

April 16, 2004

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

Alameda County
APR 20 2004
Environmental Health

**SUBJECT: Soil and Groundwater Investigation Workplan for the Former BP Service Station #11102, 100 MacArthur Boulevard, Oakland, California
ACHCS Fuel Leak Case No. RO0000456
URS Project Number: 38486804**

Dear Mr. Hwang:

On behalf of the Atlantic Richfield Company (ARCO, an affiliated company of BP), URS Corporation (URS) has prepared this workplan for additional soil and water characterization at the above referenced facility. This workplan was prepared in response to the letters from the Alameda County Health Care Services (ACHCS) to BP dated May 3 and July 18, 2003 (Attachment A). This work plan includes a discussion of the site background, proposed scope of work and schedule.

SITE FEATURES AND BACKGROUND

The site is an active 76-branded gasoline retail outlet located at the intersection of MacArthur Boulevard and Oakland Avenue in Oakland, California (see Figure 1). The site is located in a mixed commercial and residential area. A Quikstop station is located northwest of the site at the intersection of Harrison Street and MacArthur Boulevard. The MacArthur Freeway (Interstate 580), an elevated freeway, is located immediately south of the site.

BP acquired the property from Mobil Oil Corporation (Mobil) in 1989 (BP, 1989). In 1994, BP transferred the property to TOSCO Marketing Company (TOSCO) and has not operated the facility since that time.

Improvements to the property include the service station building, pump islands, and underground storage tanks (USTs). The last known renovation at the site occurred in 1990, when new USTs, pump islands and a new canopy were installed. Existing USTs at the station include four fiberglass tanks: one 12,000 gallon tank, one 10,000 gallon tank and one 6,000 gallon gasoline tank installed in 1990, and one 1,000 gallon waste oil tank installed in September 1988. There are currently three monitoring wells at the site, MW-1, MW-2 and MW-3 (see Figure 2). Groundwater is typically encountered between 10 to 15 feet below ground surface (bgs) and the wells are screened from 11 to 32 feet bgs. The screened soils are clayey sands, clayey gravels, and clays in well MW-1, silty clays, silts, and clays in well MW-2, and clays in well MW-3 (Attachment C). Due to the difference in soil types encountered during the drilling of boring MW-1 as opposed to the other borings, and the proximity of MW-1 to the waste oil UST, it was

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suggested by ACHCS in their letter dated May 19, 1999 that MW-1 is screened within the waste oil UST backfill and should be replaced by a new well located farther away in native soil (Attachment A).

Site investigations were initiated at the site in 1988 with Mobil Oil Company's removal of a 550-gallon waste oil UST. KEI conducted soil sampling in conjunction with the waste oil tank removal activities. Two soil samples were collected: one from below the UST at about 9-feet below ground surface (bgs) and another soil sample was collected from the stockpile of the oil excavated from the UST pit. Although the soil sample from below the UST showed low levels of total petroleum hydrocarbons as diesel (TPH-d) and total oil and grease (TOG), elevated levels of TPH-d (1,700 parts per million [ppm]) and TOG (65,000 ppm) warranted further investigations (Table 3).

In 1989, Alton conducted a subsurface investigation at the site and installed three onsite monitoring wells, MW-1 through MW-3. Boring logs and well construction diagrams are included in Attachment C. Saturated soil was encountered at depths ranging from 16 to 19 feet bgs. The initial analysis of groundwater samples collected from these wells identified very low levels of benzene, toluene and total xylenes in soil samples collected from wells MW-2 and MW-3 (Alton, 1989). In 1989, BP purchased the property from Mobil Oil Company and continued groundwater monitoring at the site on a quarterly basis. It appears from the historical groundwater tables that the sampling frequency was reduced from quarterly to semi-annual after the November 1992 sampling event due to low detected concentrations. The groundwater flow direction during this period was reported to be generally towards the south-southwest (Emcon, 1994). Historical groundwater and soil data are included in Tables 1, 2, and 3.

In 1994, BP transferred the property to TOSCO Marketing Company (TOSCO) and has not operated the facility since that time.

In February 2000, Cambria Environmental Technology (Cambria) conducted a historical review, utility survey, and a recovery test. The utility survey was conducted in order to determine the location of potential preferential pathways and subsurface obstructions beneath the site. The study identified several conduits (Figure 4 and Attachment D) including sanitary sewers, storm drains, electrical, water, natural gas, telephone, and tank vent lines. A storm drain located beneath MacArthur Boulevard was believed to intersect groundwater seasonally (Cambria, 2000).

In October 2000, Alisto conducted a Potential Receptor Survey, Expanded Site Plan and Well Search (Alisto, 2000) (Attachment C). The survey verified the existence of various utilities and determined that the site is not within 0.5 miles of any public or private drinking water source. Observed site hydrology is addressed in the following section.

SITE GEOLOGY & HYDROGEOLOGY

Groundwater at the Site is typically encountered between 10 to 15 feet below ground surface (bgs). The three existing monitoring wells on the Site, MW-1, MW-2, and MW-3 are screened from 11 to 32 feet bgs. Screened soils are clayey sands, clayey gravels and clays in well MW-1, silty clays, silts and clays in well MW-2, and clays in well MW-3 (see Attachment C). The soil types screened by well MW-1 are very likely non-native backfill for the nearby waste oil UST. Groundwater flow direction during the 2004

first quarter monitoring event on January 4, 2003 was to the northwest at a gradient of 0.08 ft/ft (Figure 5).

According to the Alisto Potential Receptor Survey (Alisto, 2000), the Site is more than 3 miles from any public water supply well or intake and more than 0.5 mile from any private water supply well. The nearest surface water is Glen Echo Creek and is approximately 1000 ft northwest of the Site. The California Department of Water Resources has classified the underlying aquifer as Class II or a current or potential drinking water source (Alisto, 2000).

PROPOSED SCOPE OF WORK

The proposed scope of work has been prepared in response to a letter from Mr. Don Hwang of Alameda County Health Care Services (ACHCS), dated July 18, 2001 (Attachment A) and further discussed between Mr. Hwang and URS in a telephone conference on August 12, 2003. The work will be completed in order to further delineate and address the existing underground contaminant plume and will consist of the following tasks:

- Completion/Review of a Conduit Study;
- Contaminant Source Characterization;
- Contaminant Plume Definition;
- Groundwater Plume Monitoring; and
- Corrective Action Plan.

Conduit Study

In February of 2000, Cambria conducted an underground conduit study in order to identify potential migration pathways and conduits. This was done in order to assess the probability of the plume encountering preferential pathways and conduits that might promote the migration of petroleum hydrocarbons. The study consisted of the review of maps and plans acquired from TOSCO, using Underground Service Alert to mark utilities, and contracting CU Surveys to conduct a geophysical survey. Cambria also constructed a figure (see Attachment D) showing the identified locations of underground utilities such as sanitary sewers, storm drains, electrical, water, natural gas, telephone, and tank vent lines (Cambria, 2000).

Cambria found that MacArthur Boulevard is underlain by a sanitary sewer and a storm drain. An underground water main runs along the east side of McArthur, then connects to a water main on the south side of Harrison Street. Several onsite electrical lines were located running between the station and various above and underground utilities such as lights, signs, and dispenser islands. The tank vent lines were located between the tanks and the eastern corner of the station building (Cambria, 2000). Although

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groundwater is not expected to intersect existing electrical, water, natural gas, telephone, and tank vent lines, it is possible groundwater will reach the storm drains at least once a year.

Cambria's findings were verified in April 2000, when Alisto conducted a Potential Receptor Survey (Alisto, 2000). The survey identified the locations of various underground utilities as well as any other sensitive areas near the Site. It was determined that there are no public water supply wells or intakes within 3 miles of the Site and no private wells within ½ mile of the Site. Glen Echo Creek is the nearest surface water located approximately 1,000 ft to the northwest of the Site.

In December 2003, URS reviewed city utility maps in order to obtain depths of the storm drain and sanitary sewer lines. Due to the variable topography of the site, URS was unable to obtain exact measurements, however approximate depths of the lines are shown in Figure 4. The average depth below ground surface (bgs) of the storm drain is 11 feet. The sanitary sewer line was found to have an average depth of 3 feet bgs. Groundwater at the site is expected to intersect the storm drain at least once a year.

Contaminant Source Characterization

The purpose of the contaminant source characterization is to assess the nature and extent of separate and dissolved phase hydrocarbons in the soil and groundwater in the vicinity of the site. Source areas are typically former and current USTs, product dispensers, or product piping. Due to high concentrations of MTBE observed during site monitoring, ACHCS has requested that URS further delineate the subsurface contaminate plume for future monitoring and remediation. Samples collected from monitoring wells MW-1, MW-2, and MW-3 on January 4, 2004 contained MTBE at concentrations of 220 ug/l, 21,000 ug/l, and 380 ug/l, respectively. MW-1 and MW-2, had decreased concentration from the previous monitoring event on July 14, 2003, which had concentrations of 940 ug/l and 24,000 ug/l, respectively (see Table 1). MW-3 had an increased MTBE concentration since the previous event at 28 ug/l.

Preliminary evaluation by URS of the available historical soil and groundwater analytical data indicates the presence of some data gaps that need to be addressed in order to identify the source area. Therefore, URS proposes to advance seven pairs of soil borings (SB-1a & b through SB-7a & b) in the vicinity of the Site that will help characterize the source area as well as further delineate the contaminate plume. Proposed boring locations are shown on Figure 3. A pair of closely spaced borings will be advanced at each location. Continuously cored soil samples will be collected from one boring and depth discrete groundwater samples from the other. Soil samples will be collected from each boring location and analysis of the soil will be used to fill any data gaps for the proper characterization of lateral and vertical extent of subsurface contamination in the source areas.

All proposed boring locations are preliminary and subject to change in order to avoid any underground or aboveground utilities per the BP GEM drilling and utility clearance guidelines. In accordance to BP GEM's utility clearance policy, all proposed boring locations will be at a minimum 10 feet away from all USTs, product lines, and dispensers. Prior to coring, each location will be advanced to 5 feet bgs using an air knife in order to avoid contact with any possible underground utilities at the location. Following clearance of each location to 5 feet bgs, each location will be continuously cored using GeoProbe™ or similar direct-push technology and lithologically logged by an onsite URS geologist. Soil samples will be collected for potential analysis at 5 foot intervals, at the unsaturated/saturated interface, changes in

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lithology, or zones of obvious contamination. Borings will be advanced to a total depth of 25 to 35 feet bgs.

During onsite operations, soil samples will be field screened for hydrocarbons using a photo-ionization detector (PID). A State of California DHS Certified Laboratory will be selected to analyze the soil and groundwater samples for TPHg, BTEX, and fuel-oxygenates (including MTBE) using EPA Method 8260B. Laboratory turn-around-time for the analytical results will be 10-days.

Contaminant Plume Definition

Groundwater at the site is currently monitored on a semi-annual basis. Based on high MTBE concentrations in 2001, the ACHCS has requested for sampling frequency to be increased from semi-annual to quarterly. The current schedule of semi-annual sampling has shown peak concentrations of MTBE in MW-1 during the March 1999 and March and September 2000 sampling events (49,000 ug/l and 28,000 ug/l, respectively). Since 2000, MTBE concentrations of MW-1 have decreased to 220 ug/l in January 2004. Peak MTBE concentrations in MW-2 occurred in September 1999 (35,000 ug/l) and have fluctuated since, recently reaching a high in February 2003 (32,000 ug/l), then decreasing to 21,000 ug/l in January 2004. After reviewing MTBE concentrations and groundwater elevation in MW-2, it appears that high concentrations roughly correlate with lower groundwater elevations. MW-3 has had relatively low concentrations with a peak MTBE concentration in the most recent sampling event in January 2004 (380 ug/l).

ACHCS has expressed concern regarding the possibility that MW-1 was installed within fill material resulting in skewed data collection (Attachment A). URS will locate one soil boring (SB-1) in the vicinity of MW-1 in order to determine nearby lithology and to assess the reinstallation of MW-1.

All three monitoring wells (MW-1, MW-2, and MW-3) are located onsite. MW-1 is located cross-gradient and within close proximity to the former used oil tank in the northeast of the Site. MW-2 is located down-gradient of the main tank pit. MW-3 is located in the down-gradient portion of the site, but is approximately 40 feet northwest of the dispenser islands and 15 feet southwest of a used oil tank.

To assist in the definition of the contaminant plume, URS proposes to advance four additional on-site borings (SB-1 through SB-4) and three additional off-site borings (SB-5 through SB-7) using a GeoProbe™ or equivalent direct push sampling rig. SB-1 will be located adjacent to existing well MW-1 in order to nearby lithology. SB-2, SB-3, and SB-4 will be located along the southern down-gradient edge of the Site and SB-5, SB-6, and SB-7 will be located off-site, adjacent to the Interstate 580 right-of-way, and down-gradient of the Site in order to delineate any off-site contaminant migration of the plume. Boring locations are shown in Figure 3, however exact locations may be adjusted to accommodate any existing underground utilities. URS will obtain any and all required City of Oakland and/or Caltrans encroachment permits for completing borings at street locations prior to conducting work.

Borings will be advanced to a total depth of 25 to 35 feet bgs. In order to obtain depth discrete samples of both soil and groundwater, URS proposes a closely spaced pairing of borings at each location. One boring will be advanced and continuously cored for data logging and soil sampling. Subsequently, a

depth discrete groundwater sampling probe with a sealed retractable screen interval will be advanced to obtain groundwater samples. Groundwater samples will be collected at the saturated/unsaturated zone interface, at 10 foot intervals below, and at multiple discrete water-bearing zones and lithologic changes, if encountered within the initial boring.

Soil and groundwater samples that are collected will be submitted to a State of California DHS Certified Laboratory and analyzed for TPHg, BTEX, and fuel-oxygenates (including MTBE) using EPA Method 8260. The analytical results will be used to further delineate the down-gradient extent of the contaminant plume.

Groundwater Contaminant Plume Monitoring

The three existing on-site monitoring wells (MW-1 through MW-3) are currently being sampled on a semi-annual basis. In response to high concentrations of MTBE during the March, 2001 sampling event, the ACHCS has requested for the monitoring schedule to be increased from a semi-annual basis to a quarterly basis (Attachment A). Therefore, URS will now perform quarterly monitoring of the onsite wells. In order for URS to obtain accurate data from the existing wells, URS will have the wells re-surveyed to Geotracker standards by a California state-certified surveyor.

Corrective Action Plan

The data obtained from the proposed Site assessment activities will be evaluated in conjunction with data from past assessment activities. Based on the data review, a Corrective Action Plan (CAP) will be developed and submitted. The CAP will include the proposal for a cost-effective final cleanup solution for the remaining soil and groundwater contamination at the Site and will address human health and safety, the environment, elimination of nuisance conditions, and protect water resources. The plan will contain an assessment of impacts, a site conceptual model, a feasibility study, and applicable cleanup levels for all contamination. At least two technically and economically feasible remedial methods will be evaluated within the CAP to restore and protect the beneficial uses of local water and to meet the applicable cleanup levels for the Site. The CAP will also address additional groundwater contaminant plume delineation and monitoring, including installation of additional monitoring wells.

SCHEDULE AND PROJECT MANAGEMENT

The schedule for the above noted work is as follows:

- Soil and Water Investigation – Upon approval of this workplan and obtaining the required access agreements and permits.
- Soil and Water Investigation Report – 60 days after the completion of the Soil and Water Investigation Report; and
- Corrective Action Plan – 60 days after the completion of the Soil and Water Investigation Report.

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In addition, quarterly groundwater monitoring reports will be completed within 45 days of the end of each quarter.

The Project Manager for this proposed work will be Mr. Leonard P. Niles, A State Registered Geologist and Certified Hydrogeologist. Mr. Niles will oversee all technical aspects of this work and act as liaison between ACHCS and BP. Other URS staff of engineers, geologists and technicians will support Mr. Niles during the course of this project.

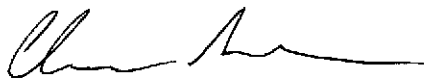
LIMITATIONS

This report is based on data, site conditions and other information that is generally applicable as of the date of the report, and the conclusions and recommendations herein are therefore applicable only to that time frame. Background information including but not limited to previous field measurements, analytical results, site plans and other data have been furnished to URS by ARCO, their previous consultants, and/or third parties, which URS has used in preparing this report. URS has relied on this information as furnished, and is neither responsible for nor has confirmed the accuracy of this information.

Analytical data provided by the ARCO approved laboratory has been reviewed and verified by the laboratory. URS has not performed an independent review of the data and is neither responsible for nor has confirmed the accuracy of this data. Field measurements have been supplied by a groundwater sampling subcontractor. URS has not performed an independent review of the field sampling data and is neither responsible for nor has confirmed the accuracy of this data. This report was prepared for the sole use of ARCO and the local over-sight agency, and should not be relied upon by any third party.

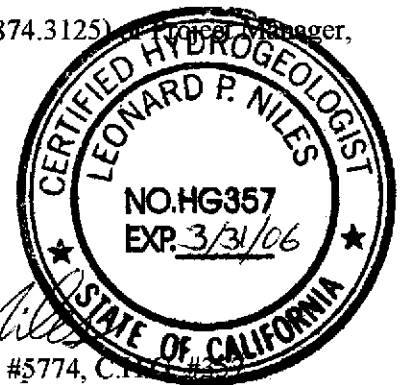
If you have any questions or concerns, please contact Chris Sheridan (510.874.3125) or Project Manager, Leonard Niles (510.874.1720).

Sincerely,
URS CORPORATION



Christopher J. Sheridan
Geologist

Leonard P. Niles
Leonard P. Niles, R.G. #5774, C.E.
Project Manager



ATTACHMENTS

References

Figure 1 – Site Location Map

Figure 2 – Site Plan

Figure 3 – Proposed Soil Boring Map

Figure 4 – Underground Utilities Map

Figure 5 – Groundwater Elevation Contour and Analytical Summary Map (January, 14 2004)

Table 1 – Historical Groundwater Elevation and Analytical Data

Table 2 – Historical Soil Data (Alton, 1989)

Table 3 – Historical Soil Data (KEI, 1988)

Attachment A – ACHCS Correspondence

Attachment B – Well Construction/Boring Logs

Attachment C – Potential Receptor Survey (Alisto, 2000)

Attachment D – Conduit Study Map (Cambria, 2000)

cc: Mr. Paul Supple, BP, Environmental Resources Management, P.O. Box 6549, Moraga, California
94549

Mr. Ade Fagorala, San Francisco Bay Regional Water Quality Control Board, 1515 Clay Street,
Suite 1400, Oakland, California 94612

Ms. Liz Sewell, ConocoPhillips, 75 Broadway, Sacramento,
California 95818

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REFERENCES:

- Alisto, 2000. *Potential Receptor Survey , Expanded Site Plan and Well Search*, BP Oil Company Service Station No. 11102, 100 MacArthur Boulevard, Oakland, CA. October 19, 2000.
- Alton, 1989. *Preliminary Site Investigation Report*, Former Mobile Service Station No. 10-E6A, 100 MacArthur Blvd., Oakland, CA. December 20, 1989.
- BP, 1989. *Underground Storage Tank Registration*, BP Oil Company Facilities, county of Alameda. Letter to Rafat Shahid from W.J. Hollis. July 10, 1989.
- Cambria, 2000. *Historical Review, Utility Survey, and Recovery Testing Report*. BP Oil Site No. 11102, 100 MacArthur Boulevard, Oakland, CA. February, 24, 2000.
- Emcon 1994. *Baseline Assessment Report*, Site Number 1102, 100 MacArthur Boulevard, Oakland, CA. December 27, 1994.
- KEI, 1988. *Soil Sampling Report*, Mobile Service Station #10-E6A, 100 MacArthur Blvd., Oakland, CA. October 7, 1988.



REF: BASE MAP FROM USGS TOPOI
7.5 MINUTE TOPOGRAPHIC
PHOTOREVISED 1998



QUADRANGLE LOCATION



NORTH



APPROXIMATE SCALE

URS

Project No. 38486804
Former BP Service Station #11102
100 MacArthur Boulevard
Oakland, California

SITE LOCATION MAP

FIGURE

1

Quickstop
Gas Station

HARRISON STREET

EXPLANATION

◆ Monitoring well

used oil tank

MW-3

Station Building

former used
oil tank

MW-1

dispenser
islands

tank pit

MW-2

MACARTHUR BOULEVARD

INTERSTATE 580
Planter

OAKLAND AVENUE



NORTH



SCALE IN FEET

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

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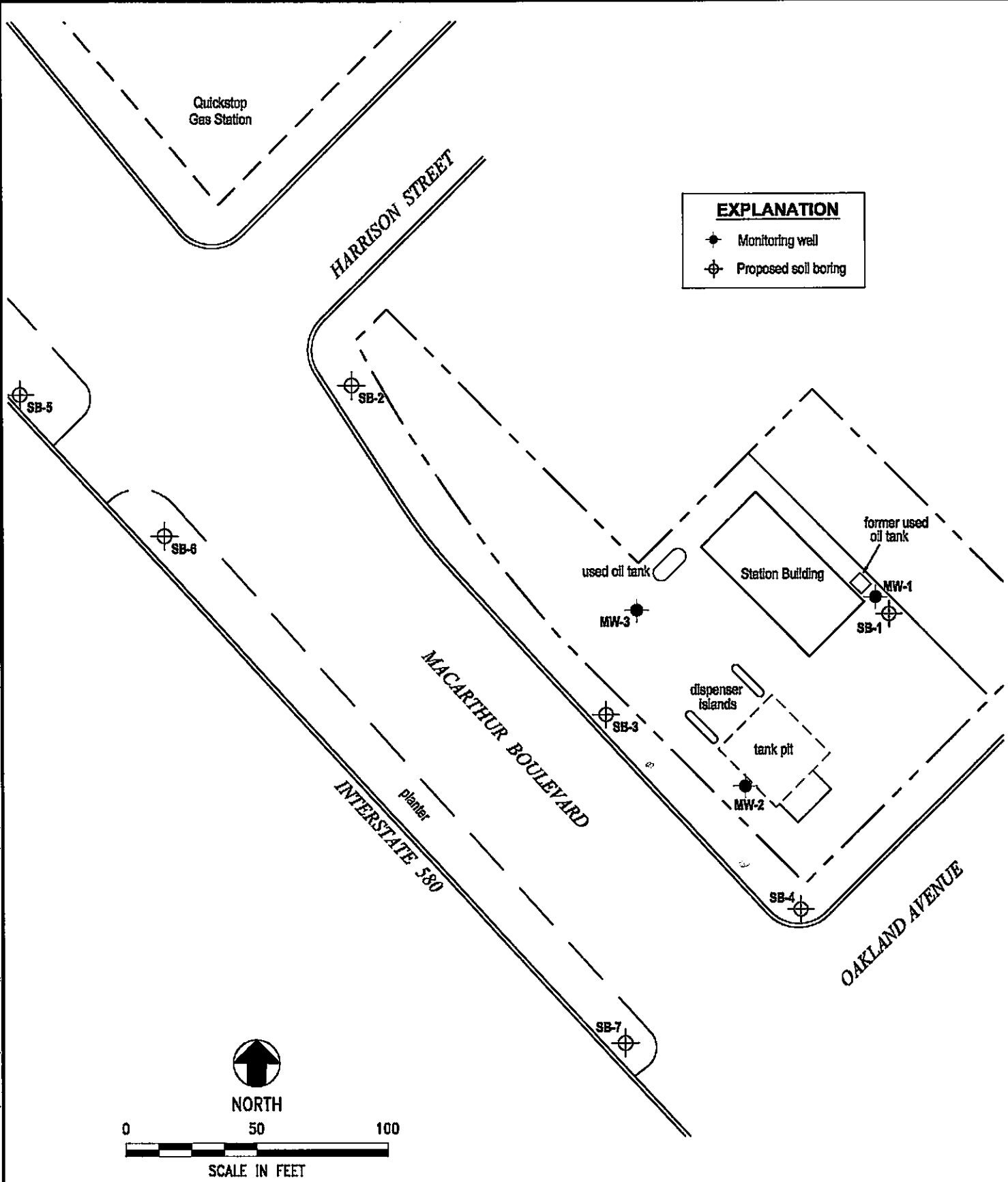
Project No. 38486804
Former BP Service Station #11102
100 MacArthur Boulevard
Oakland, California

SITE PLAN

FIGURE

2

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Project No. 38486804
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 100 MacArthur Boulevard
 Oakland, California

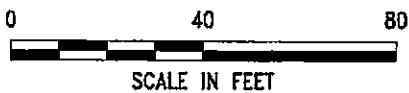
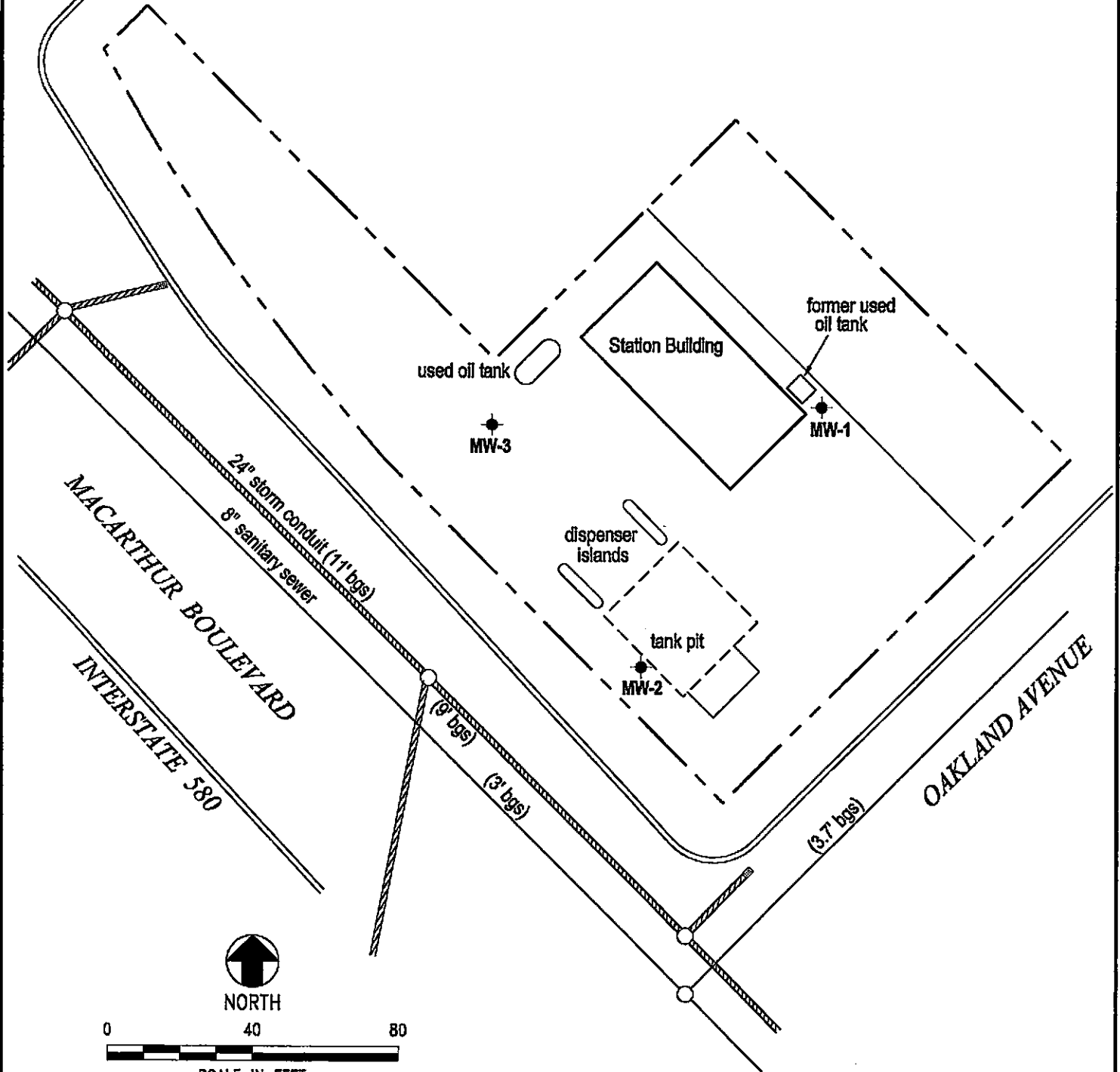
PROPOSED SOIL BORING MAP

FIGURE
3

HARRISON STREET

EXPLANATION

- ◆ Monitoring Well
- bgs Below ground surface



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

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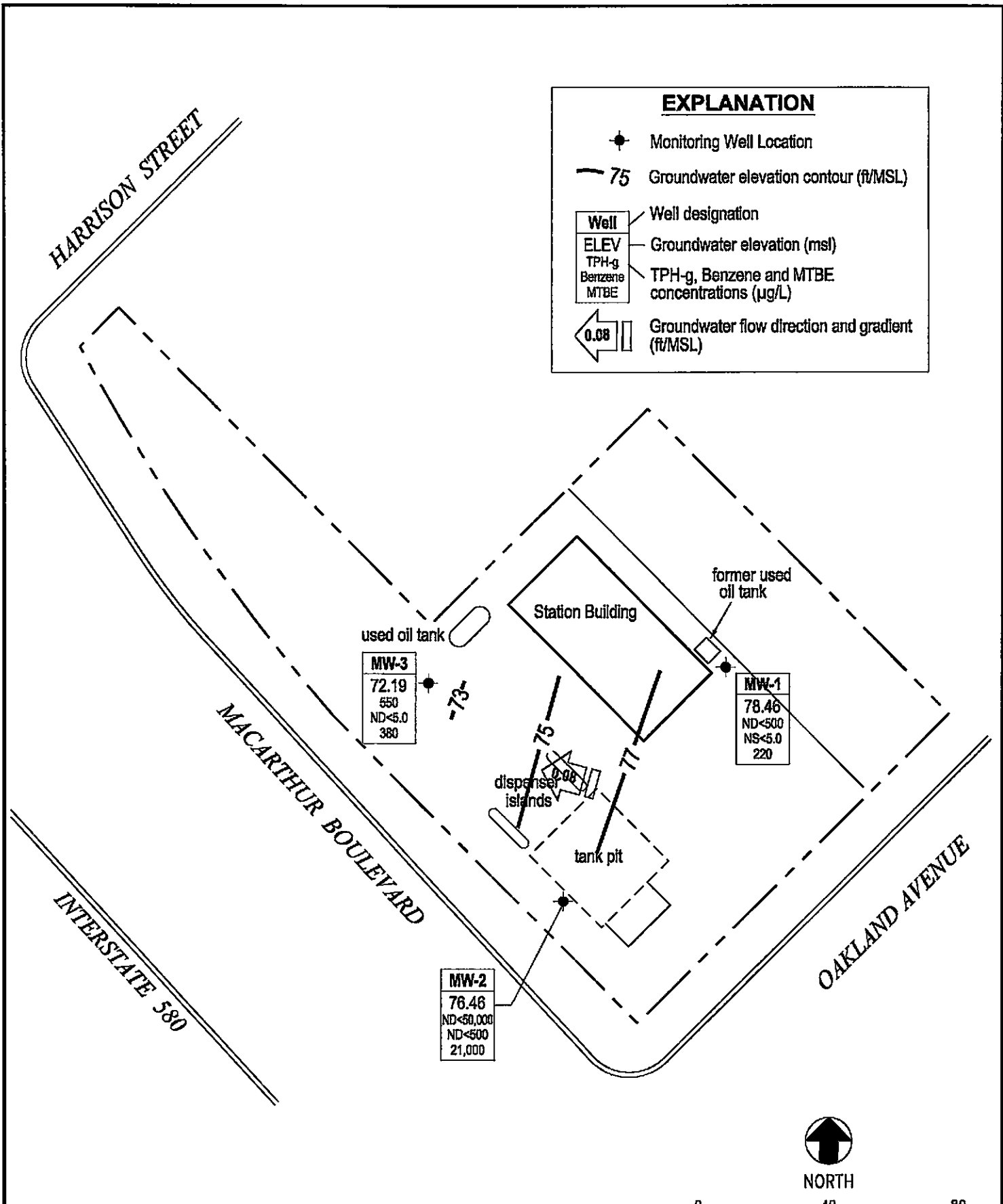


Project No. 38486458
Former BP Service Station #11102
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Oakland, California

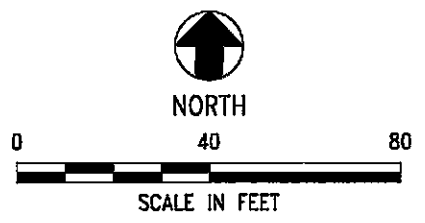
UNDERGROUND UTILITY MAP

FIGURE
4

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



	Project No. 38486804 Former BP Service Station #11102 100 MacArthur Boulevard Oakland, California	GROUNDWATER ELEVATION CONTOUR AND ANALYTICAL SUMMARY MAP First Quarter 2004 (January 14, 2004)	FIGURE 5

Table 1
Groundwater Elevation and Analytical Data

Former BP Service Station #11102
100 MacArthur Boulevard
Oakland, CA

WELL ID	DATE OF SAMPLING/ MONITORING	TOC (Feet)	DEPTH TO WATER (Feet) (a)	GWE (Feet)	TPH-G (b) (ug/l)	TPH-D (ug/l)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	MTBE (ug/l)	TOG (ug/l)	1,1-DCA (ug/l)	1,2-DCA (ug/l)	HVOC's (ug/l)	DO (ppm)	LAB	
MW-1	11/04/89	90.20	13.21	76.99	ND<500	ND<50	3.4	0.6	ND<0.3	ND<0.3	---	ND<5000	---	0.9	---	---	SAL	
	11/11/89		13.32	76.88	---	---	---	---	---	---	---	---	---	---	---	---	---	
	04/03/90		12.46	77.74	820	---	64	1.9	23	34	---	---	---	---	---	---	ANA	
	07/30/90		12.92	77.28	190	ND<50	11	ND<5.0	ND<5.0	ND<5.0	---	ND<5000	---	ND	---	---	ANA	
	11/20/90		14.08	76.12	50	79	2.4	ND<0.3	ND<0.3	ND<0.3	---	ND<5000	---	4.0	---	---	SAL	
	03/01/91		13.61	76.59	ND<100	ND<1000	0.9	ND<0.3	ND<0.3	0.3	---	14000	---	ND	---	---	SAL	
	08/19/91		15.74	74.46	370	ND<50	35	0.73	6.4	5.6	---	ND<5000	---	1.4	---	---	SEQ	
	11/13/91		14.08	76.12	60	ND<30	0.68	ND<0.3	ND<0.3	ND<0.3	---	ND<5000	---	1.0	---	---	SEQ	
	02/24/92		12.52	77.68	140	100	3.9	0.66	1.2	3.8	---	ND<5000	---	1.7	---	---	SEQ	
	05/19/92		11.8	78.40	4200	910	440	21	250	37	---	ND<5000	---	ND	---	---	SEQ	
	06/17/92		12.01	78.19	4000	560	350	14	150	17	---	ND<5000	---	ND	---	---	SEQ	
	07/22/92		12.42	77.78	4000	---	ND<5.0	19	210	61	---	---	---	---	---	---	ANA	
	08/14/92		12.75	77.45	2400	1700	330	20	150	47	---	ND<5000	---	ND<2.5	---	---	SEQ	
	11/11/92		13.69	76.51	260	92	30	3.4	7.6	6.8	---	ND<5000	---	ND<2.5	---	---	ANA	
	06/07/93		10.93	79.27	3400	440	98	11	21	7.6	---	---	6.2	0.9	---	---	PACE	
	(c) 06/07/93		---	---	3700	---	120	12	26	9.5	---	---	---	---	---	---	---	PACE
	12/02/93		12.72	77.48	1100	120	8.3	3.6	0.6	1.5	---	ND<5000	2.6	1.8	---	---	PACE	
	06/22/94		11.81	78.39	2100	ND<50	32	3.8	2.2	17	4000	(d) ND<5000	2.3	3.3	---	---	3.2	PACE
	(c) 06/22/94		---	---	2100	---	30	3.2	2.0	15	2000	(d) ---	---	---	---	---	---	PACE
	01/10/95		10.97	79.23	ND<300	420	120	ND<5	ND<5	ND<10	---	---	ND<1	1	---	---	3.9	ATI
	(c) 01/10/95		---	---	ND<500	---	120	ND<5	5	ND<10	---	---	---	---	---	---	---	ATI
	06/21/95		9.38	80.82	4700	1300	16	ND<5.0	ND<5.0	ND<10	---	2900	2.0	0.38	0.6	(e)	6.7	ATI
	(c) 06/21/95		---	---	3600	---	ND<13	ND<5.0	ND<5.0	ND<10	---	---	---	---	---	---	---	ATI
	12/27/95		11.55	78.65	430	2100	ND<2.5	ND<2.5	ND<2.5	ND<5.0	1200	640	0.67	ND<0.20	---	---	6.3	ATI
	06/13/96		9.28	80.92	3200	920	51	ND<12	ND<12	ND<12	4000	2000	---	---	---	---	6.3	SPL
	12/04/96		11.91	78.29	1400	280	6.2	ND<5	ND<5	ND<5	2600	2000	ND<5.0	ND<5.0	6.0	(f)	6.7	SPL
	06/10/97		8.97	81.23	7900	1700	12	ND<10	ND<10	ND<10	15000	ND<5	ND<2.50	ND<2.50	ND	---	6.0	SPL
(c) 06/10/97		---	---	7700	---	14	ND<25	ND<25	ND<25	13000	---	---	---	---	---	---	SPL	
12/12/97		11.37	78.83	440	760	8.8	ND<1.0	2.6	9.4	6700	1200	ND<1.0	ND<1.0	ND	---	5.5	SPL	
06/18/98		8.02	82.18	7500	2900	ND<2.5	ND<3.0	ND<3.0	ND<5.0	5600	ND<5	ND<5.0	ND<5.0	ND	---	4.9	SPL	
03/09/99		9.80	80.40	32000	---	100	16	72	110	49000	---	---	---	---	---	---	SPL	
09/28/99		10.78	79.42	1000	---	ND<5.0	ND<5.0	ND<5.0	ND<5.0	730	---	ND<1.0	ND<1.0	ND<1.0	---	---	SPL	
10/14/99		10.84	79.36	---	660	---	---	---	---	---	---	---	---	---	---	---	SPL	
03/27/00		9.83	80.37	4300	---	160	19	37	43	28000	---	---	ND<500	---	---	---	PACE	
09/28/00		11.33	78.87	2700	---	10	2.6	1.1	2.7	28000	---	---	---	---	---	---	PACE	
03/08/01		10.96	79.24	8200	---	23.5	6.09	5.23	8.97	11600	---	---	---	---	---	---	PACE	
09/21/01		12.07	78.13	6000	---	37.9	ND<0.5	ND<0.5	ND<1.5	7370	---	---	---	---	---	---	PACE	
02/28/02		10.48	79.72	6400	---	60.8	ND<5.0	6.43	ND<10	7750	---	---	---	---	---	---	PACE	
09/06/02*		11.20	79.00	1400	---	ND<5.0	ND<5.0	ND<5.0	ND<5.0	6000	---	---	---	---	---	---	SEQ	
02/19/03	(b)	11.29	78.91	ND<10000	---	ND<100	110	ND<100	ND<100	4,500	---	---	---	---	---	---	SEQ	
07/14/03		11.18	79.02	710	---	11	ND<10	ND<10	ND<10	940	---	---	---	---	---	---	SEQ	
01/14/04		11.74	78.46	ND<500	---	ND<5.0	ND<5.0	ND<5.0	ND<5.0	220	---	---	---	---	---	---	SEQ	

Table 1
Groundwater Elevation and Analytical Data

Former BP Service Station #11102
100 MacArthur Boulevard
Oakland, CA

WELL ID	DATE OF SAMPLING/ MONITORING	TOC (Feet)	DEPTH TO WATER (Feet) (a)	GWE (Feet)	TPH-G (ug/l) (b)	TPH-D (ug/l)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	MTBE (ug/l)	TOG (ug/l)	1,1-DCA (ug/l)	1,2-DCA (ug/l)	HVOCs (ug/l)	DO (ppm)	LAB
MW-2	11/04/89	87.91	15.84	72.07	ND<500	---	6.5	ND<0.3	ND<0.3	ND<0.3	---	---	---	---	---	---	SAL
	11/11/89		14.75	73.16	---	---	---	---	---	---	---	---	---	---	---	---	---
	04/03/90		15.25	72.66	ND<500	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	---	---	ANA
	07/30/90		15.59	72.32	61	---	6.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	---	---	ANA
	11/20/90		17.81	70.10	ND<50	---	0.3	ND<0.3	ND<0.3	ND<0.3	---	---	---	---	---	---	SAL
	03/01/91		17.11	70.80	ND<100	---	0.4	ND<0.3	ND<0.3	ND<0.3	---	---	---	4.0	---	---	SAL
	08/19/91		17.97	69.94	ND<30	---	ND<0.3	ND<0.3	ND<0.3	ND<0.3	---	---	---	---	---	---	SEQ
	11/13/91		16.76	71.15	38	---	0.32	ND<0.3	ND<0.3	ND<0.3	---	---	---	---	---	---	SEQ
	02/24/92		15.07	72.84	ND<50	---	ND<0.5	ND<0.5	ND<0.5	0.58	---	---	---	16	---	---	SEQ
	05/19/92		14.7	73.21	ND<50	---	0.55	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	---	---	SEQ
	07/22/92		15.6	72.31	90	---	1.3	0.6	0.9	1.9	---	---	---	---	---	---	ANA
	08/14/92		15.88	72.03	---	---	---	---	---	---	---	---	---	---	---	---	---
	11/11/92		16.19	71.72	52	---	2.8	ND<0.5	ND<0.5	0.9	---	---	---	---	---	---	ANA
(c)	11/11/92		---	---	65	---	3.2	ND<0.5	ND<0.5	1.0	---	---	---	---	---	---	ANA
	06/07/93		14.42	73.49	1200	---	14	2.8	1.9	1.7	---	---	---	---	---	---	PACE
	12/02/93		14.94	---	790	---	3.4	0.5	10	ND<0.5	3700 (d)	---	---	---	---	---	PACE
(c)	12/02/93		---	---	2100	---	32	3.8	2.2	17	3700 (d)	---	2.3	---	---	---	PACE
	06/22/94		14.25	73.66	110	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	120 (d)	---	---	---	---	---	3.9
	01/10/95		13.64	74.27	ND<50	---	ND<0.5	ND<0.5	0.6	1	---	---	---	---	---	---	4.3
	06/21/95		11.66	76.25	4700	---	ND<10	ND<10	ND<10	ND<20	---	---	---	---	---	---	7.8
	12/27/95		13.11	74.80	6100	---	ND<25	ND<25	ND<25	ND<50	20000	---	---	---	---	---	6.7
(c)	12/27/95		---	---	6300	---	ND<25	ND<25	ND<25	ND<50	19000	---	---	---	---	---	ATI
	06/13/96		10.86	77.05	8300	---	ND<2.5	ND<2.5	ND<2.5	ND<2.5	13000	---	---	---	---	---	6.5
(c)	06/13/96		---	---	8700	---	ND<5	ND<5	ND<5	ND<5	13000	---	---	---	---	---	SPL
	12/04/96		13.03	74.88	5900	---	ND<2.5	ND<5	ND<5	ND<5	11000	---	---	---	---	---	6.3
(c)	12/04/96		---	---	5900	---	ND<2.5	ND<5	ND<5	ND<5	11000	---	---	---	---	---	SPL
	06/10/97		10.04	77.87	ND<50	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	---	---	---	---	---	5.8
	12/12/97		12.44	75.47	ND<50	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	---	---	---	---	---	5.7
	06/18/98		8.89	79.02	50	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	---	---	---	---	---	5.3
(c)	06/18/98		---	---	ND<50	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	---	---	---	---	---	SPL
	03/09/99		10.20	77.71	15000	---	ND<5.0	ND<5.0	ND<5.0	ND<5.0	23000	---	---	---	---	---	SPL
	09/28/99		11.81	76.10	36000	---	ND<5.0	12	7.0	26	35000	---	ND<5.0	7.7	ND<5.0	---	SPL
	10/14/99		10.27	77.64	---	100	---	---	---	---	---	---	---	---	---	---	SPL
	03/27/00		9.98	77.93	1300	---	ND<0.5	ND<0.5	0.51	ND<0.5	5800	---	---	ND<100	---	---	PACE
	09/28/00		11.40	76.51	1600	---	1.8	1.7	0.54	2.2	15000	---	---	---	---	---	PACE
	03/08/01		11.16	76.75	20000	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	29100	---	---	---	---	---	PACE
	09/21/01		11.65	76.26	5000	---	ND<0.5	ND<0.5	ND<0.5	ND<1.5	6110	---	---	---	---	---	PACE
	02/28/02		9.86	78.05	3200	---	35.1	ND<0.5	ND<0.5	ND<1.0	4620	---	---	---	---	---	PACE
	09/06/02*		12.32	75.59	1900	---	ND<10	ND<10	ND<10	ND<10	15000	---	---	---	---	---	SEQ
	02/19/03 (h)		11.63	76.28	45000	---	ND<250	ND<250	ND<250	ND<250	32000	---	---	---	---	---	SEQ
	07/14/03		12.07	75.84	9300	---	ND<500	ND<500	ND<500	ND<500	24000	---	---	---	---	---	SEQ
	01/14/04		11.45	76.46	ND<50000	---	ND<500	ND<500	ND<500	ND<500	21000	---	---	---	---	---	SEQ

Table 1
Groundwater Elevation and Analytical Data

Former BP Service Station #11102
100 MacArthur Boulevard
Oakland, CA

WELL ID	DATE OF SAMPLING/ MONITORING	TOC (Feet) (a)	DEPTH TO WATER (Feet)	GWE (Feet) (b)	TPH-G (ug/l)	TPH-D (ug/l)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	MTBE (ug/l)	TOG (ug/l)	1,1-DCA (ug/l)	1,2-DCA (ug/l)	HVOC's (ug/l)	DO (ppm)	LAB
MW-3	11/04/89	87.02	15.4	71.62	ND<500	--	ND<0.3	ND<0.3	ND<0.3	ND<0.3	--	--	--	--	--	--	SAL
	11/11/89		14.1	72.92	--	--	--	--	--	--	--	--	--	--	--	--	--
	04/03/90		13.90	73.12	ND<100	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--	--	--	--	ANA
	07/30/90		13.77	73.25	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	ND<5000	--	--	--	--	ANA
	11/20/90		14.67	72.35	ND<50	--	0.3	0.8	0.4	1.5	--	--	--	--	--	--	SAL
	03/01/91		15.22	71.80	ND<100	--	0.4	ND<0.3	ND<0.3	ND<0.3	--	--	--	ND	--	--	SAL
	08/19/91		13.15	73.87	ND<30	--	ND<0.3	ND<0.3	ND<0.3	ND<0.3	--	--	--	--	--	--	SEQ
	11/13/91		15.66	71.36	ND<30	--	ND<0.3	ND<0.3	ND<0.3	ND<0.3	--	--	--	--	--	--	SEQ
	02/24/92		15.01	72.01	ND<50	--	0.65	1.4	0.66	4.4	--	--	--	ND	--	--	SEQ
	05/19/92		15.52	71.50	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--	--	--	--	SEQ
	07/22/92		15.63	71.39	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	ND<5000	--	ND<0.50	--	--	ANA
	08/14/92		13.57	73.45	--	--	--	--	--	--	--	--	--	--	--	--	--
	11/11/92		14.13	72.89	ND<50	--	ND<0.5	0.7	ND<0.5	1.3	--	--	--	--	--	--	ANA
	06/07/93		12.13	74.89	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--	--	--	--	PACE
	12/02/93		13.29	73.73	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--	--	--	--	PACE
	06/22/94		12.78	74.24	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--	--	--	2.9	PACE
	01/10/95		12.01	75.01	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<1	--	--	--	1	--	3.8	ATI
	06/21/95		11.57	75.45	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	--	--	--	--	7.4	ATI
	12/27/95		13.47	73.55	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<1.0	5.7	--	--	--	--	7.3	ATI
	06/13/96		11.22	75.80	60	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<10	--	--	--	--	6.8	SPL
	12/04/96		13.28	73.74	ND<50	--	ND<0.5	ND<1	ND<1	ND<1	ND<10	--	--	--	--	6.7	SPL
	06/10/97		10.22	76.80	ND<50	--	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	--	--	--	--	6.1	SPL
	12/12/97		12.61	74.41	ND<50	--	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	--	--	--	--	5.6	SPL
(c)	12/12/97		--	--	ND<50	--	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	--	--	--	--	--	SPL
	06/18/98		9.07	77.95	50	--	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	--	--	--	--	5.3	SPL
	06/18/98		12.80	74.22	--	--	--	--	--	--	--	--	--	--	--	--	--
	09/28/99		13.76	73.26	--	--	--	--	--	--	--	--	--	--	--	--	--
	03/27/00		13.77	73.25	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	1.6	--	--	--	--	--	PACE
	09/28/00		11.28	75.74	ND<50	--	ND<0.5	7.4	ND<0.5	1.3	2.0	--	--	--	--	--	PACE
	03/08/01		11.75	75.27	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	60.4	--	--	--	--	--	PACE
	09/21/01		11.33	75.69	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<1.5	8.18	--	--	--	--	--	PACE
	02/28/02		10.86	76.16	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<1.0	25.5	--	--	--	--	--	PACE
	09/06/02*		12.73	74.29	ND<50	--	1.2	ND<0.5	ND<0.5	1.0	16	--	--	--	--	--	SEQ
	02/19/03 (h)		11.72	75.30	ND<500	--	ND<5.0	ND<5.0	ND<5.0	ND<5.0	110	--	--	--	--	--	SEQ
	07/14/03		13.76	73.26	ND<50	--	ND<0.50	ND<0.50	ND<0.50	0.67	28	--	--	--	--	--	SEQ
	01/14/04		14.83	72.19	550	--	ND<5.0	ND<5.0	ND<5.0	ND<5.0	380	--	--	--	--	--	SEQ

Table 1
Groundwater Elevation and Analytical Data

Former BP Service Station #11102
100 MacArthur Boulevard
Oakland, CA

WELL ID	DATE OF SAMPLING/ MONITORING	TOC (Feet)	DEPTH TO WATER (a) (Feet)	GWE (Feet) (b)	TPH-G (ug/l)	TPH-D (ug/l)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	MTBE (ug/l)	TOG (ug/l)	1,1-DCA (ug/l)	1,2-DCA (ug/l)	HVOC's (ug/l)	DO (ppm)	LAB
QC-2	(g) 11/11/92	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	---	---	ANA
QC-2	(g) 06/07/93	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	---	---	PACE
QC-2	(g) 12/02/93	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	---	---	PACE
QC-2	(g) 06/22/94	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	---	---	PACE
QC-2	(g) 01/10/95	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<1	---	---	---	---	---	---	ATI
QC-2	(g) 06/21/95	---	---	---	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	---	---	---	---	---	ATI
QC-2	(g) 12/27/95	---	---	---	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<5.0	---	---	---	---	---	ATI
QC-2	(g) 06/13/96	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<10	---	---	---	---	---	SPL

ABBREVIATIONS:

TPH-G Total petroleum hydrocarbons as gasoline
 TPH-D Total petroleum hydrocarbons as diesel
 B Benzene
 T Toluene
 E Ethylbenzene
 X Total xylenes
 TOG Total oil and grease
 1,1-DCA 1,1-Dichloroethane
 1,2-DCA 1,2-Dichloroethane
 1,2-DBA 1,2-Dibromoethane
 HVOC's Halogenated volatile organic compounds
 MTBE Methyl tert butyl ether
 DIPE Di-(isopropyl Ether
 ETBE Ethyl t-Butyl Ether
 TAME t-Amyl Methyl Ether
 DO Dissolved oxygen
 ug/l Micrograms per liter
 ppm Parts per million
 ND Not detected above reported detection limit
 --- Not analyzed/measured/applicable
 SAL Superior Analytical Laboratory
 ANA Anamatrix, Inc.
 SEQ Sequoia Analytical Laboratory
 PACE Pace, Inc.
 ATI Analytical Technologies, Inc.
 SPL Southern Petroleum Laboratories

- (a) Top of casing elevations surveyed to the nearest 0.01 foot above mean sea level.
 (b) Groundwater elevations in feet above mean sea level.
 (c) Blind duplicates.
 (d) A copy of the documentation for this data is included in Appendix C of Alisto report 10-076-06-002.
 (e) Tetrachloroethene.
 (f) Trans-1,2-Dichloroethene
 (g) Travel blank.
 (h) TPH, BTEX, and MTBE analyzed by EPA Method 8260B beginning on 1st Quarter Sampling event (2/19/03)
 (i) Discrete peak @ C6-C7.
 * The data within this table collected prior to June 2002 was provided to URS by Atlantic Richfield Company and their previous consultants. URS has not verified the accuracy of this information.

TABLE 2
RESULTS OF
LABORATORY ANALYSIS OF SOIL SAMPLES

Boring	Depth (Feet)	TOG	TPH	B	T	E	X	HVOC
		(Concentrations in parts per billion)						
MW-1	5	ND	ND	ND	ND	ND	ND	ND
	10	ND	ND	ND	ND	ND	ND	ND
	15	ND	ND	ND	ND	ND	ND	ND
MW-2	5	---	ND	6	ND	ND	ND	---
	10	---	ND	8	ND	ND	ND	---
	15	ND	ND	ND	ND	ND	ND	---
MW-3	5	---	ND	ND	6	ND	13	---
	10	---	ND	ND	ND	ND	ND	---
	15	---	ND	ND	ND	ND	ND	---

Notes: TOG = total oil and grease
 TPH = total petroleum hydrocarbons
 B = benzene
 T = toluene
 E = ethylbenzene
 X = xylenes
 HVOC = halogenated volatile organic compounds
 ND = not detected; see lab sheets for various
 detection limits
 --- = not analyzed

(Alton, 1989)

TABLE 3

SUMMARY OF LABORATORY ANALYSES

(all analyses are in parts per million)
(collected September 19, 1988)

<u>Sample #</u>	<u>TPH as Diesel</u>	<u>TOG</u>	<u>EPA 8240</u>
W.O.	2.0	24	<1.0
Comp W.O.	1,700	65,000	--

(KEI, 1988)

ATTACHMENT A
ACHCS Correspondence

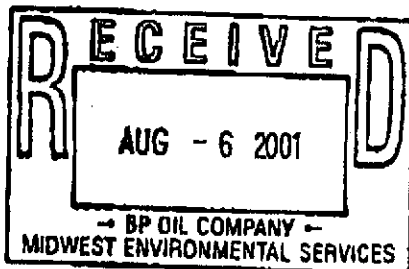
ALAMEDA COUNTY
HEALTH CARE SERVICES

AGENCY
DAVID J. KEARS, Agency Director



File 11102

July 31, 2001



ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-8577
(510) 567-6700
FAX (510) 337-9335

Scott Hooton
BP Oil Co.
Midwest Environmental Services
295 SW 41st St
Bldg. 13, Suite N
Renton, WA 98055

Dear Mr. Hooton:

Subject: Former BP Oil Site No. 11102, 100 MacArthur Blvd., Oakland, CA
RO0000456

Your letter of May 15, 2001 indicated that Tosco would be responsible for the tasks listed in our letter of July 18, 2001. However, we have received a copy of a letter dated June 22, 2001 to you from David De Witt of Tosco disputing this. We hope that the two of you will be able to resolve differences so that the tasks requested can proceed. If I may be of any assistance, please don't hesitate to call me at 510/567-6746.

Sincerely,

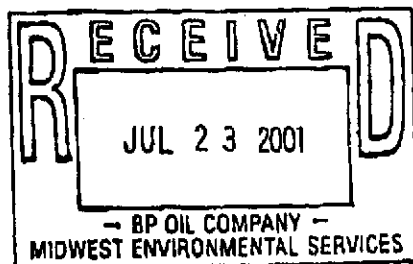
Don Hwang
Hazardous Materials Specialist

C: David De Witt, Tosco Marketing Co., 2000 Crow Canyon Pl., Suite 400,
San Ramon, CA 94583

file

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) 337-8335

July 18, 2001

Scott Hooton
BP Oil Co.
Midwest Environmental Services
295 SW 41st St.
Bldg. 13, Suite N
Renton, WA 98055

Dear Mr. Hooton:

Subject: Former BP Oil Site No. 11102, 100 MacArthur Blvd., Oakland, CA
RO0000456

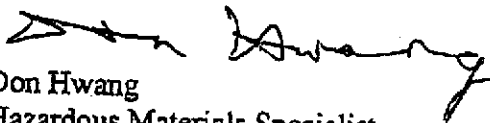
"1st Quarter 2001 Monitoring..." dated April 11, 2001 prepared by Blaine Tech Services and your May 15, 2001 letter were reviewed. These samples were collected on March 8, 2001. Methyl Tertiary-Butyl Ether (MTBE) concentrations found in monitoring wells MW-1 and MW-2 were 11,600 ug/l and 29,100 ug/l, respectively. MTBE in MW-1 has decreased from the prior sampling event while increasing in MW-2. The prior results on September 28, 2000 were 28,000 ug/l and 15,000 ug/l, respectively. Total Petroleum Hydrocarbons-Gasoline (TPH-G) increased in MW-1 and MW-2 since the prior sampling event. TPH-G concentrations found in MW-1 and MW-2 on March 8, 2001 were 8,200 ug/l and 20,000 ug/l, respectively. The prior results on September 28, 2000 were 2,700 ug/l and 1,600 ug/l, respectively. MW-3's concentrations on March 8, 2001 were Not Detected (ND) or low which were consistent with previous results. However, the MTBE concentration increased to 60 ug/l from prior results of 2.0 ug/l and 1.6 ug/l.

As noted in our letter dated May 3, 2001, due to the high concentrations of MTBE, the sampling frequencies will need to increase to quarterly and a Corrective Action Plan, which includes an assessment of impacts, a feasibility study, and applicable cleanup levels will be required. Additionally, further delineation of the plume may be necessary. As stated in our letter dated May 19, 1999, because MW-1 was installed in the gravel backfill of the former waste oil tank pit, the determination of gradient using groundwater levels from this well may be inaccurate. Therefore, groundwater flow directions and gradients may need to be confirmed by an acceptable method, which could include the installation of another well in native soil or using wells adjacent to the site.

Mr. Hooton
July 18, 2001
Page 2 of 2

Your letter of May 15, 2001 indicated that Tosco will be responsible for these tasks because the increases in contaminant concentrations occurred while Tosco was operating the facility. If you have any questions, you may call me at 510/567-6746.

Sincerely,


Don Hwang
Hazardous Materials Specialist

u
C: David DeWitt, Tosco Marketing Co., 2000 Crow Canyon Pl., Suite 400, San Ramon,
CA 94583

file

ALAMEDA COUNTY
HEALTH CARE SERVICES

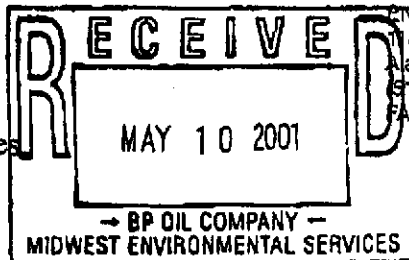
AGENCY

DAVID J. KEARS, Agency Director



May 3, 2001

Scott Hooton
BP Oil Co.
Midwest Environmental Services
295 SW 41st St.
Bldg. 13, Suite N
Renton, WA 98055



ENVIRONMENTAL HEALTH SERVICES

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

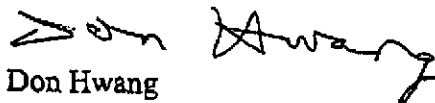
Dear Mr. Hooton:

Subject: Former BP Oil Site No. 11102, 100 MacArthur Blvd., Oakland, CA
RO0000456

"3rd Quarter 2000 Monitoring..." dated November 15, 2000 prepared by Blaine Tech Services was reviewed. These samples were collected on September 28, 2000. Methyl Tertiary-Butyl Ether (MTBE) concentrations found in monitoring wells MW-1 and MW-2 were 28,000 ug/l and 15,000 ug/l, respectively. Total Petroleum Hydrocarbons-Gasoline (TPH-G) concentrations found in MW-1 and MW-2 were 2,700 ug/l and 1,600 ug/l, respectively.

If the results for MTBE for the next round of sampling are consistent with those obtained recently, then the sampling frequencies will need to increase to quarterly and a Corrective Action Plan, which includes an assessment of impacts, a feasibility study, and applicable cleanup levels will be required. Additionally, further delineation of the plume may be necessary. As stated in our letter dated May 19, 1999, because MW-1 was installed in the gravel backfill of the former waste oil tank pit, the determination of gradient using groundwater levels from this well may be inaccurate. Therefore, groundwater flow directions and gradients may need to be confirmed by an acceptable method, which could include the installation of another well in native soil or using wells adjacent to the site. If you have any questions, you may call me at 510/567-6746.

Sincerely,


Don Hwang
Hazardous Materials Specialist

C: David DeWitt, Tosco Marketing Co., 2000 Crow Canyon Pl., Suite 400, San Ramon,
CA 94583

file

ALAMEDA COUNTY
HEALTH CARE SERVICES

AGENCY
DAVID J. KEARS, Agency Director



File 11102

MAY 24 1999

ENVIRONMENTAL HEALTH SERVICES
1131 Harbor Bay Parkway, Suite 260
Alameda, CA 94602-6577
(510) 567-6700
(510) 337-9335 (FAX)
BP OIL CO.
ENVIRONMENTAL DEPT.
WEST COAST REGION OFFICE

May 19, 1999

Scott Hooton
BP Oil Company
Environmental Remediation Management
295 SW 41st Street
Renton, Washington 98055-4931

STTD: 1108

Re: Investigations at Former BP Oil Site No. 11102, located at 100 MacArthur Blvd.,
Oakland, CA

Dear Mr. Hooton,

This office has reviewed Blaine Tech Services' First Quarter 1999 Groundwater Monitoring Report. The following is a list of comments and requirements in response to our review:

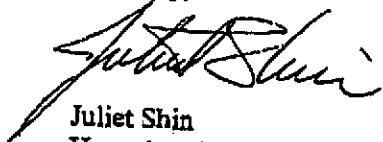
- MTBE and TPHg concentrations in the "downgradient" well MW-2 increased dramatically, after 1.5 to 2 years of NonDetect. This concerns our office, because it is suggestive of plume migration or a recent release. If these concentrations persist, efforts must be made to further delineate and characterize this plume. If further delineation work is eventually conducted, the groundwater flow direction at the site must be confirmed. Per our meeting on March 16, 1999, one of my concerns was that Well MW-1 was installed in the gravel backfill of the former waste oil tank pit and that the water levels collected from this well may be inaccurate and producing erroneous gradient determinations. Therefore, as part of possible future delineation work, groundwater flow directions and gradients will need to be confirmed by an acceptable method, which could include the installation of another well in native materials to tie into.
- Well MW-3 was not sampled in this last monitoring event. No mention was made in Blaine Tech's report as to why this well was not analyzed. In future monitoring events, this well is required to be sampled with the other two on-site monitoring wells. If a vehicle is obstructing this well, arrangements must be made with the operator to come out at a time when this well is accessible.
- This report's chain-of-custody did not include an explanation as to which wells correlated to the Sample IDs "A" and "B". Therefore, there is no way for this office to confirm whether the concentrations provided in the laboratory analytical results correlate to the wells indicated in the report. Future chain-of-custody forms should make clear which samples correlate to which wells.

Lastly, per your April 24, 1999 cover letter, the next monitoring event in September 1999 will include the analysis for chlorinated solvents using Method 8010, oxygenates using Method 8260, and TPHd for Wells MW-1 and MW-2. As stated above, Well MW-3 should continue to be included in the monitoring events. Additionally, per your letter, work is currently underway to perform on-site and off-site utility line surveys and slug tests on all three monitoring wells.

Scott Hooton
Re: 100 MacArthur Blvd.
May 19, 1999
Page 2 of 2

Thank you for your cooperation. If you have any questions or comments, please contact me at
(510) 567-6763.

Sincerely,



Juliet Shin
Hazardous Materials Specialist

Cc: Leroy Griffin
City of Oakland Hazardous Materials
505 14th St., Ste 702
Oakland, CA 94612

Files-JMS

ALAMEDA COUNTY
HEALTH CARE SERVICES



AGENCY
DAVID J. KEARS, Agency Director

January 05, 1999

Tina Berry
TOSCO Marketing Company
2000 Crow Canyon Place, Ste 400
San Ramon, CA 94583

ENVIRONMENTAL HEALTH SERVICES

1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

(510) 667-8700
(510) 337-9335 (FAX)

JAN - 8 ' 99

ENVIRONMENTAL CO.
ENVIRONMENTAL DEPT.
WEST COAST REGION OFFICE

STID: 1108

Re: Required investigations at BP Oil Company Service Station No. 11102, located at 100 MacArthur Boulevard, Oakland, California

Dear Ms. Berry,

Recently I have been designated as the case worker for the above site. Although you stated in an earlier communication that BP Oil Company (BP) is currently the primary responsible party at the site, BP has stated that the issues of responsibility have not yet been established between TOSCO Marketing Company (TOSCO) and BP. Currently TOSCO is listed as a Responsible Party for investigations at the above site along with BP, based on the fact that TOSCO purchased the property from BP after the observed release. Therefore, this letter is being directed to both TOSCO and BP.

Investigations were initiated at the site in 1988 with Mobil Oil Company's (Mobil) removal of a 550-gallon waste oil underground storage tank (UST). One soil sample was collected from below the UST at approximately 9-feet below ground surface (bgs) and another soil sample was collected from the 15-cubic yards of soil excavated from the UST pit which was stockpiled on site. These two soil samples were analyzed for Total Petroleum Hydrocarbons as Diesel (TPHD), Total Oil & Grease (TOG), and Volatile Organic Compounds (VOCs) using Method 8240. Although no apparent holes or cracks were noted in the UST and low levels of TPHD and TOG were detected in the soil sample collected from below the UST, elevated levels of TPHD at 1,700 parts per million (ppm) and TOG at 65,000 ppm were identified in the stockpiled soil sample which warranted further investigations.

In October 1989, three monitoring wells, MW-1 through MW-3, were installed at the site. The initial analysis of samples collected from these wells identified very low levels of benzene, toluene, and total xylenes in soil samples collected from Wells MW-2 and MW-3, and up to 6.5 parts per billion (ppb) benzene, 0.6ppb toluene, and 0.9ppb 1,2-Dichloroethane (DCA) in groundwater samples collected from Wells MW-1 and MW-2.

Mobil Oil Company conducted quarterly groundwater monitoring at the site until mid-1992, when BP purchased the property. Quarterly groundwater monitoring of these wells has continued to the present time, with Well MW-1, located closest to the former waste oil UST, being analyzed for TPH as Gasoline (TPHG), TPHD, TOG, BTEX, and Halogenated Volatile Organic Compounds (HVOCs). Wells MW-2 and MW-3 were analyzed for the same constituents as Well MW-1, except analyses for HVOCs and TPHD were intermittent and appear to have been discontinued in and around 1991/1992. The observed peaks of higher contaminant

Ms. Tina Berry
Re: 100 MacArthur Blvd.
January 05, 1999
Page 2 of 3

concentrations in all three wells appear to have correlated with shallower groundwater depths at roughly 11- to 12-foot bgs. This could be due to the leaching of residual soil contamination at these depths.

Although the most elevated levels of DCA have been identified in samples collected from Well MW-2 in 1991 and 1992, no further analyses for this constituent has been conducted on groundwater samples from this well. The levels of DCA observed in Well MW-2 may be coming from the former waste oil UST, since Well MW-2 is located downgradient from this location. Consequently, this office is requiring that analysis for DCA be conducted for this well in the next sampling event. Additionally, levels of TPHD appear to have increased in upgradient Well MW-1 since monitoring began in 1989, however, downgradient Well MW-2 has never been analyzed for TPHD and downgradient Well MW-3 has not been analyzed for TPHD since 1992. The next round of groundwater sampling must include analyses for TPHD in both these wells.

Analysis for Methyl Tertiary Butyl Ether (MTBE) began for Wells MW-1 and MW-2 in 1994, and for Well MW-3 in 1995. Due to the elevated levels of MTBE being identified in Wells MW-1 and MW-2, additional work must be conducted to delineate the extent of the MTBE plume in the downgradient directions which vary from westerly to southerly. Additionally, there is some concern that a more permeable sandy lense may be transporting groundwater and contaminants such as MTBE in other directions. Based on the boring logs for MW-1 through MW-3, significantly more permeable soils of sand and gravel were noted in Well MW-1, as opposed to the strikingly different soil types of silt and clay in Wells MW-2 and MW-3, which suggests a sandy lense, whose size is unknown, that could be influencing local groundwater flow to be different than those already noted at the site. Therefore, the characterization of the MTBE plume should include delineation in the "upgradient" directions to the north/northeast. Although Mr. Hooton mentioned in a May 18, 1993 letter to this office that no further investigations were possible upgradient of MW-1 due to a retaining wall, I would like to meet with you or your consultant out at the site to consider what potential there may be to work around this retaining wall.

Based on the results of research conducted by Lawrence Livermore National Laboratory on MTBE analyses, the San Francisco Bay Regional Water Quality Control Board (RWQCB) has issued guidelines stating that "it is recommended that at least one groundwater sample per site which was positive for MTBE by EPA Method 8020A (or 8021B) be analyzed by EPA method 8240B (or 8260A) to verify the correct identification of MTBE (i.e., split samples from a minimum of one well from each site). We recommend that confirmation analysis be performed for the sample containing the highest MTBE concentration from the site based on Method 8020A (or 8021B) values. For these samples the 8240B (or 8260A) value should be reported." Additionally, per the request of RWQCB, you are required to include the analysis for the following additional oxygenates and lead scavengers in the next round of sampling using Methods 8260 and 8010: Tertiary Amyl Methyl Ether (TAME), Diisopropyl Ether (DIPE), Ethyl Tertiary Butyl Ether (ETBE), Tertiary Butyl Alcohol (TBA), and Ethylene Dibromide (EDB).

According to the December 1989 Well Installation Report, the site's three monitoring wells were

Ms. Tina Berry
Re: 100 MacArthur Blvd.
January 05, 1999
Page 3 of 3

surveyed to an arbitrary benchmark on site. Per RWQCB guidelines, these wells must be surveyed to Mean Sea Level to an accuracy of 0.01 foot.

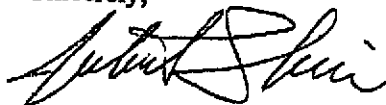
Per the Oakland Museum's "Creek and Watershed Map of Oakland and Berkeley", there appears to be a stormwater culvert running along MacArthur Boulevard immediately adjacent to the downgradient boundary of the site. Apparently this culvert discharges into Lake Merritt. Please provide information to this office on the details of this culvert, (such as the depth, type of backfill material, diameter of culvert, slope, etc) to assist us in determining whether this culvert could be influencing the migration of the plume.

Currently, the site's wells are on a semi-annual sampling frequency, with the last groundwater sampling event being conducted on June 18, 1998. The next groundwater sampling event should have taken place in December 1998, and a report documenting the work should be submitted within the next month. All future groundwater monitoring reports shall include, among others, the following elements:

- Details and results of all work performed during the designated period of time: records of field observations and data, boring and well construction logs, water level data, chain-of-custody forms, laboratory results for all samples collected and analyzed, tabulations of free product thicknesses and dissolved fractions, etc.
- Status of groundwater contamination characterization
- Interpretations of results: water level contour maps showing gradients, free and dissolved product, plume definition maps for each target component, geologic cross sections, etc.
- Recommendations or plans for additional investigative work or remediation

A workplan addressing the above plume delineation work shall be submitted to this office within 60 days of the date of this letter, (i.e., by March 02, 1999). A report documenting the work shall be submitted to this office within 45 days after completing field activities. If you have any questions or comments, please contact me at (510) 567-6763.

Sincerely,



Juliet Shin
Hazardous Materials Specialist

Cc: Mr. Scott Hooton, BP Oil Company, Environmental Remediation Management
295 SW 41st Street, Renton, Washington 98055-4931

Leroy Griffin, Oakland Hazardous Materials
505 14th Street, Ste 702, Oakland, CA 94612

Files-JMS

ATTACHMENT B
Well Construction/Boring Logs

BORING LOG

PROJECT: 30-063

BORING DATE: 10-26-89

LOCATION: 100 MacArthur Boulevard, Oakland

GEOLOGIST: M. Hopwood

TYPE: 10" HSA

BORING NO.: MW-1

DRILLING COMPANY: Bay Area Exploration

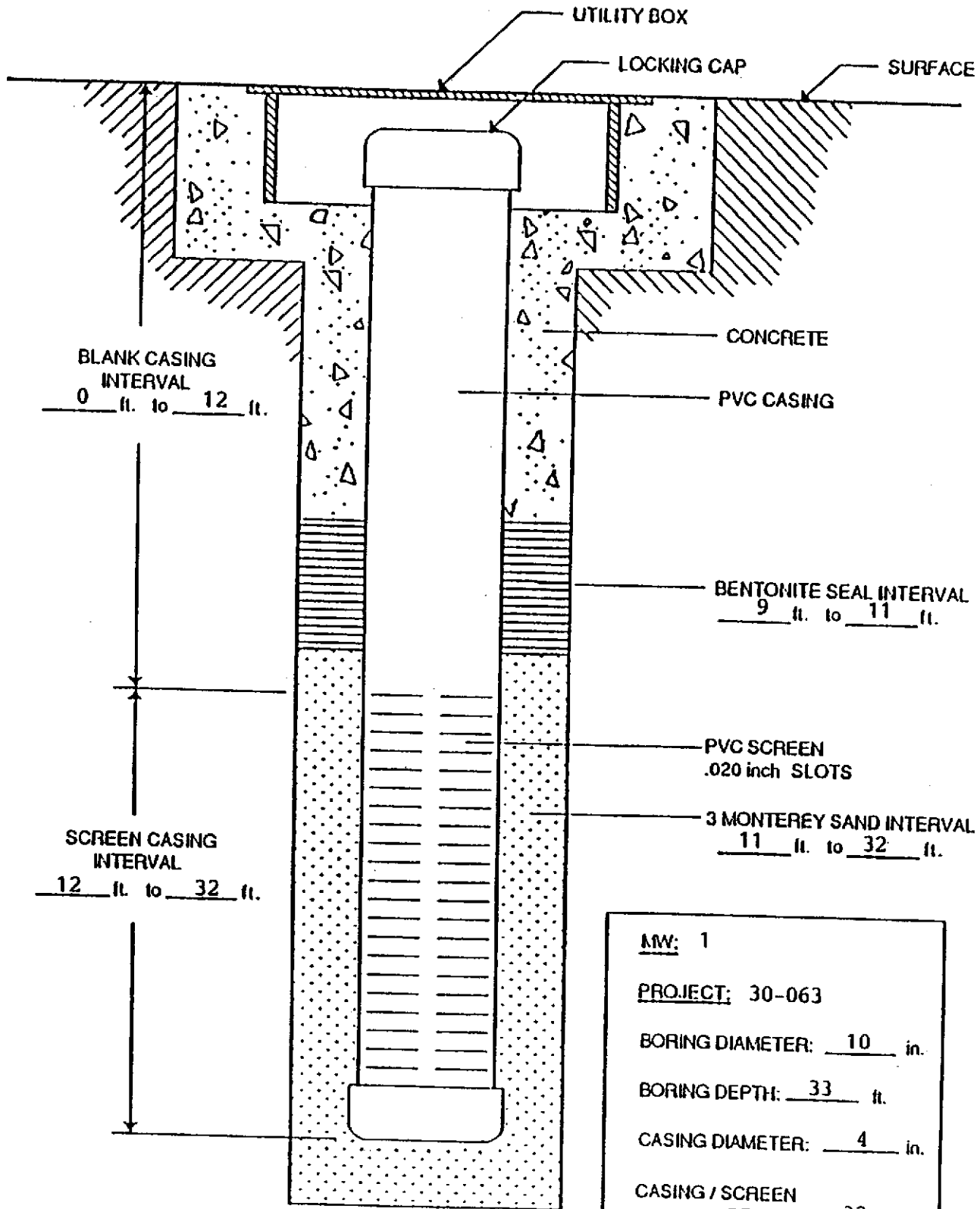
DEPTH (FEET)	I	BLOW CTS	MATERIAL ENCOUNTERED	USCS
-			Asphalt Over Road Base Loose, dry, tan to orange, gravelly SAND.	GP
5		5,14,16	Loose, damp, tan to orange, gravelly SAND; wood fragments. CGI = ND.	GP
10		6,10,13	Loose, damp, tan to light brown, clayey SAND; poorly sorted. CGI = ND.	SC
15		8,8,25	Loose, very moist, tan to light brown, clayey SAND; some iron staining.	SC
20		9,9,12	Loose, saturated, tan to brown, gravelly SAND, with clay. CGI = ND.	GC
25				
30			Medium stiff, moist, tan CLAY.	CL
35			Total Depth = 32 Feet	
40				

TPH = Total Petroleum Hydrocarbons
 TRPH = Total Recoverable Petroleum Hydrocarbons
 ∇ = Ground Water Piezometric Surface
 ND = Not Detected
 CGI = Combustible Gas Indicator

↔ = Sample Analyzed for Hydrocarbon Concentration
 I = Sampling Interval
 ppm = Parts per Million
 LEL = Lower Explosive Limit

B = Benzene
 T = Toluene
 E = Ethylbenzene
 X = Xylene
 Total Depth = 32 Feet

MONITORING WELL CONSTRUCTION DETAIL



BLANK CASING INTERVAL
0 ft. to 12 ft.

SCREEN CASING INTERVAL
12 ft. to 32 ft.

CONCRETE

PVC CASING

BENTONITE SEAL INTERVAL
9 ft. to 11 ft.

PVC SCREEN
.020 inch SLOTS

3 MONTEREY SAND INTERVAL
11 ft. to 32 ft.

MW: 1
PROJECT: 30-063
BORING DIAMETER: 10 in.
BORING DEPTH: 33 ft.
CASING DIAMETER: 4 in.
CASING / SCREEN DEPTH: 32 ft.

NOTE: DRAWING IS NOT TO SCALE



ALTON GEOSCIENCE
1170 BURNETT AVE., STE S
CONCORD, CA 94520

BORING LOG

PROJECT: 30-063

BORING DATE: 10-25-89

LOCATION: 100 MacArthur Boulevard, Oakland

GEOLOGIST: M. Hopwood

TYPE: 10" HSA

BORING NO.: MW-2

DRILLING COMPANY: Bay Area Exploration

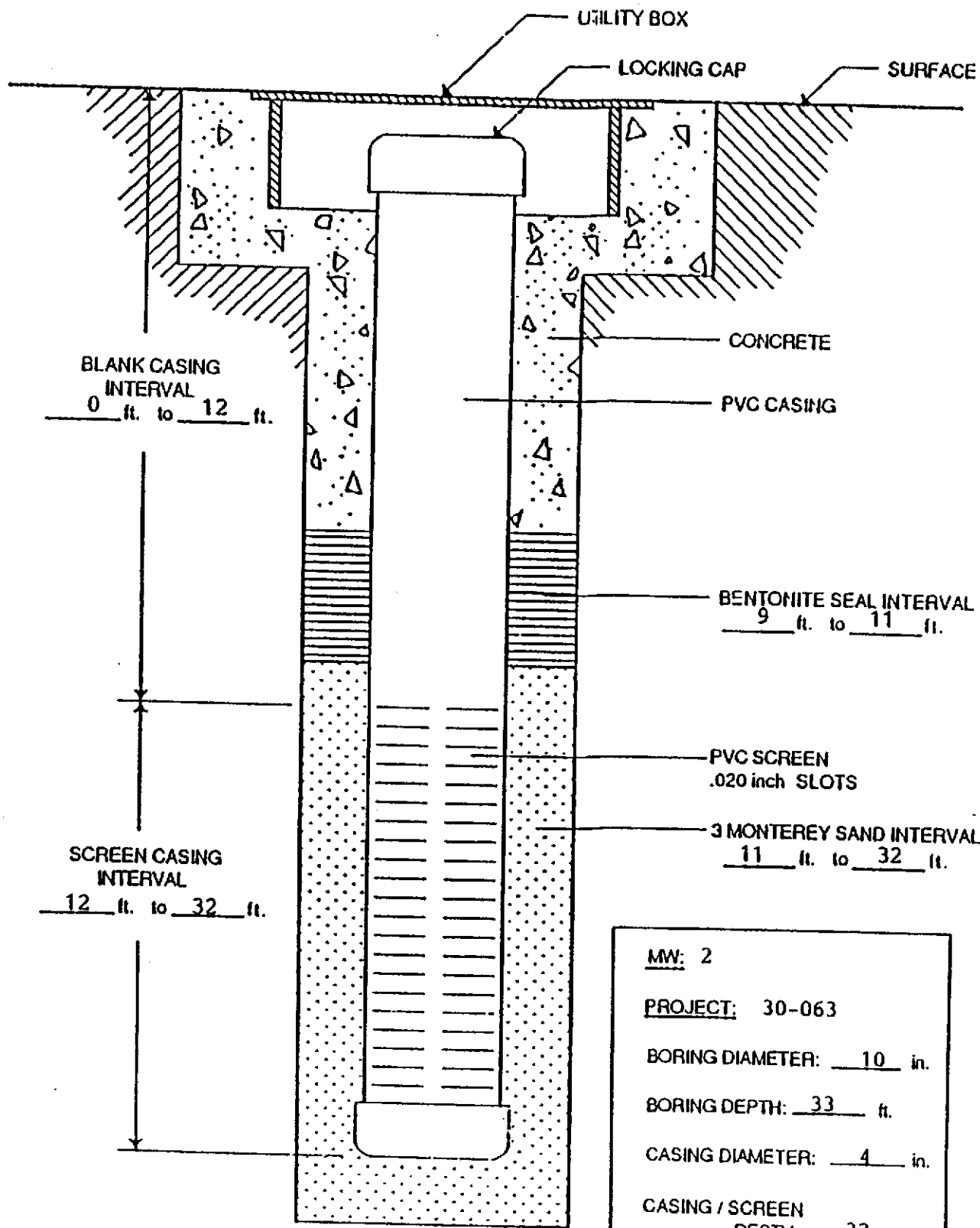
DEPTH (FEET)	I	BLOW CTS	MATERIAL ENCOUNTERED	USCS
-			Asphalt Over Road Base	
-			Very loose, damp, dark brown, silty CLAY.	
5		3,4,7	Loose, damp, greenish gray, silty CLAY with some coarse sand; very slight odor. CGI = 75 ppm.	CL
10		2,4,6	Medium stiff, damp, tan, sandy SILTY/CLAY. CGI = ND.	CL
15	Y	5,7,12	Moderately stiff, damp, tan, clayey SILT.	ML
20				
25				
30			Stiff, damp, gray, silty CLAY; iron stains; calcite stringers.	CL
35			Total Depth - 32 Feet	
40				

TPH = Total Petroleum Hydrocarbons
 TRPH = Total Recoverable Petroleum Hydrocarbons
 ∇ = Ground Water Piezometric Surface
 ND = Not Detected
 CGI = Combustible Gas Indicator

++ = Sample Analyzed for Hydrocarbon Concentration
 I = Sampling Interval
 ppm = Parts per Million
 LEL = Lower Explosive Limit

B = Benzene
 T = Toluene
 E = Ethylbenzene
 X = Xylene
 Total Depth = 32 Feet

MONITORING WELL CONSTRUCTION DETAIL



MW: 2
PROJECT: 30-063
 BORING DIAMETER: 10 in.
 BORING DEPTH: 33 ft.
 CASING DIAMETER: 4 in.
 CASING / SCREEN DEPTH: 32 ft.

NOTE: DRAWING IS NOT TO SCALE



ALTON GEOSCIENCE

16510 ASTON ST.
IRVINE, CA 92714

BORING LOG

PROJECT: 30-063

BORING DATE: 10-26-89

LOCATION: 100 MacArthur Boulevard, Oakland

GEOLOGIST: M. Hopwood

TYPE: 10" HSA

BORING NO.: MW-3

DRILLING COMPANY: Bay Area Explored

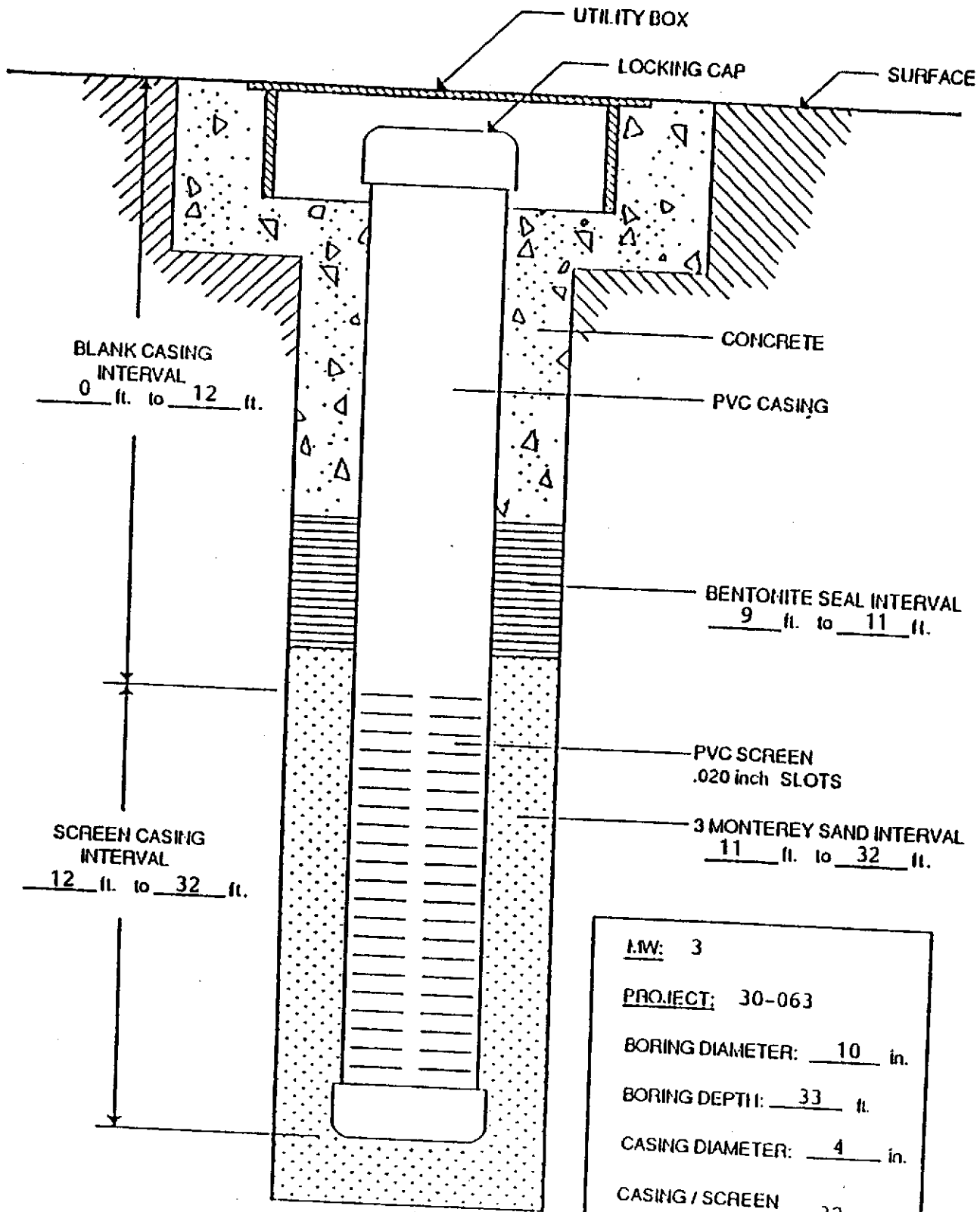
DEPTH (FEET)	I	BLOW CTS	MATERIAL ENCOUNTERED	USCS
0			Asphalt Over Road Base Loose, dry, tan to orange, gravelly SAND.	GP
5		7, 11, 14	Moderately stiff, damp, tan to gray/green, silty CLAY, with gravel; some iron staining.	CL
10		3, 5, 6		
15		6, 8, 13	Moderately soft, damp, brown, silty CLAY.	CL
20			Moderately loose, damp, tan to brown, sandy CLAY.	CL
25			Soft, moist, tan CLAY.	CL
30			Becomes silty.	
35			Total Depth - 32 Feet	
40				

TPH = Total Petroleum Hydrocarbons
 TRPH = Total Recoverable Petroleum Hydrocarbons
 ▽ = Ground Water Piezometric Surface
 ND = Not Detected
 CGI = Combustible Gas Indicator


↔ = Sample Analyzed for Hydrocarbon Concentration
 I = Sampling Interval
 ppm = Parts per Million
 LEL = Lower Explosive Limit

B = Benzene
 T = Toluene
 E = Ethylbenzene
 X = Xylene
 Total Depth = 32 Feet

MONITORING WELL CONSTRUCTION DETAIL



I.W.:	3
PROJECT:	30-063
BORING DIAMETER:	10 in.
BORING DEPTH:	33 ft.
CASING DIAMETER:	4 in.
CASING / SCREEN DEPTH:	32 ft.



ALTON GEOSCIENCE
 1170 BURNETT AVE., STE S
 CONCORD, CA 94520

NOTE: DRAWING IS NOT TO SCALE

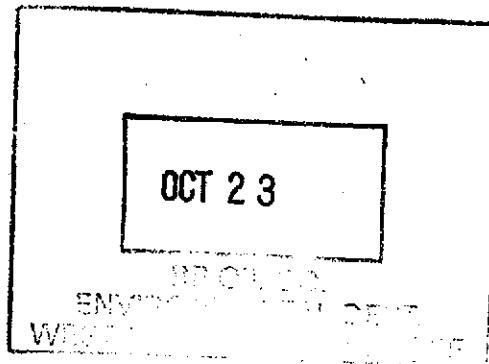
ATTACHMENT C
Potential Receptor Survey,
Alisto, 2000

11102(7)



ALISTO ENGINEERING GROUP

October 19, 2000



Mr. Scott Hooton
Environmental Resources Management
BP Oil Company
295 S.W. 41st Street
Building 13, Suite N
Renton, Washington 98055

10-076-08-05

Subject: Potential Receptor Survey, Expanded Site Plan and Well Search
BP Oil Company Service Station No. 11102
100 MacArthur Boulevard
Oakland, California

Dear Mr. Hooton:

Alisto Engineering Group is pleased to submit the completed BP Oil Potential Receptor Survey, the expanded site plan and utility map, and the results of the well search to identify wells in the vicinity of BP Oil Company Service Station No. 11102, 100 MacArthur Boulevard, Oakland, California.

A review of the files of the State of California Department of Water Resources (DWR) was performed to identify all wells within a one-half-mile radius of the site. The results of the well search reveal that there are no wells other than onsite monitoring wells.

Attached for your use are the following:

- The completed Potential Receptor Survey
- Expanded Site Plan and Utility Map showing the locations of nearby offsite properties and structures, including the locations of underground utilities
- Table presenting available property addresses and owners by assessor's parcel number

Please call if you have questions or comments.

Sincerely,

ALISTO ENGINEERING GROUP

Brady Nagle
Project Manager

Enclosures

F:\00\10-076\076-8-5 letter

Potential Receptor Survey

Site # 11102

Site # 11102
 Address 100 MacArthur
 City/State Oakland, CA
 County Alameda
 Quadrangle Latitude 37° 49' 9"
 Longitude 122° 15' 9"

Signature of Preparer William A. Bis
 Company: Alisto Engineering Group
 Date: 4/18/00

1. Potential Receptors

Provide information for the following potential receptors	Yes/No	Field Verify	Date Verify	Distance	Direction	Depth
	Y/N		Complete as appropriate			
Is a basement or subsurface foundation within 100 feet of the source or source area?	N	Y	4/18/00	NA	NA	
Is a school within 1000 feet of the source or source area?	N	Y	4/18/00	NA	NA	
Is a storm sewer within 50 feet of the source or source area?	Y	Y	4/18/00	20 FT	S	Unknown
Is a sanitary sewer within 50 feet of the source or source area?	Y	Y	4/18/00	50 FT	S	Unknown
Is a septic system leach field within 50 feet of the source or source area?	N	Y	4/18/00	NA	NA	
Is a water line main within 50 feet of source or source area?	Y	Y	4/18/00	20 FT	S	Unknown
Is a natural gas line main within 50 feet of the source or source area?	Y	Y	4/18/00	40 FT	E	Unknown
Is a buried telephone/television cable main within 50 feet of the source or source area?	Y	Y	4/18/00	30 FT	E	Unknown
Is a buried electrical cable main within 50 feet of source or source area?	N	Y	4/18/00	NA	NA	NA
Is a subway within 1000 feet of the source or source area?	N	Y	4/18/00	NA	NA	NA
Is the bedrock area prone to dissolution along joints or fractures within 100 feet of the source or source area?	N	Y	4/18/00			
Is there a fault or known fracture within 100 feet of the source or source area?	N	Y	4/18/00			

Potential Receptor Survey

Site # 11102

Source of information Site Visit, PG&E, Pacific Bell, EBMUD, Geologic Maps of Upper Cenozoic Deposits in Central, California, 1993

Verified By William Bir Date 4/18/00

2. Sensitive Areas

Provide Information for the following potential receptors	Yes/No	Field Verify	Date Verify	If yes, give a brief explanation of classification		
		Y/N		Complete as appropriate		
Is this property classified as a sensitive area?	N	Y	4/18/00			

Source of information California Department of Fish and Game Website *

Verified By William Bir Date 4/18/00

3. Drinking Water Supply

Provide Information for the following potential receptors	Yes/No	Field Verify	Date Verify	Distance	Direction	Production Rate
		Y/N		Complete as appropriate		
Is a public water supply well within 3 miles of the source or source area?	N	Y	4/18/00			
Is a public water supply intake within 3 miles of the source or source area?	N	Y	4/18/00	Note: Field verified by Alisto staff visits to each potential water-supply well.		
Is a private water supply well within 0.5 miles of the source or source area?	N	Y	4/18/00			

Source of information California Dept. of Water Resources **

Verified By William Bir Date 4/18/00

* California Department of Fish and Game Website; Habitat Conservation Division; Wetlands Inventory and Conservation Unit; View Maps; Wetland and Riparian Classification for Bay Area Region of California (urban areas listed as "other")

**Review of DWR Well Data Sheets from the Sacramento office.

Potential Receptor Survey

Site # 11102

4. Surface Water Body

Provide Information for the following potential receptors	Yes	No	If yes, provide the following information.	
Are there surface waters located within 1000 feet of the property?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Complete as appropriate.	
			Name	Glen Echo Creek
			Type	Stream
			Distance from property	1000 FT
			Direction from property	NW
			Name	
			Type	
			Distance from property	
			Direction from property	

Source of information USGS Oakland West Quad

Verified By William Bir Date 4/18/00

5. Describe type of local water supply:

Public Private

Supplier's Name East Bay Municipal Utilities District

Supplier's water supply source Mokelumne River

Water supply source distance and direction from property Approximately 150 Miles East

Intake distance and direction from property NA

Source of information EBMUD

Verified By William Bir Date 4/18/00

6. Aquifer Classification (include a brief explanation for classification)

Class I: Special Ground Waters, Irreplaceable Drinking Water Source or Ecologically Vital

Class II: Current or Potential Drinking Water Source

Class III: Not Potential Source of Drinking Water

Potential Receptor Survey

Site # 11102

Is this a sole source aquifer? Yes No

Depth to top of aquifer: Unknown

Source of information California Dept. of Water Resources

Verified By William Bir Date 4/18/00

7. Describe monitoring wells, if any:

Number: 3

Free Product: Yes No Well(s) _____

Source of information Alisto Engineering Group

Verified By William Bir Date 4/18/00

8.0 Relevant Ecological Receptors and Habitats

8.1 Property Characteristics

Size of Property (acres)	→	0.34 Acres
% of property that is wooded	→	0%
Dominant tree type	→	NA
% of property that is scrub/shrub	→	5%
Dominant Vegetation	→	Various Shrubs
% of property that is open land	→	0%
% of property that is grass area	→	10%
% of property that is agricultural crops	→	0%
% of property that is barren	→	0%
% of property that is commercial or industrial use including paved areas	→	85%

Source of information Site Visit

Verified By William Bir Date 4/18/00

Potential Receptor Survey

Site # 11102

8.2 Fauna

List any fauna (e.g., mammals, birds, fish, reptiles) that are either observed or evidenced to be on property.	→	None
	→	
	→	
	→	
	→	
	→	
	→	
	→	

Source of information Site Visit

Verified By William Bir Date 4/18/00

8.3 Water Bodies on the Property

Identify the type of water body (e.g., river, creek, lake, stream)	→	None
Is water body naturally developed or man made?	→	NA
List the uses of the water body	→	NA
What is the source of the water for the water body	→	NA
What is the nature of the bottom of the water body (e.g., rocky or concrete bottom, drainage ways or impoundments)	→	NA
Describe the observed biota	→	NA

Source of information Site Visit

Verified By William Bir Date 4/18/00

Potential Receptor Survey

Site # 11102

8.4 Wetlands

Are there any wetlands present on the property?	→	No
Describe the type of vegetation present	→	NA
Identify the source of water	→	NA
Is the wetlands influenced by tidal changes?	→	NA
Describe the observed biota	→	NA

Source of Information Site Visit

Verified By William Pir Date 4/18/00



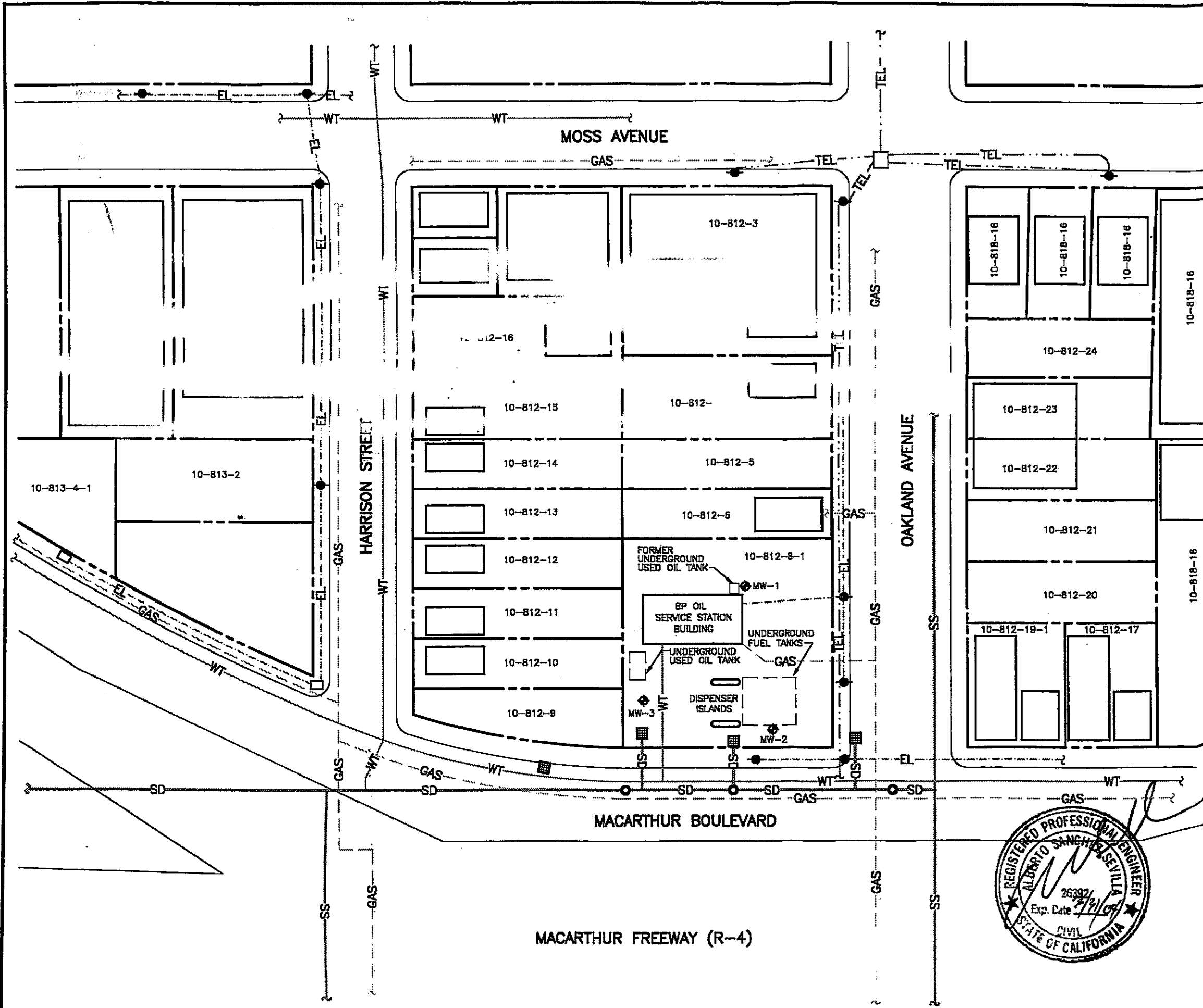
ADJACENT PROPERTIES
BP OIL COMPANY SERVICE STATION NO. 11102
100 MACARTHUR BOULEVARD, OAKLAND, CALIFORNIA

APN	Property Address	Owner Address
10-812-8-1	100 MacArthur Boulevard Oakland, CA 94610	First Interstate Bank of California P.O. Box 52085 Phoenix, AZ 85072
10-812-10	3506 Harrison Street Oakland, CA 94610	Albert & Virginia Troelstrup 925 Freedom Boulevard Watsonville, CA 95076
10-812-9	96 MacArthur Boulevard Oakland, CA 94610	First Interstate Bank of California P.O. Box 52085 Phoenix, AZ 85072
10-812-11	3510 Harrison Street Oakland, CA 94611	Ju Duarte & Maria A. Huntington 3510 Harrison Street Oakland, CA 94611
10-812-12	3516 Harrison Street Oakland, CA 94611	Scott C. & Maxine E. Leonard P.O. Box 6473 Oakland, CA 94603
10-812-13	3520 Harrison Street Oakland, CA 94611	Joe T. & Peggy A. Heskett - owner on 3/1/98 Rene M. Gauthier - current owner 3520 Harrison Street Oakland, CA 94611
10-812-14	3522 Harrison Street Oakland, CA 94611	Glen D. Carlos 3524 Harrison Street Oakland, CA 94611
10-812-15	3530 Harrison Street Oakland, CA 94611	Judith G. Lahrson & Kathleen Fry 3528 Harrison Street Oakland, CA 94611
10-812-16	3536 Harrison Street Oakland, CA 94611	Susan T. Montauk 5236 Boyd Avenue Oakland, CA 94618
10-812-6	515 Oakland Avenue Oakland, CA 94611	William O. Booms 5299 Harbord Drive Oakland, CA 94618
10-812-5	517 Oakland Avenue Oakland, CA 94611	Mary A. & Lilla A. Acebo 517 Oakland Avenue Oakland, CA 94611
10-812-4	525 Oakland Avenue Oakland, CA 94611	Charles F. Ston & Alfred Aline 4600 Market Street Oakland, CA 94608
10-812-3	535 Oakland Avenue Oakland, CA 94611	Lee & Carolyn H. Winson 319 Maverick Court Lafayette, CA 94549
10-810-26-3	449 Oakland Avenue Oakland, CA 94611	George W. & Carmen O. Kramer 31 Jerome Avenue Piedmont, CA 94611
10-810-26-4	445 Oakland Avenue Oakland, CA 94611	George W. & Carmen O. Kramer 31 Jerome Avenue Piedmont, CA 94611

10-810-9	439 Oakland Avenue Oakland, CA 94611	James M. & Marion C. Bitzer 352 Birchwood Drive Moraga, CA 94556
10-810-10	435 Oakland Avenue Oakland, CA 94611	A. LeMan P.O. Box 21052 Piedmont, CA 94620
10-810-23	3334 Harrison Street Oakland, CA 94611	Robert A. & Michelle Brown 3334 Harrison Street Oakland, CA 94611
10-810-24	3340 Harrison Street Oakland, CA 94611	Lois Rylee Heirs of Estate - owner on 3/1/98 Lois Rylee Heirs of Estate - current owner c/o - Michael Gregory 3777 Arlington Court Pittsburg, CA 94565
10-818-19-1	154 Santa Clara Avenue Oakland, CA 94610	Richard P. Warren 166 Santa Clara Avenue Oakland, CA 94610
10-818-17	158 Santa Clara Oakland, CA 94610	First Barbara Inc. 499 Embarcadero Oakland, CA 94606
10-818-20	512 Oakland Avenue Oakland, CA 94610	Richard P. Warren 166 Santa Clara Avenue Oakland, CA 94610
10-818-21	516 Oakland Avenue Oakland, CA 94610	Richard P. Warren 166 Santa Clara Avenue Oakland, CA 94610
10-818-22	520 Oakland Avenue Oakland, CA 94610	Richard P. Warren 166 Santa Clara Avenue Oakland, CA 94610
10-818-23	524 Oakland Avenue Oakland, CA 94610	Richard P. Warren 166 Santa Clara Avenue Oakland, CA 94610
10-818-24	528 Oakland Avenue Oakland, CA 94610	Tamara Locicero 528 Oakland Avenue Oakland, CA 94611
10-818-16	160 Santa Clara Avenue Oakland, CA 94610	Richard Warren 166 Santa Clara Avenue Oakland, CA 94610
10-818-15-2	164 Santa Clara Avenue Oakland, CA 94610	Richard P. Warren 166 Santa Clara Avenue Oakland, CA 94610
10-813-1	3545 Harrison Street Oakland, CA 94611	John U. & Marcellina A. Ogbu 6531 Exeter Drive Oakland, CA 94611
10-813-2	3527 Harrison Street Oakland, CA 94611	Malcolm W. & Marion P. Gerrit 1245 Mountain Boulevard Oakland, CA 94611
10-813-3	96 MacArthur Boulevard Oakland, CA 94611	Barbara B. Jelinek c/o - Larry Kronick 4567 Enterprise Street Fremont, CA 94538

10-813-4-1 66 MacArthur Boulevard
Oakland, CA 94611

Barbara B. Jelinek
c/o - Larry Kronick
4567 Enterprise Street
Fremont, CA 94538



LEGEND

- ⊕ GROUNDWATER MONITORING WELL
- 10-812-8-1 ASSESSOR'S PARCEL NUMBER
- DROP INLET GRATE
- MANHOLE
- POWER POLE

UNDERGROUND UTILITY LINES

- SS SANITARY SEWER PIPE
- WT WATER SERVICE PIPE
- GAS GAS PIPE
- EL ELECTRICAL LINE
- TEL TELEPHONE LINE
- UNKNOWN DESTINATION

NOTE:
 Location of utilities are approximate and based upon information provided at time of preparation. This map is not be used for any construction or related activities.



BP OIL SERVICE STATION NO. 11102
 100 MACARTHUR BOULEVARD
 OAKLAND, CALIFORNIA
 PROJECT NO. 10-076



ATTACHMENT D
Conduit Study Map
Cambria, 2000

BP Oil Service Station No. 11102
100 MacArthur Boulevard
Oakland, California

C A M B R I A



Conduit Study Map

