

December 3, 1999

Mr. Amir Gholami
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502

*Response to
12/28/99
(MGR)*

Subject: Phase II Soil and Groundwater Investigation
508 East Lewelling Boulevard
San Lorenzo, California
AEI Project No. 3353
Stid 3101

Dear Mr. Gholami:

Enclosed is the Phase II Soil and Groundwater Investigation for the property referenced above.
Please call me at (925) 283-6000 if you have any questions.

Sincerely,



Carrie E. Locke
Project Engineer

99 DEC 23 PM 3:27

PROTECTION

December 3, 1999

RESPONSE 12/28/99

**PHASE II
SUBSURFACE INVESTIGATION**

(186)

508 East Lewelling Boulevard
San Lorenzo, California

Project No. 3353

Prepared For

Max Gracio
19048 Schuster Avenue
Castro Valley, CA 94546

Prepared By

AEI Consultants
901 Moraga Road, Suite C
Lafayette, CA 94549
(800) 801-3224

AEI

December 3, 1999

Max Gracio
19048 Schuster Avenue
Castro Valley, CA 94546

Subject: Phase II Subsurface Investigation
508 East Lewelling Boulevard
San Lorenzo, California
Project No. 3353

Dear Mr. Gracio:

The following letter report describes the activities and results of the subsurface investigation performed by AEI Consultants (AEI) at the above referenced property (Figure 1: Site Location Map). The investigation included the collection and analysis of soil and groundwater samples from four locations on the property and two locations downgradient from the property. The project was designed to investigate whether the soil and/or groundwater beneath the property, as well as downgradient from the property, had been impacted by the former storage of petroleum hydrocarbons in underground storage tanks (USTs) at the site.

I Background

The subject property is located southeast of the intersection of East Lewelling Boulevard and Alisal Court. The property is developed with a single story building occupied by an automotive repair business. Numerous automobiles are parked on the property.

In April, 1994 two (2) 2,000-gallon and one (1) 4,000-gallon gasoline USTs were removed by Pacific Excavators from the northwestern corner of the property. Holes were observed in the 4,000 gallon storage tank upon removal. According to an Unauthorized Leak Report dated May 19, 1994, up to 94 mg/kg of TPH as gasoline was present in a northern sidewall soil sample. A final report detailing the underground storage tank removal was not issued by the contractor. Two sets of analytical reports were issued by Trace Analysis Laboratory, Inc. that detail two different sampling episodes. Soil samples were collected on April 14, 1994 from the sidewalls of the excavation and from stockpiled soil. Additional soil samples were collected from the product lines and dispenser areas on September 15, 1994. Refer to the following table for the analytical results. Refer to Figure 2 for soil sample locations.

TABLE 1 – UST Excavation and Piping Soil Sample Analyses

ANALYTE	E1	E2	E3	E5	E6	SP1	SP2	SP3	S1	S2	S3	SPIA/SP1B Composite	SP2A
TPH-GASOLINE (mg/kg)	1.8	13	94	0.95	<0.5	<0.5	5.6	0.73	6.6	12	<0.5	180*	<0.5
BENZENE (mg/kg)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
TOLUENE (mg/kg)	0.0076	<0.005	1.2	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.44	<0.005	9.3	<0.005
ETHYL BENZENE (mg/kg)	0.023	0.096	0.59	0.0094	<0.005	<0.005	0.025	<0.005	0.19	0.31	<0.005	6.2	<0.005
TOTAL XYLENES (mg/kg)	0.074	0.20	38	0.053	<0.005	0.033	0.024	0.047	2.4	3.4	<0.005	46	<0.005
TOTAL LEAD (TTLIC-mg/kg)	12	10	15	6.6	4.1	6.6	12	22	NA	NA	NA	NA	NA

mg/kg = milligrams per kilogram (ppm)
 NA = Not Analyzed

According to a note dated November 30, 1994 by Ms. Shin of the Alameda County Health Care Services Agency, no further work was required for the product piping excavations. She stated that the stockpiled soil must be aerated and confirmation soil samples collected prior to backfilling. According to the owner of the property, the soil aerated for approximately one year and was re-sampled under the direction of Ms. Shin. The stockpile was used to backfill the excavation after approval was granted from Ms. Shin. The area of the former excavations is currently unpaved.

On November 14, 1994, Environmental Investigation & Action, Inc. (EIA) installed a single soil boring north of the former tanks in the parking lane of Alisal Court. Soil samples and a grab groundwater sample were collected from the boring. The following tables summarize the results of the soil boring investigation.

TABLE 2 – Soil Boring Sample Analyses

ANALYTE	B-1-13	B-1-20	B-1-25
TPH-GASOLINE (mg/kg)	<1.0	6.9	1.8
BENZENE (mg/kg)	<0.005	0.027	0.076
TOLUENE (mg/kg)	<0.005	0.047	0.12
ETHYL BENZENE (mg/kg)	<0.005	0.042	0.073
TOTAL XYLENES (mg/kg)	<0.005	0.086	0.16

mg/kg = milligrams per kilogram (ppm)

TABLE 3 – Grab Groundwater Sample Analysis

ANALYTE	B-1-H20
TPH-GASOLINE (µg/L)	1,300
BENZENE (µg/L)	3.6
TOLUENE (µg/L)	8.2
ETHYL BENZENE (µg/L)	3.9
TOTAL XYLENES (µg/L)	9.5

µg/L = micrograms per liter (ppb)

II Investigative Efforts

AEI performed a subsurface investigation at the property on October 26, 1999. A total of 6 soil borings (AEI-1 through AEI-6) were advanced. The locations of the soil borings were chosen by AEI and Mr. Gholami of the Alameda County Health Care Services Agency (ACHCSA) to investigate whether soil and/or groundwater had been impacted beneath the location of the former USTs, associated piping, and downgradient of the former USTs. The locations of the soil borings are shown on Figure 2.

The near surface native soil encountered during the boring advancement generally consisted of clay. Refer to Attachment A for detailed logs of the borings. Based on local topography, groundwater flow direction is estimated to be to the west.

Soil Sample Collection

The borings were advanced with a direct-push Geoprobe drilling rig to a depth of 24 feet bgs. Soil samples were continuously collected in four-foot long acrylic liners, from which a six-inch sample was chosen. Soil samples were collected at approximately five-foot intervals beginning at approximately five feet below ground surface (bgs). The soil samples were sealed with teflon tape and plastic caps and placed in a cooler with wet ice to await transportation to the laboratory.

No soil staining was observed during the advancement of the soil borings and sample collection. However, a strong petroleum odor was present during the drilling of boring AEI-1 near the soil and groundwater interface. The soil samples were screened in the field using a Photo-ionizing Detector (PID). The soil screening data is presented on the borings logs (Attachment A).

Groundwater Sample Collection

Groundwater was encountered at between 19 and 20 feet bgs during the advancement of the six soil borings. A grab groundwater sample was collected by exposing a screened interval of the direct push rods within the water bearing deposits. The sample was collected by a disposable bailer inserted through the direct push rods. The groundwater samples were collected in 40-mL volatile organic analysis (VOA) vials. The groundwater samples were capped so that there was no head space or visible air bubbles within the vials, then placed in a cooler with wet ice to await transportation to the laboratory.

Following sample collection, each boring was backfilled with neat cement grout.

Laboratory Analysis

On October 26, 1999, the soil samples were transported to McCampbell Analytical Inc. (DOHS Certification Number 1644) under chain of custody protocol for analysis. Analytical results and chain of custody documents are included as Attachment B.

A groundwater sample was collected and analyzed from each boring. In addition, two soil samples from borings AEI-1 through AEI-4 were chosen for analysis. Soil and groundwater samples were analyzed for total petroleum hydrocarbons (TPH) as gasoline, benzene, toluene, ethylbenzene and xylenes (BTEX) and methyl tertiary butyl ether (MTBE).

The remaining soil samples were placed on hold at the laboratory.

III Findings

TPH as gasoline was detected in the soil samples up to 13 mg/kg. Benzene was detected up to 0.027 mg/kg, toluene up to 0.22 mg/kg, ethylbenzene up to 2.4 mg/kg, and xylenes up to 3.0 mg/kg in the soil. MTBE was not detected in any of the soil samples. Refer to Table 1 for further detailed analytical results of the soil samples.

Groundwater samples from all six of the borings showed significant amounts of TPH as gasoline - up to 460,000 µg/L in boring AEI-1. MTBE and benzene were detected up to 91 µg/L and 3,400 µg/L, respectively. Refer to Table 2 for further detailed analytical results of the groundwater samples.

IV Conclusions and Recommendations

This investigation has revealed that a significant release of petroleum hydrocarbons has occurred at this site. The concentrations detected in the soil are minor, however, the groundwater has concentrations significantly above maximum contaminant levels (MCL). The MCL for benzene and MTBE is 1.0 µg/L. Based on the high concentrations of petroleum hydrocarbons and fuel oxygenates in groundwater samples, AEI recommends the installation of groundwater monitoring wells at the site, to determine the extent of the petroleum hydrocarbon plume in the groundwater and to determine the on-site groundwater flow direction.

V Report Limitation

This report presents a summary of work completed by AEI Consultants. The completed work includes observations and descriptions of site conditions encountered. Where appropriate, it includes analytical results for samples taken during the course of the work. The number and location of samples are chosen to provide the required information, but it cannot be assumed that they are representative of areas not sampled. All conclusions and/or recommendations are based

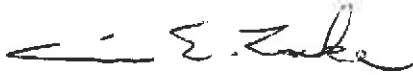
Max Gracio
December 3, 1999
Project No. 3353
Page 5

on these analyses and observations, and the governing regulations. Conclusions beyond those stated and reported herein should not be inferred from this document.

These services were performed in accordance with generally accepted practices, in the environmental engineering and construction field, which existed at the time and location of the work.

If you have any questions regarding our investigation, please do not hesitate to contact me at (925) 283-6000.

Sincerely,



Carrie Locke
Project Engineer



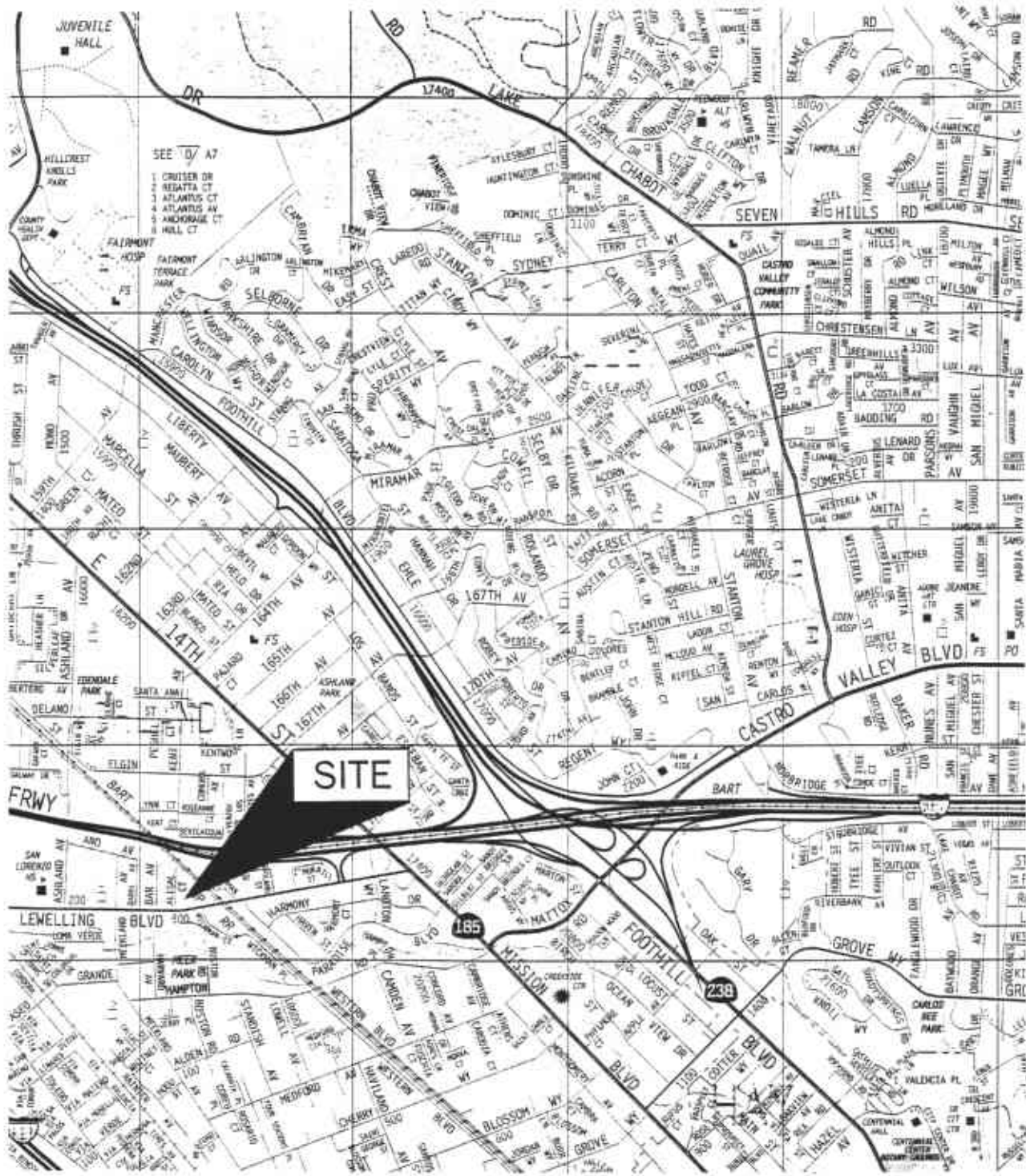
Joseph P. Derhake, PE, CAC
Principal



cc: Amir Gholami, Alameda County Health Care Services Agency, 1131 Harbor Bay Parkway,
Suite 250, Alameda, California 94502

- Figures
- Tables
- Attachment A: Soil Boring Logs
- Attachment B: Sample Analytical Documentation

AEI



SOURCE:
 THOMAS BROS. MAPS
 1998
 SCALE 1" = 1,900'

AEI CONSULTANTS 901 MORAGA ROAD, SUITE C, LAFAYETTE, CA	
SITE LOCATION MAP	
508 EAST LEWELLING BLVD. SAN LORENZO, CALIFORNIA	FIGURE 1 PROJECT No. 3353

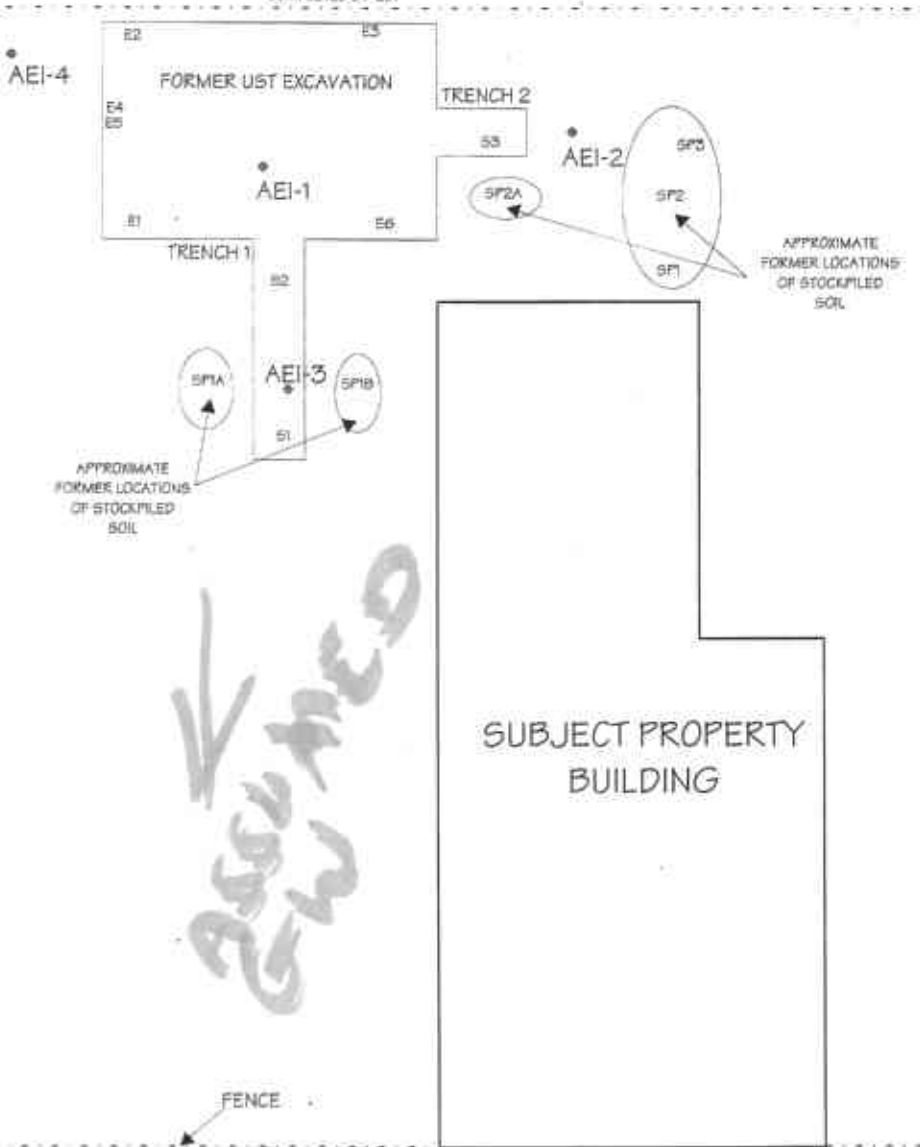
AEI-6

AEI-5

ALISAL COURT

SIDEWALK

APPROXIMATE LOCATION OF FORMER SOIL BORING COMPLETED BY EIA



EAST LEWELLING BLVD.

ENTRANCE

SIDEWALK

ENTRANCE

FENCE

SUBJECT PROPERTY BUILDING

SCALE: 1 in. = 20 ft.

• SOIL BORING LOCATIONS PERFORMED ON 10/26/99

E1 - E6, S1 - S3, SP1-SP2, AND SP1A - SP2A SOIL SAMPLES COLLECTED FROM TANK EXCAVATION



AEI CONSULTANTS
901 MORAGA ROAD, SUITE C, LAFAYETTE, CA

SITE PLAN

508 EAST LEWELLING BLVD.
SAN LORENZO, CA 94580

FIGURE 2
PROJECT NO. 3353

Table 1:
Soil Sample Analytical Results
October 26, 1999

Sample ID	TPH as gasoline mg/kg	MTBE mg/kg	Benzene mg/kg	Toluene mg/kg	Ethylbenzene mg/kg	Xylenes mg/kg
AEI-1 15'	2.0	ND	ND	0.065	0.29	0.006
AEI-2 20'	13.0	ND	0.027	0.22	2.4	3.0
AEI-2 10'	ND	ND	ND	ND	ND	ND
AEI-2 15'	ND	ND	ND	ND	ND	ND
AEI-3 6'	ND	ND	ND	ND	ND	ND
AEI-3 12'	ND	ND	ND	0.023	ND	0.011
AEI-4 15'	ND	ND	ND	0.023	0.063	0.005
AEI-4 20'	3.5	ND	0.012	0.005	0.66	0.024
MDL	1.0	0.05	0.005	0.005	0.005	0.005

MDL = Method Detection Limit

ND = Not detected above Method Detection Limit

mg/kg = milligrams per kilogram

µg/kg = micrograms per kilogram

Table 2:
Groundwater Sample Analytical Results
October 26, 1999

Sample ID	TPH as gasoline µg/L	MTBE µg/L	Benzene µg/L	Toluene µg/L	Ethylbenzene µg/L	Xylenes µg/L
AEI-1 W	460,000	ND<1,300	990	37,000	19,000	90,000
AEI-2 W	15,000	ND<60	18	43	1,100	3,100
AEI-3 W	470	91	ND	ND	12	33
AEI-4 W	430,000	ND<500	3,400	66,000	12,000	61,000
AEI-5 W	1,500	ND	ND	3.4	0.8	7.9
AEI-6 W	80,000	ND<100	870	3,000	4,300	19,000
MDL	50.0	5	0.5	0.5	0.5	0.5

MDL = Method Detection Limit

ND = Not detected above Method Detection Limit

mg/kg = milligrams per kilogram

µg/kg = micrograms per kilogram

Project No: 3353

Sheet: 1 of 1

Project Name: Max's Auto Repair

Log of Borehole: AEI-1

Client: Max Gracio

Location: Center of tank excavation

Depth ft m	Soil Symbol	Subsurface Description	Sample Data				Well Data	Remarks
			Sample Label	Type	Blow Counts/	Recovery		
0		Ground Surface						
1		Clay Sandy clay with interbedded gravel						
2								
3								
4							Sample recovery 30% at 4-8'	
5								
6								
7		Silty Clay						
8			AEI-1 8'	SS			PID = 1.0 ppm	
9							Sample recovery 25% at 8-12'	
10								
11								
12		Gravel Gravel with remnants of concrete						
13		Clay Dark brown clay					Sample recovery 60% at 12-16'	
14								
15			AEI-1 15'	SS			PID = 383 ppm	
16		Sand Fine silty sand						
17		Clay Dark brown clay with interbedded gravel						
18								
19								
20		Moist silty black clay	AEI-1 20'	SS			PID = 13ppm	
21		Light gray to dark brown silty clay					Sheen observed on groundwater samples	
22							Strong hydrocarbon odor	
23								
24		End of Borehole						
25								

Drill Date October 26, 1999

Reviewed by: Joe Derhake

AEI Consultants
901 Moraga Road, Suite C
Lafayette, CA 94549
(800) 801-3224

Drill Method: Direct push

Logged by: Carrie Locke

Total Depth: 24'

Depth to Water: 20'

Project No: 3353



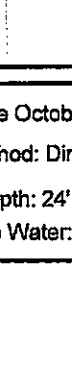
Sheet: 1 of 1

Project Name: Max's Auto Repair

Log of Borehole: AEI-2

Client: Max Gracio

Location: Just north of tank excavation

Depth ft m	Soil Symbol	Subsurface Description	Sample Data				Well Data	Remarks
			Sample Label	Type	Blow Counts/	Recovery		
0 0		Ground Surface						
1 1		Clay Dark brown silty clay					PID = 73 ppm	
2 2								
3 3								
4 4								
5 5		Moist reddish-brown silty clay	AEI-2 5'	SS			PID = 17 ppm	
6 6								
7 7								
8 8								
9 9								
10 10				AEI-2 10'	SS			PID = 10 ppm
11 11		Silt Clayey silt						
12 12								
13 13								
14 14				AEI-2 15'	SS			PID = 120 ppm
15 15								
16 16								
17 17								
18 18								
19 19			AEI-2 19'	SS			▼	
20 20								
21 21								
22 22								
23 23								
24 24		End of Borehole						
25 25								

Drill Date October 28, 1999

Reviewed by: Joe Derhake

AEI Consultants
901 Moraga Road, Suite C
Lafayette, CA 94549
(800) 801-3224

Drill Method: Direct push

Logged by: Carrie Locke

Total Depth: 24'

Depth to Water: 19'

Project No: 3353






Sheet: 1 of 1

Project Name: Max's Auto Repair

Log of Borehole: AEI-3

Client: Max Gracio

Location: East end of trench 1

Depth ft m	Soil Symbol	Subsurface Description	Sample Data				Well Data	Remarks
			Sample Label	Type	Blow Counts/	Recovery		
0		Ground Surface						
1		Clay Dark brown with interbedded gravel						
2							PID = 0 ppm	
3		Dark brown clay					Sample recovery 60% at 0-4'	
4							Sample recovery 50% at 4-8'	
5								
6			AEI-3 6'	SS			PID = 0 ppm	
7		Gray clay						
8		Gray clay with interbedded gravel						
9							Sample recovery 30% at 8-12'	
10								
11								
12		Gray/brown silty clay	AEI-3 12'	SS			PID = 9.0 ppm	
13								
14		Silt Gray sandy silt						
15								
16		Sand Brown silty fine sand with interbedded clay					Sample recovery 50% at 16-20'	
17								
18								
19		Clay Dark brown clay						
20		Gray sandy clay	AEI-3 20'	SS			PID = 0 ppm	
21		Sand Wet silty sand						
22								
23								
24		End of Borehole						
25								

Drill Date October 26, 1999

Reviewed by: Joe Derhake

AEI Consultants
901 Moraga Road, Suite C
Lafayette, CA 94549
(800) 801-3224

Drill Method: Direct push

Logged by: Carrie Locke

Total Depth: 24'

Depth to Water: 20'

Project No: 3353










Sheet: 1 of 1

Project Name: Max's Auto Repair

Log of Borehole: AEI-4

Client: Max Gracio

Location: Southwestern corner of site

Depth ft m	Soil Symbol	Subsurface Description	Sample Data				Well Data	Remarks
			Sample Label	Type	Blow Counts/	Recovery		
0		Ground Surface						
0-4		Clay Dark brown silty clay					Sample recovery 60% at 0-4' PID = 10 ppm	
4-8							Sample recovery 60% at 4-8' PID = 287 ppm	
5'			AEI-4 5'	SS				
8-10							PID = 60 ppm	
10'			AEI-4 10'	SS				
10-12		Gray clay						
12-14		Sand Gray silty sand					PID = 130 ppm	
14'			AEI-4 15'	SS				
14-16		Clay Gray clay						
16-20							PID = 839 ppm	
20'			AEI-4 20'	SS				
20-22		Gray sandy clay						
22-24		Gray silty clay						
24		End of Borehole						

Drill Date October 26, 1998

Reviewed by: Joe Derhake

AEI Consultants
901 Moraga Road, Suite C
Lafayette, CA 94549
(800) 801-3224

Drill Method: Direct push

Logged by: Carrie Locke

Total Depth: 24'

Depth to Water: 20'

Project No: 3353

Sheet: 1 of 1

Project Name: Max's Auto Repair

Log of Borehole: AEI-5

Client: Max Gracio

Location: Across Alisal Court, to the northwest

Depth	Soil Symbol	Subsurface Description	Sample Data				Well Data	Remarks
			Sample Label	Type	Blow Counts/	Recovery		
0		Ground Surface						
0		Silt Dark brown silt					PID = 0 ppm	
1								
2								
3								
4								
5			AEI-5 5'	SS			PID = 0 ppm	
6								
7								
8								
9								
10			AEI-5 10'	SS			PID = 0 ppm	
11		Brown sandy silt						
12								
13								
14								
15		Clay Moist brown clay	AEI-5 15'	SS			PID = 0 ppm	
16		Silty clay						
17								
18								
19		Silty clay with interbedded gravel						
20			AEI-5 20'	SS			PID = 0 ppm	
21		Silt Very moist silt						
22								
23		Clay Dark brown clay						
24								
25		End of Borehole						

Drill Date October 26, 1999

Reviewed by: Joe Derhake

AEI Consultants
901 Moraga Road, Suite C
Lafayette, CA 94549
(800) 801-3224

Drill Method: Direct push

Logged by: Carrie Locke

Total Depth: 24'

Depth to Water: 19.5'

Project No: 3353

Sheet: 1 of 1

Project Name: Max's Auto Repair

Log of Borehole: AEI-6

Client: Max Gracio

Location: Across Alsai Court, to the southwest

Depth ft m	Soil Symbol	Subsurface Description	Sample Data				Well Data	Remarks
			Sample Label	Type	Blow Counts/	Recovery		
0		Ground Surface						
0		Silt Dark brown clayey silt						PID = 0 ppm
1								
2								
3								
4		Brown sandy silt						PID = 0 ppm
5			AEI-6 5'	SS				
6		Brown clayey silt						
7								
8								Sample recovery 50% at 8-12'
9								
10								
11		Sand Silty fine sand						PID = 0 ppm
12			AEI-6 12'	SS				Sample recovery 50% at 12-16'
13								
14								
15			AEI-6 15'	SS				PID = 0 ppm
16								
17		Clay Dark brown clay						
18		Brown sandy clay Dark brown clay						
19								
20		Greenish gray sandy clay	AEI-6 20'	SS				PID = 8.5 ppm
21								
22		Dark brown clay						
23								
24		End of Borehole						
25								

Drill Date October 26, 1999

Reviewed by: Joe Derhake

AEI Consultants
901 Moraga Road, Suite C
Lafayette, CA 94549
(800) 801-3224

Drill Method: Direct push

Logged by: Carrie Locke

Total Depth: 24'

Depth to Water: 19.5'



McCAMPBELL ANALYTICAL INC.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
 Telephone : 925-798-1620 Fax : 925-798-1622
<http://www.mccampbell.com> E-mail: main@mccampbell.com

All Environmental, Inc. 901 Moraga Road, Suite C Lafayette, CA 94549	Client Project ID: #3198; Max's Auto Repair	Date Sampled: 10/26/99
	Client Contact: Carrie E. Locke	Date Received: 10/27/99
	Client P.O:	Date Extracted: 10/27-10/29/99
		Date Analyzed: 10/27-10/29/99

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with Methyl tert-Butyl Ether* & BTEX*

EPA methods 5030, modified 8015, and 8020 or 602; California RWQCB (SF Bay Region) method GCFID(5030)

Lab ID	Client ID	Matrix	TPH(g) ⁺	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	% Recovery Surrogate
24167	AEI 1-15'	S	2.0j	ND	ND	0.065	0.29	0.006	91
24168	AEI 1-20'	S	13.j	ND	0.027	0.22	2.4	3.0	92
24169	AEI 1-W	W	460,000,b,h,i	ND<1300	990	37,000	19,000	90,000	97
24171	AEI 2-10'	S	ND	ND	ND	ND	ND	ND	94
24172	AEI 2-15'	S	ND	ND	ND	ND	ND	ND	96
24174	AEI 2-W	W	15,000,a,i	ND<60	18	43	1100	3100	91
24175	AEI 3-6'	S	ND	ND	ND	ND	ND	ND	99
24176	AEI 3-12'	S	ND	ND	ND	0.023	ND	0.011	96
24178	AEI 3-W	W	470,b,j,i	91	ND	ND	12	33	98
24181	AEI 4-15'	S	ND	ND	ND	0.023	0.063	0.005	95
24182	AEI 4-20'	S	3.5,a	ND	0.012	0.005	0.66	0.024	105
24183	AEI 4-W	W	430,000,b,h,i	ND<500	3400	66,000	12,000	61,00	96
24188	AEI 5-W	W	1500,b,j,i	ND	ND	3.4	0.80	7.9	103
24193	AEI 6-W	W	80,000,a,h,i	ND<100	870	3000	4300	19,000	98
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit		W	50 ug/L	5.0	0.5	0.5	0.5	0.5	
		S	1.0 mg/kg	0.05	0.005	0.005	0.005	0.005	

* water and vapor samples are reported in ug/L, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP and SPLP extracts in ug/L

* cluttered chromatogram; sample peak coelutes with surrogate peak

*The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5 vol. % sediment; j) no recognizable pattern.



McCAMPBELL ANALYTICAL INC.

110 2nd Ave. South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
<http://www.mccampbell.com> E-mail: main@mccampbell.com

QC REPORT

Date: 10/27/99 Matrix: Water

Extraction: N/A

Compound	Concentration: ug/L			%Recovery		RPD
	Sample	MS	MSD	Amount Spiked	MS	

SampleID: 22651

Instrument: GC-7

Xylenes	0.0	312.0	322.0	300.00	104	107	3.2
Ethyl Benzene	0.0	104.0	108.0	100.00	104	108	3.8
Toluene	0.0	112.0	109.0	100.00	112	109	2.7
Benzene	0.0	104.0	108.0	100.00	104	108	3.8
MTBE	0.0	102.0	107.0	100.00	102	107	4.8
GAS	0.0	939.3	922.2	1000.00	94	92	1.8

SampleID: 102799

Instrument: GC-6 A

TPH (diesel)	0.0	341.2	350.7	7500.00	5	5	2.7
--------------	-----	-------	-------	---------	---	---	-----

$$\% \text{ Recovery} = \frac{(MS - \text{Sample})}{\text{Amount Spiked}} \cdot 100$$

$$RPD = \frac{(MS - MSD)}{(MS + MSD)} \cdot 2 \cdot 100$$

RPD means Relative Percent Deviation



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QC REPORT

Date: 10/27/99 Matrix: Soil
 Extraction: N/A

Compound	Concentration: mg/kg				%Recovery		RPD
	Sample	MS	MSD	Amount Spiked	MS	MSD	

SampleID: 102799

Instrument: GC-12

Xylenes	0.0	0.3	0.3	0.30	100	102	1.6
Ethyl Benzene	0.0	0.1	0.1	0.10	99	98	1.0
Toluene	0.0	0.1	0.1	0.10	99	99	0.0
Benzene	0.0	0.1	0.1	0.10	99	100	1.0
MTBE	0.0	0.1	0.1	0.10	92	96	4.3
GAS	0.0	0.9	0.9	1.00	86	89	3.2

SampleID: 18393

Instrument: GC-6 A

TPH (diesel)	0.0	311.4	314.3	300.00	104	105	0.9
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SampleID: 17926

Instrument: IR-1

TRPH	0.0	21.9	21.5	20.80	105	103	1.8
------	-----	------	------	-------	-----	-----	-----

$$\% \text{ Recovery} = \frac{(MS - \text{Sample})}{\text{Amount Spiked}} \cdot 100$$

$$RPD = \frac{(MS - MSD)}{(MS + MSD)} \cdot 2 \cdot 100$$

RPD means Relative Percent Deviation

ALL ENVIRONMENTAL, INC.
 901 Moraga Road, Suite C
 Lafayette, CA 94549

17411
 EAIE 102

ICEM ✓
 GOOD CONDITION ✓
 HEAD SPACE ABSENT ✓

PRESERVATION APPROPRIATE CONTAINERS ✓
 VOAS O&G METALS OTHER

Chain of Custody

DATE: 10/26/99 PAGE: 1 OF 2

S Day Turnaround Time

(925) 283-6000 FAX: (925) 283-6121

AEI PROJECT MANAGER: Corrie E. Locke
 PROJECT NAME: Max's Auto Repair
 PROJECT NUMBER: 3198
 TOTAL # OF CONTAINERS: 34
 RECD. GOOD COND./COLD: _____

ANALYSIS REQUEST

24166H
 24167
 24168
 24169
 24170H
 24171
 24172
 X 24173H
 24174
 X 24175
 24176
 24177H
 X 24178
 X 24179H
 X 24180H

SAMPLE I.D.	DATE	TIME	MATRIX
AEI1-9'	10/26/99	12:35	S
AEI1-15'		12:50	S
AEI1-20'		1:16	S
+5 AEI1-W		1:40	W
AEI2-5'		11:20	S
AEI2-10'		11:30	S
AEI2-15'		11:35	S
AEI2-18'		11:50	S
+5 AEI2-W		12:05	W
AEI3-6'		2:45	S
AEI3-12'		3:05	S
AEI3-20'		3:15	S
+5 AEI3-W		3:40	W
AEI4-5'		4:15	S
AEI4-10'		4:20	S

TPH-Casoline (EPA 9090, 8015) w/ ETX and MTBE (EPA 802-8020)	TPH-Diesel (EPA 9910/9980, 8015)	TOTAL OIL & GREASE (EPA 9580 E&F)	VOLATILE HALOCARBONS (EPA 601 or 8010)	VOLATILE ORGANIC COMPOUNDS (EPA 8940)	TOTAL LEAD (AA) (EPA 7420)	LUFT, Metals (EPA 7190, 7190, 7480, 7520, 7980)	STLC CALX 17 (EPA 1810/6010)	PCI REACTIVITY, CORROSIVITY, INSTABILITY Table 2, CCR 60881, 21.53
X								
X								
X								
X								
X								
X								
X								
X								
X								
X								
X								
X								
X								
X								
X								
X								
X								
X								

ANALYTICAL LAB: McCambell Analytical
 ADDRESS: 110 Second Ave. South #D7
Pacheco, CA
 PHONE: () 925 - 1620 FAX: () 925 - 1622
 INSTRUCTIONS/COMMENTS:

RELINQUISHED BY: 1
Corrie E. Locke
 Signature
Corrie E. Locke
 Printed Name
AEI Consultants
 Company
 Time 11:20 a.m. Date 10/27/99

RECEIVED BY: 1
Kit Wheeler
 Signature
Kit Wheeler
 Printed Name
AEI Consultants
 Company
 Time 11:20 a.m. Date 10/27/99

RELINQUISHED BY: 2
Kit Wheeler
 Signature
Kit Wheeler
 Printed Name
AEI Consultants
 Company
 Time 11:55 Date 10/27/99

RECEIVED BY:
Gina A Blatten
 Signature
Gina A Blatten
 Printed Name
M&I
 Company
 Time 11:55 Date 10/27

ALL ENVIRONMENTAL, INC.
 901 Moraga Road, Suite C
 Lafayette, CA 94549

(925) 283-6000 FAX: (925) 283-6121

ICEA
 GOOD CONDITION ✓
 HEAD SPACE ABSENT ✓

PRESERVATION
 APPROPRIATE ✓
 CONTAINERS ✓

VOC'S | O&G | METALS | OTHER

Chain of Custody

17441
 ZALE 102

DATE: 10/26/99 PAGE: 2 OF 2

5 Day Turnaround Time

AEI PROJECT MANAGER: Carrie E. Locke
 PROJECT NAME: Max's Auto Repair
 PROJECT NUMBER: 3198
 TOTAL # OF CONTAINERS: 34
 RECD. GOOD COND./COLD:

ANALYSIS REQUEST

SAMPLE I.D.	DATE	TIME	MATRIX	ANALYSIS REQUEST											HOT		
				TPH-Castroline (EPA 5090-R01B) w/ PTEX and MATBE (EPA 602-8020)	TPH-Diesel (EPA 9510/9550,8015)	TOTAL OIL & GREASE (EPA 5980 E&F)	VOLATILE HALOCARBONS (EPA 601 or 8010)	VOLATILE ORGANIC COMPOUNDS (EPA 8240)	TOTAL LEAD (AA) (EPA 7480)	LCFT Metals (EPA 7190,7196,7480,7480,7480)	STLC CAL 17 (EPA 1310/8010)	ACT REACTIVITY CORROSIIVITY IDENTIFIABILITY TITLE 22, CCR 49821, 21, 21					
AEI4-15'	10/26/99	4:30	S	X													24181
AEI4-20'		4:40	S	X													24182
AEI4-W		5:00	W	X													24183
AEI5-5'		8:10	S														24184H
AEI5-10'		8:15	S														24185H
AEI5-15'		8:25	S														24186H
AEI5-20'		8:35	S														24187H
AEI5-W		9:00	W	X													24188
AEI6-5'		9:30	S														24189H
AEI6-10'		9:35	S														24190H
AEI6-15'		9:45	S														24191H
AEI6-20'		9:50	S														24192H
AEI6-W		10:25	W	X													24193

ANALYTICAL LAB: McConnell Analytical
 ADDRESS: 110 Second Ave., Ste 107
San Jose, CA
 PHONE: () 998-620 FAX: () 998-1622

INSTRUCTIONS/COMMENTS:

RELINQUISHED BY: 1
Carrie E. Locke
 Signature
Carrie E. Locke
 Printed Name
AEI Consultants
 Company
 Time: 11:20 Date: 10/27/99

RECEIVED BY: 1
Kit Wheeler
 Signature
Kit Wheeler
 Printed Name
AEI Consultants
 Company
 Time: 11:20 a.m. Date: 10/27/99

RELINQUISHED BY: 2
Kit Wheeler
 Signature
Kit Wheeler
 Printed Name
AEI Consultants
 Company
 Time: 11:55 Date: 10/27/99

RECEIVED BY: 2
Gina A. Butler
 Signature
Gina A. Butler
 Printed Name
M AEI
 Company
 Time: 11:55 Date: 10/27/99