



Texaco Refining
and Marketing Inc.

100 Cutting Blvd
Richmond CA 94804

ALCO
HAZMAT

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November 12, 1993

ENV - STUDIES, SURVEYS & REPORTS

Former Texaco Service Station
930 Springtown, Livermore, CA

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

Dear Ms. Chu:

Enclosed is a copy of the Quarterly Groundwater Monitoring Letter Report, dated November 2, 1993, for the subject site.

Questions regarding this matter may be directed to me at (510) 236-9139.

Best Regards,

Karen E. Petryna
Environmental Project Coordinator
Texaco Environmental Services

KEP:hs
930 A:\QTRCVR.EC

Enclosure

cc: Case Worker - California Regional Water Quality Control Board
Mr. Bob Vasquez - Southland Corporation

RRZielinski

PR:

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

LETTER REPORT
QUARTERLY GROUNDWATER MONITORING
AND SAMPLING
Third Quarter 1993
at
Former Texaco Station
930 Springtown Boulevard
Livermore, California

62090.01

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

November 2, 1993
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Ms. Karen Petryna
Texaco Environmental Services
108 Cutting Boulevard
Richmond, California 94804

Subject: Results of Groundwater Monitoring and Sampling, Third Quarter 1993,
Former Texaco Station located at 930 Springtown Boulevard, Livermore,
California.

Ms. Petryna:

At the request of Texaco Environmental Services (TES), RESNA Industries Inc. (RESNA) has prepared this letter report 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 third quarter 1993 (July through September 1993). On August 9, 1993, 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 seven groundwater monitoring wells (MW-1, MW-3, MW-4, MW-5, MW-6, MW-A, and MW-B) associated with this site. On August 9, 1993, hydrocarbon sheen was detected in purgewater from wells MW-A and MW-B, therefore these wells were not sampled for laboratory analysis. RESNA's groundwater sampling protocol and well purge data sheets are included in Appendix A.

WORK PERFORMED

GROUNDWATER MONITORING

Groundwater elevations at the site have decreased an average of 1.67 feet in wells MW-A, MW-B, MW-1, MW-3, MW-4, and MW-5 from the elevations reported last quarter (May 5, 1993). The groundwater gradient map shows the groundwater beneath the site to be flowing towards the northeast with a hydraulic gradient of approximately 0.005 (Plate 2, Groundwater Gradient Map). Historical and recent monitoring data are summarized in

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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 and TPH LUFT with Method 602.

GROUNDWATER ANALYTICAL RESULTS

Concentrations of TPHg in groundwater samples collected ranged from less than 50 parts per billion (ppb) to 2,300 ppb (MW-5). Dissolved benzene concentrations in groundwater samples collected ranged from less than 0.5 ppb to 180 ppb (MW-5). TPHg and benzene concentrations are shown on Plate 3, TPHg/Benzene Concentrations in Groundwater. 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


Approximately 120 gallons of water generated during purging and sampling of the 5 monitoring wells was removed after sampling, and transported on August 18, 1993, to Gibson Environmental in Redwood City, California for recycling.

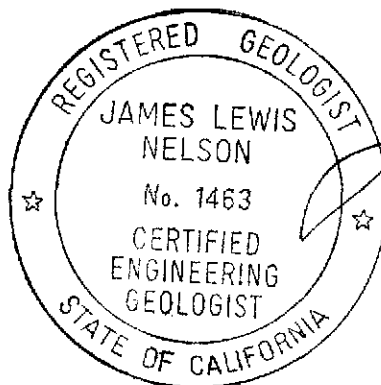
Third Quarter 1993 Quarterly Report
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If you have any questions or comments regarding this report, please call (408) 264-7723.

Sincerely,
RESNA Industries Inc.


Robin A. Adair
Geologic Technician



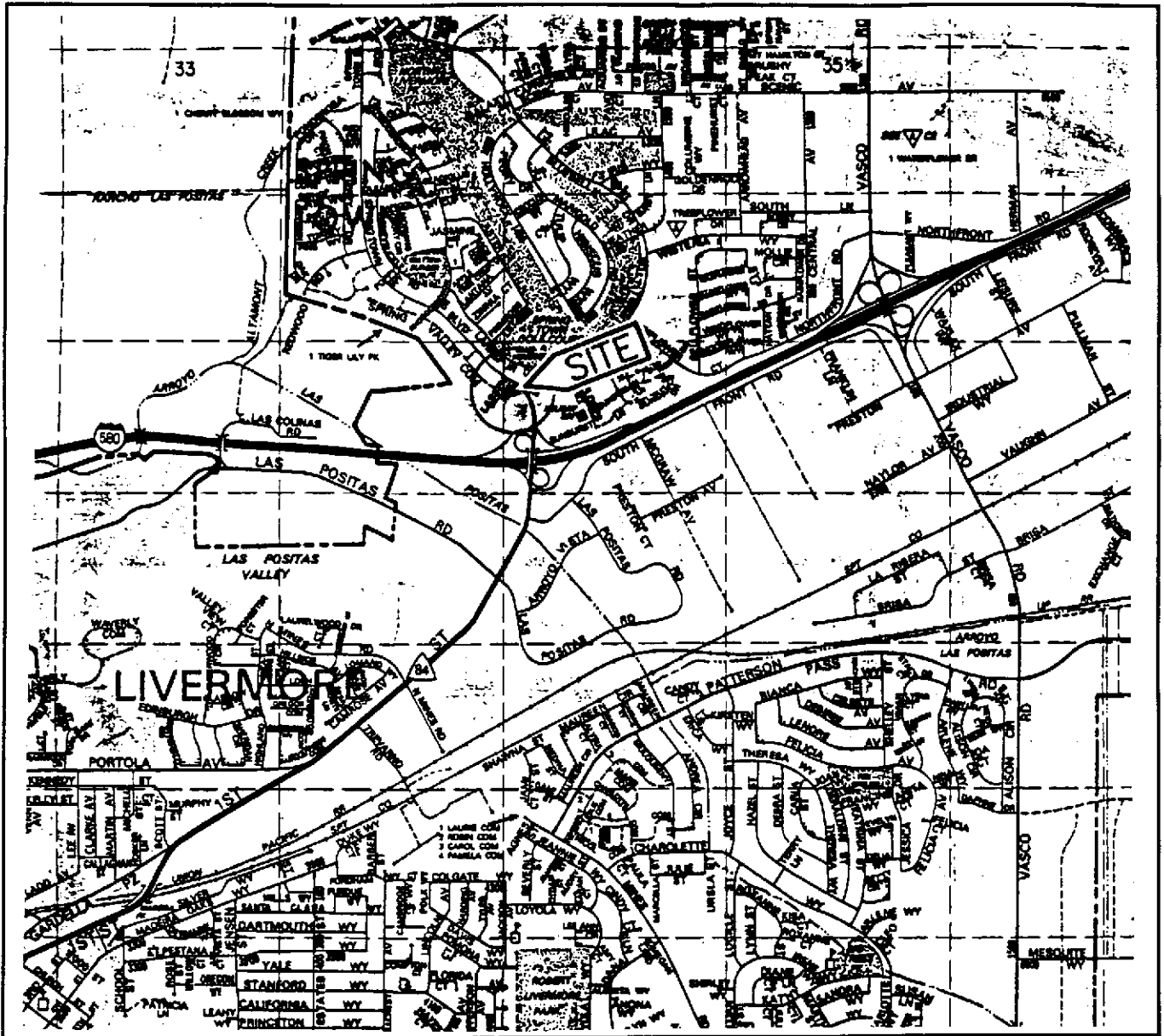

James L. Nelson
Certified Engineering
Geologist No. 1463

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

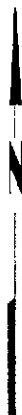
- Appendix A, Groundwater Sampling Protocol and Well Purge Data Sheets
- Appendix B, Laboratory Analysis Reports and Chain of Custody Documentation



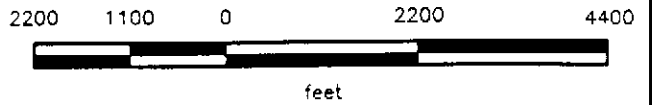
Base: The Thomas Guide
 Alameda County
 Livermore, California.
 Photorevised 1991

LEGEND

○ = Site Location



Approximate Scale



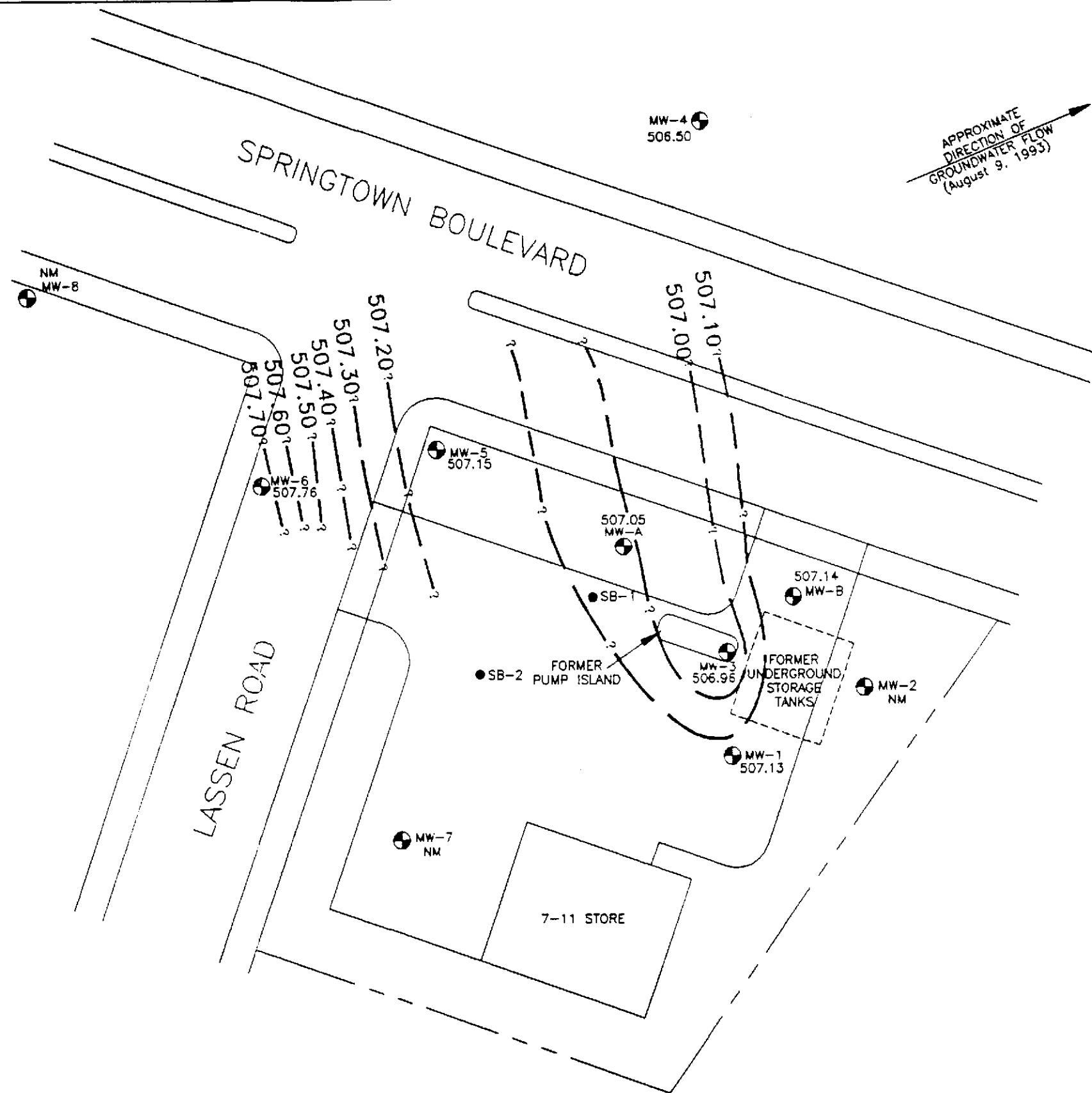
RESNA
 Working to Restore Nature

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

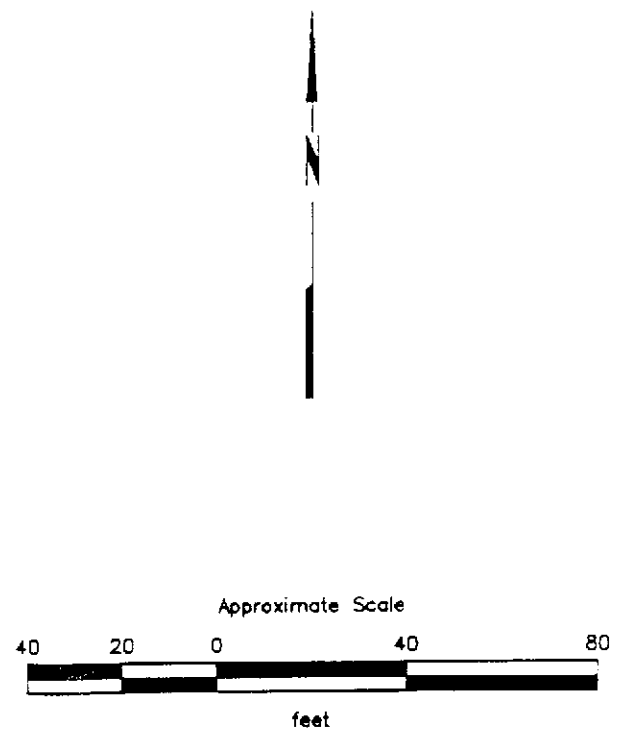
PLATE

1

PROJECT 62090.01



- EXPLANATION**
- MW-8 = Groundwater monitoring well (GT)
 - SB-2 = Soil boring (GT)
 - 507.70 = Line of equal elevation of groundwater in feet above mean sea level (MSL)
 - 507.76 = Elevation of groundwater in feet above MSL August 9, 1993
 - NM = Not monitored



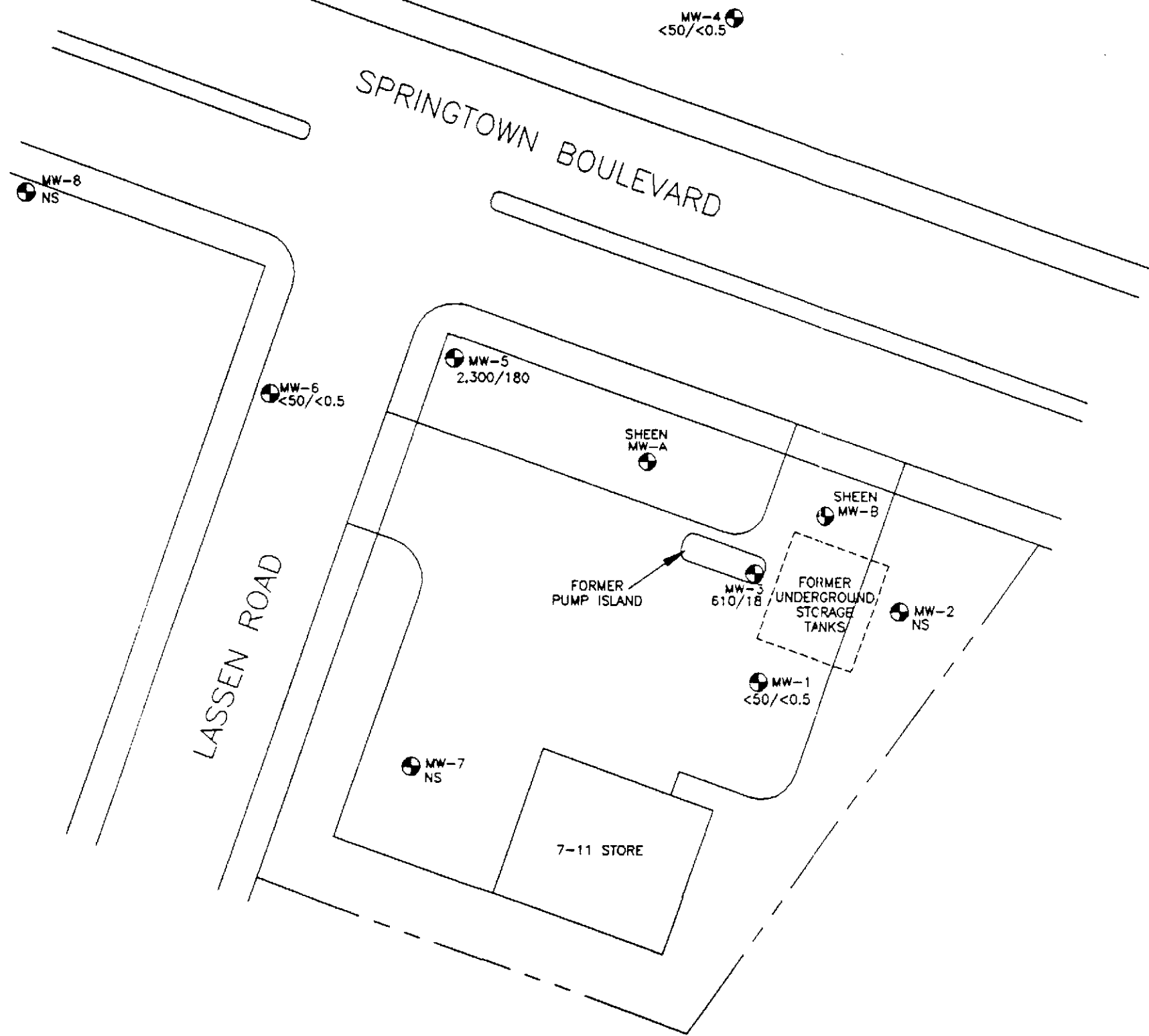
Source: Modified from site plan provided by Groundwater Technology, Inc., dated April 22, 1992.



PROJECT 62090.01

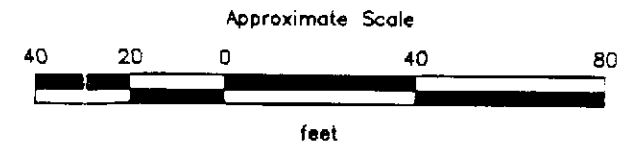
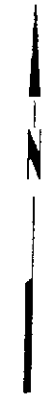
GROUNDWATER GRADIENT MAP
 Former Texaco Station
 930 Springtown Boulevard
 Livermore, California

PLATE
 2



EXPLANATION

- MW-8 = Groundwater monitoring well (GTI)
- 2,300/180 = Concentration of TPHg/Benzene in groundwater, in parts per billion, August 9, 1993
- NS = Not sampled



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



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

PLATE
3

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TABLE 1
CUMULATIVE GROUNDWATER MONITORING DATA
Former Texaco Service Station
930 Springtown Boulevard
Livermore, California
(Page 1 of 4)

Well	Date	Elevation of Wellhead	Depth to Water	Elevation of Groundwater	Floating Product	
<u>MW-A</u>						
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
			01/11/93	11.78	508.07	SD
			05/05/93	11.39	508.46	SD
08/09/93	12.80	507.05	SD			
<u>MW-B</u>						
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
			01/11/93	9.65	508.51	SD
			05/05/93	9.28	508.88	SD
08/09/93	11.02	507.14	SD			
<u>MW-1</u>						
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	--
			01/11/93	12.30	508.46	--
			05/05/93	11.88	508.88	--
08/09/93	13.63	507.13	--			

See notes at page 4 of 4.

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TABLE 1
CUMULATIVE GROUNDWATER MONITORING DATA
Former Texaco Service Station
930 Springtown Boulevard
Livermore, California
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Well	Date	Elevation of Wellhead	Depth to Water	Elevation of Groundwater	Floating Product
<u>MW-2</u>					
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		
	01/11/93		Not Monitored		
	05/05/93		Not Monitored		
	08/09/93		Not Monitored		
<u>MW-3</u>					
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	--
	01/11/93		11.16	508.14	--
	05/05/93		10.72	508.58	--
	08/09/93		12.34	506.96	--
<u>MW-4</u>					
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	--
	01/11/93		10.72	508.03	--
	05/05/93		10.21	508.54	--
	08/09/93		12.25	506.50	--

See notes at page 4 of 4.

TABLE 1
CUMULATIVE GROUNDWATER MONITORING DATA
Former Texaco Service Station
930 Springtown Boulevard
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Well	Date	Elevation of Wellhead	Depth to Water	Elevation of Groundwater	Floating Product	
<u>MW-5</u>						
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	---
			01/11/93	12.24	508.26	---
			05/05/93	11.90	508.60	---
08/09/93	13.35	507.15	---			
<u>MW-6</u>						
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	---
			01/11/93	Not Monitored		
			05/05/93	Not Monitored		
08/09/93	14.50	507.76	---			
<u>MW-7</u>						
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		
			01/11/93	Not Monitored		
			05/05/93	Not Monitored		
08/09/93	Not Monitored					
<u>MW-8</u>						
GTI	01/10/91	524.04	18.03	506.01	---	

See notes at page 4 of 4.

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TABLE 1
CUMULATIVE GROUNDWATER MONITORING DATA
Former Texaco Service Station
930 Springtown Boulevard
Livermore, California
(Page 4 of 4)

Well	Date	Elevation of Wellhead	Depth to Water	Elevation of Groundwater	Floating Product
MW-8 cont	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		
	01/11/93		Not Monitored		
	05/05/93		Not Monitored		

Datum Mean Sea Level (MSL)

Measurements in feet.

Depth to water measured in feet below top of casing.

— : None Present.
GTI : Monitored by Groundwater Technology, Inc.
RESNA : RESNA Industries Inc. began monitoring.
NR : No Record.
SD : Sheen detected in purge water.

RESNA assumes all wells are screened within the same hydrostratigraphic unit, as identified by the previous consultant.

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TABLE 2
 CUMULATIVE RESULTS OF LABORATORY ANALYSES
 OF GROUNDWATER SAMPLES
 Former Texaco Service Station
 930 Springtown Boulevard
 Livermore, California
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Well	Date	TPHg	Benzene	Toluene	Ethyl- benzene	Total Xylenes
<u>MW-A</u>						
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
RESNA	04/02/92	27,000	1,200	570	1,700	2,300
	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
	01/11/93		Sheen -- Not Sampled			
	05/05/93		Sheen -- Not Sampled			
	08/09/93		Sheen -- Not sampled			
<u>MW-B</u>						
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
RESNA	04/02/92	1,900	ND	39	24	35
	07/21/92	16,000	180	1,600	270	1,100
	10/09/92	38,000	490	8,300	1,400	5,100
	01/11/93		Sheen -- Not Sampled			
	05/05/93		Sheen -- Not Sampled			
	08/09/93		Sheen -- Not Sampled			
<u>MW-1</u>						
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
	01/11/93	<50	<0.5	<0.5	<0.5	<0.5
	05/05/93	<50	<0.5	<0.5	<0.5	<0.5
	08/09/93	<50	<0.5	<0.5	<0.5	<0.5

See notes on page 4 of 4.

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TABLE 2
CUMULATIVE RESULTS OF LABORATORY ANALYSES
OF GROUNDWATER SAMPLES
Former Texaco Service Station
930 Springtown Boulevard
Livermore, California
(Page 2 of 4)

Well	Date	TPHg	Benzene	Toluene	Ethyl- benzene	Total Xylenes	
<u>MW-2</u>							
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
		01/11/93	NS	NS	NS	NS	NS
		05/05/93	NS	NS	NS	NS	NS
08/09/93	NS	NS	NS	NS	NS		
<u>MW-3</u>							
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
		01/11/93	130	<0.5	<0.5	<0.5	<0.5
		05/05/93	340	1.8	<0.5	1.3	<0.5
08/09/93	610	18	<0.5	2.4	0.9		
<u>MW-4</u>							
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
		01/11/93	<50	<0.5	<0.5	<0.5	<0.5
		05/05/93	<50	<0.5	<0.5	<0.5	<0.5
08/09/93	<50	<0.5	<0.5	<0.5	<0.5		

See notes on page 4 of 4.

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TABLE 2
CUMULATIVE RESULTS OF LABORATORY ANALYSES
OF GROUNDWATER SAMPLES
Former Texaco Service Station
930 Springtown Boulevard
Livermore, California
(Page 3 of 4)

Well	Date	TPHg	Benzene	Toluene	Ethyl- benzene	Total Xylenes
<u>MW-5</u>						
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
RESNA	04/02/92	ND	ND	ND	ND	ND
	07/21/92	1,000	69	16	40	31
	10/09/92	3,400	890	51	110	110
	01/11/93	15,000	460	110	900	370
	05/05/93	4,500	160	19	280	110
	08/09/93	2,300	180	19	130	80
<u>MW-6</u>						
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
RESNA	04/02/92	ND	ND	ND	ND	ND
	07/21/92	<50	<0.5	<0.5	<0.5	<0.5
	10/09/92	<50	<0.5	<0.5	<0.5	<0.5
	01/11/93	NS	NS	NS	NS	NS
	05/05/93	NS	NS	NS	NS	NS
	08/09/93	<50	<0.5	<0.5	<0.5	<0.5
<u>MW-7</u>						
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
RESNA	04/02/92	ND	ND	ND	ND	ND
	07/21/92	NS	NS	NS	NS	NS
	10/09/92	NS	NS	NS	NS	NS
	01/11/93	NS	NS	NS	NS	NS
	05/05/93	NS	NS	NS	NS	NS
	08/09/93	NS	NS	NS	NS	NS

See notes on page 4 of 4.

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930 Springtown Boulevard, Livermore, California

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TABLE 2
CUMULATIVE RESULTS OF LABORATORY ANALYSES
OF GROUNDWATER SAMPLES
Former Texaco Service Station
930 Springtown Boulevard
Livermore, California
(Page 4 of 4)

Well	Date	TPHg	Benzene	Toluene	Ethyl- benzene	Total Xylenes
<u>MW-8</u>						
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
	10/09/93	NS	NS	NS	NS	NS
	01/11/93	NS	NS	NS	NS	NS
	05/05/93	NS	NS	NS	NS	NS
	08/09/93	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. began sampling.

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 depth to water (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.

WELL PURGE DATA SHEET

Project Name: Texaco-- Springtown

Job No. 62090.01

Date: 08/09/93

Page 1 of 1

Well No. MW-1

Time Started 15:20

TIME (hr)	GALLONS (cum.)	TEMP. (F)	pH	CONDUCT. (micromho)
15:20	Start purging MW-1			
15:20	0	76.3	6.98	2300
15:24	8.0	72.8	7.00	2260
15:28	16.0	71.8	6.99	2250
15:32	24.0	71.5	7.01	2240
15:36	32.0	70.2	7.00	2250
15:37	Stop purging MW-1			
Notes:				
Well Diameter (inches) : 4				
Depth to Bottom (feet) : 25.48				
Depth to Water - initial (feet) : 13.63				
Depth to Water - final (feet) : 13.63				
% recovery : 100%				
Time Sampled : 16:50				
Gallons per Well Casing Volume : 7.73				
Gallons Purged : 36.0				
Well Casing Volume Purged : 4.65				
Approximate Pumping Rate (gpm) : 1.5				

WELL PURGE DATA SHEET

Project Name: Texaco-- Springtown

Job No. 62090.01

Date: 08/09/93

Page 1 of 1

Well No. MW-3

Time Started 16:10

TIME (hr)	GALLONS (cum.)	TEMP. (F)	pH	CONDUCT. (micromho)
16:10	Start purging MW-3			
16:10	0	75.9	7.07	1730
16:14	8.0	73.7	7.05	1680
16:18	16.0	71.9	7.03	1660
16:45	24.0	72.4	7.06	1700
16:49	32.0	71.3	7.04	1670
16:50	Stop purging MW-3			
Notes:				
	Well Diameter (inches)	:	4	
	Depth to Bottom (feet)	:	24.25	
	Depth to Water - initial (feet)	:	12.34	
	Depth to Water - final (feet)	:	12.34	
	% recovery	:	100%	
	Time Sampled	:	17:30	
	Gallons per Well Casing Volume	:	7.77	
	Gallons Purged	:	36.0	
	Well Casing Volume Purged	:	4.63	
	Approximate Pumping Rate (gpm)	:	1.5	

WELL PURGE DATA SHEET

Project Name: Texaco-- Springtown

Job No. 62090.01

Date: 08/09/93

Page 1 of 1

Well No. MW-4

Time Started 12:30

TIME (hr)	GALLONS (cum.)	TEMP. (F)	pH	CONDUCT. (micromho)
12:00	Start purging MW-4			
12:00	0	71.4	7.38	1230
12:05	5.0	71.0	7.44	1210
12:10	10.0	70.5	7.46	1200
12:20	15.0	70.3	7.46	1210
12:25	20.0	70.2	7.47	1210
12:26	Stop purging MW-4			
Notes:				
	Well Diameter (inches) :	3		
	Depth to Bottom (feet) :	25.05		
	Depth to Water - initial (feet) :	12.25		
	Depth to Water - final (feet) :	12.25		
	% recovery :	100%		
	Time Sampled :	13:25		
	Gallons per Well Casing Volume :	4.70		
	Gallons Purged :	22.8		
	Well Casing Volume Purged :	4.85		
	Approximate Pumping Rate (gpm) :	1.5		

WELL PURGE DATA SHEET

Project Name: Texaco-- Springtown

Job No. 62090.01

Date: 08/09/93

Page 1 of 1

Well No. MW-5

Time Started 14:45

TIME (hr)	GALLONS (cum.)	TEMP. (F)	pH	CONDUCT. (micromho)
14:45	Start purging MW-5			
14:45	0	74.5	7.20	1370
14:50	2.50	71.8	7.18	1340
14:55	5.00	70.6	7.19	1320
15:05	7.50	72.3	7.21	1340
15:10	10.0	70.5	7.20	1320
15:11	Stop purging MW-5			
Notes:				
Well Diameter (inches) : 2				
Depth to Bottom (feet) : 27.90				
Depth to Water - initial (feet) : 13.35				
Depth to Water - final (feet) : 13.35				
% recovery : 100%				
Time Sampled : 16:00				
Gallons per Well Casing Volume : 2.37				
Gallons Purged : 11.0				
Well Casing Volume Purged : 4.64				
Approximate Pumping Rate (gpm) : 0.5				

WELL PURGE DATA SHEET

Project Name: Texaco-- Springtown

Job No. 62090.01

Date: 08/09/93

Page 1 of 1

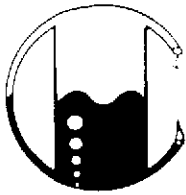
Well No. MW-6

Time Started 14:00

TIME (hr)	GALLONS (cum.)	TEMP. (F)	pH	CONDUCT. (micromho)
14:00	Start purging MW-6			
14:00	0	73.9	7.44	700
14:04	2.00	70.9	7.44	690
14:08	4.00	70.3	7.45	690
14:18	6.00	69.9	7.45	670
14:24	8.00	69.7	7.45	680
14:25	Stop purging MW-6			
Notes:				
Well Diameter (inches) : 2 Depth to Bottom (feet) : 24.60 Depth to Water - initial (feet) : 14.50 Depth to Water - final (feet) : 14.50 % recovery : 100% Time Sampled : 15:30 Gallons per Well Casing Volume : 1.65 Gallons Purged : 8.0 Well Casing Volume Purged : 4.85 Approximate Pumping Rate (gpm) : 0.5				

APPENDIX B

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



MOBILE CHEM LABS INC.

5011 Blum Road, Suite 1 • Martinez, CA 94553
Phone (510) 372-3700 • Fax (510) 372-6955

62090.01\1718\012901

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

Date Sampled: 08-09-93
Date Received: 08-11-93
Date Analyzed: 08-20-93

Sample Number

083367

Sample Description

Project # 62090.01
Texaco - Livermore
930 Springtown
MW1 WATER

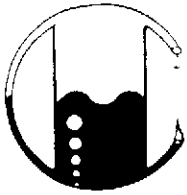
ANALYSIS

	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

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.

5011 Blum Road, Suite 1 • Martinez, CA 94553
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RESNA Industries
3315 Alamen Expressway, #34
San Jose, CA 95118
Attn: Phillip Mayberry
Project Manager

Date Sampled: 08-09-93
Date Received: 08-11-93
Date Analyzed: 08-20-93

Sample Number

083366

Sample Description


Project # 62090.01
Texaco - Livermore
930 Springtown
Rinsate MW1 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

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



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

Date Sampled: 08-09-93
Date Received: 08-11-93
Date Analyzed: 08-20-93

Sample Number

083369

Sample Description

Project # 62090.01
Texaco - Livermore
930 Springtown
MW3 WATER

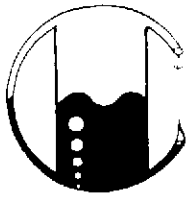
ANALYSIS

	Detection Limit ----- ppb	Sample Results ----- ppb
Total Petroleum Hydrocarbons as Gasoline	50	610
Benzene	0.5	18
Toluene	0.5	<0.5
Xylenes	0.5	0.9
Ethylbenzene	0.5	2.4

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

Date Sampled: 08-09-93
Date Received: 08-11-93
Date Analyzed: 08-20-93

Sample Number

083368

Sample Description

Project # 62090.01
Texaco - Livermore
930 Springtown
Rinsate MW3 WATER

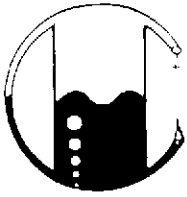
ANALYSIS

	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

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

Date Sampled: 08-09-93
Date Received: 08-11-93
Date Analyzed: 08-20-93

Sample Number

083361

Sample Description

Project # 62090.01
Texaco - Livermore
930 Springtown
MW4 WATER

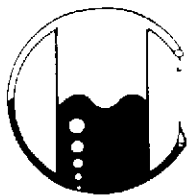
ANALYSIS

	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

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

Date Sampled: 08-09-93
Date Received: 08-11-93
Date Analyzed: 08-20-93

Sample Number

083360

Sample Description

Project # 62090.01
Texaco - Livermore
930 Springtown
Rinsate MW4 WATER

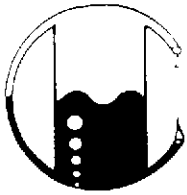
ANALYSIS

	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

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
Lab Director



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

Date Sampled: 08-09-93
Date Received: 08-11-93
Date Analyzed: 08-20-93

Sample Number

083365

Sample Description

Project # 62090.01
Texaco - Livermore
930 Springtown
MW5 WATER

ANALYSIS

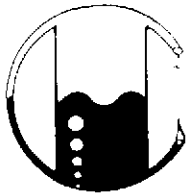
	Detection Limit	Sample Results
	----- ppb	----- ppb
Total Petroleum Hydrocarbons as Gasoline	50	2,300
Benzene	0.5	180
Toluene	0.5	19
Xylenes	0.5	80
Ethylbenzene	0.5	130

QA/QC: Duplicate Deviation is 8.9%

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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62090.01\1718\012901

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

Date Sampled: 08-09-93
Date Received: 08-11-93
Date Analyzed: 08-20-93

Sample Number

083364

Sample Description

Project # 62090.01
Texaco - Livermore
930 Springtown
Rinsate MW5 WATER

ANALYSIS

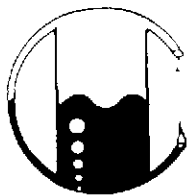
	<u>Detection Limit</u>	<u>Sample Results</u>
	ppb	ppb
Total Petroleum Hydrocarbons as Gasoline	50	<50
Benzene	0.5	<0.5
Toluene	0.5	<0.5
Xylenes	0.5	<0.5
Ethylbenzene	0.5	<0.5

QA/QC: Spike Recovery is 102%

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

Date Sampled: 08-09-93
Date Received: 08-11-93
Date Analyzed: 08-20-93

Sample Number

083363

Sample Description

Project # 62090.01
Texaco - Livermore
930 Springtown
MW6 WATER

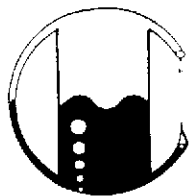
ANALYSIS

	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

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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62090.01\1718\012901

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

Date Sampled: 08-09-93
Date Received: 08-11-93
Date Analyzed: 08-20-93

Sample Number

083362

Sample Description

Project # 62090.01
Texaco - Livermore
930 Springtown
Rinsate MW6 WATER

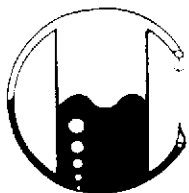
ANALYSIS

	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

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

MOBILE CHEM LABS

Ronald G. Evans
Lab Director



MOBILE CHEM LABS INC.

5011 Blum Road, Suite 1 • Martinez, CA 94553
Phone (510) 372-3700 • Fax (510) 372-6955

62090.01\1718\012901

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

Date Sampled: 08-09-93
Date Received: 08-11-93
Date Analyzed: 08-20-93

Sample Number

083359

Sample Description

Project # 62090.01
Texaco - Livermore
930 Springtown
Trip Blank WATER

ANALYSIS

	<u>Detection Limit</u>	<u>Sample Results</u>
	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

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



CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

PROJECT NO. 62090.01		PROJECT NAME/SITE TEXACO 930 SPRINGLAWN, Livermore					ANALYSIS REQUESTED							P.O. #			
SAMPLERS (SIGN) Robert A. Adams		(PRINT) Robert A. Adams					NO. CONTAINERS	SAMPLE TYPE	/ / / / / / / / / / / / / / /							REMARKS	
SAMPLE IDENTIFICATION		DATE	TIME	COMP	GRAB	PRES. USED			ICED	BTEX (602/6020)	TPHg (6015)	TPHg (6015)	TCG 418 1/5520	601/6010	624/6240		625/6270
Top Blank		8-9-93	1:15			HCL	Y	X	X								
Pinacite BIK-MW4			1:25					X	X								
mw-4			1:25					X	X								
Kin BIK-MW6			3:30					X	X								
mw6			3:30					X	X								
Kin BIK-MW5			4:00					X	X								
mw5			4:00					X	X								
Kin-BIK-MW1			4:50					X	X								
mw1			4:50					X	X								
Kin-BIK-MW3			5:30					X	X								
mw3		↓	5:30					X	X								

RELINQUISHED BY: Robert A. Adams	DATE 8-9-93	TIME 8:00	RECEIVED BY:	LABORATORY mobile Chem Labs	PLEASE SEND RESULTS TO: Phil Mayberry Resna, San-Jose
RELINQUISHED BY:	DATE:	TIME:	RECEIVED BY:		
RELINQUISHED BY:	DATE:	TIME:	RECEIVED BY:	REQUESTED TURNAROUND TIME NORMAL	
RELINQUISHED BY:	DATE 8-11-93	TIME 10:30	RECEIVED BY LABORATORY Diane Kerwin	RECEIPT CONDITION on Ice w/ head spill	