will be connected to monitoring well AW-1. Well AW-1 was selected as the point of injection for the following reasons:

- Hydrocarbon Concentrations: During the first quarter 2005 groundwater-monitoring event, groundwater samples from AW-1 contained high BTEX compound concentrations

for this Site. The levels of GRO and MTBE were also elevated relative to the background concentrations

- Geochemical and Microbiological Conditions: In the recent geochemical and microbiological parameter analysis conducted on March 16, 2005 (Table 2), this well showed an existing anaerobic environment with low concentrations of nitrate and sulfate, indicting nitrate and sulfate reducing condition.

- Screen Interval: Monitoring well AW-1 is screened from 15-35 feet below ground surface (ft bgs). The majority of the screen interval is located in the silty sand layer, which should allow for the greatest dispersion of the nitrate/sulfate solution.

2.2.2 Observation Points

Well VEW-4 will be used as the monitoring point for the feasibility study. In addition, well AW-4 will be used to monitor the down-gradient effects of the injections and will serve as the contingency point. The well detail for well AW-4 is provided in Attachment B. No documentation regarding the construction of vapor well VEW-4 could be located at this time. The conditions at well VEW-4 will assessed during the pre-injection Site visit.

2.3 Injection Procedure

The amount of nitrate and sulfate to be injected into the subsurface is dependent on Site conditions. As the Site conditions change (i.e. BTEX concentrations change), the amount of nitrate and sulfate to be added is also impacted. The procedure below is based on current Site conditions and may be modified after the first injection is complete and the impact of the injection is evaluated.

2.3.1 Injection Frequency

The feasibility study will consist of three injection events. The second injection event will be performed approximately two weeks after the first injection event is completed. Similarly, the third event will be performed two weeks after the second event. The two-week period will allow sufficient time to obtain laboratory data, analyze the effects of the injection events on the Site conditions and serve as an incubation period for the nitrate/sulfate reducing microorganisms. URS will use the two-week period to evaluate the effects of the previous injection event and make any necessary changes to the injection parameters.

2.3.2 Mass of Nitrate and Sulfate

The mass of nitrate and sulfate injected during the first injection event will be based on the stoichiometric demand for the metabolism of dissolved BTEX compounds and the first quarter 2005 groundwater BTEX concentrations. The BTEX concentration in well AW-1

during the first quarter 2005 was 2.32 g/L (Table 1). The calculated mass flux of BTEX in the vicinity of well AW-1 is approximately 3.94 g/day (Table 3). The mass of nitrate and sulfate consumed per gram of BTEX is 4.8 and 4.6 grams, respectively (ASTM E 1943, 22). Based on the BTEX mass flux and the stoichiometric demand for nitrate and sulfate, approximately 18.9 grams of nitrate and 18.1grams of sulfate will be injected per day. A total of 396.9 grams of nitrate and 380.1 grams of sulfate will be injected per event. Nitrate and sulfate will be injected as an aqueous solution. The calculation details for the amount of nitrate and sulfate to be added are presented in Table 3.

The primary maximum contaminant level (MCL) established for nitrate by the EPA is 45 mg/L (CCR 22-64431). Sulfate does not have a primary MCL, however, the secondary MCL is 250 mg/L (CCR 22-64449). Based on the amount of nitrate and sulfate to be injected into the groundwater, URS does not believe that concentrations of nitrate and sulfate will exceed the established MCL values. Theoretically, nitrate and sulfate will be consumed and diluted within the hydrocarbon plume. In previous nitrate/sulfate injection case studies, nitrate and sulfate concentrations typically returned to historical levels in less than one month and the utilization of nitrate and sulfate was described as "quick" (NAVFAC, 2000). Concentrations of nitrate and sulfate at the Site for the first quarter 2005 are summarized in Table 2.

As previously discussed, the mass of nitrate and sulfate for the second and third injection will be re-calculated after the first injection is performed. URS will evaluate the effect of the injections on hydrocarbon, nitrate and sulfate concentrations, etc. As part of the feasibility study groundwater monitoring program, URS will also monitor the concentrations of nitrate and sulfate in down-gradient well AW-4 to monitor any potentially adverse effects on the water quality (Section 2.4). If the injections appear to be having a negative effect on the down-gradient or observation well (VEW-4) water quality, either the amount of nitrate and sulfate injected will be reduced or the injections will be stopped.

2.3.3 Mass of Nutrients

It is anticipated that natural nutrients in groundwater may be depleted by the nitrate/sulfate addition due to higher rates of consumption. URS will monitor the concentrations of nitrogen and phosphorous to determine if additional nutrients are required to maintain an appropriate level of nitrogen and phosphorous for microbial growth. Nitrogen and phosphorous supplements will be added in form of ammonium phosphate.

2.3.4 Injection Flow Rate

The nitrate/sulfate solution will be slug-fed at a rate of approximately 1 to 2 gallons per minute (gpm). During the first injection, the solution will be gravity fed into the injection point. However, additional pressure may be applied to the injection point if the solution does

not appear to be dispersing the nitrate and sulfate. Pressure will be applied in the range of 20 to 30 pounds per square inch (psi) for approximately 30 minutes.

2.4 Monitoring Activities

During each of the injection events, URS personnel will be present at the site to monitor the effect of the injections on the Site conditions. The groundwater parameters to be monitored are: the groundwater depth, temperature, pH, oxidation reduction potential (ORP) and dissolved oxygen levels. All of the groundwater parameters should be measured before and after the injection event is completed. URS will also monitor the volume of solution injected, the rate of injection and the pressure applied (if applicable). System parameters will be measured approximately every hour.

2.5 Groundwater Monitoring Plan

In addition to the routine groundwater monitoring events performed at the Site, URS will also conduct a monitoring event after each of the injections events. The groundwater sampling procedure is presented as attachment C.

A total of five groundwater monitoring events are proposed as part of the feasibility study. Three of the groundwater monitoring events will be performed the week following the injection events and monthly events will be performed during the 60-day post-monitoring period. During each of the groundwater monitoring events, samples will be collected from the injection point (AW-1) and observation points VEW-4 and AW-4. The constituents that will be analyzed and their respective EPA method are listed in the following table:

Constituents	EPA Method
Field Parameters	
Depth to Water, pH and Temperature,	---
Dissolved Oxygen	---
Oxidation Reduction Potential (ORP)	---
Ferrous Iron	---
Conductivity	---
Hydrocarbon Constituents	
Gasoline Range Organics	8015M
Benzene	8260B
Toluene	8260B
Ethlybenzene	8260B
Total Xylenes	8260B
Methyl Tertiary Butyl Ether	8260B
Tertiary Butyl Alcohol	8260B
Geochemical Parameters-Anaerobic Electron Acceptors	
Nitrate (as NO_3)	300.0
Sulfate	300.0
Aerobic/Anaerobic Attenuation Products	
Ferrous Iron (dissolved)	SM 3500FeD
Manganese (II)	200.0
Sulfide	376.2
Methane	RSK-175M
Carbon Dioxide	RSK-175M
Nutrients	
Ammonia as N	350.1
Nitrogen	SM 4500-N
Ortho-phosphate	300.0
Phosphorous	365.3
Conventional Water Chemistry Parameters	
Alkalinity	SM 2320B
Total Dissolved Solids	SM2540C
Sodium	200.7
Hardness	SM2340B
Microbiological Parameters	
Heterotrophic Plate Counts	9215
Hydrocarbon Degraders- Anaerobic and Aerobic	9215

3.0 REPORT

Upon completing the feasibility study and obtaining all of the analytical results, URS will submit the results of the feasibility study within the Corrective Action Plan (CAP).

We appreciate the opportunity to present this Nitrate/Sulfate Injection Work Plan to the ACHCS on behalf of RM and trust that this document meets with your approval. Please do not hesitate to contact us at (510) 893-3600 with any questions or comments.

Sincerely,

URS CORPORATION

Eric Rivero-Montes
Chemical Engineer

S.A. Rehan

REGISTERED PROFESSIONAL ENGINEER
SYED A. REHAN
No. C67805
Exp. 06/30/07
CIVIL
STATE OF CALIFORNIA

Syed Rehan, P.E.
Project Civil Engineer

for

Lynelle Onishi
Project Manager

Attachments:

Figure 1 –Site Map
Table 1 – Groundwater Elevation and Analytical Data
Table 2 – Geochemical and Microbiological Parameters
Table 3 – Nitrate/Sulfate Calculations
Attachment A – Alameda County Health Care Services letter dated May 11, 2005
Attachment B – Well Construction Detail
Attachment C – Standard Field Sampling Procedures

cc: Mr. Kyle Christie, RM (electronic copy uploaded to ENFOS)
Ms. Liz Sewell, ConocoPhillips (electronic copy uploaded to URS ftp server)
Mr. Derek Whitworth California Regional Water Quality Control Board, San Francisco Bay Region, 1515 Clay Street, Suite 1400, Oakland, CA 94612

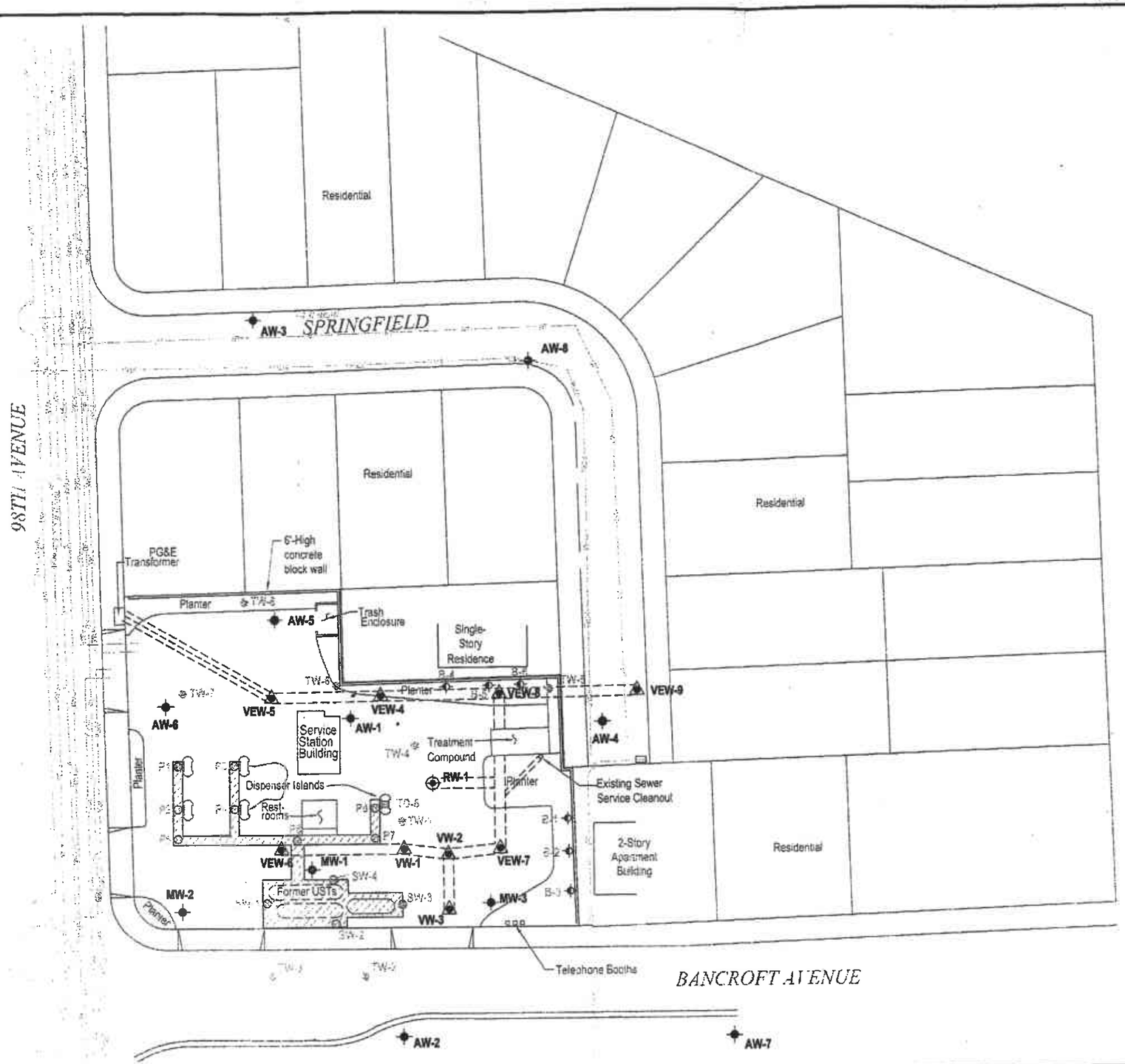
References:

ASTM E 1943. *Standard Guide for Remediation of Groundwater by Natural Attenuation at Petroleum Release Sites*, American Society For Testing and Materials, April 10, 1998.

CCR 22-64431 California Code of Regulations, Title 22 Social Security, Division 4 Environmental Health, Section 64431.

CCR 22-64449 California Code of Regulations, Title 22 Social Security, Division 4 Environmental Health, Section 64449.

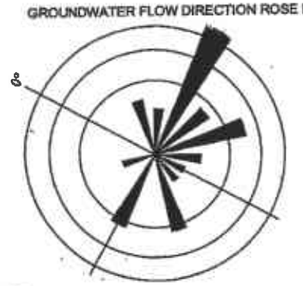
NAVFAC,2000. *Enhanced in Situ Anaerobic Bioremediation Fuel-Contaminated Groundwater*, Dr. Martin Reinhard, Mr. Gary Hopkins, Dr. Jeff Cunningham and Carmen A. Lebron, September 2000.



EXPLANATION

- Existing Monitoring Well
- Temporary Wells (January, 1990)
- Existing Vapor Extraction Well
- Combined Groundwater Recovery/ Vapor Extraction Well
- Tosco Dispenser Grab Sample Location (Dec. 1994)
- Grab Sample Location (Oct. 2001)
- Soil Sample Location (Oct. 1998)
- Trench/Excavation
- Existing Trench

GROUNDWATER FLOW DIRECTION ROSE DIAGRAM



N=52
Interval= 10

Notes:

1) Data from available Historical Quarterly Monitoring Reports (Table 3)
2) Complex groundwater gradients at the Site resulted in multiple directions and gradients reported in a single monitoring event.

0 25 50 100

Scale (ft)

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

URS	Project No. 38487352 Former BP Service Station #11133 2220 98th Avenue Oakland, California	SITE MAP	FIGURE 1

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Table 1

Groundwater Elevation and Analytical Data

Former BP Station #11133
2220 98th Ave., Oakland, CA

Well No.	Date	P/ NP	Well Elevation/ TOC (feet)	DTW (feet)	Product Thickness (feet)	GWE (feet)	GRO/ TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	DO (mg/L)	Lab	pH	Comments
AW-1	4/5/1991	--	38.11	25.44	--	12.67	4,100	1,500	69	100	83	--	--	SUP	--	
	4/1/1992	--	38.11	23.22	--	14.89	--	--	--	--	--	--	--	---	--	
	4/2/1992	--	38.11	--	--	--	11,000	1,800	210	210	490	--	--	APP	--	
	7/6/1992	--	38.11	24.89	--	13.22	6,500	4,000	40	290	530	--	--	ANA	--	
	10/7/1992	--	38.11	--	--	--	2,900	1,200	25	37	210	--	--	ANA	--	e
	10/7/1992	--	38.11	26.55	--	11.56	4,700	1,500	41	47	300	--	--	ANA	--	
	1/14/1993	--	38.11	--	--	--	4,100	1,700	28	130	230	--	--	PACE	--	m, e
	1/14/1993	--	38.11	23.73	--	14.38	2,800	830	31	140	240	--	--	PACE	--	m
	4/22/1993	--	38.11	--	--	--	39,000	14,000	530	1,800	6,100	987	--	PACE	--	c, m
	7/15/1993	--	38.11	22.50	--	15.61	6,200	2,200	28	210	540	838	--	PACE	--	c, m
	10/21/1993	--	38.11	24.32	--	13.79	2,400	820	13	55	120	832	--	PACE	--	c, m
	1/27/1994	--	38.11	23.72	--	14.39	3,500	1,400	26	130	220	650	--	PACE	--	c, n
	4/21/1994	--	38.11	22.48	--	15.63	40,000	12,000	1,900	1,600	5,000	1,119	1.4	PACE	--	m
	9/9/1994	--	38.11	--	--	--	3,900	1,900	5.5	190	240	--	--	PACE	--	e
	9/9/1994	--	38.11	23.04	--	15.07	3,500	1,600	5	200	250	--	2.1	PACE	--	m
	12/21/1994	--	38.11	21.70	--	16.41	7,500	3,100	36	370	320	855	1.6	PACE	--	m
	1/30/1995	--	38.11	17.71	--	20.40	35,000	23,000	650	3,200	4,100	--	1.7	ATI	--	
	4/10/1995	--	38.11	--	--	--	56,000	17,000	2,000	3,900	10,000	--	--	ATI	--	e
	4/10/1995	--	38.11	20.04	--	18.07	60,000	18,000	2,000	4,300	11,000	--	7.9	ATI	--	
	6/29/1995	--	38.11	--	--	--	86,000	12,000	8,400	4,800	18,000	--	--	ATI	--	e
	6/29/1995	--	38.11	20.60	--	17.51	72,000	10,000	7,300	4,200	15,000	--	6.2	ATI	--	
	9/18/1995	--	38.11	21.87	--	16.24	--	--	--	--	--	--	--	---	--	
	9/19/1995	--	38.11	--	--	--	65,000	12,000	3,100	4,400	14,000	1,000	8.5	ATI	--	
	12/7/1995	--	38.11	22.06	--	16.05	25,000	8,700	<50	2,500	1,300	1,100	2.9	ATI	--	
	3/28/1996	--	38.11	16.91	--	21.20	24,000	11,000	<100	3,200	3,390	<1000	6.6	SPL	--	
	6/20/1996	--	38.11	20.82	--	17.29	38,000	6,900	1,100	3,200	7,300	<100	6.4	SPL	--	
	10/11/1996	--	38.11	23.20	--	14.91	33,000	8,500	69	3,300	4,230	580	6.3	SPL	--	
	1/2/1997	--	38.11	20.41	--	17.70	32,000	6,000	<50	3,100	2,300	700	6.7	SPL	--	
	4/14/1997	--	38.11	21.61	--	16.50	--	--	--	--	--	--	--	---	--	
	4/15/1997	--	38.11	--	--	--	31,000	5,000	160	2,400	4,540	340	5.4	SPL	--	
	7/2/1997	--	38.11	21.17	--	16.94	26,000	5,800	<100	2,600	2,200	<1000	6.2	SPL	--	
	9/30/1997	--	38.11	21.48	--	16.63	29,000	9,200	17	1,400	130	560	6.9	SPL	--	
	1/21/1998	--	38.11	20.02	--	18.09	50,000	6,900	450	3,200	4,450	720	5.8	SPL	--	
	4/9/1998	--	38.11	13.37	--	24.74	--	--	--	--	--	--	--	---	--	

Table 1

Groundwater Elevation and Analytical Data

Former BP Station #11133
2220 98th Ave., Oakland, CA

Well No.	Date	P/ NP	Well Elevation/ TOC (feet)	DTW (feet)	Product Thickness (feet)	GWE (feet)	GRO/ TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	DO (mg/L)	Lab	pH	Comments
AW-1	4/10/1998	--	38.11	--	--	--	46,000	5,800	1,900	3,000	7,400	1,000	4.3	SPL	--	
	6/19/1998	--	38.11	--	--	--	43,000	6,800	260	3,100	3,490	620	--	SPL	--	e
	6/19/1998	--	38.11	19.12	--	18.99	42,000	6,600	200	3,000	3,350	660	4.9	SPL	--	
	11/30/1998	--	38.11	21.13	--	16.98	23,000	6,700	<25	3,100	130	710/620	--	SPL	--	g
	1/21/1999	--	38.11	20.77	--	17.34	25,000	4,800	54	2,800	780	1,000	--	SPL	--	
	4/30/1999	--	38.11	20.80	--	17.31	21,000	5,300	67	2,800	750	1,500	--	SPL	--	
	7/9/1999	--	38.11	20.41	--	17.70	11,000	3,000	<10	760	180	1,300	--	SPL	--	
	11/3/1999	--	38.11	20.82	--	17.29	--	--	--	--	--	--	--	---	--	
	1/12/2000	--	38.11	19.99	--	18.12	330,000	5,300	10	2,900	560	2,200	--	PACE	--	
	4/13/2000	--	38.11	20.14	--	17.97	--	--	--	--	--	--	--	---	--	
	5/24/2000	--	38.11	20.17	--	17.94	--	--	--	--	--	--	--	---	--	
	6/1/2000	--	38.11	23.05	--	15.06	--	--	--	--	--	--	--	---	--	
	6/8/2000	--	38.11	17.08	--	21.03	--	--	--	--	--	--	--	---	--	
	6/15/2000	--	38.11	16.93	--	21.18	--	--	--	--	--	--	--	---	--	
	7/26/2000	--	38.11	20.07	--	18.04	15,000	290	98	77	220	37,000	--	PACE	--	
	10/24/2000	--	38.11	20.10	--	18.01	--	--	--	--	--	--	--	---	--	
	1/19/2001	--	38.11	19.82	--	18.29	7,600	2,220	10.9	415	58.4	1,630	--	PACE	--	
	7/24/2001	--	38.11	19.86	--	18.25	9,600	2,140	6.34	281	43	1,440	--	PACE	--	
	1/18/2002	--	38.11	15.60	--	22.51	20,000	2,170	75.2	1,800	2,080	1,250	--	PACE	--	
	8/1/2002	--	38.11	19.55	--	18.56	14,000	2,150	<12.5	197	42.4	1,120	--	PACE	--	
	1/16/2003	--	38.11	16.32	--	21.79	15,000	2,300	75	1,600	1,600	1,100	--	SEQ	--	p
	7/7/2003	--	38.11	19.80	--	18.31	9,700	1,600	<25	540	110	1,100	--	SEQ	--	q, u
	02/05/2004	--	38.11	18.75	--	19.36	12,000	2,000	<50	820	590	930	--	SEQM	6.7	
	07/01/2004	P	38.11	19.72	--	18.39	9,900	2,600	<25	300	<25	1,100	--	SEQM	6.5	
	03/16/2005	P	38.11	18.78	--	19.33	10,000	1,100	30	630	560	720	0.8	SEQM	6.7	
AW-2	4/5/1991	--	36.83	22.38	--	14.47	<50	<0.3	<0.3	<0.3	<0.3	--	--	SUP	--	
	4/1/1992	--	36.83	20.81	--	16.02	--	--	--	--	--	--	--	---	--	
	4/2/1992	--	36.83	--	--	--	130	25	2.3	0.7	2.1	--	--	APP	--	
	7/6/1992	--	36.83	23.57	--	13.26	<50	<0.5	<0.5	<0.5	<0.5	--	--	ANA	--	
	10/7/1992	--	36.83	25.24	--	11.59	<50	<0.5	<0.5	<0.5	<0.5	--	--	ANA	--	
	1/14/1993	--	36.83	20.82	--	16.01	<50	<0.5	<0.5	<0.5	<0.5	--	--	PACE	--	m
	4/22/1993	--	36.83	19.37	--	17.46	<50	<0.5	<0.5	<0.5	<0.5	--	--	PACE	--	m
	7/15/1993	--	36.83	21.29	--	15.54	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	PACE	--	m

Table 1

Groundwater Elevation and Analytical Data

Former BP Station #11133

2220 98th Ave., Oakland, CA

Well No.	Date	P/ NP	Well Elevation/ TOC (feet)	DTW (feet)	Product Thickness (feet)	GWE (feet)	GRO/ TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	DO (mg/L)	Lab	pH	Comments
AW-2	10/21/1993	--	36.83	23.14	--	13.69	<50	1.3	1.1	0.9	2.1	<5.0	--	PACE	--	m
	1/27/1994	--	36.83	22.34	--	14.49	<50	<0.5	<0.5	<0.5	<0.5	--	--	PACE	--	m
	4/21/1994	--	36.83	21.15	--	15.68	<50	<0.5	<0.5	<0.5	<0.5	<5.0	2.0	PACE	--	m
	9/9/1994	--	36.83	22.09	--	14.74	<50	<0.5	<0.5	<0.5	<0.5	--	4.1	PACE	--	m
	12/21/1994	--	36.83	20.12	--	16.71	<50	<0.5	<0.5	<0.5	<0.5	<5.0	2.0	PACE	--	m
	1/30/1995	--	36.83	16.65	--	20.18	<50	<0.50	<0.50	<0.50	<1.0	--	2.5	ATI	--	
	4/10/1995	--	36.83	16.22	--	20.61	<50	<0.50	<0.50	<0.50	<1.0	--	4.4	ATI	--	
	6/29/1995	--	36.83	17.55	--	19.28	<50	<0.50	<0.50	<0.50	<1.0	--	7.8	ATI	--	
	9/18/1995	--	36.83	19.87	--	16.96	--	--	--	--	--	--	--	--	--	
	9/19/1995	--	36.83	--	--	--	<50	<0.50	<0.50	<0.50	<1.0	<5.0	--	ATI	--	e
	9/19/1995	--	36.83	--	--	--	<50	<0.50	<0.50	<0.50	<1.0	<5.0	4.5	ATI	--	
	12/7/1995	--	36.83	21.31	--	15.52	<50	<0.50	<0.50	<0.50	<1.0	<5.0	4.9	ATI	--	
	3/28/1996	--	36.83	15.61	--	21.22	<50	<0.5	<1	<1	<1	<10	4.1	SPL	--	
	6/20/1996	--	36.83	16.30	--	20.53	<50	<0.5	<1	<1	<1	<10	5.2	SPL	--	
	10/11/1996	--	36.83	19.60	--	17.23	<50	<0.5	<1.0	<1.0	<1.0	<10	6.0	SPL	--	
	1/2/1997	--	36.83	15.97	--	20.86	<50	<0.5	<1.0	<1.0	<1.0	<10	6.1	SPL	--	
	4/14/1997	--	36.83	17.19	--	19.64	<50	<0.5	<1.0	<1.0	<1.0	<10	5.3	SPL	--	
	7/2/1997	--	36.83	18.11	--	18.72	<50	<0.5	<1.0	<1.0	<1.0	<10	5.7	SPL	--	
	9/30/1997	--	36.83	18.52	--	18.31	<50	<0.5	<1.0	<1.0	<1.0	860	5.4	SPL	--	
	1/21/1998	--	36.83	14.46	--	22.37	160	13	<1.0	<1.0	<1.0	110	4.9	SPL	--	
	4/9/1998	--	36.83	12.85	--	23.98	--	--	--	--	--	--	--	--	--	
	4/10/1998	--	36.83	--	--	--	<50	<0.5	<1.0	<1.0	<1.0	<10	3.9	SPL	--	
	6/19/1998	--	36.83	14.37	--	22.46	60	<0.5	<1.0	<1.0	<1.0	<10	3.6	SPL	--	
	11/30/1998	--	36.83	16.90	--	19.93	--	--	--	--	--	--	--	--	--	
	1/21/1999	--	36.83	16.87	--	19.96	<50	<1.0	<1.0	<1.0	<1.0	<1.0	--	SPL	--	
	4/30/1999	--	36.83	17.01	--	19.82	--	--	--	--	--	--	--	--	--	
	7/9/1999	--	36.83	17.83	--	19.00	--	--	--	--	--	--	--	--	--	
	11/3/1999	--	36.83	19.74	--	17.09	--	--	--	--	--	--	--	--	--	
	1/12/2000	--	36.83	19.90	--	16.93	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	PACE	--	
	4/13/2000	--	36.83	19.75	--	17.08	--	--	--	--	--	--	--	--	--	
	7/26/2000	--	36.83	19.86	--	16.97	--	--	--	--	--	--	--	--	--	
	10/24/2000	--	36.83	18.77	--	18.06	--	--	--	--	--	--	--	--	--	
	1/19/2001	--	36.83	--	--	--	--	--	--	--	--	--	--	--	--	f
	7/24/2001	--	36.83	--	--	--	--	--	--	--	--	--	--	--	--	f

Table 1

Groundwater Elevation and Analytical Data

Former BP Station #11133

2220 98th Ave., Oakland, CA

Well No.	Date	P/ NP	Well Elevation/ TOC (feet)	DTW (feet)	Product Thickness (feet)	GWE (feet)	GRO/ TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	DO (mg/L)	Lab	pH	Comments
AW-2	1/18/2002	--	36.83	15.17	--	21.66	<50	<0.5	<0.5	<0.5	<1.0	<0.5	--	PACE	--	
	8/1/2002	--	36.83	17.17	--	19.66	--	--	--	--	--	--	--	--	--	
	1/16/2003	--	36.83	14.81	--	22.02	<50	<0.50	<0.50	<0.50	<0.50	<2.5	--	SEQ	--	p
	7/7/2003	--	36.83	16.65	--	20.18	--	--	--	--	--	--	--	--	--	
	02/05/2004	--	36.83	15.37	--	21.46	<50	3.0	<0.50	<0.50	<0.50	5.1	--	SEQM	--	
	07/01/2004	--	36.83	17.55	--	19.28	--	--	--	--	--	--	--	--	--	
	03/16/2005	P	36.83	14.58	--	22.25	<50	0.75	<0.50	1.1	1.1	<0.50	1.7	SEQM	6.7	
AW-3	4/5/1991	--	39.13	23.90	--	15.23	5,200	980	450	95	310	--	--	SUP	--	
	4/1/1992	--	39.13	22.50	--	16.63	4,700	890	47	43	110	--	--	APP	--	
	7/6/1992	--	39.13	23.26	--	15.87	3,900	3,100	30	80	99	--	--	ANA	--	
	10/7/1992	--	39.13	24.75	--	14.38	5,000	2,600	<0.5	<0.5	59	--	--	ANA	--	
	1/14/1993	--	39.13	23.59	--	15.54	350	250	<0.5	<0.5	<0.5	--	--	PACE	--	m
	4/22/1993	--	39.13	19.42	--	19.71	240	71	2.4	0.6	4	--	--	PACE	--	m
	7/15/1993	--	39.13	20.09	--	19.04	650	71	2.8	1.5	1.1	37.3	--	PACE	--	c, m
	10/21/1993	--	39.13	--	--	--	170	6.1	2	1.7	4.4	--	--	PACE	--	e
	10/21/1993	--	39.13	21.88	--	17.25	160	4.8	1.7	1.6	3.6	8.95	--	PACE	--	m
	1/27/1994	--	39.13	--	--	--	90	2.9	0.5	<0.5	<0.5	--	--	PACE	--	e
	1/27/1994	--	39.13	22.33	--	16.80	92	2.1	<0.5	<0.5	<0.5	7.37	--	PACE	--	m
	4/21/1994	--	39.13	20.96	--	18.17	150	3.6	0.8	0.9	2.5	9.36	1.3	PACE	--	m
	9/9/1994	--	39.13	21.60	--	17.53	53	<0.5	<0.5	<0.5	<0.5	--	1.9	PACE	--	m
	12/21/1994	--	39.13	--	--	--	--	--	--	--	--	--	--	--	--	f
	1/30/1995	--	39.13	--	--	--	--	--	--	--	--	--	--	--	--	f
	4/10/1995	--	39.13	--	--	--	--	--	--	--	--	--	--	--	--	f
	6/29/1995	--	39.13	15.41	--	23.72	<50	<0.50	<0.50	<0.50	<1.0	--	8.0	ATI	--	
	9/18/1995	--	39.13	17.83	--	21.30	--	--	--	--	--	--	--	--	--	
	9/19/1995	--	39.13	--	--	--	61,000	11,000	2,900	4,100	13,000	790	7.4	ATI	--	
	12/7/1995	--	39.13	--	--	--	<50	<0.50	<0.50	<0.50	<1.0	<5.0	--	ATI	--	e
	12/7/1995	--	39.13	19.27	--	19.86	<50	<0.50	<0.50	<0.50	<1.0	<5.0	3.4	ATI	--	
	3/28/1996	--	39.13	--	--	--	<50	<0.5	<1	<1	<1	<10	--	SPL	--	e
	3/28/1996	--	39.13	13.85	--	25.28	<50	<0.5	<1	<1	<1	<10	4.1	SPL	--	
	6/20/1996	--	39.13	--	--	--	<50	<0.5	<1	<1	<1	<10	--	SPL	--	e
	6/20/1996	--	39.13	14.47	--	24.66	<50	<0.5	<1	<1	<1	<10	4.2	SPL	--	
	10/11/1996	--	39.13	--	--	--	<50	<0.5	<1.0	<1.0	<1.0	<10	--	SPL	--	e

Table 1

Groundwater Elevation and Analytical Data

Former BP Station #11133

2220 98th Ave., Oakland, CA

Well No.	Date	P/ NP	Well Elevation/ TOC (feet)	DTW (feet)	Product Thickness (feet)	GWE (feet)	GRO/ TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	DO (mg/L)	Lab	pH	Comments
AW-3	10/11/1996	--	39.13	17.97	--	21.16	<50	<0.5	<1.0	<1.0	<1.0	<10	4.7	SPL	--	
	1/2/1997	--	39.13	13.00	--	26.13	<50	<0.5	<1.0	<1.0	<1.0	<10	5.6	SPL	--	
	4/14/1997	--	39.13	14.36	--	24.77	<50	<0.5	<1.0	<1.0	<1.0	<10	5.0	SPL	--	
	4/15/1997	--	39.13	--	--	--	<50	<0.5	<1.0	<1.0	<1.0	<10	--	SPL	--	e
	7/2/1997	--	39.13	15.87	--	23.26	<50	<0.5	<1.0	<1.0	<1.0	<10	5.4	SPL	--	
	9/30/1997	--	39.13	17.50	--	21.63	<250	<2.5	<5.0	<5.0	<5.0	810	5.7	SPL	--	
	1/21/1998	--	39.13	--	--	--	150	<0.5	<1.0	<1.0	1.2	110	--	SPL	--	e
	1/21/1998	--	39.13	11.98	--	27.15	140	<0.5	<1.0	<1.0	<1.0	99	4.6	SPL	--	
	4/9/1998	--	39.13	9.45	--	29.68	--	--	--	--	--	--	--	--	--	
	4/10/1998	--	39.13	--	--	--	<50	<0.5	<1.0	<1.0	1.6	<10	4.5	SPL	--	
	4/10/1998	--	39.13	--	--	--	<50	<0.5	<1.0	1.4	1.7	<10	--	SPL	--	e
	6/19/1998	--	39.13	12.13	--	27.00	<50	<0.5	<1.0	<1.0	<1.0	<10	4.4	SPL	--	
	11/30/1998	--	39.13	15.91	--	23.22	--	--	--	--	--	--	--	--	--	
	1/21/1999	--	39.13	15.93	--	23.20	<50	<1.0	<1.0	<1.0	<1.0	<1.0	--	SPL	--	
	4/30/1999	--	39.13	15.98	--	23.15	--	--	--	--	--	--	--	--	--	
	7/9/1999	--	39.13	14.58	--	24.55	--	--	--	--	--	--	--	--	--	
	11/3/1999	--	39.13	17.43	--	21.70	--	--	--	--	--	--	--	--	--	
	1/12/2000	--	39.13	16.30	--	20.83	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	PACE	--	
	4/13/2000	--	39.13	16.89	--	20.24	--	--	--	--	--	--	--	--	--	
	7/26/2000	--	39.13	16.67	--	20.46	--	--	--	--	--	--	--	--	--	
	10/24/2000	--	39.13	16.98	--	20.15	--	--	--	--	--	--	--	--	--	
	1/19/2001	--	39.13	16.74	--	22.39	--	--	--	--	--	--	--	--	--	
	7/24/2001	--	39.13	16.55	--	20.58	--	--	--	--	--	--	--	--	--	
	1/18/2002	--	39.13	14.49	--	24.64	--	--	--	--	--	--	--	--	--	
	8/1/2002	--	39.13	14.27	--	24.86	--	--	--	--	--	--	--	--	--	
	1/16/2003	--	39.13	14.25	--	24.88	--	--	--	--	--	--	--	--	--	
	7/7/2003	--	39.13	14.70	--	24.43	--	--	--	--	--	--	--	--	--	
	02/05/2004	--	39.13	14.61	--	24.52	--	--	--	--	--	--	--	--	--	
	07/01/2004	--	39.13	15.62	--	23.51	--	--	--	--	--	--	--	--	--	
	03/16/2005	P	39.13	12.70	--	26.43	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.1	SEQM	7.3	
AW-4	4/5/1991	--	39.08	25.12	--	13.96	110,000	40,000	13,000	2,000	5,500	--	--	SUP	--	
	4/1/1992	--	39.08	--	--	--	210,000	55,000	23,000	2,900	7,000	--	--	APP	--	e
	4/1/1992	--	39.08	23.56	--	15.52	230,000	57,000	31,000	2,900	7,600	--	--	APP	--	

Table 1

Groundwater Elevation and Analytical Data

Former BP Station #11133
2220 98th Ave., Oakland, CA

Well No.	Date	P/ NP	Well Elevation/ TOC (feet)	DTW (feet)	Product Thickness (feet)	GWE (feet)	GRO/ TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	DO (mg/L)	Lab	pH	Comments
AW-4	7/6/1992	--	39.08	25.87	--	13.21	38,000	16,000	5,400	2,000	6,100	--	--	ANA	--	
	10/7/1992	--	39.08	27.53	--	11.55	120,000	41,000	26,000	4,700	13,000	--	--	ANA	--	
	1/14/1993	--	39.08	24.12	--	14.96	62,000	18,000	14,000	2,700	7,700	1,400	--	PACE	--	c, m
	4/22/1993	--	39.08	21.47	--	17.61	18,000	1,100	2,100	320	3,500	--	--	PACE	--	m
	7/15/1993	--	39.08	23.30	--	15.78	21,000	820	2,300	590	3,800	1,978	--	PACE	--	c, m
	10/21/1993	--	39.08	25.08	--	14.00	11,000	570	83	630	2,300	4,600	--	PACE	--	c, m
	1/27/1994	--	39.08	24.61	--	14.47	12,000	420	460	600	2,200	6,400	--	PACE	--	c, m
	4/21/1994	--	39.08	--	--	--	14,000	71	160	29	1,200	13,000	--	PACE	--	c, e
	4/21/1994	--	39.08	22.96	--	16.12	12,000	110	250	150	1,900	16,010	1.5	PACE	--	c, m
	9/9/1994	--	39.08	23.85	--	15.23	9,700	75	64	280	2,000	--	2.1	PACE	--	m
	12/21/1994	--	39.08	--	--	--	--	--	--	--	--	--	--	--	--	f
	1/30/1995	--	39.08	--	--	--	--	--	--	--	--	--	--	--	--	f
	4/10/1995	--	39.08	18.07	--	21.01	3,700	69	8.7	44	130	--	8.5	ATI	--	
	6/29/1995	--	39.08	19.25	--	19.83	8,000	62	190	190	1,100	--	7.5	ATI	--	
	9/18/1995	--	39.08	20.73	--	18.35	--	--	--	--	--	--	--	--	--	
	9/19/1995	--	39.08	--	--	--	12,000	660	1,600	200	1,900	7,100	8.3	ATI	--	
	12/7/1995	--	39.08	22.49	--	16.59	41,000	8,400	7,200	710	6,300	5,200	3.6	ATI	--	
	3/28/1996	--	39.08	16.49	--	22.59	--	--	--	--	--	--	--	--	--	f
	6/20/1996	--	39.08	16.00	--	23.08	<50	<0.5	<1	<1	<1	12	--	SPL	--	
	10/11/1996	--	39.08	19.52	--	19.56	36,000	12,000	5,500	<25	3,800	880/1000	6.2	SPL	--	g
	1/2/1997	--	39.08	--	--	--	<50	61	3.8	3.5	8.1	110	--	SPL	--	e
	1/2/1997	--	39.08	15.80	--	23.28	<50	<0.5	<1.0	<1.0	<1.0	22	6.4	SPL	--	
	4/14/1997	--	39.08	17.01	--	22.07	--	--	--	--	--	--	--	--	--	
	4/15/1997	--	39.08	--	--	--	<50	<0.5	<1.0	<1.0	<1.0	<10	5.4	SPL	--	
	7/2/1997	--	39.08	19.68	--	19.40	<50	21	<1.0	<1.0	<1.0	41	4.1	SPL	--	
	9/30/1997	--	39.08	22.71	--	16.37	--	--	--	--	--	--	--	--	--	f
	1/21/1998	--	39.08	15.89	--	23.19	13,000	2,900	<10	230	314	3,100	3.9	SPL	--	
	4/9/1998	--	39.08	13.50	--	25.58	--	--	--	--	--	--	--	--	--	
	4/10/1998	--	39.08	--	--	--	890	<0.5	<1	<1	<1	730	4.9	SPL	--	
	6/19/1998	--	39.08	14.75	--	24.33	60	<0.5	<1.0	<1.0	<1.0	34	4.3	SPL	--	
	11/30/1998	--	39.08	19.25	--	19.83	--	--	--	--	--	--	--	--	--	
	1/21/1999	--	39.08	18.94	--	20.14	3,700	830	93	200	360	30	--	--	--	
	4/30/1999	--	39.08	19.10	--	19.98	--	--	--	--	--	--	--	--	--	
	7/9/1999	--	39.08	18.93	--	20.15	76,000	12,000	6,600	2,000	8,700	320	--	SPL	--	

Table 1

Groundwater Elevation and Analytical Data

Former BP Station #11133

2220 98th Ave., Oakland, CA

Well No.	Date	P/ NP	Well Elevation/ TOC (feet)	DTW (feet)	Product Thickness (feet)	GWE (feet)	GRO/ TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	DO (mg/L)	Lab	pH	Comments
AW-4	11/3/1999	--	39.08	20.65	--	18.43	--	--	--	--	--	--	--	--	--	
	1/12/2000	--	39.08	21.21	--	17.87	67,000	12,000	3,500	2,900	15,000	280	--	PACE	--	
	4/13/2000	--	39.08	21.33	--	17.75	--	--	--	--	--	--	--	--	--	
	5/24/2000	--	39.08	19.84	--	19.24	--	--	--	--	--	--	--	--	--	
	6/1/2000	--	39.08	19.04	--	20.04	--	--	--	--	--	--	--	--	--	
	6/8/2000	--	39.08	18.32	--	20.76	--	--	--	--	--	--	--	--	--	
	6/15/2000	--	39.08	16.70	--	22.38	--	--	--	--	--	--	--	--	--	
	7/26/2000	--	39.08	21.50	--	17.58	910	<0.5	<0.5	<0.5	<0.5	3,500	--	PACE	--	
	10/24/2000	--	39.08	22.00	--	17.08	--	--	--	--	--	--	--	--	--	
	1/19/2001	--	39.08	18.97	--	20.11	6,600	2,460	24	497	534	267	--	PACE	--	
	7/24/2001	--	39.08	18.55	--	20.53	5,100	1,080	143	409	827	115	--	PACE	--	
	1/18/2002	--	39.08	17.22	--	21.86	3,900	442	241	157	681	85.3	--	PACE	--	
	8/1/2002	--	39.08	--	--	--	--	--	--	--	--	--	--	--	--	f
	1/16/2003	--	39.08	16.85	--	22.23	2,900	260	160	120	590	<120	--	SEQ	--	p
	7/7/2003	--	39.08	17.94	--	21.14	600	90	7.9	18	36	56	--	SEQ	--	q
	02/05/2004	--	39.08	16.94	--	22.14	420	40	3.1	15	27	40	--	SEQM	6.8	
	07/01/2004	P	39.08	18.24	--	20.84	6,000	970	200	310	1,500	64	--	SEQM	6.7	
	03/16/2005	P	39.08	16.16	--	22.92	3,600	71	31	200	870	23	0.6	SEQM	6.5	
AW-5	4/5/1991	--	38.51	25.48	--	13.03	420	31	7.5	20	68	--	--	SUP	--	
	4/1/1992	--	38.51	23.95	--	14.56	--	--	--	--	--	--	--	--	--	
	4/2/1992	--	38.51	--	--	--	4,000	270	63	190	290	--	--	APP	--	
	7/6/1992	--	38.51	26.48	--	12.03	1,400	160	<2.5	250	58	--	--	ANA	--	
	10/7/1992	--	38.51	28.18	--	10.33	360	12	0.6	8.7	5	--	--	ANA	--	
	1/14/1993	--	38.51	24.15	--	14.36	1,700	270	7.5	130	62	--	--	PACE	--	m
	4/22/1993	--	38.51	--	--	--	3,500	780	29	240	210	--	--	PACE	--	m, e
	4/22/1993	--	38.51	22.43	--	16.08	2,700	780	30	220	180	--	--	PACE	--	m
	7/15/1993	--	38.51	--	--	--	1,300	66	8.3	64	99	<50	--	PACE	--	m, e
	7/15/1993	--	38.51	24.31	--	14.20	1,300	69	16	67	120	<50	--	PACE	--	m
	10/21/1993	--	38.51	26.05	--	12.46	510	9.6	1.5	17	45	75	--	PACE	--	c, m
	1/27/1994	--	38.51	26.42	--	12.09	420	3.3	<0.5	1	0.9	48.9	--	PACE	--	m
	4/21/1994	--	38.51	24.36	--	14.15	1,000	110	25	56	27	75	1.3	PACE	--	c, m
	9/9/1994	--	38.51	24.55	--	13.96	210	<0.5	<0.5	0.5	0.9	--	2.7	PACE	--	m
	12/21/1994	--	38.51	--	--	--	340	<0.5	15	3.3	1.4	104	--	PACE	--	m, e

Table 1

Groundwater Elevation and Analytical Data

Former BP Station #11133
2220 98th Ave., Oakland, CA

Well No.	Date	P/ NP	Well Elevation/ TOC (feet)	DTW (feet)	Product Thickness (feet)	GWE (feet)	GRO/ TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	DO (mg/L)	Lab	pH	Comments
AW-5	12/21/1994	--	38.51	22.30	--	16.21	410	<0.5	20	4.3	1.4	114	1.1	PACE	--	m
	1/30/1995	--	38.51	18.88	--	19.63	210	0.6	11	8.8	2	--	1.5	ATI	--	
	4/10/1995	--	38.51	18.44	--	20.07	500	1.4	0.59	6.5	4.3	--	8.3	ATI	--	
	6/29/1995	--	38.51	19.92	--	18.59	490	1.2	0.58	7.3	2.2	--	6.9	ATI	--	d
	9/18/1995	--	38.51	22.15	--	16.36	--	--	--	--	--	--	--	--	--	
	9/19/1995	--	38.51	--	--	--	260	0.62	<0.50	3.1	1.1	110	8.2	ATI	--	
	12/7/1995	--	38.51	23.75	--	14.76	60	<0.50	<0.50	<0.50	<1.0	210	4.3	ATI	--	
	3/28/1996	--	38.51	17.76	--	20.75	<50	<0.5	<1	<1	<1	63	3.0	SPL	--	
	6/20/1996	--	38.51	18.46	--	20.05	<50	<0.5	<1	<1	<1	<10	3.6	SPL	--	
	10/11/1996	--	38.51	21.84	--	16.67	<50	<0.5	<1.0	<1.0	<1.0	<10	4.5	SPL	--	
	1/2/1997	--	38.51	18.01	--	20.50	<50	<0.5	<1.0	<1.0	<1.0	<10	4.6	SPL	--	
	4/14/1997	--	38.51	19.35	--	19.16	<50	<0.5	<1.0	<1.0	<1.0	<10	5.1	SPL	--	
	7/2/1997	--	38.51	20.29	--	18.22	<50	<0.5	<1.0	<1.0	<1.0	<10	4.0	SPL	--	
	9/30/1997	--	38.51	23.15	--	15.36	<250	<2.5	<5.0	<5.0	<5.0	1,300	6.3	SPL	--	
	1/21/1998	--	38.51	17.33	--	21.18	6,100	<0.5	2.1	<1.0	<1.0	3,700	4.5	SPL	--	
	4/9/1998	--	38.51	15.25	--	23.26	--	--	--	--	--	--	--	--	--	
	4/10/1998	--	38.51	--	--	--	3,500	<0.5	<1.0	<1.0	<1.0	3,000	5.4	SPL	--	
	6/19/1998	--	38.51	17.39	--	21.12	3,300	<0.5	<1.0	<1.0	<1.0	2,500	5.2	SPL	--	
	11/30/1998	--	38.51	--	--	--	--	--	--	--	--	--	--	--	--	f
	1/21/1999	--	38.51	21.22	--	17.29	2,800	<1.0	<1.0	<1.0	<1.0	1,800	--	SPL	--	
	4/30/1999	--	38.51	21.50	--	17.01	--	--	--	--	--	--	--	--	--	
	7/9/1999	--	38.51	20.15	--	18.36	4,000	<1.0	<1.0	<1.0	<1.0	3400/3500	--	SPL	--	g
	11/3/1999	--	38.51	22.04	--	16.47	--	--	--	--	--	--	--	--	--	
	1/12/2000	--	38.51	22.59	--	15.92	1,000	7.3	30	6.7	40	4,600	--	PACE	--	j (TPH-g/GRO)
	4/13/2000	--	38.51	23.11	--	15.40	--	--	--	--	--	--	--	--	--	
	7/26/2000	--	38.51	22.72	--	15.79	1,800	94	35	5.9	27	16,000	--	PACE	--	
	10/24/2000	--	38.51	20.15	--	18.36	--	--	--	--	--	--	--	--	--	
	1/19/2001	--	38.51	19.79	--	18.72	2,600	<0.5	<0.5	<0.5	<0.5	4,580	--	PACE	--	
	7/24/2001	--	38.51	20.17	--	18.34	5,400	16.4	17.2	<12.5	40.8	5,170	--	PACE	--	
	1/18/2002	--	38.51	17.34	--	21.17	3,800	343	0.738	<0.5	<1.0	3,750	--	PACE	--	
	8/1/2002	--	38.51	19.49	--	19.02	5,300	<12.5	<12.5	<12.5	<25	3,470	--	PACE	--	
	1/16/2003	--	38.51	17.30	--	21.21	1,400	140	<10	<10	<10	1,600	--	SEQ	--	p
	7/7/2003	--	38.51	18.43	--	20.08	1,400	<10	<10	<10	<10	980	--	SEQ	--	q
	02/05/2004	--	38.51	17.24	--	21.27	1,800	<10	<10	<10	<10	810	--	SEQM	6.7	

Table 1

Groundwater Elevation and Analytical Data

Former BP Station #11133

2220 98th Ave., Oakland, CA

Well No.	Date	P/ NP	Well Elevation/ TOC (feet)	DTW (feet)	Product Thickness (feet)	GWE (feet)	GRO/ TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	DO (mg/L)	Lab	pH	Comments
AW-5	07/01/2004	P	38.51	19.43	--	19.08	1,100	<5.0	<5.0	<5.0	<5.0	550	--	SEQM	6.6	
	03/16/2005	P	38.51	15.30	--	23.21	<5,000	<50	<50	<50	130	890	2.1	SEQM	6.7	
AW-6	4/5/1991	--	37.08	22.48	--	14.60	1,100	80	19	1.4	230	--	--	SUP	--	
	4/1/1992	--	37.08	22.50	--	14.58	--	--	--	--	--	--	--	---	--	
	4/2/1992	--	37.08	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	APP	--	
	7/6/1992	--	37.08	22.74	--	14.34	<50	<0.5	<0.5	<0.5	<0.5	--	--	ANA	--	
	10/7/1992	--	37.08	24.64	--	12.44	<50	<0.5	<0.5	<0.5	<0.5	--	--	ANA	--	
	1/14/1993	--	37.08	22.36	--	14.72	<50	<0.5	<0.5	<0.5	<0.5	--	--	PACE	--	m
	4/22/1993	--	37.08	22.82	--	14.26	<50	<0.5	<0.5	<0.5	<0.5	--	--	PACE	--	m
	7/15/1993	--	37.08	20.49	--	16.59	<50	<0.5	<0.5	<0.5	0.8	<5.0	--	PACE	--	m
	10/21/1993	--	37.08	22.84	--	14.24	<50	0.5	0.6	<0.5	0.7	<5.0	--	PACE	--	m
	1/27/1994	--	37.08	22.33	--	14.75	<50	<0.5	0.9	3.1	12	<5.0	--	PACE	--	m
	4/21/1994	--	37.08	20.66	--	16.42	<50	<0.5	<0.5	<0.5	<0.5	<5.0	1.7	PACE	--	m
	9/9/1994	--	37.08	21.57	--	15.51	<50	0.9	<0.5	<0.5	0.5	--	2.9	PACE	--	m
	12/21/1994	--	37.08	19.40	--	17.68	<50	1.8	0.8	0.8	3.2	5.19	1.1	PACE	--	m
	1/30/1995	--	37.08	--	--	--	<50	<0.50	<0.50	<0.50	<1.0	--	--	ATI	--	e
	1/30/1995	--	37.08	16.74	--	20.34	<50	<0.50	<0.50	<0.50	<1.0	--	2.2	ATI	--	
	4/10/1995	--	37.08	16.01	--	21.07	<50	<0.50	<0.50	<0.50	<1.0	--	8.6	ATI	--	
	6/29/1995	--	37.08	17.54	--	19.54	<50	<0.50	<0.50	<0.50	<1.0	--	6.3	ATI	--	
	9/18/1995	--	37.08	19.65	--	17.43	--	--	--	--	--	--	--	---	--	
	9/19/1995	--	37.08	--	--	--	<50	<0.50	<0.50	<0.50	<1.0	25	8.3	ATI	--	
	12/7/1995	--	37.08	20.35	--	16.73	<50	<0.50	<0.50	<0.50	<1.0	16	4.7	ATI	--	
	3/28/1996	--	37.08	14.99	--	22.09	<50	<0.5	<1	<1	<1	<10	4.0	SPL	--	
	6/20/1996	--	37.08	15.59	--	21.49	<50	<0.5	<1	<1	<1	<10	4.6	SPL	--	
	10/11/1996	--	37.08	19.09	--	17.99	<50	<0.5	<1.0	<1.0	<1.0	<10	5.3	SPL	--	
	1/2/1997	--	37.08	15.11	--	21.97	<50	<0.5	<1.0	<1.0	<1.0	<10	5.5	SPL	--	
	4/14/1997	--	37.08	16.25	--	20.83	<50	<0.5	<1.0	<1.0	<1.0	<10	3.9	SPL	--	
	7/2/1997	--	37.08	17.99	--	19.09	<50	<0.5	<1.0	<1.0	<1.0	<10	5.2	SPL	--	
	9/30/1997	--	37.08	20.50	--	16.58	<50	<0.5	<1.0	<1.0	<1.0	<10	6.0	SPL	--	
	1/21/1998	--	37.08	15.72	--	21.36	160	<0.5	<1.0	<1.0	<1.0	110	5.0	SPL	--	
	4/9/1998	--	37.08	13.31	--	23.77	--	--	--	--	--	--	--	---	--	
	4/10/1998	--	37.08	--	--	--	370	<0.5	<1.0	<1.0	<1.0	300	4.3	SPL	--	
	6/19/1998	--	37.08	15.18	--	21.90	830	2	<1.0	<1.0	<1.0	690	4.0	SPL	--	

Table 1

Groundwater Elevation and Analytical Data

Former BP Station #11133

2220 98th Ave., Oakland, CA

Well No.	Date	P/ NP	Well Elevation/ TOC (feet)	DTW (feet)	Product Thickness (feet)	GWE (feet)	GRO/ TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	DO (mg/L)	Lab	pH	Comments
AW-6	11/30/1998	--	37.08	--	--	--	--	--	--	--	--	--	--	--	--	f
	1/21/1999	--	37.08	15.78	--	21.30	2,300	<1.0	<1.0	<1.0	<1.0	1,900	--	SPL	--	
	4/30/1999	--	37.08	16.01	--	21.07	--	--	--	--	--	--	--	--	--	
	7/9/1999	--	37.08	17.63	--	19.45	--	--	--	--	--	--	--	--	--	
	11/3/1999	--	37.08	18.42	--	18.66	--	--	--	--	--	--	--	--	--	
	1/12/2000	--	37.08	19.92	--	17.16	<50	<0.5	<0.5	<0.5	<0.5	2,700	--	PACE	--	
	4/13/2000	--	37.08	19.87	--	17.21	--	--	--	--	--	--	--	--	--	
	7/26/2000	--	37.08	19.99	--	17.09	--	--	--	--	--	--	--	--	--	
	10/24/2000	--	37.08	18.12	--	18.96	--	--	--	--	--	--	--	--	--	
	1/19/2001	--	37.08	17.04	--	20.04	2,700	<0.5	<0.5	<0.5	<0.5	4,850	--	PACE	--	
	7/24/2001	--	37.08	17.83	--	19.25	--	--	--	--	--	--	--	--	--	
	1/18/2002	--	37.08	15.54	--	21.54	5,500	614	<0.5	<0.5	<1.0	5,390	--	PACE	--	
	8/1/2002	--	37.08	16.98	--	20.10	--	--	--	--	--	--	--	--	--	
	1/16/2003	--	37.08	15.05	--	22.03	2,900	<20	<20	<20	63	2,500	--	SEQ	--	p
	7/7/2003	--	37.08	16.58	--	20.50	--	--	--	--	--	--	--	--	--	
	02/05/2004	--	37.08	15.84	--	21.24	7,000	<50	<50	<50	<50	5,400	--	SEQM	6.7	
	07/01/2004	P	37.08	17.91	--	19.17	9,600	<50	<50	<50	<50	4,600	--	SEQM	6.5	
	03/16/2005	P	37.08	16.04	--	21.04	6,700	<25	<25	<25	<25	4,400	3.0	SEQM	6.8	
AW-7	4/5/1991	--	37.60	23.38	--	14.22	<50	0.4	0.7	<0.3	<0.3	--	--	SUP	--	
	4/1/1992	--	37.60	21.92	--	15.68	--	--	--	--	--	--	--	--	--	
	4/2/1992	--	37.60	--	--	--	<50	<0.5	3.2	1	5.4	--	--	APP	--	
	7/6/1992	--	37.60	24.50	--	13.10	<50	<0.5	<0.5	<0.5	<0.5	--	--	ANA	--	
	10/7/1992	--	37.60	26.16	--	11.42	<50	<0.5	<0.5	<0.5	<0.5	--	--	ANA	--	
	1/14/1993	--	37.60	22.03	--	15.57	<50	<0.5	<0.5	<0.5	<0.5	--	--	PACE	--	m
	4/22/1993	--	37.60	21.18	--	16.42	<50	<0.5	<0.5	<0.5	<0.5	--	--	PACE	--	m
	7/15/1993	--	37.60	22.09	--	15.51	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	PACE	--	m
	10/21/1993	--	37.60	24.05	--	13.55	51	5	4.2	3.5	8.2	<5.0	--	PACE	--	m
	1/27/1994	--	37.60	23.40	--	14.20	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	PACE	--	m
	4/21/1994	--	37.60	22.24	--	15.36	<50	<0.5	<0.5	<0.5	<0.5	<5.0	2.5	PACE	--	m
	9/9/1994	--	37.60	22.94	--	14.66	<50	<0.5	<0.5	<0.5	0.5	--	4.3	PACE	--	m
	12/21/1994	--	37.60	20.86	--	16.74	<50	<0.5	<0.5	<0.5	<0.5	<5.0	2.2	PACE	--	m
	1/30/1995	--	37.60	17.51	--	20.09	<50	<0.50	<0.50	<0.50	<1.0	--	2.7	ATI	--	
	4/10/1995	--	37.60	16.69	--	20.91	<50	<0.50	<0.50	<0.50	<1.0	--	4.8	ATI	--	

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2220 98th Ave., Oakland, CA

Well No.	Date	P/ NP	Well Elevation/ TOC (feet)	DTW (feet)	Product Thickness (feet)	GWE (feet)	GRO/ TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	DO (mg/L)	Lab	pH	Comments
AW-7	6/29/1995	--	37.60	18.33	--	19.27	<50	<0.50	<0.50	<0.50	<1.0	--	7.6	ATI	--	
	9/18/1995	--	37.60	20.68	--	16.92	--	--	--	--	--	--	--	---	--	
	9/19/1995	--	37.60	--	--	--	<50	<0.50	<0.50	<0.50	<1.0	<5.0	5.1	ATI	--	
	12/7/1995	--	37.60	22.15	--	15.45	<50	<0.50	<0.50	<0.50	<1.0	<5.0	5.2	ATI	--	
	3/28/1996	--	37.60	16.38	--	21.22	<50	<0.5	<1	<1	<1	<10	3.9	SPL	--	
	6/20/1996	--	37.60	17.02	--	20.58	<50	<0.5	<1	<1	<1	<10	5.0	SPL	--	
	10/11/1996	--	37.60	20.47	--	17.13	<50	<0.5	<1.0	<1.0	<1.0	<10	6.3	SPL	--	
	1/2/1997	--	37.60	16.70	--	20.90	<50	<0.5	<1.0	<1.0	<1.0	<10	6.2	SPL	--	
	4/14/1997	--	37.60	17.96	--	19.64	<50	<0.5	<1.0	<1.0	<1.0	<10	5.0	SPL	--	
	7/2/1997	--	37.60	19.11	--	18.49	<50	<0.5	<1.0	<1.0	<1.0	<10	5.4	SPL	--	
	9/30/1997	--	37.60	22.97	--	14.63	<250	<2.5	<5.0	<5.0	<5.0	1,100	6.5	SPL	--	
	1/21/1998	--	37.60	16.50	--	21.10	<50	<0.5	<1.0	<1.0	<1.0	<10	4.9	SPL	--	
	4/9/1998	--	37.60	13.56	--	24.04	<50	<0.5	<1.0	<1.0	<1.0	<10	4.9	SPL	--	
	6/19/1998	--	37.60	15.41	--	22.19	<50	<0.5	<1.0	<1.0	<1.0	<10	4.4	SPL	--	
	11/30/1998	--	37.60	18.90	--	18.70	--	--	--	--	--	--	--	---	--	
	1/21/1999	--	37.60	18.39	--	19.21	--	--	--	--	--	--	--	---	--	
	4/30/1999	--	37.60	18.54	--	19.06	--	--	--	--	--	--	--	---	--	
	7/9/1999	--	37.60	17.98	--	19.62	--	--	--	--	--	--	--	---	--	
	11/3/1999	--	37.60	20.22	--	17.38	--	--	--	--	--	--	--	---	--	
	1/12/2000	--	37.60	19.46	--	18.14	--	--	--	--	--	--	--	---	--	
	4/13/2000	--	37.60	19.59	--	18.01	--	--	--	--	--	--	--	---	--	
	7/26/2000	--	37.60	19.69	--	17.91	--	--	--	--	--	--	--	---	--	
	10/24/2000	--	37.60	18.78	--	18.82	--	--	--	--	--	--	--	---	--	
	1/19/2001	--	37.60	--	--	--	--	--	--	--	--	--	--	---	--	
	7/25/2001	--	37.60	--	--	--	--	--	--	--	--	--	--	---	--	f
	1/18/2002	--	37.60	--	--	--	--	--	--	--	--	--	--	---	--	f
	8/1/2002	--	37.60	--	--	--	--	--	--	--	--	--	--	---	--	o
	1/16/2003	--	37.60	--	--	--	--	--	--	--	--	--	--	---	--	o
	7/7/2003	--	37.60	--	--	--	--	--	--	--	--	--	--	---	--	o
	02/05/2004	--	37.60	--	--	--	--	--	--	--	--	--	--	---	--	o
	07/01/2004	--	37.60	--	--	--	--	--	--	--	--	--	--	--	--	o
	03/16/2005	--	37.60	--	--	--	--	--	--	--	--	--	--	--	--	o
AW-8	4/5/1991	--	40.86	26.68	--	14.18	80	1.9	2.2	0.5	1.3	--	--	SUP	--	

Table 1

Groundwater Elevation and Analytical Data

Former BP Station #11133
2220 98th Ave., Oakland, CA

Well No.	Date	P/ NP	Well Elevation/ TOC (feet)	DTW (feet)	Product Thickness (feet)	GWE (feet)	GRO/ TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	DO (mg/L)	Lab	pH	Comments
AW-8	4/1/1992	--	40.86	25.11	--	15.75	73	<0.5	0.7	<0.5	0.6	--	--	APP	--	
	7/6/1992	--	40.86	26.43	--	14.43	<50	<0.5	<0.5	<0.5	<0.5	--	--	ANA	--	
	10/7/1992	--	40.86	28.59	--	12.27	<50	<0.5	<0.5	<0.5	<0.5	--	--	ANA	--	
	1/14/1993	--	40.86	25.55	--	15.31	<50	<0.5	<0.5	<0.5	<0.5	--	--	PACE	--	m
	4/22/1993	--	40.86	22.29	--	18.57	<50	<0.5	<0.5	<0.5	<0.5	--	--	PACE	--	m
	7/15/1993	--	40.86	23.42	--	17.44	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	PACE	--	m
	10/21/1993	--	40.86	25.15	--	15.71	<50	1.9	1.8	1.3	3.3	<5.0	--	PACE	--	m
	1/27/1994	--	40.86	25.42	--	15.44	<50	<0.5	0.5	0.6	8.5	<5.0	--	PACE	--	m
	4/21/1994	--	40.86	24.14	--	16.72	<50	<0.5	<0.5	<0.5	<0.5	<5.0	1.5	PACE	--	m
	9/9/1994	--	40.86	24.55	--	16.31	<50	<0.5	<0.5	<0.5	<0.5	--	2.4	PACE	--	m
	12/21/1994	--	40.86	22.72	--	18.14	<50	<0.5	<0.5	<0.5	<0.5	<5.0	1.1	PACE	--	m
	1/30/1995	--	40.86	19.75	--	21.11	<50	<0.50	1	<0.50	1	--	0.8	ATI	--	
	4/10/1995	--	40.86	17.78	--	23.08	<50	<0.50	<0.50	<0.50	<1.0	--	8.3	ATI	--	
	8/29/1995	--	40.86	18.18	--	22.68	<50	<0.50	<0.50	<0.50	<1.0	--	8.3	ATI	--	
	9/18/1995	--	40.86	20.20	--	20.66	--	--	--	--	--	--	--	---	--	
	9/19/1995	--	40.86	--	--	--	<50	<0.50	<0.50	<0.50	<1.0	<5.0	7.7	ATI	--	
	12/7/1995	--	40.86	21.54	--	19.32	<50	<0.50	<0.50	<0.50	<1.0	<5.0	4.4	ATI	--	
	3/28/1996	--	40.86	15.77	--	25.09	<50	<0.5	<1	<1	<1	<10	3.8	SPL	--	
	6/20/1996	--	40.86	16.41	--	24.45	<50	<0.5	<1	<1	<1	<10	3.6	SPL	--	
	10/11/1996	--	40.86	19.90	--	20.96	<50	<0.5	<1.0	<1.0	<1.0	<10	6.4	SPL	--	
	1/2/1997	--	40.86	15.89	--	24.97	<50	<0.5	<1.0	<1.0	<1.0	<10	5.9	SPL	--	
	4/14/1997	--	40.86	17.07	--	23.79	<50	<0.5	<1.0	<1.0	<1.0	<10	4.6	SPL	--	
	7/2/1997	--	40.86	18.67	--	22.19	<50	<0.5	<1.0	<1.0	<1.0	<10	5.6	SPL	--	
	9/30/1997	--	40.86	22.52	--	18.34	<50	<5	<10	<10	<10	820	6.7	SPL	--	
	1/21/1998	--	40.86	16.01	--	24.85	<50	<0.5	<1.0	<1.0	<1.0	<10	5.2	SPL	--	
	4/9/1998	--	40.86	11.18	--	29.68	<50	<0.5	<1.0	<1.0	<1.0	<10	4.4	SPL	--	
	6/19/1998	--	40.86	13.01	--	27.85	<50	<0.5	<1.0	<1.0	<1.0	<10	4.1	SPL	--	
	11/30/1998	--	40.86	17.46	--	23.40	--	--	--	--	--	--	--	---	--	
	1/21/1999	--	40.86	17.47	--	23.39	--	--	--	--	--	--	--	---	--	
	4/30/1999	--	40.86	17.60	--	23.26	--	--	--	--	--	--	--	---	--	
	7/9/1999	--	40.86	16.50	--	24.36	--	--	--	--	--	--	--	---	--	
	11/3/1999	--	40.86	19.29	--	21.57	--	--	--	--	--	--	--	---	--	
	1/12/2000	--	40.86	21.49	--	19.37	--	--	--	--	--	--	--	---	--	
	4/13/2000	--	40.86	21.60	--	19.26	--	--	--	--	--	--	--	---	--	

Table 1

Groundwater Elevation and Analytical Data

Former BP Station #11133
2220 98th Ave., Oakland, CA

Well No.	Date	P/ NP	Well Elevation/ TOC (feet)	DTW (feet)	Product Thickness (feet)	GWE (feet)	GRO/ TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	DO (mg/L)	Lab	pH	Comments
AW-8	7/26/2000	--	40.86	21.53	--	19.33	--	--	--	--	--	--	--	--	--	
	10/24/2000	--	40.86	19.37	--	21.49	--	--	--	--	--	--	--	--	--	
	1/19/2001	--	40.86	18.60	--	22.26	--	--	--	--	--	--	--	--	--	
	7/24/2001	--	40.86	18.22	--	22.64	--	--	--	--	--	--	--	--	--	
	1/18/2002	--	40.86	16.29	--	24.57	--	--	--	--	--	--	--	--	--	
	8/1/2002	--	40.86	17.25	--	23.61	--	--	--	--	--	--	--	--	--	
	1/16/2003	--	40.86	15.82	--	25.04	--	--	--	--	--	--	--	--	--	
	7/7/2003	--	40.86	18.55	--	22.31	--	--	--	--	--	--	--	--	--	
	02/05/2004	--	40.86	--	--	--	--	--	--	--	--	--	--	--	--	t
	07/01/2004	--	40.86	18.25	--	22.61	--	--	--	--	--	--	--	--	--	t
	03/16/2005	P	40.86	15.20	--	25.66	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.5	SEQM	7.3	
AW-9	1/2/1997	--	37.78	10.00	--	27.78	<50	<0.5	<1.0	<1.0	<1.0	<10	6.7	SPL	--	
	4/14/1997	--	37.78	--	--	--	--	--	--	--	--	--	--	--	--	f
	7/2/1997	--	37.78	12.71	--	25.07	<50	<0.5	<1.0	<1.0	<1.0	<10	6.0	SPL	--	
	9/30/1997	--	37.78	21.22	--	16.56	<50	<0.5	<1.0	<1.0	<1.0	<10	6.8	SPL	--	
	1/21/1998	--	37.78	10.26	--	27.52	<50	<0.5	<1.0	<1.0	<1.0	<10	5.3	SPL	--	
	4/9/1998	--	37.78	6.77	--	31.01	<50	<0.5	<1.0	<1.0	<1.0	<10	5.6	SPL	--	
	6/19/1998	--	37.78	8.96	--	28.82	<50	<0.5	<1.0	<1.0	<1.0	<10	4.8	SPL	--	
MW-1	4/5/1991	--	34.46	--	--	--	--	--	--	--	--	--	--	--	--	
	4/1/1992	--	34.46	11.25	0.01	23.20	--	--	--	--	--	--	--	--	--	
	7/6/1992	--	34.46	13.61	0.02	20.83	--	--	--	--	--	--	--	--	--	
	10/7/1992	--	34.46	15.15	0.09	19.22	--	--	--	--	--	--	--	--	--	
	1/14/1993	--	34.46	10.73	0.01	23.72	--	--	--	--	--	--	--	--	--	
	4/22/1993	--	34.46	11.64	0.16	22.66	--	--	--	--	--	--	--	--	--	
	7/15/1993	--	34.46	13.50	1.11	19.85	--	--	--	--	--	--	--	--	--	
	10/21/1993	--	34.46	15.21	1.00	18.25	--	--	--	--	--	--	--	--	--	
	1/27/1994	--	34.46	17.48	0.81	16.17	--	--	--	--	--	--	--	--	--	
	4/21/1994	--	34.46	10.94	--	23.52	110,000	1,400	9,100	3,400	30,000	11,000	1.6	PACE	--	c
	9/9/1994	--	34.46	13.80	--	20.66	--	--	--	--	--	--	--	--	--	
	12/21/1994	--	34.46	12.60	0.02	21.84	--	--	--	--	--	--	--	--	--	
	1/30/1995	--	34.46	--	--	--	--	--	--	--	--	--	--	--	--	
	4/10/1995	--	34.46	10.62	--	23.84	--	--	--	--	--	--	--	--	--	
	6/29/1995	--	34.46	18.72	--	15.74	--	--	--	--	--	--	--	--	--	

Table 1

Groundwater Elevation and Analytical Data

Former BP Station #11133
2220 98th Ave., Oakland, CA

Well No.	Date	P/ NP	Well Elevation/ TOC (feet)	DTW (feet)	Product Thickness (feet)	GWE (feet)	GRO/ TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	DO (mg/L)	Lab	pH	Comments
MW-1	9/18/1995	--	34.46	12.92	--	21.54	--	--	--	--	--	--	--	--	--	
	12/7/1995	--	34.46	13.82	--	20.64	--	--	--	--	--	--	--	--	--	
	3/28/1996	--	34.46	10.03	0.01	24.42	--	--	--	--	--	--	--	--	--	
	6/20/1996	--	34.46	11.29	0.02	23.15	--	--	--	--	--	--	--	--	--	
	10/11/1996	--	34.46	14.86	0.01	19.59	--	--	--	--	--	--	--	--	--	
	1/2/1997	--	34.46	11.03	0.01	23.42	--	--	--	--	--	--	--	--	--	
	4/14/1997	--	34.46	12.25	0.01	22.20	--	--	--	--	--	--	--	--	--	
	4/15/1997	--	34.46	--	--	--	35,000	130	650	1,700	8,200	4,800	--	SPL	--	
	7/2/1997	--	34.46	14.11	--	20.35	42,000	<250	<500	2,000	9,600	<5000	5.5	SPL	--	
	9/30/1997	--	34.46	14.40	--	20.06	61,000	130	1,100	2,700	14,600	2,000	6.7	SPL	--	
	1/21/1998	--	34.46	7.99	0.01	26.46	14,000	11	60	310	1,790	1,300	4.5	SPL	--	
	4/9/1998	--	34.46	7.89	--	26.57	--	--	--	--	--	--	--	--	--	
	4/10/1998	--	34.46	--	--	--	45,000	380	520	2,100	6,800	9,300	5.3	SPL	--	
	6/19/1998	--	34.46	10.31	--	24.15	35,000	170	100	1,100	3,590	5,000	4.9	SPL	--	
	11/30/1998	--	34.46	11.16	--	23.30	10,000	100	24	360	1,040	1800/2800	--	SPL	--	g
	1/21/1999	--	34.46	10.76	--	23.70	18,000	120	37	560	1,800	2,700	--	SPL	--	
	4/30/1999	--	34.46	10.78	--	23.68	17,000	240	89	1,100	1,900	1,800	--	SPL	--	
	7/9/1999	--	34.46	12.62	--	21.84	58,000	140	100	1,800	6,900	1,200	--	SPL	--	
	11/3/1999	--	34.46	14.00	--	20.46	20,000	62	42	620	2,100	630	--	PACE	--	
	1/12/2000	--	34.46	15.25	--	19.21	72,000	110	120	2,400	8,200	630	--	PACE	--	
	4/13/2000	--	34.46	15.57	--	18.89	37,000	300	32	1,000	1,700	810	--	PACE	--	
	5/24/2000	--	34.46	11.75	--	22.71	--	--	--	--	--	--	--	--	--	
	6/1/2000	--	34.46	11.41	--	23.05	--	--	--	--	--	--	--	--	--	
	6/8/2000	--	34.46	11.68	--	22.78	--	--	--	--	--	--	--	--	--	
	6/15/2000	--	34.46	11.85	--	22.61	--	--	--	--	--	--	--	--	--	
	7/26/2000	--	34.46	16.19	--	18.27	10,000	480	210	470	710	1,100	--	PACE	--	
	10/24/2000	--	34.46	13.89	--	20.57	9,900	31	7.2	550	1,200	4,400	--	PACE	--	
	1/19/2001	--	34.46	12.90	--	21.56	57,000	199	7.66	1,170	3,260	514	--	PACE	--	
	7/24/2001	--	34.46	13.55	--	20.91	27,000	96.7	<5.0	548	1,460	285	--	PACE	--	
	1/18/2002	--	34.46	10.91	--	23.55	25,000	150	31.5	597	1,040	138	--	PACE	--	
	8/1/2002	--	34.46	12.97	--	21.49	25,000	80.2	17.7	714	1,280	489	--	PACE	--	
	1/16/2003	--	34.46	10.45	--	24.01	22,000	170	110	630	670	<500	--	SEQ	--	p
	7/7/2003	--	34.46	12.40	--	22.06	9,900	42	<5.0	160	150	24	--	SEQ	--	q, u
	02/05/2004	--	34.46	10.26	--	24.20	6,200	56	11	250	210	9.2	--	SEQM	6.9	

Table 1

Groundwater Elevation and Analytical Data

Former BP Station #11133
2220 98th Ave., Oakland, CA

Well No.	Date	P/ NP	Well Elevation/ TOC (feet)	DTW (feet)	Product Thickness (feet)	GWE (feet)	GRO/ TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	DO (mg/L)	Lab	pH	Comments
MW-1	07/01/2004	--	34.46	13.20	--	21.26	18,000	<50	<50	210	300	<50	--	SEQM	--	u
	03/16/2005	P	34.46	9.62	--	24.84	7,600	33	5.4	200	130	<5.0	0.9	SEQM	6.9	
MW-2	4/5/1991	--	35.50	16.62	--	18.88	<50	0.6	0.9	<0.3	<0.3	--	--	SUP	--	
	4/1/1992	--	35.50	11.25	--	24.25	--	--	--	--	--	--	--	--	--	
	4/2/1992	--	35.50	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	APP	--	
	7/6/1992	--	35.50	12.72	--	22.78	<50	<0.5	<0.5	<0.5	<0.5	--	--	ANA	--	
	10/7/1992	--	35.50	15.08	--	20.42	<50	<0.5	1.8	<0.5	2.3	--	--	ANA	--	
	1/14/1993	--	35.50	9.69	--	25.81	<50	<0.5	<0.5	<0.5	<0.5	--	--	PACE	--	m
	4/22/1993	--	35.50	10.46	--	25.04	<50	<0.5	<0.5	<0.5	<0.5	30	--	PACE	--	c
	7/15/1993	--	35.50	12.02	--	23.48	<50	<0.5	<0.5	<0.5	<0.5	21.7	--	PACE	--	c, m
	10/21/1993	--	35.50	13.12	--	22.38	<50	0.7	0.9	<0.5	0.9	14.9	--	PACE	--	m
	1/27/1994	--	35.50	12.01	--	23.49	<50	0.6	<0.5	<0.5	<0.5	11.5	--	PACE	--	m
	4/21/1994	--	35.50	10.60	--	24.90	<50	<0.5	<0.5	<0.5	<0.5	11.4	1.1	PACE	--	m
	9/9/1994	--	35.50	12.42	--	23.08	<50	<0.5	<0.5	<0.5	0.6	--	2.2	PACE	--	m
	12/21/1994	--	35.50	10.85	--	24.65	<50	<0.5	<0.5	<0.5	<0.5	<5.0	1.2	PACE	--	m
	1/30/1995	--	35.50	8.38	--	27.12	<50	<0.50	<0.50	<0.50	<1.0	--	1.7	ATI	--	
	4/10/1995	--	35.50	9.00	--	26.50	<50	<0.50	<0.50	<0.50	<1.0	--	7.8	ATI	--	
	6/29/1995	--	35.50	9.91	--	25.59	<50	<0.50	<0.50	<0.50	<1.0	--	9.1	ATI	--	
	9/18/1995	--	35.50	10.98	--	24.52	--	--	--	--	--	--	--	--	--	
	9/19/1995	--	35.50	--	--	--	<50	<0.50	<0.50	<0.50	<1.0	<5.0	7.2	ATI	--	
	12/7/1995	--	35.50	12.30	--	23.20	<50	<0.50	<0.50	<0.50	<1.0	<5.0	2.4	ATI	--	
	3/28/1996	--	35.50	8.57	--	26.93	<50	<0.5	<1	<1	<1	<10	3.2	SPL	--	
	6/20/1996	--	35.50	9.77	--	25.73	<50	<0.5	<1	<1	<1	<10	4.2	SPL	--	
	10/11/1996	--	35.50	13.32	--	22.18	<50	<0.5	<1.0	<1.0	<1.0	<10	6.3	SPL	--	
	1/2/1997	--	35.50	9.60	--	25.90	<50	<0.5	<1.0	<1.0	<1.0	<10	6.7	SPL	--	
	4/14/1997	--	35.50	10.93	--	24.57	<50	<0.5	<1.0	<1.0	<1.0	<10	5.7	SPL	--	
	7/2/1997	--	35.50	12.57	--	22.93	<50	<0.5	<1.0	<1.0	<1.0	<10	5.9	SPL	--	
	9/30/1997	--	35.50	12.91	--	22.59	<50	<0.5	<1.0	<1.0	<1.0	<10	6.3	SPL	--	
	1/21/1998	--	35.50	10.12	--	25.38	160	<0.5	<1.0	<1.0	<1.0	100	5.4	SPL	--	
	4/9/1998	--	35.50	6.82	--	28.68	--	--	--	--	--	--	--	--	--	
	4/10/1998	--	35.50	--	--	--	<50	1	<1.0	<1.0	<1.0	23	5.0	SPL	--	
	6/19/1998	--	35.50	9.00	--	26.50	<50	<0.5	<1.0	<1.0	<1.0	<10	4.9	SPL	--	
	11/30/1998	--	35.50	9.44	--	26.06	--	--	--	--	--	--	--	--	--	

Table 1

Groundwater Elevation and Analytical Data

Former BP Station #11133
2220 98th Ave., Oakland, CA

Well No.	Date	P/ NP	Well Elevation/ TOC (feet)	DTW (feet)	Product Thickness (feet)	GWE (feet)	GRO/ TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	DO (mg/L)	Lab	pH	Comments
MW-2	1/21/1999	--	35.50	8.96	--	26.54	<50	<1.0	<1.0	<.1.0	<1.0	1.9	--	SPL	--	
	4/30/1999	--	35.50	9.15	--	26.35	--	--	--	--	--	--	--	---	--	
	7/9/1999	--	35.50	10.82	--	24.68	--	--	--	--	--	--	--	---	--	
	11/3/1999	--	35.50	11.86	--	23.64	--	--	--	--	--	--	--	---	--	
	1/12/2000	--	35.50	12.35	--	23.15	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	PACE	--	
	4/13/2000	--	35.50	13.01	--	22.49	--	--	--	--	--	--	--	---	--	
	7/26/2000	--	35.50	13.01	--	22.49	--	--	--	--	--	--	--	---	--	
	10/24/2000	--	35.50	11.57	--	23.93	--	--	--	--	--	--	--	---	--	
	1/19/2001	--	35.50	10.52	--	24.98	--	--	--	--	--	--	--	---	--	
	7/24/2001	--	35.50	11.13	--	24.37	--	--	--	--	--	--	--	---	--	
	1/18/2002	--	35.50	8.85	--	26.65	--	--	--	--	--	--	--	---	--	
	8/1/2002	--	35.50	10.47	--	25.03	--	--	--	--	--	--	--	---	--	
	1/14/2003	--	35.50	8.49	--	27.01	--	--	--	--	--	--	--	---	--	
	7/7/2003	--	35.50	9.63	--	25.87	--	--	--	--	--	--	--	---	--	
	02/05/2004	--	35.50	8.40	--	27.10	--	--	--	--	--	--	--	--	--	
	07/01/2004	NP	35.50	9.94	--	25.56	--	--	--	--	--	--	--	--	--	
	03/16/2005	P	35.50	8.39	--	27.11	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.3	SEQM	7.1	
MW-3	4/5/1991	--	36.53	17.84	--	18.69	<50	<0.3	<0.3	<0.3	<0.3	--	--	SUP	--	
	4/1/1992	--	36.53	15.64	--	20.89	--	--	--	--	--	--	--	---	--	
	4/2/1992	--	36.53	--	--	--	<50	1.4	<0.5	<0.5	<0.5	--	--	APP	--	
	7/6/1992	--	36.53	19.03	--	17.50	<50	<0.5	<0.5	<0.5	<0.5	--	--	ANA	--	
	10/7/1992	--	36.53	21.83	--	14.70	<50	<0.5	<0.5	<0.5	<0.5	--	--	ANA	--	
	1/14/1993	--	36.53	15.96	--	20.57	350	<0.5	<0.5	<0.5	<0.5	714	--	PACE	--	c, m
	4/22/1993	--	36.53	16.20	--	20.33	2,800	<0.5	<0.5	<0.5	<0.5	3,800	--	PACE	--	c, m
	7/15/1993	--	36.53	16.82	--	19.71	1,400	1.2	<0.5	2	3.5	2,204	--	PACE	--	c, m
	10/21/1993	--	36.53	18.84	--	17.69	370	2.1	2.3	2.3	6	847	--	PACE	--	c, m
	1/27/1994	--	36.53	18.00	--	18.53	1,300	6.3	<0.5	<0.5	<0.5	3,892	--	PACE	--	c, m
	4/21/1994	--	36.53	16.62	--	19.91	2,000	<0.5	<0.5	<0.5	<0.5	3,864	1.4	PACE	--	c, m
	9/9/1994	--	36.53	18.38	--	18.15	1,300	<0.5	<0.5	0.5	1.2	--	3.0	PACE	--	m
	12/21/1994	--	36.53	15.28	--	21.25	420	16	0.7	3.5	5.9	800	1.9	PACE	--	m
	1/30/1995	--	36.53	12.62	--	23.91	<50	<0.50	<0.50	<0.50	<1.0	--	2.5	ATI	--	
	4/10/1995	--	36.53	12.41	--	24.12	150	<0.50	<0.50	<0.50	<1.0	--	6.9	ATI	--	
	6/29/1995	--	36.53	14.95	--	21.58	100	<0.50	<0.50	<0.50	<1.0	--	6.4	ATI	--	d (TPH-g)

Table 1

Groundwater Elevation and Analytical Data

Former BP Station #11133
2220 98th Ave., Oakland, CA

Well No.	Date	P/ NP	Well Elevation/ TOC (feet)	DTW (feet)	Product Thickness (feet)	GWE (feet)	GRO/ TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	DO (mg/L)	Lab	pH	Comments
MW-3	9/18/1995	--	36.53	15.82	--	20.71	--	--	--	--	--	--	--	--	--	
	9/19/1995	--	36.53	--	--	--	82	<0.50	<0.50	<0.50	<1.0	260	7.0	ATI	--	
	12/7/1995	--	36.53	17.09	--	19.44	<50	<0.50	<0.50	<0.50	<1.0	91	4.5	ATI	--	
	3/28/1996	--	36.53	11.90	--	24.63	<50	<0.5	<1	<1	<1	230	4.2	SPL	--	
	6/20/1996	--	36.53	12.66	--	23.87	260	<0.5	<1	<1	<1	370	4.4	SPL	--	
	10/11/1996	--	36.53	16.23	--	20.30	330	<0.5	<1.0	<1.0	<1.0	440	5.8	SPL	--	
	1/2/1997	--	36.53	12.17	--	24.36	<50	<0.5	<1.0	<1.0	<1.0	140	6.0	SPL	--	
	4/14/1997	--	36.53	13.45	--	23.08	--	--	--	--	--	--	--	--	--	
	4/15/1997	--	36.53	--	--	--	1,500	<0.5	<1.0	<1.0	<1.0	1,800	5.6	SPL	--	
	7/2/1997	--	36.53	15.60	--	20.93	880	<0.5	<1.0	<1.0	<1.0	940	5.3	SPL	--	
	9/30/1997	--	36.53	17.16	--	19.37	40,000	13,000	2,400	870	3,100	510	6.6	SPL	--	
	1/21/1998	--	36.53	11.77	--	24.76	120	<0.5	<1.0	<1.0	<1.0	98	4.7	SPL	--	
	4/9/1998	--	36.53	9.42	--	27.11	950	<0.5	<1.0	<1.0	<1.0	890	5.7	SPL	--	
	6/19/1998	--	36.53	12.09	--	24.44	1,800	<0.5	<1.0	<1.0	<1.0	1,900	4.7	SPL	--	
	6/19/1998	--	36.53	15.28	--	21.25	1,800	<0.5	<1.0	<1.0	<1.0	1,900	4.7	SPL	--	
	1/21/1999	--	36.53	14.67	--	21.86	1,100	<1.0	<1.0	<1.0	<1.0	1,200	--	SPL	--	
	4/30/1999	--	36.53	16.00	--	20.53	--	--	--	--	--	--	--	--	--	
	7/9/1999	--	36.53	14.64	--	21.89	470	<1.0	<1.0	<1.0	<1.0	460/470	--	SPL	--	g
	11/3/1999	--	36.53	16.39	--	20.14	--	--	--	--	--	--	--	--	--	
	1/12/2000	--	36.53	16.80	--	19.73	<50	<0.5	<0.5	<0.5	<0.5	34	--	PACE	--	
	4/13/2000	--	36.53	16.43	--	20.10	--	--	--	--	--	--	--	--	--	
	7/26/2000	--	36.53	16.93	--	19.60	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	PACE	--	
	10/24/2000	--	36.53	15.69	--	20.84	--	--	--	--	--	--	--	--	--	
	1/19/2001	--	36.53	14.84	--	21.69	<50	<0.5	<0.5	<0.5	1	25.9	--	PACE	--	
	7/23/2001	--	36.53	15.11	--	21.42	62	<0.5	<0.5	<0.5	<1.5	28.7	--	PACE	--	
	1/18/2002	--	36.53	12.37	--	24.16	<50	<0.5	<0.5	<0.5	<1.0	17.8	--	PACE	--	
	8/1/2002	--	36.53	14.44	--	22.09	66	<0.5	<0.5	<0.5	<1.0	<0.5	--	PACE	--	
	1/16/2003	--	36.53	12.07	--	24.46	<50	<0.50	<0.50	<0.50	<0.50	20	--	SEQ	--	p
	7/7/2003	--	36.53	13.90	--	22.63	<50	<0.50	<0.50	<0.50	<0.50	8.8	--	SEQ	--	q
	02/05/2004	--	36.53	12.60	--	23.93	<50	<0.50	<0.50	<0.50	<0.50	4.6	--	SEQM	7.0	
	07/01/2004	--	36.53	14.57	--	21.96	<50	<0.50	<0.50	<0.50	<0.50	3.3	--	SEQM	--	
	03/16/2005	P	36.53	11.03	--	25.50	<50	<0.50	<0.50	<0.50	<0.50	4.4	1.5	SEQM	6.8	
QC-2	10/7/1992	--	37.73	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	ANA	--	l

Table 1

Groundwater Elevation and Analytical Data

Former BP Station #11133
2220 98th Ave., Oakland, CA

Well No.	Date	P/ NP	Well Elevation/ TOC (feet)	DTW (feet)	Product Thickness (feet)	GWE (feet)	GRO/ TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	DO (mg/L)	Lab	pH	Comments
QC-2	1/14/1993	--	37.73	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	PACE	--	i, m
	4/22/1993	--	37.73	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	PACE	--	i, m
	7/15/1993	--	37.73	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	PACE	--	i, m
	10/21/1993	--	37.73	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	PACE	--	i
	1/27/1994	--	37.73	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	PACE	--	i
	4/21/1994	--	37.73	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	PACE	--	i
	9/9/1994	--	37.73	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	PACE	--	i
	12/21/1994	--	37.73	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	PACE	--	i
	1/30/1995	--	37.73	--	--	--	<50	<0.50	<0.50	<0.50	<1.0	--	--	ATI	--	i
	4/10/1995	--	37.73	--	--	--	<50	<0.50	<0.50	<0.50	<1.0	--	--	ATI	--	i
	6/27/1995	--	37.73	--	--	--	<50	<0.50	<0.50	<0.50	<1.0	--	--	ATI	--	i
	9/19/1995	--	37.73	--	--	--	<50	<0.50	<0.50	<0.50	<1.0	<5.0	--	ATI	--	i
	12/7/1995	--	37.73	--	--	--	<50	<0.50	<0.50	<0.50	<1.0	<5.0	--	ATI	--	i
	3/28/1996	--	37.73	--	--	--	<50	<0.5	<1	<1	<1	<10	--	SPL	--	i
	6/20/1996	--	37.73	--	--	--	<50	<0.5	<1	<1	<1	<10	--	SPL	--	i
RW-1	4/5/1991	--	37.73	--	--	--	--	--	--	--	--	--	--	--	--	
	4/1/1992	--	37.73	22.81	0.30	14.62	--	--	--	--	--	--	--	--	--	
	7/6/1992	--	37.73	26.92	0.41	10.40	--	--	--	--	--	--	--	--	--	
	10/7/1992	--	37.73	26.51	1.26	7.96	--	--	--	--	--	--	--	--	--	
	1/14/1993	--	37.73	23.75	0.25	13.73	--	--	--	--	--	--	--	--	--	
	4/22/1993	--	37.73	22.70	1.38	13.65	--	--	--	--	--	--	--	--	--	
	7/15/1993	--	37.73	26.10	0.81	10.82	--	--	--	--	--	--	--	--	--	
	10/21/1993	--	37.73	25.40	0.49	11.84	--	--	--	--	--	--	--	--	--	
	1/27/1994	--	37.73	28.02	0.37	9.34	--	--	--	--	--	--	--	--	--	
	4/21/1994	--	37.73	23.10	0.91	13.72	--	--	--	--	--	--	--	--	--	
	9/9/1994	--	37.73	24.39	1.04	12.30	--	--	--	--	--	--	--	--	--	
	12/21/1994	--	37.73	--	--	--	--	--	--	--	--	--	--	--	--	h
	12/7/1995	--	37.73	25.71	1.04	10.98	150,000	34,000	35,000	4,300	21,000	2,700	--	ATI	--	
	3/28/1996	--	37.73	16.75	0.18	20.80	--	--	--	--	--	--	--	--	--	
	6/20/1996	--	37.73	25.10	0.02	12.61	--	--	--	--	--	--	--	--	--	h
	10/11/1996	--	37.73	25.51	0.00	12.22	130,000	20,000	32,000	2,800	20,700	1400/1200	7.4	SPL	--	g
	1/2/1997	--	37.73	24.49	0.01	13.23	--	--	--	--	--	--	--	--	--	
	4/14/1997	--	37.73	23.99	0.04	13.70	--	--	--	--	--	--	--	--	--	

Table 1

Groundwater Elevation and Analytical Data

Former BP Station #11133

2220 98th Ave., Oakland, CA

Well No.	Date	P/ NP	Well Elevation/ TOC (feet)	DTW (feet)	Product Thickness (feet)	GWE (feet)	GRO/ TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	DO (mg/L)	Lab	pH	Comments
RW-1	4/15/1997	--	37.73	--	--	--	1,800,000	38,000	190,000	48,000	281,000	<25000	--	SPL	--	
	7/2/1997	--	37.73	--	--	--	130,000	19,000	54,000	4,700	33,400	<10000	--	SPL	--	e
	7/2/1997	--	37.73	16.40	0.20	21.13	140,000	19,000	55,000	4,400	32,400	<10000	5.7	SPL	--	
	9/30/1997	--	37.73	--	--	--	140,000	17,000	29,000	2,500	15,800	1,200	--	SPL	--	e
	9/30/1997	--	37.73	27.97	0.02	9.74	110,000	13,000	22,000	2,000	12,500	1,100	7.0	SPL	--	
	1/21/1998	--	37.73	14.14	0.44	23.15	270,000	21,000	48,000	3,500	25,000	1,100	4.8	SPL	--	
	4/9/1998	--	37.73	25.01	0.05	12.67	--	--	--	--	--	--	--	--	--	
	4/10/1998	--	37.73	--	--	--	220,000	26,000	46,000	4,400	24,500	<2500	5.1	SPL	--	
	6/19/1998	--	37.73	11.43	--	26.30	160,000	19,000	32,000	3,000	17,400	<2500	4.6	SPL	--	
	11/30/1998	--	37.73	7.87	--	29.86	--	--	--	--	--	--	--	--	--	
	1/21/1999	--	37.73	18.90	0.03	18.80	260,000	24,000	46,000	5,100	30,000	1,700	--	SPL	--	
	7/9/1999	--	37.73	18.58	0.26	18.89	--	--	--	--	--	--	--	--	--	
	11/3/1999	--	37.73	20.85	0.60	16.28	160,000	19,000	37,000	3,800	25,000	1,500	--	PACE	--	
	1/12/2000	--	37.73	21.20	0.23	16.30	240,000	18,000	46,000	5,800	26,000	2,100	--	PACE	--	
	4/13/2000	--	37.73	21.71	0.11	15.91	120,000	2,100	33,000	2,800	28,000	1,500	--	PACE	--	
	5/24/2000	--	37.73	21.89	0.24	15.60	--	--	--	--	--	--	--	--	--	
	6/1/2000	--	37.73	18.30	0.01	21.42	--	--	--	--	--	--	--	--	--	
	6/8/2000	--	37.73	17.88	0.20	19.65	--	--	--	--	--	--	--	--	--	
	6/15/2000	--	37.73	16.72	0.04	20.97	--	--	--	--	--	--	--	--	--	
	6/20/2000	--	37.73	21.04	0.20	16.49	--	--	--	--	--	--	--	--	--	
	7/7/2000	--	37.73	17.21	0.01	20.51	--	--	--	--	--	--	--	--	--	
	7/20/2000	--	37.73	21.87	0.18	15.68	--	--	--	--	--	--	--	--	--	
	7/26/2000	--	37.73	21.45	0.13	16.15	67,000	160	5,300	2,100	18,000	1,100	--	PACE	--	
	7/31/2000	--	37.73	22.11	--	15.62	--	--	--	--	--	--	--	--	--	
	8/8/2000	--	37.73	17.80	0.01	19.92	--	--	--	--	--	--	--	--	--	
	8/16/2000	--	37.73	17.92	--	19.81	--	--	--	--	--	--	--	--	--	
	8/23/2000	--	37.73	18.11	0.02	19.60	--	--	--	--	--	--	--	--	--	
	10/24/2000	--	37.73	18.93	--	18.80	--	--	--	--	--	--	--	--	--	
	10/25/2000	--	37.73	19.04	--	18.69	360,000	18,000	78,000	34,000	180,000	2,100	--	PACE	--	k
	1/19/2001	--	37.73	18.19	0.05	19.49	110,000	9,450	19,600	3,510	21,100	1,270	--	PACE	--	
	7/24/2001	--	37.73	17.93	--	19.80	--	--	--	--	--	--	--	--	--	l
	1/18/2002	--	37.73	14.87	--	22.86	63,000	2,060	4,370	1,770	13,900	491	--	PACE	--	
	8/1/2002	--	37.73	16.84	--	20.89	60,000	1,210	2,200	1,520	10,600	390	--	PACE	--	
	1/16/2003	--	37.73	14.42	--	23.31	34,000	2,500	2,700	780	5,300	680	--	SEQ	--	p

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Groundwater Elevation and Analytical Data

Former BP Station #11133
2220 98th Ave., Oakland, CA

Well No.	Date	P/ NP	Well Elevation/ TOC (feet)	DTW (feet)	Product Thickness (feet)	GWE (feet)	GRO/ TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	DO (mg/L)	Lab	pH	Comments
RW-1	7/7/2003	--	37.73	16.11	--	21.62	50,000	640	280	1,600	10,000	<250	--	SEQ	--	q, u
	07/01/2004	P	37.73	16.75	--	20.98	47,000	320	87	1,900	7,500	72	--	SEQM	6.7	
	03/16/2005	P	37.73	12.48	--	25.25	17,000	28	23	350	580	53	1.0	SEQM	6.8	

Table 1

Groundwater Elevation and Analytical Data

Former BP Station #11133
2220 98th Ave., Oakland, CA

ABBREVIATIONS & SYMBOLS:
-- = Not analyzed/applicable/measured/available
< = Not detected at or above laboratory reporting limit
DO = Dissolved oxygen
DTW = Depth to water in feet below ground surface
ft bgs = feet below ground surface
ft MSL = feet above mean sea level
GRO = Gasoline Range Organics, range C4-C12
GWE = Groundwater elevation measured in feet above mean sea level
mg/L = Milligrams per liter
MTBE = Methyl tert butyl ether
NP = Not Purged
P = Purge
TOC = Top of casing measured in feet above mean sea level
TPH-g = Total petroleum hydrocarbons as gasoline
ug/L = Micrograms per liter
ANA = Anametrix, Inc.
PACE = Pace, Inc.
ATI = Analytical Technologies, Inc.
CEI = Ceimic Corporation
SPL = Southern Petroleum Laboratories
SEQ/SEQM= Sequoia Analytical/Sequoia Morgan Hill Laboratories

FOOTNOTES:
c = A copy of the documentation for this data is included in Appendix C of Alistoreport 10-025-13-003.
d = MTBE peak. See documentation in Appendix C of Alisto report 10-025-13-003.
e = Blind duplicate.
f = Well inaccessible.
g = EPA Methods 8020/8260 used.
h = Well not monitored and/or sampled due to vapor extraction system.
i = Travel blank.
j = This gasoline does not include MTBE.
k = Well was sampled on a different date from the other wells due to lack of proper equipment.
l = Unable to sample due to nature of product.
m = A copy of the documentation for this data is included in Blaine Tech Services, Inc., Report 010724-B-2.The data for sampling events January 14, 1993 and April 22, 1993 has been destroyed.No chromatograms could be located for samples AW-2 on January 27, 1994, and for samples AW-1, AW-2, AW-3, AW-4, AW-5, AW-6, AW-7, AW-8, MW-2 and MW-3 on September 9, 1994.
n = On June 1, 2001, after reviewing chromatograms, Sequoia reported the value as <5.0.
o = Unable to locate well.
p = TPH-g data analyzed by EPA Method 8015B modified; BTEX and MTBE by EPA Method 8021B
q = TPH-g, BTEX, and MTBE analyzed by EPA method 8260B beginning on the third quarter 2003 sampling event 07/07/03 =
r = Discrete peak at C5
t = Well was not gauged during the quarter due to an oversite by the technician.
u = Sheen in well

NOTES:
Beginning in the fourth quarter 2003, the laboratory modified the reported analyte list. Total petroleum hydrocarbons as gasoline (TPHg) has been changed to gasoline range organics (GRO). The resulting data may be impacted by the potential of non-TPHg analytes within the requested fuel range resulting in a higher concentration being reported.

Table 1

Groundwater Elevation and Analytical Data

Former BP Station #11133
2220 98th Ave., Oakland, CA

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

Values for dissolved oxygen (DO) and pH were obtained through field measurements.

Source : The data within this table collected prior to August 2002 was provided to URS by RM and their previous consultants. URS has not verified the accuracy of this information.

GWEs adjusted assuming a specific gravity of 0.75 for free product

Sample Identification	Sampling Date	Temp. (°F)	pH	Conductivity (umhos/cm)	DO (mg/L)	ORP (mV)	Total Alkalinity (mg/L)	COD (mg/L)	BOD (mg/L)	HTC CFU/ml	HDC aerobic CFU/ml	HDC anaerobic CFU/ml
MW-1	03/16/05	65.90	6.9	706	0.9	-17	310	100	18	20,000	200	3,000
MW-2	03/16/05	68.70	7.1	320	1.3	3(	85	59	ND<2.0	1,000	200	200
AW-1	03/16/05	68.50	6.7	801	0.8	-1(	420	84	14	10,000	6,000	8,000
AW-4	03/16/05	64.00	6.5	841	0.6	1(	310	70	6.8	20,000	1,000	2,000

Explanations:

Ammonium as N = By EPA Method 350.1
BOD = Biological oxygen demand
BTEX = Benzene, Toluene, Ethylbenzene,and Total Xylenes
CFU/ml = Colony forming units per milliliter
COD = Chemical oxygen demand
DO = Dissolved oxygen
GRO = Gasoline Range Organics
HDC = Hydrocarbon Degraders by EPA method 365.3
HTC = Heterotrophic Plate Count by EPA method 365.3
mg/L = Milligrams per liter
Mn = Manganese by EPA method 200
MTBE = Methyl tert-butyl ether
mV = Millivolts
ND< = Not detected at or above the laboratory reporting limit.
Nitrogen, Total = By SM 4500-N
Nitrate as NO3 = By EPA Method 300.0
o-P = o-Phosphate (as P) by EPA Method 365.3 or 300.0
ORP = Oxidation reduction potential
Sulfate as SO_4 = By EPA Method 300.0
Sodium = by EPA Method 6010B or 200.7
Sulfide = By EPA Method 376.2
Total Alkalinity = By EPA Method 310.1 or SM2320B
Total Hardness = By EPA Method 130.2
TDS = Total Dissolved Solids by EPA Method 160.1 or SM2540C
Total Phosphorus = By EPA Method 365.3

Table 3
Nitrate/Sulfate Calculations
Former BP Service Station #11133
2200 98 th Avenue,Oakland, California

Nitrate Calculation

Parameters	Site Information & Results	Comments/Basis
Site Name	11133	
Hydraulic Conductivity Estimate (K)	0.6 ft/d	URS Site Conceptual Model, October 29, 2004
Thickness of impacted saturated zone	50 ft	Screen interval for Injection Well
Hydraulic gradient	0.1 ft/ft	URS Site Conceptual Model, October 29, 2004
Width of GW plume being addressed	20 ft	Cross Gradient Distance of benzene plume (> 100 ppb)
Maximum BTEX concentration	2.32 mg/L	March 16, 2005 sampling event
Injection Nitrate Concentration	50 mg/L	Higher of nitrate in un-impacted water or 50 mg/L
Number of injection wells	1	Design choice
Calculations		
Total groundwater volumetric flux (Q = KiA)	60 ft3/d	
Total groundwater volumetric flux (Q = KiA)	449 gal/d	
Mass flux of BTEX Through Treatment Zone	3941 mg BTEX/d	
BTEX degraded/mass of nitrate	0.21 (mg/mg)	Stoichiometry for BTEX and Nitrate, ASTM E-1943
Stoichiometric Nitrate Demand	18917 mg sulfate/d	
Total nitrate injection volume (w/ safety factor)	100 gal/d	
Design Choices for Liquid Nitrate Addition		
Option 1: Continuous Addition		
Solution Flow/well	0.069 gpm/well	Adjust nitrate concentration to get reasonable flow
Option 2: Addition in Slugs		
Slug Addition Frequency	0.33 times/week	
Required Slug Addition Rate	700 gal/week	
Slug volume/well/event	2099 gal	

Table 3
Nitrate/Sulfate Calculations
Former BP Service Station #11133
2200 98 th Avenue, Oakland, California

Sulfate Calculation

Parameters	Site Information & Results	Comments/Basis
Site Name	11133	
Hydraulic Conductivity Estimate (K)	0.6 ft/d	URS Site Conceptual Model, October 29, 2004
Thickness of impacted saturated zone	50 ft	Screen interval for Injection Well
Hydraulic gradient	0.1 ft/ft	URS Site Conceptual Model, October 29, 2004
Width of GW plume being addressed	20 ft	Cross Gradient Distance of benzene plume (> 100 ppb)
Maximum BTEX concentration	2.32 mg/L	March 16, 2005 sampling event
Injection Sulfate Concentration	250 mg/L	Higher of sulfate in un-impacted water or 250 mg/L
Number of injection wells	1	Design choice
Calculations		
Total groundwater volumetric flux (Q = KiA)	60 ft3/d	
Total groundwater volumetric flux (Q = KiA)	449 gal/d	
Mass flux of BTEX Through Treatment Zone	3941 mg BTEX/d	
BTEX degraded/mass of sulfate	0.22 (mg/mg)	Stoichiometry for BTEX and sulfate, ASTM E-1943
Stoichiometric Sulfate Demand	18129 mg sulfate/d	
Total sulfate injection volume (w/ safety factor)	19 gal/d	
Design Choices for Liquid Sulfate Addition		
Option 1: Continuous Addition		
Solution Flow/well	0.013 gpm/well	Adjust sulfate concentration to get reasonable flow
Option 2: Addition in Slugs		
Slug Addition Frequency	0.33 times/week	
Required Slug Addition Rate	134 gal/week	
Slug volume/well/event	402 gal	

ATTACHMENT A

Alameda County Health Care Services Letter
Dated May 11, 20

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
DAVID J. KEARS, Agency Director

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

May 11, 2005

Kyle Christie
Atlantic Richfield Company
6 Centerpointe Drive, LPR6-161
La Palma, CA 90623-1066

Liz Sewell
ConocoPhillips
76 Broadway
Sacramento, CA 95818

Subject: Fuel Leak Case No. RO0000403, BP #11133, Former Service Station at 2220 98th Avenue, Oakland, California – Workplan Approval

Dear Mr. Christie, and Ms. Sewell:

Alameda County Environmental Health (ACEH) has reviewed your April 28, 2005, *Soil and Water Investigation Workplan* prepared by URS Corporation, Inc., and the case file for the above-referenced site. We concur with your workplan provided the following conditions are met:

1. If deemed necessary by your geologist or engineer to fully define the vertical and lateral extent of contamination, additional soil or groundwater samples will be collected as part of the current investigation efforts. ACEH will be informed via telephone or email of any additions to the sampling and analysis plan. Any additional work will follow the workplan-specified procedures. Dynamic investigations are consistent with USEPA protocol for expedited site assessments, which are scientifically valid and offer a cost-effective approach to fully define a plume and to help progress a case toward closure.
2. 72-hr advance written notification (email preferred) will be provided to ACEH prior to field sampling activities.

Please implement the proposed investigation and submit technical reports following the schedule below. In addition, we request that you address the following technical comments in your report.

TECHNICAL COMMENTS

1. Contaminants of Concern

URS proposes sample analysis for TPHg, BTEX, MTBE, TBA, ETBE, TAME, DIPE, 1,2-DCA, EDB and ethanol. Based on our review of the recent groundwater data, contaminants of concern (COCs) at the site include: TPHg, BTEX, MTBE, TBA, and TAME only (TBA is a COC due to its potential occurrence as a MTBE degradation product). Ongoing analysis for DIPE, ETBE, EDB and 1,2-DCA may not be necessary. Prior to conducting the proposed investigation, we request that you review all historical analytical data for the site in order to 1) confirm compliance with the minimum verification analyses listed in the Tri-Regional Guidelines, and 2) confirm the COCs at the site. Please identify appropriate COCs for the site in the report requested below.

2. Feasibility Study Workplan

Please specify the procedures for nitrate and sulfate injection in your feasibility study workplan. The workplan needs to propose groundwater monitoring procedures and other sampling activities, including specification of analytes, to ensure that pre-injection and post-injection geochemical conditions are well documented and understood. Please submit your Feasibility Study Workplan following the schedule specified below.

3. Corrective Action Plan

In accordance with 23 CCR 2725, an assessment of the impacts, a feasibility study, and applicable cleanup levels need to be included in your CAP. We request that 1) your assessment summarize all subsurface investigation performed at the site, 2) your feasibility study evaluate at least three potentially feasible remedial technologies, and 3) your CAP propose cleanup goals and cleanup levels for the site. Your cleanup goals need to be consistent with water quality objectives for the basin. Soil and groundwater cleanup levels for the site need to be protective of human health and the environment. Prior to discontinuation of active remediation, the appropriate cleanup levels will need to be achieved. Please submit your CAP following the schedule specified below.

REPORT REQUEST

Please submit reports according to the following schedule:

Feasibility Study Workplan	July 11, 2005
Soil and Water Investigation Report	August 11, 2005
Corrective Action Plan	90 days after FS approval

ACEH makes this request pursuant to California Health & Safety Code Section 25296.10. 23 CCR Sections 2652 through 2654, and 2721 through 2778 outline the responsibilities of a responsible party for an unauthorized release from an UST system, and require your compliance with this request.

Please call me at (510) 567-6719 with any questions regarding this case.

Sincerely,

Robert W. Schultz, R.G.
Hazardous Materials Specialist

cc: Lyneile Onishi, URS Corporation, 1333 Broadway, Ste. 800, Oakland, CA 94612-1924
Donna Drogos, ACEH
File

ATTACHMENT B
Well Construction Details

ALTON GEOSCIENCE, Inc.
LOG OF EXPLORATORY BORING

PROJECT NO. 30-080 DATE DRILLED 6/5/90
CLIENT BP OIL COMPANY
LOCATION 2201 98TH AVENUE, OAKLAND, CA
LOGGED BY M. TAYLOR APPROVED BY

BORING NO.
WELL NO. AW-1

FIELD SKETCH OF BORING LOCATION

TOP OF CASING ELEVATION 98.99

DRILLING METHOD HOLLOW-STEM AUGER HOLE DIAM. 10 inch
SAMPLER TYPE SEE MONITORING WELL CONSTRUCTION DETAIL
CASING DATA
DRILLER WEST HAZMAT

WATER LEVEL: 26.87
DATE: JULY, 1990
TIME:

BLOWS PER FOOT(M)	OVA (PPM)	SAMPLE	DEPTH	WELL CONSTRUCTION OR BORING CLOSURE	USCS	PROFILE	DESCRIPTION
			0	Christy Box			ASPHALT
			2				SILTY CLAY; moderately stiff, damp, light gray
			4	2" sch. 40 PVC Casing			
5,12,20			6		CL		SILTY CLAY; moderately stiff, damp, brown, some organic material
7,17,31			8				As above
8,23,45			10				As above
			12				
8,21,29			14				SILTY CLAY; brown, damp
11,17,28			16				As above, increasing sand
8,12,30	75		18				CLAYEY SILT; moderately stiff, damp
8,13,24	ND		20		ML		
4,6,11	25		22	2" sch. 40 PVC .020 Slot			As above, softer, very moist
			24				
4,6,10			26		SC		CLAYEY SAND; very fine grained, saturated, moderately loose, tan
5,20,34			28				SILTY CLAY; w/ sand, saturated, moderately stiff, brown w/ gray motiling
			30				

CONTINUED ON NEXT PAGE

ALTON GEOSCIENCE, Inc.
LOG OF EXPLORATORY BORING

PROJECT NO. 30-080 DATE DRILLED 5/17/90
CLIENT BP OIL COMPANY
LOCATION 2201 98TH AVENUE, OAKLAND, CA
LOGGED BY M. TAYLOR APPROVED BY

BORING NO.
WELL NO. AW-1

FIELD SKETCH OF BORING LOCATION

TOP OF CASING ELEVATION

DRILLING METHOD HOLLOW-STEM AUGER HOLE DIAM. 10 INCH
SAMPLER TYPE
CASING DATA SEE MONITORING WELL CONSTRUCTION DETAIL
DRILLER WEST HAZMAT

WATER LEVEL
DATE
TIME

BLOWS PER FOOT(ft)	OGI (PPM)	SAMPLE	DEPTH	WELL CONSTRUCTION OR BORING CLOSURE	USCS	PROFILE	DESCRIPTION
11,23, 35			30				
			32		SC		CLAYEY SAND; very fine grained, very moist, moderately dense, tan to light brown
8,25, 33			34				As above, some coarse sand
			36	End Cap			BOREHOLE TERMINATED AT 35 FEET
			38				
			40				
			42				
			44				
			46				
			48				
			50				

Portland Cement
Sand #3 Lonestar
Bentonite Pellets
Sample
Driven Interval

ALTON GEOSCIENCE, Inc.
LOG OF EXPLORATORY BORING

PROJECT NO. 30-080 DATE DRILLED 6/6/90
CLIENT BP OIL COMPANY
LOCATION 2201 98TH AVENUE, OAKLAND, CA
LOGGED BY M. TAYLOR APPROVED BY

BORING NO.
WELL NO. AW-4

FIELD SKETCH OF BORING LOCATION

TOP OF CASING ELEVATION 99.96

DRILLING METHOD HOLLOW-STEM AUGER HOLE DIAM. 10 inch
SAMPLER TYPE
CASING DATA SEE MONITORING WELL CONSTRUCTION DETAIL
DRILLER WEST HAZMAT

WATER LEVEL: 27.29
DATE : JULY, 1990
TIME:

BLOWS PER FOOT(N)	CGI (PPM)	SAMPLE	DEPTH	WELL CONSTRUCTION OR BORING CLOSURE	USCS	PROFILE	DESCRIPTION
			0	Christy Box			ASPHALT
8, 12, 16			4	2" sch. 40 PVC Casing			CLAY w/ roots, dark brown, organic, damp, high plasticity SILTY clay w/ root fragments, greyish brown, damp, medium plasticity, no odor,very stiff
23, 50/5			10				SILTY CLAY; brown, damp, medium plasticity,no odor, hard
28, 38, 41			16		CL		SILTY CLAY; brown, moist, medium to high plasticity, no odor, hard
9, 17, 32			20	2" sch. 40 PVC .020 Slot			SILTY CLAY; brown, moist, low to medium plasticity, gas odor, hard
11, 15, 22			26				SILTY CLAY; brown, moist, medium plasticity, gas odor, hard
			30				

CONTINUED ON NEXT PAGE

ALTON GEOSCIENCE, Inc.
LOG OF EXPLORATORY BORING

PROJECT NO. 30-060 DATE DRILLED 6/6/90
CLIENT BP OIL COMPANY
LOCATION 2201 98TH AVENUE, OAKLAND, CA
LOGGED BY M. TAYLOR APPROVED BY

BORING NO.
WELL NO. AW-4

FIELD SKETCH OF BORING LOCATION

TOP OF CASING ELEVATION

DRILLING METHOD HOLLOW-STEM AUGER HOLE DIAM. 10 inch
SAMPLER TYPE
CASING DATA SEE MONITORING WELL CONSTRUCTION DETAIL
DRILLER WEST HAZMAT

WATER LEVEL
DATE
TIME

BLOWS PER FOOT(N)	CGI (PPM)	SAMPLE	DEPTH	WELL CONSTRUCTION OR BORING CLOSURE	USCS	PROFILE	DESCRIPTION
15, 19, 23			30				SILTY CLAY; brown, moist, low plasticity, gas odor, hard
			32		CL		
16,23,31			34				SILTY CLAY; brown, damp, high plasticity, no odor, hard
			36	End Cap			BOREHOLE TERMINATED AT 35 FEET
			38				
			40				
			42				
			44				
			46				
			48				
			50				

Portland Cement
Sand #3 Lonestar
Bentonite Pellets
sample
Driven interval

ATTACHMENT C
Standard Field Sampling Procedures

FIELD PROCEDURES

Sampling Procedures

The sampling procedure for each well consists first of measuring the water level and depth to bottom, and checking for the presence of free phase petroleum product (free product), using either an electronic indicator and a clear Teflon™ bailer or an oil-water interface probe. Wells not containing free product are purged approximately three casing volumes of water (or until dewatered) using a centrifugal pump, gas displacement pump, or bailer. Equipment and purging method used for the current sampling event is noted on the attached field data sheets. During purging, temperature, pH, and electrical conductivity are monitored to document that these parameters are stable prior to collecting samples. After purging, water levels are allowed to partially (approximately 80%) recover. Groundwater samples (both purge and no purge) are collected using a Teflon bailer, placed into appropriate Environmental Protection Agency- (EPA) approved containers, labeled, logged onto chain-of-custody records, and transported on ice to a California State-certified laboratory. Wells with free product are not sampled and free product is removed according to California Code of Regulation, Title 23, Div. 3, Chap. 16, Section 2655, UST Regulations.

Chain of Custody Record

Page 1 of 1

Project Name: Analytical for QMR sampling

BP BU/AR Region/Enfos Segment: BP > Americas > West Coast > Retail > WCBU > CA > Central > 11133 > HistoricalBL

State or Lead Regulatory Agency: California Regional Water Quality Control Board - San Fr

Requested Due Date (mm/dd/yy): 10 Day TAT

On-site Time: 0845	Temp: 69
Off-site Time: 1400	Temp: 80
Sky Conditions:	
Meteorological Events:	
Wind Speed:	Direction:

Lab Name: Sequoia	BP/AR Facility No.: 11133	Consultant/Contractor: URS
Address: 885 Jarvis Drive	BP/AR Facility Address: 2220 98th Ave., Oakland, CA 94603	Address: 1333 Broadway, Suite 800
Morgan Hill, CA 95037	Site Lat/Long: 37.748269 / -122.161	Oakland, CA 94612
Lab PM: Lisa Race	California Global ID No.: T0600100210	Consultant/Contractor Project No.: 38487139
Tele/Fax: 408.782.8156 / 408.782.6308	Enfos Project No.: G07TT-0019	Consultant/Contractor PM: Lynelle Onishi
BP/AR PM Contact: Kyle Christie	Provision or RCOP: Provision	Tele/Fax: 510.874.1758 / 510.874.3268
Address: 4 Centerpointe Dr.	Phase/WBS: 04 - Mon/Remed by Natural Attenuation	Report Type & QC Level: Level 1 with EDF
La Palma, CA 90623	Sub Phase/Task: 03 - Analytical	E-mail EDD To: Donna_Cosper@urscorp.com
Tele/Fax: (714) 670-5303 / (714) 670-5195	Cost Element: 05 - Subcontracted Costs	Invoice to: Atlantic Richfield Company

Lab Bottle Order No: 11133

Item No.	Sample Description	Time	Date	Matrix: Soil/Solid	Matrix: Water/Liquid	Matrix: Air	Laboratory No.	No. of Containers	Preservative: Unpreserved	Preservative: H_2SO_4	Preservative: HNO_3	Preservative: HCl	Preservative: Methanol	Requested Analysis: GRO / BTEX (8260)	Requested Analysis: MTBE, TAME, ETBE, DIPE, TBA (8260)	Requested Analysis: EDB, 1,2-DCA (8260)	Requested Analysis: Ethanol (8260)	Sample Point Lat/Long and Comments
1	MW-1	1145	7/26/05		X		01	3				X		X	X	X	X	MOG 982
2	MW-3	1100			X		02	3				X		X	X	X	X	
3	AW-1	1245			X		03	3				X		X	X	X	X	
4	AW-4	1015			X		04	3				X		X	X	X	X	
5	AW-5	1125			X		05	3				X		X	X	X	X	
6	AW-6	1335			X		06	3				X		X	X	X	X	
7	RW-1	945			X		07	3				X		X	X	X	X	
8	VEW-4	1305			X		08	3				X		X	X	X	X	
9	VEW-8	1330			X		09	3				X		X	X	X	X	
10	TB-11133-072205	—			X		10	2				X		—	—	—	—	On Hold

Sampler's Name: John Dodson	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Sampler's Company: Blaine Tech		7/26/05	1557	SAMPLE CUSTODIAN	7/26/05	1557
Shipment Date:		7/26/05	0820		7/26/05	8:20
Shipment Method:		7/26/05	9:00		7/26/05	9:20
Shipment Tracking No:						

Special Instructions:

Custody Seals In Place Yes — No — Temp Blank Yes — No — Cooler Temperature on Receipt ____ °F/C — Trip Blank Yes — No

Distribution: White Copy - Laboratory / Yellow Copy - BP/Atlantic Richfield Co. / Pink Copy - Consultant/Contractor

SEQUOIA ANALYTICAL SAMPLE RECEIPT LOG

CLIENT NAME: URS
REC. BY (PRINT) Marcos
WORKORDER: 0506982

DATE REC'D AT LAB: 7.26.05
TIME REC'D AT LAB: 0900
DATE LOGGED IN: 7.28.05

For Regulatory Purposes?
DRINKING WATER YES / (NO)
WASTE WATER YES / (NO)

CIRCLE THE APPROPRIATE RESPONSE	LAB SAMPLE #	DASH #	CLIENT ID	CONTAINER DESCRIPTION	PRESERVATIVE	pH	SAMPLE MATRIX	DATE SAMPLED	REMARKS: CONDITION (ETC.)
1. Custody Seal(s) Present / (Absent) Intact / Broken*	01	A,C	MW-1	3-VOA	HCL	—	L	7.22.05	
2. Chain-of-Custody (Present) / Absent*	02		MW-3	↓	↓	↓	↓	↓	
3. Traffic Reports or Packing List: Present / (Absent)	03		MW-1 -4						
4. Airbill: Airbill / Sticker Present / (Absent)	04		-5						
5. Airbill #:	05		-6						
6. Sample Labels: (Present) / Absent	06		RW-1						
7. Sample IDs: (Listed) / Not Listed on Chain-of-Custody	07		VEW-4						
8. Sample Condition: (Intact) / Broken* / Leaking*	08		-8	↓					
9. Does information on chain-of-custody, traffic reports and sample labels agree? (Yes) / No*	09	A,C	TB111133-072205	2-VOA	↓	↓	↓	↓	
10. Sample received within hold time? (Yes) / No*									
11. Adequate sample volume received? (Yes) / No*									
12. Proper preservatives used? (Yes) / No*									
13. Trip Blank / Temp Blank Received? (circle which, if yes) (Yes) / No*									
14. Read Temp: 3.4 Corrected Temp: 3.4 Is corrected temp 4 +/-2°C? Yes / No**									
(Acceptance range for samples requiring thermal pres.)									
**Exception (if any): METALS / DFF ON ICE or Problem COC									

MF 7.26.05

*IF CIRCLED, CONTACT PROJECT MANAGER AND ATTACH RECORD OF RESOLUTION.