Applied GeoSystems

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

91 JAN 17 AM 11:37

TRANSMITTAL

TO: MR. GIL WISTAR
ALAMEDA COUNTY DEPT. OF
ENVIRONMENTAL HEALTH
80 SWAN WAY, ROOM 200
OAKLAND, CA 94621

FROM: MIKE BARMINSKI
TITLE: STAFF GEOLOGIST

DATE: [illegible]
PROJECT NUMBER: 69034-3
SUBJECT: REPORT

WE ARE SENDING YOU [X] Attached [ ] Under separate cover via _____ the following items:

[ ] Shop drawings [ ] Prints [X] Reports [ ] Specifications

[ ] Letters [ ] Change Orders [ ] _____

COPIES	DATED	NO.	DESCRIPTION
1	11/30/90	69034-3	LETTER REPORT QUARTERLY GROUND-WATER MONITORING FOURTH QUARTER 1990 AT ARCO STATION 601, 712 LEWELLING BOULEVARD, SAN LEANDRO, CA.

THESE ARE TRANSMITTED as checked below:

[ ] For review and comment [ ] Approved as submitted [ ] Resubmit ___ copies for approval

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Copies: 1 to AGS project file no. 69034-3 SJ READER'S FILE

*Revision Date: 10/15/90
*File Name: TRANSMT.PRJ

Applied GeoSystems 3315 Almaden Expressway, Suite 34, San Jose, CA 95118 (408) 264-7723

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LETTER REPORT
QUARTERLY GROUND-WATER MONITORING
Fourth Quarter 1993

at

ARCO Station 601
712 Lewelling Boulevard
San Leandro, California

AGS 69034-3 [redacted]

Applied GeoSystems 3315 Almaden Expressway, Suite 34, San Jose, CA 95118 (408) 264-7723

• FREMONT • IRVINE • HOUSTON • BOSTON • SACRAMENTO • CULVER CITY • SAN JOSE

[redacted]
AGS 69034-3

Mr. Kyle Christie
ARCO Products Company
P.O. Box 5811
San Mateo, California 94402

Subject: Fourth Quarter 1990 Quarterly Ground-Water Monitoring Report for ARCO Station 601, 712 Lewelling Boulevard, San Leandro, California.

Mr. Christie:

This letter report summarizes the methods and results of October 1990 ground-water monitoring performed by Applied GeoSystems (AGS) at the above-referenced site. The station is on the southwest corner of the intersection of Lewelling Boulevard and Washington Avenue in San Leandro, California, as shown on the Site Vicinity Map (Plate 1). ARCO has requested that AGS perform quarterly ground-water sampling and analyses to monitor hydrocarbon concentrations associated with the former waste-oil and gasoline storage tanks at the site, and to evaluate trends related to fluctuations of these hydrocarbon concentrations.

Prior to the present monitoring, AGS performed limited subsurface environmental investigations related to the underground gasoline storage tanks at the site. [redacted]. The methods and results of these investigations are presented in the reports listed in the references attached to this letter report. The locations of the ground-water monitoring wells and pertinent site features are shown on the Generalized Site Plan (Plate 2).

missing

Ground-Water Sampling and Gradient Evaluation

AGS personnel performed quarterly ground-water monitoring and sampling on October 15, 1990. Field work consisted of measuring depth-to-water (DTW) levels in wells MW-1, MW-2, and MW-3; subjectively analyzing water from these wells for the presence of petroleum hydrocarbon sheen and floating product; and purging and sampling ground water from these monitoring wells for laboratory analysis. The ground-water sampling protocol is attached (Appendix A).

The DTW levels, wellhead elevations, and ground-water elevations for this and other monitoring episodes at the site are summarized in Table 1, Ground-Water Monitoring Data. The ground-water gradient interpreted from the October 15, 1990 monitoring data is approximately 0.006 (about 0.6 feet vertical per 100 feet horizontal) toward the southwest, as shown on the Ground-Water Gradient Map (Plate 3). The ground-water gradient interpreted from the November 20, 1990 monitoring data is approximately 0.003 (about 0.3 feet vertical per 100 feet horizontal) toward the southwest, as shown on the Ground-Water Gradient Map (Plate 4). These gradient interpretations are consistent with the previously interpreted ground-water gradients at this site. These interpreted gradients are approximate because of the need to calculate the depth to water in wells MW-1 and MW-3 due to the presence of floating product in these wells. The method for calculating the depth to water in wells MW-1 and MW-3 is attached (Appendix A).

Water samples were collected from wells MW-1, MW-2, and MW-3 for subjective analysis before the monitoring wells were purged and sampled. Subjective analysis of wells MW-1 and MW-3 indicated approximately 3 and 9 inches of floating product in these wells respectively. No evidence of floating product or product odor was noted in well MW-2. Cumulative results of subjective analyses are presented in Table 1.

Monitoring well MW-2 was purged and sampled in accordance with the attached protocol. A well purge data sheet for the parameters monitored and a stabilization graph for well MW-2 are also attached.

Laboratory Analysis

Water samples collected from the well MW-2 were delivered to Applied Analytical Environmental Laboratories in Fremont, California (Hazardous Waste Testing Laboratory Certification No. 153). The water samples from well MW-2 were analyzed for total petroleum hydrocarbons as gasoline (TPHg) and benzene, toluene, ethylbenzene, and total xylenes (BTEX) using modified Environmental Protection Agency (EPA) Methods 5030/8015/8020/602. Samples of the floating product from wells MW-1 and MW-3 were

submitted to the analytical laboratory for "fingerprinting ", to evaluate the characteristic hydrocarbons present. The Chain of Custody Records and Laboratory Analysis Reports are attached. Chromatographs from analyses of samples from wells MW-1 and MW-3 are also attached. Results of these and previous water analyses are summarized in Table 2, Cumulative Results of Ground-Water Laboratory Analyses.

Results of this quarter's laboratory analyses of water samples from wells MW-1 through MW-3 indicate:

- **6400 parts per billion (ppb) TPHg and concentrations of BTEX from 110 to 650 are present in well MW-2; and**
- **"fingerprint" analyses of samples from wells MW-1 and MW-3 indicated that the product is gasoline; hydrocarbons heavier than gasoline were not reported.**

Conclusions

The ground water at the site has been impacted by gasoline hydrocarbons. [redacted] vertical extent of the gasoline hydrocarbons at the site has not been delineated. [redacted] hydrocarbons detected in ground water at the site are significantly lower than the levels detected in the initial monitoring episode.

Schedule

Applied GeoSystems will continue the quarterly ground-water monitoring at this site to evaluate trends in petroleum hydrocarbons and changes in ground-water gradient with time. Routine well maintenance and quality control will be performed as necessary during these site visits. The next quarterly monitoring episode is scheduled for January 15, 1991.

We recommend that copies of this report be forwarded to:

Mr. Gil Wistar
Alameda County Department of
Environmental Health
80 Swan Way, Room 200
Oakland, California 94621

Mr. Lester Feldman
Regional Water Quality Control Board
San Francisco Bay Region
1800 Harrison Street
Oakland, California 94612

If you have any questions or comments, please call Mr. Mike Barminski at (408) 264-7723.

Sincerely,
Applied GeoSystems

Michael J. Barminski
Staff Geologist

Joan E. Tiernan
Registered Civil
Engineer #044600

Enclosures:

References
Plate 1, Site Vicinity Map
Plate 2, Generalized Site Plan
Plate 3, Ground-Water Gradient Map, October 15, 1990
Plate 4, Ground-Water Gradient Map, November 20, 1990
Table 1, Ground-Water Monitoring Data
Table 2, Cumulative Results of Ground-Water Laboratory Analyses

Appendix A: Ground-Water Sampling Protocol
Well Purge Data Sheets and Stabilization Graphs
Chain of Custody Records (1 pages)
Laboratory Analysis Reports (2 pages)
Laboratory Chromatographs (6 pages)

REFERENCES

Applied GeoSystems. January 18, 1990. Limited Subsurface Environmental Investigation Related to Underground Tank Removal, 712 Lewelling Boulevard, San Leandro, California: AGS Report 69013-2.

Applied GeoSystems. April 1, 1990. Work Plan - Initial Subsurface Investigation at ARCO Station No. 601, 712 Lewelling Boulevard, San Leandro, California: AGS 69013-3W.

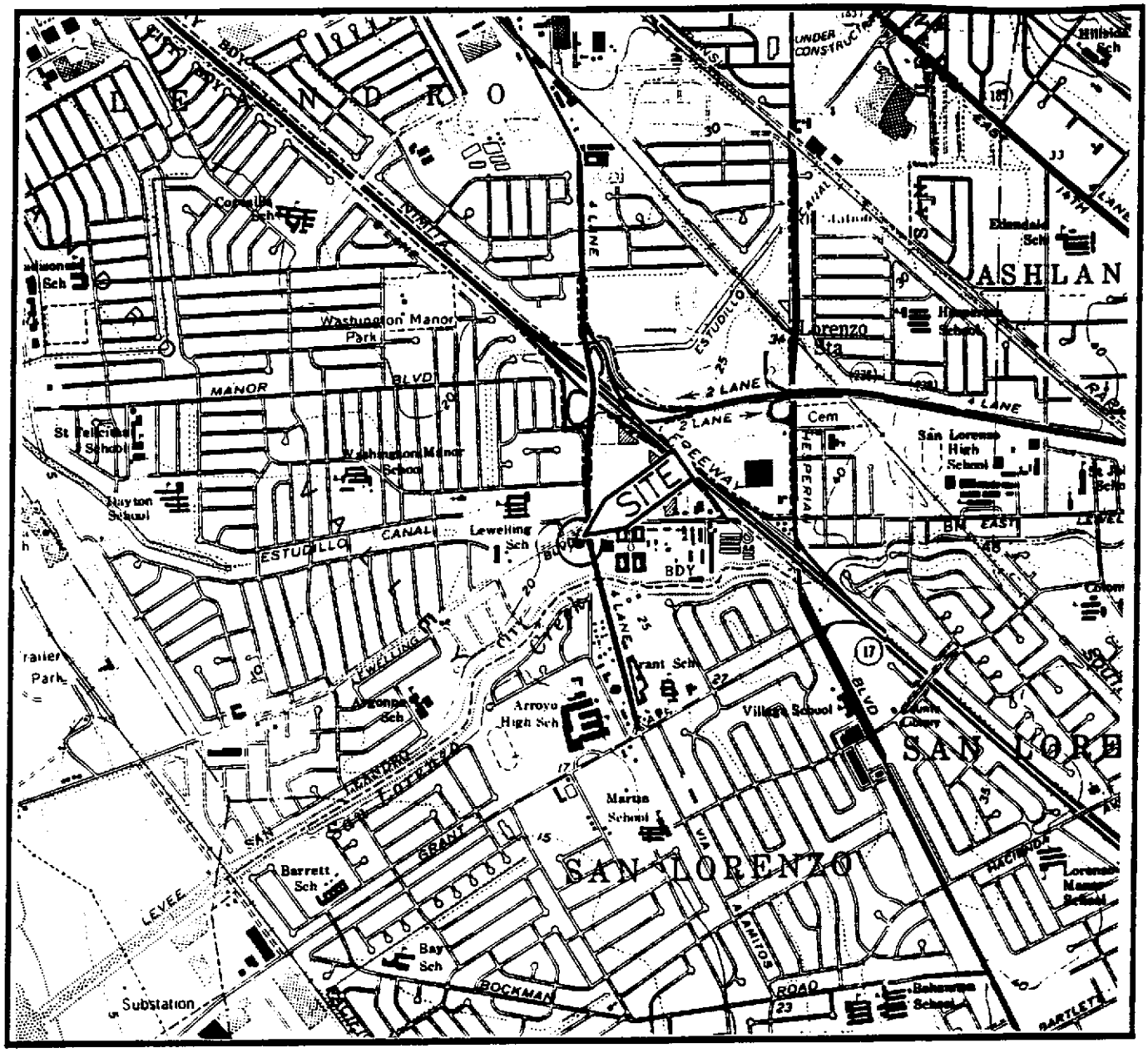
Applied GeoSystems. May 8, 1990. Site Safety Plan, 712 Lewelling Boulevard, San Leandro, California: AGS 69013-3S.

Applied GeoSystems. May 14, 1990. Addendum to Work Plan - Initial Subsurface Investigation at ARCO Station No. 601, 712 Lewelling Boulevard, San Leandro, California: AGS 69013-3WA.

Applied GeoSystems. May 26, 1989. Limited Environmental Site Assessment, 712 Lewelling Boulevard, San Leandro, California, AGS Report 69013-1.

Helley, E.S., K.R. Lajoie, W.E. Spangle, and M.L. Blair, M.L. 1979. Flatland deposits of the San Francisco Bay region, California. U.S. Geological Survey Professional Paper 943.

Hickenbottom, K. and Muir, K. 1988. Geohydrology And Groundwater-Quality Overview Of The East Bay Plain Area, Alameda County, California 205 (j) Report. Alameda County Flood Control and Water Conservation District, California.



Source: U.S. Geological Survey
7.5–Minute Quadrangles
Hayward/San Leandro,
California
Photorevised 1984

N

Approximate Scale

2000 1000 0 2000 4000

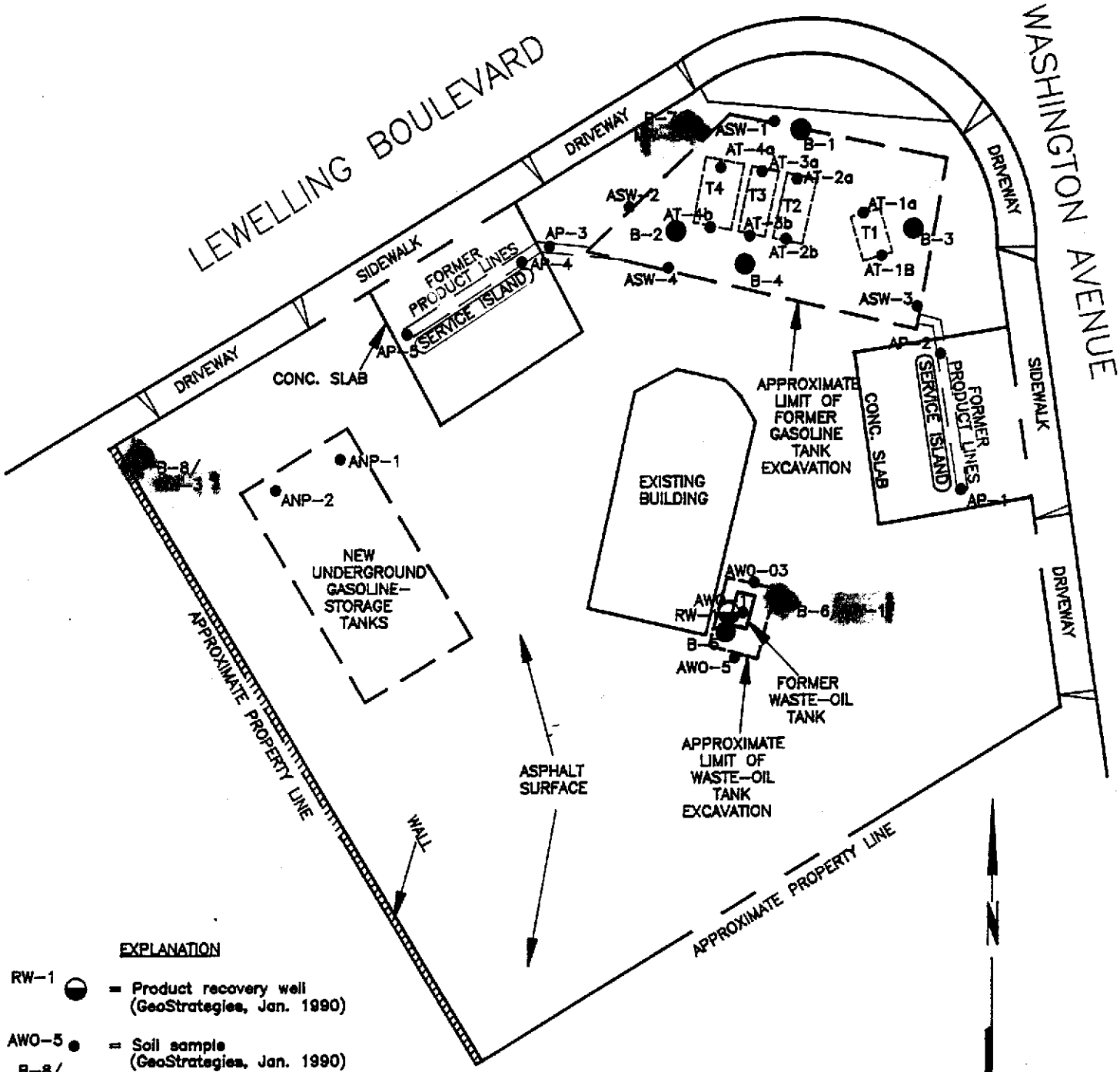
feet

Applied GeoSystems

PROJECT 69034-3

SITE VICINITY MAP
ARCO Service Station 601
712 Lewelling Boulevard
San Leandro, California

PLATE
1



EXPLANATION

RW-1 = Product recovery well (GeoStrategies, Jan. 1990)

AWO-5 = Soil sample (GeoStrategies, Jan. 1990)

B-8/MW-3 = Ground-water monitoring well (Applied GeoSystems, June 1990)

B-5 = Soil boring (Applied GeoSystems, August 1989)

T4 = Former Underground Gasoline-storage tanks

Approximate Scale

30 15 0 30 60

feet

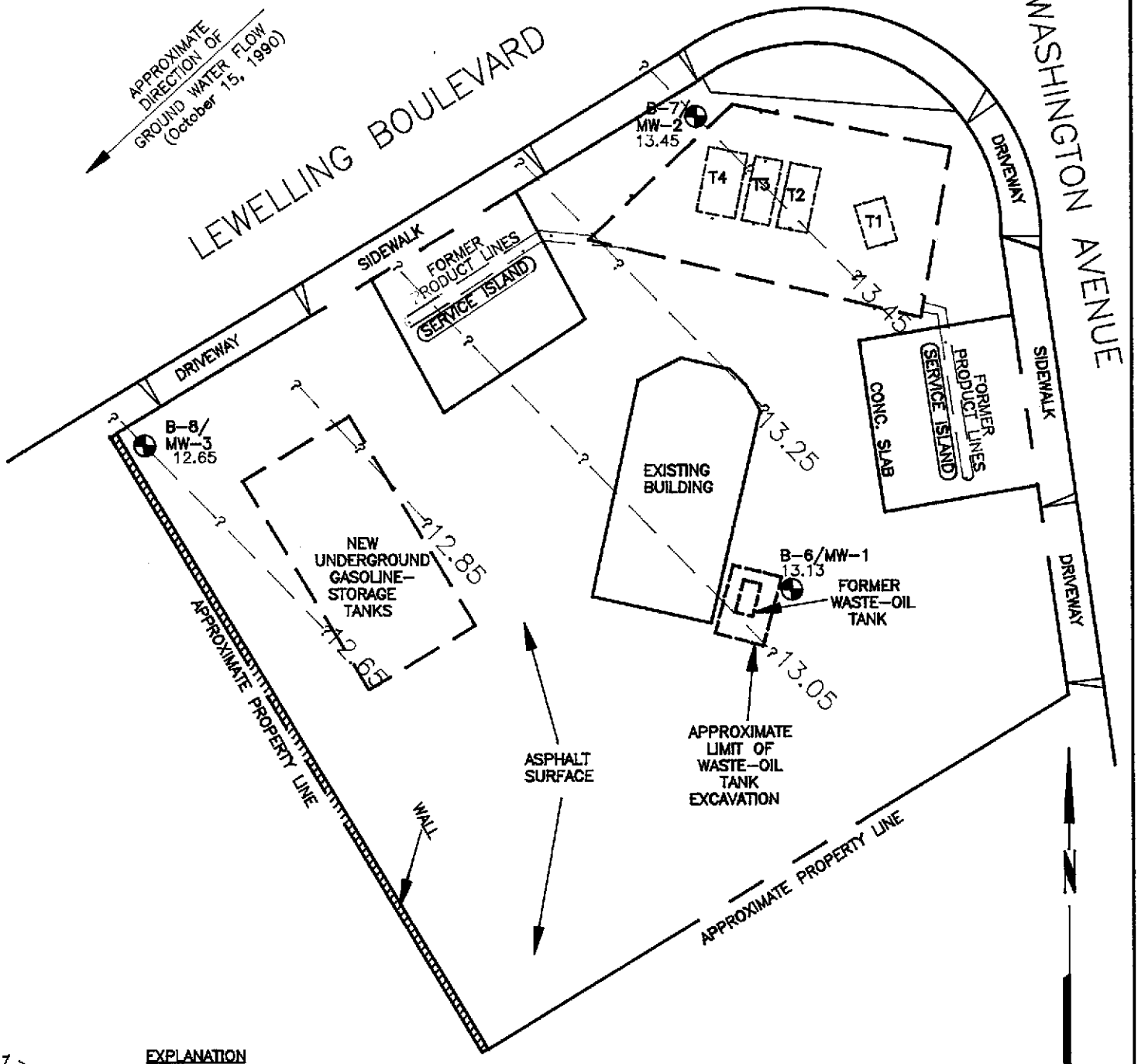
Source: Surveyed by Ron Archer, Civil Engineer Inc.

Applied GeoSystems

PROJECT 69034-3

GENERALIZED SITE PLAN
ARCO Station 601
712 Lewelling Boulevard
San Leandro, California

PLATE 2



EXPLANATION

13.45 = Line of equal elevation of ground water

13.45 = Elevation of ground water in feet, October 15, 1990

B-8/MW-3 = Ground-water monitoring well (Applied GeoSystems, June 1990)

Approximate Scale

30 15 0 30 60

feet

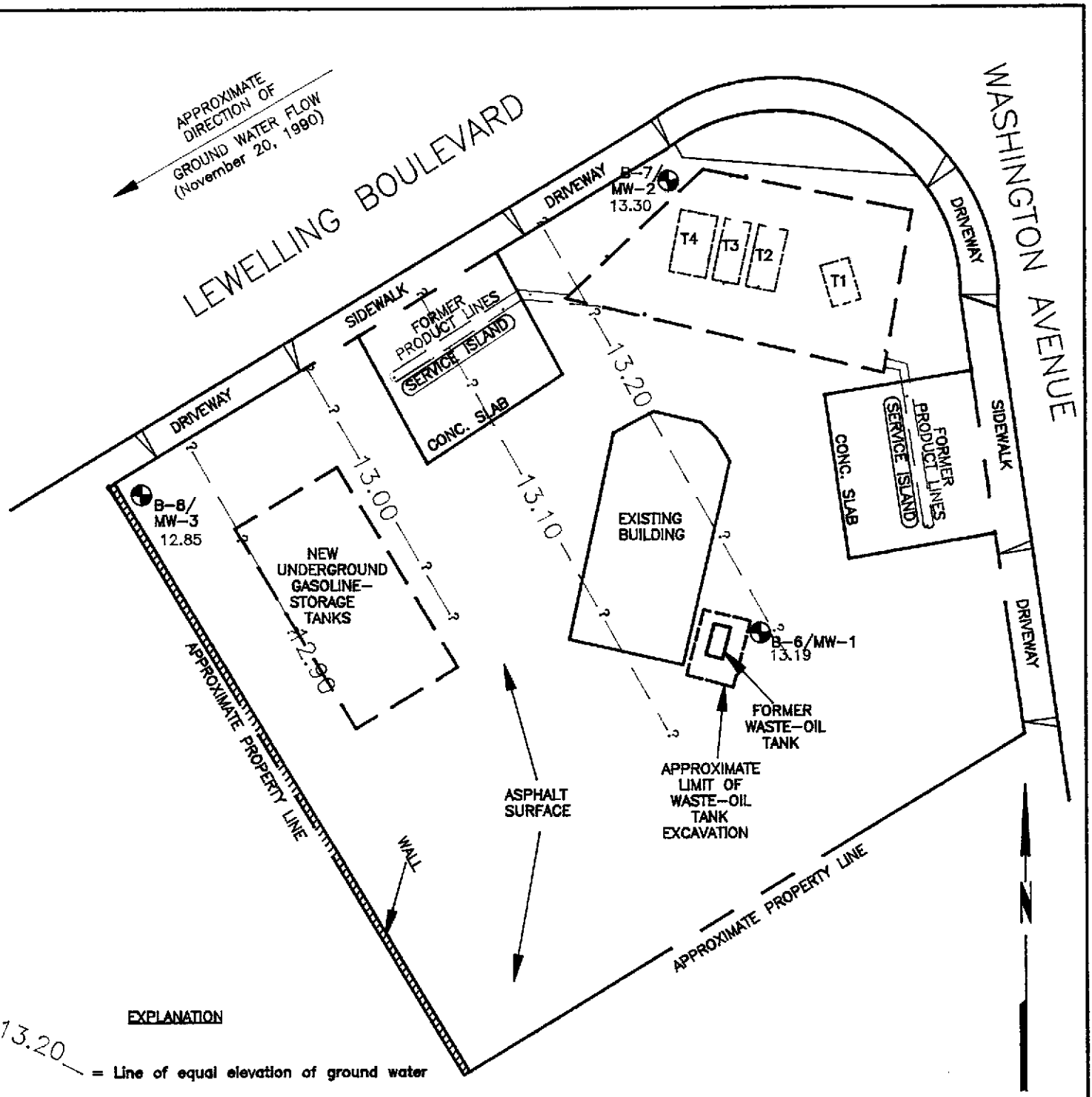
Source: Surveyed by Ron Archer, Civil Engineer Inc.

Applied GeoSystems

PROJECT 69034-3

GROUND-WATER GRADIENT MAP
ARCO Station 601
712 Lewelling Boulevard
San Leandro, California

PLATE 3



Source: Surveyed by Ron Archer, Civil Engineer Inc.

Applied GeoSystems

PROJECT 69034-3

GROUND-WATER GRADIENT MAP
ARCO Station 601
712 Lewelling Boulevard
San Leandro, California

PLATE 4

TABLE 1
GROUND-WATER MONITORING DATA
ARCO Station 601
712 Lewelling Boulevard
San Leandro, California

Date Well Measured	Depth of Well	Well Elevation	Depth-to-Water	Water Elevation	Product Evidence
MW-1					
07/17/90	11.20	22.98	9.03	13.95	emulsion
08/07/90	11.18	22.98	9.19	13.79	odor
10/15/90	11.18	22.98	9.85*	13.13	product, 0.25
11/20/90	11.18	22.98	9.79*	13.19	[redacted]
MW-2					
07/17/90	12.33	22.06	7.86	14.20	odor
08/07/90	12.24	22.06	8.03	14.03	ND
10/15/90	12.35	22.06	8.61	13.45	ND
11/20/90	12.35	22.06	8.76	13.30	ND
MW-3					
07/17/90	11.99	20.84	7.03	13.81	sheen
08/07/90	11.98	20.84	7.21	13.63	odor
10/15/90	11.98	20.84	8.19*	12.65	product, 0.75
11/20/90	11.98	20.84	7.98*	12.85	[redacted]

Measurements in feet.
Datum mean sea level.
Depth-to-Water measured in feet below top of casing.
ND = Not detected.
* Depth to water was calculated using the attached protocol (Appendix A).

TABLE 2
CUMULATIVE RESULTS OF GROUND WATER
LABORATORY ANALYSES
ARCO Service Station 601
712 Lewelling Boulevard
San Leandro, California
(Page 1 of 2)

Sample	TPHg	TPHd	B	T	E	X	TOG
MW-1							
07/17/90	NA	NR	NA	NA	NA	NA	NR
10/15/90	NA	NR	NA	NA	NA	NA	NR
MW-2							
07/17/90	[redacted]	850*	[redacted] (3,200)	2,900 (2,400)	690 (270)	3,600 (2,900)	<5,000
10/15/90	[redacted]	NR	650	290	110	560	NR
MW-3							
07/17/90	NA	NR	NA	NA	NA	NA	<5,000
10/15/90	NA	NR	NA	NA	NA	NA	NR

Results in micrograms per liter (ug/L) = [redacted]
NA: Not analyzed, floating product.
NR: Not requested.
TPHg: Total petroleum hydrocarbons as gasoline by EPA method 8015.
TPHd: Total petroleum hydrocarbons as diesel by EPA method 3550/3510.
B: Benzene, T: Toluene, E: Ethlybenzene, T: Total Xylene isomers.
BTEX: Measured by EPA method 8020/602.
TOG: Total oil and grease measured by Standard Method 503A/E.
<: Results reported as less than the detection limit.
* Applied analytical laboratories reports that the chromatograph resembled gasoline not diesel.
() BTEX results analyzed as VOCs.

TABLE 2
CUMULATIVE RESULTS OF GROUND WATER
LABORATORY ANALYSES
ARCO Station 601
712 Lewelling Boulevard
San Leandro, California
(page 2 of 2)

Well Number	BNAs	VOCs	Cadmium	Chromium	Lead	Zinc
MW-2						
07/17/90	340[a],170[b]	39[c]	<20	50	50	120
DWAL	--	40[c]	10	50	50	5000

Results are in parts per billion (ppb).
BNAs = base neutral and acid extractables including polynuclear aromatics
Concentrations are below laboratory reporting limits for respective compounds except as indicated.
([a] = naphthalene, [b] = 2-methylnaphthalene)
VOCs = volatile organics except for BTEX
Concentrations are below laboratory reporting limits for respective compounds except as indicated.
([c] = methylene chloride)
< = Below indicated laboratory reporting limit
DWAL = California Department of Health Services recommended drinking water action levels (July 1990)

GROUND-WATER SAMPLING PROTOCOL

The static water level in each well that contained water was measured with a Solinst® water-level indicator; this instrument is accurate to the nearest 0.01 foot. These ground-water depths were subtracted from wellhead elevations measured by Ron Archer, Civil Engineer, Inc., of Pleasanton, California, a licensed land surveyor, to calculate the differences in ground-water elevations.

The static water level in each well that was suspected to contain floating product was measured with an ORS® interface probe; this instrument is accurate to the nearest 0.01 foot. The probe contains two different sensor units, one for detecting the liquid/air interface, and one for distinguishing between water and hydrocarbon. The thickness of the floating product and the ground-water depths were recorded. The recorded thickness of the floating product was then multiplied by 0.80 to obtain an approximate value for the displacement of water by the floating product. This approximate displacement value is then subtracted from the measured depth to water to obtain a calculated depth to water. These calculated ground-water depths were subtracted from wellhead elevations measured by Ron Archer, Civil Engineer, Inc., of Pleasanton, California, a licensed land surveyor, to calculate the differences in ground-water elevations.

Water samples collected for subjective evaluation were collected by gently lowering approximately half the length of a clean Teflon® bailer past the air-water interface (if possible) and collecting a sample from near the surface of the water in the well. The samples were checked for measurable floating hydrocarbon product and sheen.

Before water samples were collected from the ground-water monitoring wells, the wells were purged until stabilization of the temperature, pH, and conductivity was obtained. Approximately 3 well casing volumes of water were purged before these characteristics stabilized. Turbidity measurements were also collected from the purged well water, but are not presented in this report at the request of Alameda County Health Care Agency. The quantity of water purged from the wells was calculated as follows:

$$1 \text{ well casing volume} = \pi r^2 h(7.48)$$

where:

r = radius of the well casing in feet.

h = column of water in the well in feet (well depth - depth to water).

7.48 = conversion constant from cubic feet to gallons

gallons of water purged/gallons in 1 well casing volume = well casing volumes removed.

After purging, each well was allowed to recharge to within 80% of the initial water level. Water samples were then collected with an Environmental Protection Agency (EPA) approved Teflon® bailer which had been cleaned with Alconox® and deionized water. The water samples were carefully poured into 40-milliliter glass vials, which were filled so as to produce a positive meniscus. Each sample container was preserved with hydrochloric acid, sealed with a cap containing a Teflon® septum, and subsequently examined for air bubbles to avoid headspace which would allow volatilization to occur. The samples were promptly transported in iced storage in a thermally-insulated ice chest, accompanied by a Chain of Custody Record, to a California-certified laboratory.

WELL PURGE DATA SHEET

Project Name: ARCO 601 Job No. 69034-3

Date: 10/15/90 Page 1 of 1

Well No. MW-2 Time Started 3:00

Time (hr)	Gallons (cum.)	Temp. (F)	pH	Conduct. (micromoh)
3:00	Begin pumping well MW-2			
3:05	.2	78.6	8.15	1.55
3:27	9	72.8	8.28	1.50
3:44	15	71.4	8.21	1.47
4:05	20	70.5	8.32	1.46
4:13	22	71.0	8.31	1.47
4:20	23	70.8	8.29	1.46
4:21	Well dewatered, stop pumping.			

Notes:

Depth to Bottom (feet)	12.35
Depth to Water - initial (feet)	8.61
Depth to Water - final (feet)	8.95
% recovery	91.0
Time Sampled	6:05
Gallons per Well Casing Volume	9.56
Gallons Purged	23
Well Casing Volumes Purged	2.4
Approximate Pumping Rate (gpm)	0.28

WELL PURGE DATA SHEET

Project Name: ARCO 601 Job No. 69034-3

Date: 10/15/90 Page 1 of 1

Well No. MW-2 Time Started 3:00

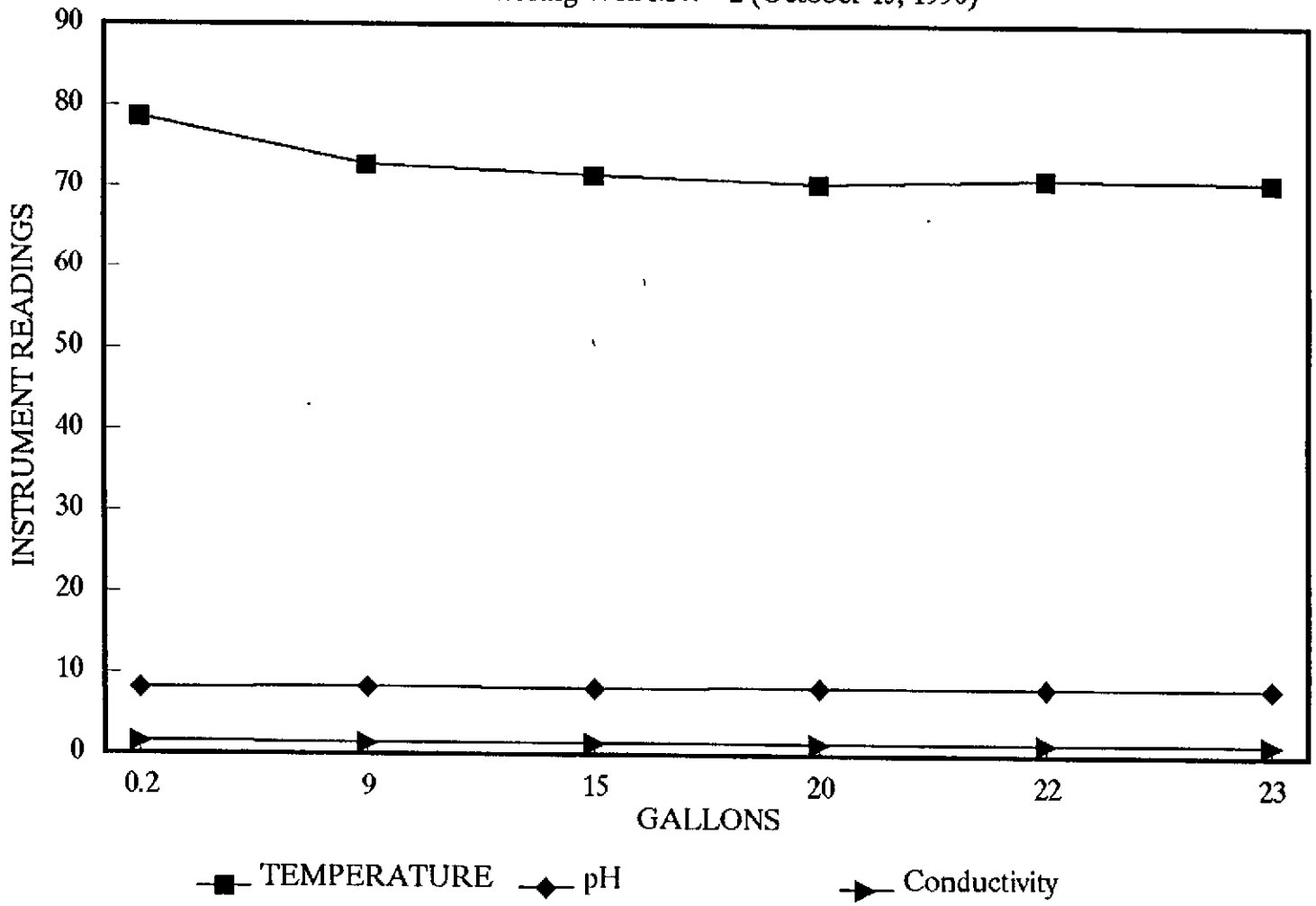
Time (hr)	Gallons (cum.)	Temp. (F)	pH	Conduct. (micromoh)
3:00	Begin pumping well MW-2			
3:05	.2	78.6	8.15	1.55
3:27	9	72.8	8.28	1.50
3:44	15	71.4	8.21	1.47
4:05	20	70.5	8.32	1.46
4:13	22	71.0	8.31	1.47
4:20	23	70.8	8.29	1.46
4:21	Well dewatered, stop pumping.			

Notes:

Depth to Bottom (feet)	: 12.35
Depth to Water - initial (feet)	: 8.61
Depth to Water - final (feet)	: 8.95
% recovery	: 91.0
Time Sampled	: 6:05
Gallons per Well Casing Volume	: 9.56
Gallons Purged	: 23
Well Casing Volumes Purged	: 2.4
Approximate Pumping Rate (gpm)	: 0.28

ARCO STATION 601 STABILIZATION GRAPH

Monitoring Well MW–2 (October 15, 1990)



Applied GeoSystems

CHAIN-OF-CUSTODY RECORD

RECEIVED
OCT 31 1990
APPLIED GEOSYSTEMS
SAN JOSE BRANCH

PROJ. NO.	PROJECT NAME
6703-4-3	ARCO 601
P.O. NO.	SAMPLERS (Signature)
	Mike Bannister

DATE MM/DD/YY	TIME		No. of Cont-ainers	TPHgasoline (8015)	BTEX (602/8020)	TPHdiesel (8015)						Preserved?	REMARKS	LABORATORY I.D. NUMBER
				ANALYSIS										
10/15/90	0900	W-8-MW2	4	X	X							HCl	2 week	
10/15/90	2:30	W-8-MW3	1										Fingerprint 2week	
10/15/90	0900	W-9-MW1	1										Fingerprint 2weeks	

RELINQUISHED BY (Signature):	DATE / TIME	RECEIVED BY (Signature):
Mike Bannister	10/16/90 9:15	Benny D. Gardner # 282
RELINQUISHED BY (Signature):	DATE / TIME	RECEIVED BY (Signature):
Benny D. Gardner	10/16/90 10:16	
RELINQUISHED BY (Signature):	DATE / TIME	RECEIVED FOR LABORATORY BY (Signature):

Laboratory:

Turn Around:

SEND RESULTS TO:
Applied GeoSystems
3315 Almaden Expressway
Suite 34
San Jose, California 95118
(408) 264-7723

Proj. Mgr.: DAVE HIGGINS

APPLIED ANALYTICAL

Environmental Laboratories

42501 Albrae St., Suite 100
Fremont, CA 94538
Bus: (415) 623-0775
Fax: (415) 651-8647

ANALYSIS REPORT

1020lab.frm

Attention:	Mr. Dave Higgins	Date Sampled:	10-15-90
	Applied GeoSystems	Date Received:	10-16-90
	3315 Almaden Expressway	BTEX Analyzed:	10-22-90
	San Jose, CA 95118	TPHg Analyzed:	10-22-90
Project:	AGS 69034-3	TPHd Analyzed:	NR
		Matrix:	Water

	Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPHg	TPHd
	ppb	ppb	ppb	ppb	ppb	ppb
Detection Limit:	10	10	10	10	100	100
SAMPLE Laboratory Identification						
W-8-MW2 W1010263	650	290	110	560	6400	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.

Laboratory Representative

October 24, 1990
Date Reported

APPLIED ANALYTICAL LABORATORY IS CERTIFIED BY THE STATE OF CALIFORNIA
DEPARTMENT OF HEALTH SERVICES AS A HAZARDOUS WASTE TESTING LABORATORY
(Certification No. 153)

APPLIED ANALYTICAL

Environmental Laboratories

42501 Albrae St., Suite 100
Fremont, CA 94538
Bus: (415) 623-0775
Fax: (415) 651-8647

ANALYSIS REPORT

1020lab.frm

Attention:	Mr. Dave Higgins	Date Sampled:	10-15-90
	Applied GeoSystems	Date Received:	10-16-90
	3315 Almaden Expressway	BTEX Analyzed:	NR
	San Jose, CA 95118	TPHg Analyzed:	10-23-90
Project:	AGS 69034-3	TPHd Analyzed:	10-29-90
		Matrix:	Water

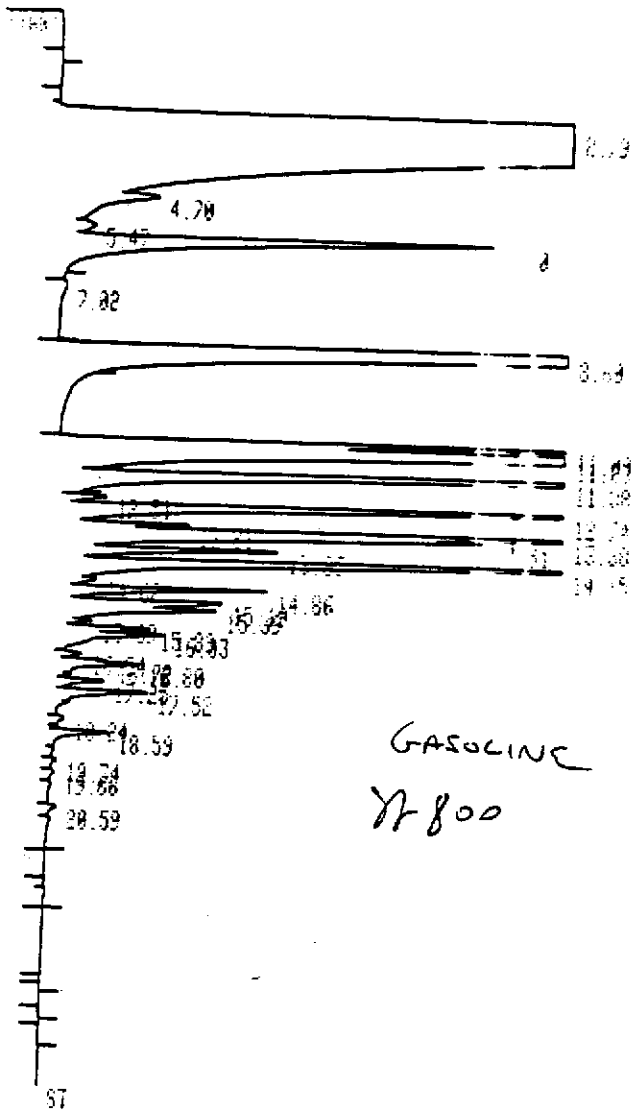
Samples: W-8-MW3, W-9-MW1

Lab Job: W1010262,W1010264

Both samples were analyzed for TPHg and TPHd in order to identify the product type. The chromatographs resulting from the gasoline analysis matched the gasoline standard. The chromatographs from the diesel analysis showed a much lower molecular weight composition than diesel. No hydrocarbons heavier than gasoline were detected. The chromatographs are included for your files.

Thank you,

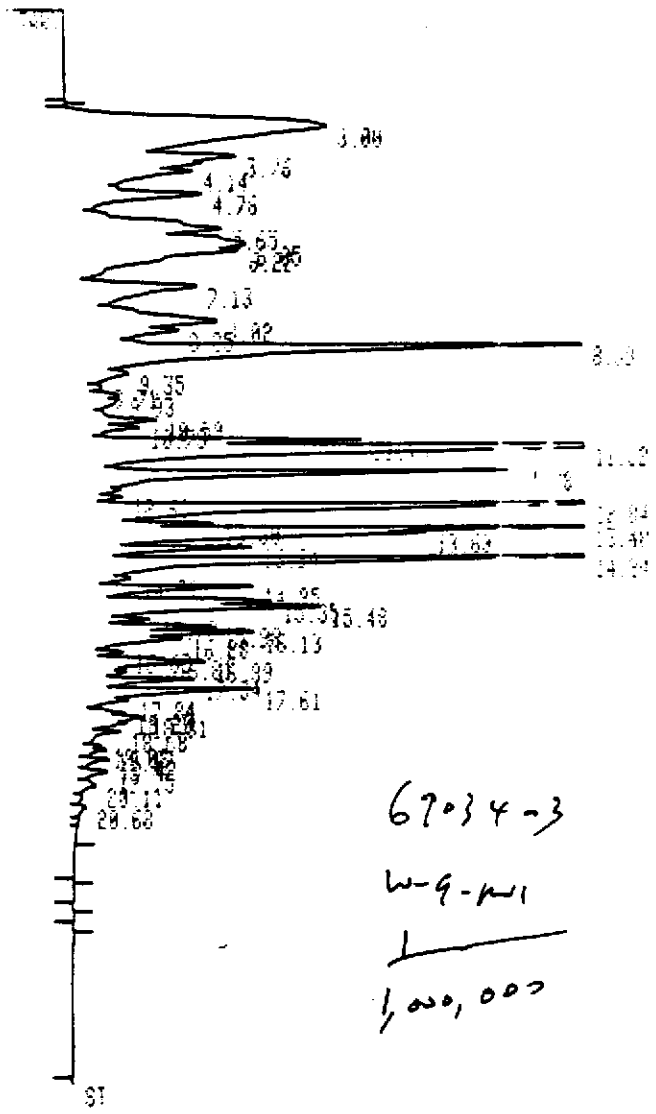
Laura Kuck
Laboratory Manager
Applied Analytical



RUN # 1842
WORKFILE ID: C
WORKFILE NAME:

ESTD

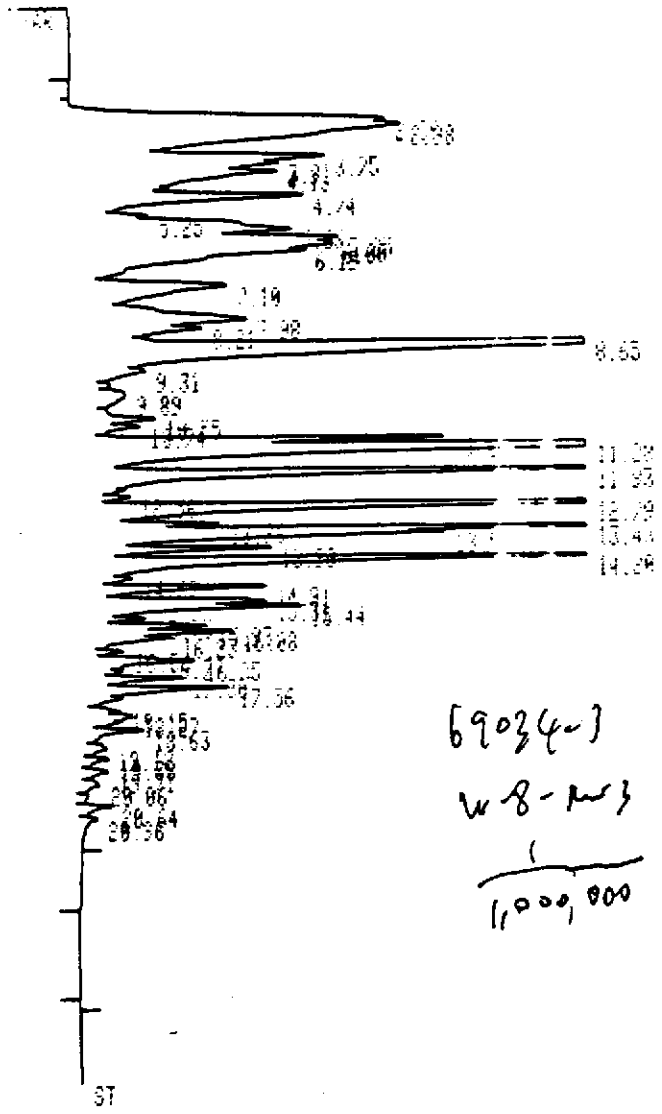
RT	AREA	TYPE	CAL #	AMOUNT
2.29	7108100	PV		0.000
4.20	140650	VV		0.000
5.47	32605	VV		0.000
5.80	371580	VB	1	20.363
7.02	2619	BB		0.000
8.60	1801000	PB	2	115.440
11.03	247360	PV	3	23.153
11.23	1390600	VB	4	100.620
11.88	527420	BB	5	39.589
12.51	10079	BV		0.000
12.74	328580	VV	6	103.730
13.21	40889	VV		0.000
13.38	294000	VV		0.000
13.51	193060	VV		0.000
13.85	98209	VV		0.000
14.15	436670	VV		0.000
14.62	14874	VV	7	2.632
14.86	90574	VV	8	11.684
15.19	90595	VV		3.050
15.39	81719	VV	9	12.748



67034-3
W-9-M1
1
1,000,000

RUN # 1839
WORKFILE ID: C
WORKFILE NAME:

ESTD RT	AREA	TYPE	CAL #	AMOUNT
3.90	633000	BV		0.000
3.76	128690	VV		0.000
4.14	131490	VV		0.000
4.76	156980	VV		0.000
5.65	203650	VV		0.000
6.05	214820	VV		0.000
6.22	220650	VV		0.000
7.13	177910	VV		0.000
8.02	134770	VV		0.000
8.25	93394	VV		0.000
8.69	495470	VV	2	31.760
9.35	62732	VV		0.000
9.71	18965	VV		0.000
9.93	30306	VV		0.000
10.59	75627	VV		0.000
10.78	46926	VV		0.000
11.13	137190	VV	3	12.841
11.32	729850	VV	4	82.914
11.98	293390	VV	5	22.833
13.61	29476	VV		0.000



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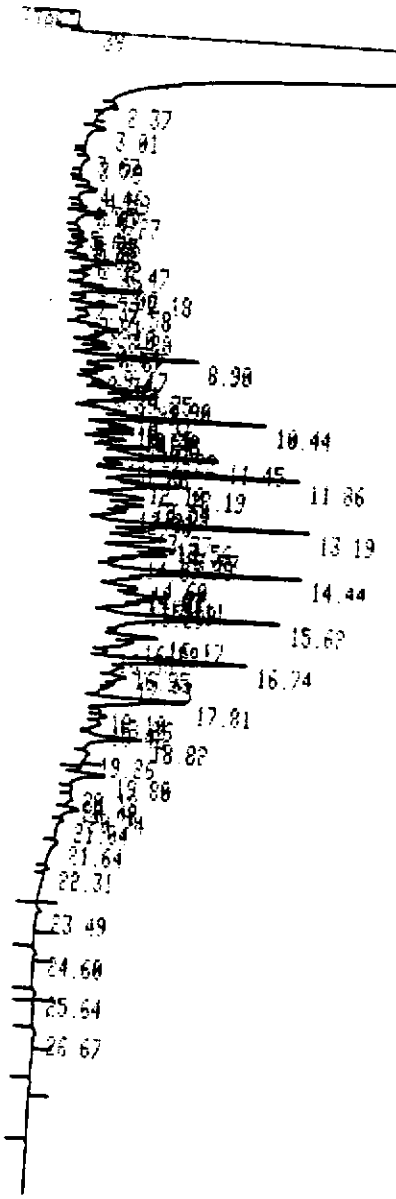
RUN # 1840
WORKFILE ID: C
WORKFILE NAME:

ESTD RT	AREA	TYPE	CAL #	AMOUNT
2.86	220950	PH		0.000
2.98	524890	HV		0.000
3.75	184660	VV		0.000
3.91	133720	VV		0.000
4.13	231130	VV		0.000
4.74	231560	VV		0.000
5.25	35370	VV		0.000
5.63	262430	VV		0.000
5.85	150930	VV	1	9.271
6.00	194790	VV		0.000
6.19	299150	VV		0.000
7.10	216n40	VV		0.000
7.98	230310	VV		0.000
8.21	107760	VV		0.000
8.65	886590	VV	2	36.831
9.31	71841	VV		0.000
9.89	72416	VV		0.000
10.55	69704	VV		0.000
10.74	43123	VV		0.000
11.08	172020	VV	3	16.191
11.28	924370	VV	4	67.012
11.93	378550	VV	5	28.429
[illegible]	[illegible]	VV		[illegible]

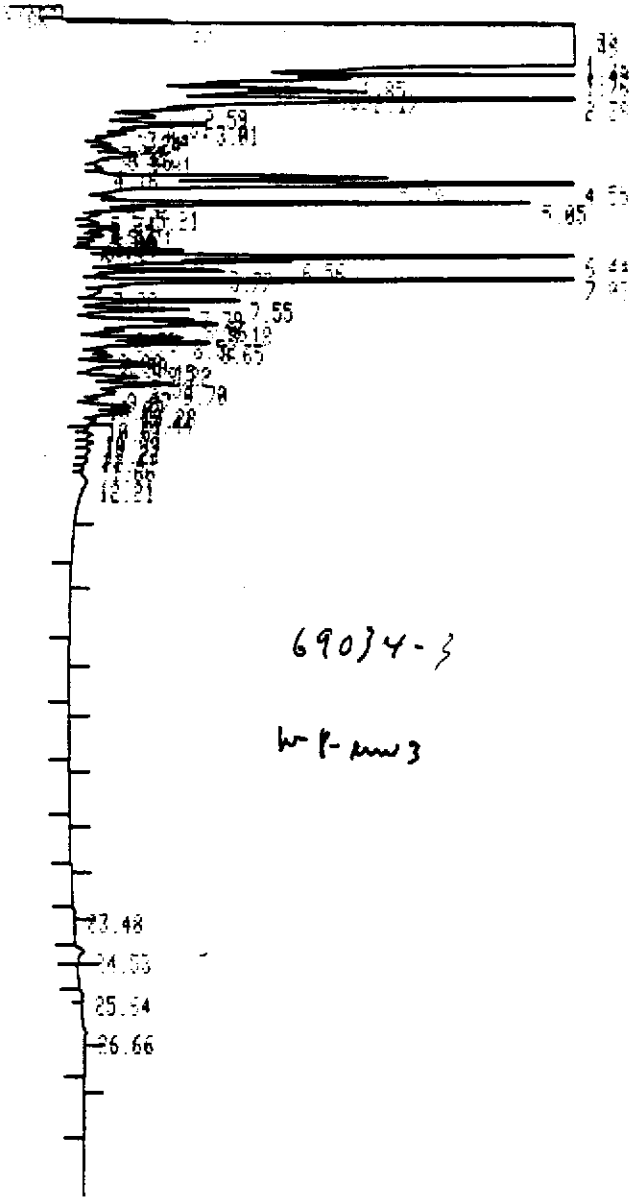
14.30	11427	BB	0.233	9.213
16.38	10427	PB	0.094	8.406
18.11	14883	BB	0.090	11.999
19.64	15422	BB	0.093	12.433
21.04	15122	BB	0.096	12.191
22.32	15459	PB	0.097	12.463
23.50	16866	PB	0.108	13.597
24.60	12730	PB	0.107	10.263
25.65	7475	PB	0.103	6.026
26.67	4229	BB	0.133	3.409

TOTAL AREA= 124040
MUL FACTOR= 1.0000E+00



Diesel Std

320



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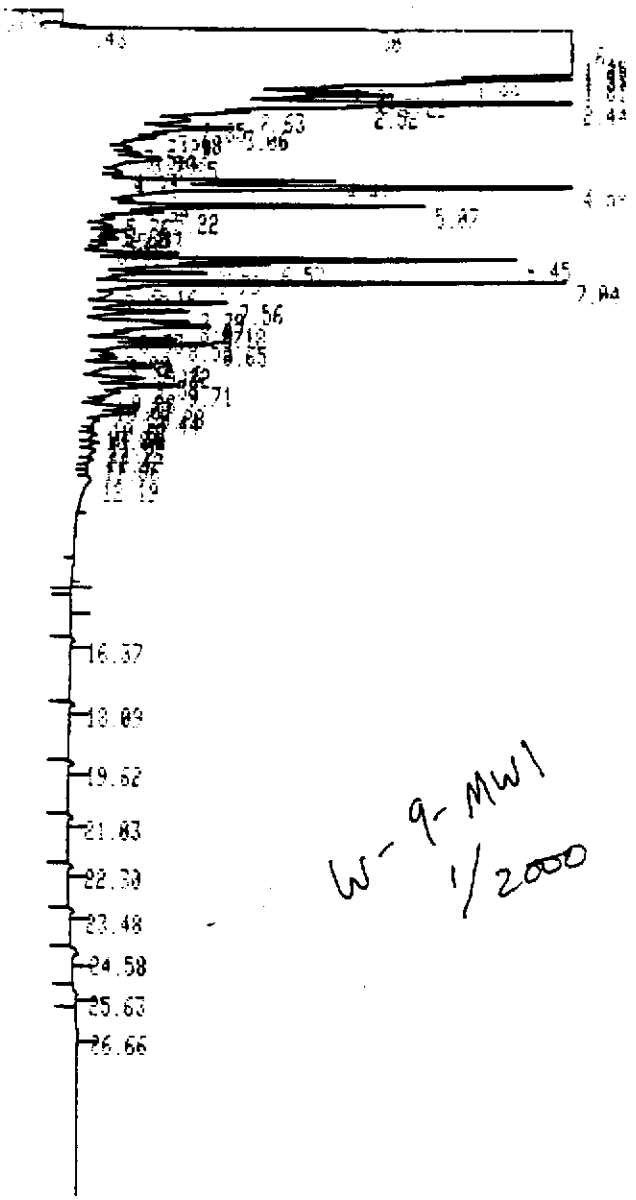
WP-MW3

RUN # 285
WORKFILE ID: C
WORKFILE NAME:

AREA%

RT	AREA	TYPE	AR/HT	AREA%
0.39	46509	BV	0.030	0.026
0.45	223510	D VH	0.019	0.094
0.49	2.2709E+08	†SHB	0.451	95.536
1.21	403800	TBV	0.034	0.170
1.28	103950	DTVP	0.029	0.044
1.35	1347200	TPP	0.049	0.567
1.49	86850	TPB	0.031	0.037
1.76	202520	TPH	0.048	0.085
1.85	110310	THP	0.082	0.046
1.97	22921	TPP	0.041	0.010
2.09	126590	TPV	0.059	0.053
2.17	238190	TVV	0.082	0.100
2.38	1301800	TVV	0.078	0.548
2.59	83164	TVP	0.095	0.035
2.81	58084	TPV	0.115	0.024
3.01	130180	TVV	0.096	0.055



W-9-MW1
1/2000

RUN # 279
WORKFILE ID: C
WORKFILE NAME:

AREA%

RT	AREA	TYPE	AR/HT	AREA%
0.43	9919	PV	0.031	0.004
0.50	95850	D VH	0.022	0.034
0.61	2.7334E+08	VSHB	0.543	97.025
1.25	117950	DTBB	0.048	0.042
1.40	1001600	TBP	0.046	0.356
1.53	48904	DTVB	0.033	0.017
1.81	151820	TBP	0.045	0.054
1.89	62306	TPP	0.087	0.022
2.01	19378	TPP	0.044	0.007
2.14	77139	TPH	0.056	0.027
2.22	119670	THP	0.066	0.043
2.44	513760	TPH	0.066	0.183
2.52	86982	DTHP	0.055	0.031
2.63	36684	TPP	0.083	0.013
2.85	44570	TPP	0.113	0.016