

SUMMARY REPORT
Third Quarter 1990

ARCO Service Station 374
6407 Telegraph Avenue
Oakland, California
Alameda County

BACKGROUND

For site history prior to 1990 refer to the October-December 1989 Quarterly Summary Report issued in January 1990.

- o Report describing drilling, well installation, soil and ground-water analyses, hydrogeologic conditions, an assessment of the beneficial use of the ground water, and the results of a records search to identify any potential offsite sources of hydrocarbons, is in draft form. Ground-water sampling of four existing monitoring wells was performed in January 1990.
- o Records on file with state and local regulatory agencies indicate a tank leak occurred offsite near 6392 Telegraph Avenue, hydraulically upgradient of the project site, at some time before March 17, 1986. Available records do not indicate that any additional investigation was performed at this potential offsite source.
- o Quarterly monitoring was performed on August 7, 1990. The quarterly monitoring report is in draft form. See Plate 1 for locations of monitoring wells.

SOIL CONDITIONS

No change from last quarter.

QUARTERLY GROUND-WATER MONITORING

No change from last quarter. Refer to Table 1 for third quarter 1990 laboratory results of water samples collected from wells MW-1 through MW-4 at the site.

STATUS SUMMARY: REMEDIATION

- o No change from last quarter.

ANTICIPATED WORK FOR THE NEXT QUARTER

- o Submit report of onsite subsurface environmental investigation to RWQCB and ACHA.
- o Continue quarterly monitoring and reporting.
- o Request that the ACHA require an environmental investigation of the tank leak which occurred at 6392 Telegraph.

TABLE 1
 CUMULATIVE RESULTS OF ANALYSIS OF WATER SAMPLES
 ARCO Service Station 374
 6407 Telegraph Avenue
 Oakland, California
 (Page 1 of 3)

Date/Well	TPHg	TPHd	B	T	E	X	TOG
<u>MW-1</u>							
07/21/89	33	NA	0.77	1.6	1.5	5.0	NA
08/30/89	<20	NA	<0.50	<0.50	<0.50	<0.50	NA
10/04/89	<20	NA	<0.50	<0.50	<0.50	<0.50	NA
01/10/90	<20	NA	<0.50	<0.50	<0.50	<0.50	NA
08/07/90	<20	NA	<0.50	<0.50	<0.50	<0.50	NA
<u>MW-2</u>							
07/21/89	4200	NA	280	210	38	24	NA
08/30/89	4200	NA	160	260	45	240	NA
10/04/89	4300	NA	860	300	29	330	NA
01/10/90	8000	NA	890	710	120	760	NA
08/07/90	6000	NA	880	76	25	80	NA
<u>MW-3</u>							
07/21/89	430	NA	9	4.8	<0.50	50	NA
08/30/89	1200	NA	85	46	8.4	55	NA
10/04/89	7000	NA	580	900	120	670	NA
01/10/90	940	NA	130	59	21	73	NA
08/07/90	2300	NA	180	64	59	120	NA

See notes on page 2 of 3

TABLE 1
 CUMULATIVE RESULTS OF ANALYSIS OF WATER SAMPLES
 ARCO Service Station 374
 6407 Telegraph Avenue
 Oakland, California
 (Page 2 of 3)

Date/Well	TPHg	TPHd	B	T	E	X	TOG
MW-4							
07/21/89	8700	NA	720	360	120	640	NA
08/30/89	7300	NA	630	220	72	320	NA
10/04/89	21000	NA	2300	1300	280	1300	NA
01/10/90	4300	NA	470	250	63	430	NA
08/07/90	69000	28000	8700	4200	540	4600	<5000

Results in micrograms per liter (ug/L) = parts per billion (ppb).

TPHg: Total petroleum hydrocarbons as gasoline by EPA method 8015.

TPHd: Total petroleum hydrocarbons as diesel by EPA method 3550/3510.

B: Benzene, T: Toluene, E: Ethylbenzene, T: Total Xylene isomers

BTEX: Measured by EPA method 8020/602.

TOG: Measured by Standard Method 503A/E.

<: Results reported as less than the detection limit.

NA: Not analyzed

Sample designation:

W-35-MW5



Monitoring well number

Sample depth in feet below top of well casing

Water sample

TABLE 1
CUMULATIVE RESULTS OF ANALYSIS OF WATER SAMPLES
ARCO Service Station 374
6407 Telegraph Avenue
Oakland, California
(Page 3 of 3)

Date/Well HALOGENATED VOLATILE ORGANICS

MW-4

07/31/90 Nondetectable (<1 ppb)
 for thirty one
 compounds tested

Results in micrograms per liter (ug/L) = parts per billion (ppb).
Halogenated Volatile Organics: Measured by EPA method 601/8010.
<: Results reported as less than the detection limit.

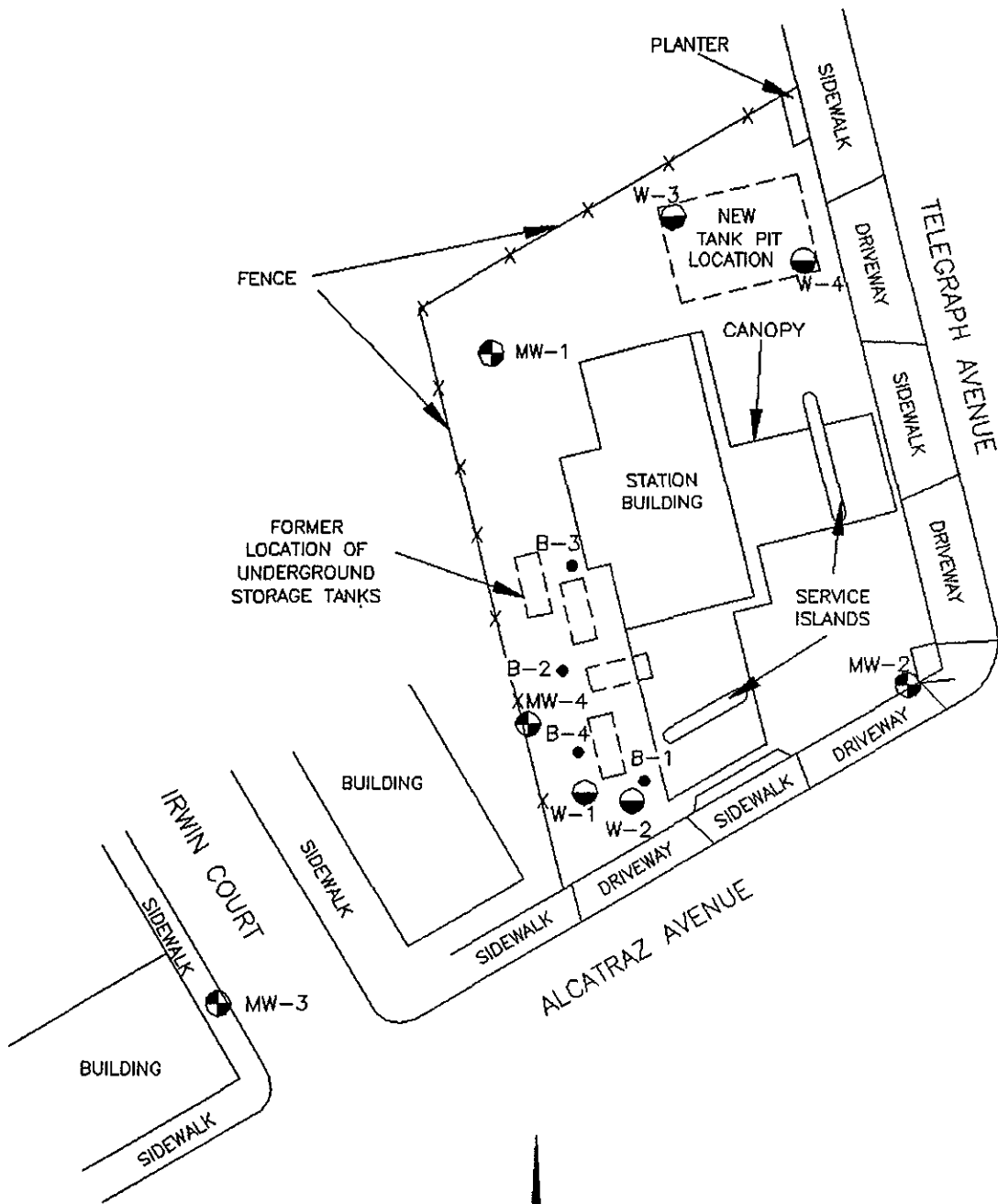
NA: Not analyzed

Sample designation:




W-35-MW5

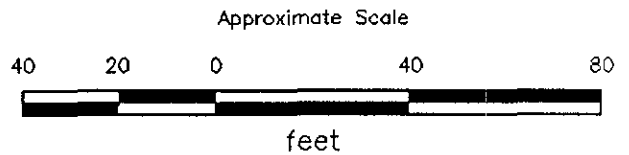


Monitoring well number
Sample depth in feet below top of well
casing
Water sample



EXPLANATION

- MW-4  = Monitoring well installed by (Applied GeoSystems, 1989)
- W-4  = Tank pit monitoring well installed by (Applied GeoSystems, 1988)
- B-4  = Soil boring (Applied GeoSystems, 1988)



Source: Surveyed by Ron Archer
Civil Engineer, Inc.



GENERALIZED SITE PLAN
ARCO Station 374
6407 Telegraph Avenue
Oakland, California

PLATE
1

PROJECT 19011-1

QUARTERLY SUMMARY REPORT
Alameda County
January 1990

ARCO Service Station No. 374
6407 Telegraph Avenue/Alcatraz Avenue
Oakland, California

Brief History

- February 8, 1988, a vapor/vent line leak was detected in the unleaded system during annual tank testing at site. The system was reportedly repaired.
- An underground Storage Tank Unauthorized Release (Leak) Report was sent from Brown and Caldwell to Alameda County Public Health Service on April 5, 1988.
- April 8, 1988, Applied GeoSystems initiated a limited environmental investigation (Applied GeoSystems Report No. 18039-1, dated June 15, 1988) at the site prior to tank replacement activities. Four soil borings were drilled near the underground product storage tanks (Plate P-1). Total petroleum hydrocarbon (TPH) concentrations between 48 and 930 ppm were detected in samples collected from depths of between approximately 5 to 8-1/2 feet in these borings. Ground water was encountered at a depth of approximately 12 feet.
- June 7 through 10, 1988, Golden West Construction Company excavated and removed four underground product storage tanks from the site (Applied GeoSystems Report No. 18039-2, dated August 1, 1988). Applied GeoSystems collected and analyzed soil samples from beneath the ends of each tank. Less than 100 ppm of TPH was detected in samples, except for samples collected beneath the north ends of tanks T1 and T4, which showed 399 and 1,097 ppm respectively. The excavation for tank T4 was extended northwards to remove contaminated soil. A sample collected from the north wall following this excavation showed 795 ppm TPH. Monitoring wells W-1 and W-2 were installed in the tank pit excavation. Wells M-3 and M-4 were installed in the new product tank pit.
- July 22, 1988, subjective analyses was performed by Applied GeoSystems on water samples collected from four wells (Plate P-1). No floating product, sheen, or emulsion were detected in wells W-3 and W-4. Product sheen was detected in wells W-1 and W-2.
- September 1988, Applied GeoSystems prepared a Work Plan for a supplemental environmental investigation to evaluate the extent of hydrocarbon contamination at the site (Work Plan No. 18039-3W, dated September 11, 1988).

- September 1988 to March 1989, encroachment permit process to install one monitoring well offsite.

Work Performed during Third Quarter 1989

- July 6, 1989, three onsite and one offsite ground-water monitoring wells were installed to assess the level of soil and ground-water contamination. Results of laboratory analyses of water and soil samples are shown on Tables 1 and 2. Locations of the wells and former tanks are shown on Plate P-1. The direction of ground-water flow is toward the southwest. Alameda County Health Agency (ACHA) requested ground-water sampling and analysis once a month for 3 months. Results of most recent sampling (August 30 and 31, 1989) indicate elevated levels of hydrocarbons offsite in well MW-3.

Work Performed during Fourth Quarter 1989

- Continue ground-water monitoring (Table 2).
- Performed a beneficial use analysis of the first-encountered water-bearing zone at the site (Table 3).
- Performed a records research of sites in the immediate area of the subject site.

Future Work - First Quarter 1990

- Complete preparation and submit a report describing the results of the environmental investigation performed at the site.
- Evaluate removal of contaminated water from former tank pit.

Status of Delineation of Hydrocarbon-Contaminated Soil

- Extent of soil contamination at the site has not been delineated, although the majority appears to be limited to the area of the former tanks. The extent of soil contamination will be assessed during the continuing investigation.

Status of Delineation of Hydrocarbon-Contaminated Ground Water

- The extent of hydrocarbon contamination in ground water has not been defined. The extent of ground-water contamination will be assessed during the continuing investigation.

Status of Remediation of Hydrocarbon-Contaminated Ground Water and Soil

- Alternatives for remediation of hydrocarbon-contaminated soil and ground water will be evaluated upon completion of the ongoing environmental investigation. Preliminary indications suggest the very low recharge in first-encountered water-bearing zone.

TABLE 1
 ANALYTICAL RESULTS OF SOIL SAMPLES
 ARCO Service Station 374
 6407 Telegraph Avenue
 Oakland, California
 (July 1989)

Sample Number	TPHg	Benzene	Toluene	Ethyl-benzene	Total Xylenes
S-3.5-B1	<2	<0.05	<0.05	<0.05	<0.05
S-8.5-B1	60	0.66	2.9	0.99	5.2
S-3.5-B2	<2	<0.05	<0.05	<0.05	<0.05
S-13.5-B2	<2	<0.05	<0.05	<0.05	<0.05
S-18.5-B2	<2	<0.05	<0.05	<0.05	<0.05
S-3.5-B3	<2	<0.05	<0.05	<0.05	<0.05
S-3.5-B4	<5.0	<0.05	<0.05	<0.05	<0.05
S-8.5-B4	310	0.36	4.9	5.2	22
S-13.5-B4	560	12	5.8	12	49

Results are in parts per million (ppm)
 TPHg = total petroleum hydrocarbons as gasoline
 < = below the reporting limits of the analysis

Sample designation: S-13.5-B4

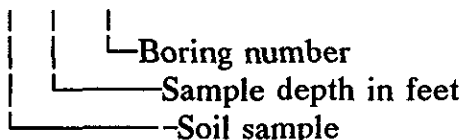


TABLE 2
 ANALYTICAL RESULTS OF WATER SAMPLES
 ARCO Service Station 374
 6407 Telegraph Avenue
 Oakland, California

Sample Number	TPHg	Benzene	Toluene	Ethyl-benzene	Total Xylenes
MW-1					
7/21/89	0.0332	0.00077	0.0016	0.0015	0.0050
8/30/89	<0.020	<0.00050	<0.00050	<0.00050	<0.00050
10/4/89	<0.020	<0.00050	<0.00050	<0.00050	<0.00050
MW-2					
7/20/89	4.2	0.28	0.21	0.038	0.024
8/30/89	4.2	0.16	0.26	0.045	0.24
10/4/89	4.3	0.86	0.30	0.029	0.33
MW-3					
7/21/89	0.43	0.0090	0.0048	<0.00050	0.050
8/30/89	1.2	0.085	0.046	0.0084	0.055
10/4/89	7.0	0.58	0.90	0.12	0.67
MW-4					
7/21/89	8.7	0.72	0.36	0.12	0.64
8/30/89	7.3	0.63	0.22	0.072	0.32
10/4/89	21	2.3	1.3	0.28	1.3

Results are in parts per million (ppm)

TPHg = total petroleum hydrocarbons as gasoline

< = below the reporting limits of the analysis

TABLE 3
 RESULTS OF GENERAL MINERAL ANALYSES
 ARCO Service Station 374
 6407 Telegraph Avenue
 Oakland, California

Constituent	MW-1	SMCL/COS
Bicarbonate Alkalinity	180	150-200 * +
Calcium	130	25-50 * +
Carbonate Alkalinity	<0.5	150-200 * +
Chloride	330	250-500 +
Copper	<0.5	1.0
Hardness	520	>180-v.hard * +
Hydroxide Alkalinity	<0.001	NA
Iron	0.23	0.3
Magnesium	48	NA
Manganese	0.061	0.05
pH	6.9	6.5-8.5
Sodium	100	20-170 * +
Specific Conductance	1,600	900-1,600 +
Sulfate	120	250-500
Surfactants	<0.02	0.5
Total Dissolved Solids	1,000	500-1,000 +
Zinc	0.011	5.0

Results and Values in parts per million with exception of Specific Conductance (micro-mhos/cm or micro-Siemens/cm)

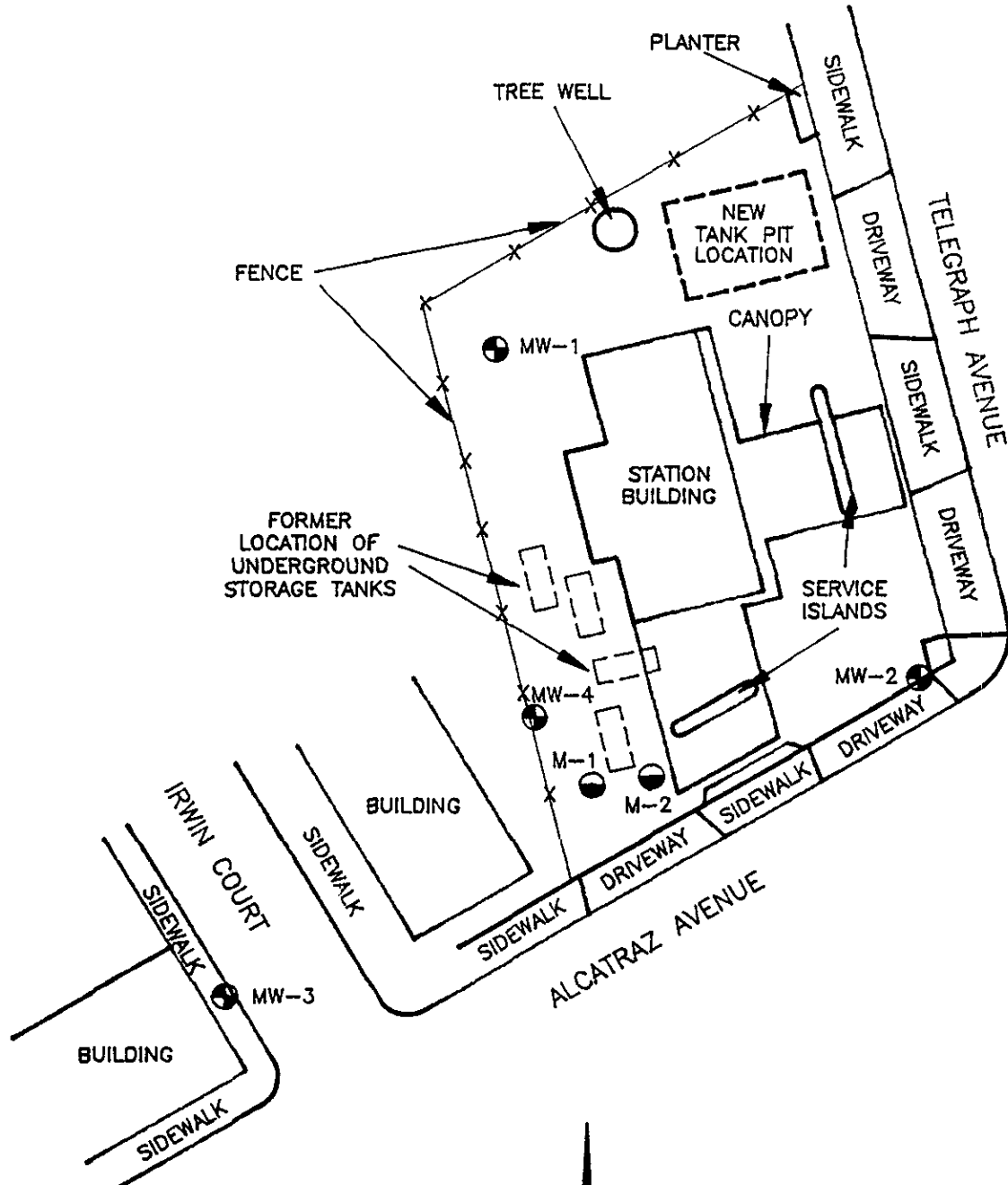
SMCL = Maximum Contamination Level for Secondary Drinking Water Standards established by Title 40 of the Code of Federal Regulations Section 143 and Title 22 Section 64445.1 of the California Administrative Code.

COS = Concentration of Significance as defined in USGS Water Supply Paper 2220, page 65, 1983.

* = No SMCL values established for this constituent. Signifies concentrations considered significant as described in the United States Geological Survey Water-Supply Paper 2220.

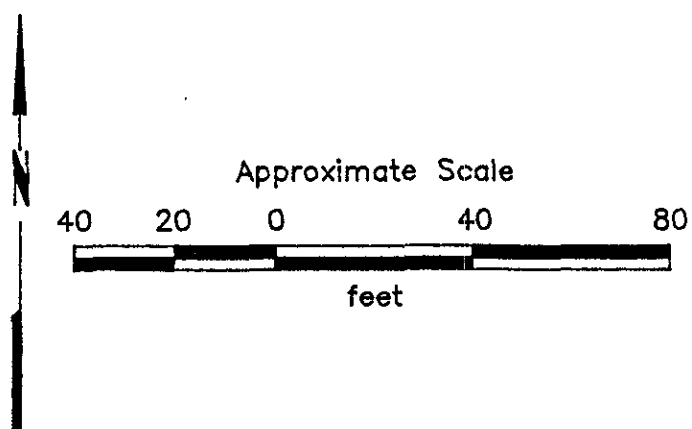
+ = Constituents in ground water which exceeds established SMCL or COS value for drinking water standards.

NA = Regulatory information not available.



- MW-4 ● = Monitoring well installed by Applied GeoSystems (July 1989)
- M-2 ● = Tank pit monitoring well installed by Applied GeoSystems (1988)

Source: Surveyed by Ron Archer
Civil Engineer, Inc.



GENERALIZED SITE PLAN
ARCO Station No. 374
6407 Telegraph Avenue
Oakland, California

PLATE
P - 2

PROJECT NO. 18039-3

QUARTERLY SUMMARY REPORT

Alameda County

September 1989

ARCO Service Station No. 374
6407 Telegraph Avenue/Alcatraz Avenue
Oakland, California

01

Brief History

- February 8, 1988, a vapor/vent line leak was detected in the unleaded system during annual tank testing at site. The system was reportedly repaired.
- An underground Storage Tank Unauthorized Release (Leak) Report was sent from Brown and Caldwell to Alameda County Public Health Service on April 5, 1988.
- April 8, 1988, Applied GeoSystems initiated a limited environmental investigation (Applied GeoSystems Report No. 18039-1, dated June 15, 1988) at the site prior to tank replacement activities. Four soil borings were drilled near the underground product storage tanks (Plate P-1). Total petroleum hydrocarbon (TPH) concentrations between 48 and 930 ppm were detected in samples collected from depths of between approximately 5 to 8-1/2 feet in these borings. Ground water was encountered at a depth of approximately 12 feet.
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- September 1988, Applied GeoSystems prepared a Work Plan for a supplemental environmental investigation to evaluate the extent of hydrocarbon contamination at the site (Work Plan No. 18039-3W, dated September 11, 1988).

- September 1988 to March 1989, encroachment permit process to install one monitoring well offsite.

Work Performed during Third Quarter 1989

- July 6, 1989, three onsite and one offsite ground-water monitoring wells were installed to assess the level of soil and ground-water contamination. Results of laboratory analyses of water and soil samples are shown on Tables 1 and 2. Locations of the wells and former tanks are shown on Plate P-1. The direction of ground-water flow is toward the southwest. Alameda County Health Agency (ACHA) requested ground-water sampling and analysis once a month for 3 months. Results of most recent sampling (August 30 and 31, 1989) indicate elevated levels of hydrocarbons offsite in well MW-3.

Future Work - Fourth Quarter 1989

- Prepare and submit a report describing the results of the environmental investigation performed at the site.
- Perform a general quality analysis of the ground water and beneficial use analysis to assess potential impact on public health and environment.
- Prepare Work Plan for additional offsite delineation of hydrocarbons in ground water.

Status of Delineation of Hydrocarbon-Contaminated Soil

- Extent of soil contamination at the site has not been delineated, although the majority appears to be limited to the area of the former tanks. The extent of soil contamination will be assessed during the continuing investigation.

Status of Delineation of Hydrocarbon-Contaminated Ground Water

- The extent of hydrocarbon contamination in ground water has not been defined. The extent of ground-water contamination will be assessed during the continuing investigation.

Status of Remediation of Hydrocarbon-Contaminated Ground Water and Soil

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S-3.5-B2	<2	<0.05	<0.05	<0.05	<0.05
S-13.5-B2	<2	<0.05	<0.05	<0.05	<0.05
S-18.5-B2	<2	<0.05	<0.05	<0.05	<0.05
S-3.5-B3	<2	<0.05	<0.05	<0.05	<0.05
S-3.5-B4	<5.0	<0.05	<0.05	<0.05	<0.05
S-8.5-B4	310	0.36	4.9	5.2	22
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Results are in parts per million (ppm)
 TPHg = total petroleum hydrocarbons as gasoline
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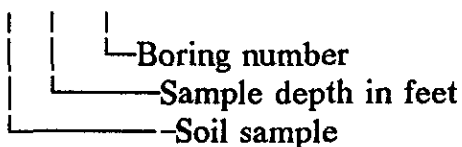
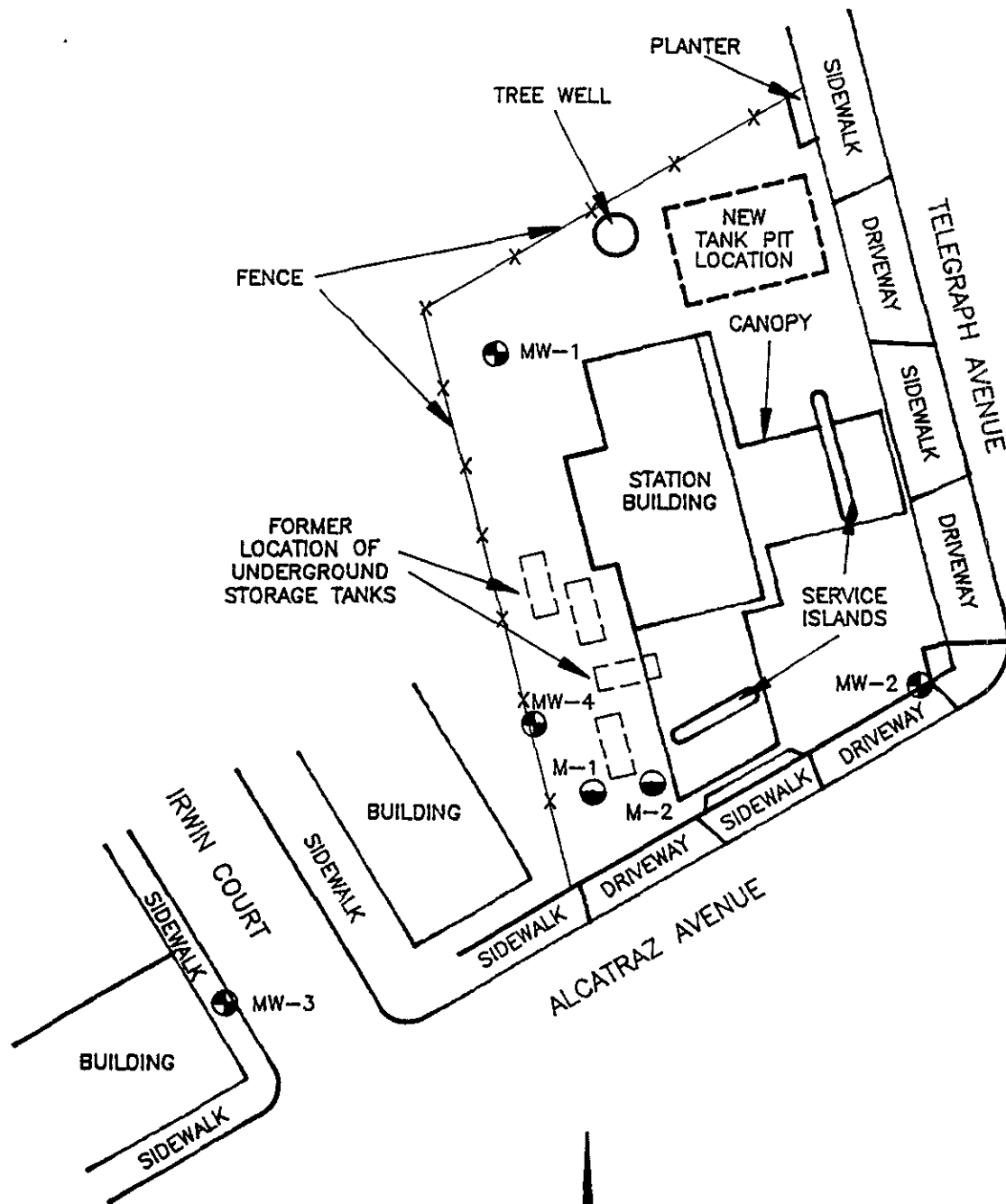


TABLE 2
 ANALYTICAL RESULTS OF WATER SAMPLES
 ARCO Service Station 374
 6407 Telegraph Avenue
 Oakland, California

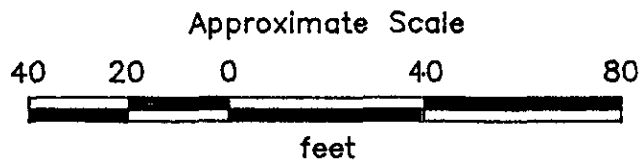
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MW-2					
7/20/89	4.2	0.28	0.21	0.038	0.024
8/30/89	4.2	0.16	0.26	0.045	0.24
MW-3					
7/21/89	0.43	0.0090	0.0048	<0.00050	0.050
8/30/89	1.2	0.085	0.046	0.0084	0.055
MW-4					
7/21/89	8.7	0.72	0.36	0.12	0.64
8/30/89	7.3	0.63	0.22	0.072	0.32

Results are in parts per million (ppm)
 TPHg = total petroleum hydrocarbons as gasoline
 < = below the reporting limits of the analysis



- MW-4 ⊕ = Monitoring well installed by Applied GeoSystems (July 1989)
- M-2 ● = Tank pit monitoring well installed by Applied GeoSystems (1988)

Source: Surveyed by Ron Archer
Civil Engineer, Inc.



PROJECT NO. 18039-3

**GENERALIZED SITE PLAN
ARCO Station No. 374
6407 Telegraph Avenue
Oakland, California**

**PLATE
P - 2**

07/14/89
①

QUARTERLY SUMMARY REPORT
Alameda County
July 1989

ARCO Service Station No. 374
6407 Telegraph Avenue/Alcatraz Avenue
Oakland, California

Brief History

- February 8, 1988, a vapor/vent line leak was detected in the unleaded system during annual tank testing at site. The system was partially repaired.
- An underground Storage Tank Unauthorized Release (Leak) Report was sent from Brown and Caldwell to Alameda County Public Health Service on April 5, 1988.
- April 8, 1988, Applied GeoSystems initiated a limited environmental investigation (Applied GeoSystems Report No. 18039-1, dated June 15, 1988) at the site prior to tank replacement activities. Four soil borings were drilled near the underground product storage tanks (Plate P-1). Total petroleum hydrocarbon (TPH) concentrations between 48 and 930 ppm were detected in samples collected from depths of between approximately 5 to 8-1/2 feet in these borings. Ground water was encountered at a depth of approximately 12 feet.
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- September 1988, Applied GeoSystems prepared a Work Plan for a supplemental environmental investigation to evaluate the extent of hydrocarbon contamination at the site (Work Plan

- No. 18039-3W, dated September 11, 1988).
- September 1988 to March 1989, applying for encroachment permit to install one monitoring well offsite.

Work Performed during Second Quarter 1989

- March through July 1989, Alameda County Health Agency (ACHA) review of Work Plan, modifications to Work Plan, and approval of Work Plan by ACHA. Initiated work described in Work Plan.

Proposed Work - Third Quarter 1989

- Implement Work Plan, including drilling and installing three onsite monitoring wells and one offsite monitoring well.

Status of Delineation of Hydrocarbon-Contaminated Soil

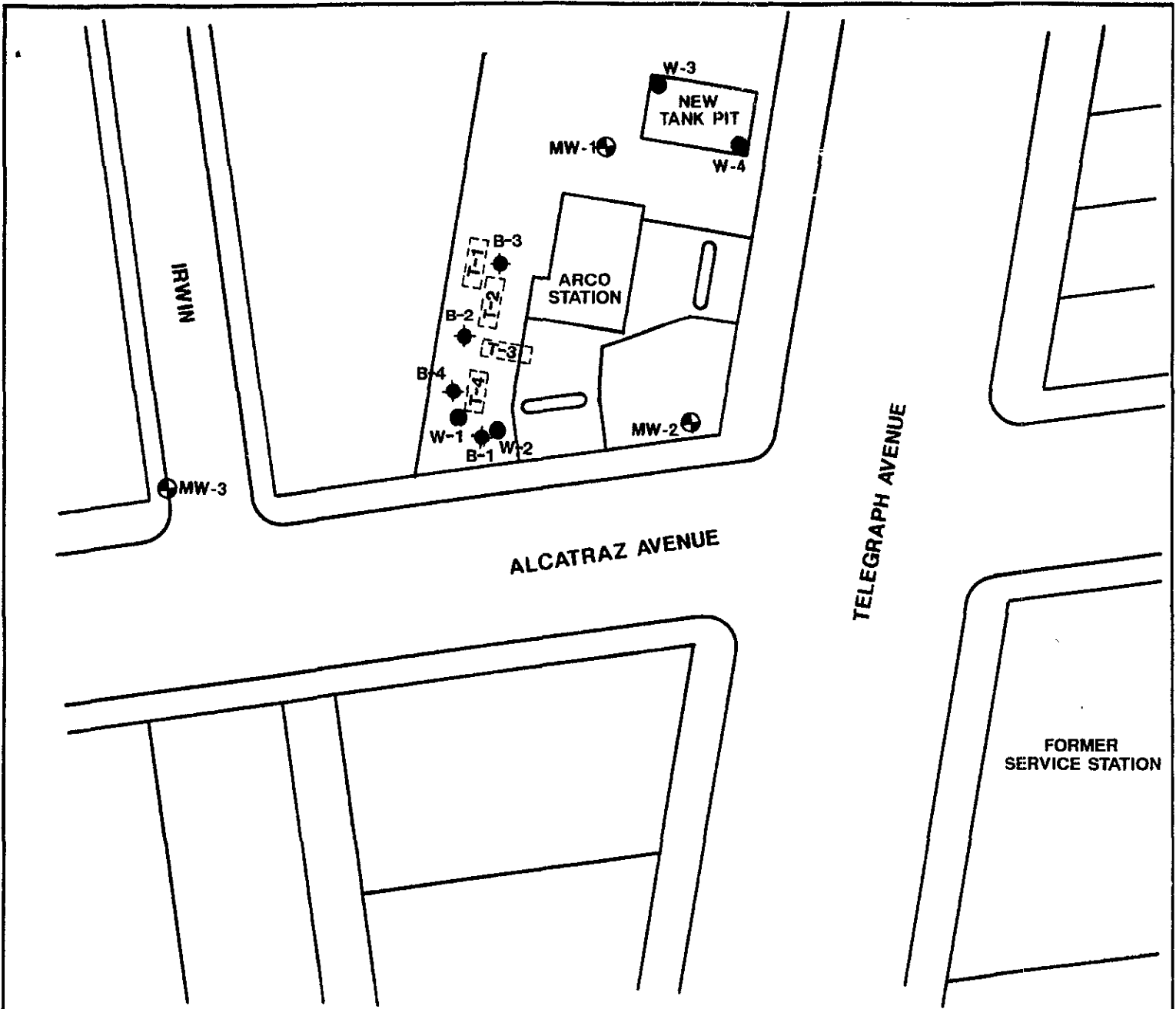
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Status of Delineation of Hydrocarbon-Contaminated Ground Water

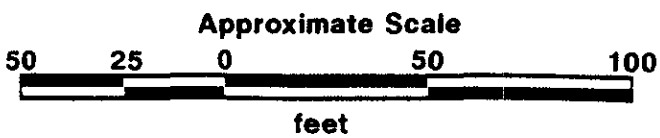
- The extent of hydrocarbon contamination in ground water has not been defined. The extent of ground-water contamination will be assessed during the continuing investigation.

Status of Remediation of Hydrocarbon-Contaminated Ground Water and Soil

- Alternatives for remediation of hydrocarbon-contaminated soil and ground water will be evaluated upon completion of the ongoing environmental investigation.



- B-4
- ◆ = Soil boring location
- ☐ = Former underground tank
- ⊕ = Proposed monitoring well location
- = Tank-pit well location



Source: Modified from Assessor's maps and ARCO site plan



PROJECT NO. 19011-1

GENERALIZED SITE PLAN
 ARCO Station No. 0374
 Telegraph and Alcatraz Avenues
 Oakland, California

PLATE
P - 1

4/24/89

01

NC

QUARTERLY SUMMARY REPORT
Alameda County
April 1989

ARCO Service Station No. 374
6407 Telegraph Avenue/Alcatraz Avenue
Oakland, California

BRIEF HISTORY

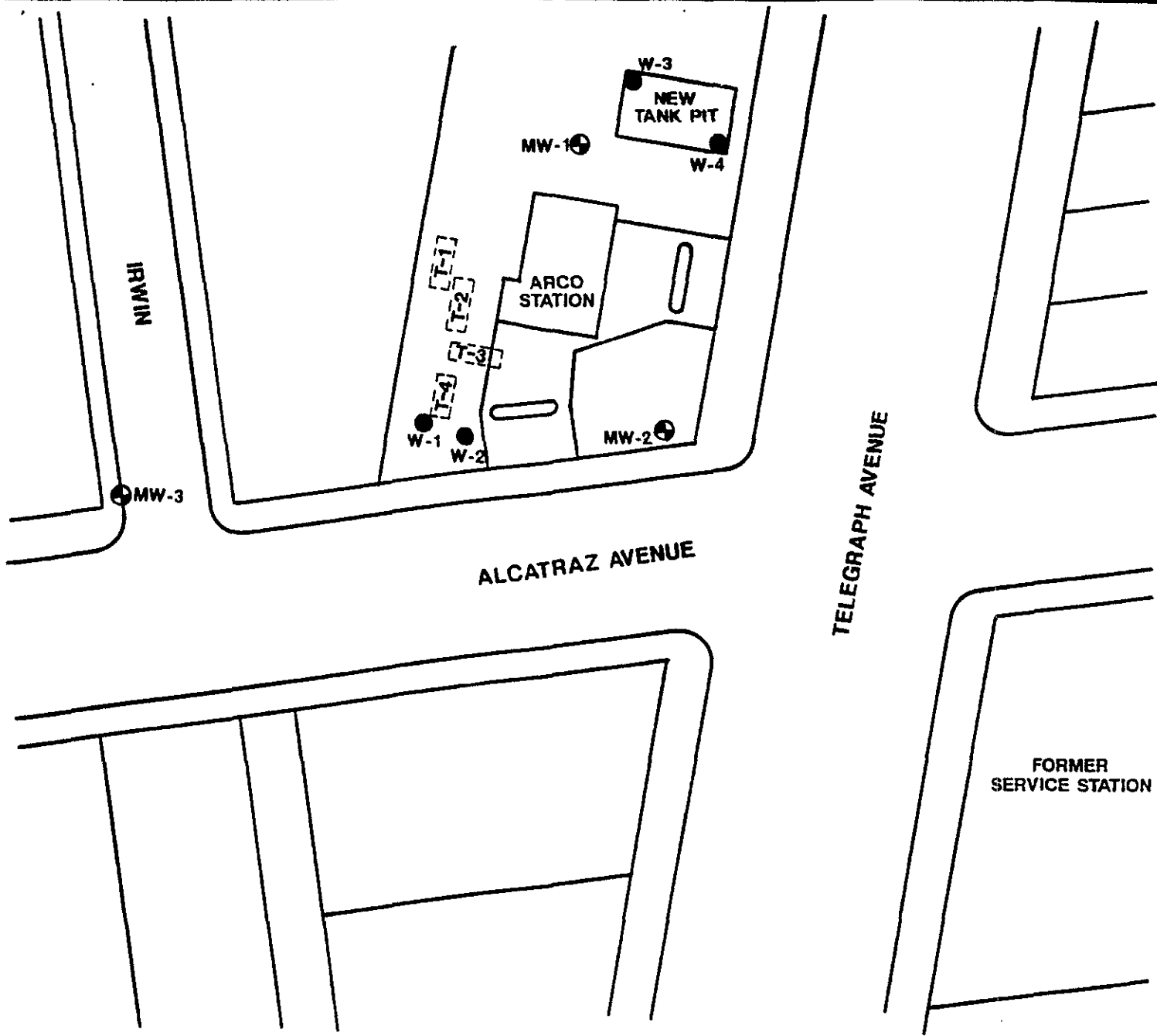
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- September 1988, Applied GeoSystems prepared a Work Plan for a supplemental environmental investigation to evaluate the extent of hydrocarbon contamination at the site (Work Plan No. 18039-3W, dated September 11, 1988). Proposed work




includes drilling three soil borings and installing ground-water monitoring wells in each boring (Plate P-1).

- September 1988 to March 1989, applying for encroachment permit to install one monitoring well offsite.

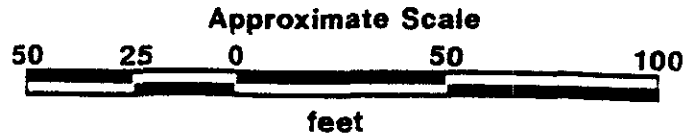
PROPOSED WORK

- Continue supplemental environmental investigation as stated in September 11, 1988 Work Plan.



-  = Former underground tank
-  = Proposed monitoring well location
-  = Well location

Source: Modified from Assessor's maps and ARCO site plan



4/24/89

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QUARTERLY SUMMARY REPORT
Alameda County
April 1989

ARCO Service Station No. 2169
889 West Grand Avenue
Oakland, California

BRIEF HISTORY

- February 12, 1988, vapor/vent line leak detected in unleaded, regular, and super unleaded gasoline systems during annual tank testing at the site.
- March 24, 1988, an Underground Storage Tank Unauthorized Release (Leak) Report and the results of tank testing were sent from Brown and Caldwell to Alameda County Division of Environmental Health on June 7, 1988.
- Per Letter LG-43 (State Water Resources Control Board), ARCO plans no further work at this site at this time.