EXCAVATION AND SAMPLING PROCEDURES

OKADA PROPERTY 16109 ASHLAND AVENUE SAN LEANDRO, CALIFORNIA

BY

ENVIRONMENTAL EXPERTS, INC.

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EXCAVATION AND SAMPLING PROCEDURES

OKADA PROPERTY 16109 ASHLAND AVENUE SAN LEANDRO. CALIFORNIA

1.0 INTRODUCTION

This report summerizes the activities and results of Environmental Experts, Inc. (EEI) excavation and sampling of the impacted soils at the Okada property located at 16109 Ashland Avenue in San Leandro, California.

1.1 SITE HISTORY

Two underground storage tanks were excavated from the property by Ericson, Inc. under the supervision of Terrasearch Inc. on February 10, 1989. The two tanks, 250-gallon gasoline tank and 3,000-gallon fuel oil tank, were inspected visually upon removal. The gasoline tank appeared in a very good condition, while the oil tank revealed small holes in the bottom and a few small cracks along the sides. Ground water was encountered in the excavation pits at a depth of 6.5 feet in the gasoline tank pit, and 7 to 7.5 feet in the oil tank pit.

One soil sample and one ground water sample were collected from the gasoline tank pit. Three soil samples and one ground water sample were collected from the oil tank pit. Laboratory results for the collected samples are tabulated below in Table 1.

TABLE 1

Sample (No.)	Depth (Ft.)	Lead	TPH-G T	PH-D T	OG	В	T	E 	X
A- Soil	(Concentr	ations in	Parts Per	Million ((PPM))				
<u>Gasoline</u>	<u>Tank</u>								
7.5-8'	7.5-8.0'	20	N.D.	N/A.	N/A.	N.D.	N.D.	N.D.	N.D.
Oil Tank	<u>(</u>								
	5.5-6.0' 5.5-6.0' 5.5-6.0'	22 22 13	28 N.D. N.D.	4100 220 10		N.D	D. N.D. . N.D. . N.D.	N.D.	N.D.
B- GRO	OUND WAT	Γ ER (Con	centrations	in Part I	Per Billio	on (PF	PB))		
Gas Tar	<u>ık</u>								
6.5-7'	6.5-7.0'	N.D.	740	N/A	N/A	. N.C). N.D	. 3.0	2.0
Oil Tan	<u>k</u>								
7.5'	7.5'	N.1	D. N/A	v. 60,0	000 44	1 000,	N/A N/	A N/A	A N/A
LEGEN	TPH-G = TPH-D = TOG = TO	= Total = Total (= Benzer = Toluen = Ethyle = Xylene	e. benzene. s. Jetected by	Hydrocar ase.	bons as	Diese	el.	S.	

Two 2-inch monitoring wells were installed in the property by Terratech, Inc. (Project No. 4486, dated March 28, 1989). Monitoring well MW-1 was installed within 10 feet from the previous oil tank, on the western side. MW-2 was installed approximately 100 feet southeast of the fuel oil tank area. Soil sample results with respect to well installations are tabulated below in Table 2.

On March 30, 1989, Terrasearch installed three soil borings (EB1, EB2, and EB3) adjacent to the former fuel oil tank area to define the extent of the soil contamination. Soil borings were drilled to a maximum depth of 20 feet. Analytical results of the collected soil samples indicated low levels of TPH as diesel, see Table 3 and Figure 2.

To determine the ground water flow direction, a third ground water monitoring well was installed by Terratech on August 1989 (Project 4486/1). MW-3 was installed next to the former gasoline tank, see Figure 2. Results for the laboratory testing of the collected soil samples due to well installation are tabulated in Table 2.

TABLE 2

Sample	Sample	TPH-G	TPH-D	В	1	E	X
Location 	Depth (Ft.)	***** All C	concentrations are	in Parts Pe	r Million (PPM) *	***
Soil Sam	nples Due to	o M. Wells Ins	stallation				
MW-1	5.5'	N.D.	N.D.	0.0036	0.0055	0.0047	N.D.
	15.5'	N.D.	N.D.	N.D.	0.28	0.024	N.D.
	20.5'	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
	25.5	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
MW-2	5.5'	N.D.	· N.D.	N.D	. 0.003	2 0.004	N.D.
	15.5'	N.D.	N.D.	N.D.	0.0031	N.D.	N.D.
MW-3	5.5'	N.D.	30	N.D.	N.D.	N.D.	N.D.
	10.5'	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
	15.5'	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.

TABLE 3

Sample Location	Sample Depth (Ft)	TPH-D (PPM)
Soil Samples Due to S	oil Borings	
EB1.1	5.0'	2.5
EB1.2	10.0'	2.4
EB1.3	15.0'	3.9
EB2.1	5.0'	2.6
EB2.2	10.0'	3.0
EB2.3	15.0'	4.8
EB3.4	3.0'	3.1
EB3.1	5.0'	N.D.
EB3.2	10.0'	3.2
EB3.3	15.0'	3.0

1.2 PURPOSE AND SCOPE

By reviewing the soil sampling results, the only soil samples showing concentrations of petroleum hydrocarbons above 100 ppm were found at the excavation pit for the oil tank. The environmental assessment began by installing monitoring wells in the vicinity of the oil tank area followed by soil borings. All samples collected from the soil borings indicate the non-presence or low levels of petroleum hydrocarbons.

Since the contaminated soils due to the previous existance of the oil tank were defined in the northern, western, and southern vicinity of the tank pit, it was necessary to define the extent of contamination in the eastern vicinity of the tank and remove the source of contamination that may impact the ground water.

The suspected area of contamination was excavate, and soil samples

were obtained to confirm the non-presence of petroleum hydrocarbons in the soils. Chemical analysis of the soil samples were conducted by Chromalab, Inc. at their certified environmental laboratory in San Ramon, California. All soil samples were analysed for Total Petroleum Hydrocarbons as diesel (TPH-D) including Benzene, Toluene, Ethylebenzene, and Xylenes (BTEX), and Total Oil and Grease (TOG) following EPA Test Methods 3550/8015, 3550/8020, and 503 D&E, respectively.

Field activities and available information regarding chemical analysis results and conclusions are summerized below.

1.3 SITE DESCRIPTION

The site is located in the city of San Leandro on 16109 Ashland Avenue and consists of approximately 16 acres. The site is currently under construction, grading, and contains one excavation pit for the previous oil tank. The excavation area is fenced by a chain link fence. The site is in the middle of housing (houses and appartment complexes) community and intended to be developed for residential purposes.

2.0 FIELD PROCEDURES

2.1 EXCAVATION PROCEDURES

The ground water level in MW-1, adjacent to the former oil tank, was measured. Citation Homes subcontracted a general contractors to perform the excavation of the contaminated soils. An engineer from EEI was present to supervise excavation operations and collect the necessary soil samples.

Since the areas north, west and south of the excavation pit were drilled, sampled, and showed very low presence of petroleum hydrocarbons, it was necessary to excavate the bottom and east areas of the excavation pit. Figure 3, attached, shows the extent of the new excavation that occurred on August 29, 1990. The soils were excavated up to ground water level. A PID device was used in the field to direct the extent of the excavation.

The excavated soils were segregated to what believe to be clean and contaminated soils. Any soils below 4 feet in depth were stockpiled in a different area. A total of approximately 40 cubic yards were excavated. Both clean and contaminated soils were stockpiled separately on visqueen sheets and fully covered, when excavation was completed, by visqueen sheets. The visqueen cover was secured on the soil stockpiles by placing old tires on top of the sheets.

When excavation was assumed to be satisfactory, six soil samples were obtained from the excavation walls, few inches above the ground water-soil interface (6.5 to 7 feet in depth). The locations of the soil samples are drawn in Figure 3. Soil samples were collected by pushing a clean brass sleeve into the soils collected in the bucket of the backhoe. The brass sleeve was then capped, taped, labeled, and placed immediately in a cooler with ice. Samples were then delevered for the laboratory for chemical analysis along with the proper chain of custody documentation.

2.2 LABORATORY ANALYSIS

A total of six soil samples were collected and analysed by Chromalab, Inc. in their certified environmental laboratory in San Ramon, California. The samples were analysed individually for Total Petroleum Hydrocarbons as diesel (TPH-D) including Benzene, Toluene, Ethylebenzene, and Xylenes (BTEX), and Total Oil and Grease (TOG) following EPA Test Methods 3550/8015, 3550/8020, and 503 D&E.

3.0 RESULTS

A hard copy of the analytical results as recieved from the laboratory is attached with the chain of custody documentation. All soil samples show TPH as diesel including BTEX, and TOG concentrations below the instrument detection limits.

4.0 RECOMMENDATIONS

Environmental Experts, Inc. believes that the excavation of the contaminated soils was satisfactory. The excavated soils should be handeled properly following the Alameda County Department of Health Services recommendations.

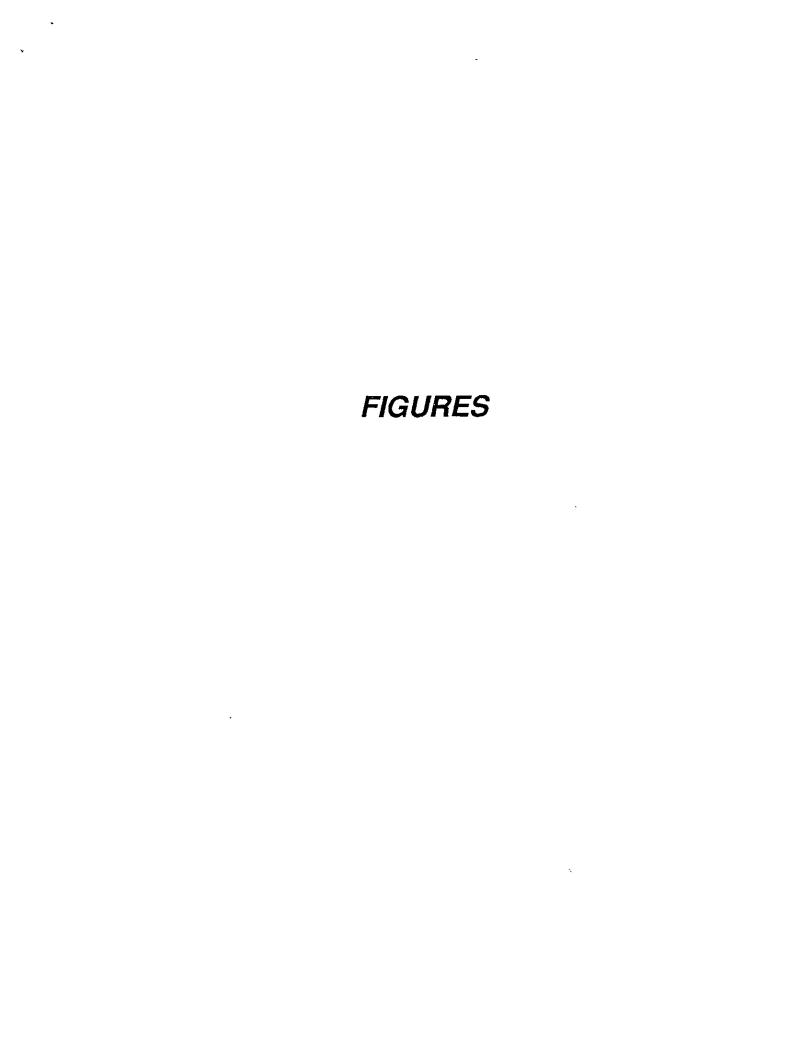
5.0 CERTIFICATION

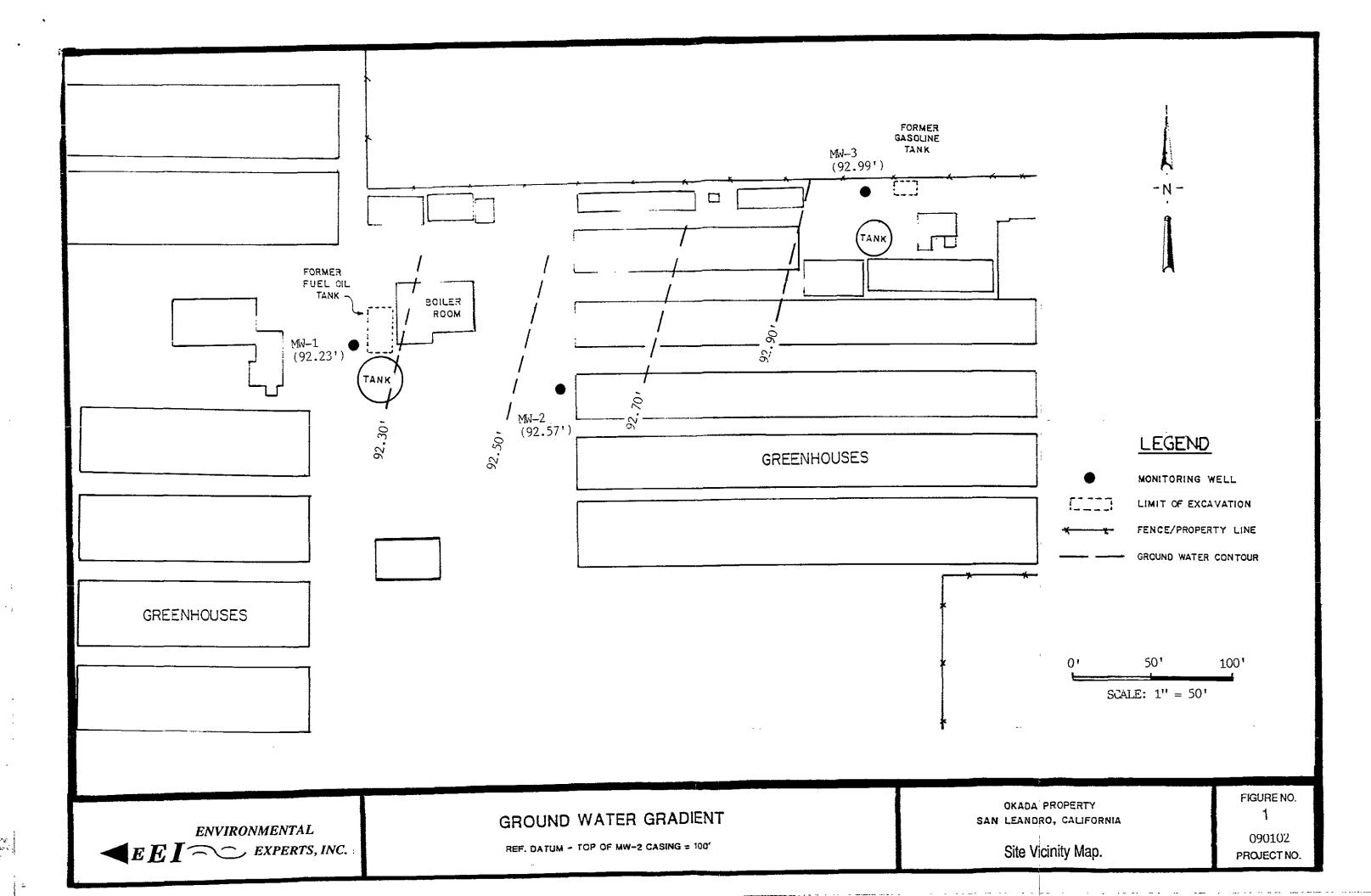
I declare, under the penalty of the perjury that, to the best of my knowledge, all statements and information above, are true and correct.

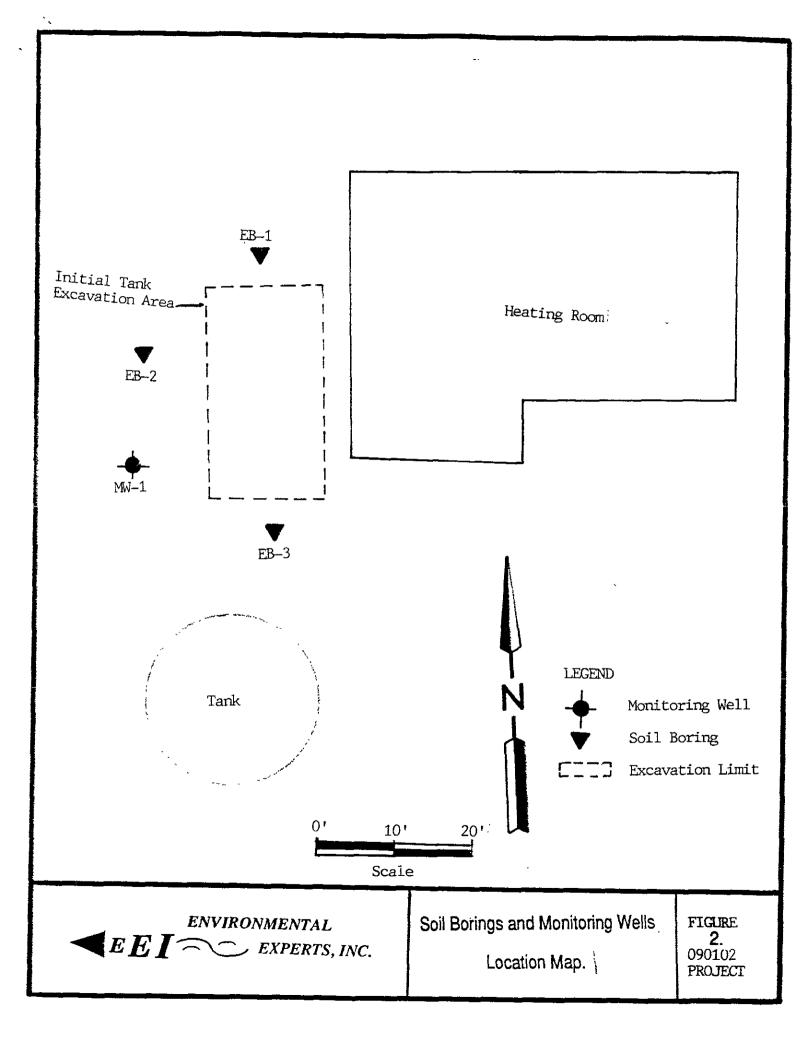
Rasmi El-Jurf, MSCE, REA Senior Project Engineer

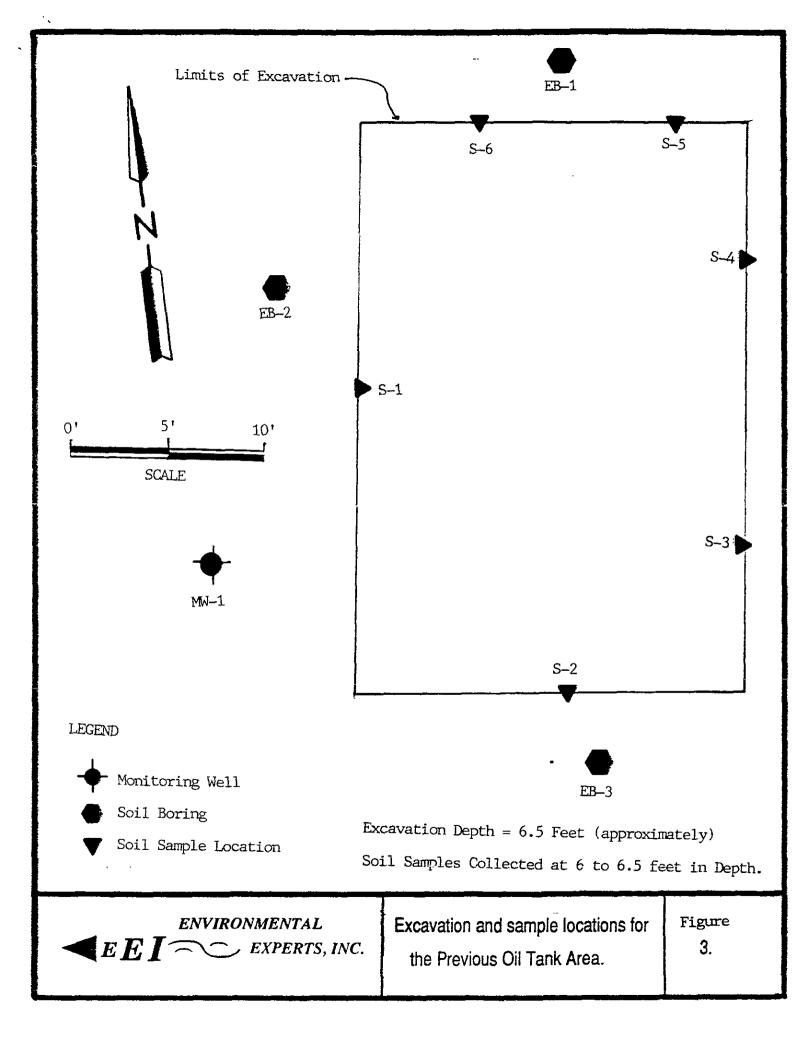
Youssef El-Shoubary, Ph. D., REA Engineering Program Manager

Shoubary









APPENDIX A

CHROMALAB, INC.

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CHROMALAB FILE # 890251

Chain of Custody

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CHROMALAB, INC.

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Drinking Water (#955)

Waste Water

Consultation

September 5, 1990

ChromaLab File No.:

0890251

ENVIRONMENTAL EXPERTS, INC.

Attn: Rasmi El-Jurf

RE: Six soil samples for BTEX, Diesel and Oil & Grease analyses

Project Name: CITATION

Date Sampled: Aug. 29, 1990
Date Extracted: 8/31-9/4/90
Date Submitted: Aug. 29, 1990
Date Analyzed: 8/31-9/4/90

RESULTS:

Sample No.	Diesel (mg/Kg)	Benzene (µg/Kg)	Toluene (µg/Kg)	Ethyl Benzene (ug/Kg)	Total Xylenes (µg/Kg)	Oil & Grease (mg/Kg)
S-1 S-2 S-3 S-5 S-6	N.D. N.D. N.D. N.D.	N.D. N.D. N.D. N.D.	N.D. N.D. N.D. N.D.	N.D. N.D. N.D. N.D.	N.D. N.D. N.D. N.D.	N.D. N.D. N.D. N.D.
BLANK SPIKE	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
RECOVERY DUP. SPIKE	98.9%	86.1%	92.5%	94.4%	93.5%	
RECOVERY DETECTION	94.4%	92.5%	107.9%	102.5%	89.1%	
LIMIT METHOD OF	5 3550/	5	5	5	5	50 503
ANALYSIS	8015	8020	8020	8020	8020	D&E

ChromaLab, Inc.

David Duong

Senior Chemist

Eric Tam

Laboratory Director