HAGEMAN-AGUIAR, INC.
Underground Contamination Investigations, Groundwater Consultants, Environmental Engineering

REPORT OF QUARTERLY GROUNDWATER SAMPLING

(sampled March 24, 1995)

QUALITY TUNE-UP
2780 Castro Valley Boulevard
Castro Valley, CA

April 3, 1995

3732 Mt. Diablo Blvd. Suite 372 Lafayette, California 94549 (510) 284-1661 FAX (510) 284-1664

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I. INTRODUCTION

The site location is the Quality Tune-up facility in Castro Valley, California. The location of the site is shown in Figure 1. In conjunction with a previous service station operation, the site has historically operated four underground fuel storage tanks for a number of years.

In February 1987 the two 7,500-gallon Gasoline tanks and one Waste Oil tank were removed by 4M Construction of Madera, California. Soil and groundwater samples were collected, and were subsequently analyzed by Trace Analysis Laboratory, Inc. Of the seven soil samples collected, only "Extractable Hydrocarbons" were detected in those soil samples collected in the vicinity of the Waste Oil tank location. Analysis of the groundwater sample indicated 26 mg/L (ppm) of Volatile Hydrocarbons, 420 µg/L (ppb) of Benzene, 2,000 µg/L (ppb) of Toluene and 9,400 µg/L (ppb) of Total Xylenes.

On June 11, 1991, the final 8,000-gallon underground storage tank was removed from the site by Minter & Fahy Construction, Inc, Pacheco, California. This underground tank was utilized for Gasoline storage until February 1987, at which time it was converted to Waste Oil storage. At the time of removal, the tank was apparently being utilized for storage of Waste Oil. Soil samples were collected from the tank excavation and were subsequently analyzed by Chromalab Laboratory, Inc., San Ramon, California. The results of laboratory analyses indicated no detectable of concentrations of Diesel, Gasoline, Benzene, Oil & Grease, Halogenated Volatile Organics (EPA 8010), or Semi-Volatile Organics (EPA 8270). A groundwater sample was collected from the tank excavation and was subsequently analyzed. The results of laboratory

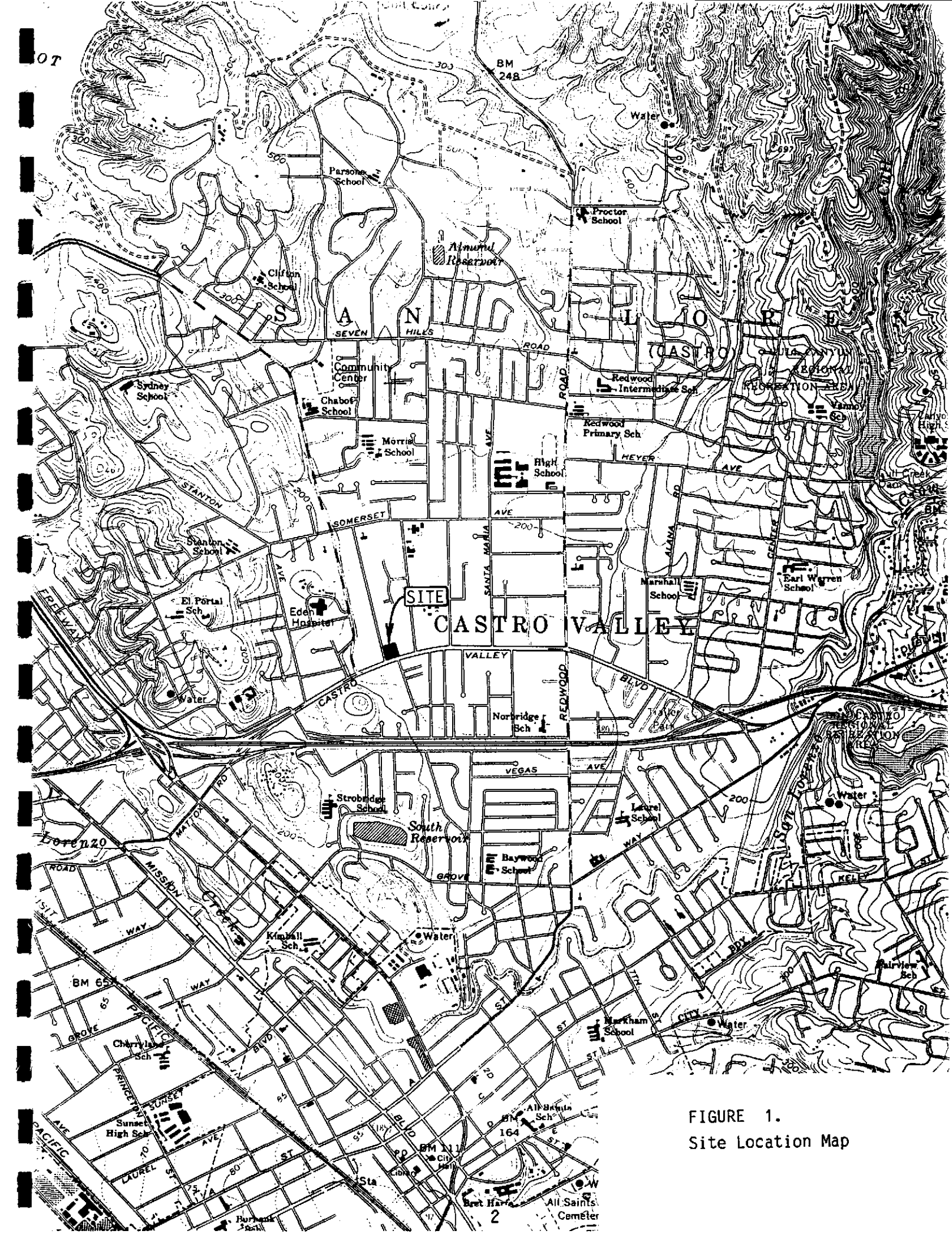


FIGURE 1.
Site Location Map

analyses indicated no detectable of concentrations of Diesel, Gasoline, Benzene, Oil & Grease, Halogenated Volatile Organics (EPA 601), or Extractable Organics (EPA 625). Soil samples collected from the spoils pile indicated the presence of Gasoline at concentrations of up to 1.4 mg/kg (ppm), and Oil & Grease at concentrations of up to 24 mg/kg (ppm).

Following the underground tank removals, three on-site shallow groundwater monitoring wells were installed by Hageman-Aguiar, Inc., on May 20, 1992. The report of that soil and groundwater investigation was issued on July 17, 1992. The locations of the monitoring wells are shown in Figure 2.

On March 24, 1995, all three (3) of the on-site monitoring wells were sampled for the laboratory analysis for dissolved petroleum constituents. In addition to the monitoring well sampling, other tasks included water level measurements for each monitoring well. This eighth "round" of groundwater sampling has been conducted as part of the quarterly groundwater monitoring program at the site, as required by the Alameda County Department of Environmental Health and the California Regional Water Quality Control Board (RWQCB), San Francisco Bay Region.

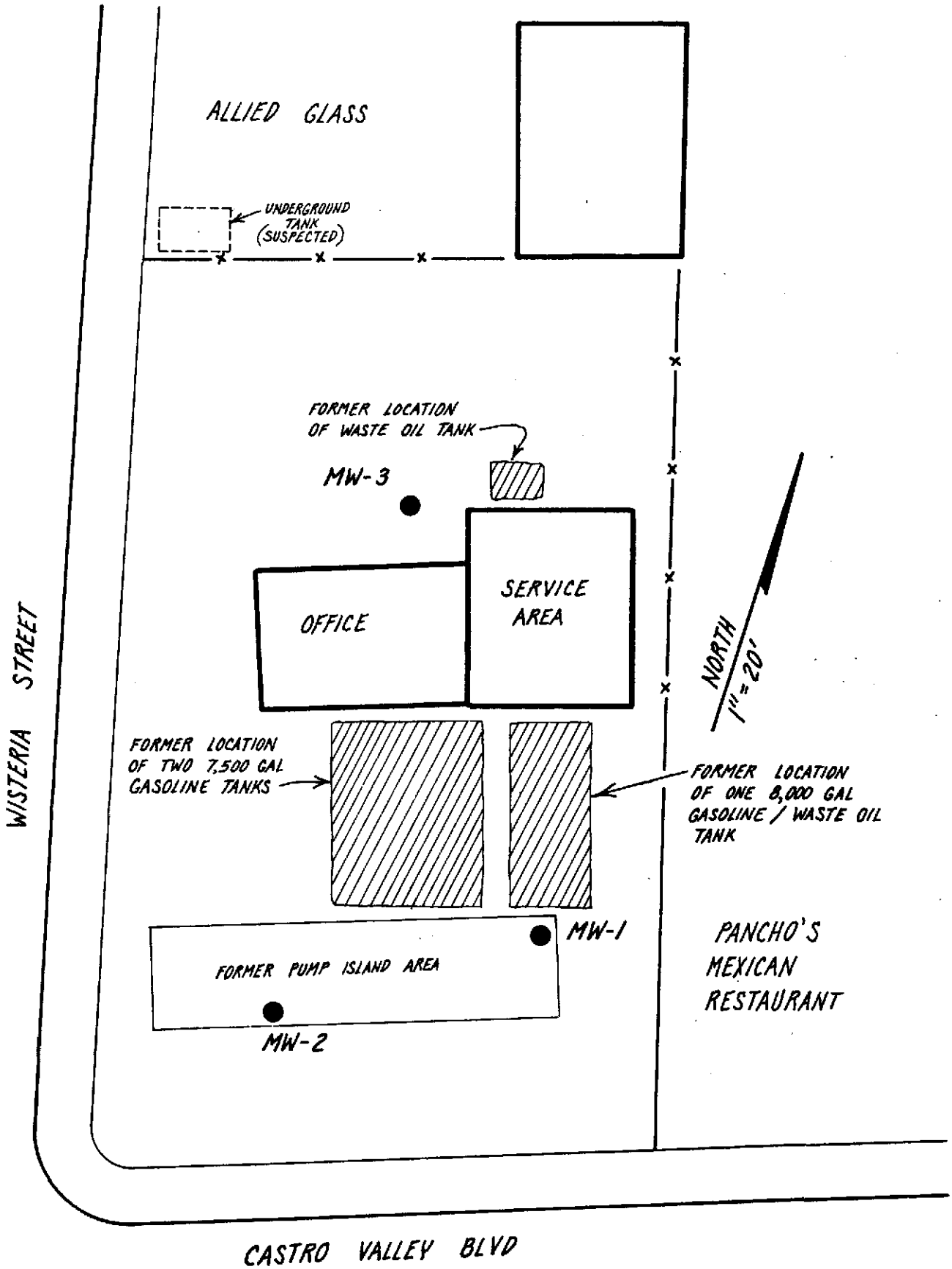


FIGURE 2.
Site Map.

II. FIELD WORK

Monitoring Well Sampling

On March 24, 1995, groundwater samples were collected from each of the three on-site monitoring wells (MW-1, MW-2 and MW-3). The locations of the monitoring wells are shown on Figure 2 (site map). Prior to groundwater sampling, each well was purged by bailing several casing volumes of water. Field conductivity, temperature, and pH meters were present on-site during the monitoring well sampling. As the purging process proceeded, the three parameters were monitored. Purging continued until readings appeared to have reasonably stabilized. After the water level in the well had attained 80% or more of the original static water level, a groundwater sample was collected using a clean teflon bailer. The water samples were placed inside appropriate 40 mL VOA vials and 1-liter amber bottles free of any headspace. The samples were immediately placed on crushed ice, then transported under chain-of-custody to the laboratory at the end of the work day.

At the time each monitoring well was sampled, the following information was recorded in the field: 1) depth-to-water prior to purging, using an electrical well sounding tape, 2) identification of any floating product, sheen, or odor prior to purging, using a clear teflon bailer, 3) sample pH, 4) sample temperature, and 5) specific conductance of the sample.

Copies of the well sampling logs are included as Attachment A.

Wastewater Generation

All water removed from the wells during development and purging was drummed and stored on-site until the results of laboratory analyses were obtained. Based upon these results, the water should be transported as a hazardous liquid waste under proper manifest to an appropriate TSD facility for treatment and disposal. The disposal of wastewater is the responsibility of the property owner (waste generator), and is beyond the scope of work as described in this report.

III. RESULTS OF WATER LEVEL MEASUREMENTS

Shallow Groundwater Flow Direction

Shallow water table elevations were measured on March 24, 1995. These measurements are shown in Table 1. Figure 3 presents a contour map for the shallow groundwater table beneath the site. As shown in this figure, the data from these monitoring wells indicate that the shallow groundwater flow beneath the site was in the southerly direction during this most recent round of groundwater sampling.

Shallow Water Table Hydraulic Gradient

Figure 3 presents the contour map for the shallow groundwater table beneath the site. As shown in this figure, the shallow groundwater table through the center of the site appears to have a calculated hydraulic gradient of dH/dL = 1.0'/19.5' = 0.051.

Historical Water Level Measurements

In addition to the most recent measurement of the shallow water table elevations prior to the groundwater sampling on June 28, 1994, a tabulation of all historical water level measurements for the site has been completed. Table 2 presents the results of all water level measurements collected between May 20, 1992, and the present time.

TABLE 1.

Shallow Water Table Elevations
March 24, 1995

Well	Top of Casing Elevation (feet)	Depth to Water (feet)	Water Table Elevation (feet)
MW-1	163.70	6.55	157.15
MW-2	163.33	7.21	156.12
MW-3	163.35	3.32	160.03

Datum is Alameda County Benchmark Anita-CVB.
Standard surveyor brass disc on top-of-curb over drop inlet on Anita Avenue.

Elevation = 168.04 MSL

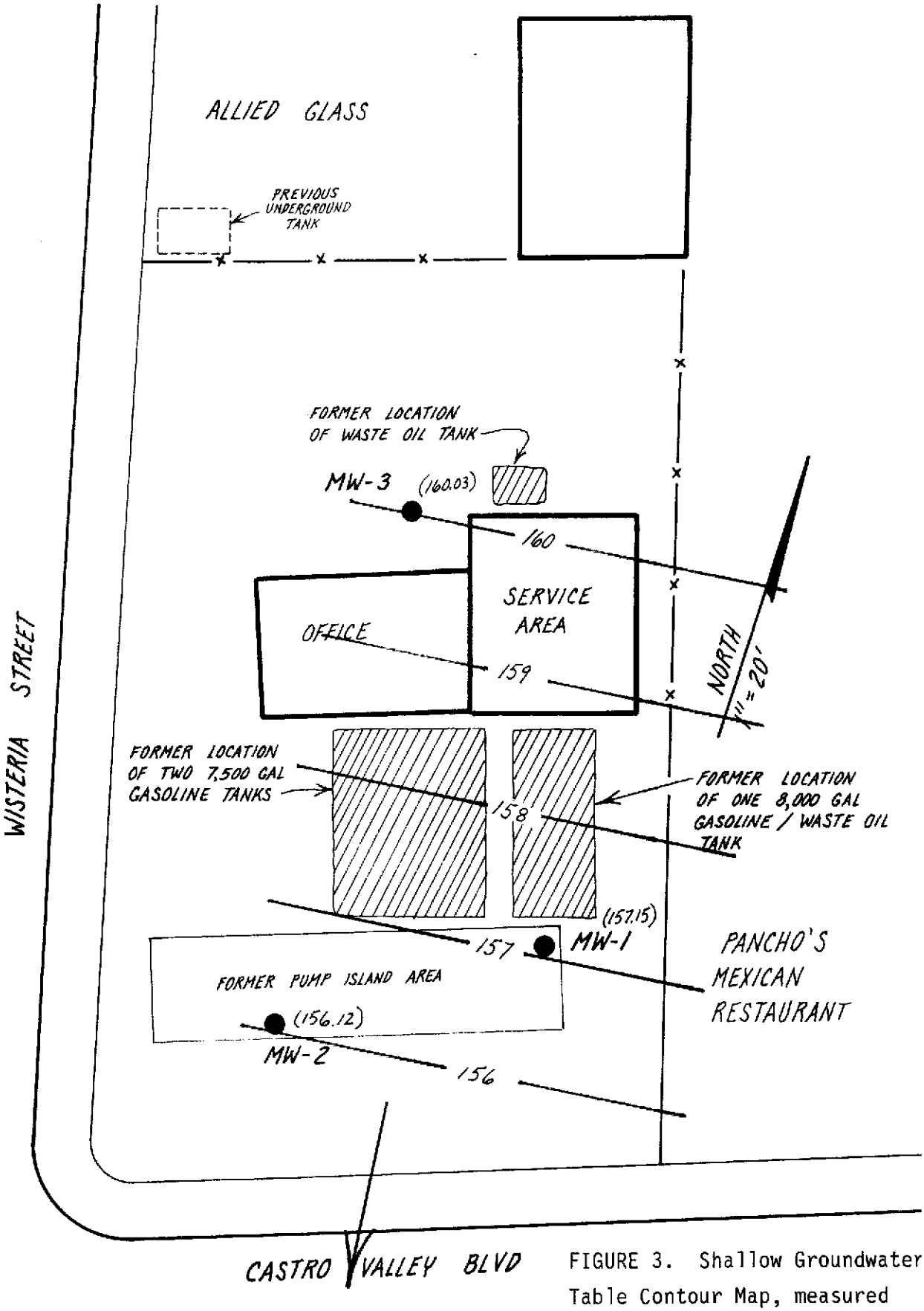


FIGURE 3. Shallow Groundwater Table Contour Map, measured March 24, 1995.

TABLE 2.

Historical Water Table Elevations
(feet)

Well	Date of Measurement								
	5-20-92	8-19-92	11-18-92	3-1-93	5-24-93	8-16-93	11-15-93	2-11-94	6-28-94
MW-1	152.67	152.64	152.40	154.88	153.27	153.00	153.52	154.96	153.09
MW-2	152.65	152.47	151.84	154.23	153.01	152.69	153.01	154.15	153.08
MW-3	154.28	154.48	154.05	156.88	154.89	154.48	154.87	154.82	154.65
Flow Direction	SE	SE	S	S	S	S	S	SW	SE
Hydraulic Gradient	0.025	0.029	0.030	0.035	0.027	0.025	0.024	0.020	0.025

Well	Date of Measurement								
	9-12-94	12-13-94	3-24-95						
MW-1	152.97	154.25	157.15						
MW-2	152.76	153.51	156.12						
MW-3	154.34	156.03	160.03						
Flow Direction	S	S	S						
Hydraulic Gradient	0.022	0.034	0.051						

IV. SHALLOW GROUNDWATER SAMPLING RESULTS

Laboratory Analysis

All analyses were conducted by a California State DOHS certified laboratory in accordance with EPA recommended procedures (Priority Environmental Laboratory, Milpitas, CA).

All shallow groundwater samples were analyzed for 1) total petroleum hydrocarbons as Gasoline (EPA method 8015) and 2) Benzene, Toluene, Ethylbenzene, and Total Xylenes (EPA method 602).

Results of Laboratory Analysis

Table 3 presents the results of the laboratory analysis of the groundwater samples collected from monitoring wells MW-1, MW-2 and MW-3. For this most recent round of quarterly sampling, dissolved Gasoline was detected in wells MW-1, MW-2 and MW-3 at concentrations of 6,000 µg/L (ppb), 1,500 µg/L (ppb) and 290 µg/L (ppb), respectively.

In addition, Benzene was present in the shallow groundwater samples collected from wells MW-1 and MW-3 at concentrations of 7.3 µg/L (ppb) and 14 µg/L (ppb), respectively during this most recent groundwater sampling episode.

A copy of the laboratory certificate for the water sample analyses is included as Attachment B.

TABLE 3.

Shallow groundwater Sampling Results

Well	Date	TPH as Gasoline (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl-benzene (ug/L)	Total Xylenes (ug/L)
MW-1	05-20-92	260	ND	ND	4.4	9.0
	08-19-92	ND	ND	ND	ND	ND
	11-18-92	160	0.9	4.0	2.6	9.4
	02-22-93	9,000	15	34	46	91
	05-24-93	540	0.5	0.9	2.0	4.5
	08-16-93	53	ND	ND	1.0	4.7
	11-15-93	780	0.6	0.9	1.1	5.2
	02-11-94	3,000	3.9	2.5	12	26
	06-28-94	180	ND	ND	4.2	9.0
	09-12-94	ND	ND	ND	ND	ND
	12-13-94	580	ND	ND	2.6	3.9
	03-24-95	1,500	7.3	6.2	12	28
MW-2	05-20-92	ND	ND	ND	ND	ND
	08-19-92	ND	ND	ND	ND	ND
	11-18-92	70	ND	ND	0.9	6.7
	02-22-93	ND	ND	ND	ND	ND
	05-24-93	ND	ND	ND	ND	ND
	08-16-93	ND	ND	ND	ND	ND
	11-15-93	ND	ND	ND	ND	ND
	02-11-94	ND	ND	ND	ND	ND
	06-28-94	ND	ND	ND	ND	ND
	09-12-94	ND	ND	ND	ND	ND
	12-13-94	120	ND	ND	ND	0.8
	03-24-95	290	ND	0.5	10	18
Detection Limit		50	0.5	0.5	0.5	0.5

ND = Not Detected

TABLE 3. (continued)

Shallow groundwater Sampling Results

Well	Date	TPH as Gasoline (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl-benzene (ug/L)	Total Xylenes (ug/L)
MW-3	05-20-92	4,200	4.5	1.2	13	43
	08-19-92	280	5.3	16	25	61
	11-18-92	4,800	26	27	35	98
	02-22-93	6,200	9.4	15	30	66
	05-24-93	1,100	1.5	3.4	4.1	9.9
	08-16-93	420	2.1	3.0	3.8	23
	11-15-93	3,000	2.4	3.1	4.4	20
	02-11-94	3,700	7.7	6.8	12	29
	06-28-94	230	ND	4.0	8.5	19
	09-12-94	460	0.7	1.4	3.5	4.7
	12-13-94	1,400	1.1	2.1	5.4	9.5
	03-24-95	6,000	14	15	10	79
Detection Limit		50	0.5	0.5	0.5	0.5

ND = Not Detected

V. DATA ANALYSIS

Chemical Concentration Contours

Figures 4 and 5 show lines of equal concentration for Gasoline and Benzene in the shallow groundwater. Since these lines have been drawn based upon relatively limited data (three data points), the plots represent only a small portion of the respective concentration plume. The plots do continue to suggest, however, that the dissolved concentrations are centered somewhere around the rear of the service/office building (vicinity of well MW-3).

The water sample collected from shallow monitoring well MW-3 indicates the highest Gasoline contamination in the shallow groundwater on the Quality Tune-Up site. Well MW-3 is located down-gradient of the previous Allied Glass underground tank, based on the measured shallow groundwater flow direction beneath the subject site. The most recent sampling data continue to suggest the possibility of migration of subsurface contamination from the adjoining Allied Glass property.

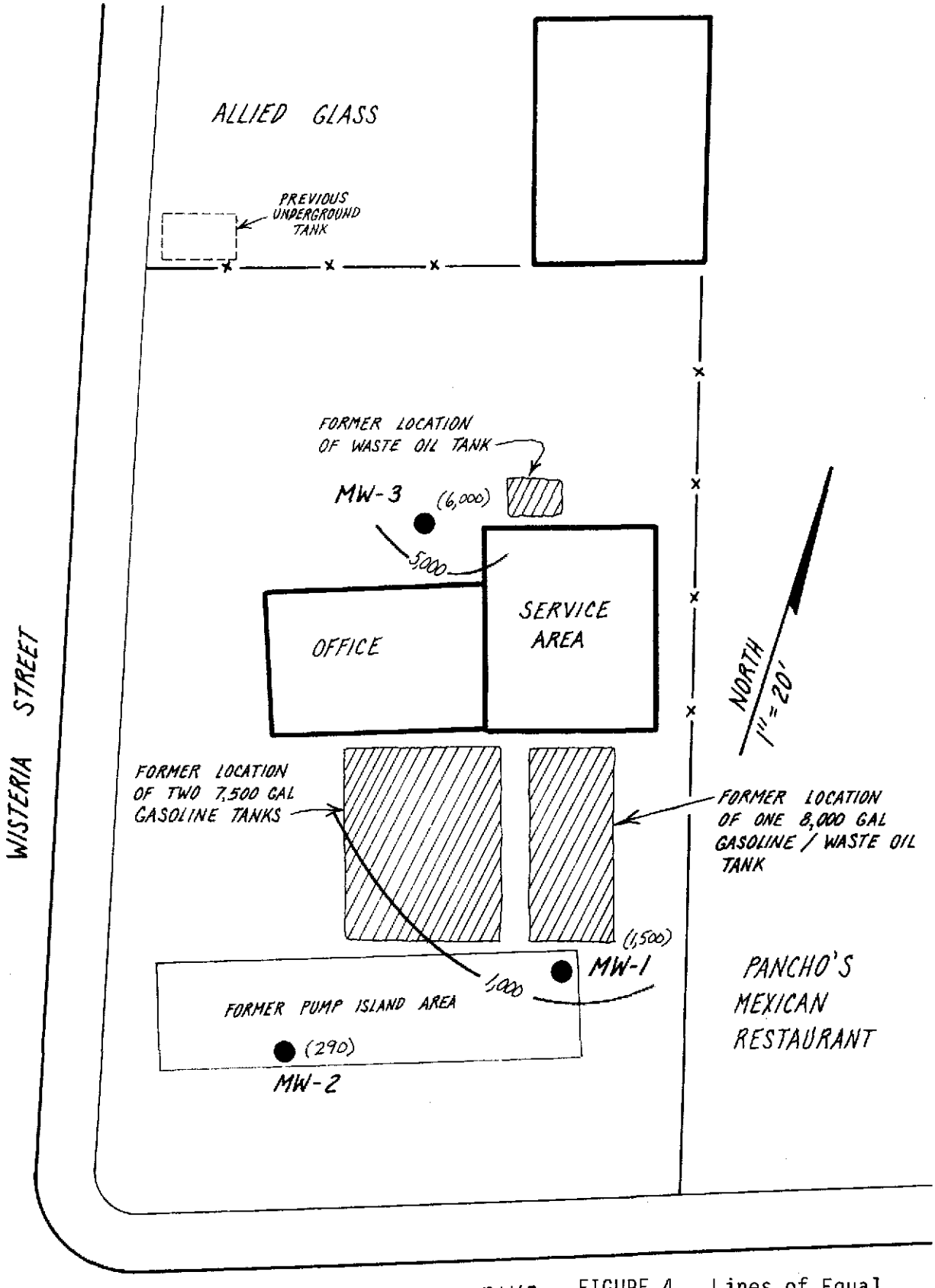


FIGURE 4. Lines of Equal Concentration of Gasoline in ug/L (ppb) in the Shallow Groundwater. (March 24, 1995

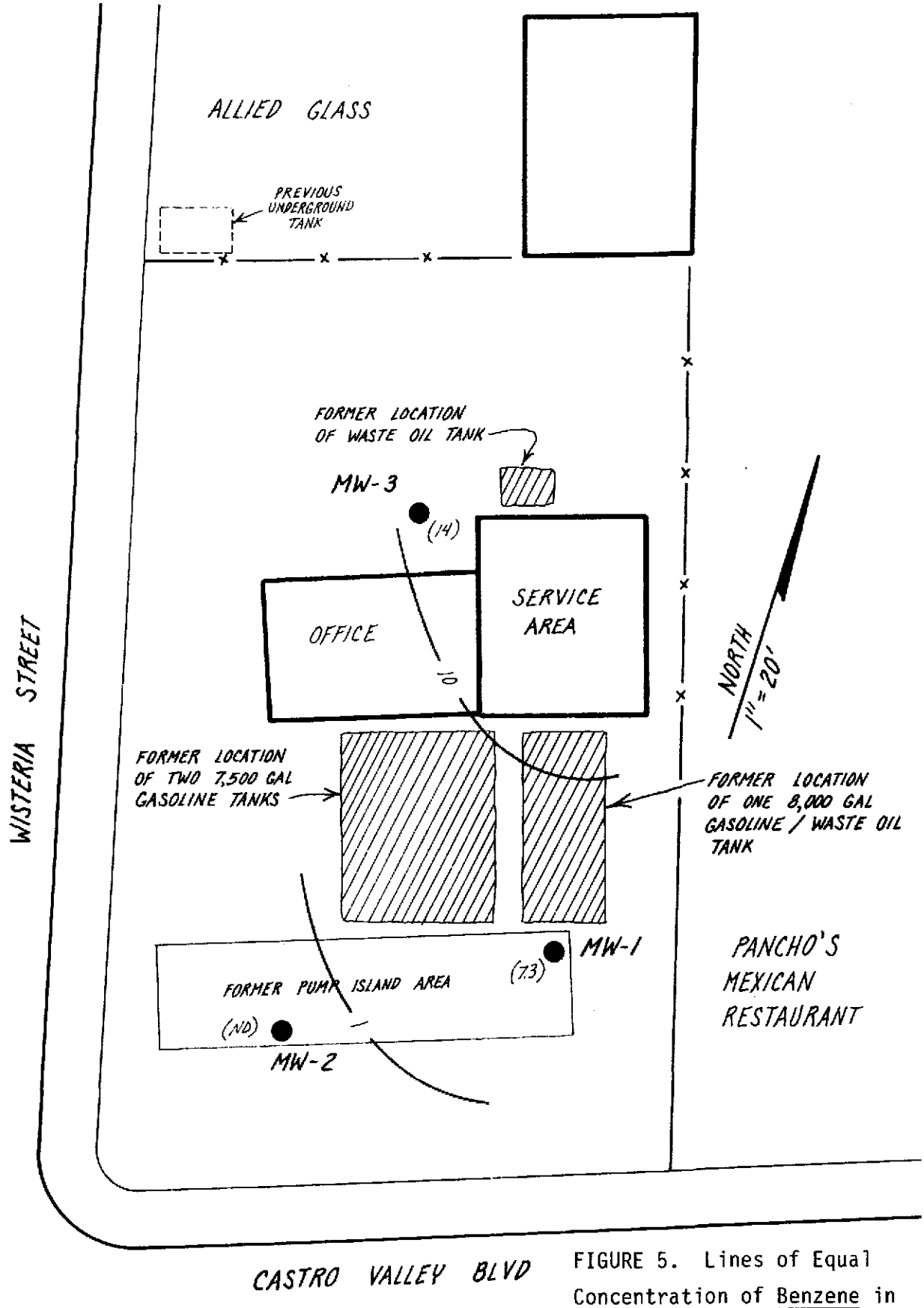
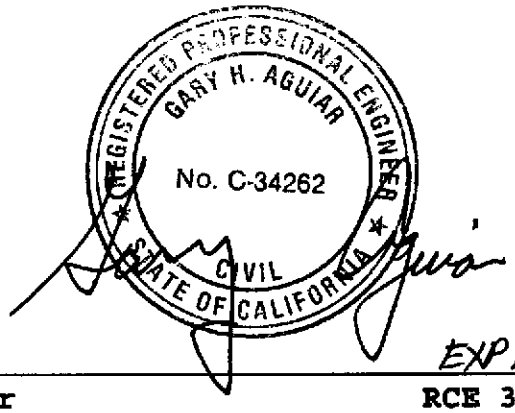


FIGURE 5. Lines of Equal Concentration of Benzene in ug/L (ppb) in the Shallow Groundwater. (March 24, 1995

QUARTERLY GROUNDWATER SAMPLING REPORT
QUALITY TUNE-UP
2780 Castro Valley Blvd, Castro Valley, CA.

April 3, 1995



EXP, 9-30-95

Gary Aguiar **RCE 34262**

Gerard F. Aarons 4-3-95

Gerard Aarons **Geologist**

WELL SAMPLING LOG

Project/No. Quality Tune-Up

Page 1 of 3

Site Location Castro Valley CA

Date 3/24/95

Well No. MW-1

Time Began 9:30

Weather Sunny Mid 60's

Completed 2:00

EVACUATION DATA

Description of Measuring Point (MP) Well Box @ Grade

Total Sounded Depth of Well Below MP 24.46'

- Depth to Water Below MP 6.55'

Diameter of Casing 2"

= Water Column in Well 17.91'

Gallons in Casing 2.89 + Annular Space (30% porosity) (x10) = Total Gallons 28.90

Gallons Pumped Prior to Sampling 30

Evacuation Method PVC Bailer

SAMPLING DATA / FIELD PARAMETERS

Inspection for Free Product: None Clear
(thickness to 0.1 inch, if any)

Time	11:10	11:19	11:39	11:54
Gals Removed	5	10	20	30
Temperature	62.6	62.3	62.2	60.3
Conductivity	360	290	260	230
pH	6.56	6.52	6.84	6.43
Color / Odor	Gray/Brown Oil Organic Odor	Gray/Brown slight Sheen Fuel smell	Gray/Brown Sheen Fuel Smell	Gray/Brown Sheen Fuel Smell
Turbidity	mod	Mod/High	High	High

Comments: Sheen droplets appeared in 5 gallon buckets
Very good recharge

WELL SAMPLING LOG

Project/No. Quality Tune-Up

Page 2 of 3

Site Location Castro Valley

Date 3/24/95

Well No. MW-2

Time Began 9:30
Completed 2:00

Weather Sunny Mid 60°s

EVACUATION DATA

Description of Measuring Point (MP) Well Box @ Grade

Total Sounded Depth of Well Below MP 20.58'

- Depth to Water Below MP 7.21'

Diameter of Casing 2"

= Water Column in Well 13.37

Gallons in Casing 2.1 + Annular Space (30% porosity) (x10) = Total Gallons 21

Gallons Pumped Prior to Sampling 18

Evacuation Method PVC Bailer

SAMPLING DATA / FIELD PARAMETERS

Inspection for Free Product: None, Clear, Low Turb
(thickness to 0.1 inch, if any)

Time	10:50	10:55	11:36	12:00
Gals Removed	5	10	15	18
Temperature	64.9	65.7	63.7	61.8
Conductivity	700	740	680	630
pH	6.62	6.93	6.91	6.78
Color / Odor	Gray/Brown No odor	Gray/Brown No Odor	Brown No Odor	Brown
Turbidity	Mod	mod/High	High	High

Comments: Slow recharge after 10 gallons.

WELL SAMPLING LOG

Project/No. Quality Tune-Up

Page 2 of 3

Site Location Castro Valley CA

Date 3/24/95

Well No. MW-2

Time Began 9:30

Weather Sunny Mid 60's

Completed 2:00

EVACUATION DATA

Description of Measuring Point (MP) Well Box @ Grade

Total Sounded Depth of Well Below MP 24.44

- Depth to Water Below MP 3.32

Diameter of Casing 2"

= Water Column in Well 21.12

Gallons in Casing 3.4 + Annular Space (30% porosity) (x 10) = Total Gallons 34

Gallons Pumped Prior to Sampling 35

Evacuation Method PVC Bailer

SAMPLING DATA / FIELD PARAMETERS

Inspection for Free Product: None, Low Turb, Rust particles or bio growth in free product bailer
(thickness to 0.1 inch, if any)

Time	12:07	12:23	12:33	12:46
Gals Removed	5	15	25	35
Temperature	62.6	66.5	65.0	67.5
Conductivity	860	950	940	960
pH	6.48	6.58	6.69	6.75
Color / Odor	Brown, Sheen, Fuel Smell	Brown, Sheen Fuel Smell	Brown, Sheen, Fuel Smell	Brown, Sheen Fuel Smell
Turbidity	Mod/High	Mod/High	High	High

Comments: Sheen droplets appeared in 5 gallon buckets

PRIORITY ENVIRONMENTAL LABS

Precision Environmental Analytical Laboratory

March 29, 1995 PEL # 9503071

HAGEMAN - AGUIAR, INC.

Attn: Mark Hainsworth

Re: Three water samples for Gasoline/BTEX analysis.

Project name: Quality Tune-Up
Project location: Castro Valley Blvd., - Castro Valley, CA.

Date sampled: Mar 24, 1995 Date submitted: Mar 27, 1995
Date extracted: Mar 27-28, 1995 Date analyzed: Mar 27-28, 1995

RESULTS:

SAMPLE I.D.	Gasoline (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl Benzene (ug/L)	Total Xylene (ug/L)
MW-1	1500	7.3	6.2	12	28
MW-2	290	N.D.	0.5	10	18
MW-3	6000	14	15	10	79
Blank	N.D.	N.D.	N.D.	N.D.	N.D.
Spiked Recovery	94.8%	102.8%	81.8%	86.9%	90.0%
Detection limit	50	0.5	0.5	0.5	0.5
Method of Analysis	5030 / 8015	602	602	602	602

David Duong
Laboratory Director

1764 Houret Court Milpitas, CA. 95035 Tel: 408-946-9636 Fax: 408-946-9663

PEL # 9503071

INV # 25795

CHAIN OF CUSTODY RECORD

PROJECT NAME AND ADDRESS:
Quality Tune-Up
Castro Valley Blvd
Castro Valley CA

SAMPLER: (Signature) Mark Hammerstad

HAGEMAN - AGUIAR, INC.
3732 Mt. Diablo Blvd., Suite 372
Lafayette, CA 94549
(415)284-1661 (415)284-1664 (FAX)

ANALYSIS REQUESTED: TPH Gas / BTXE

CROSS REFERENCE NUMBER	DATE	TIME	SOIL	WATER	STATION LOCATION			REMARKS
MW-1	3/24/95			X	Monitoring Well #1	X		Norm TAT
MW-2	3/24/95			X	#2	X		↓
MW-3	3/24/95			X	#3	X		

RELINQUISHED BY: (Signature) Mark Hammerstad	DATE 3/27/95 TIME 09:44	RECEIVED BY: (Signature)	DATE TIME
RELINQUISHED BY: (Signature)	DATE TIME	RECEIVED BY: (Signature)	DATE TIME
RELINQUISHED BY: (Signature)	DATE TIME	RECEIVED BY: (Signature)	DATE TIME
RELINQUISHED BY: (Signature)	DATE TIME	RECEIVED FOR LABORATORY BY: (Signature)	DATE 03/27/95 TIME 9:45 AM