

LOP #3566

STID 3566



Texaco Refining
and Marketing Inc

10 Universal City Plaza
Universal City, CA 91608

February 21, 1992

92 FEB 22 11 2: 25

SUBJECT: ENV - Status Report
1127 Lincoln Avenue
Alameda, CA

Mr. Thomas F. Peacock
Alameda County
Department Of Environmental Health
UST Local Oversight Program
Hazardous Materials Program
80 Swan Way, Room 200
Oakland, CA 94621

Mr. Peacock:

This is in response to your letter of December 5, 1991, and our recent telecommunication regarding the above-referenced site. Texaco Environmental Services (TES) is redistributing the project load in the Northern California area and therefore any requests regarding this site should go to Mr. Robert Robles at this address.

Presently, this project is under evaluation regarding both the future remedial options available and additional delineation. TES recommend at this point that we continue monitoring and sampling and develop workplans for the Phase II Remedial Investigation and Remedial Action Plan.

Quarterly ground-water monitoring and sampling was completed Wednesday and Thursday (February 19 and 20, 1992) and a report of the results is expected in 4-6 weeks. I have included the last Quarterly Monitoring and Sampling Report (Fourth Quarter-1991) for your files.

In the very near future, you will be sent another more detailed status report (including a schedule) regarding this site. If you have questions, comments or require additional information please contact Mr. Robles at (818) 505-2476 or me at (818) 505-2719.

Sincerely,

Rose Coughlin
TEXACO ENVIRONMENTAL SERVICES

Attachment (1)
RRobles-RRZielinski

pr: RS (on file)



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

**REPORT
QUARTERLY GROUNDWATER MONITORING
Fourth Quarter 1991
at
Former Texaco Station
1127 Lincoln Avenue
Alameda, California**

61006.01

Additionally, one soil sample was collected from the bottom of the waste-oil storage tank excavation and analyzed at 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, 61006.01, August 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). Quarterly groundwater monitoring was initiated by RESNA at the request of TES in May 1991. Results of these investigations 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 site on November 14, 1991. Field work during this episode consisted of measuring depth-to-water (DTW) levels in all wells (MW-1 through MW-3 and VW-1 through VW-5), subjectively analyzing the groundwater from monitoring wells MW-1 through MW-3 for the presence of a hydrocarbon sheen or floating product, purging, and subsequently sampling the groundwater from monitoring wells MW-1, MW-2, and MW-3 for laboratory analysis. Vapor wells VW-1 through VW-5 contained no 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 monitoring episodes are shown in Table 1, Cumulative Groundwater Monitoring Data. The apparent gradient magnitude and flow direction interpreted from the November 14, 1991 groundwater elevation data is approximately 0.01 towards the north-northwest. The Groundwater Surface Contour Map (Plate 3) is a graphic presentation of the groundwater surface from the November 14, 1991 groundwater monitoring data. The present groundwater gradient is generally consistent with the previous gradients interpreted from prior groundwater monitoring data. In general, the groundwater elevations in the monitoring wells at the site have decreased approximately two feet since first measured in March 1991.

Groundwater samples were collected from monitoring wells MW-1, MW-2, and MW-3, for subjective analysis before the monitoring wells were purged and sampled. No evidence of

measurable floating product or sheen was observed in the groundwater samples collected from these wells, as reported in Table 1.

Monitoring wells MW-1, MW-2, and MW-3 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 included in Appendix B.

Laboratory Methods and Results

Groundwater samples collected from monitoring wells MW-1 through MW-3 were analyzed for BTEX and TPHg, by modified Environmental Protection Agency (EPA) Methods 5030/8015/8020. The Chain of Custody Record and Laboratory Analysis Reports are attached as Appendix C. The results of these and previous analyses are summarized in Table 2, Cumulative Results of Laboratory Analyses of Water Samples.

This quarter's laboratory analyses of water samples from monitoring wells MW-1, MW-2, and MW-3 reported:

- o No TPHg or BTEX was detected in the groundwater samples collected from well MW-1.
- o TPHg was detected in the groundwater samples collected from wells MW-2 and MW-3 at concentrations of 870 parts per billion (ppb) in both wells. Interpreted concentration contours for TPHg are shown on Plate 4.
- o Benzene was detected in the groundwater samples collected from wells MW-2 and MW-3, at levels of 56 and 89 ppb, respectively. These concentrations exceed the California Department of Health Services maximum contaminant level for drinking water of 1.0 ppb. Interpreted concentration contours for benzene are shown on Plate 5.
- o Concentrations of the other purgeable gasoline constituents detected (toluene, ethylbenzene, and total xylenes) are below the California Department of Health Services maximum contaminant levels or recommended action levels for drinking water.

Quarterly Groundwater Monitoring
Former Texaco Station, 1127 Lincoln Avenue, Alameda, California

January 8, 1992
61006.01

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. Tom Callaghan
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 us at (408) 264-7723.

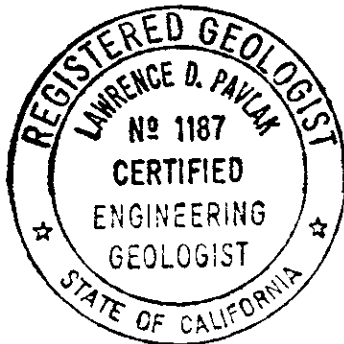
Sincerely,
RESNA

Patrick Lamb

Patrick B. Lamb
Geological Technician

Philip J. Mayberry

Philip J. Mayberry
Project Geologist



Lawrence D. Pavlak

Lawrence D. Pavlak
C.E.G. No. 1187
Senior Program Geologist

Enclosures:

References:

Plate 1: Site Vicinity Map

Plate 2: Generalized Site Plan

Plate 3: Groundwater Surface Contour Map

Plate 4: TPHg Concentrations in Groundwater

Plate 5: Benzene Concentrations in Groundwater

Table 1: Cumulative Groundwater Monitoring Data

Table 2: Cumulative Laboratory Analyses of Groundwater Samples

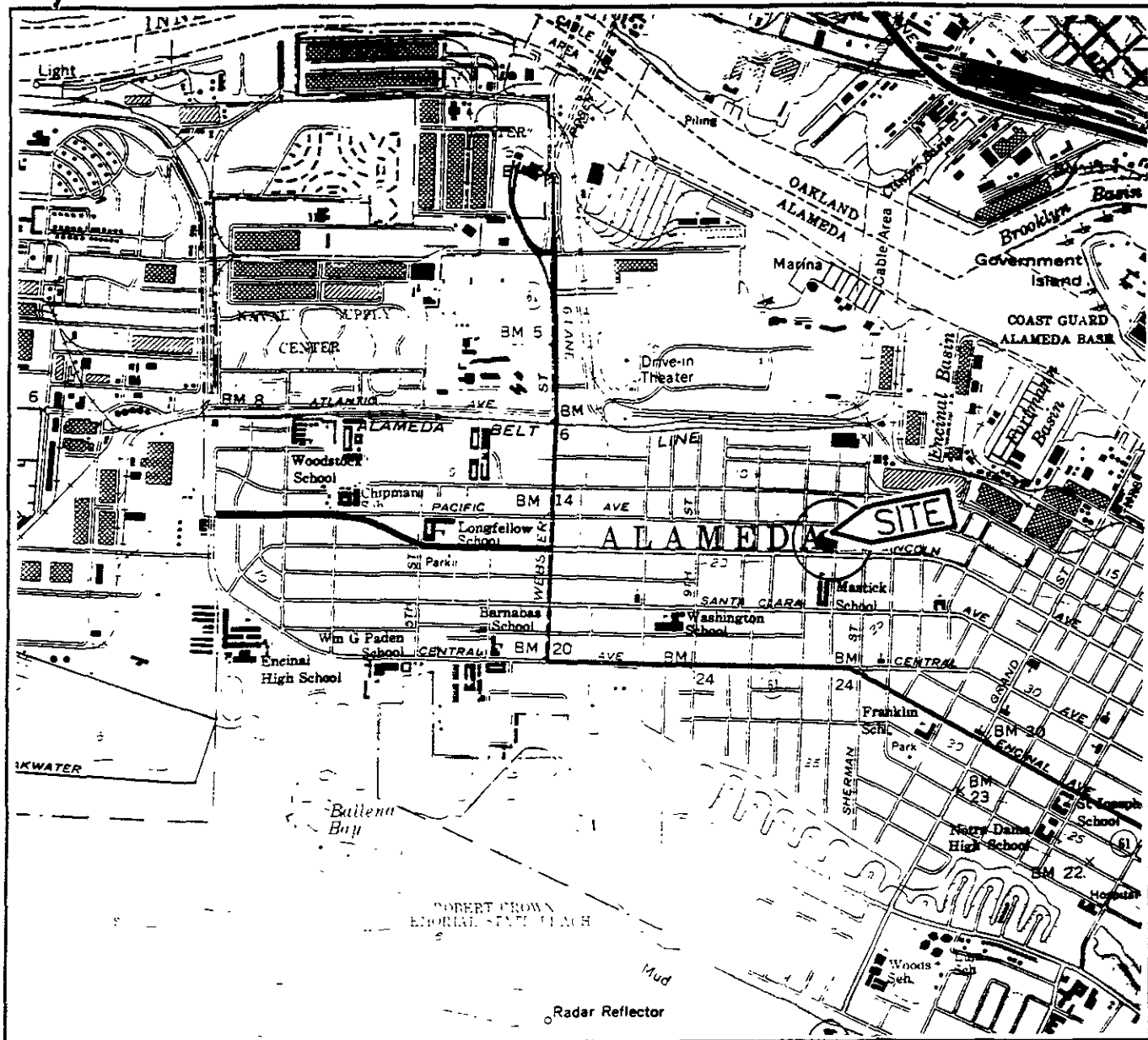
Appendix A: Groundwater Sampling Protocol

Appendix B: Well Purge Data Sheets and Stabilization Graphs

Appendix C: Chain of Custody Record and Laboratory Analysis Reports

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

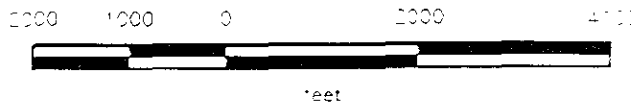


Base: U.S. Geological Survey
 7.5-Minute Quadrangle
 Oakland West, California
 Photorevised 1980

LEGEND

● = Site Location

Approximate Scale



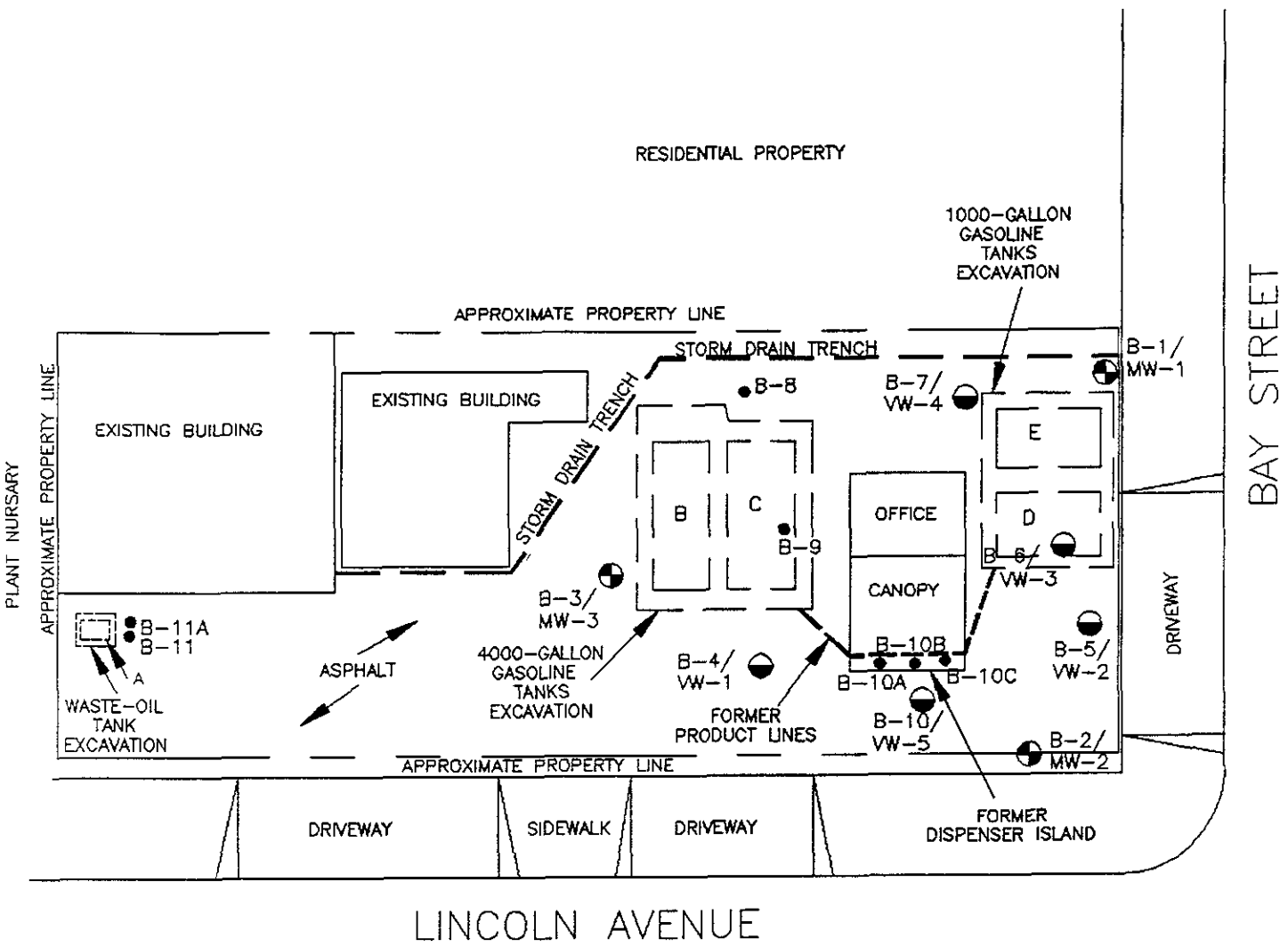
RESNA

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

PLATE

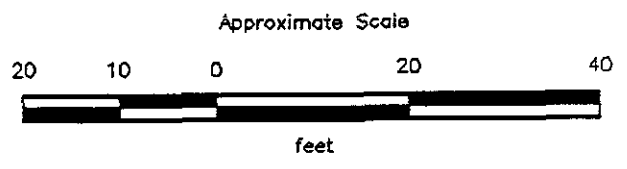
1

PROJECT 61006.01



EXPLANATION

- B-10C ● = Exploratory boring (RESNA, March and April 1991)
- B-10/VW-5 ● = Vapor monitoring/extraction well (RESNA, March 1991)
- B-3/MW-3 ● = Groundwater monitoring well (RESNA, March 1991)
- ⬡ = Former underground storage tank



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

RESNA

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

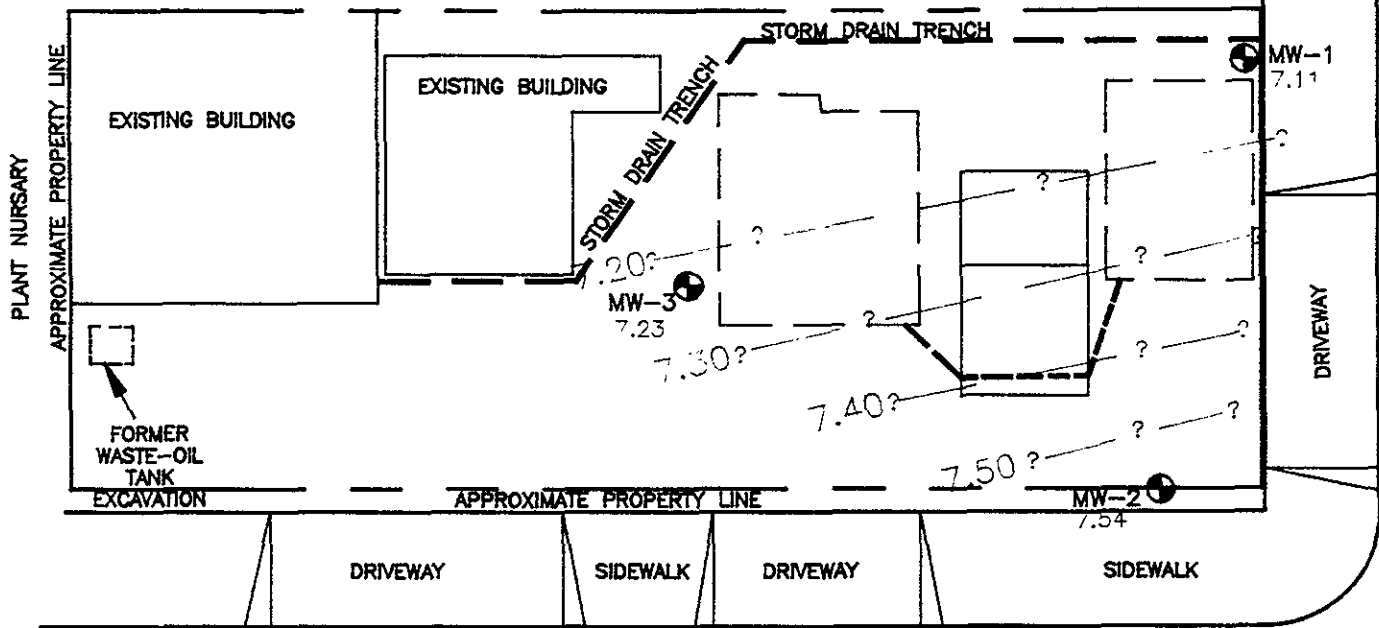
PLATE
2

PROJECT 61006.01

APPROXIMATE DIRECTION OF GROUNDWATER FLOW (November 14, 1991)

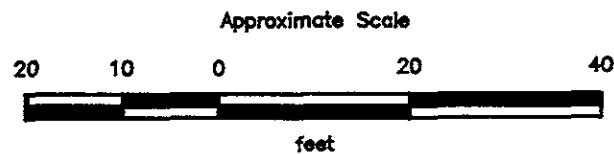
RESIDENTIAL PROPERTY

APPROXIMATE PROPERTY LINE



EXPLANATION

- 7.50 — = Line of equal elevation of groundwater above mean sea level (MSL)
- 7.54 = Elevation of groundwater in feet, November 14, 1991
- MW-3 = Groundwater monitoring well (RESNA, March 1991)



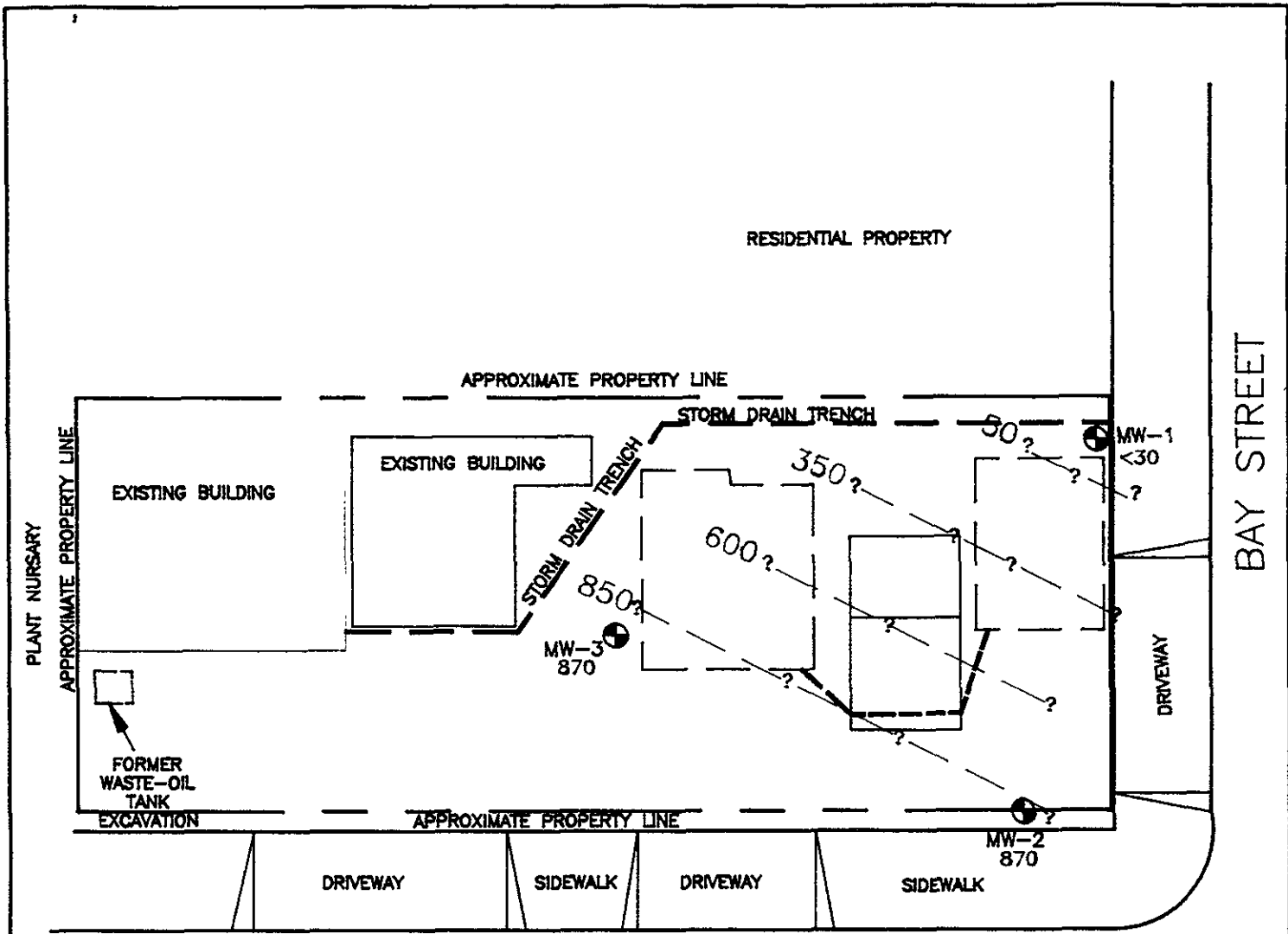
Source: Surveyed by Ron Archer, Civil Engineer, Inc. March 1991.

RESNA

PROJECT 61006.01

**GROUNDWATER SURFACE
CONTOUR MAP**
Former Bay Street Texaco Station
1127 Lincoln Avenue
Alameda, California

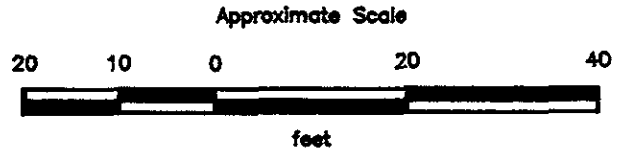
**PLATE
3**



LINCOLN AVENUE

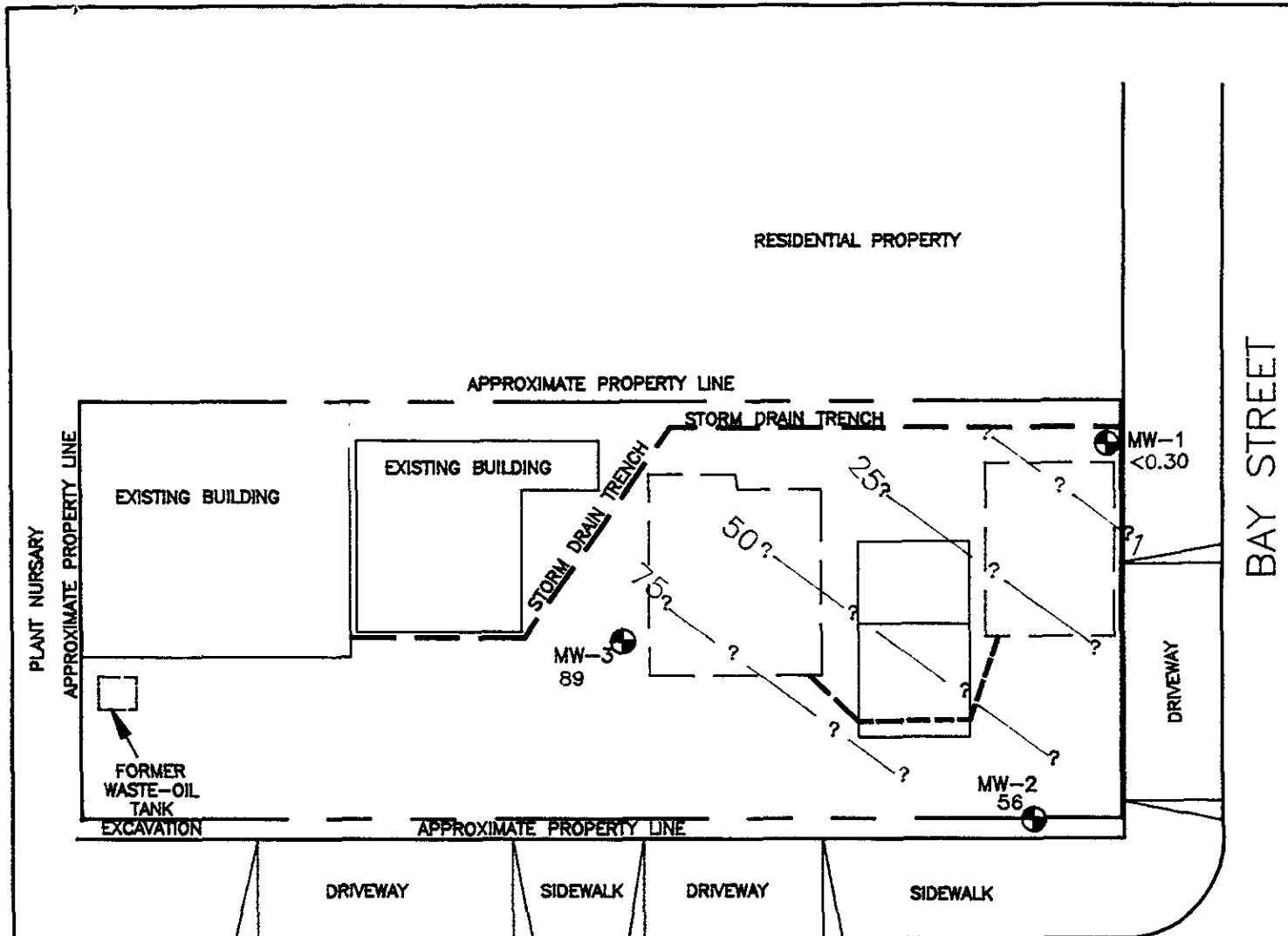
EXPLANATION

- 850 --- = Line of equal concentration of TPHg in groundwater
- 870 = Concentration of TPHg in groundwater in ppb, November 14, 1991
- MW-3 ● = Groundwater monitoring well (RESNA, March 1991)



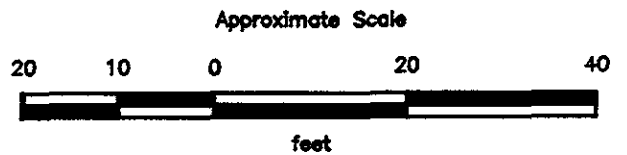
Source: Surveyed by Ron Archer, Civil Engineer, Inc. March 1991.

RESNA	TPHg CONCENTRATIONS IN GROUNDWATER	PLATE 4
	Former Bay Street Texaco Station 1127 Lincoln Avenue Alameda, California	
PROJECT	61006.01	



EXPLANATION

- 75 — Line of equal concentration of Benzene in groundwater
- 89 = Concentration of Benzene in groundwater in ppb, November 14, 1991
- MW-3 = Groundwater monitoring well (RESNA, March 1991)



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

RESNA	BENZENE CONCENTRATIONS IN GROUNDWATER	PLATE 5
	Former Bay Street Texaco Station 1127 Lincoln Avenue Alameda, California	
PROJECT	61006.01	

TABLE 1
CUMULATIVE GROUNDWATER MONITORING DATA
Former Bay Street Texaco Station
Alameda, California

Monitoring Well	Date	Elevation of Well Casing	Depth to Water	Elevation of Ground water	Floating Product
MW-1	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
MW-2	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
MW-3	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
VW-1	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
VW-2	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
VW-3	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
VW-4	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
VW-5	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

Elevations above mean sea level.
Depth to water measured in feet below top of casing

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

Well Number Date	TPHg	B	T	E	X	TPHd*	VOCs & Semi-VOCs
<u>MW-1</u>							
03-22-91	4,500	1,300	670	180	770	1,100	ND
08-13-91	850	260	51	13	48	NA	NA
11-14-91	<30	<0.30	<0.30	<0.30	<0.30	NA	NA
<u>MW-2</u>							
03-22-91	1,100	100	20	63	220	140	ND
08-13-91	1,100	270	4.7	16	49	NA	NA
11-14-91	870	56	8.9	21	46	NA	NA
<u>MW-3</u>							
03-22-91	2,500	390	27	240	780	770	ND
08-13-91	1,300	180	3.8	79	200	NA	NA
11/14/91	870	89	9	30	82	NA	NA
<u>Jan. 1990</u>							
MCLs	--	1.0	--	680	1,750		
DWALs	--	--	100	--	--		

Results in parts per billion (ppb)

- MCLs = Adopted Maximum Contaminant Levels in Drinking Water, DHS (July 1989)
 DWALs = Recommended Drinking Water Action Levels, DHS (January 1990)
 ND = Below laboratory detection limit.
 NA = Not Analyzed
 TPHg = Total petroleum hydrocarbons as gasoline (analyzed by EPA Method 5030).
 TPHd = Total petroleum hydrocarbons as diesel (analyzed by EPA Method 3510).
 * = Anamatrix 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."
 B = benzene, T = toluene, E = ethylbenzene, X = total xylene isomers.
 BTEX = Measured by EPA Method 602/(624).
 VOCs = Volatile organic compounds (analyzed by EPA Method 624/8240).
 Semi-VOCs = Semi-volatile organic compounds (analyzed by EPA Method 8270)

APPENDIX A
GROUNDWATER SAMPLING PROTOCOL

GROUNDWATER SAMPLING PROTOCOL

The static water level in each well 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 to calculate the differences in water-level elevations.

Water samples collected for subjective evaluation were collected by gently lowering approximately half the length of a clean Teflon® 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.

Before groundwater samples were collected from the groundwater monitoring wells, the wells were purged of approximately six well casing volumes until stabilization of the temperature, pH, and conductivity was obtained. Turbidity measurements were also taken on the purged well water. The quantity of water purged from each well 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
(depth to bottom - depth to water).

7.48 = conversion constant from cubic feet to gallons

gallons removed/1 well casing volume = number of well casing volumes removed
from the well.

After purging, each well was allowed to recharge to at least 80 percent of the approximate initial water level. Water samples were collected with a U.S. Environmental Protection Agency (EPA) approved Teflon® bailer subsequent to being cleaned with Alconox® and deionized water. The water samples were poured into 40-milliliter (ml) glass vials, which were filled so as to produce a positive meniscus. Each vial 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 transported in iced storage in a thermally insulated ice chest, accompanied by a Chain of Custody form, to a California-certified laboratory.

APPENDIX B

**WELL PURGE DATA SHEETS
AND
STABILIZATION GRAPHS**

WELL PURGE DATA SHEET

Project Name: Texaco Alameda

Job No. 61006.01

Date: November 14, 1991

Page 1 of 1

Well No. MW-1

Time Started 12:30

Time (hr)	Gallons (cum.)	Temp. (F)	pH	Conduct. (micromoh)	Turbidity (NTU)
12:30	Start purging MW-1				
12:32	0	65.7	6.90	6.76	11.6
12:42	5	67.9	7.16	8.94	5.7
12:46	10	67.6	6.93	8.55	4.1
12:51	15	67.5	7.19	8.15	4.2
12:55	20	68.3	7.21	7.54	1.9
01:01	25	68.5	7.19	7.51	1.4
01:06	30	67.9	6.93	7.45	0.9
01:11	35	68.0	6.74	7.42	0.7
01:16	40	68.4	6.73	7.39	1.2
	Stop purging MW-1				

Notes:

Well diameter (inches) : 4"
 Depth to Bottom (feet) : 19.72
 Depth to Water - initial (feet) : 9.38
 Depth to Water - final (feet) : 9.54
 % recovery : 98.3%
 Time Sampled : 01:25
 Gallons per Well Casing Volume : 6.56
 Gallons Purged : 40
 Well Casing Volumes Purged : 6.10
 Approximate Pumping Rate (gpm) : 0.87

WELL PURGE DATA SHEET

Project Name: Texaco Alameda

Job No. 61006.01

Date: November 14, 1991

Page 1 of 1

Well No. MW-2

Time Started 11:30

Time (hr)	Gallons (cum.)	Temp. (F)	pH	Conduct. (micromoh)	Turbidity (NTU)
11:30	Start purging MW-2				
11:37	0	65.9	7.09	9.30	14.2
11:41	5	68.3	6.74	9.51	4.3
11:45	10	67.7	6.85	9.02	2.9
11:48	15	67.1	6.78	8.78	2.3
11:52	20	66.0	7.02	7.66	10.2
11:57	25	65.2	6.89	7.74	6.1
12:03	30	65.5	7.12	7.23	5.7
12:17	35	66.1	7.14	7.01	5.1
12:27	40	65.8	7.08	6.97	3.4
	Stop purging MW-2				

Notes:

Well diameter (inches) : 4"
 Depth to Bottom (feet) : 19.45
 Depth to Water - initial (feet) : 9.60
 Depth to Water - final (feet) : 9.81
 % recovery : 97.8%
 Time Sampled : 12:30
 Gallons per Well Casing Volume : 6.43
 Gallons Purged : 40
 Well Casing Volumes Purged : 6.22
 Approximate Pumping Rate (gpm) : 0.70

WELL PURGE DATA SHEET

Project Name: Texaco Alameda

Job No. 61006.01

Date: November 14, 1991

Page 1 of 1

Well No. MW-3

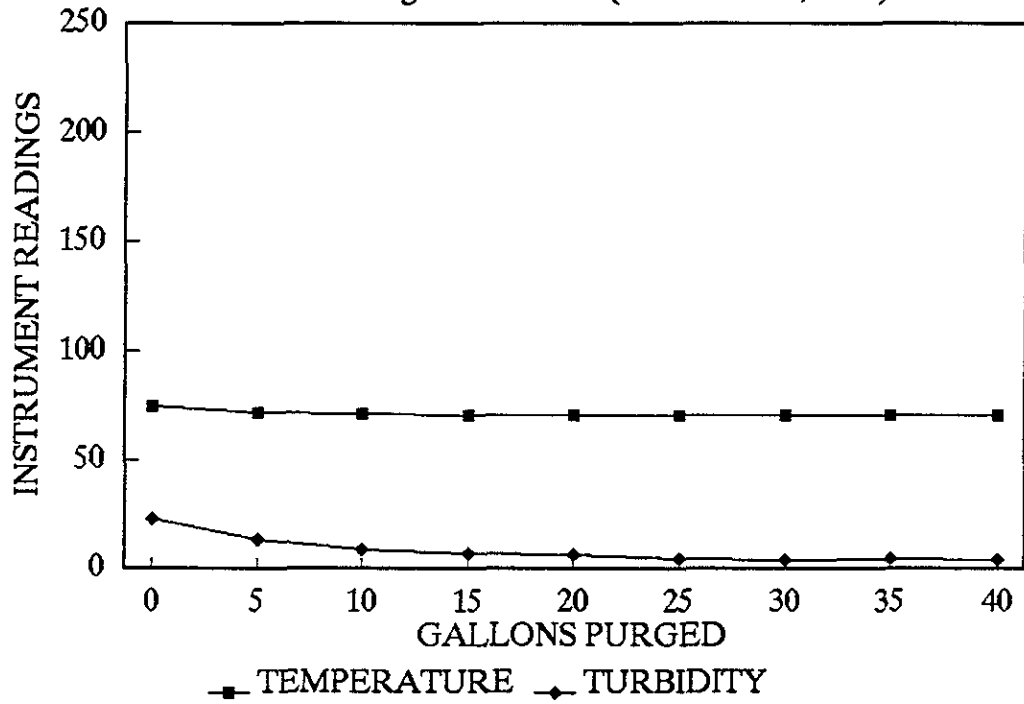
Time Started 10:35

Time (hr)	Gallons (cum.)	Temp. (F)	pH	Conduct. (micromoh)	Turbidity (NTU)
10:35	Start purging MW-3				
10:48	0	67.3	7.96	9.56	36.7
10:53	5	67.4	7.58	8.83	10.5
10:56	10	66.4	7.42	8.16	9.3
10:59	15	65.6	7.28	7.62	4.6
11:04	20	65.2	7.09	7.29	1.7
11:09	25	67.4	6.89	7.61	1.9
11:14	30	66.6	6.73	7.42	2.7
11:18	35	67.1	6.78	7.51	2.3
11:23	40	66.9	6.75	7.59	2.1
	Stop purging MW-3				

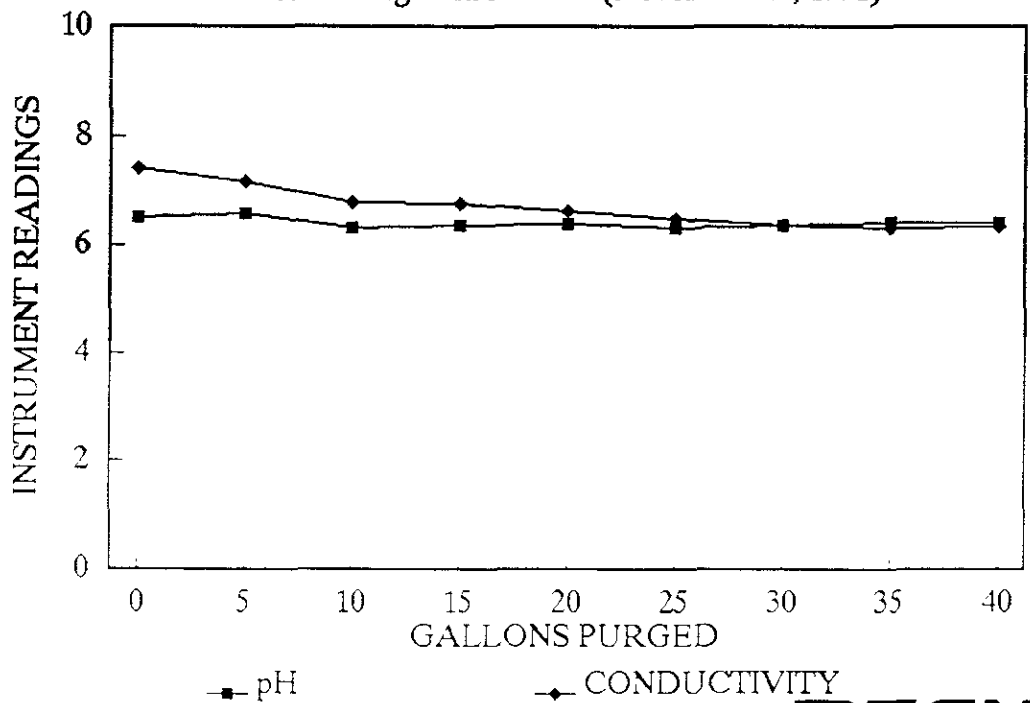
Notes:

Well diameter (inches) : 4"
 Depth to Bottom (feet) : 19.40
 Depth to Water - initial (feet) : 9.68
 Depth to Water - final (feet) : 9.99
 % recovery : 96.9%
 Time Sampled : 11:25
 Gallons per Well Casing Volume : 6.54
 Gallons Purged : 40
 Well Casing Volumes Purged : 6.11
 Approximate Pumping Rate (gpm) : 0.83

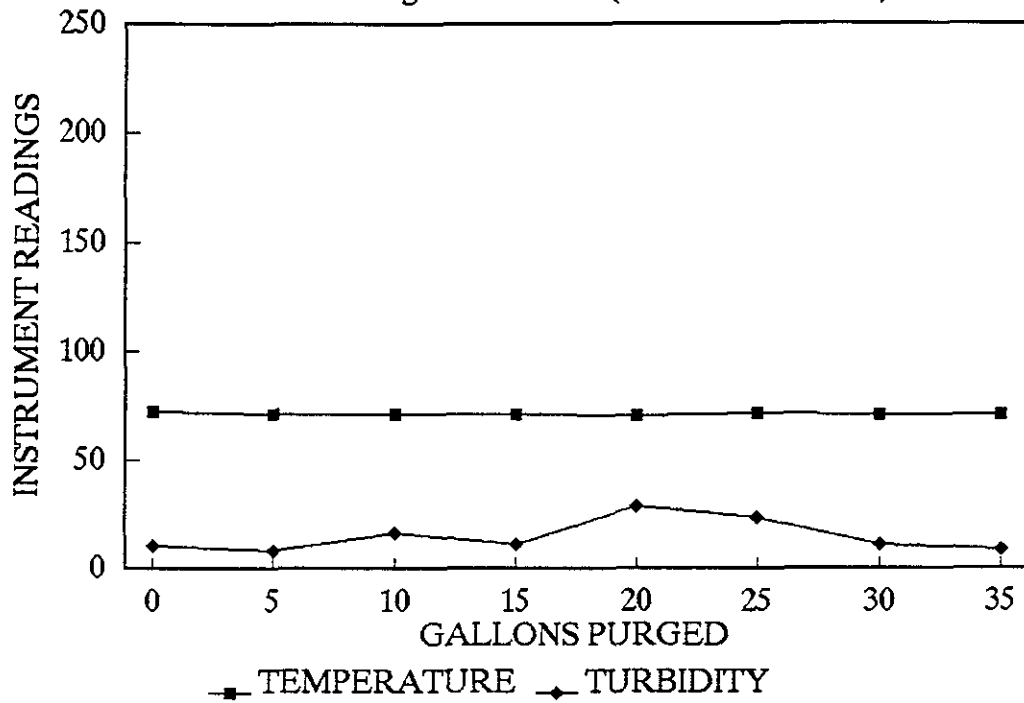
TEXACO - ALAMEDA STABILIZATION GRAPH
Monitoring Well MW-1 (November 14, 1991)



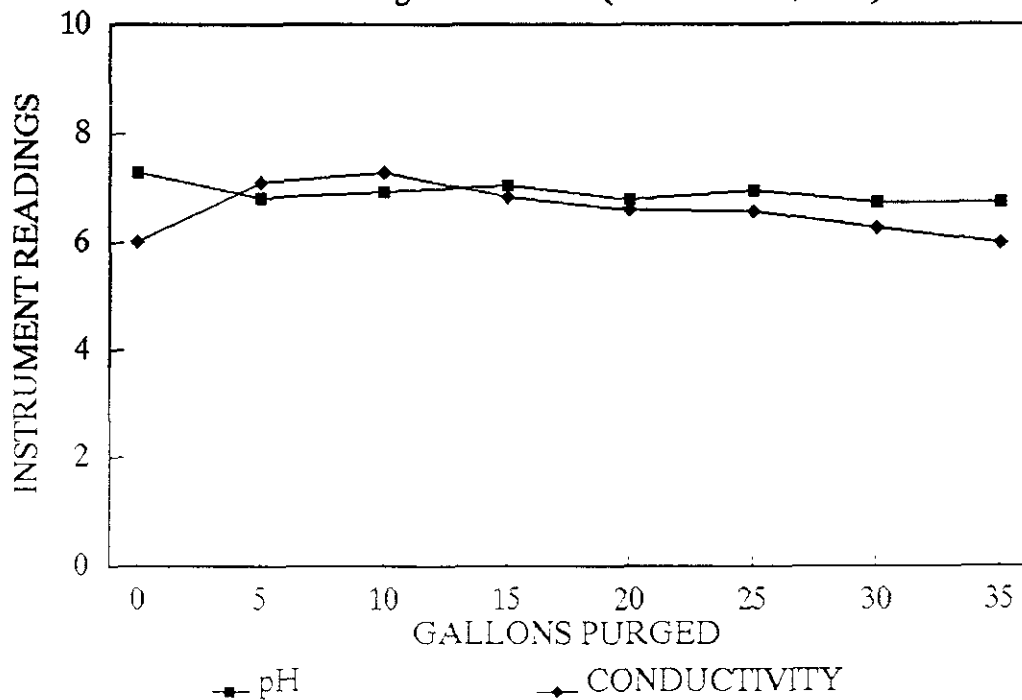
TEXACO - ALAMEDA STABILIZATION GRAPH
Monitoring Well MW-1 (November 14, 1991)



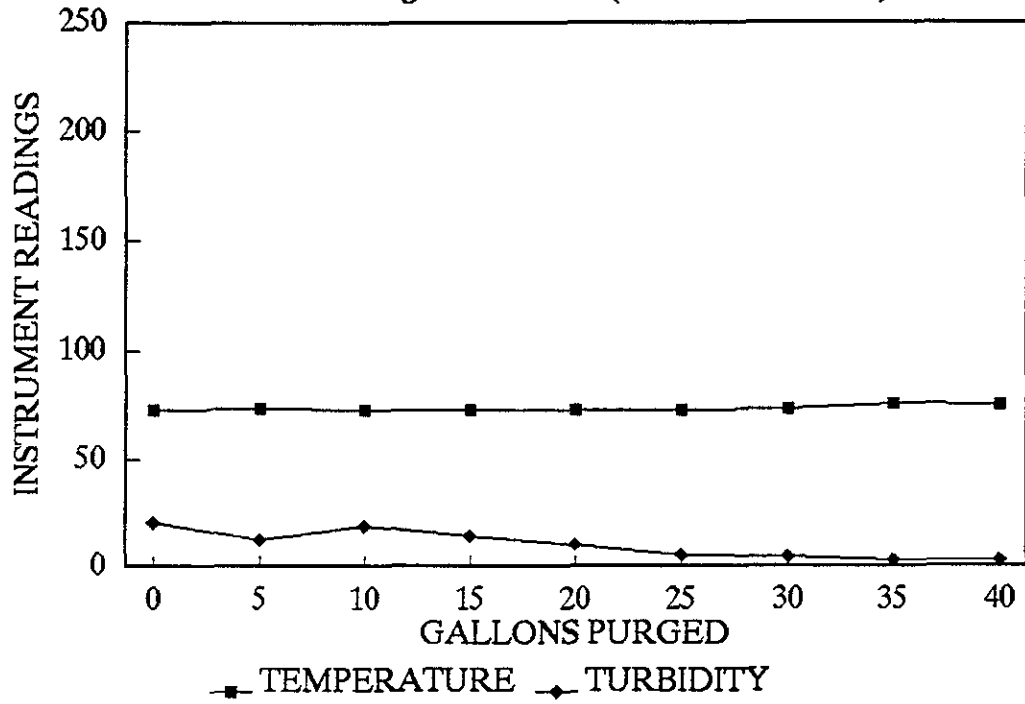
TEXACO – ALAMEDA STABILIZATION GRAPH
Monitoring Well MW-2 (November 14, 1991)



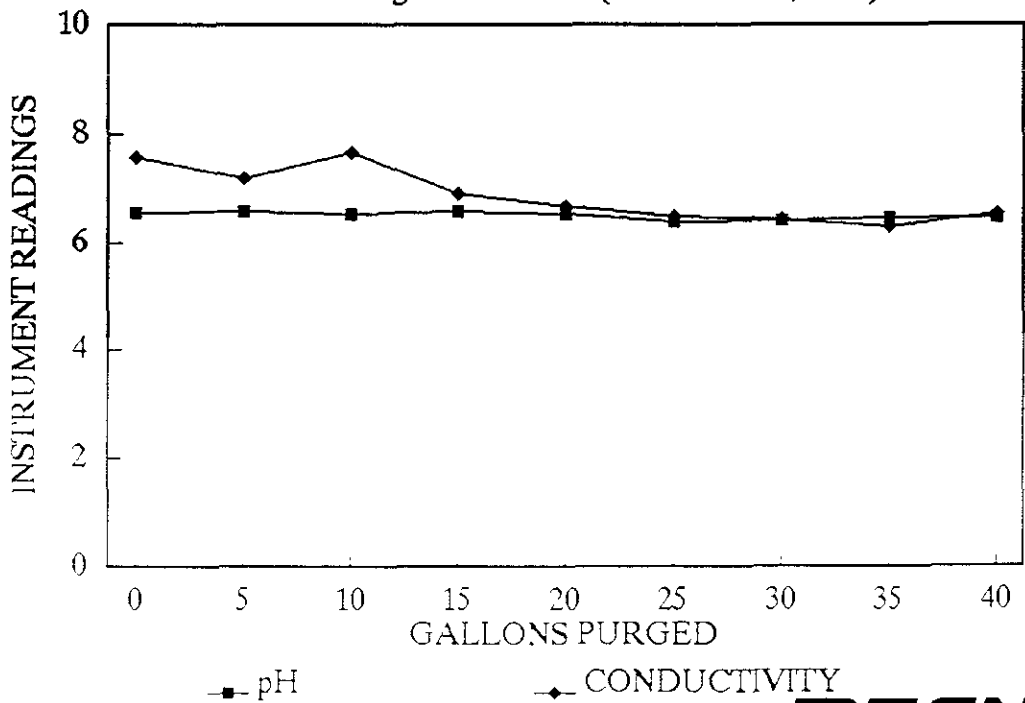
TEXACO – ALAMEDA STABILIZATION GRAPH
Monitoring Well MW-2 (November 14, 1991)



TEXACO – ALAMEDA STABILIZATION GRAPH
Monitoring Well MW-3 (November 14, 1991)



TEXACO – ALAMEDA STABILIZATION GRAPH
Monitoring Well MW-3 (November 14, 1991)



APPENDIX C

**CHAIN OF CUSTODY RECORD
AND
LABORATORY ANALYSIS REPORTS**

RECEIVED

DEC - 4 1991

RESNA
SAN JOSE



SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

RESNA	Client Project ID: 61006.01, Texaco, Alameda	Sampled: Nov 14, 1991
3315 Almaden Expwy., Suite 34	Matrix Descript: Water	Received: Nov 14, 1991
San Jose, CA 95112	Analysis Method: EPA 5030/8015/8020	Analyzed: Nov 20-22, 1991
Attention: Patrick Lamb	First Sample #: 111-3390	Reported: Nov 27, 1991

TOTAL PETROLEUM FUEL HYDROCARBONS with BTEX DISTINCTION (EPA 8015/8020)

Sample Number	Sample Description	Low/Medium B.P. Hydrocarbons			Ethyl Benzene Xylenes	
		$\mu\text{g/L}$ (ppb)	$\mu\text{g/L}$ (ppb)	$\mu\text{g/L}$ (ppb)	$\mu\text{g/L}$ (ppb)	$\mu\text{g/L}$ (ppb)
111-3390	W-9-MW1	N.D.	N.D.	N.D.	N.D.	N.D.
111-3391	W-9-MW1R	N.D.	N.D.	0.32	N.D.	0.49

Detection Limits:	30	0.30	0.30	0.30	0.30
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Low to Medium Boiling Point Hydrocarbons are quantitated against a gasoline fuel standard
Analytes reported as N.D. were not present above the stated limit of detection

SEQUOIA ANALYTICAL

Maria Lee
Maria Lee
Project Manager



SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

RESNA
3315 Almaden Expwy., Suite 34
San Jose, CA 95112
Attention: Patrick Lamb

Client Project ID: 61006 01, Texaco, Alameda
Matrix Descript: Water
Analysis Method: EPA 5030/8015/8020
First Sample #: 111-3392

Sampled: Nov 14, 1991
Received: Nov 14, 1991
Analyzed: Nov 25, 1991
Reported: Nov 27, 1991

TOTAL PETROLEUM FUEL HYDROCARBONS with BTEX DISTINCTION (EPA 8015/8020)

Sample Number	Sample Description	Low/Medium B.P.	Benzene	Toluene	Ethyl Benzene	Xylenes
		Hydrocarbons $\mu\text{g/L}$ (ppb)	$\mu\text{g/L}$ (ppb)	$\mu\text{g/L}$ (ppb)	$\mu\text{g/L}$ (ppb)	$\mu\text{g/L}$ (ppb)
111-3392	W-9-MW2	870	56	8.9	21	46

Detection Limits:

60 0.60 0.60 0.60 0.60

Low to Medium Boiling Point Hydrocarbons are quantitated against a gasoline fuel standard.
Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors
required additional sample dilution, detection limits for this sample are elevated.

SEQUOIA ANALYTICAL

Maria Lee
Maria Lee
Project Manager



SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

RESNA
3315 Almaden Expwy., Suite 34
San Jose, CA 95112
Attention: Patrick Lamb

Client Project ID: 61006.01, Texaco, Alameda
Matrix Descript: Water
Analysis Method: EPA 5030/8015/8020
First Sample #: 111-3393

Sampled: Nov 14, 1991
Received: Nov 14, 1991
Analyzed: Nov 25, 1991
Reported: Nov 27, 1991

TOTAL PETROLEUM FUEL HYDROCARBONS with BTEX DISTINCTION (EPA 8015/8020)

Sample Number	Sample Description	Low/Medium B.P. Hydrocarbons			Ethyl Benzene Xylenes	
		$\mu\text{g/L}$ (ppb)	$\mu\text{g/L}$ (ppb)	$\mu\text{g/L}$ (ppb)	$\mu\text{g/L}$ (ppb)	$\mu\text{g/L}$ (ppb)
111-3393	W-9 MW3	870	89	9.0	50	82

Detection Limits:

300

3.0

3.0

3.0

3.0

Low to Medium Boiling Point Hydrocarbons are quantitated against a gasoline fuel standard. Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample are reported as such.

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Project Manager



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(415) 364-9600 • FAX (415) 364-9233

RESNA
3315 Almaden Expwy., Suite 34
San Jose, CA 95112
Attention: Patrick Lamb

Client Project ID: 61006.01, Texaco, Alameda

QC Sample Group: 111-3391

Reported: Nov 27, 1991

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl-Benzene	Xylenes
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Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	C. Donohue	C. Donohue	C. Donohue	C. Donohue
Reporting Units:	µg/L	µg/L	µg/L	µg/L
Date Analyzed:	Nov 20, 1991	Nov 20, 1991	Nov 20, 1991	Nov 20, 1991
QC Sample #:	GBLK112091	GBLK112091	GBLK112091	GBLK112091

Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Spike Conc. Added:	10	10	10	30
Conc. Matrix Spike:	9.9	10	10	30
Matrix Spike % Recovery:	99	100	100	100
Conc. Matrix Spike Dup.:	9.2	9.2	9.2	28
Matrix Spike Duplicate % Recovery:	92	92	92	93
Relative % Difference:	7.3	8.3	8.3	6.9

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Project Manager

% Recovery	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Sp. Re. Conc. Added}} \times 100$
Relative % Difference	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{\frac{\text{Conc. of M.S.} + \text{Conc. of M.S.D.}}{2}} \times 100$



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RESNA
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San Jose, CA 95112
Attention: Patrick Lamb

Client Project ID: 61006 01, Texaco, Alameda

QC Sample Group: 1113392-93

Reported: Nov 27, 1991

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl-Benzene	Xylenes
---------	---------	---------	---------------	---------

Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	L. Laikhtman	L. Laikhtman	L. Laikhtman	L. Laikhtman
Reporting Units:	µg/L	µg/L	µg/L	µg/L
Date Analyzed:	Nov 25, 1991	Nov 25, 1991	Nov 25, 1991	Nov 25, 1991
QC Sample #:	GBLK112591	GBLK112591	GBLK112591	GBLK112591
	MS/MSD	MS/MSD	MS/MSD	MS/MSD

Sample Conc.:	N.D.	N.D.	N.D.	N.D.
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Spike Conc. Added:	10	10	10	30
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Conc. Matrix Spike:	10	10	10	31
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Matrix Spike % Recovery:	100	100	100	103
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Conc. Matrix Spike Dup.:	11	11	11	33
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Matrix Spike Duplicate % Recovery:	110	110	110	110
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Relative % Difference:	9.5	9.5	9.5	6.3
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SEQUOIA ANALYTICAL

Maria Lee
 Maria Lee
 Project Manager

% Recovery	$\frac{\text{Conc. of Spike} - \text{Conc. of Matrix}}{\text{Spike Conc. Added}} \times 100$
Relative % Difference	$\frac{ \text{Conc. of MS} - \text{Conc. of MSD} }{\frac{\text{Conc. of MS} + \text{Conc. of MSD}}{2}} \times 100$



SEQUOIA ANALYTICAL

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RESNA
3315 Almaden Expwy., Suite 34
San Jose, CA 95112
Attention: Patrick Lamb

Client Project ID: 61006.01, Texaco, Alameda

QC Sample Group: 111-3390

Reported: Nov 27, 1991

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl-Benzene	Xylenes
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Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	J Jencks	J. Jencks	J Jencks	J Jencks
Reporting Units:	µg/L	µg/L	µg/L	µg/L
Date Analyzed:	Nov 22 1991	Nov 22, 1991	Nov 22 1991	Nov 22, 1991
QC Sample #:	GBLK112291	GBLK112291	GBLK112291	GBLK112291

Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Spike Conc. Added:	10	10	10	30
Conc. Matrix Spike:	9.1	9.3	9.2	27
Matrix Spike % Recovery:	91	93	92	90
Conc. Matrix Spike Dup.:	9.2	9.5	9.4	28
Matrix Spike Duplicate % Recovery:	92	95	94	93
Relative % Difference:	1.1	2.1	2.2	3.6

SEQUOIA ANALYTICAL

Maria Lee
Project Manager

% Recovery	$\frac{\text{Conc. of Spikes} \times \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$
Relative % Difference	$\frac{ \text{Conc. of Spike 1} - \text{Conc. of Spike 2} }{\frac{\text{Conc. of Spike 1} + \text{Conc. of Spike 2}}{2}} \times 100$



CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

PROJECT NO 61006-01	PROJECT NAME/SITE TEXAS ALAMEDA (127 Lincoln Ave. Alameda, CA.)						ANALYSIS REQUESTED										P.O. #:		
SAMPLERS (SIGN) <i>J. Hill</i>	(PRINT) Patrick Lamb						NO. CONTAINERS	SAMPLE TYPE	/										REMARKS
SAMPLE IDENTIFICATION		DATE	TIME	COMP	GRAB	PRES. USED			ICED	BTEX (602/8020)	TPHg (8015)	TPHg (8015)	TOG 418.1/5520	601/8010	824/8240	825/8270	Hold		
W-9-MW1R •		11/14/91	1335			Hei	✓	1									1113391		
W-9-mw1 •			1340					3	✓	✓							1113390		
W-9-MW2R •			1345					1	✓	✓							1113392		
W-9-mw2 •			1350					3	✓	✓							1113392		
W-9-MW3R •			1355					1							✓				
W-9-mw3 •			1400					3	✓	✓							1113393		
RELINQUISHED BY <i>J. Hill</i>	DATE 11-14-91	TIME 1600	RECEIVED BY: <i>Ken Folter</i>				LABORATORY: SEQUOIA					PLEASE SEND RESULTS TO: RESNA 3315 ALAMEDA EXPRESSWAY SUITE 74 SAN JOSE, CA. 95118							
RELINQUISHED BY <i>Ken Folter</i>	DATE 11/14/91	TIME 16:55	RECEIVED BY:				REQUESTED TURNAROUND TIME: 2 weeks												
RELINQUISHED BY	DATE	TIME	RECEIVED BY:				RECEIPT CONDITION: good / cool										PROJECT MANAGER: Patrick Lamb / Dale Higgins		
RELINQUISHED BY	DATE 11/14	TIME 1655	RECEIVED BY: <i>Ken Folter</i>																