Texaco Refining and Marketing Inc.

10 Universal City Plaza Universal City CA 91608

93 AUG 19 AMIT 27

August 17, 1993

Mr. Tom Peacock Alameda County Environmental Health Department 80 Swan Way, Room 200 Oakland, CA 94621

Dear Tom:

Enclosed is a copy of our quarterly technical letter report dated July 22, 1993, for the currently operating Exxon service station located at 2225 Telegraph Avenue in Oakland, California. In addition, I have inclosed a copy of the self monitoring report, dated July 14, 1993, for the groundwater treatment facility.

Please call me at (818) 505-2476 if you have any questions or wish to discuss the report further.

Very truly yours,

N Nobles
Bob Robles

Texaco Refining and Marketing Inc.

RR:rr

Enclosure

cc: Mr. Rich Hiett
California Regional Water
Ouality Control Board

Quality Control Board San Francisco Bay Region 2101 Webster Street, Ste. 500

Oakland, Ca 94612

DAHarris - Exxon; Houston RRZielinski-Richmond

pr\_



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

### LETTER REPORT GROUNDWATER MONITORING AND SAMPLING Second Quarter 1993

at
Former Texaco Station
2225 Telegraph Avenue
Oakland, California

62073.01



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

> July 22, 1993 62073.01

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

Subject:

Groundwater Monitoring and Sampling, Second Quarter 1993, Texaco Service

Station, 2225 Telegraph Avenue, Oakland, California.

Mr. Robles:

At the request of Texaco Environmental Services (TES), RESNA Industries Inc. (RESNA) has prepared this letter which summarizes the results of monthly groundwater monitoring and quarterly groundwater sampling at the former Texaco Service Station located at 2225 Telegraph Avenue in Oakland, California (Plate 1, Site Vicinity Map) for the second quarter 1993 (April through June 1993). Monthly monitoring was conducted on April 14, May 11, and June 17, 1993, and quarterly groundwater sampling was conducted on May 11, 1993, 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 the six monitoring wells (MW-6B, MW-6E, MW-6F, MW-6G, MW-6H, and MW-6I) sampled at this site. As requested by TES, wells RW-1 and RW-2 were not monitored or sampled this quarter. RESNA's groundwater sampling protocol and well purge data sheets are included in Appendix A.



July 22, 1993 62073.01

### **GROUNDWATER MONITORING**

Based on the May 11, 1993, depth to water levels, groundwater elevations at the site have decreased from approximately 0.28 foot (well MW-6I) to 1.13 (well MW-6F) from the elevations reported the previous quarter (February 11, 1993). On May 11, 1993, direction of groundwater flow was toward the south with a hydraulic gradient of approximately 0.02 (Plate 2, Groundwater Gradient Map). Neither floating product nor hydrocarbon sheen was observed in the wells. 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/TPH LUFT with Method 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 4,200 ppb (MW-6H). Dissolved benzene concentrations ranged from less than 0.5 ppb to 490 ppb (MW-6H). 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.

### **PURGE WATER RECYCLING**

On May 11, 1993 approximately 100 gallons of purge water generated during purging and sampling of the monitoring wells were transported to Gibson Environmental in Redwood City, California for recycling.



July 22, 1993 62073.01

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

Sincerely, **RESNA** Industries Inc.

their O. adam Robin A. Adair Geologic Technician

GEOLOG, JAMES LEWIS NELSON No. 1463 CERTIFIED ENGINEERING **GEOLOGIST** OF CALIFOR

James L Nelson

Certified Engineering

Geologist 1463

Enclosures: Plate 1:

Site Vicinity Map

Plate 2:

Groundwater Gradient Map (May 11, 1993)

Plate 3:

TPHg/Benzene Concentrations in Groundwater (May 11, 1993)

Table 1:

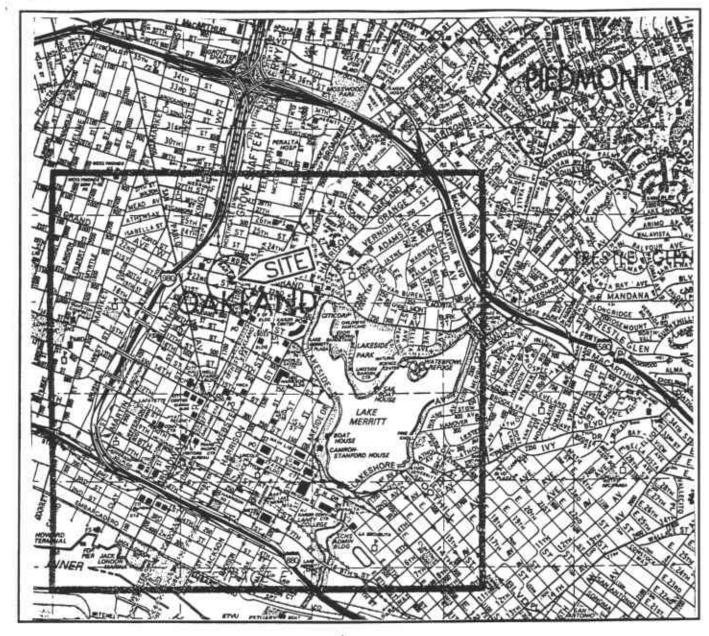
Cumulative Groundwater Monitoring Data

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 Oakland, California. 1991

LEGEND

Site Location

Approximate Scale
1100 0 2200 4400

feet

Working to Restore Nature

PROJECT

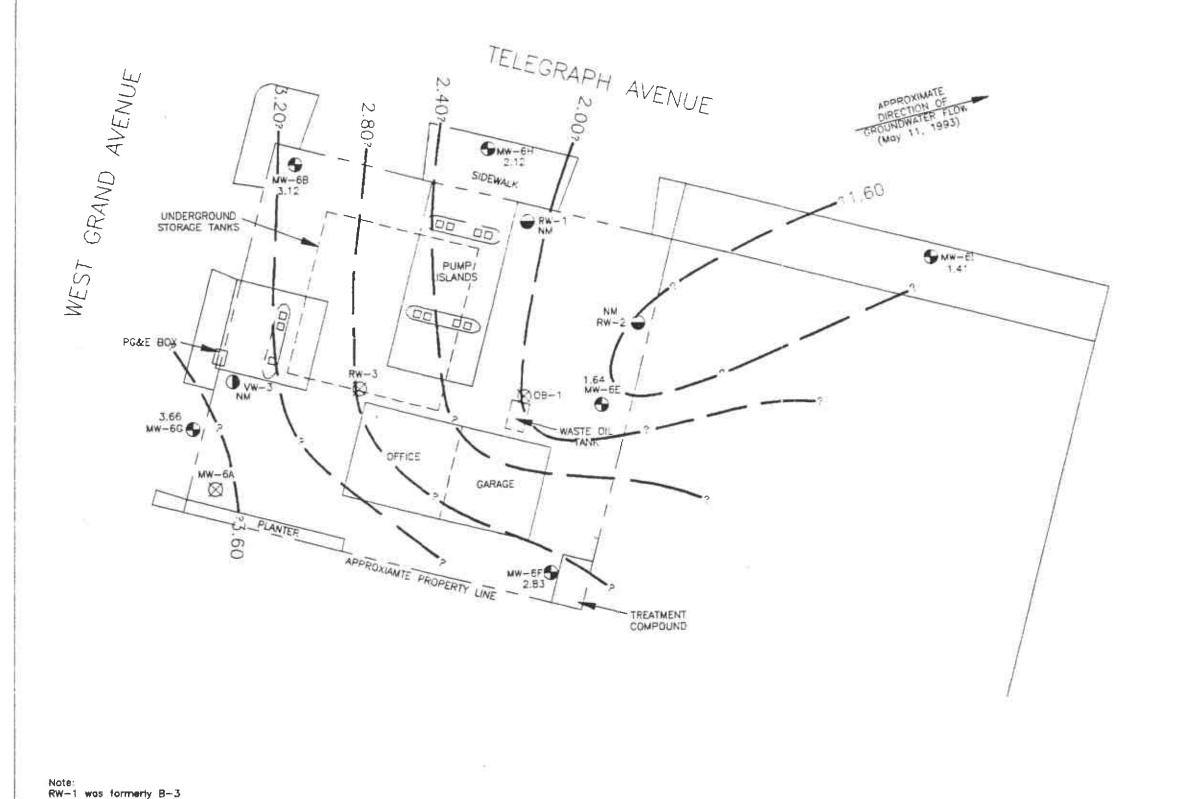
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SITE VICINITY MAP Former Texaco Station 2225 Telegraph Avenue Oakland, California

2200

PLATE

1



### EXPLANATION

MW-6! = Groundwater monitoring well (Harding Lawson, 1988)

RW-2 = Graundwater recovery/vapor extraction well (Haraing Lawson, 1988 and 1990)

W-3 = Vapor extraction well (Harding Lawson, 1988)

RW-3∑ = Abandoned well

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

3.65 = Elevation of groundwater in feet above MSL, May 11, 1993

NY = Not Monitored

Approximate Scale
15 0 30 60

Source: Modified from site plan provided by marding Lawson Associates, dated July 29, 1992.

Working to Restore Nature

GROUNDWATER GRADIENT MAP Former Texaco Station 2225 Telegraph Avenue Oakland, California PLATE

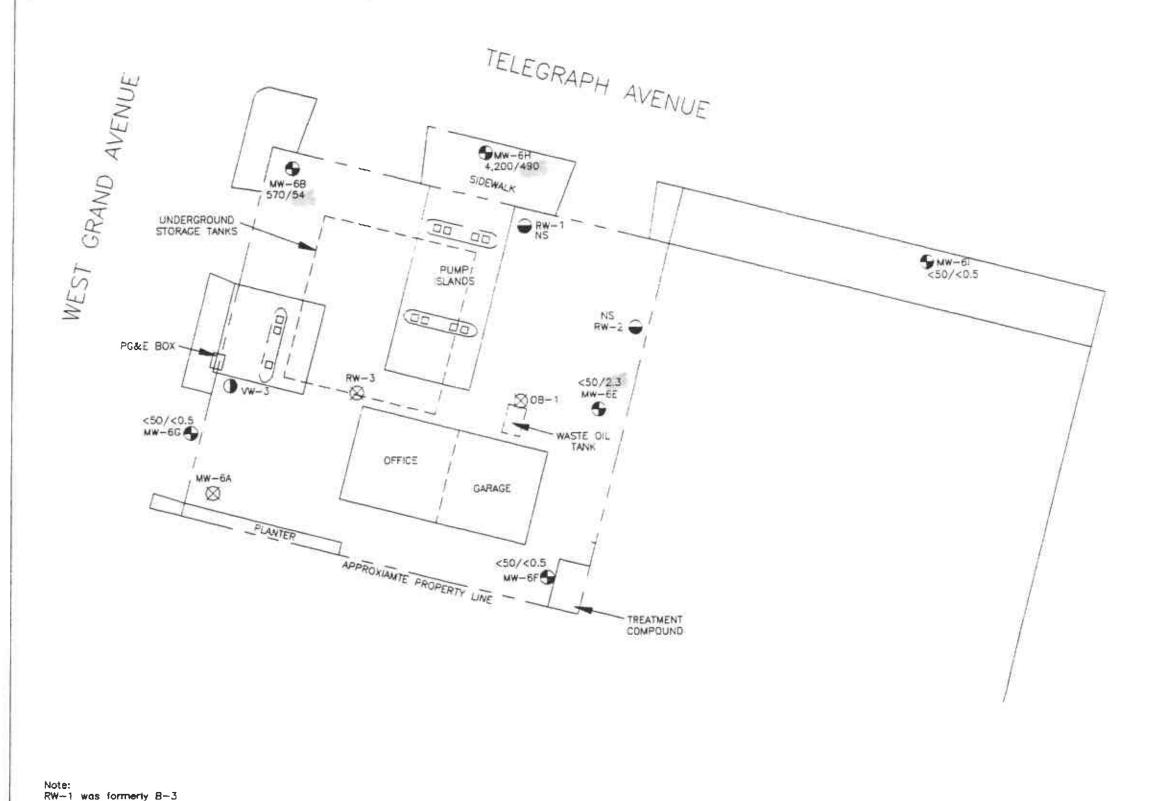
2

PROJECT

RW-2 was formerly MW-6D RW-3 was formerly MW-6C

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#### EXPLANATION

MW-6I = Graundwater monitoring well (Harding Lawson, 1988)

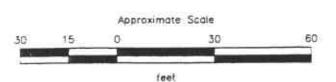
RW-2 = Groundwater recovery/vapor extraction well (Harding Lawson, 1988 and 1990)

W-3 = Vapor extraction well (Harding Lawson, 1988)

RW-3 🔀 = Abandoned well

4,200/490 = Concentration of TPHg/Benzene in groundwater in parts per billion, May 11, 1993

NS = Not sampled



Source: Modified from site plan provided by Harding Lawson Associates, dated July 29, 1992.

Working to Restore Mature

TPHg/BENZENE CONCENTRATIONS IN GROUNDWATER
Former Texaco Station
2225 Telegraph Avenue
Oakland, California

PLATE

3

PROJECT

RW-2 was formerly MW-6D

RW-3 was formerly MW-60

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July 22, 1993 62073.01

## TABLE 1 CUMULATIVE GROUNDWATER MONITORING DATA

Texaco Service Station 2225 Telegraph Avenue Oakland, California (Page 1 of 7)

Well	Date	Wellhead Elevation	Depth to Water	Groundwater Elevation*	Floating Product	
						_
MW-6A						
HLA	12/15/88	98.99*	13.77	85.22	NA.	
	10/03/89		13.40	85.59	NA	
	05/11/90		12.87	86.12	NA	
	10/16/90		13.27	85.72	NA	
	12/06/90		13.28	85.71	NA	
	01/14/91		Not :	Monitored		
	02/08/91		12.49	86.50	NA	
	04/02/91		Not:	Monitored		
	05/07/91		11.94	87.05	NA.	
	05/31/91		Not	Accessible		
	06/26/91		12.87	86.12	NA	
	08/05/91		13.44	85.55	NA.	
	08/14/91	¥	13.47	85.52	NA	
	09/11/91		13.48	85.51	NA	
	10/16/91		13.64	85.35	NA	
	12/30/91			Destroyed		
MW-6B						
HLA	12/15/88	98.81*	13.01	85.80	NA	
	10/03/89		12.94	85.87	NA	
	04/30/90		12.53	86.28	NA	
	10/16/90		12.73	86.08	NA.	
	12/06/90		12.74	86.07	NA	
	01/14/91		12.57	86.24	NA.	
	02/08/91		12.16	86.65	NA	
	04/02/91		11.50	87.31	NA.	
	05/07/91		12.02	86.79	NA.	
	05/31/91		12.40	86.41	NA	
	06/26/91		12.69	86.12	NA	
	08/05/91		12.95	85.86	NA	
	08/14/91		12.93	85.88	NA	
	09/11/91		13.01	85.80	NA.	
	10/16/91		13.09	85.72	NA	
	12/30/91		12.62	86.19	NA	
	02/25/92		11.81	87.00	NA	
	03/25/92		11.58	87.23	NA	
	06/16/92	15.34**	12.54	2.80	NA	
RESNA	09/08/92		12.87	2.47	None	
INDIAN.	11/05/92		12.70	2.64	None	
	12/14/92		12.19	3.15	None	



July 22, 1993 62073.01

### TABLE 1 CUMULATIVE GROUNDWATER MONITORING DATA

Texaco Service Station 2225 Telegraph Avenue Oakland, California (Page 2 of 7)

Well	Date	Wellhead Elevation	Depth to Water	Groundwater Elevation*	Floating Product
MW-6B (Con	ťď)				
	01/28/93		11.39	3.95	None
	02/11/93		11.70	3.64	None
	03/09/93		11.70	3.64	None
	04/14/93		11.87	3.47	None
	05/11/93		12.22	3.12	None
	06/17/93		12.46	2.88	None
RW-3 (forme	rly MW-6C)				
HLA	12/15/88	99.89*	14.41	85.48	NA
	10/03/89		14.10	85.79	NA
	04/30/90		13.81	86.68	NA.
	10/16/90	98.97*	13.29	85.68	NA
	01/14/91		14.50	84.47	NA.
	02/08/91		12.54	86.43	NA
	04/02/91		11.39	87 <i>.</i> 58	NA
	05/07/91		12.47	86.50	NA
	05/31/91		16.31	82.66	NA
	06/26/91		15.50	83.47	NA
	08/05/91		13.69	85.28	NA
	08/13/91		13.67	85.30	NA
	09/11/91		13.77	85.20	NA.
	10/16/91		16.66	82.31	NA
	11/05/91		Well	Abandoned	
RW-2 (forme					
HLA	12/15/88	98.78*	13.53	85.25	NA
	10/03/89		13.44	85.34	NA
	04/30/90		13.19	85.59	NA
	10/16/90	98.11*	12.77	85.34	NA
	01/14/91			Monitored	
	02/08/91		13.11	85.00	NA.
	04/02/91		11.70	86.41	NA
	05/07/91		14.09	84.02	NA
	05/31/91		16.01	82.10	NA
	06/26/91		14.60	83.51	NA
	08/05/91		14.00	84.11	NA
	08/13/91		21.30	76.81	NA
	09/11/91		19.97	78.14	NA.
	10/16/91		15.19	82.92	NA
	12/30/91		13.19	84.92	NA.



July 22, 1993 62073.01

## TABLE 1 CUMULATIVE GROUNDWATER MONITORING DATA

Texaco Service Station 2225 Telegraph Avenue Oakland, California (Page 3 of 7)

Well	Date	Wellhead Elevation	Depth to Water	Groundwater Elevation*	Floating Product
W-2 (cont'd)	02/25/92		16.27	81.84	NA
	03/25/92			Monitored	
	06/16/92	14.61**	12.86	1.75	NA
	09/08/92			Monitored	
	11/05/92			Monitored	
	12/14/92		*	Monitored	
	01/28/93		•	Monitored	
	02/11/93			Monitored	
	03/09/93			Monitored	
	04/14/93		•	Monitored	
	05/11/93			Monitored	
	06/17/93		Not	Monitored	
<u>MW-6B</u>					
HLA	12/15/88	98.99*	13.84	85.15	NA
	10/03/89		13.70	85.29	NA
	04/30/90		13.43	85.56	NA
	10/16/90		13.77	85.22	NA
	12/06/90		13.95	85.04	NA
	01/14/91		13.95	85.04	NA.
	02/08/91		13.20	85.79	NA
	04/02/91		12.28	86.71	NA.
	05/07/91		13.48	85. <b>5</b> 1	NA
	05/31/91		14.09	84.90	NA.
	06/26/91		12.54	86.45	NA.
	08/05/91		14.39	84.60	NA
	08/14/91		14.18	84.81	NA
	09/11/91		14.73	84.26	NA
	10/16/91		14.40	84.59	NA
	12/30/91		13.39	85.60	NA
	02/25/92		13.16	85.83	NA.
	03/25/92		12.15	86.84	NA
	06/16/92	15.23**	13.54	1.69	NA
RESNA	09/08/92		14.78	0.45	None
	11/05/92		Not	Monitored	
	12/14/92		Not	Monitored	
	01/28/93		11.62	3.61	None
	02/11/93		12.85	2.38	None
	03/09/93		12.83	2.40	None
	04/14/93		_	Monitored	
	05/11/93		13.59	1.64	None



July 22, 1993 62073.01

# TABLE 1 CUMULATIVE GROUNDWATER MONITORING DATA Texaco Service Station

2225 Telegraph Avenue Oakland, California (Page 4 of 7)

	Date	Wellhead Elevation	Depth to Water	Groundwater Elevation*	Floating Product
MW-6E cont'd	06/17/93		13.74	1.49	None
	,			27.15	
<u>MW-6F</u>					
HLA	12/15/88	99.91*	14.73	85.18	NA
	10/03/89		14.48	85.43	NA
	04/30/90		14.14	85.77	NA
	10/16/90		14.77	85.14	NA.
	12/06/90		14.81	85.10	NA
	01/14/91		14.73	85.18	NA
	02/08/91		13.73	86.18	NA
	04/02/91		12.38	87.53	NA
	05/07/91		13.67	86.24	NA
	05/31/91		14.43	85.48	NA
	06/26/91		14.81	85.10	NA
	08/05/91		14.96	84.95	NA
	08/14/91		14.87	85.04	NA
	09/11/91		15.11	84.80	NA
	10/16/91		15.16	84.75	NA.
	12/30/91		13.78	86.13	NA
	02/25/92		12.68	87.23	NA
	03/25/92		11.93	87.98	NA
	06/16/92	16.46**	14.34	2.12	NA
RESNA	09/08/92		14.75	1.71	None
	11/05/92		14.35	2.11	None
	12/14/92		12.90	3.56	None
	01/28/93		11.60	4.86	None
	02/11/93		12.25	4.21	None
	03/09/93		12.50	3.96	None
	04/14/93		12.71	3.75	None
	05/11/93		13.63	2.83	None
	06/17/93		14.02	2.44	None
MW-6G					
HLA	12/15/88	99.16°	12.39	86.77	NA
	10/03/89	100	12.22	86.94	NA
	04/30/90		11.73	87.43	NA
	10/16/90		12.28	86.88	NA
	12/06/90		12.27	86.89	NA
	01/14/91		12.14	87.02	NA
	02/08/91		11.44	87.72	NA.
	04/02/91		10.03	89.13	NA
	41/40/12				



July 22, 1993 62073.01

### TABLE 1 CUMULATIVE GROUNDWATER MONITORING DATA

Texaco Service Station 2225 Telegraph Avenue Oakland, California (Page 5 of 7)

Well	Date	Wellhead Elevation	Depth to Water	Groundwater Elevation*	Ploating Product	
MW-6G (cont'd)	05/07/91		11.00	88.16	NA	
	05/31/91		11.75	87.41	NA	
	06/26/91		12.91	86.25	NA	
	08/05/91		12.43	86.73	NA	
	08/14/91		12.43	86.73	NA	
	09/11/91		12.48	86.68	NA	
	10/16/91		12.64	86.52	NA	
	12/30/91		11.80	87.36	NA	
	02/25/92		10.32	88.84	NA.	
	03/25/92		9.93	89.23	NA	
	06/16/92	14.71**	11.88	2.83	NA	
RESNA	09/08/92		12.20	2.51	None	
	11/05/92		12.02	2.69	None	
	12/14/92		10.95	3.76	None	
	01/28/93		9.56	5.15	None	
	02/11/93		10.04	4.67	None	
	03/09/93		10.10	4.61	None	
	04/14/93		10.43	4.28	None	
	05/11/93		11.05	3.66	None	
	06/17/93		11.49	3.22	None	
<u>MW-6H</u>						
HLA	12/15/88	97.93*	12.39	85.54	NA	
	10/03/89		12.36	85 <i>.</i> 57	NA	
	04/30/90		12.10	85.83	NA	
1,00	10/16/90		12.18	85.75	NA	
	12/06/90		12.29	85.64	NA	
	01/14/91		12.22	85.71	NA	
	02/08/91		11.93	86.00	NA	
	04/02/91		11.59	86.34	NA	
	05/07/91		12.24	85.69	NA	
	05/31/91		12.22	85.71	NA.	
	06/26/91		14.34	83.59	NA	
	08/05/91		12.62	<b>85.31</b>	NA	
	08/14/91		12.43	85.50	NA	
	09/11/91		12.83	85.10	NA	
	10/16/91		12.71	85.22	NA	
	12/30/91		12.16	85.77	NA	
	02/25/92		12.17	85.76	NA.	
	03/25/92		11.65	86.28	NA	



July 22, 1993 62073.01

## TABLE 1 CUMULATIVE GROUNDWATER MONITORING DATA

Texaco Service Station 2225 Telegraph Avenue Oakland, California (Page 6 of 7)

Well	Date	Wellhead Elevation	Depth to Water	Groundwater Elevation*	Floating Product	
W-6H cont'd	06/16/92	14.47**	12.12	2.35	NA	
RESNA	09/08/92		12.30	2.17	None	
	11/05/92		12.05	2.42	None	
	12/14/92		11.65	2.82	None	
	01/28/93		11.57	2.90	None	
	02/11/93		12.22	2.25	None	
	03/09/93		12.02	2.45	None	
	04/14/93		12.02	2.45	None	
	05/11/93		12.35	2.12	None	
	06/17/93		12.22	2.25	None	
MW-6I						
HLA	12/15/88	97.60*	12.82	84.78	NA	
	10/03/89		12.83	84.77	NA	
	04/30/90		12.66	84.94	NA	
	10/16/90		12.71	84.89	NA	
	12/06/90		12.75	84.85	NA	
	01/14/91		12.55	85.05	NA	
	02/08/91		12.32	85.28	NA	
	04/02/91		12.22	85.38	NA	
	05/07/91		12.61	84.99	NA	
	05/31/91		12.82	84.78	NA.	
	06/26/91		12.93	84.67	NA.	
	08/05/91		13.01	84.59	NA.	
	08/14/91		12.98	84.62	NA.	
			13.11	84.49	NA	
	09/11/91		13.04	84.56	NA	
	10/16/91 12/30/91		12.72	84.88	NA	
			12.45	85.15	NA.	
	02/25/92		12.12	85.48	NA.	
	03/25/92	14.14**	12.75	1.39	NA	
RESNA	06/16/92	14.14	12.84	1.30	None	
KESNA	09/08/92			1.39	None	
	11/05/92		12.75	1.74	None	
	12/14/92		12.40	1.74	None	
	01/28/93		12.20	1.74	None	
	02/11/93		12.40		None	
	03/09/93		12.45	1.69		
	04/14/93		12.43	1.71	None	
	05/11/93		12.73	1.41	None	
	06/17/93		12.78	1.36	None	



July 22, 1993 62073.01

### TABLE 1 CUMULATIVE GROUNDWATER MONITORING DATA

Texaco Service Station 2225 Telegraph Avenue Oakland, California (Page 7 of 7)

Well	Date	Wellhead Elevation	Depth to Water	Groundwater Elevation*	Ploating Product	
DW 1						
RW-1 HLA	10/16/90	97.89*	12.24	85.65	NA	
IIIA	01/14/91	71.03	12.80	85.09	NA.	
	02/08/91		12.53	85.36	NA.	
	04/02/91		NA.	NA.	NA.	
	05/07/91		NA.	NA	NA	
	05/31/91		12.86	85.03	NA.	
	08/05/91		13.19	84.70	NA	
	08/13/91		14.05	83.84	NA	
	09/11/91		15.96	81.93	NA	
	10/16/91		16.00	81.89	NA	
	12/30/91		12.65	85.24	NA	
	02/25/92		14.40	83.49	NA	
	03/25/92		NA	NA	NA	
	06/16/92	14.42**	12.37	2.05	NA.	
RESNA	09/08/92		fonitored .			
	11/05/92	Not N	fonitored			
	12/14/92	Not N	fonitored			
	01/18/93	Not N	(onitored			
	02/11/93		fonitored .			
	03/09/93	Not N	fonitored .			
	04/14/93	Not N	fonitored			
	05/11/93	Not N	fonitored			

#### Measurements in feet.

Based on assigned benchmark with elevation arbitrarily set at 100 feet.

Elevation relative to mean sea level (MSL).

NA : Not Available

HI.A : Monitoring by Harding Lawson Associates
RESNA : RESNA Industries Inc. began monitoring.

RESNA assumes all wells are acreened in the same hydrostratigraphic unit, as identified by the previous environmental consultant.



See notes on page 4 of 4.

July 22, 1993 62073.01

# TABLE 2 CUMULATIVE RESULTS OF LABORATORY ANALYSES OF GROUNDWATER SAMPLES

Texaco Service Station 2225 Telegraph Avenue Oakland, California (Page 1 of 4)

<u>Weli</u>	Date	TPHg	Benzene	Tolucne	Ethyl- benzene	Total Xylenes	Total Oil and Grease	
					-	-		
MW-6A HLA	06/24/88	NA.	ND	ND	ND	ND	NA.	
III.A	10/20/88	NA.	1.0	ND	ND	ND	NA.	
	09/07/89	ND	2.0	ND	ND	ND	NA NA	
	05/11/90	<500	150	6.2	< 0.25	13	NA NA	
	05/07/91	2,700	700	64	67	74	NA.	
	08/14/91	ND	3.6	<0.5	<0 <i>5</i>	<0.5	NA NA	
	12/31/91	ND	3.0	Well Damage		~0	IVA	
	03/25/92			Well Damage				
	05/02/92			Well Abandon				
	03/02/92			Well Abandon	ieu			
MW-6B								
HLA	06/24/88	NA	ND	ND	ND	5.0	NA	
	10/20/88	NA	4.0	ND	ND .	ND	NA	
	09/07/89	2,700	70	3.0	ND	160	NA	
	04/30/90	168	45	8.0	60	22	NA	
	05/07/91	3,300	240	6.0	20	660	NA	
	08/14/91	980	9.1	42	310	150	NA	
	12/31/91	1,200	46	< 5.0	85	220	ND	
	03/25/92	190	31	8.6	84	8.6	NA	
	06/16/92	1,700	44	1.7	7.2	230	NA	
RESNA	09/08/92	2,900	35	8.3	110	330	NA.	
	11/05/92	1,400	29	< 0.5	75	190	NA	
	02/11/93	210	1.2	<0.5	2.8	4.3	NA	
	05/11/93	570	54	2.4	37	36	NA	
PW-3 (form	nerly MW-6C)							
HLA	06/24/88	NA.	7,400	7.0	170	2,300	NA.	
	10/20/88	NA	9,500	65	170	850	NA.	
	09/07/89	18,000	7,900	430	350	1,100	NA.	
	04/30/90	30,000	6,100	1,500	1,000	2,700	NA	
	05/07/91	5,800	4,200	640	220	670	NA	
	08/14/91	3,800	2,300	300	49	360	NA	
	11/05/91	3,500	2,000	Well Abando				
	11,00,71				<del></del>			
	nerly MW-6D)					.45	27.1	
HLA	07/11/88	NA.	220	27	<20	<10	NA	
	10/20/88	NA	710	74	22	110	NA	
	09/07/89	2,200	600	26	58	31	NA.	
	04/30/90	3,600	800	150	310	280	NA	



July 22, 1993 62073.01

# TABLE 2 CUMULATIVE RESULTS OF LABORATORY ANALYSES OF GROUNDWATER SAMPLES Texaco Service Station

Texaco Service Station 2225 Telegraph Avenue Oakland, California (Page 2 of 4)

<u>Well</u>	Date	ТРНд	Benzene	Toluene	Ethyl- benzene	Total Xylenes	Total Oil and Grease
RW-2 (cont'd)	05/07/91	11,000	3,200	480	150	780	NA.
<u> </u>	08/14/91	NA NA	NA.	NA NA	NA NA	NA.	NA
	12/31/91	NA	NA.	NA NA	NA	NA	NA.
	03/25/92	NA	NA.	NA.	NA.	NA.	NA ·
	06/16/92	28,000	2,900	1,000	120	2,700	NA.
RESNA	09/08/92	20,000	<b>2</b> ,500	Not Sampled	440	2,700	141
	11/05/92			Not Sampled			
	05/11/93			Not Sampled			
MW-6E HLA	10/20/88	NA	1.0	ND	ND	3.0	NA
	09/07/89	220	3.0	NĐ	ND	ND	NA
	04/30/90	250	57	< 5.0	<5.0	53	NA
	05/07/91	160	32	1.0	2.2	1.4	NA
	08/14/91	ND	0.9	<0.5	<0.5	< 0.5	NA
	12/31/91	90	3.1	<0.5	< 0.5	< 0.5	ND
	03/25/92	830	41	1.0	3.8	16	NA
	06/16/92	3,400	300	23	68	510	NA
RESNA	09/08/92	480	27	< 0.5	3.6	21	NA
	11/05/92			Not Sampled			
	02/11/93	270	15	< 0.5	<0.5	8.7	NA
	05/11/93	<50	2.3	<0.5	1.4	3.2	NA.
MW-6F							
HLA	10/25/88	ND	ND	ND	2.0	NA	NA
	09/07/89	ND	ND	ND	ND	ND	NA
	04/30/90	ND	ND	ND	ND	ND	NA
	05/07/91	ND	ND	< 0.5	<0.5	< 0.5	NA '
	08/14/91	ND	ND	< 0.5	< 0.5	< 0.5	NA
	12/31/91	ND	ND	< 0.5	<0.5	< 0.5	ND
	03/25/92	ND	ND	< 0.5	<0.5	<0.5	NA
	06/16/92	ND	ND	< 0.5	< 05	< 0.5	NA
RESNA	09/08/92	<50	<0.5	<0.5	< 0.5	<0.5	NA
	11/05/92	<50	< 0.5	<0.5	<0.5	< 0.5	NA.
	02/11/93	<.50	< 0.5	<0.5	<0.5	<0.5	NA
	05/11/93	< 0.5	<0.5	<0.5	<0.5	<0.5	NA
MW-6G							***
HLA	12/07/88	ND	ND	ND	ND	NA.	NA NA
	09/07/89	ND	ND	ND	ND	ND	NA



July 22, 1993 62073.01

# TABLE 2 CUMULATIVE RESULTS OF LABORATORY ANALYSES OF GROUNDWATER SAMPLES

Texaco Service Station 2225 Telegraph Avenue Oakland, California (Page 3 of 4)

<u>Well</u>	Date	ТРНg	Benzene	Toluene	Ethyl-	Total	Total Oil and Grease
	Date	1rng	Denzene	1 Oluene	benzene	Xylenes	and Grease
MW-6G	04/30/90	ND	ND	ND	ND	ND	NA
cont'd	05/07/91	ND	ND	<0.5	<0.5	< 0.5	NA
	08/14/91	ND	ND	<0.5	<0.5	< 0.5	NA
	12/31/91	ND	ND	< 0.5	< 0.5	< 0.5	ND
	03/25/92	ND	ND	<0.5	<0.5	<0.5	NA
	06/16/92	ND	ND	<0.5	< 0.5	<0.5	NA
RESNA	09/08/92	<50	< 0.5	<0.5	< 0.5	<0.5	NA
	11/05/92	<50	< 0.5	< 0.5	<0.5	<0.5	NA
	02/11/93	<50	< 0.5	< 0.5	<0.5	< 0.5	NA
	05/11/93	<50	<0.5	<0.5	<b>.0.5</b>	<0.5	NA
MW-6H						. 3	
HLA	12/07/88	NA.	1,200	320	110	<b>22</b> 0	NA
	09/07/89	660	480	<10	16	<15	NA
	04/30/90	630	700	39	31	50	NA
	05/07/91	570	95	14	15	21	NA
	08/14/91	540	52	9.9	11	18	NA
	12/31/91	<b>790</b>	52	28	22	42	ND
	03/25/92	920	170	52	25	54	NA
	06/16/92	460	31	11	6.8	16	NA
RESNA	09/08/92	780	69	23	17	18	NA
	11/05/92	3,400	500	260	85	160	NA
	02/11/93	2,500	410	170	28	130	NA
	05/11/93	4,200	490	270	80	210	NA
MW-6I							
HLA	12/07/88	ND	ND	ND	ND	NA	NA
	09 <sup>/</sup> /07/ <b>89</b>	ND	ND	ND	ND	ND	<b>NA</b>
	04/30/90	ND	ND	ND	ND	ND	NA.
	05/07/91	ND	ND	< 0.5	<0.5	< 0.5	NA.
	08/14/91	ND	ND	< 0.5	< 0.5	< 0.5	NA
	12/31/91	ND	ND	<0.5	<0.5	< 0.5	ND
	03/25/92	ND	ND	< 0.5	< 0.5	<0.5	NA
	06/16/92	ND	ND	< 0.5	<0.5	<0.5	NA
RESNA	09/08/92	<50	< 0.5	< 0.5	< 0.5	< 0.5	NA
	11/05/92	< 50	< 0.5	< 0.5	< 0.5	< 0.5	NA
	02/11/93	<50	<0.5	< 0.5	< 0.5	<0.5	NA
	05/11/93	< 50	< 0.5	<0.5	< 0.5	<0.5	NA.



July 22, 1993 62073.01

### TABLE 2 CUMULATIVE RESULTS OF LABORATORY ANALYSES OF GROUNDWATER SAMPLES

Texaco Service Station 2225 Telegraph Avenue Oakland, California (Page 4 of 4)

Wel <u>l</u>	Date	ТРНg	Benzene	Toluene	Ethyl- benzene	Total Xylenes	Total Oil and Grease	
RW-1 HLA RESNA	06/16/92 09/08/92 11/05/92 02/11/93	6,200	620	1,400 Not Sampled Not Sampled Not Sampled	240	1,400	NA	
MCLs DWAL		_	1.0	 100	680 —	1,750 —	<u> </u>	

Results in parts per billion (ppb).

TPHg : Total petroleum hydrocarbons analyzed as gasoline.

: 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 Levels, DHS (October 1990)

NA : Not Analyzed

ND : Not detectable at or above method detection limit.

Not Applicable

HLA : Sampled by Harding Lawson Associates RESNA : RESNA Industries Inc. began sampling.

### APPENDIX A

# GROUNDWATER SAMPLING PROTOCOL 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 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 rinsed with Alconox® and triple rinsed with distilled water prior to use.

Before water samples were collected from the groundwater monitoring wells, the wells were purged until stabilization of the temperature, Ph, and conductivity was obtained. Approximately four 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 transported in iced storage in a thermally insulated ice chest, accompanied by a Chain of Custody form, to a California-certified laboratory.

Project Name: Texaco - Oakland Job No. 62073.01

Date: May 11, 1993 Page 1 of 1

Well No. MW-6B Time Started 2:15

TIME (hr)	GALLONS (cum.)	TEMP. (F)	рН	CONDUCT. (micromho)
2:15	Start purg	ging MW-6B		***
2:15	1.0	62.6	7.72	980
2:17	2.0	62.4	7.69	1010
2:19	3.0	62.3	7.63	1010
2:21	4.0	62.0	7.62	1020
2:21	Stop puro	jing MW-6B		
iotes:	Depth t Gallon	Depth to Bo o Water - ini o Water - fir s per Well Ca Gal	cer (inches) : ttom (feet) : tial (feet) : al (feet) : % recovery : lime Sampled : lons Purged : lume Purged :	18.00 12.22 12.22 100.0% 3:10 0.98 4.0

Project Name: Texaco - Oakland Job No. 62073.01

Date: May 11, 1993 Page 1 of 1

Well No. MW-6E Time Started 12:30

TIME (hr)	GALLONS (cum.)	TEMP. (F)	рн	CONDUCT. (micrombo)
12:30	Start purg	ing MW-6E		
12:30	0	63.0	7.71	590
12:34	4.0	61.9	7.72	570
12:38	8.0	62.1	7.73	510
12:46	12.0	62.3	7.73	500
12:50	16.0	62.3	7.80	500
12:51	Stop purg	ing MW-6E		
Notes:	Depth t	Depth to Bo o Water - ini o Water - fir s per Well Ca	al (feet) % recovery lime Sampled asing Volume llons Purged	: 19.50 : 13.59 : 13.59 : 100.0% : 2:00 : 3.90 : 16.0

Project Name: Texaco - Oakland Job No. 62073.01

Date: May 11, 1993 Page 1 of 1

Well No. MW-6F Time Started 10:15

TIME (hr)	GALLONS (cum.)	TEMP.	рĦ	CONDUCT. (micromho)
10:15	Start purg	ing MW-6F		
10:15	0	63.1	7.88	570
10:19	4.0	63.2	7.85	550
10:23	8.0	62.9	7.86	540
10:32	12.0	63.0	7.86	530
10:36	16.0	63.1	7.84	530
10:37	Stop purg	ing MW-6F		
Not <b>es:</b>	Depth to Gallons	Depth to Bo water - ini water - fin T s per Well Ca	al (feet) % recovery ime Sampled sing Volume lons Purged lume Purged	: 19.58 : 13.63 : 13.70 : 95.5% : 11:45 : 3.93 : 16.0 : 4.0

Project Name: Texaco - Oakland

Job No. <u>62073.01</u>

Date: May 11, 1993

Page <u>1</u> of <u>1</u>

Well No. MW-6G

Time Started 9:30

TIME (hr)	GALLONS (cum.)	TEMP. (F)	рн	CONDUCT. (micrombo)
9:30	Start purg	ing MW-6G		
9:30	0	64.4	7.74	990
9:34	5.65	64.2	7.76	910
9:38	11.30	64.3	7.77	860
9:42	16.95	64.7	7.76	910
9:46	22.60	64.7	7.72	920
9:46	Stop purg	ing MW-6G		
otes:	Depth to	Depth to Bo o Water - ini o Water - fin T s per Well Ca	al (feet) % recovery ime Sampled sing Volume lons Purged	: 19.60 : 11.05 : 11.15 : 98% : 10:55 : 5.64 : 22.6

Project Name: Texaco - Oakland Job No. 62073.01

Date: May 11, 1993 Page 1 of 1

Well No. MW-6H Time Started 1:15

(cum.)	TEMP. (F)	рн	(micromho)
Start purg	ing MW-6H		
0	63.9	7.61	900
5	64.1	7.63	940
10	63.9	7.62	920
15	63.7	7.65	920
20	63.4	7.62	910
Stop purg	ing MW-6H		
Depth to	Depth to Bo water - ini water - fin T s per Well Ca Gal	ttom (feet) tial (feet) al (feet) % recovery ime Sampled sing Volume lons Purged	: 19.65 : 12.35 : 12.38 : 99.0% : 2:45 : 4.82 : 20
	Start purg  0 5 10 15 20 Stop purg  Depth to	Start purging MW-6H  0 63.9  5 64.1  10 63.9  15 63.7  20 63.4  Stop purging MW-6H  Well Diamet Depth to Bo Depth to Water - ini Depth to Water - fin Gallons per Well Ca Gal	Start purging NW-6H   0   63.9   7.61     5   64.1   7.63     10   63.9   7.62     15   63.7   7.65     20   63.4   7.62     Stop purging NW-6H     Well Diameter (inches) Depth to Bottom (feet) Depth to Water - initial (feet) Depth to Water - final (feet)

Project Name: Texaco - Oakland Job No. 62073.01

Date: May 11, 1993 Page 1 of 1

Well No. MW-6I Time Started 11:05

TIME (hr)	GALLONS (cum.)	TEMP. (F)	PH	CONDUCT.
11:05	Start purg	ing MW-6I		
11:05	0	62.6	7.93	270
11:10	4.5	63.2	7.83	470
11:15	9.0	63.4	7.79	490
11:25	13.5	62.9	7.82	440
11:30	18.0	62.8	7.81	450
11:31	Stop purg	ing MW-6I		
iotes:	_			: 19.40 : 12.73 : 12.73

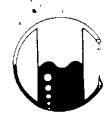
Gallons per Well Casing Volume:
Gallons Purged:

Well Casing Volume Purged: 4.0
Approximate Pumping Rate (gpm): 1.0

18.0

### APPENDIX B

# LABORATORY ANALYSIS REPORTS AND CHAIN OF CUSTODY DOCUMENTATION



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

62073.01\1428\012681

RESNA Industries

3315 Alamden Expressway, #34

San Jose, CA 95118 Attn: Phillip Mayberry

Project Manager

Date Sampled: 05-11-93 Date Received: 05-12-93

Date Analyzed: 05-19-93

Sample Number \_\_\_\_\_

053127

Sample Description Project # 62073.01

Texaco - Oakland 2225 Telegraph

Rinsate Blank 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: Spike Recovery is 79%

Note:

Analysis was performed using EPA methods 5030 and TPH LUFT with method 602 used for BTX distinction.

 $(ppb) = (\mu g/L)$ 

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Ronald G. Evans Lab Director



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62073.01\1428\012681

**RESNA** Industries

3315 Alamden Expressway, #34

San Jose, CA 95118 Attn: Phillip Mayberry

Project Manager

Date Sampled: 05-11-93 Date Received: 05-12-93

Date Analyzed: 05-19-93

Sample Number

053128

Sample Description

Project # 62073.01 Texaco - Oakland 2225 Telegraph Site Blank 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:

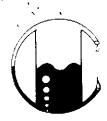
Analysis was performed using EPA methods 5030 and TPH

LUFT with method 602 used for BTX distinction.

 $(ppb) = (\mu g/L)$ 

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62073.01\1428\012681

RESNA Industries

3315 Alamden Expressway, #34

San Jose, CA 95118 Attn: Phillip Mayberry

Project Manager

Date Sampled: 05-11-93

Date Received: 05-12-93 Date Analyzed: 05-19-93

053129

Sample Number

Sample Description

Project # 62073.01 Texaco - Oakland

2225 Telegraph

MW-6G

WATER

### ANALYSIS

Detection Sample
Limit Results
----ppb ppb

Ethylbenzene

0.5 <0.5

Note:

Analysis was performed using EPA methods 5030 and TPH

LUFT with method 602 used for BTX distinction.

 $(ppb) = (\mu g/L)$ 

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62073.01\1428\012681

**RESNA Industries** 

3315 Alamden Expressway, #34

San Jose, CA 95118 Attn: Phillip Mayberry

Project Manager

Date Sampled: 05-11-93 Date Received: 05-12-93

Date Analyzed: 05-19-93

Sample Number

053130

Sample Description

Project # 62073.01 Texaco - Oakland

2225 Telegraph MW-6F

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.

 $(ppb) = (\mu g/L)$ 

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62073.01\1428\012681

RESNA Industries

3315 Alamden Expressway, #34

San Jose, CA 95118 Attn: Phillip Mayberry

Project Manager

Date Sampled: 05-11-93 Date Received: 05-12-93

Date Analyzed: 05-19-93

Sample Number

053131

Sample Description

Project # 62073.01 Texaco - Oakland 2225 Telegraph

MW-6I

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.

 $(ppb) = (\mu q/L)$ 

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62073.01\1428\012681

RESNA Industries

3315 Alamden Expressway, #34

San Jose, CA 95118 Attn: Phillip Mayberry

Project Manager

Date Sampled: 05-11-93 Date Received: 05-12-93

Date Analyzed: 05-19-93

Sample Number

053132

Sample Description

Project # 62073.01 Texaco - Oakland

2225 Telegraph

MW-6E

WATER

#### ANALYSIS \_\_\_\_\_

	Detection Limit	Sample Results	
	ppb	ppb	
Total Petroleum Hydrocarbons as Gasoline	50	<50	
Benzene	0.5	2.3	
Toluene	0.5	<0.5	
Xylenes	0.5	3.2	
Ethylbenzene	0.5	1.4	

QA/QC: Duplicate Deviation is 6.7%

Note:

Analysis was performed using EPA methods 5030 and TPH

LUFT with method 602 used for BTX distinction.

 $(ppb) = (\mu g/L)$ 

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Ronald G. Evans Lab Director



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62073.01\1428\012681

**RESNA** Industries

3315 Alamden Expressway, #34

San Jose, CA 95118 Attn: Phillip Mayberry Project Manager

Date Sampled: 05-11-93

Date Received: 05-12-93

Date Analyzed: 05-19-93

Sample Number \_\_\_\_\_\_

053133

Sample Description

Project # 62073.01 Texaco - Oakland

2225 Telegraph

MW-6H

WATER

### ANALYSIS

	Detection Limit	Sample Results	
	ppb	ppb	
Total Petroleum Hydrocarbons as Gasoline	50	4,200	
Benzene	0.5	490	
Toluene	0.5	270	
Xylenes	0.5	210	
Ethylbenzene	0.5	80	

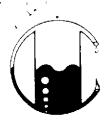
Note:

Analysis was performed using EPA methods 5030 and TPH LUFT with method 602 used for BTX distinction.

 $(ppb) = (\mu g/L)$ 

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62073.01\1428\012681

**RESNA** Industries

3315 Alamden Expressway, #34

San Jose, CA 95118 Attn: Phillip Mayberry

Project Manager

Date Sampled: 05-11-93 Date Received: 05-12-93

Date Analyzed: 05-19-93

Sample Number \_\_\_\_\_

053134

Sample Description

Project # 62073.01 Texaco - Oakland 2225 Telegraph

Mw-6B WATER

ANALYSIS

	Detection Limit	Sample Results
	ppb	ppb
Total Petroleum Hydrocarbons as Gasoline	50	570
Benzene	0.5	54
Toluene	0.5	2.4
Xylenes	0.5	36
Ethylbenzene	0.5	37

Note:

Analysis was performed using EPA methods 5030 and TPH LUFT with method 602 used for BTX distinction.

 $(ppb) = (\mu g/L)$ 

MOBILE CHEM LABS

Ronald G. Evans



### CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

	NAME/SITE						ANALYSIS REQUESTE							D P.O. #:			
62073.01 Texaco Telegah, carkant, Of.													7				
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						-					-		+	-			
RELINQUISHED BY:		TIME 700AM					Mobile Cham Labs						PI	PLEASE SEND RESULTS TO:			
RELINQUISHED BY:	DATE	TIME	RECEIVED BY:											Phil Mayberry Resna, Santose			
RELINQUISHED BY:	DATE	TIME	RECEIVED BY:				REQUESTED TURNAROUND TIME:										
RELINQUISHED BY:	DATE TIME RECEIVED BY LABOR				RATORY	′: F	ON the No head Space							PROJECT MANAGER:			