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ENVIRONMENTAL
PROTECTION
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Manmohan S. Chopra
4216 Warbler Loop
FREMONT, CA 94555

Mr Scott Seery

Alameda County Department of Enviromental health
1131 Harbor Bay Parkway,
ALAMEDA, CA 94502-6577

SUB: Quarterly Ground Water Monitoring & Sampling Report
1401 grand Ave. San Leandro, CA

Dear Mr Seery,

Attached, for your review and records, please find a copy of Quarterely Ground Water Monitoring and Sampling Report for the above site. The report is self explanatory and is in standard format. However, if you have any questions or comments, please contact the undersigned at above address or call at 510-790-9252 or 510-489-5696.

Sincerely,

Manmohan

Manmohan S. Chopra
Property Oener

P & D ENVIRONMENTAL

4020 Panama Court
Oakland, CA 94611
Telephone (510) 658-6916

April 25, 1996
Report 0055.R7

Mr. Manmohan Chopra
4216 Warbler Loop
Fremont, CA 94555

SUBJECT: QUARTERLY GROUNDWATER MONITORING AND SAMPLING REPORT
Former ARCO Service Station
1401 Grand Avenue
San Leandro, California

Dear Mr. Chopra:

P&D Environmental (P&D) is pleased to present this report documenting the results of the quarterly monitoring and sampling of the eight wells at or near the subject site. This work was performed in accordance with P&D's proposal 011796.P1 dated January 17, 1996. All of the wells were monitored and sampled on March 28, 1996. The reporting period is for January through March, 1996. A Site Location Map (Figure 1) and Site Plan (Figure 2) are attached with this report.

BACKGROUND

The site is presently used as an active gasoline station. It is P&D's understanding that on April 24, 1991 Aegis Environmental, Inc. (Aegis) personnel drilled four soil borings, designated as B-1 through B-4, to a vertical depth of approximately 40 feet at the site. The locations of the borings are shown on Figure 2. A total of nine soil samples collected from the boreholes were analyzed for total petroleum hydrocarbons as gasoline (TPH-G); benzene, toluene, ethylbenzene, and total xylenes (BTEX) by EPA Method 8260; and for total lead by EPA Method 7420. TPH-G concentrations ranged from below detection limit to 66 parts per million (ppm). Benzene concentrations ranged from not detected to 0.94 ppm. Total lead concentrations ranged from not detected to 3 ppm. Documentation of the subsurface investigation and results are presented in a report prepared by Aegis titled, "Soil Boring Results Report," dated June 10, 1991.

It is P&D's understanding that on April 14, 1992 Aegis personnel returned to the site to drill three slant borings, designated as B5 through B7, to a total vertical depth of approximately 49 feet at the site. The borings were drilled at an angle of approximately 26 to 28 degrees to collect samples from beneath the underground storage tanks. The locations of the borings are shown on Figure 2. A total of twenty-two soil samples were analyzed for TPH-G using EPA Method 5030; and for BTEX using EPA Method 8240. In addition, one of the samples was analyzed for total lead using EPA Method 7420, and several of the soil samples were analyzed for soluble lead using the California Waste Extraction Test. TPH-G concentrations ranged from not detected to 4,000 ppm. Benzene, concentrations ranged from not detected to 11 ppm. Total lead was not detected, and soluble lead concentrations ranged from not detected to 0.061 ppm. Documentation of the subsurface investigation and results are presented in a report prepared by Aegis titled, "Initial Subsurface Investigation Results Report," dated June 22, 1992.

It is P&D's understanding that between September 15 and 18, 1992 Aegis personnel returned to the site to install five groundwater monitoring wells, designated as MW1 through MW5. The wells were drilled to total depths of between 50 and 55 feet, and were constructed using four-inch diameter PVC pipe. Wells MW1 and MW2 were constructed with perforated casing between the depths of approximately 15 and 55 feet. Wells MW3, MW4 and MW5 were constructed with perforated casing between the depths of approximately 35 and 55 feet.

Groundwater was reported to have been first encountered at a depth of 42 feet. The locations of the wells are shown in Figure 2.

A total of thirty-one soil samples were analyzed for TPH-G using EPA Method 5030/8015; and for BTEX using EPA Method 8020. In addition, three soil samples containing TPH-G were analyzed for total metals concentrations of cadmium, chromium, lead, and zinc using EPA Method 6010 and 7421. One soil sample was collected from each borehole from below the air-water interface and analyzed for petrophysical properties, including saturated permeability and grain size distribution.

TPH-G concentrations ranged from not detected to 39 ppm. Benzene concentrations ranged from not detected to 0.27 ppm. The total metals concentrations were all less than 10 times their respective STLC values. The subsurface materials encountered in the borings indicate that soil types vary across the site, but generally consist of silty clay, silt, clayey silt and sandy silt from the surface to a depth of between 30 and 35 feet. Below the depth of 30 to 35 feet, layers of sand and sandy silt were reported to have been encountered.

It is P&D's understanding that on September 29, 1992 Aegis personnel collected groundwater samples from wells MW1, MW2, MW4 and MW5 at the site. A sample was not collected from well MW-3 due to the reported presence of 0.02 feet of floating hydrocarbons. The measured depth to water ranged from approximately 41.5 to 44.5 feet. The samples were analyzed for TPH-G using EPA Method 5030/8015; and for BTEX using EPA Method 8020. TPH-G concentrations ranged from 0.06 to 20 ppm, and benzene concentrations ranged from 0.16 to 10 ppm. Based upon the water level measurements in the wells, the groundwater flow direction was reported to be to the northwest. The water level measurements are summarized in Table 1. The analytical results are summarized in Table 2.

It is P&D's understanding that on October 7, 1992 Aegis personnel performed rising head slug tests wells MW1, MW2, and MW4 to estimate the saturated hydraulic conductivity at the site. In addition, two short-term soil vapor extraction tests were performed on wells MW1 and MW2. Wells MW-3, MW-4, and MW-5 were used as vacuum influence monitoring points. Documentation of the monitoring well groundwater sample collection, slug test and vapor extraction tests are presented in a report prepared by Aegis titled, "Problem Assessment Report," dated December 16, 1992.

On February 18, 1994 P&D personnel monitored the five groundwater monitoring wells at the site for depth to water and the presence of free product or sheen. The depth to water was measured using an electric water level indicator, and the presence of free product and sheen was evaluated using a transparent bailer. The measured depth to water in the wells ranged from approximately 39.8 to 42.9 feet. No evidence of free product or sheen was detected in any of the wells. Based on the measured depth to water in the wells, the groundwater flow direction was calculated to be to the north with a gradient of 0.054. In a letter dated October 19, 1995 Mr. Scott Seery of the Alameda County Department of Environmental Health requested that all of the onsite and offsite wells be monitored and sampled for the quarterly monitoring and sampling program. The measured depth to water in the wells is presented in Table 1.

On June 15 and 16, 1995 P&D installed three offsite monitoring wells, designated as MW6 through MW8. The locations of the wells are shown on Figure 2. Documentation of the well installation and sample results is presented in P&D's report 0055.R5 dated August 23, 1995.

FIELD ACTIVITIES

On March 28, 1996 all eight of the wells in the groundwater monitoring network for the site were monitored and sampled by P&D personnel. The wells were monitored for depth to water and the presence of free product or sheen. Depth to water was measured to the nearest 0.01 foot using an electric water level indicator. The presence of sheen was evaluated using a transparent bailer. No free product or sheen was observed in any of the wells. Depth to water level measurements and monitoring well groundwater surface elevations are presented in Table 1.

Prior to sampling, the wells were purged of a minimum of three casing volumes of water. During purging operations, the field parameters of electrical conductivity, temperature and pH were monitored. Once the field parameters were observed to stabilize, and a minimum of three casing volumes had been purged, water samples were collected using a clean Teflon bailer. The water samples were transferred to 40-milliliter glass Volatile Organic Analysis (VOA) vials which were sealed with Teflon-lined screw caps. The VOA vials were overturned and tapped to assure that no air bubbles were present.

The VOA vials were then transferred to a cooler with ice, and later were transported to McCampbell Analytical, Inc. in Pacheco, California. McCampbell Analytical, Inc. is a State-certified hazardous waste testing laboratory. Chain of custody documentation accompanied the samples to the laboratory. Records of the field parameters measured during well purging are attached with this report.

HYDROGEOLOGY

The subsurface materials encountered in the borings drilled by Aegis indicate that soil types vary across the site, but generally consist of silty clay, silt, clayey silt and sandy silt from the surface to a depth of between 30 and 35 feet. Below the depth of 30 to 35 feet, layers of sand and sandy silt were reported to have been encountered. Groundwater has historically been encountered at the site at depths ranging from approximately 40 to 45 feet below grade.

Based upon the regional groundwater flow direction identified by Woodward-Clyde Consultants in a report titled, "Hydrogeology of Central San Leandro and Remedial Investigation of Regional Groundwater Contamination - San Leandro Plume - San Leandro, California - Volume I," prepared for the California Environmental Protection Agency and dated December 29, 1993 the regional groundwater flow direction to the west of the site appears to be to the southwest. However, based upon the measured depth to water in the five wells at the site on September 29, 1992 Aegis identified a northwesterly groundwater flow direction. Based upon water level measurements collected by P&D from the five wells at the site on February 18, July 5, and October 12, 1994, February 1, and May 4, 1995 the groundwater flow direction at the site was calculated to be to the north, towards San Leandro Creek. Based upon water level measurements collected in wells MW1 through MW8 by P&D personnel on June 23 and December 19, 1995 the groundwater flow direction was calculated to be to the northwest.

Based upon water level measurements collected in wells MW1 through MW8 by P&D personnel on March 28, 1996 the groundwater flow direction was calculated to be to the northwest.

The measured depth to water at or near the site on March 28, 1996 for wells MW1, MW2, MW3, MW4, MW5, MW6, MW7, and MW8 was 37.10, 35.97, 36.75, 35.00, 38.30, 36.18, 38.94, and 36.98 feet, respectively. Since the previous quarter, groundwater levels have increased in the wells by between 2.83 and 3.49 feet. Based on the March 28, 1996 water level measurements, the groundwater flow direction on March 28, 1996 was to the northwest with a gradient ranging from

0.045 to 0.050. The groundwater flow direction has remained relatively unchanged and the gradient has decreased since the previous water level measurements were collected on December 19, 1995. The groundwater monitoring data are presented in Table 1. The groundwater flow direction at the site on March 28, 1996 is shown on Figure 2.

LABORATORY RESULTS

All of the groundwater samples collected from the monitoring wells were analyzed for TPH-G using EPA Method 5030 in conjunction with Modified EPA Method 8015 and for BTEX and MTBE using EPA Method 8020.

The laboratory analytical results for the groundwater samples showed that TPH-G and BTEX were not detected in wells MW5, MW6, MW7, and MW8. [illegible] was detected at concentrations of 1.[illegible]6, and 5.6 [illegible], and benzene was detected at concentrations of 0.022, 0.45, 1.1, and 0.64 ppm, respectively. TPH-G and BTEX concentrations have increased in wells MW1 through MW4 since the previous quarter. In wells MW5 through MW8 TPH-G and BTEX have remained unchanged (not detected) since the previous quarter. The sample analytical results are summarized in Table 2. Copies of the laboratory analytical reports and chain of custody documentation are attached with this report.

MTBE
Benzene
320
5800
1460
140

DISCUSSION AND RECOMMENDATIONS

Based on the depth to water measurements collected on March 28, 1996 from all of the monitoring wells (MW1 through MW8), the groundwater flow direction appears to be to the northwest.

P&D recommends that the quarterly groundwater monitoring and sampling program be continued for the site. P&D recommends that the groundwater samples collected from all of the wells be analyzed for TPH-G, BTEX and MTBE.

P&D also recommends that a Corrective Action Plan be prepared and submitted to the ACDEH in accordance with a request set forth in letters from Mr. Scott Seery dated March 23, and October 19, 1995.

DISTRIBUTION

Copies of this report should be forwarded to Mr. Scott Seery at the Alameda County Department of Environmental Health and to the San Francisco Bay Regional Water Quality Control Board.

LIMITATIONS

This report was prepared solely for the use of Mr. Manmohan Chopra. The content and conclusions provided by P&D in this assessment are based on information collected during our investigation, which may include, but not be limited to, visual site inspections; interviews with the site owner, regulatory agencies and other pertinent individuals; review of available public documents; subsurface exploration and our professional judgement based on said information at the time of preparation of this document. Any subsurface sample results and observations presented herein are considered to be representative of the area of investigation; however, geological conditions may vary between borings and pits and may not necessarily apply to the general site as a whole. If future subsurface or other conditions are revealed which vary from these findings, the newly-revealed conditions must be evaluated and may invalidate the findings of this report.

This report is issued with the understanding that it is the responsibility of the owner, or his representative, to ensure that the information contained herein is brought to the attention of the appropriate regulatory agencies, where required by law. Additionally, it is the sole responsibility of the owner to properly dispose of any hazardous materials or hazardous wastes left onsite, in accordance with existing laws and regulations.

This report has been prepared in accordance with generally accepted practices using standards of care and diligence normally practiced by recognized consulting firms performing services of a similar nature. P&D is not responsible for the accuracy or completeness of information provided by other individuals or entities which is used in this report. This report presents our professional judgement based upon data and findings identified in this report and interpretation of such data based upon our experience and background, and no warranty, either express or implied, is made. The conclusions presented are based upon the current regulatory climate and may require revision if future regulatory changes occur.

Should you have any questions, please do not hesitate to contact us at (510) 658-6916.

Sincerely,

P&D Environmental

Paul H. King
Hydrogeologist

Don R. Braun
Certified Engineering Geologist
Registration No.: 1310
Expiration Date: 6/30/96

PHK/aog
0055.R7

Attachments: Tables 1 & 2
Site Location Map (Figure 1)
Site Plan (Figure 2)
Field Parameter Forms
Laboratory Analytical Reports
Chain of Custody Documentation

TABLE 1
WELL MONITORING DATA

Well No.	Date Monitored	Top of Casing Elev. (ft.)	Depth to Water (ft.)	Water Table Elev. (ft.)
MW1	3/28/96	87.98+	37.10	50.88
	12/19/95		40.16	47.82
	6/23/95		38.54	49.44
	5/04/95	87.96++	37.65	50.33
	2/01/95		38.46	49.52
	10/12/94		42.01	45.97
	7/05/94		41.36	46.62
	2/18/94		41.02	46.96
	9/29/92		42.77	45.21
MW2	3/28/96	86.61+	35.97	50.64
	12/19/95		38.80	47.81
	6/23/95		37.40	49.21
	5/04/95	86.60++	36.54	50.07
	2/01/95		37.27	49.34
	10/12/94		40.77	45.84
	7/05/94		40.13	46.48
	2/18/94		39.81	46.80
	9/29/92		41.55	45.06
MW3	3/28/96	87.48+	38.75	48.73
	12/19/95		42.20	45.28
	6/23/95		40.65	46.83
	5/04/95	87.50++	39.61	47.87
	2/01/95		40.13	47.35
	10/12/94		43.92	43.56
	7/05/94		43.32	44.16
	2/18/94		43.09	44.39
	9/29/92		44.60	42.88*
MW4	3/28/96	86.21+	35.00	51.21
	12/19/95		38.45	47.76
	6/23/95		37.40	48.81
	5/04/95	86.20++	36.33	49.88
	2/01/95		36.96	49.25
	10/12/94		40.48	45.73
	7/05/94		39.69	46.52
	2/18/94		39.36	46.85
	9/29/92		44.29	41.92

NOTES:
Elevations are in feet Mean Sea Level.
ft. = Feet.
+ = Indicates survey data provided by Kier & Wright dated June 26, 1995.
++ = Indicates survey data provided by Aegis Environmental, Inc.
* = Indicates groundwater elevation corrected for the presence of free product.

TABLE 1 (Continued)
WELL MONITORING DATA

Well No.	Date Monitored	Top of Casing Elev. (ft.)	Depth to Water (ft.)	Water Table Elev. (ft.)
MW5	3/28/96	89.10+	38.30	50.80
	12/19/95		41.79	47.31
	6/23/95		39.87	49.23
	5/04/95	89.06++	38.94	50.16
	2/01/95		39.94	49.16
	10/12/94		43.81	45.29
	7/05/94		43.08	46.02
	2/18/94		42.88	46.22
	9/29/92		44.53	44.57
MW6	3/28/96	84.02+	36.18	47.84
	12/19/95		39.25	44.77
	6/23/95		38.17	45.85
	6/21/95**		38.11	45.91
MW7	3/28/96	87.11+	38.94	48.17
	12/19/95		42.26	44.85
	6/23/95		41.00	46.11
	6/21/95**		40.30	46.81
MW8	3/28/96	89.70+	36.98	52.72
	12/19/95		40.35	49.35
	6/23/95		38.36	51.34
	6/21/95**		38.20	51.50

NOTES:
Elevations are in feet Mean Sea Level.
ft. = Feet.
+ = Indicates survey data provided by Kier & Wright dated June 26, 1995.
++ = Indicates survey data provided by Aegis Environmental, Inc.
** = Indicates depth to water measurements prior to groundwater monitoring well development.

TABLE 2
GROUNDWATER
LABORATORY ANALYTICAL RESULTS

Samples Collected
On March 28, 1996

Sample Location	TPH-G	MTBE	Benzene	Toluene	Ethyl-benzene	Xylenes
MW1	1.3	0.022	0.32	0.0023	0.034	0.0046
MW2	38	0.45	5.8	4.7	1.1	5.1
MW3	4.6	1.1	1.4	0.012	0.17	0.020
MW4	5.6	0.64	1.4	0.038	0.31	0.30
MW5	ND	ND	ND	ND	ND	ND
MW6	ND	ND	ND	ND	ND	ND
MW7	ND	ND	ND	ND	ND	ND
MW8	ND	ND	ND	ND	ND	ND

Samples Collected
On December 19, 1995

Sample Location	TPH-G	MTBE	Benzene	Toluene	Ethyl-benzene	Xylenes
MW1	0.50	0.0081	0.087	0.0015	0.011	0.0035
MW2	25	0.45	5.2	3.8	0.86	3.8
MW3	0.95	0.12	0.16	0.0023	0.015	0.0016
MW4	2.0	0.21	0.70	0.029	0.089	0.15
MW5	ND	ND	ND	ND	ND	ND
MW6	ND	0.01	ND	ND	ND	ND
MW7	ND	ND	ND	ND	ND	ND
MW8	ND	ND	ND	ND	ND	ND

NOTES:

TPH-G = Total Petroleum Hydrocarbons as Gasoline.
MTBE = Methyl Tert Butyl Ether.
ND = Not Detected.
Results are in parts per million (ppm), unless otherwise specified.

TABLE 2 (Continued)
GROUNDWATER
LABORATORY ANALYTICAL RESULTS

Well No.	TPH-G	MTBE	Benzene	Toluene	Ethyl-benzene	Total Xylenes
			Samples Collected on June 23, 1995			
MW6	ND	3.0	ND	ND	ND	ND
MW7	ND	ND	ND	ND	ND	ND
MW8	ND	ND	ND	ND	ND	ND
			Samples Collected On May 4, 1995			
MW1	2.4	NA	0.67	0.0028	0.076	0.0060
MW2	63	NA	10	11	1.6	8.8
MW3	7.2	NA	3.1	0.038	0.20	0.062
MW4	3.3	NA	0.89	0.068	0.15	0.30
MW5	ND	NA	ND	ND	ND	ND
			Samples Collected On February 1, 1995			
MW1	4.6	NA	1.8	0.0099	0.23	0.030
MW2	45	NA	7.0	5.1	1.2	6.1
MW3	11	NA	4.2	0.031	0.33	0.29
MW4	1.4	NA	0.39	0.055	0.049	0.18
MW5	ND	NA	ND	ND	ND	ND

NOTES:
TPH-G = Total Petroleum Hydrocarbons as Gasoline.
ND = Not Detected.
NA = Not Analyzed. A sample was not collected because of the presence of free product.
Results in parts per million (ppm), unless otherwise indicated.

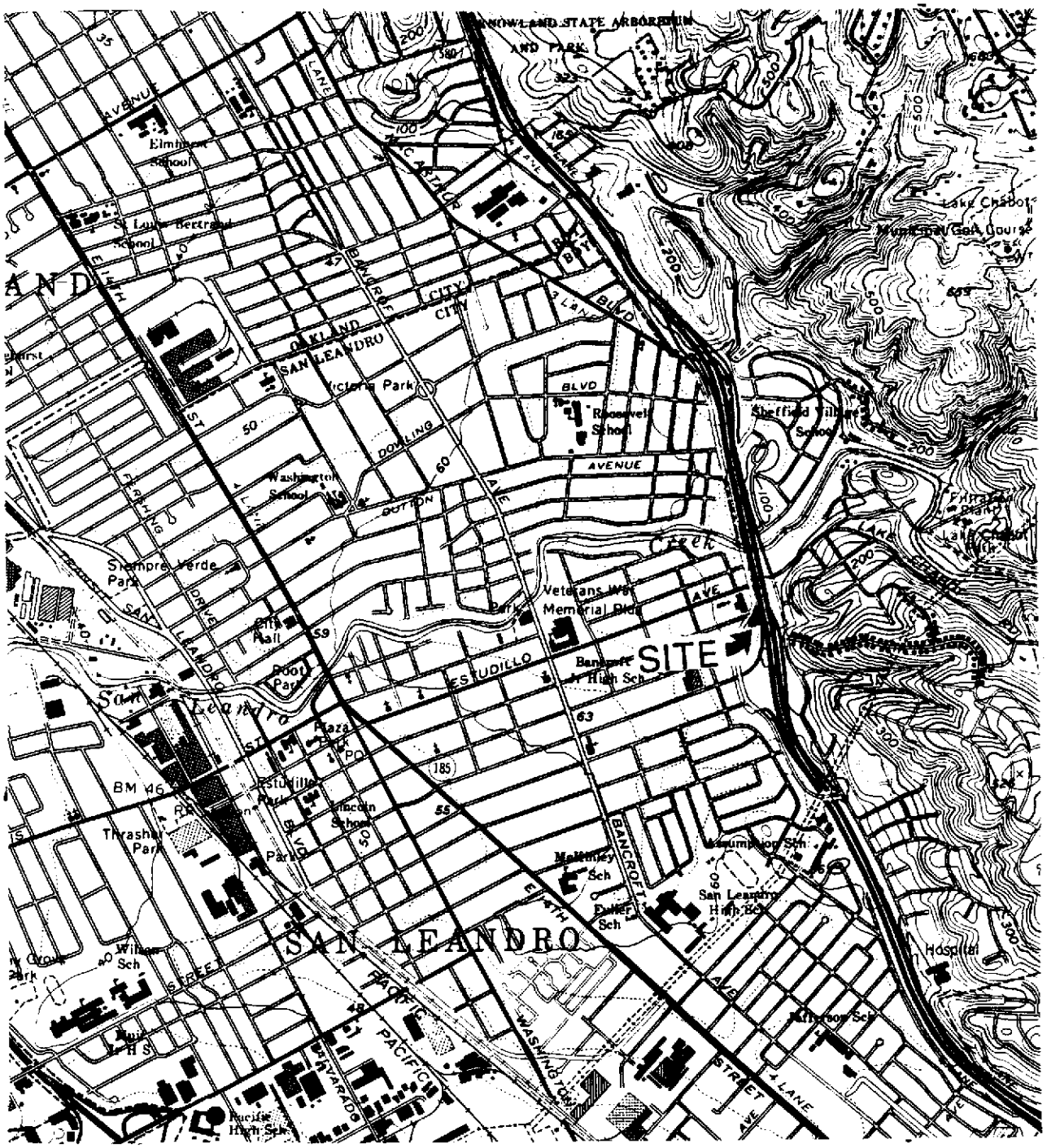
TABLE 2 (Continued)
GROUNDWATER
LABORATORY ANALYTICAL RESULTS

Well No.	TPH-G	MTBE	Benzene	Toluene	Ethyl-benzene	Total Xylenes
			Samples Collected On October 12, 1994			
MW1	2.5	NA	0.82	0.0039	0.10	0.020
MW2	24	NA	4.4	2.8	0.73	3.5
MW3	1.7	NA	0.39	0.00090	0.018	0.0057
MW4	0.68	NA	0.14	0.0087	0.014	0.052
MW5	ND	NA	ND	ND	ND	ND
			Samples Collected On July 5, 1994			
MW1	3.0	NA	1.3	0.0038	0.035	0.0025
MW2	46.0	NA	9.1	7.0	1.4	7.3
MW3	3.6	NA	1.6	0.0083	0.076	0.047
MW4	2.6	NA	0.47	0.045	0.084	0.25
MW5	ND	NA	ND	ND	ND	0.0010
			Samples Collected On September 29, 1992			
MW1	3.1	NA	0.16	ND	ND	0.0060
MW2	20	NA	4.6	3.8	0.26	3.3
MW3	NA	NA	NA	NA	NA	NA
MW4	0.63	NA	0.17	0.06	0.0073	0.65
MW5	0.06	NA	10	0.0071	ND	0.0069

NOTES:
TPH-G = Total Petroleum Hydrocarbons as Gasoline.
ND = Not Detected.
NA = Not Analyzed. A sample was not collected because of the presence of free product.
Results in parts per million (ppm), unless otherwise indicated.

P & D ENVIRONMENTAL

4020 Panama Court
Oakland, CA 94611
Telephone (510) 658-6916

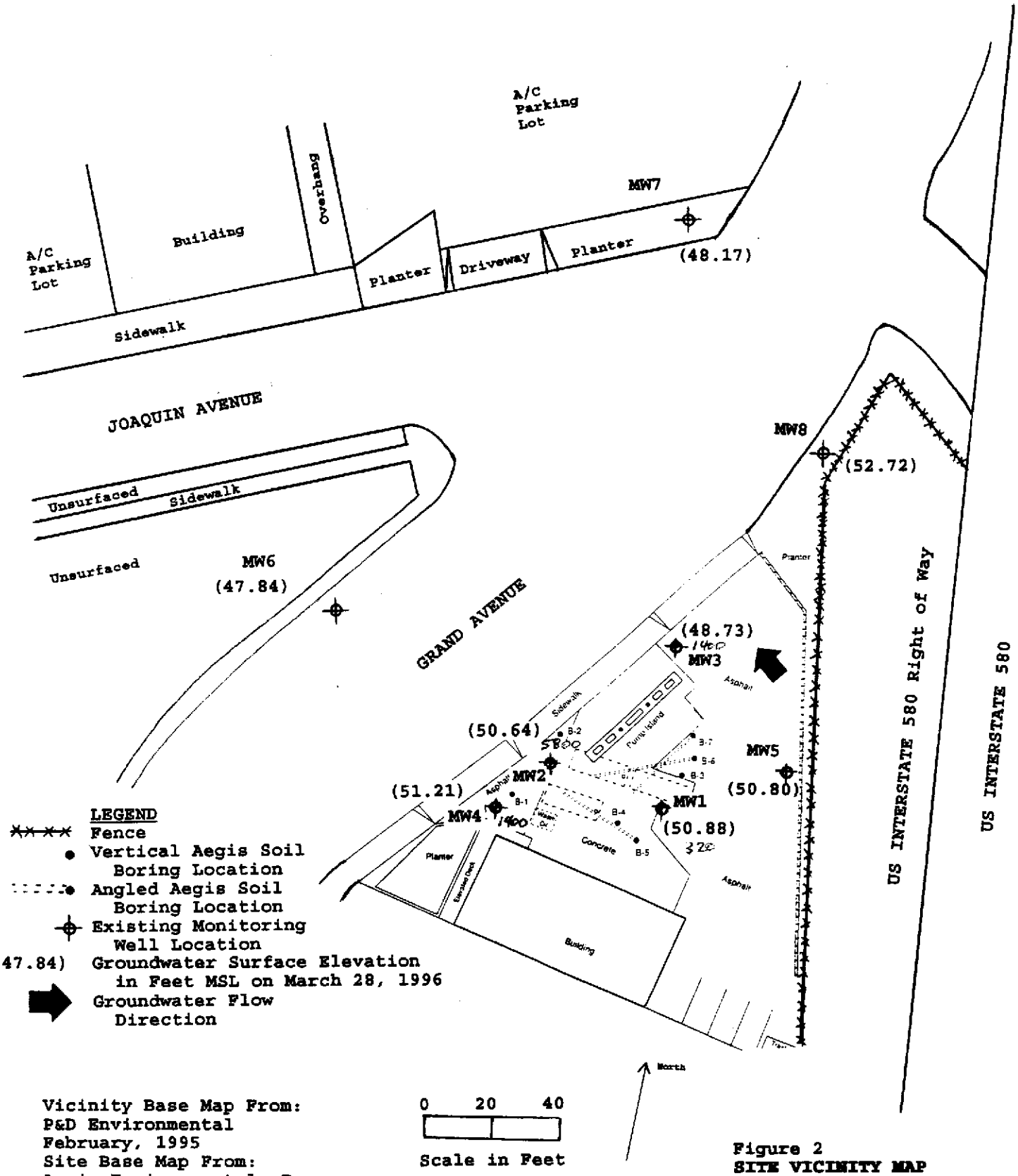


Base Map from:
U.S. Geological Survey
San Leandro, Calif.
7.5 Minute Quadrangle
Photorevised 1980

Figure 1
SITE LOCATION MAP
Former ARCO Service Station
1401 Grand Avenue
San Leandro, California

P & D ENVIRONMENTAL

4020 Panama Court
Oakland, CA 94611
Telephone (510) 658-6916



Vicinity Base Map From:
P&D Environmental
February, 1995
Site Base Map From:
Aegis Environmental, Inc.
Problem Assessment Report
dated December 16, 1992

Figure 2
SITE VICINITY MAP
Former ARCO Service Station
1401 Grand Avenue
San Leandro, California

P&D ENVIRONMENTAL
GROUNDWATER MONITORING/WELL PURGING
DATA SHEET

Site Name Former Arco Service Station
Well No. MW1
Job No. 0055
Date 3/28/96
TOC to Water (ft.) 37.10
Sheen None
Well Depth (ft.) 55.80
Free Product Thickness ∅
Well Diameter 4"
Sample Collection Method Teflon Bailer
Gal./Casing Vol. 12

TIME	GAL. PURGED	pH	TEMPERATURE (°C)	ELECTRICAL CONDUCTIVITY (µs/cm)
2:15	6	7.51	59.3	4.68 x 100
2:25	12	7.45	59.3	4.23
2:40	18	7.28	59.3	3.50
2:55	24	7.39	59.4	3.78
3:10	30	7.35	59.3	3.80
3:25	36	7.29	59.4	3.90
3:30	Sampled.			

NOTES: AOG
Well purged using plastic Bailer (hand Bailed)

PURGE10.92

P&D ENVIRONMENTAL
GROUNDWATER MONITORING/WELL PURGING
DATA SHEET

Site Name Former Arco Service Station
Well No. MW2
Job No. 0055
Date 3/28/96
TOC to Water (ft.) 35.97
Sheen None
Well Depth (ft.) 56.10
Free Product Thickness ∅
Well Diameter 4"
Sample Collection Method Teflon Bailer
Gal./Casing Vol. 13.0

TIME	GAL. PURGED	pH	TEMPERATURE (°C)	ELECTRICAL CONDUCTIVITY (µs/cm)
12:40	6.5	7.48	59.5	3.02 x100
12:55	13	7.42	59.2	4.25
1:05	19.5	7.35	59.3	3.86
1:20	26.0	7.15	59.5	3.70
1:35	32.5	7.10	59.2	3.68
1:50	39	7.12	59.2	3.50
2:05	Sampled			

NOTES: AOC
Well purged using plastic Bailer (Hand Bailed)

PURGE10.92

P&D ENVIRONMENTAL
GROUNDWATER MONITORING/WELL PURGING
DATA SHEET

Site Name Former Arco Service Station
Well No. MW3
Job No. 0055
Date 3/28/96
TOC to Water (ft.) 38.75
Sheen None
Well Depth (ft.) 58.30
Free Product Thickness ϕ
Well Diameter 4"
Sample Collection Method Teflon Bailer
Gal./Casing Vol. 13.0

TIME	GAL. PURGED	pH	TEMPERATURE (°C)	ELECTRICAL CONDUCTIVITY (µS/cm)
11:20	6.5	7.85	59.7	5.20 x100
11:30	13.0	7.60	59.8	5.46
11:40	19.5	7.38	59.3	6.06
11:50	26	7.24	59.2	5.95
12:00	32.5	7.30	59.1	5.85
12:15	39	7.32	59.5	5.90
12:30	Sampled			

NOTES: AOG
Well purged using plastic Bailer (Hand Bailed)

PURGE10.92

P&D ENVIRONMENTAL
GROUNDWATER MONITORING/WELL PURGING
DATA SHEET

Site Name Former Arco Service Station
Well No. MW4
Job No. 0055
Date 3/28/96
TOC to Water (ft.) 35.00
Sheen None
Well Depth (ft.) 56.80
Free Product Thickness ∅
Well Diameter 4"
Sample Collection Method Teflon Bailer
Gal./Casing Vol. 14

TIME	GAL. PURGED	pH	TEMPERATURE (°C)	ELECTRICAL CONDUCTIVITY (µs/cm)
10:05	7	7.21	59.4	9.26 X100
10:15	14	7.22	59.2	8.46
10:25	21	7.18	59.3	8.75
10:35	28	7.15	59.3	8.55
10:45	35	7.10	59.3	8.60
11:00	42	7.13	60.0	8.59
11:10	Sampled			

NOTES: AOG
Well purged using plastic Bailer (Hand Bailed)

PURGE10.92

P&D ENVIRONMENTAL
GROUNDWATER MONITORING/WELL PURGING
DATA SHEET

Site Name Former Arco Service Station
Well No. MW5
Job No. 0055
Date 3/28/96
TOC to Water (ft.) 38.30
Sheen None
Well Depth (ft.) 59.90
Free Product Thickness ϕ
Well Diameter 4"
Sample Collection Method Teflon Bailer
Gal./Casing Vol. 14

TIME	GAL. PURGED	pH	TEMPERATURE (°C)	ELECTRICAL CONDUCTIVITY (µS/cm)
9:00	7	7.45	59.1	2.05 X100
9:10	14	7.10	59.2	3.42
9:20	21	7.35	59.3	3.67
9:30	28	7.30	59.2	3.90
9:40	35	7.29	59.1	3.82
9:50	42	7.25	59.1	3.75
10:00	Sampled			

NOTES: AOG

Well purged using plastic Bailer (hand Bailed)

PURGE10.92

P&D ENVIRONMENTAL
GROUNDWATER MONITORING/WELL PURGING
DATA SHEET

Site Name Former Arco Service Station
Well No. MW 6
Job No. 0055
Date 3/28/96
TOC to Water (ft.) 36.18
Sheen None
Well Depth (ft.) 49.98
Free Product Thickness ϕ
Well Diameter 2"
Sample Collection Method Teflon Bailer
Gal./Casing Vol. 2.2

TIME	GAL. PURGED	pH	TEMPERATURE (°C)	ELECTRICAL CONDUCTIVITY (µs/cm)
8:32	1.1	7.50	59.1	3.78 x100
8:35	2.2	7.52	59.1	3.20
8:38	3.3	7.45	59.1	4.05
8:41	4.4	7.40	59.1	3.52
8:44	5.5	7.35	59.2	3.60
8:47	6.6	7.30	59.1	3.71
8:50	Sampled			

NOTES: AOC
Well purged using plastic Bailer (Hand Bailed)

PURGE10.92

P&D ENVIRONMENTAL
GROUNDWATER MONITORING/WELL PURGING
DATA SHEET

Site Name Former Arco Service Station
Well No. MW 7
Job No. 0055
Date 3/28/96
TOC to Water (ft.) 38.94
Sheen None
Well Depth (ft.) 49.96
Free Product Thickness ϕ
Well Diameter 2"
Sample Collection Method Teflon Bailer
Gal./Casing Vol. 1.8

TIME	GAL. PURGED	pH	TEMPERATURE (°C)	ELECTRICAL CONDUCTIVITY (µS/cm)
8:05	0.9	7.85	59.3	3.30 x100
8:08	1.8	7.70	59.2	3.95
8:11	2.7	7.62	59.1	4.20
8:14	3.6	7.50	59.2	4.25
8:17	4.5	7.50	59.3	4.40
8:20	5.4	7.45	59.1	4.55
8:25	Sampled			

NOTES: AOA
Well purged using plastic Bailer (hand Bailed)

PURGE10.92

P&D ENVIRONMENTAL
GROUNDWATER MONITORING/WELL PURGING
DATA SHEET

Site Name Former Arco Service Station
Well No. MW8
Job No. 0055
Date 3/28/96
TOC to Water (ft.) 36.98
Sheen None
Well Depth (ft.) 48.50
Free Product Thickness ϕ
Well Diameter 2"
Sample Collection Method Teflon Bailer
Gal./Casing Vol. 2.0

TIME	GAL. PURGED	pH	TEMPERATURE (°C)	ELECTRICAL CONDUCTIVITY (µs/cm)
7:27	1.0	7.15	59.2	4.19 x100
7:29	2.0	7.10	59.1	5.05
7:31	3.0	7.05	59.3	4.80
7:35	4.0	7.05	59.1	4.65
7:38	5.0	7.05	59.1	4.50
7:40	6.0	7.05	59.2	4.56
7:50	Sampled			

NOTES: AOC
Well purged using plastic Bailer (Hand Bailed)

PURGE10.92

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

P & D Environmental 4020 Panama Court Oakland, CA 94611	Client Project ID: # 0055; Former Arco Service Station	Date Sampled: 03/28/96
		Date Received: 03/29/96
	Client Contact: Paul King	Date Extracted: 03/29-03/30/96
	Client P.O:	Date Analyzed: 03/29-03/30/96

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with MTBE & BTEX*

EPA methods 5030, modified 8015, and 8020 or 602; California RWQCB (SF Bay Region) method GCFID(5030)

Lab ID	Client ID	Matrix	TPH(g)+	MTBE	Benzene	Toluene	Ethylben-zene	Xylenes	% Rec. Surrogate
62837	MW1	W	1300,b,c	22	320	2.3	34	4.6	102
62838	MW2	W	38,000,a	450	5800	4700	1100	5100	98
62839	MW3	W	4600,a	1100	1400	12	170	20	101
62840	MW4	W	5600,a	640	1400	38	310	300	101
62841	MW5	W	ND	ND	ND	ND	ND	ND	97
62842	MW6	W	ND	ND	ND	ND	ND	ND	97
62843	MW7	W	ND	ND	ND	ND	ND	ND	96
62844	MW8	W	ND	ND	ND	ND	ND	ND	96
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit		W	50 ug/L	5.0	0.5	0.5	0.5	0.5	
		S	1.0 mg/kg	0.05	0.005	0.005	0.005	0.005	

* water and vapor samples are reported in ug/L, soil samples in mg/kg, and all TCLP extracts in mg/L

cluttered chromatogram; sample peak coelutes with surrogate peak

+ The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~ 5 vol. % sediment; j) no recognizable pattern.

DHS Certification No. 1644

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

QC REPORT FOR HYDROCARBON ANALYSES

Date: 03/28/96-03/29/96 Matrix: Water

Analyte	Concentration (ug/L) Sample (#62791)	MS	MSD	Amount Spiked	% Recovery MS	MSD	RPD
TPH (gas)	0.0	102.0	100.5	100.0	102.0	100.5	1.4
Benzene	0.0	9.9	9.8	10.0	99.0	98.0	1.0
Toluene	0.0	10.0	9.9	10.0	100.0	99.0	1.0
Ethyl Benzene	0.0	9.9	9.8	10.0	99.0	98.0	1.0
Xylenes	0.0	29.2	28.7	30.0	97.3	95.7	1.7
TPH (diesel)	0	146	147	150	97	98	0.6
TRPH (oil & grease)	0	25200	24000	23700	106	101	4.9

% Rec. = (MS - Sample) / amount spiked x 100

RPD = (MS - MSD) / (MS + MSD) x 2 x 100

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Tele: 510-798-1620 Fax: 510-798-1622

QC REPORT FOR HYDROCARBON ANALYSES

Date: 03/30/96 Matrix: Water

Analyte	Concentration (ug/L) Sample (#62829)	MS	MSD	Amount Spiked	% Recovery MS	MSD	RPD
TPH (gas)	0.0	100.9	99.4	100.0	100.9	99.4	1.5
Benzene	0.0	9.5	9.7	10.0	95.0	97.0	2.1
Toluene	0.0	9.5	9.7	10.0	95.0	97.0	2.1
Ethyl Benzene	0.0	9.4	9.6	10.0	94.0	96.0	2.1
Xylenes	0.0	27.6	28.2	30.0	92.0	94.0	2.2
TPH (diesel)	0	146	145	150	97	97	0.8
TRPH (oil & grease)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

% Rec. = (MS - Sample) / amount spiked x 100

RPD = (MS - MSD) / (MS + MSD) x 2 x 100

P & D ENVIRONMENTAL
4020 Panama Court
Oakland, CA 94611
Telephone (510) 658-6916

CHAIN OF CUSTODY RECORD

6126 APdX168 PAGE 1 OF 1

PROJECT NUMBER: 0055	PROJECT NAME: Former Arco Service Station
SAMPLED BY: (PRINTED AND SIGNATURE) Ahmad Ghandour	Ahmadghandour

SAMPLE NUMBER	DATE	TIME	TYPE	SAMPLE LOCATION	NUMBER OF CONTAINERS	ANALYSIS(ES): TPH-Gas, BTEX & MTBE	PRESERVATIVE	REMARKS
+ MW1	3/29/96		Water		2	X	ICE	Normal Turn Around
+ MW2	"		"		2	X	"	"
+ MW3	"		"		2	X	"	"
+ MW4	"		"		2	X	"	"
+ MW5	"		"		2	X	"	"
+ MW6	"		"		2	X	"	"
+2 MW7	"		"		2	X	"	"
+2 MW8	"		"		2	X	"	"

62837
62838
62839
62840
62841
62842
62843
62844

VOAS | ORG | METALS | OTHER

ICE/T ✓ PRESERVATIVE ✓
GOOD CONDITION ✓ APPROPRIATE
HEAD SPACE ABSENT ✓ CONTAINERS ✓

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	TOTAL NO. OF SAMPLES (THIS SHIPMENT)	LABORATORY:
Ahmad Ghandour	3/29	10:15	Richard Sloan #680	8	McCampbell Analytical
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	TOTAL NO. OF CONTAINERS (THIS SHIPMENT) 16	LABORATORY CONTACT:
Richard Sloan	3/29	1180	Vicki Rice		Ed. Hamilton
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED FOR LABORATORY BY: (SIGNATURE)		LABORATORY PHONE NUMBER: (510) 798-1620
					SAMPLE ANALYSIS REQUEST SHEET ATTACHED: ( )YES (X)NO

REMARKS: VOA's preserved with HCL