



Bob Robles
Environmental Coordinator
(818) 505 2476

Texaco Refining
and Marketing Inc

10 Universal City Plaza
Universal City CA 91608

September 2, 1992

ST10 3566

Mr. Ariu Levi
ALAMEDA COUNTY DEPARTMENT OF
ENVIRONMENTAL PROTECTION
80 Swan Way, Room 200
Oakland, CA 94621

SUBJECT: QUARTERLY GROUNDWATER MONITORING REPORT
Site: 1127 Lincoln Avenue
Alameda, California

Dear Mr. Levi:


Enclosed is a copy of the Quarterly Groundwater Monitoring Report dated August 20, 1992, for the above site.

If you have any questions or wish to discuss this report, please call me at (818) 505 2476.

Very truly yours,
Texaco Refining And Marketing Inc


Bob Robles

RR:rr

pr. 

Enclosure

cc: Mr. Leo Pagan
1127 Lincoln Avenue
Alameda, California

Mr. Lester Feldman
California Regional Water Quality Control Board
San Francisco Bay Region
2201 Webster Street, Suite 500
Oakland, California 94612

RRZielinski-Richmond



REPORT
QUARTERLY GROUNDWATER MONITORING
Second Quarter 1992
at
Former Texaco Station
1127 Lincoln Avenue
Alameda, California

61006.04

3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Phone: (408) 264-7723
Fax: (408) 264-2435

August 20, 1992
0819RROB
61006.04

Mr. Robert Robles
Texaco Environmental Services
10 Universal City Plaza, 7th Floor
Universal City, California 91608

Subject: Second Quarter 1992 Groundwater Monitoring Report at the former Texaco Station, 1127 Lincoln Avenue, Alameda, California.

Mr. Robles:

As requested by Texaco Environmental Services (TES), this report summarizes the methods and results of the second quarter 1992 groundwater monitoring and sampling performed by RESNA Industries Inc. (RESNA) at the above subject site. TES has contracted RESNA to perform quarterly groundwater depth measurements, sampling, and laboratory analyses to monitor trends in the groundwater flow direction, gradient, and gasoline hydrocarbon concentrations over time.

The subject site is located on the northwest corner of Lincoln Avenue and Bay Street in the city and county of Alameda, California, as shown on the Site Vicinity Map (Plate 1). The former Bay Street Texaco Station is presently an operating auto repair shop utilizing the buildings and facilities of the former service station. Residential properties border the site to the north, Lincoln Avenue and other commercial properties border the site to the south, Bay Street and commercial property border the site to the east, and a plant nursery borders the site to the west. The site is nearly flat and paved with asphalt.

Previous Work

Prior to the present episode, McLaren/Hart performed an environmental investigation and subsequent limited subsurface investigations related to the removal of four underground gasoline-storage tanks (USTs) and one waste-oil tank from the site in September 1989 (McLaren/Hart, January 1991). Laboratory analysis of the soil samples collected from the former UST excavation detected total petroleum hydrocarbons as gasoline (TPHg) at concentrations ranging from 3.7 to 6,200 parts per million (ppm). Additionally, one soil sample was collected from

the bottom of the waste-oil storage tank excavation and analyzed by the laboratory for TPHg, the gasoline constituents benzene, toluene, ethylbenzene, and total xylenes (BTEX), total petroleum hydrocarbons as diesel (TPHd), total oil and grease (TOG), volatile organic compounds (VOCs), and semi-VOCs. These analyses did not detect any TPHg, BTEX, TPHd, TOG, or semi-VOCs. VOC's were not detected in this sample with the exception of acetone, at a concentration of 0.61 ppm.

In March 1991, RESNA performed an Initial Subsurface Investigation (RESNA, May 1991) which included the installation of three groundwater monitoring wells (MW-1, MW-2, and MW-3), and five vapor wells (VW-1 through VW-5). An additional Subsurface Investigation, from June 17 through June 20, 1992, included the installation of 5 monitoring wells (MW-4 through MW-8). Results of the most recent investigation (in progress) and the others are presented in the reports listed in the references attached to this report. The locations of the groundwater monitoring and vapor extraction wells and pertinent site features are shown on the Generalized Site Plan (Plate 2).

Groundwater Sampling and Gradient Evaluation

RESNA personnel performed quarterly groundwater monitoring and sampling at the subject site on June 25, 1992. Field work during this quarter consisted of measuring depth to water (DTW) levels in all wells (MW-1 through MW-8 and VW-1 through VW-5), subjectively analyzing the groundwater for the presence of a hydrocarbon sheen or floating product, purging, and subsequently sampling the groundwater from monitoring wells MW-1 through MW-8 for laboratory analysis. Vapor wells VW-1 through VW-5 contained 2 to 3 inches of residual water.

Groundwater elevations were calculated for each well by subtracting the measured DTW from the previously surveyed wellhead elevations. The measured DTW levels for this and previous monitorings are shown in Table 1, Cumulative Results of Groundwater Monitoring Data. The magnitude of the measured groundwater gradient and flow direction interpreted from the June 25, 1992, groundwater elevation data is 0.006 towards the north-northeast. The Groundwater Gradient Map (Plate 3) is a graphic presentation of the groundwater surface from the June 25, 1992, groundwater monitoring data. The present groundwater gradient is generally consistent with the previous gradients ranging from north-northwest to northeast interpreted from prior groundwater monitoring data.

Groundwater samples were collected from monitoring wells MW-1 through MW-8 for subjective analysis before the groundwater in the monitoring wells was purged and sampled. No evidence of a measurable floating product or sheen was observed in the groundwater samples collected from these wells.

Monitoring wells MW-1 through MW-8 were purged and sampled in accordance with the enclosed groundwater sampling protocol (Appendix A). Monitoring well purge data sheets and stabilization graphs for the parameters monitored are also included in Appendix A.

Laboratory Methods and Results

Groundwater samples collected from monitoring wells MW-1 through MW-8 were analyzed for BTEX and TPHg, by modified Environmental Protection Agency (EPA) Methods 5030/8015/602. Groundwater samples were analyzed by Mobile Chem Laboratories (California Hazardous Waste Testing Laboratory Certification No. 1223) in Martinez, California. The Laboratory Analysis Reports and Chain of Custody Record are attached as Appendix B. The results of these and previous analyses are summarized in Table 2, Cumulative Results of Laboratory Analyses of Groundwater Samples.

This quarter's laboratory analyses of groundwater samples from monitoring wells MW-1 through MW-8 reported:

- o TPHg and BTEX were nondetectable in monitoring wells MW-4 and MW-7;
- o TPHg was detected in the groundwater samples collected from wells MW-1 through MW-3, MW-5, MW-6, and MW-8 at concentrations ranging from 990 parts per billion (ppb) (MW-6) to 18,000 ppb (MW-5);
- o Benzene was detected in the groundwater samples collected from wells MW-1 through MW-3, MW-5, MW-6, and MW-8 at concentrations ranging from 10 ppb (MW-6) to 1,100 ppb (MW-8). These concentrations exceed the California Department of Health Services (DHS) Maximum Contaminant Level (MCL) of 1.0 ppb for benzene in drinking water;
- o Toluene was detected in the groundwater samples collected from wells MW-1 through MW-3, MW-5, MW-6, and MW-8 at concentrations ranging from 11 ppb (MW-3) to 1,200 ppb (MW-5). The concentrations of toluene in samples from MW-1 (110 ppb), MW-6 (240 ppb), and MW-5 (1,200 ppb) are greater than the DHS Recommended Drinking Water Action Level (DWAL) of 100 ppb for toluene in drinking water. The concentrations in samples from MW-2, MW-3, and MW-8 were less than the DWAL;

- o Ethylbenzene was detected in the groundwater samples collected from wells MW-1 through MW-3, MW-5, MW-6, and MW-8 at concentrations ranging from 55 ppb (MW-6) to 750 ppb (MW-5); except for MW-5 (750 ppb), these concentrations are less than the DHS MCL of 680 ppb for ethylbenzene in drinking water; and
- o Total xylenes were detected in the groundwater samples collected from wells MW-1 through MW-3, MW-5, MW-6, and MW-8 at concentrations ranging from 140 ppb (MW-1) to 2,400 ppb (MW-5). Except for MW-5 (2,400 ppb), these concentrations are less than the DHS MCL of 1,750 ppb for total xylenes in drinking water.

It is recommended that copies of this report be forwarded to:

Mr. Ariu Levi
Alameda County Health Care Services
Department of Environmental Health
Hazardous Materials Program
80 Swan Way, Room 200
Oakland, California 95621

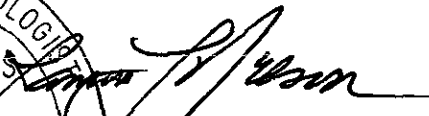
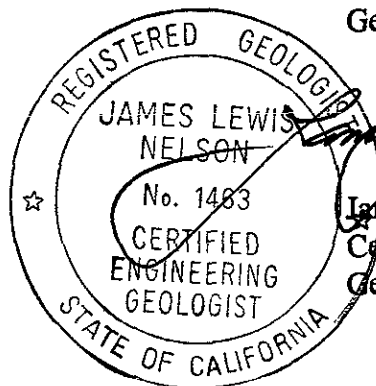
Mr. Lester Feldman
California Regional Water Quality Control Board
San Francisco Bay Region
2101 Webster Street, Suite 500
Oakland, California 94612

If you have any questions or comments regarding the information contained in this letter report, please call (408) 264-7723.

Sincerely,
RESNA Industries Inc.



Jeanne Buckthal
Geologic Technician



James L. Nelson
Certified Engineering
Geologist No. 1463

Enclosures:

References:

- Plate 1: Site Vicinity Map
- Plate 2: Generalized Site Plan
- Plate 3: Groundwater Gradient Map (June 25, 1992)
- Plate 4: TPHg Concentrations in Groundwater
- Plate 5: Benzene Concentrations in Groundwater

Table 1: Cumulative Results of Groundwater Monitoring Data

Table 2: Cumulative Results of Laboratory Analyses of Groundwater Samples

Appendix A: Groundwater Sampling Protocol, Well Purge Data Sheets and Stabilization Graphs

Appendix B: Laboratory Analysis Reports and Chain of Custody Record

REFERENCES

McLaren/Hart, November 29, 1990, Texaco-Alameda Site Safety and Health Plan, Project 88705-001.

McLaren/Hart, January 23, 1991, Work Plan for Phase I Investigation, Lewis Bay Street Service Station, Alameda, California, Project 88705-001.

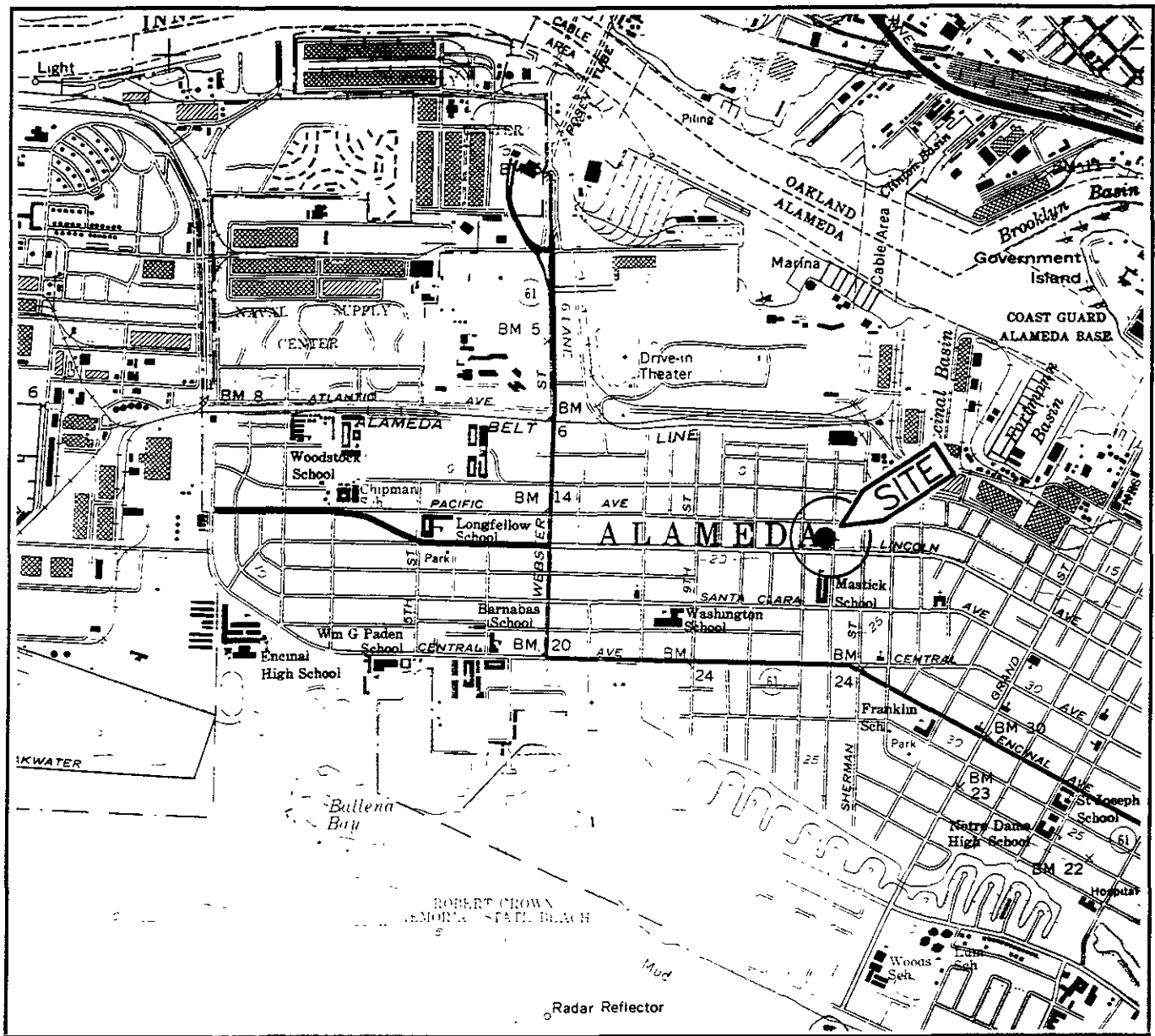
RESNA, May 7, 1991, Initial Subsurface Environmental Investigation at Former Bay Street Station, 1127 Lincoln Avenue, Alameda, California. RESNA Report No. 61006.01

RESNA, September 24, 1991, Letter Report, Quarterly Groundwater Monitoring, Third Quarter 1991 at Former Bay Street Station, 1127 Lincoln Avenue, Alameda, California. RESNA Report No. 61006.01

RESNA, January 9, 1992, Letter Report, Quarterly Groundwater Monitoring, Fourth Quarter 1991 at Former Bay Street Station, 1127 Lincoln Avenue, Alameda, California. RESNA Report No. 61006.01

RESNA, March 26, 1992, Letter Report, Quarterly Groundwater Monitoring, First Quarter 1992 at Former Bay Street Station, 1127 Lincoln Avenue, Alameda, California. RESNA Report No. 61006.02

RESNA, May 12, 1992, Addendum One to Work Plan at Former Bay Street Station, 1127 Lincoln Avenue, Alameda, California. RESNA Report No. 61006.03

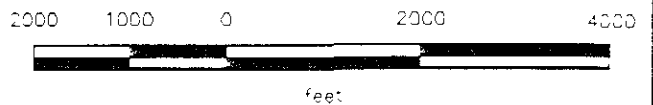


Base: U.S. Geological Survey
 7.5-Minute Quadrangles
 Oakland West, California
 Photorevised 1980

LEGEND

● = Site Location

Approximate Scale



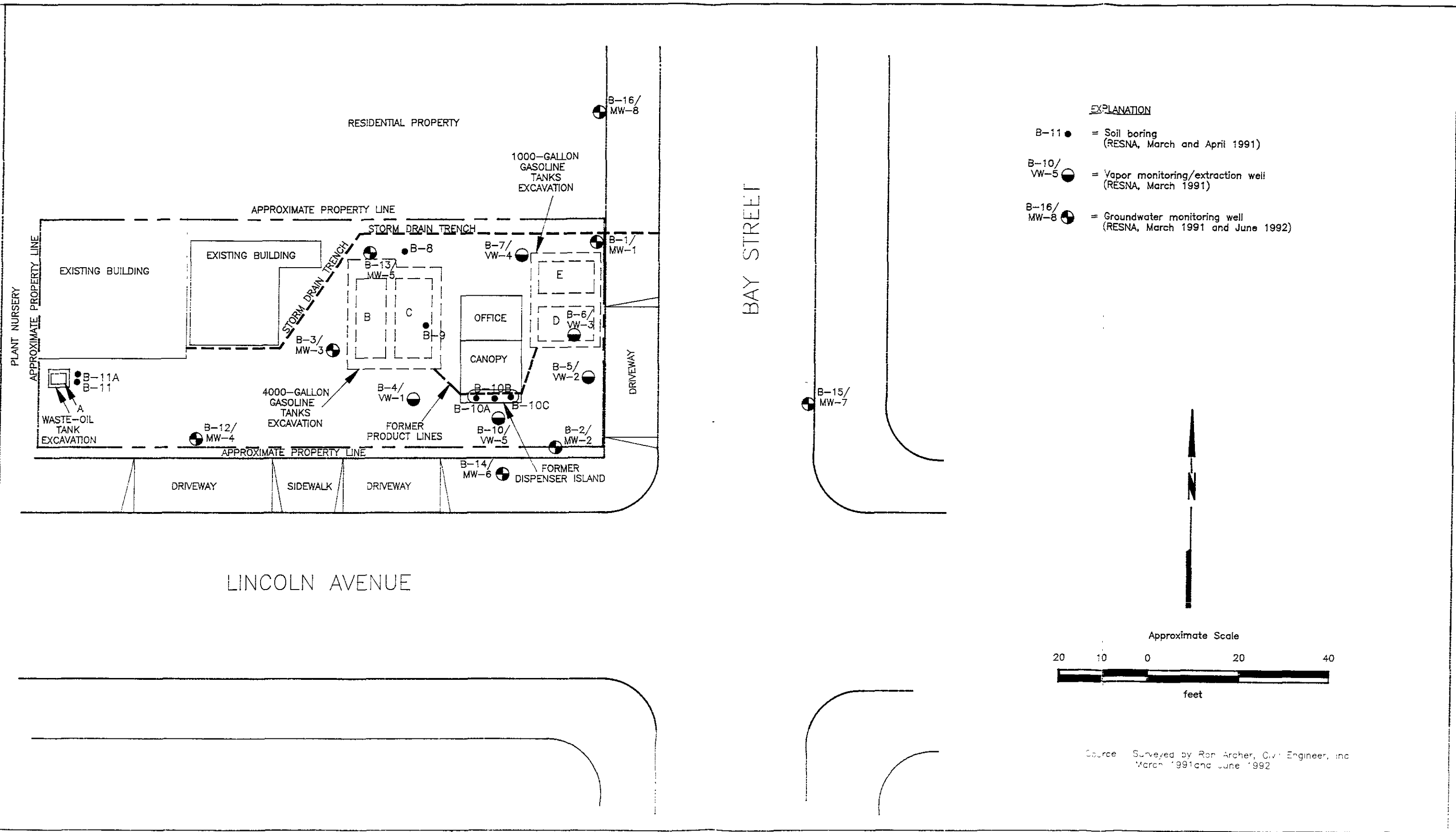
RESNA
 Working to Restore Nature

SITE VICINITY MAP
Former Bay Street Station
1127 Lincoln Avenue
Alameda, California

PLATE

1

PROJECT 61006.04



- EXPLANATION**
- B-11 ● = Soil boring (RESNA, March and April 1991)
 - B-10/VW-5 ● = Vapor monitoring/extraction well (RESNA, March 1991)
 - B-16/MW-8 ● = Groundwater monitoring well (RESNA, March 1991 and June 1992)

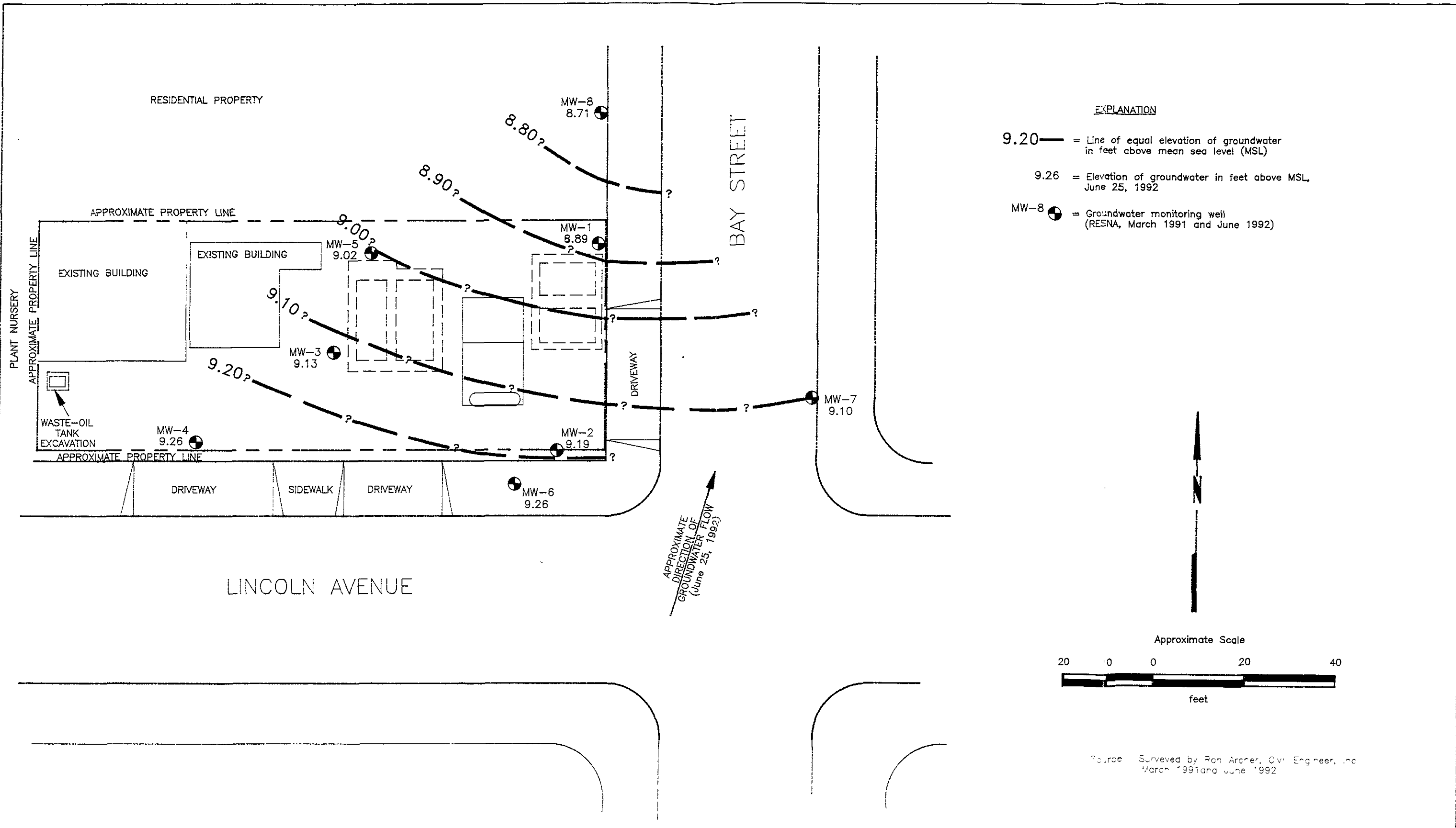


PROJECT 61006.04

GENERALIZED SITE PLAN
 Former Bay Street Texaco Station
 1127 Lincoln Avenue
 Alameda, California

PLATE
 2

Source: Surveyed by Ron Archer, Civil Engineer, Inc. March 1991 and June 1992.

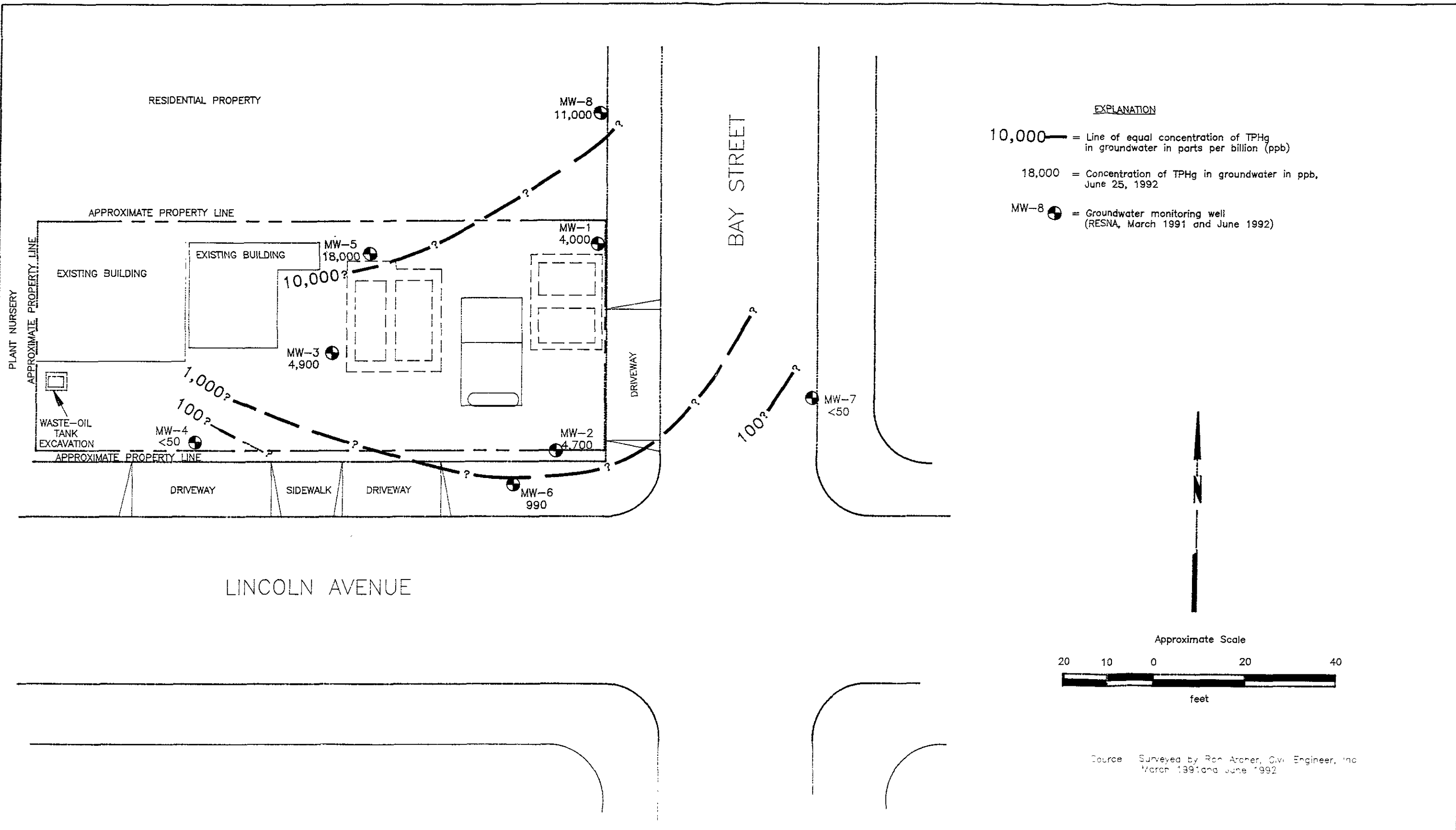


PROJECT 61006.04

GROUNDWATER GRADIENT MAP
 Former Bay Street Texaco Station
 1127 Lincoln Avenue
 Alameda, California

PLATE
3

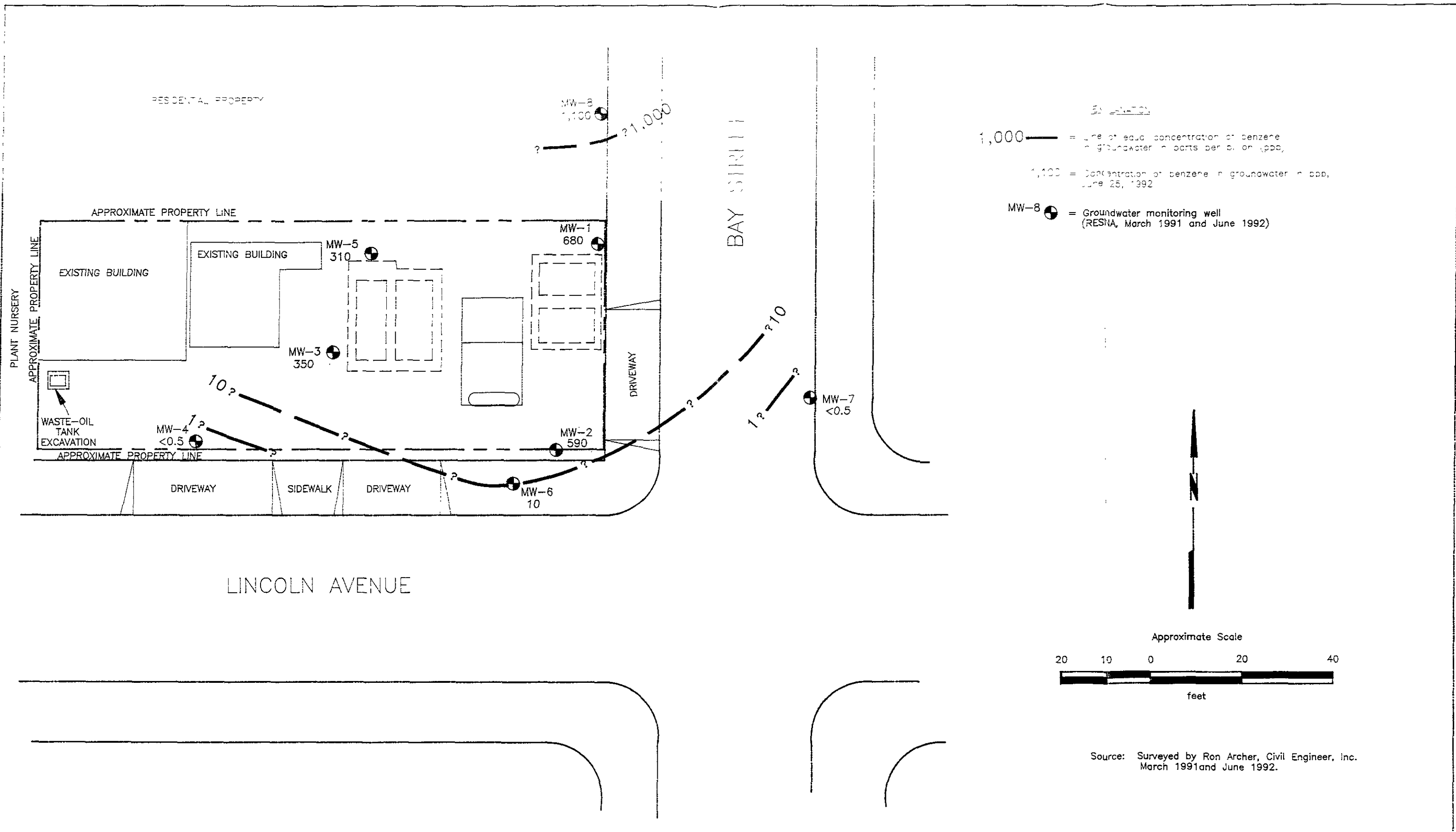
Source: Surveyed by Ron Archer, Civil Engineer, Inc.
 March 1991 and June 1992



PROJECT 61006.04

TPHg CONCENTRATIONS IN GROUNDWATER
 Former Bay Street Texaco Station
 1127 Lincoln Avenue
 Alameda, California

PLATE
4



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BENZENE CONCENTRATIONS IN GROUNDWATER
Former Bay Street Texaco Station
1127 Lincoln Avenue
Alameda, California

PLATE

5

TABLE 1
 CUMULATIVE RESULTS OF GROUNDWATER MONITORING DATA
 Former Bay Street Texaco Station
 Alameda, California
 Page 1 of 2

Well Date	Elevation of Wellhead	Depth to-Water	Elevation of Groundwater	Floating Product/ Sheen
<u>MW-1</u>				
03/22/91	16.49	7.23	9.26	NONE
04/04/91		6.68	9.81	NONE
08/13/91		8.59	7.90	NONE
11/14/91		9.38	7.11	NONE
02/19/92		6.34	10.15	NONE
06/25/92		7.60	8.89	NONE
<u>MW-2</u>				
03/22/91	17.14	7.60	9.54	NONE
04/04/91		7.07	10.07	NONE
08/13/91		8.85	8.29	NONE
11/14/91		9.60	7.54	NONE
02/19/92		6.96	10.18	NONE
06/25/92		7.95	9.19	NONE
<u>MW-3</u>				
03/22/91	16.91	7.43	9.48	NONE
04/04/91		6.80	10.11	NONE
08/13/91		8.88	8.03	NONE
11/14/91		9.68	7.23	NONE
02/19/92		6.69	10.22	NONE
06/25/92		7.78	9.13	NONE
<u>MW-4</u>				
06/25/92	17.18	7.92	9.26	NONE
<u>MW-5</u>				
06/25/92	16.37	7.35	9.02	NONE
<u>MW-6</u>				
06/25/92	17.12	7.86	9.26	NONE
<u>MW-7</u>				
06/25/92	16.71	7.61	9.10	NONE
<u>MW-8</u>				
06/25/92	15.91	7.20	8.71	NONE

See notes on page 2 of 2.

TABLE 1
 CUMULATIVE RESULTS OF GROUNDWATER MONITORING DATA
 Former Bay Street Texaco Station
 Alameda, California
 Page 2 of 2

Well Date	Elevation of Wellhead	Depth to-Water	Elevation of Groundwater	Floating Product/ Sheen
<u>VW-1</u>				
03/22/91	16.83	DRY	DRY	NONE
04/04/91		6.89	9.92	NONE
08/13/91		DRY	DRY	NONE
11/14/91		DRY	DRY	NONE
02/19/92		DRY	DRY	NONE
06/25/92		7.36	9.47	NONE
<u>VW-2</u>				
03/22/91	17.00	7.59	9.41	NONE
04/04/91		7.04	9.96	NONE
08/13/91		DRY	DRY	NONE
11/14/91		DRY	DRY	NONE
02/19/92		6.94	10.06	NONE
06/25/92		8.10	8.90	NONE
<u>VW-3</u>				
03/22/91	16.94	7.71	9.23	NONE
04/04/91		6.92	10.02	NONE
08/13/91		8.45	8.49	NONE
11/14/91		DRY	DRY	NONE
02/19/92		7.40	9.54	NONE
06/25/92		7.16	9.78	NONE
<u>VW-4</u>				
03/22/91	16.81	7.66	9.15	SHEEN
04/04/91		INACCESSIBLE		
08/13/91		8.40	8.41	NONE
11/14/91		DRY	DRY	NONE
02/19/92		5.76	11.05	NONE
06/25/92		7.23	9.58	NONE
<u>VW-5</u>				
03/22/91	17.20	7.67	9.53	SHEEN
04/04/91		INACCESSIBLE		
08/13/91		DRY	DRY	NONE
11/14/91		DRY	DRY	NONE
02/19/92		7.04	10.16	NONE
06/25/92		8.09	9.11	NONE

Elevations above mean sea level

Depth to water measured in feet below top of casing.

TABLE 2
 CUMULATIVE RESULTS OF LABORATORY ANALYSES
 OF GROUNDWATER SAMPLES
 Former Bay Street Texaco Station
 Alameda, California
 Page 1 of 2

Well Number Date	TPHg	B	T	E	X	TPHd*	VOCs & Semi-VOCs	DO	EG
<u>MW-1</u>									
03/22/91	4,500	1,300	670	180	770	1,100	ND	NA	NA
08/13/91	850	260	51	13	48	NA	NA	NA	NA
11/14/91	<30	<0.30	<0.30	<0.30	<0.30	NA	NA	NA	NA
02/19/92	440	14	14	2.1	9.9	NA	NA	4.0	<10
06/25/92	4,000	680	110	73	140	NA	NA	NA	NA
<u>MW-2</u>									
03/22/91	1,100	100	20	63	220	140	ND	NA	NA
08/13/91	1,100	270	4.7	16	49	NA	NA	NA	NA
11/14/91	870	56	8.9	21	46	NA	NA	NA	NA
02/19/92	2,100	57	5.6	9.1	75	NA	NA	3.2	NA
06/25/92	4,700	590	24	290	160	NA	NA	NA	NA
<u>MW-3</u>									
03/22/91	2,500	390	27	240	780	770	ND	NA	NA
08/13/91	1,300	180	3.8	79	200	NA	NA	NA	NA
11/14/91	870	89	9	30	82	NA	NA	NA	NA
02/19/92	990	<0.5	<0.5	2.0	72	NA	NA	3.4	NA
06/25/92	4,900	350	11	330	570	NA	NA	NA	NA
<u>MW-4</u>									
06/25/92	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	NA	NA
<u>MW-5</u>									
06/25/92	18,000	310	1,200	750	2,400	NA	NA	NA	NA
<u>MW-6</u>									
06/25/92	990	10	240	55	310	NA	NA	NA	NA
<u>MW-7</u>									
06/25/92	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	NA	NA
<u>MW-8</u>									
06/25/92	11,000	1,100	29	150	190	NA	NA	NA	NA
<u>Jan 1990</u>									
MCLs	—	10	—	680	1,750	—	—	—	—
DWALs	—	—	100	—	—	—	—	—	—

See notes on page 2 of 2

TABLE 2
CUMULATIVE RESULTS OF LABORATORY ANALYSES
OF GROUNDWATER SAMPLES
Former Bay Street Texaco Station
Alameda, California
Page 2 of 2

Results in parts per billion (ppb)

TPHg:	Total petroleum hydrocarbons as gasoline (analyzed by EPA Method 5030).
TPHd:	Total petroleum hydrocarbons as diesel (analyzed by EPA Method 3510).
BTEX:	Measured by EPA Method 602/(624).
B: benzene, T: toluene, E: ethylbenzene, X: total xylene isomers.	
---	Not Applicable
MCLs:	Adopted Maximum Contaminant Levels in Drinking Water, DHS (October 1990)
DWALs:	Recommended Drinking Water Action Levels, DHS (October 1990)
ND:	Below laboratory detection limit.
NA:	Not Analyzed
*	Anametrix states: "The concentrations reported as diesel for samples W-9-MW1, W-9-MW2, and W-9-MW3 are primarily due to the presence of a lighter petroleum product, possibly gasoline."
VOCs:	Volatile organic compounds (analyzed by EPA Method 624/8240).
Semi-VOCs:	Semi-volatile organic compounds (analyzed by EPA Method 8270).
DO:	Dissolved oxygen in parts per million (ppm).
EG:	Ethylene glycol in ppm.

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 Former Bay Street Texaco Station
 Alameda, California
 Page 1 of 2

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08/13/91		8.85	8.29	NONE
11/14/91		9.60	7.54	NONE
02/19/92		6.96	10.18	NONE
06/25/92		7.95	9.19	NONE
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11/14/91		9.68	7.23	NONE
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06/25/92		7.78	9.13	NONE
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06/25/92	16.71	7.61	9.10	NONE
<u>MW-8</u>				
06/25/92	15.91	7.20	8.71	NONE

See notes on page 2 of 2.

APPENDIX A

**GROUNDWATER SAMPLING PROTOCOL,
WELL PURGE DATA SHEETS, AND
STABILIZATION GRAPHS**

GROUNDWATER SAMPLING PROTOCOL

The static water level in each well that contained water was measured with a Solinst® water level indicator; this instrument is accurate to the nearest 0.01 foot. These groundwater depths were subtracted from wellhead elevations measured in March 1991 and June 1992 by Ron Archer, Civil Engineer, Inc. (a licensed land surveyor), of Pleasanton, California.

Water samples collected for subjective evaluation were collected by gently lowering approximately half the length of a new disposable bailer past the air-water interface (if possible) and collecting a sample from near the surface of the water in the well. The samples were checked for measurable floating hydrocarbon product, and any floating product was removed from the well.

Before water samples were collected from the groundwater monitoring wells, the wells were purged until stabilization of the temperature, pH, and conductivity was obtained. Approximately four to six well casing volumes were purged before those characteristics stabilized. Water samples from the wells that do not obtain stability of the temperature, pH, and conductivity are considered to be "grab samples". Turbidity measurements were collected from the purged well water. The quantity of water purged from the wells was calculated as follows:

1 well casing volume = $\pi r^2 h (7.48)$ where:

- r = radius of the well casing in feet.
- h = column of water in the well in feet (well depth - depth to water)
- 7.48 = conversion constant from cubic feet to gallons

gallons of water purged/gallons in 1 well casing volume = well casing volumes removed.

After purging, each well was allowed to recharge to the approximate initial water level. Water samples that do not recover to approximately 80% (due to slow recharge of the well) of the initial water level within the time between purging and sampling are considered to be "grab samples". Water samples were then collected with a new disposable sampler. The water samples were carefully poured into 40-milliliter glass vials, which were filled so as to produce a positive meniscus. Each sample container was preserved with hydrochloric acid, sealed with a cap containing a Teflon® septum, and subsequently examined for air bubbles to avoid headspace which would allow volatilization to occur. The samples were promptly transported in iced storage in a thermally-insulated ice chest, accompanied by a Chain of Custody Record, to a California-certified laboratory.

WELL PURGE DATA SHEET

Project Name: Texaco--Alameda

Job No. 61006.04

Date: June 25, 1992

Page 1 of 1

Well No. MW-1

Time Started 1358

TIME (hr)	GALLONS (cum.)	TEMP. (F)	pH	CONDUCT. (micromho)	TURBIDITY (NTU)
1358	Start purging MW-1				
1358	0	73.5	7.04	1.03	>200
1402	5	70.5	6.44	1.04	5.2
1405	10	69.3	6.39	.97	3.7
1409	15	68.8	6.37	.96	2.8
1413	20	68.9	6.39	.93	2.4
1417	25	69.5	6.37	.86	2.6
1421	30	69.2	6.39	.83	2.7
1425	35	69.4	6.39	.82	2.6
1425	Stop purging MW-1				

Notes:

Well Diameter (inches) : 4
 Depth to Bottom (feet) : 19.13
 Depth to Water - initial (feet) : 7.60
 Depth to Water - final (feet) : 8.23
 % recovery : 95
 Time Sampled : 1500
 Gallons per Well Casing Volume : 7.53
 Gallons Purged : 35
 Well Casing Volume Purged : 4.65
 Approximate Pumping Rate (gpm) : 1.30

WELL PURGE DATA SHEET

Project Name: Texaco--Alameda

Job No. 61006.04

Date: June 25, 1992

Page 1 of 1

Well No. MW-2

Time Started 1533

TIME (hr)	GALLONS (cum.)	TEMP. (F)	pH	CONDUCT. (micromho)	TURBIDITY (NTU)
1533	start purging MW-2				
1533	0	75.4	5.68	1.26	15.8
1537	5	73.2	6.23	1.19	1.8
1541	10	73.8	6.71	1.19	2.2
1545	15	73.1	6.82	1.16	2.7
1549	20	72.4	6.87	1.04	2.3
1554	25	71.0	6.90	.99	2.5
1558	30	71.5	6.91	.96	2.1
1603	35	70.0	6.90	.87	2.3
1603	stop purging MW-2				

Notes:

Well Diameter (inches) : 4
 Depth to Bottom (feet) : 19.17
 Depth to Water - initial (feet) : 7.95
 Depth to Water - final (feet) : 8.48
 % recovery : 95
 Time Sampled : 1700
 Gallons per Well Casing Volume : 7.33
 Gallons Purged : 35
 Well Casing Volume Purged : 4.77
 Approximate Pumping Rate (gpm) : 1.17

WELL PURGE DATA SHEET

Project Name: Texaco--Alameda

Job No. 61006.04

Date: June 25, 1992

Page 1 of 1

Well No. MW-3

Time Started 1612

TIME (hr)	GALLONS (cum.)	TEMP. (F)	pH	CONDUCT. (micromho)	TURBIDITY (NTU)
1612	Start purging MW-3				
1612	0	76.0	7.27	.87	>200
1616	5	72.4	6.92	1.09	9.8
1619	10	72.5	6.93	1.06	5.5
1624	15	72.5	6.94	1.09	3.2
1628	20	72.6	7.03	.93	2.6
1632	25	72.5	7.03	.90	3.0
1635	30	72.0	7.02	.86	3.8
1639	35	72.3	7.04	.83	2.7
1639	Stop purging MW-3				

Notes:

Well Diameter (inches) : 4
 Depth to Bottom (feet) : 19.44
 Depth to Water - initial (feet) : 7.78
 Depth to Water - final (feet) : 8.06
 % recovery : 98
 Time Sampled : 1725
 Gallons per Well Casing Volume : 7.61
 Gallons Purged : 35
 Well Casing Volume Purged : 4.60
 Approximate Pumping Rate (gpm) : 1.30

WELL PURGE DATA SHEET

Project Name: Texaco--Alameda

Job No. 61006.04

Date: June 25, 1992

Page 1 of 1

Well No. MW-4

Time Started 1057

TIME (hr)	GALLONS (cum.)	TEMP. (F)	pH	CONDUCT. (micromho)	TURBIDITY (NTU)
1057	Start purging MW-4				
1057	0	76.4	7.98	.27	>200
1101	5	73.9	7.66	.61	42.9
1105	10	71.9	7.61	.60	56.9
1109	15	71.4	7.60	.68	67.2
1113	20	71.9	7.62	.66	124.7
1116	25	72.1	7.61	.61	35.4
1121	30	71.7	7.56	.57	23.6
1124	35	71.8	7.46	.57	13.9
1124	Stop purging MW-4				

Notes:

Well Diameter (inches) : 4
 Depth to Bottom (feet) : 20.02
 Depth to Water - initial (feet) : 7.92
 Depth to Water - final (feet) : 8.11
 % recovery : 98
 Time Sampled : 1205
 Gallons per Well Casing Volume : 7.90
 Gallons Purged : 35
 Well Casing Volume Purged : 4.43
 Approximate Pumping Rate (gpm) : 1.30

WELL PURGE DATA SHEET

Project Name: Texaco--Alameda

Job No. 61006.04

Date: June 25, 1992

Page 1 of 1

Well No. MW-5

Time Started 1310

TIME (hr)	GALLONS (cum.)	TEMP. (F)	pH	CONDUCT. (micromho)	TURBIDITY (NTU)
1310	Start purging MW-5				
1310	0	74.8	5.64	1.09	>200
1315	5	73.7	6.43	1.07	56.2
1320	10	72.7	6.67	1.04	56.5
1325	15	72.2	6.85	1.11	77.5
1330	20	70.8	6.87	1.14	54.3
1334	25	70.8	6.89	1.17	32.5
1338	30	70.4	6.92	1.17	23.0
1343	35	70.8	6.94	1.19	23.8
1343	Stop purging MW-5				

Notes:

Well Diameter (inches) : 4
 Depth to Bottom (feet) : 19.68
 Depth to Water - initial (feet) : 7.35
 Depth to Water - final (feet) : 7.57
 % recovery : 98
 Time Sampled : 1440
 Gallons per Well Casing Volume : 8.05
 Gallons Purged : 35
 Well Casing Volume Purged : 4.35
 Approximate Pumping Rate (gpm) : 1.06

WELL PURGE DATA SHEET

Project Name: Texaco--Alameda

Job No. 61006.04

Date: June 25, 1992

Page 1 of 1

Well No. MW-6

Time Started 1035

TIME (hr)	GALLONS (cum.)	TEMP. (F)	pH	CONDUCT. (micromho)	TURBIDITY (NTU)
1035	Start purging MW-6				
1035	0	70.7	7.62	.86	>200
1037	2	71.9	7.22	.81	>200
1038	4	71.8	7.11	.88	>200
1039	6	70.9	7.06	.89	>200
1041	8	70.1	7.08	.85	>200
1043	10	69.8	7.15	.76	>200
1043	Stop purging MW-6				

Notes:

Well Diameter (inches) : 2
 Depth to Bottom (feet) : 19.71
 Depth to Water - initial (feet) : 7.86
 Depth to Water - final (feet) : 8.03
 % recovery : 99
 Time Sampled : 1145
 Gallons per Well Casing Volume : 1.93
 Gallons Purged : 10
 Well Casing Volume Purged : 5.18
 Approximate Pumping Rate (gpm) : 1.25

WELL PURGE DATA SHEET

Project Name: Texaco--Alameda

Job No. 61006.04

Date: June 25, 1992

Page 1 of 1

Well No. MW-7

Time Started 0827

TIME (hr)	GALLONS (cum.)	TEMP. (F)	pH	CONDUCT. (micromho)	TURBIDITY (NTU)
0827	Start purging MW-7				
0827	0	67.6	5.41	.68	>200
0829	2	68.7	5.79	.60	>200
0830	4	68.4	5.94	.68	>200
0831	6	68.0	6.10	.67	>200
0832	8	67.5	6.33	.62	>200
0833	10	66.9	6.48	.58	>200
0835	12	66.4	6.69	.54	>200
0835	Stop purging MW-7				

Notes:

Well Diameter (inches) : 2
 Depth to Bottom (feet) : 19.82
 Depth to Water - initial (feet) : 7.61
 Depth to Water - final (feet) : 7.81
 % recovery : 98
 Time Sampled : 0925
 Gallons per Well Casing Volume : 1.99
 Gallons Purged : 12
 Well Casing Volume Purged : 6.03
 Approximate Pumping Rate (gpm) : 1.5

WELL PURGE DATA SHEET

Project Name: Texaco--Alameda

Job No. 61006.04

Date: June 25, 1992

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Well No. MW-8

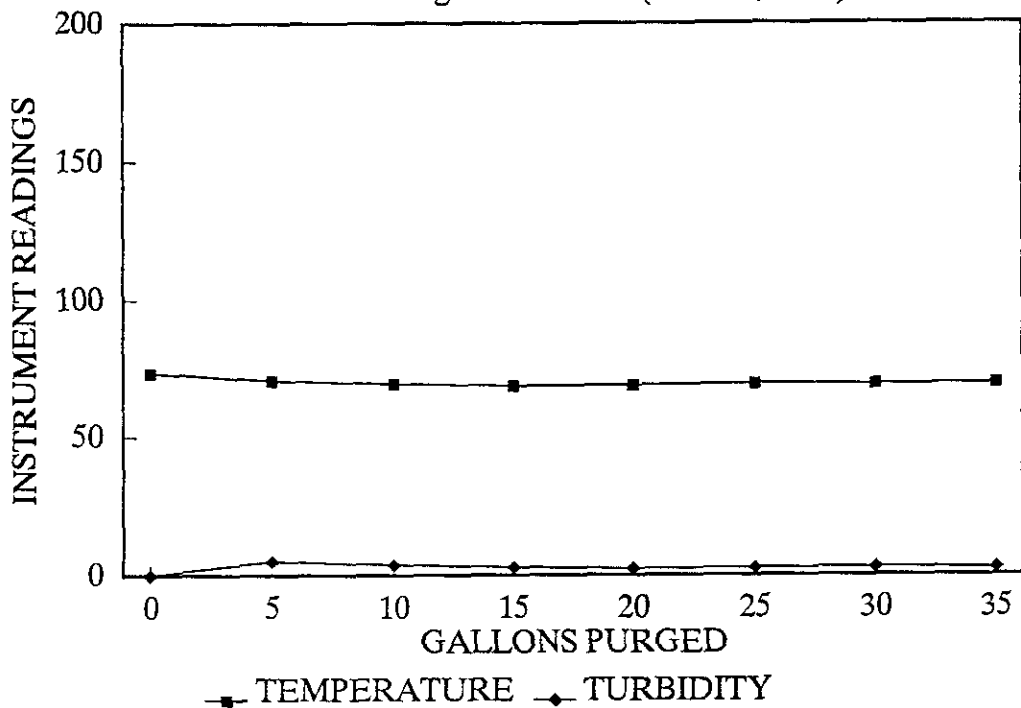
Time Started 0838

TIME (hr)	GALLONS (cum.)	TEMP. (F)	pH	CONDUCT. (micromho)	TURBIDITY (NTU)
0838	Start purging MW-8				
0838	0	64.9	6.51	.96	>200
0842	5	64.5	6.61	1.00	12.6
0846	10	65.1	6.66	.99	45.1
0850	15	65.0	6.73	1.00	85.0
0854	20	64.9	6.48	.98	95.2
0857	25	65.3	6.51	.99	107.2
0900	30	64.9	6.54	.98	115.0
0904	35	64.9	6.51	.98	96.9
0904	Stop purging MW-8				

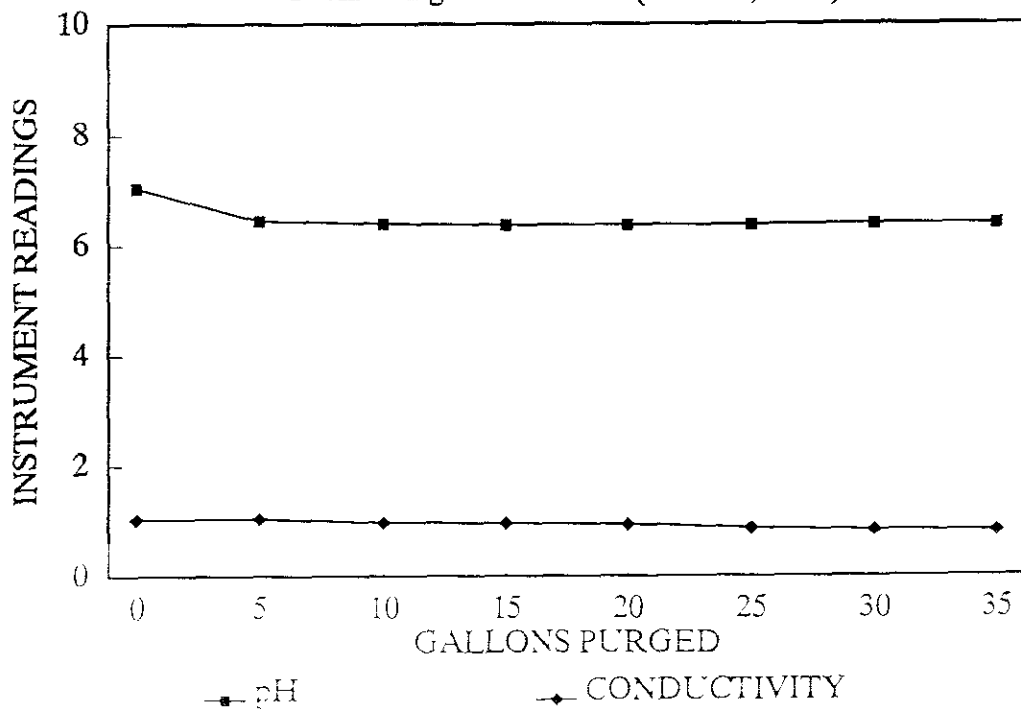
Notes:

Well Diameter (inches) : 4
 Depth to Bottom (feet) : 19.55
 Depth to Water - initial (feet) : 7.20
 Depth to Water - final (feet) : 7.31
 % recovery : 99
 Time Sampled : 1010
 Gallons per Well Casing Volume : 8.06
 Gallons Purged : 35
 Well Casing Volume Purged : 4.34
 Approximate Pumping Rate (gpm) : 1.35

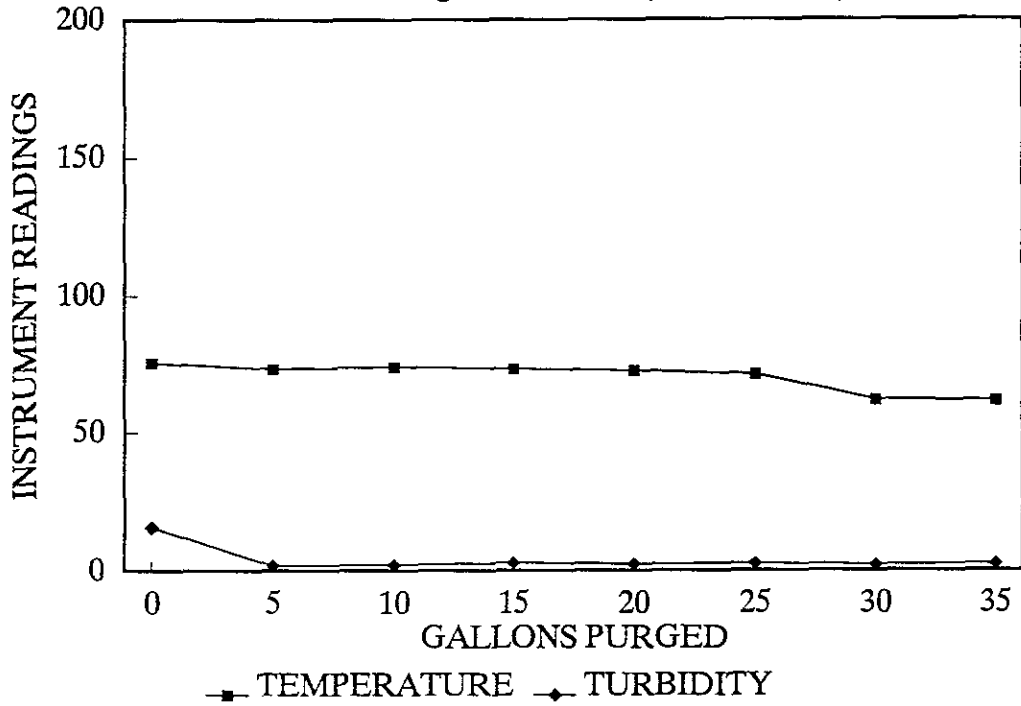
TEXACO - ALAMEDA STABILIZATION GRAPH
Monitoring Well MW-1 (June 25, 1992)



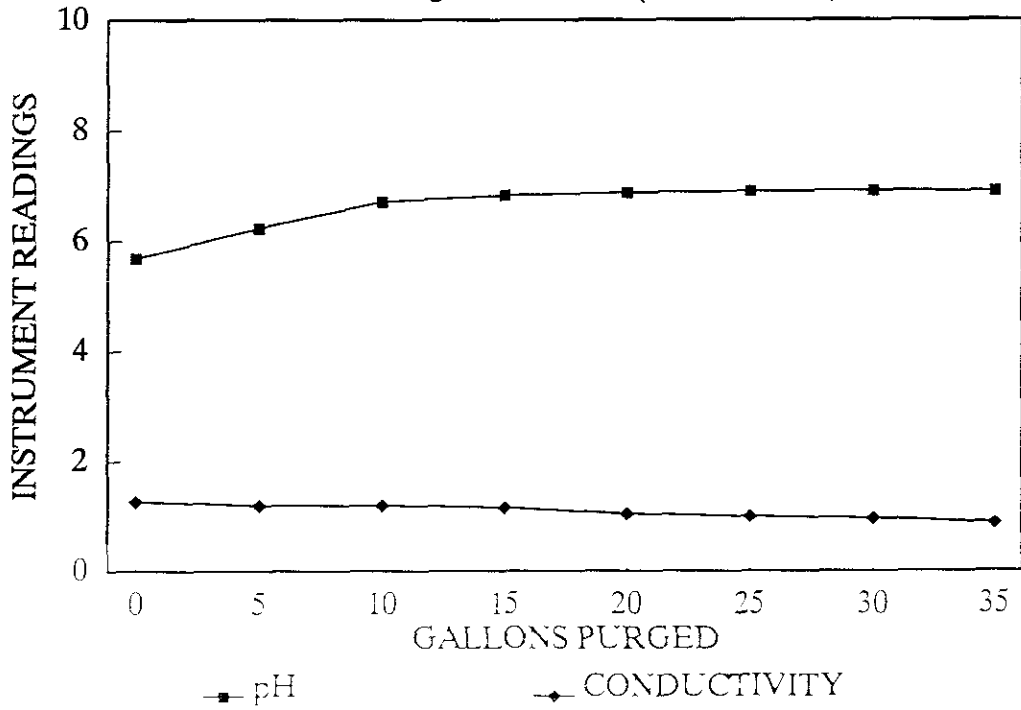
TEXACO - ALAMEDA STABILIZATION GRAPH
Monitoring Well MW-1 (June 25, 1992)



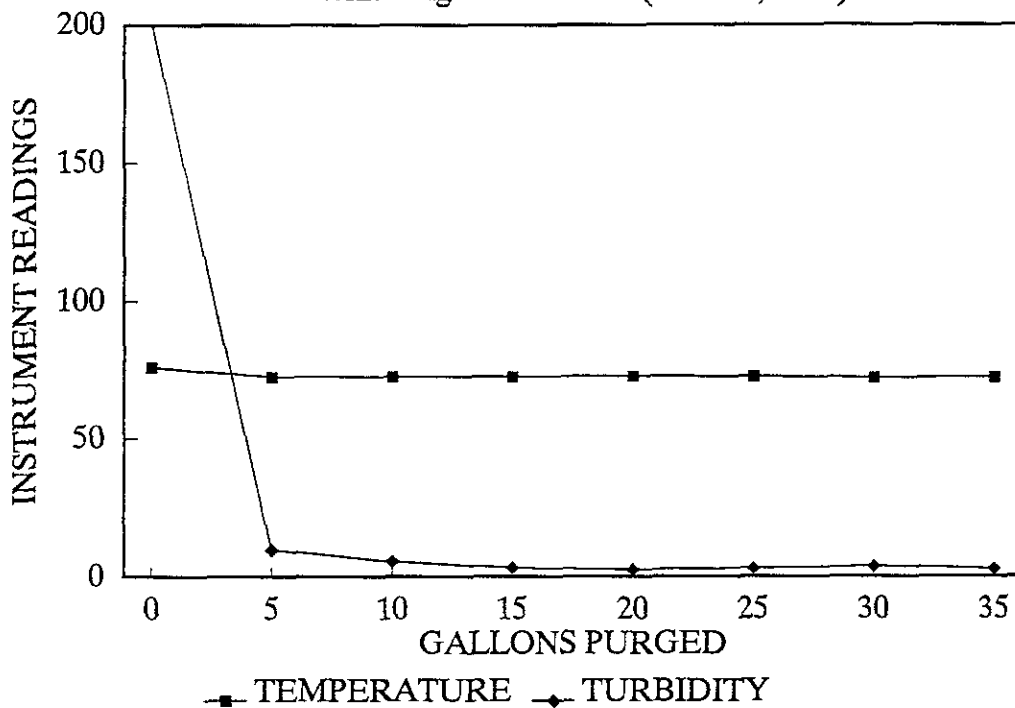
TEXACO - ALAMEDA STABILIZATION GRAPH
Monitoring Well MW-2 (June 25, 1992)



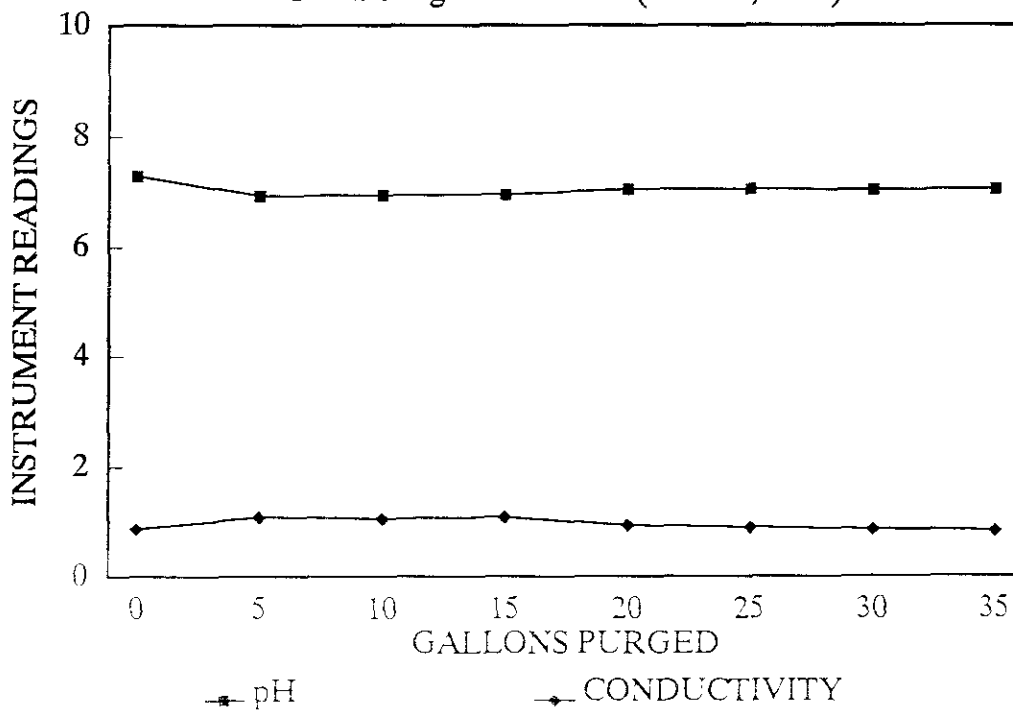
TEXACO - ALAMEDA STABILIZATION GRAPH
Monitoring Well MW-2 (June 25, 1992)



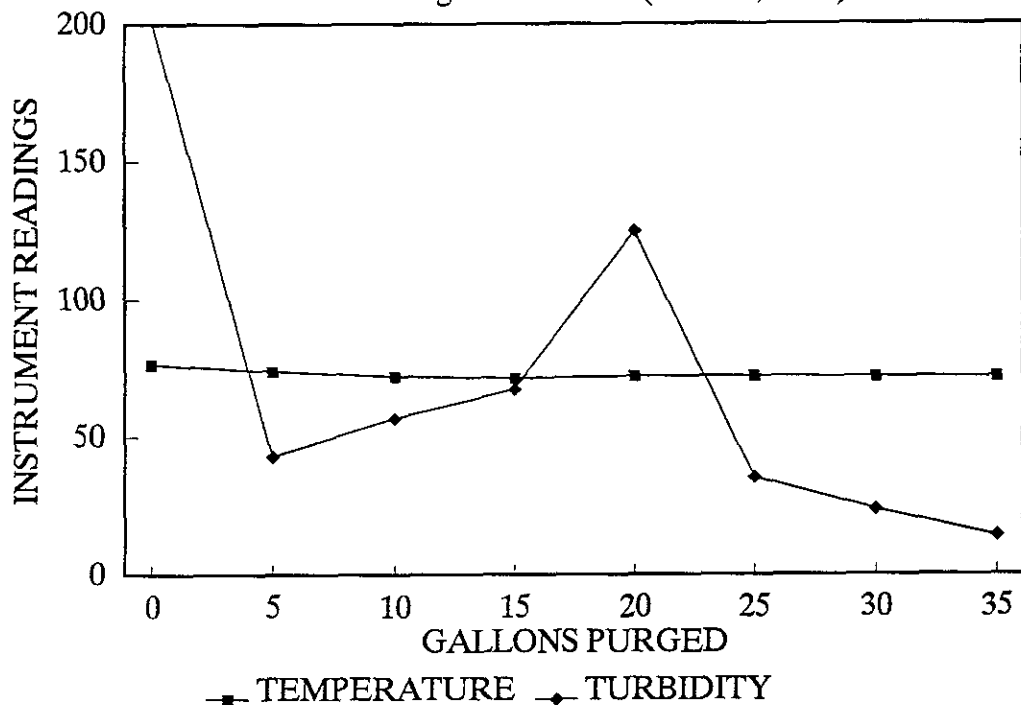
TEXACO - ALAMEDA STABILIZATION GRAPH
Monitoring Well MW-3 (June 25, 1992)



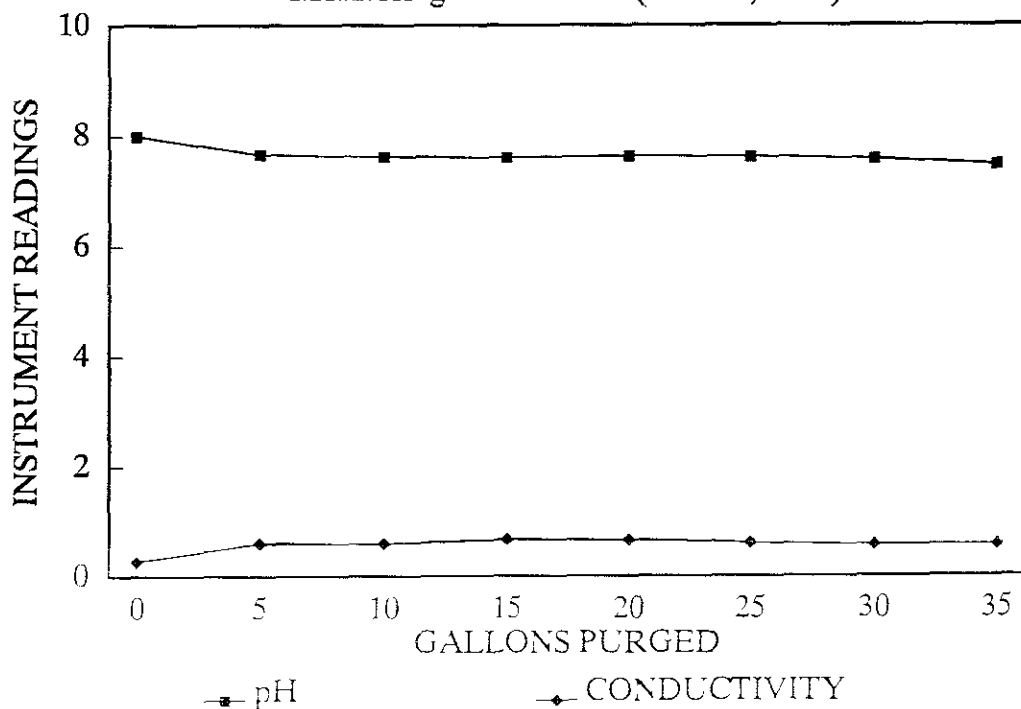
TEXACO - ALAMEDA STABILIZATION GRAPH
Monitoring Well MW-3 (June 25, 1992)



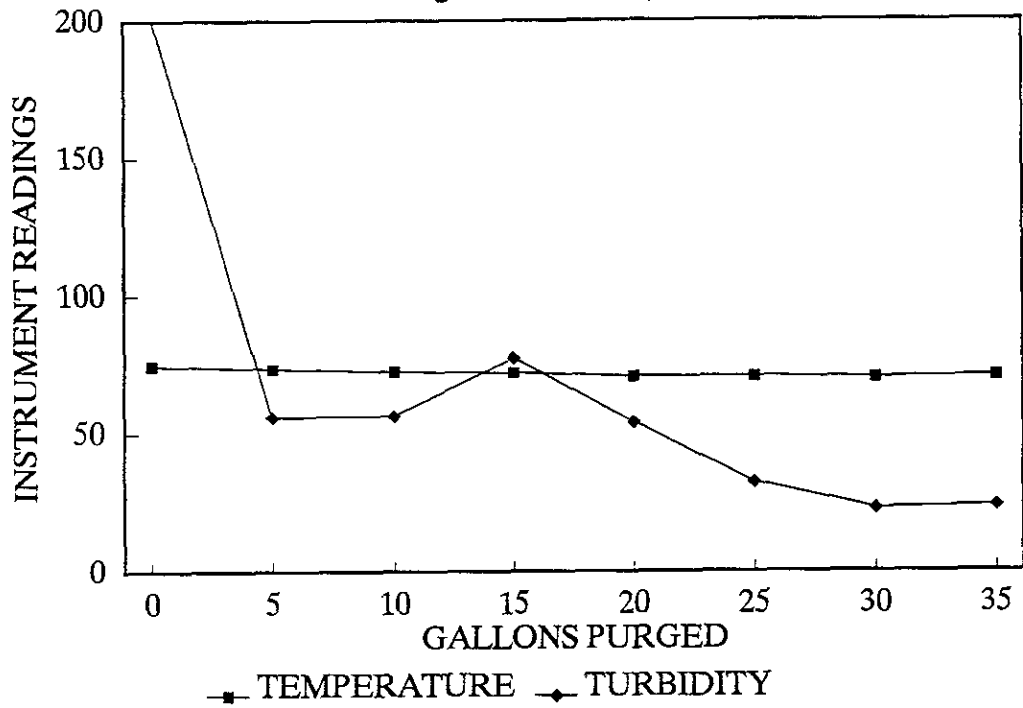
TEXACO - ALAMEDA STABILIZATION GRAPH
Monitoring Well MW-4 (June 25, 1992)



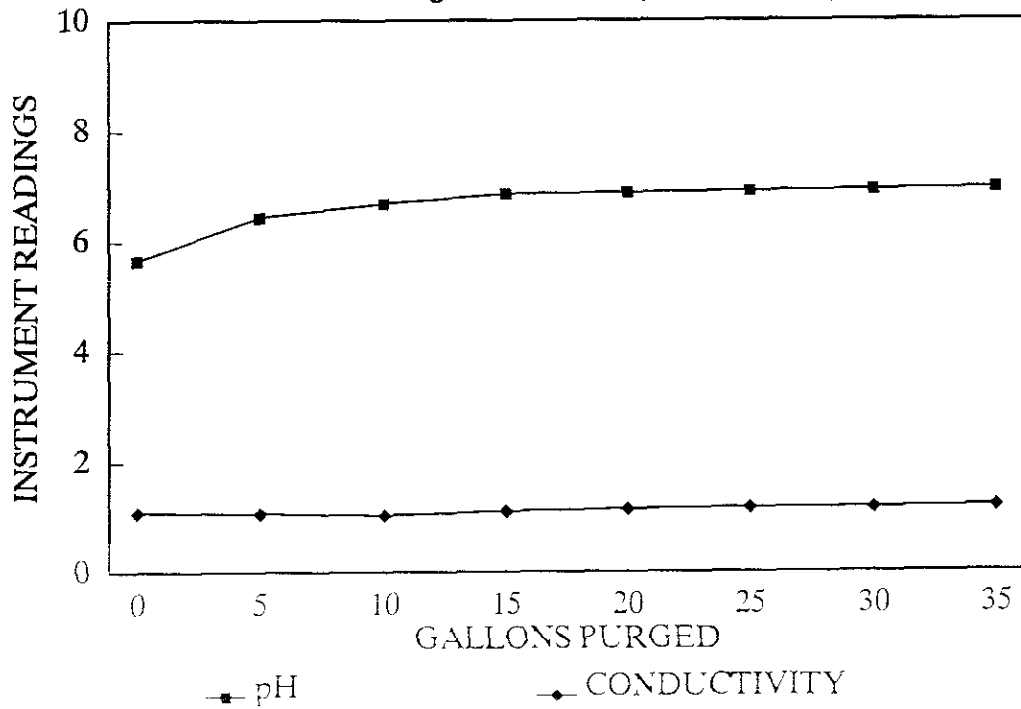
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Monitoring Well MW-4 (June 25, 1992)



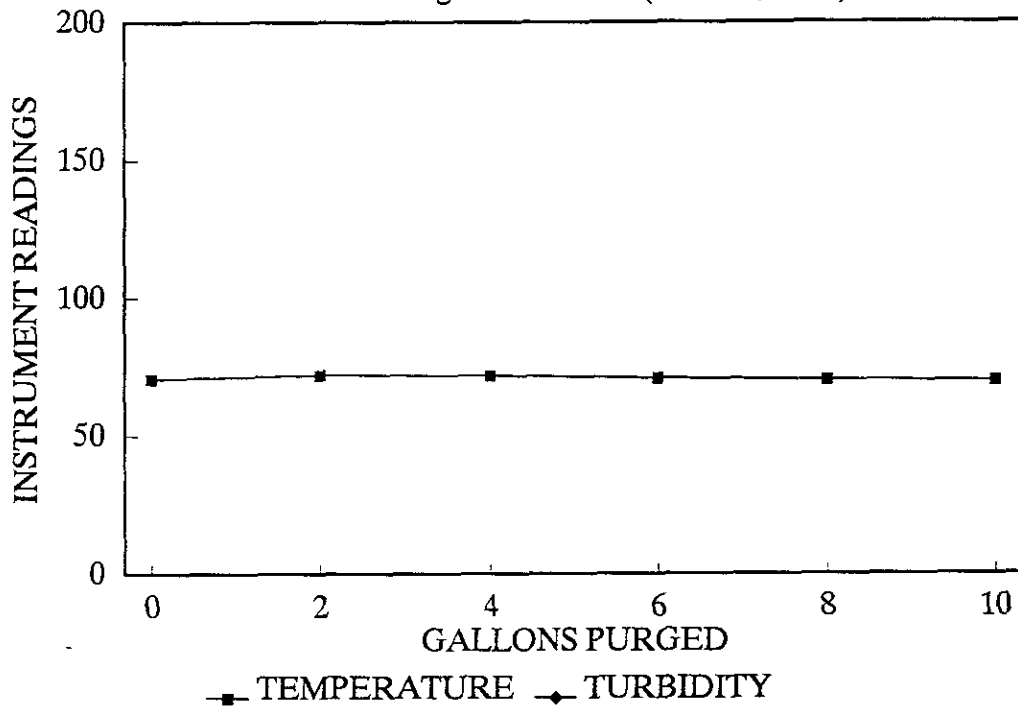
TEXACO - ALAMEDA STABILIZATION GRAPH
Monitoring Well MW-5 (June 25, 1992)



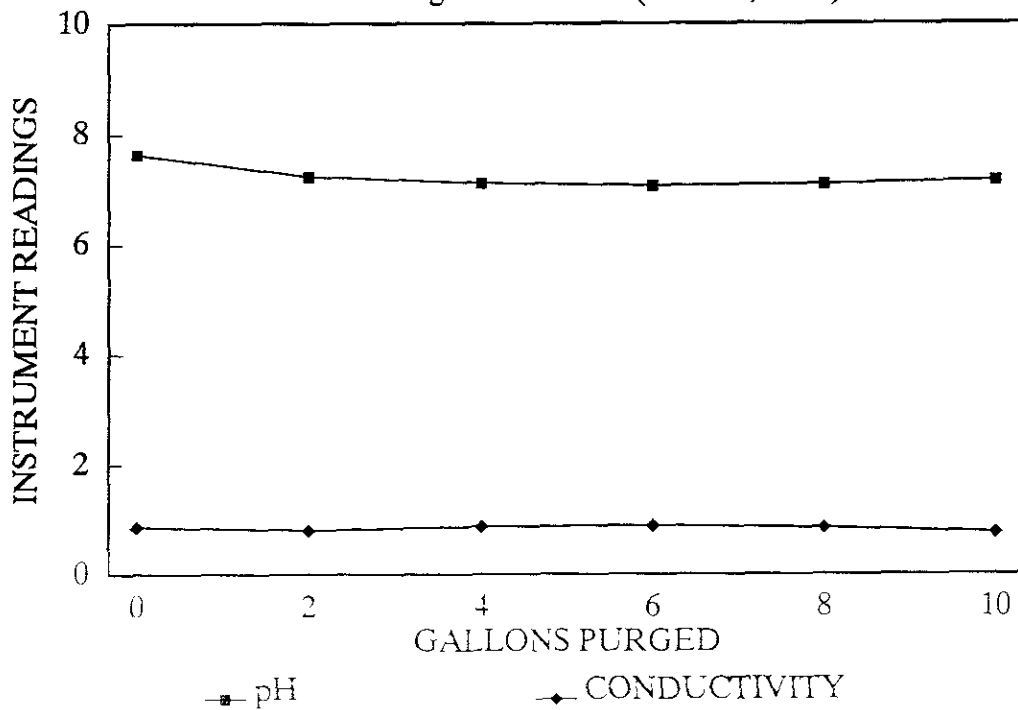
TEXACO - ALAMEDA STABILIZATION GRAPH
Monitoring Well MW-5 (June 25, 1992)



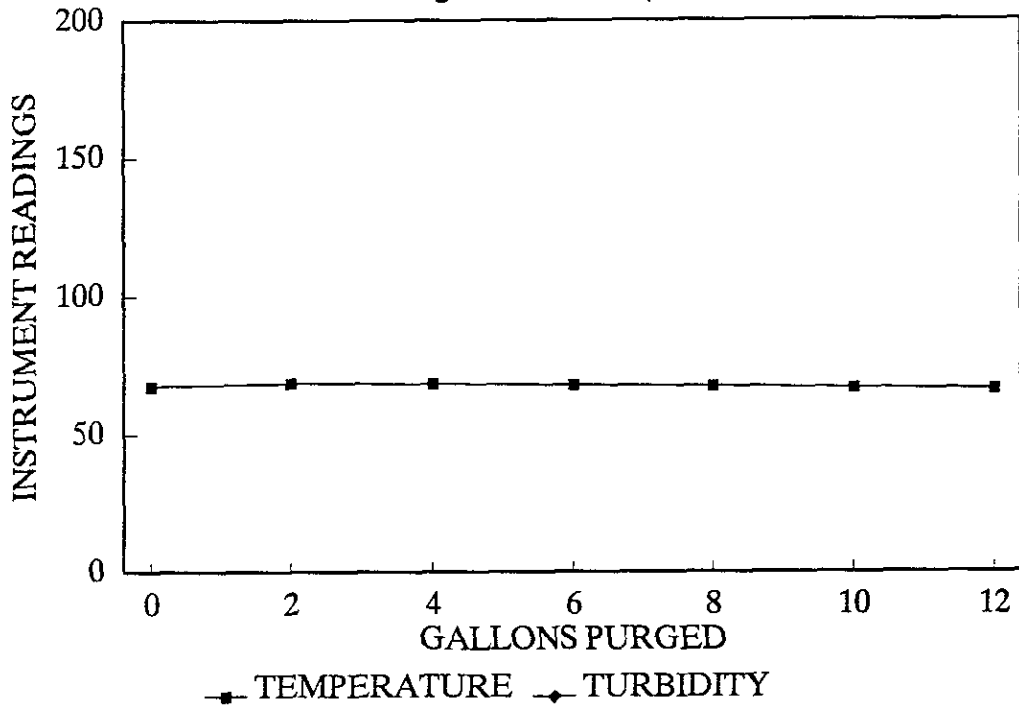
TEXACO - ALAMEDA STABILIZATION GRAPH
Monitoring Well MW-6 (June 25, 1992)



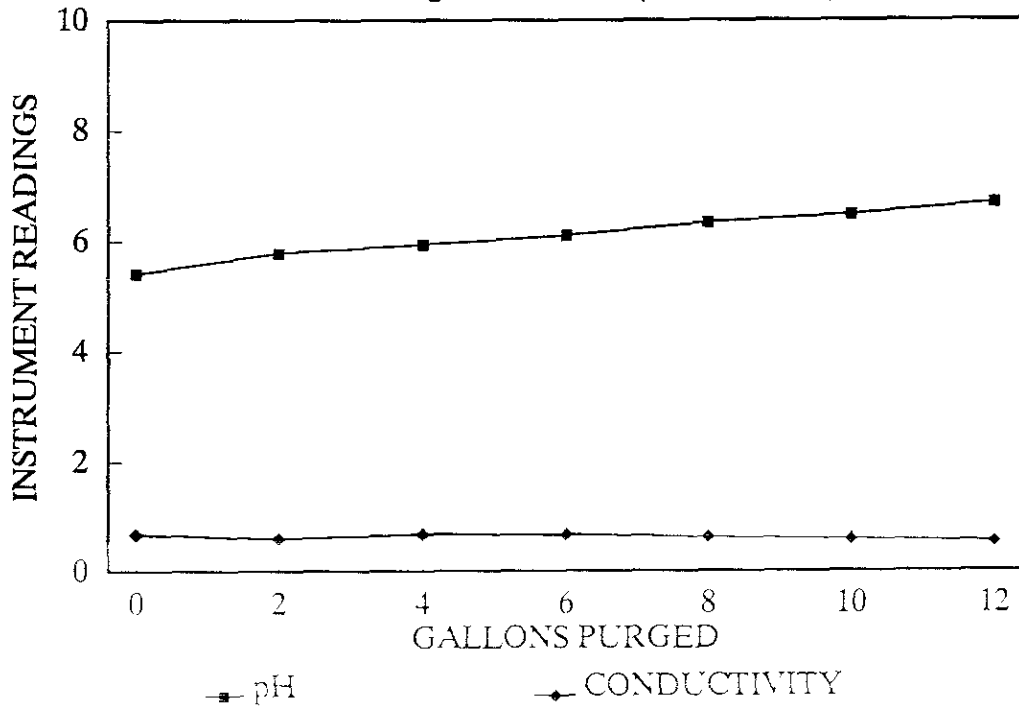
TEXACO - ALAMEDA STABILIZATION GRAPH
Monitoring Well MW-6 (June 25, 1992)



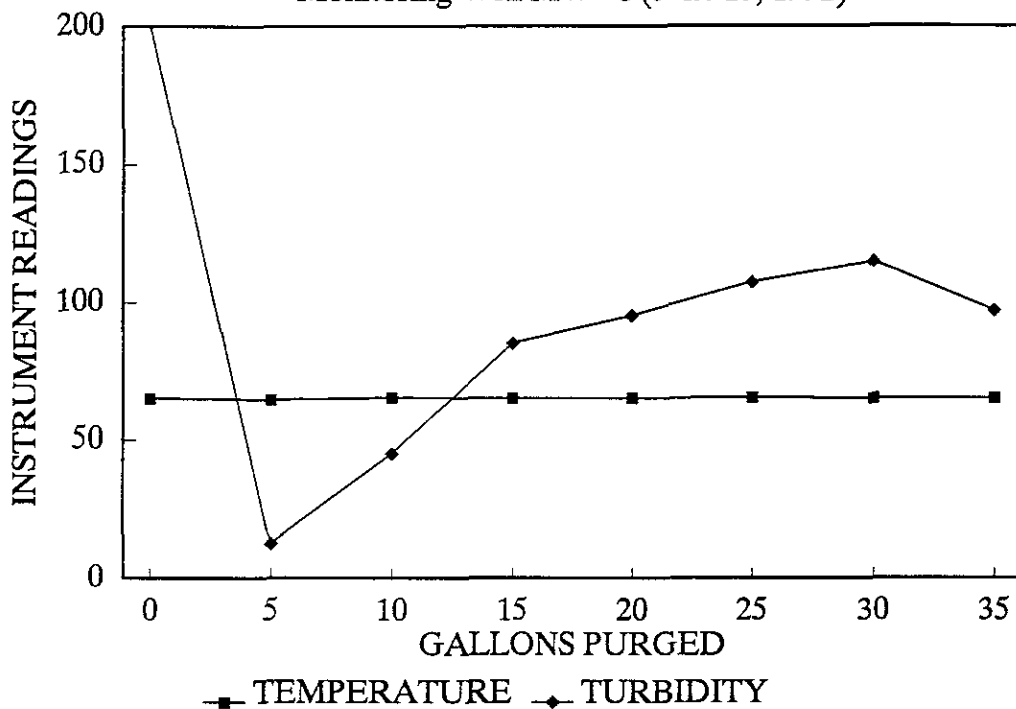
TEXACO - ALAMEDA STABILIZATION GRAPH
Monitoring Well MW-7 (June 25, 1992)



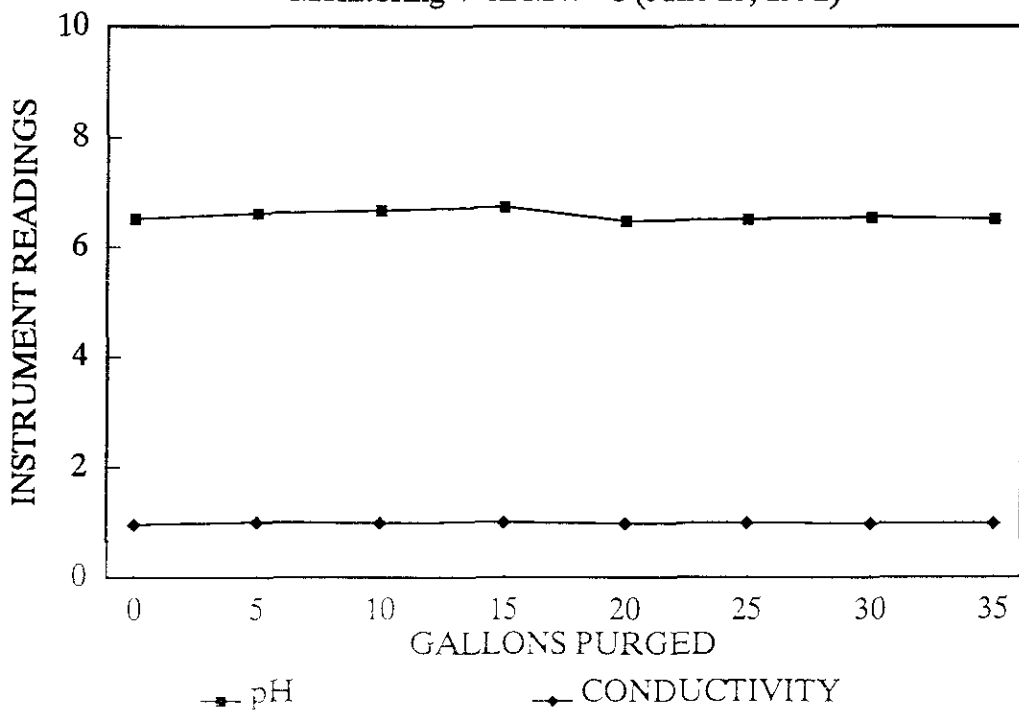
TEXACO - ALAMEDA STABILIZATION GRAPH
Monitoring Well MW-7 (June 25, 1992)



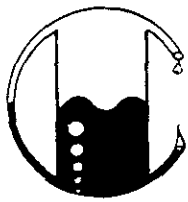
TEXACO – ALAMEDA STABILIZATION GRAPH
Monitoring Well MW-8 (June 25, 1992)



TEXACO – ALAMEDA STABILIZATION GRAPH
Monitoring Well MW-8 (June 25, 1992)



APPENDIX B
LABORATORY ANALYSIS REPORTS
AND
CHAIN OF CUSTODY RECORD



MOBILE CHEM LABS INC.

5021 Blum Road, Suite 3 • Martinez, CA 94553
Phone (415) 372-3700 • Fax (415) 372-6955

61006.04/011970

RESNA Industries
3315 Alamen Expressway, #34
San Jose, CA 95118
Attn: Phillip Mayberry
Project Manager

Date Sampled: 06-25-92
Date Received: 06-26-92
Date Reported: 06-29-92

Sample Number

062195

Sample Description

Project # 61006.04
Texaco - Alameda
W-8-MW1 WATER

ANALYSIS

	Detection Limit ----- ppb	Sample Results ----- ppb
Total Petroleum Hydrocarbons as Gasoline	50	4,000
Benzene	0.5	680
Toluene	0.5	110
Xylenes	0.5	140
Ethylbenzene	0.5	73

QA/QC: Sample blank is none detected

Note: Analysis was performed using EPA methods 5030 and TPH
LUFT with method 602 used for BTX distinction.
(ppb) = (µg/L)

MOBILE CHEM LABS


Ronald G. Evans
Lab Director

MOBILE CHEM LABS INC.

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61006.04/011970

PSNA Industries
15 Alameda Expressway, #34
San Jose, CA 95118
Attn: Phillip Mayberry
Project Manager

Date Sampled: 06-25-92
Date Received: 06-26-92
Date Reported: 06-29-92

Sample Number
062197

Sample Description
Project # 61006.04
Texaco - Alameda
W-8-MW2 WATER

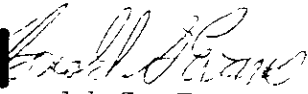
ANALYSIS

	<u>Detection Limit</u>	<u>Sample Results</u>
	ppb	ppb
Total Petroleum Hydrocarbons as Gasoline	50	4,700
Benzene	0.5	590
Toluene	0.5	24
Xylenes	0.5	160
Ethylbenzene	0.5	290

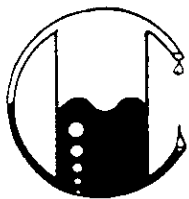
A/QC: Sample blank is none detected

Note: Analysis was performed using EPA methods 5030 and TPH LUFT with method 602 used for BTX distinction.
(ppb) = (µg/L)

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Lab Director



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RESNA Industries
3315 Alamden Expressway, #34
San Jose, CA 95118
Attn: Phillip Mayberry
Project Manager

Date Sampled: 06-25-92
Date Received: 06-26-92
Date Reported: 06-29-92

Sample Number

062201

Sample Description

Project # 61006.04
Texaco - Alameda
W-8-MW4 WATER


ANALYSIS

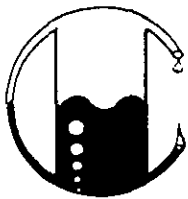
	Detection Limit ----- ppb	Sample Results ----- ppb
Total Petroleum Hydrocarbons as Gasoline	50	<50
Benzene	0.5	<0.5
Toluene	0.5	<0.5
Xylenes	0.5	<0.5
Ethylbenzene	0.5	<0.5

QA/QC: Sample blank is none detected

Note: Analysis was performed using EPA methods 5030 and TPH
LUFT with method 602 used for BTX distinction.
(ppb) = ($\mu\text{g/L}$)

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61006.04/011970

RESNA Industries
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San Jose, CA 95118
Attn: Phillip Mayberry
Project Manager

Date Sampled: 06-25-92
Date Received: 06-26-92
Date Reported: 06-29-92

Sample Number

062203

Sample Description

Project # 61006.04
Texaco - Alameda
W-7-MW5 WATER

ANALYSIS

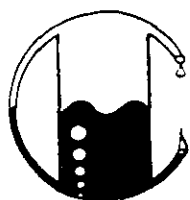
	Detection Limit ----- ppb	Sample Results ----- ppb
Total Petroleum Hydrocarbons as Gasoline	50	18,000
Benzene	0.5	310
Toluene	0.5	1,200
Xylenes	0.5	2,400
Ethylbenzene	0.5	750

QA/QC: Sample blank is none detected

Note: Analysis was performed using EPA methods 5030 and TPH
LUFT with method 602 used for BTX distinction.
(ppb) = (µg/L)

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61006.04/011970

RESNA Industries
3315 Alamen Expressway, #34
San Jose, CA 95118
Attn: Phillip Mayberry
Project Manager

Date Sampled: 06-25-92
Date Received: 06-26-92
Date Reported: 06-29-92

Sample Number

062205

Sample Description

Project # 61006.04
Texaco - Alameda
W-8-MW6 WATER

ANALYSIS

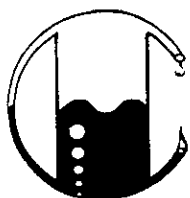
	<u>Detection Limit</u>	<u>Sample Results</u>
	ppb	ppb
Total Petroleum Hydrocarbons as Gasoline	50	990
Benzene	0.5	10
Toluene	0.5	240
Xylenes	0.5	310
Ethylbenzene	0.5	55

QA/QC: Sample blank is none detected

Note: Analysis was performed using EPA methods 5030 and TPH
LUFT with method 602 used for BTX distinction.
(ppb) = ($\mu\text{g/L}$)

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Ronald G. Evans
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MOBILE CHEM LABS INC.

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Phone (415) 372-3700 • Fax (415) 372-6955

61006.04/011970

RESNA Industries
3315 Alamen Expressway, #34
San Jose, CA 95118
Attn: Phillip Mayberry
Project Manager

Date Sampled: 06-25-92
Date Received: 06-26-92
Date Reported: 06-29-92

Sample Number

062207

Sample Description

Project # 61006.04
Texaco - Alameda
W-7-MW7 WATER

ANALYSIS

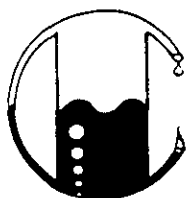
	Detection Limit	Sample Results
	----- ppb	----- ppb
Total Petroleum Hydrocarbons as Gasoline	50	<50
Benzene	0.5	<0.5
Toluene	0.5	<0.5
Xylenes	0.5	<0.5
Ethylbenzene	0.5	<0.5

QA/QC: Sample blank is none detected

Note: Analysis was performed using EPA methods 5030 and TPH
LUFT with method 602 used for BTX distinction.
(ppb) = (µg/L)

MOBILE CHEM LABS


Ronald G. Evans
Lab Director



MOBILE CHEM LABS INC.

5021 Blum Road, Suite 3 • Martinez, CA 94553
Phone (415) 372-3700 • Fax (415) 372-6955

61006.04/011970

RESNA Industries
3315 Alamden Expressway, #34
San Jose, CA 95118
Attn: Phillip Mayberry
Project Manager

Date Sampled: 06-25-92
Date Received: 06-26-92
Date Reported: 06-29-92

Sample Number

062209

Sample Description

Project # 61006.04
Texaco - Alameda
W-7-MW8 WATER

ANALYSIS

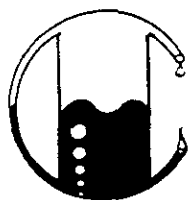
	Detection Limit	Sample Results
	----- ppb	----- ppb
Total Petroleum Hydrocarbons as Gasoline	50	11,000
Benzene	0.5	1,100
Toluene	0.5	29
Xylenes	0.5	190
Ethylbenzene	0.5	150

QA/QC: Sample blank is none detected

Note: Analysis was performed using EPA methods 5030 and TPH
LUFT with method 602 used for BTX distinction.
(ppb) = (µg/L)

MOBILE CHEM LABS


Ronald G. Evans
Lab Director



MOBILE CHEM LABS INC.

5021 Blum Road, Suite 3 • Martinez, CA 94553
Phone (415) 372-3700 • Fax (415) 372-6955

61006.04/011970

RESNA Industries
3315 Alamen Expressway, #34
San Jose, CA 95118
Attn: Phillip Mayberry
Project Manager

Date Sampled: 06-25-92
Date Received: 06-26-92
Date Reported: 06-29-92

Sample Number

062210

Sample Description

Project # 61006.04
Texaco - Alameda
S-pile-(A-D) SOIL

ANALYSIS

	<u>Detection Limit</u>	<u>Sample Results</u>
	ppm	ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	<1.0
Benzene	0.005	<0.005
Toluene	0.005	<0.005
Xylenes	0.005	0.010
Ethylbenzene	0.005	<0.005

QA/QC: Sample blank is none detected

Note: Analysis was performed using EPA methods 5030 and TPH
LUFT with method 8020 used for BTX distinction.
(ppm) = (mg/kg)

MOBILE CHEM LABS

Ronald G. Evans
Lab Director

