

QUARTERLY SUMMARY REPORT
Alameda County
January 1990

ARCO Service Station No. 2152
22141 Center Street
Castro Valley, California

Brief History

- March 10, 1988, a vapor/vent line leak was detected in an unleaded gasoline system during annual tank testing at the site. The system was reportedly repaired.
- April 6, 1988, the system passed retest. An underground Storage Tank Unauthorized Release (Leak) Report and results of tank testing were sent from Brown and Caldwell to Alameda County Division of Environmental Health on June 7, 1988.
- April 1989, Applied GeoSystems observed the drilling of three soil borings (B-1 through B-3) to a maximum depth of approximately 45 feet, as part of a site assessment prior to tank replacement. Soil samples collected from the borings at depths from approximately 5 to 45 feet indicated levels of total petroleum hydrocarbons (TPH) ranging from nondetectable to 6 parts per million (ppm), with the exception of one sample collected at a depth of 5 feet from boring B-3, which indicated 460 ppm TPH. See attached Plate P-1 for boring locations and selected site features, and attached Table 1 for laboratory results of soil samples. Ground water was not encountered (Applied GeoSystems Report No. 69013-1, dated May 26, 1989).

Work Performed - Third and Fourth Quarter 1989

- Four 6,000-gallon and one 12,000-gallon underground product storage tanks were removed from the site by Paradiso Construction Company (Paradiso) in August 1989. Soil samples collected by Applied GeoSystems from beneath the tanks at a depth of approximately 14 feet indicated TPH concentrations from less than 2 ppm to 1,400 ppm in the soil in the north end of the tank pit. The north end of the pit was excavated to a depth of approximately 19 to 22 feet which was the limit of the equipment on site. Samples collected at this depth showed concentrations of TPH in the soil to be less than 2 ppm to 3,800 ppm (Table 2). Soil samples collected from beneath the tanks at the south end of the pit showed concentrations of TPH in the soil to be 2 ppm to 12 ppm or less. Two soil samples were collected from beneath the vapor recovery system at approximate depths of 14 feet and 22 feet. Laboratory analysis of these samples indicate TPH concentrations of 2,300 ppm and 37,000 ppm respectively. Product line piping was removed and soil samples were

TABLE 2
 RESULTS OF LABORATORY ANALYSES OF TANK-PIT SOIL SAMPLES
 ARCO Station No. 2152
 22141 Center Street
 Castro Valley, California
 (Page 1 of 2)

Date	Sample Number	TPHg	B	T	E	X
<u>Tank-Pit Excavation</u>						
08/18/89	S-14-T1S	<2	0.24	<0.05	<0.05	<0.05
08/18/89	S-13-T2S	<2	<0.05	<0.05	<0.05	<0.05
08/18/89	S-13-T3S	4.3	0.09	<0.05	<0.05	<0.05
08/18/89	S-13-T4S	<2	<0.05	<0.05	<0.05	<0.05
08/18/89	S-13-T5S	2.4	<0.05	<0.05	<0.05	<0.05
08/18/89	S-14-T1N	1,400	0.72	6.1	11	130
08/18/89	S-13-T2N	<2	0.076	<0.05	1.1	8.5
08/18/89	S-13-T3N	12	0.29	0.29	0.22	1.3
08/18/89	S-13-T4N	4.4	<0.05	<0.05	<0.05	0.2 3
08/18/89	S-13-T5N	700	4.6	2.0	4.6	83
08/18/89	S-18-T1N	430	<0.05	<0.05	1.1	8.5
08/18/89	S-18-T2N	<2	0.076	<0.05	<0.05	0.092
08/18/89	S-19-T3N	93	0.11	0.11	0.74	3.5
08/18/89	S-19-T4N	<2	<0.05	<0.05	<0.05	<0.05
08/18/89	S-19-T5N	3,800	<0.05	15	18	150
08/24/89	S-22-T5N	6.5	<0.05	0.36	0.093	0.8 2

See notes on page 2 of 2.

collected from the trenches. Laboratory analysis of these soil samples indicate TPH concentrations of 2 ppm to 190 ppm or less (Table 3). Excavated soil was aerated onsite by Paradiso. Composite samples were collected by Applied GeoSystems and the soil was transported to a Class III landfill in Novato, California.

- Prepared report - Environmental Investigation Related to Underground Tank Removal.

Future Work - First Quarter 1990

- January 5, 1990, submitted draft report (Environmental Investigation Related to Underground Tank Removal) summarizing work performed to date and the results of the work to ARCO.
- Submit report - Environmental Investigation Related to Underground Tank Removal to the Regional Water Quality Control Board, Alameda County Department of Environmental Health and Castro Valley Fire Department.
- Initiate preparation of a Work Plan for future work at the site, including assessment of potential impact to ground water.

TABLE 2
 RESULTS OF LABORATORY ANALYSES OF TANK-PIT SOIL SAMPLES
 ARCO Station No. 2152
 22141 Center Street
 Castro Valley, California
 (Page 2 of 2)

Date	Sample Number	TPHg	B	T	E	X
08/22/89	S-14-NW1	<2	<0.05	<0.05	<0.05	<0.05
08/22/89	S-14-EW1	<2	<0.05	<0.05	<0.05	<0.05
08/30/89	S-14-NW2	3.4	<0.005	<0.005	<0.005	.030
08/30/89	S-14-WW1	<1	<0.005	<0.005	<0.005	<0.005
08/30/89	S-14-SF1	<1	<0.005	<0.005	<0.005	<0.005
08/30/89	S-14-SF2	<1	<0.005	<0.005	<0.005	<0.005
08/30/89	S-14-VR1	2,300	<2	<2	19	46
08/30/89	S-22-VR1	37,000	<40	510	380	2,600

Results in milligrams per kilogram (mg/kg) or parts per million (ppm).

TPHg: Total petroleum hydrocarbons as gasoline

B: Benzene T: Toluene E: Ethylbenzene X: Total xylenes

<: Less than the detection limit for the analysis method.

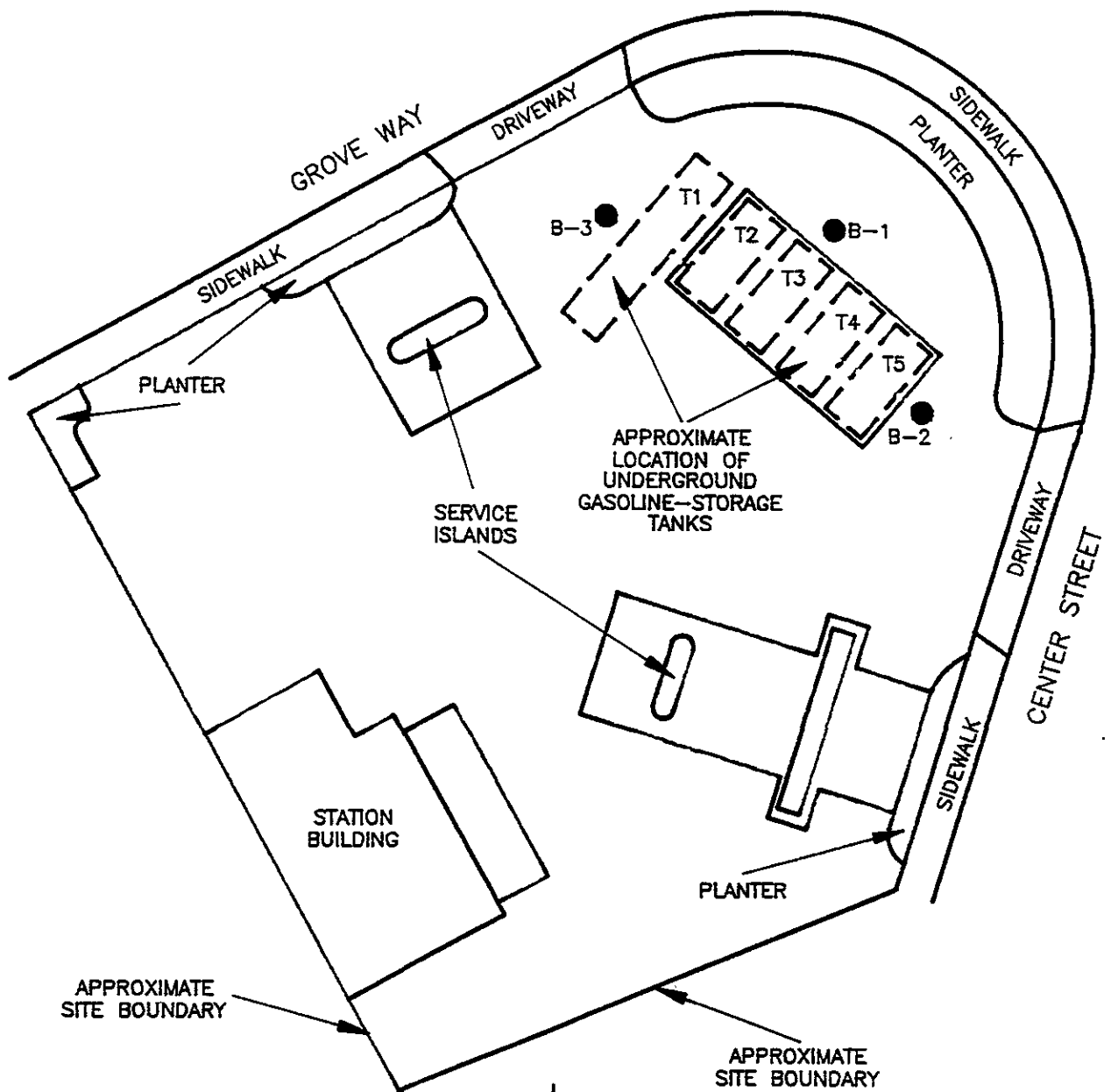
Sample identification:

S-14-T1S

┌ ┌ ┌ Area of sample (See Plate P-4)

└ └ └ Approximate sample depth in feet below grade

└ └ └ Soil sample



B-3 ● = Approximate boring location

Source: Modified from plan supplied by ARCO Corporation



PROJECT NO. 19011-1

**GENERALIZED SITE PLAN
ARCO Station No. 2152
2214 Center Street
Castro Valley, California**

**PLATE
P-1**

SUMMARY REPORT

First Quarter 1990

ARCO Service Station No. 2152
22141 Center Street
Castro Valley, California 94546
Alameda County

BACKGROUND

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

- o January 19, 1990 - submitted report Environmental Investigation Related to Tank Removal to the Regional Water Quality Control Board, San Francisco Bay Region; the Alameda County Health Agency; and the City of Castro Valley Fire Department, Fire Prevention Bureau (Applied GeoSystems Report 69013-2, dated January 18, 1990).

SOIL CONDITIONS

Elevated levels of TPHg were present in the soil beneath the removed tanks. Results of laboratory analysis indicated TPHg concentrations of up to 1,400 ppm and 3,800 ppm in soil beneath the northeastern ends of the tanks at depths of approximately 14 and 19 feet, respectively. Elevated levels of TPHg were present in the soil beneath the former vapor-recovery system. Results of laboratory analysis indicated TPHg concentrations of 2,300 ppm and 37,000 ppm in the soil at depths of approximately 14 feet and 22 feet, respectively.

QUARTERLY GROUND-WATER MONITORING

No monitoring wells onsite.

STATUS SUMMARY: REMEDIATION

Approximately 1,750 cubic yards of backfill and native soil removed from the gasoline-tank pit and approximately 100 cubic yards of soil removed from the areas of the former product-transfer lines were stockpiled onsite. The soil was aerated in accordance with Bay Area Air Quality Management District guidelines. Composite samples of the stockpiled soil were collected and analyzed in the laboratory to confirm that TPHg concentrations were less than 100 ppm. Paradiso Construction of Oakland, California, arranged with Conrad Trucking of

Escalon, California, to have the aerated soil and backfill transported to Redwood Landfill in Novato, California, which is a Class III landfill.

Options for further soil remediation will be considered.

ANTICIPATED WORK FOR NEXT QUARTER

- o Prepare a Work Plan to evaluate the extent of hydrocarbons in soil and potential hydrocarbons in first-encountered ground water beneath the site, and direction and magnitude of the ground-water gradient.

SUMMARY REPORT

Third Quarter 1990

**ARCO Service Station 2152
22141 Center Street
Castro Valley, California
Alameda County**

BACKGROUND

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

- o January 19, 1990 - submitted report Environmental Investigation Related to Tank Removal to the City of Castro Valley Fire Department, Fire Prevention Bureau (Applied GeoSystems Report 69013-2, January 18, 1990). Elevated levels of TPHg (up to 37,000 ppm) were reported in soil samples collected from beneath the former underground storage tanks.
- o April 1990 - Work Plan for investigation of hydrocarbons in soil and ground water prepared by Applied GeoSystems and submitted to RWQCB and ACHA (Applied GeoSystems 69013-3W, April 10, 1990).
- o May 1990 - letter from ACHA, dated May 3, 1990, requesting an addendum to the Work Plan. Addendum to Work Plan (Applied GeoSystems, May 14, 1990) approved by ACHA.
- o June 13 through 19, 1990 - four ground-water monitoring wells (MW-1 through MW-4) and two vapor extraction wells (VW-1 and VW-2) installed at the site (Plate 1).

SOIL CONDITIONS

Results of laboratory analysis of soil samples collected from soil borings B-4 through B-11 on June 12, 1990 through June 18, 1990 are presented in Table 1.

QUARTERLY GROUND-WATER MONITORING

Laboratory analytical results of ground-water samples collected from monitoring wells MW-1 through MW-4 on June 26, 1990 and September 26, 1990 are presented in Table 2.

STATUS SUMMARY: REMEDIATION

August through September 1989 - approximately 1,750 cubic yards of backfill and native soil removed from the gasoline-tank pit and approximately 100 cubic yards of soil removed from the areas of the former product-transfer lines were aerated onsite and disposed of at a Class III landfill.

Options for further soil remediation will be considered.

ANTICIPATED WORK FOR THE NEXT QUARTER

- o Prepare a report summarizing the ongoing investigation of hydrocarbons in soil and ground water the to RWQCB and ACHA.
- o Continue quarterly ground-water monitoring at the site.

TABLE 1 (Page 1 of 2)
 CUMULATIVE RESULTS OF LABORATORY ANALYSIS OF SOIL SAMPLES
 ARCO Station 2152
 Castro Valley, California

Date	Sample ID	TPHg	B	T	E	X
6/15/90	S-20-B4	<2.0	<0.050	<0.050	<0.050	<0.050
6/15/90	S-29.5-B4	<2.0	<0.050	<0.050	<0.050	<0.050
6/15/90	S-40-B4	<2.0	<0.050	<0.050	<0.050	<0.050
6/15/90	S-44.5-B4	<2.0	<0.050	<0.050	<0.050	<0.050
6/15/90	S-49.5-B4	<2.0	<0.050	<0.050	<0.050	<0.050
6/15/90	S-59-B4	<2.0	<0.050	<0.050	<0.050	<0.050
6/14/90	S-20-B5	<2.0	<0.050	<0.050	<0.050	0.077
6/14/90	S-30-B5	<2.0	0.17	<0.050	<0.050	0.16
6/14/90	S-40-B5	88.0	2.1	7.2	1.8	13
6/14/90	S-45-B5	<2.0	<0.050	<0.050	<0.050	<0.050
6/14/90	S-49.5-B5	7.9	<0.050	<0.050	<0.050	0.096
6/14/90	S-59-B5	<2.0	<0.050	<0.050	<0.050	<0.050
6/12/90	S-5-B6	<2.0	<0.050	<0.050	<0.050	<0.050
6/12/90	S-15-B6	<2.0	<0.050	<0.050	<0.050	<0.050
6/12/90	S-29.5-B6	<2.0	<0.050	<0.050	<0.050	<0.050
6/12/90	S-44.5-B6	<2.0	<0.050	<0.050	<0.050	<0.050
6/12/90	S-49.5-B6	<2.0	<0.050	<0.050	<0.050	<0.050
6/12/90	S-62-B6	<2.0	<0.050	<0.050	<0.050	<0.050
6/13/90	S-5-B7	<2.0	<0.050	<0.050	<0.050	<0.050
6/13/90	S-15-B7	<2.0	<0.050	<0.050	<0.050	<0.050
6/13/90	S-30-B7	<2.0	<0.050	<0.050	<0.050	<0.050
6/13/90	S-44.5-B7	<2.0	<0.050	0.10	<0.050	0.093
6/13/90	S-49-B7	<2.0	<0.050	<0.050	<0.050	<0.050
6/13/90	S-61-B7	<2.0	<0.050	<0.050	<0.050	<0.050

See notes on page 2 of 2.

TABLE 1 (Page 2 of 2)
 CUMULATIVE RESULTS OF LABORATORY ANALYSIS OF SOIL SAMPLES
 ARCO Station 2152
 Castro Valley, California

Date	Sample ID	TPHg	B	T	E	X
6/18/90	S-10-B10	<2.0	<0.05	<0.05	<0.05	<0.05
6/18/90	S-20-B10	<2.0	<0.05	<0.05	<0.05	<0.05
6/18/90	S-30-B10	<2.0	<0.05	<0.05	<0.05	<0.05
6/18/90	S-35-B10	<2.0	<0.05	<0.05	<0.05	<0.05
6/18/90	S-40-B10	<2.0	<0.05	<0.05	<0.05	<0.05
6/18/90	S-5-B11	<2.0	<0.05	<0.05	<0.05	<0.05
6/18/90	S-15-B11	<2.0	<0.05	<0.05	<0.05	<0.05
6/18/90	S-25-B11	<2.0	<0.05	<0.05	<0.05	<0.05
6/18/90	S-35-B11	<2.0	<0.05	<0.05	<0.05	<0.05
6/18/90	S-40-B11	<2.0	<0.05	<0.05	<0.05	<0.05

Results in parts per million (ppm).

TPHg: Total petroleum hydrocarbons as gasoline

B:benzene T:toluene E:ethylbenzene X:total xylene isomers

Sample ID:

S-40-B11

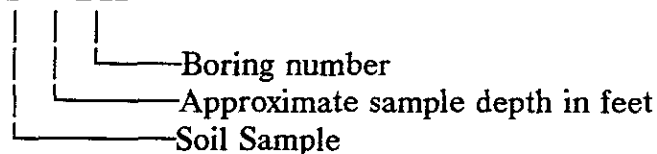


TABLE 2
 RESULTS OF LABORATORY ANALYSIS OF GROUND WATER SAMPLES
 ARCO Station 2152
 Castro Valley, California

Date	Sample Identifier	TPHg	B	T	E	X
6/26/90	W-50-MW1	64	0.63	<0.50	<0.50	<0.50
6/26/90	W-49-MW2	27	<0.50	<0.50	<0.50	<0.50
6/25/90	W-50-MW3	52	0.65	1.5	<0.50	2.0
6/25/90	W-48-MW4	<20	<0.50	<0.50	<0.50	<0.50
9/26/90	W-51-MW1	<20	<0.50	<0.50	<0.50	<0.50
9/26/90	W-50-MW2	<20	<0.50	<0.50	<0.50	<0.50
9/26/90	W-51-MW3	<20	<0.50	<0.50	<0.50	<0.50
9/26/90	W-49-MW4	<20	<0.50	<0.50	<0.50	<0.50

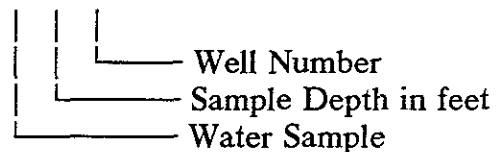
Results in parts per billion (ppb).

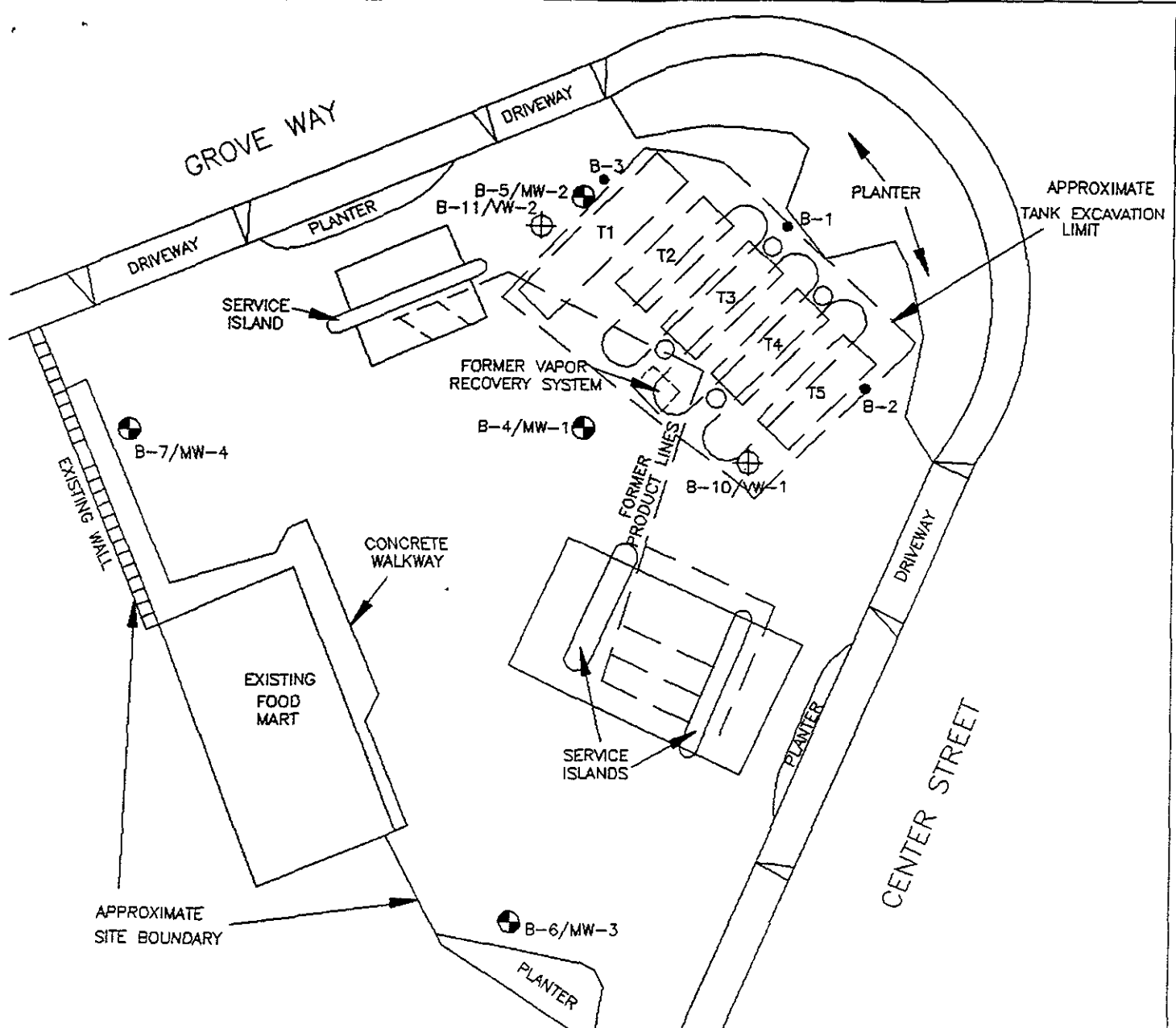
TPHg: Total petroleum hydrocarbons as gasoline

B:benzene T:toluene E:ethylbenzene X:total xylene isomers

Sample identification:

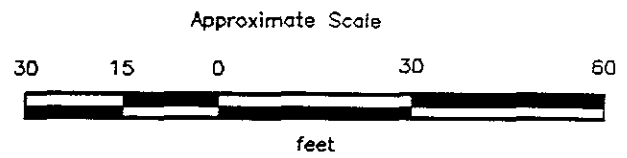
W-48-MW4





EXPLANATION

- = Conductor casing (August 17, 1989)
- B-3 ● = Soil Boring location (Applied GeoSystems, April 1989)
- B-6/MW-3 ⊕ = Boring/Monitoring Well (Applied GeoSystems, April 1989)
- B-10/VW-1 ⊕ = Boring/Vapor Well (Applied GeoSystems, June 1990)
- [T5] = Former underground gasoline-storage tanks
- = Present underground gasoline storage tanks



Source: Surveyed by Ron Archer Civil Engineer, Inc.



GENERALIZED SITE PLAN
ARCO Station 2152
22141 Center Street
Castro Valley, California

PLATE
1

PROJECT 19011-1

SUMMARY REPORT
Third Quarter 1990

ARCO Service Station 4977
2770 Castro Valley Road
Castro Valley, California
Alameda County

BACKGROUND

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

SOIL CONDITIONS

No change from last quarter.

QUARTERLY GROUND-WATER MONITORING

No monitoring wells onsite.

STATUS SUMMARY: REMEDIATION

No remediation planned.

ANTICIPATED WORK FOR NEXT QUARTER

ARCO plans no further work at this time.