Atlantic Richfield Company
(a BP affiliated company)

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bp

April 28, 2005

Re: Soil and Water Investigation Work Plan
Former BP Service Station #11133
2220 98th Avenue
Oakland, CA
ACHCS Fuel Leak Case No. RO0000403

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

Submitted by:

Kyle Christie
Environmental Business Manager

URS

April 28, 2005

Mr. Robert W. Schultz
Hazardous Material Specialist
Alameda County Health Care Services
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

SUBJECT: Soil and Water Investigation Work Plan
Former BP Service Station #11133
2220 98th Avenue, Oakland, California
ACHCS Fuel Leak Case No. RO0000403

Dear Mr. Schultz:

URS Corporation (URS) has prepared this *Soil and Water Investigation (SWI) Work Plan* on behalf of Atlantic Richfield Company (RM - a BP affiliated company), for the former BP Service Station #11133 located at 2220 98th Avenue, Oakland, California (the Site, Figure 1). This SWI work plan was prepared in response to the January 25, 2005 letter from the Alameda County Health Care Services (ACHCS) to RM (Attachment A). The work plan addresses ACHCS comments to the URS *Additional Investigation Work Plan* dated October 29, 2004 which proposed a comprehensive well sampling event, geochemical and microbiological data collection and evaluation, additional north and east-southeastern sampling locations, and corrective action planning. Presented below is the Site background followed by URS' response to your comments.

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).

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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).

1.1 SITE GEOLOGY AND HYDROLOGY

The regional surface and groundwater flow is to the Southwest, towards San Francisco Bay. The historical groundwater flow direction at the Site between July 1992 and March 2005 has ranged from the northwest through the south and through the northeast but has predominantly been to the east and secondarily to the southeast. The groundwater flow directions in the western and eastern sections of the Site have predominantly been easterly and westerly, respectively, converging to a generally northwest-southeast trending potentiometric depression or trough across the center of the Site. The groundwater flow direction along the axis of the trough is generally to the east and southeast, which represent the overall predominant groundwater flow direction at the Site. During the same time frame, the hydraulic gradient has ranged between 0.02 to 0.30 feet per foot. A rose diagram indicating the historical hydraulic gradient direction at the Site is shown on Figure 2. Current groundwater flow direction and gradient is shown on Figure 3. Between April 1991 and March 2005, the depth to groundwater beneath the Site and in the immediate vicinity has ranged between 6.77 to 28.51 feet bgs, with notable seasonal fluctuations. During the last five years since January 2000, the depth to groundwater at the Site and the immediate vicinity ranged between 8.40 and 23.11 feet bgs.

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 COMPREHENSIVE WELL SAMPLING

On March 16, 2005, a comprehensive sampling event was performed at the Site for first quarter 2005, during which all of the Site wells that could be located were sampled. The additional data was used to evaluate the Site conditions, further delineate the dissolved

hydrocarbon plume, and develop an appropriate remedial action plan. In addition, groundwater samples from monitoring wells MW-1, MW-2, AW-1, and AW-4 were analyzed for geochemical and microbiological parameters to assist in evaluating the effectiveness of using enhanced in-situ bioremediation technologies.

2.1 COMPREHENSIVE WELL SAMPLING DATA

During the March 16, 2005 sampling event, gasoline range organics (GRO) were detected at or above the laboratory reporting limits in five of the eleven wells sampled this quarter at concentrations ranging from 3,600 micrograms per liter (µg/L) (AW-4) to 17,000 µg/L (RW-1). Benzene was detected at or above the laboratory reporting limits in five wells at concentrations ranging from 0.75 µg/L (AW-2) to 1,100 µg/L (AW-1). Methyl tert-butyl ether (MTBE) was detected at or above the laboratory reporting limits in six wells sampled at concentrations ranging from 4.4 µg/L (MW-3) to 4,400 µg/L (AW-6). Tert-butyl alcohol (TBA) was detected at or above the laboratory reporting limits in one well at a concentration of 2,100 µg/L (AW-5). Tert-amyl methyl ether (TAME) was detected at or above the laboratory reporting limits in three wells at concentrations ranging from 130 µg/L (AW-1) to 1,400 µg/L (AW-6). The data is summarized on Table 1 and Table 2. Groundwater flow direction during this event was to the southeast and southwest with a calculated hydraulic gradient of 0.03 to 0.08 feet per foot (Figure 3). This convergence of groundwater flow is creating the apparent trough along the northeastern portion of the Site.

2.2 GEOCHEMICAL AND MICROBIOLOGICAL PARAMETERS

Groundwater samples from wells MW-1, MW-2, AW-1, and AW-4 were analyzed for geochemical and microbiological parameters. Geochemical and microbiological parameters include: ferrous iron (Fe^{+2}), ferric iron (Fe^{+3}), sulfide, nitrate (as NO_3), sulfate, manganese, ammonia as N, alkalinity, methane, carbon dioxide, total hardness, total dissolved solids (TDS), nitrogen, phosphate, phosphorous, aerobic and anaerobic hydrocarbon degraders count (HDC), and heterotrophic plate count (HTC). The wells were selected based on their location with respect to the dissolved hydrocarbon plume. Wells MW-1 and AW-1 are located within the hydrocarbon plume. Well MW-2 is located upgradient of the source (former USTs, dispensers, and product piping), and AW-4 is located down-gradient of the source. The analytical results for the geochemical and microbiological samples are summarized in Table 3. The analytical data is presented in Attachment B. Attachment C provides field data sheets which have dissolved oxygen (DO) and oxidation reduction potential (ORP).

Based on an evaluation of the groundwater analytical data, it appears that biodegradation of hydrocarbons is occurring at the Site. The concentrations of dissolved methane and carbon dioxide in the wells found within and down-gradient of the dissolved hydrocarbon plume (MW-1, AW-1 and AW-4) are elevated relative to the background concentrations (MW-2).

This indicates that dissolved hydrocarbons within the plume are being consumed and reduced to methane and carbon dioxide. Moreover, the HTC from the wells within the plume are also higher than the count from the upgradient well (MW-2). The total HTC in wells within the hydrocarbon plume range from 10,000 colony-forming units per milliliter (CFU/ml) (AW-1) to 20,000 CFU/ml (wells MW-1 and AW-4). The HTC in upgradient well MW-2 was 1,000 CFU/ml. This suggests that the subsurface conditions within the hydrocarbon plume promote microbiological growth and activity.

2.2.1 AEROBIC AND ANAEROBIC BIODEGRADATION

The DO concentrations and geochemical data appears to indicate that subsurface conditions are capable of supporting both aerobic and anaerobic degradation of hydrocarbons. The DO concentrations are summarized as follows:

- Relative to the upgradient DO concentration (1.3 milligrams per liter [mg/L]), the DO concentrations within the hydrocarbon plume are low. The DO concentration in the wells within the hydrocarbon plume ranged from 0.6 mg/L (well AW-4) to 0.9 mg/L (well MW-1).

The low concentrations of DO suggest that DO is being used as a terminal electron acceptor (TEA) during the biodegradation of hydrocarbons. However, the geochemical data also indicates that nitrate, manganese, ferrous iron, and sulfate are also being used as alternative TEAs to DO. The geochemical parameters in the impacted wells can be summarized as follows:

- The nitrate (NO_3) concentrations within the hydrocarbon plume were below the laboratory reporting limit of 0.50 mg/L. In upgradient well MW-2, the NO_3 concentration was higher (5.3 mg/L).
- The manganese (Mn) (II) concentrations within the hydrocarbon plume ranged from 5.6 to 7.7 mg/L. In well MW-2, the Mn (II) concentration was lower (2.2 mg/L).
- The ferrous iron (Fe (II)) concentrations within the hydrocarbon plume ranged from 1.4 to 3.4 mg/L. In well MW-2, the (Fe (II)) concentration was lower (0.7 mg/L)
- The sulfate (SO_4) concentrations in wells AW-1, AW-4, and MW-1 were 0.58 mg/L, 71 mg/L and 13 mg/L, respectively. In well MW-2, the SO_4 concentration was generally lower (38 mg/L), with the exception of the concentration in well AW-4.

The low NO_3 concentrations within the plume suggest that NO_3 is being used as an alternative TEA during the degradation of hydrocarbons. Similarly, the elevated Mn (II) and Fe (II) suggest that Mn (IV) and ferric iron [Fe (III)] are being used as TEAs for hydrocarbon degradation. Use of SO_4 as a TEA also appears to be occurring at the Site, but only to a limited extent. Sulfate reduction appears to be most significant in well AW-1; well AW-1 has

the highest concentration of hydrocarbons. The geochemical analytical results and the DO measurements are summarized in Table 3 and provided in Attachments B and C, respectively.

Similarly, the microbiological data suggests that biodegradation of hydrocarbons is occurring by both aerobic and anaerobic processes. However, the microbiological data and the ORP also indicate that conditions are more favorable for anaerobic bacteria than aerobic bacteria. In background well MW-2, the aerobic and the anaerobic HDC were the same (200 CFU/ml). In the well with the highest GRO, BTEX, and MTBE concentrations (AW-1), the aerobic and anaerobic HDC were 6,000 CFU/ml and 8,000 CFU/ml, respectively. With respect to the background counts, both the aerobic and anaerobic counts are elevated. However, the anaerobic HDC is higher than the aerobic HDC. A similar result is reported for wells MW-1 and AW-4, where the anaerobic HDC is also higher than the aerobic HDC. Moreover, the low ORP levels further support that conditions at the Site favor anaerobic degradation of hydrocarbons. The ORP levels within the plume are relatively low and range from –175 milli volts (mV) (MW-1) to 10 mV (AW-4). In background well MW-2, the ORP value was higher (30 mV). Typically, low ORP values are indicative of reducing conditions, which are favorable for anaerobic processes. The microbiological results and the ORP measurements are summarized in Table 3 and are provided in Attachments B and C, respectively.

2.2.2 ASSIMILATIVE CAPACITY

The assimilative capacity was calculated to assess the potential for each electron acceptor to degrade hydrocarbons in the plume. Assimilative capacity is the relative contribution of aerobic, nitrate-reducing, sulfate-reducing, iron-reducing and methanogenic microorganism in the plume. The assimilative capacity was obtained by comparing the background and center of plume DO, nitrate, sulfate, iron and methane concentrations at the Site and applying the reaction stoichiometry to the difference. Chart 1 illustrates the assimilative capacity.

It can be noted from the chart that the biodegradation is occurring under sulfate reducing methanogenesis, and nitrate-reducing conditions, with sulfate being dominant at 59.9% of the total assimilative capacity, 30.3% by methane reduction and 7.7 % by nitrate reduction. It is interpreted that if the nitrate, iron sulfate and methane found in the background were available within the hydrocarbon plume, about 60% of the hydrocarbon degradation would occur due to sulfate reduction and the remaining 40% would predominantly occur by methanogensis and nitrate reduction.

2.2.3 SUMMARY AND RECOMMENDATIONS

Based on this information, biodegradation of hydrocarbons is occurring at the Site. Furthermore, the mechanisms for the biodegradation appear to be predominantly anaerobic. URS proposes to enhance the anaerobic environment and promote further biodegradation of

hydrocarbons by introducing nitrate and sulfate into the subsurface. Upon receiving approval of this *SWI Work Plan* from the ACHCS, URS will prepare and submit a *Feasibility Study Work Plan* to outline the procedure for the nitrate and sulfate injections.

3.0 PLUME DELINEATION

In the October 2004 *Additional Site Investigation Work Plan*, URS proposed depth-discrete groundwater sampling between wells AW-4 and AW-8 to assist in placing an additional groundwater monitoring well. ACHCS requested that the proposed scope of work include tasks that would evaluate the potential presence of light non-aqueous phase liquid (LNAPL) beneath the down-gradient residence(s). After reviewing historical Site data and the data collected during the March 16, 2005 sampling event, URS proposes advancing one off-site soil boring (SB-1) to assess the extent of dissolved or free-phase hydrocarbons and evaluate the potential off-site migration of LNAPL in the predominant down-gradient groundwater direction (southeast) , in front of the neighboring residence. In addition to the off-site and down-gradient soil boring (SB-1), URS proposes advancing one soil boring (SB-2) on-site in the northern corner of the property. Boring SB-2 will be advanced to assess the extent of dissolved hydrocarbons cross-gradient of wells AW-5 and AW-6, which currently or historically have shown elevated concentrations of GRO and MTBE. The location of the proposed soil borings is shown on Figure 2.

3.1 PRELIMINARY FIELD ACTIVITIES

Prior to initiating field activities, URS will obtain necessary permits, prepare a site-specific Health and Safety Plan (HASP) for the proposed work, and conduct a subsurface utility clearance. The utility clearance will include notifying Underground Service Alert (USA) of the pending work a minimum of 48-hours prior to initiating the field investigation, and securing the services of a private utility locating company to confirm the absence of underground utilities at each boring location. The borings will be located at least 10 feet from the nearest underground utilities and 50 feet from the nearest overhead electrical lines per BP GEM and URS utility clearance procedures. All borings will be cleared using a hand auger or air knife method to a minimum depth of 5 feet bgs and to a minimum of the proposed boring diameter per BP GEM utility clearance procedures.

The HASP will address the proposed boring/well installations and groundwater sampling. A copy of the HASP will be available on-site at all times. The subcontractor(s) performing field activities will be provided with a copy of the HASP prior to initiating work. Traffic control and lane closures will be performed for the proposed wells MW-4 and MW-5 located on Springfield Street and 98th Avenue, respectively.

3.2 DIRECT PUSH SOIL BORINGS

The soil borings will be advanced to a total depth of approximately 30 feet bgs, or approximately 10 feet below depth of first encountered groundwater, using direct push drilling techniques. In order to collect depth discrete groundwater samples within a continuously cored direct push soil boring, or conduct soil sampling while using depth discrete groundwater sampling probes, URS proposes a closely spaced pair of borings (within 2 feet apart) at each boring location. The lithologic characterization of the initial boring will provide the information necessary to determine the proper discrete groundwater sampling depths. Soil samples will be collected for analysis every 5-feet, at the capillary fringe and at signs of obvious soil impacts. Depth discrete groundwater samples will be collected at the saturated/unsaturated zone interface, 10 feet below saturated/unsaturated zone interface, and at multiple discrete water-bearing zones and lithologic changes, if encountered within the initial boring.

Soil samples will be logged by URS personnel under the supervision of a State of California Professional Geologist, according to the Unified Soil Classification System (USCS), and monitored for grain size, color, consistency, staining, and odor using a photoionization detector (PID). Soil samples collected for potential chemical analysis will be sealed with Teflon® tape, capped, and placed in an ice-filled cooler for transportation to the laboratory. Soil samples collected during this investigation will be submitted to a California State-certified analytical laboratory for analysis of GRO, benzene, toluene, ethylbenzene, and xylenes (BTEX), and fuel additives (MTBE, TBA, ETBE, TAME, DIPE, 1,2-DCA, EDB, and ethanol) using EPA Method 8260B.

Depth discrete groundwater samples will be collected, labeled and placed in ice-filled coolers for preservation, and sent under standard chain-of-custody procedures to a California state-certified laboratory. The groundwater samples will be analyzed for the presence of GRO, BTEX, and fuel additives (MTBE TBA, ETBE, TAME, DIPE, 1,2-DCA, EDB, and ethanol) using EPA Method 8260B.

Upon completing sampling activities, each boring will be grouted to ground surface with Portland cement.

4.0 PREFERENTIAL PATHWAY SAMPLING

In the *Additional Site Investigation Work Plan* dated October 29, 2004, URS presented the results of an underground utility survey conducted to identify potential migration pathways and conduits to assess the probability of the hydrocarbon plume encountering preferential pathways and conduits that may promote migration. Underground utilities identified included on-site remediation system associated trenching extending to approximate depths of less than 4 to 5 feet bgs, and sanitary sewer lines running directly beneath the south to

southwestern section and north to northwestern section of the Site at approximate depths of 6.5 to 7 feet bgs (Figure 2). All other identified underground utilities were off-site and the underground utilities down-gradient (east to southeast) of the Site do not extend beyond a maximum depth of approximately 6.5 feet bgs.

ACHCS responded to the *Additional Site Investigation Work Plan* on January 25, 2005, requesting that soil and groundwater samples be collected from within the Springfield Street storm drain trench backfill since the storm drain invert is approximately 6.5 feet of higher permeability backfill, potentially intersecting the groundwater table. For clarification, the line the ACHCS is referring to is actually a sanitary sewer line. Soil borings (SB-3 and SB-4) will be advanced to a depth of approximately 8 feet bgs and 12 feet bgs. This line runs along the northern boundary of the Site from Springfield Street at an invert depth of approximately 6.5 feet bgs and slopes toward 98th Avenue at an invert depth of approximately 7.0 feet bgs. URS proposes advancing soil boring SB-3 near Springfield Street to an approximate depth of 10 feet bgs and on-site soil boring SB-4 to an approximate depth of 12 feet bgs, to the total assumed depth of the utility trench in each location. The proposed borings will be advanced within ten feet of the sanitary sewer using a hand auger since BP protocol requires that the first five feet of any boring be cleared by hand and that no borings be advanced within 10 feet of any utility. The location of the proposed hand auger soil borings are shown on Figure 2.

In addition to advancing soil borings SB-3 and SB-4, down-gradient vapor extraction wells VEW-4, VEW-5 and VEW-8 will be gauged and sampled, if measurable groundwater is encountered. Wells VEW-4, VEW-5 and VEW-8 are in the vicinity of the sanitary sewer line running along the north to northwestern section of the property. If water is present within each of the wells, the water samples collected can help assess the potential of impacted groundwater migrating via the higher permeability trench material of the sanitary sewer.

On April 25, 2005, a suggestion was made by ACHCS that the sanitary sewer line could be sampled to confirm that the line was not being used as a preferential pathway for impacted groundwater. After reviewing the layout of the sanitary sewer line, there does not appear to be an appropriate location to collect a sample from the line. The sanitary sewer running along the north to northwestern section of the property slopes to 98th Avenue (north) where it converges with another sanitary sewer line from the northeast. Ideally a sample would be collected from the sanitary sewer line at the end of the down slope on 98th Avenue, but since the line converges with another at that point, a sample collected at this location could potentially be diluted or cross contaminated with waste water traveling along 98th Avenue.

4.1 PRELIMINARY FIELD ACTIVITIES

Prior to initiating field activities, URS will obtain necessary permits, prepare a site-specific Health and Safety Plan (HASP) for the proposed work, and conduct a subsurface utility clearance as described in the previous preliminary field activities section. Traffic control and sidewalk closures will be performed for the proposed boring SB-3 located on Springfield Street.

4.2 HAND-AUGER BORING AND GROUNDWATER SAMPLING

URS proposes advancing two hand auger borings to assess the potential of dissolved hydrocarbons to enter the sanitary sewer trench and preferentially migrate along the sanitary sewer trench backfill material.

The soil borings (SB-3 and SB-4) will be advanced to a total depth of approximately 8 feet bgs and 12 feet bgs, respectively, using hand auger techniques due to the close proximity to the sanitary sewer line. Soil samples will be collected for analysis every 3 feet bgs. Soil samples will be logged by URS personnel under the supervision of a State of California Professional Geologist, according to the Unified Soil Classification System (USCS), and monitored for grain size, color, consistency, staining, and odor using a photoionization detector (PID).

Upon reaching the total depth of the boring, a temporary PVC casing will be placed within each boring to allow for groundwater sampling, if groundwater is encountered. Groundwater is not expected to be encountered based on previous boring logs, first encountered groundwater is between 18 to 26 feet bgs. If groundwater is encountered, samples will be collected, labeled and placed in ice-filled coolers for preservation, and sent under standard chain-of-custody procedures to a California state-certified laboratory. The groundwater samples will be analyzed for the presence of GRO, BTEX, and fuel additives (MTBE TBA, ETBE, TAME, DIPE, 1,2-DCA, EDB, and ethanol) using EPA Method 8260B. After allowing up to approximately an hour for groundwater recharge, the boring will be sampled, the temporary PVC casing will be removed, and the boring will be grouted to surface using Portland cement.

5.0 WASTE DISPOSAL

Investigation derived waste will be temporarily stored on-site in 55-gallon, DOT-approved 17H drums, pending characterization and disposal. URS will coordinate with Dillard Environmental Services (Dillard, under direct contract to RM) to transport and dispose of the investigation derived waste at an approved facility.

6.0 GEOTRACKER

In accordance with GeoTracker requirements, URS will upload well survey data, soil and groundwater analytical data, and groundwater gauging data related to this investigation.

7.0 REMEDIATION SYSTEM EVALUATION

A soil vapor extraction (SVE) and treatment system was operated from November 1994 to December 1998, intermittently the system was non-operational. The SVE system consisted of a Lamson Turbotron TBT-2600 cubic feet per minute (cfm) maximum capacity blower, Retox Airex 600 Regenerative Thermal Oxidizers (RETOX) of 600 cfm capacities and ancillary equipment. The SVE and treatment system well network consisted of nine vapor extraction wells (VEW-1 through VEW-9) and one recovery well RW-1.

Based on available operational data, the SVE system had operated at flow rates ranging from 375 to 650 scfm. In December 1995, maximum hydrocarbon concentrations of 2,000 parts per million by volume (ppmv) were reported at the system influent. Based on the available data, the SVE system appears to have operated effectively, meeting the required destruction efficiency during its operation. As of December 27, 1995, a total of approximately 13,495.8 pounds of hydrocarbons had been removed from the subsurface by the SVE system. The reason for system shutdown in December 1998 is not known. However, records show that the noise from the system operation was a concern at the Site, which possibly could have been one of the causes for system shutdown.

A groundwater extraction (GWE) and treatment system began operation in 1995 and was shut down December 1998. The GWE and treatment system consisted of a Gas Space R 6p335A Aeration Tank (air stripper), series of four granular activated carbon canisters, and ancillary equipment. The system had operated intermittently with average flow rates of up to 1.95 gallons per minute (gpm). Based on available operational data for the GWE and treatment system, as of December 14, 1998, a total of approximately 344.4 pounds of hydrocarbons had been removed from groundwater by the system.

URS evaluated the current status of the GWE and SVE system to assess whether the system could be retrofitted for the purposes of a feasibility test. Based on the available information and Site visit, the power to the current system is three-phase, 230 voltage and the total amperage is 200 amperes (amps). It appears that the system would require significant repairs and replacement of equipment before it could be properly operated. The electrical panel and the power meter box were opened and several of the wires appeared to have been removed and possibly damaged. The air stripper and blower motor from the RETOX unit are missing.

The stack height does not appear to meet current Bay Area Air Quality Management District (BAAQMD) regulations.

Based on the current condition of the SVE/GWE and treatment system, it does not appear cost effective to retrofit the current system as part of a feasibility test.

8.0 SOIL AND GROUNDWATER INVESTIGATION REPORT

Upon completion of field activities and receipt of all laboratory analytical data, URS will finalize and provide the ACHCS with a Soil and Groundwater Investigation (SWI) Report. This report will document the results of the investigation, including the field operations, findings, conclusions and recommendations. If there are deviations from this work plan or data inconsistencies, these will be discussed in the report as well.

9.0 PROPOSED SCHEDULE

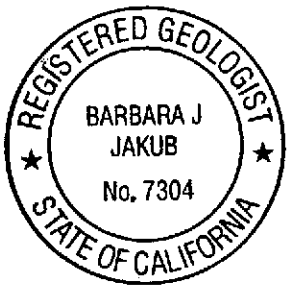
Upon receiving written approval of this *SWI Work Plan* from the ACHCS, URS will proceed with the proposed work. URS will obtain all necessary permits to complete the proposed work. URS anticipates submitting the SWI Report to the ACHCS within 60 days of receipt of all final laboratory analytical results from field activities.

In addition, upon receiving written approval of this *SWI Work Plan* from the ACHCS, URS will prepare and submit a *Feasibility Study Work Plan* to outline the procedure for the introduction of nitrate and sulfate.

We appreciate the opportunity to present this SWI Report 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
Project Engineer

Barbara J. Jakub, P.G.
Senior Geologist

Lynelle Onishi
Project Manager

Attachments:

Figure 1 – Site Vicinity Map
Figure 2 – Site Map with Sample Locations
Figure 3 – Groundwater Elevation Contour and Analytical Summary Map First Quarter 2005 (March 16, 2005)

Table 1 - Groundwater Elevation and Analytical Data
Table 2 – Fuel Additives Analytical Data
Table 3 – Geochemical and Microbiological Parameters

Chart 1 – Assimilative Capacity

Attachment A – Alameda County Health Care Services letter dated January 25, 2005
Attachment B – Laboratory Analytical Reports and Chain-of-Custody Records
Attachment C – Field Procedures and Field Data Sheets
Attachment D – Sulfate Calculations

cc: Mr. Kyle Christie, RM (electronic copy uploaded to ENFOS)
Ms. Liz Sewell, ConocoPhillips (electronic copy uploaded to URS ftp server)

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	7,600	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	8,000	<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	710/820	--	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	1,800	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	22.36	--	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

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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
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	18.30	--	20.83	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	PACE	--	
	4/13/2000	--	39.13	18.89	--	20.24	--	--	--	--	--	--	--	---	--	
	7/26/2000	--	39.13	18.67	--	20.46	--	--	--	--	--	--	--	---	--	
	10/24/2000	--	39.13	18.98	--	20.15	--	--	--	--	--	--	--	---	--	
	1/19/2001	--	39.13	16.74	--	22.39	--	--	--	--	--	--	--	---	--	
	7/24/2001	--	39.13	18.55	--	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**	**8.1**	
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	68	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	18.4	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	--	

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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
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	26.18	--	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	--	

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-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	--	--	--	--	--	--	--	--	--	--	---	--	f
	7/25/2001	--	37.60	--	--	--	--	--	--	--	--	--	--	---	--	f
	1/18/2002	--	37.60	--	--	--	--	--	--	--	--	--	--	---	--	o
	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	--	
	6/29/1995	--	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	13.81	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	350	1,040	1800/2800	--	SPL	--	g
	1/21/1999	--	34.46	10.76	--	23.70	18,000	120	37	590	1,800	2,700	--	SPL	--	
	4/30/1999	--	34.46	10.78	--	23.68	17,000	240	89	1,100	1,900	1,600	--	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	3,600	--	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	--	i

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	28.51	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	15,900	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	180,000	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	16.30	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

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	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**	**590**	**53**	**1.0**	**SEQM**	**6.8**	

Table 1

Groundwater Elevation and Analytical Data

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

ABBREVIATIONS AND SYMBOLS:
TOC - Top of casing in ft MSL
DTW - Depth to water in ft bgs
ft bgs - feet below ground surface
ft MSL - feet above mean sea level
GWE - Groundwater elevation in ft MSL
GRO - Gasoline range organics
TPH-g - Total petroleum hydrocarbons as gasoline
B - benzene
T - toluene
E- ethyl benzene
X - total xylenes
MTBE - methyl tert butyl ether
DO - dissolved oxygen
ug/L - micrograms per liter
ppm - parts per million
--- - not sampled
< - not detected at or above the lab reporting limit
PACE - PACE, Inc.
SUP - Superior Analytical Laboratories, Inc.
APP - Applied Analytical Laboratory
ANA - Anametrix, Inc.
ATI - Analytical Technologies, Inc.
SPL - Southern Petroleum Laboratories
SEQ - Sequoia Analytical

NOTES:
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

Table 1

Groundwater Elevation and Analytical Data

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

NOTES:

pH and DO values are field readings

During the second quarter of 2002, URS Corporation assumed groundwater monitoring activities for BP.
Please note that beginning in the Fourth Quarter 2003, the laboratory modified the reported analyte list. TPHg has been changed to GRO. The resulting data may be impacted by the potential inclusion of non-TPHg analytes within the requested fuel range resulting in a higher concentration being reported. Also, beginnig the second quarter 2004, the carbon range for GRO has been changed from C-6-C10 to C4-C12.

TOC elevations surveyed to the nearest 0.01 foot above mean sea level.

GWEs adjusted assuming a specific gravity of 0.75 for free product

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

Table 2

Fuel Additives Analytical Data

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

Well Number	Date Sampled	Ethanol (µg/L)	TBA (µg/L)	MTBE (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	1,2-DCA (µg/L)	EDB (µg/L)	Footnotes/ Comments
AW-1	7/7/2003	<5,000	<1,000	1,100	<25	<25	190	--	--	
	02/05/2004	<10,000	<2,000	930	<50	<50	160	<50	<50	
	07/01/2004	<5,000	<1,000	1,100	<25	<25	170	<25	<25	
	03/16/2005	**<5,000**	**<1,000**	**720**	**<25**	**<25**	**130**	**<25**	**<25**	
AW-2	02/05/2004	<100	<20	5.1	<0.50	<0.50	<0.50	<0.50	<0.50	
	03/16/2005	**<100**	**<20**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	
AW-3	**03/16/2005**	**<100**	**<20**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	
AW-4	7/7/2003	<1,000	<200	56	<5.0	<5.0	<5.0	--	--	
	02/05/2004	<200	<40	40	<1.0	<1.0	3.7	<1.0	<1.0	
	07/01/2004	<1,000	<200	64	<5.0	<5.0	9.6	<5.0	<5.0	
	03/16/2005	**<500**	**<100**	**23**	**<2.5**	**<2.5**	**<2.5**	**<2.5**	**<2.5**	
AW-5	7/7/2003	<2,000	1,200	980	<10	<10	210	--	--	
	02/05/2004	<2,000	1,200	810	<10	<10	160	<10	<10	
	07/01/2004	<1,000	1,600	550	<5.0	<5.0	94	<5.0	<5.0	
	03/16/2005	**<10,000**	**2,100**	**890**	**<50**	**<50**	**190**	**<50**	**<50**	
AW-6	02/05/2004	<10,000	<2,000	5,400	<50	<50	1,800	<50	<50	
	07/01/2004	<10,000	<2,000	4,600	<50	<50	1,600	<50	<50	
	03/16/2005	**<5,000**	**<1,000**	**4,400**	**<25**	**<25**	**1,400**	**<25**	**<25**	
AW-8	**03/16/2005**	**<100**	**<20**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**a**
MW-1	7/7/2003	<1,000	<200	24	<5.0	<5.0	<5.0	--	--	
	02/05/2004	<1,000	<200	9.2	<5.0	<5.0	<5.0	<5.0	<5.0	
	07/01/2004	<10,000	<2,000	<50	<50	<50	<50	<50	<50	
	03/16/2005	**<1,000**	**<200**	**<5.0**	**<5.0**	**<5.0**	**<5.0**	**<5.0**	**<5.0**	
MW-2	**03/16/2005**	**<100**	**<20**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	
MW-3	7/7/2003	<100	<20	8.8	<0.50	<0.50	0.65	--	--	
	02/05/2004	<100	<20	4.6	<0.50	<0.50	<0.50	<0.50	<0.50	
	07/01/2004	<100	<20	3.3	<0.50	<0.50	<0.50	<0.50	<0.50	
	03/16/2005	**<100**	**<20**	**4.4**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	
RW-1	7/7/2003	<50,000	<10,000	<250	<250	<250	<250	--	--	

Table 2

Fuel Additives Analytical Data

Former BP Station #11133

2220 98th Ave., Oakland, CA

Well Number	Date Sampled	Ethanol (µg/L)	TBA (µg/L)	MTBE (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	1,2-DCA (µg/L)	EDB (µg/L)	Footnotes/ Comments
RW-1	07/01/2004	<10,000	<2,000	72	<50	<50	<50	<50	<50	
	03/16/2005	**<2,000**	**<400**	**53**	**<10**	**<10**	**<10**	**<10**	**<10**	

Table 2

Fuel Additives Analytical Data

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

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-dibromoethane
ug/L = micrograms per liter
< = Not detected at or above the laboratory reporting limit

FOOTNOTES:

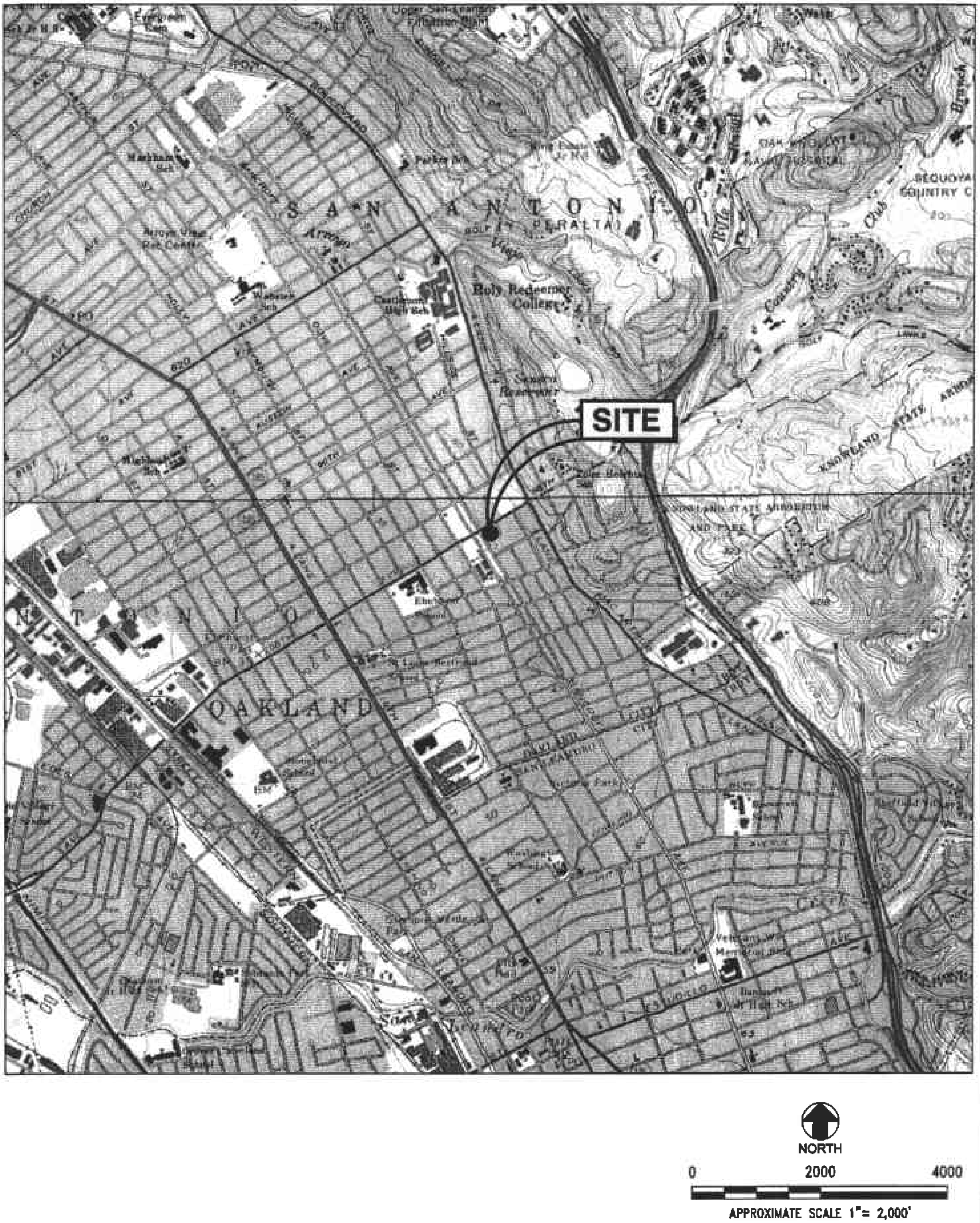
a = Calibration verification for ethanol is within method limits but outside contractual limits.

NOTES:
All fuel oxygenate compounds analyzed using EPA Method 8260B.

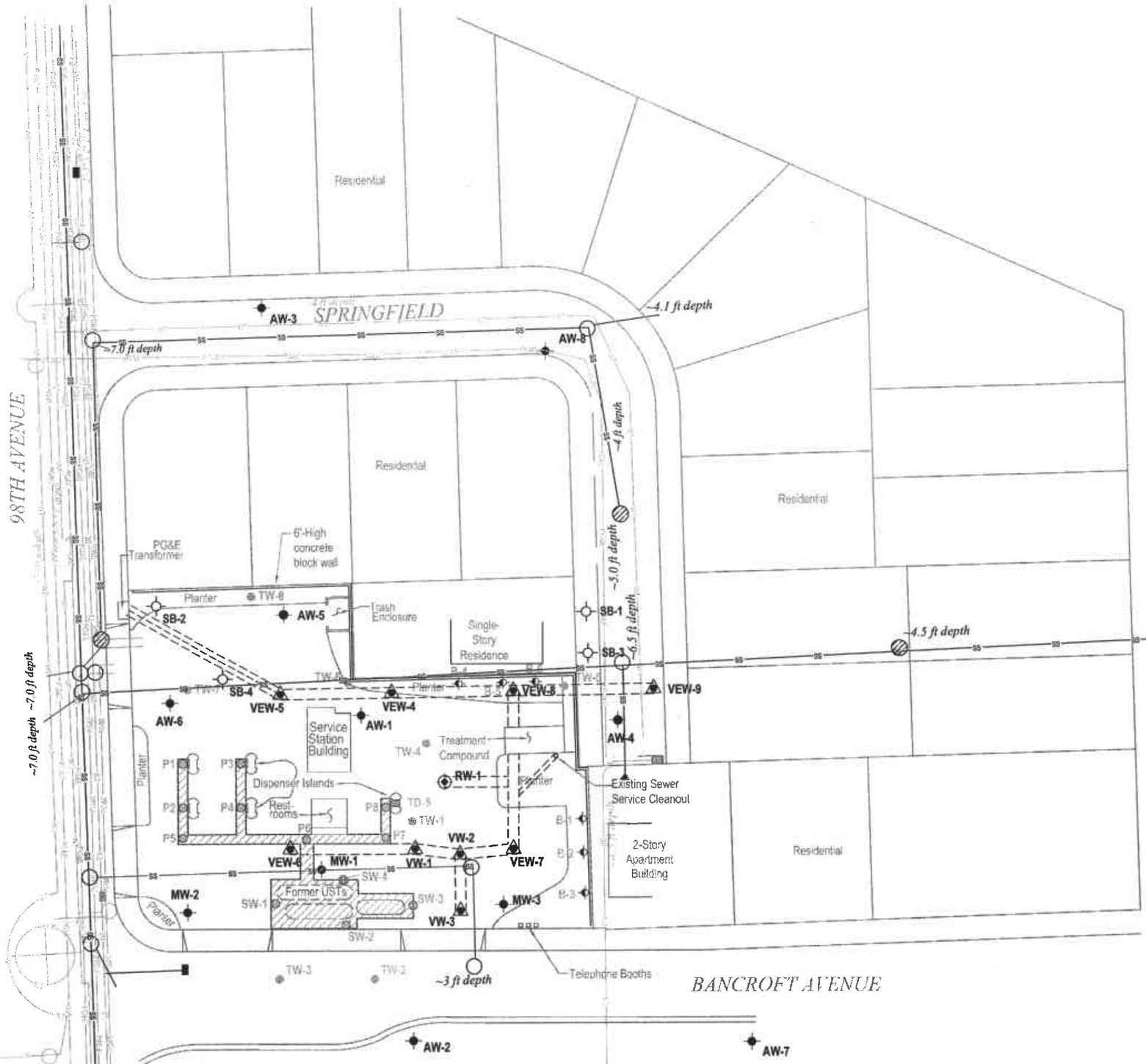
Table 3
Geochemical and Microbiological Parameters
Former BP Service Station #11133
2220 98th Avenue, Oakland, CA

Sample Identification	Sampling Date	Temp. (°F)	pH	Conductivity (umhos/cm)	DO (mg/L)	ORP (Mv)	BTEX (µg/L)	MTBE (µg/L)	GRO (µg/L)	Nitrate as NO_3 (mg/L)	Mn (mg/L)	Ferrous Iron (mg/L)	Sulfate as SO_4 (mg/L)	Methane (mg/L)	CO_2	Iron (mg/L)	Sulfide (mg/L)	Total Hardness (mg/L)	TDS (mg/L)	o-P (mg/L)	Ammonium as N (mg/L)	Total Phosphorus (mg/L)	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	-175	368.4	ND<5.0	7,600	ND<0.50	7.7	2.7	13	4.55	49.9	11	ND<1.0	300	390	ND<1.0	ND<0.50	1.20	310	100	18	20,000	200	3,000
MW-2	03/16/05	68.70	7.1	320	1.3	30	ND<2.0	ND<0.50	ND<50	5.3	2.2	0.7	38	ND<0.001	7.37	21	ND<1.0	160	220	ND<1.0	ND<0.50	0.22	85	59	ND<2.0	1,000	200	200
AW-1	03/16/05	68.50	6.7	801	0.8	-10	2,320	730	10,000	ND<0.50	6.5	3.4	0.58	3.29	81.4	32	ND<1.0	370	470	ND<1.0	ND<0.50	0.32	420	64	14	10,000	6,000	8,000
AW-4	03/16/05	64.00	6.5	841	0.6	10	1,172	23	3,600	ND<0.50	5.6	1.4	71	0.585	54.2	30	ND<1.0	310	490	ND<1.0	ND<0.50	0.59	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



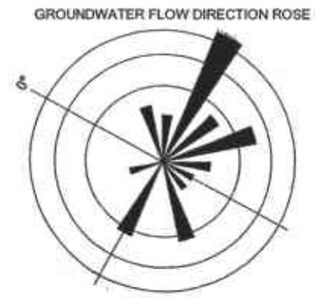
URS	Project No. 38487259 Former BP Service Station #11133 2220 98th Avenue Oakland, California	SITE VICINITY MAP	FIGURE 1



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)
- Proposed Groundwater Monitoring Well
- Proposed Soil Boring
- Trench/Excavation
- Existing Trench

GROUNDWATER FLOW DIRECTION ROSE DIAGRAM



N=52
Interval= 10

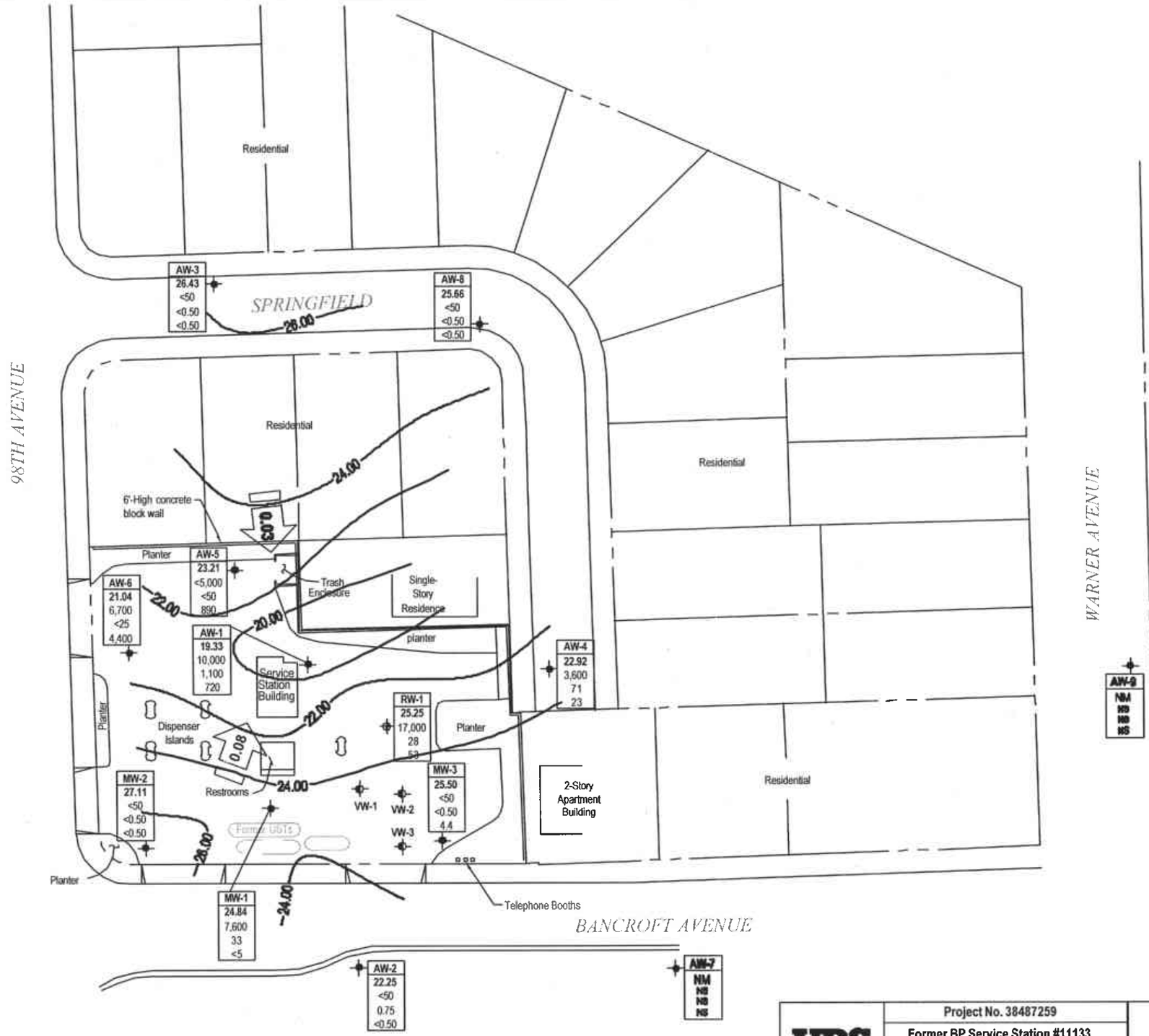
Notes:

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. 38487259 Former BP Service Station #11133 2220 98th Avenue Oakland, California	SITE MAP WITH SAMPLE LOCATIONS	FIGURE 2



EXPLANATION

- Monitoring Well
- Vapor Extraction Well
- Combined Groundwater Recovery/ Vapor Extraction Well
- 0.03 — Groundwater Flow Gradient and Direction (Feet/Foot)
- 20.00 — Groundwater Elevation Contour (Feet above MSL)
- Well Designation
- ELEV — Groundwater Elevation (Ft above MSL)
- GRO, Benzene and MTBE Concentrations in Micrograms Per Liter (µg/L)
- < — Not Detected at or Above Laboratory Reporting Limits
- NM — Not Measured
- NS — Not Sampled

NOTES: WELL AW-7 COULD NOT BE SAMPLED DUE TO INACCESSIBILITY.
SITE MAP ADAPTED FROM CAMBRIA ENVIRONMENTAL FIGURES.
SITE DIMENSIONS AND FACILITY LOCATIONS NOT VERIFIED.

0 25 50 100
Scale (ft)

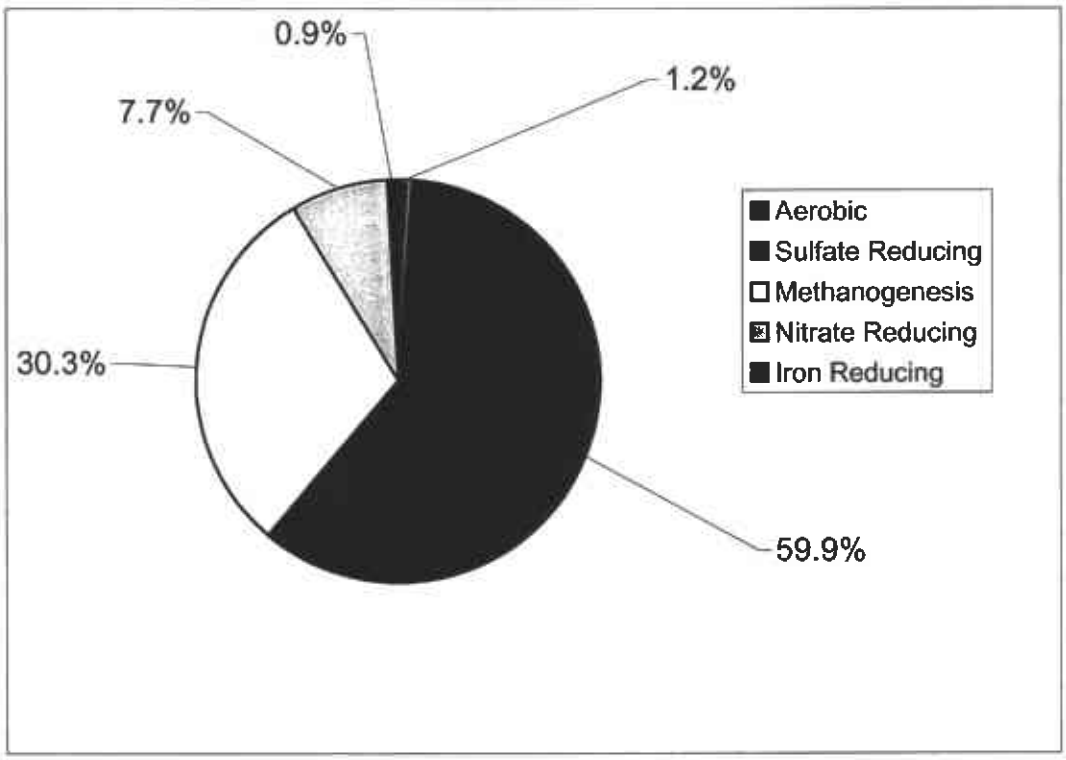
URS	Project No. 38487259 Former BP Service Station #11133 2220 98th Avenue Oakland, California	GROUNDWATER ELEVATION CONTOUR AND ANALYTICAL SUMMARY MAP First Quarter 2005 (March 16, 2005)	FIGURE 3

Chart 1
Estimates of Assimilative Capacity
Former BP Service Station #11133
2200 98 th Avenue
Oakland, California

Assimilative Capacity	Expressed Assimilative Capacity (mg/L of BTEX)	Percent
Aerobic	0.16	1.2%
Sulfate Reducing	8.13	59.9%
Methanogenesis	4.11	30.3%
Nitrate Reducing	1.05	7.7%
Iron Reducing	0.12	0.9%

Notes:

Expressed Assimilative Capacity calculated from reaction stoichiometry and chemical concentrations from the March 16, 2005 groundwater sampling event.
mg/L = milligrams per liter



ATTACHMENT A

Alameda County Health Care Services Letter
Dated January 25, 2005

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

January 25, 2005

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

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

Dear Mr. Christie:

Alameda County Environmental Health (ACEH) has reviewed your October 29, 2004, *Additional Investigation Workplan* prepared by URS Corporation, Inc., for the above-referenced site. URS proposes a comprehensive well sampling event, bioparameter (including microbial) evaluation, determination of additional sampling locations north and east-southeast of the site, and corrective action planning. We concur with your workplan. Please implement the proposed comprehensive well sampling event 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. Offsite Investigation

Up to 1.38 ft of separate phase hydrocarbons (SPH) have been detected in onsite well RW-1, and the groundwater concentrations detected in boring B-6 exceed 10% of the pure component solubility of benzene. Accordingly, your proposed scope of work needs to include tasks that will evaluate the potential presence of LNAPL beneath the downgradient residence(s). URS proposes depth-discrete groundwater sampling between borings A-4 and A-8. Please identify specifically how your proposed sampling will address our concern in the workplan requested below.

2. Preferential Pathway Sampling

URS states that the depth to the Springfield Street storm drain invert is approximately 6.5 ft. Higher permeability backfill sands and/or gravels are frequently used in utility construction to underlie and protect subsurface utilities. Considering the potential cumulative thickness of the storm drain line (~6 inches) and the storm drain trench backfill (~1 to 2 ft), the data presented to date suggests that higher permeability materials beneath the Springfield Street storm drain could intersect the groundwater table. Please propose tasks to collect soil and groundwater samples within the Springfield Street storm drain trench backfill in the workplan requested below.

3. Feasibility Study

URS proposes tasks to collect and evaluate data relative to intrinsic and enhanced biodegradation at the site. Previously, a groundwater extraction system was installed at the site. It may be cost-effective to retrofit this system for future use. Accordingly, it may be necessary to

include operation of an extraction system (soil vapor or dual-phase) in a future feasibility study for the site. Please evaluate the condition of the existing system in the workplan requested below.

REPORT REQUEST

Please submit your *Soil and Water Investigation Workplan*, which addresses the comments above by **April 25, 2005**. 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.

Professional Certification and Conclusions/Recommendations

The California Business and Professions Code (Sections 6735 and 7835.1) requires that workplans and technical or implementation reports containing geologic or engineering evaluations and/or judgments be performed under the direction of an appropriately registered or certified professional. For your submittal to be considered a valid technical report, you are to present site specific data, data interpretations, and recommendations prepared by an appropriately licensed professional and include the professional registration stamp, signature, and statement of professional certification. Please ensure all that all technical reports submitted for this fuel leak case meet this requirement.

Perjury Statement

All work plans, technical reports, or technical documents submitted to ACEH must be accompanied by a cover letter from the responsible party that states, at a minimum, the following: "I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge." This letter must be signed by an officer or legally authorized representative of your company. Please include a cover letter satisfying these requirements with all future reports and technical documents submitted for this fuel leak case.

UNDERGROUND STORAGE TANK CLEANUP FUND

Please note that delays in investigation, late reports or enforcement actions by ACEH may result in you becoming ineligible to receive cleanup cost reimbursement from the state's Underground Storage Tank Cleanup Fund (senate Bill 2004).

AGENCY OVERSIGHT

If it appears as though significant delays are occurring or reports are not submitted as requested we will consider referring your case to the County District Attorney or other appropriate agency, for enforcement. California Health and Safety Code, Section 25299.76 authorizes ACEH enforcement including administrative action or monetary penalties of up to $10,000 per day for each day of violation.

Please contact me at (510) 567-6719 or at robert.schultz@acgov.org with any questions regarding this case.

Sincerely,

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

cc: Leonard Niles, URS Corporation, 500 12th St., Ste. 200, Oakland, CA 94607-4014
Liz Sewell, ConocoPhillips, Risk Management & Remediation, 76 Broadway, Sacramento, CA 95818
First Interstate Bank of California, c/o Property Tax Dept. DC-17, P.O. Box 52085, Phoenix, AZ 85072
Donna Drogos, ACEH
Robert W. Schultz, ACEH

ATTACHMENT B
Laboratory Analytical Reports and Chain-of-Custody Records

Sequoia
Analytical

885 Jarvis Drive
Morgan Hill, CA 95037
(408) 776-9600
FAX (408) 782-6308
www.sequoialabs.com

5 April, 2005

Lynelle Onishi
URS Corporation [Arco]
1333 Broadway, Suite 800
Oakland, CA 94612

RE: BP Heritage #11133, Oakland, CA
Work Order: MOC0460

Enclosed are the results of analyses for samples received by the laboratory on 03/16/05 16:40. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Lisa Race
Senior Project Manager

CA ELAP Certificate #1210

Sequoia Analytical

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URS Corporation [Arco]	Project:BP Heritage #11133, Oakland, CA	MOC0460
1333 Broadway, Suite 800	Project Number:G07TT-0019	**Reported:**
Oakland CA, 94612	Project Manager:Lynelle Onishi	04/05/05 11:33

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-1	MOC0460-01	Water	03/16/05 11:50	03/16/05 16:40
MW-2	MOC0460-02	Water	03/16/05 10:25	03/16/05 16:40
MW-3	MOC0460-03	Water	03/16/05 12:38	03/16/05 16:40
AW-1	MOC0460-04	Water	03/16/05 11:05	03/16/05 16:40
AW-2	MOC0460-05	Water	03/16/05 13:10	03/16/05 16:40
AW-3	MOC0460-06	Water	03/16/05 14:10	03/16/05 16:40
AW-4	MOC0460-07	Water	03/16/05 09:25	03/16/05 16:40
AW-5	MOC0460-08	Water	03/16/05 14:28	03/16/05 16:40
AW-6	MOC0460-09	Water	03/16/05 15:00	03/16/05 16:40
AW-8	MOC0460-10	Water	03/16/05 13:40	03/16/05 16:40
RW-1	MOC0460-11	Water	03/16/05 15:12	03/16/05 16:40
TB-11133-03162005	MOC0460-12	Water	03/16/05 00:00	03/16/05 16:40

The carbon range for the TPH-GRO has been changed from C6-C10 to C4-C12. The carbon range for TPH-DRO has been changed from C10-C28 to C10-C36. EPA 8015B has been modified to better meet the requirements of California regulatory agencies.

These samples were received with no custody seals.

Revised report created 4/5/05. Hardness and Manganese added.

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URS Corporation [Arco]	Project:BP Heritage #11133, Oakland, CA	MOC0460
1333 Broadway, Suite 800	Project Number:G07TT-0019	**Reported:**
Oakland CA, 94612	Project Manager:Lynelle Onishi	04/05/05 11:33

METALS

Del Mar Analytical, Irvine

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-1 (MOC0460-01) Water Sampled: 03/16/05 11:50 Received: 03/16/05 16:40									
Calcium	**56000**	100	ug/l	1	5C25083	03/25/05	04/02/05 15:12	EPA 200.7	
Iron	**11000**	40	"	"	"	"	03/26/05 15:27	"	
Magnesium	**39000**	20	"	"	"	"	04/02/05 15:12	"	
Manganese	**7700**	20	"	"	"	"	"	"	
MW-2 (MOC0460-02) Water Sampled: 03/16/05 10:25 Received: 03/16/05 16:40									
Calcium	**32000**	100	ug/l	1	5C25083	03/25/05	04/02/05 15:18	EPA 200.7	
Iron	**21000**	40	"	"	"	"	03/26/05 15:33	"	
Magnesium	**19000**	20	"	"	"	"	04/02/05 15:19	"	
Manganese	**2200**	20	"	"	"	"	04/02/05 15:18	"	
AW-1 (MOC0460-04) Water Sampled: 03/16/05 11:05 Received: 03/16/05 16:40									
Calcium	**66000**	100	ug/l	1	5C25083	03/25/05	04/02/05 15:25	EPA 200.7	
Iron	**32000**	40	"	"	"	"	03/26/05 15:39	"	
Magnesium	**50000**	20	"	"	"	"	04/02/05 15:25	"	
Manganese	**6500**	20	"	"	"	"	"	"	
AW-4 (MOC0460-07) Water Sampled: 03/16/05 09:25 Received: 03/16/05 16:40									
Calcium	**55000**	100	ug/l	1	5C25083	03/25/05	04/02/05 15:31	EPA 200.7	
Iron	**30000**	40	"	"	"	"	03/26/05 15:45	"	
Magnesium	**42000**	20	"	"	"	"	04/02/05 15:31	"	
Manganese	**5600**	20	"	"	"	"	"	"	

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URS Corporation [Arco]	Project:BP Heritage #11133, Oakland, CA	MOC0460
1333 Broadway, Suite 800	Project Number:G07TT-0019	**Reported:**
Oakland CA, 94612	Project Manager:Lynelle Onishi	04/05/05 11:33

INORGANICS

Del Mar Analytical, Irvine

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-1 (MOC0460-01) Water Sampled: 03/16/05 11:50 Received: 03/16/05 16:40									
Ammonia-N	ND	500	ug/l	1	5C21106	03/21/05	03/21/05 15:25	EPA 350.3	
Hardness (as CaCO3)	**300000**	1000	"	"	5C25083	03/25/05	04/02/05 15:12	SM2340B	
Phosphorus	**1200**	50	"	"	5C22078	03/22/05	03/22/05 14:02	EPA 365.3	
Total Dissolved Solids	**390000**	10000	"	"	5C21073	03/21/05	03/21/05 20:15	EPA 160.1	
MW-2 (MOC0460-02) Water Sampled: 03/16/05 10:25 Received: 03/16/05 16:40									
Ammonia-N	ND	500	ug/l	1	5C21106	03/21/05	03/21/05 15:25	EPA 350.3	
Hardness (as CaCO3)	**160000**	1000	"	"	5C25083	03/25/05	04/02/05 15:19	SM2340B	
Phosphorus	**220**	50	"	"	5C22078	03/22/05	03/22/05 14:02	EPA 365.3	
Total Dissolved Solids	**220000**	10000	"	"	5C21073	03/21/05	03/21/05 20:15	EPA 160.1	
AW-1 (MOC0460-04) Water Sampled: 03/16/05 11:05 Received: 03/16/05 16:40									
Ammonia-N	ND	500	ug/l	1	5C21106	03/21/05	03/21/05 15:25	EPA 350.3	
Hardness (as CaCO3)	**370000**	1000	"	"	5C25083	03/25/05	04/02/05 15:25	SM2340B	
Phosphorus	**320**	50	"	"	5C22078	03/22/05	03/22/05 14:02	EPA 365.3	
Total Dissolved Solids	**470000**	10000	"	"	5C21073	03/21/05	03/21/05 20:15	EPA 160.1	
AW-4 (MOC0460-07) Water Sampled: 03/16/05 09:25 Received: 03/16/05 16:40									
Ammonia-N	ND	500	ug/l	1	5C28090	03/28/05	03/28/05 15:00	EPA 350.3	
Hardness (as CaCO3)	**310000**	1000	"	"	5C25083	03/25/05	04/02/05 15:31	SM2340B	
Phosphorus	**590**	50	"	"	5C22078	03/22/05	03/22/05 14:02	EPA 365.3	
Total Dissolved Solids	**490000**	10000	"	"	5C21075	03/21/05	03/21/05 20:15	EPA 160.1	

Sequoia Analytical

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URS Corporation [Arco]	Project:BP Heritage #11133, Oakland, CA	MOC0460
1333 Broadway, Suite 800	Project Number:G07TT-0019	**Reported:**
Oakland CA, 94612	Project Manager:Lynelle Onishi	04/05/05 11:33

Volatile Organic Compounds by EPA Method 8260B

Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-1 (MOC0460-01) Water Sampled: 03/16/05 11:50 Received: 03/16/05 16:40									
tert-Amyl methyl ether	ND	5.0	ug/l	10	5C25006	03/25/05	03/25/05	EPA 8260B	
Benzene	**33**	5.0	"	"	"	"	"	"	
tert-Butyl alcohol	ND	200	"	"	"	"	"	"	
Di-isopropyl ether	ND	5.0	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	5.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.0	"	"	"	"	"	"	
Ethanol	ND	1000	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	**200**	5.0	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	5.0	"	"	"	"	"	"	
Toluene	**5.4**	5.0	"	"	"	"	"	"	
Xylenes (total)	**130**	5.0	"	"	"	"	"	"	
Gasoline Range Organics (C4-C12)	**7600**	500	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*111 %*	*60-135*		"	"	"	"	
MW-2 (MOC0460-02) Water Sampled: 03/16/05 10:25 Received: 03/16/05 16:40									
tert-Amyl methyl ether	ND	0.50	ug/l	1	5C25006	03/25/05	03/25/05	EPA 8260B	
Benzene	ND	0.50	"	"	"	"	"	"	
tert-Butyl alcohol	ND	20	"	"	"	"	"	"	
Di-isopropyl ether	ND	0.50	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.50	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.50	"	"	"	"	"	"	
Ethanol	ND	100	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Xylenes (total)	ND	0.50	"	"	"	"	"	"	
Gasoline Range Organics (C4-C12)	ND	50	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*102 %*	*60-135*		"	"	"	"	

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1333 Broadway, Suite 800	Project Number:G07TT-0019	**Reported:**
Oakland CA, 94612	Project Manager:Lynelle Onishi	04/05/05 11:33

Volatile Organic Compounds by EPA Method 8260B

Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-3 (MOC0460-03) Water Sampled: 03/16/05 12:38 Received: 03/16/05 16:40									
tert-Amyl methyl ether	ND	0.50	ug/l	1	5C25006	03/25/05	03/25/05	EPA 8260B	
Benzene	ND	0.50	"	"	"	"	"	"	
tert-Butyl alcohol	ND	20	"	"	"	"	"	"	
Di-isopropyl ether	ND	0.50	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.50	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.50	"	"	"	"	"	"	
Ethanol	ND	100	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
Methyl tert-butyl ether	**4.4**	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Xylenes (total)	ND	0.50	"	"	"	"	"	"	
Gasoline Range Organics (C4-C12)	ND	50	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*81 %*	*60-135*		"	"	"	"	
AW-1 (MOC0460-04) Water Sampled: 03/16/05 11:05 Received: 03/16/05 16:40									
tert-Amyl methyl ether	**130**	25	ug/l	50	5C25006	03/25/05	03/25/05	EPA 8260B	
Benzene	**1100**	25	"	"	"	"	"	"	
tert-Butyl alcohol	ND	1000	"	"	"	"	"	"	
Di-isopropyl ether	ND	25	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	25	"	"	"	"	"	"	
1,2-Dichloroethane	ND	25	"	"	"	"	"	"	
Ethanol	ND	5000	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	25	"	"	"	"	"	"	
Ethylbenzene	**630**	25	"	"	"	"	"	"	
Methyl tert-butyl ether	**720**	25	"	"	"	"	"	"	
Toluene	**30**	25	"	"	"	"	"	"	
Xylenes (total)	**560**	25	"	"	"	"	"	"	
Gasoline Range Organics (C4-C12)	**10000**	2500	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*108 %*	*60-135*		"	"	"	"	

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URS Corporation [Arco]	Project:BP Heritage #11133, Oakland, CA	MOC0460
1333 Broadway, Suite 800	Project Number:G07TT-0019	**Reported:**
Oakland CA, 94612	Project Manager:Lynelle Onishi	04/05/05 11:33

Volatile Organic Compounds by EPA Method 8260B

Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
AW-2 (MOC0460-05) Water Sampled: 03/16/05 13:10 Received: 03/16/05 16:40									
tert-Amyl methyl ether	ND	0.50	ug/l	1	5C25006	03/25/05	03/25/05	EPA 8260B	
Benzene	**0.75**	0.50	"	"	"	"	"	"	
tert-Butyl alcohol	ND	20	"	"	"	"	"	"	
Di-isopropyl ether	ND	0.50	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.50	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.50	"	"	"	"	"	"	
Ethanol	ND	100	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	**1.1**	0.50	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Xylenes (total)	**1.1**	0.50	"	"	"	"	"	"	
Gasoline Range Organics (C4-C12)	ND	50	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*85 %*	*60-135*		"	"	"	"	
AW-3 (MOC0460-06) Water Sampled: 03/16/05 14:10 Received: 03/16/05 16:40									
tert-Amyl methyl ether	ND	0.50	ug/l	1	5C25006	03/25/05	03/25/05	EPA 8260B	
Benzene	ND	0.50	"	"	"	"	"	"	
tert-Butyl alcohol	ND	20	"	"	"	"	"	"	
Di-isopropyl ether	ND	0.50	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.50	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.50	"	"	"	"	"	"	
Ethanol	ND	100	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Xylenes (total)	ND	0.50	"	"	"	"	"	"	
Gasoline Range Organics (C4-C12)	ND	50	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*112 %*	*60-135*		"	"	"	"	

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URS Corporation [Arco]	Project:BP Heritage #11133, Oakland, CA	MOC0460
1333 Broadway, Suite 800	Project Number:G07TT-0019	**Reported:**
Oakland CA, 94612	Project Manager:Lynelle Onishi	04/05/05 11:33

Volatile Organic Compounds by EPA Method 8260B

Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
AW-4 (MOC0460-07) Water Sampled: 03/16/05 09:25 Received: 03/16/05 16:40									
tert-Amyl methyl ether	ND	2.5	ug/l	5	5C25006	03/25/05	03/25/05	EPA 8260B	
Benzene	**71**	2.5	"	"	"	"	"	"	
tert-Butyl alcohol	ND	100	"	"	"	"	"	"	
Di-isopropyl ether	ND	2.5	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	2.5	"	"	"	"	"	"	
1,2-Dichloroethane	ND	2.5	"	"	"	"	"	"	
Ethanol	ND	500	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	2.5	"	"	"	"	"	"	
Ethylbenzene	**200**	2.5	"	"	"	"	"	"	
Methyl tert-butyl ether	**23**	2.5	"	"	"	"	"	"	
Toluene	**31**	2.5	"	"	"	"	"	"	
Xylenes (total)	**870**	2.5	"	"	"	"	"	"	
Gasoline Range Organics (C4-C12)	**3600**	250	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*99 %*	*60-135*		"	"	"	"	
AW-5 (MOC0460-08) Water Sampled: 03/16/05 14:28 Received: 03/16/05 16:40									
tert-Amyl methyl ether	**190**	50	ug/l	100	5C25006	03/25/05	03/25/05	EPA 8260B	
Benzene	ND	50	"	"	"	"	"	"	
tert-Butyl alcohol	**2100**	2000	"	"	"	"	"	"	
Di-isopropyl ether	ND	50	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	50	"	"	"	"	"	"	
1,2-Dichloroethane	ND	50	"	"	"	"	"	"	
Ethanol	ND	10000	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	50	"	"	"	"	"	"	
Ethylbenzene	ND	50	"	"	"	"	"	"	
Methyl tert-butyl ether	**890**	50	"	"	"	"	"	"	
Toluene	ND	50	"	"	"	"	"	"	
Xylenes (total)	**130**	50	"	"	"	"	"	"	
Gasoline Range Organics (C4-C12)	ND	5000	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*98 %*	*60-135*		"	"	"	"	

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URS Corporation [Arco]	Project:BP Heritage #11133, Oakland, CA	MOC0460
1333 Broadway, Suite 800	Project Number:G07TT-0019	**Reported:**
Oakland CA, 94612	Project Manager:Lynelle Onishi	04/05/05 11:33

Volatile Organic Compounds by EPA Method 8260B

Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
AW-6 (MOC0460-09) Water Sampled: 03/16/05 15:00 Received: 03/16/05 16:40									
tert-Amyl methyl ether	**1400**	25	ug/l	50	5C28010	03/28/05	03/28/05	EPA 8260B	
Benzene	ND	25	"	"	"	"	"	"	
tert-Butyl alcohol	ND	1000	"	"	"	"	"	"	
Di-isopropyl ether	ND	25	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	25	"	"	"	"	"	"	
1,2-Dichloroethane	ND	25	"	"	"	"	"	"	
Ethanol	ND	5000	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	25	"	"	"	"	"	"	
Ethylbenzene	ND	25	"	"	"	"	"	"	
Methyl tert-butyl ether	**4400**	25	"	"	"	"	"	"	
Toluene	ND	25	"	"	"	"	"	"	
Xylenes (total)	ND	25	"	"	"	"	"	"	
Gasoline Range Organics (C4-C12)	**6700**	2500	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*101 %*	*60-135*		"	"	"	"	
AW-8 (MOC0460-10) Water Sampled: 03/16/05 13:40 Received: 03/16/05 16:40									
tert-Amyl methyl ether	ND	0.50	ug/l	1	5C28010	03/28/05	03/28/05	EPA 8260B	
Benzene	ND	0.50	"	"	"	"	"	"	
tert-Butyl alcohol	ND	20	"	"	"	"	"	"	
Di-isopropyl ether	ND	0.50	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.50	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.50	"	"	"	"	"	"	
Ethanol	ND	100	"	"	"	"	"	"	IC
Ethyl tert-butyl ether	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Xylenes (total)	ND	0.50	"	"	"	"	"	"	
Gasoline Range Organics (C4-C12)	ND	50	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*85 %*	*60-135*		"	"	"	"	

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1333 Broadway, Suite 800	Project Number:G07TT-0019	**Reported:**
Oakland CA, 94612	Project Manager:Lynelle Onishi	04/05/05 11:33

Volatile Organic Compounds by EPA Method 8260B

Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
RW-1 (MOC0460-11) Water Sampled: 03/16/05 15:12 Received: 03/16/05 16:40									
tert-Amyl methyl ether	ND	10	ug/l	20	5C28010	03/28/05	03/28/05	EPA 8260B	
Benzene	**28**	10	"	"	"	"	"	"	
tert-Butyl alcohol	ND	400	"	"	"	"	"	"	
Di-isopropyl ether	ND	10	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	10	"	"	"	"	"	"	
1,2-Dichloroethane	ND	10	"	"	"	"	"	"	
Ethanol	ND	2000	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	10	"	"	"	"	"	"	
Ethylbenzene	**350**	10	"	"	"	"	"	"	
Methyl tert-butyl ether	**53**	10	"	"	"	"	"	"	
Toluene	**23**	10	"	"	"	"	"	"	
Xylenes (total)	**590**	10	"	"	"	"	"	"	
Gasoline Range Organics (C4-C12)	**17000**	1000	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*106 %*		*60-135*	"	"	"	"	

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1333 Broadway, Suite 800	Project Number:G07TT-0019	**Reported:**
Oakland CA, 94612	Project Manager:Lynelle Onishi	04/05/05 11:33

Conventional Chemistry Parameters by APHA/EPA Methods

Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-1 (MOC0460-01) Water	**Sampled: 03/16/05 11:50**	**Received: 03/16/05 16:40**							
Hydroxide Alkalinity	ND	5000	ug/l	1	5C25010	03/25/05	03/25/05	SM 2320B	
Carbonate Alkalinity	ND	5000	"	"	"	"	"	"	
Bicarbonate Alkalinity	**310000**	5000	"	"	"	"	"	"	
Total Alkalinity	**310000**	5000	"	"	"	"	"	"	
Biochemical Oxygen Demand	**18000**	2000	"	"	5C22034	03/17/05 18:30	03/22/05	EPA 405.1	
Chemical Oxygen Demand	**100000**	30000	"	"	5C24023	03/24/05	03/24/05	EPA 410.4	
Ferric Iron	**10000**	100	"	"	5C31033	03/31/05	03/31/05	EPA 200.7	
Sulfide	ND	1000	"	"	5C31031	03/16/05	03/16/05	EPA 376.1	
MW-2 (MOC0460-02) Water	**Sampled: 03/16/05 10:25**	**Received: 03/16/05 16:40**							
Bicarbonate Alkalinity	**85000**	5000	ug/l	1	5C25010	03/25/05	03/25/05	SM 2320B	
Hydroxide Alkalinity	ND	5000	"	"	"	"	"	"	
Carbonate Alkalinity	ND	5000	"	"	"	"	"	"	
Total Alkalinity	**85000**	5000	"	"	"	"	"	"	
Biochemical Oxygen Demand	ND	2000	"	"	5C22034	03/17/05 18:30	03/22/05	EPA 405.1	
Chemical Oxygen Demand	**59000**	30000	"	"	5C24023	03/24/05	03/24/05	EPA 410.4	
Ferric Iron	**18000**	100	"	"	5C31033	03/31/05	03/31/05	EPA 200.7	
Sulfide	ND	1000	"	"	5C31031	03/16/05	03/16/05	EPA 376.1	
AW-1 (MOC0460-04) Water	**Sampled: 03/16/05 11:05**	**Received: 03/16/05 16:40**							
Bicarbonate Alkalinity	**420000**	5000	ug/l	1	5C25010	03/25/05	03/25/05	SM 2320B	
Hydroxide Alkalinity	ND	5000	"	"	"	"	"	"	
Carbonate Alkalinity	ND	5000	"	"	"	"	"	"	
Total Alkalinity	**420000**	5000	"	"	"	"	"	"	
Biochemical Oxygen Demand	**14000**	2000	"	"	5C22034	03/17/05 18:30	03/22/05	EPA 405.1	
Chemical Oxygen Demand	**84000**	30000	"	"	5C24023	03/24/05	03/24/05	EPA 410.4	
Ferric Iron	**29000**	100	"	"	5C31033	03/31/05	03/31/05	EPA 200.7	
Sulfide	ND	1000	"	"	5C31031	03/16/05	03/16/05	EPA 376.1	

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1333 Broadway, Suite 800	Project Number:G07TT-0019	**Reported:**
Oakland CA, 94612	Project Manager:Lynelle Onishi	04/05/05 11:33

Conventional Chemistry Parameters by APHA/EPA Methods

Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
AW-4 (MOC0460-07) Water	**Sampled: 03/16/05 09:25**	**Received: 03/16/05 16:40**							
Hydroxide Alkalinity	ND	5000	ug/l	1	5C25010	03/25/05	03/25/05	SM 2320B	
Carbonate Alkalinity	ND	5000	"	"	"	"	"	"	
Bicarbonate Alkalinity	**310000**	5000	"	"	"	"	"	"	
Total Alkalinity	**310000**	5000	"	"	"	"	"	"	
Biochemical Oxygen Demand	**6800**	2000	"	"	5C22034	03/17/05 18:30	03/22/05	EPA 405.1	
Chemical Oxygen Demand	**70000**	30000	"	"	5C24023	03/24/05	03/24/05	EPA 410.4	
Ferric Iron	**29000**	100	"	"	5C31033	03/31/05	03/31/05	EPA 200.7	
Sulfide	ND	1000	"	"	5C31031	03/16/05	03/16/05	EPA 376.1	

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1333 Broadway, Suite 800	Project Number:G07TT-0019	**Reported:**
Oakland CA, 94612	Project Manager:Lynelle Onishi	04/05/05 11:33

Anions by EPA Method 300.0

Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-1 (MOC0460-01) Water Sampled: 03/16/05 11:50 Received: 03/16/05 16:40									
Nitrate as NO3	ND	500	ug/l	1	5C28016	03/17/05	03/17/05 21:54	EPA 300.0	
Phosphate (Ortho) as P	ND	1000	"	"	"	"	"	"	
Sulfate as SO4	**13000**	500	"	"	"	"	"	"	
MW-2 (MOC0460-02) Water Sampled: 03/16/05 10:25 Received: 03/16/05 16:40									
Nitrate as NO3	**5300**	500	ug/l	1	5C28016	03/17/05	03/17/05 23:00	EPA 300.0	
Phosphate (Ortho) as P	ND	1000	"	"	"	"	"	"	
Sulfate as SO4	**38000**	5000	"	10	"	"	03/17/05	"	
AW-1 (MOC0460-04) Water Sampled: 03/16/05 11:05 Received: 03/16/05 16:40									
Nitrate as NO3	ND	500	ug/l	1	5C28016	03/17/05	03/17/05 23:28	EPA 300.0	
Phosphate (Ortho) as P	ND	1000	"	"	"	"	"	"	
Sulfate as SO4	**580**	500	"	"	"	"	"	"	
AW-4 (MOC0460-07) Water Sampled: 03/16/05 09:25 Received: 03/16/05 16:40									
Nitrate as NO3	ND	500	ug/l	1	5C28016	03/17/05	03/17/05 23:56	EPA 300.0	
Phosphate (Ortho) as P	ND	1000	"	"	"	"	"	"	
Sulfate as SO4	**71000**	5000	"	10	"	"	03/18/05	"	

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1333 Broadway, Suite 800	Project Number:G07TT-0019	**Reported:**
Oakland CA, 94612	Project Manager:Lynelle Onishi	04/05/05 11:33

Conventional Chemistry Parameters by APHA/EPA Methods

Sequoia Analytical - Petaluma

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-1 (MOC0460-01) Water	**Sampled: 03/16/05 11:50**	**Received: 03/16/05 16:40**							
Total Organic Carbon	**4600**	800	ug/l	4	5030236	03/23/05	03/23/05	EPA 415.1	
MW-2 (MOC0460-02) Water	**Sampled: 03/16/05 10:25**	**Received: 03/16/05 16:40**							
Total Organic Carbon	**1400**	800	ug/l	4	5030236	03/23/05	03/23/05	EPA 415.1	
AW-1 (MOC0460-04) Water	**Sampled: 03/16/05 11:05**	**Received: 03/16/05 16:40**							
Total Organic Carbon	**3700**	800	ug/l	4	5030236	03/23/05	03/23/05	EPA 415.1	
AW-4 (MOC0460-07) Water	**Sampled: 03/16/05 09:25**	**Received: 03/16/05 16:40**							
Total Organic Carbon	**2300**	800	ug/l	4	5030236	03/23/05	03/23/05	EPA 415.1	

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URS Corporation [Arco]	Project:BP Heritage #11133, Oakland, CA	MOC0460
1333 Broadway, Suite 800	Project Number:G07TT-0019	**Reported:**
Oakland CA, 94612	Project Manager:Lynelle Onishi	04/05/05 11:33

METALS - Quality Control

Del Mar Analytical, Irvine

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5C25083 - EPA 200.2 ICP / EPA 200.7										
Blank (5C25083-BLK1)				Prepared: 03/25/05 Analyzed: 03/26/05						
Iron	ND	40	ug/l							
Blank (5C25083-BLK1)				Prepared: 03/25/05 Analyzed: 04/02/05						
Calcium	ND	100	"							
Magnesium	ND	20	"							
Manganese	ND	20	"							
Laboratory Control Sample (5C25083-BS1)				Prepared: 03/25/05 Analyzed: 03/26/05						
Iron	491	40	ug/l	500		98	85-115			
Laboratory Control Sample (5C25083-BS1)				Prepared: 03/25/05 Analyzed: 04/02/05						
Calcium	2430	100	"	2500		97	85-115			
Magnesium	2870	20	"	2500		115	85-115			
Manganese	511	20	"	500		102	85-115			
Matrix Spike (5C25083-MS1)	**Source: IOC1711-03**			Prepared: 03/25/05 Analyzed: 03/26/05						
Iron	918	40	ug/l	500	380	108	70-130			
Matrix Spike (5C25083-MS1)	**Source: IOC1711-03**			Prepared: 03/25/05 Analyzed: 04/02/05						
Calcium	52100	100	"	2500	47000	204	70-130			BB
Magnesium	20000	20	"	2500	17000	120	70-130			BB
Manganese	502	20	"	500	8.8	99	70-130			
Matrix Spike Dup (5C25083-MSD1)	**Source: IOC1711-03**			Prepared: 03/25/05 Analyzed: 03/26/05						
Iron	855	40	ug/l	500	380	95	70-130	7	20	
Matrix Spike Dup (5C25083-MSD1)	**Source: IOC1711-03**			Prepared: 03/25/05 Analyzed: 04/02/05						
Calcium	49700	100	"	2500	47000	108	70-130	5	20	BB
Magnesium	19200	20	"	2500	17000	88	70-130	4	20	BB
Manganese	503	20	"	500	8.8	99	70-130	0.2	20	

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1333 Broadway, Suite 800	Project Number:G07TT-0019	**Reported:**
Oakland CA, 94612	Project Manager:Lynelle Onishi	04/05/05 11:33

INORGANICS - Quality Control

Del Mar Analytical, Irvine

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5C21073 - General Prep / EPA 160.1										
Blank (5C21073-BLK1)				Prepared & Analyzed: 03/21/05						
Total Dissolved Solids	ND	10000	ug/l							
Laboratory Control Sample (5C21073-BS1)				Prepared & Analyzed: 03/21/05						
Total Dissolved Solids	968000	10000	ug/l	1000000		97	90-110			
Duplicate (5C21073-DUP1)	**Source: IOC1566-01**			Prepared & Analyzed: 03/21/05						
Total Dissolved Solids	320000	10000	ug/l		300000			6	10	
Batch 5C21075 - General Prep / EPA 160.1										
Blank (5C21075-BLK1)				Prepared & Analyzed: 03/21/05						
Total Dissolved Solids	ND	10000	ug/l							
Laboratory Control Sample (5C21075-BS1)				Prepared & Analyzed: 03/21/05						
Total Dissolved Solids	1030000	10000	ug/l	1000000		103	90-110			
Duplicate (5C21075-DUP1)	**Source: IOC1555-10**			Prepared & Analyzed: 03/21/05						
Total Dissolved Solids	114000	10000	ug/l		110000			4	10	
Batch 5C21106 - General Prep / EPA 350.3										
Blank (5C21106-BLK1)				Prepared & Analyzed: 03/21/05						
Ammonia-N	ND	500	ug/l							
Laboratory Control Sample (5C21106-BS1)				Prepared & Analyzed: 03/21/05						
Ammonia-N	1030	500	ug/l	1000		103	85-115			

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1333 Broadway, Suite 800	Project Number:G07TT-0019	**Reported:**
Oakland CA, 94612	Project Manager:Lynelle Onishi	04/05/05 11:33

INORGANICS - Quality Control

Del Mar Analytical, Irvine

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5C21106 - General Prep / EPA 350.3										
Matrix Spike (5C21106-MS1)	**Source: IOC1395-06**			Prepared & Analyzed: 03/21/05						
Ammonia-N	1400	500	ug/l	2000	ND	70	75-125			LN,AY
Matrix Spike Dup (5C21106-MSD1)	**Source: IOC1395-06**			Prepared & Analyzed: 03/21/05						
Ammonia-N	1460	500	ug/l	2000	ND	73	75-125	4	15	LN,AY
Batch 5C28090 - General Prep / EPA 350.3										
Blank (5C28090-BLK1)				Prepared & Analyzed: 03/28/05						
Ammonia-N	ND	500	ug/l							
Laboratory Control Sample (5C28090-BS1)				Prepared & Analyzed: 03/28/05						
Ammonia-N	1060	500	ug/l	1000		106	85-115			
Matrix Spike (5C28090-MS1)	**Source: IOC1931-05**			Prepared & Analyzed: 03/28/05						
Ammonia-N	1520	500	ug/l	2000	ND	76	75-125			
Matrix Spike Dup (5C28090-MSD1)	**Source: IOC1931-05**			Prepared & Analyzed: 03/28/05						
Ammonia-N	1510	500	ug/l	2000	ND	76	75-125	0.7	15	
Batch 5C22078 - General Prep / EPA 365.3										
Blank (5C22078-BLK1)				Prepared & Analyzed: 03/22/05						
Phosphorus	ND	50	ug/l							
Laboratory Control Sample (5C22078-BS1)				Prepared & Analyzed: 03/22/05						
Phosphorus	1090	50	ug/l	1000		109	80-120			

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1333 Broadway, Suite 800	Project Number:G07TT-0019	**Reported:**
Oakland CA, 94612	Project Manager:Lynelle Onishi	04/05/05 11:33

INORGANICS - Quality Control

Del Mar Analytical, Irvine

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5C22078 - General Prep / EPA 365.3										
Matrix Spike (5C22078-MS1)	**Source: MOC0460-04**			Prepared & Analyzed: 03/22/05						
Phosphorus	1420	50	ug/l	1000	320	110	65-130			
Matrix Spike Dup (5C22078-MSD1)	**Source: MOC0460-04**			Prepared & Analyzed: 03/22/05						
Phosphorus	1380	50	ug/l	1000	320	106	65-130	3	15	
Batch 5C25083 - EPA 200.2 ICP / SM2340B										
Blank (5C25083-BLK1)				Prepared: 03/25/05 Analyzed: 04/02/05						
Hardness (as CaCO3)	ND	1000	ug/l							

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Oakland CA, 94612	Project Manager:Lynelle Onishi	04/05/05 11:33

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5C25006 - EPA 5030B P/T / EPA 8260B										
Blank (5C25006-BLK1)				Prepared & Analyzed: 03/25/05						
tert-Amyl methyl ether	ND	0.50	ug/l							
Benzene	ND	0.50	"							
tert-Butyl alcohol	ND	20	"							
Di-isopropyl ether	ND	0.50	"							
1,2-Dibromoethane (EDB)	ND	0.50	"							
1,2-Dichloroethane	ND	0.50	"							
Ethanol	ND	100	"							
Ethyl tert-butyl ether	ND	0.50	"							
Ethylbenzene	ND	0.50	"							
Methyl tert-butyl ether	ND	0.50	"							
Toluene	ND	0.50	"							
Xylenes (total)	ND	0.50	"							
Gasoline Range Organics (C4-C12)	ND	50	"							
Surrogate: 1,2-Dichloroethane-d4	*5.60*		"	*5.00*		*112*	*60-135*			
Laboratory Control Sample (5C25006-BS1)				Prepared & Analyzed: 03/25/05						
tert-Amyl methyl ether	10.4	0.50	ug/l	10.0		104	80-115			
Benzene	9.44	0.50	"	10.0		94	65-115			
tert-Butyl alcohol	51.5	20	"	50.0		103	75-150			
Di-isopropyl ether	10.7	0.50	"	10.0		107	75-125			
1,2-Dibromoethane (EDB)	9.34	0.50	"	10.0		93	85-120			
1,2-Dichloroethane	11.3	0.50	"	10.0		113	85-130			
Ethanol	184	100	"	200		92	70-135			
Ethyl tert-butyl ether	10.8	0.50	"	10.0		108	75-130			
Ethylbenzene	9.43	0.50	"	10.0		94	75-135			
Methyl tert-butyl ether	10.6	0.50	"	10.0		106	65-125			
Toluene	9.29	0.50	"	10.0		93	85-120			
Xylenes (total)	30.2	0.50	"	30.0		101	85-125			
Surrogate: 1,2-Dichloroethane-d4	*5.35*		"	*5.00*		*107*	*60-135*			

Sequoia Analytical

885 Jarvis Drive
Morgan Hill, CA 95037
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URS Corporation [Arco]	Project:BP Heritage #11133, Oakland, CA	MOC0460
1333 Broadway, Suite 800	Project Number:G07TT-0019	**Reported:**
Oakland CA, 94612	Project Manager:Lynelle Onishi	04/05/05 11:33

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5C25006 - EPA 5030B P/T / EPA 8260B										
Laboratory Control Sample (5C25006-BS2)				Prepared & Analyzed: 03/25/05						
Benzene	5.58	0.50	ug/l	6.40		87	65-115			
Ethylbenzene	7.86	0.50	"	7.52		105	75-135			
Methyl tert-butyl ether	10.1	0.50	"	9.92		102	65-125			
Toluene	33.2	0.50	"	31.9		104	85-120			
Xylenes (total)	40.8	0.50	"	36.6		111	85-125			
Gasoline Range Organics (C4-C12)	423	50	"	440		96	70-124			
Surrogate: 1,2-Dichloroethane-d4	*5.86*		*"*	*5.00*		*117*	*60-135*			
Laboratory Control Sample Dup (5C25006-BSD1)				Prepared & Analyzed: 03/25/05						
tert-Amyl methyl ether	11.0	0.50	ug/l	10.0		110	80-115	6	15	
Benzene	10.1	0.50	"	10.0		101	65-115	7	20	
tert-Butyl alcohol	48.7	20	"	50.0		97	75-150	6	25	
Di-isopropyl ether	11.3	0.50	"	10.0		113	75-125	5	15	
1,2-Dibromoethane (EDB)	9.78	0.50	"	10.0		98	85-120	5	15	
1,2-Dichloroethane	11.6	0.50	"	10.0		116	85-130	3	20	
Ethanol	179	100	"	200		90	70-135	3	35	
Ethyl tert-butyl ether	11.5	0.50	"	10.0		115	75-130	6	25	
Ethylbenzene	9.89	0.50	"	10.0		99	75-135	5	15	
Methyl tert-butyl ether	11.4	0.50	"	10.0		114	65-125	7	20	
Toluene	9.75	0.50	"	10.0		98	85-120	5	20	
Xylenes (total)	30.9	0.50	"	30.0		103	85-125	2	20	
Surrogate: 1,2-Dichloroethane-d4	*5.36*		*"*	*5.00*		*107*	*60-135*			
Matrix Spike (5C25006-MS1)	**Source: MOC0460-04**			Prepared & Analyzed: 03/25/05						
Benzene	1300	25	ug/l	320	1100	62	65-115			LN
Ethylbenzene	975	25	"	376	630	92	75-135			
Methyl tert-butyl ether	1180	25	"	496	720	93	65-125			
Toluene	1610	25	"	1600	30	99	85-120			
Xylenes (total)	2550	25	"	1830	560	109	85-125			
Gasoline Range Organics (C4-C12)	28400	2500	"	22000	10000	84	70-124			
Surrogate: 1,2-Dichloroethane-d4	*5.62*		*"*	*5.00*		*112*	*60-135*			

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URS Corporation [Arco]	Project:BP Heritage #11133, Oakland, CA	MOC0460
1333 Broadway, Suite 800	Project Number:G07TT-0019	**Reported:**
Oakland CA, 94612	Project Manager:Lynelle Onishi	04/05/05 11:33

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5C25006 - EPA 5030B P/T / EPA 8260B										
Matrix Spike Dup (5C25006-MSD1)	**Source: MOC0460-04**			Prepared & Analyzed: 03/25/05						
Benzene	1400	25	ug/l	320	1100	94	65-115	7	20	
Ethylbenzene	1100	25	"	376	630	125	75-135	12	15	
Methyl tert-butyl ether	1030	25	"	496	720	62	65-125	14	20	LN
Toluene	1620	25	"	1600	30	99	85-120	0.6	20	
Xylenes (total)	2690	25	"	1830	560	116	85-125	5	20	
Gasoline Range Organics (C4-C12)	28300	2500	"	22000	10000	83	70-124	0.4	20	
Surrogate: 1,2-Dichloroethane-d4	*4.35*		"	*5.00*		*87*	*60-135*			
Batch 5C28010 - EPA 5030B P/T / EPA 8260B										
Blank (5C28010-BLK1)				Prepared & Analyzed: 03/28/05						
tert-Amyl methyl ether	ND	0.50	ug/l							
Benzene	ND	0.50	"							
tert-Butyl alcohol	ND	20	"							
Di-isopropyl ether	ND	0.50	"							
1,2-Dibromoethane (EDB)	ND	0.50	"							
1,2-Dichloroethane	ND	0.50	"							
Ethanol	ND	100	"							
Ethyl tert-butyl ether	ND	0.50	"							
Ethylbenzene	ND	0.50	"							
Methyl tert-butyl ether	ND	0.50	"							
Toluene	ND	0.50	"							
Xylenes (total)	ND	0.50	"							
Gasoline Range Organics (C4-C12)	ND	50	"							
Surrogate: 1,2-Dichloroethane-d4	*4.05*		"	*5.00*		*81*	*60-135*			
Laboratory Control Sample (5C28010-BS1)				Prepared & Analyzed: 03/28/05						
tert-Amyl methyl ether	9.38	0.50	ug/l	10.0		94	80-115			
Benzene	8.36	0.50	"	10.0		84	65-115			
tert-Butyl alcohol	59.3	20	"	50.0		119	75-150			
Di-isopropyl ether	9.20	0.50	"	10.0		92	75-125			
1,2-Dibromoethane (EDB)	8.93	0.50	"	10.0		89	85-120			
1,2-Dichloroethane	9.76	0.50	"	10.0		98	85-130			
Ethanol	205	100	"	200		102	70-135			
Ethyl tert-butyl ether	9.42	0.50	"	10.0		94	75-130			
Ethylbenzene	9.59	0.50	"	10.0		96	75-135			
Methyl tert-butyl ether	8.95	0.50	"	10.0		90	65-125			

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1333 Broadway, Suite 800	Project Number:G07TT-0019	**Reported:**
Oakland CA, 94612	Project Manager:Lynelle Onishi	04/05/05 11:33

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5C28010 - EPA 5030B P/T / EPA 8260B										
Laboratory Control Sample (5C28010-BS1)				Prepared & Analyzed: 03/28/05						
Toluene	8.56	0.50	ug/l	10.0		86	85-120			
Xylenes (total)	30.9	0.50	"	30.0		103	85-125			
Surrogate: 1,2-Dichloroethane-d4	*4.99*		"	*5.00*		*100*	*60-135*			
Laboratory Control Sample (5C28010-BS2)				Prepared & Analyzed: 03/28/05						
Benzene	5.58	0.50	ug/l	6.40		87	65-115			
Ethylbenzene	7.84	0.50	"	7.52		104	75-135			
Methyl tert-butyl ether	10.0	0.50	"	9.92		101	65-125			
Toluene	32.5	0.50	"	31.9		102	85-120			
Xylenes (total)	39.7	0.50	"	36.6		108	85-125			
Gasoline Range Organics (C4-C12)	406	50	"	440		92	70-124			
Surrogate: 1,2-Dichloroethane-d4	*5.43*		"	*5.00*		*109*	*60-135*			
Laboratory Control Sample Dup (5C28010-BSD1)				Prepared & Analyzed: 03/28/05						
tert-Amyl methyl ether	9.74	0.50	ug/l	10.0		97	80-115	4	15	
Benzene	8.37	0.50	"	10.0		84	65-115	0.1	20	
tert-Butyl alcohol	59.4	20	"	50.0		119	75-150	0.2	25	
Di-isopropyl ether	9.36	0.50	"	10.0		94	75-125	2	15	
1,2-Dibromoethane (EDB)	9.50	0.50	"	10.0		95	85-120	6	15	
1,2-Dichloroethane	10.5	0.50	"	10.0		105	85-130	7	20	
Ethanol	205	100	"	200		102	70-135	0	35	IC
Ethyl tert-butyl ether	9.80	0.50	"	10.0		98	75-130	4	25	
Ethylbenzene	9.45	0.50	"	10.0		94	75-135	1	15	
Methyl tert-butyl ether	9.41	0.50	"	10.0		94	65-125	5	20	
Toluene	8.67	0.50	"	10.0		87	85-120	1	20	
Xylenes (total)	30.1	0.50	"	30.0		100	85-125	3	20	
Surrogate: 1,2-Dichloroethane-d4	*5.12*		"	*5.00*		*102*	*60-135*			

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URS Corporation [Arco]	Project:BP Heritage #11133, Oakland, CA	MOC0460
1333 Broadway, Suite 800	Project Number:G07TT-0019	**Reported:**
Oakland CA, 94612	Project Manager:Lynelle Onishi	04/05/05 11:33

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5C28010 - EPA 5030B P/T / EPA 8260B										
Matrix Spike (5C28010-MS1)	**Source: MOC0479-04**			Prepared & Analyzed: 03/28/05						
Benzene	736	50	ug/l	640	160	90	65-115			
Ethylbenzene	809	50	"	752	ND	108	75-135			
Methyl tert-butyl ether	4860	50	"	992	3700	117	65-125			
Toluene	3180	50	"	3190	3.6	100	85-120			
Xylenes (total)	4300	50	"	3660	ND	117	85-125			
Gasoline Range Organics (C4-C12)	45500	5000	"	44000	3900	95	70-124			
Surrogate: 1,2-Dichloroethane-d4	*4.45*		"	*5.00*		*89*	*60-135*			
Matrix Spike Dup (5C28010-MSD1)	**Source: MOC0479-04**			Prepared & Analyzed: 03/28/05						
Benzene	714	50	ug/l	640	160	87	65-115	3	20	
Ethylbenzene	775	50	"	752	ND	103	75-135	4	15	
Methyl tert-butyl ether	5310	50	"	992	3700	162	65-125	9	20	BB,LM
Toluene	3240	50	"	3190	3.6	101	85-120	2	20	
Xylenes (total)	3950	50	"	3660	ND	108	85-125	8	20	
Gasoline Range Organics (C4-C12)	45700	5000	"	44000	3900	95	70-124	0.4	20	
Surrogate: 1,2-Dichloroethane-d4	*5.32*		"	*5.00*		*106*	*60-135*			

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URS Corporation [Arco]	Project:BP Heritage #11133, Oakland, CA	MOC0460
1333 Broadway, Suite 800	Project Number:G07TT-0019	**Reported:**
Oakland CA, 94612	Project Manager:Lynelle Onishi	04/05/05 11:33

Conventional Chemistry Parameters by APHA/EPA Methods - Quality Control
Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5C31033 - General Preparation / EPA 200.7										
Blank (5C31033-BLK1)				Prepared & Analyzed: 03/31/05						
Ferric Iron	ND	100	ug/l							
Batch 5C31031 - General Preparation / EPA 376.1										
Blank (5C31031-BLK1)				Prepared & Analyzed: 03/16/05						
Sulfide	ND	1000	ug/l							
Laboratory Control Sample (5C31031-BS1)				Prepared & Analyzed: 03/16/05						
Sulfide	10100	1000	ug/l	10200		99	80-115			
Matrix Spike (5C31031-MS1)	**Source: MOC0460-01**			Prepared & Analyzed: 03/16/05						
Sulfide	10100	1000	ug/l	10200	ND	99	80-115			
Matrix Spike Dup (5C31031-MSD1)	**Source: MOC0460-01**			Prepared & Analyzed: 03/16/05						
Sulfide	9700	1000	ug/l	10200	ND	95	80-115	4	20	
Batch 5C22034 - General Preparation / EPA 405.1										
Blank (5C22034-BLK1)				Prepared: 03/17/05 Analyzed: 03/22/05						
Biochemical Oxygen Demand	ND	2000	ug/l							
Laboratory Control Sample (5C22034-BS1)				Prepared: 03/17/05 Analyzed: 03/22/05						
Biochemical Oxygen Demand	196000	2000	ug/l	198000		99	75-120			
Duplicate (5C22034-DUP1)	**Source: MOC0460-01**			Prepared: 03/17/05 Analyzed: 03/22/05						
Biochemical Oxygen Demand	16800	2000	ug/l		18000			7	50	

Sequoia Analytical

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URS Corporation [Arco]	Project:BP Heritage #11133, Oakland, CA	MOC0460
1333 Broadway, Suite 800	Project Number:G07TT-0019	**Reported:**
Oakland CA, 94612	Project Manager:Lynelle Onishi	04/05/05 11:33

Conventional Chemistry Parameters by APHA/EPA Methods - Quality Control
Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5C24023 - General Preparation / EPA 410.4										
Blank (5C24023-BLK1)				Prepared & Analyzed: 03/24/05						
Chemical Oxygen Demand	ND	30000	ug/l							
Laboratory Control Sample (5C24023-BS1)				Prepared & Analyzed: 03/24/05						
Chemical Oxygen Demand	86000	30000	ug/l	100000		86	75-120			
Matrix Spike (5C24023-MS1)	Source: MOC0460-01			Prepared & Analyzed: 03/24/05						
Chemical Oxygen Demand	212000	33000	ug/l	111000	100000	101	75-120			
Matrix Spike Dup (5C24023-MSD1)	Source: MOC0460-01			Prepared & Analyzed: 03/24/05						
Chemical Oxygen Demand	211000	33000	ug/l	111000	100000	100	75-120	0.5	15	
Batch 5C25010 - General Preparation / SM 2320B										
Blank (5C25010-BLK1)				Prepared & Analyzed: 03/25/05						
Bicarbonate Alkalinity	ND	5000	ug/l							
Carbonate Alkalinity	ND	5000	"							
Hydroxide Alkalinity	ND	5000	"							
Laboratory Control Sample (5C25010-BS1)				Prepared & Analyzed: 03/25/05						
Total Alkalinity	104000	5000	ug/l	100000		104	80-120			
Matrix Spike (5C25010-MS1)	Source: MOC0633-01			Prepared & Analyzed: 03/25/05						
Total Alkalinity	166000	5000	ug/l	100000	62000	104	75-125			
Matrix Spike Dup (5C25010-MSD1)	Source: MOC0633-01			Prepared & Analyzed: 03/25/05						
Total Alkalinity	168000	5000	ug/l	100000	62000	106	75-125	1	20	

Sequoia Analytical

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URS Corporation [Arco]	Project:BP Heritage #11133, Oakland, CA	MOC0460
1333 Broadway, Suite 800	Project Number:G07TT-0019	**Reported:**
Oakland CA, 94612	Project Manager:Lynelle Onishi	04/05/05 11:33

Anions by EPA Method 300.0 - Quality Control

Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5C28016 - General Preparation / EPA 300.0										
Blank (5C28016-BLK1)				Prepared & Analyzed: 03/17/05						
Phosphate (Ortho) as P	ND	1000	ug/l							
Sulfate as SO4	ND	500	"							
Nitrate as NO3	ND	500	"							
Laboratory Control Sample (5C28016-BS1)				Prepared & Analyzed: 03/17/05						
Phosphate (Ortho) as P	2450	1000	ug/l	2500		98	70-130			
Nitrate as NO3	9520	500	"	10000		95	80-115			
Sulfate as SO4	10000	500	"	10000		100	80-120			
Matrix Spike (5C28016-MS1)	Source: MOC0460-01			Prepared & Analyzed: 03/17/05						
Phosphate (Ortho) as P	242000	100000	ug/l	250000	58	97	70-130			
Nitrate as NO3	957000	50000	"	1000000	ND	96	80-115			
Sulfate as SO4	1010000	50000	"	1000000	13000	100	80-120			
Matrix Spike Dup (5C28016-MSD1)	Source: MOC0460-01			Prepared & Analyzed: 03/17/05						
Phosphate (Ortho) as P	250000	100000	ug/l	250000	58	100	70-130	3	10	
Nitrate as NO3	955000	50000	"	1000000	ND	96	80-115	0.2	10	
Sulfate as SO4	1010000	50000	"	1000000	13000	100	80-120	0	10	

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URS Corporation [Arco]	Project:BP Heritage #11133, Oakland, CA	MOC0460
1333 Broadway, Suite 800	Project Number:G07TT-0019	**Reported:**
Oakland CA, 94612	Project Manager:Lynelle Onishi	04/05/05 11:33

Conventional Chemistry Parameters by APHA/EPA Methods - Quality Control

Sequoia Analytical - Petaluma

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5030236 - General Preparation / EPA 415.1										
Blank (5030236-BLK1)				Prepared & Analyzed: 03/23/05						
Total Organic Carbon	ND	200	ug/l							
Laboratory Control Sample (5030236-BS1)				Prepared & Analyzed: 03/23/05						
Total Organic Carbon	8970	200	ug/l	10000		90	80-120			
Matrix Spike (5030236-MS1)	**Source: P503202-01**			Prepared & Analyzed: 03/23/05						
Total Organic Carbon	107000	1600	ug/l	40000	72000	88	75-125			
Matrix Spike Dup (5030236-MSD1)	**Source: P503202-01**			Prepared & Analyzed: 03/23/05						
Total Organic Carbon	133000	1600	ug/l	40000	72000	152	75-125	22	20	BA, BB,LM

Sequoia Analytical

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URS Corporation [Arco]	Project:BP Heritage #11133, Oakland, CA	MOC0460
1333 Broadway, Suite 800	Project Number:G07TT-0019	**Reported:**
Oakland CA, 94612	Project Manager:Lynelle Onishi	04/05/05 11:33

Notes and Definitions

LN,AY	MS and/or MSD below acceptance limits. See Blank Spike(LCS). Matrix interference suspected.
LN	MS and/or MSD below acceptance limits. See Blank Spike(LCS).
IC	Calib. verif. is within method limits but outside contract limits
BB,LM	Sample > 4x spike concentration. MS and/or MSD above acceptance limits. See Blank Spike(LCS).
BB	Sample > 4x spike concentration
BA	Relative percent difference out of control
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Calscience
Environmental
Laboratories, Inc.

March 23, 2005

Lisa Race
Sequoia Analytical - Morgan Hill
885 Jarvis Drive
Morgan Hill, CA 95037-0000

Subject: **Calscience Work Order No.: 05-03-1182**
Client Reference: MOC0460

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 3/18/2005 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Assurance Program Manual, applicable standard operating procedures, and other related documentation. The original report of any subcontracted analysis is provided herein, and follows the standard Calscience data package. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

Calscience Environmental
Laboratories, Inc.
Robert Stearns
Project Manager

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT

Sequoia Analytical - Morgan Hill	Date Sampled:	03/16/05
885 Jarvis Drive	Date Received:	03/18/05
Morgan Hill, CA 95037-0000	Date Analyzed:	03/18/05
	Work Order No.:	05-03-1182
Attn: Lisa Race	Method:	RSK-175M
RE: MOC0460	Page 1 of 1	

All concentrations are reported in mg/L (ppm).

Sample Number	Carbon Dioxide Concentration	Reporting Limit
MOC0460-01	49.9	0.17
MOC0460-02	7.37	0.17
MOC0460-04	81.4	0.17
MOC0460-07	54.2	0.17
Method Blank	ND	0.17

QA/QC

Sample Number: Laboratory Control Sample

Analyte	Sample Conc.	Duplicate Conc.	%RPD	Control Limits (%)
Oxygen (O_2) + Argon (Ar)	20.1	20.2	0	0 - 30
Nitrogen (N_2)	72.3	72.3	0	0 - 30
Carbon Dioxide (CO_2)	5.03	5.01	0	0 - 30

Calscience Environmental Laboratories, Inc.

Analytical Report

Sequoia Analytical - Morgan Hill		Date Received:	03/18/05
885 Jarvis Drive		Work Order No:	05-03-1182
Morgan Hill, CA 95037-0000		Preparation:	N/A
		Method:	RSK-175M

Project: MOC0460

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
MOC0460-01	05-03-1182-1	03/16/05	Aqueous	N/A	03/18/05	050318L01

Parameter	Result	RL	DF	Qual	Units
Methane	4550	40	40		ug/L

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
MOC0460-02	05-03-1182-2	03/16/05	Aqueous	N/A	03/18/05	050318L01

Parameter	Result	RL	DF	Qual	Units
Methane	ND	1.00	1		ug/L

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
MOC0460-04	05-03-1182-3	03/16/05	Aqueous	N/A	03/18/05	050318L01

Parameter	Result	RL	DF	Qual	Units
Methane	3290	40	40		ug/L

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
MOC0460-07	05-03-1182-4	03/16/05	Aqueous	N/A	03/18/05	050318L01

Parameter	Result	RL	DF	Qual	Units
Methane	585	20	20		ug/L

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
Method Blank	099-12-010-887	N/A	Aqueous	N/A	03/18/05	050318L01

Parameter	Result	RL	DF	Qual	Units
Methane	ND	1.00	1		ug/L

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

Sequoia Analytical - Morgan Hill		Date Received:	N/A
885 Jarvis Drive		Work Order No:	05-03-1182
Morgan Hill, CA 95037-0000		Preparation:	N/A
		Method:	RSK-175M

Project: MOC0460

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-010-887	Aqueous	GC/33	N/A	03/18/05	050318L01

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Methane	100	101	79-109	1	0-20	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Glossary of Terms and Qualifiers

Work Order Number: 05-03-1182

Qualifier	Definition
*	See applicable analysis comment.
1	Surrogate compound recovery was out of control due to a required sample dilution, therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike or Matrix Spike Duplicate compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification.
4	The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification.
5	The PDS/PDSD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported with no further corrective action required.
A	Result is the average of all dilutions, as defined by the method.
B	Analyte was present in the associated method blank.
C	Analyte presence was not confirmed on primary column.
E	Concentration exceeds the calibration range.
H	Sample received and/or analyzed past the recommended holding time.
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
N	Nontarget Analyte.
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
U	Undetected at the laboratory method detection limit.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

SUBCONTRACT ORDER

Printed: 3/17/05 3:22:05PM

Sequoia Analytical - Morgan Hill

MOC0460

(182)

SENDING LABORATORY:	RECEIVING LABORATORY:	
Sequoia Analytical - Morgan Hill 885 Jarvis Drive Morgan Hill, CA 95037 Phone: 408-776-9600 Fax: 408-782-6308 Project Manager: Lisa Race Sending lab received date: 03/16/05 16:40	Calscience Environmental 7440 Lincoln Way Garden Grove, CA 92841 Phone: (714) 895-5494 Fax: (714) 894-7501	☐ Drinking Water ☐ Waste Water ☐ Other

Analysis	Due	Expires	Laboratory ID	Comments
Sample ID: MOC0460-01 (Water sampled on 03/16/05 11:50)			[redacted]	BP grouping
COELT Deliverables	03/28/05 12:00	06/23/05 11:50		Calscience
Dissolved Gases	03/28/05 12:00	03/23/05 11:50		Calscience,carbon dioxide & methane ASTM only
Containers Supplied:				
VOA Unpres (I)	VOA Unpres (J)	VOA Unpres (K)		
Sample ID: MOC0460-02 (Water sampled on 03/16/05 10:25)			[redacted]	
Dissolved Gases	03/28/05 12:00	03/23/05 10:25		Calscience,carbon dioxide & methane ASTM only
Containers Supplied:				
VOA Unpres (I)	VOA Unpres (J)	VOA Unpres (K)		
Sample ID: MOC0460-04 (Water sampled on 03/16/05 11:05)			[redacted]	
Dissolved Gases	03/28/05 12:00	03/23/05 11:05		Calscience,carbon dioxide & methane ASTM only
Containers Supplied:				
VOA Unpres (I)	VOA Unpres (J)	VOA Unpres (K)		
Sample ID: MOC0460-07 (Water sampled on 03/16/05 09:25)			[redacted]	
Dissolved Gases	03/28/05 12:00	03/23/05 09:25		Calscience,carbon dioxide & methane ASTM only
Containers Supplied:				
VOA Unpres (I)	VOA Unpres (J)	VOA Unpres (K)		

Released By	Date	Time	Received By	Date	Time
[signature]	3/17/05	1713			
CO	3-18-05	0840	Wheat CCL	3-18-05	0840
Released By	Date	Time	Received By	Date	Time

Chain of Custody Record

REVISED

(1182)

Page 3 of 3

Project Name: Analytical for ~~SSI sampling~~ QMR SAMPLING

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

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: 755	Temp: 70°F
Off-site Time:	Temp:
Sky Conditions: clear	
Meteorological Events: none	
Wind Speed:	Direction:

Lab Name: [redacted]	BP/AR Facility No.: 11133	Consultant/Contractor: URS
Address: 885 Jarvis Drive	BP/AR Facility Address: 2320 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	
Tele/Fax: 408.782.8156 / 408.782.6308	Enfos Project No.: G07TT-002~~0~~ 19	Consultant/Contractor Project No.: 38487140
BP/AR PM Contact: Paul Supple	Provision or RCOP: Provision	Consultant/Contractor PM: ~~Leonard Niles~~ Lynelle Onishi
Address: P.O. Box 6549	Phase/WBS: ~~01 - Assessment~~ 04 - Mon/Remed by natural attenuation	Tele/Fax: 510.874.1720 / 510.874.3268
Moraga, CA 94570	Sub Phase/Task: 03 - Analytical	Report Type & QC Level: Level 1 with EDF
Tele/Fax: 925.299.8891 / 925.299.8872	Cost Element: 05 - Subcontracted Costs	E-mail EDD To: Rachel_Lindvall@urscorp.com
Lab Bottle Order No: 11133		Invoice to: Atlantic Richfield Company

Item No.	Sample Description	Time	Date	Matrix: Soil/Solid	Matrix: Water/Liquid	Matrix: Air	Laboratory No.	No. of Containers	Preservative: Unpreserved	H_2SO_4	HNO_3	HCl	Methanol		Requested Analysis: Nitrate, Sulfate 300.0	Orthophosphate 300.0	Alkalinity 310.1/2320B	Ferric Iron	COD 410.1	TDS	Total Phosphorus 365.3	Ammonia as N 350.1	BOD 405.1	TOC	M0C0440 ~~Ferrous Iron Readings~~
1	MW-1	1150	3/4/05		X		61	14	X	X	X	X			X	X	X	X	X	X	X	X	X	X	0.7 mg/L
2	MW-2	1025			X		62	14	X	X	X	X			X	X	X	X	X	X	X	X	X	X	2.7
3	AW-1	1105			X		64	14	X	X	X	X			X	X	X	X	X	X	X	X	X	X	3.4
4	AW-4	925			X		67	14	X	X	X	X			X	X	X	X	X	X	X	X	X	X	1.4
5																									
6																									
7																									
8																									
9																									
10																									

	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Sampler's Name: P. Cowdy	Blaine	3/4/05	1556	T. Silvernez	3/6	16
Sampler's Company: Blaine Tech						
Shipment Date:						
Shipment Method:						
Shipment Tracking No:						

Special Instructions:

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

Distribution: White Copy - Laboratory / Yellow Copy - BP/Atlantic Richfield Co. / Pink Copy - Consultant/Contractor   BP COC Rev. 4 10/1/04

Chain of Custody Record

bp

REVISED

Project Name: Analytical for ~~SSI~~ sampling QNE Sampling

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

State or Local Regulatory Agency: California Regional Water Quality Control Board - San Fran

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

(1682) Page 1 of 3

On-site Time: 735	Temp: 70°F
Off-site Time:	Temp:
Sky Conditions: clear	
Meteorological Events: none	
Wind Speed:	Direction:

Lab Name: [redacted]	
Address: 885 Jarvis Drive	
Morgan Hill, CA 95037	
Lab PM: Lisa Race	
Tele/Fax: 408.782.8156 / 408.782.6308	
BP/AR PM Contact: Paul Supple	
Address: P.O. Box 6549	
Moraga, CA 94570	
Tele/Fax: 925.299.8891 / 925.299.8872	

BP/AR Facility No.:	11133
BP/AR Facility Address:	2228 98th Ave., Oakland, CA 94603
Site Lat/Long:	37.748269 / -122.161
California Global ID No.:	T0600100210
Enfos Project No.:	G0TTT-0028 19
Provision or RCOP:	Provision
Phase/WBS:	01 - Assessment Off-Mon/Removal Actions
Sub Phase/Task:	03 - Analytical
Cost Element:	05 - Subcontracted Costs

Consultant/Contractor:	URS
Address:	1333 Broadway, Suite 800
	Oakland, CA 94612
Consultant/Contractor Project No.:	38487140
Consultant/Contractor PM:	Leonard Niles Lynette Onishi
Tele/Fax:	510.874.1720 / 510.874.3268
Report Type & QC Level:	Level 1 with EDF
E-mail EDD To:	Rachel.Lindsay@urscorp.com
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, TBA (8260)	Requested Analysis: 1,2-DCA & EDB (8260)	Requested Analysis: ETHANOL (8260)	Requested Analysis: Sulfide 376.1	Requested Analysis: Manganese, Magnesium 200.7	Requested Analysis: Balance as CaCO3 M310B	Requested Analysis: Carbon, Fluoride ASTM	Requested Analysis: Balance ASTM	Sample Point Lat/Long and Comments
1	MW-1	1155	2/16/05		X		01	4	X		X	X		X	X	X	X	X	X	X	X	X	
2	MW-2	1035			X		02	4	X	X	X	X		X	X	X	X	X	X	X	X	X	
3	MW-3	1235			X		03	3	X	X	X	X		X	X	X	X						
4	AW-1	1105			X		04	4	X	X	X	X		X	X	X	X	X	X	X	X	X	
5	AW-2	1310			X		05	3	X	X	X	X		X	X	X	X						
6	AW-3	1310			X		06	3	X	X	X	X		X	X	X	X						
7	AW-4	1326			X		07	4	X	X	X	X		X	X	X	X	X	X	X	X	X	
8	AW-5	1420			X		08	3	X	X	X	X		X	X	X	X						
9	AW-6	1350			X		09	3	X	X	X	X		X	X	X	X						
10	AW-8	1340	↓		X		10	3	X	X	X	X		X	X	X	X						

Sampler's Name:	P. Cornish	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Sampler's Company:	Blaine Tech	[illegible]	2/16/05	1556	[illegible]	2/16/05	1556
Shipment Date:							
Shipment Method:							
Shipment Tracking No:							

Special Instructions:

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

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

BP COC Rev.4 3/01/04

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 05 - 03 - 1118

Cooler 1 of 1

SAMPLE RECEIPT FORM

CLIENT: SEQUOIA ANALYTICAL DATE: 3-18-05

TEMPERATURE – SAMPLES RECEIVED BY:

CALSCIENCE COURIER:

_____ Chilled, cooler with temperature blank provided.
_____ Chilled, cooler without temperature blank.
_____ Chilled and placed in cooler with wet ice.
_____ Ambient and placed in cooler with wet ice.
_____ Ambient temperature.
_____ °C Temperature blank.

LABORATORY (Other than Calscience Courier):

_____ °C Temperature blank.
3.9 °C IR thermometer.
_____ Ambient temperature.

Initial: WB

CUSTODY SEAL INTACT:

Sample(s): _____ Cooler: _____ No (Not Intact) : _____ Not Applicable (N/A): ✓

Initial: WB

SAMPLE CONDITION:

	Yes	No	N/A
Chain-Of-Custody document(s) received with samples	✓		
Sample container label(s) consistent with custody papers	✓		
Sample container(s) intact and good condition	✓		
Correct containers for analyses requested	✓		
Proper preservation noted on sample label(s)			✓
VOA vial(s) free of headspace.			✓
Tedlar bag(s) free of condensation			✓

Initial: WB

COMMENTS:

Chain of Custody Record

bp

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Page 1 of 3

Project Name: Analytical for [redacted] sampling QME SAMPLING

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

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

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

On-site Time: 725	Temp: 70°F
Off-site Time:	Temp:
Sky Conditions: clear	
Meteorological Events: none	
Wind Speed:	Direction:

Lab Name: [redacted]	
Address: 885 Jarvis Drive	
Morgan Hill, CA 95037	
Lab PM: Lisa Race	
Tele/Fax: 408.782.8156 / 408.782.6308	
BP/AR PM Contact: Paul Supple	
Address: P.O. Box 6549	
Moraga, CA 94570	
Tele/Fax: 925.299.8891 / 925.299.8872	

BP/AR Facility No.:	11133
BP/AR Facility Address:	2220 98th Ave., Oakland, CA 94603
Site Lat/Long:	37.748269 / -122.161
California Global ID No.:	T0600100210
Enfos Project No.:	G07TT-0020 19
Provision or RCOP:	Provision
Phase/WBS:	01 - Assessment 04 - Mon/Remed Perf Actions Only
Sub Phase/Task:	03 - Analytical
Cost Element:	05 - Subcontracted Costs

Consultant/Contractor:	URS
Address:	1333 Broadway, Suite 800
	Oakland, CA 94612
Consultant/Contractor Project No.:	38487140
Consultant/Contractor PM:	Leonard Niles Lynette Quashi
Tele/Fax:	510.874.1720 / 510.874.3268
Report Type & QC Level:	Level 4 with EDF
E-mail EDD To:	Rachel.Lindvall@urscorp.com
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: 1,2-DCA & EDB (8260)	Requested Analysis: ETHANOL (8260)	Requested Analysis: Sulfides 376.1	Requested Analysis: Manganese, Magnesium 200.7	Requested Analysis: Hardness as CaCO3 SM2340B	Requested Analysis: Carbon Dioxide ASTM	Requested Analysis: Methane ASTM	Sample Point Lat/Long and Comments
1	MW-1	1156	3/16/05		W		01	14	X	X	A	X		X	X	X	X	X	X	X	X	X	
2	MW-2	1026			W		02	14	X	X	A	X		X	X	X	X	X	X	X	X	X	
3	MW-3	1238			W		03	3	X	X	X	X		X	X	X	X						
4	AW-1	1145			W		04	14	X	X	X	X		X	X	X	X	X	X	X	X	X	
5	AW-2	1310			W		05	3	X	X	X	X		X	X	X	X						
6	AW-3	1410			W		06	3	X	X	X	X		X	X	X	X						
7	AW-4	926			W		07	14	X	X	X	X		X	X	X	X	X	X	X	X	X	
8	AW-5	1428			W		08	3	X	X	X	X		X	X	X	X						
9	AW-6	1522			W		09	3	X	X	X	X		X	X	X	X						
10	AW-7B	1310	↓		W		10	3	X	X	X	X		X	X	X	X						

M026460

Sampler's Name:	P. Lemuth
Sampler's Company:	Blaine Tech
Shipment Date:	
Shipment Method:	
Shipment Tracking No:	

Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
[redacted]	3/16/05	1556	[redacted]	3/16/05	16

Special Instructions:

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

Chain of Custody Record

REVISED

Project Name: Analytical for ~~SSI sampling~~ QMR SAMPLING

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

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: 735	Temp: 70°
Off-site Time:	Temp:
Sky Conditions: clear	
Meteorological Events: none	
Wind Speed:	Direction:

Lab Name: [redacted]	
Address: 885 Jarvis Drive	
Morgan Hill, CA 95037	
Lab PM: Lisa Race	
Tele/Fax: 408.782.8156 / 408.782.6308	
BP/AR PM Contact: Paul Supple	
Address: P.O. Box 6549	
Moraga, CA 94570	
Tele/Fax: 925.299.8891 / 925.299.8872	

BP/AR Facility No.:	11133
BP/AR Facility Address:	2220 98th Ave., Oakland, CA 94603
Site Lat/Long:	37.748269 / -122.161
California Global ID No.:	T0600100210
Enfos Project No.:	G07TT-0020 19
Provision or RCOP:	Provision
Phase/WBS:	01 - Assessment 04 - Mon/Remed
Sub Phase/Task:	03 - Analytical
Cost Element:	05 - Subcontracted Costs

Consultant/Contractor:	URS
Address:	1333 Broadway, Suite 800
	Oakland, CA 94612
Consultant/Contractor Project No.:	38487140
Consultant/Contractor PM:	~~Leonard Niles~~ Lynette Ow
Tele/Fax:	510.874.1720 / 510.874.3268
Report Type & QC Level:	Level 1 with EDF
E-mail EDD To:	Rachel_Lindvall@urscorp.com
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: Nitrate, Sulfate 300.0	Requested Analysis: Orthophosphate 300.0	Requested Analysis: Alkalinity SM2320B	Requested Analysis: Ferric Iron	Requested Analysis: COD 410.1	Requested Analysis: TDS	Requested Analysis: Total Phosphorus 365.3	Requested Analysis: Ammonia as N 350.1	Requested Analysis: BOD 405.1	Requested Analysis: TOC	MDL 0.4 RUSH TURNAROUND REQUIRED
1	MW-1	1150	3/31/05		X		61	14	X	X	X	X		X	X	X	X	X	X	X	X	X	X	
2	MW-2	1025			X		62	14	X	X	X	X		X	X	X	X	X	X	X	X	X	X	0.7 mg/L
3	AW-1	1105			X		63	14	X	X	X	X		X	X	X	X	X	X	X	X	X	X	2.7
4	AW-4	925			X		64	14	X	X	X	X		X	X	X	X	X	X	X	X	X	X	3.4
5																								1.4
6																								
7																								
8																								
9																								
10																								

Sampler's Name: P. Conklin				
Sampler's Company: Blaine Tech				
Shipment Date:				
Shipment Method:				
Shipment Tracking No:				
Special Instructions:				

Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
[signature]	3/31/05	1550	[signature]	3/31	16

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

Chain of Custody Record

now 3/17/05

bp

Project Name: Analytical for ~~SSI sampling~~ QMR SAMPLING

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

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

REVISED

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

On-site Time: 7:35	Temp: 70°F
Off-site Time:	Temp:
Sky Conditions: clear	
Meteorological Events: none	
Wind Speed:	Direction:

Lab Name: [redacted]	
Address: 885 Jarvis Drive	
Morgan Hill, CA 95037	
Lab PM: Lisa Race	
Tele/Fax: 408.782.8156 / 408.782.6308	
BP/AR PM Contact: Paul Supple	
Address: P.O. Box 6549	
Moraga, CA 94570	
Tele/Fax: 925.299.8891 / 925.299.8872	

BP/AR Facility No.:	11133
BP/AR Facility Address:	2220 98th Ave., Oakland, CA 94603
Site Lat/Long:	37.748269 / -122.161
California Global ID No.:	T0600100200
Enfos Project No.:	G07TT-0020 19
Provision or RCOP:	Provision
Phase/WBS:	~~01 - Assessment~~ 04 - Monitoring
Sub Phase/Task:	03 - Analytical
Cost Element:	05 - Subcontracted Costs

Consultant/Contractor:	URS
Address:	1333 Broadway, Suite 800
	Oakland, CA 94612
Consultant/Contractor Project No.:	38487140
Consultant/Contractor PM:	Leonard Niles Lyndall Chi
Tele/Fax:	510.874.1706 / 510.874.3268
Report Type & QC Level:	Level 1 with EDF
E-mail EDD To:	Rachel.Lindvall@urscorp.com
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: 8260 / BTEX (8260)	Requested Analysis: MTBE, TAME, ETBE, DIPE, TBA (8260)	Requested Analysis: 1,2-DCA & EDB (8260)	Requested Analysis: ETHANOL (8260)	Requested Analysis: Sulfides 376.1	Requested Analysis: Manganese, Magnesium 200.7	Requested Analysis: Hardness as CaCO3	Requested Analysis: SM5310B	Requested Analysis: Carbon Dioxide ASTM	Requested Analysis: Methane ASTM	Sample Point Lat/Long and Comments
1	✓ RW1	1512	3/16/05		X		11	3				X		X	X	X	X							
2	✓ TB-11133081605		↓		X		11	2				X												on hold
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								

MDC 6460

Sampler's Name: [redacted]	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Sampler's Company: Blaine Tech	[redacted]	3/16/05	1556	FEDEX	3/16/05	1700
Shipment Date:						
Shipment Method:						
Shipment Tracking No:						

Special Instructions:

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

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

BP COC Rev. 4.19/04

Chain of Custody Record

Project Name: Analytical for SSI 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 Fran
Requested Due Date (mm/dd/yy): 10 Day TAT

On-site Time: 735	Temp: 700 P
Off-site Time:	Temp:
Sky Conditions: clear	
Meteorological Events: none	
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.: 38487140
Tele/Fax: 408.782.8156 / 408.782.6308		Enfos Project No.: G07TT-0020	Consultant/Contractor PM: Leonard Niles
BP/AR PM Contact: Paul Supple		Provision or RCOP: Provision	Tele/Fax: 510.874.1720 / 510.874.3268
Address: P.O. Box 6549		Phase/WBS: 01 - Assessment	Report Type & QC Level: Level 1 with EDF
Moraga, CA 94570		Sub Phase/Task: 03 - Analytical	E-mail EDD To: Rachel_Lindvall@urscorp.com
Tele/Fax: 925.299.8891 / 925.299.8872		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: 1,2-DCA & EDB (8260)	Requested Analysis: ETHANOL (8260)	Requested Analysis: Sulfides 376.1	Requested Analysis: Manganese, Magnesium 200.7	Requested Analysis: Hardness as CaCO3 SM2340B	Requested Analysis: Carbon Dioxide ASTM	Requested Analysis: Methane ASTM	Sample Point Lat/Long and Comments
1	✓ MW-1	1150	2/16/05		K		01	14						K	K	K	K	K		K	K	K	MOC 0460
2	✓ MW-2	1035			K		02	14						K	K	K	K	K		K	K	K	
3	✓ MW-3	1238			K		03	3						K	K	K	K						
4	✓ AW-1	1105			K		04	14						K	K	K	K	K		K	K	K	
5	✓ AW-2	1310			K		05	3						K	K	K	K						
6	✓ AW-3	1410			K		06	3						K	K	K	K						
7	✓ AW-4	926			K		07	14						K	K	K	K	K		K	K	K	
8	✓ AW-5	1425			K		08	3						K	K	K	K						
9	✓ AW-6	1500			K		09	3						K	K	K	K						
10	✓ AW-B	1340	↓		K		10	3						K	K	K	K						

		Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Sampler's Name:	B. Cornish		2/16/05	1556		2/16/05	16
Sampler's Company:	Blaine Tech			1640		2/16/05	1640
Shipment Date:							
Shipment Method:							
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

Chain of Custody Record

Project Name: Analytical for SSI 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 Franc

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

On-site Time: 736	Temp: 70F
Off-site Time:	Temp:
Sky Conditions: clear	
Meteorological Events: none	
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.: 38487140
Tele/Fax: 408.782.8156 / 408.782.6308	Enfos Project No.: G07TT-0020	Consultant/Contractor PM: Leonard Niles
BP/AR PM Contact: Paul Supple	Provision or RCOP: Provision	Tele/Fax: 510.874.1720 / 510.874.3268
Address: P.O. Box 6549	Phase/WBS: 01 - Assessment	Report Type & QC Level: Level 1 with EDF
Moraga, CA 94570	Sub Phase/Task: 03 - Analytical	E-mail EDD To: Rachel_Lindvall@urscorp.com
Tele/Fax: 925.299.8891 / 925.299.8872	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: 1,2-DCA & EDB (8260)	Requested Analysis: ETHANOL (8260)	Requested Analysis: Sulfides 376.1	Requested Analysis: Manganese, Magnesium 200.7	Requested Analysis: Hardness as CaCO3 SM2340B	Requested Analysis: Carbon Dioxide ASTM	Requested Analysis: Methane ASTM	Sample Point Lat/Long and Comments
1	✓ RW-1	1512	3/16/05		X		11	3				X		X	X	X	X						
2	✓ TB-11133 03/16/2005		↓		X		12	2				X											on hold
3																							
4																							
5																							
6																							
7																							
8																							
9																							
10																							

MDC 0460

	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Sampler's Name: R. Gerich	Matt Wa	3/16/05	1556	F. Simone	3/16/05	No
Sampler's Company: Blaine Tech	F. Simone		1644		3/16/05	1640
Shipment Date:						
Shipment Method:						
Shipment Tracking No:						

Special Instructions: SHORT HOLD TIMES

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

Chain of Custody Record

Project Name: Analytical for SSI 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 Fra
Requested Due Date (mm/dd/yy): 10 Day TAT

On-site Time: 735	Temp: 70°F
Off-site Time:	Temp:
Sky Conditions: clear	
Meteorological Events: none	
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.: 38487140
Tele/Fax: 408.782.8156 / 408.782.6308	Enfos Project No.: G07TT-0020	Consultant/Contractor PM: Leonard Niles
BP/AR PM Contact: Paul Supple	Provision or RCOP: Provision	Tele/Fax: 510.874.1720 / 510.874.3268
Address: P.O. Box 6549	Phase/WBS: 01 - Assessment	Report Type & QC Level: Level 1 with EDF
Moraga, CA 94570	Sub Phase/Task: 03 - Analytical	E-mail EDD To: Rachel_Lindvall@urscorp.com
Tele/Fax: 925.299.8891 / 925.299.8872	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: Nitrate, Sulfate 300.0	Requested Analysis: Orthophosphate 300.0	Requested Analysis: Alkalinity SM2320B	Requested Analysis: Ferric Iron	Requested Analysis: COD 410.1	Requested Analysis: TDS	Requested Analysis: Total Phosphorus 365.3	Requested Analysis: Ammonia as N 350.1	Requested Analysis: BOD 405.1	Requested Analysis: TOC	FIELD FERROUS IRON READINGS
1	MW-1	1150	3/16/05		X		01	14	X					X	X	X	X	X	X	X	X	X	X	0.7 mg/L
2	MW-2	1025			X		02	14	X					X	X	X	X	X	X	X	X	X	X	2.7
3	AW-1	1105			X		03	14	X					X	X	X	X	X	X	X	X	X	X	3.4
4	AW-4	925			X		04	14	X					X	X	X	X	X	X	X	X	X	X	1.4
5																								
6																								
7																								
8																								
9																								
10																								

MDL 0.440

Sampler's Name: P. Cornish	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Sampler's Company: Blaine Tech	[illegible]	3/16/05	1556	[illegible]	3/16	16
Shipment Date:	[illegible]		1630		3/16/05	1649
Shipment Method:						
Shipment Tracking No:						

Special Instructions: SHORT HOLD TIMES

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

SEQUOIA ANALYTICAL SAMPLE RECEIPT LOG

CLIENT NAME: BP 11133
REC. BY (PRINT): JN
WORKORDER: 306460

DATE REC'D AT LAB: 3/16/05
TIME REC'D AT LAB: 16.40
DATE LOGGED IN: 3-17-05

For Regulatory Purposes?
DRINKING WATER YES / (NO)
WASTE WATER YES / (NO)
(For clients requiring preservation checks at receipt, document here ↓)

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)			MW-1	1L Poly (2)	—	—	W	3/16/05	
	Intact / Broken*				1L Poly	H_2SO_4	1			
2. Chain-of-Custody	(Present) / Absent*					HNO_3	1			
3. Traffic Reports or Packing List:	Present / (Absent)				↓	Zn/Acetate	9			
4. Airbill:	Airbill / Sticker				VOA (3)	HCl	—			
	Present / (Absent)				↓	—				
5. Airbill #:				MW-2	Same	H_2SO_4				pH H_2SO_4: 1 pH HNO_3: 1 pH Zn/Acetate: 8
6. Sample Labels:	(Present) / Absent			MW-3	VOA (3)	HCl				
7. Sample IDs:	(Listed) / Not Listed			AW-1	1L Poly (2)	—	↓			
	on Chain-of-Custody				1L Poly	H_2SO_4	1			
8. Sample Condition:	(Intact) / Broken* /				↓	HNO_3	1			
	Leaking*				↓	Zn/Acetate	8			
9. Does information on chain-of-custody, traffic reports and sample labels agree?	(Yes) / No*				VOA (3)	HCl	—			
					↓	—	—			
				↓	↓	H_2SO_4	—			
10. Sample received within hold time?	(Yes) / No*			AW-2	VOA (2)	HCl	—			
				AW-3	↓	↓	—			
11. Adequate sample volume received?	(Yes) / No*			AW-4	1L Poly (2)	—	—			
					1L Poly	H_2SO_4	1			
12. Proper Preservatives used?	(Yes) / No*					HNO_3	1			
					↓	Zn/Acetate	10			
13. Trip Blank / Temp Blank Received?					VOA (3)	HCl	—			
(circle which, if yes)	(Yes) / No*				↓	—	—			
14. Temp Rec. at Lab: 45				↓	↓	H_2SO_4	—			
Is temp 4 +/-2°C?	(Yes) / No**			AW-5	VOA (3)	HCl	—			
(Acceptance range for samples requiring thermal pres.)				AW-6	↓	↓	—			
**Exception (if any): METALS / DFF ON ICE or Problem COC				AW-8	↓	↓	—			
				RW-1	↓	↓	—	↓	↓	

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

SRL Revision 6
Replaces Rev 5 (08/07/04)

SEQUOIA ANALYTICAL SAMPLE RECEIPT LOG

CLIENT NAME: BP 11133
REC. BY (PRINT):
WORKORDER: 0603040

DATE REC'D AT LAB:
TIME REC'D AT LAB:
DATE LOGGED IN: 3-17-05

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

(For clients requiring preservation checks at receipt, document here ↓)

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*			TB-11133 032605	VOA (2)	HCl	—	W	3/16/05	
2. Chain-of-Custody	Present / Absent*									
3. Traffic Reports or Packing List:	Present / Absent									
4. Airbill:	Airbill / Sticker Present / Absent									
5. Airbill #:										
6. Sample Labels:	Present / Absent									
7. Sample IDs:	Listed / Not Listed on Chain-of-Custody									
8. Sample Condition:	Intact / Broken* / Leaking*									
9. Does information on chain-of-custody, traffic reports and sample labels agree?	Yes / No*									
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. Temp Rec. at Lab: Is temp 4 +/-2°C?	4.5 Yes / No**									

(Acceptance range for samples requiring thermal pres.)

**Exception (if any): METALS / DFF ON ICE or Problem COC

3/16/05

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

CytoCulture
ENVIRONMENTAL
BIOTECHNOLOGY
CytoCulture International, Inc.
249 Tewksbury Avenue
Pt. Richmond, CA 94801 USA

STL-SF
Project Name: **Analytical for QMR Sampling**
Project Manager: Afsaneh Salimpour
Address: 1220 Quarry Lane
Pleasanton, CA 94566

Reporting date: **March 30, 2005**
CytoCulture lab login: **05-30**
Tel: 925-484-1919
Fax: 925-484-1096

Samples: Four water samples packed on ice were received 03/16/05. The samples were stored at 4°C and assayed on the same day. Please see attached chain of custody form.

AEROBIC
Hydrocarbon-Degrading Bacteria Enumeration Assay

Analysis Request: Enumeration of aerobic and anaerobic petroleum hydrocarbon-degrading bacteria (broad range petroleum derived from regular gasoline and diesel No. 2). As well as aerobic total heterotrophic bacteria by method 9215A (HPC)/ Standard Methods 9215B modified.

Protocol for Aerobic Hydrocarbon-Degrading Bacteria: Pasteurized Chevron regular gasoline and diesel No. 2 were dissolved into agar plates as the sole carbon and energy source for the growth of aerobic hydrocarbon-degrading bacteria. Sterile agar plates (100x 15 mm) were prepared with minimal salts medium at pH 6.8 with agar and hydrocarbons, without any other carbon sources or nutrients added. Triplicate plates were inoculated with 1.0 ml of each sample (log dilution 10^0) or log dilutions of each sample at 10^{-1}, 10^{-2}, and 10^{-3}. Hydrocarbon plates were counted after 7 days incubation at 30°C. The plate count data is reported as colony forming units (cfu) per milliliter (ml). Each enumeration value represents a statistical average of the plate count data obtained from two of the four inoculating log dilutions assayed.

Carbon Source for Total Heterotrophic Bacteria: Growth medium was prepared with standard methods total plate count agar (Difco) containing a wide range of carbon sources derived from yeast extract, tryptone, pancreatic digest of casein and glucose.

Protocol for Total Heterotrophic Bacteria: Sterile agar plates (100 x 15 mm) were prepared with minimal salts and 2.35% heterotrophic plate count agar at pH 6.8 without any other carbon source or nutrients added. Sets of triplicate plates were inoculated with 1.0 ml of sample at log dilutions 10^1, 10^{-2}, and 10^{-3}. The heterotrophic plates were counted after 4 days incubation at 30°C. The plate count data is reported as colony forming units (cfu) per milliliter (ml) of sample. Each enumeration value represents a statistical average of two of the four inoculating log dilutions assayed.

ANAEROBIC
Hydrocarbon-Degrading Bacteria Enumeration Assay

Analysis Request: Enumeration of anaerobic petroleum hydrocarbon-degrading bacteria (broad range petroleum hydrocarbons derived from diesel No. 2 and regular gasoline) by method 9215A (HPC) / Standard Methods 9215B modified for anaerobic conditions.

Protocol for Anaerobic Hydrocarbon-Degrading Bacteria: Pasteurized Chevron diesel No. 2 and regular gasoline were dissolved into agar plates as the sole carbon and energy sources for the growth of anaerobic hydrocarbon-degrading bacteria. The medium includes alternative terminal electron acceptors such as sulfate, nitrate, and iron. Sterile agar plates (100 x 15 mm) were prepared with minimal salts medium at pH 6.8 with agar and hydrocarbons, without any other carbon sources or nutrients added. Plates were setup and poured in a Coy anaerobic glove box under strict anaerobic conditions (atmosphere of nitrogen, carbon dioxide and hydrogen). Triplicate plates were inoculated with 1.0 ml of each sample (log dilution 10^0) or log dilutions of the sample at 10^{-1}, 10^{-2}, and 10^{-3}. Hydrocarbon plates were counted after 12 days incubation in the glove box at ambient temperature. The plate count data is reported as colony forming units (cfu) per milliliter (ml). Each enumeration value represents a statistical average of the plate count data obtained from two of the four inoculating log dilutions assayed.

Heterotrophic Plate Count, AEROBIC and ANAEROBIC Hydrocarbon-Degrading Bacteria Enumeration Results

Client Sample Number	Sample Date	Total Heterotrophs (cfu/ml)	Aerobic Hydrocarbon Degraders* (cfu/ml)	Anaerobic Hydrocarbon Degraders (cfu/ml)	Target Hydrocarbons Tested
AW-1	03/16/05	1×10^4	6×10^3	8×10^3	Gasoline/Diesel
AW-4	03/16/05	2×10^4	1×10^3	2×10^3	Gasoline/Diesel
MW-1	03/16/05	2×10^4	2×10^2	3×10^3	Gasoline/Diesel
MW-2	03/16/05	1×10^3	2×10^2	2×10^2	Gasoline/Diesel
Sterile Water	03/16/05	0	0	0	Gasoline/Diesel
Air Control	03/16/05	0	0	0	Gasoline/Diesel
Positive Control	03/16/05	1×10^9	9×10^8	3×10^8	Gasoline/Diesel

Reporting Limit for enumeration data is 1.0×10^1 cfu/ml.

A hydrocarbon-degrading bacteria positive control sample was run concurrently with each set of samples using a mixed flask culture of bacteria enriched from contaminated UST sites in Northern California.

CytoCulture is available on a consulting basis to assist in the interpretation of these data and their application to field bioremediation protocols.

Sharon Huang
Laboratory Technician

Randall von Wedel, Ph.D.
Principal Biochemist

C:\CytoCulture2005\Cytolab\Lab reports\ STL-SF\Water 05-30

ATTACHMENT C
Field Procedures and Field Data Sheets

WELL GAUGING DATA

Project # 050316-PC1 Date 3/16/05 Client BP 11133

Site 2220 98th Ave, Oakland

Well ID	Well Size (in.)	Sheen / Odor	Depth to Immiscible Liquid (ft.)	Thickness of Immiscible Liquid (ft.)	Volume of Immiscibles Removed (ml)	Depth to water (ft.)	Depth to well bottom (ft.)	Survey Point: TOB or TOC	
MW-1	2					9.62	28.38	Toc	
MW-2	2					8.79	31.36		
MW-3	2					11.03	34.18		
AW-1	2					18.78	38.51		
AW-2	2					14.58	34.68		Tr.
AW-3	2					12.78	35.58		Tr
AW-4	2					16.16	32.81		Tr.
AW-5	4					15.30	42.94		
AW-6	4					16.04	34.10		
AW-7	-		Unable to locate well			-	-		G.O.Tr.
AW-8	2					15.20	37.22		G.O.Tr.
RW-1	6		No SPH Detected			12.48	37.70		IP.

ARCO / BP WELL MONITORING DATA SHEET

BTS #: 050316-PC1	Station # BP 11133
Sampler: PC	Date: 3/16/05
Well I.D.: MW-1	Well Diameter: (2) 3 4 6 8 ___
Total Well Depth: 28.38	Depth to Water: 9.62
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): (YSI) HACH

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius² * 0.163

Purge Method:
- Bailer
- Disposable Bailer
- (Positive Air Displacement
- Electric Submersible
- Extraction Pump
- Other: ___

Sampling Method:
- Bailer
- (Disposable Bailer
- Extraction Port
- Other: ___

Top of Screen: ___

If well is listed as a no-purge, confirm that water level is below the top of screen. Otherwise, the well must be purged.

3.0 (1 Case Volume (Gals.)) X 3 (Specified Volumes) = 9 (Calculated Volume) Gals.

Time	Temp (°F)	pH	Conductivity (mS or (µS))	Gals. Removed	Observations	ORP mV ?
1122	66.7	7.0	727	3		-144
1130	66.8	6.9	712	6		-[illegible]
1136	65.9	6.9	706	9		-181
					2.7 mg/L ferrous iron	

Did well dewater? Yes (No) Gallons actually evacuated: 9

Sampling Time: 1150 Sampling Date: 3/16/05

Sample I.D.: MW-1 Laboratory: Pace (Sequoia) Other STL

Analyzed for: GRO BTEX MTBE DRO Other: see COC

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	0.9 mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	-175 mV

ARCO / BP WELL MONITORING DATA SHEET

BTS #: 050316-PC1	Station # BP 11133
Sampler: PC	Date: 3/16/05
Well I.D.: MW-2	Well Diameter: (2) 3 4 6 8 ____
Total Well Depth: 31.36	Depth to Water: 8.39
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): (YSI) HACH

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius^2 * 0.163

Purge Method: Bailer / Disposable Bailer / (Positive Air Displacement) / Electric Submersible / Extraction Pump / Other: ____

Sampling Method: Bailer / (Disposable Bailer) / Extraction Port / Other: ____

Top of Screen: ____

If well is listed as a no-purge, confirm that water level is below the top of screen. Otherwise, the well must be purged.

3.7 (1 Case Volume (Gals.)) x 3 (Specified Volumes) = 11.1 (Calculated Volume) Gals.

Time	Temp (°F)	pH	Conductivity (mS or (µS))	Gals. Removed	Observations	ORP mV
1002	63.8	7.3	438	3.7	cloudy	-3
1010	66.8	7.2	336	7.4	clearing	25
1018	68.7	7.1	320	11.1	↓	32
					0.7 mg/L Ferrous Iron	

Did well dewater? Yes (No) Gallons actually evacuated: 11.1

Sampling Time: 1026 Sampling Date: 3/16/05

Sample I.D.: MW-2 Laboratory: Pace (Sequoia) Other STL

Analyzed for: GRO BTEX MTBE DRO Other: see COC

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	1.3	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	30	mV

ARCO / BP WELL MONITORING DATA SHEET

BTS #: 050316-PC1	Station # BP 11133
Sampler: PC	Date: 3/16/05
Well I.D.: MW-3	Well Diameter: (2) 3 4 6 8 ____
Total Well Depth: 34.10	Depth to Water: 11.03
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): (YSI) HACH

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius^2 * 0.163

Purge Method: Bailer / Disposable Bailer / (Positive Air Displacement) / Electric Submersible / Extraction Pump / Other: ____

Sampling Method: Bailer / (Disposable Bailer) / Extraction Port / Other: ____

Top of Screen: ____

If well is listed as a no-purge, confirm that water level is below the top of screen. Otherwise, the well must be purged.

3.7 (1 Case Volume (Gals.)) x 3 (Specified Volumes) = 11.1 (Calculated Volume) Gals.

Time	Temp (°F)	pH	Conductivity (mS or (µS))	Gals. Removed	Observations
1214	65.7	7.4	493	3.7	
1220	67.3	7.0	455	7.4	
1230	71.9	6.8	415	11.1	

Did well dewater? Yes (No) Gallons actually evacuated: 11.1

Sampling Time: 1236 Sampling Date: 3/16/05

Sample I.D.: MW-3 Laboratory: Pace (Sequoia) Other ____

Analyzed for: GRO BTEX MTBE DRO Other: see COC

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	1.5	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	4	mV

ARCO / BP WELL MONITORING DATA SHEET

BTS #: 050316-PC1	Station # BP11133
Sampler: PC	Date: 3/16/05
Well I.D.: AW-1	Well Diameter: 2 3 4 6 8 ___
Total Well Depth: 38.51	Depth to Water: 18.78
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	D.O. Meter (if req'd): YSI HACH

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius² * 0.163

Purge Method: Bailer / Disposable Bailer / ^Positive Air Displacement / Electric Submersible / Extraction Pump / Other: _____

Sampling Method: Bailer / ^Disposable Bailer / Extraction Port / Other: _____

Top of Screen: _____

If well is listed as a no-purge, confirm that water level is below the top of screen. Otherwise, the well must be purged.

3.2 (1 Case Volume (Gals.)) x 3 (Specified Volumes) = 9.6 (Calculated Volume) Gals.

Time	Temp (°F)	pH	Conductivity (mS or µS)	Gals. Removed	Observations	ORP mV
[redacted]	66.9	6.6	737	3.2		9
1050	67.7	6.6	794	6.4		1
1056	68.5	6.7	801	9.6		-24
					3.4 mg/L Ferrous Iron	

Did well dewater? Yes (No) Gallons actually evacuated: 9.6

Sampling Time: 1105 Sampling Date: 3/16/05

Sample I.D.: AW-1 Laboratory: Pace Sequoia Other STL

Analyzed for: GRO BTEX MTBE DRO Other: See COC

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	0.8 mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	-10 mV

ARCO / BP WELL MONITORING DATA SHEET

BTS #: 050316-PC1	Station # BP 11133
Sampler: PC	Date: 3/16/05
Well I.D.: MW-2	Well Diameter: ② 3 4 6 8 ___
Total Well Depth: 34.68	Depth to Water: 14.50
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	D.O. Meter (if req'd): YSI HACH

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius² * 0.163

Purge Method:
- Bailer
- Disposable Bailer
- ^ Positive Air Displacement
- Electric Submersible
- Extraction Pump
- Other: _____

Sampling Method:
- Bailer
- ^ Disposable Bailer
- Extraction Port
- Other: _____

Top of Screen: _____

If well is listed as a no-purge, confirm that water level is below the top of screen. Otherwise, the well must be purged.

3.2 (1 Case Volume (Gals.)) X 3 (Specified Volumes) = 9.6 (Calculated Volume) Gals.

Time	Temp (°F)	pH	Conductivity (mS or µS)	Gals. Removed	Observations
1252	68.9	6.9	427	3.2	
1258	69.5	6.7	454	6.4	
1306	70.1	6.7	469	9.6	

Did well dewater? Yes (No) Gallons actually evacuated: 9.6

Sampling Time: 1310 Sampling Date: 3/16/05

Sample I.D.: MW-2 Laboratory: Pace ~~Sequoia~~ Other _____

Analyzed for: GRO BTEX MTBE DRO Other: see COC

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	1.7	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	83	mV

ARCO / BP WELL MONITORING DATA SHEET

BTS #: 050316-PC	Station # BP 11133
Sampler: PC	Date: 3/16/05
Well I.D.: AW-3	Well Diameter: (2) 3 4 6 8 ____
Total Well Depth: 35.58	Depth to Water: 12.70
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): (YSI) HACH

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius² * 0.163

Purge Method: Bailer / Disposable Bailer / (Positive Air Displacement) / Electric Submersible / Extraction Pump / Other: ____

Sampling Method: Bailer / (Disposable Bailer) / Extraction Port / Other: ____

Top of Screen: ____ If well is listed as a no-purge, confirm that water level is below the top of screen. Otherwise, the well must be purged.

3.6 (1 Case Volume (Gals.)) x 3 (Specified Volumes) = 10.8 (Calculated Volume) Gals.

Time	Temp (°F)	pH	Conductivity (mS or (µS))	Gals. Removed	Observations
1355	67.1	7.4	1053	3.6	
1359	66.5	7.2	1051	7.2	
1405	66.1	7.3	1066	10.8	

Did well dewater? Yes (No) Gallons actually evacuated: 11

Sampling Time: 1410 Sampling Date: 3/16/05

Sample I.D.: AW-3 Laboratory: Pace (Sequoia) Other ____

Analyzed for: GRO BTEX MTBE DRO Other: see COC

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	* 1.1	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	68	mV

ARCO / BP WELL MONITORING DATA SHEET

BTS #: 050316-PC1	Station # BP 11133
Sampler: PC	Date: 3/16/05
Well I.D.: AW-4	Well Diameter: (2) 3 4 6 8 ____
Total Well Depth: 32.81	Depth to Water: 16.16
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (TOC) Grade	D.O. Meter (if req'd): (YSI) HACH

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius^2 * 0.163

Purge Method: Bailer / (Disposable Bailer) / Positive Air Displacement / Electric Submersible / Extraction Pump / Other: ____

Sampling Method: Bailer / (Disposable Bailer) / Extraction Port / Other: ____

Top of Screen: ____

If well is listed as a no-purge, confirm that water level is below the top of screen. Otherwise, the well must be purged.

2.7 (1 Case Volume (Gals.)) X 3 (Specified Volumes) = 8.1 (Calculated Volume) Gals.

Time	Temp (°F)	pH	Conductivity (mS or (µS))	Gals. Removed	Observations	ORP
910	67.1	6.3	954	2.7		77 mV
912	64.2	6.5	867	5.4		22
918	64.0	6.5	841	8.1		-6
					1.4 mg/L Ferrous Iron	

Did well dewater? Yes (NO) Gallons actually evacuated: 8.1

Sampling Time: 925 Sampling Date: 3/16/05

Sample I.D.: AW-4 Laboratory: Pace (Sequoia) Other STL

Analyzed for: GRO BTEX MTBE DRO Other: see COC

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	0.6 mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	10 mV

ARCO / BP WELL MONITORING DATA SHEET

BTS #: 050316-PC	Station # BP 11133
Sampler: PC	Date: 3/16/05
Well I.D.: AW-5	Well Diameter: 2 3 (4) 6 8 ___
Total Well Depth: 42.94	Depth to Water: 15.30
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): (YSI) HACH

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius^2 * 0.163

Purge Method: Bailer / Disposable Bailer / Positive Air Displacement / (Electric Submersible) / Extraction Pump / Other: ___

Sampling Method: Bailer / (Disposable Bailer) / Extraction Port / Other: ___

Top of Screen: ___ If well is listed as a no-purge, confirm that water level is below the top of screen. Otherwise, the well must be purged.

18 (1 Case Volume (Gals.)) x 3 (Specified Volumes) = 5.4 Gals. (Calculated Volume)

Time	Temp (°F)	pH	Conductivity (mS or µS)	Gals. Removed	Observations
1418	67.6	6.9	562	18	
1421	67.2	6.7	540	36	
1424	66.9	6.7	513	54	

Did well dewater? Yes (No) Gallons actually evacuated: 54

Sampling Time: 1428 Sampling Date: 3/16/05

Sample I.D.: AW-5 Laboratory: Pace (Sequoia) Other ___

Analyzed for: GRO BTEX MTBE DRO Other: see COC

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	2.1	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	-4	mV

ARCO / BP WELL MONITORING DATA SHEET

BTS #: 050316-PC	Station # BP 11137
Sampler: PC	Date: 3/16/05
Well I.D.: AW-6	Well Diameter: 2 3 (4) 6 8 ____
Total Well Depth: 34.10	Depth to Water: 16.04
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): (YSI) HACH

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius² * 0.163

Purge Method: Bailer / Disposable Bailer / Positive Air Displacement / (Electric Submersible) / Extraction Pump / Other: _____

Sampling Method: Bailer / (Disposable Bailer) / Extraction Port / Other: _____

Top of Screen: _____

If well is listed as a no-purge, confirm that water level is below the top of screen. Otherwise, the well must be purged.

11.7 (1 Case Volume (Gals.)) x 3 (Specified Volumes) = 35.1 (Calculated Volume) Gals.

Time	Temp (°F)	pH	Conductivity (mS or (µS))	Gals. Removed	Observations
1438	67.4	6.9	443	12	
1440	67.7	6.9	466	24	
	well dewatered @ 26 gal				
1500	68.5	6.8	444	Sitedepart. DTW-30.19	

Did well dewater? (Yes) No — Gallons actually evacuated: 26

Sampling Time: 1500 — Sampling Date: 3/16/05

Sample I.D.: AW-6 — Laboratory: Pace (Sequoia) Other _____

Analyzed for: GRO BTEX MTBE DRO — Other: See COC

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	3.0 mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	39 mV

ARCO / BP WELL MONITORING DATA SHEET

BTS #: 050316-PC	Station # BP 11133
Sampler: PC	Date: 3/16/05
Well I.D.: AW-7	Well Diameter: 2 3 4 6 8 ____
Total Well Depth:	Depth to Water:
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	D.O. Meter (if req'd): YSI HACH

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius^2 * 0.163

Purge Method: Bailer / Disposable Bailer / Positive Air Displacement / Electric Submersible / Extraction Pump / Other: _____

Sampling Method: Bailer / Disposable Bailer / Extraction Port / Other: _____

Top of Screen: _____

If well is listed as a no-purge, confirm that water level is below the top of screen. Otherwise, the well must be purged.

_____ (1 Case Volume (Gals.)) X _____ (Specified Volumes) = _____ Gals. (Calculated Volume)

Time	Temp (°F)	pH	Conductivity (mS or µS)	Gals. Removed	Observations
		well paved over - unable to locate			

Did well dewater? Yes No		Gallons actually evacuated:	
Sampling Time:		Sampling Date:	
Sample I.D.: AW-7		Laboratory: Pace Sequoia Other _____	
Analyzed for: GRO BTEX MTBE DRO		Other:	
D.O. (if req'd):	Pre-purge:	mg/L	Post-purge: mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge: mV

ARCO / BP WELL MONITORING DATA SHEET

BTS #: 050316-PC	Station # BP 11133
Sampler: PC	Date: 3/16/05
Well I.D.: AW-B	Well Diameter: (2) 3 4 6 8 ____
Total Well Depth: 37.22	Depth to Water: 15.20
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): (YSI) HACH

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius^2 * 0.163

Purge Method: Bailer / Disposable Bailer / (X) Positive Air Displacement / Electric Submersible / Extraction Pump / Other: ____

Sampling Method: Bailer / (✓) Disposable Bailer / Extraction Port / Other: ____

80% recharge = 1960

Top of Screen: ____ If well is listed as a no-purge, confirm that water level is below the top of screen. Otherwise, the well must be purged.

3.5 (1 Case Volume (Gals.)) X 3 (Specified Volumes) = 10.5 (Calculated Volume) Gals.

Time	Temp (°F)	pH	Conductivity (mS or µS)	Gals. Removed	Observations
1330	68.3	7.3	996	3.5	
				DTW	
1340	67.7	7.3	1079	Traffic well DTW=30.15	

Did well dewater? (Yes) No — Gallons actually evacuated: 4

Sampling Time: 1340 — Sampling Date: 3/16/05

Sample I.D.: AW-B — Laboratory: Pace (Sequoia) Other ____

Analyzed for: GRO BTEX MTBE DRO — Other: see COC

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	1.5 mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	59 mV

ARCO / BP WELL MONITORING DATA SHEET

BTS #: 050316-PC	Station # BP 11133
Sampler: PC	Date: 3/16/05
Well I.D.: RW-1	Well Diameter: 2 3 4 (6) 8 ____
Total Well Depth: 37.70	Depth to Water: 12.40
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): (YSI) HACH

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius^2 * 0.163

Purge Method: Bailer / Disposable Bailer / Positive Air Displacement / (Electric Submersible) Extraction Pump / Other: ____

Sampling Method: Bailer / (Disposable Bailer) Extraction Port / Other: ____

Top of Screen: ____ If well is listed as a no-purge, confirm that water level is below the top of screen. Otherwise, the well must be purged.

37.2 (1 Case Volume (Gals.)) x 3 (Specified Volumes) = 111.6 (Calculated Volume) Gals.

Time	Temp (°F)	pH	Conductivity (mS or (µS))	Gals. Removed	Observations
1452	69.5	6.7	663	37.5	
1459	69.9	6.8	734	75	
	well dewatered @ 76 gal				
1512	69.9	6.8	740	site depart DTW-34.92	

Did well dewater? (Yes) No — Gallons actually evacuated: 76

Sampling Time: 1512 — Sampling Date: 3/16/05

Sample I.D.: RW-1 — Laboratory: Pace (Sequoia) Other ____

Analyzed for: GRO BTEX MTBE DRO — Other: see COC

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	1.0 mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	-160 mV

BP GEM OIL COMPANY TYPE **A** BILL OF LADING

SOURCE RECORD **BILL OF LADING** FOR NON-HAZARDOUS PURGEWATER RECOVERED FROM GROUNDWATER WELLS AT BP GEM OIL COMPANY FACILITIES IN THE STATE OF CALIFORNIA. THE NON-HAZARDOUS PURGE- WATER WHICH HAS BEEN RECOVERED FROM GROUND- WATER WELLS IS COLLECTED BY THE CONTRACTOR, MADE UP INTO LOADS OF APPROPRIATE SIZE AND HAULED BY DILLARD ENVIRONMENTAL TO THE ALTAMONT LANDFILL AND RESOURCE RECOVERY FACILITY IN LIVERMORE, CALIFORNIA.

The contractor performing this work is BLAINE TECH SERVICES, INC. (BTS), 1680 Rogers Avenue, San Jose, CA 95112 (phone [408] 573-0555). Blaine Tech Services, Inc. is authorized by BP GEM OIL COMPANY to recover, collect, apportion into loads the Non-Hazardous Well Purgewater that is drawn from wells at the BP GEM Oil Company facility indicated below and deliver that purgewater to BTS. Transport routing of the Non-Hazardous Well Purgewater may be direct from one BP GEM facility to the designated destination point; from one BP GEM facility to the designated destination point via another BP GEM facility; from a BP GEM facility to the designated destination point via the contractor's facility, or any combination thereof. The Non-Hazardous Well Purgewater is and remains the property of BP GEM Oil Company.

This **Source Record BILL OF LADING** was initiated to cover the recovery of Non-Hazardous Well Purgewater from wells at the BP GEM Oil Company facility described below:

BP 11133
Station #

2220 85th Ave., Oakland
Station Address

Total Gallons Collected From Groundwater Monitoring Wells:

229

added equip. rinse water 30

any other adjustments

TOTAL GALS. RECOVERED 259

loaded onto BTS vehicle # 48

BTS event # 050216-PC1

time 1200

date 2/16/05

signature

* *

REC'D AT BTS

time

date 2/16/05

unloaded by

signature

ATTACHMENT D
Sulfate Calculations

Attachment C -
Sulfate Calculations
Former BP Service Station #11133
2200 98 th Avenue
Oakland, California

Data Input (in yellow highlighted cells)

			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	20	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	50	ft	Cross Gradient Distance of benzene plume (> 100 ppb)
Maximum BTEX concentration	2.32	mg/L	March 16, 2005 sampling event
Safety Factor for sulfate demand (over stoichiometric)	3		Assume 2 to 4 (Reaction will not go to completion)
Injection Sulfate Concentration	100	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	4.60	(mg/mg)	Stoichiometry for toluene and sulfate, ASTM E-1943
Stoichiometric Sulfate Demand	857	mg sulfate/d	
Total sulfate injection volume (w/ safety factor)	7	gal/d	

Design Choices for Liquid Sulfate Addition

Option 1: Continuous Addition

Solution Flow/well	0.005	gpm/well	Adjust sulfate concentration to get reasonable flow

Option 2: Addition in Slugs

Slug Addition Frequency	1	times/week	
Required Slug Addition Rate	48	gal/week	
Slug volume/well/event	48	gal	per well

Chemical Requirements

Salt Used	MW (gm)	Quantity Required (gm/d)	Unit Cost ($/lb)	Chemical Cost ($/year)
Epsom salt ($MgSO_4.7H_2O$)	246	**7**	0.75	**4**
anhydrous Sodium Sulfate	142	**4**	1.76	**5**