



Texaco Refining
and Marketing Inc

108 Cutting Boulevard
Richmond CA 94804

93 AUG 11 PM 3:39

August 5, 1993

ENV-STUDIES, SURVEYS & REPORTS
3940 Castro Valley Blvd., Castro Valley, CA

Mr. Scott Seery
Alameda County Department of Environmental Health
80 Swan Way, Room 200
Oakland, CA 94621

Dear Mr. Seery:

Enclosed is the Quarterly Groundwater Monitoring Letter Report, covering the second quarter 1993, 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

C:\KLD\COVER2.WKB
A:\COVER\COVER2.WKB
C:\KLD\CC

Attachment

cc: HRPearson-RRZielinski

Mr. Richard Hiett
Regional Water Quality Control Board
2101 Webster Street, Suite 500
Oakland, CA 94612

Mr. Dave Daffern
Lakeshore Financial
21060 Redwood Road
Castro Valley, CA 94596

pr:

PM 3:39

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
3940 Castro Valley Boulevard
Castro Valley, California

62091.01

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

July 26, 1993
62091.01

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

Subject: Groundwater Monitoring and Sampling, Second Quarter 1993, Former Texaco Station, 3940 Castro Valley Boulevard, Castro Valley, California.

Ms. Detterman:

At the request of Texaco Environmental Services, RESNA Industries Inc. (RESNA) has prepared this letter which summarizes the results of quarterly groundwater monitoring at the former Texaco Service Station located at 3940 Castro Valley Boulevard in Castro Valley, California (Plate 1, Site Vicinity Map) for the second quarter 1993 (April through June 1993). On June 22 and 23, 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 the seven monitoring wells (MW-1 and MW-3 through MW-8) at this site. RESNA's groundwater sampling protocol and well purge data sheets are included in Appendix A.

GROUNDWATER MONITORING

Groundwater elevations at the site have decreased an average of about 0.01 foot in wells MW-1 and MW-5, increased an average of about 0.05 foot in wells MW-3, MW-6, and MW-8, and remained the same in wells MW-4 and MW-7 from the elevations reported the last quarter (March 31, 1993). The groundwater beneath the site appears to be flowing toward the northwest with a gradient of less than 0.001 (Plate 2, Groundwater Gradient Map). Floating product or hydrocarbon sheen was not observed in the wells this quarter. Historical and recent monitoring data are summarized in Table 1, Cumulative Groundwater Monitoring Data.

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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 and total petroleum hydrocarbons as gasoline (TPHg) using modified Environmental Protection Agency Methods 5030/602. Copies of the laboratory analyses reports and the Chain of Custody Documentation for the groundwater samples are included in Appendix B.

GROUNDWATER ANALYTICAL RESULTS

Concentrations of TPHg in groundwater samples were less than 50 parts per billion (ppb) in all wells sampled, except for well MW-3 (1900 ppb). Dissolved benzene concentrations were less than 0.5 ppb in all wells sampled, except for well MW-3 (220 ppb). 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

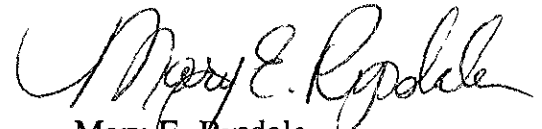
On June 24, 1993, approximately 400 gallons of purge water generated during purging and sampling of the monitoring wells were removed from the site for transport to Gibson Environmental in Redwood City, California for recycling.

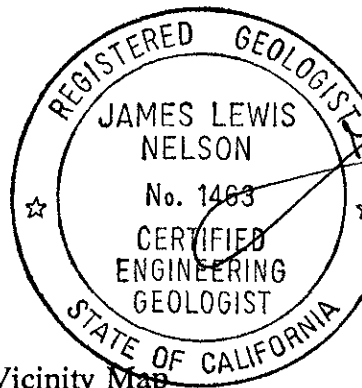
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If you have any questions or comments regarding this report, please call (408) 264-7723.

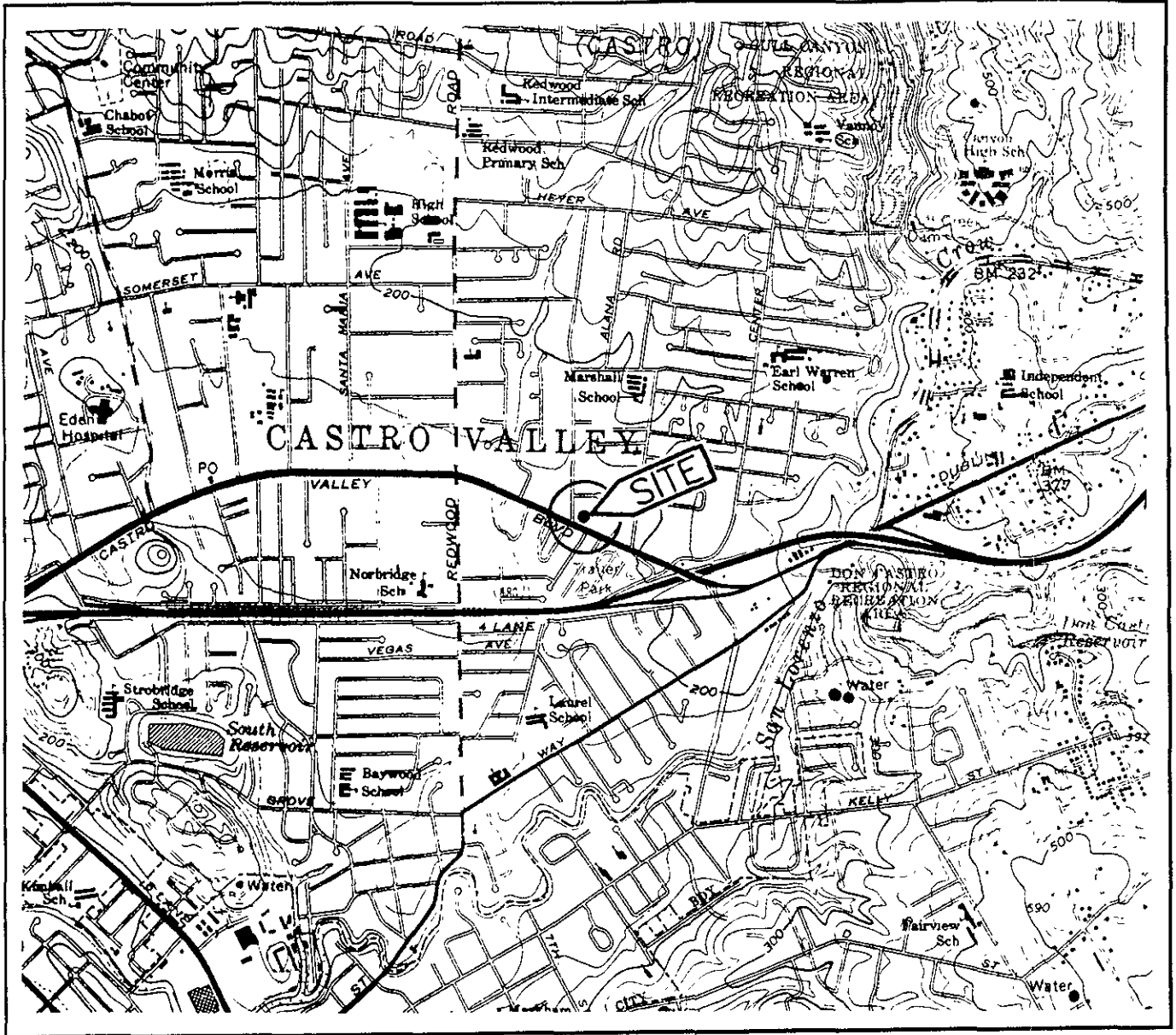
Sincerely,
RESNA Industries Inc.


Mary E. Rysdale
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

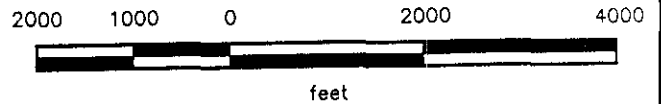


Base U.S. Geological Survey
 7 1/2-Minute Quadrangles
 Hayward, California
 Photorevised 1980

LEGEND

○ = Site Location

Approximate Scale

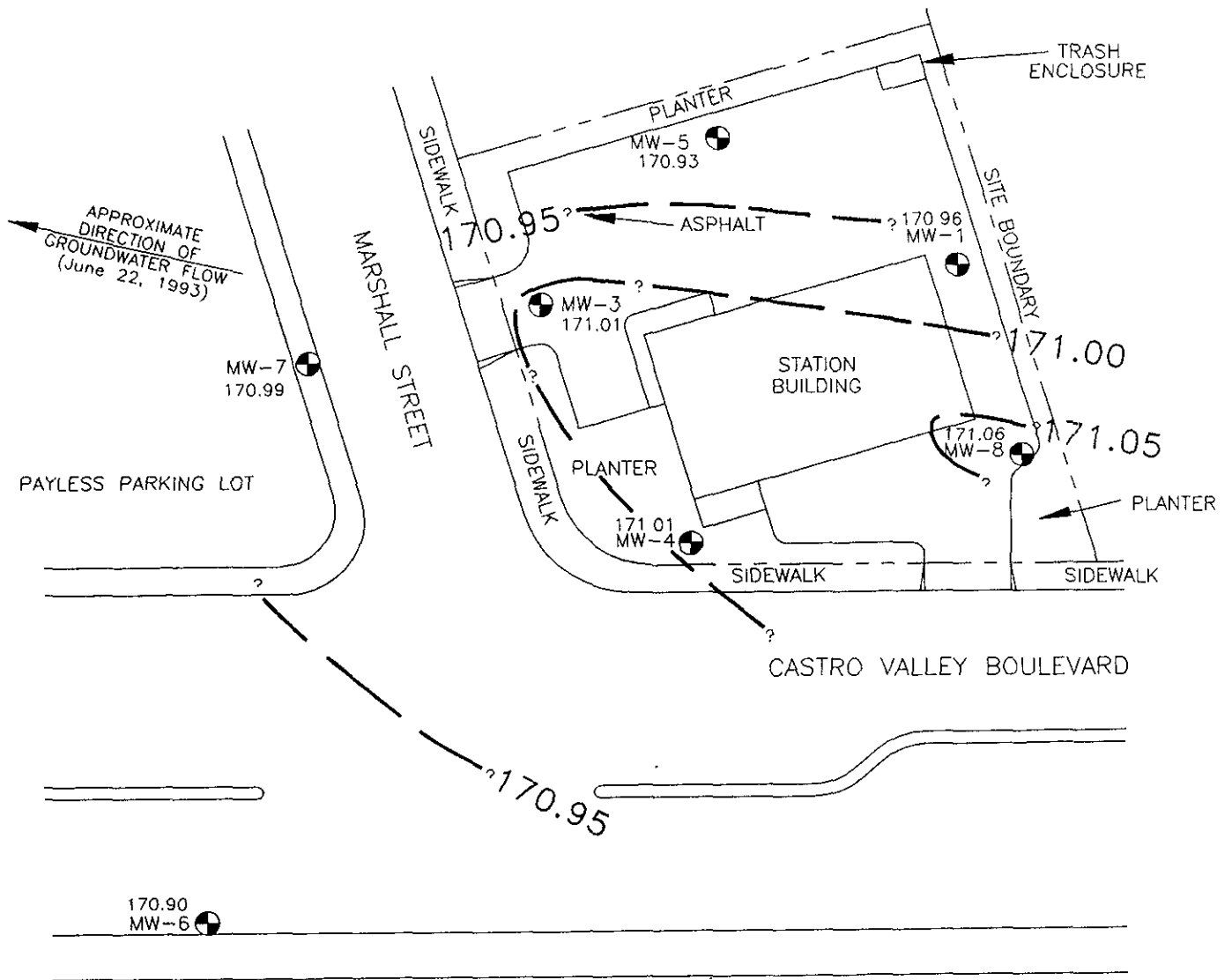


RESNA
 Working to Restore Nature



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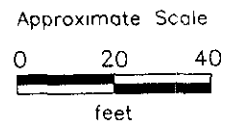
SITE VICINITY MAP
Former Texaco Station
3940 Castro Valley Boulevard
Castro Valley, California

PLATE
1



EXPLANATION

- MW-8  = Monitoring Well
- 171.05  = Line of equal elevation of groundwater in feet above mean sea level (MSL)
- 171.06 = Elevation of groundwater in feet above MSL, June 22, 1993



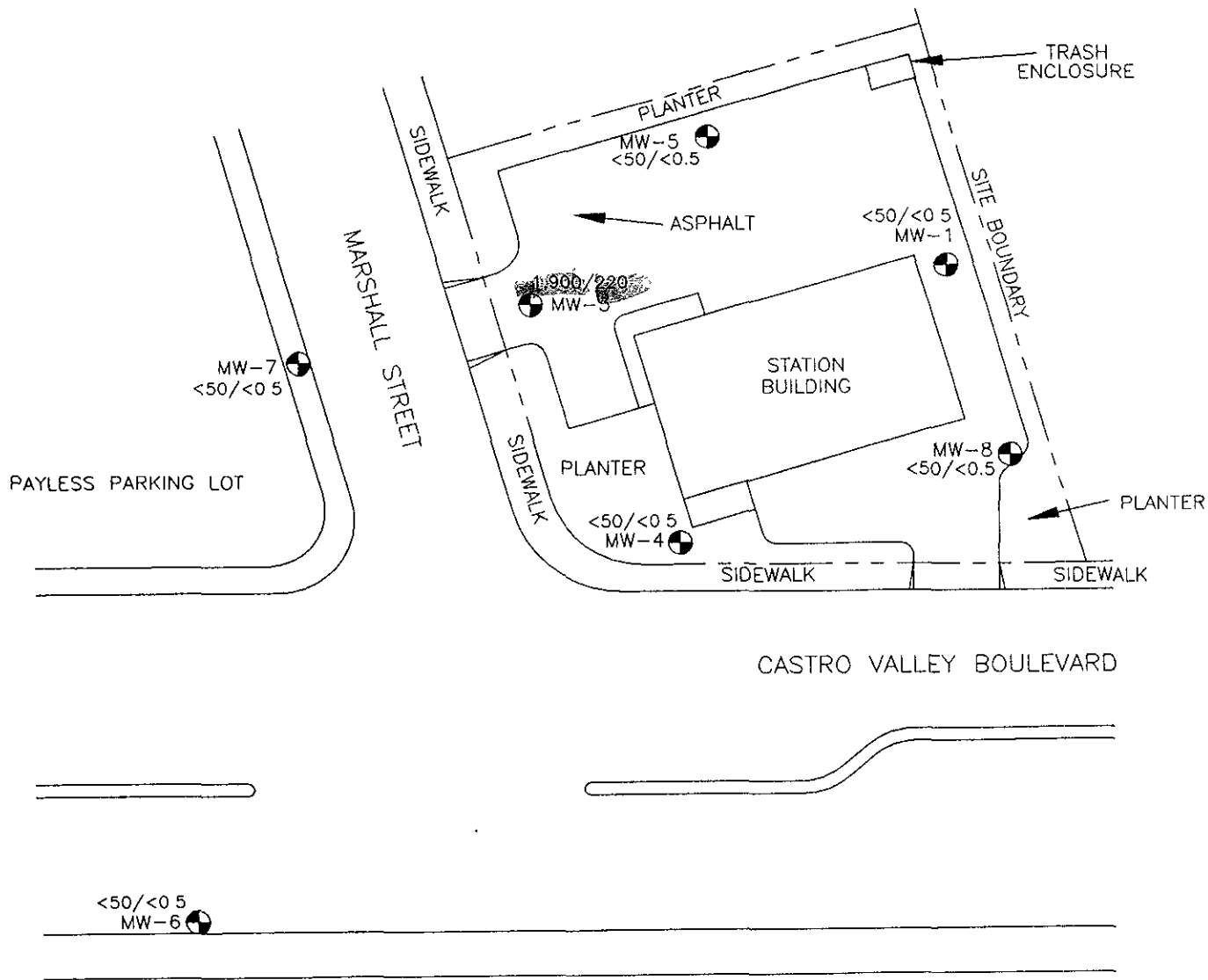
BASE MAP: SURVEYED BY RON ARCHER
CIVIL ENGINEER, INC.




GROUNDWATER GRADIENT MAP
Former Texaco Station
3940 Castro Valley Boulevard
Castro Valley, California

PLATE
2

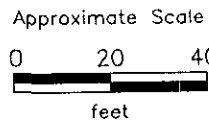
PROJECT 62091.01



EXPLANATION

MW-8  = Monitoring Well

1,900/220 = TPHg\Benzene concentration in groundwater in parts per billion, June 22 and 23, 1993



BASE MAP SURVEYED BY RON ARCHER
CIVIL ENGINEER, INC.

RESNA
Working to Restore Nature

**TPHg\BENZENE CONCENTRATIONS
IN GROUNDWATER**
Former Texaco Station
3940 Castro Valley Boulevard
Castro Valley, California

PLATE
3

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TABLE 1
CUMULATIVE GROUNDWATER MONITORING DATA
Former Texaco Service Station
3940 Castro Valley Boulevard
Castro Valley, California
(Page 1 of 5)

Well	Date	Elevation of Wellhead	Depth to Water	Elevation of Groundwater	Floating Product
<u>TX</u>	11/19/87	--	Dry	--	--
	12/20/87		Dry	--	--
	12/30/87		Dry	--	--
	06/07/88		Dry	--	--
	12/13/88		Dry	--	--
	08/29/92		Well Destroyed		
<u>MW-1</u>	12/30/87	192.46	21.92	170.54	NR
	06/07/88		23.35	169.11	NR
	12/13/88		23.17	169.29	NR
	08/29/89		23.70	168.76	NR
	02/27/90		23.25	169.21	NR
	04/21/90		23.65	168.81	NR
	06/11/90		23.74	168.72	NR
	07/18/90		23.90	168.56	NR
	08/22/90		24.07	168.39	NR
	09/27/90		24.21	168.25	NR
	10/10/90		24.25	168.21	NR
	11/15/90		24.45	168.01	NR
	12/11/90		23.54	168.92	NR
	01/09/91		24.68	167.78	NR
	01/23/91		24.61	167.85	NR
	02/22/91		24.58	167.88	NR
	03/20/91		23.95	168.51	NR
	04/11/91		23.41	169.05	NR
	05/14/91		23.52	168.94	NR
	06/10/91		23.61	168.85	NR
	07/16/91		23.89	168.57	NR
	08/09/91		23.96	168.50	NR
	09/11/91		24.16	168.30	NR
	12/11/91		24.68	167.78	NR
	02/28/92	192.45	23.72	168.73	NR
	03/30/92		23.25	169.20	NR
	06/30/92		23.44	169.01	NR
RESNA	10/05/92		23.96	168.49	ND
	12/29/92		Flooded - Not Accessible		
	03/31/93		21.38	171.07	ND
	06/22/93		21.49	170.96	ND

See notes on page 5 of 5.

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TABLE 1
CUMULATIVE GROUNDWATER MONITORING DATA
Former Texaco Service Station
3940 Castro Valley Boulevard
Castro Valley, California
(Page 2 of 5)

Well	Date	Elevation of Wellhead	Depth to Water	Elevation of Groundwater	Floating Product
<u>MW-2</u>	12/20/87	—	22.30	—	—
	06/07/88		23.83	—	—
	12/13/88		23.69	—	—
	08/29/89		Well Destroyed		
<u>MW-3</u>	12/30/87	190.48	22.60	167.88	NR
	06/07/88		20.90	169.58	NR
	12/13/88		20.92	169.56	NR
	08/29/89		21.48	169.00	NR
	02/27/90		21.58	168.90	NR
	04/12/90		21.70	168.78	NR
	06/11/90		21.79	168.69	NR
	07/18/90		21.96	168.52	NR
	08/22/90		22.10	168.38	NR
	09/27/90		22.24	168.24	NR
	10/10/90		22.28	168.20	NR
	11/15/90		22.50	167.98	NR
	12/11/90		24.54	165.94	NR
	01/09/91		22.71	167.77	NR
	01/23/91		22.65	167.83	NR
	02/22/91		22.68	167.80	NR
	03/20/91		24.96	168.52	NR
	04/11/91		21.14	169.34	NR
	05/14/91		21.54	168.94	NR
	06/10/91		21.64	168.84	NR
	07/16/91		21.93	168.55	NR
	08/09/91		21.99	168.49	NR
	09/11/91		22.22	168.26	NR
12/11/91		22.67	167.81	NR	
02/28/92	190.50	21.76	168.74	NR	
03/30/92		21.49	169.18	NR	
06/30/92		21.49	169.01	NR	
RESNA	10/05/92		22.15	168.35	ND
	12/29/92		21.90	168.60	ND
	03/31/93		19.50	171.00	ND
	06/22/93		19.49	171.01	ND
<u>MW-4</u>	04/12/90	191.63	22.84	168.79	NR
	06/11/90		21.82	169.81	NR
	07/18/90		23.09	168.54	NR

See notes on page 5 of 5.

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TABLE 1
CUMULATIVE GROUNDWATER MONITORING DATA
Former Texaco Service Station
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Castro Valley, California
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Well	Date	Elevation of Wellhead	Depth to Water	Elevation of Groundwater	Floating Product
<u>MW-4 (cont.)</u>					
	08/22/90		23.24	168.39	NR
	09/27/90		23.38	168.25	NR
	10/10/90		24.43	167.20	NR
	11/15/90		21.64	167.99	NR
	12/11/90		23.69	167.94	NR
	01/09/91		23.84	167.79	NR
	01/23/91		23.79	167.84	NR
	02/22/91		23.77	167.86	NR
	03/20/91		23.11	168.52	NR
	04/11/91		22.60	169.03	NR
	05/14/91		22.68	168.95	NR
	06/10/91		22.79	168.84	NR
	07/16/91		23.06	168.57	NR
	08/09/91		23.14	168.49	NR
	09/11/91		23.36	168.27	NR
	10/11/91		23.75	167.88	NR
	11/12/91		23.87	167.76	NR
	12/11/91		23.80	167.83	NR
	01/28/92	191.64	23.79	167.85	NR
	02/28/92		22.90	168.74	NR
	03/30/92		22.46	169.18	NR
	06/30/92		22.64	169.00	NR
RESNA	10/05/92		23.90	167.74	ND
	12/29/92		Flooded - Not Accessible		
	03/31/93		20.63	171.01	ND
	06/22/93		20.63	171.01	ND
<u>MW-5</u>					
	04/12/90	191.55	22.74	168.81	NR
	06/11/90		22.83	168.72	NR
	07/18/90		23.01	168.54	NR
	08/22/90		23.15	168.40	NR
	09/27/90		23.29	168.26	NR
	10/10/90		22.33	169.22	NR
	11/15/90		23.54	168.01	NR
	12/11/90		23.59	167.96	NR
	01/09/91		23.75	167.80	NR
	01/23/91		23.69	167.86	NR
	02/22/91		23.66	167.89	NR
	03/20/91		23.01	168.54	NR
	04/11/91		22.50	169.05	NR
	05/14/91		22.57	168.98	NR

See notes on page 5 of 5.

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TABLE 1
CUMULATIVE GROUNDWATER MONITORING DATA
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Castro Valley, California
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Well	Date	Elevation of Wellhead	Depth to Water	Elevation of Groundwater	Floating Product
<u>MW-5 (cont.)</u>					
	06/10/91		22.68	168.87	NR
	07/16/91		22.95	168.60	NR
	08/09/91		23.01	168.54	NR
	09/11/91		23.26	168.29	NR
	12/11/91		23.70	167.85	NR
	02/28/92	191.56	22.80	168.76	NR
	03/30/92		22.35	168.21	NR
	06/30/92		22.54	169.02	NR
RESNA	10/05/92		23.05	168.51	ND
	12/29/92		22.53	169.03	ND
	03/31/93		20.55	171.01	ND
	06/22/93		20.63	170.93	ND
<u>MW-6</u>					
	01/28/92	187.30	19.55	167.75	NR
	02/28/92		18.62	168.68	NR
	03/30/92		18.20	168.10	NR
	06/30/92		18.38	168.92	NR
RESNA	10/05/92		19.02	168.28	ND
	12/29/92		18.73	168.57	ND
	03/31/93		16.45	170.85	ND
	06/22/93		16.40	170.90	ND
<u>MW-7</u>					
	01/28/92	189.34	21.53	167.81	NR
	02/28/92		20.61	168.73	NR
	03/30/92		20.17	169.17	NR
	06/30/92		20.37	168.97	NR
RESNA	10/05/92		21.00	168.34	ND
	12/29/92		20.65	168.69	ND
	03/31/93		18.35	170.99	ND
	06/22/93		18.35	170.99	ND
<u>MW-8</u>					
	01/28/92	193.62	25.77	167.85	NR
	02/28/92		24.89	168.73	NR
	03/30/92		24.42	169.20	NR
	06/30/92		24.61	169.01	NR
RESNA	10/05/92		25.20	168.42	ND
	12/29/92		25.00	168.62	ND
	03/31/93		22.63	170.99	ND
	06/22/93		22.56	171.06	ND

See notes on page 5 of 5.

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TABLE 1
CUMULATIVE GROUNDWATER MONITORING DATA
Former Texaco Service Station
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Measurements in feet and Datum Mean Sea Level (MSL)
Depth to water measured in feet below top of casing.

NR : No Record
ND : None Detected
— : Not Applicable
RESNA : RESNA Industries Inc., began monitoring

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

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TABLE 2
CUMULATIVE RESULTS OF LABORATORY ANALYSES
OF GROUNDWATER SAMPLES
Former Texaco Service Station
3940 Castro Valley Boulevard
Castro Valley, California
(Page 1 of 4)

Well	Date	TPHg	Benzene	Toluene	Ethyl- benzene	Total Xylenes
<u>TX</u>	12/30/87	---	---	---	---	---
	06/07/88	---	---	---	---	---
	12/13/88	---	---	---	---	---
	08/29/89	Well Abandoned				
<u>MW-1</u>	12/30/87	2,100	15	12	3	190
	06/07/88	290	12	<PQL	<PQL	17
	12/13/88	370	3	<PQL	<PQL	<PQL
	08/29/89	160	6	<PQL	<PQL	<PQL
	03/07/90	<PQL	<PQL	<PQL	<PQL	<PQL
	04/16/90	NA	NA	NA	NA	NA
	06/11/90	39	14	1	1	2
	08/22/90	130	0.3	<MDL	<MDL	<MDL
	09/12/90	92	7	<MDL	2	3
	10/10/90	40	2	<MDL	0.6	1
	11/15/90	18	0.8	<MDL	<MDL	<MDL
	12/11/90	<MDL	<MDL	<MDL	<MDL	<MDL
	01/09/91	33	0.7	<MDL	<MDL	<MDL
	02/22/91	<MDL	<MDL	<MDL	<MDL	<MDL
	05/14/91	17	1	<0.3	0.4	0.8
	09/11/91	<10	<0.3	<0.3	<0.3	<0.6
	10/11/91	NA	NA	NA	NA	NA
	11/12/91	NA	NA	NA	NA	NA
	12/11/91	<50	<0.5	<0.5	<0.5	<0.5
	01/28/92	NA	NA	NA	NA	NA
	02/28/92	NA	NA	NA	NA	NA
	03/31/92	280	<0.5	<0.5	<0.5	1.3
06/30/92	67	1.3	<0.5	<0.5	<0.5	
RESNA	10/05/92	<50	<0.5	<0.5	<0.5	<0.5
	12/29/92	NA	NA	NA	NA	NA
	03/31/93	<50	1.0	<0.5	<0.5	<0.5
	06/23/93	<50	<0.5	<0.5	<0.5	<0.5
<u>MW-2</u>	12/30/87	2,400	220	16	3	150
	06/07/88	1,200	220	<PQL	32	46
	12/13/88	4,000	640	23	120	110
	08/29/89	Well Abandoned				

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
3940 Castro Valley Boulevard
Castro Valley, California
(Page 2 of 4)

Well	Date	TPHg	Benzene	Toluene	Ethyl- benzene	Total Xylenes
<u>MW-3</u>						
	12/30/87	<MDL	<MDL	<MDL	<MDL	<MDL
	06/07/88	<PQL	<PQL	<PQL	<PQL	<PQL
	12/13/88	<PQL	<PQL	<PQL	<PQL	<PQL
	08/29/89	<PQL	<PQL	<PQL	<PQL	<PQL
	03/07/90	<PQL	<PQL	<PQL	<PQL	<PQL
	04/16/90	NA	NA	NA	NA	NA
	06/11/90	<MDL	<MDL	<MDL	<MDL	<MDL
	08/22/90	<MDL	<MDL	<MDL	<MDL	<MDL
	09/12/90	<MDL	<MDL	<MDL	<MDL	<MDL
	10/10/90	<MDL	<MDL	<MDL	<MDL	<MDL
	11/15/90	<MDL	<MDL	<MDL	<MDL	<MDL
	12/11/90	<MDL	<MDL	<MDL	<MDL	<MDL
	01/09/91	<MDL	<MDL	<MDL	<MDL	<MDL
	02/22/91	<MDL	<MDL	<MDL	<MDL	<MDL
	05/14/91	<10	<0.3	<0.3	<0.3	<0.6
	09/11/91	<10	<0.3	<0.3	<0.3	<0.6
	10/11/91	NA	NA	NA	NA	NA
	11/12/90	NA	NA	NA	NA	NA
	12/11/90	<50	<0.5	<0.5	<0.5	<0.5
	01/28/92	NA	NA	NA	NA	NA
	02/02/92	NA	NA	NA	NA	NA
	03/31/92	<50	<0.5	<0.5	<0.5	1.0
	06/30/92	<50	<0.5	<0.5	<0.5	<0.5
RESNA	10/05/92	<50	<0.5	<0.5	<0.5	<0.5
	12/29/92	260	6.2	<0.5	<0.5	<0.5
	03/31/93	64	5.6	<0.5	<0.5	<0.5
	06/23/93	1,900	220	160	29	160
<u>MW-4</u>						
	04/16/90	1,500	97	1	11	120
	06/11/90	110	18	<MDL	<MDL	0.7
	08/22/90	50	4	<MDL	<MDL	1
	09/12/90	49	6	<MDL	<MDL	1
	10/10/90	77	4	<MDL	<MDL	<MDL
	11/15/90	49	2	<MDL	0.4	<MDL
	12/11/90	79	6	<MDL	1	<MDL
	01/19/91	120	6	<MDL	3	<MDL
	02/22/91	120	1	<MDL	<MDL	<MDL
	05/14/91	370	29	<0.3	9	1
	09/11/91	22	0.8	<0.3	1	<0.6
	10/11/91	<50	1.0	<0.5	1.5	<0.5

See notes on page 4 of 4.

Second Quarter 1993 Quarterly Report
Castro Valley Boulevard, Castro Valley, California

July 26, 1993
62091.01

TABLE 2
CUMULATIVE RESULTS OF LABORATORY ANALYSES
OF GROUNDWATER SAMPLES
Former Texaco Service Station
3940 Castro Valley Boulevard
Castro Valley, California
(Page 3 of 4)

Well	Date	TPHg	Benzene	Toluene	Ethyl- benzene	Total Xylenes
<u>MW-4 (cont.)</u>						
	11/12/91	<50	1.6	<0.5	1.3	<0.5
	12/11/91	<50	0.8	<0.5	0.9	<0.5
	01/28/92	1,200	26	0.8	28	2.0
	02/28/92	9,400	68	5.3	68	240
	03/31/92	360	<0.5	<0.5	3.2	1.1
	06/30/92	76	2.4	<0.5	3.3	<0.5
RESNA	10/05/92	<50	1.5	<0.5	<0.5	<0.5
	12/29/92	NA	NA	NA	NA	NA
	03/31/93	<50	<0.5	<0.5	<0.5	<0.5
	06/23/93	<50	<0.5	<0.5	<0.5	<0.5
<u>MW-5</u>						
	04/16/90	<MDL	<MDL	<MDL	<MDL	<MDL
	06/11/90	<MDL	<MDL	<MDL	<MDL	<MDL
	08/22/90	<MDL	<MDL	<MDL	<MDL	<MDL
	09/12/90	<MDL	<MDL	<MDL	<MDL	<MDL
	10/10/90	<MDL	<MDL	<MDL	<MDL	<MDL
	11/15/90	<MDL	<MDL	<MDL	<MDL	<MDL
	12/11/90	<MDL	<MDL	<MDL	<MDL	<MDL
	01/09/91	<MDL	<MDL	<MDL	<MDL	<MDL
	02/22/91	<MDL	<MDL	<MDL	<MDL	<MDL
	05/14/91	<10	<0.3	<0.3	<0.3	<0.6
	09/11/91	<10	<0.3	<0.3	<0.3	<0.6
	10/11/91	NA	NA	NA	NA	NA
	11/12/91	NA	NA	NA	NA	NA
	12/11/91	<50	<0.5	<0.5	<0.5	<0.5
	01/28/92	NA	NA	NA	NA	NA
	02/28/92	NA	NA	NA	NA	NA
	03/31/92	<50	<0.5	<0.5	<0.5	1.2
	06/30/90	<50	<0.5	<0.5	<0.5	<0.5
RESNA	10/05/92	<50	<0.5	<0.5	<0.5	<0.5
	12/29/92	<50	<0.5	<0.5	<0.5	<0.5
	03/31/93	<50	<0.5	<0.5	<0.5	<0.5
	06/23/93	<50	<0.5	<0.5	<0.5	<0.5
<u>MW-6</u>						
	01/28/92	<50	<0.5	<0.5	<0.5	<0.5
	02/28/92	280	<0.5	0.3	<0.5	5.1
	03/31/92	<50	<0.5	<0.5	<0.5	<0.5
	06/30/92	<50	<0.5	<0.5	<0.5	<0.5
RESNA	10/05/92	<50	<0.5	<0.5	<0.5	<0.5

See notes on page 4 of 4.

APPENDIX A

**GROUNDWATER SAMPLING PROTOCOL
AND WELL PURGE DATA SHEETS**

Second Quarter 1993 Quarterly Report
Castro Valley Boulevard, Castro Valley, California

July 26, 1993
62091.01

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 a 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 triple 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 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--Castro Valley

Job No. 62091.01

Date: June 23, 1993

Page 1 of 1

Well No. MW-1

Time Started 12:05

TIME (hr)	GALLONS (cum.)	TEMP. (F)	pH	CONDUCT. (micromho)
12:05	Start purging MW-3			
12:05	0	72.7	7.17	2520
12:11	11.75	70.5	7.17	2440
12:17	23.50	70.6	7.17	2440
12:28	35.25	70.5	7.18	2400
12:34	47.00	70.2	7.21	2410
12:35	Stop purging MW-3			

Notes:

NM = Not Measured
 Well Diameter (inches) : 4
 Depth to Bottom (feet) : 39.28
 Depth to Water - initial (feet) 06/22/93 : 21.49
 Depth to Water - final (feet) : 21.49
 % recovery : 100%
 Time Sampled : 1:15
 Gallons per Well Casing Volume : 11.74
 Gallons Purged : 47.0
 Well Casing Volume Purged : 4
 Approximate Pumping Rate (gpm) : 2

WELL PURGE DATA SHEET

Project Name: Texaco--Castro Valley

Job No. 62091.01

Date: June 23, 1993

Page 1 of 1

Well No. MW-3

Time Started 9:15

TIME (hr)	GALLONS (cum.)	TEMP. (F)	pH	CONDUCT. (micromho)
9:15	Start purging MW-3			
9:15	0	68.3	7.36	2240
9:20	9.75	68.2	7.33	2170
9:25	19.50	69.0	7.61	2190
9:30	29.25	68.7	7.67	2190
9:35	48.75	69.5	7.65	2190
9:36	Stop purging MW-3			

Notes:

NM = Not Measured
 Well Diameter (inches) : 4
 Depth to Bottom (feet) : 34.24
 Depth to Water - initial (feet) 06/22/93 : 19.49
 Depth to Water - final (feet) : 19.49
 % recovery : 100%
 Time Sampled : 10:15
 Gallons per Well Casing Volume : 9.74
 Gallons Purged : 48.35
 Well Casing Volume Purged : 4
 Approximate Pumping Rate (gpm) : 2

WELL PURGE DATA SHEET

Project Name: Texaco--Castro Valley

Job No. 62091.01

Date: June 23, 1993

Page 1 of 1

Well No. MW-4

Time Started 11:10

TIME (hr)	GALLONS (cum.)	TEMP. (F)	pH	CONDUCT. (micromho)
11:10	Start purging MW-5			
11:10	0	71.8	7.22	2420
11:16	12.8	71.0	7.30	2350
11:22	25.6	70.5	7.30	2310
11:28	38.4	70.8	7.27	2320
11:34	51.2	71.7	7.20	2350
11:35	Stop purging MW-5			
Notes:				
	Well Diameter (inches) :	4		
	Depth to Bottom (feet) :	40.00		
	Depth to Water - initial (feet) 06/22/93 :	20.63		
	Depth to Water - final (feet) :	20.63		
	% recovery :	100%		
	Time Sampled :	13:30		
	Gallons per Well Casing Volume :	12.78		
	Gallons Purged :	51.2		
	Well Casing Volume Purged :	4		
	Approximate Pumping Rate (gpm) :	2		

WELL PURGE DATA SHEET

Project Name: Texaco--Castro Valley

Job No. 62091.01

Date: June 23, 1993

Page 1 of 1

Well No. MW-5

Time Started 9:15

TIME (hr)	GALLONS (cum.)	TEMP. (F)	pH	CONDUCT. (micromho)
9:15	Start purging MW-5			
9:15	0	67.7	7.69	2070
9:22	14.5	66.9	7.34	2050
9:29	29	66.8	7.00	2070
9:36	43.5	66.7	7.31	2070
9:43	58	67.8	7.29	2080
9:44	Stop purging MW-5			

Notes:

Well Diameter (inches) : 4
 Depth to Bottom (feet) : 42.27
 Depth to Water - initial (feet) 06/22/93 : 20.63
 Depth to Water - final (feet) : 20.63
 % recovery : 100%
 Time Sampled : 10:45
 Gallons per Well Casing Volume : 14.30
 Gallons Purged : 58.00
 Well Casing Volume Purged : 4
 Approximate Pumping Rate (gpm) : 2

WELL PURGE DATA SHEET

Project Name: Texaco--Castro Valley

Job No. 62091.01

Date: June 23, 1993

Page 1 of 1

Well No. MW-6

Time Started 3:00

TIME (hr)	GALLONS (cum.)	TEMP. (F)	pH	CONDUCT. (micromho)
3:00	Start purging MW-6			
3:00	0	64.2	7.20	2430
3:06	14	65.5	7.24	2540
3:12	28	66.4	7.24	2500
3:18	42	65.5	7.24	2530
3:24	56	65.6	7.24	2510
3:25	Stop purging MW-6			

Notes:

NM = Not Measured
 Well Diameter (inches) : 4
 Depth to Bottom (feet) : 37.33
 Depth to Water - initial (feet) 06/22/93 : 16.40
 Depth to Water - final (feet) : 16.40
 % recovery : 100%
 Time Sampled : 4:30
 Gallons per Well Casing Volume : 13.80
 Gallons Purged : 56.0
 Well Casing Volume Purged : 4
 Approximate Pumping Rate (gpm) : 2.5

WELL PURGE DATA SHEET

Project Name: Texaco--Castro Valley

Job No. 62091.01

Date: June 22, 1993

Page 1 of 1

Well No. MW-7

Time Started 2:35

TIME (hr)	GALLONS (cum.)	TEMP. (F)	pH	CONDUCT. (micromho)
2:35	Start purging MW-7			
2:35	0	69.5	8.19	2040
2:40	12.5	69.8	7.86	2040
2:45	25.0	69.8	7.86	2020
2:50	37.5	70.3	7.50	2040
2:55	50.0	69.7	7.61	2020
2:56	Stop purging MW-7			
Notes:				
Well Diameter (inches) : 4				
Depth to Bottom (feet) : 37.10				
Depth to Water - initial (feet) : 18.35				
Depth to Water - final (feet) : 18.35				
% recovery : 100%				
Time Sampled : 3:45				
Gallons per Well Casing Volume : 12.45				
Gallons Purged : 50.0				
Well Casing Volume Purged : 4				
Approximate Pumping Rate (gpm) : 2½				

WELL PURGE DATA SHEET

Project Name: Texaco--Castro Valley

Job No. 62091.01

Date: June 23, 1993

Page 1 of 1

Well No. MW-8

Time Started 11:15

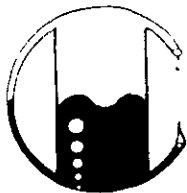
TIME (hr)	GALLONS (cum.)	TEMP. (F)	pH	CONDUCT. (micromho)
11:15	Start purging MW-8			
11:15	0	72.0	7.25	2790
11:20	11	70.6	7.26	2690
11:25	22	71.5	7.25	2730
11:30	33	73.0	7.25	2740
11:35	44	72.6	7.23	2720
11:36	Stop purging MW-8			

Notes:

Well Diameter (inches) : 4
 Depth to Bottom (feet) : 38.90
 Depth to Water - initial (feet) 06/22/93 : 22.56
 Depth to Water - final (feet) : 22.56
 % recovery : 100%
 Time Sampled : 12:15
 Gallons per Well Casing Volume : 10.78
 Gallons Purged : 44.0
 Well Casing Volume Purged : 4
 Approximate Pumping Rate (gpm) : 2

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

62091.01\1428\012790

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

Date Sampled: 06-22-93
Date Received: 06-25-93
Date Analyzed: 07-02-93

Sample Number

063363

Sample Description

Project # 62091.01
Texaco - Castro Valley
3940 Castro Valley Blvd.
Trip Blank WATER

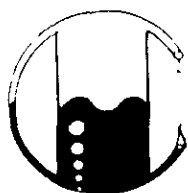
ANALYSIS

	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) = ($\mu\text{g/L}$)

MOBILE CHEM LABS

Ronald G. Evans
Lab Director



MOBILE CHEM LABS INC.

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

Date Sampled: 06-22-93
Date Received: 06-25-93
Date Analyzed: 07-02-93

Sample Number

063364

Sample Description

Project # 62091.01
Texaco - Castro Valley
3940 Castro Valley Blvd.
Rinsate Blk MW7 WATER

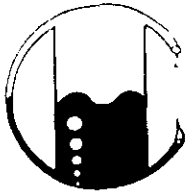
ANALYSIS

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

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

Date Sampled: 06-22-93
Date Received: 06-25-93
Date Analyzed: 07-02-93

Sample Number

063365

Sample Description

Project # 62091.01
Texaco - Castro Valley
3940 Castro Valley Blvd.
MW-7 WATER

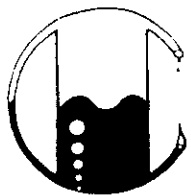
ANALYSIS

	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)

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

Date Sampled: 06-23-93
Date Received: 06-25-93
Date Analyzed: 07-02-93

Sample Number

063366

Sample Description

Project # 62091.01
Texaco - Castro Valley
3940 Castro Valley Blvd.
MW-6 WATER

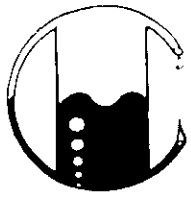
ANALYSIS

	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: 06-23-93
Date Received: 06-25-93
Date Analyzed: 07-02-93

Sample Number

063367

Sample Description

Project # 62091.01
Texaco - Castro Valley
3940 Castro Valley Blvd.
MW-5 WATER

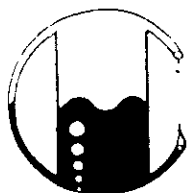
ANALYSIS

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

Date Sampled: 06-23-93
Date Received: 06-25-93
Date Analyzed: 07-02-93

Sample Number

063368

Sample Description

Project # 62091.01
Texaco - Castro Valley
3940 Castro Valley Blvd.
MW-3 WATER

ANALYSIS

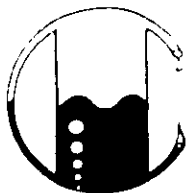
	Detection Limit ----- ppb	Sample Results ----- ppb
Total Petroleum Hydrocarbons as Gasoline	50	1,900
Benzene	0.5	220
Toluene	0.5	160
Xylenes	0.5	160
Ethylbenzene	0.5	29

QA/QC: Duplicate Deviation is 2.8%

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

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Lab Director



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

Date Sampled: 06-23-93
Date Received: 06-25-93
Date Analyzed: 07-02-93

Sample Number

063369

Sample Description

Project # 62091.01
Texaco - Castro Valley
3940 Castro Valley Blvd.
MW-8 WATER

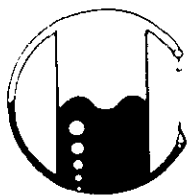
ANALYSIS

	<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



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

Date Sampled: 06-23-93
Date Received: 06-25-93
Date Analyzed: 07-02-93

Sample Number

063370

Sample Description

Project # 62091.01
Texaco - Castro Valley
3940 Castro Valley Blvd.
MW-4 WATER

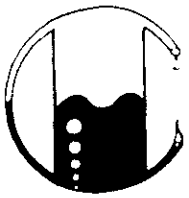
ANALYSIS

	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)

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Lab Director



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

Date Sampled: 06-23-93
Date Received: 06-25-93
Date Analyzed: 07-02-93

Sample Number

063371

Sample Description

Project # 62091.01
Texaco - Castro Valley
3940 Castro Valley Blvd.
MW-1 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)

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Ronald G. Evans
Lab Director

