AEI CONSULTANTS
ENVIRONMENTAL & CIVIL ENGINEERING SERVICES

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Phone: (925) 283-6000 Fax: (925) 283-6121

January 16, 2003

Mr. Don Hwang
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway
Suite 250
Alameda, CA 94502-6577

Alameda County
JAN 2 2 2003
Environmental Health

Subject: **Quarterly Groundwater Monitoring Report**
1075 40th Street
Oakland, California
AEI Project No. 3119

Dear Mr. Hwang:

Enclosed is a copy of the quarterly groundwater report for the seventeenth episode of sampling.

Please call either Peter McIntyre at (925) 283-6000 if you have any questions.

Sincerely,

Nathan Garfield
Staff Geologist

January 16, 2003

QUARTERLY GROUNDWATER MONITORING REPORT

1075 40TH Street
Oakland, California

Project No. 3119

Prepared For

Fidelity Roof Company
1075 40th Street
Oakland, CA 94608

Prepared By

All Environmental, Inc.
3210 Old Tunnel Road, Suite B
Lafayette, CA 94549
(925) 283-6000

AEI

AEI CONSULTANTS
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Phone: (925) 283-6000 Fax: (925) 283-6121

January 16, 2003

Mr. Monte Upshaw
Fidelity Roof Company
1075 40th Street
Oakland, CA 94608

RE: Quarterly Groundwater Monitoring and Sampling Report
Seventeenth Episode
1075 40th Street
Oakland, California
Project No. 3119

Dear Mr. Upshaw:

On your behalf, AEI Consultants (AEI) has prepared this report to document the groundwater investigation at the above referenced site (Figure 1: Site Location Map). The purpose of this activity was to monitor groundwater quality in the vicinity of previous underground storage tanks (USTs). The work was performed in compliance with requirements of the Alameda County Health Care Services Agency (ACHCSA). This report presents the findings of the seventeenth episode of groundwater monitoring and sampling.

Site Description and Background

The site currently supports the operation of Fidelity Roof Company and is located in a mixed residential and commercial area of Oakland at 1075 40th Street.

On December 19, 1995, Tank Protect Engineering, Inc. removed one (1) 1,000 gallon diesel underground storage tank (UST) and one (1) 500 gallon gasoline UST from the southeast corner of the property. The removal of the tanks produced a single excavation. Analysis of the soil samples indicated that soil beneath the 1,000 gallon UST had been impacted by minor concentrations of total petroleum hydrocarbons as gasoline (TPH-g), TPH as diesel (TPH-d), benzene, toluene, ethylbenzene and total xylenes (BTEX) and methyl tertiary butyl ether (MTBE).

On September 12, 1996, AEI advanced four soil borings in the vicinity of the former UST excavation[1]. Analytical results from the subsurface investigation revealed significant levels of gasoline and diesel petroleum hydrocarbons present in soil to the south and to the west of the open excavation. The contamination was thought to extend beneath the existing pump island. Due to the high concentrations of petroleum hydrocarbons within the groundwater, the ACHCSA required further investigation of the extent and magnitude of the groundwater contaminant plume.

During the drilling investigation, AEI collected a four-point composite soil sample from the stockpile. Approval was granted by Ms. Hugo of the ACHCSA to reuse the stockpiled soil as backfill material.

On October 25, 1996, AEI extended the excavation laterally 7 feet to the south and 12 feet to the west[2]. Soil was removed to a depth of 9 feet below ground surface (bgs). The dispenser island and associated piping were also removed. Groundwater was not encountered during the excavation activities. Analyses of the soil samples collected from the excavation sidewalls indicated that up to 150 mg/kg of TPH-g, 16 mg/kg of benzene, and 300 mg/kg of TPH-d remained within the western sidewall of the excavation.

On March 6, 1997, AEI installed three groundwater monitoring wells[3]. At the request of the ACHCSA, six additional soil borings were drilled south and west of the well locations on November 4, 1998[4]. The locations of these borings were chosen to assess the lateral extent of impacted groundwater at the site. TPH-d was detected at 2,400 µg/L in groundwater to the south of the former excavation. No significant concentrations of petroleum hydrocarbons were detected from the other borings.

Based on the results of these six soil borings, the ACHCSA requested the installation of a fourth groundwater monitoring well at the site, located south of the former tank locations along Yerba Buena Avenue. Monitoring well MW-4 was installed on July 15, 1999[5]. No detectable concentrations of petroleum hydrocarbons were found in the soil samples taken during installation.

The analytical results of prior groundwater sampling episodes are included in Table 2. This report describes the results of the seventeenth groundwater monitoring event that took place on November 14, 2002.

Summary of Activities

AEI measured the depth to groundwater in the four wells on November 14, 2002. Prior to sampling, the depth to water from the top of the well casings was measured with an electric water level indicator. The wells were purged and sampled using disposable plastic bailers. Temperature, pH, and specific conductivity were measured during the purging of the wells. AEI removed at least 3 well volumes from each well while purging. Once the temperature, pH, and specific conductivity stabilized, a water sample was collected. Well locations are shown in Figure 2.

Water was poured from the bailers into 1-liter amber glass bottles and 40 ml glass VOA vials and capped so neither headspace nor air bubbles were visible within the sample containers. Samples were shipped on ice under proper chain of custody protocol to McCampbell Analytical, Inc. of Pacheco, California (State Certification #1644).

Groundwater samples were submitted for chemical analysis for TPH-g (EPA Method 5030/8015), MTBE (EPA Method 8020/602), benzene, toluene, ethylbenzene, and xylenes (BTEX) (EPA Method 8020/602), and (TPH-d) (EPA Method 3510/8015).

Field Results

A strong hydrocarbon odor and heavy sheen were detected during the sampling of monitoring well MW-1. Groundwater levels for the current monitoring episode ranged from 33.09 to 36.41 feet above mean sea level (msl). These groundwater elevations were an average of 0.54 feet higher than the previous monitoring episode. The most recent calculated groundwater gradient was 0.075 foot per foot (ft/ft), and the direction of flow was towards the northwest. This represents an approximately 45-degree shift to the north in the direction of flow, and a slight increase in gradient. These fluctuations were consistent with previous sampling episodes.

Groundwater elevation data are summarized in Table 1. The groundwater elevation contours and the groundwater flow direction are shown on Figure 2. Refer to Appendix B for Groundwater Monitoring Well Field Sampling Forms.

Groundwater Quality

Significant concentrations of petroleum hydrocarbons remain in the groundwater. The highest concentrations of petroleum hydrocarbons were observed in MW-1 which TPH-g at 66,000 µg/L and benzene at 8,300 µg/L. This is a drastic increase since the previous sampling episode. Well MW-3, which has had the highest historical contaminant levels, was non detect for all parameters. MTBE was detected in well MW-2 at 3,800 µg/L and in MW-4 at 11 µg/L.

A summary of groundwater quality data is presented in Table 2. Laboratory results and chain of custody documents are included in Appendix B.

Conclusions

Groundwater analytical results from the current sampling episode indicated that elevated levels of petroleum hydrocarbons remained in the groundwater. The analytical results indicate that hydrocarbon concentrations have drastically increased in MW-1 while they have become non detect in well MW-3. Groundwater elevations were 0.54 feet higher than the previous sampling episode and groundwater flow direction was to the northwest.

A corrective action plan (CAP)[13] discussing available remedial technologies available to this site was submitted to the ACHCSA for their review and has been approved. AEI anticipates beginning the approved scope of work once pre-approval for reimbursement has been approved by the California State UST Cleanup Fund. Quarterly groundwater monitoring and sampling of the wells will continue at the site and the next monitoring and sampling episode is scheduled for February 2003.

References

1. Phase II Soil and Groundwater Investigation Report, October 7, 1996, prepared by AEI.
2. Excavation and Disposal of Contaminated Soil Report, January 7, 1997, prepared by AEI.
3. Groundwater Monitoring Well Installation Report, dated May 30, 1997, prepared by AEI.
4. Phase II Subsurface Investigation Report, December 9, 1998, prepared by AEI.
5. Groundwater Monitoring Well and Sampling report, September 3, 1999, prepared by AEI.
6. Quarterly Groundwater Monitoring and Sampling Report (QGMSR), March 21, 2000, prepared by AEI.
7. QGMSR, July 28, 2000, prepared by AEI.
8. QGMSR, November 6, 2000, prepared by AEI.
9. QGMSR, January 29, 2001, prepared by AEI.
10. QGMSR, May 8, 2001, prepared by AEI.
11. QGMSR, August 14, 2001, prepared by AEI.
12. QGMSR, December 11, 2001, prepared by AEI.
13. Corrective Action Plan, July 31, 2001, prepared by AEI.
14. QGMSR, May 31, 2002, prepared by AEI.
15. QGMSR, June 4, 2002, prepared by AEI.
16. QGWMSR, September 9, 2002, prepared by AEI.

Report Limitations and Signatures

This report presents a summary of work completed by AEI Consultants 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 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 that existed at the time and location of the work.

Sincerely,
AEI Consultants

Nathan Garfield
Staff Geologist

J. P. Derhake, PE
Senior Author, Principal

Figures

Figure 1	Site Location Map
Figure 2	Groundwater Gradient Map
Figure 3	Dissolved Hydrocarbon Map

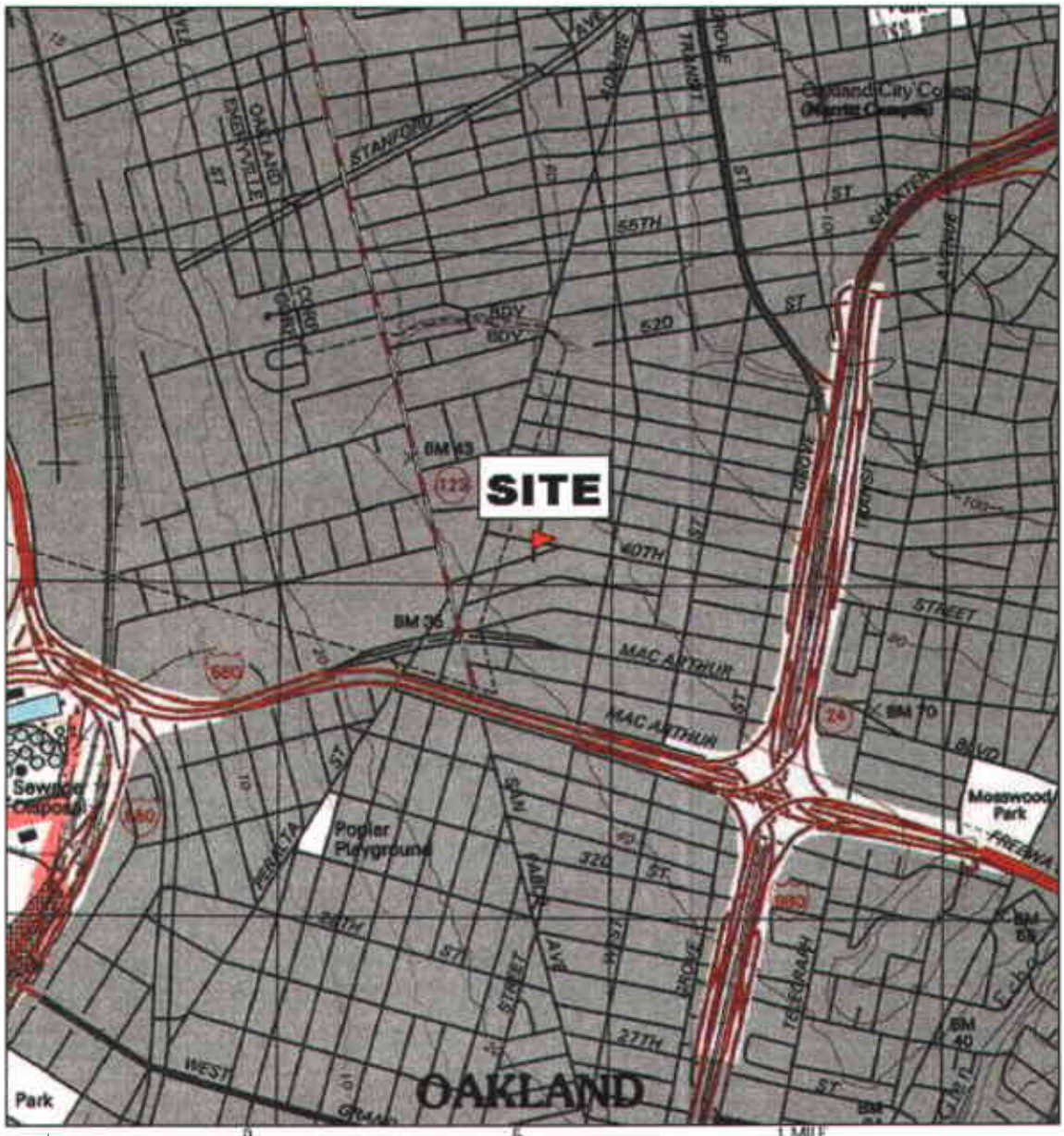
Tables

Table 1	Groundwater Elevation Data
Table 2	Groundwater Sample Analytical Data

Appendices

Appendix A	Groundwater Monitoring Well Field Sampling Forms
Appendix B	Laboratory Analyses With Chain of Custody Documentation

cc: Mr. Don Hwang, Alameda County Health Care Services Agency, 1131 Harbor Bay Parkway, Suite 250, Alameda, CA 94502-6577



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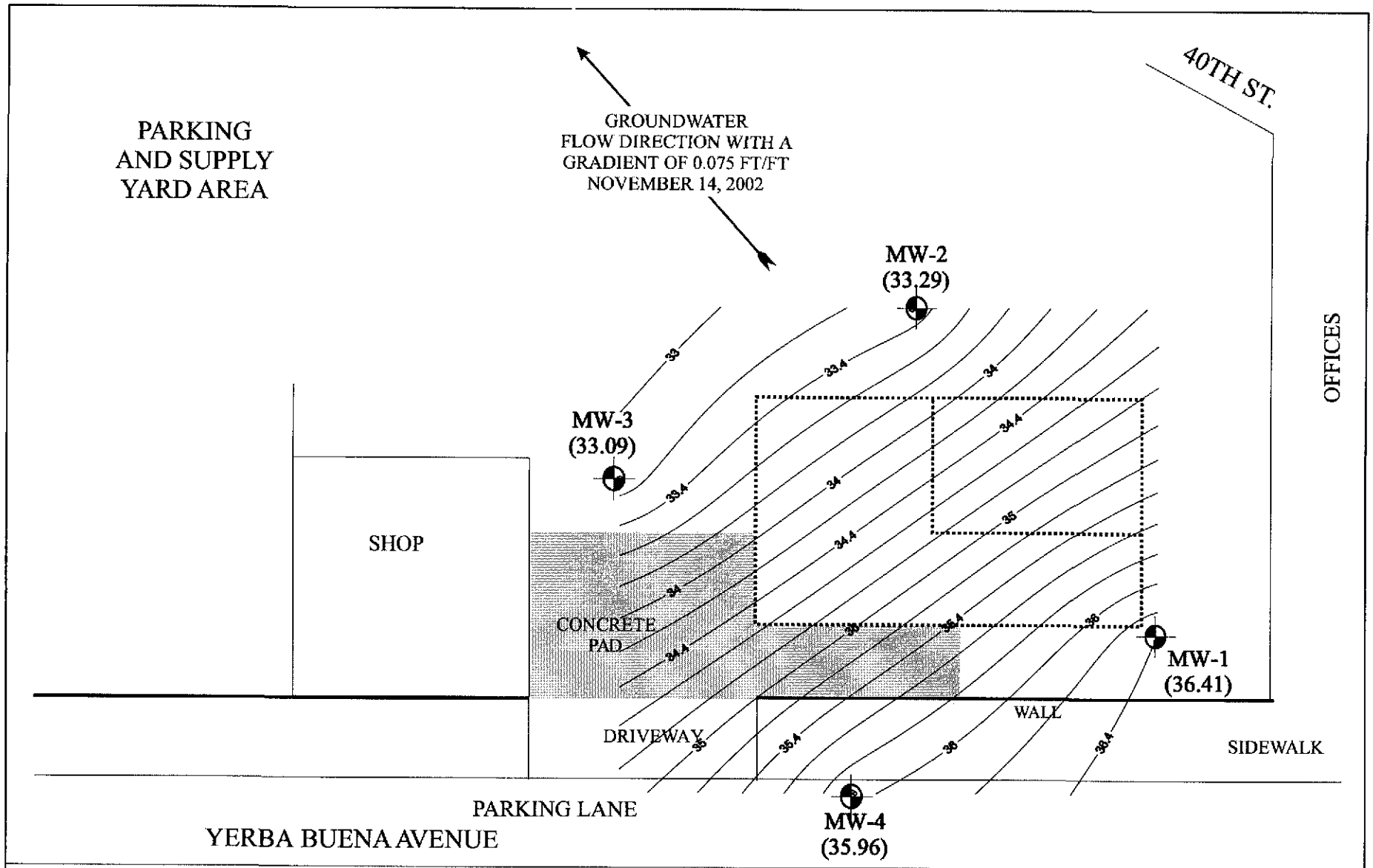
3210 OLD TUNNEL RD, STE B, LAFAYETTE, CA

SITE LOCATION MAP

1075 44 TH STREET
OAKLAND, CALIFORNIA

FIGURE 1
PROJECT NO. 3119



LEGEND

Monitoring Well

Contours drawn in Surfer v. 7.0
Contour interval is 0.2 feet

N

0 10 20

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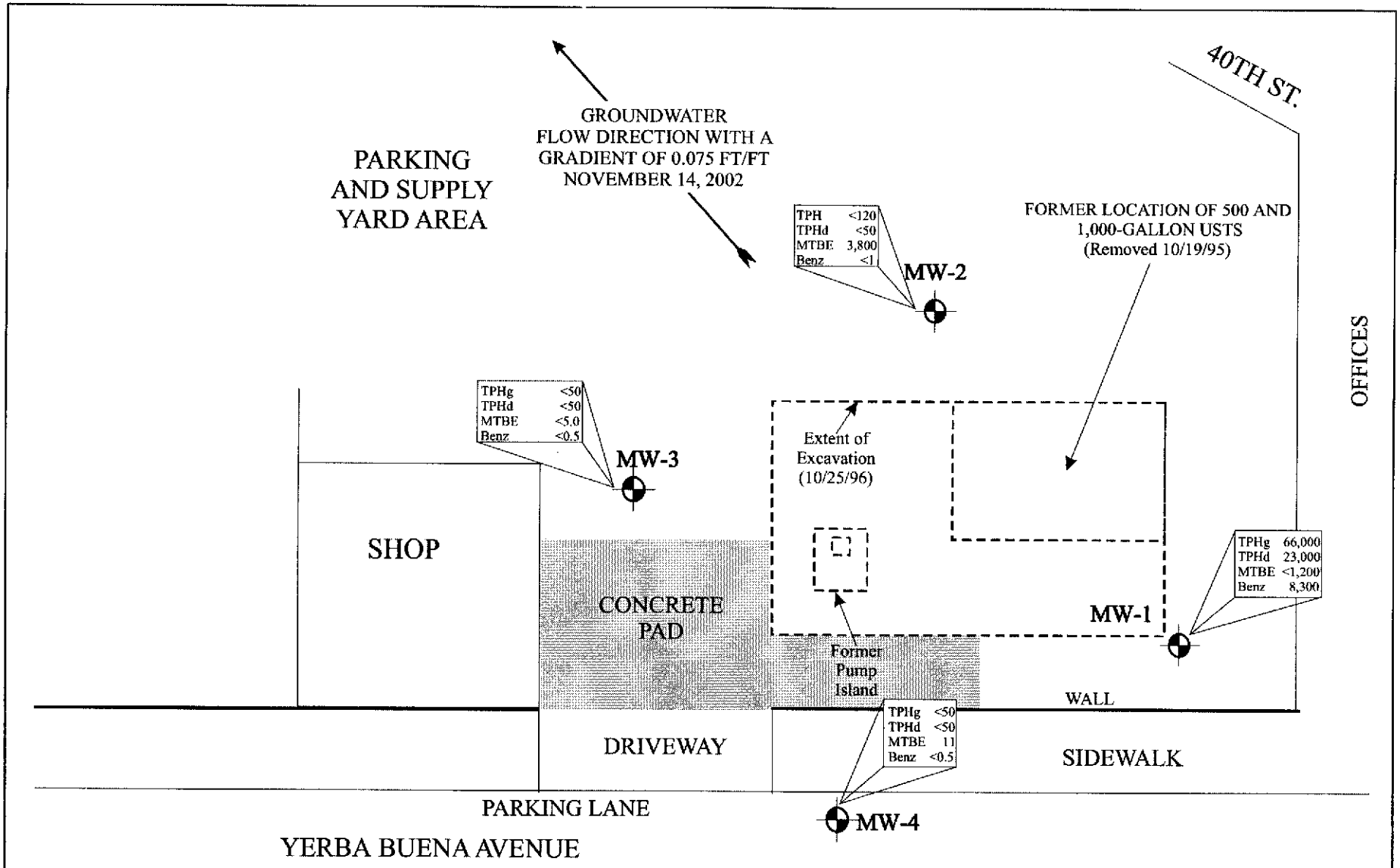
3210 OLD TUNNEL ROAD, SUITE B, LAFAYETTE, CA

GROUNDWATER GRADIENT MAP

1075 40TH STREET
OAKLAND, CALIFORNIA

FIGURE 2
Project 3119



LEGEND

Monitoring Well

Groundwater results are expressed in µg/L.
TPHg = Total petroleum hydrocarbons as gasoline
TPHd = Total petroleum hydrocarbons as diesel
MTBE = Methyl tertiary butyl ether
Benz = Benzene

N

0 10 20

AEI CONSULTANTS

3210 OLD TUNNEL ROAD, SUITE B, LAFAYETTE, CA

DISSOLVED HYDROCARBON MAP

1075 40TH STREET
OAKLAND, CALIFORNIA

FIGURE 3
Project: 3119

Table 1
Groundwater Elevation Data

Well ID	Date	Elevation (ft msl)	Depth to Water (ft)	Groundwater Elevation (ft msl)
MW-1	03/19/97	45.41	8.25	37.16
	06/20/97	45.41	9.1	36.31
	10/08/97	45.41	9.95	35.46
	01/16/98	45.41	7.57	37.84
	08/05/99	45.49	10.16	35.33
	11/18/99	45.49	8.52	36.97
	02/24/00	45.49	7.65	37.84
	05/24/00	45.49	8.47	37.02
	08/29/00	45.49	10.28	35.21
	01/12/01	45.49	8.5	36.99
	04/18/01	45.49	8.77	36.72
	07/27/01	45.49	10.5	34.99
	11/06/01	45.49	10.28	35.21
	02/13/02	45.49	8.47	37.02
	05/14/02	45.49	9.50	35.99
	08/15/02	45.49	10.39	35.10
	11/14/02	**45.49**	**9.08**	**36.41**
MW-2	03/19/97	44.94	8.4	36.54
	06/20/97	44.94	8.85	36.09
	10/08/97	44.94	9.8	35.14
	01/16/98	44.94	5.28	39.66
	08/05/99	44.98	9.32	35.66
	11/18/99	44.98	10.2	34.78
	02/24/00	44.98	7.03	37.95
	05/24/00	44.98	8.01	36.97
	08/29/00	44.98	11.07	33.91
	01/12/01	44.98	8.6	36.38
	04/18/01	44.98	8.8	36.18
	07/27/01	44.98	11.1	33.88
	11/06/01	44.98	12.21	32.77
	02/13/02	44.98	7.98	37.00
	05/14/02	44.98	10.48	34.50
	08/15/02	44.98	10.64	34.34
	11/14/02	**44.98**	**11.69**	**33.29**
MW-3	03/19/97	44.32	7.59	36.73
	10/08/97	44.32	9.98	34.34
	06/20/97	44.32	8.36	35.96
	01/16/98	44.32	9.18	35.14
	08/05/99	44.37	10.56	33.81
	11/18/99	44.37	10.92	33.45
	02/24/00	44.37	8.49	35.88
	05/24/00	44.37	8.42	35.95
	08/29/00	44.37	12	32.37
	01/12/01	44.37	10.5	33.87
	04/18/01	44.37	9.5	35.22
	07/27/01	44.37	11.61	32.76
	11/06/01	44.37	11.73	32.64
	02/13/02	44.37	9.36	35.01
	05/14/02	44.37	9.00	35.37
	08/15/02	44.37	11.72	32.65
	11/14/02	**44.37**	**11.28**	**33.09**
MW-4	08/05/99	43.48	8.79	34.69
	11/18/99	43.48	8.11	35.37
	02/24/00	43.48	5.19	38.29
	05/24/00	43.48	7.23	36.25
	08/29/00	43.48	9.04	34.44
	01/12/01	43.48	6.4	37.08
	04/18/01	43.48	7.3	36.18
	07/27/01	43.48	9.16	34.32
	11/06/01	43.48	9.03	34.45
	02/13/02	43.48	6.60	36.88
	05/14/02	43.48	7.19	36.29
	08/15/02	43.48	8.97	34.51
	11/14/02	**43.48**	**7.52**	**35.96**

Notes:
All well elevations are measured from the top of the casing and not from the ground
ft msl = feet above mean sea level

Table 2
Groundwater Sample Analytical Data

Well ID	Date	Consultant/ Lab	TPHg (ug/L)	MTBE (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl-benzene (ug/L)	Xylenes (ug/L)	TPHd (ug/L)
MW - 1	03/19/97	AEI/MAI	<50	23	<0.5	<0.5	<0.5	<0.5	<50
	06/23/97	AEI/MAI	1,300	14	150	2.1	12	19	420
	10/08/97	AEI/MAI	56	5.8	2.8	<0.5	<0.5	<0.5	66
	01/16/98	AEI/MAI	1,500	<33	95	0.72	69	8.4	910
	08/05/99	AEI/MAI	160	<15	1.6	<0.5	0.56	1.1	63
	11/18/99	AEI/MAI	79	<5.0	<0.5	<0.5	<0.5	<0.5	<50
	02/24/00	AEI/MAI	300	<5.0	14	0.82	3.5	1.6	160
	05/24/00	AEI/MAI	1,300	ND<10	93	<0.5	17	1.6	480
	08/29/00	AEI/MAI	120	<5.0	0.93	<0.5	<0.5	<0.5	<0.5
	01/12/01	AEI/MAI	360	<5.0	16	<0.5	9.3	0.69	170
	04/18/01	AEI/MAI	1,100	2,800	63	<0.5	34	0.73	410
	07/27/01	AEI/MAI	130	<5.0	1.6	<0.5	<0.5	<0.5	66
	11/06/01	AEI/MAI	<50	<5.0	<0.5	<0.5	<0.5	<0.5	<50
	02/13/02	AEI/MAI	430	<5.0	17	0.51	11	0.64	270
	05/14/02	AEI/MAI	340	<5.0	21	<0.5	5.3	0.67	170
	08/15/02	AEI/MAI	96	<5.0	0.66	<0.5	<0.5	<0.5	53
	11/14/02	**AEI/MAI**	**66,000**	**ND<1,200**	**8,300**	**860**	**3,000**	**11,000**	**23,000**
MW - 2	03/19/97	AEI/MAI	<50	65	<0.5	<0.5	<0.5	<0.5	<50
	06/23/97	AEI/MAI	<50	70	3.4	<0.5	<0.5	<0.5	<50
	10/08/97	AEI/MAI	<50	90	<0.5	<0.5	<0.5	<0.5	<50
	01/16/98	AEI/MAI	<50	65	<0.5	<0.5	<0.5	<0.5	<50
	08/05/99	AEI/MAI	<50	600	<0.5	<0.5	<0.5	<0.5	<50
	11/18/99	AEI/MAI	<50	370	<0.5	<0.5	<0.5	<0.5	<50
	02/24/00	AEI/MAI	<50	880	<0.5	<0.5	<0.5	<0.5	<50
	05/24/00	AEI/MAI	ND<250	2,200	<0.5	<0.5	<0.5	<0.5	62
	08/29/00	AEI/MAI	ND<200	1,900	<0.5	<0.5	<0.5	<0.5	<50
	01/12/01	AEI/MAI	470	2,000	8.7	3.1	16	73	70
	04/18/01	AEI/MAI	<50	2,800	<0.5	<0.5	<0.5	<0.5	<50
	07/27/01	AEI/MAI	ND<100	3,300	<0.5	<0.5	<0.5	<0.5	<50
	11/06/01	AEI/MAI	ND<100	3,000	<0.5	<0.5	<0.5	<0.5	<50
	02/13/02	AEI/MAI	54	3,200	<0.5	<0.5	<0.5	<0.5	<50
	05/14/02	AEI/MAI	ND<150	3,800	4.8	ND<1.0	ND<1.0	ND<1.0	<50
	08/15/02	AEI/MAI	<50	2,900	<0.5	<0.5	<0.5	<0.5	<50
	11/14/02	**AEI/MAI**	**ND<120**	**3,800**	**ND<1**	**ND<1**	**ND<1**	**ND<1**	**<50**
MW -3	03/19/97	AEI/MAI	26,000	230	3,000	530	340	2,300	5,000
	06/23/97	AEI/MAI	25,000	270	4,400	120	540	1,500	7,000
	10/08/97	AEI/MAI	17,000	ND<280	4,400	47	280	410	5,100
	01/16/98	AEI/MAI	29,000	ND<360	5,600	740	950	3,500	7,300
	08/05/99	AEI/MAI	31,000	ND<200	5,400	150	1100	2,300	5,100
	11/18/99	AEI/MAI	74,000	ND<1,000	8,100	5,000	2,100	8,100	490,000
	02/24/00	AEI/MAI	110,000	ND<200	12,000	1,400	2,900	14,000	6,300
	05/24/00	AEI/MAI	87,000	ND<200	13,000	1,900	2,900	14,000	26,000
	08/29/00	AEI/MAI	49,000	ND<200	7,400	800	1,800	7,400	9,400
	01/12/01	AEI/MAI	69,000	ND<300	8,600	980	2,600	11,000	21,000
	04/18/01	AEI/MAI	75,000	ND<500	9,200	1,200	2,500	12,000	13,000
	07/27/01	AEI/MAI	75,000	ND<650	8,700	1,100	2,600	12,000	85,000
	11/06/01	AEI/MAI	89,000	ND<200	7,900	910	2,800	12,000	86,000
	02/13/02	AEI/MAI	85,000	ND<2000	8,500	830	2,600	11,000	13,000
	05/14/02	AEI/MAI	94,000	ND<1000	9,700	1,100	3,400	15,000	35,000
	08/15/02	AEI/MAI	37,000	ND<1200	5,200	430	1,800	5,900	9,700
	11/14/02	**AEI/MAI**	**<50**	**<5.0**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<50**
MW-4	08/05/99	AEI/MAI	<50	37	<0.5	<0.5	<0.5	<0.5	<50
	11/18/99	AEI/MAI	<50	20	<0.5	<0.5	<0.5	<0.5	<50
	02/24/00	AEI/MAI	<50	20	<0.5	<0.5	<0.5	<0.5	<50
	05/24/00	AEI/MAI	120	31	1.3	<0.5	<0.5	<0.5	140
	08/29/00	AEI/MAI	<50	22	<0.5	<0.5	<0.5	<0.5	<0.5
	01/12/01	AEI/MAI	<50	25	<0.5	<0.5	<0.5	<0.5	81
	04/18/01	AEI/MAI	30	35	2.4	1.1	0.66	4.2	170
	07/27/01	AEI/MAI	87	26	1.8	<0.5	2	10	110
	11/06/01	AEI/MAI	200	21	4.5	1	5.2	24	59
	02/13/02	AEI/MAI	<50	15	<0.5	<0.5	<0.5	<0.5	91
	05/14/02	AEI/MAI	260	26	12	2.7	11	49	140
	08/15/02	AEI/MAI	<50	12	<0.5	<0.5	<0.5	<0.5	<50
	11/14/02	**AEI/MAI**	**<50**	**11**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<50**

Notes:
ug/L= micrograms per liter
ND= Not detected
MTBE= Methyl Tertiary Butyl Ether
TPHg= Total Petroleum Hydrocarbons as gasoline
TPHd= Total Petroleum Hydrocarbons as diesel
AEI = AEI Consultants
MAI = McCampbell Analytical Inc., Pacheco, California

AEI CONSULTANTS

GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

Monitoring Well Number: MW-1

Project Name:	Fidelity Roof Company	Date of Sampling:	11/14/2002
Job Number:	3119	Name of Sampler:	N. Garfield
Project Address:	1075 40th Street, Oakland		

MONITORING WELL DATA

Well Casing Diameter (2"/4"/6")	2		
Wellhead Condition			
Elevation of Top of Casing (feet above msl)	45.49		
Depth of Well	21.00		
Depth to Water (from top of casing)	9.08		
Water Elevation (feet above msl)	36.41		
Well Volumes Purged	3		
Gallons Purged: formula valid only for casing sizes of 2" (.16 gal/ft), 4" (.65 gal/ft), and 6" (1.44 gal/ft)	**5.7**		
Actual Volume Purged (gallons)	5.0		
Appearance of Purge Water	clear		
Free Product Present?	Yes	Thickness (ft):	<0.1

GROUNDWATER SAMPLES

Number of Samples/Container Size: 2 40mL VOA, 1 1L

Time	Vol Removed (gal)	Temperature (deg C)	pH	Conductivity (µ sec/cm)	DO (mg/L)	ORP (meV)	Comments
1:20	1	19.5	6.48	1748			
1:21	2	19.1	6.57	1665			dry
1:24	3.5	19.0	6.65	1698			dry
1:29	6	19.9	6.61	1665			

COMMENTS (i.e., sample odor, well recharge time & percent, etc.)

Oily sheen, strong hydrocarbon odor

AEI CONSULTANTS

GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

Monitoring Well Number: MW-2

Project Name:	Fidelity Roof Company	Date of Sampling:	11/14/2002
Job Number:	3119	Name of Sampler:	N. Garfield
Project Address:	1075 40th Street, Oakland		

MONITORING WELL DATA

Well Casing Diameter (2"/4"/6")	2		
Wellhead Condition	OK		
Elevation of Top of Casing (feet above msl)	44.98		
Depth of Well	21.00		
Depth to Water (from top of casing)	11.69		
Water Elevation (feet above msl)	33.29		
Well Volumes Purged	3		
Gallons Purged: formula valid only for casing sizes of 2" (.16 gal/ft), 4" (.65 gal/ft), and 6" (1.44 gal/ft)	**4.5**		
Actual Volume Purged (gallons)	5.0		
Appearance of Purge Water	clear		
Free Product Present?	No	Thickness (ft):	

GROUNDWATER SAMPLES

Number of Samples/Container Size				2 40mL VOA, 1 1L			
Time	Vol Removed (gal)	Temperature (deg C)	pH	Conductivity (µ sec/cm)	DO (mg/L)	ORP (meV)	Comments
1:05	1	23.1	6.82	1450			
1:06	3	21.9	6.61	1355			
1:07	5	21.7	6.70	1382			

COMMENTS (i.e., sample odor, well recharge time & percent, etc.)

no odor

AEI CONSULTANTS

GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

Monitoring Well Number: MW-3

Project Name:	Fidelity Roof Company	Date of Sampling:	11/14/2002
Job Number:	3119	Name of Sampler:	N. Garfield
Project Address:	1075 40th Street, Oakland		

MONITORING WELL DATA

Well Casing Diameter (2"/4"/6")	2		
Wellhead Condition	OK		
Elevation of Top of Casing (feet above msl)	44.37		
Depth of Well	21.00		
Depth to Water (from top of casing)	11.28		
Water Elevation (feet above msl)	33.09		
Well Volumes Purged	3		
Gallons Purged: formula valid only for casing sizes of 2" (.16 gal/ft), 4" (.65 gal/ft), and 6" (1.44 gal/ft)	**4.7**		
Actual Volume Purged (gallons)	4.5		
Appearance of Purge Water	clear		
Free Product Present?	No	Thickness (ft):	

GROUNDWATER SAMPLES

Number of Samples/Container Size: 2 40mL VOA, 1 1L

Time	Vol Removed (gal)	Temperature (deg C)	pH	Conductivity (µ sec/cm)	DO (mg/L)	ORP (meV)	Comments
1:22	1	18.1	7.00				
1:23	2.5	20.0	6.81				
1:24	4.5	19.9	6.72				

COMMENTS (i.e., sample odor, well recharge time & percent, etc.)

AEI CONSULTANTS

GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

Monitoring Well Number: MW-4

Project Name:	Fidelity Roof Company	Date of Sampling:	11/14/2002
Job Number:	3119	Name of Sampler:	N. Garfield
Project Address:	1075 40th Street, Oakland		

MONITORING WELL DATA

Well Casing Diameter (2"/4"/6")	2		
Wellhead Condition	OK		
Elevation of Top of Casing (feet above msl)	43.48		
Depth of Well	20.00		
Depth to Water (from top of casing)	7.52		
Water Elevation (feet above msl)	35.96		
Well Volumes Purged	3		
Gallons Purged: formula valid only for casing sizes of 2" (.16 gal/ft), 4" (.65 gal/ft), and 6" (1.44 gal/ft)	**6.0**		
Actual Volume Purged (gallons)	6.0		
Appearance of Purge Water	clear		
Free Product Present?	No	Thickness (ft):	

GROUNDWATER SAMPLES

Number of Samples/Container Size	2 40mL VOA, 1 1L						
Time	Vol Removed (gal)	Temperature (deg C)	pH	Conductivity (µ sec/cm)	DO (mg/L)	ORP (meV)	Comments
1:15	1	21.3	7.04	1150			
1:16	2.5	21.3	6.93	990			
1:17	4	22.0	6.71	1040			
1:18	6	22.1	6.70	1072			

COMMENTS (i.e., sample odor, well recharge time & percent, etc.)

McCampbell Analytical Inc.

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http://www.mccampbell.com E-mail: main@mccampbell.com

All Environmental, Inc. 3210 Old Tunnel Rd., Ste. B Lafayette, CA 94549-4157	Client Project ID: #3119; Fidelity	Date Sampled: 11/14/02
		Date Received: 11/14/02
	Client Contact: Nathan Garfield	Date Reported: 11/20/02
	Client P.O.:	Date Completed: 11/20/02

WorkOrder: 0211263

November 20, 2002

Dear Nathan:

Enclosed are:

1). the results of **4** analyzed samples from your **#3119; Fidelity project,**

2). a QC report for the above samples

3). a copy of the chain of custody, and

4). a bill for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits. If you have any questions please contact me. McCampbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Yours truly,

Angela Rydelius, Lab Manager

McCampbell Analytical Inc.
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All Environmental, Inc.	Client Project ID: #3119; Fidelity	Date Sampled: 11/14/02
3210 Old Tunnel Rd., Ste. B		Date Received: 11/14/02
Lafayette, CA 94549-4157	Client Contact: Nathan Garfield	Date Extracted: 11/15/02-11/19/02
	Client P.O.:	Date Analyzed: 11/15/02-11/19/02

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE*

Extraction method: SW5030B Analytical methods: SW8021B/8015Cm Work Order: 0211263

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	MW-1	W	66,000,a	ND<1200	8300	860	3000	11,000	250	---#
002A	MW-2	W	ND<120,j	3800	ND<1	ND<1	ND<1	ND<1	2	118
003A	MW-3	W	ND	ND	ND	ND	ND	ND	1	100
004A	MW-4	W	ND	11	ND	ND	ND	ND	1	102
Reporting Limit for DF =1; ND means not detected at or above the reporting limit		W	50	5.0	0.5	0.5	0.5	0.5	1	µg/L
		S	NA	NA	NA	NA	NA	NA	1	mg/Kg

*water and vapor samples are reported in µg/L, soil and sludge samples in mg/kg, wipe samples in µg/wipe, and TCLP extracts in µg/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 (stoddard solvent / mineral spirit?); f) one to a few isolated non-target peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~2 vol. % sediment; j) reporting limit raised due to high MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern.

DHS Certification No. 1644

Edward Hamilton, Lab Director

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Telephone : 925-798-1620 Fax : 925-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

All Environmental, Inc.	Client Project ID: #3119; Fidelity	Date Sampled: 11/14/02
3210 Old Tunnel Rd., Ste. B		Date Received: 11/14/02
Lafayette, CA 94549-4157	Client Contact: Nathan Garfield	Date Extracted: 11/14/02
	Client P.O.:	Date Analyzed: 11/15/02

Diesel Range (C10-C23) Extractable Hydrocarbons as Diesel*

Extraction method: SW3510C Analytical methods: SW8015C Work Order: 0211263

Lab ID	Client ID	Matrix	TPH(d)	DF	% SS
0211263-001B	MW-1	W	23,000,d	100	120
0211263-002B	MW-2	W	ND	1	98.4
0211263-003B	MW-3	W	ND	1	98.0
0211263-004B	MW-4	W	ND	1	97.2
Reporting Limit for DF =1; ND means not detected at or above the reporting limit		W	50	µg/L	
		S	NA	NA	

* water and vapor samples are reported in µg/L, wipe samples in ug/wipe, soil/solid/sludge samples in mg/kg, product/oil/non-aqueous liquid samples in mg/L, and all TCLP / STLC / SPLP extracts in µg/L

cluttered chromatogram resulting in coeluted surrogate and sample peaks, or; surrogate peak is on elevated baseline, or; surrogate has been diminished by dilution of original extract.

+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 diesel is significant; b) diesel range compounds are significant; no recognizable pattern; c) aged diesel? is significant); d) gasoline range compounds are significant; e) unknown medium boiling point pattern that does not appear to be derived from diesel; f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~2 vol. % sediment; k) kerosene/kerosene range; l) bunker oil; m) fuel oil; n) stoddard solvent / mineral spirit.

DHS Certification No. 1644

Edward Hamilton, Lab Director

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QC SUMMARY REPORT FOR SW8021B/8015Cm

Matrix: W WorkOrder: 0211263

EPA Method: SW8021B/8015Cm Extraction: SW5030B BatchID: 4884 Spiked Sample ID: N/A

Compound	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
TPH(gas)	N/A	60	N/A	N/A	N/A	110	110	0.445	80	120
MTBE	N/A	10	N/A	N/A	N/A	94.6	92.9	1.88	80	120
Benzene	N/A	10	N/A	N/A	N/A	96.7	95.2	1.58	80	120
Toluene	N/A	10	N/A	N/A	N/A	92.1	93.7	1.65	80	120
Ethylbenzene	N/A	10	N/A	N/A	N/A	97.6	97.2	0.381	80	120
Xylenes	N/A	30	N/A	N/A	N/A	93.3	93.3	0	80	120
%SS:	N/A	100	N/A	N/A	N/A	96.1	97.3	1.32	80	120

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.
NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / (MS + MSD) * 2.

* MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.

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QC SUMMARY REPORT FOR SW8021B/8015Cm

Matrix: W WorkOrder: 0211263

EPA Method: SW8021B/8015Cm Extraction: SW5030B BatchID: 4902 Spiked Sample ID: 0211272-009A

Compound	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
TPH(gas)	ND	60	111	109	2.11	107	109	1.90	80	120
MTBE	69.62	10	NR	NR	NR	108	105	3.26	80	120
Benzene	ND	10	109	107	2.20	110	101	8.12	80	120
Toluene	ND	10	105	102	2.77	105	96.2	8.92	80	120
Ethylbenzene	ND	10	106	104	1.97	110	104	5.37	80	120
Xylenes	1.03	30	103	99.9	3.17	103	100	3.28	80	120
%SS:	103	100	103	106	2.99	104	100	4.06	80	120

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.
NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS – MSD) / (MS + MSD) * 2.

* MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.

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QC SUMMARY REPORT FOR SW8015C

Matrix: W WorkOrder: 0211263

EPA Method: SW8015C	Extraction: SW3510C	BatchID: 4880	Spiked Sample ID: N/A

Compound	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
TPH(d)	N/A	7500	N/A	N/A	N/A	92.1	90.9	1.32	70	130
%SS:	N/A	100	N/A	N/A	N/A	96.2	94.5	1.78	70	130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.
NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS – MSD) / (MS + MSD) * 2.

* MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.

McCampbell Analytical Inc.
110 Second Avenue South, #D7
Pacheco, CA 94553-5560
(925) 798-1620

CHAIN-OF-CUSTODY RECORD

WorkOrder: 0211263

Client:
All Environmental, Inc.
3210 Old Tunnel Rd., Ste. B
Lafayette, CA 94549-4157

TEL: (925) 283-6000
FAX: (925) 283-6121
ProjectNo: #3119; Fidelity
PO:

14-Nov-02

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests						
					SW8015C	8021B/8015					
0211263-001	MW-1	Water	11/14/02 2:00:00 AM	☐	B	A					
0211263-002	MW-2	Water	11/14/02 1:45:00 AM	☐	B	A					
0211263-003	MW-3	Water	11/14/02 1:55:00 AM	☐	B	A					
0211263-004	MW-4	Water	11/14/02 1:50:00 AM	☐	B	A					

Comments:

	Date/Time		Date/Time
Relinquished by:		**Received by:**	
Relinquished by:		**Received by:**	
Relinquished by:		**Received by:**	

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense.

Bottle Type: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other

0211263

McCAMPBELL ANALYTICAL INC.

110 2nd AVENUE SOUTH, #D7
PACHECO, CA 94553-5560
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CHAIN OF CUSTODY RECORD

TURN AROUND TIME ☐ RUSH ☐ 24 HR ☐ 48 HR ☐ 72 HR ☒ 5 DAY

EDF Required? ☐ Yes ☒ No

Report To: Nathan Bill To:
Company: AEI
3210 Old Tunnel Suite B Lafayette 94549
E-Mail:
Tele: ( ) 925-283-6000 Fax: ( ) 925-283-6121
Project #: 3119 Project Name: Fidelity
Project Location:
Sampler Signature:

SAMPLE ID (Field Point Name)	LOCATION	SAMPLING Date	SAMPLING Time	# Containers	Type Containers	MATRIX Water	Soil	Air	Sludge	Other	METHOD PRESERVED Ice	HCl	HNO_3	Other	BTEX & TPH as Gas (602/8020 + 8015)/MTBE	TPH as Diesel (8015)	Total Petroleum Oil & Grease (5520 E&F/B&F)	Total Petroleum Hydrocarbons (418.1)	EPA 601 / 8010	BTEX ONLY (EPA 602 / 8020)	EPA 608 / 8080	EPA 608 / 8080 PCB's ONLY	EPA 624 / 8240 / 8260	EPA 625 / 8270	PAH's / PNA's by EPA 625 / 8270 / 8310	CAM-17 Metals	LUFT 5 Metals	Lead (7240/7421/239.2/6010)	RCI	Other	Comments
MW-1		11/14	2:00	3	VOA	X					X	X			X	X															
MW-2			1:45																												
MW-3			1:55																												
MW-4			1:50																												

Relinquished By:	Date:	Time:	Received By:
	11/14/02	2:35	
Relinquished By:	Date:	Time:	Received By:
Relinquished By:	Date:	Time:	Received By:

	VOAS	O&G	METALS	OTHER
PRESERVATION	✓			
APPROPRIATE CONTAINERS	✓			

ICE/t° ✓
GOOD CONDITION ✓
HEAD SPACE ABSENT
DECHLORINATED IN LAB PERSERVED IN LAB