Vqe
5/20/93

Texaco Refining and Marketing Inc
108 Cutting Boulevard
Richmond CA 94804

May 18, 1993

ENV-STUDIES, SURVEYS & REPORTS
930 Springtown Blvd., Livermore, CA

Ms. Eva Chu
Alameda County Department of Environmental Health
80 Swan Way, Room 200
Oakland, CA 94621

Dear Ms. Chu:

As per our telephone conversation of April 27, 1993, enclosed is a letter outlining the planned remediation and project schedule for the former Texaco Service Station located at the above referenced site.

If you have any questions, I may be reached at (510) 236-3611.

Sincerely,
Texaco Environmental Services

Karel Detterman, R.G.
Project Coordinator

KLD:kld

A:\930S\ACDEH1

Attachment

cc: HRPearson-RRZielinski

~~Santa Clara County Program Coordinator~~
Regional Water Quality Control Board
2101 Webster Street, Suite 500
Oakland, CA 94612

Mr. Bob Vasquez
The Southland Corporation
5820 Stoneridge Mall Road, Suite 310
Pleasanton, CA 94588-3201

pr: Q3

Texaco Refining
and Marketing Inc

108 Cutting Boulevard
Richmond CA 94804

April 21, 1993

ENV-STUDIES, SURVEYS & REPORTS
930 Springtown Blvd., Livermore, CA

Ms. Eva Chu
Alameda County Department of Environmental Health
80 Swan Way, Room 200
Oakland, CA 94621

Dear Ms. Chu:

Enclosed are the following reports for the former Texaco Service Station located at the above referenced site:

1) Quarterly Groundwater Monitoring Letter Report, dated February 4, 1993, covering the third quarter 1992

2) Quarterly Groundwater Monitoring Letter Report, dated March 31, 1993, covering the fourth quarter 1992

3) Extraction Well Installation and Feasibility Testing Report, dated January 5, 1993

If you have any questions, I may be reached at (510) 236-3611.

Sincerely,
Texaco Environmental Services

Karel Detterman, R.G.
Project Coordinator

KLD:kld

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A:\COVER\COVER1.WKB
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Attachments

cc: HRPearson-RRZielinski

Regional Water Quality Control Board
2101 Webster Street, Suite 500
Oakland, CA 94612

Mr. Bob Vasquez
The Southland Corporation
5820 Stoneridge Mall Road, Suite 310
Pleasanton, CA 94588-3201

pr: 6RS

RESNA
Working To Restore Nature

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

LETTER REPORT
QUARTERLY GROUNDWATER MONITORING
Fourth Quarter 1992
at
Former Texaco Station
930 Springtown Boulevard
Livermore, California

62090.01

RESNA
Working To Restore Nature

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

March 31, 1993
0301KDET
62090.01

Ms. Karel Detterman
Texaco Environmental Services
108 Cutting Boulevard
Richmond, California 94804

Subject: Results of Groundwater Monitoring and Sampling, Fourth Quarter 1992, Former Texaco Station located at 930 Springtown Boulevard, Livermore, California.

Ms. Detterman:

At the request of Texaco Environmental Services (TES), RESNA Industries Inc. (RESNA) has prepared this letter which summarizes the results of quarterly groundwater monitoring at the former Texaco Service Station located at 930 Springtown Boulevard in Livermore, California (Plate 1, Site Vicinity Map) for the fourth quarter 1992 (October through December 1992). On October 9, 1992, quarterly groundwater monitoring and sampling was conducted to evaluate groundwater elevations, gradient and flow direction, the presence and thickness of any petroleum hydrocarbon sheen or floating product, and the distribution of dissolved hydrocarbons in 7 monitoring wells (MW-A, MW-B, MW-1 and MW-3 through MW-6) present at this site. Wells MW-2, MW-7, and MW-8 were not monitored or sampled for laboratory analysis as requested by TES. RESNA's groundwater sampling protocol and well purge data sheets are included in Appendix A. Results of laboratory analyses with chain of custody documentation are included in Appendix B.

WORK PERFORMED

GROUNDWATER MONITORING

Groundwater elevations at the site have decreased an average of about 0.3 from the elevations reported the previous quarter, except for the elevations in MW-A which has increased by 0.43 feet. The groundwater gradient map shows the groundwater beneath the site to be flowing towards the **north-northeast** with a hydraulic gradient of approximately

0.002 (Plate 2, Groundwater Gradient Map). Historical and recent monitoring data are summarized in Table 1, Cumulative Groundwater Monitoring Data.

GROUNDWATER SAMPLING

Groundwater samples were submitted to Mobile Chem Laboratories (California Hazardous Materials Testing Laboratory Certification No. 1223) in Martinez, California under Chain of Custody protocol. The samples were analyzed for the gasoline constituents benzene, toluene, ethylbenzene, and total xylenes (BTEX), and total petroleum hydrocarbons as gasoline (TPHg) using modified Environmental Protection Agency (EPA) Methods 5030/602. The Chain of Custody Record and Laboratory Analysis reports are included in Appendix B.

GROUNDWATER ANALYTICAL RESULTS

Concentrations of TPHg in groundwater samples ranged from less than 50 parts per billion (ppb) to 56,000 ppb (MW-A). Dissolved benzene concentrations ranged from less than 0.5 ppb to 2,900 ppb (MW-A). TPHg and benzene concentrations are shown on Plate 3, TPHg/Benzene Concentrations in Groundwater. Hydrocarbon sheen was observed in the purgewater from wells MW-A and MW-B. Historical and recent analytical data are summarized in Table 2, Cumulative Results of Laboratory Analyses of Groundwater Samples. Copies of the laboratory analyses reports and the chain of custody manifest for the groundwater samples are included in Appendix B.

PURGE WATER DISPOSAL

On November 17, 1992, purge water generated during purging and sampling of the monitoring wells was transported to Gibson Environmental in Redwood City, California for disposal.

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

Sincerely,
RESNA Industries Inc.

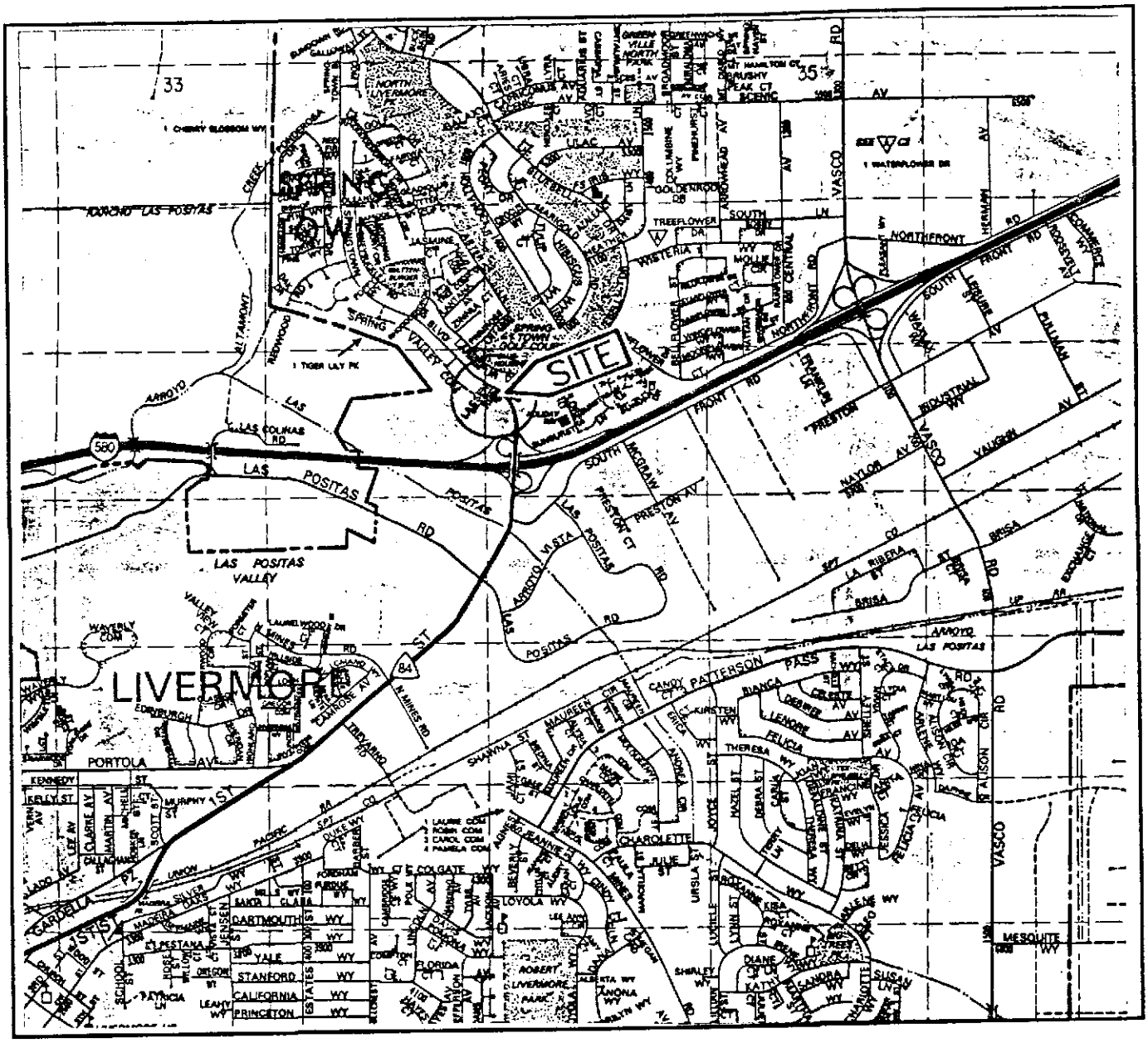
Mary E. Rysdale
Geologic Technician

REGISTERED GEOLOGIST
JAMES LEWIS NELSON
No. 1463
CERTIFIED ENGINEERING GEOLOGIST
STATE OF CALIFORNIA

James L. Nelson
Certified Engineering Geologist No. 1463

Enclosures:

Plate 1:	Site Vicinity Map
Plate 2:	Groundwater Gradient Map
Plate 3:	TPHg/Benzene Concentrations in Groundwater
Table 1:	Cumulative Groundwater Monitoring Data
Table 2:	Cumulative Results of Laboratory Analyses of Groundwater Samples
Appendix A,	Groundwater Sampling Protocol and Well Purge Data Sheets
Appendix B,	Laboratory Analysis Reports and Chain of Custody Documentation



Base: The Thomas Guide
Alameda County
Livermore, California.
1991

N

LEGEND

(•) = Site Location

Approximate Scale

2200 1100 0 2200 4400

feet

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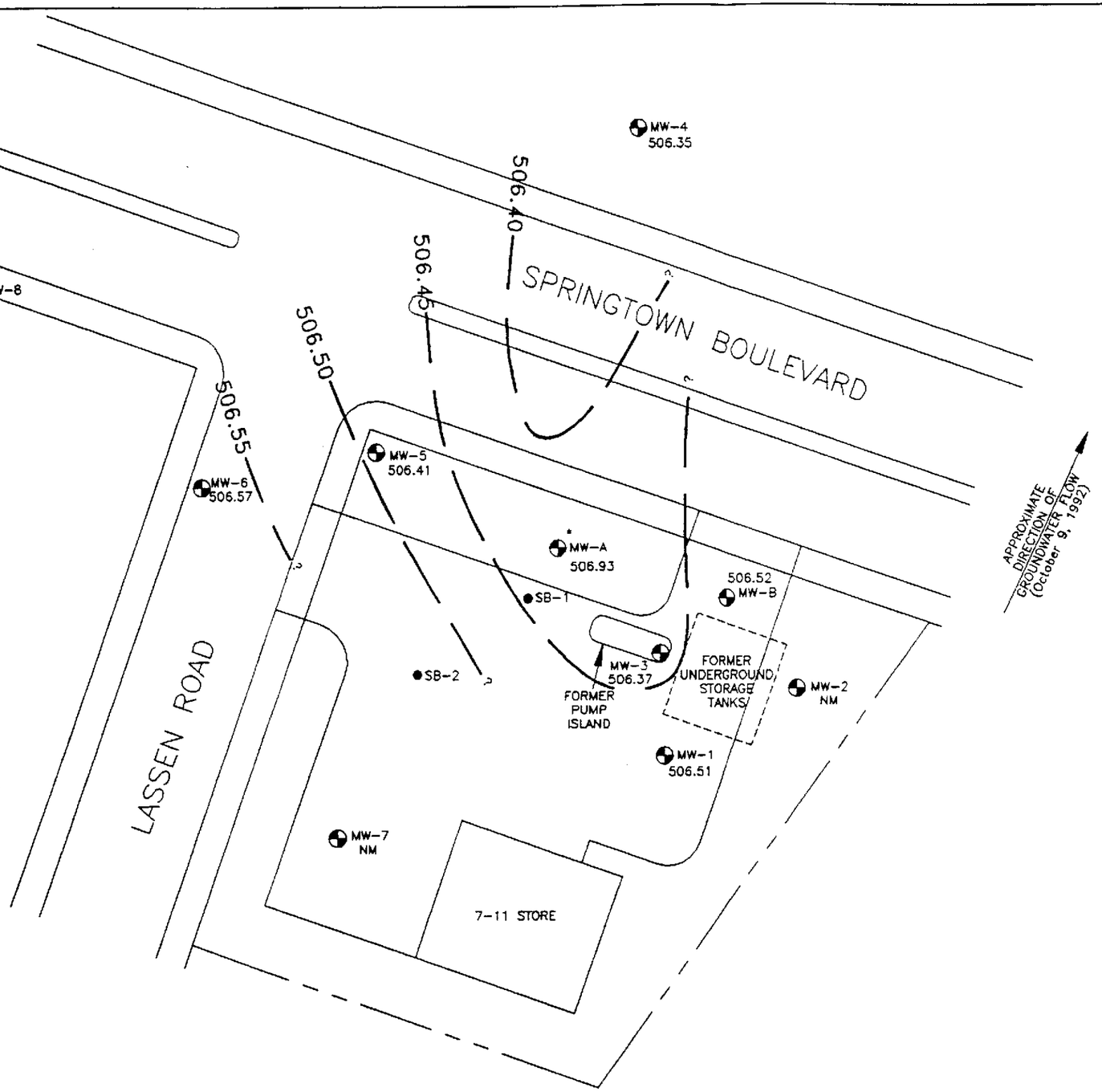
PROJECT 62090.01

SITE VICINITY MAP
Former Texaco Station
930 Springtown Boulevard
Livermore, California

PLATE
1



EXPLANATION

MW-8 ⊕ = Groundwater monitoring well (GTI,

SB-2 ● = Soil boring (GTI,

506.55 — = Line of equal elevation of groundwater in feet above mean sea level (MSL)

513.15 = Elevation of groundwater in feet above MSL October 9, 1992

• = Not used to interpret groundwater gradient

NM = Not measured

N

Approximate Scale

40 20 0 40 80

feet

Source: Modified from site plan provided by Groundwater Technology, Inc., dated April 22, 1992.

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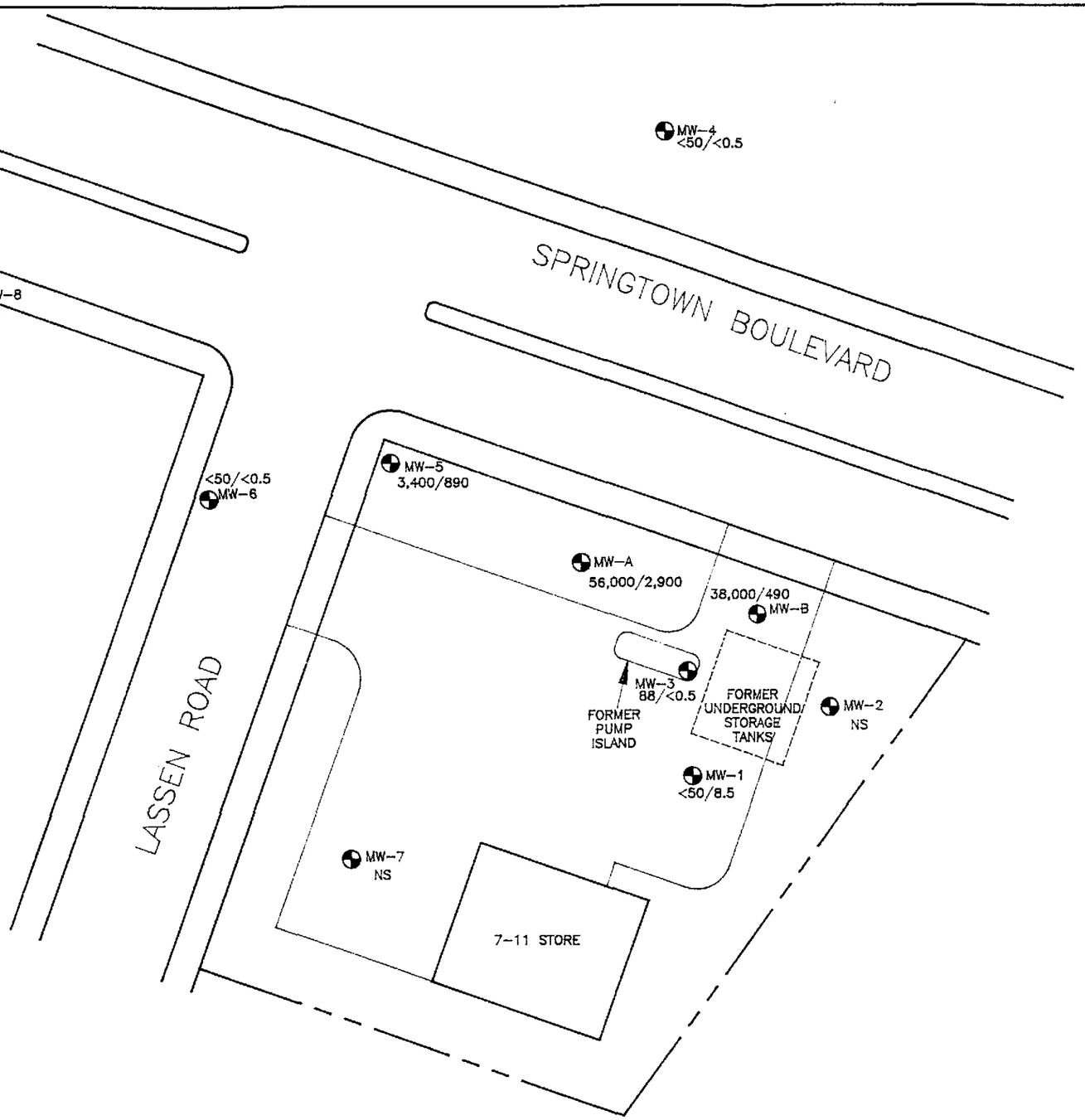
PROJECT 62090.01

GROUNDWATER GRADIENT MAP
Former Texaco Station
930 Springtown Boulevard
Livermore, California

PLATE
2



EXPLANATION

MW-8 ⊕ = Groundwater monitoring well (GTI,

56,000/2,900 = Concentration of TPHg/Benzene in groundwater, in parts per billion, October 9, 1992

NS = Not sampled

N

Approximate Scale

40 20 0 40 80

feet

Source: Modified from site plan provided by Groundwater Technology, Inc., dated April 22, 1992.

RESNA
Working to Restore Nature

PROJECT 62090.01

TPHg/BENZENE CONCENTRATIONS IN GROUNDWATER
Former Texaco Station
930 Springtown Boulevard
Livermore, California

PLATE 3

TABLE 1
CUMULATIVE GROUNDWATER MONITORING DATA
Former Texaco Service Station
930 Springtown Boulevard
Livermore, California
(Page 1 of 3)

Well	Date	Elevation of Wellhead	Depth to Water	Elevation of Groundwater	Floating Product
MW-A					
GTI	01/10/91	519.85	13.28	506.57	—
	04/04/91		12.12	507.73	—
	07/12/91		12.95	506.90	—
	10/04/91		13.98	505.87	trace
	01/02/92		13.61	506.24	—
	04/02/92		12.44	507.41	—
RESNA	07/21/92		13.35	506.50	—
	10/09/92		12.92	506.93	SD Sheen
MW-B					
GTI	01/10/91	518.16	11.06	507.10	—
	04/04/91		10.04	508.12	—
	07/12/91		10.91	507.25	—
	10/04/91		11.82	506.34	trace
	01/02/92		11.27	506.89	trace
	04/02/92		10.18	507.98	—
RESNA	07/21/92		11.27	506.89	—
	10/09/92		11.64	506.52	SD
MW-1					
GTI	01/10/91	520.76	13.80	506.96	—
	04/04/91		12.70	508.06	—
	07/12/91		13.55	507.21	—
	10/04/91		14.52	506.24	—
	01/02/92		14.11	506.65	—
	04/02/92		12.98	507.78	—
RESNA	07/21/92		13.92	506.84	—
	10/09/92		14.25	506.51	—
MW-2					
GTI	01/10/91	518.46	11.66	506.80	—
	04/04/91		10.61	507.85	—
	07/12/91		11.48	506.98	—
	10/04/91		12.35	506.11	—
	01/02/92		11.96	506.50	—
	04/02/92		10.89	507.57	—
RESNA	07/21/92		11.55	506.91	—
	10/09/92		Not Monitored		

See notes on page 3 of 3.

TABLE 1
CUMULATIVE GROUNDWATER MONITORING DATA
Former Texaco Service Station
930 Springtown Boulevard
Livermore, California
(Page 2 of 3)

Well	Date	Elevation of Wellhead	Depth to Water	Elevation of Groundwater	Floating Product
MW-3					
GTI	01/10/91	519.30	12.84	506.46	—
	04/04/91		11.71	507.59	—
	07/12/91		12.54	506.76	—
	10/04/91		13.47	505.83	—
	01/02/92		12.87	506.43	—
	04/02/92		11.97	507.33	—
RESNA	07/21/92		12.60	506.70	—
	10/09/92		12.93	506.37	—
MW-4					
GTI	01/10/91	518.75	12.02	506.73	—
	04/04/91		10.72	508.03	—
	07/12/91		11.78	506.97	—
	10/04/91		12.30	506.45	—
	01/02/92		12.22	506.53	—
	04/02/92		11.03	507.72	—
RESNA	07/21/92		12.36	506.39	—
	10/09/92		12.40	506.35	—
MW-5					
GTI	01/10/91	520.50	14.33	506.17	—
	04/04/91		13.26	507.24	—
	07/12/91		14.14	506.36	—
	10/04/91		14.96	505.54	—
	01/02/92		14.56	505.94	—
	04/02/92		13.58	506.92	—
RESNA	07/21/92		13.77	506.73	—
	10/09/92		14.09	506.41	—
MW-6					
GTI	01/10/91	522.26	16.31	505.95	—
	04/04/91		15.19	507.07	—
	07/12/91		NR	NR	NR
	10/04/91		16.90	505.36	—
	01/02/92		16.64	505.62	—
	04/02/91		15.61	506.65	—
RESNA	07/21/92		15.53	506.73	—
	10/09/92		15.69	506.57	—

See notes on page 3 of 3.

TABLE 1
CUMULATIVE GROUNDWATER MONITORING DATA
Former Texaco Service Station
930 Springtown Boulevard
Livermore, California
(Page 3 of 3)

Well	Date	Elevation of Wellhead	Depth to Water	Elevation of Groundwater	Floating Product
MW-7					
GTI	01/10/91	522.17	9.07	513.10	—
	04/04/91		7.59	514.58	—
	07/12/91		9.26	512.91	—
	10/04/91		10.53	511.64	—
	01/02/92		11.17	511.00	—
	04/02/92		10.34	511.83	—
RESNA	07/21/92		9.02	513.15	—
	10/09/92		Not Monitored		
MW-8					
GTI	01/10/91	524.04	18.03	506.01	—
	04/04/91		17.01	507.03	—
	07/12/91		17.82	506.22	—
	10/04/91		18.70	505.34	—
	01/02/92		18.42	505.62	—
	04/02/92		17.39	506.65	—
RESNA	07/21/92		14.02	510.02	—
	10/09/92		Not Monitored		

Datum Mean Sea Level (MSL)
Measurements in feet.
Depth to water measured in feet below top of casing.

—	:	None Present
GTI	:	Groundwater Technology, Inc.
RESNA	:	RESNA Industries Inc.
NR	:	No Record
SD	:	Sheen detected in purgewater.

TABLE 2
CUMULATIVE RESULTS OF LABORATORY ANALYSES
OF GROUNDWATER SAMPLES
Former Texaco Service Station
930 Springtown Boulevard
Livermore, California
(Page 1 of 3)

Well	Date	TPHg	Benzene	Toluene	Ethyl-benzene	Total Xylenes
MW-A						
GTI	01/10/91	50,000	1,900	3,700	2,600	8,300
	04/04/91	31,000	950	1,100	1,300	2,900
	07/12/91	100,000	2,000	4,200	4,600	13,000
	10/04/91	SP	SP	SP	SP	SP
	01/02/92	SP	SP	SP	SP	SP
	04/02/92	27,000	1,200	570	1,700	2,300
RESNA	07/21/92	57,000	1,500	1,800	2,700	7,100
	10/09/92	56,000	2,900	2,600	4,600	12,000
MW-B						
GTI	01/10/91	35,000	47	1,300	770	3,100
	04/04/91	2,300	4	10	22	19
	07/12/91	18,000	88	1,800	390	1,300
	10/04/91	SP	SP	SP	SP	SP
	01/02/92	SP	SP	SP	SP	SP
	04/02/92	1,900	ND	39	24	35
RESNA	07/21/92	16,000	180	1,600	270	1,100
	10/09/92	38,000	490	8,300	1,400	5,100
MW-1						
GTI	01/10/91	ND	ND	ND	ND	ND
	04/04/91	ND	ND	ND	ND	ND
	07/12/91	390	ND	ND	3	16
	10/04/91	ND	1	ND	ND	ND
	01/02/92	16	6	ND	ND	ND
	04/02/92	ND	ND	ND	ND	ND
RESNA	07/21/92	<50	3.2	<0.5	<0.5	<0.5
	10/09/92	<50	8.5	<0.5	<0.5	<0.5
MW-2						
GTI	01/10/91	ND	ND	ND	ND	ND
	04/04/92	ND	ND	ND	ND	ND
	07/12/91	ND	ND	ND	ND	ND
	10/04/91	ND	0.3	ND	ND	ND
	01/02/92	ND	ND	ND	ND	ND
	04/02/91	ND	ND	ND	ND	ND
RESNA	07/21/92	NS	NS	NS	NS	NS
	10/09/92	NS	NS	NS	NS	NS

See notes on page 3 of 3.

TABLE 2
CUMULATIVE RESULTS OF LABORATORY ANALYSES
OF GROUNDWATER SAMPLES
Former Texaco Service Station
930 Springtown Boulevard
Livermore, California
(Page 2 of 3)

Well	Date	TPHg	Benzene	Toluene	Ethyl-benzene	Total Xylenes
MW-3						
GTI	01/10/91	110	ND	ND	ND	ND
	04/04/91	630	4	ND	0.6	0.9
	07/12/91	230	2	ND	ND	1
	10/04/91	360	0.5	2	ND	0.5
	01/02/92	340	0.4	ND	ND	ND
	04/02/92	160	5	ND	0.3	0.5
RESNA	07/21/92	260	1.7	<0.5	<0.5	<0.5
	10/09/92	88	<0.5	<0.5	<0.5	<0.5
MW-4						
GTI	01/10/91	ND	ND	ND	ND	ND
	04/04/91	ND	ND	ND	ND	ND
	07/12/91	ND	ND	ND	ND	ND
	10/04/91	ND	0.6	ND	ND	ND
	01/02/92	ND	ND	ND	ND	ND
	04/02/92	ND	ND	ND	ND	ND
RESNA	07/21/92	<50	<0.5	<0.5	<0.5	<0.5
	10/09/92	<50	<0.5	<0.5	<0.5	<0.5
MW-5						
GTI	01/10/91	1,900	48	2	87	9
	04/04/91	ND	ND	ND	ND	ND
	07/12/91	850	13	ND	18	1
	10/04/91	2,000	240	13	34	14
	01/02/92	1,800	74	41	84	94
	04/02/92	ND	ND	ND	ND	ND
RESNA	07/21/92	1,000	69	16	40	31
	10/09/92	3,400	890	51	110	110
MW-6						
GTI	01/10/91	ND	ND	ND	ND	ND
	04/04/91	ND	ND	ND	ND	ND
	07/12/91	NS	NS	NS	NS	NS
	10/04/91	ND	0.3	ND	ND	ND
	01/02/92	23	ND	0.3	0.6	3
	04/02/92	ND	ND	ND	ND	ND
RESNA	07/21/92	<50	<0.5	<0.5	<0.5	<0.5
	10/09/92	<50	<0.5	<0.5	<0.5	<0.5

See notes on page 3 of 3.

TABLE 2
CUMULATIVE RESULTS OF LABORATORY ANALYSES
OF GROUNDWATER SAMPLES
Former Texaco Service Station
930 Springtown Boulevard
Livermore, California
(Page 3 of 3)

Well	Date	TPHg	Benzene	Toluene	Ethyl-benzene	Total Xylenes
MW-7						
GTI	01/10/91	ND	ND	ND	ND	ND
	04/04/91	ND	ND	ND	ND	ND
	07/12/91	NS	NS	NS	NS	NS
	10/04/91	NS	NS	NS	NS	NS
	01/02/92	NS	NS	NS	NS	NS
	04/02/92	ND	ND	ND	ND	ND
RESNA	07/21/92	NS	NS	NS	NS	NS
	10/09/92	NS	NS	NS	NS	NS
MW-8						
GTI	01/10/91	ND	ND	ND	ND	ND
	04/04/91	NS	NS	NS	NS	NS
	07/12/91	NS	NS	NS	NS	NS
	10/04/91	NS	NS	NS	NS	NS
	01/02/92	12,000	32	980	200	760
	04/02/92	ND	ND	ND	ND	ND
RESNA	07/21/92	NS	NS	NS	NS	NS
	MCLs:	-	1.0	-	680	1,750
	DWAL:	-	-	100	-	-

Results in parts per billion (ppb).

NS	:	Not Sampled
NR	:	No Records
ND	:	None Detected
SP	:	Separate-phase petroleum hydrocarbons
TPHg	:	Total petroleum hydrocarbons as gasoline analyzed by EPA method 5030/602.
BTEX	:	Analyzed by EPA method 5030/602.
<	:	Less than the detection limit for the specified method of analysis.
MCLs	:	Adopted Maximum Contaminant Levels in Drinking Water, DHS (October 1990)
DWAL	:	Recommended Drinking Water Action Level, DHS (October 1990)
—	:	Not applicable
GTI	:	Groundwater Technology, Inc.
RESNA	:	RESNA Industries Inc.

APPENDIX A

GROUNDWATER SAMPLING PROTOCOL AND WELL PURGE DATA SHEETS

GROUNDWATER SAMPLING PROTOCOL

The static water level and floating product level, if present, in each well that contained water was measured with an ORS Interphase Probe Model No. 1068018, or Solonist Water Level Indicator; these instruments are accurate to the nearest 0.01 foot. These groundwater depths were subtracted from wellhead elevations, including corrections for product thickness, when necessary, for gradient evaluation by multiplying product thickness (PT) by a correction factor 0.8 and subtracting from the DTW (Adjusted DTW = DTW - [PT x 0.8]).

Water samples collected for subjective evaluation were collected by gently lowering approximately half the length of a new disposable bailer or 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. All Teflon® bailers are triple washed with Alconox® and rinsed with distilled water prior to each use.

Before water samples were collected from the groundwater monitoring wells, the wells were purged until stabilization of the temperature, pH, and conductivity were obtained. Approximately four well casing volumes were purged before those characteristics stabilized. 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 of water purged/gallons in 1 well casing volume = well casing volumes removed.

After purging, each well was allowed to recharge to at least 80% of the initial water level. Water samples were collected with a new disposable or Teflon® bailer, and carefully 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 promptly transported in iced storage in a thermally-insulated ice chest, accompanied by a Chain of Custody Record, to a California-certified laboratory.

RESNA
Working To Restore Nature

WELL PURGE DATA SHEET

Project Name: Texaco-- Springtown Job No. 62090.01

Date: 10/09/92 Page 1 of 1

Well No. MW-A Time Started 3:30

TIME (hr)	GALLONS (cum.)	TEMP. (F)	pH	CONDUCT. (micromho)
3:30	Start purging MW-A			
3:30	0	76.2	7.71	1950
3:31	0.6	74.6	7.68	1920
3:32	1.2	74.1	7.65	1940
3:33	1.8	73.6	7.61	1940
3:34	Stop purging MW-A			

Notes:

Well Diameter (inches)	:	2
Depth to Bottom (feet)	:	16.50
Depth to Water - initial (feet)	:	12.92
Depth to Water - final (feet)	:	13.05
% recovery	:	97%
Time Sampled	:	4:15
Gallons per Well Casing Volume	:	0.6
Gallons Purged	:	1.8
Well Casing Volume Purged	:	3
Approximate Pumping Rate (gpm)	:	1

RESNA
Working To Restore Nature

WELL PURGE DATA SHEET

Project Name: Texaco-- Springtown Job No. 62090.01

Date: 10/09/92 Page 1 of 1

Well No. MW-B Time Started 2:45

TIME (hr)	GALLONS (cum.)	TEMP. (F)	pH	CONDUCT. (micromho)
2:45	Start purging MW-B			
2:45	0	78.2	7.58	1800
2:47	1.7	75.0	7.60	1760
2:49	3.4	74.0	7.58	1760
2:51	5.1	73.4	7.57	1750
2:51	Stop purging MW-B			

Notes:

Well Diameter (inches)	:	2
Depth to Bottom (feet)	:	21.35
Depth to Water - initial (feet)	:	11.64
Depth to Water - final (feet)	:	11.69
% recovery	:	99%
Time Sampled	:	3:45
Gallons per Well Casing Volume	:	1.7
Gallons Purged	:	5.1
Well Casing Volume Purged	:	3
Approximate Pumping Rate (gpm)	:	1

RESNA
Working To Restore Nature

WELL PURGE DATA SHEET

Project Name: Texaco-- Springtown Job No. 62090.01

Date: 10/09/92 Page 1 of 1

Well No. MW-1 Time Started 11:15

TIME (hr)	GALLONS (cum.)	TEMP. (F)	pH	CONDUCT. (micromho)
11:15	Start purging MW-1			
11:15	0	75.6	7.51	2270
11:22	7.4	73.0	7.45	2220
11:29	14.8	72.7	7.58	2200
11:36	22.2	71.7	7.53	2180
11:37	Stop purging MW-1			

Notes:

Well Diameter (inches) :	2
Depth to Bottom (feet) :	25.47
Depth to Water - initial (feet) :	14.25
Depth to Water - final (feet) :	14.28
% recovery :	99%
Time Sampled :	1:00
Gallons per Well Casing Volume :	7.4
Gallons Purged :	22.2
Well Casing Volume Purged :	3
Approximate Pumping Rate (gpm) :	1

RESNA
Working To Restore Nature

WELL PURGE DATA SHEET

Project Name: Texaco-- Springtown Job No. 62090.01

Date: 10/09/92 Page 1 of 1

Well No. MW-3 Time Started 12:30

TIME (hr)	GALLONS (cum.)	TEMP. (F)	pH	CONDUCT. (micromho)
12:30	Start purging MW-3			
12:30	0	78.0	7.86	1810
12:38	7.5	75.4	7.84	1710
12:46	15.0	74.1	7.79	1710
12:54	22.5	73.7	7.78	1710
12:54	Stop purging MW-3			

Notes:

NM = Not Measured

Well Diameter (inches) :	4
Depth to Bottom (feet) :	24.23
Depth to Water - initial (feet) :	12.93
Depth to Water - final (feet) :	12.93
% recovery :	100%
Time Sampled :	2:15
Gallons per Well Casing Volume :	7.5
Gallons Purged :	22.5
Well Casing Volume Purged :	3
Approximate Pumping Rate (gpm) :	1

RESNA
Working To Restore Nature

WELL PURGE DATA SHEET

Project Name: Texaco-- Springtown Job No. 62090.01

Date: 10/09/92 Page 1 of 1

Well No. MW-4 Time Started 10:35

TIME (hr)	GALLONS (cum.)	TEMP. (F)	pH	CONDUCT. (micromho)
10:35	Start purging MW-4			
10:35	0	72.2	7.69	1250
10:40	4.8	70.8	7.69	1220
10:45	9.6	70.1	7.68	1220
10:50	14.4	70.0	7.67	1220
10:50	Stop purging MW-4			

Notes:

Well Diameter (inches) :	3
Depth to Bottom (feet) :	25.03
Depth to Water - initial (feet) :	12.40
Depth to Water - final (feet) :	12.40
% recovery :	100%
Time Sampled :	12:15
Gallons per Well Casing Volume :	4.8
Gallons Purged :	14.4
Well Casing Volume Purged :	3
Approximate Pumping Rate (gpm) :	1

RESNA
Working To Restore Nature

WELL PURGE DATA SHEET

Project Name: Texaco-- Springtown Job No. 62090.01

Date: 10/09/92 Page 1 of 1

Well No. MW-5 Time Started 1:45

TIME (hr)	GALLONS (cum.)	TEMP. (F)	pH	CONDUCT. (micromho)
1:45	Start purging MW-5			
1:45	0	74.6	7.56	1480
1:48	2.3	71.2	7.56	1470
1:51	4.6	71.5	7.54	1450
1:53	6.9	70.5	7.54	1450
1:54	Stop purging MW-5			

Notes:

NM = Not Measured

Well Diameter (inches)	:	2
Depth to Bottom (feet)	:	27.90
Depth to Water - initial (feet)	:	14.09
Depth to Water - final (feet)	:	14.12
% recovery	:	99%
Time Sampled	:	3:10
Gallons per Well Casing Volume	:	2.3
Gallons Purged	:	9.2
Well Casing Volume Purged	:	4
Approximate Pumping Rate (gpm)	:	1

RESNA
Working To Restore Nature

WELL PURGE DATA SHEET

Project Name: Texaco-- Springtown Job No. 62090.01

Date: 10/09/92 Page 1 of 1

Well No. MW-6 Time Started 11:50

TIME (hr)	GALLONS (cum.)	TEMP. (F)	pH	CONDUCT. (micromho)
11:50	Start purging MW-6			
11:50	0	74.4	7.70	1220
11:52	1.5	72.7	7.68	1190
11:54	3.0	71.6	7.65	1180
11:55	3.5	70.6	7.64	1170
11:55	Stop purging MW-6			

Notes:

NM = Not Measured

Well Diameter (inches)	:	2
Depth to Bottom (feet)	:	24.65
Depth to Water - initial (feet)	:	15.69
Depth to Water - final (feet)	:	15.69
% recovery	:	100%
Time Sampled	:	1:30
Gallons per Well Casing Volume	:	1.5
Gallons Purged	:	6.0
Well Casing Volume Purged	:	4
Approximate Pumping Rate (gpm)	:	1

APPENDIX B

LABORATORY ANALYSIS REPORTS AND CHAIN OF CUSTODY DOCUMENTATION

MOBILE CHEM LABS INC.

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

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OCT 27 1992
RESNA
SAN JOSE

62090.01\1718\012182

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

Date Sampled: 10-09-92
Date Received: 10-14-92
Date Analyzed: 10-18-92

Sample Number	Sample Description
102204	Project # 62090.01 Texaco - Livermore 930 Springtown BB1 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

62090.01\1718\012182

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

Date Sampled: 10-09-92
Date Received: 10-14-92
Date Analyzed: 10-18-92

Sample Number	Sample Description
102205	Project # 62090.01 Texaco - Livermore 930 Springtown MW-A WATER

ANALYSIS

	Detection Limit	Sample Results
	ppb	ppb
Total Petroleum Hydrocarbons as Gasoline	50	56,000
Benzene	0.5	2,900
Toluene	0.5	2,600
Xylenes	0.5	12,000
Ethylbenzene	0.5	4,600

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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Lab Director

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

Date Sampled: 10-09-92
Date Received: 10-14-92
Date Analyzed: 10-18-92

Sample Number	Sample Description
102206	Project # 62090.01 Texaco - Livermore 930 Springtown MW-B WATER

ANALYSIS

	Detection Limit	Sample Results
	ppb	ppb
Total Petroleum Hydrocarbons as Gasoline	50	38,000
Benzene	0.5	490
Toluene	0.5	8,300
Xylenes	0.5	5,100
Ethylbenzene	0.5	1,400

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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Lab Director

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

Date Sampled: 10-09-92
Date Received: 10-14-92
Date Analyzed: 10-18-92

Sample Number	Sample Description
102207	Project # 62090.01 Texaco - Livermore 930 Springtown MW-1 WATER

ANALYSIS

	Detection Limit	Sample Results
	ppb	ppb
Total Petroleum Hydrocarbons as Gasoline	50	<50
Benzene	0.5	8.5
Toluene	0.5	<0.5
Xylenes	0.5	<0.5
Ethylbenzene	0.5	<0.5

QA/QC: Sample blank is none detected
Duplicate Deviation is 9.4%

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

MOBILE CHEM LABS

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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: 10-09-92
Date Received: 10-14-92
Date Analyzed: 10-18-92

Sample Number	Sample Description
102208	Project # 62090.01 Texaco - Livermore 930 Springtown MW-3 WATER

ANALYSIS

	Detection Limit	Sample Results
	ppb	ppb
Total Petroleum Hydrocarbons as Gasoline	50	88
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)

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Ronald G. Evans
Lab Director

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

Date Sampled: 10-09-92
Date Received: 10-14-92
Date Analyzed: 10-18-92

Sample Number	Sample Description
102210	Project # 62090.01 Texaco - Livermore 930 Springtown MW-5 WATER

ANALYSIS

	Detection Limit	Sample Results
	ppb	ppb
Total Petroleum Hydrocarbons as Gasoline	50	3,400
Benzene	0.5	890
Toluene	0.5	51
Xylenes	0.5	110
Ethylbenzene	0.5	110

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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Ronald G. Evans
Lab Director

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

Date Sampled: 10-09-92
Date Received: 10-14-92
Date Analyzed: 10-18-92

Sample Number	Sample Description
102211	Project # 62090.01 Texaco - Livermore 930 Springtown MW-6 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

RESNA

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

PROJECT NO.	PROJECT NAME/SITE	P.O. #
62090.01	Texaco, 930 Spring Ln, Livermore, CA	

SAMPLERS (SIGN) Robin A. Adair (PRINT) Robin A. Adair

SAMPLE IDENTIFICATION	DATE	TIME	COMP	GRAB	PRES USED	ICED	NO. CONTAINERS	SAMPLE TYPE	BTEX (602/8020)	TPHg (8015)	TPHd (8015)	TOG 418.1/5520	601/8010	624/8240	625/8270	REMARKS
BB1	10-9-92	12:10			HCl	Y	3	H2O	X	X						
MW-A		4:15					3		X	X						
MW-B		3:45					3		X	X						
MW-1		1:00					3		X	X						
MW-3		2:15					3		X	X						
MW-4		12:15					3		X	X						
MW-5		3:10					3		X	X						
MW-6		1:30					3		X	X						
[redacted]																

RELINQUISHED BY	DATE	TIME	RECEIVED BY	LABORATORY	PLEASE SEND RESULTS TO:
Robin A. Adair	10-12-92	8:00	[redacted]	Mobile Chem Labs	Robin A. Adair Resna, Fremont Phil Mayberry Resna, San Jose
RELINQUISHED BY	DATE	TIME	RECEIVED BY	REQUESTED TURNAROUND TIME	
				NORMAL	
RELINQUISHED BY	DATE	TIME	RECEIVED BY		
RELINQUISHED BY	DATE	TIME	RECEIVED BY LABORATORY	RECEIPT CONDITION	PROJECT MANAGER
Henry Fowler	10-14-92	2:35	[redacted]		Dave Higgins