Ultramar

Ultramar Inc.
P.O. Box 466
525 W. Third Street
Hanford, CA 93232-0466
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Telecopy: 209-584-6113 Credit & Wholesale
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December 8, 1992

Ms. Pamela Evans
Hazardous Materials Program
Department of Environmental Health
Alameda County Health Care Services
80 Swan Way, Room 200
Oakland, CA 94612

SUBJECT: BEACON STATION NO. 721, 44 LEWELLING BLVD., SAN LORENZO, CALIFORNIA

Dear Ms. Evans:

Enclosed is a copy of the Groundwater Monitoring and Sampling Report Third Quarter 1992 for the above-referenced Ultramar facility. Also included is a copy of the Quarterly Status Report which describes the work completed this quarter and the work anticipated to be completed next quarter.

Ultramar is in the process of submitting the necessary permit applications for the installation and operation of the remediation system which will include a diffused aeration tank with the off gas going through vapor activated carbon. The soil gas from the vapor extraction will also pass through vapor activated carbon.

Please call if you have any questions regarding this project.

Sincerely,

ULTRAMAR INC.

Terrence A. Fox

Terrence A. Fox
Senior Project Manager
Marketing Environmental Department

Enclosures

cc w/encl: Mr. Steven Ritchie, San Francisco Bay Region, RWQCB

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ENVIRONMENTAL PROJECT QUARTERLY STATUS REPORT

DATE REPORT SUBMITTED: December 8, 1992
QUARTER ENDING: September 30, 1992

SERVICE STATION NO.: 721
ADDRESS: 44 Lewelling Blvd., San Lorenzo, CA
COUNTY: Alameda

ULTRAMAR CONTACT: Terrence A. Fox **TEL. NO:** 209-583-5545

BACKGROUND:

In April 1987, three underground gasoline storage tanks were excavated and removed. Samples collected from beneath the former tanks indicated that hydrocarbons were present in the soil. In May 1987, three monitoring wells (MW-1 through MW-3) were installed by Conoco. Hydrocarbons were detected in soil and ground-water samples collected from the wells. In December 1988, four additional wells (MW-4 through MW-7) were installed. Dissolved-phase hydrocarbons were detected in the new wells. In September 1989, two additional wells (MW-8 and MW-9) were installed. The site has been on a monitoring program since May 1987.

In July 1990, the site was purchased by Ultramar Inc. from Conoco. The monitoring program has continued. Submitted work plan for additional assessment on March 14, 1991.

In October 1991, drilled two additional offsite wells (MW-10 and MW-11) southwest of the site and one onsite recovery well (RW-1). In November 1991, performed ground-water pump test and vapor extraction test.

SUMMARY OF THIS QUARTER'S ACTIVITIES:

Performed quarterly monitoring on May 14 and 15, 1992. Manual bailing of free product was discontinued due to the lack of measurable free product in the wells at the site.

Selected Delta Environmental Consultants to perform the remediation.

RESULT OF QUARTERLY MONITORING:

Monitoring data indicates that a sheen of free product was detected in MW-1 and MW-3. The benzene concentration decreased in MW-6 from 4.8 ppb to not detected and in MW-10 from 110 ppb to 24 ppb. Benzene concentrations increased in MW-1 from 2,000 ppb to 3,800 ppb, in MW-2 from 1.2 ppb to 6.5 ppb, in MW-3 from 6,300 ppb to 25,000 ppb, in MW-4 from not detected to 6.6 ppb, in MW-6 from not detected to 1.2 ppb, in MW-7 from 44 ppb to 400 ppb, in MW-11 from not detected to 15 ppb, and in RW-1 from 270 ppb to 1,300 ppb. Benzene concentrations remained not detected in wells MW-5, MW-8, and MW-9.

PROPOSED ACTIVITY OR WORK FOR NEXT QUARTER:

ACTIVITY	ESTIMATED COMPLETION DATE
Continue quarterly ground-water monitoring	Ongoing
Submit necessary permit applications for construction and operation of remediation system	December 20, 1992

GROUNDWATER MONITORING AND SAMPLING REPORT THIRD QUARTER 1992 AT BEACON GAS STATION NO. 721 44 LEWELLING BOULEVARD SAN LORENZO, CALIFORNIA

FOR

ULTRAMAR INC.
525 WEST THIRD STREET
HANFORD, CALIFORNIA 93230

Project No. F3092.32 (3-30092-32)
October 1992

RESNA
42501 Albrae Street
Fremont, California 94538
(510) 440-3300

Table of Contents

RESNA
Working To Restore Nature

42501 Albrae Street
Fremont, CA 94538
Phone: (510) 440-3300
FAX: (510) 651-2233

November 9, 1992
Project No. F3092.32 (3-30092-32)

Ultramar Inc.
525 West Third Street
Hanford, CA 93230

Attention: Mr. Terrence A. Fox

Subject: Groundwater Monitoring and Sampling Report
Third Quarter of 1992, Beacon Gas Station No. 721
44 Lewelling Boulevard, San Lorenzo, California

Dear Mr. Fox:

This report presents the results of groundwater sampling and analyses for the third quarter of 1992, conducted by RESNA Industries Inc. for Beacon Gas Station No. 721 in the City of San Lorenzo, Alameda County, California (Plate 1). The purpose of this sampling program is to monitor and evaluate the extent of hydrocarbons dissolved in the groundwater underlying the subject property.

Summary

RESNA sampled eleven on- and off-site groundwater monitoring wells and one on-site recovery well, RW-1 on August 27 and 28, 1992.

RESNA measured the depth to groundwater and collected groundwater samples from twelve wells in accordance with the RESNA groundwater sampling protocol (Appendix A). The equipment rinse water and groundwater purged from the wells were placed in DOT approved drums and left on-site pending laboratory analytical results. Groundwater monitoring data are presented in Table 1. RESNA prepared a groundwater surface contour map (Plate 2) from the measured depths to groundwater and the elevations of the tops of the well casings. A summary of previous and most current groundwater elevation data are presented in Table 2.

No measurable free product was detected in any of the wells during this quarter. A sheen was detected in wells MW-1 and MW-3. A summary of groundwater analytical results is included in Table 3.

Groundwater elevations at the site on August 28, 1992 were lower than on May 14, 1992. The decrease varied from 2.04 feet in wells MW-7 and MW-8 to 3.10 feet in well MW-10. Groundwater level in well MW-5 decreased 4.89 feet according to field data and appears anomalous. This data was not used for construction of the groundwater elevation contour map.

RESNA
Working To Restore Nature

The apparent general groundwater flow direction observed in August 1992 was to the west-southwest. The groundwater surface gradient calculated for August 1992 varied from approximately 0.001 to 0.002 (Plate 2).

RESNA Environmental Laboratories, a state-certified laboratory in Fremont, California, analyzed the groundwater samples for total petroleum hydrocarbons as gasoline (TPHg) and benzene, toluene, ethyl benzene, and total xylenes (BTEX) EPA Methods 5030/8020 and Modified 8015. Benzene was not detected in groundwater from wells MW-5, MW-8, and MW-9.

August 1992 concentrations of benzene increased in groundwater samples collected from wells MW-1, MW-2, MW-3, MW-4, MW-6, MW-7, MW-11, and RW-1 and decreased in MW-10 when compared to May 1992 samples.

A summary of groundwater analyses and monitoring data for the August 1992 monitoring round is presented in Table 1. A summary of cumulative groundwater analytical results is presented in Table 3. Certified laboratory results are presented in Appendix B and field data are presented in Appendix C.

Reporting Requirements

Ultramar Inc. should forward a copy of this report to the following agencies in a timely manner:

California Regional Water Quality Control Board
San Francisco Bay Region
2101 Webster Street, Suite 500
Oakland, California 94612

Alameda County Health Care Services
Department of Environmental Health
Hazardous Materials Division
80 Swan Way Center, Suite 200
Oakland, California 94621-1439

If you have any questions or comments concerning this report, or if we may be of further service to Ultramar, please call us at (510) 440-3300.

Sincerely,
RESNA Industries Inc.

Zbigniew L. Ignatowicz
Staff Geologist

Gary Pischke, C.E.G. 1501
Senior Project Geologist

REGISTERED GEOLOGIST
GARY PISCHKE
No. 1501
CERTIFIED
ENGINEERING
GEOLOGIST
STATE OF CALIFORNIA

ZLI/GP/sw
Attachments

TABLE 1

SUMMARY OF GROUNDWATER ANALYSES AND MONITORING DATA
(August 27, 28, 1992)

Sample Number	Date Collected	TPHg ppb	Benzene ppb	Toluene ppb	Ethyl Benzene ppb	Total Xylenes ppb	Well Elevation msl	DTW feet	Water Elevation msl
MW-1	8/28/92	110,000	3,800	54	850	970	43.67	19.48	24.19
MW-2	8/27/92	1,400	6.5	1.1	0.6	ND	43.09	18.81	24.28
MW-3	8/28/92	1,300,000	25,000	40,000	6.700	44,000	43.10	18.98	24.12
MW-4	8/28/92	1,700	6.6	1.3	1.6	3.1	44.66	20.47	24.19
MW-5	8/27/92	ND	ND	ND	ND	ND	43.79	22.18	21.61*
MW-6	8/27/92	ND	1.2	ND	ND	ND	42.47	18.17	24.30
MW-7	8/27/92	23,000	400	5.8	290	1,400	41.54	17.45	24.09
MW-8	8/28/92	140	ND	ND	ND	ND	42.26	18.28	23.98
MW-9	8/27/92	ND	ND	ND	ND	ND	44.94	20.80	24.14
MW-10	8/28/92	9,600	20	2.8	40	3.5	42.34	18.35	23.99
MW-11	8/27/92	2,100	15	2	0.6	1.2	45.00	21.13	23.87
RW-1	8/28/92	24,000	1,300	200	68	810	43.17	19.05	24.12
BB-1	8/27/92	ND	ND	ND	ND	ND	---	---	---

ppb Parts per billion
msl Mean sea level
ND None detected — Detection limits for BTEX <0.5 ppb, TPHG <50 ppb
DTW Depth to water
--- No data available
* Water elevation not used for groundwater elevation contour map
NS Not sampled
BB-1 Bailer blank

TABLE 2

SUMMARY OF GROUNDWATER ELEVATION DATA

Well Number	Top of Well Casing (famsl)	Date Sampled	Depth to Water (feet)	Groundwater Surface Elevation (famsl)	Elevation Change Since Previous Measurement (feet)
MW-1	43.67	03/10/88	17.12	26.55	---
		06/14/88	18.05	25.62	-0.93
		12/05/88	19.48	24.19	-1.43
		03/08/89	18.07	25.60	1.41
		06/22/89	18.60	25.07	-0.53
		09/27/89	19.98	23.69	-1.38
		12/29/89	20.45	23.22	-0.47
		03/29/90	19.31	24.36	1.14
		06/21/90	19.69	23.98	-0.38
		09/25/90*	21.88	22.51	-1.47
		12/18/90*	20.89	23.12	0.61
		03/28/91	17.77	25.90	2.78
		06/25/91	18.60	25.07	-0.83
		09/17/91	20.14	23.53	-1.54
		11/05/91	20.40	23.27	-0.26
		02/18/92	16.42	27.25	3.98
		05/14/92	17.28	26.39	-0.86
		08/28/92	19.48	24.19	-2.20
MW-2	43.09	03/10/88	16.43	26.66	---
		06/14/88	17.35	25.74	-0.92
		12/05/88	18.79	24.30	-1.44
		03/08/89	17.31	25.78	1.48
		06/22/89	17.92	25.17	-0.61
		09/27/89	19.27	23.82	-1.35
		12/29/89	19.75	23.34	-0.48
		03/29/90	18.62	24.47	1.13
		06/21/90	19.12	23.97	-0.50
		09/25/90	20.54	22.55	-1.42
		12/18/90	20.30	22.79	0.24
		03/28/91	16.94	26.15	3.36
		06/25/91	17.95	25.14	-1.01
		09/17/91	19.50	23.59	-1.55
		11/05/91	19.73	23.36	-0.23
		02/18/92	16.65	26.44	3.08
		05/14/92	16.64	26.45	0.01
		08/28/92	18.81	24.28	-2.17
MW-3	43.10	03/10/88	16.68	26.42	---
		06/14/88	17.59	25.51	-0.91
		12/05/88	18.96	24.14	-1.37

TABLE 2

SUMMARY OF GROUNDWATER ELEVATION DATA

Well Number	Top of Well Casing (famsl)	Date Sampled	Depth to Water (feet)	Groundwater Surface Elevation (famsl)	Elevation Change Since Previous Measurement (feet)
MW-3 Cont'd		03/08/89	17.60	25.50	1.36
		06/22/89	18.11	24.99	-0.51
		09/27/89	19.47	23.63	-1.36
		12/29/89*	19.97	23.13	-0.50
		3/29/90*	17.60	25.53	2.40
		06/21/90	19.35	23.75	-1.78
		9/25/90*	20.72	22.41	-1.34
		12/18/90*	21.42	22.00	-0.41
		03/28/91	17.45	25.85	3.85
		06/25/91	18.12	25.01	-0.84
		9/17/91*	19.55	23.55	-1.46
		11/05/91	19.98	23.12	-0.43
		02/18/92	16.89	26.21	3.09
		05/14/92	16.80	26.30	0.09
		08/28/92	18.98	24.12	-2.18
MW-4	44.66	12/05/88	20.47	24.19	---
		03/08/89	19.03	25.63	1.44
		06/22/89	19.57	25.09	-0.54
		09/27/89	20.98	23.68	-1.41
		12/29/89	21.43	23.23	-0.45
		03/29/90	20.29	24.37	1.14
		06/21/90	20.78	23.88	-0.49
		09/25/90	22.24	22.42	-1.46
		12/18/90	22.18	22.48	0.06
		03/28/91	18.79	25.87	3.39
		06/25/91	19.59	25.07	-0.80
		09/17/91	21.15	23.51	-1.56
		11/05/91	21.41	23.25	-0.26
		02/18/92	18.51	26.15	2.90
		05/14/92	18.22	26.44	0.29
		08/28/92	20.47	24.19	-2.25
MW-5	43.79	12/05/88	19.48	24.31	---
		03/08/89	18.00	25.79	1.48
		06/22/89	18.60	25.19	-0.60
		09/27/89	20.00	23.79	-1.40
		12/29/89	20.43	23.36	-0.43
		03/29/90	19.24	24.55	1.19
		06/21/90	19.82	23.97	-0.58
		09/25/90	21.23	22.56	-1.41

TABLE 2

SUMMARY OF GROUNDWATER ELEVATION DATA

Well Number	Top of Well Casing (famsl)	Date Sampled	Depth to Water (feet)	Groundwater Surface Elevation (famsl)	Elevation Change Since Previous Measurement (feet)
MW-5 (Con't)		12/18/90	21.04	22.75	0.19
		03/28/91	17.69	26.10	3.35
		06/25/91	18.62	25.17	-0.93
		09/17/91	20.23	23.56	-1.61
		11/05/91	20.43	23.36	-0.20
		02/18/92	17.37	26.42	3.06
		05/14/92	17.29	26.50	0.08
		08/28/92	22.18	21.61	-4.89
MW-6	42.47	12/05/88	17.99	24.48	---
		03/08/89	16.75	25.72	-1.24
		06/22/89	17.30	25.17	-0.55
		09/27/89	18.64	23.83	-1.34
		12/29/89	19.16	23.31	-0.52
		03/29/90	18.04	24.43	1.12
		06/21/90	18.53	23.94	-0.49
		09/25/90	19.91	22.56	-1.38
		12/18/90	20.61	21.86	-0.70
		03/28/91	16.29	26.18	4.32
		06/25/91	17.36	25.11	-1.07
		09/17/91	18.89	23.58	-1.53
		11/05/91	19.07	23.40	-0.18
		02/18/92	15.87	26.60	3.20
		05/14/92	16.04	26.43	-0.17
		08/28/92	18.17	24.30	-2.13
MW-7	41.54	12/05/88	17.61	23.93	---
		03/08/89	16.27	25.27	1.34
		06/22/89	16.72	24.82	-0.45
		09/27/89	17.99	23.55	-1.27
		12/29/89	18.54	23.00	-0.55
		03/29/90	17.43	24.11	1.11
		06/21/90	17.88	23.66	-0.45
		09/25/90	19.12	22.42	-1.24
		12/18/90	19.16	22.38	-0.04
		03/28/91	16.04	25.50	3.12
		06/25/91	16.66	24.88	-0.62
		09/17/91	17.99	23.55	-1.33
		11/05/91	18.33	23.21	-0.34
		02/18/92	15.51	26.03	2.82
		05/14/92	15.41	26.13	0.10
		08/28/92	17.45	24.09	-2.04

TABLE 2

SUMMARY OF GROUNDWATER ELEVATION DATA

Well Number	Top of Well Casing (famsl)	Date Sampled	Depth to Water (feet)	Groundwater Surface Elevation (famsl)	Elevation Change Since Previous Measurement (feet)
MW-8	42.26	09/27/89	18.89	23.37	---
		12/29/89	19.45	22.81	-0.56
		03/29/90	18.39	23.87	1.06
		06/21/90	18.80	23.46	-0.41
		09/25/90	20.10	22.16	-1.30
		12/18/90	20.13	22.13	-0.03
		03/28/91	17.14	25.12	2.99
		06/25/91	17.45	24.81	-0.31
		09/17/91	18.81	23.45	-1.36
		11/05/91	19.14	23.12	-0.33
		02/18/92	16.57	25.69	2.57
		05/14/92	16.24	26.02	0.33
		08/28/92	18.28	23.98	-2.04
MW-9	44.94	09/27/89	21.38	23.56	---
		12/29/89	21.76	23.18	-0.38
		03/29/90	20.58	24.36	1.18
		06/21/90	21.11	23.83	-0.53
		09/25/90	22.60	22.34	-1.49
		12/18/90	22.56	22.38	0.04
		03/28/91	19.13	25.81	3.43
		06/25/91	19.90	25.04	-0.77
		09/17/91	21.49	23.45	-1.59
		11/05/91	21.75	23.19	-0.26
		02/18/92	18.87	26.07	2.88
		05/14/92	18.55	26.39	0.32
		08/28/92	20.80	24.14	-2.25
MW-10	42.34	11/05/91	19.28	23.06	---
		02/18/92	16.63	25.71	2.65
		05/14/92	15.25	27.09	1.38
		08/28/92	18.35	23.99	-3.10
MW-11	45.00	11/05/91	22.11	22.89	---
		02/18/92	17.00	26.17	3.28
		05/14/92	19.02	25.98	-0.19
		08/28/92	21.13	23.87	-2.11

TABLE 2

SUMMARY OF GROUNDWATER ELEVATION DATA

Well Number	Top of Well Casing (famsl)	Date Sampled	Depth to Water (feet)	Groundwater Surface Elevation (famsl)	Elevation Change Since Previous Measurement (feet)
RW-1		05/14/92	16.88	26.29	---
		08/28/92	19.05	24.12	-2.17

NOTE: All available water elevation data were recalculated to present wellhead elevations as reported by Ronald R. Archer, Surveryor, on November 6, 1991

1. famsl = feet above mean sea level
2. * = groundwater elevations for these quarters were corrected for the presence of floating gasoline product using the equation:
   GWE = WE -[DTW-(PT x 0.8)]

Where:
- GWE = Groundwater elevation in feet above mean sea level
- WE = Well elevation at top of casing
- DTW = Depth to water from top of casing in feet
- PT = Product thickness in feet
- 0.8 = Assumed difference in specific gravities between water and gasoline

TABLE 3

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS

Well No.	Date Sampled	Benzene (ppb)	Toluene (ppb)	Ethyl Benzene (ppb)	Xylenes (ppb)	TPHG (ppb)	Comments
MW-1	05/29/87	490	150	930	3,790	18,050	
	07/14/87	560	120	950	3,270	14,750	
	08/17/87	630	40	320	1,130	12,860	
	09/01/87	558	84	562	1,942	14,269	
	12/10/87	200	138	273	777	14,000	
	03/10/88	70	40	340	940	7,300	
	06/14/88	290	ND	330	790	34,000	
	12/05/88	100	16	140	310	4,000	
	03/08/89	670	20	580	1,200	9,100	Sheen
	06/22/89	1,000	20	1,200	2,200	12,000	Sheen
	09/27/89	960	9	260	360	6,800	
	12/29/89	210	33	1,200	250	4,800	
	03/29/90	1,100	42	510	1,800	14,000	
	06/21/90	1,400	ND	160	130	7,900	
	09/25/90	NS	NS	NS	NS	NS	0.9 ft free-product
	12/18/90	NS	NS	NS	NS	NS	0.4 ft free-product
	03/28/91	230	75	570	2,000	26,000	Sheen
	06/25/91	970	35	300	610	22,000	
	09/17/91	490	150	250	370	16,000	
	11/05/91	420	45	410	780	35,000	Sheen
	02/18/92	NS	NS	NS	NS	NS	Sheen
	05/15/92	2,000	47	200	400	41,000	Sheen
	08/28/92	3,800	54	850	970	110,000	Sheen
MW-2	05/29/87	113	14	46	58	4,870	
	07/14/87	103	25	34	48	2,207	
	08/17/87	37.6	10.9	8.2	11.1	756	
	09/01/87	75.3	14.2	16.4	27.6	1,482	
	12/10/87	28	40.6	38.1	100.3	1,800	
	03/10/88	9.2	3.1	7.3	2.6	1,200	
	06/14/88	ND	ND	2.2	5.7	500	
	12/05/88	ND	1.3	5.6	3.6	500	
	03/08/89	ND	1.3	3.5	3.7	730	
	06/22/89	ND	ND	ND	ND	570	
	09/27/89	3.8	0.64	2.9	54	420	
	12/29/89	6.7	2	5.7	2.9	270	
	03/29/90	10	0.88	10	3.3	420	
	06/21/90	ND	ND	4	ND	650	
	09/25/90	ND	1.5	3.5	1.5	680	
	12/18/90	ND	1.7	2.2	0.6	500	

TABLE 3

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS

Well No.	Date Sampled	Benzene (ppb)	Toluene (ppb)	Ethyl Benzene (ppb)	Xylenes (ppb)	TPHG (ppb)	Comments
MW-2 (cont)	03/28/91	ND	2.2	2.7	1.1	730	
	06/25/91	ND	ND	ND	1.2	610	
	09/17/91	ND	ND	2.5	1.2	820	
	11/05/91	ND	ND	1.1	ND	700	
	02/18/92	ND	ND	1.9	ND	1600	
	05/14/92	1.2	1.0	1.3	ND	740	
	08/27/92	6.5	1.1	0.6	ND	1400	
MW-3	05/29/87	5,400	3,900	1,700	5,200	40,300	
	07/14/87	6,880	7,080	1,580	4,770	30,320	
	08/17/87	5,930	4,180	1,240	3,370	25,620	
	09/01/87	8,540	6,660	1,020	3,740	38,210	
	12/10/87	4,240	2,350	890	1,860	25,000	
	03/10/88	3,210	950	940	950	13,400	
	06/14/88	5,900	7,600	450	4,600	54,000	
	12/05/88	4,200	2,400	1,000	3,100	19,000	
	03/08/89	11,000	9,400	2,300	9,900	53,000	Sheen
	06/22/89	16,000	5,900	2,100	6,600	60,000	Sheen
	09/27/89	8,100	2,800	1,200	4,300	34,000	
	12/29/89	NS	NS	NS	NS	NS	0.02 ft free-product
	03/29/90	NS	NS	NS	NS	NS	0.04 ft free-product
	06/21/90	19,000	22,000	22,000	120,000	2,100,000	
	09/25/90	NS	NS	NS	NS	NS	0.04 ft free-product
	12/18/90	NS	NS	NS	NS	NS	0.42 ft free-product
	03/28/91	NS	NS	NS	NS	NS	0.25 ft free-product
	06/25/91	NS	NS	NS	NS	NS	0.02 ft free-product
	09/17/91	NS	NS	NS	NS	NS	0.44 ft free-product
	11/05/91	NS	NS	NS	NS	NS	Sheen
	02/18/92	NS	NS	NS	NS	NS	Sheen
	05/15/92	6,300	5,900	1,700	6,100	160,000	Sheen
	08/28/92	25,000	40,000	6,700	44,000	1,300,000	Sheen
MW-4	12/05/88	ND	ND	2.3	6.5	4,500	
	03/08/89	ND	ND	ND	ND	3,900	
	06/22/89	ND	ND	ND	ND	1,500	
	09/27/89	11	ND	ND	ND	1,200	
	12/29/89	ND	2.1	2.3	ND	920	
	03/29/90	ND	ND	8	ND	870	
	06/21/90	ND	ND	ND	ND	1,500	
	09/25/90	ND	11	4.6	6	3,100	
	12/18/90	ND	4.4	15	6.3	3,600	

TABLE 3

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS

Well No.	Date Sampled	Benzene (ppb)	Toluene (ppb)	Ethyl Benzene (ppb)	Xylenes (ppb)	TPHG (ppb)	Comments
MW-4 (Con't)	03/28/91	8.9	4.4	4.4	2.2	2,000	
	06/25/91	ND	5.4	1.7	ND	2,000	
	09/17/91	ND	ND	0.8	ND	2,300	
	11/05/91	ND	ND	3.2	1.1	3,500	
	02/18/92	ND	ND	12	21	5,100	
	05/14/92	ND	5.6	1.8	2.2	4,600	
	08/28/92	6.6	1.3	1.6	3.1	1,700	
MW-5	12/05/88	ND	0.78	0.23	0.92	3.9	
	03/08/89	2.7	6.7	2.7	15	58	
	06/22/89	0.91	ND	ND	ND	5	
	09/27/89	1.3	ND	ND	ND	5.3	
	12/29/89	ND	ND	ND	ND	ND	
	03/29/90	ND	ND	ND	ND	ND	
	06/21/90	ND	ND	ND	ND	12	
	09/25/90	ND	ND	ND	ND	ND	
	12/18/90	ND	ND	ND	ND	ND	
	03/28/91	ND	ND	ND	ND	ND	
	06/25/91	ND	ND	ND	ND	ND	
	09/17/91	ND	ND	ND	ND	ND	
	11/05/91	ND	ND	ND	ND	ND	
	02/18/92	ND	ND	ND	ND	ND	
	05/14/92	ND	ND	ND	ND	ND	
	08/27/92	ND	ND	ND	ND	ND	
MW-6	12/05/88	4	1.3	0.63	1.3	190	
	03/08/89	2.2	ND	ND	1.1	23	
	06/22/89	0.82	2.6	0.18	1.2	57	
	09/27/89	0.2	0.24	ND	ND	2.1	
	12/29/89	ND	ND	ND	ND	ND	
	03/29/90	2.1	ND	ND	ND	12	
	06/21/90	ND	ND	ND	ND	ND	
	09/25/90	1.4	ND	ND	ND	98	
	12/18/90	2.2	ND	ND	ND	200	
	03/28/91	3.5	ND	ND	ND	140	
	06/25/91	ND	ND	ND	ND	95	
	09/17/91	ND	ND	ND	ND	ND	
	11/05/91	ND	ND	ND	ND	130	
	02/18/92	4.8	ND	ND	ND	370	
	05/14/92	ND	ND	ND	ND	120	
	08/27/92	1.2	ND	ND	ND	ND	

TABLE 3

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS

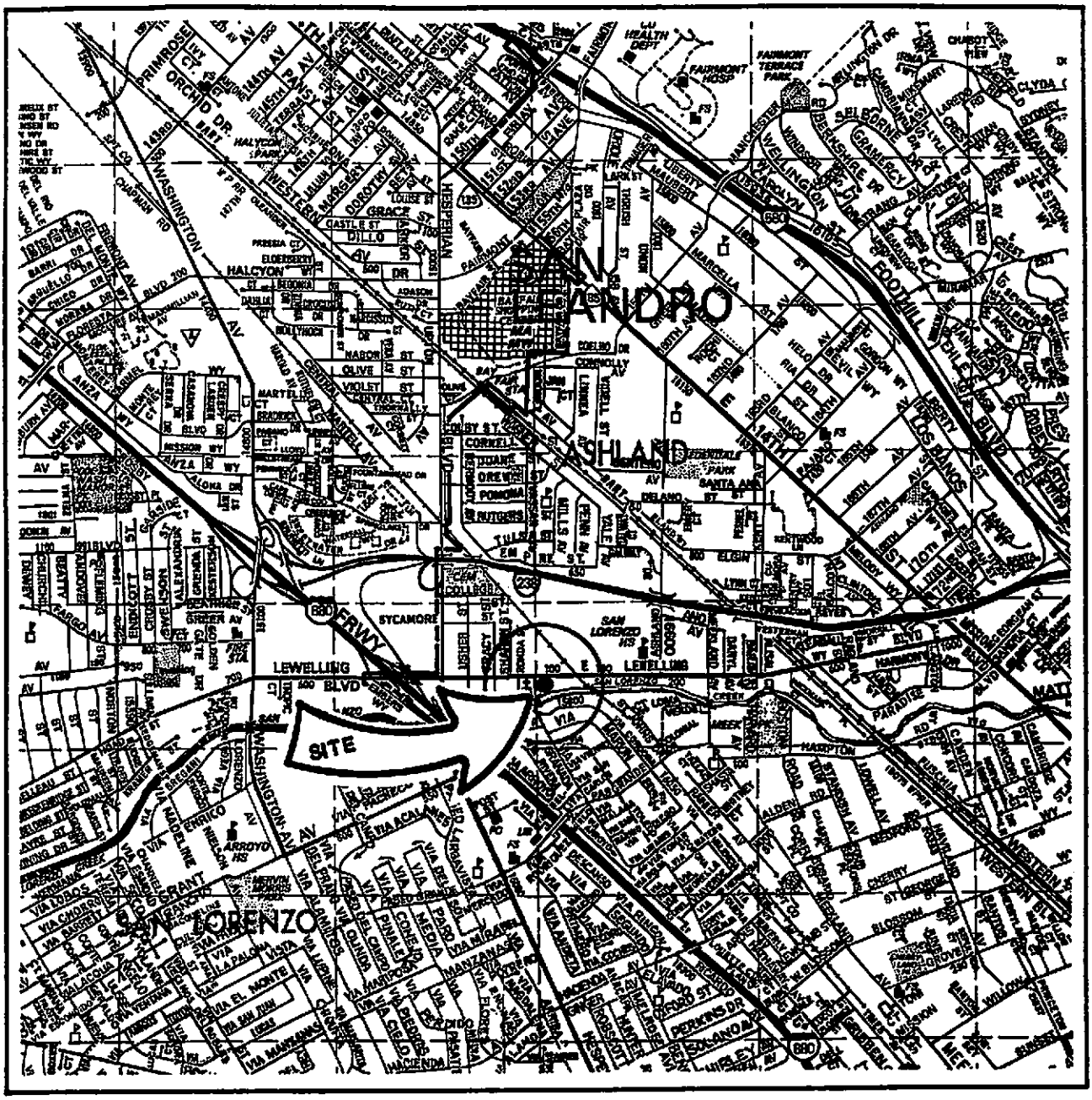
Well No.	Date Sampled	Benzene (ppb)	Toluene (ppb)	Ethyl Benzene (ppb)	Xylenes (ppb)	TPHG (ppb)	Comments
MW-7	12/05/88	140	150	40	370	1,500	
	03/08/89	730	72	180	370	2,400	
	06/22/89	570	43	180	220	2,000	
	09/27/89	420	5.9	140	28	1,400	
	12/29/89	87	3.5	18	15	150	
	03/29/90	110	40	53	150	530	
	06/21/90	620	34	290	400	4,100	
	09/25/90	49	2.4	30	42	750	
	12/18/90	74	4.5	25	69	510	
	03/28/91	53	0.8	24	24	500	
	06/25/91	23	ND	32	37	570	
	09/17/91	79	1	89	100	1,400	
	11/05/91	52	ND	76	58	1,100	
	02/18/92	16	ND	10	16	670	
	05/14/92	44	ND	36	88	1,500	
	08/27/92	400	5.8	290	1400	23,000	
MW-8	09/27/89	ND	ND	16	ND	4,200	
	12/29/89	ND	3.2	18	ND	2,800	
	03/29/90	ND	ND	19	ND	2,600	
	06/21/90	ND	ND	13	ND	4,600	
	09/25/90	2.3	22	16	26	4,500	
	12/18/90	0.7	6	9.7	2.3	1,100	
	03/28/91	2.6	4.6	3.2	3.1	1,600	
	06/25/91	ND	ND	2.5	1.3	760	
	09/17/91	ND	ND	13	3.9	1,900	
	11/05/91	ND	ND	15	ND	1,400	
	02/18/92	ND	ND	9.5	ND	1,200	
	05/14/92	ND	ND	ND	ND	130	
	08/28/92	ND	ND	ND	ND	140	
MW-9	09/27/89	ND	ND	ND	ND	25	
	12/29/89	ND	ND	ND	2.5	11	
	03/29/90	ND	ND	ND	ND	ND	
	06/21/90	ND	ND	ND	ND	ND	
	09/25/90	ND	ND	ND	ND	ND	
	12/18/90	ND	ND	ND	ND	100	
	03/28/91	ND	ND	ND	ND	ND	
	06/25/91	ND	ND	ND	ND	ND	
	09/17/91	ND	ND	ND	ND	ND	

TABLE 3

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS

Well No.	Date Sampled	Benzene (ppb)	Toluene (ppb)	Ethyl Benzene (ppb)	Xylenes (ppb)	TPHG (ppb)	Comments
MW-9 (Con't)	11/05/91	ND	ND	ND	ND	ND	
	02/18/92	ND	ND	ND	ND	ND	
	05/14/92	ND	ND	ND	ND	ND	
	08/27/92	ND	ND	ND	ND	ND	
MW-10	11/05/91	29	140	500	320	27,000	
	02/18/92	110	57	440	63	18,000	
	05/15/92	24	9.8	97	ND	8,500	
	08/28/92	20	2.8	40	3.5	9,600	
MW-11	11/05/91	ND	ND	ND	ND	890	
	02/18/92	ND	ND	ND	ND	2,400	
	05/15/92	ND	1.9	1.3	0.7	1,600	
	08/27/92	15	2	0.6	1.2	2,100	Slight odor
RW-1	11/13/91	74	68	7	99	1,600	
	05/15/92	270	62	29	140	790	
	08/28/92	1,300	200	68	810	24,000	Slight odor
BB-1	08/27/92	ND	ND	ND	ND	ND	

1. TPHG Total petroleum hydrocarbons as gasoline
2. ND - Not detected
3. NS - Not sampled
4. Samples prior to December 1988 collected by Applied GeoSystems
5. Sample from December 1988 through December 1990 collected by DuPont Environmental
6. Sample from March 1991 through September 1991 collected by Groundwater Technology
7. BB-1- Bailer Blank



SOURCE: THOMAS BROS. GUIDE
ALAMEDA CO. 1991

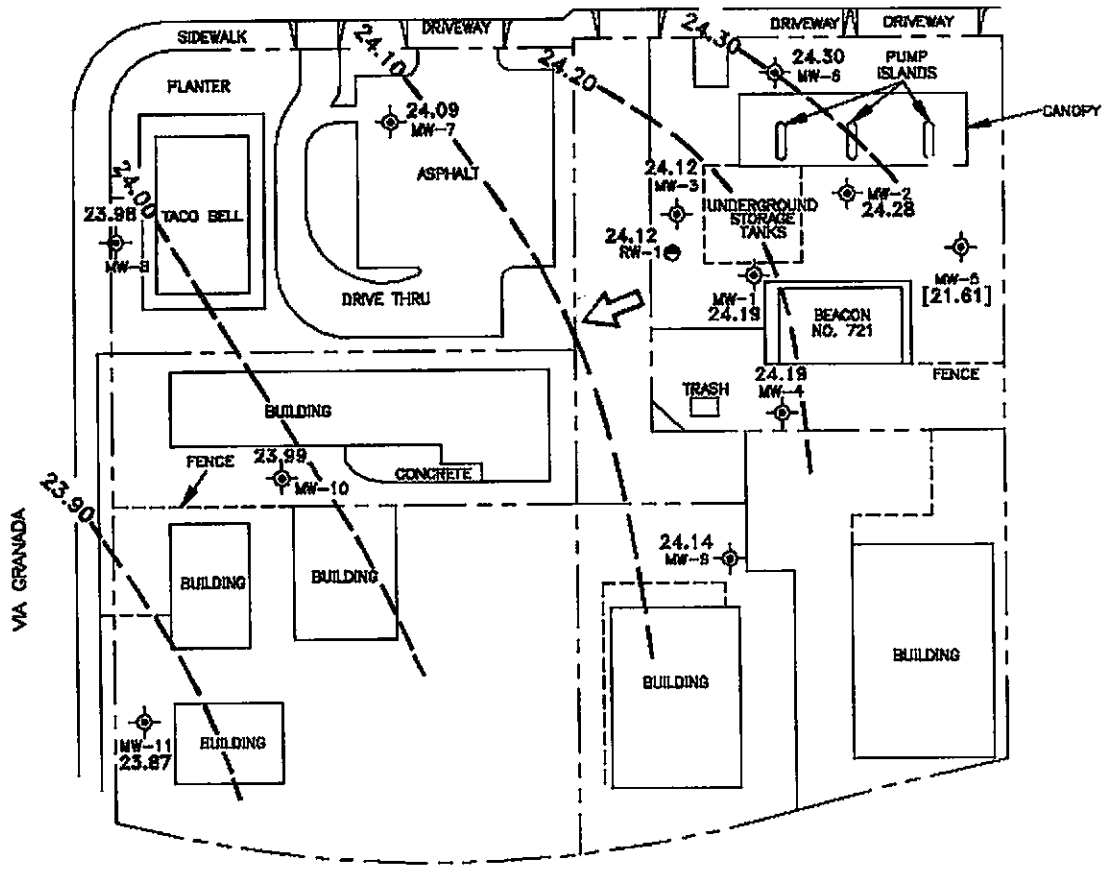
N

APPROXIMATE SCALE

0 1100 2200 4400

FEET

RESNA	SITE LOCATION MAP	PLATE
	ULTRAMAR/BEACON STATION NO. 721	1
	44 LEWELLING BOULEVARD	
PROJECT NO. F3092.32	SAN LORENZO, CALIFORNIA	



LEGEND

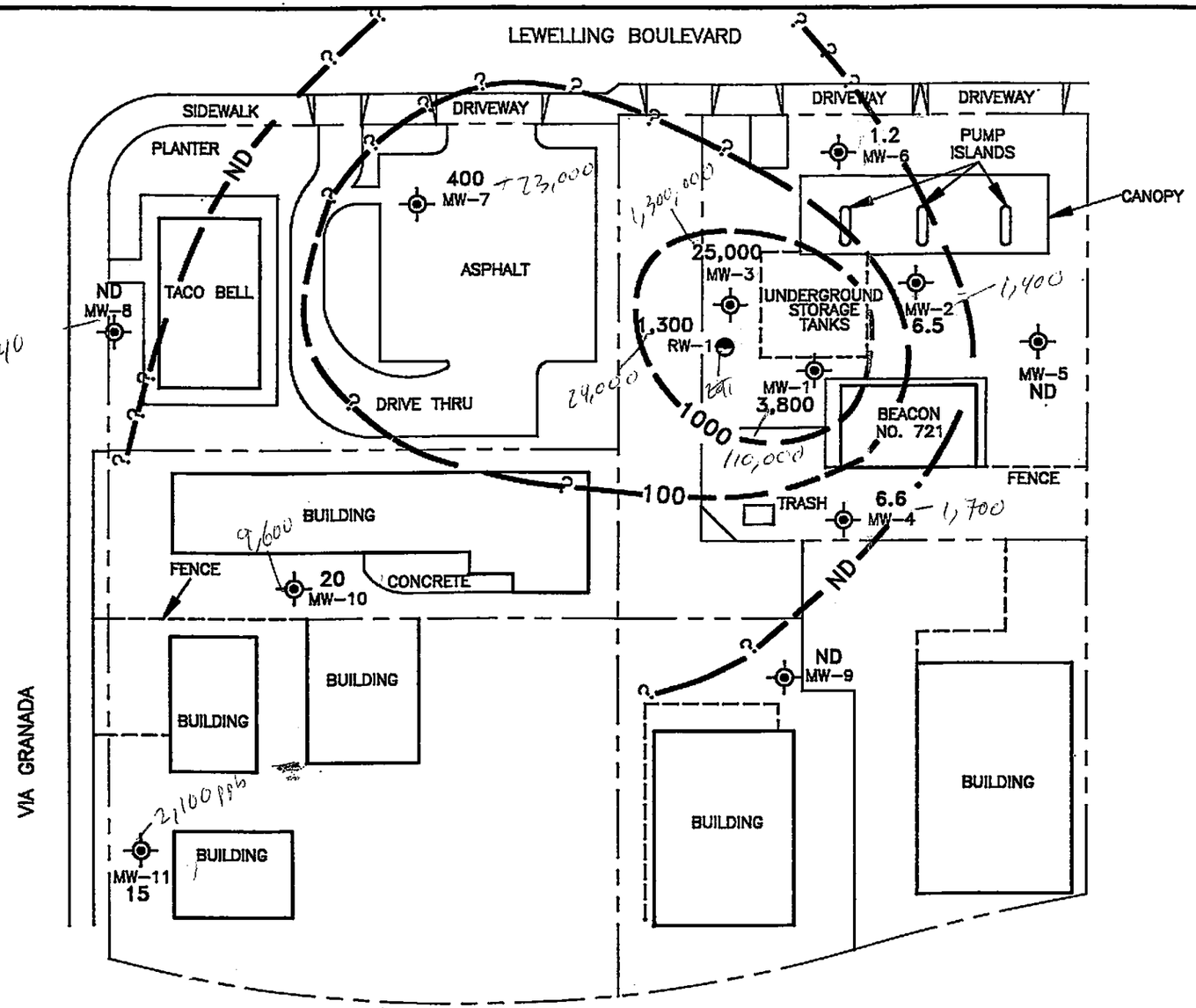
- MW-11 ⊕ GROUNDWATER MONITORING WELL
- RW-1 ⊕ RECOVERY WELL
- APPROXIMATE PROPERTY LINES
- 24.30 GROUNDWATER ELEVATION IN FEET (DATUM: M.S.L.)
- 24.30 GROUNDWATER ELEVATION CONTOUR LINE IN FEET (DATUM: M.S.L.)
- APPROXIMATE DIRECTION OF GROUNDWATER FLOW
- CONTOUR INTERVAL = 0.1 FEET
- [21.61] GROUNDWATER ELEVATION NOT USED IN CONTRUCTION OF CONTOUR MAP

N

0 20 40
SCALE IN FEET

NOTE: CONTOURS ARE BASED ON INTERPRETATION OF AVAILABLE DATA, AND ARE NOT INTENDED TO IMPLY CERTAINTY.

RESNA	GROUNDWATER ELEVATION CONTOUR MAP (8/28/92)	PLATE
	ULTRAMAR/BEACON STATION NO. 721	2
PROJECT NO. F3092-32	44 LEWELLING BOULEVARD	
	SAN LORENZO, CALIFORNIA	



LEGEND

MW-11	GROUNDWATER MONITORING WELL
RW-1	RECOVERY WELL
	APPROXIMATE PROPERTY LINES
(6300)	BENZENE CONCENTRATION IN PPB
ND	NONE DETECTED
1000	BENZENE CONCENTRATION CONTOUR LINE IN PPB

N

0 20 40
SCALE IN FEET

NOTE: CONTOURS ARE BASED ON INTERPRETATION OF AVAILABLE DATA, AND ARE NOT INTENDED TO IMPLY CERTAINTY.

RESNA	BENZENE CONCENTRATION MAP (8/27,28/92)	PLATE
	ULTRAMAR/BEACON STATION NO. 721	3
PROJECT NO. F3092-32	44 LEWELLING BOULEVARD	
F3092-B8	SAN LORENZO, CALIFORNIA	

APPENDIX A

GROUNDWATER SAMPLING PROTOCOL AND LABORATORY PROCEDURES

RESNA

Groundwater Sampling Protocol

GROUNDWATER SAMPLING PROTOCOL

Sampling of groundwater is performed by RESNA Industries, Inc. sampling technicians. Monitoring well sampling procedures are summarized as follows:

1. Wells are sampled in approximate order of increasing contamination.
2. Proceed to first well with clean and decontaminated equipment.
3. Measurements depths to liquid surface(s) in the well, and total depth of monitoring well. Note presence of sediment.
4. Field check for presence of floating product; measure apparent thickness.
5. Calculate minimum purge volume (well volumes) then purge well.
6. Monitor groundwater for temperature, pH, and specific conductance during purging. Following stabilization of parameters and removal of minimum volume, allow well to recover adequately.
7. Collect samples using Environmental Protection Agency (EPA) approved sample collection devices, i.e., teflon or stainless steel bailers or pumps.
8. Transfer samples into laboratory-supplied EPA-approved containers.
9. Label samples and log onto chain-of-custody form.
10. Store samples in a chilled ice chest for shipment to a state-certified analytical laboratory.
11. Secure wellhead.
12. Decontaminate equipment prior to sampling next well.

Equipment Cleaning and Decontamination

All water samples are placed in precleaned laboratory-supplied bottles. Sample bottles and caps remain sealed until actual usage at the site. All equipment which comes in contact with the interior of the well or groundwater is thoroughly cleaned with either a steam cleaner, a trisodium phosphate (TSP) solution or an Alconox™ solution and rinsed with deionized or distilled water before use at the site. This cleaning procedure is followed between each well sampled. If a teflon cord is used, the cord is cleaned. If a nylon or cotton cord is used, a new cord is used in each well.

All equipment blanks are collected prior to sampling. The blanks are analyzed periodically to ensure proper cleaning procedures are used.

Water Level Measurements

Depth to groundwater is measured in each well using a sealed sampling tape or scaled electric sounder prior to purging or sampling. If the well is known or suspected of containing free-phase petroleum hydrocarbons, either an optical interface probe or a bailer is used to measure the hydrocarbon thickness. Measurements are collected and recorded to the nearest 0.01 foot. Each monitoring well's total depth will be measured; this will allow a relative judgement of well sedimentation and need for redevelopment to be made.

Bailer Sheen Check

If no measurable free-phase petroleum hydrocarbons are detected, a clear acrylic bailer is used to determine the presence of a sheen. The color of the water and any film or obvious odor are recorded.

Groundwater Sampling

Prior to groundwater sampling, each well is purged of "standing" groundwater. Either a bailer, hand pump, or submersible pump is used to purge the well. The amount of purging is dependent on the well hydraulics. Samples will be collected when temperature, pH, and specific conductance stabilize and a minimum of three well-casing volumes of water have been removed. Field measurements will be taken after purging each well volume. Physical parameter measurements (temperature, pH, and specific conductance) are closely monitored throughout the well purging process and are used as

indicators for assessing sufficient purging. The purging parameters are measured to observe stabilization to a range of values typical for that aquifer and well. Stable field parameters are recognized as indicative of groundwater aquifer chemistry entering the well. Specific conductance (conductivity) meters are read to the nearest ±10 umhos/cm and are calibrated daily. pH meters are read to the nearest ±0.1 pH units and are calibrated daily. Temperature is read to the nearest 0.1 °F. Calibration of physical parameter meters will follow manufacturer's specifications. Collected field data during purging activities will be entered on the Well Sampling Field Data Sheet.

Following purging, the well is allowed to recharge prior to sampling. When recovery to 80% of the static water level is estimated or observed to exceed two hours, a sample will be collected when sufficient volume is available to fill all sample containers. The well will be purged slowly enough to minimize the volatilization of organic contaminants during well recharge.

In wells where free-phase hydrocarbons are detected, the free-phase portion will be bailed from the well and its volume recorded. If free-phase hydrocarbons persist through bailing, a groundwater sample will not be collected.

Volatile organic groundwater samples are collected so that air passage through the sample does not occur or is minimal (to prevent volatiles from being stripped from the samples). Sample bottles are filled by slowly running the sample down the side of the bottle until there is a positive convex meniscus over the mouth of the bottle. The teflon side of the septum (in cap) is then positioned against the meniscus, the cap is screwed on tightly, the sample is inverted, and the bottle is lightly tapped. If a bubble is evident, the cap is removed, more sample is added, and the bottle is resealed.

Chain-of-Custody

Groundwater sample containers are labeled with a unique sample number, location, and date of collection. All samples are logged into a chain-of-custody form and placed in a secure, chilled ice chest for shipment to a laboratory certified by the State of California.

Sample Storage

Groundwater samples collected in the field are stored in an ice chest cooled to approximately 4 °C while in transit to the office or analytical laboratory. Samples are stored in a refrigerator overnight and during weekends and holidays. The refrigerator is set to 4 °C and is locked with access controlled by a designated sample custodian.

Quality Assurance/Quality Control Objectives

The sampling and analysis procedures employed by RESNA for groundwater sampling and monitoring follow regulatory guidance for quality assurance/quality control (QA/QC). Quality assurance objectives have been established to develop and implement procedures for obtaining and evaluating water quality and field data in an accurate, precise, and complete manner. In this way, sampling procedures and field measurements provide information that is comparable and representative of actual field conditions. Quality control (QC) is maintained by site-specific field protocols and by requiring the analytical laboratory to perform internal and external QC checks. The goal is to provide data that are accurate, precise, complete, comparable, and representative. The definitions as developed by overseeing federal, state, and local agency guidance documents for accuracy, precision, completeness, comparability, and representativeness are:

- **Accuracy** — the degree of agreement of a measurement with an accepted reference or true value.
- **Precision** — a measure of agreement among individual measurements under similar conditions. Usually expressed in terms of the standard deviation.
- **Completeness** — the amount of valid data obtained from a measurement system compared to the amount that was expected to meet the project data goals.
- **Comparability** — express the confidence with which one data set can be compared to another.
- **Representativeness** — a sample or group of samples that reflect the characteristics of the media at the sampling point.

Laboratory and field handling procedures of samples may be monitored by including QC samples for analysis. QC samples may include any combination of the following:

- **Trip Blanks:** Trip blanks are sent to the project site, and travel with project site samples. Trip blanks are **not** opened, and are returned from a project site with the project site samples for analysis.

- **Field Blank:** Prepared in the field using organic-free water. Field blanks accompany project site samples to the laboratory and are analyzed for specific chemical parameters unique to the project site where they were prepared.

- **Duplicates:** Duplicated samples are collected "second samples" from a selected well and project site. They are collected as either split samples or second-run samples collected from the same well.

- **Equipment Blank:** Periodic QC samples collected from field equipment rinseate to verify decontamination procedures.

The number and types of QC samples are determined and analyzed on a project-specific basis.

Shallow Groundwater Survey

A shallow groundwater survey employs reconnaissance field sampling and chemical analysis for rapid plume mapping. A state-certified mobile laboratory may be used. The subcontractor would sample for analysis at locations marked by the RESNA field geologist. The thin-diameter probes from which groundwater is collected are advanced to the water bearing stratum and a groundwater sample is withdrawn to the surface, and analyzed immediately thereafter. Probe holes are backfilled with a grout slurry or as the local permitting agency requires. The contractor will report the details and results sampling, purging, and chemical analysis to RESNA. RESNA considers this type of shallow probe mapping (together with shallow groundwater sampling) to be a reconnaissance technique only.

RESNA

Laboratory Procedures

LABORATORY PROCEDURES

Selection of the Laboratory

The laboratories selected to perform the analytical work are certified by the California State Department of Health Services (DHS) as being qualified to perform the selected analyses. The selected laboratories are reviewed by RESNA Industries, Inc., to assure that they are certified by the State of California and maintain an adequate in-house quality control program. When a laboratory is selected by a client for RESNA's use, a check is made regarding current DHS certification.

Chain-of-Custody Control

The following procedures are used during sampling and analytical activities to provide chain-of-custody control during transfer of samples from collection through delivery to the laboratories. Record keeping activities used to achieve chain-of-custody control are:

- Contact made by sampling organization with facility supervisor and laboratory prior to sampling to alert them of dates of sampling and sample delivery.
- Well location map with well identification number(s) prominently displayed.
- Field log book for documenting sampling activities in the field.
- Labels for identifying individual samples.
- Chain-of-custody record for documenting transfer and possession of samples.
- Laboratory analysis request sheet for documenting analyses to be performed.

Field Filtration of Samples

Samplers will refrain from filtering TOC, TOX, or other organic compound samples as the increased handling required may result in the loss of chemical constituents of interest. Allowing the samples to settle prior to analysis followed by decanting the sample is preferable to filtration of these substances. If filtration is necessary for the determination of extractable organic compounds, the filtration should be performed in the laboratory. It may be necessary to run parallel sets of filtered and unfiltered samples with standards to establish the recovery of hydrophobic compounds when sample must be filtered. All the materials' precautions used in the construction of the sampling train should be observed for filtration apparatus. Vacuum filtration of groundwater samples is not recommended.

Water samples for dissolved inorganic chemical constituents (e.g., metals, alkalinity, and anionic species) will be filtered in the field.

Sample Containers

Sample containers vary with each type of analytical parameter. Selected container types and materials are non-reactive with the sample and the particular analytical parameter being tested. Appropriate containers for volatile organics are glass bottles of at least 40 milliliters in size, fitted with teflon-faced silicon septa. Sample containers are properly cleaned and sterilized by the certified laboratory according to the Environmental Protection Agency (EPA) protocol for the individual analysis. RESNA uses laboratory-prepared sample containers for the sampling and analysis desired. Containers prepared by one laboratory are not sent to a different laboratory.

Sample Preservation and Shipment

Various preservatives are used by the certified laboratory to retard changes in samples. Sample shipment from RESNA to laboratories performing the selected analyses routinely occurs within 24 hours of sample collection. If an overnight delivery service is required, samples are shipped at the end of each day.

Analytical Procedures

The analysis of groundwater samples is conducted in accordance with accepted quantitative analytical procedures. The following six publications are considered the primary references for groundwater sample analysis, and the contracts with the

laboratories analyzing the samples stipulate that the methods set out in these publications be used. Please note that procedures used are periodically updated by federal and state agencies, and the certified laboratories amend analysis as required by the update.

- Standard Methods for the Examination of Water and Wastewater, 16th Ed., American Public Health Association, et al., 1985, and later revisions.

- Methods for Chemical Analysis of Water and Wastes, U.S. EPA, 600/4-79-020, March 1979, and later revisions.

- Test Methods for Evaluation of Solid Waste: Physical/Chemical Methods, U.S. EPA SW-846, 1982, and later revisions.

- Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater, EPA, 600/4-82-057, 1982, and later revisions.

- Practical Guide for Groundwater Sampling, EPA, 600/2-85/104, September 1985.

- RCRA Ground-Water Monitoring Technical Enforcement Guidance Document, EPA, September 1986.

Analytical Methods

The analytical methods used by the selected laboratories are those required by the type of analysis (fuels, metals, etc.). These methods are those currently approved by the State Regional Water Quality Control Board (RWQCB). Additional information regarding chemical analyses are contained in the RWQCB Leaking Underground Fuel Tank(LUFT) Manual; Tri-Regional Board guidance dated August 2, 1988; policy letters on guidance offered at irregular intervals; or analytical procedures selected for site-specific project needs.

APPENDIX B

CERTIFIED LABORATORY RESULTS AND CHAIN-OF-CUSTODY

ANALYSIS REPORT

1020lab.frm

Attention:	Mr. Zbig Ignatowicz	Date Sampled:	08-27/28-92
	RESNA	Date Received:	08-28-92
	42501 Albrae St.	BTEX Analyzed:	8-31, 9-1-92
	Fremont, CA 94538	TPHg Analyzed:	8-31, 9-1-92
Project:	19505-L, Project 3-30092-32	TPHd Analyzed:	NR
	Station 721, San Lorenzo	Matrix:	Water

	Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPHg	TPHd
	ppb	ppb	ppb	ppb	ppb	ppb
Detection Limit:	0.5	0.5	0.5	0.5	50	50
SAMPLE Laboratory Identification						
BB-1 W1208397	ND	ND	ND	ND	ND	NR
MW-5 W1208398	ND	ND	ND	ND	ND	NR
MW-9 W1208399	ND	ND	ND	ND	ND	NR
MW-6 W1208400	1.2	ND	ND	ND	ND	NR
MW-2 W1208401	6.5	1.1	0.6	ND	1400	NR

ppb = parts per billion = μg/L = micrograms per liter.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not requested.

ANALYTICAL PROCEDURES

BTEX-- Benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction using EPA Method 5030 followed by analysis using EPA Method 8020/602, which utilizes a gas chromatograph (GC) equipped with a photoionization detector (PID) and a flame-ionization detector (FID) in series.

TPHg--Total petroleum hydrocarbons as gasoline (low-to-medium boiling points) are measured by extraction using EPA Method 5030, followed by analysis using modified EPA Method 8015, which utilizes a GC equipped with an FID.

TPHd--Total petroleum hydrocarbons as diesel (high boiling points) are measured by extraction using EPA Method 3550 for soils and EPA Method 3510 for water, followed by modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

MMTague
Laboratory Representative

September 8, 1992
Date Reported

ANALYSIS REPORT

1020lab.frm

Attention: Mr. Zbig Ignatowicz
RESNA
42501 Albrae St.
Fremont, CA 94538

Project: 19505-L, Project 3-30092-32
Station 721, San Lorenzo

Date Sampled: 08-27/28-92
Date Received: 08-28-92
BTEX Analyzed: 8-31, 9-1-92
TPHg Analyzed: 8-31, 9-1-92
TPHd Analyzed: NR
Matrix: Water

	Benzene ppb	Toluene ppb	Ethyl-benzene ppb	Total Xylenes ppb	TPHg ppb	TPHd ppb
Detection Limit:	0.5	0.5	0.5	0.5	50	50
SAMPLE Laboratory Identification						
MW-11 W1208402	15	2.0	0.6	1.2	2100	NR
MW-7 01208403	400	5.8	290	1400	23000	NR
MW-8 W1208404	ND	ND	ND	ND	140	NR
RW-1 W1208405	1300	200	68	810	24000	NR
MW-4 W1208406	6.6	1.3	1.6	3.1	1700	NR

ppb = parts per billion = $\mu g/L$ = micrograms per liter.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not requested.

ANALYTICAL PROCEDURES

BTEX– Benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction using EPA Method 5030 followed by analysis using EPA Method 8020/602, which utilizes a gas chromatograph (GC) equipped with a photoionization detector (PID) and a flame-ionization detector (FID) in series.

TPHg--Total petroleum hydrocarbons as gasoline (low-to-medium boiling points) are measured by extraction using EPA Method 5030, followed by analysis using modified EPA Method 8015, which utilizes a GC equipped with an FID.

TPHd--Total petroleum hydrocarbons as diesel (high boiling points) are measured by extraction using EPA Method 3550 for soils and EPA Method 3510 for water, followed by modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

M Tague
Laboratory Representative

September 8, 1992
Date Reported

ANALYSIS REPORT

1020lab.frm

Attention:	Mr. Zbig Ignatowicz	Date Sampled:	08-27/28-92
	RESNA	Date Received:	08-28-92
	42501 Albrae St.	BTEX Analyzed:	8-31, 9-1-92
	Fremont, CA 94538	TPHg Analyzed:	8-31, 9-1-92
Project:	19505-L, Project 3-30092-32	TPHd Analyzed:	NR
	Station 721, San Lorenzo	Matrix:	Water

	Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPHg	TPHd
	ppb	ppb	ppb	ppb	ppb	ppb
Detection Limit:	0.5	0.5	0.5	0.5	50	50
SAMPLE Laboratory Identification						
MW-10 W1208407	20	2.8	40	3.5	9600	NR
MW-1 01208408	3800	54	850	970	110000	NR
MW-3 W1208409	25000	40000	6700	44000	1300000	NR

ppb = parts per billion = $\mu g/L$ = micrograms per liter.
ND = Not detected. Compound(s) may be present at concentrations below the detection limit.
NR = Analysis not requested.

ANALYTICAL PROCEDURES

BTEX-- Benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction using EPA Method 5030 followed by analysis using EPA Method 8020/602, which utilizes a gas chromatograph (GC) equipped with a photoionization detector (PID) and a flame-ionization detector (FID) in series.

TPHg--Total petroleum hydrocarbons as gasoline (low-to-medium boiling points) are measured by extraction using EPA Method 5030, followed by analysis using modified EPA Method 8015, which utilizes a GC equipped with an FID.

TPHd--Total petroleum hydrocarbons as diesel (high boiling points) are measured by extraction using EPA Method 3550 for soils and EPA Method 3510 for water, followed by modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

Laboratory Representative

September 8, 1992
Date Reported

Ultramar Inc.

CHAIN OF CUSTODY REPORT

BEACON

005439

Beacon Station No.	Sampler (Print Name)	Date	Form No.
721	Robin Sutherland	8-27-92	1 of 2

Project No.: 3-30092-32

Sampler (Signature): [signature]

Project Location: 44 Leweling Blvd San Lorenzo

Affiliation: Resna

Sample No./Identification	Date	Time	Lab No.	BTEX	TPH (gasoline)	TPH (diesel)						No. of Containers	REMARKS
BB-1	8-27-92	10:00	W1208397	X	X							3	
MW-5	↓	10:30	398	X	X							3	
MW-9	↓	11:30	399	X	X							3	
MW-6	↓	12:30	400	X	X							3	
MW-2	↓	13:30	401	X	X							3	
MW-11	↓	14:30	402	X	X							3	
MW-7	↓	15:30	403	X	X							3	
MW-8	8-28-92	9:00	404	X	X							3	

Relinquished by: (Signature/Affiliation)	Date	Time	Received by: (Signature/Affiliation)	Date	Time
[signature]	8/28/92	14:45	[signature]	8/28/92	1445

Report To: Zbig

Bill to: ULTRAMAR INC.
525 West Third Street
Hanford, CA 93230
Attention: ______________________

WHITE: Return to Client with Report   YELLOW: Laboratory Copy   PINK: Originator Copy

32-8003 1/90

Ultramar Inc.

CHAIN OF CUSTODY REPORT

BEACON

Beacon Station No. 721	Sampler (Print Name) Robin Sutherland		Date 8-27-92 Form No. 2 of 2
Project No. 3-30092-32	Sampler (Signature) [signature]		
Project Location 44 Leweling San Lorenzo	Affiliation Resna		

Sample No./Identification	Date	Time	Lab No.	BTEX	TPH (gasoline)	TPH (diesel)						No. of Containers	REMARKS
RW-1	8-28-92	10:00	W1208405	X	X							3	
MW-4	↓	11:00	406	X	X							3	
MW-10	↓	12:00	407	X	X							3	
MW-1	↓	13:00	408	X	X							3	Sheen + odor
MW-3	↓	14:00	409	X	X							3	Sheen + odor

Relinquished by: (Signature/Affiliation)	Date	Time	Received by: (Signature/Affiliation)	Date	Time
[signature]	8/28/92	14:45	[signature]	8/28/92	1445
Relinquished by: (Signature/Affiliation)	Date	Time	Received by: (Signature/Affiliation)	Date	Time
Relinquished by: (Signature/Affiliation)	Date	Time	Received by: (Signature/Affiliation)	Date	Time

Report To: Zbig

Bill to: ULTRAMAR INC.
525 West Third Street
Hanford, CA 93230
Attention: ____________________

32-8003 1/90

WHITE: Return to Client with Report YELLOW: Laboratory Copy PINK: Originator Copy

APPENDIX C

FIELD NOTES

RESNA

SAMPLING LOG

Job Name: Ultramar #721 San Lorenzo Date: 8-28-92

Job No.: 3-30092.32 Sampled by: RSutherland

Phase: Q Laboratory: Resnet

Wells Secure: ☒ Yes ☐ No If no, then comment:

Drums at Site: Full 1 Empty 7

Well No.	Depth to Water (ft)	Well Depth (ft)	Time (W"L)	Purge Volume (gal)	Temp. (°C)	Cond. (umho/cm)	pH	Observations
MW-1	19.48	21.30	9:50	.3 2	75.0	1110	6.46	odor
				3	73.1	1070	6.51	Sheen
				4	71.0	1030	6.60	cloudy 24.19
MW-2	18.81	32.70	9:15	2.3 2.5	72.5	1020	6.58	No odor
				5	71.4	980	6.67	No sheen
				7.5	70.6	920	6.74	cloudy 24.28
MW-3	18.98	30.55	9:55	1.9				sheen
					NO Parameters			odor
				6	Due to Sheen			cloudy 24.12
MW-4	20.47	24.68	9:40	.7 1.4	71.9	1260	6.56	NO odor
				2.1	71.1	1250	6.60	No Sheen
				2.8	70.3	1220	6.59	cloudy 24.19
MW-5	22.18	29.15	9:00	1.1 2	73.4	660	6.99	No odor
				3	72.1	640	7.02	No Shen
				4	70.5	610	7.05	Cloudy 21.61

42501 Albrae Street
Fremont, California 94538
(510) 440-3300

RESNA

SAMPLING LOG

Job Name: Ultramar #721 San Lorenzo Date: 8-28-92

Job No.: 3-30092-32 Sampled by: R Sutherland

Phase: 2 Laboratory: Resna

Wells Secure: [X] Yes [ ] No If no, then comment:

Drums at Site: Full 1 Empty 2

Well No.	Depth to Water (ft)	Well Depth (ft)	Time (W*L)	Purge Volume (gal)		Temp. (°C)	Cond. (umho/cm)	pH	Observations
MW-6	18.17	28.80	9:10	1.8	4	70.6	740	6.68	NO odor
					6	69.4	730	6.73	NO sheen
					8	68.7	700	6.77	Cloudy 24.30
MW-7	17.45	24.38	9:25	1.1	2	75.5	1000	6.62	slight odor
					3	73.8	960	6.73	NO sheen
					4	72.5	910	6.78	Cloudy 24.09
MW-8	18.28	23.27	9:30	1.8	2	74.9	790	6.96	NO odor
					3	73.8	750	6.96	NO sheen
					4	73.0	720	6.93	Cloudy 23.98
MW-9	20.80	23.85	9:05	1.5	1	70.3	1230	6.78	NO odor
					1.5	69.8	1230	6.73	NO sheen
					2	69.5	1210	6.71	Cloudy 24.14
MW-10	18.35	29.60	9:45	1.9	2	74.2	800	6.76	NO odor
					4	72.3	770	6.70	NO sheen
					6	70.7	750	6.67	Cloudy 23.99

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Fremont, California 94538
(510) 440-3300

Sheet ___ of ___

RESNA

SAMPLING LOG

Job Name: Ultramar #721 San Lorenzo Date: 8-28-92

Job No.: 3-30092-32 Sampled by: R Sutherland

Phase: 2 Laboratory: Resna

Wells Secure: ☒ Yes ☐ No If no, then comment:

Drums at Site: Full 1 Empty 7

Well No.	Depth to Water (ft)	Well Depth (ft)	Time (W*L)	Purge Volume (gal)	Temp. (°C)	Cond. (umho/cm)	pH	Observations
MW-11	21.13	29.60	9:20	1.4 3 4.5	74.5 72.3 70.7	790 750 740	6.99 6.97 6.94	slight odor No sheen cloudy 23.87
RW-1	19.05	36.50	9:35	11.5 24 36	76.3 75.0 74.1	770 730 700	6.83 6.81 6.75	slight odor No sheen cloudy 24.12

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