



April 26, 2004

R02509

Alameda County

MAY 03 2004

Environmental Health

Mr. Amir Gholami  
1131 Harbor Bay Parkway  
Alameda, CA 94502

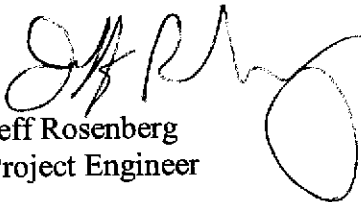
**Subject: Groundwater Investigation**  
901 77<sup>th</sup> Avenue  
Oakland, CA  
AEI Project No. 8269

Dear Mr. Gholami:

Enclosed are is a copy of the Groundwater Investigation completed at the above referenced property, as per your departments request.

Please do not hesitate to call Peter McIntyre or me at (925) 283-6000, if you have any questions or concerns.

Sincerely,



Jeff Rosenberg  
Project Engineer

Alameda County

April 26, 2004

MAY 03 2004

Environmental Health

**GROUNDWATER  
INVESTIGATION REPORT**

901 77th Avenue  
Oakland, California

Project No.8269

Prepared For

Mr. Michael Parsons  
D&D Ventures, LLC  
15700 Winchester Boulevard  
Los Gatos, CA 95030

Prepared By

**AEI Consultants**  
2500 Camino Diablo, Suite 200  
Walnut Creek, CA 94597  
(800) 801-3224

**AEI**



April 26, 2004

Mr. Michael Parsons  
D&D Ventures, LLC  
15700 Winchester Boulevard  
Los Gatos, CA 95030

**Subject: Groundwater Investigation**  
901 77<sup>th</sup> Avenue  
Oakland, California  
AEI Project No. 8269

Dear Mr. Parsons:

The following report describes the activities and results of the groundwater investigation performed by AEI Consultants (AEI) at the above referenced property (Figure 1: Site Location Map). The project was designed to assess whether and to what extent groundwater has been impacted by a release of petroleum hydrocarbons from the former underground storage tank (UST). The investigation included the collection of soil and groundwater samples from seven soil borings advanced on and near the property.

#### **SITE DESCRIPTION AND BACKGROUND**

The subject property (hereafter referred to as the "site" or "property") is located on the northeastern corner of the intersection of Hawley Street and 77<sup>th</sup> Avenue in a mixed light industrial and residential area of Oakland.

On July 25, 2002, AEI removed a 1,000-gallon gasoline UST from the subject property. Three tank pit soil samples collected during the tank removal revealed concentrations of Total Petroleum Hydrocarbons as Gasoline (TPH-g) ranging from 40 to 4,600 mg/kg. Benzene, toluene, ethyl benzene, and total xylenes (BTEX) were all present at elevated concentrations. Methyl tertiary-butyl ether (MTBE) was not detected in any of the soil samples.

The scope of work completed during this project, was based on the January 26, 2004, *Subsurface Investigation Workplan* prepared by P&D Environmental (P&D). In a letter dated, February 20, 2004, Mr. Amir Gholami of the Alameda County Health Care Services Agency (ACHCSA) approved of the scope of work in the P&D work plan. Before initiating this project, Mr. Amir Gholami was notified both by telephone and e-mail of the scope of work. AEI went forward with the subsurface investigation, and conducted field activities on March 30, 2004. The remainder of the report outlines the results of this investigation.

## **INVESTIGATIVE EFFORTS**

On March 15, 2004, AEI notified Mr. Amir Gholami of the ACHCSA both by e-mail and voice mail of the intent to perform a subsurface investigation at the site, on March 30, 2004. After notifying Underground Service Alert (USA), AEI performed the subsurface investigation at the property on the previously noted date. Seven soil borings (SB-1 through SB-7) were advanced to maximum depths ranging from 12 to 16 feet below ground surface (bgs). Soil boring SB-1 was placed upgradient from the former UST, SB-2 was placed cross gradient, and borings SB-3 through SB-7 were placed down gradient. The scope of work was designed to determine if hydrocarbons detected in the soil during the tank removal have impacted the groundwater at the property. The locations of the soil borings are shown on Figure 2.

### ***Soil Sample Collection***

The soil borings were advanced with a Geoprobe<sup>TM</sup> 5410 direct push drill rig. The borings were continuously cored, and samples were collected at approximately 4-foot intervals.

No significant hydrocarbon odor or staining were noted during the soil sample collection. Soil samples were screened in the field using a photo ionization detector (PID). Additional field screening/soil data is presented on the boring logs found in Appendix B.

The soil borings were cored continuously in 4-foot long 2 inch diameter acrylic liners, from which a 6 inch sample was taken approximately every four feet. The soil samples were sealed with Teflon<sup>TM</sup> tape and plastic caps and placed in a cooler with ice to await transportation to a state-certified laboratory.

### ***Groundwater Sample Collection***

Upon drilling to the target depth, a temporary 3/4" diameter slotted PVC casing was inserted into each soil boring to facilitate collection of groundwater samples. Saturated soils were encountered at approximately 8 to 15 feet in the borings, and groundwater was measured at approximately 6 to 10 feet bgs in the temporary casings.

Groundwater samples were collected with a clean disposable bailer and transferred into 1-L amber bottles and 40-mL volatile organic analysis (VOA) vials. The VOAs were capped so that there was no headspace or visible air bubbles within the vials. All samples were placed in a cooler with water ice to await transportation to the laboratory.

### ***Boring Destruction***

Following sample collection each boring was grouted with neat cement per Alameda County and State of California guidelines.

### **Laboratory Analysis**

On the same day of sampling (March 30, 2004), the soil samples were transported to McCampbell Analytical Inc. (Department of Health Services Certification #1644) under chain of custody protocol for analysis. Analytical results and chain of custody documents are included as Appendix C.

Groundwater samples from all seven borings were analyzed for total TPH-g, BTEX, and MTBE by EPA methods 8021B and 8015 C. Following receipt of initial analytical results, groundwater samples SB-3 W and SB-7W were analyzed for the following Oxygenated Volatile Organics: tert-Amyl methyl ether (TAME), t-Butyl alcohol (TBA), 1,2-Dibromoethane (EDB), 1,2-Dichloroethane (1,2-DCA), Diisopropyl ether (DIPE), Ethyl tert-butyl ether (ETBE), and MTBE by EPA method 8260B. In addition, SB-3 W was analyzed for TPD as diesel (TPH-d) and TPH as motor oil (TPH-mo) by EPA method 8015 C.

The soil samples were placed on hold at the laboratory.

### **III Findings**

The near surface native soil encountered during the drilling consisted primarily of clay with varying amounts of sand and gravel from 2 feet bgs to the maximum depth penetrated (16 feet).

Saturated soils were encountered from approximately 12 to 15 feet bgs. Based on regional topography, and information from nearby sites, groundwater beneath the area is estimated to flow, to the west or southwest.

TPH-g was detected in groundwater samples SB-3W and SB-4W at concentrations of 1,100 µg/L and 510 µg/L respectively. TPH-d and TPH-mo were detected in groundwater sample SB-3W at concentrations of 780 µg/L and 580 µg/L respectively. MTBE was detected by EPA Method 8021 B at concentrations of 22 µg/L and 470 µg/L in samples SB-6W and SB-7W. MTBE was found in samples SB-3W and SB-7W at 3.9 µg/L and 660 µg/L respectively by EPA Method 8260B. Tert-Amyl methyl-ether (TAME) was detected at 34 µg/L in water sample SB-7 W.

Groundwater sample analytical data is summarized in Table 1 of Appendix A.

### **IV Conclusions and Recommendations**

Based on laboratory analytical results, it appears that a release of hydrocarbons has had a minor impact to groundwater beneath the property. Hydrocarbons in the lighter range (TPH-g) and heavier range (TPH-mo), and MTBE are present at a slightly elevated level in the groundwater. BTEX compounds were not detected at significant levels. In addition, heavier range, possibly aged gasoline, compounds were present in SB-3W and SB-4W.

Based on the results of this subsurface investigation; the groundwater has been impacted by hydrocarbons in the vicinity of the former UST and immediately down gradient.

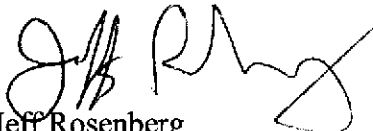
### V Report Limitation

This report presents a summary of work completed by AEI Consultants. The completed work includes observations and descriptions of site conditions encountered. Where appropriate, it includes analytical results for samples taken during the course of the work. The number and location of samples are chosen to provide the required information, but it cannot be assumed that they are representative of areas not sampled. All conclusions and/or recommendations are based on these analyses and observations, and the governing regulations. Conclusions beyond those stated and reported herein should not be inferred from this document.

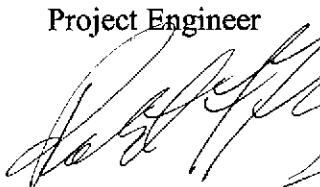
These services were performed in accordance with generally accepted practices, in the environmental engineering and construction field, which existed at the time and location of the work.

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

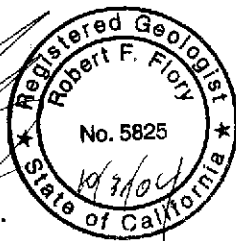
Sincerely,



Jeff Rosenberg  
Project Engineer



Robert F. Flory, R.G.  
Senior Geologist



**Figures**

Figure 1: Site Map

Figure 2: Site Plan

Figure 3: Sample Analytical Data

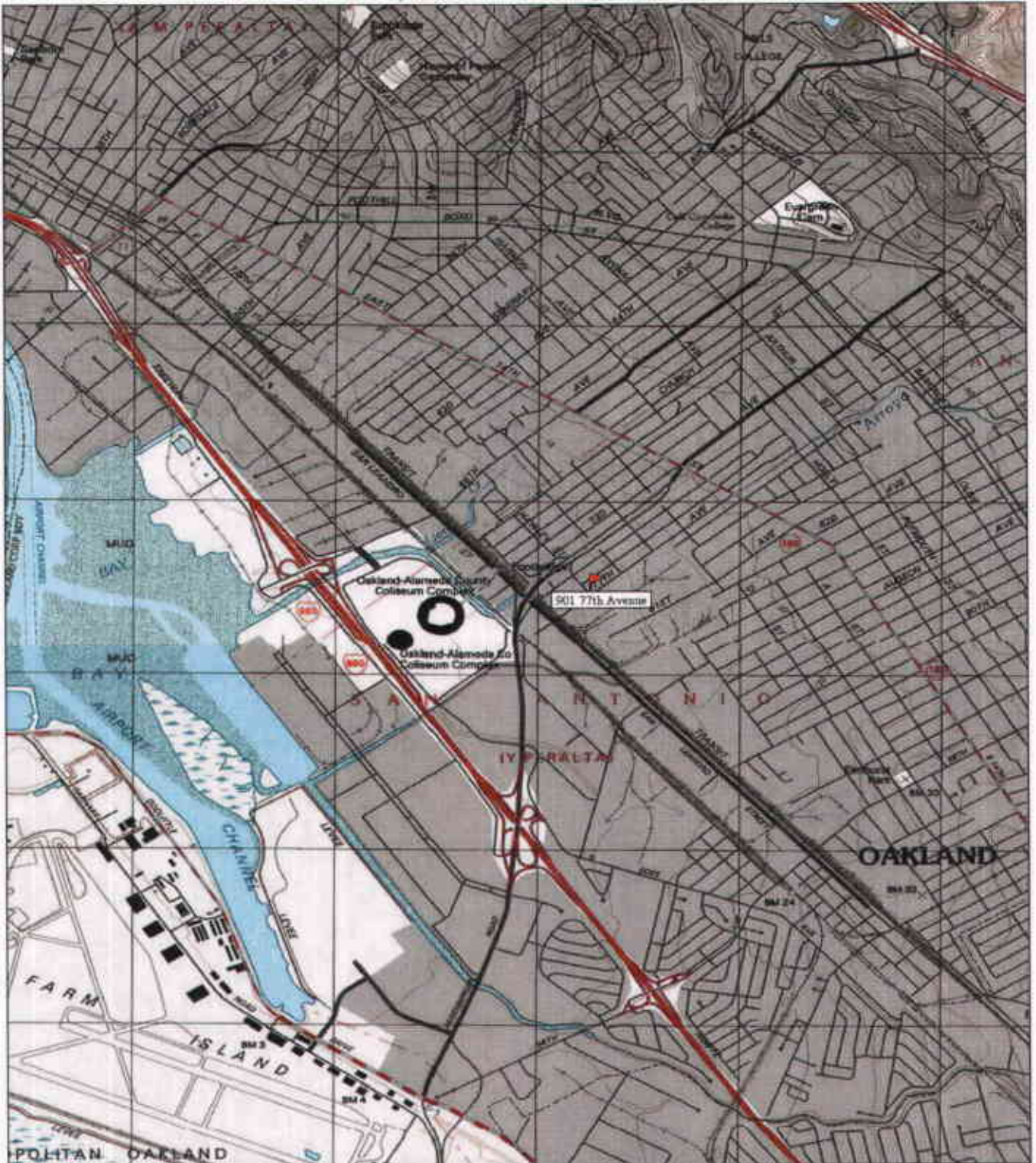
**Appendix A**

Table 1: Groundwater Sample Analytical Data

**Appendix B:** Soil Boring Logs

**Appendix C:** Sample Analytical Documentation

37°45.172' N, 122°11.779' W WGS84, San Leandro, CA



Map created with TOPO10 ©2003 National Geographic (www.nationalgeographic.com/topo)

AEI CONSULTANTS

SITE LOCATION MAP

901 77th AVENUE  
OAKLAND, CALIFORNIA

FIGURE 1  
PROJECT NO. 8269



901 77TH AVENUE

PUBLIC RIGHT OF WAY

77TH AVENUE

SB-1

FORMER LOCATION OF  
1,000-GALLON UST

SB-2

PUBLIC RIGHT OF WAY

SB-5

SB-4

SB-3

HAWLEY STREET

SB-6

SB-7

LEGEND



Soil Boring Location



AEI Consultants

2500 Camino Diablo, Walnut Creek, CA

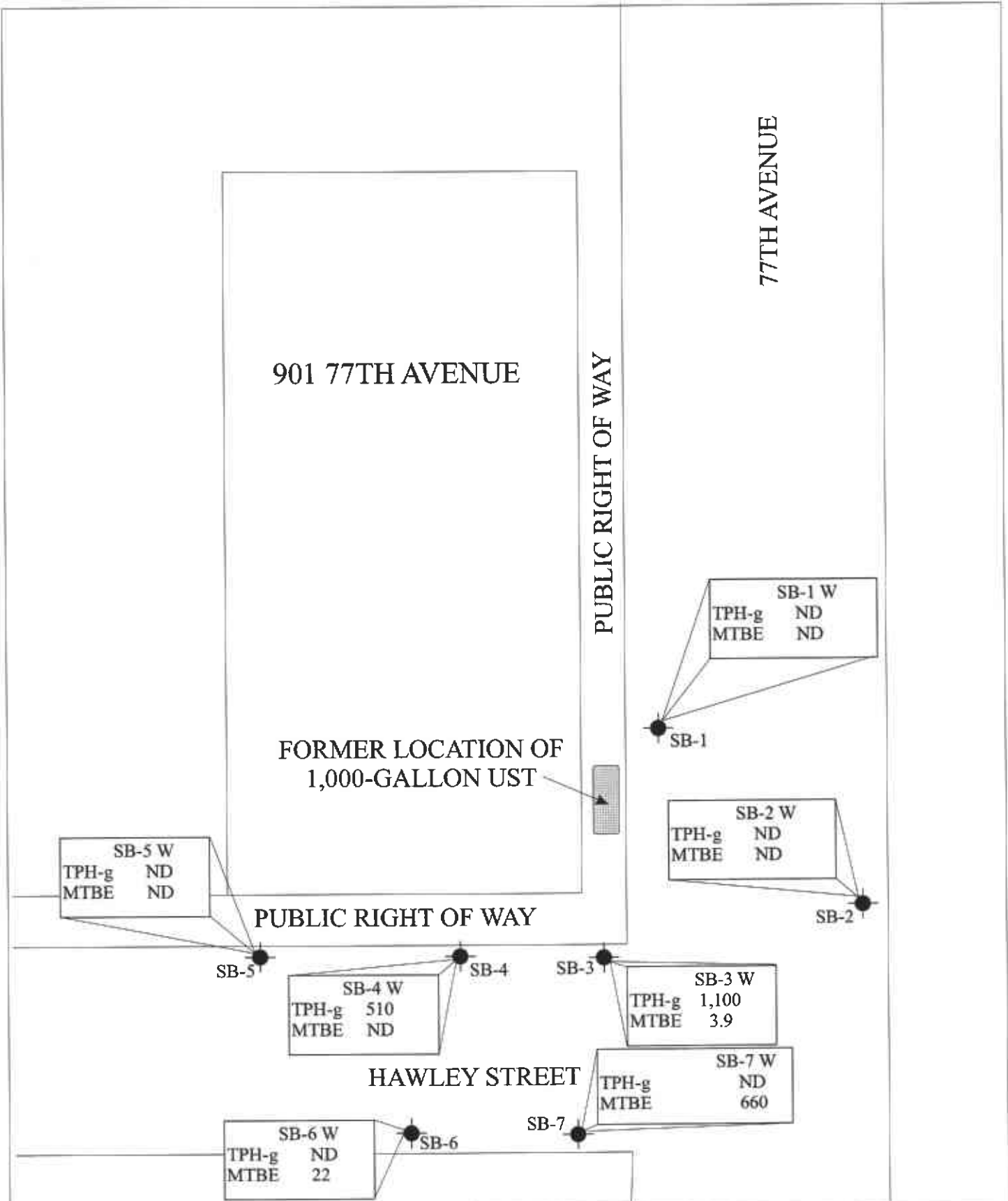
1" = 10'

4/26/2004

SITE PLAN

901 77TH AVENUE  
OAKLAND, CALIFORNIA

FIGURE 2



**LEGEND**



Soil Boring Location

TPH-g = Total Petroleum Hydrocarbons as gasoline  
 MTBE = Methyl Tertiary-Butyl Ether  
 ND = Not Detectable at method detection limit



**AEI Consultants**  
 2500 Camino Diablo, Walnut Creek, CA

**Sample Analytical Data**

901 77TH AVENUE  
 OAKLAND, CALIFORNIA

FIGURE 3

**Table 1: 901 77th Avenue, Oakland, CA  
Groundwater Sample Analytical Data**

Sample ID	Sample Date	TPH-g µg/L	TPH-d µg/L 8015C	TPH-mo µg/L	BTEX µg/L 8021 B	MTBE µg/L	MTBE µg/L	TAME µg/L 8260B	Other Oxygenates µg/L
SB-1 W	3/30/2004	ND	---	---	ALL ND	ND	---	---	---
SB-2 W	3/30/2004	ND	---	---	ALL ND	ND	---	---	---
SB-3 W	3/30/2004	1100 <sup>b,m</sup>	780 <sup>d,g</sup>	580 <sup>d,g</sup>	*	ND<40	3.9	ND	ND
SB-4 W	3/30/2004	510 <sup>b,m</sup>	---	---	*	ND	---	---	---
SB-5 W	3/30/2004	ND	---	---	ALL ND	ND	---	---	---
SB-6 W	3/30/2004	ND	---	---	ALL ND	22	---	---	---
SB-7 W	3/30/2004	ND	---	---	ALL ND	470	660	34	ND
MDL		50	50	250			0.5	0.5	NA

Note:

\* BTEX compounds were non-detect with the exception of toluene and ethylbenzene in SB-3W at 1.8 ug/L and 1.5 ug/L respectively, and toluene in SB-4W at 2.5 ug/L.

<sup>b</sup> - heavier gasoline range compounds are significant (aged gasoline?)

<sup>d</sup> - gasoline range compounds are significant

<sup>e</sup> - oil range compounds are significant

<sup>m</sup> - no recognizable pattern

ND = Not Detected above method detection limit

MDL = Method Detection Limit

mg/kg = milligrams per kilogram (ppm)

TPH-g = Total Petroleum Hydrocarbons as gasoline

TPH-d = Total Petroleum Hydrocarbons as diesel

TPH-mo = Total Petroleum Hydrocarbons as motor oil

VOCs = Volatile Organic Compounds

BTEX = Benzene, Toluene, Ethyl Benzene, and Total Xylenes

MTBE = Methyl Tertiary-Butyl Ether

TAME = tert-Amyl methyl ether




--- = not analyzed

Please refer to Appendix C: Sample Analytical Documentation for further detailed lab information including Method Detection Limit

**Project: D&D Ventures**  
**Project Location: 901 77th Avenue, Oakland, CA**  
**Project Number: 8269**

**Log of Boring SB-1**  
 Sheet 1 of 1

Date(s) Drilled <b>3/30/2004</b>	Logged By <b>JKR</b>	Checked By <b>RFF</b>
Drilling Method <b>Direct Push</b>	Drill Bit Size/Type <b>2 1/4"</b>	Total Depth of Borehole <b>12 feet bgs</b>
Drill Rig Type <b>Geoprobe 5410</b>	Drilling Contractor <b>ECA</b>	Approximate Surface Elevation
Groundwater Level and Date Measured <b>8 feet ATD, 7 feet after 5</b>	Sampling Method(s) <b>Tube (push)</b>	Well Permit
Borehole Backfill <b>Cement Slurry</b>	Location	

Elevation, feet	Depth, feet	Sample Type	Sample Number	USCS Symbol	Graphic Log	MATERIAL DESCRIPTION	PID Reading, ppm	REMARKS AND OTHER TESTS
0						Asphalt/Fill Material		
				SW		Sand, medium grain, loose, dry, greenish gray color - Cley 2 4/5BG, (likely fill material)		
	5		SB-1 5'				<1	
				SC		Clayey Sand w/ some 1/4" gravel, loose, dry, greenish gray color - Gle 2/45BG		
			SB-1 8'				<1	
	10			CL		Sandy Clay, plastic, stiff		
			SB-1 11'				<1	
						Bottom of Boring at 12 feet bgs		
	15							
	20							


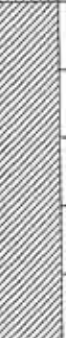


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**Project: D&D Ventures**  
**Project Location: 901 77th Avenue, Oakland, CA**  
**Project Number: 8269**

**Log of Boring SB-2**  
 Sheet 1 of 1

Date(s) Drilled <b>3/30/2004</b>	Logged By <b>JKR</b>	Checked By <b>RFF</b>
Drilling Method <b>Direct Push</b>	Drill Bit Size/Type <b>2 1/4"</b>	Total Depth of Borehole <b>16 feet bgs</b>
Drill Rig Type <b>Geoprobe 5410</b>	Drilling Contractor <b>ECA</b>	Approximate Surface Elevation
Groundwater Level and Date Measured <b>14 feet ATD, 12 feet after 5 minutes</b>	Sampling Method(s) <b>Tube (push)</b>	Well Permit
Borehole Backfill <b>Cement Slurry</b>	Location	

Elevation, feet	Depth, feet	Sample Type	Sample Number	USCS Symbol	Graphic Log	MATERIAL DESCRIPTION	PID Reading, ppm	REMARKS AND OTHER TESTS
0						Asphalt/Fill Material		
				ML		Silty Clay, cohesive, dry soft, low plasticity, dark brown color - 10 YR 2/1		
	5		SB-2 7.5'	CL		Clay, soft, medium plasticity, medium brown 10 YR 4/3, gray mottling color - 10 YR 4/1	<1	
	10		SB-2 10'	CL		Clay, stiff, tight, low plasticity, orange mottling - 10 YR 5/8	<1	
	15		SB-1 15'	CL		Sandy Clay, moist, plastic, cohesive, tan-medium color - 10 YR 4/3	<1	
						Bottom of Boring at 16 feet bgs		


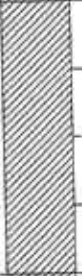

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**Project: D&D Ventures**  
**Project Location: 901 77th Avenue, Oakland, CA**  
**Project Number: 8269**

**Log of Boring SB-3**  
 Sheet 1 of 1

Date(s) Drilled: <b>3/30/2004</b>	Logged By: <b>JKR</b>	Checked By: <b>RFF</b>
Drilling Method: <b>Direct Push</b>	Drill Bit Size/Type: <b>2 1/4"</b>	Total Depth of Borehole: <b>12 feet bgs</b>
Drill Rig Type: <b>Geoprobe 5410</b>	Drilling Contractor: <b>ECA</b>	Approximate Surface Elevation:
Groundwater Level and Date Measured: <b>11 feet ATD, 7 feet after 5</b>	Sampling Method(s): <b>Tube (push)</b>	Well Permit:
Borehole Backfill: <b>Cement Slurry</b>	Location:	

Elevation, feet	Depth, feet	Sample Type	Sample Number	USCS Symbol	Graphic Log	MATERIAL DESCRIPTION	PID Reading, ppm	REMARKS AND OTHER TESTS
0						Asphalt/Fill Material		
				CL		Clay, some silt, tight, stiff, low plasticity, dark brown - 10 YR 2/1	<1	
	4'		SB-3 4'	CL		Sandy Clay, soft, medium plasticity, dark brown 10 YR 2/1	<1	
	7.5'		SB-3 7.5'	CL		Gravelly Clay, small (< 1/4") angular gravel, moist, plastic, cohesive, medium brown - 10 YR 4/1	<1	
	12'		SB-3 12'			Bottom of Boring at 12 feet bgs	-20	

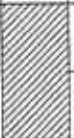




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**Project: D&D Ventures**  
**Project Location: 901 77th Avenue, Oakland, CA**  
**Project Number: 8269**

**Log of Boring SB-4**  
 Sheet 1 of 1

Date(s) Drilled <b>3/30/2004</b>	Logged By <b>JKR</b>	Checked By <b>RFF</b>
Drilling Method <b>Direct Push</b>	Drill Bit Size/Type <b>2 1/4"</b>	Total Depth of Borehole <b>12 feet bgs</b>
Drill Rig Type <b>Geoprobe 5410</b>	Drilling Contractor <b>ECA</b>	Approximate Surface Elevation
Groundwater Level and Date Measured <b>11 feet ATD, 8 feet after 5 minutes</b>	Sampling Method(s) <b>Tube (push)</b>	Well Permit
Borehole Backfill <b>Cement Slurry</b>	Location	

Elevation, feet	Depth, feet	Sample Type	Sample Number	USCS Symbol	Graphic Log	MATERIAL DESCRIPTION	PID Reading, ppm	REMARKS AND OTHER TESTS
0						Asphalt/Fill Material		
			SB-4 4'	CL		Clay, tight, stiff, low plasticity, dark brown - 10 YR 2/1	<1	
	5		SB-4 8'	CL		Clay, some 1/4" to 1/2" gravel, dark brown 10 YR 2/1, some orange and gray mottling	<2	(after 5 minutes) 
	10		SB-4 12'	SP		Clay with Gravel and Sand mixture, moist		(ATD) 
	15					Bottom of Boring at 12 feet bgs	-5	

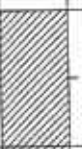
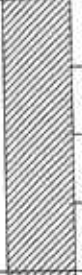

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**Project: D&D Ventures**  
**Project Location: 901 77th Avenue, Oakland, CA**  
**Project Number: 8269**

**Log of Boring SB-5**  
 Sheet 1 of 1

Date(s) Drilled: <b>3/30/2004</b>	Logged By: <b>JKR</b>	Checked By: <b>RFF</b>
Drilling Method: <b>Direct Push</b>	Drill Bit Size/Type: <b>2 1/4"</b>	Total Depth of Borehole: <b>12 feet bgs</b>
Drill Rig Type: <b>Geoprobe 5410</b>	Drilling Contractor: <b>ECA</b>	Approximate Surface Elevation
Groundwater Level and Date Measured: <b>11 feet ATD, 9 feet after 5 minutes</b>	Sampling Method(s): <b>Tube (push)</b>	Well Permit
Borehole Backfill: <b>Cement Slurry</b>	Location	

Elevation, feet	Depth, feet	Sample Type	Sample Number	USCS Symbol	Graphic Log	MATERIAL DESCRIPTION	PID Reading, ppm	REMARKS AND OTHER TESTS
0						Asphalt/Fill Material		
			SB-5 4'	CL		Clay, tight, stiff, low plasticity, dark brown - 10 YR 2/1	<2	
			SB-5 8'	CL		Clay, dark brown 10 YR 2/1, some orange and gray mottling	<1	
			SB-5 12'	CL		Sandy Clay with some gravel, cohesive, moist, brown - 10 YR 4/4 (after 5 minutes)	<1	
						(ATD)		
						Bottom of Boring at 12 feet bgs		

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**Project: D&D Ventures**  
**Project Location: 901 77th Avenue, Oakland, CA**  
**Project Number: 8269**

**Log of Boring SB-6**  
 Sheet 1 of 1

Date(s) Drilled <b>3/30/2004</b>	Logged By <b>JKR</b>	Checked By <b>RFF</b>
Drilling Method <b>Direct Push</b>	Drill Bit Size/Type <b>2 1/4"</b>	Total Depth of Borehole <b>16 feet bgs</b>
Drill Rig Type <b>Geoprobe 5410</b>	Drilling Contractor <b>ECA</b>	Approximate Surface Elevation
Groundwater Level and Date Measured <b>11 feet ATD, 6 feet after 5</b>	Sampling Method(s) <b>Tube (push)</b>	Well Permit
Borehole Backfill <b>Cement Slurry</b>	Location	

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Elevation, feet	Depth, feet	Sample Type	Sample Number	USCS Symbol	Graphic Log	MATERIAL DESCRIPTION	PID Reading, ppm	REMARKS AND OTHER TESTS
0						Asphalt/Fill Material		
			SB-6 4'	CL		Clay, tight, stiff, low plasticity, dark brown - 10 YR 2/1	<2	
			SB-6 8'	CL		Clay, dark brown 10 YR 2/1, some orange and gray mottling	<1	
			SB-6 12'	CL		Sandy Clay with some gravel, cohesive, moist, brown - 10 YR 4/4	<1	
				SC		Clayey Sand, saturated soil apparent 11' - 13.5', stiff, tight, brown - 10 YR 5/4		
						Bottom of Boring at 16 feet bgs		



**Project: D&D Ventures**  
**Project Location: 901 77th Avenue, Oakland, CA**  
**Project Number: 8269**

**Log of Boring SB-7**  
 Sheet 1 of 1

Date(s) Drilled: <b>3/30/2004</b>	Logged By: <b>JKR</b>	Checked By: <b>RFF</b>
Drilling Method: <b>Direct Push</b>	Drill Bit Size/Type: <b>2 1/4"</b>	Total Depth of Borehole: <b>12 feet bgs</b>
Drill Rig Type: <b>Geoprobe 5410</b>	Drilling Contractor: <b>ECA</b>	Approximate Surface Elevation
Groundwater Level: <b>11.5 feet ATD, 7 feet and Date Measured after 5</b>	Sampling Method(s): <b>Tube (push)</b>	Well Permit
Borehole Backfill: <b>Cement Slurry</b>	Location	

Elevation, feet	Depth, feet	Sample Type	Sample Number	USCS Symbol	Graphic Log	MATERIAL DESCRIPTION	PID Reading, ppm	REMARKS AND OTHER TESTS
0						Asphalt/Fill Material		
			SB-7 4'	CL		Clay, tight, stiff, low plasticity, dark brown - 10 YR 2/1	<2	
			SB-7 8'	CL		Clay, dark brown 10 YR 2/1, some orange and gray mottling	<1	
			SB-7 8'	CL		Sandy Clay with some gravel, cohesive, brown - 10 YR 4/4		
			SB-7 12'	SC		Clayey Sand, saturated soil apparent 11.5' to 13', stiff, tight, brown - 10 YR 5/4		
						Bottom of Boring at 12 feet bgs	<1	

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QC SUMMARY REPORT FOR SW8021B/8015Cm

Matrix: W

WorkOrder: 0403492

EPA Method: SW8021B/8015Cm		Extraction: SW5030B		BatchID: 10949		Spiked Sample ID: 0403497-004A				
	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	98.3	98.2	0.140	103	101	2.73	70	130
MTBE	ND	10	109	99.8	8.75	99.5	104	4.39	70	130
Benzene	ND	10	114	109	4.45	116	113	2.85	70	130
Toluene	ND	10	106	102	4.37	109	105	3.67	70	130
Ethylbenzene	ND	10	111	107	3.85	113	110	3.17	70	130
Xylenes	ND	30	100	96.3	3.74	100	100	0	70	130
%SS:	89.0	10	103	100	2.69	105	105	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.

**McC Campbell Analytical, Inc.**



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

**CHAIN-OF-CUSTODY RECORD**

WorkOrder: 0403492

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

TEL: (925) 283-6000  
 FAX: (925) 283-6121  
 ProjectNo: #8269; D & D  
 PO:

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

Requested TAT: 5 days  
 Date Received: 3/30/04  
 Date Printed: 3/31/04

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests (See legend below)														
					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
0403492-004	SB-1 W	Water	3/30/04	<input type="checkbox"/>	A														
0403492-007	SB-2 W	Water	3/30/04	<input type="checkbox"/>	A														
0403492-011	SB-3 W	Water	3/30/04	<input type="checkbox"/>	A														
0403492-015	SB-4 W	Water	3/30/04	<input type="checkbox"/>	A														
0403492-019	SB-5 W	Water	3/30/04	<input type="checkbox"/>	A														
0403492-023	SB-6 W	Water	3/30/04	<input type="checkbox"/>	A														
0403492-026	SB-7 W	Water	3/30/04	<input type="checkbox"/>	A														

Test Legend:

1	G-MBTX_W	2		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.



0403410

**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: Jeff Rosenberg Bill To: SWPC  
Company: AEI Consultants  
2500 Camino Diablo, Suite 200  
Walnut Creek 94597 E-Mail: aeiconsultants.com  
Tele: ( ) 925-283-6000 Fax: ( ) 925-944-2895  
Project #: 8269 Project Name: D&D  
Project Location: 901 7th Avenue  
Sampler Signature: [Signature]

SAMPLE ID (Field Point Name)	LOCATION	SAMPLING		# Containers	Type Containers	MATRIX					METHOD PRESERVED				Analysis Request	Other	Comments
		Date	Time			Water	Soil	Air	Sludge	Other	Ice	HCl	HNO <sub>3</sub>	Other			
SB-4 12'		3/30		1	Acetate	X						X					X
SB-4 W				4	3x VOA 1x Acetate	X						X	X	X			
SB-5 9'				1	Acetate	X						X					X
SB-5 8'				1	L	X						X					X
SB-5 12'				1	L	X						X					X
SB-5 W				4	3x VOA 1x Acetate	X						X	X	X			
SB-6 4'				1	Acetate	X						X					X
SB-6 8'				1	L	X						X					X
SB-6 12'				1	L	X						X					X
SB-6 W				4	3x VOA 1x Acetate	X						X	X	X			
SB-7 8'				1	Acetate	X						X					X
SB-7 12'				1	L	X						X					X
SB-7 W				4	3x VOA 1x Acetate	X						X	X	X			
				1	Acetate	X						X					X

Analysis Request	Other	Comments
BTEX & TPH as Gas (602/8020 + 8015)/MTBE		
TPH as Diesel (8015)		
Total Petroleum Oil & Grease (5520 E&F/B&F)		
Total Petroleum Hydrocarbons (413.1)		
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		

Relinquished By: [Signature] Date: 3/30 Time: 4:05  
Received By: [Signature]  
Relinquished By: [Signature] Date:  Time:   
Received By:   
Relinquished By:  Date:  Time:   
Received By:

ICE/\*   
GOOD CONDITION   
HEAD SPACE ABSENT   
DECHLORINATED IN LAB   
PRESERVATION APPROPRIATE   
CONTAINERS PRESERVED IN LAB   
VOAS  O&G METALS OTHER

1102







# 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: #8269; D & D	Date Sampled: 03/30/04
		Date Received: 03/30/04
	Client Contact: Jeff Rosenberg	Date Extracted: 04/09/04
	Client P.O.:	Date Analyzed: 04/09/04

### Oxygenated Volatile Organics + EDB and 1,2-DCA by P&T and GC/MS\*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 0403492

Lab ID	0403492-011B	0403492-026B			Reporting Limit for DF = 1
Client ID	SB-3 W	SB-7 W			
Matrix	W	W			
DF	1	20			

Compound	Concentration			ug/kg	ug/L
	tert-Amyl methyl ether (TAME)	ND	34		NA
t-Butyl alcohol (TBA)	ND	ND<100		NA	5.0
1,2-Dibromoethane (EDB)	ND	ND<10		NA	0.5
1,2-Dichloroethane (1,2-DCA)	ND	ND<10		NA	0.5
Diisopropyl ether (DIPE)	ND	ND<10		NA	0.5
Ethyl tert-butyl ether (ETBE)	ND	ND<10		NA	0.5
Methyl-t-butyl ether (MTBE)	3.9	660		NA	0.5

### Surrogate Recoveries (%)

%SS:	97.2	106		
Comments	i	i		

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

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis.

# surrogate diluted out of range or surrogate coelutes with another peak.

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~2 vol. % sediment; j) sample diluted due to high organic content.



**McC Campbell Analytical, Inc.**

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

### QC SUMMARY REPORT FOR SW8015C

Matrix: W

WorkOrder: 0403492

EPA Method: SW8015C		Extraction: SW3510C			BatchID: 11044			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	95.1	93.5	1.68	70	130
%SS:	N/A	2500	N/A	N/A	N/A	99.4	97.8	1.61	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.


$\% \text{ Recovery} = 100 * (\text{MS} - \text{Sample}) / (\text{Amount Spiked}); \text{RPD} = 100 * (\text{MS} - \text{MSD}) / ((\text{MS} + \text{MSD}) / 2).$

\* 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

 QA/QC Officer



**QC SUMMARY REPORT FOR SW8260B**

Matrix: W

WorkOrder: 0403492

EPA Method: SW8260B		Extraction: SW5030B			BatchID: 11045		Spiked Sample ID: 0404083-005B			
	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
tert-Amyl methyl ether (TAME)	ND	10	94.6	91.2	3.57	95.7	91.8	4.11	70	130
Benzene	ND	10	124	120	2.76	124	121	2.40	70	130
t-Butyl alcohol (TBA)	ND	50	72	79.8	10.2	79.4	73.2	8.08	70	130
Chlorobenzene	ND	10	104	103	1.53	103	102	1.12	70	130
1,2-Dibromoethane (EDB)	ND	10	94.9	91.4	3.76	95.7	92.5	3.41	70	130
1,2-Dichloroethane (1,2-DCA)	ND	10	107	104	2.71	105	104	1.11	70	130
1,1-Dichloroethene	ND	10	98.5	95.1	3.54	97.8	94.4	3.59	70	130
Diisopropyl ether (DIPE)	ND	10	103	99.9	2.90	102	97.8	4.00	70	130
Ethyl tert-butyl ether (ETBE)	ND	10	93.3	88.9	4.84	92.5	88.6	4.33	70	130
Methyl-t-butyl ether (MTBE)	ND	10	90.7	86.1	5.24	90.2	84.5	6.45	70	130
Toluene	ND	10	102	98.8	2.83	101	98.7	2.33	70	130
Trichloroethene	ND	10	84.3	80.4	4.78	82.8	80.6	2.66	70	130
%SS1:	99.7	10	100	99.8	0.143	95.5	93.9	1.64	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.

Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.

**McC Campbell Analytical, Inc.**

**CHAIN-OF-CUSTODY RECORD**



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

WorkOrder: 0403492

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

TEL: (925) 283-6000  
 FAX: (925) 283-6121  
 ProjectNo: #8269; D & D  
 PO:

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

Requested TAT: 5 days  
 Date Received: 3/30/04  
 Date Add-On: 4/7/04  
 Date Printed: 4/8/04

Sample ID	ClientSamplID	Matrix	Collection Date	Hold	Requested Tests (See legend below)														
					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
0403492-011	SB-3 W	Water	3/30/04	<input type="checkbox"/>	B	C													
0403492-026	SB-7 W	Water	3/30/04	<input type="checkbox"/>	B														

**Test Legend:**

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

Prepared by: Melissa Valles

Comments: 5-OXYS AND TPH (D) ADDED 4/7/04

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.

**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: Jeff Rosenberg Bill To: SUMP  
Company: AEI Consultants  
2500 Camino Diablo, Suite 200 @  
Walnut Creek 94597 E-Mail: aeiconsultants.com  
Tele: ( ) 925-283-6000 Fax: ( ) 925-944-2895  
Project #: 8269 Project Name: D&D  
Project Location: 901 7th Avenue  
Sampler Signature: [Signature]

SAMPLE ID (Field Point Name)	LOCATION	SAMPLING		# Containers	Type Containers	MATRIX					METHOD PRESERVED				Analysis Request	Other	Comments
		Date	Time			Water	Soil	Air	Sludge	Other	Ice	HCl	HNO <sub>3</sub>	Other			
SB-4 12'		3/30		1	Acetate	X					X						
SB-4 W				4	3x VOA 1x Amber	X					X	X	X				
SB-5 4'				1	Acetate	X					X						
SB-5 8'				1	L	X					X						
SB-5 12'				1	L	X					X						
SB-5 W				4	3x VOA 1x Amber	X					X	X	X				
SB-6 4'				1	Acetate	X					X						
SB-6 8'				1	L	X					X						
SB-6 12'				1	L	X					X						
SB-6 W				4	3x VOA 1x Amber	X					X	X	X				
SB-7 8'				1	Acetate	X					X						
SB-7 12'				1	L	X					X						
SB-7 W				4	3x VOA 1x Amber	X					X	X	X				
				1	Acetate	X					X						

Relinquished By: [Signature] Date: 3/30 Time: 4:05 Received By: [Signature]  
 Relinquished By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ Received By: \_\_\_\_\_  
 Relinquished By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ Received By: \_\_\_\_\_

ICE/I<sup>2</sup>  GOOD CONDITION  HEAD SPACE ABSENT  DECHLORINATED IN LAB   
 PRESERVATION  APPROPRIATE  CONTAINERS  PRESERVED IN LAB   
 VOAS  O&G METALS OTHER

aed

0403402

1120

