Ultramar

ALCO
HAZMAT

Ultramar Inc.
P.O. Box 466
525 W. Third Street
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(209) 582-0241

94 APR -7 PM 1:17

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March 29, 1994

Ms. Juliet Shin
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. Shin:

Enclosed is a copy of the ground-water monitoring report for the first quarter 1994 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.

Due to equipment malfunctions and delays in having the natural gas line installed by the utility company, the vapor extraction system has not begun operation. The new equipment has been ordered and it is anticipated that the vapor extraction portion should begin operation before mid April.

Please call if you have any questions regarding this project.

Sincerely,

ULTRAMAR INC.

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: March 29, 1994
QUARTER ENDING: March 31, 1994

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.

In April 1992, Ultramar submitted an Interim Remediation Plan. The plan was approved in June 1992.

In March 1993, installed the subsurface piping for the remediation system. Completed installation of ground-water remediation system in April 1993. Began operation in June 1993.

SUMMARY OF THIS QUARTER'S ACTIVITIES:

Performed quarterly monitoring on September 22, 1993. Continued to operate the ground-water extraction system. Completed installation of vapor extraction system.

RESULT OF QUARTERLY MONITORING:

Monitoring data indicates that free product was not detected in any well this quarter. Benzene concentrations remained not detected in wells MW-2, MW-4, MW-8, MW-9, and MW-11. The benzene concentration decreased in MW-1 from 3,000 ppb to 2,400 ppb, in MW-5 from 0.66 ppb to not detected, in MW-6 from 2.2 ppb to not detected, in MW-7 from 71 ppb to 61 ppb, and in RW-1 from 800 ppb to 33 ppb. The benzene concentration increased in MW-3 from 12,000 ppb to 14,000 ppb. MW-10 was inaccessible this quarter and was not sampled.

As of January 24, 1994, approximately 1,242,108 gallons of ground water have been removed, treated, and discharged.

PROPOSED ACTIVITY OR WORK FOR NEXT QUARTER:

ACTIVITY	ESTIMATED COMPLETION DATE
Continue quarterly ground-water monitoring.	Ongoing
Continue operation of ground-water remediation system.	Ongoing
Begin operation of vapor extraction system.	April 7, 1994

Received April 7 '94 JS

Delta
Environmental
Consultants, Inc.

3330 Data Drive
Suite 100
Rancho Cordova, CA 95670
916/638-2085
FAX: 916/638-8385

March 22, 1994

Mr. Terrence A. Fox
Ultramar Inc.
525 West Third Street
Hanford, California 93230

Subject: *Quarterly Ground Water Monitoring Report, First Quarter 1994, and Status of Remediation System, through January, 1994*
Beacon Station No. 721
44 Lewelling Boulevard
San Lorenzo, California
Delta Project No. 40-93-936

Dear Mr. Fox:

Delta Environmental Consultants, Inc. (Delta), has been authorized by Ultramar Inc. to conduct quarterly monitoring at the above-referenced site. The monitoring is intended to evaluate the presence and concentration of petroleum hydrocarbon constituents in ground water in the vicinity of the subject site and evaluate the effectiveness of the remediation system currently in operation. This letter report summarizes the results of ground water monitoring and sampling activities performed at the site on January 24, 1993, and the remediation system status through January 1994. The site location is shown in Figure 1, and site features are illustrated in Figure 2.

Quarterly ground water monitoring conducted on January 24, 1994, included measurement of depth to water in six on-site monitoring wells (MW-1, MW-2, MW-3, MW-4, MW-5 and MW-6), five off-site monitoring wells (MW-7, MW-8, MW-9, and MW-11), and one ground water recovery well (RW-1), subjective analyses of water samples to evaluate the presence of free petroleum product or product sheen in the monitoring wells, and collection of ground water samples for chemical analysis. Monitoring well MW-10 was not sampled because it had been covered with new asphalt. Methods used in the performance of these tasks are described in Enclosure A.

Water Table Elevation Measurements, Flow Direction, and Hydraulic Gradient

Depth to ground water in the monitoring wells was measured on January 24, 1994. Depth to ground water ranged from 16.07 (MW-7) to 19.79 (MW-11) feet below the top of well casings. The water table elevation measurements indicate an inferred direction of ground water flow beneath the site towards the west with recovery well RW-1 affecting the water level locally due to pumping activities discussed later in this report. Ground water table measurements recorded at the site on January 24, 1994, are compiled in Table 1, along with measurements recorded since February 1992. A water table contour map prepared from the January 1994 data is included as Figure 3.

Free Petroleum Product or Product Sheen

The presence of separate phase petroleum product or product sheen in the monitoring wells was evaluated using procedures described in Enclosure A. On January 24, 1994, separate phase petroleum product or product sheen was not observed in any of the wells associated with the site (Table 1).

Ground Water Analytical Results

Ground water samples were collected from monitoring wells MW-1 through MW-9, MW-11, and ground water recovery well RW-1 on January 24, 1994. Sampling procedures are described in Enclosure A, and copies of the sampling information data sheets are included in Enclosure B.

The ground water samples were submitted for analysis of benzene, toluene, ethylbenzene, and xylenes (BTEX), and total petroleum hydrocarbons (TPH) as gasoline. Analytical results indicate no detectable TPH as gasoline or BTEX concentrations in monitoring wells MW-5, and MW-9. Benzene was not detected in monitoring wells MW-2, MW-4, MW-5, MW-6, MW-8, MW-9, and MW-11. Detectable benzene concentrations ranged from 33 parts per billion (ppb) (RW-1) to 14,000 ppb (MW-3). A comparison of the analytical results for the samples collected in September 1993 and January 1994 indicate that the benzene concentrations decreased in MW-1 (3,000 to 2,400 ppb), MW-5 (0.66 to <0.5 ppb), MW-6 (2.2 to <0.5 ppb), MW-7 (71 to 61 ppb), and RW-1 (800 to 33 ppb), and increased in MW-3 (12,000 to 14,000 ppb). Results of the chemical analyses for the January 24, 1994, sampling event are summarized in Table 2, and copies of the certified analytical reports are included in Enclosure C. A benzene isoconcentration contour map is included as Figure 4.

Status of Remediation System

Delta was authorized to perform operation and maintenance on the ground water remediation system at the site in April 1993. The system pumps ground water from recovery well RW-1 and is designed to remove petroleum hydrocarbon constituents through treatment in an air stripper. Treated ground water is discharged to the Oro Loma Sanitary District.

The ground water treatment system was not operational during the period of August 14, 1993, through September 21, 1993, while the air stripper tower packing was replaced. The ground water treatment system was restarted on September 22, 1993.

The volume of ground water treated by the remediation system through January 24, 1994, is 1,242,108 gallons, shown in Table 3.

Numerous attempts to start the soil vapor extraction system have been made, but due to mechanical failure the system is not operational.

Remediation System Analytical Results

In order to evaluate the effectiveness of the remediation system, water samples were collected at the sewer discharge location. Water samples were collected on January 24, 1994, and were submitted for analysis of BTEX and TPH as gasoline. Analytical results indicate that BTEX and TPH as gasoline concentrations were below the allowable discharge concentrations for the Oro Loma Sanitary

Sewer District. Results of the chemical analysis are summarized in Table 4, and copies of certified analytical reports are included in Enclosure D.

Future Work

Delta will continue to monitor the operation of the remediation system and will perform monthly sampling of the remediation system effluent. The soil vapor extraction system will begin operation in March 1994. The next quarterly sampling of ground water monitoring wells is scheduled for April 1994.

Remarks\Signatures

The interpretations contained in this report represent our professional opinions, and are based in part, on information supplied by the client. These opinions are based on currently available information and are arrived at in accordance with currently accepted hydrogeologic and engineering practices at this time and location. Other than this, no warranty is implied or intended.

It is recommended that copies of this letter report be forwarded to:

Mr. Steven Ritchie
California Regional Water Quality Control Board,
Region 2
2101 Webster Street
Oakland, California 94612

Ms. Juliet Shin
Alameda County Environmental
Health Dept.
470 27th Street, Room 322
Oakland, California 94612

If you have any questions, please call me at (916) 638-2085.

Sincerely,

DELTA ENVIRONMENTAL CONSULTANTS, INC.

Paul V. Zianno
Project Hydrogeologist

Todd M. Galati
Project Manager

James R. Brownell, R.G.
California Registered Geologist No. 5078

cc\enc: Mr. Jon Black, Delta Environmental Consultants, Inc. - Sacramento

PVZ (LRP335.TA)
Enclosures

TABLE 1

GROUND WATER ELEVATIONS

Beacon Station No. 721
44 Lewelling Boulevard
San Lorenzo, California

Monitoring Well	Date	Top of Riser Elevation (ft)[a]	Depth to Water (ft)	Ground Water Elevation (ft)	Physical Observation of Free Product or Sheen
MW-1	02/18/92	43.67	16.42	27.25	
	05/14/92		17.28	26.39	
	08/27/92		19.48	24.19	
	11/19/92		20.57	23.10	
	02/03/93		15.91	27.76	
	06/23/93		16.21	27.46	No free product or sheen
	09/22/93		17.85	25.82	No free product or sheen
	01/24/94		17.91	25.76	
MW-2	02/18/92	43.09	16.65	26.44	
	05/14/92		16.64	26.45	
	08/27/92		16.61	26.28	
	11/19/92		19.91	23.18	
	02/03/93		15.23	27.86	
	06/23/93		15.55	27.54	No free product or sheen
	09/22/93		17.22	25.87	No free product or sheen
	01/24/94		17.20	25.89	
MW-3	02/18/92	43.10	16.89	26.21	
	05/14/92		16.60	26.50	
	08/27/92		18.96	24.14	
	11/18/92		20.38	23.01*	
	02/03/93		15.43	27.67*	
	06/23/93		15.67	27.43	Product sheen
	09/22/93		17.20	25.90	No free product or sheen
	01/24/94		17.35	25.75	
MW-4	02/18/92	44.66	18.51	26.15	
	05/14/92		18.22	26.44	
	08/27/92		20.47	24.19	
	11/19/92		21.58	23.08	
	02/03/93		16.98	27.68	
	06/23/93		17.23	27.43	No free product or sheen
	09/22/93		18.83	25.83	No free product or sheen
	01/24/94		18.86	25.80	
MW-5	02/18/92	43.79	17.37	26.42	
	05/14/92		17.29	26.50	
	08/27/92		22.18	21.61	
	11/19/92		20.68	23.11	
	02/03/93		15.91	27.88	
	06/23/93		16.24	27.55	No free product or sheen
	09/22/93		17.93	25.86	No free product or sheen
	01/24/94		17.82	25.97	

TABLE 1-Continued

GROUND WATER ELEVATIONS

Beacon Station No. 721
44 Lewelling Boulevard
San Lorenzo, California

Monitoring Well	Date	Top of Riser Elevation (ft)[a]	Depth to Water (ft)	Ground Water Elevation (ft)	Physical Observation of Free Product or Sheen
MW-6	02/18/92	42.47	15.87	26.60	
	05/14/92		16.04	26.43	
	08/27/92		18.17	24.30	
	11/19/92		19.30	23.17	
	02/03/93		14.60	27.87	
	06/23/93		15.00	27.47	No free product or sheen
	09/22/93		16.66	25.81	No free product or sheen
	01/24/94		16.52	25.95	
MW-7	02/18/92	41.54	15.51	26.03	
	05/14/92		15.41	26.13	
	08/27/92		17.45	24.09	
	11/19/92		18.54	23.00	
	02/03/93		14.10	27.44	
	06/23/93		14.33	27.21	No free product or sheen
	09/22/93		15.92	25.62	No free product or sheen
	01/24/94		16.07	25.47	
MW-8	02/18/92	42.26	16.57	25.69	
	05/14/92		16.24	26.02	
	08/27/92		18.28	23.98	
	11/19/92		19.32	22.94	
	02/03/93		14.87	27.39	
	06/23/93		15.18	27.08	No free product or sheen
	09/22/93		18.79	23.47	No free product or sheen
	01/24/94		17.06	25.20	
MW-9	02/18/92	44.94	18.87	26.07	
	05/14/92		18.55	26.39	
	08/27/92		20.80	24.14	
	11/19/92		21.90	23.04	
	02/03/93		17.25	27.69	
	06/23/93		17.61	27.33	No free product or sheen
	09/22/93		19.18	25.76	No free product or sheen
	01/24/94		19.17	25.77	
MW-10	02/18/92	42.34	16.63	25.71	
	05/14/92		15.25	27.09	
	08/27/92		18.35	23.99	
	11/19/92		19.43	22.91	
	02/03/93		15.01	27.33	
	06/23/93		15.30	27.04	No free product or sheen
	09/22/93		16.90	25.44	No free product or sheen
	01/24/94		NM	NM	

TABLE 1-Continued

GROUND WATER ELEVATIONS

Beacon Station No. 721
44 Lewelling Boulevard
San Lorenzo, California

Monitoring Well	Date	Top of Riser Elevation (ft)[a]	Depth to Water (ft)	Ground Water Elevation (ft)	Physical Observation of Free Product or Sheen
MW-11	02/18/92	45.00	17.00	28.00	
	05/14/92		19.02	25.98	
	08/27/92		21.13	23.87	
	11/19/92		17.91	27.09	
	02/03/92		17.91	27.09	
	06/23/93		18.14	26.86	No free product or sheen
	09/22/93		19.63	25.37	No free product or sheen
	01/24/94		19.79	25.21	
RW-1	05/14/92	43.17	16.88	26.29	
	08/27/92		19.05	24.12	
	11/19/92		21.11	22.07*	
	02/03/92		15.48	27.69	
	06/23/93		28.25	14.92	No free product or sheen
	09/22/93		17.83	25.34	No free product or sheen
	01/24/94		24.00	19.17	

[a] All top of riser elevations surveyed by Aegis Environmental.
NM = Not Measured.
Note: Aegis Environmental, Inc., collected data prior to 06/23/93.

TABLE 2

GROUND WATER SAMPLE ANALYTICAL RESULTS

Concentrations in parts per billion (ppb)

Beacon Station No. 721
44 Lewelling Boulevard
San Lorenzo, California

Monitoring Well	Date Sampled	Benzene	Toluene	Ethylbenzene	Xylenes	TPHg[a]
MW-1	02/18/92	—	—	—	—	—
	05/15/92	2,000	47	1,200	400	41,000
	08/28/92	3,800	54	850	970	110,000
	11/19/92	200	<5.0	90	140	3,600
	02/03/93	180	22	79	130	3,000
	06/23/93	2,400	74	650	510	12,000
	09/22/93	3,000	290	1,100	1,200	23,000
	01/24/94	2,400	280	1,100	1,700	18,000
MW-2	02/18/92	<0.5	<0.5	1.9	<0.5	1,600
	05/14/92	1.2	1.0	1.3	<0.5	740
	08/27/92	6.5	1.1	0.6	<0.5	1,400
	11/19/92	<0.5	<0.5	2.7	<0.5	360
	02/03/93	1.2	1.6	4.5	6.4	590
	06/23/93	<0.5	<0.5	0.52	0.50	160
	09/22/93	<0.5	0.59	1.2	0.59	290
	01/24/94	<0.5	<0.5	0.68	<0.5	330
MW-3	02/18/92	—	—	—	—	—
	05/15/92	6,300	5,900	1,700	6,100	160,000
	08/28/92	25,000	40,000	6,700	44,000	1,300,000
	11/19/92	—	—	—	—	—
	02/03/93	7,200	11,000	2,900	13,000	82,000
	06/23/93	3,200	5,300	2,500	9,100	61,000
	09/22/93	12,000	14,000	3,900	18,000	94,000
	01/24/94	14,000	17,000	4,200	14,000	110,000
MW-4	02/18/92	<0.5	<0.5	12	21	5,100
	05/14/92	<0.5	5.6	1.8	2.2	4,600
	08/28/92	6.6	1.3	1.6	3.1	1,700
	11/19/92	<0.5	<0.5	<0.5	<0.5	400
	02/03/93	<0.5	<0.5	<0.5	<0.5	1,100
	06/23/93	<0.5	<0.5	<0.5	<0.5	120
	09/22/93	<0.5	<0.5	<0.5	<0.5	110
	01/24/94	<0.5	<0.5	<0.5	<0.5	260
MW-5	02/18/92	<0.5	<0.5	<0.5	<0.5	<50
	05/14/92	<0.5	<0.05	<0.5	<0.5	<50
	08/27/92	<0.5	<0.5	<0.5	<0.5	<50
	11/19/92	<0.5	<0.5	<0.5	<0.5	<50
	02/03/93	3.0	2.7	8.0	9.9	55
	06/23/93	<0.5	<0.5	<0.5	<0.5	<50
	09/22/93	0.66	1.1	<0.5	0.6	<50
	01/24/94	<0.5	<0.5	<0.5	<0.5	<50

TABLE 2-Continued

ANALYTICAL RESULTS OF GROUND WATER SAMPLES
Concentrations in parts per billion (ppb)

Beacon Station No. 721
44 Lewelling Boulevard
San Lorenzo, California

Monitoring Well	Date Sampled	Benzene	Toluene	Ethylbenzene	Xylenes	TPHg[a]
MW-6	02/18/92	4.8	<0.5	<0.5	<0.5	370
	05/14/92	<0.5	<0.5	<0.5	<0.5	120
	08/27/92	1.2	<0.5	<0.5	<0.5	<50
	11/19/92	1.3	<0.5	1.0	1.1	66
	02/03/93	1.9	2.6	23	12	100
	06/23/93	<0.5	<0.5	<0.5	<0.5	<50
	09/22/93	2.2	3.8	0.53	2.7	81
	01/24/94	<0.5	<0.5	<0.5	<0.5	98
MW-7	02/18/92	16	<0.5	10	16	670
	05/14/92	44	<0.5	38	88	1,500
	08/27/92	400	5.8	290	1,400	23,000
	11/19/92	29	<0.5	10	53	330
	02/03/93	200	<0.5	110	480	2,000
	06/23/93	20	<0.5	16	16	280
	09/22/93	71	2.2	33	210	860
	01/24/94	61	<1.3	10	160	900
MW-8	02/18/92	<0.5	<0.5	9.5	<0.5	1,200
	05/14/92	<0.5	<0.5	<0.5	<0.5	130
	08/28/92	<0.5	<0.5	<0.5	<0.5	140
	11/19/92	<0.5	<0.5	2.0	<0.5	320
	02/03/93	<0.5	<0.5	<0.5	<0.5	<50
	06/23/93	<0.5	<0.5	<0.5	<0.5	<50
	09/22/93	<0.5	0.67	<0.5	<0.5	<50
	01/24/94	<0.5	<0.5	<0.5	<0.5	290
MW-9	02/18/92	<0.5	<0.5	<0.5	<0.5	<50
	05/14/92	<0.5	<0.5	<0.5	<0.5	<50
	08/27/92	<0.5	<0.5	<0.5	<0.5	<50
	11/19/92	<0.5	<0.5	<0.5	1.3	<50
	02/03/93	<0.5	<0.5	<0.5	<0.5	<50
	06/23/93	<0.5	<0.5	<0.5	<0.5	<50
	09/22/93	<0.5	<0.5	<0.5	<0.5	<50
	01/24/94	<0.5	<0.5	<0.5	<0.5	<50
MW-10	02/18/92	110	57	440	53	18,000
	05/15/92	24	9.8	97	<0.5	8,500
	08/29/92	20	2.8	40	3.5	9,600
	11/19/92	36	21	330	31	5,700
	02/03/93	15	4.6	36	9.6	2,200
	06/23/93	21	24	540	45	8,100
	09/22/93	22	17	350	16	6,200
	01/24/94	NS	NS	NS	NS	NS

TABLE 2-Continued

ANALYTICAL RESULTS OF GROUND WATER SAMPLES
Concentrations in parts per billion (ppb)

Beacon Station No. 721
44 Lewelling Boulevard
San Lorenzo, California

Monitoring Well	Date Sampled	Benzene	Toluene	Ethylbenzene	Xylenes	TPHg[a]
MW-11	02/18/92	<0.5	<0.5	<0.5	<0.5	2,400
	05/15/92	<0.5	1.9	1.3	0.7	1,600
	08/27/92	15	2	0.6	1.2	2,100
	11/19/92	<0.5	<0.5	<0.5	<0.5	490
	02/03/93	<0.5	<0.5	0.55	<0.5	500
	06/23/93	<0.5	<0.5	<0.5	<0.5	350
	09/22/93	<0.5	0.65	<0.5	0.71	200
	01/24/94	<0.5	<0.5	<0.5	<0.5	450
RW-1	05/15/92	270	62	29	140	790
	08/29/92	1,300	200	68	810	24,000
	11/19/92	—	—	—	—	—
	02/03/93	71	35	22	110	620
	06/23/93	30	33	9.8	35	220
	09/22/93	800	400	170	910	4,100
	01/24/94	33	6.0	6.9	23	190

[a] Total petroleum hydrocarbons as gasoline.
NS = Not Sampled.
Note: Aegis Environmental, Inc., collected data prior to 06/23/93.

TABLE 3

VOLUME OF GROUND WATER TREATED
by Remediation System

Beacon Station No. 721
44 Lewelling Boulevard
San Lorenzo, California

Date	Volume[a] (gallons)
06/21/93	2,120
07/14/93	117,367
08/14/93	210,470
09/22/93	255,241
01/24/94	1,242,108

[a] Cumulative volume of water discharged to sanitary sewer at the indicated date.

TABLE 4

ANALYTICAL RESULTS OF SYSTEM WATER SAMPLES

Concentrations in parts per billion (ppb)

Beacon Station No. 721
44 Lewelling Boulevard
San Lorenzo, California

Sample	Date	Benzene	Toluene	Ethylbenzene	Total Xylenes	TPH[a] as gasoline
Effluent	05/28/93	<0.5	<0.5	<0.5	<0.5	<50
	10/01/93	<0.5	<0.5	<0.5	<0.5	<50
	01/24/94	<0.5	<0.5	<0.5	<0.5	<50

[a] Total petroleum hydrocarbons as gasoline.

GENERAL NOTES:
BASE MAP FROM U.S.G.S.
HAYWARD, CA.
7.5 MINUTE TOPOGRAPHIC
PHOTOREVISED 1980

QUADRANGLE LOCATION

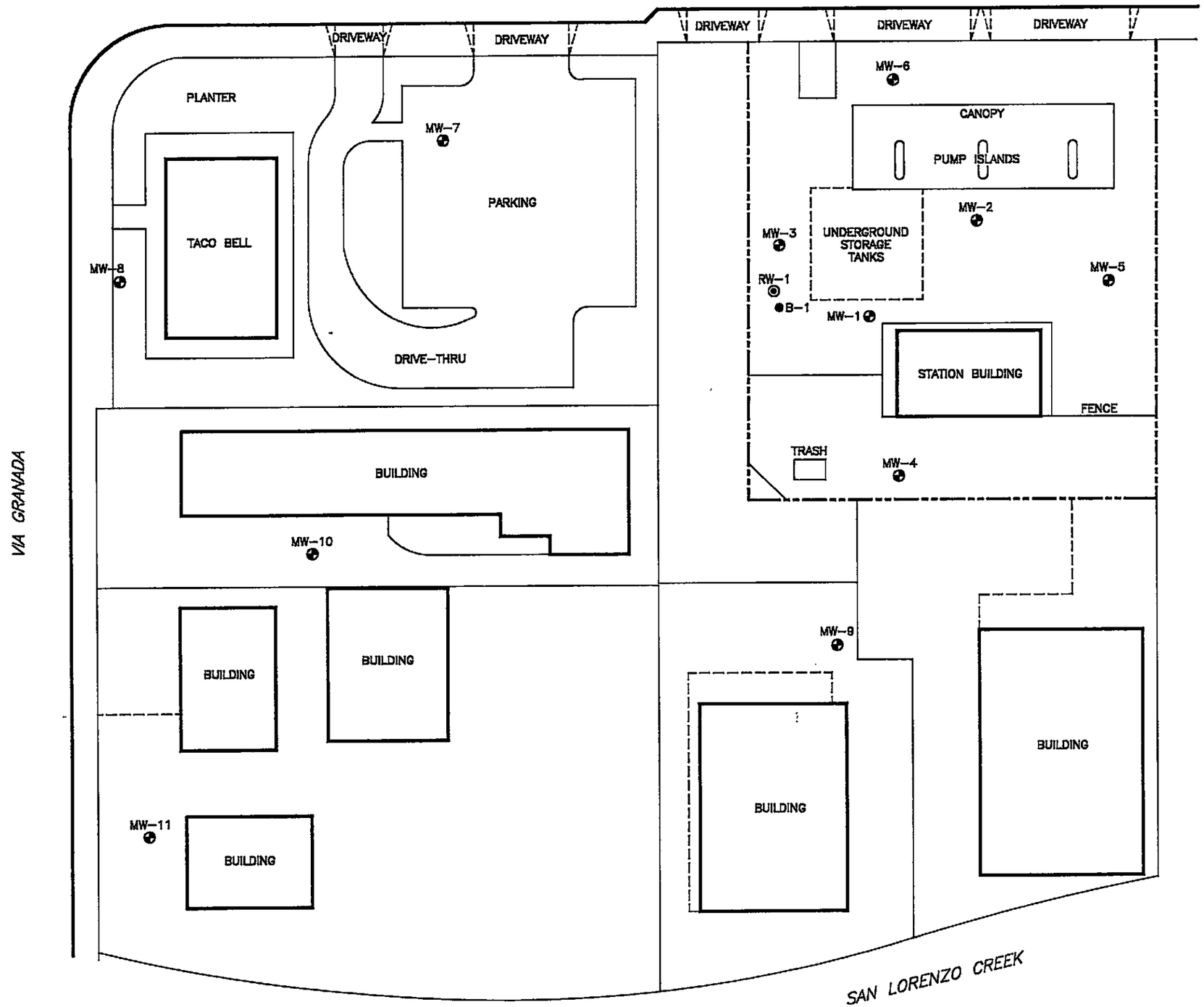
0 2000 FT

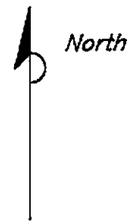
SCALE 1 : 24,000

FIGURE 1
SITE LOCATION MAP
BEACON STATION NO. 721
44 LEWELLING BOULEVARD
SAN LORENZO, CA.

PROJECT NO. 40-93-936	DRAWN BY L.H. 11/2/92
FILE NO. —	PREPARED BY TMG
REVISION NO. 1	REVIEWED BY

Delta Environmental Consultants, Inc.





LEGEND:

- ● B-1 SOIL BORING LOCATION
- ◉ RW-1 RECOVERY WELL LOCATION
- ⊕ MW-1 MONITORING WELL LOCATION

NOTE:
BASE MAP ADAPTED FROM RESNA FIGURE DATED 1/9/92
SITE DIMENSIONS AND FACILITY LOCATIONS NOT VERIFIED

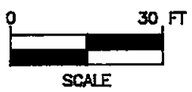


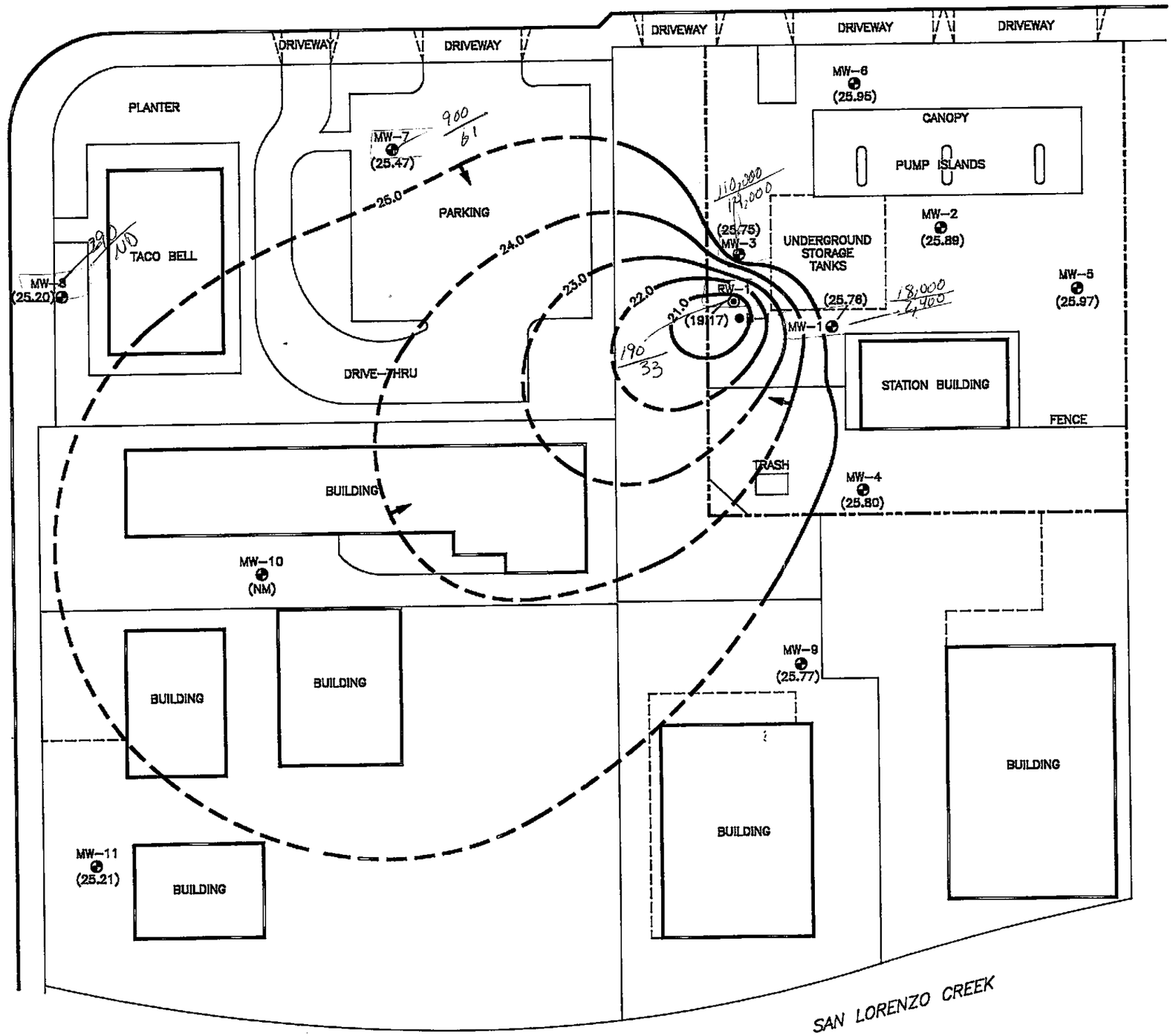
FIGURE 2
SITE VICINITY MAP

BEACON STATION NO. 721
44 LEWELLING BOULEVARD
SAN LORENZO, CA.

PROJECT NO. 40-93-838	DRAWN BY I.H. 8/11/93
FILE NO. 93-838-1	PREPARED BY JRB
REVISION NO. 1	REVIEWED BY JRB 8/11/93

Delta Environmental Consultants, Inc.

LEWELLING BOULEVARD



North

LEGEND:

- ● B-1 SOIL BORING LOCATION
- ◉ RW-1 RECOVERY WELL LOCATION
- ⊕ MW-1 MONITORING WELL LOCATION
- (25.76) GROUND WATER ELEVATION RELATIVE TO AN ASSUMED BENCH MARK
- —25.0— WATER TABLE CONTOUR RELATIVE TO AN ASSUMED BENCH MARK
- ← GROUND WATER FLOW DIRECTION
- NM NOT MEASURED

TPHg (ppb)
B

NOTE:
BASE MAP ADAPTED FROM RESNA FIGURE DATED 1/9/92
SITE DIMENSIONS AND FACILITY LOCATIONS NOT VERIFIED

0 30 FT
SCALE

FIGURE 3
WATER TABLE CONTOUR MAP – 1/24/94
BEACON STATION NO. 721
44 LEWELLING BOULEVARD
SAN LORENZO, CA.

PROJECT NO. 40-93-836	DRAWN BY L.H. 3/3/94
FILE NO. 93-836-1	PREPARED BY PVZ
REVISION NO. 2	REVIEWED BY RB 3/22/94

Delta Environmental Consultants, Inc.

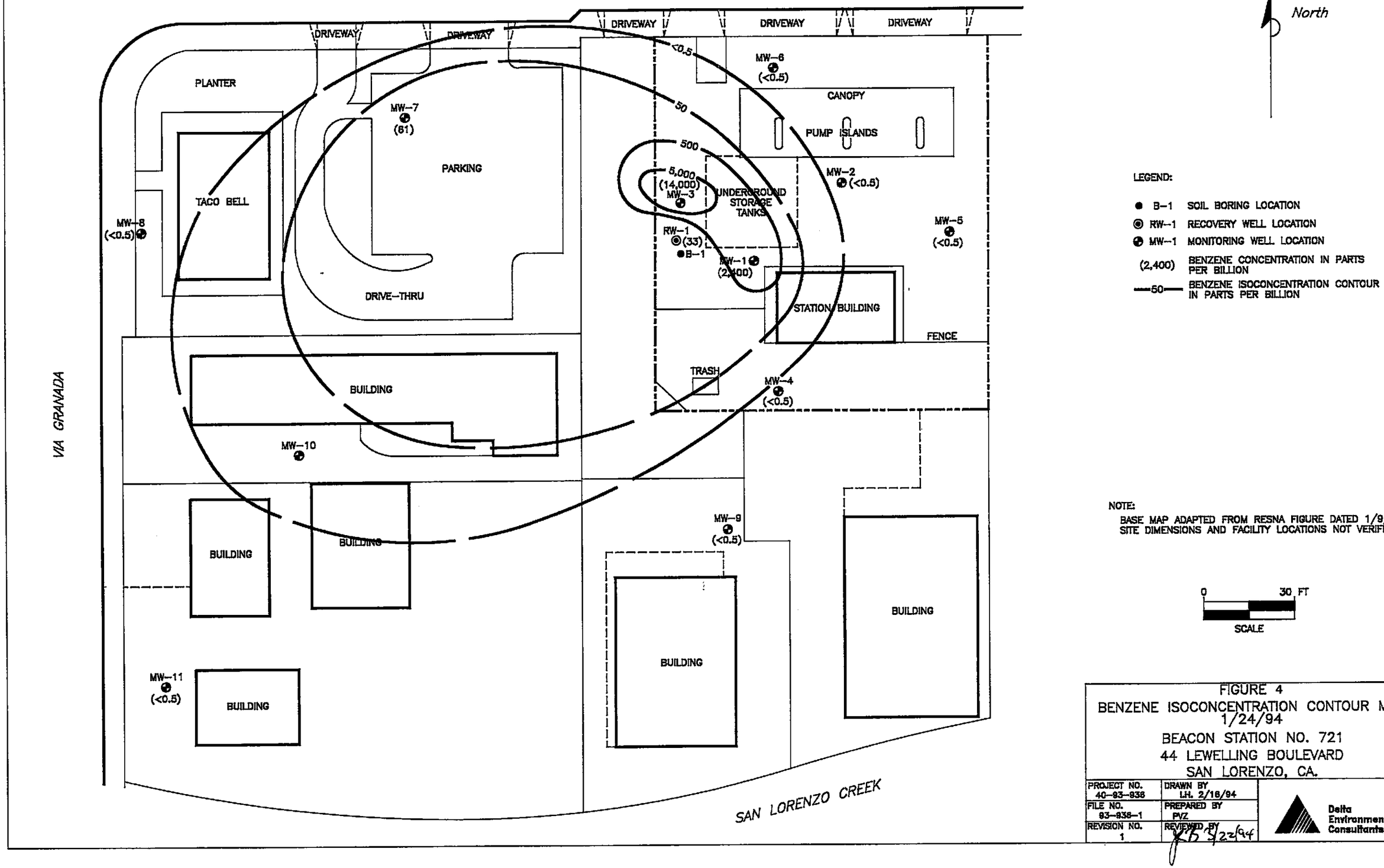


FIGURE 4
BENZENE ISOCONCENTRATION CONTOUR MAP
1/24/94
BEACON STATION NO. 721
44 LEWELLING BOULEVARD
SAN LORENZO, CA.

PROJECT NO. 40-93-838	DRAWN BY L.H. 2/16/94
FILE NO. 93-838-1	PREPARED BY PVZ
REVISION NO. 1	REVIEWED BY 3/22/94

Delta Environmental Consultants, Inc.

1.0 GROUND WATER AND FREE-FLOATING PRODUCT DEPTH DETERMINATION

A water/petroleum product interface probe was used to determine free product thickness and ground water depth in each well. If a free floating product layer was not detected by the interface probe, the tip of the probe was subjectively analyzed for product sheen or detectable odor. All measurements and physical observations were then recorded on separate data sheets in the field.

2.0 SUBJECTIVE ANALYSIS OF GROUND WATER

Prior to the purging of ground water monitoring wells, a water sample was collected from the monitoring well for subjective analysis. The sample was retrieved by gently lowering a clean disposable bailer approximately one-half the bailer length past the air/liquid interface. The bailer was then retrieved and the sample contained within the bailer was examined for floating product levels, appearance of a petroleum product sheen, and any detectable petroleum product odor.

3.0 MONITORING WELL DEVELOPMENT, PURGING, AND SAMPLING

Monitoring wells were purged and sampled using new disposable bailers. Ground water removed from the wells was stored in 55-gallon barrels at the site. The barrels were labeled with corresponding monitoring well numbers and date of purging. After pH, temperature, and purging, ground water levels were allowed to stabilize. Samples were collected in air-tight vials, appropriately labeled and stored on ice from the time of collection through the time of delivery to the laboratory. A chain-of-custody form was completed to ensure sample integrity. Ground water samples were transported to the laboratory and analyzed within the EPA-specified holding times for the requested analyses.

ENCLOSURE B

Field Sampling Data Sheets

SAMPLING INFORMATION SHEET

Weather Conditions

Cloud Cover: _____ Temperature: _____

Wind Speed: _____

GENERAL CONDITIONS

Sample ID: MW-10 Project: 40-93-936

Location: Beacon 721 W.O. #: _____

Sampling Point: MW-10 Date Sampled: 1 / 24 / 94 Time: _____

Description Sampling Point: see site map

Well Depth: 29.50 ft. below MP Casing diameter: 2 inches

Depth to water (below MP): _____ ft. Date: 1 / 24 / 94 Time: _____

Discharge rate: _____ gpm x 0.00223 = _____ cfs.

At least 4 well volumes have been evacuated before sampling.

Sampling Method: ____ Bag ____ Submersible pump X Bailer ____ Other: _____

Pump intake or bailer set at: _____ ft. below MP

Tubing (type: disposable bailer) (new) or previously used) was used to collect all samples X Yes ___ No and all field measurements (___ Yes ___ No). Tubing was used only for _____

Sample appearance: _____

Note any sampling problems: _____

Note any cleaning performed in the field: _____

Samples collected: 3 VOA's with HCl ; BTEX, TPH gas

EVACUATION/STABILIZATION TEST DATA

Time	pH Units	Temperature - Corrected Conductance (umhos/cm)	Temperature (°F)	Water Level (Nearest 0.02 ft.)	Cumulative Volume of Water Removed from Well (gallons)	Pumping Rate (gpm)

Bailing start time: _____ WL _____

Bailing stop time: _____ WL _____

Comments: _____

Temperature (Electrical measurement): cooler with ice

Form completed by: JWB, MWM Sampled by: JWB, MWM

SAMPLING INFORMATION SHEET

Weather Conditions
Cloud Cover: cloudy Temperature: 60°F
Wind Speed: ~5 mph

GENERAL CONDITIONS

Sample ID# MW-4 Project 40-93-936
Location Beacon 721 W.O. #
Sampling Point MW-4 Date Sampled 1/24/94 Time 13:08
Describe Sampling Point see site map

Well Depth 24.60 ft. below MP Casing diameter 2 inches
Depth to water (below MP) 18.86 ft. Date 1/24/94 Time 12:23
Discharge rate ____ gpm x 0.002228 = ____ cfs.
At least 4 Well volumes have been evacuated before sampling.
Sampling Method ____ Tap ____ Submersible pump X Bailer ____ Other ____
Pump Intake or bailer set at ____ ft. below MP
Tubing (type: disposable bailer) Is (new) or previously used) was used to collect all samples X Yes ___ No
and all field measurements (___ Yes ___ No. Tubing was used only for ____
Sample appearance clear
Note any sampling problems ____
Note any cleaning performed in the field ____
Samples collected 3 VOA's with HCl; BTEX, TPH gas

EVACUATION/STABILIZATION TEST DATA

Time	pH Units	Temperature Corrected Conductance (micromhos)	Temperature (°F)	Water Level (Nearest 0.01 ft.)	Cumulative Volume of Water Removed from Well (gallons)	Pumping Rate (gpm)
	6.78	1416	68		2.0	
	6.92	1344	68		2.5	
	7.01	1340	68		3.0	
					3.75	

Reading start time: 12:56 WL 18.86
Reading stop time: 13:06 WL 19.23

Comments: ____

Transportation (thermal preservation) cooler with ice

Form completed by: JWB, MWM Sampled by: JWB, MWM

SAMPLING INFORMATION SHEET

Weather Conditions: Cloud Cover: cloudy Temperature: 60 °F

Wind Speed: ~ 5 mph

GENERAL CONDITIONS

Sample ID: MW-5 Project: 40-93-936

Location: Beacon 721 W.O. #:

Sampling Point: MW-5 Date Sampled: 1 / 24 / 94 Time: 13:38

Describe Sampling Point: see site map

Well Depth: 29.20 ft. below MP Casing diameter: 2 inches

Depth to water (below MP): 17.82 ft. Date: 1 / 24 / 94 Time: 12:11

Discharge rate: _____ gpm x 0.XXXXXX = _____ cfs.

At least: 4 Well volumes have been evacuated before sampling.

Sampling Method: ____ Tap ____ Submersible pump · X Bailer ____ Other ____

Pump intake or bailer set at: _____ ft. below MP

Tubing (type): disposable bailer (new or previously used) was used to collect all samples X Yes ___ No and all field measurements (___ Yes ___ No). Tubing was used only for _____

Sample appearance: cloudy

Note any sampling problems: _____

Note any cleaning performed in the field: slope

Samples collected: 3 VOA's with HCl; BTEX, TPH gas

EVACUATION/STABILIZATION TEST DATA

Time	pH (Units)	Temperature Corrected Conductance (µmhos/cm)	Temperature (°F)	Water Level (Nearest 0.01 ft.)	Cumulative Volume of Water Removed from Well (gallons)	Pumping Rate (gpm)
13:25	7.66	777	65	17.84	5.0	
	7.14	797	66		6.0	
	7.10	791	66		7.5gal	

Bailing start time: 12:18 WL: 17.82

Bailing stop time: 13:34 WL: 17.99

Comments: purged w/ pump (dry after 5 gal); recharged to +80%. → continued purging with bailer

Transportation (thermal preservation): cooler with ice

Form completed by: JWB, MWM Sampled by: JWB, MWM

SAMPLING INFORMATION SHEET

Weather Conditions
Cloud Cover: dark clouds Temperature: 60°F
Wind Speed: 10 mph

GENERAL CONDITIONS

Sample ID: MW-2 Project: 40-93-936
Location: Beacon 721 W.O. #:
Sampling Point: MW-2 Date Sampled: 1 / 24 / 94 Time: 14:10
Describe Sampling Point: see site map

Well Depth: 33.30 ft. below MP Casing diameter: 2 inches
Depth to water (below MP): 17.20 ft. Date: 1 / 24 / 94 Time: 12:25
Discharge rate: _____ gpm x 0.002228 = _____ cfs.
At least 4 Well volumes have been evacuated before sampling.
Sampling Method: ____ Tap ____ Submersible pump X Bailer ____ Other ____
Pump Intake or bailer set at _____ ft. below MP
Tubing (type: disposable bailer) (new) or previously used) was used to collect all samples X Yes ___ No
and all field measurements (___ Yes ___ No). Tubing was used only for _____
Sample appearance: Cloudy
Note any sampling problems _____
Note any cleaning performed in the field: slope
Samples collected: 3 VOA's with HCl ; BTEX, TPH gas

EVACUATION/STABILIZATION TEST DATA

Time	pH Units	Temperature Corrected Conductance (µmhos/cm)	Temperature (°F)	Water Level (Nearest 0.01 ft.)	Cumulative Volume of Water Removed from Well (gallons)	Pumping Rate (gpm)
14:04	6.82	1276	68		8.0	
14:07	6.87	1286	68		9.0	
	6.89	1296	68		10.5	

Bailing start time: 13:50 WL: 17.20
Bailing stop time: 14:08 WL: 17.77

Comments: _____

Transportation (thermal preservation): cooler with ice

Form completed by: JWB, MWM Sampled by: JWB, MWM

SAMPLING INFORMATION SHEET

Weather Conditions
Cloud Cover: Partly Temperature: 60°

Wind Speed: 0-2 mph

GENERAL CONDITIONS

Sample ID: MW-1 Project: 40-93-936

Location: Beacon 721 W.O. #:

Sampling Point: MW-1 Date Sampled: 1 / 24 / 94 Time: 14:22

Describe Sampling Point: see site map

Well Depth: 31.20 ft. below MP Casing diameter: 2 inches

Depth to water (below MP): 17.91 ft. Date: 1 / 24 / 94 Time: 12:30

Discharge rate: _____ gpm x 0.002227 = _____ cfs.

At least: 4 Well volumes have been evacuated before sampling.

Sampling Method: ____ Tap ____ Submersible pump X Bailer ____ Other ____

Pump Intake or bailer set at: _____ ft. below MP

Tubing (type: disposable bailer) (new) or previously used) was used to collect all samples X Yes ___ No and all field measurements (___ Yes ___ No). Tubing was used only for _____

Sample appearance: cloudy

Note any sampling problems: _____

Note any cleaning performed in the field: slope

Samples collected: 3 VOA's with HCl; BTEX, TPH gas

EVACUATION/STABILIZATION TEST DATA

Time	pH Units	Temperature - Corrected Conductance (umhos/cm)	Temperature (°F)	Water Level (Nearest 0.01 ft.)	Cumulative Volume of Water Removed from Well (gallons)	Pumping Rate (gpm)
14:14				17.96	7.0	
					7.75	
					8.75gal	

Bailing start time: 13:09 WL: 17.91

Bailing stop time: 14:19 WL: 18.25

Comments: Purged 3 well volumes w/ Honda pump; purged last well volume w/ Bailer. Sheen/odor on purged water → no pH/temp/cond taken.

Transportation (thermal preservation): cooler with ice

Form completed by: JWB, MWM Sampled by: JWB, MWM

SAMPLING INFORMATION SHEET

Weather Conditions: Cloud Cover: Partly Temperature: 60°

Wind Speed: 0-2 mph

GENERAL CONDITIONS

Sample ID: MW-3 Project: 40-93-936

Location: Beacon 721 W.O. #:

Sampling Point: MW-3 Date Sampled: 1 / 24 / 94 Time: 14:42

Describe Sampling Point: see site map

Well Depth: 29.30 ft. below MP Casing diameter: 2 inches

Depth to water (below MP): 17.35 ft. Date: 1 / 24 / 94 Time: 12:31

Discharge rate: _____ gpm x 0.002228 = _____ cfs.

At least 4 Well volumes have been evacuated before sampling.

Sampling Method: ____ Tap ____ Submersible pump X Bailer ____ Other ____

Pump intake or bailer set at _____ ft. below MP

Tubing (type): disposable bailer (new) or previously used) was used to collect all samples X Yes ___ No and all field measurements (___ Yes ___ No. Tubing was used only for _____

Sample appearance: cloudy

Note any sampling problems: _____

Note any cleaning performed in the field: slope

Samples collected: 3 VOA's with HCl ; BTEX, TPH gas

EVACUATION/STABILIZATION TEST DATA

Time	pH Units	Temperature Corrected Conductance (micromhos)	Temperature (°F)	Water Level (Nearest 0.01 ft.)	Cumulative Volume of Water Removed from Well (gallons)	Pumping Rate (gpm)
14:35				17.36	6 gal	
					8 gal	

Bailing start time: 13:25 WL: 17.55

Bailing stop time: 14:41 WL: 17.85

Comments: Purged legal w/ Honda pump (3 well Volumes); Purged 2gal (1 well Volume) w/ Bailer. Heavy Sheen/odor — no pH/temp/cond taken.

Transportation (thermal preservation): cooler with ice

Form completed by: JWB, MWM Sampled by: JWB, MWM

SAMPLING INFORMATION SHEET

Weather Conditions
Cloud Cover: cloudy Temperature: 60°F
Wind Speed: ~ 5 mph

GENERAL CONDITIONS

Sample ID: MW-6 Project: 40-93-936
Location: Beacon 721 W.O. #:
Sampling Point: MW-6 Date Sampled: 1, 24, 94 Time: 14:56
Describe Sampling Point: see site map

Well Depth: 28.70 ft. below MP Casing diameter: 2 inches
Depth to water (below MP): 16.52 ft. Date: 1, 24, 94 Time: 12:27
Discharge rate: _____ gpm x 0.002228 = _____ cfs
At least 4 Well volumes have been evacuated before sampling.
Sampling Method: ____ Tap ____ Submersible pump X Bailer ____ Other ____
Pump Intake or bailer set at _____ ft. below MP
Tubing (type): disposable bailer (new) or previously used) was used to collect all samples X Yes ___ No and all field measurements (___ Yes ___ No). Tubing was used only for _____
Sample appearance: slightly Cloudy
Note any sampling problems _____
Note any cleaning performed in the field: Slope
Samples collected: 3 VOA's with HCl; BTEX, TPH gas

EVACUATION/STABILIZATION TEST DATA

Time	pH (Units)	Temperature Corrected Conductance (umhos/cm)	Temperature (°F)	Water Level (Nearest 0.01 ft.)	Cumulative Volume of Water Removed from Well (gallons)	Pumping Rate (gpm)
14:47	7.30	972	69	16.54		
	7.83	971	68			
	7.17	1027	68		8gal	

Bailing start time: 12:32 WL: 16.52
Bailing stop time: 14:55 WL: 17.42

Comments: Pumped well dry after ~5gal w/ bladder pump, let recharge pumped 1gal more; Took remaining 2gal (1well volume) w/ Bailer.

Transportation (Chemical preservation): cooler with ice

Form completed by: JWB, MWM Submitted by: JWB, MWM

SAMPLING INFORMATION SHEET

Weather Conditions

Cloud Cover: _____ Temperature: _____

Wind Speed: _____

GENERAL CONDITIONS

Sample ID: MW-7 Project: 40-93-936

Location: Beacon 721 W.O. #: _____

Sampling Point: MW-7 Date Sampled: 1 / 24 / 94 Time: 15:12

Describe Sampling Point: see site map

Well Depth: 24.30 ft. below MP Casing diameter: 2 inches

Depth to water (below MP): 16.07 ft. Date: 1 / 24 / 94 Time: 12:29

Discharge rate _____ gpm x 0.002228 = _____ cfs

At least 4 Well volumes have been evacuated before sampling.

Sampling Method _____ Tap _____ Submersible pump X Bailer _____ Other _____

Pump Intake or bailer set at _____ ft. below MP

Tubing (type: disposable bailer) (new) or previously used) was used to collect all samples X Yes ___ No and all field measurements (___ Yes ___ No). Tubing was used only for _____

Sample appearance: Slightly Cloudy

Note any sampling problems _____

Note any cleaning performed in the field: slope

Samples collected: 3 VOA's with HCl ; BTEX, TPH gas

EVACUATION/STABILIZATION TEST DATA

Time	pH Units	Temperature Corrected Conductance (umhos/cm)	Temperature (°F)	Water Level (Nearest 0.01 ft.)	Cumulative Volume of Water Removed from Well (gallons)	Pumping Rate (gpm)
15:06	6.91	1253	67	16.07	4.0	
	6.88	1169	67		5.0	
	6.86	1197	67		5.5gal	

Bailing start time: 12:50 WL: 16.07

Bailing stop time: 15:11 WL: 17.45

Comments: Pumped well dry w/ Honda pump after 2gal → let recharge → pumped remaining 2gal (total 3 well Volumes); purged 1 well Volume w/ Bailer.

Preservation (Chemical preservatives) cooler with ice

Form completed by: JWB MWM Submitted by: JWB, MWM

SAMPLING INFORMATION SHEET

Weather Conditions
Cloud Cover: Partly Temperature: 60°

Wind Speed: 0-2 mph

GENERAL CONDITIONS

Sample ID: MW-8 Project: 40-93-936

Location: Beacon 721 W.O. #:

Sampling Point: MW-8 Date Sampled: 1 / 24 / 94 Time: 15:30

Describe Sampling Point: see site map

Well Depth: 23.20 ft. below MP Casing diameter: 2 inches

Depth to water (below MP): 17.06 ft. Date: 1 / 24 / 94 Time: 12:17

Discharge rate _____ gpm x 0.002777 = _____ cfs.

At least 4 Well volumes have been evacuated before sampling.

Sampling Method: ____ Tag ____ Submersible pump X Bailer ____ Other ____

Pump intake or bailer set at _____ ft. below MP

Tubing (type: disposable bailer) Labeled (new) or previously used) was used to collect all samples X Yes ___ No and all field measurements (___ Yes ___ No). Tubing was used only for _____

Sample appearance: Slightly Cloudy

Note any sampling problems _____

Note any cleaning performed in the field: Slope

Samples collected: 3 VOA's with HCl ; BTEX, TPH gas

EVACUATION/STABILIZATION TEST DATA

Time	pH Units	Temperature Corrected Conductance (micromhos/cm)	Temperature (°F)	Water Level (Nearest 0.01 ft.)	Cumulative Volume of Water Removed from Well (gallons)	Pumping Rate (gpm)
	7.14	500	65			
	7.26	498	66			
	7.19	510	66		4 gal	

Bailing start time: 15:22 WL: 17.06

Bailing stop time: 15:28 WL: 17.99

Comments: _____

Preservation (thermal preservation): cooler with ice

Form completed by: JWB, MWM Sampled by: JWB, MWM

SAMPLING INFORMATION SHEET

Weather Conditions: Cloud Cover: Partly — Temperature: 60°

Wind Speed: 0-2 mph

GENERAL CONDITIONS

Sample ID: MW-11 — Project: 40-93-936

Location: Beacon 721 — W.O. #:

Sampling Point: MW-11 — Date Sampled: 1, 24, 94 — Time: 15:50

Describe Sampling Point: see site map

Well Depth: 29.50 ft. below MP — Casing diameter: 2 inches

Depth to water (below MP): 19.79 ft. — Date: 1, 24, 94 — Time: 12:18

Discharge rate _____ gpm x 0.002228 = _____ cfs

At least 4 Well volumes have been evacuated before sampling.

Sampling Method: ____ Tap ____ Submersible pump X Bailer ____ Other ____

Pump Intake or bailer set at _____ ft. below MP

Tubing (type: disposable bailer ; (new) or previously used) was used to collect all samples X Yes ___ No and all field measurements (___ Yes ___ No. Tubing was used only for _____

Sample appearance: Slightly Cloudy

Note any sampling problems _____

Note any cleaning performed in the field: Soap

Samples collected: 3 VOA's with HCl ; BTEX, TPH gas

EVACUATION/STABILIZATION TEST DATA

Time	pH (Units)	Temperature - Corrected Conductance (umhos/cm)	Temperature (°F)	Water Level (Nearest 0.01 ft.)	Cumulative Volume of Water Removed from Well (gallons)	Pumping Rate (gpm)
	7.44	888	65			
	7.24	812	65			
	7.12	824	66		6.5 gal	

Bailing start time: 15:38 — WL: 19.79

Bailing stop time: 15:48 — WL: 19.82

Comments: _____

Transportation (Thermal preservation): cooler with ice

Forms completed by: JWB, MWM — Sampled by: JWB, MWM

SAMPLING INFORMATION SHEET

Weather Conditions: Cloud Cover: Partly — Temperature: 60°

Wind Speed: 0-2 mph

GENERAL CONDITIONS

Sample ID: MW-9 — Project: 40-93-936

Location: Beacon 721 — W.O. #:

Sampling Point: MW-9 — Date Sampled: 1, 24, 94 — Time: 16:08

Describe Sampling Point: see site map

Well Depth: 23.80 ft. below MP — Casing diameter: 2 inches

Depth to water (below MP): 19.17 ft. — Date: 1, 24, 94 — Time: 12:21

Discharge rate _____ gpm x 0.002228 = _____ cfs

At least 4 Well volumes have been evacuated before sampling.

Sampling Method: ___ Tap ___ Submersible pump X Bailer ___ Other ___

Pump Intake or bailer set at _____ ft. below MP

Tubing (type): disposable bailer (New) or previously used was used to collect all samples X Yes ___ No and all field measurements (___ Yes ___ No). Tubing was used only for _____

Sample appearance: clear

Note any sampling problems: _____

Note any cleaning performed in the field: Slope

Samples collected: 3 VOA's with HCl ; BTEX, TPH gas

EVACUATION/STABILIZATION TEST DATA

Time	pH Units	Temperature - Corrected Conductance (umhos/cm)	Temperature (°F)	Water Level (Nearest 0.01 ft.)	Cumulative Volume of Water Removed from Well (gallons)	Pumping Rate (gpm)
	6.90	1285	64			
	7.00	1347	65			
	7.01	1362	65		3gal	

Bailing start time: 16:00 — WL: 19.17

Bailing stop time: 16:07 — WL: 19.67

Comments: _____

Transportation (thermal preservation): cooler with ice

Form completed by: JWB, MWM — Sampled by: JWB, MWM

SAMPLING INFORMATION SHEET

Weather Conditions
Cloud Cover: cloudy Temperature: 60°F
Wind Speed: 5 mph

GENERAL CONDITIONS

Sample ID: RW-1 Project: 40-93-936
Location: Beacon 721 W.O. #:
Sampling Point: RW-1 Date Sampled: 1, 24, 94 Time: 16:16
Describe Sampling Point: see site map

Well Depth: NM ft. below MP Casing diameter: 6 inches
Depth to water (below MP): 24.00 ft. Date: 1, 24, 94 Time: 12:47
Discharge rate: _____ gpm x 0.002228 = _____ cfs.
At least 4* Well volumes have been evacuated before sampling.
Sampling Method: ____ Tap ____ Submersible pump X Bailer ____ Other ____
Pump intake or bailer set at _____ ft. below MP
Tubing (type: disposable bailer L (new) or previously used) was used to collect all samples X Yes ___ No and all field measurements (___ Yes ___ No. Tubing was used only for _____
Sample appearance _____
Note any sampling problems _____
Note any cleaning performed in the field _____
Samples collected: 3 VOA's with HCl; BTEX, TPH gas

EVACUATION/STABILIZATION TEST DATA

Time	pH (Units)	Temperature Corrected Conductance (umhos/cm)	Temperature (°F)	Water Level (Nearest 0.01 ft.)	Cumulative Volume of Water Removed from Well (gallons)	Pumping Rate (gpm)
	totalizer: 1242109					
	totalizer: 1243972					
			→	1864 gal / 5hr →		6.21 gpm

Bailing start time: _____ WL _____
Bailing stop time: _____ WL _____

Comments: * pump installed in recovery well; sampled pump discharge at sample port, pneumatic pump: possibility of air bubbles in sample.

Preservation (Chemical preservatives): cooler with ice

Form completed by: JWB, MWM Sampled by: JWB, MWM

ENCLOSURE C

Ground Water Sample Laboratory Reports

January 28, 1994
Sample Log 8457

Todd Galati
Delta Environmental Consultants, Inc.
3330 Data Drive
Rancho Cordova, CA 95670

Subject: Analytical Results for 13 Water Samples
Identified as: Project # 40-93-936 (Beacon 721)
Received: 01/25/94

Dear Mr. Galati:

Analysis of the sample(s) referenced above has been completed. This report is written to confirm results communicated on January 28, 1994 and describes procedures used to analyze the samples.

Sample(s) were received in 40-milliliter glass vials sealed with TFE lined septae and plastic screw-caps. Each sample was transported and received under documented chain of custody and stored at 4 degrees C until analysis was performed.

Sample(s) were analyzed using the following method(s):

"BTEX" (EPA Method 602/Purge-and-Trap)
"TPH as Gasoline" (Modified EPA Method 8015/Purge-and-Trap)

Please refer to the following table(s) for summarized analytical results and contact us at 916-753-9500 if you have questions regarding procedures or results. The chain-of-custody document is enclosed.

Approved by:

Joel Kiff
Senior Chemist

Western Environmental Science & Technology · 45133 County Road 32B · Davis, CA 95616 · 916 753-9500 · FAX: 916 757-4652

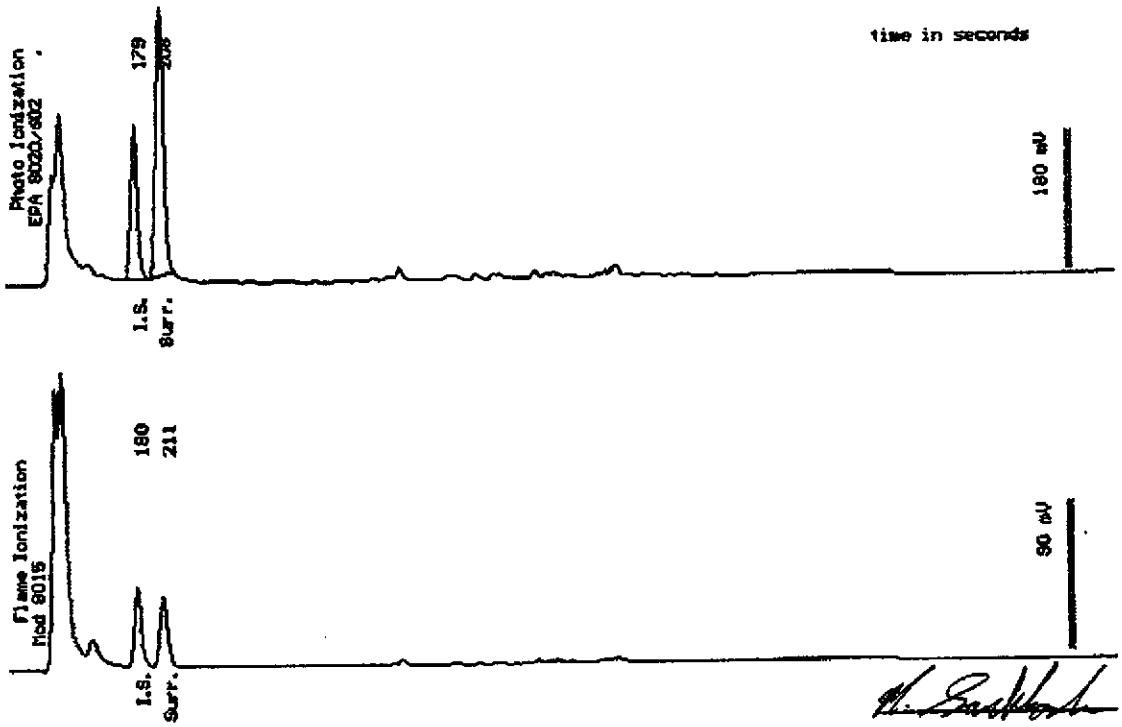
Sample Log 8457

8457-1

Sample: MW-4

From : Project # 40-93-936 (Beacon 721)
Sampled : 01/24/94
Dilution : 1:1 QC Batch : 2048e
Matrix : Water

Parameter	(MRL) ug/L	Measured Value ug/L
Benzene	(.50)	<.50
Toluene	(.50)	<.50
Ethylbenzene	(.50)	<.50
Total Xylenes	(.50)	<.50
TPH as Gasoline	(50)	260
Surrogate Recovery		111 %



Date Analyzed: 01-26-94
Column : 0.53mm ID X 30m DB5 (J&W Scientific)

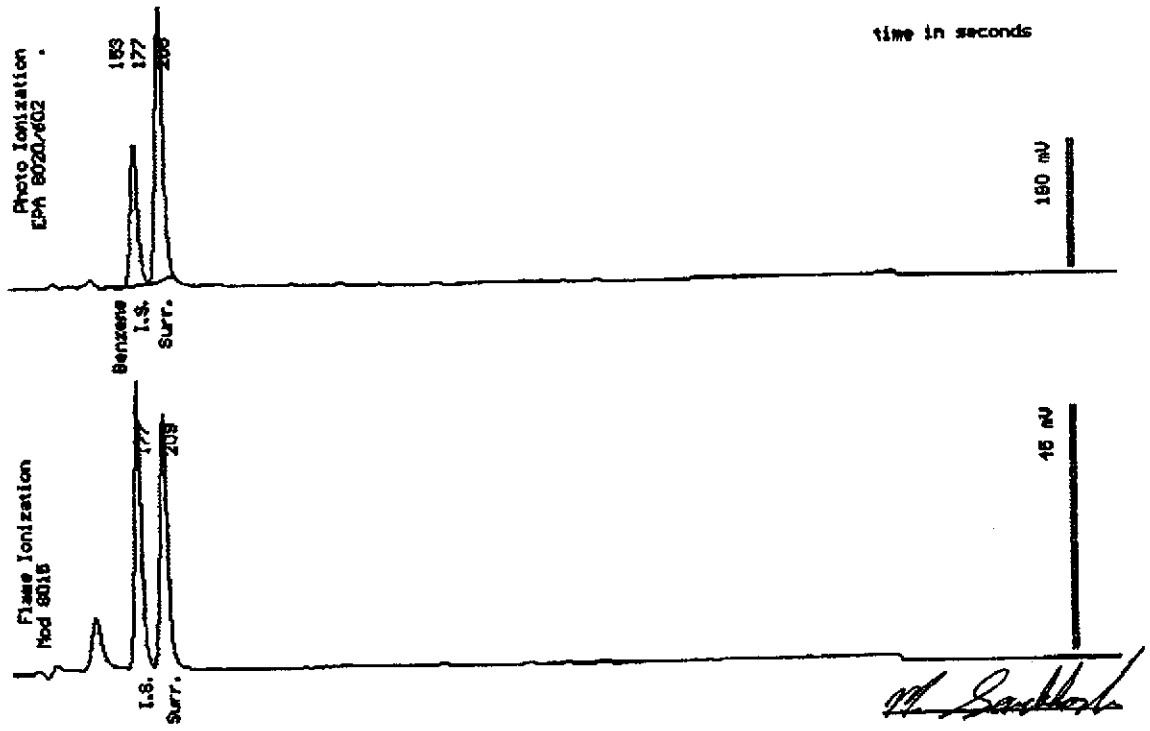
Mitra Sarkhosh
Senior Chemist

Sample Log 8457
8457-2

Sample: MW-5

From : Project # 40-93-936 (Beacon 721)
Sampled : 01/24/94
Dilution : 1:1 QC Batch : 2048e
Matrix : Water

Parameter	(MRL) ug/L	Measured Value ug/L
Benzene	(.50)	<.50
Toluene	(.50)	<.50
Ethylbenzene	(.50)	<.50
Total Xylenes	(.50)	<.50
TPH as Gasoline	(50)	<50
Surrogate Recovery		111 %



Date Analyzed: 01-26-94
Column : 0.53mm ID X 30m DB5 (J&W Scientific)

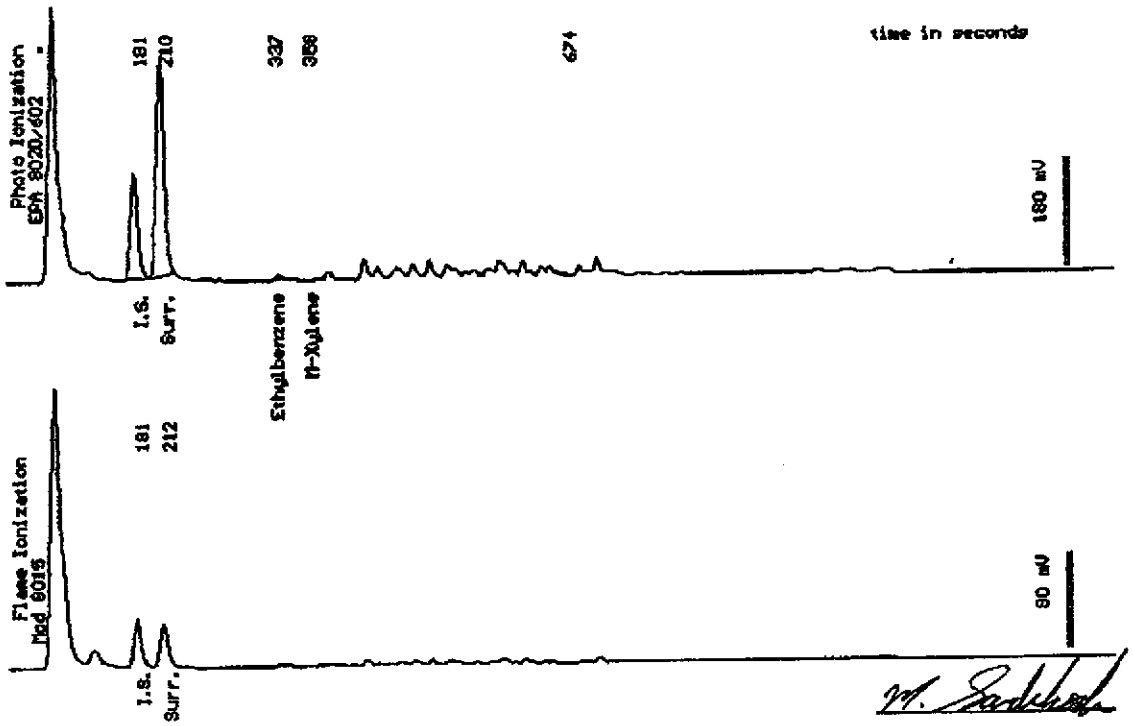
Mitra Sarkhosh
Senior Chemist

Sample Log 8457
8457-s

Sample: MW-2

From : Project # 40-93-936 (Beacon 721)
Sampled : 01/24/94
Dilution : 1:1 QC Batch : 2048e
Matrix : Water

Parameter	(MRL) ug/L	Measured Value ug/L
Benzene	(.50)	<.50
Toluene	(.50)	<.50
Ethylbenzene	(.50)	.68
Total Xylenes	(.50)	<.50
TPH as Gasoline	(50)	330
Surrogate Recovery		115 %



Date Analyzed: 01-26-94
Column : 0.53mm ID X 30m DB6 (J&W Scientific)

Mitra Sarkhosh
Senior Chemist

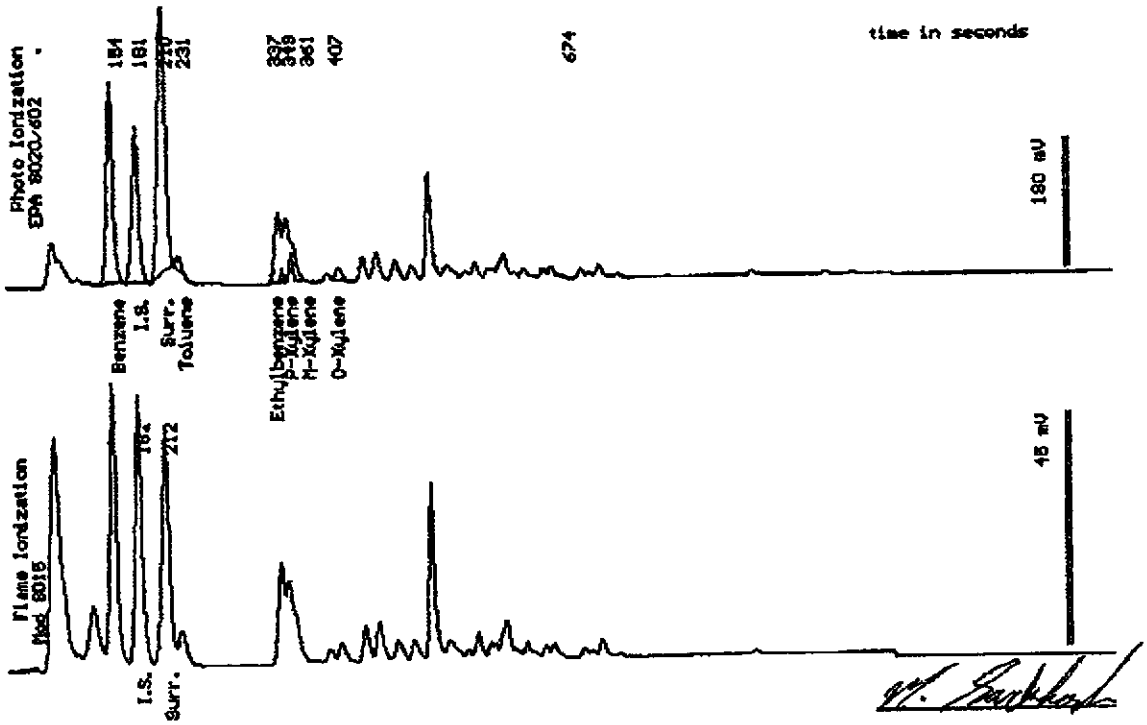
Sample Log 8457

8457-4

Sample: MW-1

From : Project # 40-93-936 (Beacon 721)
Sampled : 01/24/94
Dilution : 1:100 QC Batch : 2048e
Matrix : Water

Parameter	(MRL) ug/L	Measured Value ug/L
Benzene	(50)	2400
Toluene	(50)	280
Ethylbenzene	(50)	1100
Total Xylenes	(50)	1700
TPH as Gasoline	(5000)	18000
Surrogate Recovery		109 %



Date Analyzed: 01-26-94
Column : 0.53mm ID X 30m DB5 (J&W Scientific)

Mitra Sarkhosh
Senior Chemist

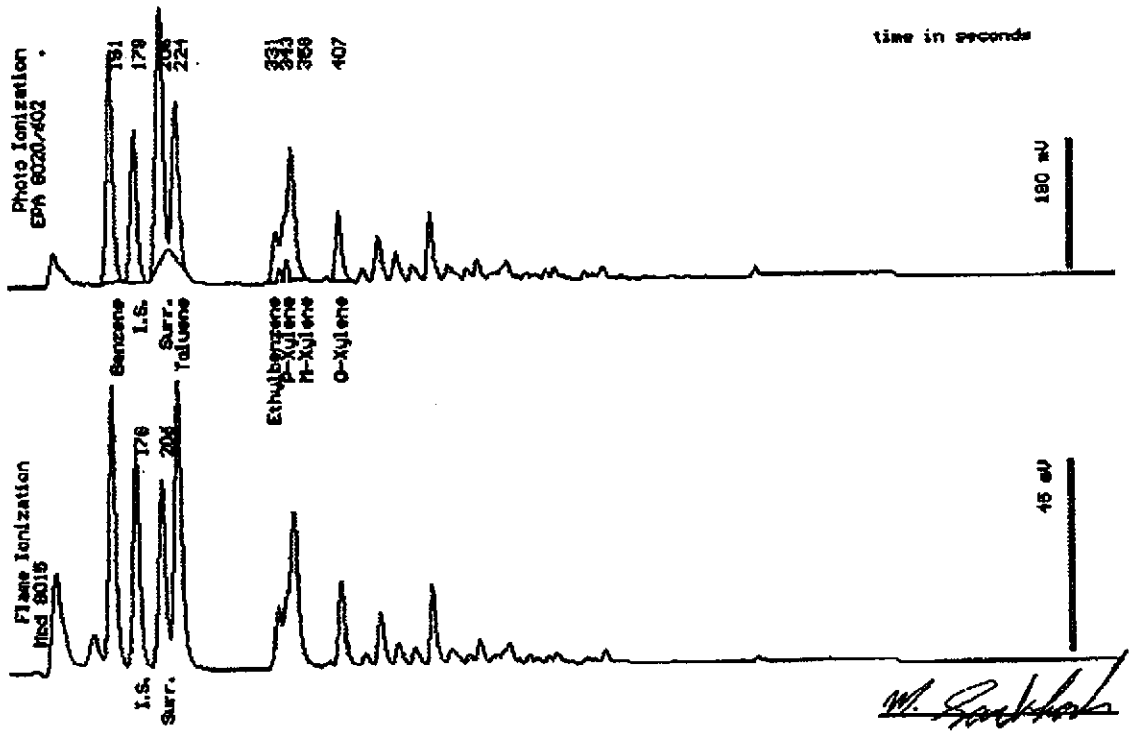
Sample Log 8457

8457-5

Sample: **MW-3**

From : Project # 40-93-936 (Beacon 721)
Sampled : 01/24/94
Dilution : 1:500 QC Batch : 2048e
Matrix : Water

Parameter	(MRL) ug/L	Measured Value ug/L
Benzene	(250)	14000
Toluene	(250)	17000
Ethylbenzene	(250)	4200
Total Xylenes	(250)	19000
TPH as Gasoline	(25000)	110000
Surrogate Recovery		100 %



Date Analyzed: 01-26-94
Column : 0.53mm ID X 30m DB5 (J&W Scientific)

Nitra Barkhosh
Senior Chemist

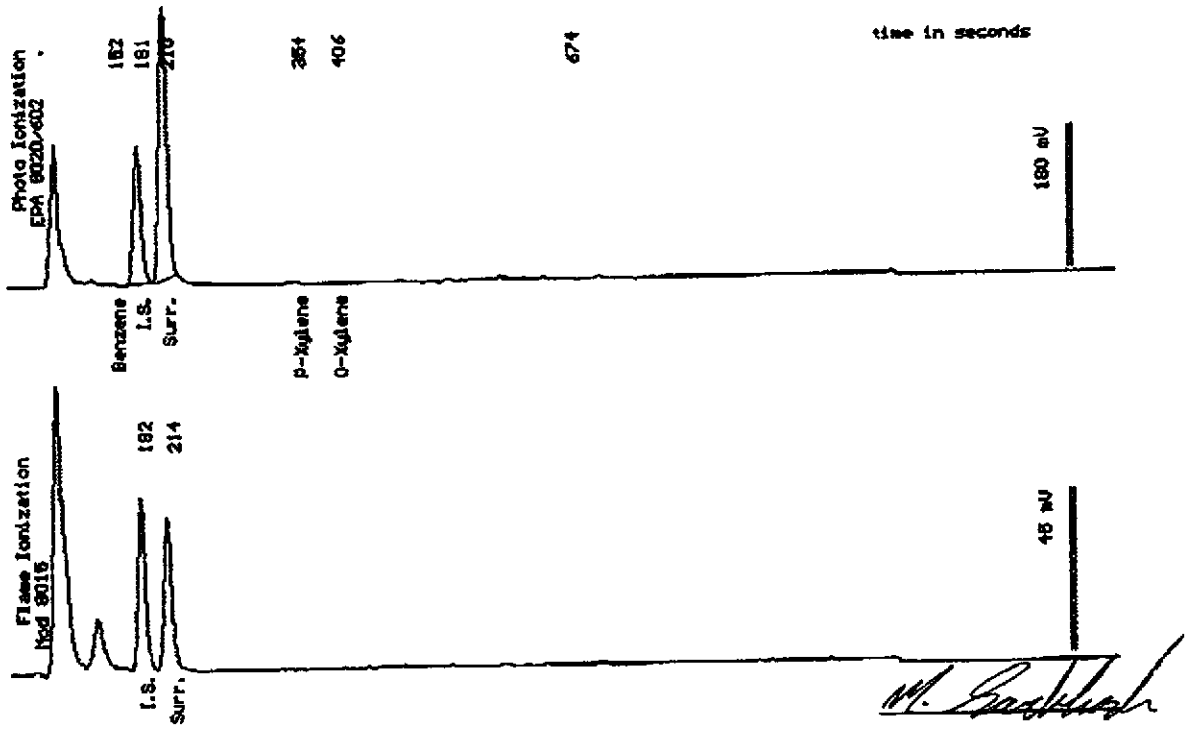
Sample Log 8457

8457-6

Sample: MW-6

From : Project # 40-93-936 (Beacon 721)
Sampled : 01/24/94
Dilution : 1:1 QC Batch : 2048e
Matrix : Water

Parameter	(MRL) ug/L	Measured Value ug/L
Benzene	(.50)	<.50
Toluene	(.50)	<.50
Ethylbenzene	(.50)	<.50
Total Xylenes	(.50)	<.50
TPH as Gasoline	(50)	98
Surrogate Recovery		115 %



Date Analyzed: 01-26-94
Column : 0.53mm ID X 30m DB5 (J&W Scientific)

Mitra Sarkhosh
Senior Chemist

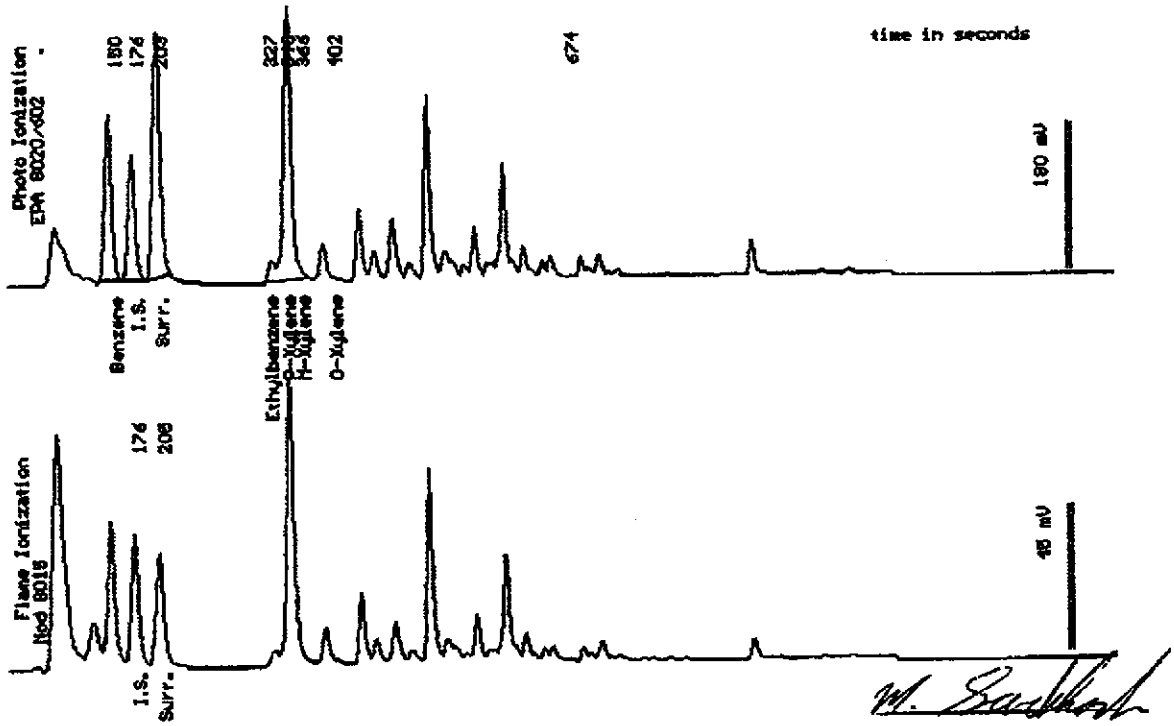
Sample Log 8457

8457-7

Sample: MW-7

From : Project # 40-93-936 (Beacon 721)
Sampled : 01/24/94
Dilution : 1:3 QC Batch : 2048f
Matrix : Water

Parameter	(MRL) ug/L	Measured Value ug/L
Benzene	(1.3)	61
Toluene	(1.3)	<1.3
Ethylbenzene	(1.3)	10
Total Xylenes	(1.3)	160
TPH as Gasoline	(130)	900
Surrogate Recovery		113 %



Date Analyzed: 01-26-94
Column : 0.53mm ID X 30m DB5 (J&W Scientific)

Mitra Sarkhosh
Senior Chemist

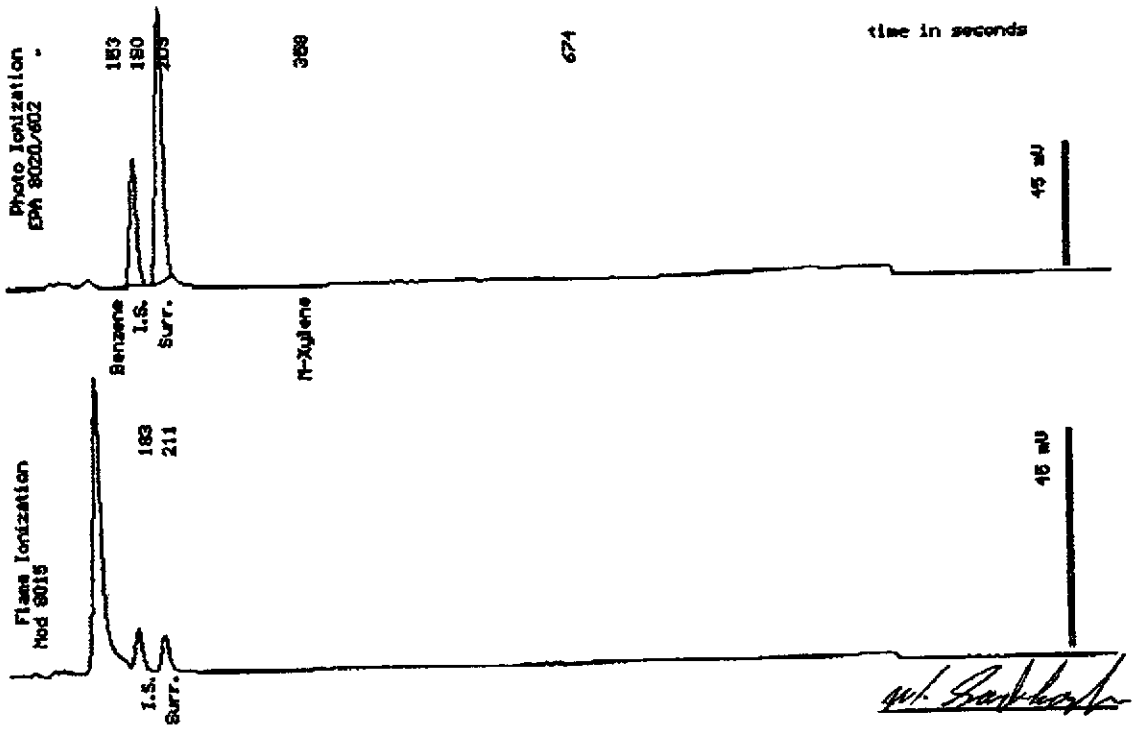
Sample Log 8457

8457-8

Sample: MW-8

From : Project # 40-93-936 (Beacon 721)
Sampled : 01/24/94
Dilution : 1:1 QC Batch : 2048e
Matrix : Water

Parameter	(MRL) ug/L	Measured Value ug/L
Benzene	(.50)	<.50
Toluene	(.50)	<.50
Ethylbenzene	(.50)	<.50
Total Xylenes	(.50)	<.50
TPH as Gasoline	(50)	290
Surrogate Recovery		123 %



Date Analyzed: 01-26-94
Column : 0.53mm ID X 30m DB5 (J&W Scientific)

Mitra Sarkhosh
Senior Chemist

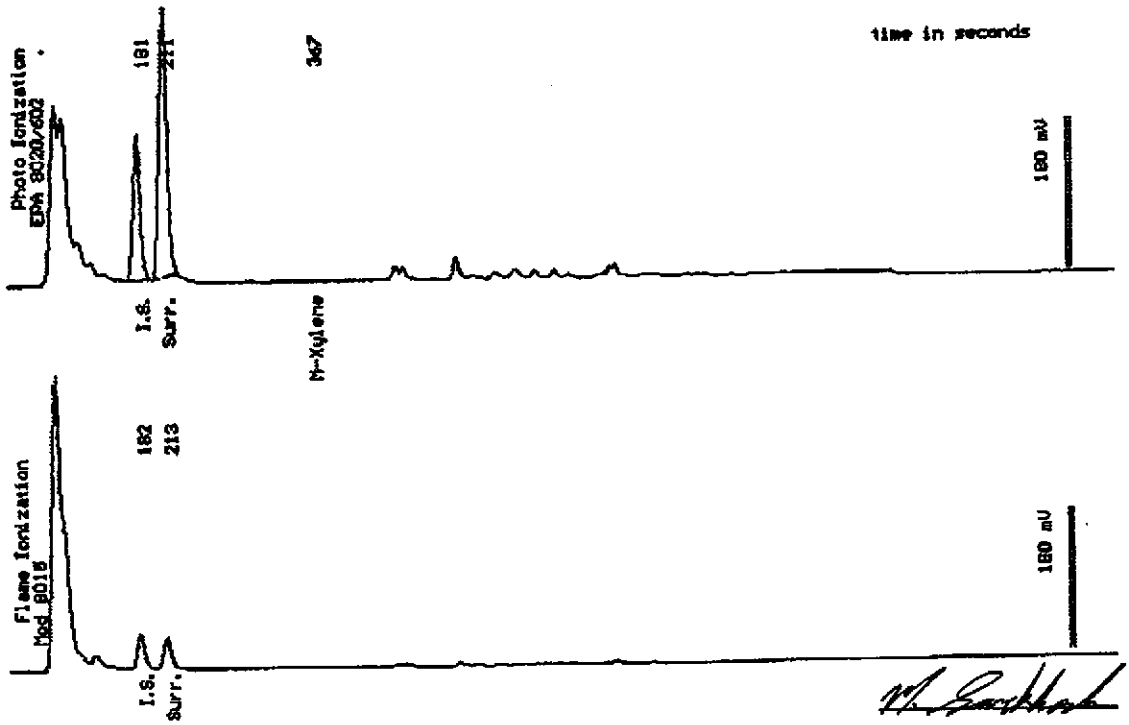
Sample Log 8457

8457-9

Sample: MW-11

From : Project # 40-93-936 (Beacon 721)
Sampled : 01/24/94
Dilution : 1:1 QC Batch : 2048e
Matrix : Water

Parameter	(MRL) ug/L	Measured Value ug/L
Benzene	(.50)	<.50
Toluene	(.50)	<.50
Ethylbenzene	(.50)	<.50
Total Xylenes	(.50)	<.50
TPH as Gasoline	(50)	450
Surrogate Recovery		116 %



Date Analyzed: 01-26-94
Column : 0.53mm ID X 30m DB5 (J&W Scientific)

Mitra Sarkhosh
Senior Chemist

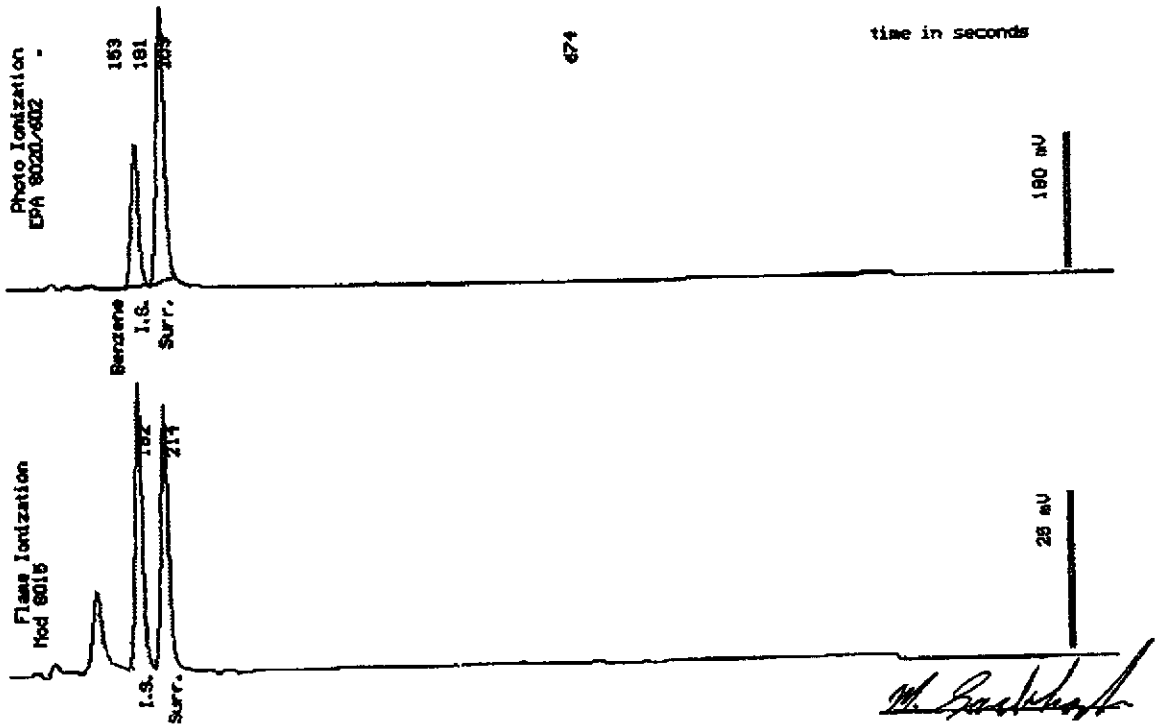
Sample Log 8457

8457-10

Sample: MW-9

From : Project # 40-93-936 (Beacon 721)
Sampled : 01/24/94
Dilution : 1:1 QC Batch : 2048e
Matrix : Water

Parameter	(MRL) ug/L	Measured Value ug/L
Benzene	(.50)	<.50
Toluene	(.50)	<.50
Ethylbenzene	(.50)	<.50
Total Xylenes	(.50)	<.50
TPH as Gasoline	(50)	<50
Surrogate Recovery		115 %



Date Analyzed: 01-26-94
Column : 0.53mm ID X 30m DB5 (J&W Scientific)

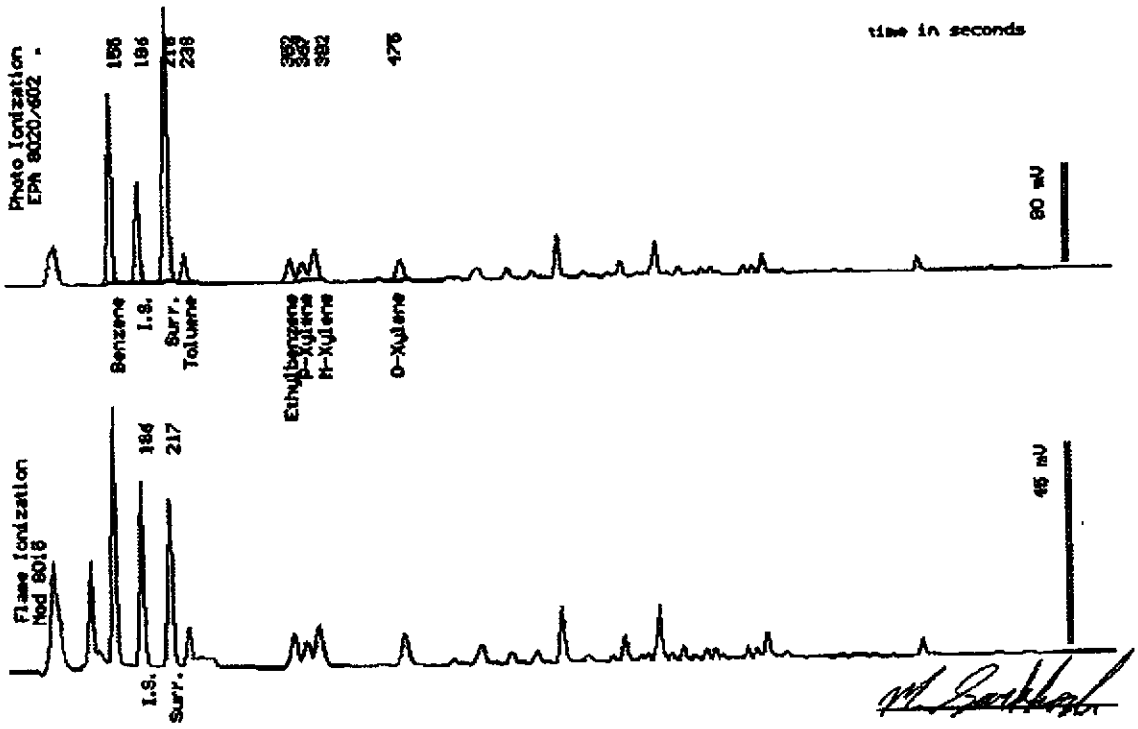
Mitra Sarkhosh
Senior Chemist

Sample Log 8457
8457-11

Sample: **RW-1**

From : Project # 40-93-936 (Beacon 721)
Sampled : 01/24/94
Dilution : 1:1 QC Batch : 4062D
Matrix : Water

Parameter	(MRL) ug/L	Measured Value ug/L
Benzene	(.50)	33
Toluene	(.50)	6.0
Ethylbenzene	(.50)	6.9
Total Xylenes	(.50)	23
TPH as Gasoline	(50)	190
Surrogate Recovery		94 %



Date Analyzed: 01-27-94
Column : 0.53mm ID X 30m DBWAX (J&W Scientific)

Mitra Sarkhosh
Senior Chemist

4437

Ultramar Inc.

CHAIN OF CUSTODY REPORT

BEACON

Beacon Station No.	Sampler (Print Name)	Date	Form No.
721	John W Black	1-25-94	of 2
Project No.	Sampler (Signature)		
40-93-936			
Project Location	Affiliation		
44 Lewelling Blvd San Lorenzo, CA	Delta		

Sample No./Identification	Date	Time	Lab No.	BTEX	TPH (gasoline)	TPH (diesel)	No. of Containers
MW-4	1-24-94	13:08		X	X		3
MW-5		13:38		X	X		3
MW-2		14:10		X	X		3
MW-1		14:22		X	X		3
MW-3		14:42		X	X		3
MW-6		14:56		X	X		3
MW-7		15:12		X	X		3
MW-8		15:30		X	X		3

ANALYSES

WEST
1045 Olive Dr., 3
Davis, CA 95616
916 753-9500

REMARKS: Standard turnaround

RECEIVED by W.E.S.T. Date 1/25/94

Relinquished by: (Signature/Affiliation)	Date	Time	Received by: (Signature/Affiliation)	Date	Time
JW Black / Delta	1-25-94	08:45	[illegible] / Delta	1/25/94	8:45
[illegible] / Delta	1/25/94	13:15	[illegible] / WEST	1/25/94	15:15
[illegible] / WEST	1/25/94	16:00	[illegible] WEST	1/25/94	1600

Report To: Todd Galati / Delta
FAX 916 638-8385
ph 638-2085

Bill to: ULTRAMAR INC.
525 West Third Street
Hanford, CA 93230
Attention: Mr. Terrence Fox

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

32-0003 1/90

Ultramar Inc.

CHAIN OF CUSTODY REPORT

BEACON

Beacon Station No.	Sampler (Print Name)	ANALYSES	Date	Form No.
721	Jon W Black		1-25-94	2 of 2

Project No.: 40-93-936

Sampler (Signature): JWBlack

Project Location: 44 Lewelling Blvd San Lorenzo, CA

Affiliation: Delta

WEST
1045 Olive Dr., 3
Davis, CA 95616
916 753-9500

Sample No./Identification	Date	Time	Lab No.	BTEX	TPH (gasoline)	TPH (diesel)		C.O.D.	Suspended Solids		No. of Containers	REMARKS
MW-11	1/24/94	15:50		X	X						3	standard turnaround
MW-9		16:08		X	X						3	
RW-1		16:16		X	X						3	
GAC inf		16:25		X	X						3	
GAC eff		16:33		X	X			X	X		5	

RECEIVED by W.E.S.T. date 1/25/94

Relinquished by: (Signature/Affiliation)	Date	Time	Received by: (Signature/Affiliation)	Date	Time
JWBlack / Delta	1-25-94	08:45	[signature] / Delta	1-25-94	8:45
[signature] / Delta	1-25-94	15:15	Troy G. [signature] / WEST	1/25/94	15:15
Troy G. [signature] / WEST	1-25-94	16:00	[signature] WEST	1/25/94	

Report To: Todd Galati / Delta
fax 916 638-8385
ph 638-2085

Bill to: ULTRAMAR INC.
525 West Third Street
Hanford, CA 93230
Attention: Mr. Terrence Fox

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

32-6005 1/90

ENCLOSURE D

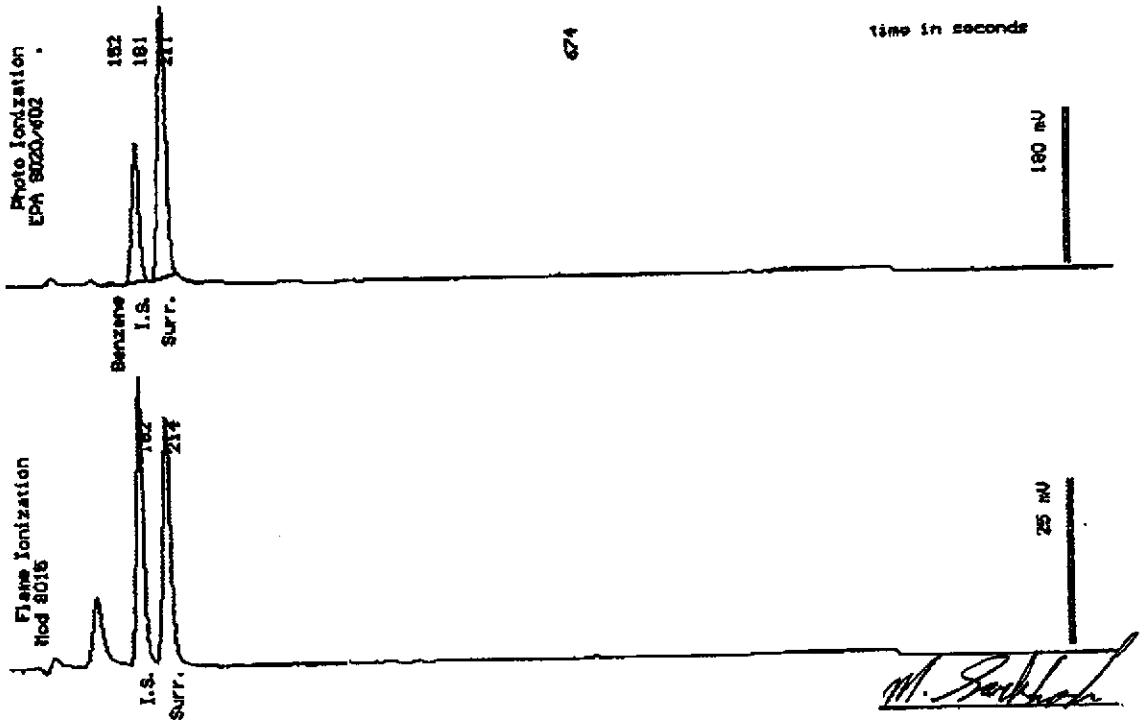
Ground Water Treatment System Analytical Report

Sample Log 8457
8457-12

Sample: GAC inf

From : Project # 40-93-936 (Beacon 721)
Sampled : 01/24/94
Dilution : 1:1 QC Batch : 2048e
Matrix : Water

Parameter	(MRL) ug/L	Measured Value ug/L
Benzene	(.50)	<.50
Toluene	(.50)	<.50
Ethylbenzene	(.50)	<.50
Total Xylenes	(.50)	<.50
TPH as Gasoline	(50)	<50
Surrogate Recovery		120 %



Date Analyzed: 01-26-94
Column : 0.53mm ID X 30m DB5 (J&W Scientific)

Mitra Sarkhosh
Senior Chemist

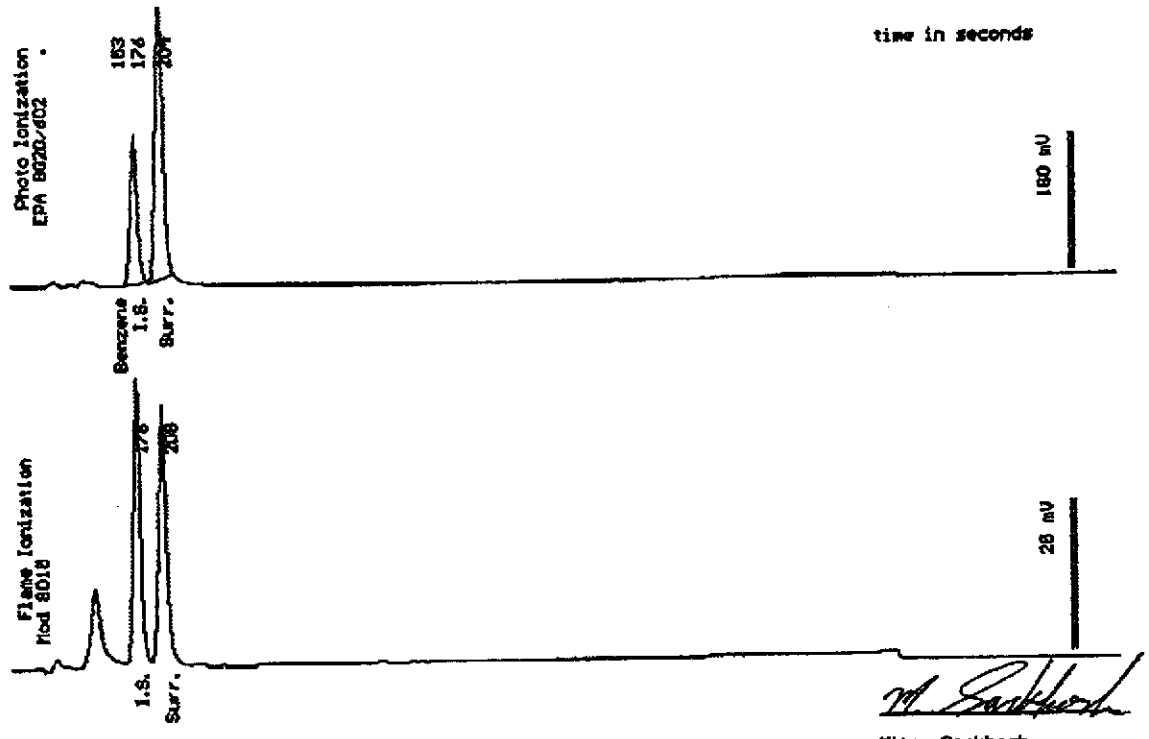
Sample Log 8457

8457-23

Sample: GAC eff

From : Project # 40-93-936 (Beacon 721)
Sampled : 01/24/94
Dilution : 1:1 QC Batch : 2048e
Matrix : Water

Parameter	(MRL) ug/L	Measured Value ug/L
Benzene	(.50)	<.50
Toluene	(.50)	<.50
Ethylbenzene	(.50)	<.50
Total Xylenes	(.50)	<.50
TPH as Gasoline	(50)	<50
Surrogate Recovery		115 %



Date Analyzed: 01-26-94
Column : 0.53mm ID X 30m DB5 (J&W Scientific)

Mitra Sarkhosh
Senior Chemist

Ultramar Inc.

CHAIN OF CUSTODY REPORT

BEACON

Beacon Station No.	Sampler (Print Name)	Date	Form No.
721	Jon W Black	1-25-94	1 of 2
Project No.	**Sampler (Signature)**		
40-93-936	JW Black		
Project Location	**Affiliation**		
44 Lewelling Blvd San Lorenzo, CA	Delta		

Sample No./Identification	Date	Time	Lab No.	BTEX	TPH (gasoline)	TPH (diesel)	No. of Containers
MW-4	1-24-94	13:08		X	X		3
MW-5		13:38		X	X		3
MW-2		14:10		X	X		3
MW-1		14:22		X	X		3
MW-3		14:42		X	X		3
MW-6		14:56		X	X		3
MW-7		15:12		X	X		3
MW-8		15:30		X	X		3

ANALYSES

WEST
1045 Olive Dr., 3
Davis, CA 95616
916 753-9500

REMARKS: Standard turnaround

Relinquished by: (Signature/Affiliation)	Date	Time	Received by: (Signature/Affiliation)	Date	Time
JW Black / Delta	1-25-94	08:45	[signature] / Delta	1/25/94	8:45
[signature] / Delta	1/25/94	15:15	[signature] / WEST	1/25/94	15:15

Report To: Todd Galati / Delta
FAX 916 638-8385
ph 638-2085

Bill to: ULTRAMAR INC.
525 West Third Street
Hanford, CA 93230
Attention: Mr Terrence Fox

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32-8003 1/90

Ultramar Inc.

CHAIN OF CUSTODY REPORT

BEACON

Beacon Station No. 721	Sampler (Print Name) Jon W Black
Project No. 40-93-936	Sampler (Signature)
Project Location 44 Lewelling Blvd San Lorenzo, CA	Affiliation Delta

Date 1-25-94 Form No. 2 of 2

WEST
1045 Olive Dr., 3
Davis, CA 95616
916 753-9500

Sample No./Identification	Date	Time	Lab No.	BTEX	TPH (gasoline)	TPH (diesel)	C.O.D.	Suspended Solids	No. of Containers
MW-11-		15:50		X	X				3
MW-9-		16:08		X	X				3
RW-1.		16:16		X	X				3
GAC inf-		16:25		X	X				3
GAC eff-		16:33		X	X		X	X	5

REMARKS: standard turnaround

	Date	Time		Date	Time
Relinquished by: (Signature/Affiliation) JW Black / Delta	1-25-94	08:45	Received by: (Signature/Affiliation) / Delta	1-25-94	8:45
Relinquished by: (Signature/Affiliation) / Delta	1-25-94	15:15	Received by: (Signature/Affiliation) / WEST	1/25/94	15:15
Relinquished by: (Signature/Affiliation)	Date	Time	Received by: (Signature/Affiliation)	Date	Time

Report To: Todd Galati / Delta
fax 916 638-8385
ph 636-2085

Bill to: ULTRAMAR INC.
525 West Third Street
Hanford, CA 93230
Attention: Mr. Terrence Fox

32-8003 1/90

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