



**AEI**  
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ENVIRONMENTAL & ENGINEERING SERVICES

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November 16, 2007

Mr. Steven Plunkett  
Alameda County Health Care Services Agency  
1131 Harbor Bay Parkway, Suite 250  
Alameda, CA 94502

**RECEIVED**

2:30 pm, Nov 20, 2007

Alameda County  
Environmental Health

**Subject: Fuel Release Case**  
Investigation Summary and Proposed Tasks  
3442 Adeline Street / 3433 Chestnut Street  
Oakland, CA 94602  
Alameda County Fuel Leak Case No. RO0002936  
AEI Project No. 274761

Dear Mr. Plunkett:

We have prepared this summary of data to present the findings of the field investigation performed at the above referenced site. The owner of the property has retained AEI to perform the previously approved investigation outlined by Clearwater, to present these results, and perform additional investigation to further define the extent of petroleum impact. We have been asked to complete the characterization of the release in a timely manner, to the extent reasonable, such that remedial planning can begin.

This presentation is intended to expedite the overall characterization process to the extent reasonable. It is believed that a Conceptual Site Model would benefit from additional data on the extent of impact and it is planned that a formal technical report, including additional details on the investigation recently completed, would be submitted once there is a better understanding of the release extent.

The following items are attached:

- Site plan with previous and proposed boring locations
- Site plan with groundwater sample analytical data
- Soil sample analytical summary tables
- Groundwater sample analytical summary tables
- Soil vapor sample analytical summary tables

A total of seven (7) additional borings are proposed. These borings would be performed with direct push drilling system and continuously cored and sampled in accordance with the recently completed work and standard field assessment practices. Select soil and groundwater samples will be analyzed for TPH as gasoline and TPH as diesel (EPA method 8015), MTBE and BTEX (EPA method 8021) and groundwater samples for the previously analyzed 5 fuel

additives (EPA method 8260). We welcome any thoughts or comments you may have on this data or the planned scope of additional investigation.

The City and County permitting for this additional work is underway, as it can take several weeks; it is hoped that the field work can be completed by the end of the year.

We appreciate your time and would be glad to discuss this approach or any other comments relating to this site in detail. Please contact either of the undersigned at (925) 944-2899 or via email at [htomsun@aeiconsultants.com](mailto:htomsun@aeiconsultants.com) or [pmcintyre@aeiconsultants.com](mailto:pmcintyre@aeiconsultants.com).

Sincerely,  
**AEI Consultants**



Harmony TomSun  
Staff Geologist

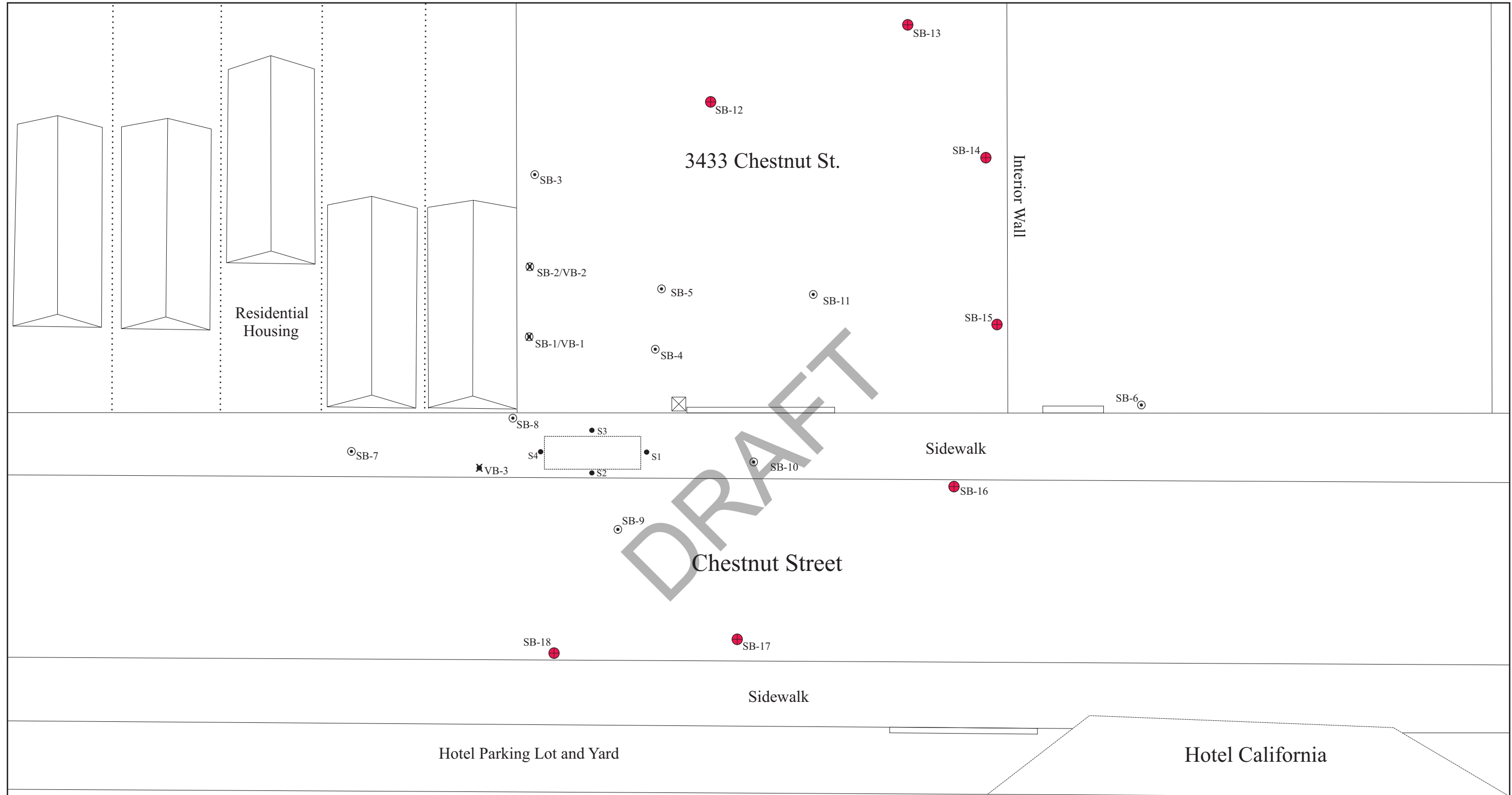


Peter J. McIntyre, PG, REA  
Senior Project Manager

#7702  
exp 5/31/8

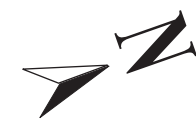
Attachments

cc: Ms. Steffi Zimmerman

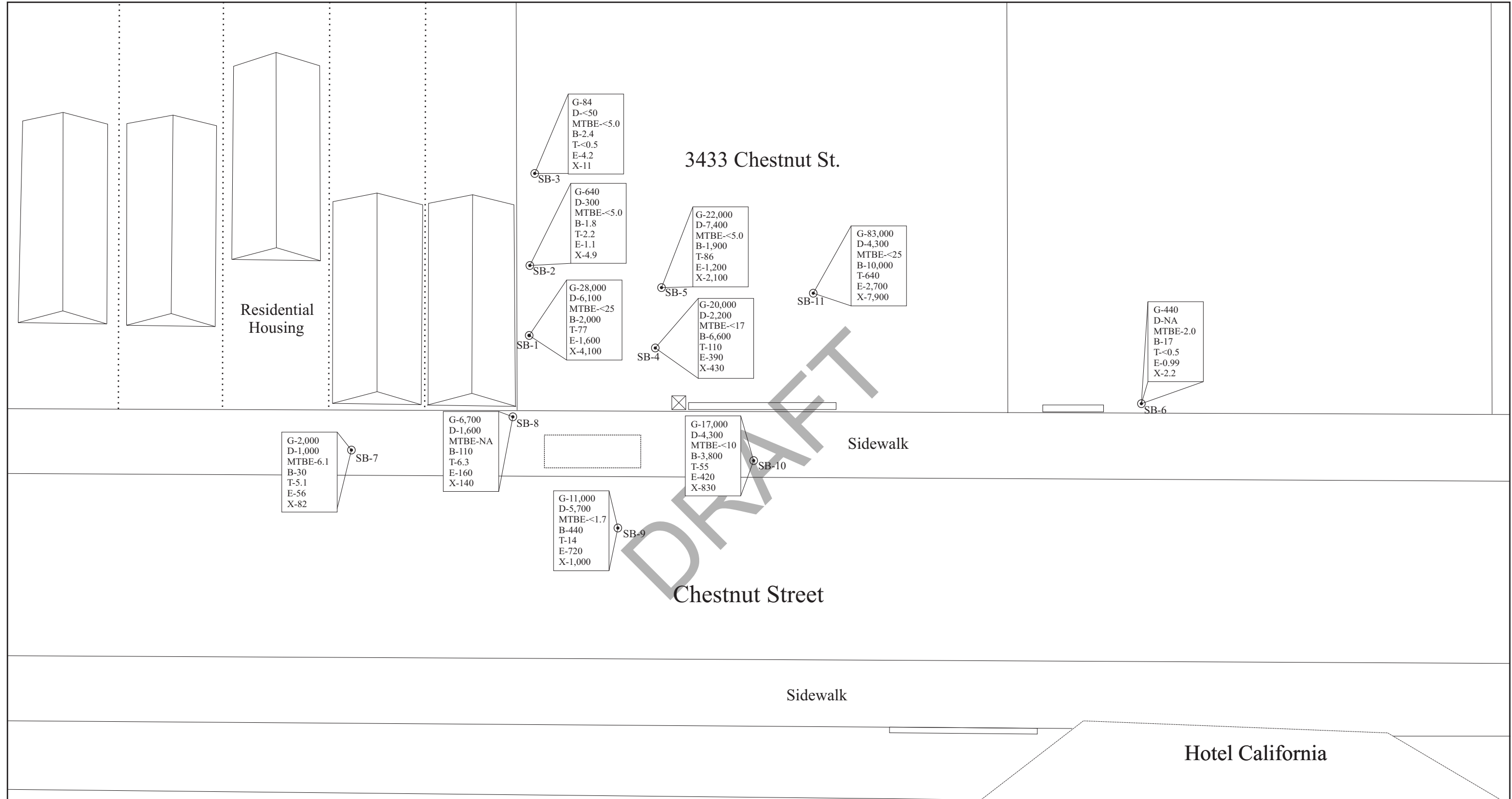


- Clearwater Soil Borings (06/23/06)
- ⊙ Soil Boring (10/1/07 - 10/3/07)
- ✱ Soil Vapor (10/1/07 - 10/3/07)
- ▭ Former UST Location
- ⊗ Fuel Dispenser
- ▭ Driveway Entrance
- Proposed Soil Borings

0' 10' 20' Approximate Scale:  
1 inch = 20 feet



<b>AEI CONSULTANTS</b>	
2500 Camino Diablo, Suite 200, Walnut Creek, CA 94597	
<b>Site Plan</b>	
3433 Chestnut St. Oakland, CA 94608	<b>FIGURE 3</b> Job No: 274761



SB-3  
 G-84  
 D-<50  
 MTBE-<5.0  
 B-2.4  
 T-<0.5  
 E-4.2  
 X-11

SB-2  
 G-640  
 D-300  
 MTBE-<5.0  
 B-1.8  
 T-2.2  
 E-1.1  
 X-4.9

SB-1  
 G-28,000  
 D-6,100  
 MTBE-<25  
 B-2,000  
 T-77  
 E-1,600  
 X-4,100

SB-5  
 G-22,000  
 D-7,400  
 MTBE-<5.0  
 B-1,900  
 T-86  
 E-1,200  
 X-2,100

SB-4  
 G-20,000  
 D-2,200  
 MTBE-<17  
 B-6,600  
 T-110  
 E-390  
 X-430

SB-11  
 G-83,000  
 D-4,300  
 MTBE-<25  
 B-10,000  
 T-640  
 E-2,700  
 X-7,900

SB-6  
 G-440  
 D-NA  
 MTBE-2.0  
 B-17  
 T-<0.5  
 E-0.99  
 X-2.2

SB-7  
 G-2,000  
 D-1,000  
 MTBE-6.1  
 B-30  
 T-5.1  
 E-56  
 X-82

SB-8  
 G-6,700  
 D-1,600  
 MTBE-NA  
 B-110  
 T-6.3  
 E-160  
 X-140

SB-10  
 G-17,000  
 D-4,300  
 MTBE-<10  
 B-3,800  
 T-55  
 E-420  
 X-830

SB-9  
 G-11,000  
 D-5,700  
 MTBE-<1.7  
 B-440  
 T-14  
 E-720  
 X-1,000

- Soil Boring
- Former UST Location
- UST Dispense Location
- Driveway

G-Total Petroleum Hydrocarbons as Gasoline (µg/L)  
 D-Total Petroleum Hydrocarbons as Diesel (µg/L)  
 MTBE-Methyl-t-butyl ether (µg/L)  
 B-Benzene (µg/L)  
 T-Toluene (µg/L)  
 E-Ethyl Benzene (µg/L)  
 X-Xylenes (µg/L)

0' 10' 20' Approximate Scale:  
 1 inch = 20 feet



<b>AEI CONSULTANTS</b>	
2500 Camino Diablo, Suite 200, Walnut Creek, CA 94597	
<b>Groundwater Sample Results</b>	
3433 Chestnut St. Oakland, CA 94608	<b>FIGURE 4</b> Job No: 274761

**Table 1: Soil Sample Analytical Data**  
**3433 Chestnut St. Oakland, CA 94608**  
**AEI Project #274761**

Sample ID	Depth ft	Date	TPH-d	TPH-g	MTBE	Benzene	Toluene	E-Benzene	Xylenes	TAME	TBA	DIPE	ETBE	MTBE
			Method 8015C mg/kg	mg/kg	mg/kg	Method 8021B mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	Method 8260B mg/kg	mg/kg
NW	6.5	2/22/2000	130	130	---	0.16	0.26	0.73	6.3	---	---	---	---	---
SW	6.5	2/22/2000	850	920	---	0.3	0.37	5.3	22	---	---	---	---	---
S-1	5	6/23/2006	5.6	<1.0	---	0.011	<0.0050	<0.0050	<0.0050	---	---	---	---	---
	8		26	100	---	1.3	0.22	2.0	7.2	---	---	---	---	---
	12		45	67	---	0.098	<0.025	0.73	0.39	---	---	---	---	---
	14.5		1.2	<1.0	---	<0.0050	<0.0050	<0.0050	0.01	---	---	---	---	---
S-2	4	6/23/2006	4.7	<1.0	---	0.016	<0.0050	<0.0050	<0.0050	---	---	---	---	---
	7.5		84	460	---	1.2	0.36	9.4	24	---	---	---	---	---
	12		49	61	---	0.33	0.055	0.84	2.4	---	---	---	---	---
	14		<1.0	<1.0	---	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---
S-3	3.5	6/23/2006	3.1	<1.0	---	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---
	7.5		250	1,200	---	0.47	0.52	18	100	---	---	---	---	---
	10		76	220	---	0.26	<0.040	6.2	7.2	---	---	---	---	---
	14.5		1.3	<1.0	---	<0.0050	<0.0050	0.0056	0.016	---	---	---	---	---
S-4	3.5	6/23/2006	3.5	<1.0	---	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---
	7.5		240	820	---	<0.20	<0.20	6.7	4.4	---	---	---	---	---
	11.5		120	500	---	0.079	<0.040	3.5	4.8	---	---	---	---	---
	14.5		1.3	<1.0	---	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---
SB-1	4	10/1/2007	---	2.9	<0.05	0.016	0.0079	<0.005	0.0094	---	---	---	---	---
	7.5		450	1,200	<5.0	3.1	2.5	24	110	---	---	---	---	---
	11.5		90	640	<2.5	0.40	1.5	9.3	23	<0.33	<3.3	<0.33	<0.33	<0.33
	15.5		---	<1.0	<0.05	<0.005	<0.005	<0.005	<0.005	---	---	---	---	---
SB-2	7.5	10/1/2007	<50	<50	<5.0	<0.5	<0.5	<0.5	<0.5	---	---	---	---	---
	11		6.1	53	<5.0	<0.5	0.24	0.0084	0.19	<0.005	<0.05	<0.005	<0.005	<0.005
SB-3	7.5	10/1/2007	<50	<50	<5.0	<0.5	<0.5	<0.5	<0.5	---	---	---	---	---
	11.5		<50	<50	<5.0	<0.5	<0.5	<0.5	<0.5	<0.005	<0.05	<0.005	<0.005	<0.005
SB-4	3.5	10/1/2007	---	1.2	<0.05	<0.005	<0.005	<0.005	<0.005	---	---	---	---	---
	7.5		170	430	<1.0	1.2	0.99	3.6	1.2	---	---	---	---	---
	11.5		25	340	<1.0	2.4	0.92	7.1	9.7	<0.005	<0.05	<0.005	<0.005	<0.005
	15.5		---	<1.0	<0.05	<0.005	<0.005	<0.005	<0.005	---	---	---	---	---
SB-5	3.5	10/1/2007	---	<1.0	<0.05	<0.005	<0.005	<0.005	<0.005	---	---	---	---	---
	7.5		54	420	<1.5	4.0	1.1	9.5	18	---	---	---	---	---
	11.5		22	130	<1.0	0.43	0.10	1.2	0.77	<0.005	<0.05	<0.005	<0.005	<0.005
	15.5		---	<1.0	<0.05	0.02	<0.005	<0.005	<0.005	---	---	---	---	---

**Table 1: Soil Sample Analytical Data**  
**3433 Chestnut St. Oakland, CA 94608**  
**AEI Project #274761**

Sample ID	Depth ft	Date	TPH-d	TPH-g	MTBE	Benzene	Toluene	E-Benzene	Xylenes	TAME	TBA	DIPE	ETBE	MTBE
			Method 8015C mg/kg	mg/kg	mg/kg	Method 8021B mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	Method 8260B mg/kg	mg/kg
SB-6	7.5	10/1/2007	<50	<50	<5.0	<0.5	<0.5	<0.5	<0.5	---	---	---	---	---
	11.5		<50	<50	<5.0	<0.5	<0.5	<0.5	<0.5	<0.005	<0.05	<0.005	<0.005	<0.005
SB-7	7.5	10/3/2007	90	310	<1.0	<0.10	0.48	0.28	0.38	---	---	---	---	---
	11.5		37	120	<0.50	0.21	0.069	0.39	0.22	<0.20	<0.20	<0.20	<0.20	<0.20
SB-8	7.5	10/3/2007	23	53	<0.10	<0.010	0.030	0.034	0.13	---	---	---	---	---
	11.5		13	99	<0.17	0.24	0.070	0.66	0.46	<0.10	<0.10	<0.10	<0.10	<0.10
SB-9	4	10/3/2007	5,700	<1.0	<0.05	<0.005	<0.005	<0.005	<0.005	---	---	---	---	---
	11.5		<1.0	<1.0	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.005
SB-10	7.5	10/3/2007	5.1	35	<0.10	0.72	0.024	0.47	0.079	---	---	---	---	---
	11.5		74	750	<10	6.9	1.6	13	33	<0.10	<1.0	<0.10	<0.10	<0.10
	15.5		---	<1.0	<0.05	0.012	<0.005	<0.005	0.0052	---	---	---	---	---
SB-11	11.5	10/3/2007	13	39	<0.3	0.68	0.086	0.76	2.3	---	---	---	---	---
	15.5		10	41	0.14	1.1	0.071	0.55	1.5	---	---	---	---	---
ESL			100	100	0.023	0.044	2.9	3.3	2.3	---	---	---	---	---

Notes:

mg/kg = milligrams per kilogram

ESL = Environmental Screening Level

NW = Soil Sample Collected from northwest sidewall during excavation

SW = Soil Sample Collected from southwest sidewall during excavation

TPH-g = total petroleum hydrocarbons as gasoline

TPH-d = total petroleum hydrocarbons as diesel

E-Benzene = ethyl benzene

TAME = tert-amyl methyl ether

ETBE = ethyl tert-butyl ether

TBA = tertiary butyl alcohol

DIPE = Di-Isopropyl Ether

MTBE = methyl tert-butyl ether

**Table 2: Groundwater Sample Analytical Data**  
**3433 Chestnut St. Oakland, CA 94608**  
**AEI Project #274761**

Sample ID	Date	TPH-g	TPH-d	MTBE	Benzene	Toluene	E-Benzene	Xylenes	TAME	ETBE	TBA	DIPE	MTBE
		<i>Method 8015C</i> µg/L	µg/L	µg/L	<i>Method 8021B</i> µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	<i>Method 8260B</i> µg/L	µg/L
Pit Water	2/22/2000	34,000	7,400	---	3,300	930	400	6,200	---	---	---	---	---
S-1	6/23/06	20,000	<10,000	---	980	70	1,500	1,100	---	---	---	---	---
S-2	6/23/06	31,000	<4,000	---	7,000	260	920	2,800	---	---	---	---	---
S-3	6/23/06	23,000	<1,500	---	490	67	1,200	3,300	---	---	---	---	---
S-4	6/23/06	120,000	<40,000	---	200	<15	3,500	2,900	---	---	---	---	---
SB-1	10/1/2007	28,000	6,100	<170	2,000	77	1,600	4,100	<25	<25	<250	<25	<25
SB-2	10/1/2007	640	300	<5.0	1.8	2.2	1.1	4.9	<0.5	<0.5	<5.0	<0.5	<0.5
SB-3	10/1/2007	84	<50	<5.0	2.4	<0.5	4.2	11	<0.5	<0.5	<5.0	<0.5	<0.5
SB-4	10/1/2007	20,000	2,200	<600	6,600	110	390	430	<17	<17	430	<17	<17
SB-5	10/1/2007	22,000	7,400	<250	1,900	86	1,200	2,100	<5.0	<5.0	120	<5.0	<5.0
SB-6	10/1/2007	440	---	---	17	<0.5	0.99	2.2	<0.5	<0.5	18	<0.5	2.0
SB-7	10/3/2007	2,000	1,000	<25	30	5.1	56	82	<0.5	<0.5	<5.0	<0.5	6.1
SB-8	10/3/2007	6,700	1,600	---	110	6.3	160	140	<0.5	<0.5	12	<0.5	<0.5
SB-9	10/3/2007	11,000	5,700	<50	440	14	720	1,000	<1.7	<1.7	37	<1.7	<1.7
SB-10	10/3/2007	17,000	1,700	<100	3,800	55	420	830	<10	<10	510	11	<10
SB-11	10/3/2007	83,000	4,300	---	10,000	640	2,700	7,900	<25	<25	840	<25	<25
ESL		100	100	5.0	1.0	40	30	20	---	---	---	---	---

Notes:

µg/L = micrograms per liter

ESL = Environmental Screening Level

TPH-g = total petroleum hydrocarbons as gasoline

TPH-d = total petroleum hydrocarbons as diesel

MTBE = methyl tert-butyl ether

E-Benzene = ethyl benzene

TAME = tert-amyl methyl ether

ETBE = ethyl tert-butyl ether

TBA = tertiary butyl alcohol

DIPE = Di-isopropyl Ether

**Table 3: Soil Vapor Sample Analytical Data**  
**3433 Chestnut St. Oakland, CA 94608**  
**AEI Project #274761**

Boring	Date	Isopropyl Alcohol	TPH-g	MTBE	Benzene		Ethyl Benzene	Xylenes
					<i>Method TO15</i>			
		$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3$
<b>VB-1</b>	10/1/2007	<25	1,900	<48	130	35	<8.8	<27
<b>VB-2</b>	10/1/2007	<25	3,100	<48	32	42	11	50
<b>VB-3</b>	10/1/2007	<25	2,500	<48	40	42	16	49
<b>ESL</b>		---	26,000	9,400	85	63,000	420,000	150,000

$\mu\text{g}/\text{m}^3$  = micrograms per cubic meter

ESL = Environmental Screening Level

TPH-g = total petroleum hydrocarbons as gasoline

MTBE = methyl tert-butyl ether

DRAFT