3-9-95

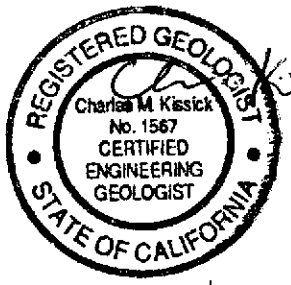
2nd QUARTERLY GROUNDWATER MONITORING REPORT
3635 13th Avenue
Oakland, CA

Prepared For

Mr. John Williamson
1511 Wellington Street
Oakland, CA 94602

Prepared By

All Environmental, Inc.
2641 Crow Canyon Road, Suite 5
San Ramon, CA 94583



exp. 12/96

March 9, 1995

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1.0 INTRODUCTION

This report presents the results of the quarterly groundwater sampling activities conducted at 3635 13th Avenue, Oakland, on February 22 and 23, 1995. The purpose of this activity is to monitor groundwater quality in the vicinity of previous underground storage tanks for a period of at least one year. This quarterly monitoring program is being conducted at the request of the Alameda County Health Care Services Agency (ACHCSA). The monitoring was accomplished using three monitoring wells which were installed by All Environmental Inc. (AEI) on March 24, 1994, as reported by AEI (Ref. 3). AEI was contracted by John Williamson to conduct these sampling activities on a quarterly basis for one year. This is the second round of sampling, the first round taking place soon after installation of the wells, on November 21 and 22, 1994.

2.0 SITE DESCRIPTION

The site is located in a largely residential zone of Oakland approximately 100 yards east of Highway 580, at the northwest corner of 13th Avenue and Excelsior, as shown in Figure 1, Site Location Map. The property slopes gently toward the southeast and is currently paved with asphalt, and is surrounded by a cyclone fence. The asphalt and fence were installed just days before this groundwater sampling was performed. The nearest significant surface water id Lake Merritt, located approximately one mile to the west.

3.0 BACKGROUND

All Environmental, Inc. (AEI) was contracted by John Williamson to conduct soil and groundwater investigations at 3635 13th Avenue in Oakland, California. Two underground gasoline tanks, with capacities of 500 and 1000 gallons, and one 250-gallon waste oil tank were removed from the site by Aqua Science Engineers, Inc. in December, 1992. Excavation and removal of an additional 360 cubic yards of soil was performed by AEI in September, 1993. The initial levels of contamination found in the soils during the tank removal and subsequent excavation led to the requirement of performing this groundwater investigation, as per the orders of the ACHCSA. Three monitoring wells, MW-1 through MW-3, were installed on the site for the purpose of monitoring groundwater contamination.

AEI prepared a Work Plan, dated December 9, 1993 to outline the soil and groundwater investigation. This was approved by the ACHCSA prior to initiation of the work. Three monitoring wells, MW-1, 2, and 3, were installed on March 24, 1994 at the locations shown in Figure 2, Site Plan. Because of funding delays, the wells were not developed and sampled until November, 1994.

4.0 SITE GEOLOGY

The geology at the site consists of early Pleistocene older alluvium deposits of mostly silty and sandy clay. Based on the borings drilled on the site, the subsurface materials consist mostly of silty and sandy clays with occasional layers, up to 4 feet thick, of silty sand. Geologic logs of the monitoring wells are included in Appendix A of the report.

Because of the low permeability of the soils, the depth to groundwater was not readily apparent during drilling of wells MW-2 and MW-3, although depths to groundwater were estimated in the field, based on observed moisture contents of soil samples, to help determine an appropriate range of depths of well screen. In MW-1, the groundwater had risen to a depth of 16 feet below ground surface by the end of the day. Static water levels were later obtained following development of the wells in November, 1994. The most recent water level measurements indicated depths to groundwater ranging from about 10-1/2 to 12-1/2 feet below ground surface.

The direction of the groundwater gradient, based on the most recent measurements, is toward the southeast, as shown in Figure 3, Groundwater Gradient. The gradient has changed very little since the November, 1994 groundwater level measurements.

5.0 GROUNDWATER SAMPLE ANALYSES

Groundwater samples were collected from the three wells on February 22 and 23, 1994. A log detailing the well sampling is included in Appendix A, Current Laboratory Analyses and Chain of Custody Documentation. **Note that the wells were purged on February 22, but it took 12 hours (overnight) for the water levels to come up enough to retrieve satisfactory water samples from MW-2 and MW-3. In MW-1, the water level came up to near the original level in a matter of minutes.** The groundwater samples were analyzed by Priority Environmental Labs (State Certification #1708) in Milpitas, California. Samples from all three wells were analyzed for Total Petroleum Hydrocarbons as Gasoline (TPH-G) (EPA Method 5030/8015), Total Petroleum Hydrocarbons as Diesel (TPH-D) (EPA Method 3510/8015), benzene, toluene, ethyl benzene, and total xylenes (BTEX) (EPA Method 8020/602), and Total Oil & Grease (EPA Method 5520 C&F).

Analyses showed moderate to high levels of TPH-G, ranging from 140 to 4400 ppm, with non-detectible levels of TPH-D, and low levels of BTEX and Oil & Grease. Current groundwater sample analyses with chain of custody documentation are included in Appendix A. Analytical data and chain of custody documentation for the previous sampling are included in Appendix B.

Tables 1 through 3 present the results of this sampling, along with results from the previous sampling, and blank columns representing the two scheduled future samplings.

Table 1 - Water Sample Analysis Results, Well No. MW-1

Compound	Nov. 1994	Feb. 1995	May 1995	Aug. 1995
TPH-G (ug/L)	210	140		
TPH-D (ug/L)	ND	ND		
Benzene (ug/L)	ND	ND		
Toluene (ug/L)	ND	ND		
Et. Benz. (ug/L)	ND	0.6		
Xylene (ug/L)	2.3	1.5		
Oil & Grease (mg/L)	ND	1.2		

DL = 0.5 ppm = 500 ppb

~~GWE~~ GWE 183.83 184.17

Table 2 - Water Sample Analysis Results, Well No. MW-2

Compound	Nov. 1994	Feb. 1995	May 1995	Aug. 1995
TPH-G (ug/L)	11,000	4400		
TPH-D (ug/L)	ND	ND		
Benzene (ug/L)	35	ND		
Toluene (ug/L)	21	ND		
Et. Benz. (ug/L)	7.2	2.5		
Xylene (ug/L)	50	5.7		
Oil & Grease (mg/L)	ND	1.6		

~~GWE~~ GWE 183.9 184.09

Table 3 - Water Sample Analysis Results, Well No. MW-3

Compound	Nov. 1994	Feb. 1995	May 1995	Aug. 1995
TPH-G (ug/L)	200	1500		
TPH-D (ug/L)	ND	ND		
Benzene (ug/L)	ND	6.6		
Toluene (ug/L)	ND	6.4		
Et. Benz. (ug/L)	ND	4.2		
Xylene (ug/L)	2.0	13		
Oil & Grease (mg/L)	3.0	0.9		

GWE 187.40 187.04

ug/L = ppb; mg/L = ppm; ND = not detected

6.0 CONCLUSIONS AND RECOMMENDATIONS

The groundwater samples taken on February 22 and 23, 1995 as part of this, the second quarter of the quarterly sampling program, showed moderate levels of TPH-G, with low to non-detectible levels of all other constituents. The level of contamination has improved markedly in MW-2, from 11,000 to 4400 ppb TPH-G. The levels of TPH-G and BTEX in MW-3 increased, but remain at fairly low levels. **Recent heavy rains may account for changes in measured levels of contamination.**

So far, tests indicate that the groundwater retrieved from the wells has been impacted by the release of hydrocarbons at the site. Monitoring should be continued for at least two more quarters, as per the requirements of the ACHCSA.

7.0 REFERENCES

1. Soil Boring and Monitoring Well Installation Final Report - dated December 14, 1994, prepared by All Environmental, Inc.

2. Soil Boring and Monitoring Well Installation Work Plan - dated December 9, 1993, prepared by All Environmental, Inc.

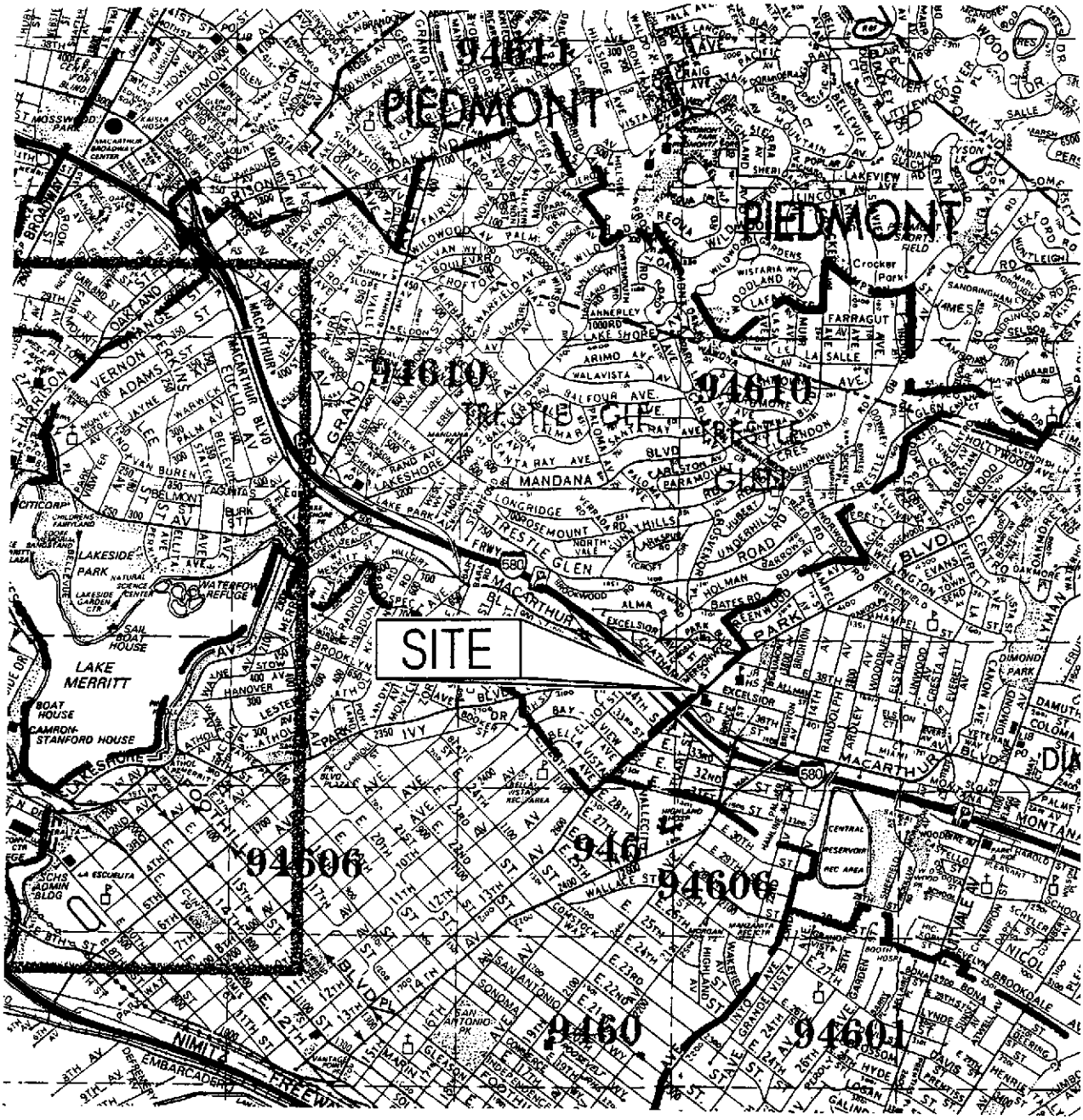
3. Contaminated Soil Over-Excavation Final Report - dated November 18, 1993, prepared by All Environmental, Inc.

4. Underground Storage Tanks Removal Final Report - dated January 20, 1993, prepared by Aqua Science Engineers, Inc.

8.0 REPORT LIMITATIONS

This report presents a summary of work completed by All Environmental, Inc., including observations and descriptions of site conditions. 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 required information, but it cannot be assumed that they are entirely representative of all areas not sampled. All conclusions and recommendations are based on these analyses, observations, and governing regulations. Conclusions beyond those stated and reported herein should not be inferred from this document.

AEI warrants that all services were performed in accordance with the generally accepted practices in the environmental engineering and construction field which existed at the time and location of the work.



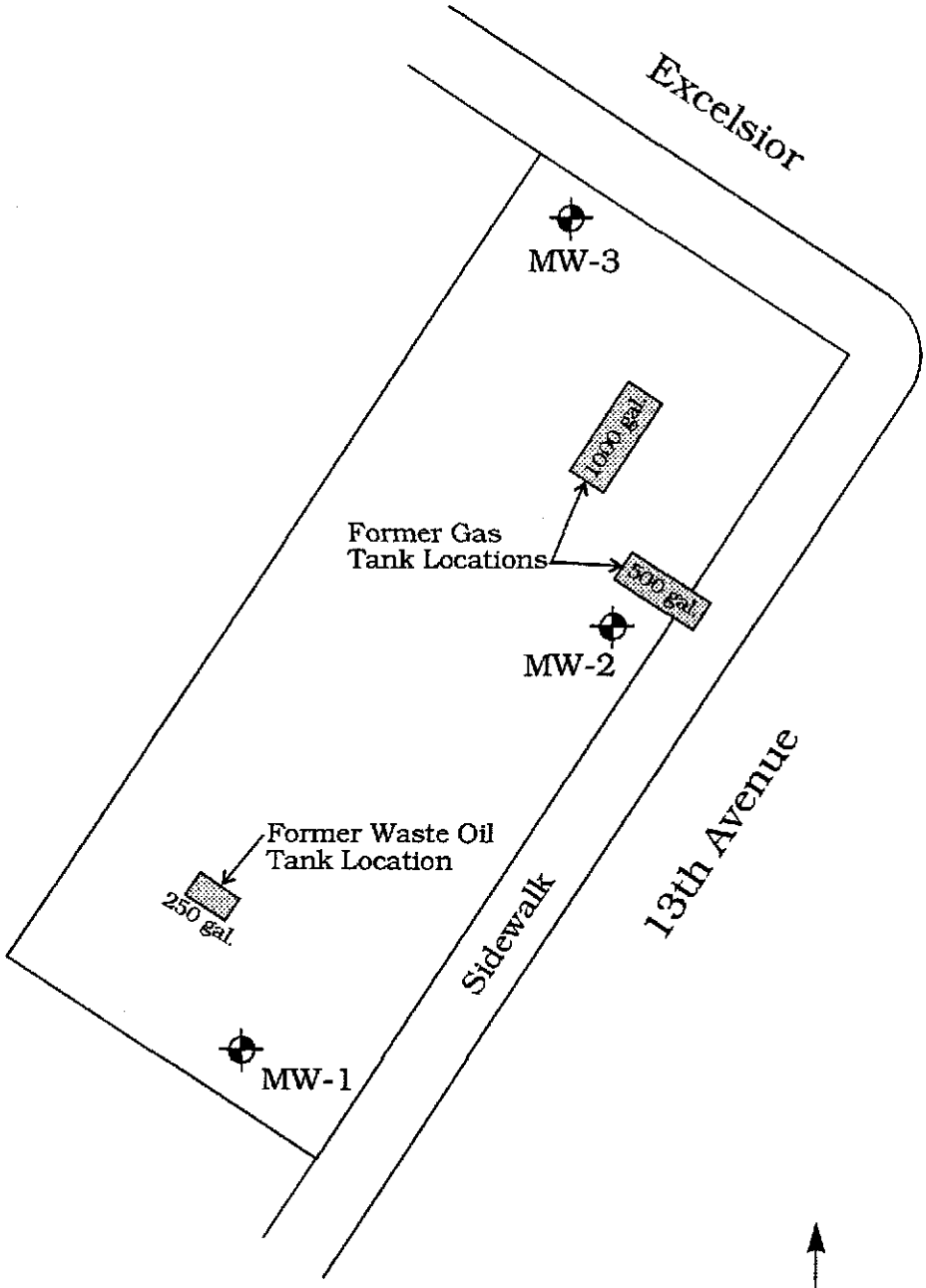
N

0 2200

Scale, feet

From Thomas Bro's. - 1993

ALL ENVIRONMENTAL, INC. 2641 CROW CANYON ROAD, SAN RAMON, CA		
DRAWN BY:		REVISED BY:
DATE:		APPROVED BY:
SITE LOCATION MAP - Williamson		
3635 13th Avenue, Oakland		FIGURE 1



N

0 20

Scale, feet

Explanation

Monitoring Well, Installed by AEI on 3/24/94.

Note: Well locations and property boundaries surveyed accurately, tank locations approximate.

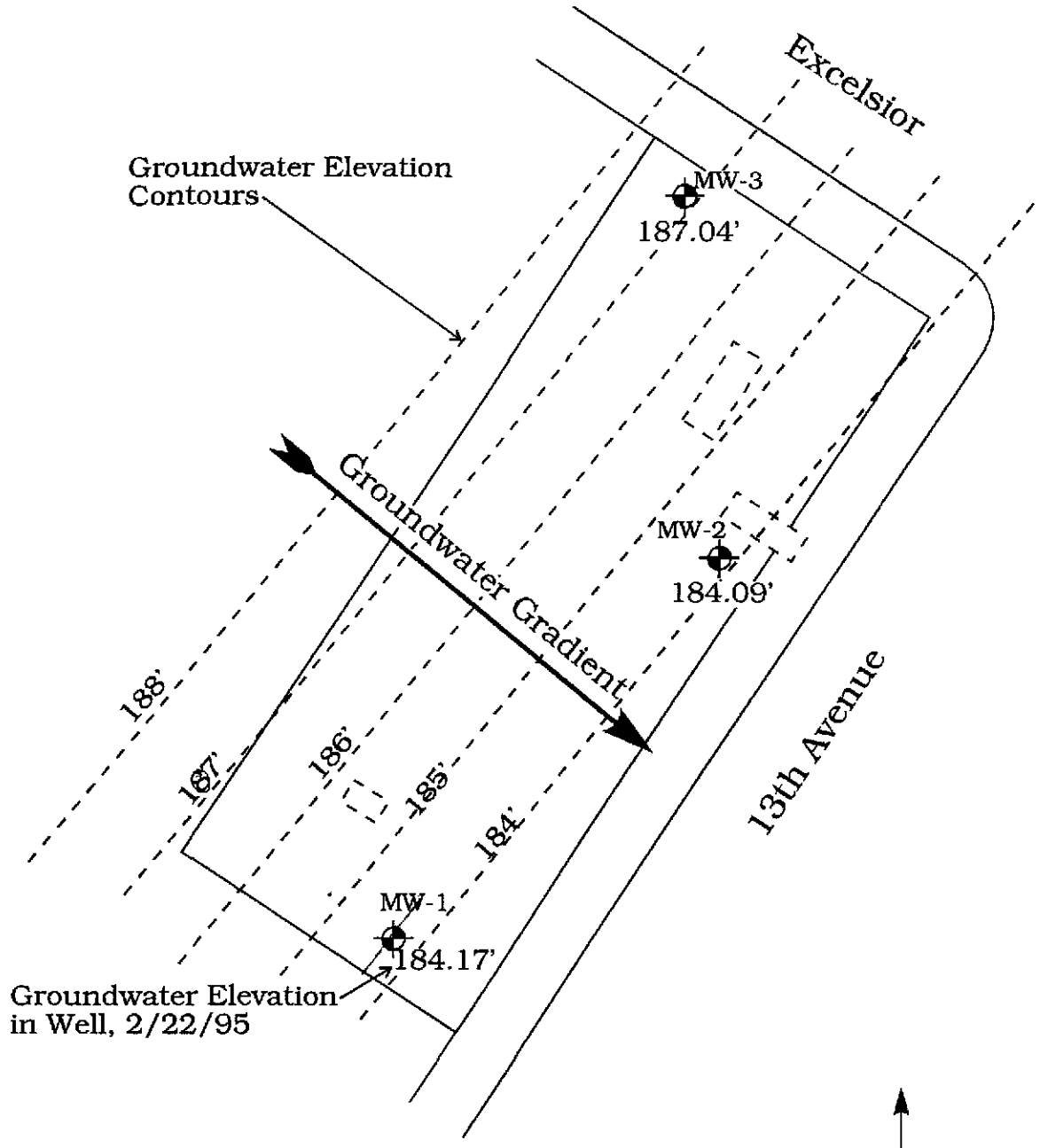
ALL ENVIRONMENTAL, INC.

2641 CROW CANYON ROAD, SAN RAMON, CA

DRAWN BY:		REVISED BY:
DATE:		APPROVED BY:

SITE PLAN - Williamson

3635 13th Avenue, Oakland | FIGURE 2



ALL ENVIRONMENTAL, INC. 2641 CROW CANYON ROAD, SAN RAMON, CA		
DRAWN BY:		REVISED BY:
DATE:		APPROVED BY:
Groundwater Gradient - Williamson		
3635 13th Avenue, Oakland		FIGURE 3

APPENDIX A

CURRENT LABORATORY ANALYSES WITH CHAIN OF CUSTODY DOCUMENTATION

PRIORITY ENVIRONMENTAL LABS

Precision Environmental Analytical Laboratory

February 27, 1995 PEL # 9502084

ALL ENVIRONMENTAL, INC.

Attn: Charles Kissick

Re: Three water samples for Gasoline/BTEX, Diesel, and Oil & Grease analyses.

Project name: Williamson
Project number: 1031

Date sampled: Feb 22-23, 1995
Date extracted: Feb 24-25, 1995

Date submitted: Feb 24, 1995
Date analyzed: Feb 24-25, 1995

RESULTS:

SAMPLE I.D.	Gasoline (ug/L)	Diesel (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl Benzene (ug/L)	Total Xylene (ug/L)	Oil & Grease (mg/L)
MW-1	140	N.D.	N.D.	N.D.	0.6	1.5	1.2
MW-2	4400	N.D.	N.D.	N.D.	2.5	5.7	1.6
MW-3	1500	N.D.	6.6	6.4	4.2	13	0.9
Blank	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Spiked Recovery	106.2%	91.7%	82.0%	103.2%	92.3%	103.1%	---
Detection limit	50	50	0.5	0.5	0.5	0.5	0.5
Method of Analysis	5030 / 8015	3510 / 8015	602	602	602	602	5520 C & F

David Duong
Laboratory Director

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

ALL ENVIRONMENTAL, INC.
2641 Crow Canyon Road, Ste. 5
San Ramon, CA 94583
(510) 820-3224 FAX: (510) 838-2687

PEL #95[illegible]84

INV #25711

Chain of Custody

DATE: 2/23/95 PAGE: 1 OF 1

AEI PROJECT MANAGER: Charles Kissick
PROJECT NAME: Williamson
PROJECT NUMBER: 1031
SIGNATURE: [signature]
TOTAL # OF CONTAINERS: 12
RECD. GOOD COND./COLD: YES

SAMPLE I.D.	DATE	TIME	MATRIX	TPH-Gasoline (EPA 5030/8015)	TPH-Gasoline (EPA 5030/8015) w/ BTEX (EPA 602/8020)	TPH-Diesel (EPA 3510/3550/8015)	PURGEABLE AROMATICS BTEX (EPA 602/8020)	TOTAL OIL & GREASE (EPA 5520 E&F)	TOTAL LEAD (AA) (EPA 7420)	VOLATILE ORGANIC COMPOUNDS (EPA 8240)	LUFT Metals (EPA 7190/7196/7480/7580/7950)	STLC CAM 17 (EPA 1310/6010)	RCI REACTIVITY, CORROSIVITY, IGNITABILITY (CFR 40 261.23)			NUMBER OF CONTAINERS
MW-1	2/22/95		Water		X	X		X								4
MW-2	2/23/95		↓		X	X		X								4
MW-3	↓		↓		X	X		X								4

ANALYTICAL LAB: PEL
ADDRESS:
PHONE: (408) 496-9600 FAX: ( ) 496-9605
INSTRUCTIONS/COMMENTS:

RELINQUISHED BY: 1	RECEIVED BY: 1	RELINQUISHED BY: 2	RECEIVED BY: 2
Signature: [signature]	Signature: [signature]	Signature:	Signature:
Printed Name: Jennifer Anderson	Printed Name: Thuy Le	Printed Name:	Printed Name:
Company: AEI	Company: PEL	Company:	Company:
Time: 11:30 Date: 2/24/95	Time: 11:35 Date: 2/24/95	Time: Date:	Time: Date:

APPENDIX B

PREVIOUS LABORATORY ANALYSES WITH CHAIN OF CUSTODY DOCUMENTATION

PRIORITY ENVIRONMENTAL LABS
Precision Environmental Analytical Laboratory

November 26, 1994 PEL # 9411068

ALL ENVIRONMENTAL, INC.

Attn: Charles Kissick
Re: Three water samples for Gasoline/BTEX, Diesel, and Oil & Grease analyses.

Project name: Williamson
Project number: 1031

Date sampled: Nov 22, 1994 Date submitted: Nov 22, 1994
Date extracted: Nov 22-25, 1994 Date analyzed: Nov 22-25, 1994

RESULTS:

SAMPLE I.D.	Gasoline (ug/L)	Diesel (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl Benzene (ug/L)	Total Xylenes (ug/L)	Oil & Grease (mg/L)
MW-1	210	N.D.	N.D.	N.D.	N.D.	2.3	N.D.
MW-2	11000	N.D.	35	21	7.2	50	N.D.
MW-3	200	N.D.	N.D.	N.D.	N.D.	2.0	3.0
Blank	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Spiked Recovery	88.5%	101.2%	88.3%	90.2%	91.0%	100.5%	---
Detection limit	50	50	0.5	0.5	0.5	0.5	0.5
Method of Analysis	5030 / 8015	3510 / 8015	602	602	602	602	5520 C & F

David Duong
Laboratory Director

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

ALL ENVIRONMENTAL, INC.
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San Ramon, CA 94583
(510) 820-3224 FAX: (510) 838-2687

Chain of Custody

TEL # 9411068

INV # 25460

DATE: 11/22/94 PAGE: 1 OF: 1

AEI PROJECT MANAGER: Charles Kissick
PROJECT NAME: Williamson
PROJECT NUMBER: 1031
SIGNATURE: Chr Kil
TOTAL # OF CONTAINERS: 12
RECD. GOOD COND./COLD: Yes

ANALYSIS REQUEST

SAMPLE I.D.	DATE	TIME	MATRIX	TPH-Gasoline (EPA 5030/8015)	TPH-Gasoline (EPA 5030/8015) w/ BTEX (EPA 602/8020)	TPH-Diesel (EPA 3510/3550/8015)	PURGEABLE AROMATICS BTEX (EPA 602/8020)	TOTAL OIL & GREASE (EPA 5520 E&F)	TOTAL LEAD (AA) (EPA 7420)	VOLATILE ORGANIC COMPOUNDS (EPA 8240)	LUFT Metals (EPA 7130,7190,7480,7520,7950)	STLC CAM 17 (EPA 1310/6010)	RCI REACTIVITY, CORROSIVITY, IGNITABILITY (Title 22, CCR 66801,21-23)			NUMBER OF CONTAINERS
MW-1	11/22/94		Water		X	X		X								4
MW-2	↓				X	X		X								4
MW-3	↓		↓		X	X		X								4

ANALYTICAL LAB: Priority Env. Labs
ADDRESS: 1764 Harmony Ct. Milpitas CA 95035
PHONE: (408) 946-9656 FAX: ( ) 946-9665

INSTRUCTIONS/COMMENTS:

RELINQUISHED BY: 1	RECEIVED BY: 1	RELINQUISHED BY: 2	RECEIVED BY: 2
Signature: Chr Kil	Signature: [signature]	Signature:	Signature:
Printed Name: Charles Kissick	Printed Name: DAVID DUONG	Printed Name:	Printed Name:
Company: All Env. Inc.	Company: PEC	Company:	Company:
Time: 3:10 Date: 11/22/94	Time: 3:10 PM Date: 11/22/94	Time: Date:	Time: Date:

APPENDIX C

GROUNDWATER SAMPLING LOGS

ALL ENVIRONMENTAL, INC., GW WELL SAMPLING FIELD LOG	
Well Number:	**MW-1**
PROJECT	
Project Name and Job Number	Williamson #1031
Project Address	3635 13th Ave.
	Oakland, CA
Date of Sampling and Name of Sampler	2/22/95 CMK
GW MONITORING WELL	
Well Diameter	2"
Seal at Grade - Type and Condition	cement seal - settled > 1 foot
Well Cap - Type and Condition	locking expanding; good condition
Top of Casing Elev - Ft. Above Sea Level	194.75
Depth of Well - feet	23.10
Depth to Water - feet	10.58
Groundwater Elevation - feet	184.17
Required GW Purge Before Sampling - gal.	10 (5 volumes)
Actual GW Purge Before Sampling - gal.	10
Appearance of Purge Water	almost clear
GW MONITORING SAMPLES	
No. of Samples and Type of Containers	two liters, two 40-ml voa's
GW Temp. and pH	65.7 degrees; pH=6.62
GW Conductivity (uS/cm)	2050
Appearance of GW Samples	clear
Samples Iced and Chain of Custody?	yes
Sampling Equipment	submersible pump for purge, disposable bailer for sample
Equipment Cleaned Between Samples?	yes
COMMENTS	
ie., sample odor, well recharge, etc.	No odor
	Fast recharge.

ALL ENVIRONMENTAL, INC., GW WELL SAMPLING FIELD LOG	
Well Number:	**MW-2**
PROJECT	
Project Name and Job Number	Williamson #1031
Project Address	3635 13th Ave.
	Oakland, CA
Date of Sampling and Name of Sampler	2/22-23/95 CMK
GW MONITORING WELL	
Well Diameter	2"
Seal at Grade - Type and Condition	cement seal - settled > 1 foot, under water
Well Cap - Type and Condition	locking expanding; good condition
Top of Casing Elev - Ft. Above Sea Level	196.44
Depth of Well - feet	36.03
Depth to Water - feet	12.35
Groundwater Elevation - feet	184.09
Required GW Purge Before Sampling - gal.	19 (5 volumes)
Actual GW Purge Before Sampling - gal.	17
Appearance of Purge Water	clear, with a shean and odor
GW MONITORING SAMPLES	
No. of Samples and Type of Containers	two liters, two 40-ml voa's
GW Temp. and pH	65.3 degrees; pH=6.58
GW Conductivity (uS/cm)	1325
Appearance of GW Samples	clear, with a shean
Samples Iced and Chain of Custody?	yes
Sampling Equipment	submersible pump for purge, disposable bailer for sample
Equipment Cleaned Between Samples?	yes
COMMENTS	
ie., sample odor, well recharge, etc.	Fuel odor
	Slow recharge, overnight.
	Well pumped dry at 17 gallons.

ALL ENVIRONMENTAL, INC., GW WELL SAMPLING FIELD LOG	
Well Number:	**MW-3**
PROJECT	
Project Name and Job Number	Williamson #1031
Project Address	3635 13th Ave.
	Oakland, CA
Date of Sampling and Name of Sampler	2/22-23/95 CMK
GW MONITORING WELL	
Well Diameter	2"
Seal at Grade - Type and Condition	cement seal - good condition
Well Cap - Type and Condition	locking expanding; good condition
Top of Casing Elev - Ft. Above Sea Level	198.93
Depth of Well - feet	35.57
Depth to Water - feet	11.89
Groundwater Elevation - feet	187.04
Required GW Purge Before Sampling - gal.	19 (5 volumes)
Actual GW Purge Before Sampling - gal.	16
Appearance of Purge Water	clear
GW MONITORING SAMPLES	
No. of Samples and Type of Containers	two liters, two 40-ml voa's
GW Temp. and pH	63.0 degrees; pH=7.20
GW Conductivity (uS/cm)	1061
Appearance of GW Samples	clear
Samples Iced and Chain of Custody?	yes
Sampling Equipment	submersible pump for purge, disposable bailer for sample
Equipment Cleaned Between Samples?	yes
COMMENTS	
ie., sample odor, well recharge, etc.	No odor
	Slow recharge, overnight.
	Well pumped dry at 16 gallons.