



April 6, 2004

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

**Subject: Quarterly Groundwater Monitoring Report**  
First Quarter 2004  
1075 40<sup>th</sup> Street  
Oakland, California  
AEI Project No. 3119

Alameda County  
APR 08 2004  
Environmental Health

Dear Mr. Chan:

Enclosed is a copy of the quarterly groundwater report for the first quarter 2004 groundwater monitoring event.

Please call me at (925) 944-2899 x122, if you have any questions.

Sincerely,  
AEI Consultants

Robert F. Flory, RG

April 6, 2004

Alameda County  
APR 08 2004  
Environmental Health

## GROUNDWATER MONITORING REPORT

*First Quarter 2004*

1075 40th Street  
Oakland, California

Project No. 3119

Prepared For

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

Prepared By

**AEI Consultants**  
2500 Camino Diablo Blvd., Suite 200  
Walnut Creek, CA 94597  
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**AEI**



April 6, 2004

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

**Subject: Quarterly Groundwater Monitoring Report  
First Quarter 2004**  
1075 40th Street  
Oakland, California  
Project No. 3119

Dear Mr. Upshaw:

AEI Consultants (AEI) has prepared this report on behalf of Fidelity Roof Company to document the ongoing groundwater investigation at the above referenced site (Figure 1: Site Location Map). The purpose of this activity was to monitor groundwater quality near the previously removed 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 first quarter 2004 groundwater monitoring and sampling event conducted on March 8, 2004.

### 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 near the former UST excavation. Analytical results from the subsurface investigation revealed significant levels of gasoline and diesel petroleum hydrocarbons present in soil and groundwater to the south and to the west of the open excavation. 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.

On October 25, 1996, AEI extended the excavation laterally 7 feet to the south and 12 feet to the west. Soil was removed to a depth of 9 feet below ground surface (bgs). The dispenser island and associated piping were also removed. 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. At the request of the ACHCSA, six additional soil borings were drilled south and west of the well locations on November 4, 1998. TPH-d was detected at a concentration of 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. Monitoring well MW-4 was installed on July 15, 1999, south of the former tank locations along Yerba Buena Avenue.

### **Summary of Activities**

AEI measured the depth to groundwater in the four wells (MW-1 to MW-4) on March 8, 2004. Well locations are shown on Figure 2. Prior to sampling, the depth to water from the top of the well casings was measured with an electric water level indicator. Each well was then purged of at least 3 well volumes with a submersible pump. Temperature, pH, specific conductivity and oxidation-reduction potential (ORP) were measured during the purging of the wells and turbidity was visually noted. Once water levels had recovered to at least 90% of their original level, a water sample was collected.

The groundwater samples were collected from each well using clean disposable bailers. The water samples were collected into 1-liter amber glass bottles and 40 ml glass volatile organic analysis (VOA) vials. The VOAs were capped so no headspace or air bubbles were present within the sample containers. Samples were delivered on ice under proper chain of custody protocol to McCampell Analytical, Inc. of Pacheco, California (Department of Health Services Certification #1644).

Four groundwater samples were submitted for chemical analysis for TPH-g, MTBE, benzene, toluene, ethylbenzene, and xylenes (BTEX) by method SW 8021B/8015Cm and TPH-d by method SW 8015C.

### **Field Results**

A strong hydrocarbon odor and sheen were observed during the purging and sampling of MW-3, however no measurable free phase fuel product was present in this well. Groundwater elevations for the current monitoring episode ranged from 33.88 to 37.83 feet above mean sea level (msl). These groundwater elevations were an average of 1.44 higher than the previous episode. Based on these water level measurements, the direction of the groundwater flow at the time of measurement was towards the northwest with a hydraulic gradient of 0.04 ft/ft. This flow direction and gradient are consistent with previous episodes.

Groundwater elevation data and groundwater sample analytical data are summarized in Tables 1 and 2. The groundwater elevation contours and the groundwater flow direction are shown on Figure 3. Refer to Appendix A for Groundwater Monitoring Well Field Sampling Forms, which include field measurements and observations made during the monitoring activities.

### **Groundwater Quality**

Significant concentrations of hydrocarbons remain in MW-1, with TPH-g and TPH-d detected at 79,000 µg/l and 160,000 µg/l, respectively. Benzene was detected in this well at 7,700 µg/l. TPH-g, TPH-d, and benzene were also detected in MW-1 at 120 µg/l, 240 µg/l and 2.9 µg/l, respectively. MTBE was detected in wells MW-2 and MW-4 at 4,600 µg/l and 10 µg/l, respectively; however, no other target analytes were detected in either of these wells above the reported detected limits.

Groundwater sample analytical data is presented in Table 2. Selected analytical data is presented on Figure 2. Laboratory results and chain of custody documents are included in Appendix B.

### **Summary**

Significant hydrocarbons remain in the groundwater beneath the site, particularly west and north of the former excavation. Although seasonal concentration fluctuations have been observed, long-term concentrations trends do not reveal that significant attenuation is occurring. AEI will continue quarterly monitoring, with the next episode scheduled for June 2004.

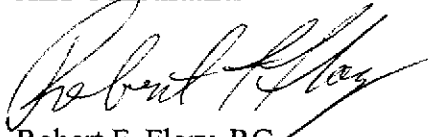
AEI is currently scheduling installation of vapor extraction and air sparge wells in preparation for a pilot test tentatively scheduled in mid-May. The ACHCSA will be notified of the exact schedule for the planned remediation pilot testing, as soon as a define schedule is established.

## Report Limitations and Signatures

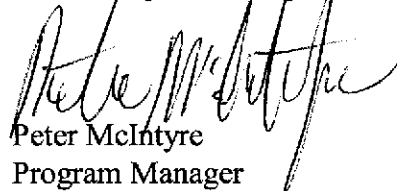
This report presents a summary of work completed by AEI Consultants including observations and descriptions of site conditions. Where appropriate, it includes analytical results for samples taken during the course of the work. The number and location of samples are chosen to provide required information, 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.

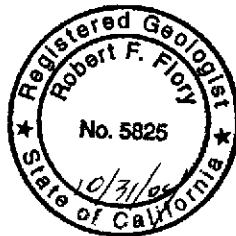
Sincerely,  
**AEI Consultants**



Robert F. Flory, RG  
Senior Project Geologist



Peter McIntyre  
Program Manager



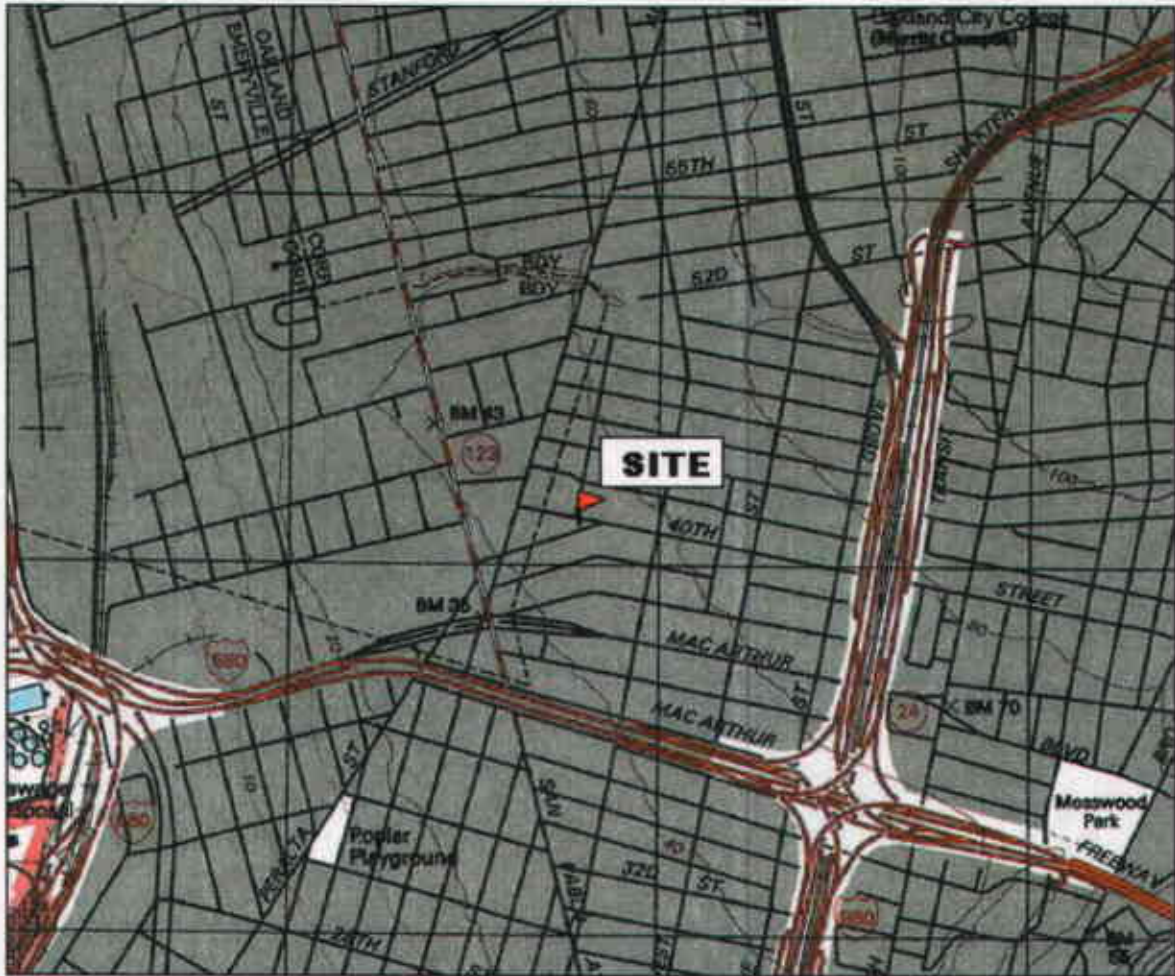
**Figures**

- Figure 1 Site Location Map*
- Figure 2 Site Plan with Sample Analytical Data*
- Figure 3 Water Table Contours*

**Appendices**

- Appendix A Tables*
  - Table 1 Groundwater Elevation Data*
  - Table 2 Groundwater Analytical Data*
- Appendix B Groundwater Monitoring Well Field Sampling Forms*
- Appendix C Laboratory Analyses with Chain of Custody Documentation*

cc: Mr. Barney Chan  
ACHCSA  
1131 Harbor Bay Parkway, Suite 250  
Alameda, CA 94502-6577



TN \* MN  
15°

0 1000 FEET 0 500 1000 METERS 1 MILE

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<b>AEI CONSULTANTS</b>	
<b>SITE LOCATION MAP</b>	
1075 40 <sup>th</sup> STREET OAKLAND, CALIFORNIA	<b>FIGURE 1</b> PROJECT NO. 8326



PARKING  
AND SUPPLY  
YARD AREA

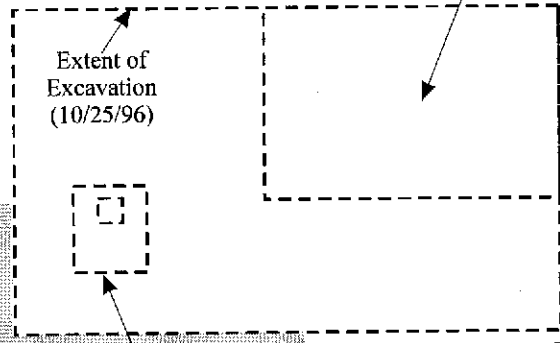
40TH ST.

TPHg ND<250  
TPHd ND<50  
MTBE 4,600  
Benzene ND<2.5

FORMER LOCATION OF 500 AND  
1,000-GALLON USTS  
(Removed 10/19/95)

MW-2

TPHg 79,000  
TPHd 160,000  
MTBE ND<250  
Benzene 7,700



Extent of  
Excavation  
(10/25/96)

Former  
Pump  
Island

OFFICES

TPHg 120  
TPHd 240  
MTBE ND<5.0  
Benzene 2.9

MW-1

SHOP

CONCRETE  
PAD

WALL

DRIVEWAY

TPHg ND<50  
TPHd ND<50  
MTBE 7,700  
Benzene ND<0.5

SIDEWALK

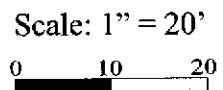
PARKING LANE

MW-4

YERBA BUENA AVENUE

 Monitoring Well

Groundwater results are expressed in  $\mu\text{g/L}$ .  
TPHg = Total petroleum hydrocarbons as gasoline  
TPHd = Total petroleum hydrocarbons as diesel  
MTBE = Methyl tertiary butyl ether



**AEI CONSULTANTS**  
2500 CAMINO DIABLO, SUITE 200, WALNUT CREEK, CA

**SAMPLE ANALYTICAL DATA - 03/08/04**

1075 40TH AVENUE  
OAKLAND, CALIFORNIA

**Figure 2**  
AEI Project: 3119

PARKING  
AND SUPPLY  
YARD AREA

Groundwater Flow  
Direction 3/8/04  
Hydraulic Gradient ~ 0.07

40TH ST.

MW-2  
(36.57)

MW-3  
(33.88)

SHOP

CONCRETE  
PAD

MW-1  
(37.83)

OFFICES

WALL


DRIVEWAY

SIDEWALK

PARKING LANE

YERBA BUENA AVENUE

MW-4  
(37.73)

  
MW-3  
(33.88)

Monitoring Well  
Water table elevations in feet above mean sea level

Scale: 1" = 20'

0 10 20



**AEI CONSULTANTS**  
2500 CAMINO DIABLO, SUITE 200, WALNUT CREEK, CA

**GROUNDWATER GRADIENT**

1075 40TH AVENUE  
OAKLAND, CALIFORNIA

**Figure 3**  
AEI Project: 3119

**Table 1: Groundwater Elevation Data**  
**Fidelity Roofing, 1075 40th Street, Oakland, California**

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	9.10	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	8.50	36.99
	04/18/01	45.49	8.77	36.72
	07/27/01	45.49	10.50	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
	02/12/03	45.49	8.36	37.13
	05/16/03	45.49	8.49	37.00
	08/29/03	45.49	9.91	35.58
12/02/03	45.49	8.88	36.61	
	<b>03/08/04</b>	<b>45.49</b>	<b>7.66</b>	<b>37.83</b>
MW-2	03/19/97	44.94	8.40	36.54
	06/20/97	44.94	8.85	36.09
	10/08/97	44.94	9.80	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	10.20	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	8.60	36.38
	04/18/01	44.98	8.80	36.18
	07/27/01	44.98	11.10	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
	02/12/03	44.98	9.07	35.91
	05/16/03	44.98	11.25	33.73
	08/29/03	44.98	12.19	32.79
12/02/03	44.98	10.92	34.06	
	<b>03/08/04</b>	<b>44.98</b>	<b>8.41</b>	<b>36.57</b>

<b>Table 1: Groundwater Elevation Data</b>					
<b>Fidelity Roofing, 1075 40th Street, Oakland, California</b>					
<b>Well ID</b>	<b>Date</b>	<b>Elevation</b>	<b>Depth to Water</b>	<b>Groundwater Elevation</b>	
		<b>(ft msl)</b>	<b>(ft)</b>	<b>(ft msl)</b>	
<b>MW-3</b>	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	12.00	32.37	
	01/12/01	44.37	10.50	33.87	
	04/18/01	44.37	9.50	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	
	02/12/03	44.37	10.17	34.20	
	05/16/03	44.37	11.47	32.90	
	08/29/03	44.37	11.92	32.45	
12/02/04	44.37	10.96	33.41		
	<b>03/08/04</b>	<b>44.37</b>	<b>10.49</b>	<b>33.88</b>	
<b>MW-4</b>	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	6.40	37.08	
	04/18/01	43.48	7.30	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	
	02/12/03	43.48	6.37	37.11	
	05/16/03	43.48	6.81	36.67	
	08/29/03	43.48	8.56	34.92	
	12/02/03	43.48	6.02	37.46	
		<b>03/08/04</b>	<b>43.48</b>	<b>5.75</b>	<b>37.73</b>

Notes:

All well elevations are measured from the top of the casing and not from the ground surface

ft msl = feet above mean sea level

<b>Table 1: Groundwater Elevation Data</b>				
<b>Fidelity Roofing, 1075 40th Street, Oakland, California</b>				
<b>Well ID</b>	<b>Date</b>	<b>Elevation</b>	<b>Depth to Water</b>	<b>Groundwater Elevation</b>
		<b>(ft msl)</b>	<b>(ft)</b>	<b>(ft msl)</b>
<b>Episode</b>	<b>Date</b>	<b>Average Water Table Elevation</b>	<b>Water Table Elevation Change</b>	<b>Hydraulic Gradient/ Flow Direction</b>
		<b>(ft amsl)</b>	<b>(ft)</b>	<b>(ft/ft)</b>
1	03/19/97	36.81	---	---
2	06/20/97	35.58	-1.23	---
3	10/08/97	35.52	-0.06	---
4	01/16/98	37.55	2.03	---
5	08/05/99	34.87	-2.67	---
6	11/18/99	35.14	0.27	---
7	02/24/00	37.49	2.35	---
8	05/24/00	36.55	-0.94	---
9	08/29/00	33.98	-2.57	NW (0.09)
10	01/12/01	36.08	2.10	W (0.06)
11	04/18/01	36.08	0.00	W (0.02)
12	07/27/01	33.99	-2.09	W (0.02)
13	11/06/01	33.77	-0.22	NW (0.05)
14	02/13/02	36.48	2.71	NW (0.05)
15	05/14/02	35.54	-0.94	N (0.04)
16	08/15/02	34.15	-1.39	W (0.05)
17	11/14/02	34.69	0.54	N (0.08)
18	02/12/03	36.09	1.40	NW (0.03)
19	05/16/03	35.08	-1.01	NW (0.06)
20	08/29/03	33.94	-1.14	NW (0.04)
21	12/02/03	35.39	1.45	NW (0.05)
22	03/08/04	36.50	1.12	NW (0.04)

Note - average water table elevation and change were not calculated for the first 8 episodes

**Table 2: Groundwater Analytical Data, Fidelity Roofing, 1075 40th Street, Oakland, California**

Well ID	Date	Depth to Water (ft)	TPHg (ug/L)	TPHd (ug/L)	MTBE (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)
MW - 1	03/19/97	8.25	ND<50	ND<50	23	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	06/23/97	9.10	1,300	420	14	150	2.1	12	19
	10/08/97	9.95	56	66	5.8	2.8	ND<0.5	ND<0.5	ND<0.5
	01/16/98	7.57	1,500	910	ND<33	95	0.72	69	8.4
	08/05/99	10.16	160	63	ND<15	1.6	ND<0.5	0.56	1.1
	11/18/99	8.52	79	ND<50	ND<5.0	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	02/24/00	7.65	300	160	ND<5.0	14	0.82	3.5	1.6
	05/24/00	8.47	1,300	480	ND<10	93	ND<0.5	17	1.6
	08/29/00	10.28	120	<0.5	ND<5.0	0.93	ND<0.5	ND<0.5	ND<0.5
	01/12/01	8.50	360	170	ND<5.0	16	ND<0.5	9.3	0.69
	04/18/01	8.77	1,100	410	2,800	63	ND<0.5	34	0.73
	07/27/01	10.50	130	66	ND<5.0	1.6	ND<0.5	ND<0.5	ND<0.5
	11/06/01	10.28	ND<50	<50	ND<5.0	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	02/13/02	8.47	430	270	ND<5.0	17	0.51	11	0.64
	05/14/02	9.50	340	170	ND<5.0	21	ND<0.5	5.3	0.67
	08/15/02	10.39	96	53	ND<5.0	0.66	ND<0.5	ND<0.5	ND<0.5
	11/14/02	9.08	ND<50	ND<50	ND<5.0	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	02/12/03	8.36	710	120	ND<5.0	28	4.3	32	130
	05/16/03	8.49	1,100	340	ND<15	54	4.1	40	100
	08/29/03	9.91	1,200	280	ND<5.0	46	5.1	55	230
12/02/03	8.88	ND<50	ND<50	ND<5.0	ND<0.5	ND<0.5	ND<0.5	ND<0.5	
03/08/04	7.66	120	240 <sup>1,2</sup>	ND<5.0	2.9	ND<0.5	ND<0.5	0.71	
MW - 2	03/19/97	8.40	ND<50	ND<50	65	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	06/23/97	8.85	ND<50	ND<50	70	3.4	ND<0.5	ND<0.5	ND<0.5
	10/08/97	9.80	ND<50	ND<50	90	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	01/16/98	5.28	ND<50	ND<50	65	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	08/05/99	9.32	ND<50	ND<50	600	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	11/18/99	10.20	ND<50	ND<50	370	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	02/24/00	7.03	ND<50	ND<50	880	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	05/24/00	8.01	ND<250	62	2,200	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	08/29/00	11.07	ND<200	ND<50	1,900	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	01/12/01	8.60	470	70	2,000	8.7	3.1	16	73
	04/18/01	8.80	ND<50	ND<50	2,800	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	07/27/01	11.10	ND<100	ND<50	3,300	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	11/06/01	12.21	ND<100	ND<50	3,000	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	02/13/02	7.98	54	ND<50	3,200	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	05/14/02	10.48	ND<150	ND<50	3,800	4.8	<1.0	<1.0	<1.0
	08/15/02	10.64	ND<50	ND<50	2,900	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	11/14/02	11.69	ND<120	ND<50	3,800	ND<1.0	ND<1.0	ND<1.0	ND<1.0
	02/12/03	9.07	1,100	120	3,200	57	7	55	210
	05/16/03	11.25	530	85	6,000	35	3.6	22	79
	08/29/03	12.19	2,400	1200	4,800	39	5.8	77	320
12/02/03	10.96	ND<100	ND<50	3,300	ND<1.0	ND<1.0	ND<1.0	ND<1.0	
03/08/04	8.41	ND<250	ND<50	4,600	ND<2.5	ND<2.5	ND<2.5	ND<2.5	

**Table 2: Groundwater Analytical Data, Fidelity Roofing, 1075 40th Street, Oakland, California**

Well ID	Date	Depth to Water (ft)	TPHg (ug/L)	TPHd (ug/L)	MTBE (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)
MW -3	03/19/97	7.59	26,000	5,000	230	3,000	530	340	2,300
	06/23/97	9.98	25,000	7,000	270	4,400	120	540	1,500
	10/08/97	8.36	17,000	5,100	ND<280	4,400	47	280	410
	01/16/98	9.18	29,000	7,300	ND<360	5,600	740	950	3,500
	08/05/99	10.56	31,000	5,100	ND<200	5,400	150	1100	2,300
	11/18/99	10.92	74,000	49,000	ND<1000	8,100	5,000	2,100	8,100
	02/24/00	8.49	110,000	6,300	ND<200	12,000	1,400	2,900	14,000
	05/24/00	8.42	87,000	26,000	ND<200	13,000	1,900	2,900	14,000
	08/29/00	12.00	49,000	9,400	ND<200	7,400	800	1,800	7,400
	01/12/01	10.50	69,000	21,000	ND<300	8,600	980	2,600	11,000
	04/18/01	9.50	75,000	13,000	ND<500	9,200	1,200	2,500	12,000
	07/27/01	11.61	75,000	85,000	ND<650	8,700	1,100	2,600	12,000
	11/06/01	11.73	89,000	86,000	ND<200	7,900	910	2,800	12,000
	02/13/02	9.36	85,000	13,000	ND<2000	8,500	830	2,600	11,000
	05/14/02	9.00	94,000	35,000	ND<1000	9,700	1,100	3,400	15,000
	08/15/02	11.72	37,000	9,700	ND<1200	5,200	430	1,800	5,900
	11/14/02	11.28	66,000	23,000	ND<1,200	8,300	860	3,000	11,000
	02/12/03	10.17	61,000	8,400	ND<500	6,800	500	2,400	9,800
	05/16/03	11.47	59,000	17,000	ND<500	6,200	320	2,000	6,500
	08/29/03	11.92	78,000	100,000	ND<1200	6,800	440	2,900	11,000
12/02/03	11.32	68,000	46,000	ND<1000	7,600	450	2,900	10,000	
03/08/04	10.49	79,000	160,000	ND<250	7,700	570	300	13,000	
MW-4	08/05/99	8.79	ND<50	ND<50	37	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	11/18/99	8.11	ND<50	ND<50	20	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	02/24/00	5.19	ND<50	ND<50	20	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	05/24/00	7.23	120	140	31	1.3	ND<0.5	ND<0.5	ND<0.5
	08/29/00	9.04	ND<50	ND<50	22	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	01/12/01	6.40	ND<50	81	25	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	04/18/01	7.30	30	170	35	2.4	1.1	0.66	4.2
	07/27/01	9.16	87	110	26	1.8	ND<0.5	2	10
	11/06/01	9.03	200	59	21	4.5	1	5.2	24
	02/13/02	6.60	ND<50	91	15	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	05/14/02	7.19	260	140	26	12	2.7	11	49
	08/15/02	8.97	ND<50	ND<50	12	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	11/14/02	7.52	ND<50	ND<50	11	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	02/12/03	6.37	170	130	16	3.1	0.66	6.4	27
	05/16/03	6.81	ND<50	60	23	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	08/29/03	8.56	610	120	10	16	2.7	30	130
	12/02/03	6.02	ND<50	ND<50	7.7	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	03/08/04	5.75	ND<50	ND<50	10	ND<0.5	ND<0.5	ND<0.5	ND<0.5

Notes:

ug/L= micrograms per liter

MTBE= Methyl Tertiary Butyl Ether

TPHg= Total Petroleum Hydrocarbons as gasoline

TPHd= Total Petroleum Hydrocarbons as diesel

1 - gasoline range compounds are significant

2 - diesel range compounds are significant; no recognizable pattern

3 - unmodified or weakly modified diesel is significant

4 - lighter than water immiscible sheen/product is present

**AEI CONSULTANTS**  
**GROUNDWATER MONITORING WELL FIELD SAMPLING FORM**

**Monitoring Well Number: MW-1**

Project Name:	Fidelity Roof Company	Date of Sampling:	3/8/2004
Job Number:	3119	Name of Sampler:	Adrian Nieto
Project Address:	1075 40th Avenue, Oakland		

MONITORING WELL DATA	
Well Casing Diameter (2"/4"/6")	2
Wellhead Condition	OK <input type="checkbox"/>
Elevation of Top of Casing (feet above msl)	45.49
Depth of Well	21.00
Depth to Water (from top of casing)	7.66
Water Elevation (feet above msl)	37.83
Well Volumes Purged	3
Calculated Gallons Purged: formula valid only for casing sizes of 2" (.16 gal/ft), 4" (.65 gal/ft), and 6" (1.44 gal/ft)	6.4
Actual Volume Purged (gallons)	8.0
Appearance of Purge Water	light grey
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 ( $\mu$ sec/cm)	DO (mg/L)	ORP (meV)	Comments
	2	18.04	6.85	956	----	-194.9	
	4	18.41	6.67	945	----	-230.8	
	6	19.10	6.59	955	---	-251.6	
	8	19.28	6.56	951	---	-244.9	

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

Initially grey color and slightly hydrocarbon odor



**AEI CONSULTANTS**  
**GROUNDWATER MONITORING WELL FIELD SAMPLING FORM**

**Monitoring Well Number: MW-2**

Project Name:	Fidelity Roof Company	Date of Sampling:	3/8/2004
Job Number:	3119	Name of Sampler:	Adrian Nieto
Project Address:	1075 40th Avenue, 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)	8.41		
Water Elevation (feet above msl)	36.57		
Well Volumes Purged	3		
Calculated 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)	8.0		
Appearance of Purge Water	clear very quickly		
Free Product Present?	yes	Thickness (ft):	sheen present

**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
	2	20.09	5.43	1377	---	252.7	
	4	20.34	5.86	1386	---	294.3	
	6	20.66	5.73	1414	---	169.3	
	8	20.71	6.61	1381	---	70.6	

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

Started light brown color and slightly hydrocarbon odor. Dry at 6.5 (11:26am.recharge at 11:46am)

**AEI CONSULTANTS**  
GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

**Monitoring Well Number: MW-3**

Project Name:	Fidelity Roof Company	Date of Sampling:	3/8/2004
Job Number:	3119	Name of Sampler:	Adrian Nieto
Project Address:	1075 40th Avenue, 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)	10.49		
Water Elevation (feet above msl)	33.88		
Well Volumes Purged	3		
Calculated Gallons Purged: formula valid only for casing sizes of 2" (.16 gal/ft), 4" (.65 gal/ft), and 6" (1.44 gal/ft)	5.0		
Actual Volume Purged (gallons)	6.0		
Appearance of Purge Water	Light grey		
Free Product Present?	yes	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
	2	19.73	7.50	1481	---	-209.4	
	4	19.79	7.32	1568	---	-249.9	
	6	20.47	5.81	1532	---	-135.8	

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

Initially light grey and strong hydrocarbon odor. Went dry at 4.5 gallons recharge in 10 minutes
Thick sheen present

**AEI CONSULTANTS**  
**GROUNDWATER MONITORING WELL FIELD SAMPLING FORM**

**Monitoring Well Number: MW-4**

Project Name:	Fidelity Roof Company	Date of Sampling:	3/8/2004
Job Number:	3119	Name of Sampler:	Adrian Nieto
Project Address:	1075 40th Avenue, 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)	5.75		
Water Elevation (feet above msl)	37.73		
Well Volumes Purged	3		
Calculated Gallons Purged: formula valid only for casing sizes of 2" (.16 gal/ft), 4" (.65 gal/ft), and 6" (1.44 gal/ft)	6.8		
Actual Volume Purged (gallons)	8.0		
Appearance of Purge Water	clear at 1.5 gallons		
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
	2	19.52	6.70	960		130.6	
	4	19.04	6.76	932	---	132.9	
	6	19.56	6.72	992	---	99.3	
	8	20.40	6.69	1012	---	147.8	
	10	20.50	6.69	1001	---	145.3	

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

Show up brown color and no hydrocarbon odor present



# McC Campbell Analytical, Inc.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560  
Telephone : 925-798-1620 Fax : 925-798-1622  
Website: www.mcccampbell.com E-mail: main@mcccampbell.com

All Environmental, Inc. 2500 Camino Diablo, Ste. #200 Walnut Creek, CA 94597	Client Project ID: #3114; Fidelity Roof	Date Sampled: 03/08/04
		Date Received: 03/08/04
	Client Contact: Peter McIntyre	Date Reported: 03/15/04
	Client P.O.:	Date Completed: 03/15/04

WorkOrder: 0403102

March 15, 2004

Dear Peter:

Enclosed are:

- 1). the results of 4 analyzed samples from your #3114; **Fidelity Roof 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. McC Campbell 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



# McC Campbell Analytical, Inc.

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 Telephone : 925-798-1620 Fax : 925-798-1622  
 Website: www.mcccampbell.com E-mail: main@mcccampbell.com

All Environmental, Inc.  2500 Camino Diablo, Ste. #200  Walnut Creek, CA 94597	Client Project ID: #3117, Fidelity Roof	Date Sampled: 03/08/04
		Date Received: 03/08/04
	Client Contact: Peter McIntyre	Date Extracted: 03/10/04-03/13/04
	Client P.O.:	Date Analyzed: 03/10/04-03/13/04

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

Extraction method: SW5030B

Analytical methods: SW8021B/8015Cm

Work Order: 0403102

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	MW-1	W	120,a	ND	2.9	ND	ND	0.71	1	97.3
002A	MW-2	W	ND<250,j	4600	ND<2.5	ND<2.5	ND<2.5	ND<2.5	5	87.3
003A	MW-3	W	79,000,a,h	ND<250	7700	570	3000	13,000	50	113
004A	MW-4	W	ND	10	ND	ND	ND	ND	1	103

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	0.5	1	µg/L
	S	NA	NA	NA	NA	NA	NA	NA	1	mg/Kg

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

# cluttered chromatogram; sample peak coelutes with surrogate peak.

+The following descriptions of the TPH chromatogram are cursory in nature and McC Campbell 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.

*AR* Angela Rydelius, Lab Manager



# McC Campbell Analytical, Inc.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560  
Telephone : 925-798-1620 Fax : 925-798-1622  
Website: www.mcccampbell.com E-mail: main@mcccampbell.com

All Environmental, Inc. 2500 Camino Diablo, Ste. #200 Walnut Creek, CA 94597	Client Project ID: #3118; Fidelity Roof	Date Sampled: 03/08/04
		Date Received: 03/08/04
	Client Contact: Peter McIntyre	Date Extracted: 03/08/04
	Client P.O.:	Date Analyzed: 03/09/04

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

Extraction method: SW3510C

Analytical methods: SW8015C

Work Order: 0403102

Lab ID	Client ID	Matrix	TPH(d)	DF	% SS
0403102-001B	MW-1	W	240,d,b	1	92.0
0403102-002B	MW-2	W	ND	1	94.0
0403102-003B	MW-3	W	160,000,d,a,h	100	---#
0403102-004B	MW-4	W	ND	1	89.0

Reporting Limit for DF=1; ND means not detected at or above the reporting limit	W	50	µg/L
	S	NA	NA

\* water samples are reported in µg/L, wipe samples in µg/wipe, soil/solid/sludge samples in mg/kg, product/oil/non-aqueous liquid samples in mg/L, and all DISTLC / STLC / SPLP / TCLP extracts are reported 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 McC Campbell 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/jet fuel range; l) bunker oil; m) fuel oil; n) stoddard solvent/mineral spirit.

Angela Rydelius, Lab Manager



**QC SUMMARY REPORT FOR SW8021B/8015Cm**

Matrix: W

WorkOrder: 0403102

EPA Method: SW8021B/8015Cm		Extraction: SW5030B		BatchID: 10634			Spiked Sample ID: 0403098-006A			
	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(btex) <sup>£</sup>	ND	60	102	105	2.79	102	101	0.536	70	130
MTBE	ND	10	95.8	100	4.37	96.7	94.2	2.69	70	130
Benzene	ND	10	109	112	3.18	111	107	3.70	70	130
Toluene	ND	10	103	107	3.85	100	100	0	70	130
Ethylbenzene	ND	10	109	111	1.73	113	110	2.97	70	130
Xylenes	ND	30	100	100	0	100	100	0	70	130
%SS:	87.0	10	105	105	0	104	105	0.461	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.

% 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.

£ TPH(btex) = sum of BTEX areas from the FID.

# cluttered chromatogram; sample peak coelutes with surrogate peak.

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.



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Website: www.mccampbell.com E-mail: main@mccampbell.com

### QC SUMMARY REPORT FOR SW8015C

Matrix: W

WorkOrder: 0403102

EPA Method: SW8015C		Extraction: SW3510C		BatchID: 10620		Spiked Sample ID: N/A				
	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	112	111	1.11	70	130
%SS:	N/A	2500	N/A	N/A	N/A	115	113	1.16	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.

% 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.

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.

DHS Certification No. 1644

*SLH* QA/QC Officer



# McC Campbell Analytical, Inc.



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

# CHAIN-OF-CUSTODY RECORD

WorkOrder: 0403102

Report to:  
 Peter McIntyre  
 All Environmental, Inc.  
 2500 Camino Diablo, Ste. #200  
 Walnut Creek, CA 94597

TEL: (925) 283-6000  
 FAX: (925) 283-6121  
 ProjectNo: #3117, Fidelity Roof  
 PO:

Bill to:  
 Lesliegh Alderman  
 All Environmental, Inc.  
 2500 Camino Diablo, Ste. #200  
 Walnut Creek, CA 94597

Requested TAT: 5 days  
 Date Received: 3/8/04  
 Date Printed: 3/8/04

Sample ID	ClientSampleID	Matrix	Collection Date	Hold	Requested Tests (See legend below)															
					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
0403102-001	MW-1	Water	3/8/04	<input type="checkbox"/>	A	B														
0403102-002	MW-2	Water	3/8/04	<input type="checkbox"/>	A	B														
0403102-003	MW-3	Water	3/8/04	<input type="checkbox"/>	A	B														
0403102-004	MW-4	Water	3/8/04	<input type="checkbox"/>	A	B														

Test Legend:

1	G-MBTEX_W	2	TPH(D)_W	3		4		5	
6		7		8		9		10	
11		12		13		14		15	

Prepared by: Melissa Valles

Comments:

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.

0403100

### McCAMPBELL ANALYTICAL INC.

110 2<sup>nd</sup> AVENUE SOUTH, #D7  
PACHECO, CA 94553-5560

Telephone: (925) 798-1620

Fax: (925) 798-1622

### CHAIN OF CUSTODY RECORD

#### TURN AROUND TIME

RUSH 24 HR  48 HR  72 HR  5 DAY

EDF Required?  Yes  No

Report To: Peter McIntyre Bill To:

Company: AEI Consultants

2500 Camino Diablo, Suite 200

Walnut Creek, CA 94597 E-Mail:

Tele: (925) 944-2899 Fax: (925) 944-2895

Project #: 3114 Project Name: Fidelity Roof

Project Location: 1075 40th Ave Oakland Cal.

Sampler Signature: Adrian Nieto

Analysis Request												Other	Comments			
BTEX & TPH as Gas (602/8020 + 801.5)/MTBE	TPH as Diesel (801.5)	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		

SAMPLE ID (Field Point Name)	LOCATION	SAMPLING		# Containers	Type Containers	MATRIX					METHOD PRESERVED					
		Date	Time			Water	Soil	Air	Sludge	Other	Ice	HCl	HNO <sub>3</sub>	Other		
MW-1		3/8/04	Am	4	1/4	X					X	X		X	X	
MW-2			Pm	1	1	X					X	X		X	X	
MW-3			Pm	1	1	X					X	X		X	X	
MW-4			Am	1	1	X					X	X		X	X	

Relinquished By: Adrian Nieto	Date: 3/8/04	Time: 3:30	Received By: [Signature]
Relinquished By:	Date:	Time:	Received By:
Relinquished By:	Date:	Time:	Received By:

ICF/c  VOAS  O&G METALS OTHER

GOOD CONDITION  PRESERVATION APPROPRIATE

HEAD SPACE ABSENT  CONTAINERS

DECLORINATED IN LAB \_\_\_\_\_ PRESERVED IN LAB \_\_\_\_\_

MW