



Atlantic Richfield Company
(a BP affiliated company)

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15 May 2007

Re: Work Plan for On-Site Soil and Ground-Water Investigation
Atlantic Richfield Company Station #2162
15135 Hesperian Boulevard
San Leandro, California
ACEH Case #RO0000190

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

Submitted by:

Paul Supple
Environmental Business Manager

RECEIVED

8:05 am, May 16, 2007

Alameda County
Environmental Health



15 May 2007

Job No. 06-08-620

Mr. Paul Supple
Environmental Business Manager
Atlantic Richfield Company (a BP affiliated company)
PO Box 1257
San Ramon, California 94583
Submitted via ENFOS

**RE: Work Plan for On-Site Soil and Ground-Water Investigation
Atlantic Richfield Company Station No. 2162
15135 Hesperian Boulevard, Oakland, California;
ACEH Case No. RO0000190**

Dear Mr. Supple,

Broadbent & Associates, Inc. (BAI) is pleased to present this Work Plan for On-Site Soil and Ground-Water Investigation for additional subsurface characterization at the Atlantic Richfield Company (ARCO) Station No. 2162, located at 15135 Hesperian Boulevard, Oakland, California (Site). BAI prepared this work plan in response to the 5 April 2007 letter request from Mr. Steven Plunkett of the Alameda County Environmental Health Services (ACEH). Specifically, technical comments within the ACEH letter requested that five on-site soil borings be advanced and soil and ground water sampled in order to supplement the case for Site closure. Copies of recent regulatory correspondence for this Site are contained with Appendix A. This work plan includes brief discussions on the Site background and previous investigations, regional and Site geology and hydrogeology, the scope of work for the proposed soil borings and soil and ground-water sampling, and completion schedule.

SITE BACKGROUND

The Site is an active ARCO-brand gasoline retail station that consists of a station building, four 10,000 gallon double-wall fiberglass underground storage tanks (USTs), and eight pump dispensers on four dispenser islands. The Site is located on the west side of Hesperian Boulevard south of Ruth Court in Oakland, California (Figure 1). The land use in the immediate vicinity of the Site is commercial. The Site is predominantly covered with concrete and asphalt.

A UST leak was reported in September of 1991. The USTs were removed and replaced with four, double-wall fiberglass, 10,000 gallon tanks in late 1991 – early 1992. Approximately 100 cubic yards (approximately 130 tons) of contaminated soil and approximately 50,000 gallons of water from the UST excavation were removed during these activities. A limited soil vapor performance test was reportedly completed in late 1991 to determine if Soil Vapor Extraction (SVE) was feasible at the Site. Results of the test using vapor wells VW-1 and VW-2 in the

southern portion of the Site showed that SVE was not an effective remediation technique due to an insufficient radius of influence by the SVE test system. Periodic ground-water monitoring at the Site began in 1992, when four monitoring wells were installed.

Product lines and dispensers were again replaced with upgrades in January 2003. Approximately 140 cubic yards (183 tons) of soil were excavated and removed from the Site during this upgrade of the product lines and dispensers. Of the soil samples collected during the upgrade, sample S-L4-3.5 yielded a Total petroleum hydrocarbons as gasoline (TPH-g) concentration of 200 milligrams per kilogram (mg/kg), toluene concentration of 2.1 mg/kg, Ethylbenzene concentration of 1.4 mg/kg, and a total xylenes concentration of 1.5 mg/kg. Sample S-L1-3.5 yielded a benzene concentration of 0.072 mg/kg. Samples S-L3-3.5, S-L1-3.5, and S-D5-3 yielded concentrations of methyl tertiary butyl ether (MTBE) of 0.55 mg/kg, 0.14 mg/kg, and 0.093 mg/kg, respectively.

Ground water at the Site has been monitored since 1992 through a network of four monitoring wells: Wells MW-1 and MW-2 are adjacent to the USTs; Wells MW-3 and MW-4 are located downgradient near the southern boundary of the Site (Figure 2). Historic water level elevations have yielded potentiometric ground-water flow directions mostly consistent to the southwest at hydraulic gradients ranging from 0.002 ft/ft to 0.013 ft/ft. Concentrations of TPH-g/Gasoline-Range Organics (GRO) have been non-detect and/or below the Environmental Screening Level (ESL) of 100 micrograms per liter ($\mu\text{g}/\text{l}$) for ground water that is a current or potential drinking water resource since July 2002. The maximum TPH-g/GRO concentration was detected in well MW-2 at a concentration of 2,100 $\mu\text{g}/\text{L}$ in October 1999. Concentrations of benzene, toluene, Ethylbenzene, and total xylenes (BTEX) have been non-detect and/or below the ESLs since December 2000. The maximum benzene concentration in ground-water at the Site was detected in well MW-3 at a concentration of 12 $\mu\text{g}/\text{L}$ in May 1996. Maximum concentrations for toluene, Ethylbenzene, and xylenes were 3.2 $\mu\text{g}/\text{L}$ (MW-3, 6/23/1999), 45 $\mu\text{g}/\text{L}$ (MW-2, 2/26/1996), and 28 $\mu\text{g}/\text{L}$ (MW-2, 2/26/1996), respectively. The wells have shown a decreasing trend in MTBE concentrations since 1996. MTBE has not been detected in well MW-1 since July 2002 or well MW-2 since 2000. The maximum MTBE concentration was detected in well MW-3 at a concentration of 1,900 $\mu\text{g}/\text{L}$ in June 1997. Concentrations in MW-3 have shown a decreasing trend from June 1997 to 4.3 $\mu\text{g}/\text{L}$ in July 2006. The MTBE concentration in well MW-4 has shown a decreasing trend from July 2002 to non-detect since August 2005. Results of periodic ground-water monitoring and sampling since 2000 are summarized in Table 1 and Table 2. Historic ground-water flow direction and gradient calculations since 2000 are summarized in Table 3. Historic soil and ground-water analytical data is provided in Appendix B.

SITE GEOLOGY AND HYDROGEOLOGY

According to the *East Bay Plain Groundwater Basin Beneficial Use Evaluation Report* (California Regional Water Quality Control Board – San Francisco Bay Region/SFRWQCB, June 1999), the Site is located within the San Leandro Sub-Area, near the northern boundary of the San Lorenzo Sub-Area, in the East Bay Plain of the San Francisco Basin. These Sub-Areas share the same hydrogeologic characteristics, yet are separated by the junction of the surface trace between the San Leandro and San Lorenzo alluvial fans. These Sub-Areas consist primarily of alluvial fan sediments with the distinction of the Yerba Buena Mud extending west into the San Leandro and San Lorenzo Sub-Areas, unlike the northern Sub-Areas. The Yerba Buena Mud forms a major aquitard between the shallow and deep aquifers throughout much of

southwestern area of the East Bay Plain. The San Leandro and San Lorenzo Sub-Areas alluvial fans are finer grained and produce less groundwater than the Niles Cone basin to the south.

Throughout most of the Alameda County portion of the East Bay Plain, from Hayward north to Albany, water level contours show that the general direction of ground water flow is from east to west or from the Hayward Fault to the San Francisco Bay. Ground-water flow direction generally correlates to topography. Flow direction and velocity are also influenced by buried stream channels that typically are oriented in an east-west direction. In the southern end of the study area however, near the San Lorenzo Sub-Area, the direction of flow may not be this simple. According to information presented in *East Bay Plain Groundwater Basin Beneficial Use Evaluation Report*, the small set of water level measurements available seemed to show that the ground water in the upper aquifers may be flowing south, with the deeper aquifers, the Alameda Formation, moving north. The nearest surface water drainage is the Estudillo Canal, located approximately 1,100 feet southeast of the Site. The Estudillo Canal's overall general flow direction is from east to west; however, specific flow directions of the canal vary to the southwest near the Site, eventually turning to the west-northwest prior to entering the San Francisco Bay via the San Leandro Flood Control Channel.

The Site elevation is approximately 33 feet above mean sea level. The water table fluctuates seasonally with recorded static depths to water in monitor wells at the Site ranging between a historic minimum of 7.10 ft bgs (MW-3 on 4/14/2005) and maximum of 10.08 feet bgs (MW-4 on 10/9/2002). Historically, depth-to-water measurements have typically ranged between 7.0 and 9.5 feet bgs (Table 1). Ground-water flow direction during the third quarter 2006 monitoring event on 31 July 2006 was to the south-southwest at a gradient of 0.003 ft/ft (Figure 2). Historic ground-water flow directions and gradients for the Site are summarized in Table 3. Based on this information, the local ground-water flow direction is to the southwest which is contrary to the surface topography and assumed flow direction, west towards San Francisco Bay.

According to the *East Bay Plain Groundwater Basin Beneficial Use Evaluation Report*, the majority of East Bay Plain Cities (except the City of Hayward) do not have "any plans to develop local ground-water resources for drinking water purposes, because of existing or potential saltwater intrusion, contamination, or poor or limited quantity." The SFRWQCB's basin plan denotes existing beneficial uses of municipal and domestic supply (MUN), industrial process supply (PROC), industrial service supply (IND), and agricultural supply (AGR) for the East Bay Plain ground-water basin.

Geologic data derived from on-site borings indicate unconsolidated sediments consisting of interbedded silts and silty clay from one to nine feet below ground surface (ft bgs). A sand and gravel unit underlies these silts and silty clays. A silt unit encountered at 13 ft bgs underlies the sand and gravel unit. Soil boring and well construction logs are provided in Appendix C. Copies of geologic cross-sections for the Site are provided in Appendix D.

PROPOSED SCOPE OF WORK

At the request of ACEH, the purpose of the proposed additional Site investigation is to further evaluate the soil and ground water for the presence of petroleum hydrocarbons immediately down gradient of the UST pit and waste oil tank pit and along the southern Site boundary

between monitoring wells MW-3 and MW-4. BAI proposes advancing five direct-push technology (DPT) borings to evaluate potential petroleum hydrocarbon impacts to soil and ground water. Two borings (CB-1, CB-2) are proposed downgradient (south) of the UST pit. One boring (CB-3) are proposed downgradient (south) of the waste oil tank pit and west of the dispenser islands. Two borings (CB-4, CB-5) are proposed adjacent to the southern property line equidistant between MW-4 and VM-2. Actual locations may vary due to the potential presence of underground utility conflicts. The proposed boring locations are shown in Drawing 3.

Prior to initiating field activities, Stratus will obtain the necessary drilling permit with Alameda County; prepare a site health and safety plan (HASP) for the proposed work; clear the Site for subsurface utilities; and provide 72-hour advance written notification to ACEH prior to start of field activities. 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. Boreholes will be physically cleared to five feet bgs using hand auger or air knife methods.

The Site-specific HASP will be prepared for use by personnel implementing the work plan. The HASP will address the proposed soil boring. A copy of the HASP will be available onsite during work. The subcontractor(s) performing filed activities will be provided with a copy of the HASP prior to initiating work. A safety tailgate meeting will also be conducted daily to review the Site hazards and drilling work scope.

A Stratus Environmental Inc. (Stratus) field geologist will observe a California-licensed driller advance the soil borings using a Geoprobe or similar DPT drilling rig to a total approximate depth of 12-15 feet bgs or approximately five feet into ground water. Soils will be classified according to the Unified Soil Classification System (USCS), and will be examined using visual and manual methods for parameters including odor, staining, color, grain size, and moisture content. Soil samples will be collected continuously and preserved at five-foot intervals, at changes in lithology, and at areas of obvious chemical impact. For each soil sample collected for laboratory analysis (anticipate samples from five ft bgs and nine ft bgs), an extra soil sample will be collected and placed in a sealable plastic bag for field screening. The soil samples collected for field screening will be allowed to volatilize and later analyzed using a photo-ionization detector (PID) for the presence of volatile petroleum compounds. Based on field screening results and observations, soil samples will be selected and submitted to the laboratory for analysis.

Ground-water samples will be collected from each of the borings using a temporary well screen and a bailer, and will be placed in appropriately-preserved containers. Selected soil and ground-water samples will be submitted to the laboratory for chemical analysis. Following sample collection, each boring will be grouted to the surface using neat cement, and the surface refinished to match the surrounding area.

Soil samples collected for possible chemical analysis will be retained in sampling tubes, covered at each end with Teflon sheeting, capped with plastic end caps, labeled, and placed in an ice-filled cooler for preservation. Ground-water samples collected will be placed in appropriately-preserved containers, labeled, and placed in an ice-filled cooler for preservation.

The samples will be submitted under chain-of-custody protocol to TestAmerica Analytical Testing Corporation (Morgan Hill), a California State-certified environmental laboratory. Soil and ground-water samples will be analyzed for the following:

- GRO, BTEX, MTBE, Ethyl tert-butyl ether (ETBE), tert-Amyl methyl ether (TAME), Di-isopropyl ether (DIPE), 1,2-Dichloroethane (1,2-DCA), 1,2-Dibromoethane (EDB), tert-Butyl alcohol (TBA), and ethanol using EPA Method 8260B, and Diesel-Range Organics (DRO) by EPA Method 8015M.

Investigation-derived residuals will be temporarily stored onsite in 55-gallon, DOT-approved 17H drums, pending characterization for proper disposal. Stratus will coordinate the transportation and disposal of surplus soils and liquids to the appropriate California-regulated facilities.

Upon completion of field activities and receipt of certified field data package (including copies of permits, field data sheets, boring logs, and the laboratory analytical report with chain-of-custody documentation), BAI will prepare a Soil and Ground-Water Investigation Report. The report will document the results of the investigation, field activities, copies of required permit(s), copies of field notes, soil boring logs, laboratory analytical reports with copies of chain-of-custody records, discussion of findings, conclusions and recommendations. Deviations from the work plan or data inconsistencies will be discussed in the report.

PROPOSED SCHEDULE

The schedule for the above-noted work shall proceed as follows:

- Implement Onsite Soil and Ground-Water Investigation – Upon approval of this work plan and obtaining the necessary permits. Due to aggressive scheduling planned for the field work, BAI will assume that the contents of this work plan meets with ACEH approval if no comments are received back from ACEH within 30 days of submittal.
- Submittal of Onsite Soil and Ground-Water Investigation Report – Within 60 days after completion of fieldwork.

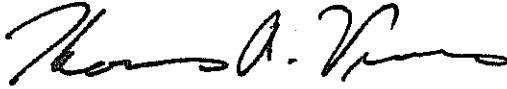
In accordance with direction received from ACEH in their email of 4 April 2007 (provided within Attachment A), annual ground-water monitoring from the onsite ground-water monitoring wells will be discontinued. Quarterly status reports will continue to be submitted.

CLOSURE

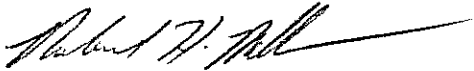
The findings presented in this document are based upon: observation of field personnel from previous consultants, the points investigated, and results of laboratory tests performed by various laboratories. Our services were performed in accordance with the generally accepted standard of practice at the time this document was written. No other warranty, expressed or implied was made. This report has been prepared for the exclusive use of Atlantic Richfield Company. It is possible that variations in soil or ground-water conditions could exist beyond points explored in this investigation. Also changes in site conditions could occur in the future due to variations in rainfall, temperature, regional water usage, or other factors.

Should you have any questions concerning this work plan, please do not hesitate to contact us at (530) 566-1400.

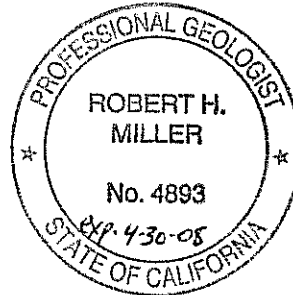
Sincerely,
BROADBENT & ASSOCIATES, INC.



Thomas A. Venus, P.E.
Senior Engineer



Robert H. Miller, P.G.
Principal Hydrogeologist



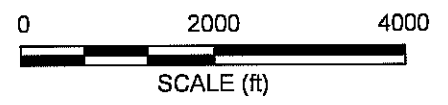
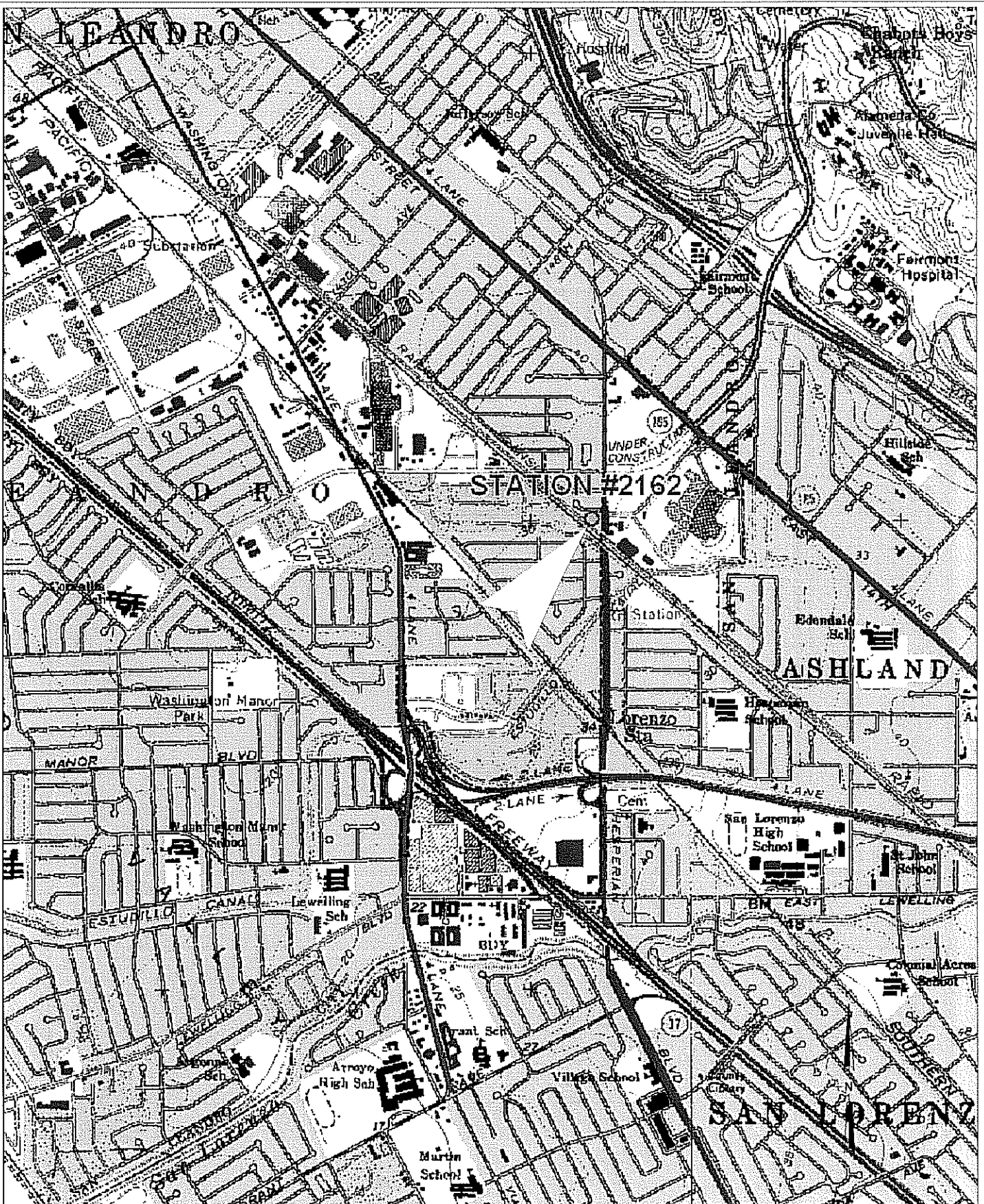
cc: Mr. Steven Plunkett, ACEH (Submitted via ACEH ftp site)
Electronic copy uploaded to GeoTracker

Attachments:

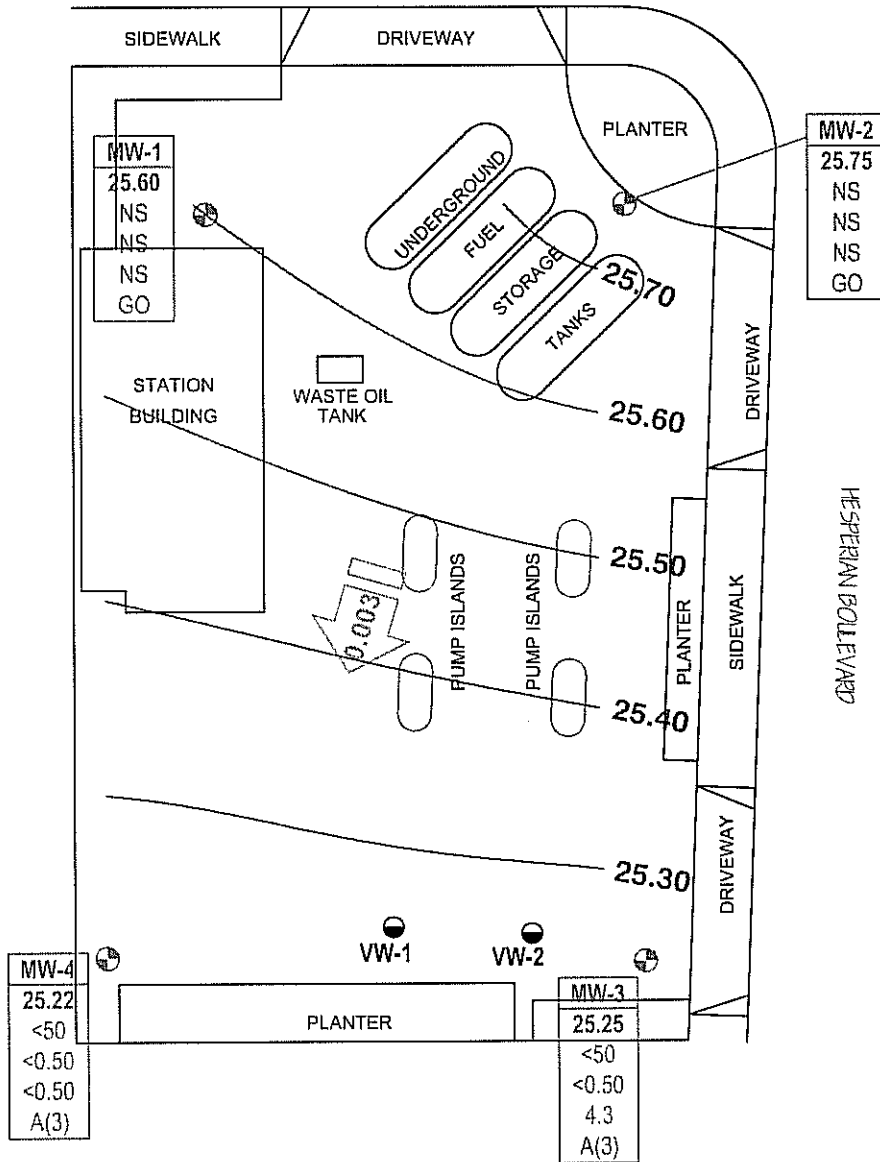
- Drawing 1 – Site Location Map
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- Figure 2. Ground-Water Elevation Contours and Analytical Summary Map
- Figure 3. Proposed Boring Locations



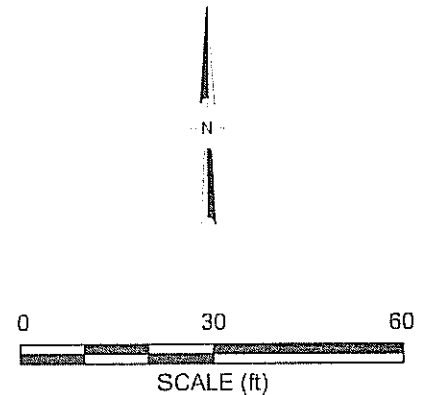
RUTH COURT

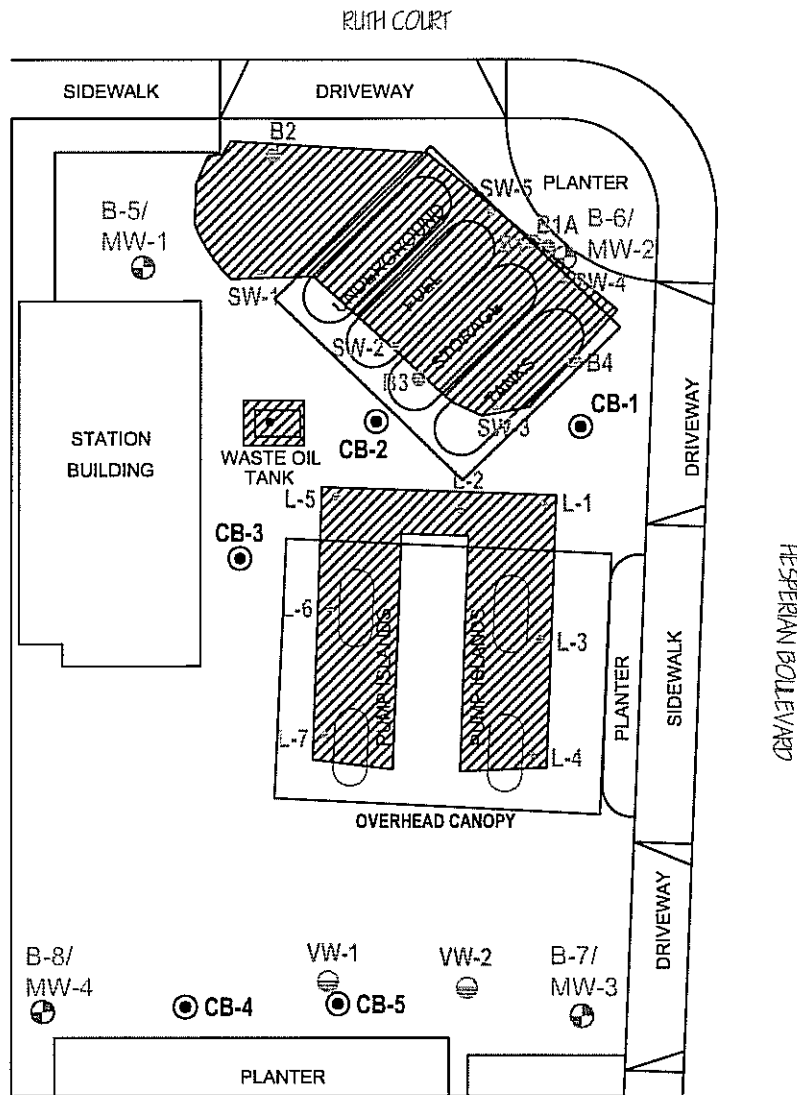


LEGEND


- MONITORING WELL
 - SOIL VAPOR EXTRACTION WELL
 - 25.40 — GROUND-WATER ELEVATION CONTOURS (FT MSL)
 - APPROXIMATE GROUND-WATER FLOW DIRECTION AND GRADIENT (FT/FT)
- | Well | ELEV | GRO | Benzene | MTBE | A/Q |
|------|-------|-----|---------|-------|------|
| MW-1 | 25.60 | NS | NS | NS | GO |
| MW-2 | 25.75 | NS | NS | NS | GO |
| MW-3 | 25.25 | <50 | <0.50 | 4.3 | A(3) |
| MW-4 | 25.22 | <50 | <0.50 | <0.50 | A(3) |
- < NOT DETECTED AT OR ABOVE LABORATORY REPORTING LIMITS
 - GO GAUGED ONLY
 - A(3) ANNUAL SAMPLING DURING 3RD QUARTER
 - NS NOT SAMPLED

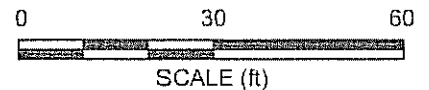
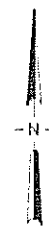
NOTE: SITE MAP ADAPTED FROM URS CORPORATION FIGURES.
SITE DIMENSIONS AND FACILITY LOCATIONS NOT VERIFIED.





LEGEND

- CB-5 ● PROPOSED SOIL/GROUNDWATER BORING
- B-8/
MW-4 ⊕ MONITORING WELL RESNA SEPTEMBER 1992
- VW-2 ⊖ SOIL VAPOR EXTRACTION WELL (ROUX ASSOCIATES, INC., 1991)
- B4 ● SOIL BORING (ROUX ASSOCIATES, INC., 1991)
- SW-5 • SIDEWALL SOIL SAMPLE
- L-7 • PRODUCT LINE SAMPLE
-  FORMER UNDERGROUND STORAGE TANK AND PRODUCT LINE EXCAVATIONS



NOTE: SITE MAP ADAPTED FROM URS CORPORATION AND RESNA FIGURES.
SITE DIMENSIONS AND FACILITY LOCATIONS NOT VERIFIED.

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

Station #2162, 15135 Hesperian Blvd., San Leandro, CA

Well and Sample Date	P/NP	Comments	TOC (feet msl)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet bgs)	Water Level Elevation (feet msl)	Concentrations in (µg/L)					DO (mg/L)	pH	
								GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes			MTBE
MW-1															
6/20/2000	--		31.19	8.0	16.0	8.33	22.86	<50	<0.5	0.8	<0.5	<1.0	<10	--	--
9/29/2000	--		31.19	8.0	16.0	9.07	22.12	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
12/17/2000	--		31.19	8.0	16.0	8.69	22.5	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
3/23/2001	--		31.19	8.0	16.0	8.19	23.0	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
6/20/2001	--		31.19	8.0	16.0	8.97	22.22	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
9/22/2001	--		31.19	8.0	16.0	9.56	21.63	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
12/28/2001	--		31.19	8.0	16.0	8.4	22.79	<50	<0.5	<0.5	<0.5	0.63	<2.5	--	--
3/14/2002	--		31.19	8.0	16.0	8.05	23.14	<50	<0.5	<0.5	<0.5	<0.5	170	--	--
4/18/2002	--		31.19	8.0	16.0	8.27	22.92	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
7/19/2002	NP		31.19	8.0	16.0	8.88	22.31	<50	<0.5	<0.5	<0.5	<0.5	11	1.0	8.2
10/09/02	NP	a	31.19	8.0	16.0	--	--	--	--	--	--	--	--	--	--
03/28/03	NP	a, c	31.19	8.0	16.0	--	--	--	--	--	--	--	--	--	--
4/7/2003	NP		31.19	8.0	16.0	8.28	22.91	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.6	6.9
7/9/2003	NP		31.19	8.0	16.0	8.62	22.57	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.1	7.2
10/08/2003	--	d, e	31.13	8.0	16.0	9.19	21.94	--	--	--	--	--	--	--	--
01/13/2004	--		31.13	8.0	16.0	8.35	22.78	--	--	--	--	--	--	--	--
04/05/2004	--		33.70	8.0	16.0	7.29	26.41	--	--	--	--	--	--	--	--
07/12/2004	NP		33.70	8.0	16.0	9.00	24.70	<50	<0.50	<0.50	<0.50	<0.50	<0.50	0.8	7.0
10/19/2004	--		33.70	8.0	16.0	9.47	24.23	--	--	--	--	--	--	--	--
01/11/2005	--		33.70	8.0	16.0	7.64	26.06	--	--	--	--	--	--	--	--
04/14/2005	--		33.70	8.0	16.0	7.35	26.35	--	--	--	--	--	--	--	--
08/01/2005	--		33.70	8.0	16.0	8.21	25.49	--	--	--	--	--	--	--	--
7/31/2006	--		33.70	8.0	16.0	8.10	25.6	--	--	--	--	--	--	--	--
MW-2															
6/20/2000	--		30.38	8.0	16.0	7.38	23.0	--	--	--	--	--	--	--	--
9/29/2000	--		30.38	8.0	16.0	8.08	22.3	266	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
12/17/2000	--		30.38	8.0	16.0	7.8	22.58	175	<0.5	<0.5	0.659	<0.5	<2.5	--	--
3/23/2001	--		30.38	8.0	16.0	7.23	23.15	351	<0.5	<0.5	0.912	<0.5	<2.5	--	--
6/20/2001	--		30.38	8.0	16.0	7.98	22.4	360	<0.5	<0.5	0.74	<0.5	<2.5	--	--
9/22/2001	--		30.38	8.0	16.0	8.55	21.83	190	<0.5	<0.5	<0.5	<0.5	<2.5	--	--

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

Station #2162, 15135 Hesperian Blvd., San Leandro, CA

Well and Sample Date	P/NP	Comments	TOC (feet msl)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet bgs)	Water Level Elevation (feet msl)	Concentrations in (µg/L)						DO (mg/L)	pH
								GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE		
MW-2 Cont.															
12/28/2001	--		30.38	8.0	16.0	7.53	22.85	130	<0.5	0.93	<0.5	0.51	<2.5	--	--
3/14/2002	--		30.38	8.0	16.0	7.17	23.21	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
4/18/2002	--		30.38	8.0	16.0	7.31	23.07	74	<0.5	<0.5	<0.5	<0.5	--	--	--
7/19/2002	P		30.38	8.0	16.0	7.93	22.45	<50	<0.5	<0.5	<0.5	<0.5	<2.5	1.1	7.6
10/9/2002	P		30.38	8.0	16.0	8.55	21.83	<50	<0.5	<0.5	<0.5	<0.5	<2.5	0.7	7.3
03/28/03	P	c	30.38	8.0	16.0	7.3	23.08	<50	<0.50	0.83	<0.50	<0.50	<0.50	1.48	7.7
4/7/2003	P		30.38	8.0	16.0	7.36	23.02	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.4	7.0
7/9/2003	P		30.38	8.0	16.0	7.71	22.67	<50	<0.50	<0.50	<0.50	<0.50	<0.50	2.5	7.6
10/08/2003	--		30.38	8.0	16.0	8.25	22.13	--	--	--	--	--	--	--	--
01/13/2004	--		30.38	8.0	16.0	7.55	22.83	--	--	--	--	--	--	--	--
04/05/2004	--		32.97	8.0	16.0	7.29	25.68	--	--	--	--	--	--	--	--
07/12/2004	NP		32.97	8.0	16.0	8.09	24.88	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.4	7.2
10/19/2004	--		32.97	8.0	16.0	8.29	24.68	--	--	--	--	--	--	--	--
01/11/2005	--		32.97	8.0	16.0	6.81	26.16	--	--	--	--	--	--	--	--
04/14/2005	--		32.97	8.0	16.0	6.69	26.28	--	--	--	--	--	--	--	--
08/01/2005	--		32.97	8.0	16.0	7.40	25.57	--	--	--	--	--	--	--	--
7/31/2006	--		32.97	8.0	16.0	7.22	25.75	--	--	--	--	--	--	--	--
MW-3															
6/20/2000	--		30.3	8.0	15.0	7.75	22.55	--	--	--	--	--	--	--	--
9/29/2000	--		30.3	8.0	15.0	8.46	21.84	<50	<0.5	<0.5	<0.5	<0.5	128	--	--
12/17/2000	--		30.3	8.0	15.0	8.01	22.29	<50	<0.5	<0.5	<0.5	<0.5	46.7	--	--
3/23/2001	--		30.3	8.0	15.0	7.7	22.6	<50	<0.5	<0.5	<0.5	<0.5	26.8	--	--
6/20/2001	--		30.3	8.0	15.0	8.23	22.07	<50	<0.5	<0.5	<0.5	<0.5	30	--	--
9/22/2001	--		30.3	8.0	15.0	8.89	21.41	<50	<0.5	<0.5	<0.5	<0.5	12	--	--
12/28/2001	--		30.3	8.0	15.0	7.83	22.47	<50	<0.5	<0.5	<0.5	<0.5	6.2	--	--
3/14/2002	--		30.3	8.0	15.0	7.48	22.82	<50	<0.5	<0.5	<0.5	<0.5	47	--	--
4/18/2002	--		30.3	8.0	15.0	7.62	22.68	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
7/19/2002	P	b (TPH-g)	30.3	8.0	15.0	8.23	22.07	100	<1.0	<1.0	<1.0	<1.0	330	0.9	7.6
10/9/2002	P		30.3	8.0	15.0	8.83	21.47	<50	<0.5	<0.5	<0.5	<0.5	61	0.5	7.4
03/28/03	P	c	30.3	8.0	15.0	7.85	22.45	52	<0.50	1.2	<0.50	<0.50	45	1.42	7.6

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

Station #2162, 15135 Hesperian Blvd., San Leandro, CA

Well and Sample Date	P/NP	Comments	TOC (feet msl)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet bgs)	Water Level Elevation (feet msl)	Concentrations in (µg/L)					DO (mg/L)	pH	
								GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes			MTBE
MW-3 Cont.															
4/7/2003	P		30.3	8.0	15.0	7.71	22.59	56	<0.50	<0.50	<0.50	<0.50	56	1.1	6.8
7/9/2003	P		30.3	8.0	15.0	8.0	22.3	<500	<5.0	<5.0	<5.0	<5.0	87	1.6	7.4
10/08/2003	P		30.30	8.0	15.0	8.59	21.71	<50	<0.50	<0.50	<0.50	<0.50	25	0.9	—
01/15/2004	P		30.30	8.0	15.0	7.90	22.40	<50	<0.50	<0.50	<0.50	<0.50	9.8	2.9	7.3
04/05/2004	P		32.89	8.0	15.0	7.61	25.28	<50	<0.50	<0.50	<0.50	<0.50	15	1.5	7.0
07/12/2004	P		32.89	8.0	15.0	8.45	24.44	<50	<0.50	<0.50	<0.50	<0.50	7.3	1.6	6.9
10/19/2004	P		32.89	8.0	15.0	8.95	23.94	<50	<0.50	<0.50	<0.50	<0.50	5.0	0.96	7.1
01/11/2005	P		32.89	8.0	15.0	7.27	25.62	<50	<0.50	<0.50	<0.50	<0.50	2.3	—	7.2
04/14/2005	P		32.89	8.0	15.0	7.10	25.79	<50	<0.50	<0.50	<0.50	1.5	5.6	2.0	7.2
08/01/2005	P		32.89	8.0	15.0	7.71	25.18	<50	<0.50	<0.50	<0.50	<0.50	5.2	1.18	7.0
7/31/2006	P		32.89	8.0	15.0	7.64	25.25	<50	<0.50	<0.50	<0.50	<0.50	4.3	—	6.8
MW-4															
6/20/2000	—		30.39	10.0	18.0	8.87	21.52	—	—	—	—	—	—	—	—
9/29/2000	—		30.39	10.0	18.0	9.61	20.78	<50	1.02	<0.5	<0.5	<0.5	12.2	—	—
12/17/2000	—		30.39	10.0	18.0	9.17	21.22	<50	<0.5	<0.5	<0.5	<0.5	5.81	—	—
3/23/2001	—		30.39	10.0	18.0	8.7	21.69	<50	<0.5	<0.5	<0.5	<0.5	3.04	—	—
6/20/2001	—		30.39	10.0	18.0	9.51	20.88	<50	<0.5	<0.5	<0.5	<0.5	<2.5	—	—
9/22/2001	—		30.39	10.0	18.0	10.06	20.33	<50	<0.5	<0.5	<0.5	<0.5	5.2	—	—
12/28/2001	—		30.39	10.0	18.0	8.86	21.53	<50	<0.5	<0.5	<0.5	<0.5	4.3	—	—
3/14/2002	—		30.39	10.0	18.0	8.52	21.87	<50	<0.5	<0.5	<0.5	<0.5	5.1	—	—
4/18/2002	—		30.39	10.0	18.0	8.76	21.63	<50	<0.5	<0.5	<0.5	<0.5	—	—	—
7/19/2002	NP		30.39	10.0	18.0	9.39	21.00	<50	<0.5	<0.5	<0.5	<0.5	30	1.8	7.8
10/9/2002	NP		30.39	10.0	18.0	10.08	20.31	<50	<0.5	<0.5	<0.5	<0.5	28	1.0	8.0
03/28/03	NP	c	30.39	10.0	18.0	8.88	21.51	<50	<0.50	1.3	<0.50	<0.50	4.4	0.98	7.2
4/7/2003	NP		30.39	10.0	18.0	8.78	21.61	<50	<0.50	<0.50	<0.50	<0.50	14	1.1	7.0
7/9/2003	NP		30.39	10.0	18.0	9.14	21.25	<50	<0.50	<0.50	<0.50	<0.50	1.8	1.6	7.4
10/08/2003	NP		30.39	10.0	18.0	9.77	20.62	<50	<0.50	<0.50	<0.50	<0.50	3.1	2.6	6.4
01/15/2004	P		30.39	10.0	18.0	8.68	21.71	<50	1.4	0.84	<0.50	1.5	6.6	2.9	7.1
04/05/2004	NP		33.97	10.0	18.0	8.77	25.20	<50	<0.50	<0.50	<0.50	<0.50	1.3	1.2	7.0
07/12/2004	NP		33.97	10.0	18.0	9.46	24.51	<50	<0.50	<0.50	<0.50	<0.50	1.0	2.5	6.6

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

Station #2162, 15135 Hesperian Blvd., San Leandro, CA

Well and Sample Date	P/NP	Comments	TOC (feet msl)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet bgs)	Water Level Elevation (feet msl)	Concentrations in (µg/L)						DO (mg/L)	pH
								GRO/ TPHg	Benzene	Toluene	Ethyl- Benzene	Total Xylenes	MTBE		
MW-4 Cont.															
10/19/2004	NP		33.97	10.0	18.0	9.91	24.06	<50	<0.50	<0.50	<0.50	<0.50	4.4	1.21	7.9
01/11/2005	P		33.97	10.0	18.0	7.80	26.17	59	2.0	<0.50	<0.50	<0.50	11	0.9	7.1
04/14/2005	NP		33.97	10.0	18.0	8.07	25.90	<50	<0.50	<0.50	<0.50	<0.50	0.64	2.8	7.4
08/01/2005	NP		33.97	10.0	18.0	8.58	25.39	<50	<0.50	<0.50	<0.50	<0.50	<0.50	2.48	5.7
7/31/2006	P		33.97	10.0	18.0	8.75	25.22	<50	<0.50	<0.50	<0.50	<0.50	<0.50	—	6.7

SYMBOLS AND ABBREVIATIONS:

--- = Not analyzed/applicable/measured/available
< = Not detected at or above laboratory reporting limit
DO = Dissolved oxygen
DTW = Depth to water in feet below ground surface
ft bgs = feet below ground surface
GRO = Gasoline Range Organics, range C4-C12
GWE = Groundwater elevation measured in feet above mean sea level
mg/L = Milligrams per liter
MTBE = Methyl tert butyl ether
NP = Well not purged prior to sampling
P = Well purged prior to sampling
TOC = Top of casing measured in feet above mean sea level
TPH-g = Total petroleum hydrocarbons as gasoline
ug/L = Micrograms per liter

FOOTNOTES:

a = Well not accessible - car parked over.
b = Hydrocarbon pattern is present in the requested fuel quantitation range but does not represent the pattern of the requested fuel
c =TPH-g, BTEX and MTBE analyzed by EPA method 8260 beginning on 1st Quarter 2003 sampling event (3/28/03)
d = Gauged with stinger in well
e = Well casing lowered 0.06 feet during well repairs on 9/17/2003

NOTES:

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

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

Well were surveyed to NAVD'88 datum by URS Corporation on February 23, 2004.

Values for DO and pH were obtained through field measurements.

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

Table 2. Summary of Fuel Additives Analytical Data
Station #2162, 15135 Hesperian Blvd., San Leandro, CA

Well and Sample Date	Concentrations in (µg/L)								Comments
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
MW-1									
4/7/2003	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
7/9/2003	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
07/12/2004	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
MW-2									
3/28/2003	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
4/7/2003	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
7/9/2003	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
07/12/2004	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
MW-3									
3/28/2003	<100	<20	45	<0.50	<0.50	0.73	<0.50	<0.50	
4/7/2003	<100	<20	56	<0.50	<0.50	0.72	<0.50	<0.50	
7/9/2003	<1,000	<200	87	<5.0	<5.0	<5.0	<5.0	<5.0	
10/08/2003	<100	<20	25	<0.50	<0.50	<0.50	<0.50	<0.50	
01/15/2004	<100	<20	9.8	<0.50	<0.50	<0.50	<0.50	<0.50	a (TBA and EDB)
04/05/2004	<100	<20	15	<0.50	<0.50	<0.50	<0.50	<0.50	
07/12/2004	<100	<20	7.3	<0.50	<0.50	<0.50	<0.50	<0.50	
10/19/2004	<100	<20	5.0	<0.50	<0.50	<0.50	<0.50	<0.50	
01/11/2005	<100	<20	2.3	<0.50	<0.50	<0.50	<0.50	<0.50	b
04/14/2005	<100	<20	5.6	<0.50	<0.50	<0.50	<0.50	<0.50	
08/01/2005	<100	<20	5.2	<0.50	<0.50	<0.50	<0.50	<0.50	b
7/31/2006	<300	<20	4.3	<0.50	<0.50	<0.50	<0.50	<0.50	c
MW-4									
3/28/2003	<100	<20	4.4	<0.50	<0.50	<0.50	<0.50	<0.50	
4/7/2003	<100	<20	14	<0.50	<0.50	<0.50	<0.50	<0.50	
7/9/2003	<100	<20	1.8	<0.50	<0.50	<0.50	<0.50	<0.50	
10/08/2003	<100	<20	3.1	<0.50	<0.50	<0.50	<0.50	<0.50	
01/15/2004	<100	<20	6.6	<0.50	<0.50	<0.50	<0.50	<0.50	a (TBA and EDB)
04/05/2004	<100	<20	1.3	<0.50	<0.50	<0.50	<0.50	<0.50	
07/12/2004	<100	<20	1.0	<0.50	<0.50	<0.50	<0.50	<0.50	
10/19/2004	<100	<20	4.4	<0.50	<0.50	<0.50	<0.50	<0.50	

**Table 2. Summary of Fuel Additives Analytical Data
Station #2162, 15135 Hesperian Blvd., San Leandro, CA**

Well and Sample Date	Concentrations in (µg/L)								Comments
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
MW-4 Cont.									
01/11/2005	<100	<20	11	<0.50	<0.50	<0.50	<0.50	<0.50	b
04/14/2005	<100	<20	0.64	<0.50	<0.50	<0.50	<0.50	<0.50	
08/01/2005	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	b
7/31/2006	<300	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	c

SYMBOLS AND ABBREVIATIONS:

< = Not detected at or above specified laboratory reporting limit

— = Not analyzed/applicable/measured/available

1,2-DCA = 1,2-Dichloroethane

DIPE = Di-isopropyl ether

EDB = 1,2-Dibromoethane

ETBE = Ethyl tert-butyl ether

MTBE = Methyl tert-butyl ether

TAME = Tert-amyl methyl ether

TBA = Tert-butyl alcohol

ug/L = Micrograms per liter

FOOTNOTES:

a = The result was reported with a possible high bias due to the continuing calibration verification falling outside acceptance criteria.

b = The calibration verification for ethanol was within method limits but outside contract limits.

c = LCS rec. above meth. control limits. Analyte ND. Data not impacted.

NOTES:

All fuel oxygenate compounds analyzed using EPA Method 8260B

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

**Table 3. Historical Ground-Water Flow Direction and Gradient
Station #2162, 15135 Hesperian Blvd., San Leandro, CA**

Date Sampled	Approximate Flow Direction	Approximate Hydraulic Gradient
3/23/2001	Southwest	0.011
6/20/2001	Southwest	0.013
9/22/2001	Southwest	0.012
12/28/2001	Southwest	0.010
3/14/2002	Southwest	0.011
4/18/2002	Southwest	0.012
7/19/2002	Southwest	0.012
10/9/2002	Southwest	0.013
3/28/2003	Southwest	0.013
4/7/2003	Southwest	0.011
7/9/2003	Southwest	0.010
10/8/2003	Southwest	0.010
1/15/2004	Southwest	0.008
4/5/2004	South-Southwest	0.004
7/12/2004	South and Southwest	0.003 and 0.005
10/19/2004	Southwest	0.004
1/11/2005	Southwest (a) to Southeast (b)	0.005 to 0.004
4/14/2005	Southeast	0.004
8/1/2005	Southwest	0.002
7/31/2006	South-Southwest	0.003

FOOTNOTES:

a = Direction at underground storage tanks

b = Direction at dispensers

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

APPENDIX A.

RECENT REGULATORY CORRESPONDENCE

ALAMEDA COUNTY
HEALTH CARE SERVICES

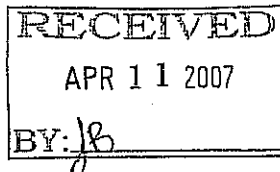


AGENCY
DAVID J. KEARS, Agency Director

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

April 5, 2007

Mr. Paul Supple
Atlantic Richfield
PO Box 1257
San Ramon, CA 94583



Subject: Fuel Leak Case No. RO0000190, ARCO #2162, 15135 Hesperian Boulevard, San Leandro, CA

Dear Mr. Supple:

Alameda County Environmental Health (ACEH) staff have reviewed the case file and the recently submitted report entitled, "Third Quarter 2006 Annual Groundwater Monitoring Report," dated October 27, 2006 and prepared on your behalf by Broadbent Associates, Inc. During the case closure review process, ACEH has determined that in order to facilitate site closure an additional soil and groundwater investigation is required.

Our request is based on the conclusion that separate phase petroleum hydrocarbon (SPH) contamination was detected during the preliminary tank assessment, while subsequent UST removal and confirmation soil sampling detected concentrations of up to 1000 mg/kg and 2.3 mg/kg of TPHg and benzene, respectively. Furthermore, excavation and confirmation soil sampling performed in conjunction with the fuel dispenser and product line upgrade detected elevated concentrations of petroleum hydrocarbons in shallow soil.

Based on ACEH staff review of the case file, we request that you address the following technical comments and send us the reports described below. Please provide 72-hour advance written notification to this office (e-mail preferred to steven.plunkett@acgov.org) prior to the start of field activities.

TECHNICAL COMMENTS

1. **Soil Boring Locations.** During the preliminary UST assessment, SPH was observed in soil borings B3 and B4 at 7.5 feet bgs. at concentrations of up to 2,400 mg/kg TPHg and 17 mg/kg benzene, respectively. The soil borings were located to the southeast and southwest of the tank pit. The lack of soil and groundwater data immediately down gradient of the UST tank pit and dispenser island must be evaluated prior to considering the site for regulatory case closure. Furthermore, the linear separation between monitoring well MW-3 and MW-4, approximately 60 feet, combined with groundwater analytical data from the monitoring wells indicate the dissolved contamination plume has not been defined between the monitoring wells. Specifically, the presence of TPHg and benzene in VM1 and the lack of analytical data for VM2 demonstrate that additional sampling is warranted.

Therefore, ACEH request five soil borings be advanced on site. Two soil borings shall be placed adjacent to the UST tank pit; one soil boring shall be placed slightly southeast of the tank pit, while one soil boring shall be placed slightly southwest of the tank pit. In addition, one

soil boring shall be located downgradient of the former waste oil tank and slightly west of the dispenser island. Lastly, two soil borings shall be located adjacent to the southern property line equidistant between MW-4 and VM2.

If soil and groundwater analytical data indicate that petroleum hydrocarbon contamination is not a concern at your site, it is likely ACEH will move the case toward closure. However, if current soil and groundwater quality data indicate that elevated concentrations of petroleum hydrocarbons exist, further investigation may be necessary. Please prepare a Work Plan that details your proposal to evaluate soil and groundwater contamination.

2. **Soil Sampling and Analysis.** Grab groundwater sampling conducted in conjunction with the investigation shall be analyzed for TPHg and TPHd by EPA Method 8015M or 8260, BTEX, EDB, EDC, MtBE, TAME, ETBE, DIPE, TBA and EtOH by EPA Method 8260. Please present the results from groundwater sampling in the soil and groundwater investigation (SWI) report requested below.
3. **Groundwater Monitoring and Sampling.** Grab groundwater sampling conducted in conjunction with the investigation shall be analyzed for TPHg and TPHd by EPA Method 8015M or 8260, BTEX, EDB, EDC, MtBE, TAME, ETBE, DIPE, TBA and EtOH by EPA Method 8260. Please present the results from groundwater sampling SWI report requested below.

TECHNICAL REPORT REQUEST

Please submit technical reports to Alameda County Environmental Health (Attention: Mr. Steven Plunkett), according to the following schedule:

- May 15, 2007 – Work Plan
- July 15, 2007 – Soil and Groundwater Investigation Report

These reports are being requested pursuant to California Health and Safety Code Section 25296.10. 23 CCR Sections 2652 through 2654, and 2721 through 2728 outline the responsibilities of a responsible party in response to an unauthorized release from a petroleum UST system, and require your compliance with this request.

ELECTRONIC SUBMITTAL OF REPORTS

The Alameda County Environmental Cleanup Oversight Programs (LOP and SLIC) require submission of all reports in electronic form to the county's ftp site. Paper copies of reports will no longer be accepted. The electronic copy replaces the paper copy and will be used for all public information requests, regulatory review, and compliance/enforcement activities. Instructions for submission of electronic documents to the Alameda County Environmental Cleanup Oversight Program ftp site are provided on the attached "Electronic Report Upload (ftp) Instructions." Please do not submit reports as attachments to electronic mail.

Submission of reports to the Alameda County ftp site is an addition to existing requirements for electronic submittal of information to the State Water Resources Control Board (SWRCB) Geotracker website. Submission of reports to the Geotracker website does not fulfill the

requirement to submit documents to the Alameda County ftp site. In September 2004, the SWRCB adopted regulations that require electronic submittal of information for groundwater cleanup programs. For several years, responsible parties for cleanup of leaks from underground storage tanks (USTs) have been required to submit groundwater analytical data, surveyed locations of monitor wells, and other data to the Geotracker database over the Internet. Beginning July 1, 2005, electronic submittal of a complete copy of all necessary reports was required in Geotracker (in PDF format). Please visit the SWRCB website for more information on these requirements (http://www.swrcb.ca.gov/ust/cleanup/electronic_reporting).

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.

PROFESSIONAL CERTIFICATION & CONCLUSIONS/RECOMMENDATIONS

The California Business and Professions Code (Sections 6735, 6835, and 7835.1) requires that work plans 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.

UNDERGROUND STORAGE TANK CLEANUP FUND

Please note that delays in investigation, later reports, or enforcement actions may result in your becoming ineligible to receive grant money from the state's Underground Storage Tank Cleanup Fund (Senate Bill 2004) to reimburse you for the cost of cleanup.

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 Regional Board or other appropriate agency, including the County District Attorney, for possible enforcement actions. California Health and Safety Code, Section 25299.76 authorizes enforcement including administrative action or monetary penalties of up to \$10,000 per day for each day of violation.

If you have any questions, please call me at (510) 383-1767

Mr. Paul Supple
April 3, 2007
Page 4

Sincerely,



Steven Plunkett
Hazardous Materials Specialist

cc: Mr. Tom Venus
Broadbent Associates, Inc.
1324 Mangrove Avenue, Suite 212
Chico, CA 95926

Donna Drogos, ACEH, Steven Plunkett, ACEH, File

Tom Venus

From: Plunkett, Steven, Env. Health [steven.plunkett@acgov.org]
Sent: Wednesday, April 04, 2007 1:27 PM
To: supplpv@bp.com
Cc: Tom Venus
Subject: RO190

Paul and Tom,

During the case closure review process, please discontinue the current program of groundwater monitoring for ARCO #2162, 15135 Hesperian Boulevard, San Leandro, CA. and ARCO #4494, 566 Hegenberger Road, Oakland CA. ACEH will be requesting additional soil and groundwater sampling to evaluate current subsurface conditions at ARCO #2162, with a letter from ACEH to follow.

I will be presenting ARCO #4494 for case closure to the program manager.

Thanks for your cooperation.

Regards,
Steven Plunkett
Hazardous Materials Specialist
Alameda County Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
510-383-1767
510-337-9355 Fax
steven.plunkett@acgov.org

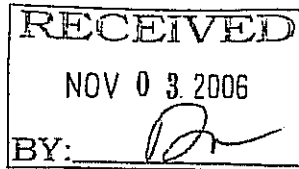
ALAMEDA COUNTY
HEALTH CARE SERVICES

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

October 31, 2006



Mr. Paul Supple
BP West Coast Products LLC
PO Box 6459
Moraga, CA 94570

Subject: Fuel Leak Case No. RO0000190, ARCO #2162, 15135 Hesperian Boulevard, San Leandro, CA

Dear Mr. Supple:

The fuel leak case file for the above-referenced site is under review for case closure by Alameda County Environmental Health (ACEH). If case closure is approved, the fuel leak case will be closed with the following site management requirement:

"Case closure for the fuel leak site is granted for commercial land use only. If a change in land use to residential or other conservative scenario occurs at this property, Alameda County Environmental Health must be notified and the case needs to be re-evaluated. This site is to be entered into the City of Oakland Permit Tracking System due to the residual contamination posing a nuisance for subsurface utility work."

Please provide the certification requested below in the Landowner Notification Requirements that you have notified all responsible landowners of the request for case closure or that you are the sole landowner.

LANDOWNER NOTIFICATION REQUIREMENTS

Pursuant to California Health & Safety Code Section 25297.15, the active or primary responsible party for a fuel leak case must inform all current property owners of the site of cleanup actions or requests for closure. Furthermore, ACEH may not consider any cleanup proposals or requests for case closure without assurance that this notification requirement has been met. Additionally, the active or primary responsible party is required to forward to ACEH a complete mailing list of all record fee title holders to the site.

For you to meet these requirements when submitting cleanup proposals or requests for case closure, ACEH requires that you:

1. Notify all current record owners of fee title to the site of any cleanup proposals or requests for case closure;
2. Submit a letter to ACEH which certifies that the notification requirement in 25297.15(a) of the Health and Safety Code has been met;
3. Forward to ACEH a copy of your complete mailing list of all record fee title holders to the site; and

4. Update your mailing list of all record fee title holders, and repeat the process outlined above prior to submittal of any additional *Corrective Action Plan* or your *Request for Case Closure*.

Your written certification to ACEH (Item 2 above) must state, at a minimum, the following:

A. *In accordance with Section 25297.15(a) of the Health & Safety Code, I, (name of primary responsible party), certify that I have notified all responsible landowners of the enclosed proposed action. (Check space for applicable proposed action(s)):*

cleanup proposal (Corrective Action Plan)

request for case closure

local agency intention to make a determination that no further action is required

local agency intention to issue a closure letter

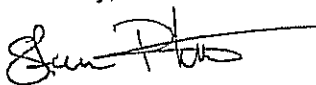
- OR -

B. *In accordance with section 25297.15(a) of Chapter 6.7 of the Health & Safety Code, I, (name of primary responsible party), certify that I am the sole landowner for the above site.*

(Note: Complete item A if there are multiple site landowners. If you are the sole site landowner, skip item A and complete item B.)

If you have any questions, please call me at (510) 383-1767

Sincerely,

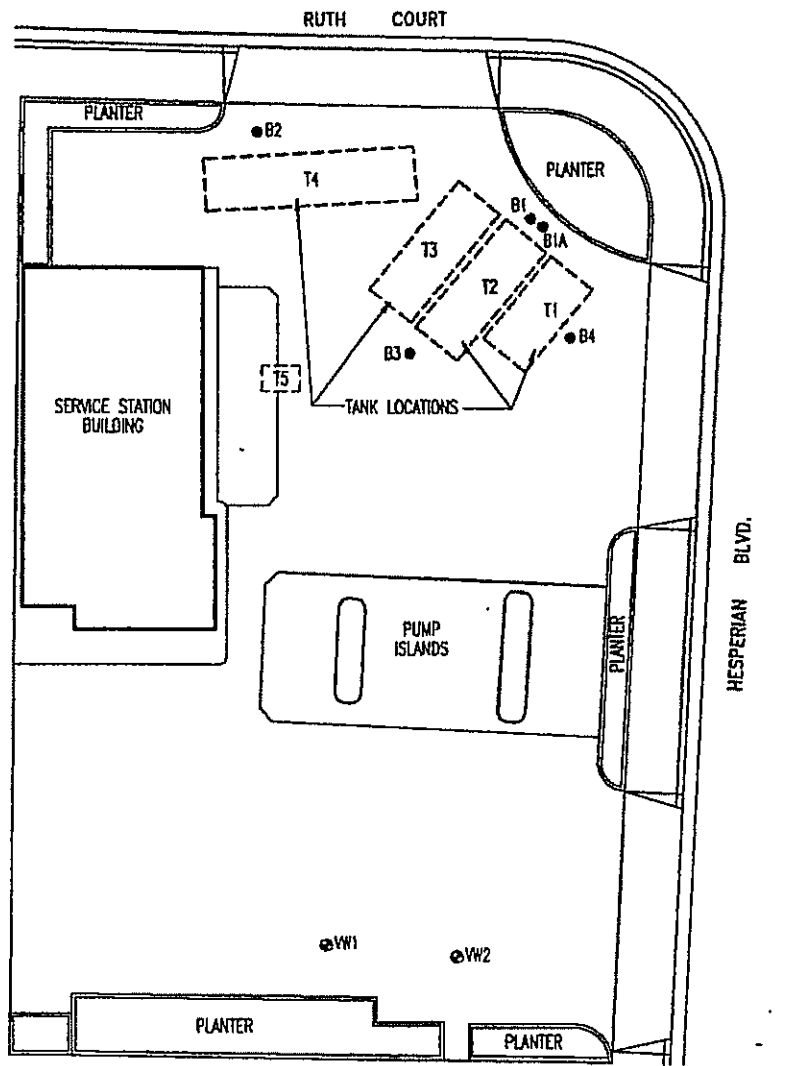


Steven Plunkett
Hazardous Materials Specialist

cc: ✓ Mr. Tom Venus
Broadbent Associates, Inc.
1324 Mangrove Avenue, Suite 212
Chico, CA 95926

Donna Drogos, ACEH
Steven Plunkett, ACEH
File

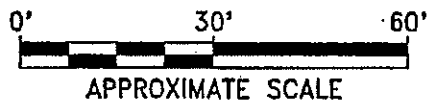
APPENDIX B.
HISTORIC SOIL AND GROUND-WATER DATA



EXPLANATION

- B1 SOIL BORING LOCATIONS AND DESIGNATIONS.
- ⊙ VW1 VAPOR EXTRACTION TEST WELL LOCATIONS AND DESIGNATIONS.
- FORMER UNDERGROUND STORAGE TANK LOCATION.

- T1 6,000 GAL. STEEL TANK.
- T2 8,000 GAL. STEEL TANK.
- T3 8,000 GAL. STEEL TANK.
- T4 12,000 GAL. FIBERGLASS TANK.
- T5 560 GAL. WASTE OIL TANK.



ROUX ASSOCIATES <small>ENVIRONMENTAL CONSULTING & MANAGEMENT</small>	COMPILED BY: T.R.	PREPARED FOR: ARCO PRODUCTS COMPANY	FIGURE 2
	PREPARED BY: R.P.	TITLE: SITE PLAN ARCO FACILITY NO. 2162	
	PROJECT MNGR. G.M.		
	DATE: 06/92		
	SCALE: AS SHOWN		
	PROJECT NO. A117W01		
FILE NAME: AR216201			

**Table 2. Summary of Soil Analyses: Sidewall and Product Lines
ARCO Facility No. 2162, San Leandro, California**

Sample Number	Date Sampled	Depth Sampled	TPH-G (1)	BTEX Distinction (1)			
				Benzene	Toluene	Ethylbenzene	Xylenes
<u>Excavation Sidewall Samples:</u>							
SW-1	12/5/91	9	500	ND	0.4	3.5	8.4
SW-2	12/5/91	10	140	0.1	0.38	3.0	7.2
SW-3	12/5/91	10	150	0.26	0.11	2.1	2.0
SW-4	12/5/91	10	610	0.47	7.1	11	82
SW-5	12/5/91	10	1,000	2.3	9.2	25	220
<u>Product Line Samples:</u>							
L-1	2/4/92	3	ND	ND	ND	ND	ND
L-2	2/4/92	3.5	4.4	0.082	0.013	0.21	0.3
L-3	2/4/92	3	ND	ND	ND	ND	ND
L-4	2/4/92	3	ND	0.0063	0.0076	ND	0.029
L-5	2/4/92	3	110	0.65	0.17	1.2	0.14
L-6	2/4/92	2.5	16	1.0	0.2	0.96	4.0
L-7	2/4/92	4	12	0.28	0.018	0.35	0.78

FOOTNOTES

(1) = Concentrations reported in mg/kg (= parts per million).

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

BTEX Distinction (USEPA Method 8020).

ND = Not Detected.

Table 1
Groundwater Elevation and Analytical Data
Total Purgeable Petroleum Hydrocarbons
(TPPH as Gasoline, BTEX Compounds, and MTBE)

ARCO Service Station 2162
15135 Hesperian Boulevard, San Leandro, California

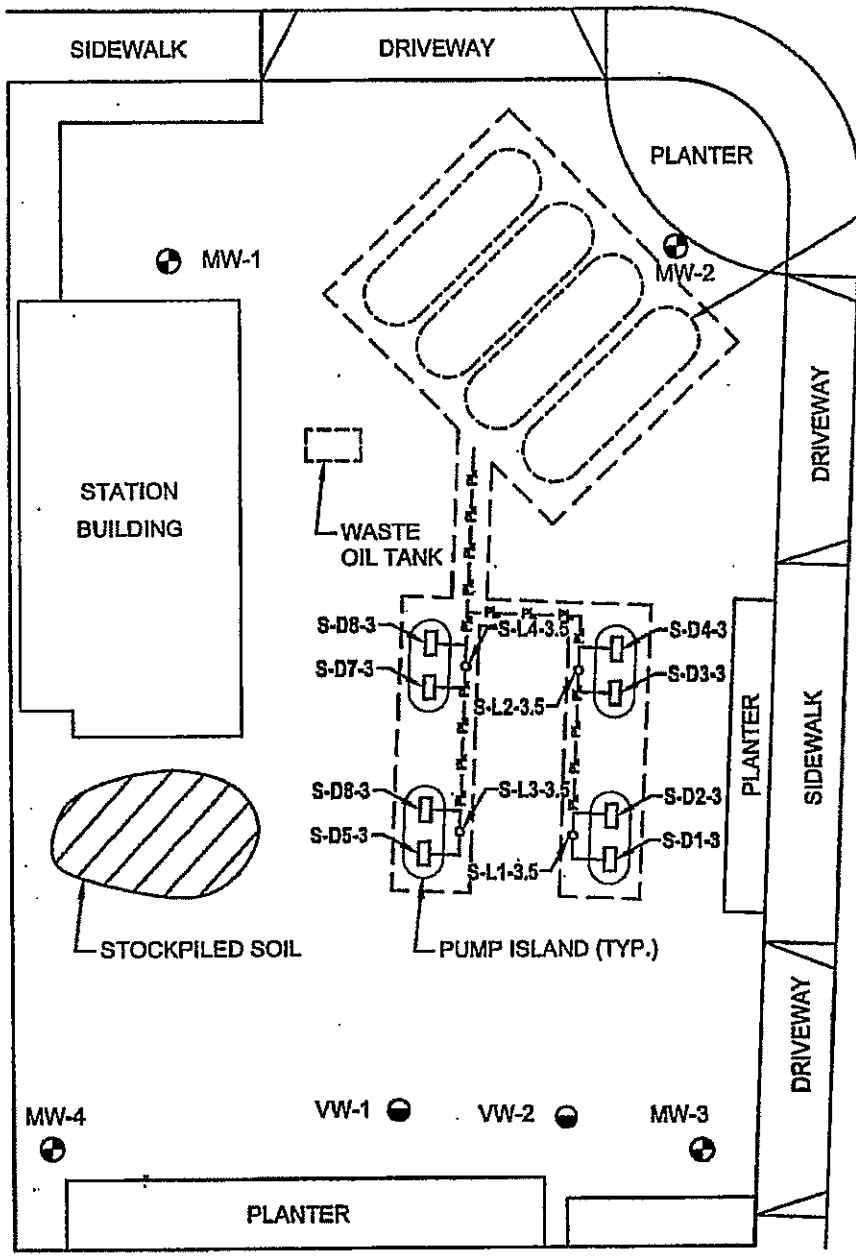
Well Number	Date Gauged/ Sampled	Well Elevation (feet, MSL)	Depth to Water (feet, TOC)	Groundwater Elevation (feet, MSL)	TPPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl- benzene (ppb)	Xylenes (ppb)	MTBE 8021B* (ppb)	MTBE 8260 (ppb)	Dissolved Oxygen (ppm)	Purged/ Not Purged (P/NP)
MW-1	02/26/96	31.19	7.14	24.05	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	NA	
MW-1	05/23/96	31.19	7.70	23.49	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	NA	
MW-1	08/21/96	31.19	8.75	22.44	210	<0.5	<0.5	<0.5	<0.5	<2.5	NA	NA	
MW-1	11/20/96	31.19	8.62	22.57	91	<0.5	<0.5	<0.5	<0.5	2.6	NA	NA	
MW-1	04/01/97	31.19	8.70	22.49	<50	<0.5	<0.5	<0.5	<0.5	<2.5	NA	NA	NP
MW-1	06/10/97	31.19	8.45	22.74	94	<0.5	<0.5	0.68	0.56	6.4	NA	NA	NP
MW-1	09/17/97	31.19	9.20	21.99	<50	<0.5	<0.5	<0.5	<0.5	10	NA	1.0	NP
MW-1	12/12/97	31.19	8.00	23.19	<200	<2	<2	<2	<2	180	NA	2.0	NP
MW-1	03/25/98	31.19	7.00	24.19	<200	<2	<2	3	<2	180	NA	2.0	
MW-1	05/14/98	31.19	7.46	23.73	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	1.17	P
MW-1	07/31/98	31.19	8.10	23.09	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	2.0	NP
MW-1	10/12/98	31.19	8.60	22.59	<50	<0.5	<0.5	<0.5	<0.5	9	NA	2.5	NP
MW-1	02/11/99	31.19	7.32	23.87	<50	<0.5	<0.5	<0.5	<0.5	25	NA	1.0	P
MW-1	06/23/99	31.19	8.40	22.79	55	<0.5	<0.5	<0.5	<0.5	<3	NA	1.36	NP
MW-1	08/23/99	31.19	8.85	22.34	<50	<0.5	0.6	<0.5	<0.5	5	NA	1.42	NP
MW-1	10/27/99	31.19	8.50	22.69	<50	<0.5	<0.5	<0.5	<1	90	NA	0.83	NP
MW-1	02/09/00	31.19	8.11	23.08	<50	<0.5	<0.5	<0.5	<1	9	NA	0.77	NP
MW-2	02/26/96	30.38	6.41	23.97	770	<0.5	<0.5	45	28	NA	NA	NA	
MW-2	05/23/96	30.38	6.80	23.58	590	0.50	<0.5	35	18	NA	NA	NA	
MW-2	08/21/96	30.38	7.80	22.58	170	<0.5	<0.5	21	6.3	<2.5	NA	NA	
MW-2	11/20/96	30.38	7.73	22.65	88	<0.5	<0.5	7.9	1.1	<2.5	NA	NA	
MW-2	04/01/97	30.38	7.83	22.55	66	<0.5	<0.5	3.6	0.56	33	NA	NA	
MW-2	06/10/97	30.38	7.52	22.86	<50	<0.5	<0.5	<0.5	<0.5	<2.5	NA	NA	NP
MW-2	09/17/97	30.38	8.24	22.14	<50	<0.5	<0.5	<0.5	<0.5	<3.0	NA	0.6	NP
MW-2	12/12/97	30.38	7.10	23.28	<50	<0.5	<0.5	<0.5	<0.5	<3.0	NA	1.2	NP
MW-2	03/25/98	30.38	6.27	24.11	<50	<0.5	<0.5	0.7	0.5	55	NA	1.0	
MW-2	05/14/98	30.38	6.54	23.84	210	<0.5	<0.5	3.3	<0.5	42	NA	1.47	P
MW-2	07/31/98	30.38	7.14	23.24	230	<0.5	<0.5	3.9	<0.5	6	NA	1.0	P

Table 1
Groundwater Elevation and Analytical Data
Total Purgeable Petroleum Hydrocarbons
(TPPH as Gasoline, BTEX Compounds, and MTBE)

ARCO Service Station 2162
15135 Hesperian Boulevard, San Leandro, California

Well Number	Date Gauged/ Sampled	Well Elevation (feet, MSL)	Depth to Water (feet, TOC)	Groundwater Elevation (feet, MSL)	TPPH as					MTBE 8021B* (ppb)	MTBE 8260 (ppb)	Dissolved Oxygen (ppm)	Purged/ Not Purged (P/NP)
					Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl- benzene (ppb)	Xylenes (ppb)				
MW-2	10/12/98	30.38	7.65	22.73	110	<0.5	<0.5	1.5	<0.5	<3	NA	1.0	P
MW-2	02/11/99	30.38	6.55	23.83	660	<0.5	<0.5	6.7	0.7	3	NA	1.0	P
MW-2	06/23/99	30.38	7.48	22.90	270	<0.5	<0.5	2.2	0.8	<3	NA	NM	P
MW-2	08/23/99	30.38	7.89	22.49	200	<0.5	0.9	1.8	<0.5	<3	NA	1.17	P
MW-2	10/27/99	30.38	8.30	22.08	2,100	1.0	2.5	14	3	3	NA	0.75	NP
MW-2	02/09/00	30.38	8.02	22.36	<50	<0.5	<0.5	<0.5	<1	5	NA	0.69	NP
MW-3	02/26/96	30.30	6.72	23.58	120	5.0	<0.5	<0.5	<0.5	NA	NA	NA	
MW-3	05/23/96	30.30	7.18	23.12	140	12	<0.5	<0.5	<0.5	NA	NA	NA	
MW-3	08/21/96	30.30	8.17	22.13	<50	1.1	<0.5	<0.5	<0.5	130	NA	NA	
MW-3	11/20/96	30.30	8.03	22.27	55	<0.5	<0.5	<0.5	<0.5	59	NA	NA	
MW-3	04/01/97	30.30	8.09	22.21	<50	<0.5	<0.5	<0.5	<0.5	180	NA	NA	NP
MW-3	06/10/97	30.30	7.97	22.33	<50	<0.5	<0.5	<0.5	<0.5	1,900	NA	NA	NP
MW-3	09/17/97	30.30	8.54	21.76	<5,000	<50	<50	<50	<50	1,100	860	2.2	NP
MW-3	12/12/97	30.30	7.50	22.80	560	<5.0	<5.0	<5.0	5.0	370	NA	1.4	NP
MW-3	03/25/98	30.30	6.60	23.70	<500	<5	<5	<5	<5	470	NA	1.0	
MW-3	05/14/98	30.30	7.13	23.17	750	<5	<5	<5	<5	630	NA	1.97	P
MW-3	07/31/98	30.30	7.58	22.72	<500	<5	<5	<5	<5	590	NA	1.0	P
MW-3	10/12/98	30.30	8.00	22.30	<500	<5	<5	<5	<5	600	NA	2.0	P
MW-3	02/11/99	30.30	6.90	23.40	<500	<5	<5	<5	<5	280	NA	1.0	P
MW-3	06/23/99	30.30	7.82	22.48	220	<0.5	3.2	<0.5	<0.5	740	NA	1.98	P
MW-3	08/23/99	30.30	8.28	22.02	<50	<0.5	1.1	<0.5	<0.5	230	NA	1.20	P
MW-3	10/27/99	30.30	9.27	21.03	<50	<0.5	<0.5	<0.5	<1	<3	NA	0.81	NP
MW-3	02/09/00	30.30	7.45	22.85	<50	<0.5	<0.5	<0.5	<1	80	NA	0.81	P
MW-4	02/26/96	30.39	7.59	22.80	110	9.9	<0.5	<0.5	<0.5	NA	NA	NA	
MW-4	05/23/96	30.39	8.22	22.17	69	8.0	<0.5	<0.5	<0.5	NA	NA	NA	
MW-4	08/21/96	30.39	9.28	21.11	<50	6.8	<0.5	<0.5	<0.5	<2.5	NA	NA	
MW-4	11/20/96	30.39	9.12	21.27	95	10	0.59	<0.5	0.52	3.8	NA	NA	

RUTH COURT

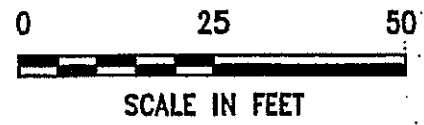


UNDERGROUND FUEL STORAGE TANKS

HESPERIAN BLVD.

LEGEND

- MW-1 GROUNDWATER MONITORING WELL
- VW-1 SOIL VAPOR EXTRACTION WELL
- S-L1-3.5 FUEL LINE SAMPLING LOCATION
- S-D1-3 FUEL DISPENSER SAMPLING LOCATION
- EXPOSED PRODUCT LINE PIPING
- APPROXIMATE LIMITS OF EXCAVATION



Project No. 38486067

Arco Service Station No. 2162
15135 Hesperian Boulevard
San Leandro, California

SOIL SAMPLING LOCATION PLAN
January 10, 2003

FIGURE
2



Soil Analytical Data
ARCO Service Station No. 2162
15135 Hesperian Boulevard
San Leandro, California

TABLE 1
Product Line/Dispenser Analytical Results

Soil Sample ID	Sample	Date	TPH as gasoline (ppm)	Benzene (ppm)	Toluene (ppm)	Ethylbenzene (ppm)	Total Xylenes (ppm)	MTBE (ppm)
S-D1-3	3	1/10/03	ND<0.5	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.025
S-D2-3	3	1/10/03	ND<0.5	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.025
S-D3-3	3	1/10/03	ND<0.5	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.025
S-D4-3	3	1/10/03	ND<0.5	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.025
S-D5-3	3	1/10/03	0.75	ND<0.005	ND<0.005	0.021	0.03	0.093
S-D6-3	3	1/10/03	ND<0.5	ND<0.005	ND<0.005	ND<0.005	ND<0.01	0.021
S-D7-3	3	1/10/03	5.7	ND<0.025	ND<0.025	0.1	0.49	ND<0.12
S-D8-3	3	1/10/03	46	ND<0.025	0.13	0.17	0.36	ND<0.25
S-L1-3.5	3.5	1/10/03	ND<0.5	0.072	0.0095	0.029	0.032	0.14
S-L2-3.5	3.5	1/10/03	ND<0.5	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.025
S-L3-3.5	3.5	1/10/03	ND<2.5	ND<0.025	ND<0.025	ND<0.025	ND<0.05	0.55
S-L4-3.5	3.5	1/10/03	200	ND<0.025	2.1	1.4	1.5	ND<0.25

TABLE 2
Soil Stockpile Analytical Results

Soil Sample ID	Sample	Date	TPH as gasoline (ppm)	Benzene (ppm)	Toluene (ppm)	Ethylbenzene (ppm)	Total Xylenes (ppm)	MTBE (ppm)	Total (ppm)
SP (1-4) Composite	—	1/10/03	0.79	ND<0.025	ND<0.025	0.032	0.14	ND<0.12	19

TPH = Total purgeable petroleum hydrocarbons using EPA Method 8015B, modified.
 BTEX = Benzene, toluene, ethylbenzene, total xylenes using EPA Method 8021B.
 MTBE = Methyl Tertiary Butyl Ether.
 ppb = Parts per billion.
 ppm = Parts per million.
 ND< = Less than stated laboratory detection limit.

APPENDIX C.

SOIL BORING AND WELL CONSTRUCTION LOGS

Project: ARCO FACILITY NUMBER 2162 15135 Hesperian Blvd, San Leandro, CA		Log of Soil Boring No. B1	
Logged By: Jon Florez	Checked By: L.E.	Date Started: 6/5/91	Date Completed: 6/5/91
Drilling Co: Gregg Drilling	Drill Bit Diameter: 6 inches	Total Depth: 11.5 ft	
Driller: S. Stone	Backfill Material: Bentonite Grout from 0 ft to 11.5 ft		
Drilling Method: Hollow Stem Auger	Sampler: CA Modified Split-spoon		
Drilling Equipment: Mobile B-53	Depth to Water at Time of Drilling: 9.5 ft		

Depth (feet)	LITHOLOGIC DESCRIPTION	Lithology	Sample	Blow Counts	OVM (ppm)	REMARKS
	Asphalt & baserock					
	Pea gravel					
	<u>CLAY</u> , Silty, black-brown.		OL			
	<u>CLAY</u> , Silty, brown.		CL			
5	<u>CLAY</u> , Silty, green-grey, little medium(-) sand, slight hydrocarbon odor		OL	6-9-12		No Recovery For OVM
10	<u>SAND</u> , medium Silty, green-brown, some fine gravel, wet, strong hydrocarbon odor.		SM	2-3-4	3.3	
15						

Project: ARCO FACILITY NUMBER 2162 15135 Hesperian Blvd, San Leandro, CA		Log of Soil Boring No. B1A	
Logged By: Jon Florez	Checked By: L.E.	Date Started: 6/5/91	Date Completed: 6/5/91
Drilling Co: Gregg Drilling	Drill Bit Diameter: 6 inches	Total Depth: 9.0 ft	
Driller: S. Stone	Backfill Material: Bentonite Grout from 0 ft to 9.0 ft ft		
Drilling Method: Hollow Stem Auger	Sampler: CA Modified Split-spoon		
Drilling Equipment: Mobile B-53	Depth to Water at Time of Drilling:		

Depth (feet)	LITHOLOGIC DESCRIPTION	Lithology	Sample	Blow Counts	OVM (ppm)	REMARKS
	Asphalt & baserock					
	Pea gravel					
	<u>CLAY</u> , Silty, black-brown.					
	<u>CLAY</u> , Silty, brown.					
5	<u>CLAY</u> , Silty, green-gray, little medium(-) sand, slight hydrocarbon odor.					
	<u>SILT</u> , clayey, dark brown, light brown mottling, moderate to strong hydrocarbon odor.					
				6-9-12		OVM Malfunction
10						
15						

Project: ARCO FACILITY NUMBER 2162 15135 Hesperian Blvd, San Leandro, CA		Log of Soil Boring No. B2	
Logged By: Jon Florez	Checked By: L.E.	Date Started: 6/5/91	Date Completed: 6/5/91
Drilling Co: Gregg Drilling	Drill Bit Diameter: 6 inches	Total Depth: 9.5 ft	
Driller: S. Stone	Backfill Material: Bentonite Grout from 0 ft to 9.5 ft		
Drilling Method: Hollow Stem Auger	Sampler: CA Modified Split-spoon		
Drilling Equipment: Mobile B-53	Depth to Water at Time of Drilling: 9.0 ft		

Depth (feet)	LITHOLOGIC DESCRIPTION	Lithology	Sample	Blow Counts	OVm (ppm)	REMARKS
	Asphalt & baserock Pea gravel					
	<u>CLAY</u> , Silty, black.		OL			
5	<u>SILT</u> , Sandy, brown-green with orange mottling, damp, few rootlets, mild hydrocarbon odor.		ML	4-7-10	76.7	
	<u>SAND</u> , medium to fine(+), green, and fine(-) gravel, moist, mild hydrocarbon odor.		SP	5-4-10	10.5	
10						
15						

Project: ARCO FACILITY NUMBER 2162 15135 Hesperian Blvd, San Leandro, CA		Log of Soil Boring No. B3	
Logged By: Jon Florez	Checked By: L.E.	Date Started: 6/5/91	Date Completed: 6/5/91
Drilling Co: Gregg Drilling	Drill Bit Diameter: 6 inches	Total Depth: 10.5 ft	
Driller: S. Stone	Backfill Material: Bentonite Grout from 0 ft to 10.5 ft		
Drilling Method: Hollow Stem Auger	Sampler: CA Modified Split-spoon		
Drilling Equipment: Mobile B-53	Depth to Water at Time of Drilling: 10.0 ft		

Depth (feet)	LITHOLOGIC DESCRIPTION	Lithology	Sample	Blow Counts	OVM (ppm)	REMARKS
	Asphalt & baserock	[Pattern]				
	<u>GRAVEL</u> , Sandy, with lens of white medium sand.	[Pattern]				
	<u>SILT</u> , Clayey, black, organic odor? <u>SILT</u> , brown-orange, trace lenses of fine gravel. <u>SILT</u> , Clayey, black, with piece of glass.	[Pattern]				
5	<u>SILT</u> , greenish-black to dark brown, trace shell fragments, trace medium sand, very slight odor.	OL [Pattern]		4-7-12	10.5	
		CL [Pattern]				
	<u>CLAY</u> , silty, green-brown, 1-2 inch lense of green sand at top of sampler, moist, trace of separate phase petroleum hydrocarbon.	[Pattern]		3-6-8	207.5	
10	<u>SAND</u> , medium(+), green, little silt, wet.	SW [Pattern]	[Symbol]	4-6-10		No Recovery For OVM
15						

Project: ARCO FACILITY NUMBER 2162 15135 Hesperian Blvd, San Leandro, CA		Log of Soil Boring No. B4	
Logged By: Jon Florez	Checked By: L.E.	Date Started: 6/5/91	Date Completed: 6/5/91
Drilling Co: Gregg Drilling	Drill Bit Diameter: 6 inches	Total Depth: 15.0 ft	
Driller: S. Stone	Backfill Material: Bentonite Grout from 0 ft to 15.0 ft		
Drilling Method: Hollow Stem Auger	Sampler: CA Modified Split-spoon		
Drilling Equipment: Mobile B-53	Depth to Water at Time of Drilling: 9.5 ft		

Depth (feet)	LITHOLOGIC DESCRIPTION	Lithology	Sample	Blow Counts	OVM (ppm)	REMARKS
	Asphalt & baserock SAND , medium, yellow. SILT , Clayey, black. SILT , Sandy, brown-green, and gravel. SILT , black, trace fine gravel.	[Pattern]				
5	SILT , green with brown mottling, trace fine sand, trace rootlets, slight hydrocarbon odor.	OL		4-6-8	10.5	
	SILT , green-grey, moist, strong hydrocarbon odor, trace dark brown to black separate phase petroleum hydrocarbon.	[Pattern]		4-8-8	992	
	1/2-inch thick lens of medium to fine, green-grey gravel	[Pattern]				
	SAND , fine, green-grey, wet.	SM	▽	4-3-8		
10	GRAVEL , medium to fine, green-grey, and fine sand, wet, trace brown separate phase petroleum hydrocarbon. GRAVEL , medium, green-grey, wet, trace brown separate phase petroleum hydrocarbon.	GP	=			
	SAND , fine, wet, separate phase petroleum hydrocarbon noted.	SM		7-17-5		
	GRAVEL , fine, green, wet, separate phase petroleum hydrocarbon noted.	GP				
	SAND , medium, brown, and fine gravel, wet, separate phase petroleum hydrocarbon noted.	SP				
	GRAVEL , medium to fine, green-grey, and fine sand, wet, slight hydrocarbon odor.	GM		2-3-5		
	SILT , brown-orange with dark brown mottling, moist, no odor noted.	ML				
	SILT , brown, trace medium flecks of black organic matter, damp.	[Pattern]		3-4-6		
15						

Project: ARCO FACILITY NUMBER 2162 15135 Hesperian Blvd, San Leandro, CA		Log of Well No. VW1	
Date Started: 6/5/91	Completed: 6/5/91	Measuring Point Elevation: 30 ft	Total Depth: 10.5 ft
Logged By: Jonathan Florez	Checked By: L.E.	Water Level During Drilling: 10.0 ft	Stabilized: ft
Drilling Co: Gregg Drilling	Driller: S. Stone	Casing: 2" sched. 40 PVC	Drill Bit Diameter: 6 inches
Drilling Method: Hollow Stem Auger		Perforation: 0.020 Slotted PVC	from 8.7 ft to 3.7 ft
Drilling Equipment: Mobile B-53		Pack: #3 Monterey Sand	from 9.0 ft to 3.3 ft
Sampler: CA Modified Split-spoon		Seal: Bentonite Chips	from 3.3 ft to 2.3 ft
		Cement/Bentonite Grout	from 2.3 ft to 0 ft

Depth (feet)	LITHOLOGIC DESCRIPTION	Lithology	Monitoring Well Construction	Sample	Blow Counts	OVM (ppm)	REMARKS
	Asphalt & baserock						
	<u>SAND</u> , medium to fine, brown, and medium to fine(+) gravel.						
	<u>SILT</u> , Clayey, black, trace fine sand.	OL					
	<u>SILT</u> , Clayey, black, trace 2mm. brown needles.				5-13-16		OVM Malfunction
5	<u>SILT</u> , Sandy, green, moist, rootlet fragments.						
	<u>SAND</u> , coarse to fine(+), green, little fine gravel, moist.	SW			6-8-7		OVM Malfunction
	<u>SAND</u> , Silty(+) to clayey, green, moist.	SM					
10					3-6-8		OVM Malfunction 1.5-foot thick bentonite seal below vapor extraction well
15							

Project: ARCO FACILITY NUMBER 2162 15135 Hesperian Blvd, San Leandro, CA		Log of Well No. VW2	
Date Started: 6/5/91	Completed: 6/5/91	Measuring Point Elevation: 30 ft	Total Depth: 9.8 ft
Logged By: Jonathan Florez	Checked By: L.E.	Water Level During Drilling: 9.8 ft	Stabilized: ft
Drilling Co: Gregg Drilling	Driller: S. Stone	Casing: 2" sched. 40 PVC	Drill Bit Diameter: 6 inches
Drilling Method: Hollow Stem Auger		Perforation: 0.020 Slotted PVC	from 9 ft to 4 ft
Drilling Equipment: Mobile B-53		Pack: #3 Monterey Sand	from 9.3 ft to 3.7 ft
Sampler: Cuttings		Seal: Bentonite Chips	from 3.7 ft to 2.7 ft
		Cement/Bentonite Grout	from 2.7 ft to 0 ft

Depth (feet)	LITHOLOGIC DESCRIPTION	Lithology	Monitoring Well Construction	Sample	Blow Counts	OVM (ppm)	REMARKS
<div style="text-align: center;">5</div> <div style="text-align: center;">10</div> <div style="text-align: center;">15</div>	<p>Asphalt & baserock</p> <p>SAND, medium to fine, brown, and fine gravel.</p> <hr style="border-top: 1px dashed black;"/> <p>SILT, Clayey, black.</p> <p>SILT, Clayey, green.</p>						<p>0.5-foot thick bentonite seal below vapor extraction well</p>

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

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STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

Depth of boring: 18-1/2 feet Diameter of boring: 12 inches Date drilled: 09/08/92
 Well depth: 16 feet Material type: Sch 40 PVC Casing diameter: 4 inches
 Screen interval: 8 to 16 feet Filter pack: #3 Sand Slot size: 0.020-inch
 Drilling Company: Exploration GeoServices Driller: John and Dennis
 Method Used: Hollow-Stem Auger Field Geologist: Lou Leet

Signature of Registered Professional: _____

Registration No.: CEG 1463 State: CA

Depth	Sample No.	Blows	P.I.D.	USCS Code	Description	Well Const.
0					Asphalt-covered surface.	
				GW	Asphalt (4 inches).	
2				ML	Sandy gravel, fine to coarse gravel, fine- to coarse-grained sand, brown, damp, medium dense; shell fragments: baserock.	
4					Clayey silt with sand, fine- to medium-grained sand, black, damp, medium plasticity, very stiff.	
4.5	S-4.5	7				
6		10				
		18				
8	S-8.5	3		ML	Sandy silt with clay, fine- to medium-grained sand, gray-brown, very moist, low to medium plasticity, stiff; product odor.	
		4	12			
		5				
10	S-10		126		Water at 10-1/2 feet.	
			3		Lost sample.	
12		2				
		4				
		6				
		3				
		3				
		4				
14		2		SM	Silty sand with gravel, fine- to medium-grained sand, fine to coarse gravel, brown, moist, medium dense.	
		3				
		5				
		2				
16		3	0			
		3				
		5				
		4				
18		6		CL	Silty clay, dark brown; damp, medium plasticity, very stiff	
		11				
					Total depth = 18-1/2 feet.	
20						



PROJECT 62019.02

LOG OF BORING B-5/MW-1
 ARCO Station 2162
 15135 Hesperian Boulevard
 San Leandro, California

PLATE
 4

Depth of boring: 18-1/2 feet Diameter of boring: 12 inches Date drilled: 09/08/92
 Well depth: 16 feet Material type: Sch 40 PVC Casing diameter: 4 inches
 Screen interval: 8 to 16 feet Filter pack: #3 Sand Slot size: 0.020-inch
 Drilling Company: Exploration GeoServices Driller: John and Dennis
 Method Used: Hollow-Stem Auger Field Geologist: Lou Leet

Signature of Registered Professional: _____

Registration No.: CEG 1463 State: CA

Depth	Sample No.	Blows	P.I.D.	USCS Code	Description	Well Const.
0					Asphalt-covered surface.	
				GW	Asphalt (4 inches).	
2				ML	Sandy gravel, medium to coarse gravel, medium- to coarse-grained sand, brown, damp, medium dense; glass fragments: baserock.	
4					Clayey silt, brown, damp, medium plasticity, stiff.	
5	S-5	7				
6		10				
		12				
8						
9	S-9	5	58	SM	Silty sand, fine-grained, brown, moist to wet, medium dense; obvious odor.	
10	S-10	7	203		Color change to gray.	
11		3				
12		7				
13		3	0			
14		2		SM	Silty sand with clay, fine-grained, moist, loose.	
15		3				
16		6			Sand with silt, fine- to coarse-grained, brown, wet, medium dense.	
17	S-17	7		SP-SM	Clayey silt with sand, fine- to medium-grained, brown, damp, medium plasticity, stiff.	
18		5		ML		
		8		CL/CH	Silty clay, dark brown, damp, medium to high plasticity, stiff.	
19		6				
20		8			Total depth = 18-1/2 feet.	



LOG OF BORING B-6/MW-2
 ARCO Station 2162
 15135 Hesperian Boulevard
 San Leandro, California

PLATE
 5

PROJECT 62019.02

Depth of boring: 19 feet Diameter of boring: 12 inches Date drilled: 09/08/92
 Well depth: 15 feet Material type: Sch 40 PVC Casing diameter: 4 inches
 Screen interval: 8 to 15 feet Filter pack: #3 Sand Slot size: 0.020-inch
 Drilling Company: Exploration GeoServices Driller: John and Dennis
 Method Used: Hollow-Stem Auger Field Geologist: Lou Leet

Signature of Registered Professional: _____

Registration No.: CEG 1463 State: CA

Depth	Sample No.	Blows	P.I.D.	USCS Code	Description	Well Const.
0					Asphalt-covered surface.	
				SM	Asphalt (4 inches).	
2				ML	Silty sand, fine- to medium-grained, brown, damp, medium dense.	
					Clayey silt, black, moist, medium plasticity, very stiff.	
4						
6	S-5	5 7 11	0		Color change to brown at 5-1/2 feet.	
8	S-7.5	5 5 10	0		Silty sand with clay, fine- to medium-grained, brown, very moist, medium dense.	
10	S-10	5 6 5 5 7	0	SM	Silty sand, fine- to medium-grained, brown, wet, medium dense.	
12		10 6 6 5	0	SM	Sandy gravel, fine to medium gravel, fine- to coarse-grained sand, brown, wet, medium dense.	
14		4 4 3 3	0	GW	Silty sand, fine- to medium-grained, brown, wet, medium dense.	
				SM	Sandy silt with clay, fine-grained, brown, wet, low plasticity, stiff.	
16	S-16.5	5 3 4 6 7	0	ML	Silty sand, fine-grained, brown, very moist, loose.	
18		10 12	0	ML	Clayey silt with sand, fine-grained, brown, damp to moist medium stiff.	
				SM	Silty sand, fine- to medium-grained, brown, damp, medium dense.	
				ML	Clayey silt with sand, fine-grained, dark brown, damp, low plasticity, very stiff.	
20					Total depth = 19 feet.	



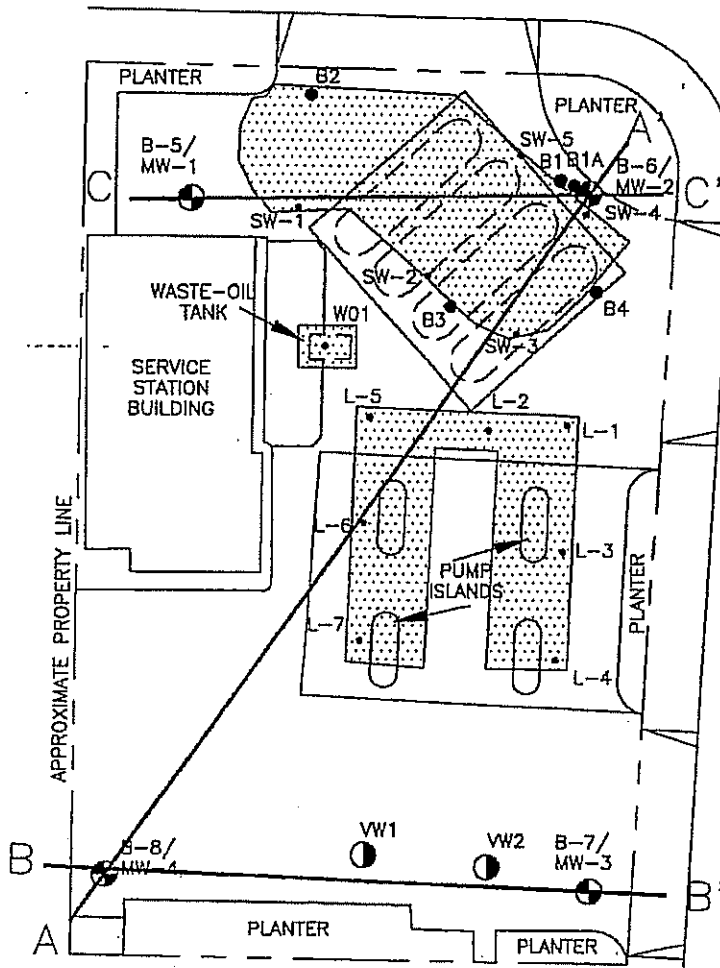
PROJECT 62019.02

LOG OF BORING B-7/MW-3
 ARCO Station 2162
 15135 Hesperian Boulevard
 San Leandro, California

PLATE
 6








APPENDIX D.
GEOLOGIC CROSS-SECTIONS

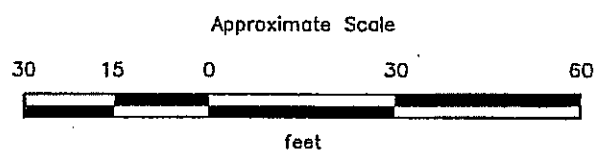
RUTH COURT



HESPERIAN BOULEVARD

EXPLANATION

- B-8/MW-4  = Monitoring well RESNA September 1992
- VW2  = Vapor extraction well (Roux Associates, Inc., 1991)
- B4  = Soil boring (Roux Associates, Inc., 1991)
- L-7  = Product line sample
- SW-5  = Sidewall soil sample
-  = Former underground storage tank and product line excavations
-  = Existing underground storage tank



Source: Modified from site plan provided by Roux Associates, and survey data from John Koch, licensed land surveyor (9/16/92)

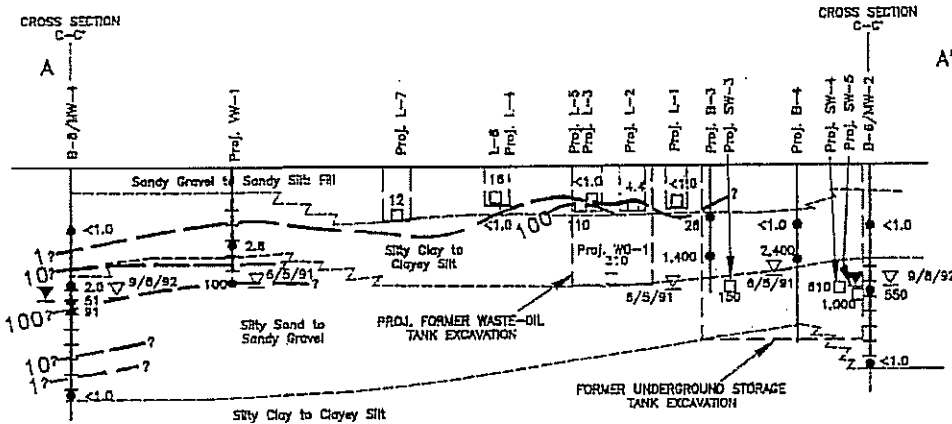


PROJECT 62019.02

GENERALIZED SITE PLAN
 ARCO Station 2162
 15135 Hesperian Boulevard
 San Leandro, California

PLATE
 2

ELEVATION IN FEET ABOVE MEAN SEA LEVEL (MSL)



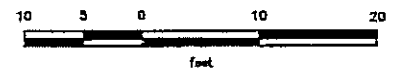
EXPLANATION

- Product line and tank excavations
- 100 - Line of equal concentration of TPHg in soil, in parts per million (ppm)
- 1,000 - Laboratory analyzed product line excavation soil sample showing TPHg concentration in ppm
- 2,400 - Laboratory analyzed soil sample showing TPHg concentration in ppm
- Well casing
- Well screen
- Boring
- Initial water level
- Static water level (10/16/92)

Approximate Vertical Scale



Approximate Horizontal Scale



RESNA
Working to Restore Nature

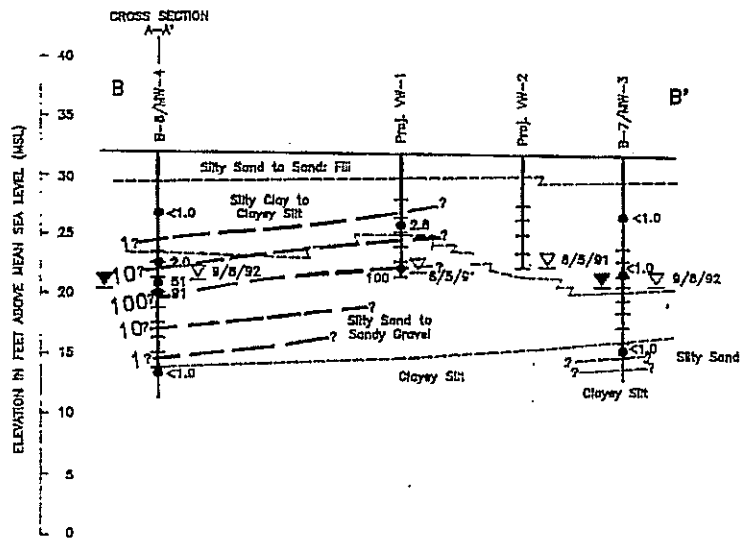
PROJECT

02019.C2

GEOLOGIC CROSS SECTION A-A'
ARCO Station 2182
15135 Heapean Boulevard
San Leandro, California

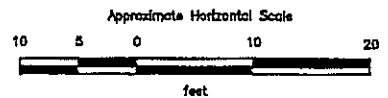
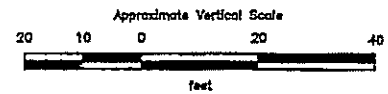
PLATE

8



EXPLANATION

- 100 — Line of equal concentration of TPH in soil, in parts per million (ppm)
- 2,400 — Laboratory analyzed soil sample showing TPH concentration in ppm
- Well casing
- Well screen
- Boring
- ▽ — Inlet water level
- ▽ — Static water level (10/18/92)



RESNA
Working to Restore Nature

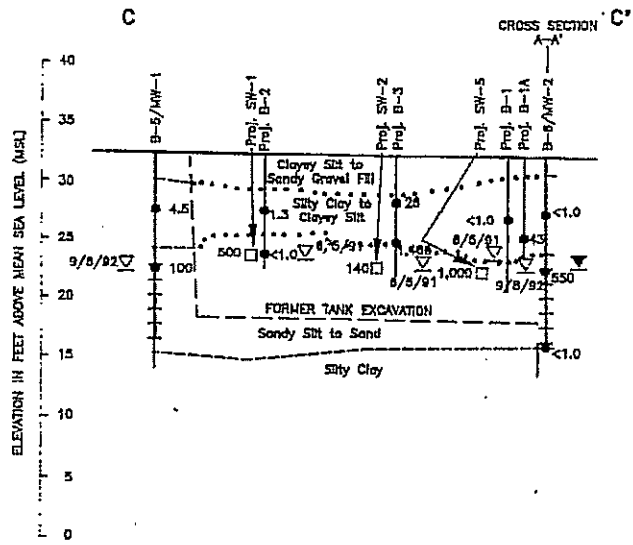
PROJECT

G2019.02

GEOLOGIC CROSS SECTION B-B'
ARCO Station 2162
15135 Hesperian Boulevard
San Leandro, California

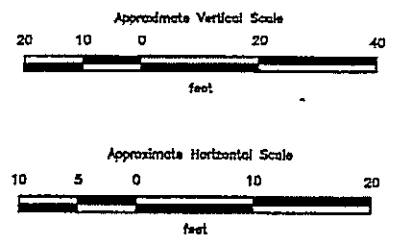
PLATE

9



- EXPLANATION**
- Product line and tank excavations
 - 100 - Line of equal concentration of TPH in soil, in parts per million (ppm)
 - 1,000 - Laboratory analyzed tank excavation sidewall soil sample showing TPH concentration in ppm
 - 2,400 - Laboratory analyzed soil sample showing TPH concentration in ppm
 - Wall casing
 - Wall screen
 - Boring
 - Initial water level
 - Static water level (10/18/82)

NOTE: Dotted line denotes inferred stratigraphic contact through former excavation tank.



RESNA
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PROJECT 62019.02

GEOLOGIC CROSS SECTION C-C'
ARCO Station 2102
15135 Hesperian Boulevard
San Leandro, California

PLATE
10