AEI CONSULTANTS
Environmental & Civil Engineering

2500 Camino Diablo, Suite 200, Walnut Creek, CA 94597
Phone: (925) 283-6000 Fax: (925) 944-2895

Re 186

October 8, 2003

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

Subject: **Quarterly Groundwater Monitoring Report**
Twentieth Episode, 2003
1075 40th Street
Oakland, California
AEI Project No. 3119

Dear Mr. Chan:

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

Please call Peter McIntyre at (925) 283-6000 x104, if you have any questions.

Sincerely,

Jeff Rosenberg
Staff Engineer

October 8, 2003

GROUNDWATER MONITORING REPORT

Twentieth Episode

Third Quarter 2003

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
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October 8, 2003

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

Subject: **Quarterly Groundwater Monitoring Report**
Twentieth Episode, 2003
1075 40th Street
Oakland, California
Project No. 3119

Dear Mr. Upshaw:

AEI Consultants (AEI) has prepared this report on behalf of Mr. Upshaw, in response to his request for a 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 twentieth episode of groundwater monitoring and sampling conducted on August 29, 2003.

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. 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.

Due to low concentration levels from 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. 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.

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. No detectable concentrations of petroleum hydrocarbons were found in the soil samples taken during installation.

This report describes the results of the twentieth groundwater monitoring event that took place on August 29, 2003.

Summary of Activities

AEI measured the depth to groundwater in the four wells on August 29, 2003. 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 clean, disposable plastic bailers. Temperature, pH, dissolved oxygen (DO), specific conductivity, and oxygen reduction potential (ORP) were measured and the turbidity was visually noted during the purging of the wells. AEI removed at least three (3) well volumes from each well while purging. Following recovery of water levels to at least 90%, water samples were collected from each well. Well locations are shown in Figure 2.

Water was poured from the bailers into 1-liter amber glass bottles and 40 ml glass volatile organic analysis (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 (Department of Health Services Certification #1644).

Groundwater samples were submitted for chemical analysis for TPH-g (EPA Method 8015C), MTBE (EPA Method 8021B), benzene, toluene, ethylbenzene, and xylenes (BTEX) (EPA Method 8021B), and TPH-d (EPA Method 8015C).

Field Results

A strong hydrocarbon odor was observed during the sampling of monitoring well MW-3. Groundwater levels for the current monitoring episode ranged from 32.45 to 35.58 feet above mean sea level (msl). These groundwater elevations were an average of 1.14 feet lower than the previous monitoring episode. The most recent calculated groundwater gradient was 0.04 feet per foot (ft/ft), and the direction of flow was towards the northwest. The groundwater gradient is the same order of magnitude as the previous episode, and the flow direction has been consistent.

Groundwater elevation data and laboratory analytical data are summarized in Appendix A. 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, particularly MW-3, which contained TPH-g at 78,000 µg/L and benzene at 6,800 µg/L. The lowest concentrations were seen in MW-4 with a TPH-g concentration of 610 µg/L, benzene concentration of 16 µg/L, and TPH-d concentration of 120 µg/L. These concentrations are generally consistent with the past monitoring events over the last few years.

A summary of groundwater quality data is presented in Table 2. Monitoring well locations are shown in Figure 2, and dissolved hydrocarbon concentrations are shown in Figure 3. Laboratory results and chain of custody documents are included in Appendix C.

Conclusions

Groundwater analytical results from the current sampling episode indicated that elevated levels of petroleum hydrocarbons remained in the groundwater.

As requested by the ACHSCA, AEI submitted additional documentation in support of the proposed clean up levels and pilot testing procedures which were outlined in the previously approved corrective action plan. In the meantime, quarterly groundwater monitoring and sampling will continue at the site, with the next monitoring and sampling episode scheduled for November 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.
17. QGWMSR, January 16, 2003, prepared by AEI.
18. QGWMSR, March 6, 2003, prepared by AEI.
19. QGWMSR, June 11, 2003, 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

Jeff Rosenberg
Staff Engineer

Technical Review By:

L. M. Sawyer # 4450
Lorraine M. Sawyer, RG

Figures

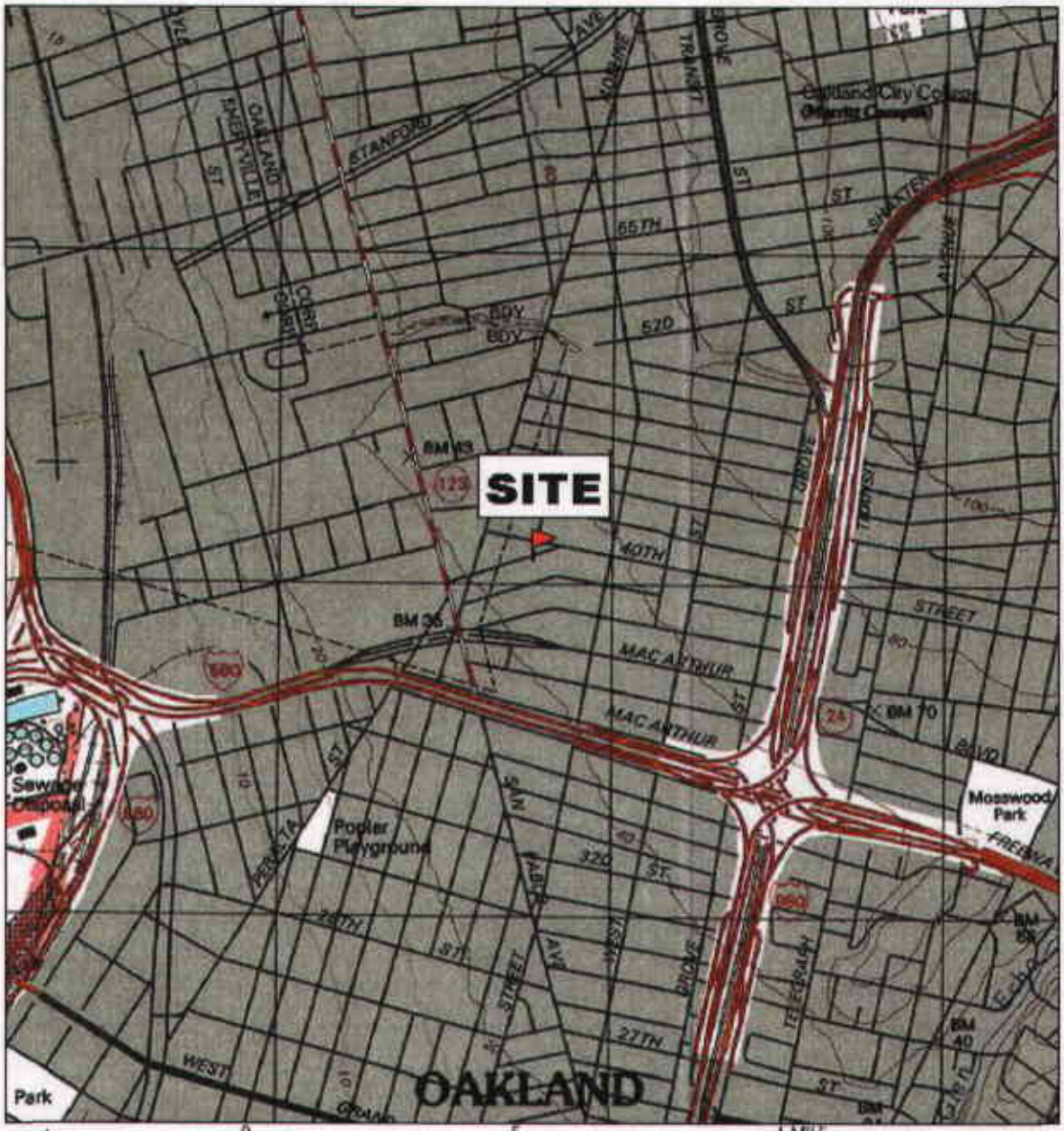
Figure 1	Site Location Map
Figure 2	Site Plan with Hydrocarbon Concentrations
Figure 3	Groundwater Gradient Map

Appendix A

Table 1	Groundwater Elevation Data
Table 2	Groundwater Sample 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



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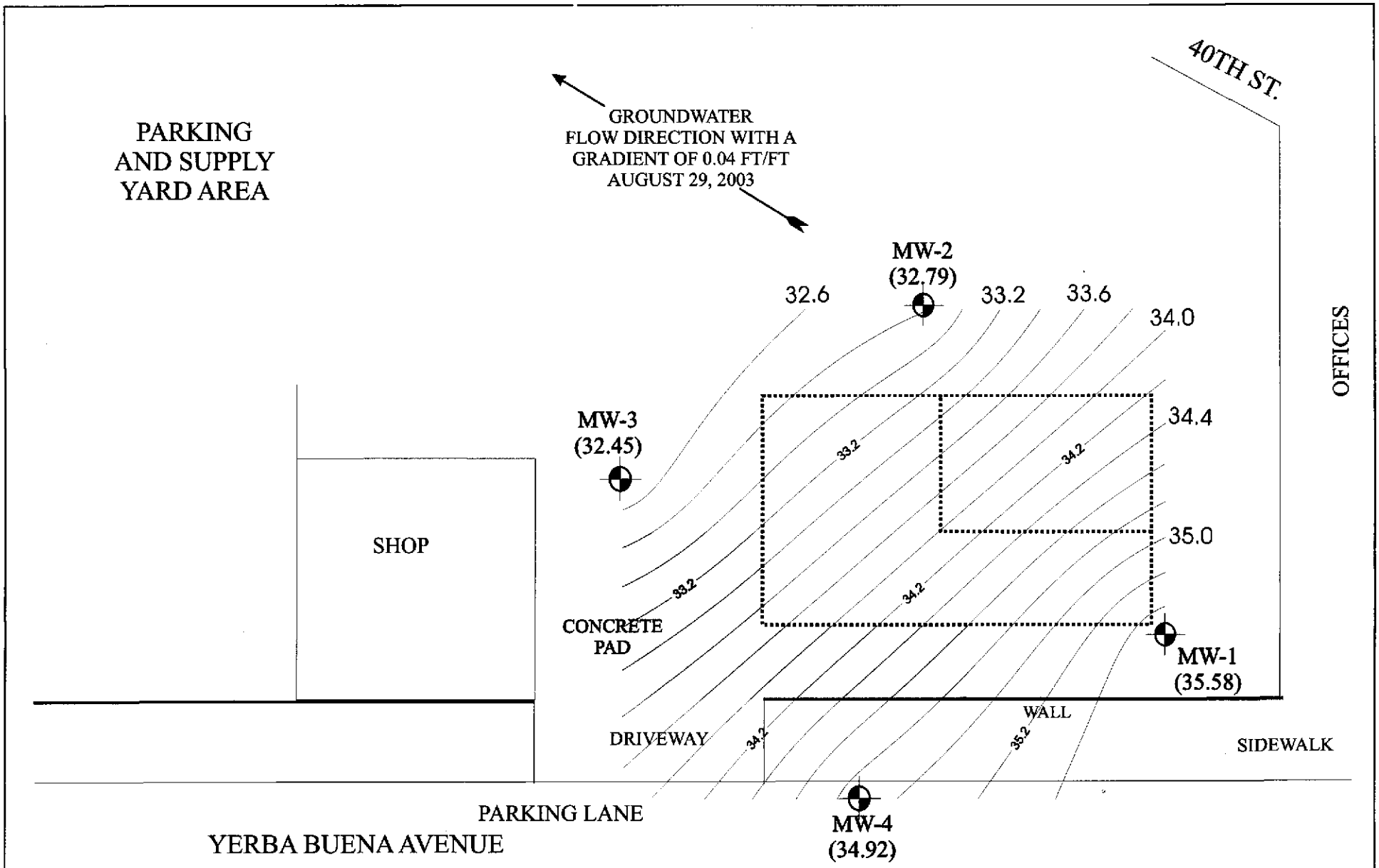
AEI CONSULTANTS 3210 OLD TUNNEL RD, STE B, LAFAYETTE, CA	
SITE LOCATION MAP	
1075 40 TH STREET OAKLAND, CALIFORNIA	**FIGURE 1** PROJECT NO. 3119



LEGEND

Monitoring Well

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

Scale: 1" = 20'
0 10 20

N

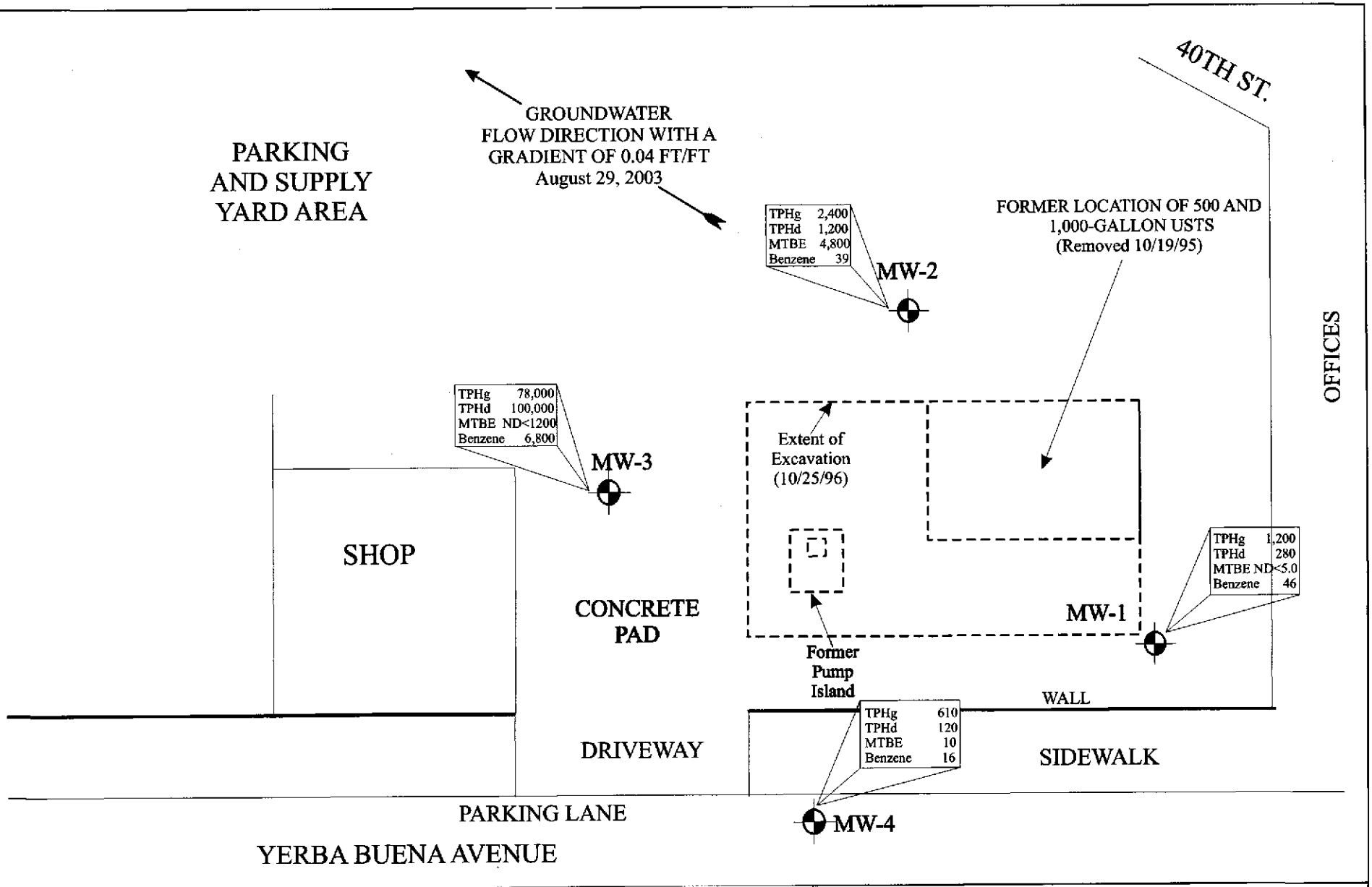
AEI CONSULTANTS

2500 CAMINO DIABLO, SUITE 200, WALNUT CREEK, CA

GROUNDWATER GRADIENT MAP

1075 40TH AVENUE
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

Scale: 1" = 20'
0 10 20

N

AEI CONSULTANTS

2500 CAMINO DIABLO, SUITE 200, WALNUT CREEK, CA

DISSOLVED HYDROCARBON MAP

1075 40TH AVENUE
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	9.10	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**
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**
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	12.00	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**
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	6.40	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**

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

Episode	Date	Average Water Table Elevation (ft amsl)	Water Table Elevation Change (ft)	Hydraulic Gradient/ Flow Direction (ft/ft)
18	02/12/03	36.09	1.40	NW (0.032)
19	05/16/03	35.08	-1.01	NW (0.06)
20	**08/29/03**	**33.94**	**-1.14**	**NW (0.04)**

Note - average water table elevation and change were not calculated for the first 17 episodes

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	ND<50	23	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<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	ND<0.5	ND<0.5	ND<0.5	66
	01/16/98	AEI/MAI	1,500	ND<33	95	0.72	69	8.4	910
	08/05/99	AEI/MAI	160	ND<15	1.6	ND<0.5	0.56	1.1	63
	11/18/99	AEI/MAI	79	ND<5.0	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<50
	02/24/00	AEI/MAI	300	ND<5.0	14	0.82	3.5	1.6	160
	05/24/00	AEI/MAI	1,300	ND<10	93	ND<0.5	17	1.6	480
	08/29/00	AEI/MAI	120	ND<5.0	0.93	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	01/12/01	AEI/MAI	360	ND<5.0	16	ND<0.5	9.3	0.69	170
	04/18/01	AEI/MAI	1,100	2,800	63	ND<0.5	34	0.73	410
	07/27/01	AEI/MAI	130	ND<5.0	1.6	ND<0.5	ND<0.5	ND<0.5	66
	11/06/01	AEI/MAI	ND<50	ND<5.0	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<50
	02/13/02	AEI/MAI	430	ND<5.0	17	0.51	11	0.64	270
	05/14/02	AEI/MAI	340	ND<5.0	21	ND<0.5	. 5.3	0.67	170
	08/15/02	AEI/MAI	96	ND<5.0	0.66	ND<0.5	ND<0.5	ND<0.5	53
	11/14/02	AEI/MAI	66,000	ND<1,200	8,300	860	3,000	11,000	23,000
	02/12/03	AEI/MAI	710	ND<5.0	28	4.3	32	130	120
	05/16/03	AEI/MAI	1,100	ND<15	54	4.1	40	100	340
	08/29/03	**AEI/MAI**	**1,200**	**ND<5.0**	**46**	**5.1**	**55**	**230**	**280**
MW - 2	03/19/97	AEI/MAI	ND<50	65	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<50
	06/23/97	AEI/MAI	ND<50	70	3.4	ND<0.5	ND<0.5	ND<0.5	ND<50
	10/08/97	AEI/MAI	ND<50	90	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<50
	01/16/98	AEI/MAI	ND<50	65	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<50
	08/05/99	AEI/MAI	ND<50	600	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<50
	11/18/99	AEI/MAI	ND<50	370	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<50
	02/24/00	AEI/MAI	ND<50	880	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<50
	05/24/00	AEI/MAI	ND<250	2,200	ND<0.5	ND<0.5	ND<0.5	ND<0.5	62
	08/29/00	AEI/MAI	ND<200	1,900	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<50
	01/12/01	AEI/MAI	470	2,000	8.7	3.1	16	73	70
	04/18/01	AEI/MAI	ND<50	2,800	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<50
	07/27/01	AEI/MAI	ND<100	3,300	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<50
	11/06/01	AEI/MAI	ND<100	3,000	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<50
	02/13/02	AEI/MAI	54	3,200	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<50
	05/14/02	AEI/MAI	ND<150	3,800	4.8	ND<1.0	ND<1.0	ND<1.0	ND<50
	08/15/02	AEI/MAI	ND<50	2,900	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<50
	11/14/02	AEI/MAI	ND<120	3,800	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<50
	02/12/03	AEI/MAI	1,100	3,200	57	7	55	210	120
	05/16/03	AEI/MAI	530	6,000	35	3.6	22	79	85
	08/29/03	**AEI/MAI**	**2,400**	**4,800**	**39**	**5.8**	**77**	**320**	**1200**
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	ND<50	ND<5.0	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<50
	02/12/03	AEI/MAI	61,000	ND<500	6,800	500	2,400	9,800	8,400
	05/16/03	AEI/MAI	59,000	ND<500	6,200	320	2,000	6,500	17,000
	08/29/03	**AEI/MAI**	**78,000**	**ND<1200**	**6,800**	**440**	**2,900**	**11,000**	**100,000**
MW-4	08/05/99	AEI/MAI	ND<50	37	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<50
	11/18/99	AEI/MAI	ND<50	20	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<50
	02/24/00	AEI/MAI	ND<50	20	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<50
	05/24/00	AEI/MAI	120	31	1.3	ND<0.5	ND<0.5	ND<0.5	140
	08/29/00	AEI/MAI	ND<50	22	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	01/12/01	AEI/MAI	ND<50	25	ND<0.5	ND<0.5	ND<0.5	ND<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	ND<0.5	2	10	110
	11/06/01	AEI/MAI	200	21	4.5	1	5.2	24	59
	02/13/02	AEI/MAI	ND<50	15	ND<0.5	ND<0.5	ND<0.5	ND<0.5	91
	05/14/02	AEI/MAI	260	26	12	2.7	11	49	140
	08/15/02	AEI/MAI	ND<50	12	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<50
	11/14/02	AEI/MAI	ND<50	11	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<50
	02/12/03	AEI/MAI	170	16	3.1	0.66	6.4	27	130
	05/16/03	AEI/MAI	ND<50	23	ND<0.5	ND<0.5	ND<0.5	ND<0.5	60
	08/29/03	**AEI/MAI**	**610**	**10**	**16**	**2.7**	**30**	**130**	**120**

Notes:
ug/L= micrograms per liter
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
Please refer to Appendix B: Laboratory Analysis for more detailed information including method detection limits and dilution factors

AEI CONSULTANTS

GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

Monitoring Well Number: MW-1

Project Name:	Fidelity Roof Company	Date of Sampling:	8/29/2003
Job Number:	3119	Name of Sampler:	AN
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)	45.49		
Depth of Well	21.00		
Depth to Water (from top of casing)	9.91		
Water Elevation (feet above msl)	35.58		
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)	**5.3**		
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
	2	20.52	6.72	874	0.44	32.3	
	4	20.28	6.66	902	0.22	-18.4	
	6	19.95	6.69	907	0.16	-26.2	

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

slight hydrocarbon odor, no sheen

AEI CONSULTANTS

GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

Monitoring Well Number: MW-2

Project Name:	Fidelity Roof Company	Date of Sampling:	8/29/2003
Job Number:	3119	Name of Sampler:	AN
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)	12.19		
Water Elevation (feet above msl)	32.79		
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)	**4.2**		
Actual Volume Purged (gallons)	5.0		
Appearance of Purge Water	light brown, clear at 2 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
	1	21.28	6.78	1422	2.64	75.6	
	3	21.31	6.74	1317	2.92	107.5	
	5	20.95	6.72	1406	0.61	134.8	

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

slight hydrocarbon odor, slight sheen

AEI CONSULTANTS

GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

Monitoring Well Number: MW-3

Project Name:	Fidelity Roof Company	Date of Sampling:	8/29/2003
Job Number:	3119	Name of Sampler:	AN
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)	11.92		
Water Elevation (feet above msl)	32.45		
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)	**4.4**		
Actual Volume Purged (gallons)	5.0		
Appearance of Purge Water	light gray color		
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	21.31	6.53	1536	0.62	-45.0	
	3	21.04	6.64	1617	0.79	-68.5	
	5	20.54	6.57	1696	0.29	-78.8	

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

strong hydrocarbon odors, thick sheen, well went dry at 2 gallons (11:27 a.m), recharge at 11:48 a.m.

AEI CONSULTANTS

GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

Monitoring Well Number: MW-4

Project Name:	Fidelity Roof Company	Date of Sampling:	8/29/2003
Job Number:	3119	Name of Sampler:	AN
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)	8.56		
Water Elevation (feet above msl)	34.92		
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)	**5.5**		
Actual Volume Purged (gallons)	6.0		
Appearance of Purge Water	clear, turned light brown at 4 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	21.95	6.75	1010	1.10	134.6	
	4	23.16	6.66	1037	0.87	204.7	
	6	21.86	6.70	1061	1.20	540.7	
	8	21.36	6.70	1071	0.40	542.7	
	10	21.03	6.71	1029	0.17	522.1	

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

no odors, no sheen

McCampbell Analytical Inc.
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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 Roof	Date Sampled: 08/29/03
2500 Camino Diablo, Ste. #200		Date Received: 08/29/03
Walnut Creek, CA 94597	Client Contact: Brandi Kiel-Reese	Date Extracted: 09/02/03-09/04/03
	Client P.O.:	Date Analyzed: 09/02/03-09/04/03

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

Extraction method: SW5030B Analytical methods: SW8021B/8015Cm Work Order: 0308470

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	MW-1	W	1200,a	ND	46	5.1	55	230	1	104
002A	MW-2	W	2400,a	4800	39	5.8	77	320	3.3	93.6
003A	MW-3	W	78,000,a,h	ND<1200	6800	440	2900	11,000	250	99.1
004A	MW-4	W	610,a	10	16	2.7	30	130	1	101
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 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 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

Angela Rydelius, Lab Manager

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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 Roof	Date Sampled: 08/29/03
2500 Camino Diablo, Ste. #200		Date Received: 08/29/03
Walnut Creek, CA 94597	Client Contact: Brandi Kiel-Reese	Date Extracted: 08/29/03
	Client P.O.:	Date Analyzed: 08/30/03-09/03/03

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

Extraction method: SW3510C Analytical methods: SW8015C Work Order: 0308470

Lab ID	Client ID	Matrix	TPH(d)	DF	% SS
0308470-001B	MW-1	W	280,d	1	102
0308470-002B	MW-2	W	1200,d	1	105
0308470-003B	MW-3	W	100,000,d,h	100	106
0308470-004B	MW-4	W	120,d	1	103

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 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

Angela Rydelius, Lab Manager

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QC SUMMARY REPORT FOR SW8021B/8015Cm

Matrix: W WorkOrder: 0308470

EPA Method: SW8021B/8015Cm Extraction: SW5030B BatchID: 8343 Spiked Sample ID: 0308471-002A

	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)£	ND	60	97.1	104	6.78	102	98.5	3.35	70	130
MTBE	ND	10	92.7	101	8.09	103	103	0	70	130
Benzene	ND	10	97.1	96.4	0.727	103	101	2.00	70	130
Toluene	ND	10	98	101	2.90	96.6	95	1.58	70	130
Ethylbenzene	ND	10	99.1	98.8	0.354	105	102	2.58	70	130
Xylenes	ND	30	100	100	0	96	95.3	0.697	70	130
%SS:	105	100	105	105	0	101	101	0	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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QC SUMMARY REPORT FOR SW8015C

Matrix: W WorkOrder: 0308470

EPA Method: SW8015C	Extraction: SW3510C			BatchID: 8339		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	100	103	2.71	70	130
%SS:	N/A	100	N/A	N/A	N/A	99.6	97.6	2.10	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.

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CHAIN-OF-CUSTODY RECORD

WorkOrder: 0308470

Client:
All Environmental, Inc.
2500 Camino Diablo, Ste. #200
Walnut Creek, CA 94597

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

Date Received: 8/29/03
Date Printed: 8/29/03

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests						
					SW8015C	MW8021B/8015C					
0308470-001	MW-1	Water	8/29/03	☐	B	A					
0308470-002	MW-2	Water	8/29/03	☐	B	A					
0308470-003	MW-3	Water	8/29/03	☐	B	A					
0308470-004	MW-4	Water	8/29/03	☐	B	A					

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.

AGE

0308470

McCAMPBELL ANALYTICAL INC.

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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: Brandi K. Reese Bill To:
Company: AEI Consultants
2500 Camino Diablo, Suite 200
Walnut Creek 94597
E-Mail: breese@aeiconsultants.com
Tele: ( )925-283-6000 Fax: ( )925-944-2895
Project #: 3119 Project Name: FIDELITY ROOF
Project Location: OAKLAND
Sampler Signature: Hdrian Meto

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		8/29		3	VOA	X					X	X			X	X															
+ MW-2		"		"	"	"					"	"			"	"															
+ MW-3		"		"	"	"					"	"			"	"															
+ MW-4		"		"	"	"					"	"			"	"															

Relinquished By:	Date:	Time:	Received By:
Hdrian Meto	8/29	4:15	Mike Vallen
Relinquished By:	Date:	Time:	Received By:
Relinquished By:	Date:	Time:	Received By:

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

PRESERVATION APPROPRIATE ✓	VOAS ✓	O&G	METALS	OTHER
CONTAINERS				