JET KAYO OIL COMPANY
1221 East Main Street Chattanooga, TN 37408-1696
(615) 755-9330

III
G52
11/15/87

October 27, 1987

Mr. Greg Zentner
San Francisco Bay Region
Regional Water Quality Control Board
1111 Jackson ST, Room 6040
Oakland, CA 94607

RE: Econo Station
44 Lewelling BLVD
San Lorenzo, CA

Dear Mr. Zentner:

Enclosed is a brief letter report prepared by Applied GeoSystems of the September monitoring well sampling at the referenced location. This concludes the three monthly samplings with the project now being sampled quarterly through June, 1988.

The laboratory analyses presented in Table 2 of the report indicate that hydrocarbon constituent values during September increased slightly as compared to August values. The depths to groundwater for each well expectedly continued to drop during this month. Of particular interest to note is the fact that the groundwater flow direction has apparently changed to a more southerly direction over the previous eastern direction.

Future quarterly monitoring data will be forwarded to you as it is made available.

Sincerely,

Paul F. Taylor

Paul F. Taylor
Coordinator - Environmental Affairs

Lodi Office: 900 S Cherokee LN
Lodi, CA 95240

Phone: 209/368-2731

PFT/dg

Enclosure

cc: Larry Seto - Alameda County Health Care Services

Applied GeoSystems 43255 Mission Blvd. Suite B Fremont, CA 94539 (415) 651-1906

COPY

October 8, 1987
1008ptay
87044-4

Mr. Paul Taylor
Kayo Oil Company
900 South Cherokee Lane
Lodi, California 95240

Subject: Letter Report No. 87044-4, regarding qualitative ground-water monitoring at Econo gasoline station, 44 Lewelling Boulevard, San Lorenzo, California.

Mr. Taylor:

This letter report summarizes the results of ground-water monitoring performed by Applied GeoSystems as required by the San Francisco Bay Region of the Regional Water Quality Control Board (RWQCB). At Kayo Oil Company's request, quantitative analysis of ground water at the site was performed monthly from June 1987 to September 1987. Monitoring of the ground water in the wells will continue quarterly schedule through June 1988.

A geologist arrived at the above-referenced site at 1:00 P.M. on September 16, 1987, to sample wells MW-1, MW-2, and MW-3. The locations of the wells are shown on the Ground-Water Potentiometric Surface Map, Plate P-1, enclosed with this letter report. An initial sample was collected from each of the wells to check for visual evidence of hydrocarbon contamination. The samples were collected by gently lowering a Teflon bailer halfway through the air/water interface and collecting a sample from the surface of the water in the well. The water in the wells showed no floating product, sheen, or emulsion. Cumulative results of the subjective analyses are presented in Table 1.

Prior to performing the subjective analyses, a static water-level measurement was made using a Solinst water-level indicator. The water-level measurements were used to produce the ground-water potentiometric surface contours shown on Plate P-1. The ground-water surface, at the time of the measurement, was sloped toward the south.

TABLE 1

Cumulative Subjective Analyses
Econo Gasoline Station
San Lorenzo, California

Date	Well No.	Depth to Water	Floating Product	Sheen	Emulsion
	MW-1:				
6/87		16.27	NONE	SLIGHT	NONE
7/87		16.96	NONE	NONE	NONE
8/87		17.28	NONE	NONE	NONE
9/87		17.62	NONE	NONE	NONE
	MW-2:				
6/87		15.62	NONE	STRONG	NONE
7/87		16.23	NONE	NONE	NONE
8/87		16.58	NONE	NONE	NONE
9/87		16.93	NONE	NONE	NONE
	MW-3:				
6/87		15.89	NONE	SLIGHT	NONE
7/87		16.48	NONE	NONE	NONE
8/87		16.80	NONE	NONE	NONE
9/87		17.13	NONE	NONE	NONE

Note: Depth to water measured in feet below top of casing

After performing the subjective analyses, the wells were purged of approximately four well volumes of water and were allowed to recover to static water level. Samples for laboratory analyses were then collected with a laboratory-cleaned Teflon bailer. A sample from each well was collected from below the static water level. The samples were transferred to laboratory-cleaned 40-ml glass Volatile Organic Analysis (VOA) vials. Hydrochloric acid was added to the vials to minimize bacterial degradation of the samples.

The samples were sealed with Teflon-lined caps, stored on ice, and delivered to Applied GeoSystems' Certified Laboratory for analyses. A Chain of Custody Record was initiated by the sampler and is enclosed with this report. The samples were analyzed for

total volatile hydrocarbons and the hydrocarbon constituents benzene, ethylbenzene, toluene, and total xylenes isomers (BETX). The results of these analyses and previous analyses are presented in Table 2. The most recent analytical results are also presented on the laboratory Record of Analysis enclosed with this report.

TABLE 2

Laboratory Results For
Water Samples Collected From
Econo Gasoline Station - San Lorenzo, California

Date	I.D.	TVH	B	E	T	X	Det. Limit
MW-1:							
6/87	W-25-MW1	18.05	0.49	0.93	0.15	3.79	0.01
7/87	W-20-MW1	14.75	0.56	0.95	0.12	3.27	0.05
8/87	W-26-MW1	12.86	0.63	0.32	0.04	1.13	0.01
9/87	W-18-MW1	14.269	0.558	0.562	0.084	1.942	0.005
MW-2:							
6/87	W-25-MW2	4.870	0.113	0.046	0.014	0.058	0.002
7/87	W-20-MW2	2.207	0.103	0.034	0.025	0.048	0.001
8/87	W-26-MW2	0.7560	0.0376	0.0082	0.0109	0.0111	0.0005
9/87	W-18-MW2	1.4825	0.0753	0.0164	0.0142	0.0276	0.0005
MW-3:							
6/87	W-25-MW3	40.3	5.4	1.7	3.9	5.2	0.1
7/87	W-20-MW3	30.32	6.88	1.58	7.08	4.77	0.05
8/87	W-26-MW3	25.62	5.93	1.24	4.18	3.37	0.05
9/87	W-18-MW3	38.21	8.54	1.02	6.66	3.74	0.05

Note: All results in parts per million (ppm)
I.D.: Sample Identifier
Det. Limit: Detection Limit
TVH: Total volatile hydrocarbons
BETX: Benzene, ethylbenzene, toluene, and total xylene isomers

The most recent analyses generally show similar concentrations of dissolved hydrocarbons from those of the analyses of August 1987. The concentration of dissolved total volatile hydrocarbons has increased since the August analyses. Cumulative results of concentrations of dissolved hydrocarbons and hydrocarbon constituents for water collected from monitoring wells MW-1 through MW-3 are presented graphically on Plates P-2 through P-5 enclosed with this letter report.

Because relatively high concentrations of dissolved hydrocarbon constituents are present in the ground water at the site, further work may be necessary to evaluate the extent of the contamination and the usefulness of the ground water in the vicinity of the site.

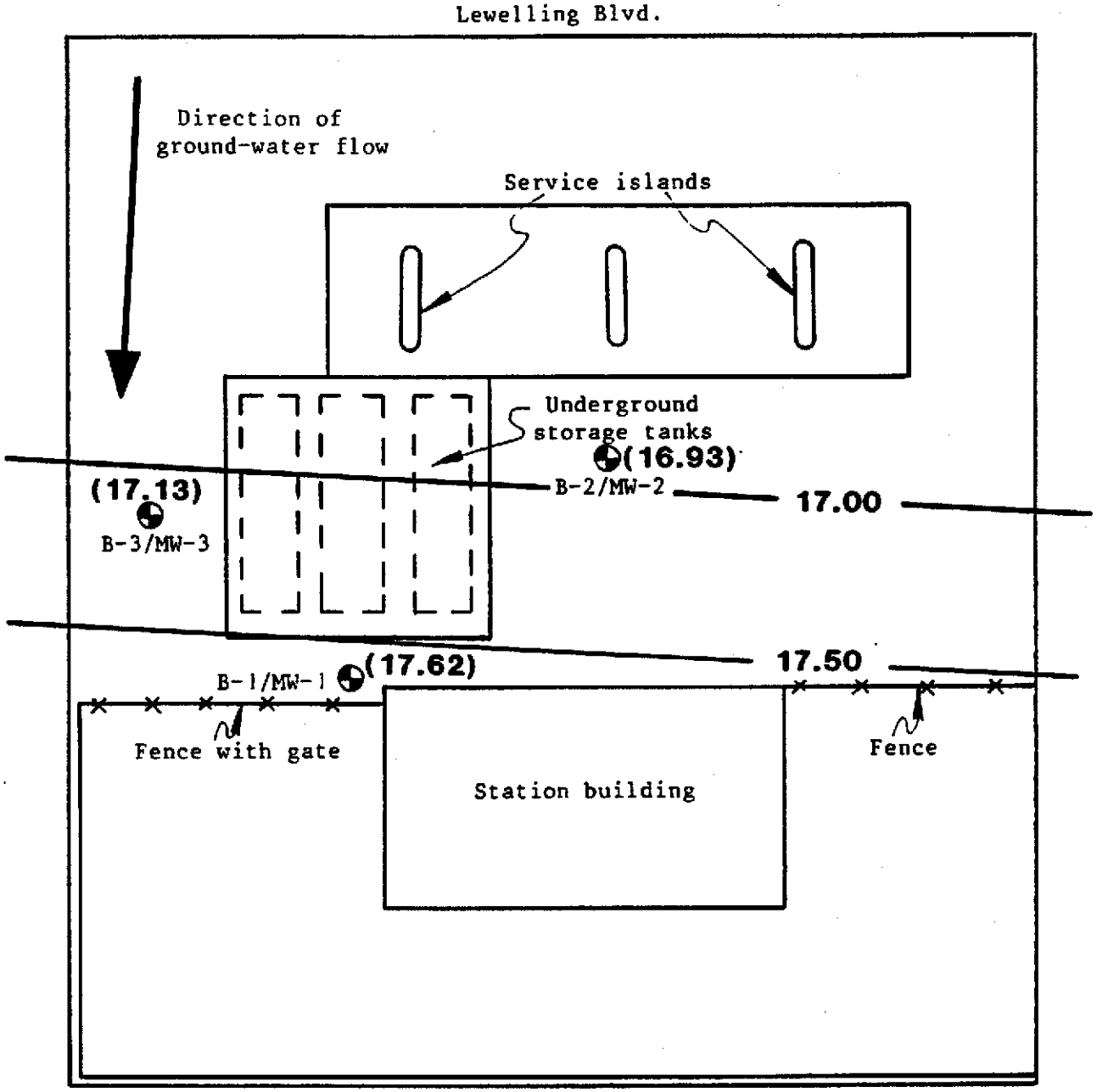
A copy of this report should be forwarded to Mr. Greg Zentner of the California Regional Water Quality Control Board, 1111 Jackson Street, Room 6040, Oakland, California 94607. Please do not hesitate to call if you have any questions regarding the material covered in this letter.

Sincerely,
Applied GeoSystems

Glenn R. Dembroff
Project Geologist

Michael N. Clark
C.E.G. 1264

Enclosures:
Ground-Water Potentiometric Surface Map
Cumulative TVH Concentration Table
Cumulative BETX Concentration Table (3)
Chain of Custody Record
Record Of Analysis (3)



● = Monitoring well location

— 17.50 — = Potentiometric surface (feet) depth measured from arbitrary datum

N

Approximate Scale

20 10 0 20 40

feet

Source: Measured by tape and compass

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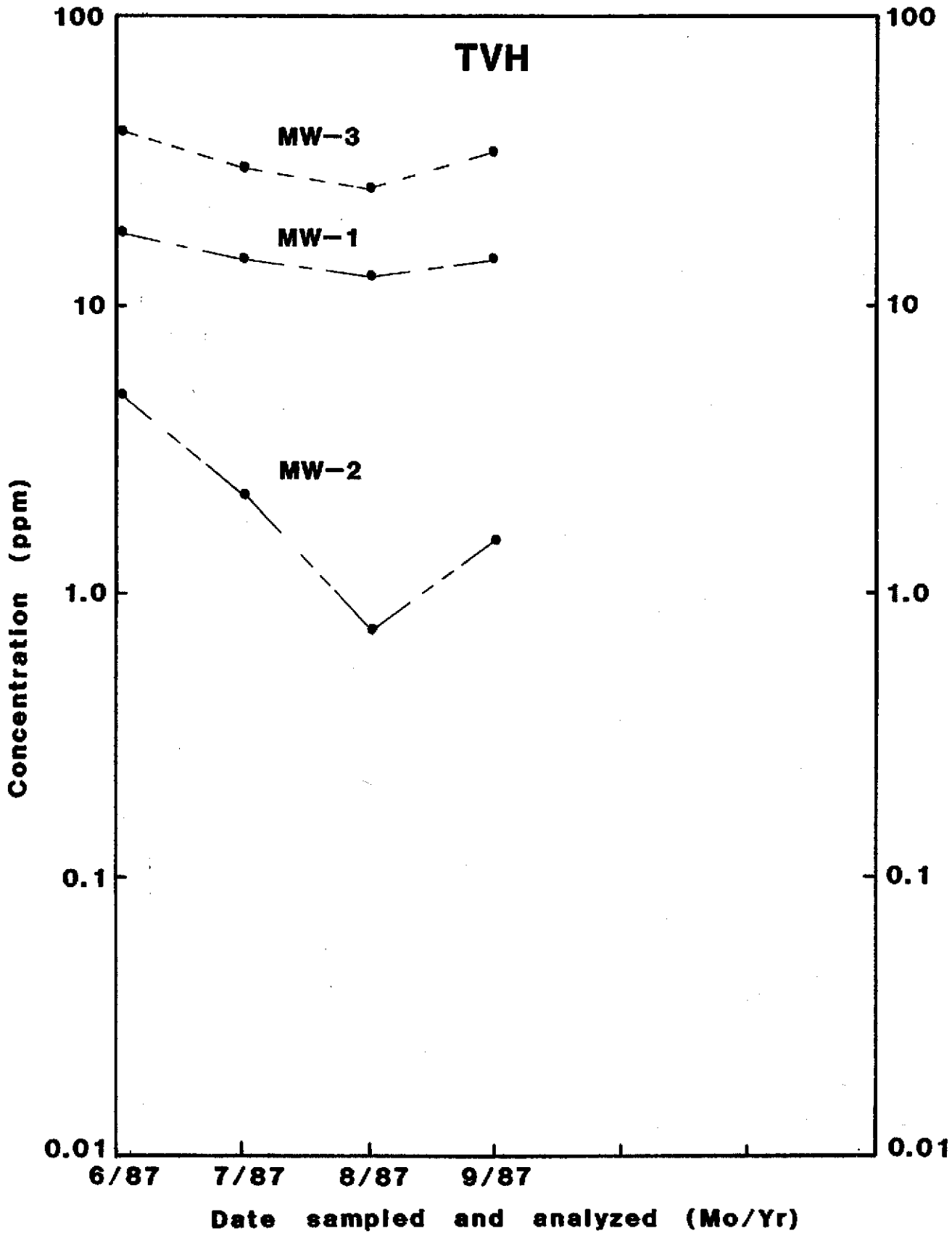
PROJECT NO. 87044-4

GROUND-WATER POTENTIOMETRIC SURFACE MAP
September 1987

Econo Gasoline Station
San Lorenzo, California

PLATE

P-1



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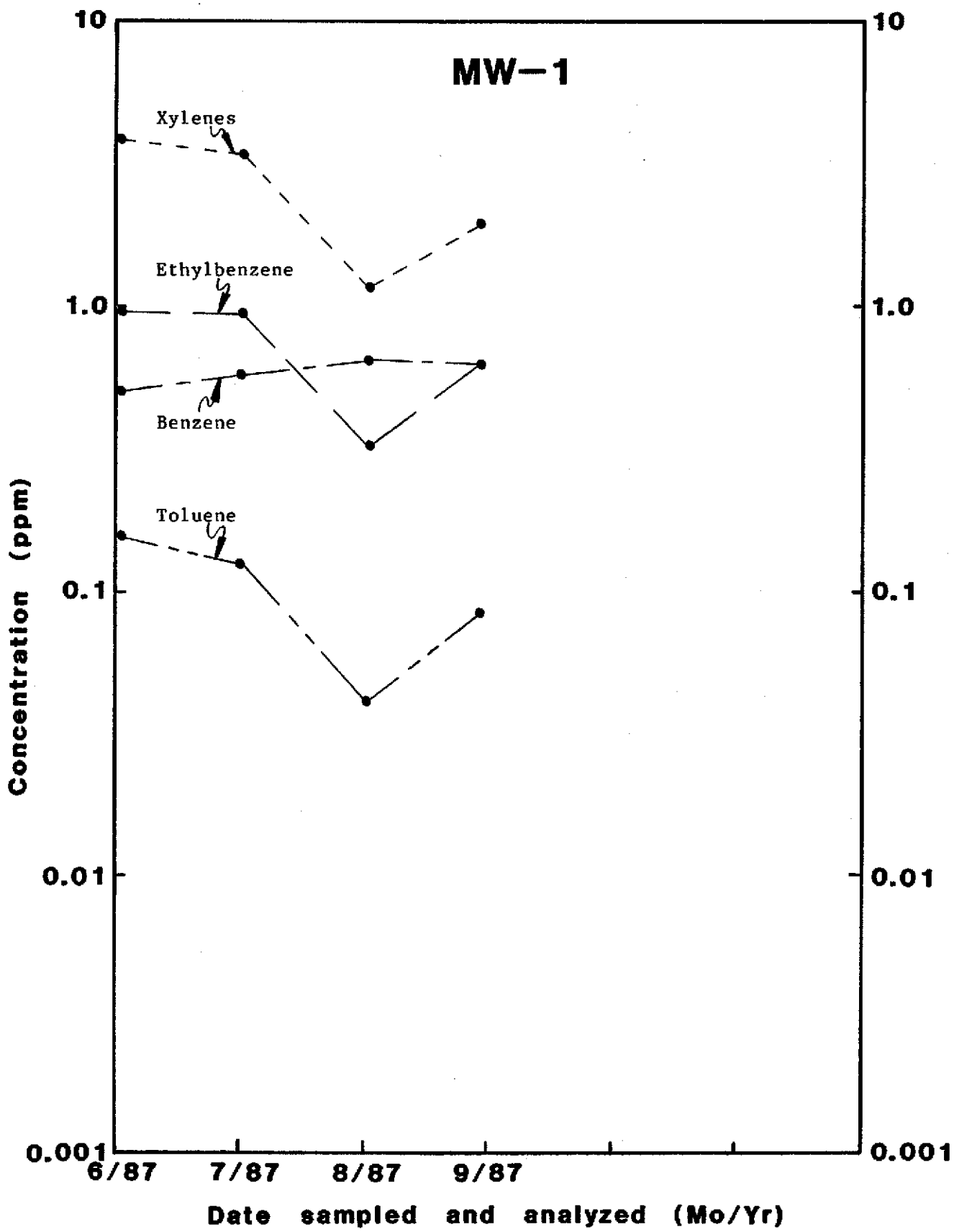
CUMULATIVE TVH CONCENTRATION GRAPH
Econo Gas Station
San Lorenzo, California

PLATE
P-2



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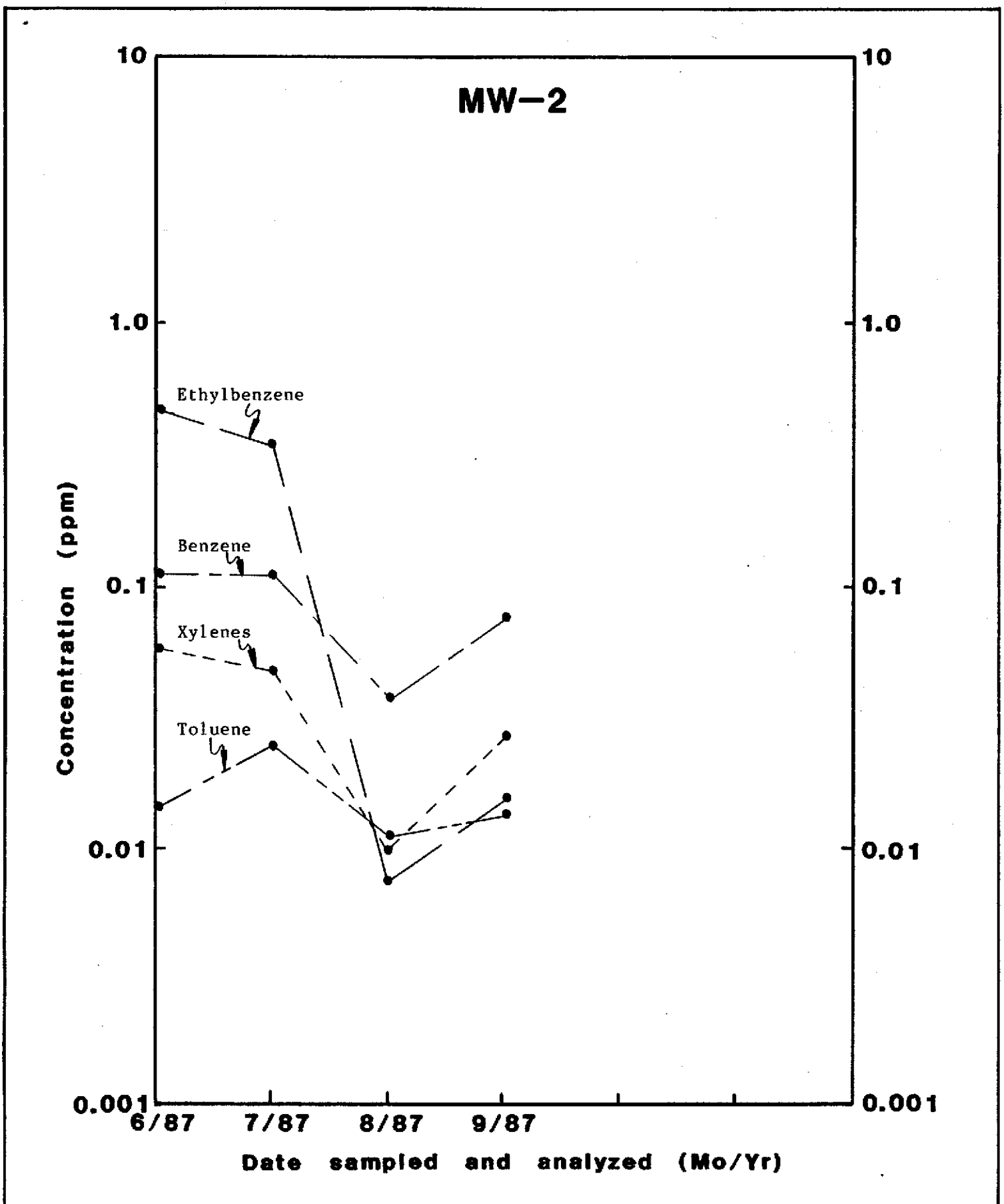
CUMULATIVE BETX CONCENTRATION GRAPH
WELL MW-1
Econo Gas Station
San Lorenzo, California

PLATE
P-3



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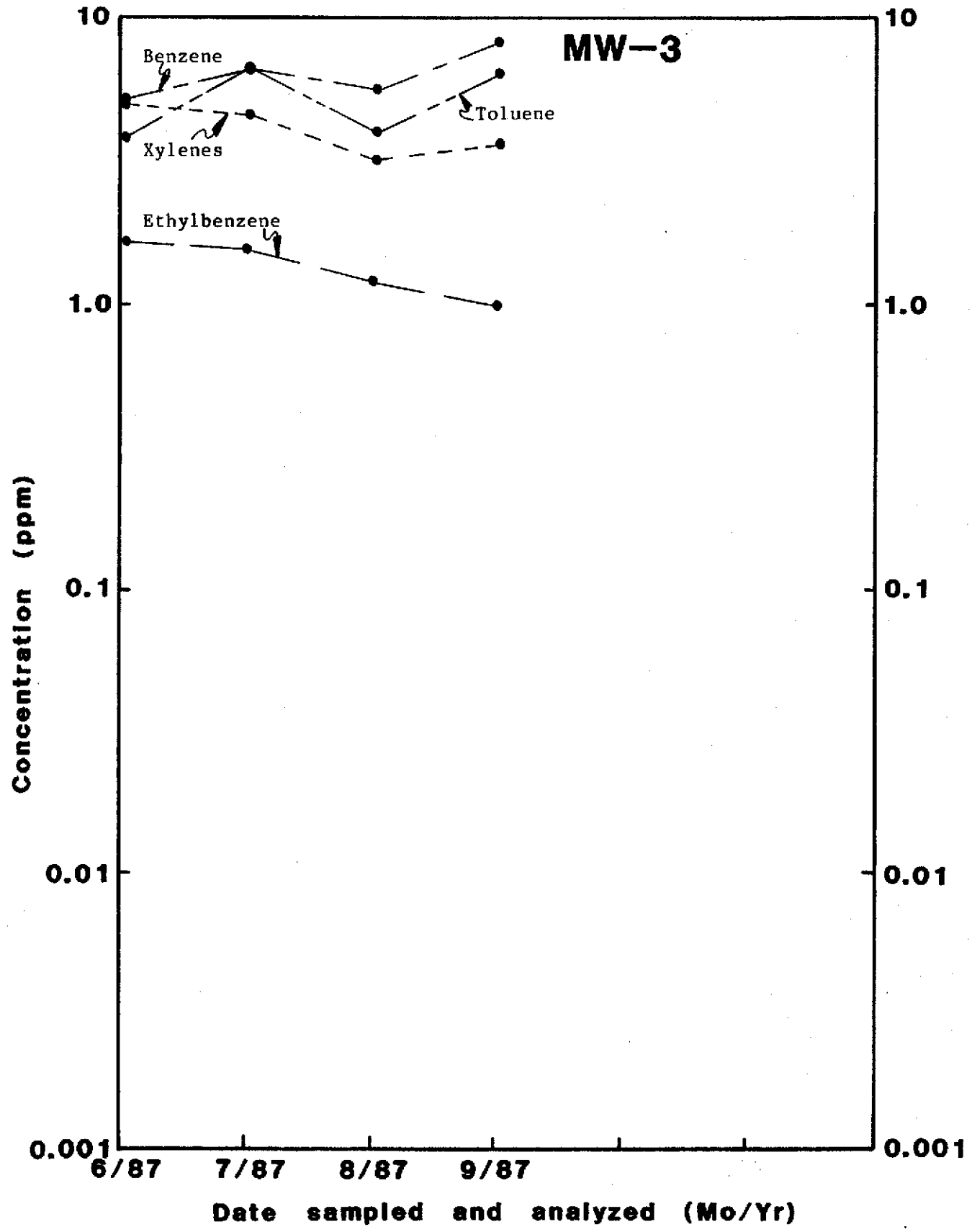
CUMULATIVE BETX CONCENTRATION GRAPH
WELL MW-2
Econo Gas Station
San Lorenzo, California

PLATE
P-4



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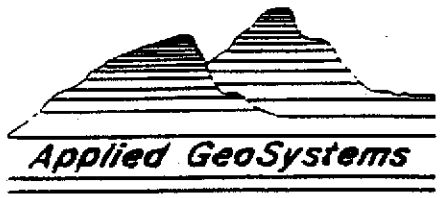
CUMULATIVE BETX CONCENTRATION GRAPH
WELL MW-3
Econo Gas Station
San Lorenzo, California

PLATE
P-5

CHAIN OF CUSTODY RECORD



41255 Mission Blvd. Suite B Fremont, CA 94539 415/651-1906

SAMPLER (signature): Tim O'Brien

Phone: 415 651 1906

LABORATORY: Applied GeoSystems

TURNAROUND TIME: 2 weeks

Attention: Glenn Dembroff

Phone No. 415 651 1906

SHIPPING INFORMATION:

Shipper

Address

Date Shipped

Service Used

Airbill No. Cooler No.

Relinquished by: (signatures)	Received by: (signatures)	Date	Time
Tim O'Brien		9-16-87	4:30
	Received for laboratory by:	9-16-87	16:30

LABORATORY SHOULD SIGN UPON RECEIPT AND RETURN A COPY OF THIS FORM WITH THE LABORATORY RESULTS

Sample No.	Site Identification	Date Sampled	Analyses Requested	Sample Condition Upon Receipt
W-18-MW1	87044-4	9-16-87	TVH & BETX	iced
W-18-MW2	↓	↓	↓	↓
W-18-MW3				

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RECORD OF ANALYSIS

Date 10-01-87

Applied GeoSystems
43255 Mission Blvd.
Fremont, CA. 94539

Attention: Glenn R. Dembroff

Date Received: 9-16-87
Date Analyzed: 9-25-87

Laboratory# 8709W137

Procedure:

The water sample referenced on the attached Chain-of-Custody was analyzed for the presence and concentration of Benzene, Ethyl-Benzene, Toluene, and Xylenes (BETX) and for Total Volatile Hydrocarbons (TVH) by EPA method 602. The sample was concentrated on a Tekmar LSC-2 and ALS automatic sampler prior to injection into a 5890 Hewlett Packard gas chromatograph fitted with a Photo-Ionization detector (PID) and a Flame Ionization detector (FID). The limit of detection for this sample is 0.005 milligrams/liter (parts per million = ppm).

The results are presented in the table below:

SAMPLE	SITE	BENZENE	ETHYL BENZENE	TOLUENE	TOTAL XYLENES	TVH
W-18-MW1	87044-4	0.558	0.562	0.084	1.942	14.269

Results in milligrams/liter (parts per million = ppm).

Tia Tran, Chemist

Applied GeoSystems is a State of California, Department of Health Services Certified Hazardous Waste Testing Laboratory (No. 153).

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RECORD OF ANALYSIS

Date 10-01-87

Applied GeoSystems
43255 Mission Blvd.
Fremont, CA. 94539

Attention: Glenn R. Dembroff

Date Received: 9-16-87 Laboratory# 8709W138
Date Analyzed: 9-25-87

Procedure:

The water sample referenced on the attached Chain-of-Custody was analyzed for the presence and concentration of Benzene, Ethyl-Benzene, Toluene, and Xylenes (BETX) and for Total Volatile Hydrocarbons (TVH) by EPA method 602. The sample was concentrated on a Tekmar LSC-2 and ALS automatic sampler prior to injection into a 5890 Hewlett Packard gas chromatograph fitted with a Photo-Ionization detector (PID) and a Flame Ionization detector (FID). The limit of detection for this sample is 0.0005 milligrams/liter (parts per million = ppm).

The results are presented in the table below:

SAMPLE	SITE	BENZENE	ETHYL BENZENE	TOLUENE	TOTAL XYLENES	TVH
W-18-MW2	87044-4	0.0753	0.0164	0.0142	0.0276	1.4825

Results in milligrams/liter (parts per million = ppm).

Tia Tran, Chemist

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RECORD OF ANALYSIS

Date 10-01-87

Applied GeoSystems
43255 Mission Blvd.
Fremont, CA. 94539

Attention: Glenn R. Dembroff

Date Received: 9-16-87
Date Analyzed: 9-25-87

Laboratory# 8709W139

Procedure:

The water sample referenced on the attached Chain-of-Custody was analyzed for the presence and concentration of Benzene, Ethyl-Benzene, Toluene, and Xylenes (BETX) and for Total Volatile Hydrocarbons (TVH) by EPA method 602. The sample was concentrated on a Tekmar LSC-2 and ALS automatic sampler prior to injection into a 5890 Hewlett Packard gas chromatograph fitted with a Photo-Ionization detector (PID) and a Flame Ionization detector (FID). The limit of detection for this sample is 0.05 milligrams/liter (parts per million = ppm).

The results are presented in the table below:

SAMPLE	SITE	BENZENE	ETHYL BENZENE	TOLUENE	TOTAL XYLENES	TVH
W-18-MW3	87044-4	8.54	1.02	6.66	3.74	38.21

Results in milligrams/liter (parts per million = ppm).

Tia Tran, Chemist

Applied GeoSystems is a State of California, Department of Health Services Certified Hazardous Waste Testing Laboratory (No. 153).