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

REPORT OF LIMITED SOIL INVESTIGATION

QUALITY TUNE-UP
14901 East 14th Street
San Leandro, CA

PSA ?

October 26, 1993

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

TABLE OF CONTENTS

I. INTRODUCTION

The site location is the Quality Tune-up facility at 14901 East 14th Street in San Leandro, California. The location of the site is shown in Figure 1. In conjunction with a previous service station operation, the site has historically operated three underground Gasoline storage tanks for a number of years. The tanks have been out of use for more than 10 years.

The layout of the site is shown in Figure 2 (site map). The scope of work involved the collection of soil samples for laboratory analysis at four locations in the immediate vicinity of the existing underground storage tanks.

FIGURE 1.
Site Location Map.

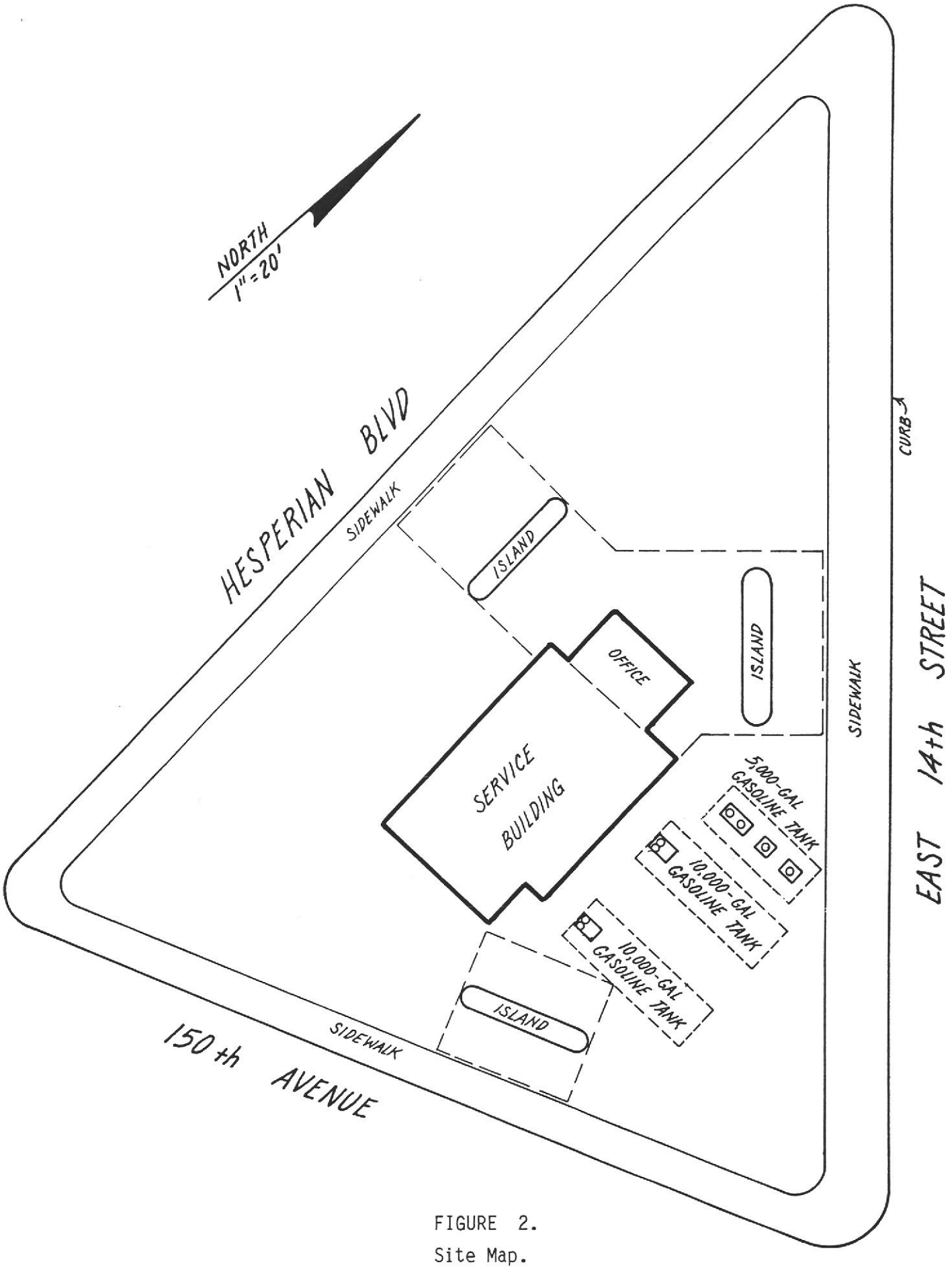

FIGURE 2.
Site Map.

II. SITE DESCRIPTION

Vicinity Description and Hydrogeologic Setting

The location of the site is shown on the site location map (Figure 1). The soils beneath the site consist of Quaternary Alluvium overlying uplifted Cretaceous Marine deposits that comprise the surrounding San Leandro Hills (Geologic Map of California, San Francisco Sheet, State of California Division of Mines and Geology, 1980). During the soil borings, the near-surface soils beneath the site were found to consist primarily of clay.

Based upon the surface topography, as well as the various hydrologic features in the vicinity of the site, the general regional shallow groundwater can be expected to flow from the San Leandro Hills to the north and to the east of the site (areas of groundwater recharge) and move toward San Lorenzo Creek to the south of the site or toward San Francisco Bay to the southwest (areas of discharge).

Site Description

A map of the site is shown in Figure 2. This map shows the layout of the facility, along with the locations of the existing underground storage tanks. At the present time, the entire site is covered by asphalt or concrete pavement.

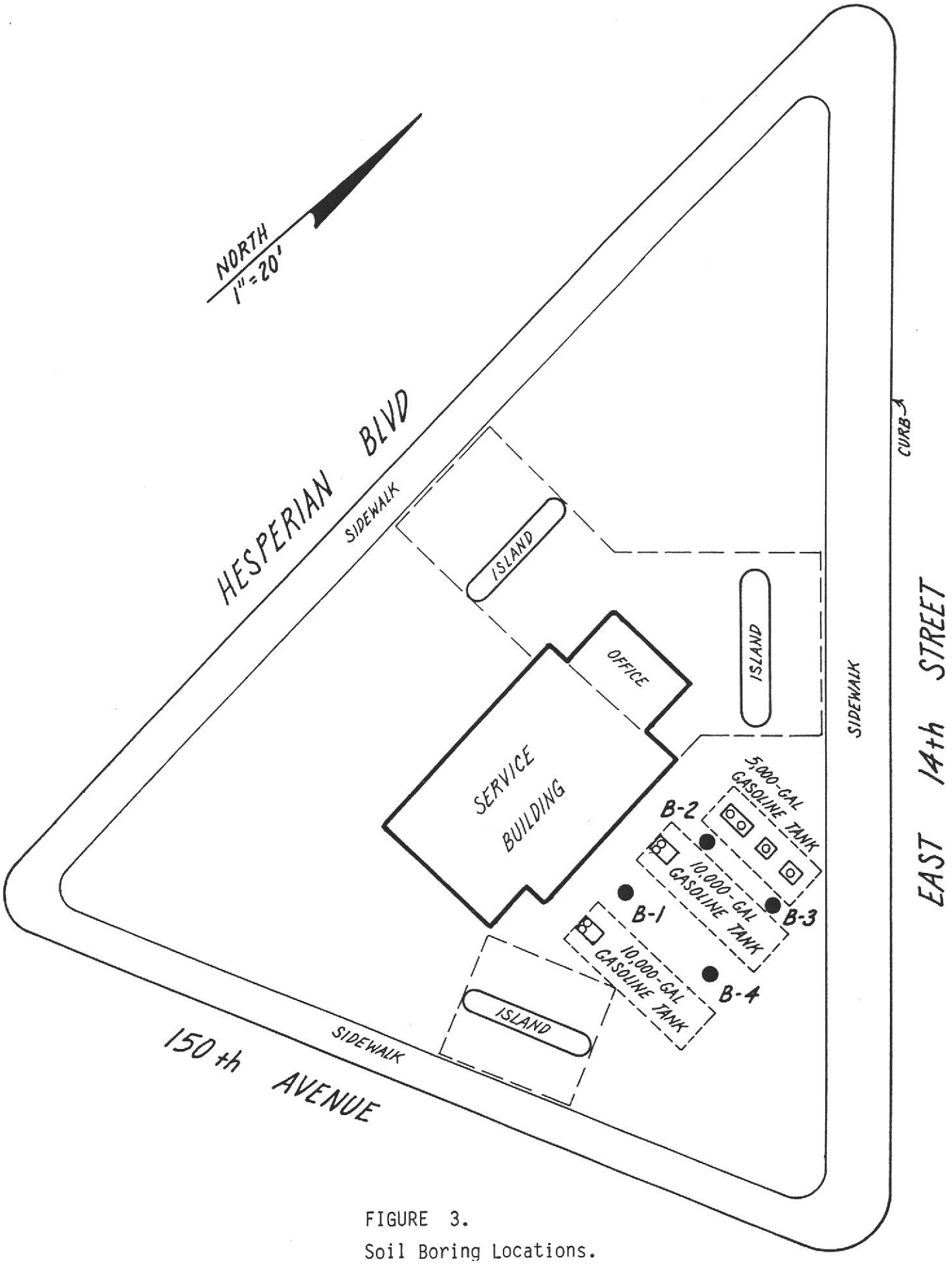

FIGURE 3.
Soil Boring Locations.

Borehole Sealing

Following the completion of the soil sampling operation, each boring was filled with neat cement grout.

Decontamination

Prior to each soil boring, all drilling equipment, including augers, drill stem, and split barrel samplers, was steam-cleaned.

Waste Generation

All drill cuttings were stockpiled on-site and covered with plastic sheeting, until the results of laboratory analyses were obtained. The results of composite sampling of the drill cuttings are included in Attachment B. As shown by these results, it would appear that this soil would be acceptable at this time for disposal as a special waste at an appropriate Class III landfill. The disposal of the drill cuttings is the responsibility of the property owner (waste generator), and is beyond the scope of work as described in this report.

IV. ANALYTICAL RESULTS

Laboratory Analysis

All analyses were conducted by a California State DOHS certified laboratory in accordance with EPA recommended procedures.

All soil samples were analyzed for 1) total petroleum hydrocarbons as Gasoline (EPA method 8015), and 2) Benzene, Toluene, Ethylbenzene, and Total Xylenes (EPA method 8020).

Analytical Results: Soil

Table 1 presents the results of the laboratory analysis of the soil samples collected during the soil boring operation. A copy of the laboratory certificate for the soil sample analyses is included as Attachment B.

As shown in Table 1, there appears to be very low residual Gasoline concentrations in the soil at the 10-foot depth in the vicinity of boring B-1, and somewhat elevated Gasoline concentrations at the 15-foot depth. Concentrations of Gasoline at these two depths were found to be 4.5 mg/kg (ppm) and 180 mg/kg (ppm), respectively.

Also shown in Table 1, there appears to be very low residual Benzene concentrations in the soil at the 10-foot depth in the vicinity of boring B-1, and somewhat elevated Benzene concentrations at the 15-foot depth. Concentrations of Benzene at these two depths were found to be 5.8 µg/kg (ppb) and 230 µg/kg (ppb), respectively.

TABLE 1.

Soil Sampling Results.

Boring	Depth (feet)	TPH as Gasoline (mg/kg)	Benzene (ug/kg)	Toluene (ug/kg)	Ethyl-benzene (ug/kg)	Total Xylenes (ug/kg)
B-1	05	ND	ND	ND	ND	ND
	10	**4.5**	**5.8**	**8.1**	**14**	**35**
	15	**180**	**230**	**320**	**560**	**1,400**
B-2	05	ND	ND	ND	ND	ND
	10	ND	ND	ND	ND	ND
	15	**31**	**35**	**49**	**84**	**210**
B-3	05	ND	ND	ND	ND	ND
	10	ND	ND	ND	ND	ND
	15	ND	ND	ND	ND	ND
B-4	05	ND	ND	ND	ND	ND
	10	ND	ND	ND	ND	ND
	15	**58**	**75**	**97**	**170**	**420**
Detection Limit		1.0	5.0	5.0	5.0	5.0

V. DATA ANALYSIS

The location of geologic cross-section A-A' is shown in Figure 4. This geologic cross-section was constructed from the data contained in the boring logs shown in Attachment A. As shown by this geologic cross-section, the site is underlain by fine-grained alluvial deposits, the major portion of which appear to consist of clay.

As shown in Figure 4, water level measurements in each of the open bore-holes indicated that the shallow groundwater is present beneath the site at a depth of approximately 13 feet below the ground surface. The location of the shallow groundwater table approximately coincides with the locations of the bottoms of the two 10,000-gal underground storage tanks.

Gasoline concentrations in mg/kg (ppm) in the soil are indicated on Figure 4 for borings B-1 and B-2. As shown by these concentrations, low-level residual Gasoline contamination appears to coincide with the location of the water table interface beneath the site. All of the near-surface soils encountered in the borings appear to be unaffected by any subsurface petroleum contamination. Seasonal variations in the water table elevation is the likely reason for the presence of elevated Gasoline concentrations in the soils beneath the present water table (at a depth of 15 feet).

Based upon analysis of the data generated from this limited soil investigation, the low-level residual Gasoline concentrations found in the vicinity of the existing underground storage tanks may be due to one or more of the following: 1) tank leakage and/or overfill at one or more of

VI. CONCLUSIONS

1. Shallow groundwater is present beneath the site at a depth of approximately 13 feet below the ground surface.

2. The site is underlain by fine-grained alluvial deposits, the major portion of which appear to consist of clay.

3. The location of the shallow groundwater table approximately coincides with the locations of the bottoms of the two 10,000-gal underground storage tanks.

4. Low level residual Gasoline concentrations were detected in the vicinity of the existing underground storage tanks at concentrations of up to 180 mg/kg (ppm).

5. Low level residual Benzene concentrations were detected in the vicinity of the existing underground storage tanks at concentrations of up to 230 µg/kg (ppb).

6. The low-level residual Gasoline contamination in the vicinity of the existing underground storage tanks appears to coincide with the location of the water table interface beneath the site. All of the near-surface soils encountered in the borings appear to be unaffected by any subsurface petroleum contamination.

7. Based upon analysis of the data generated from this limited soil investigation, the low-level residual Gasoline concentrations found in the vicinity of the existing underground storage tanks may be due to one or more of the following: 1) tank leakage and/or overfill at one or more of the existing underground storage tank

locations, 2) migration of subsurface contamination from another on-site source, such as leakage and/or spillage along piping runs or at one or more of the three existing dispenser islands, or 3) migration of subsurface contamination in the shallow groundwater from an off-site source.

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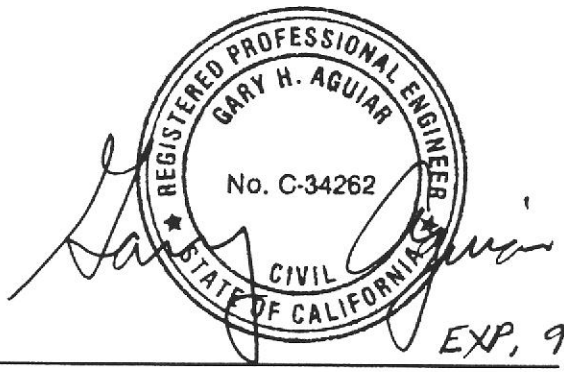


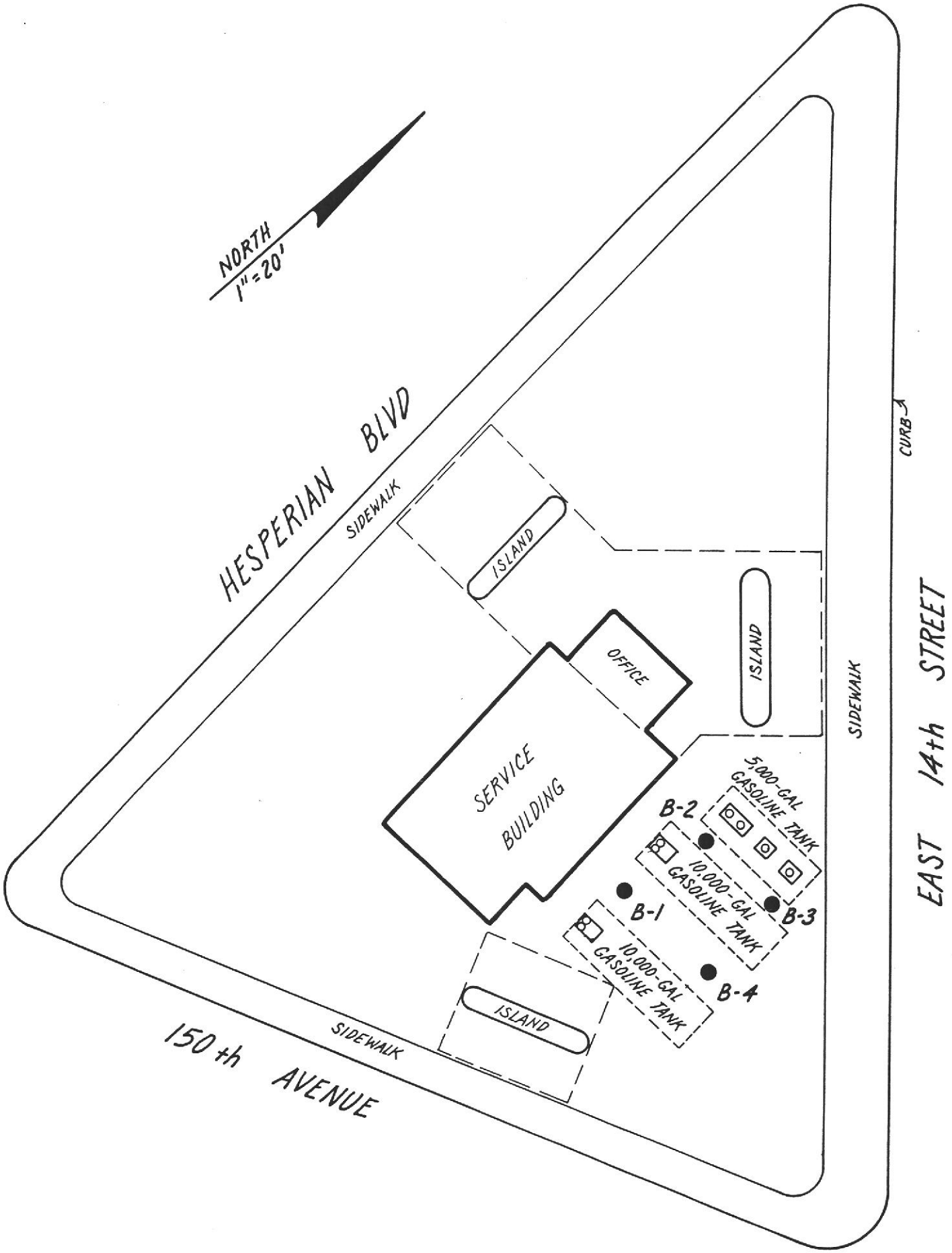
EXP, 9-30-95

Gary Aguiar
Principal Engineer
RCE 34262

Gerard F. Aarons
Staff Geologist

ATTACHMENT A

Boring Logs


NORTH
1" = 20'
HESPERIAN BLVD
SIDEWALK
ISLAND
OFFICE
SERVICE BUILDING
ISLAND
SIDEWALK
CURB
EAST 14th STREET
5,000-GAL GASOLINE TANK
B-2
10,000-GAL GASOLINE TANK
B-3
B-1
10,000-GAL GASOLINE TANK
B-4
ISLAND
SIDEWALK
150th AVENUE

LOCATION OF BORING

SEE SITE MAP

SCALE: 1" =

PROJECT NAME & LOCATION: 14901 EAST 14th STREET, SAN LEANDRO

DRILLING METHOD: 6" HOLLOW STEM AUGER

BORING: B-1

SHT: 1 of 1

SAMPLING METHOD: 2" SPLIT BARREL SAMPLER WITH BRASS LINERS

				DRILLING START	DRILLING FINISH
WATER LEVEL	13.2'				
TIME	0930			TIME 0815	TIME 0840
DATE	10/15/93			DATE 10/15/93	DATE 10/15/93
CASING DEPTH		SCREEN			

SAMPLER	inches DRIVEN	inches RECOVER	BLOW COUNT per 6 inches	TIME	DEPTH in feet	USCS	SURFACE CONDITIONS:
					0		ASPHALT
					1		RED-BRN, CLAYEY GRAVEL (BASEROCK), LOOSE, ANG & SUB-ANG TO 2"
					2		BLACK CLAY (CL), SLIGHTLY MOIST (NO ODOR)
					3		BRN SILTY CLAY (CL), SLIGHTLY MOIST, SOFT.
					4		
2" SPLIT	18	8	4/5/5	0825	5		(SLIGHT PETROLEUM ODOR) PID = 250 PPM
					6		
					7		
					8		
					9		GREY-BRN CLAY (CL), MOIST, GREY COLOR WITH RED-BRN STREAKS, LOW TO MOD. PLASTICITY.
2" SPLIT	18	14	4/5/11	0832	10		(PETROLEUM ODOR)
					1		
					2		
					3	▼	
					4		SAME, SATURATED, LOW TO MOD. PLASTICITY, VARIEGATED LT GREY & BRN COLOR, SLIGHTLY STICKY, (SLIGHT PETROLEUM ODOR)
2" SPLIT	18	18	6/6/8	0840	5		PID = 95 PPM
					6		TOTAL DEPTH = 15½' BLS
					7		
					8		
					9		
					20		

REGISTERED PROFESSIONAL ENGINEER
GARY H. AGUIAR
No. C-34262
CIVIL
STATE OF CALIFORNIA

HAGEMAN - AGUIAR, INC.

LOCATION OF BORING

SEE SITE MAP

SCALE: 1" =

PROJECT NAME & LOCATION: 14901 EAST 14th, SAN LEANDRO

DRILLING METHOD: 6" HOLLOW STEM AUGERS

BORING: B-2

SHT: 1 of 1

SAMPLING METHOD: 2" SPLIT BARREL SAMPLER WITH BRASS LINERS

				DRILLING START	DRILLING FINISH
WATER LEVEL	13.2				
TIME	1030			TIME 0900	TIME 0930
DATE	10/15/93			DATE 10/15/93	DATE 10/15/93
CASING DEPTH		SCREEN			

SAMPLER	inches DRIVEN	inches RECOVER	BLOW COUNT per 6 inches	TIME	DEPTH in feet	USCS	SURFACE CONDITIONS:
					0		ASPHALT
					1		GREY SAND & GRAVEL (BASEROCK), DRY, LOOSE, ANG + SUB-ANGULAR TO 1",
					2		BLACK CLAY (CL), SLIGHTLY MOIST, MODERATE PLASTICITY.
					3		(NO ODOR)
					4		
2" SPLIT	18	18	6/7/10	0900	5		BRN SILTY CLAY (CL), SLIGHTLY MOIST, SLIGHTLY CRUMBLY, MOD. % VERY FINE SAND.
					6		(NO ODOR)
					7		
					8		
					9		
2" SPLIT	18	14	5/5/7	0915	10		GREY-BRN CLAY (CL), SLIGHTLY MOIST, MODERATELY SILTY, LOW TO MOD. PLASTICITY, OCCASIONAL BLACK STREAKS THROUGHOUT.
					1		(NO ODOR) PID = 123 PPM
					2		
					3	▼	
					4		
2" SPLIT	18	18	5/6/7	0925	5		SAME, SATURATED, MODERATE PLASTICITY, SLIGHTLY SILTY, VARIEGATED LT GREY + BRN.
					6		(SLGHT PETROLEUM ODOR)
					7		PID = 140 PPM
					8		TOTAL DEPTH = 15½' BLS
					9		
					20		

REGISTERED PROFESSIONAL ENGINEER GARY R. AGUIAR No. C-34262 CIVIL STATE OF CALIFORNIA

HAGEMAN - AGUIAR, INC.

LOCATION OF BORING	PROJECT NAME & LOCATION	
SEE SITE MAP	14901 EAST 14th STREET, SAN LEANDRO	
	DRILLING METHOD: 6" HOLLOW STEM AUGER	BORING B-3
	SAMPLING METHOD: 2" SPLIT BARREL SAMPLER WITH BRASS LINERS	SHT 1 of 1
	WATER LEVEL 13.1'	DRILLING START TIME 0930 / FINISH TIME 1005
	TIME 1100	
	DATE 10/15/93	START DATE 10/15/93 / FINISH DATE 10/15/93
SCALE: 1" =	CASING DEPTH / SCREEN	

SAMPLER	inches DRIVEN	inches RECOVER	BLOW COUNT per 6 inches	TIME	DEPTH in feet	USCS	SURFACE CONDITIONS:
					0		ASPHALT
					1		GREY SAND & GRAVEL (BASEROCK)
					2		BLACK CLAY (CL), NEARLY DRY, MODERATE PLASTICITY, SLIGHTLY SILTY, OCCASIONAL FINE SAND.
					3		(NO ODOR)
					4		BRN CLAYEY SAND (SC), SLIGHTLY MOIST, SLIGHT TO MOD. CLAYEY, SAND FINE TO MEDIUM GRAIN.
2" SPLIT	18	11	3/7/10	0950	5		(NO ODOR)
					6		
					7		
					8		GREY-BRN CLAY (CL), SLIGHTLY MOIST, SLIGHTLY CRUMBLY, MOD. SILTY, LOW TO MOD. PLASTICITY, OCCASIONAL THIN BLACK STREAKS THROUGHOUT.
					9		
2" SPLIT	18	12	3/5/7	1000	10		(NO ODOR)
					1		
					2		
					3	▼	
					4		SAME, SATURATED, MOD. STIFF, MODERATE PLASTICITY, VARIEGATED LT GREY & BRN COLOR.
2" SPLIT	18	18	5/7/11	1005	5		(SLIGHT PETROLEUM ODOR)
					6		PID = 150 PPM
					7		TOTAL DEPTH = 15½' BLS
					8		
					9		
					20		

REGISTERED PROFESSIONAL ENGINEER
GARY H. AGUIAR
No. C-34262
CIVIL
STATE OF CALIFORNIA

HAGEMAN - AGUIAR, INC.

LOCATION OF BORING

SEE SITE MAP

SCALE: 1" =

PROJECT NAME & LOCATION: 14901 EAST 14th STREET, SAN LEANDRO

DRILLING METHOD: 6" HOLLOW STEM AUGER

BORING: B-4

SHT: 1 of 1

SAMPLING METHOD: 2" SPLIT BARREL SAMPLER WITH BRASS LINERS

				DRILLING START	DRILLING FINISH
WATER LEVEL	13'				
TIME	1045			TIME 1020	TIME 1045
DATE	10/15/93			DATE 10/15/93	DATE 10/15/93
CASING DEPTH		SCREEN			

SAMPLER	inches DRIVEN	inches RECOVER	BLOW COUNT per 6 inches	TIME	DEPTH in feet	USCS	SURFACE CONDITIONS:
					0		ASPHALT
					1		BRN SAND & GRAVEL (BASEROCK), ANGULAR, GRADED 1/8" TO 1 1/2"
					2		BLACK CLAY (CL), SLIGHTLY MOIST, MODERATE PLASTICITY.
					3		(NO ODOR)
					4		
2" SPLIT	18	10	5/8/8	1030	5		BRN CLAYEY SAND (SC), NEARLY DRY, SLIGHTLY STIFF, MOD. CLAYEY, SAND FINE GRAIN.
					6		(NO ODOR)
					7		
					8		
					9		GREY BRN CLAY (CL), SLIGHTLY MOIST, SOFT, VARIEGATED LT GREY & BRN COLOR, OCCASIONAL THIN BLACK/RED-BRN STREAKS THROUGHOUT.
2" SPLIT	18	14	4/4/5	1040	10		(NO ODOR) PID = 60 ppm
					1		
					2		
					3	▼	
					4		SAME, SATURATED, SLIGHTLY STIFF, LOW TO MOD. PLASTICITY, VARIEGATED LT GREY & BRN COLOR.
2" SPLIT	18	15	5/7/10	1045	5		(SL. PETROLEUM ODOR)
					6		
					7		TOTAL DEPTH = 15 1/2' BLS
					8		
					9		
					20		

REGISTERED PROFESSIONAL ENGINEER
GARY H. AGUIAR
No. C-34262
CIVIL
STATE OF CALIFORNIA

HAGEMAN - AGUIAR, INC.

ATTACHMENT B

Analytical Results

PRIORITY ENVIRONMENTAL LABS

Precision Environmental Analytical Laboratory

October 19, 1993 PEL # 9310054

HAGEMAN - AGUIAR, INC.

Attn: Jeffrey Roth
Re: Thirteen soil samples for Gasoline/BTEX analysis.

Project name: Quality Tune-Up
Project location: 14901 East 14th St., - San Leandro, CA.

Date sampled: Oct 15, 1993 Date submitted: Oct 18, 1993
Date extracted: Oct 18-19, 1993 Date analyzed: Oct 18-19,1993

RESULTS:

SAMPLE I.D.	Gasoline (mg/Kg)	Benzene (ug/Kg)	Toluene (ug/Kg)	Ethyl Benzene (ug/Kg)	Total Xylenes (ug/Kg)	
B-1-5'	N.D.	N.D.	N.D.	N.D.	N.D.	
B-1-10'	4.5	5.8	8.1	14	35	
B-1-15'	180	230	320	560	1400	
B-2-5'	N.D.	N.D.	N.D.	N.D.	N.D.	
B-2-10'	N.D.	N.D.	N.D.	N.D.	N.D.	
B-2-15'	31	35	49	84	210	
B-3-5'	N.D.	N.D.	N.D.	N.D.	N.D.	
B-3-10'	N.D.	N.D.	N.D.	N.D.	N.D.	
B-3-15'	N.D.	N.D.	N.D.	N.D.	N.D.	
B-4-5'	N.D.	N.D.	N.D.	N.D.	N.D.	
B-4-10'	N.D.	N.D.	N.D.	N.D.	N.D.	
B-4-15'	58	75	97	170	420	
SP1-SP4*	N.D.	N.D.	N.D.	N.D.	N.D.	DRILL CUTTINGS
Blank	N.D.	N.D.	N.D.	N.D.	N.D.	
Spiked Recovery	84.6%	81.7%	85.2%	82.7%	93.6%	
Duplicate Spiked Recovery	91.5%	90.7%	93.4%	91.8%	98.0%	
Detection limit	1.0	5.0	5.0	5.0	5.0	
Method of Analysis	5030/ 8015	8020	8020	8020	8020	

*Composites soil sample.

David Duong
Laboratory Director

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

PRIORITY ENVIRONMENTAL LABS

Precision Environmental Analytical Laboratory

October 18, 1993 PEL # 9310054

HAGEMAN - AGUIAR, INC.

Attn: Jeffrey Roth
Re: One composited soil sample for RCI analysis.

Project name: Quality Tune-Up
Project location: 14901 East 14th St., - San Leandro, CA.

Date sampled: Oct 15, 1993 Date submitted: Oct 18, 1993
Date extracted: Oct 18, 1993 Date analyzed: Oct 18, 1993

RESULTS:

SAMPLE I.D.	REACTIVITY	CORROSIVITY	IGNITABILITY
SP1-SP4	NO	pH 6.6	NO
Blank	NO	pH 7.0	NO
Method of Analysis	Title 22, CCR 66261.23	Title 22, CCR 66261.22	Title 22, CCR 66261.21

DRILL CUTTINGS

David Duong
Laboratory Director

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

P E L

PRIORITY ENVIRONMENTAL LABS

Precision Environmental Analytical Laboratory

October 19, 1993 PEL # 9310054

HAGEMAN - AGUIAR, INC.

Attn: Gary Aguiar
Re: One composited soil sample for total Lead analysis.

Project name: Quality Tune-Up
Project location: 14901 East 14th St., - San Leandro, CA.

Date sampled: Oct 15, 1993 Date submitted: Oct 18, 1993
Date extracted: Oct 18-19, 1993 Date analyzed: Oct 18-19, 1993

RESULTS:

SAMPLE I.D.	Lead (mg/Kg)
SP1-SP4	13
Blank	N.D.
Detection limit	1.0
Method of Analysis	7420

DRILL CUTTINGS

David Duong
Laboratory Director

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

PEL # 9310054

INV # 24109

CHAIN OF CUSTODY RECORD

PROJECT NAME AND ADDRESS:

QUALITY TUNE-UP
14901 EAST 14th ST.
SAN LEANDRO, CA

SAMPLER: (Signature)

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

CROSS REFERENCE NUMBER	DATE	TIME	SOIL	WATER	STATION LOCATION	ANALYSIS REQUESTED: TPH-GAS	BTEX	RCI	TOTAL LEAD			REMARKS
B-1-5'	10-15-93	0825	X		BORING B-1 @ 5'	X	X					
B-1-10'		0832	X		" " "	X	X					
B-1-15'		0840	X		" " "	X	X					
B-2-5'		0900	X		BORING B-2 @ 5'	X	X					
B-2-10'		0915	X		" " "	X	X					
B-2-15'		0925	X		" " "	X	X					
B-3-5'		0950	X		BORING B-3 @ 5'	X	X					
B-3-10'		1000	X		" " "	X	X					
B-3-15'		1005	X		" " "	X	X					
B-4-5'		1030	X		BORING B-4 @ 5'	X	X					
B-4-10'		1040	X		" " "	X	X					
B-4-15'		1045	X		" " "	X	X					
SP1-SP4	10-15-93	1100	X		4-PT COMPOSITE DRILL CUTTINGS	X	X	X	X			COMPOSITE FOUR SAMPLES SP-1→SP-4

RELINQUISHED BY: (Signature)	DATE 10/18/93 TIME 0815	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 10/18/93 TIME 8:15 AM