

Soil and Ground Water Quality Evaluation


2633 Telegraph Avenue
Oakland, California

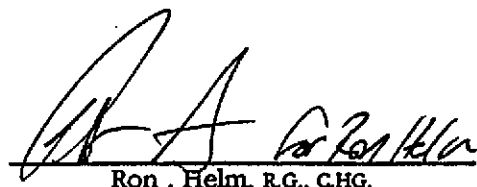
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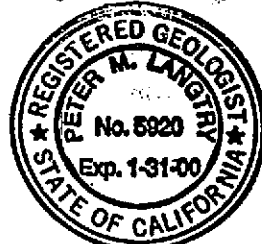
The Alexander Haagen Company, Inc.
3500 Sepulveda Boulevard, Manhattan Beach, California 90266

July 6, 1998

Project No. 1328-1A


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Mountain View

Pleasanton

Oakland

EXECUTIVE SUMMARY

In this report, we present the results of the supplemental soil and ground water quality evaluation at the former Sears store located at 2633 Telegraph Avenue in Oakland, California. This work was performed for Western States Storage L.L.C., who is considering purchasing the site, and The Alexander Haagen Company, Incorporated, who is the current owner of the site. The purpose of this work was to evaluate the extent of petroleum fuel and stoddard solvent range hydrocarbons detected in the initial investigation on-site. The results of the initial investigation were presented in the report titled "Phase I Environmental Site Assessment and Soil and Ground Water Quality Evaluation," dated April 21, 1998.

Based on the field and analytical data and the anticipated ground water flow direction, the bunker oil impacted ground water generally appears to be confined to the site. As presented in the April 21, 1998 report, ground water in the vicinity of the boiler room and UST is impacted with bunker oil range hydrocarbons. In addition, oil was previously observed on ground water in the boiler room/UST area. Bunker oil impacted soil was also previously encountered in borings drilled in this area (Lowney Associates, April 1998).

The Alameda County Department of Environmental Health (ACDEH) and the Oakland Fire Department (OFD) will likely require further evaluation of ground water quality. We recommend installing three ground water monitoring wells to monitor ground water quality and flow direction. We recommend installing one well near the bunker oil underground storage tank (UST), one near boring EB-4, and one near boring EB-5.

During the previous on-site investigation, TPH as stoddard solvent (9,100 ppb) was detected in a ground water grab sample collected within approximately 10 feet of the adjacent vacant dry cleaner (EB-4) (Figure 2). In addition, 1,600 ppb TPH as gasoline was detected in this ground water sample (Lowney Associates, April 1998). The source of the stoddard solvent may be related to the former off-site dry cleaning operations, although the source of the gasoline range hydrocarbons is not clear. Stoddard solvent has not been detected in the ground water at other locations on-site.

We recommend forwarding this report to the ACDEH and the OFD for their review.

SOIL AND GROUND WATER QUALITY EVALUATION
2633 TELEGRAPH AVENUE
OAKLAND, CALIFORNIA

1.0 INTRODUCTION

In this report, we present the results of the supplemental soil and ground water quality evaluation at the former Sears store located at 2633 Telegraph Avenue in Oakland, California (Figure 1). This work was performed for Western States Storage L.L.C., who is considering purchasing the site, and The Alexander Haagen Company, Incorporated, who is the current owner of the site. The purpose of this work was to evaluate the extent of petroleum fuel and stoddard solvent range hydrocarbons detected in the initial investigation on-site. The results of the initial investigation were presented in the report titled "Phase I Environmental Site Assessment and Soil and Ground Water Quality Evaluation," dated April 21, 1998.

The scope of work performed was outlined in our agreement/proposal with Western States Storage L.L.C., dated May 5, 1998, and included:

- ▼ Drilling and logging of seven exploratory borings.
- ▼ Collection of selected soil and ground water grab samples for laboratory analysis.

The property is currently occupied by a vacant four-story Sears retail store that was built in 1930 and an above-grade parking garage that was built in the 1960's. Prior to the construction of the store, the site was occupied by single- and multi-family residences dating to the turn of the century, the date of earliest available information for the property.

A former boiler room is located in the basement of the store. A capped pipe that is present in the sidewalk of 27th Avenue, approximately 60 feet from the boiler room, appears to be the fill port to an underground storage tank (UST) that fueled the boilers. The UST is present beneath the loading dock of the store (Figure 2). The UST is accessible through a vault in the loading dock. The top of the UST is located at a depth of approximately 25 feet below the top of the

1.1 Purpose

1.2 Scope of Work

1.3 Background

loading dock. An approximately 4-inch diameter capped pipe extends from the top of the UST to approximately 10 feet below the top of the loading dock. A high viscosity, black oil was encountered inside of the pipe.

During a subsurface investigation in April 1998, bunker oil impacted soil and ground water were encountered in borings EB-1, EB-2, and EB-3, located in the area between the UST and the UST fill pipe (Figure 2). In addition, oil was observed in the three exploratory borings in this area. The oil product appeared to be floating on the ground water.

Bunker oil range hydrocarbons (85,000 ppb) were detected in ground water in the anticipated down-gradient direction of the southwest corner of the building (EB-5) (Figure 2). The laboratory reported that the bunker oil had a similar gas chromatogram pattern to the fuel detected near the boiler room, which is located approximately 100 feet up-gradient of boring EB-5.

TPH as stoddard solvent (9,100 ppb) was detected in a ground water grab sample collected within approximately 10 feet of the adjacent vacant dry cleaner (EB-4) (Figure 2). In addition, 1,600 ppb TPH as gasoline was detected in this ground water sample. The source of the stoddard solvent may be related to the former off-site dry cleaning operations, although the source of the gasoline range hydrocarbons is not clear (Lowney, 1998).

2.0 SOIL AND GROUND WATER QUALITY EVALUATION

On May 12, 1998, environmental geologist John McCain directed a subsurface exploration program and logged seven borings (EB-6 through EB-12) to an approximate depth of 17 to 25 feet. Figure 2 shows the approximate locations of borings.

Soil samples were collected continuously from the borings. Soil sampling protocol and boring logs are presented in Appendix A.

2.1 Subsurface Investigation

Two soil samples collected from each boring were submitted to a state-certified analytical laboratory. One soil sample from each boring was collected from approximately one foot from the top of the water bearing zone. Because of a limited amount of ground water produced from the shallow water bearing zone, one soil sample collected from the water bearing zone from each boring was also submitted for laboratory analysis. No suspect odors or discoloration were noted on the soil samples observed.

The soil samples were analyzed for total petroleum hydrocarbons in the diesel range (TPH_d), stoddard range (TPH_s), bunker oil range (TPH_{bo}), fuel oil range (TPH_{fo}), plus benzene, toluene, ethylbenzene, and xylene (BTEX) (EPA Test Method 8015M/8020). Analytical results are presented in Table 1. Copies of the analytical reports and chain of custody documentation are presented in Appendix B.

2.2 Soil Quality

2.2.1 Laboratory Analyses and Results

TABLE 1. Analytical Results of Selected Soil Samples
(concentrations in parts per million)

Boring	Depth (feet)	TPH Stoddard	TPH Diesel	TPH Bunker Oil	TPH Fuel Oil	BTEX
EB-6	11 ½	<1.0	<1.0	<1.0	<1.0	<0.005
EB-6	17 ½	<1.0	<1.0	<1.0	<1.0	<0.005
EB-7	10 ½	<1.0	<1.0	<1.0	<1.0	<0.005
EB-7	14 ½	<1.0	<1.0	<1.0	<1.0	<0.005
EB-8	9	<1.0	<1.0	<1.0	<1.0	<0.005
EB-8	11	<1.0	<1.0	<1.0	<1.0	<0.005
EB-9	11	<1.0	<1.0	<1.0	<1.0	<0.005
EB-9	15	<1.0	<1.0	<1.0	<1.0	<0.005
EB-10	11 ½	<1.0	<1.0	<1.0	<1.0	<0.005
EB-10	16 ½	<1.0	<1.0	<1.0	<1.0	<0.005
EB-11	9 ½	<1.0	<1.0	<1.0	<1.0	<0.005
EB-11	13 ½	<1.0	<1.0	<1.0	<1.0	<0.005
EB-12	9 ½	<1.0	<1.0	<1.0	<1.0	<0.005
EB-12	13 ½	<1.0	<1.0	<1.0	<1.0	<0.005

To evaluate ground water quality at the site, ground water grab samples were collected from borings EB-6, EB-10, EB-11, and EB-12. A sufficient volume of ground water was not present in borings EB-7, EB-8, and EB-9 to collect samples. A discussion of sampling protocol is included in Appendix A.

2.3 Ground Water Quality

The ground water samples were analyzed for TPHd, TPHs, TPHbo, TPHfo, plus BTEX (EPA Test Method 8015M/8020). Because of the limited volume of ground water sampled from boring EB-11, the laboratory performed the extractable range analyses in the EB-11 sample with increased detection limits. Analytical results are shown in Table 2. Copies of the laboratory reports are attached in Appendix B.

2.3.1 Laboratory Analyses and Results

TABLE 2. Analytical Results of Selected Ground Water Samples
(concentrations in parts per billion)

Boring	TPH Stoddard	TPH Diesel	TPH Bunker Oil	TPH Fuel Oil	BTEX
EB-6	<50	<50	<50	<50	<0.50
EB-10	<50	<50	<50	<50	<0.50
EB-11	<1,000*	<1,000*	<1,000*	<1,000*	<0.50
EB-12	<50	<50	<50	<50	<0.50

* Detection limit increased due to limited sample volume

3.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the field and analytical data and the anticipated ground water flow direction, the bunker oil impacted ground water generally appears to be confined to the site. As presented in the April 21, 1998, report, ground water in the vicinity of the boiler room and UST is impacted with bunker oil range hydrocarbons. In addition, oil was previously observed on ground water in the boiler room/UST area. Bunker oil impacted soil was also previously encountered in borings drilled in this area (Lowney Associates, April 1998).

The Alameda County Department of Environmental Health (ACDEH) and the Oakland Fire Department (OFD) will likely require further evaluation of ground water quality. We recommend installing three ground water monitoring wells to monitor ground water quality

and flow direction. We recommend installing one well near the bunker oil UST, one near boring EB-4, and one near boring EB-5.

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We recommend forwarding this report to the ACDEH and the OFD for their review.

4.0 LIMITATIONS

This report was prepared for the sole use of The Alexander Haagen Company, Inc. We make no warranty, expressed or implied, except that our services have been performed in accordance with environmental principles generally accepted at this time and location.

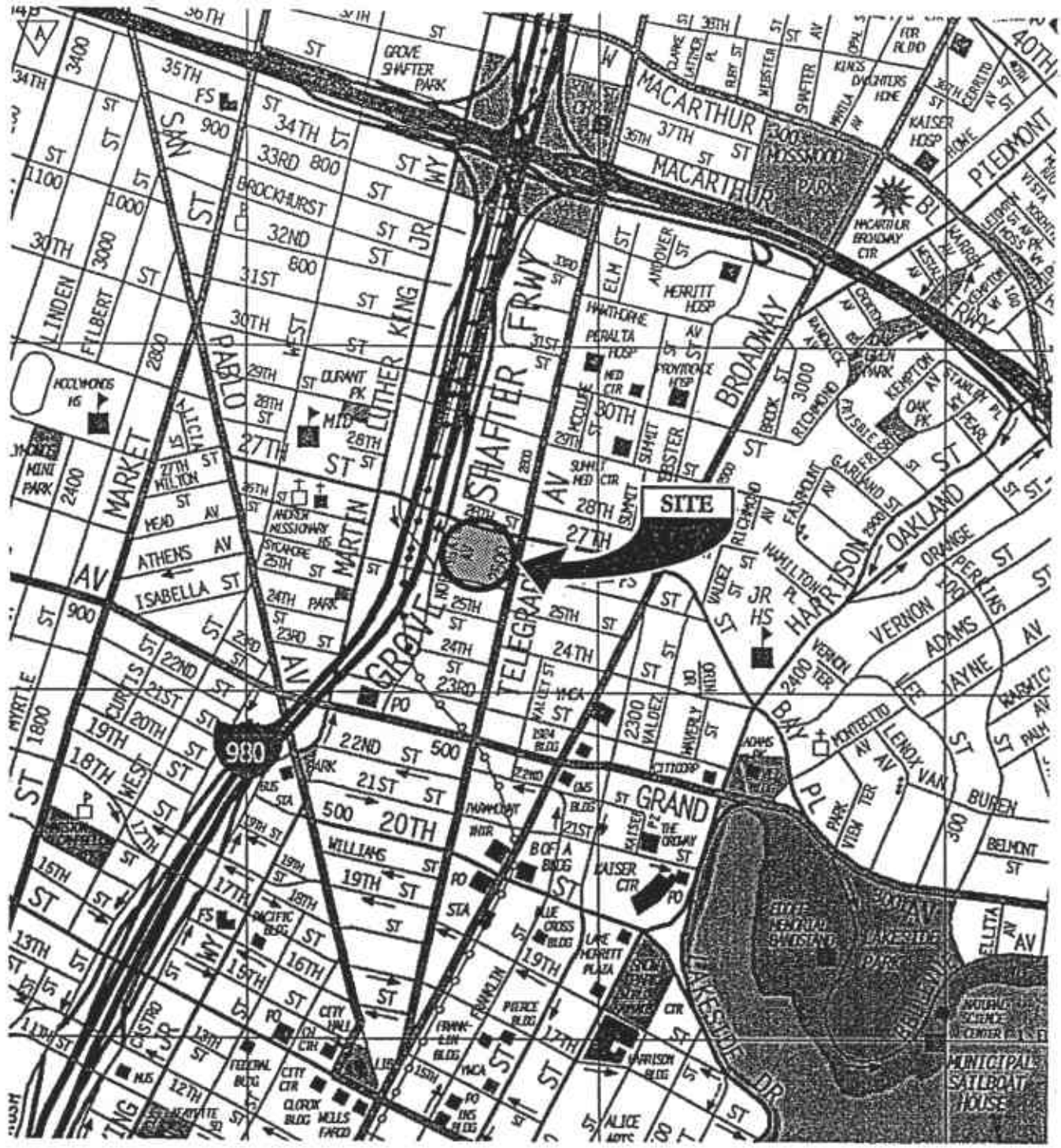
The accuracy and reliability of geo- or hydrochemical studies are a reflection of the number and type of samples taken and extent of the analyses conducted, and are thus inherently limited and dependent upon the resources expended. Chemical analyses were performed for specific parameters during this investigation, as detailed in the scope of services. Please note that additional constituents not analyzed for during this investigation may be present in soil and ground water at the site. Our sampling and analytical plan was designed using accepted environmental principles and our judgment for the performance of a reconnaissance soil and ground water quality investigation, and was based on the degree of investigation desired by you. It is possible to obtain a greater degree of certainty, if desired, by implementing a more rigorous soil and ground water sampling

program or evaluating the risk posed by the contaminants detected, if any.

5.0 REFERENCES

Lowney Associates, April 21, 1998, "Phase I Environmental Site Assessment and Soil and Ground Water Quality Evaluation."

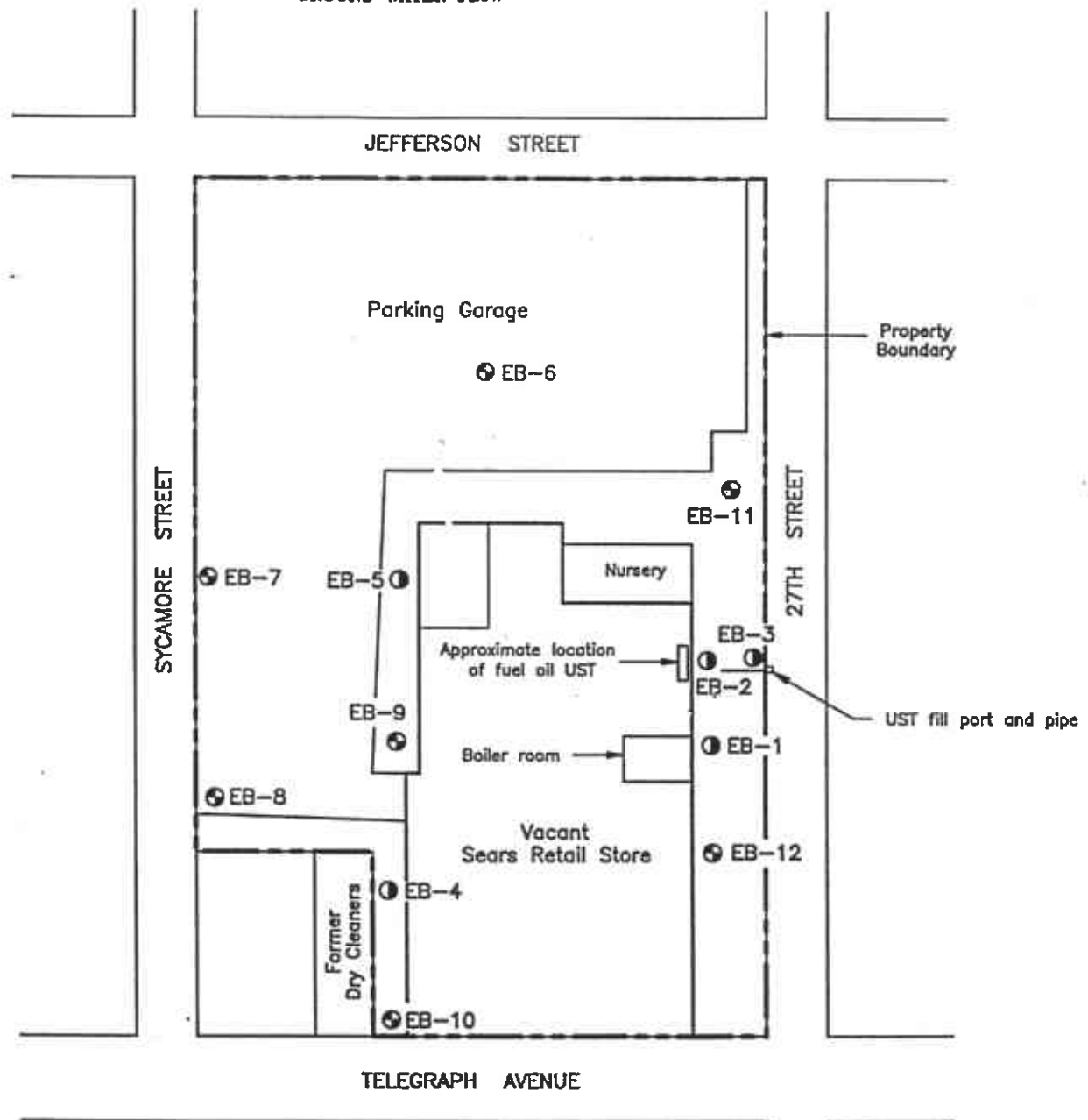
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"Reproduced with permission granted by THOMAS BROS. MAP."

VICINITY MAP
TELEGRAPH AVENUE PARCEL
Oakland, California

ANTICIPATED DIRECTION OF
GROUND WATER FLOW

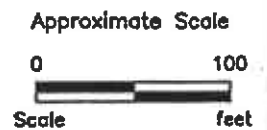


LEGEND

- ⊕ - Approximate location of exploratory boring (May 1998)
- ⊙ - Approximate location of exploratory boring (April 1998)

Note: Ground water grab samples at EB-1 to EB-5, EB-6, EB-10, EB-11, and EB-12

Base by Sanborn Map.



SITE PLAN
TELEGRAPH AVENUE PARCEL
Oakland, California

APPENDIX A
SOIL AND GROUND WATER SAMPLING PROTOCOL

The subsurface investigation was performed on May 12, 1998, using a hydraulic coring rig. The borings were advanced by hydraulically driving a double-walled sampling probe into the ground. The 1.5-inch diameter inner sleeve was used to retrieve continuous soil samples, while the 2-inch outside diameter outer sleeve is used as a drive casing.

Drilling

Soils encountered in the borings were logged using the Unified Soil Classification System (ASTM D-2487). The logs of the borings, as well as a key to the classification of soil (Figure A-1), are included as part of this appendix. Permits obtained for the boring are also included.

Soil samples for laboratory analysis were collected in sampling-tube liners, the ends covered in aluminum foil, taped, then labeled with a unique identification number. Groundwater grab samples were collected in appropriate sample bottles and labeled with a unique identification number. All samples were placed in a water ice-chilled cooler, and transported to a state-certified analytical laboratory with chain of custody documentation.

Sampling Protocol

All drilling and sampling equipment was cleaned in a solution of laboratory grade detergent and distilled water or steam cleaned before use at each sampling point.

**Equipment
Decontamination**

PRIMARY DIVISIONS			SOIL TYPE	LEGEND	SECONDARY DIVISIONS
COARSE GRAINED SOILS MORE THAN HALF OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVELS MORE THAN HALF OF COARSE FRACTION IS LARGER THAN NO. 4 SIEVE	CLEAN GRAVELS (Less than 5% Fines)	GW		Well graded gravels, gravel-sand mixtures, little or no fines
			GP		Poorly graded gravels or gravel-sand mixtures, little or no fines
		GRAVEL WITH FINES	GM		Silty gravels, gravel-sand-silt mixtures, plastic fines
			GC		Clayey gravels, gravel-sand-clay mixtures, plastic fines
	SANDS MORE THAN HALF OF COARSE FRACTION IS SMALLER THAN NO. 4 SIEVE	CLEAN SANDS (Less than 5% Fines)	SW		Well graded sands, gravelly sands, little or no fines
			SP		Poorly graded sands or gravelly sands, little or no fines
		SANDS WITH FINES	SM		Silty sands, sand-silt-mixtures, non-plastic fines
			SC		Clayey sands, sand-clay mixtures, plastic fines
FINE GRAINED SOILS MORE THAN HALF OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS LIQUID LIMIT IS LESS THAN 50 %	ML		Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity	
		CL		Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays	
		OL		Organic silts and organic silty clays of low plasticity	
	SILTS AND CLAYS LIQUID LIMIT IS GREATER THAN 50 %	MH		Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts	
		CH		Inorganic clays of high plasticity, fat clays	
		OH		Organic clays of medium to high plasticity, organic silts	
HIGHLY ORGANIC SOILS			PT		Peat and other highly organic soils

DEFINITION OF TERMS

SILTS AND CLAY	U.S. STANDARD SIEVE SIZE			CLEAR SQUARE SIEVE OPENINGS			COBBLES	BOULDERS
	200	40	10	4	3/4"	3"		
	SAND			GRAVEL				
	FINE	MEDIUM	COARSE	FINE	COARSE			

GRAIN SIZES



SAMPLERS

▽ AT TIME OF DRILLING

▼ MEASURED FOLLOWING DRILLING

GROUND WATER

SAND AND GRAVEL	BLOWS/FOOT*
VERY LOOSE	0-4
LOOSE	4-10
MEDIUM DENSE	10-30
DENSE	30-50
VERY DENSE	OVER 50

SILTS AND CLAYS	STRENGTH+	BLOWS/FOOT*
VERY SOFT	0-1/4	0-2
SOFT	1/4-1/2	2-4
MEDIUM STIFF	1/2-1	4-8
STIFF	1-2	8-16
VERY STIFF	2-4	16-32
HARD	OVER 4	OVER 32

RELATIVE DENSITY

CONSISTENCY

*Number of blows of 140 pound hammer falling 30 inches to drive a 2-inch O.D. (1-3/8 inch I.D.) split spoon (ASTM D-1586).
 +Unconfined compressive strength in tons/sq.ft. as determined by laboratory testing or approximated by the standard penetration test (ASTM D-1586), pocket penetrometer, torvane, or visual observation.

KEY TO EXPLORATORY BORING LOGS

Unified Soil Classification System (ASTM D-2487)

DRILL RIG: Vironex/Geoprobe

SURFACE ELEVATION: --

LOGGED BY: JMc

BORING TYPE: 2 inches

DEPTH TO GROUND WATER: 16 ft.

DATE DRILLED: 5/12/98

UNCONFINED COMPRESSIVE STRENGTH # (KSF)	SHEAR STRENGTH BY TORVANE (KSF)	DRY DENSITY (PCF)	WATER CONTENT (%)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT.)	DEPTH (FEET)	LEGEND	SOIL TYPE	MATERIAL DESCRIPTION AND REMARKS
						0			Concrete over gravel and sand
						0-1		SM	SANDY SILT (SM)
						1-5		CL	moist, brown and gray mottled, low plasticity, fine to medium sand, gravel to 1/2 inch
						5-11			SILTY CLAY (CL) stiff, moist, brown, low plasticity
						11-15		SC CL	CLAYEY SAND/SANDY CLAY (SC/CL) stiff, moist, brown, fine to medium sands, rounded gravel to 1/4 inch, no gravel below 11 feet
						15-18		CL	↓ SILTY CLAY (CL) stiff, moist, brown, moderate plasticity, trace fine sand, no odor
						18			Bottom of Boring = 18 feet
						20			
						25			
						30			
						35			
						40			

Note: The stratification lines represent the approximate boundary between the soil types. The transition may be gradual.

*Pocket Penetrometer Strength

EXPLORATORY BORING - EB-6

TELEGRAPH AVENUE

Oakland, California

DRILL RIG: Vironex/Geoprobe

SURFACE ELEVATION: --

LOGGED BY: JMc

BORING TYPE: 2 inches

DEPTH TO GROUND WATER: N/E

DATE DRILLED: 5/12/98

UNCONFINED COMPRESSIVE STRENGTH k (KSF)	SHEAR STRENGTH BY TORVANE (KSF)	DRY DENSITY (PCF)	WATER CONTENT (%)	SAMPLER	PENETRATION RESISTANCE (BLOKS/FT)	DEPTH (FEET)	LEGEND	SOIL TYPE	MATERIAL DESCRIPTION AND REMARKS
						0			Asphalt over base rock gravel
						5		ML	CLAYEY SILT (ML) stiff, moist, gray, minor fine sands
						10		ML CL SC	CLAYEY SILT/SILTY CLAY (ML/CL) stiff, moist, gray, minor fine sands
						10		SC	CLAYEY SAND (SC) stiff, moist, brown to brown mottled, fine to medium grained sands, occasional rounded pebble at 9 1/2 feet
						15		CL	SILTY CLAY (CL) stiff, brown to brown and gray mottled at 12 - 13 feet, minor fine sands
						20		CL	SANDY CLAY (CL) very stiff, moist, brown and gray mottled, rounded pebbles to 1/2 inch, some water in pores
						22			Bottom of Boring = 22 feet
						25			Note: The stratification lines represent the approximate boundary between the soil types. The transition may be gradual.
						30			*Pocket Penetrometer Strength
						35			
						40			

EXPLORATORY BORING - EB-7

TELEGRAPH AVENUE
Oakland, California

DRILL RIG: Vironex/Geoprobe

SURFACE ELEVATION: --

LOGGED BY: JMc

BORING TYPE: 1.25 inches

DEPTH TO GROUND WATER: N/E

DATE DRILLED: 5/12/98

UNCONFINED COMPRESSIVE STRENGTH k (KSF)	SHEAR STRENGTH BY TORVANE (KSF)	DRY DENSITY (PCF)	WATER CONTENT (%)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT)	DEPTH (FEET)	LEGEND	SOIL TYPE	MATERIAL DESCRIPTION AND REMARKS
						0			Asphalt
						8			Cored to 8 feet without sampling
						10		CL	SANDY CLAY (CL) medium stiff, moist, brown, low plasticity
						10		SC	CLAYEY SAND (SC) soft, wet, brown, some gravel (rounded 5mm)
						23			Bottom of Boring = 23 feet
						25			Note: The stratification lines represent the approximate boundary between the soil types. The transition may be gradual.
						30			*Pocket Penetrometer Strength
						35			
						40			

EXPLORATORY BORING - EB-8

TELEGRAPH AVENUE
Oakland, California

DRILL RIG: Vironex/Geoprobe

SURFACE ELEVATION: --

LOGGED BY: JMc

BORING TYPE: 1.25 inches

DEPTH TO GROUND WATER: 12 ft.

DATE DRILLED: 5/12/98

UNCONFINED COMPRESSIVE STRENGTH * (KSF)	SHEAR STRENGTH BY TORVANE (KSF)	DRY DENSITY (PCF)	WATER CONTENT (%)	SAMPLER	PENETRATION RESISTANCE (BLOKS/FT.)	DEPTH (FEET)	LEGEND	SOIL TYPE	MATERIAL DESCRIPTION AND REMARKS
						0			Cored to 8 feet without sampling
						5			
						10	ML	CLAYEY SILT (ML) low stiff, brown	
						15	SC	CLAYEY SAND (SC) low stiff, moist to wet, black, fine to coarse grained sand	
						20			Bottom of Boring = 17 feet
						25			Note: The stratification lines represent the approximate boundary between the soil types. The transition may be gradual.
						30			*Pocket Penetrometer Strength
						35			
						40			

EXPLORATORY BORING - EB-10

TELEGRAPH AVENUE
Oakland, California

DRILL RIG: Vironex/Geoprobe

SURFACE ELEVATION: --

LOGGED BY: JMc

BORING TYPE: 1.25 inches

DEPTH TO GROUND WATER: 20 ft.

DATE DRILLED: 5/12/98

UNCONFINED COMPRESSIVE STRENGTH * (KSF)	SHEAR STRENGTH BY TORVANE (KSF)	DRY DENSITY (PCF)	WATER CONTENT (%)	SAMPLER	PENETRATION RESISTANCE (BLOMS/FT)	DEPTH (FEET)	LEGEND	SOIL TYPE	MATERIAL DESCRIPTION AND REMARKS
						5			Cored to 8 feet without sampling
						10		CL	SANDY CLAY (CL) soft, moist, fine to coarse sands, some gravel (5mm) at 9 1/2 - 10 feet increased moisture with depth, smaller gravel (1-2mm), fine to medium sands
						15			
						20			↓
						25			Bottom of Boring = 22 feet
						30			Note: The stratification lines represent the approximate boundary between the soil types. The transition may be gradual.
						35			*Pocket Penetrometer Strength
						40			

EXPLORATORY BORING - EB-11

TELEGRAPH AVENUE
Oakland, California

**APPENDIX B
ANALYTICAL RESULTS AND CHAIN OF CUSTODY**

The chilled samples were delivered to a state-certified analytical laboratory. Chain of custody documentation was maintained for all samples. Attached are copies of the analytical results and the chain of custody forms.

DRILL RIG: Vironex/Geoprobe

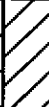

SURFACE ELEVATION: --

LOGGED BY: JMc

BORING TYPE: 1.25 inches

DEPTH TO GROUND WATER: 17 ft.

DATE DRILLED: 5/12/98

UNCONFINED COMPRESSIVE STRENGTH * (KSF)	SHEAR STRENGTH BY TORVANE (KSF)	DRY DENSITY (PCF)	WATER CONTENT (%)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT)	DEPTH (FEET)	LEGEND	SOIL TYPE	MATERIAL DESCRIPTION AND REMARKS
						5			Cored to 8 feet without sampling
						10		CL	SILTY SANDY CLAY (CL) soft, moist, brown and gray mottled, moderate plasticity, fine sands
						15			increasing moisture with depth
						20			Bottom of Boring = 18 feet
						25			Note: The stratification lines represent the approximate boundary between the soil types. The transition may be gradual.
						30			*Pocket Penetrometer Strength
						35			
						40			

EXPLORATORY BORING - EB-12

TELEGRAPH AVENUE
Oakland, California

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94086 • (408) 735-1550 • Fax (408) 735-1554

Attn: Peter Langtry
 Lowney Associates
 129 Filbert Street
 Oakland, CA 94607

Date:	5/15/98
Date Received:	5/13/98
Date Analyzed:	5/13/98
Project Name:	Sears/Telegraph Ave
Job No.:	1328-1
Sampled By:	Client

Certified Analytical Report

Soil Sample Analysis:

Test	EB-6 (11 1/2-12')	EB-6 (17 1/2-18')	EB-7 (10 1/2-11')	EB-7 (14 1/2-15')	Units	PQL	EPA Method #
Sample Matrix	Soil	Soil	Soil	Soil			
Sample Date	5/12/98	5/12/98	5/12/98	5/12/98			
Sample Time							
Lab #	E9320	E9321	E9322	E9323			
DF-Extractable	1	1	1	1			
TPH-Stoddard	ND	ND	ND	ND	mg/kg	1.0 mg/kg	8015M
TPH-Diesel	ND	ND	ND	ND	mg/kg	1.0 mg/kg	8015M
TPH-Bunker Oil	ND	ND	ND	ND	mg/kg	1.0 mg/kg	8015M
TPH-Fuel Oil	ND	ND	ND	ND	mg/kg	1.0 mg/kg	8015M
DF-BTEX	1	1	1	1			
Benzene	ND	ND	ND	ND	mg/kg	0.005 mg/kg	8020
Toluene	ND	ND	ND	ND	mg/kg	0.005 mg/kg	8020
Ethyl Benzene	ND	ND	ND	ND	mg/kg	0.005 mg/kg	8020
Xylenes	ND	ND	ND	ND	mg/kg	0.005 mg/kg	8020

- DLR=DF x PQL
- Analysis performed by Entech Analytical Labs, Inc. (CAELAP #2224)


 Michael N. Golden, Lab Director

DF=Dilution Factor
 DLR=Detection Reporting Limit

PQL=Practical Quantitation Limit
 ND=None Detected at or above DLR

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94086 • (408) 735-1550 • Fax (408) 735-1554

Attn: Peter Langtry
 Lowney Associates
 129 Filbert Street
 Oakland, CA 94607

Date:	5/15/98
Date Received:	5/13/98
Date Analyzed:	5/13-5/14/98
Project Name:	Sears/Telegraph Ave
Job No.:	1328-1
Sampled By:	Client

Certified Analytical Report

Soil Sample Analysis:

Test	EB-8 (9-10')	EB-8 (11-12')	EB-9 (11-12')	EB-9 (15-16')	Units	PQL	EPA Method #
Sample Matrix	Soil	Soil	Soil	Soil			
Sample Date	5/12/98	5/12/98	5/12/98	5/12/98			
Sample Time							
Lab #	E9324	E9325	E9326	E9327			
DF-Extractable	1	1	1	1			
TPH-Stoddard	ND	ND	ND	ND	mg/kg	1.0 mg/kg	8015M
TPH-Diesel	ND	ND	ND	ND	mg/kg	1.0 mg/kg	8015M
TPH-Bunker Oil	ND	ND	ND	ND	mg/kg	1.0 mg/kg	8015M
TPH-Fuel Oil	ND	ND	ND	ND	mg/kg	1.0 mg/kg	8015M
DF-BTEX	1	1	1	1			
Benzene	ND	ND	ND	ND	mg/kg	0.005 mg/kg	8020
Toluene	ND	ND	ND	ND	mg/kg	0.005 mg/kg	8020
Ethyl Benzene	ND	ND	ND	ND	mg/kg	0.005 mg/kg	8020
Xylenes	ND	ND	ND	ND	mg/kg	0.005 mg/kg	8020

1. DLR=DF x PQL
2. Analysis performed by Entech Analytical Labs, Inc. (CAELAP #2224)


 Michael N. Golden, Lab Director

DF=Dilution Factor
 DLR=Detection Reporting Limit

PQL=Practical Quantitation Limit
 ND=None Detected at or above DLR

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Attn: Peter Langtry
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 129 Filbert Street
 Oakland, CA 94607

Date:	5/15/98
Date Received:	5/13/98
Date Analyzed:	5/13-5/14/98
Project Name:	Sears/Telegraph Ave
Job No.:	1328-1
Sampled By:	Client

Certified Analytical Report

Soil Sample Analysis:

Test	EB-10 (11 1/2-12')	EB-10 (16 1/2-17')	EB-11 (9 1/2-10')	EB-11 (13 1/2-14')	Units	PQL	EPA Method #
Sample Matrix	Soil	Soil	Soil	Soil			
Sample Date	5/12/98	5/12/98	5/12/98	5/12/98			
Sample Time							
Lab #	E9328	E9329	E9330	E9331			
DF-Extractable	1	1	1	1			
TPH-Stoddard	ND	ND	ND	ND	mg/kg	1.0 mg/kg	8015M
TPH-Diesel	ND	ND	ND	ND	mg/kg	1.0 mg/kg	8015M
TPH-Bunker Oil	ND	ND	ND	ND	mg/kg	1.0 mg/kg	8015M
TPH-Fuel Oil	ND	ND	ND	ND	mg/kg	1.0 mg/kg	8015M
DF-BTEX	1	1	1	1			
Benzene	ND	ND	ND	ND	mg/kg	0.005 mg/kg	8020
Toluene	ND	ND	ND	ND	mg/kg	0.005 mg/kg	8020
Ethyl Benzene	ND	ND	ND	ND	mg/kg	0.005 mg/kg	8020
Xylenes	ND	ND	ND	ND	mg/kg	0.005 mg/kg	8020

1. DLR=DF x PQL
2. Analysis performed by Entech Analytical Labs, Inc. (CAELAP #2224)



Michael N. Golden, Lab Director

DF=Dilution Factor
 DLR=Detection Reporting Limit

PQL=Practical Quantitation Limit
 ND=None Detected at or above DLR

Entech Analytical Labs, Inc.

CA ELAP# 2224

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Attn: Peter Langtry
Lowney Associates
129 Filbert Street
Oakland, CA 94607

Date:	5/15/98
Date Received:	5/13/98
Date Analyzed:	5/13-5/14/98
Project Name:	Sears/Telegraph Ave
Job No.:	1328-1
Sampled By:	Client

Certified Analytical Report

Soil Sample Analysis:

Test	EB-12 (9 1/2-10')	EB-12 (13 1/2-14')	Units	PQL	EPA Method #
Sample Matrix	Soil	Soil			
Sample Date	5/12/98	5/12/98			
Sample Time					
Lab #	E9332	E9333			
DF-Extractable	1	1			
TPH-Stoddard	ND	ND	mg/kg	1.0 mg/kg	8015M
TPH-Diesel	ND	ND	mg/kg	1.0 mg/kg	8015M
TPH-Bunker Oil	ND	ND	mg/kg	1.0 mg/kg	8015M
TPH-Fuel Oil	ND	ND	mg/kg	1.0 mg/kg	8015M
DF-BTEX	1	1			
Benzene	ND	ND	mg/kg	0.005 mg/kg	8020
Toluene	ND	ND	mg/kg	0.005 mg/kg	8020
Ethyl Benzene	ND	ND	mg/kg	0.005 mg/kg	8020
Xylenes	ND	ND	mg/kg	0.005 mg/kg	8020

1. $DLR=DF \times PQL$
2. Analysis performed by Entech Analytical Labs, Inc. (CAELAP #2224)


Michael N. Golden, Lab Director

DF=Dilution Factor
DLR=Detection Reporting Limit

PQL=Practical Quantitation Limit
ND=None Detected at or above DLR

Environmental Analysis Since 1983

QUALITY CONTROL RESULTS SUMMARY

QC Batch #: DS980504

Matrix: Soil

Units: mg/Kg

Date analyzed: 05/15/98

Date extracted: 05/12/98

Quality Control Sample: Blank Spike

PARAMETER	Method #	MB	SA	SR	SP	SP	SPD	SPD	RPD	QC LIMITS	
		mg/Kg	mg/Kg	mg/Kg	mg/Kg	%R	mg/Kg	%R		RPD	%R
Diesel	8015M	<1.0	25	ND	20	81	25	98	19.2	25	61-121

Note: LCS and LCSD results reported for the following Parameter:

All

Acceptable LCS and LCSD results are reported when matrix interferences cause MS and MSD results to fall outside established QC limits.

Definition of Terms:

MB: Method Blank

na: Not Analyzed in QC batch

SA: Spike Added

SR: Sample Result

RPD(%): Duplicate Analysis - Relative Percent Difference

SP: Spike Result

SP (%R): Spike % Recovery

SPD: Spike Duplicate Result

SPD (%R): Spike Duplicate % Recovery

NC: Not Calculated

QUALITY CONTROL RESULTS SUMMARY

QC Batch #: DS980505

Matrix: Soil

Units: mg/Kg

Date analyzed: 05/15/98

Date extracted: 05/13/98

Quality Control Sample: Blank Spike

PARAMETER	Method #	MB	SA	SR	SP	SP	SPD	SPD	RPD	QC LIMITS	
		mg/Kg	mg/Kg	mg/Kg	mg/Kg	%R	mg/Kg	%R		RPD	%R
Diesel	8015M	<1.0	25	ND	23	92	26	104	12.6	25	61-121

Note: LCS and LCSD results reported for the following Parameter:
All

Acceptable LCS and LCSD results are reported when matrix interferences cause MS and MSD results to fall outside established QC limits.

Definition of Terms:

MB: Method Blank

na: Not Analyzed in QC batch

SA: Spike Added

SR: Sample Result

RPD(%): Duplicate Analysis - Relative Percent Difference

SP: Spike Result

SP (%R): Spike % Recovery

SPD: Spike Duplicate Result

SPD (%R): Spike Duplicate % Recovery

NC: Not Calculated

QUALITY CONTROL RESULTS SUMMARY

METHOD: ICP

QC Batch #: WM980506

Date Analyzed: 05/15/98

Matrix: Water

Quality Control Sample: E9280

Units: mg/L

PARAMETER	Method #	MB mg/L	SA mg/L	SR mg/L	SP mg/L	SP %R	SPD mg/L	SPD % R	RPD	QC LIMITS	
										%R	RPD
Antimony	200.7	na	na	na	na	na	na	na	na	75- 125	25.0
Arsenic	200.7	<0.005	0.50	ND	0.51	103	0.49	98	4.6	75- 125	25.0
Barium	200.7	na	na	na	na	na	na	na	na	75- 125	25.0
Beryllium	200.7	na	na	na	na	na	na	na	na	75- 125	25.0
Cadmium	200.7	<0.005	0.50	0.220	0.73	102	0.70	95	6.3	75- 125	25.0
Chromium	200.7	<0.005	0.50	0.013	0.46	90	0.49	96	6.7	75- 125	25.0
Cobalt	200.7	na	na	na	na	na	na	na	na	75- 125	25.0
Copper	200.7	<0.005	0.50	0.274	0.73	90	0.72	89	0.9	75- 125	25.0
Lead	200.7	<0.005	0.50	0.044	0.56	102	0.54	99	3.8	75- 125	25.0
Molybdenum	200.7	na	na	na	na	na	na	na	na	75- 125	25.0
Nickel	200.7	<0.005	0.50	0.026	0.53	100	0.52	98	2.4	75- 125	25.0
Selenium	200.7	na	na	na	na	na	na	na	na	75- 125	25.0
Silver	200.7	<0.005	0.50	0.011	0.46	90	0.46	89	1.1	75- 125	25.0
Thallium	200.7	na	na	na	na	na	na	na	na	75- 125	25.0
Vanadium	200.7	na	na	na	na	na	na	na	na	75- 125	25.0
Zinc	200.7	<0.005	0.50	0.352	0.82	93	0.79	88	5.3	75- 125	25.0

Note: LCS and LCSD results reported for the following Parameters:

None

Acceptable LCS and LCSD results are reported when matrix interferences cause MS and MSD results to fall outside established QC limits.

Definition of Terms:

MB: Method Blank

na: Not analyzed in QC batch

SA: Spike Added

SR: Sample Result

SP: Spike Result

SP (%R) Spike % Recovery

SPD Spike Duplicate Result

SPD (%R) Spike % Recovery

Entech Analytical Labs, Inc.

525 Del Rey Avenue, Suite E
Sunnyvale, CA 94086

QUALITY CONTROL RESULTS SUMMARY

METHOD: Gas Chromatography

QC Batch #: GBG4980513

Matrix: Soil

Units: ug/kg

Date Analyzed: 05/13/98

Quality Control Sample: E9321

PARAMETER	Method #	MB ug/kg	SA ug/kg	SR ug/kg	SP ug/kg	SP % R	SPD ug/kg	SPD %R	RPD	QC LIMITS	
										RPD	%R
Benzene	8020	<5.0	160	ND	149	93	152	95	1.6	25	76-117
Toluene	8020	<5.0	160	ND	148	93	150	94	1.5	25	76-117
Ethyl Benzene	8020	<5.0	160	ND	150	94	150	94	0.0	25	74-119
Xylenes	8020	<5.0	480	ND	447	93	449	94	0.5	25	75-120
Gasoline	8015	<1000.00	1000	ND	940	94	970	97	3.1	25	58-120

Note: LCS and LCSD results reported for the following Parameters:

None

Acceptable LCS and LCSD results are reported when matrix interferences cause MS and MSD results to fall outside established QC limits.

Definition of Terms:

na: Not Analyzed in QC batch

MB: Method Blank

SA: Spike Added

SR: Sample Result

RPD(%): Duplicate Analysis - Relative Percent Difference

SP: Spike Result

SP (%R): Spike % Recovery

SPD: Spike Duplicate Result

SPD (%R): Spike % Recovery

NC: Not Calculated

LOWERY ASSOCIATES
CLAIM OF CUSTODY RECORD

Lab. Admin. Office
405 Clyde Avenue
Mountain View, CA 94043
415-967-2365

Oakland Office
129 Filbert Street
Oakland, CA 946
510-267-1979
 510-267-1972 (fax)

Fax Copy To: 415-967-2785 (fax)

Project Name: Sears / Telegraph Avenue

Job Number: 1328-1

Report To: Peter Langtry

Sampler (print): John McCain

Sampler (signature): John McCain

QC Requirements:
 Level A (standard) Level B Level C Level D

Turnaround Requirements

10 working days
 5 working days *****
 3 working days
 48 hours
 24 hours
 2-3 hours (RUSH)

ANALYSES REQUESTED

TPH, diesel, bunker oil, fuel oil, standard solvent, BTEX (POLYM/8930)

Sample I.D.	Date	Time	Sample Matrix	# of Cont.	Laboratory I.D.													Remarks
EB-6(11 1/2' - 12')	5-12-98		Soil	1	E9320	X												
EB-6(17 1/2' - 18')					E9321	X												* need results by 12pm (noon) on 5-15-98
EB-7(10 1/2' - 11')					E9322	X												
EB-7(14 1/2' - 15')					E9323	X												
EB-8(9' - 10')					E9324	X												
EB-8(11' - 12')					E9325	X												
EB-9(11' - 12')					E9326	X												
EB-9(15' - 16')					E9327	X												
EB-10(11 1/2' - 12')					E9328	X												
EB-10(16 1/2' - 17')					E9329	X												
EB-11(9 1/2' - 10')					E9330	X												
EB-11(13 1/2' - 14')					E9331	X												
EB-12(9 1/2' - 10')					E9332	X												
EB-12(13 1/2' - 14')					E9333	X												

Relinquished By: John McCain Date: 5-13-98 Time: 10:34

Relinquished By: AMIR Date: 5-13-98 Time: 11:34

Relinquished By: _____ Date: _____ Time: _____

Received By: AMIR #985 Date: 5-13-98 Time: 1034 PM Initial

Received By: J. Dalrymple Date: 5/13/98 Time: 11:34A

Lab of Record: _____

Received by Lab: _____ Date: _____ Time: _____

Entech Analytical Labs, Inc.

CA ELAP# 2224

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94086 • (408) 735-1550 • Fax (408) 735-1554

July 1, 1998

Peter Langtry
Lowney Associates
129 Filbert St.
Oakland, CA 94607

Subject: 4 Water Samples
Lab #'s: E9334-E9337
Project Name: Sears/Telegraph Avenue
Project Number: 1328-1
Method(s): EPA 8015M

Dear Peter Langtry,

Chemical analysis on the samples referenced above has been completed. Amended results for lab #9334 are now included. Summaries of the data are contained on the following pages. Sample(s) were received under documented chain-of-custody. USEPA protocols for sample storage and preservation were followed.

Entech Analytical Labs, Inc. is certified by the State of California (#2224). If you have any questions regarding procedures or results, please call me at 408-735-1550.

Sincerely,



Michael N. Golden
Lab Director

RECEIVED

JUL 6 1998

LOWNEY

NARRATIVE

Lab #'s: E9334
Method(s): EPA 8015M: TPH-Extractable

SUMMARY:

Ground water samples were received on May 13, 1998 from Lowney Associates for Job #1328-1. The results were processed and reported on May 15, 1998. At that time positive findings for TPH-Stoddard, TPH-Diesel, and TPH-Bunker Oil were reported for sample EB-6 (lab #9334) with a notation that the sample chromatogram did not match any of the signatures for these fuels.

At the request of Lowney Associates an extensive review was performed on July 1, 1998 of the data relating to this sample. As the result of this review Entech is revising this result to None Detected for all of these fuels. During the review process it was determined that the chromatographic peaks are of a random nature rather than a distinct pattern and were caused by solvent contamination in an individual wash vial used to rinse the instrument injector immediately before the sample was analyzed.

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Attn: Peter Langtry
Lowney Associates
129 Filbert Street
Oakland, CA 94607

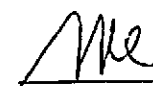
Date:	5/15/98
Date Received:	5/13/98
Date Analyzed:	5/13/98
Project Name:	Sears/Telegraph Ave
Job No.:	1328-1
Sampled By:	Client

Certified Analytical Report

Aqueous Sample Analysis:

Test	EB-11	Units	PQL	EPA Method #
Sample Matrix	Aqueous			
Sample Date	5/12/98			
Sample Time				
Lab #	E9337			
DF-Extractable	1			
TPH-Stoddard	ND	mg/kg	1.0 mg/kg	8015M
TPH-Diesel	ND	mg/kg	1.0 mg/kg	8015M
TPH-Bunker Oil	ND	mg/kg	1.0 mg/kg	8015M
TPH-Fuel Oil	ND	mg/kg	1.0 mg/kg	8015M

1. Aqueous sample reported on a weight basis due to limited sample volume and high solids content
2. $DLR = DF \times PQL$
3. Analysis performed by Entech Analytical Labs, Inc. (CAELAP #2224)


Michael N. Golden, Lab Director

DF=Dilution Factor
DLR=Detection Reporting Limit

PQL=Practical Quantitation Limit
ND=None Detected at or above DLR

QUALITY CONTROL RESULTS SUMMARY

METHOD: Gas Chromatography

QC Batch #: GBG4980513

Matrix: Water

Units: ug/L

Date Analyzed: 05/13/98

Quality Control Sample: Blank Spike

PARAMETER	Method #	MB ug/L	SA ug/L	SR ug/L	SP ug/L	SP % R	SPD ug/L	SPD %R	RPD	QC LIMITS	
										RPD	%R
Benzene	8020	<0.50	160	ND	144	90	147	92	2.3	25	74-118
Toluene	8020	<0.50	160	ND	142	89	145	91	1.7	25	75-116
Ethyl Benzene	8020	<0.50	160	ND	142	89	144	90	1.2	25	76-117
Xylenes	8020	<0.50	480	ND	414	86	439	92	5.9	25	73-122
Gasoline	8015	<50.0	1000	ND	940	94	970	97	3.1	25	60-123

Note: LCS and LCSD results reported for the following Parameters:

All

Acceptable LCS and LCSD results are reported when matrix interferences cause MS and MSD results to fall outside established QC limits.

Definition of Terms:

- na: Not Analyzed in QC batch
- MB: Method Blank
- SA: Spike Added
- SR: Sample Result
- RPD(%): Duplicate Analysis - Relative Percent Difference
- SP: Spike Result
- SP (%R): Spike % Recovery
- SPD: Spike Duplicate Result
- SPD (%R): Spike % Recovery
- NC: Not Calculated

QUALITY CONTROL RESULTS SUMMARY

METHOD: Gas Chromatography

QC Batch #: DW980503

Matrix: Water

Units: $\mu\text{g/L}$

Date analyzed: 05/15/98

Date extracted: 05/13/98

Quality Control Sample: Blank Spike

PARAMETER	Method #	MB $\mu\text{g/L}$	SA $\mu\text{g/L}$	SR $\mu\text{g/L}$	SP $\mu\text{g/L}$	SP %R	SPD $\mu\text{g/L}$	SPD %R	RPD	QC LIMITS	
										RPD	%R
Diesel	8015M	<50.0	950	ND	859	90	809	85	6	25	58-138

Definition of Terms:

- na: Not Analyzed in QC batch
- MB: Method Blank
- SA: Spike Added
- SR: Sample Result
- RPD(%): Duplicate Analysis - Relative Percent Difference
- SP: Spike Result
- SP (%R) Spike % Recovery
- SPD: Spike Duplicate Result
- SPD (%R) Spike Duplicate % Recovery
- NC: Not Calculated

QUALITY CONTROL RESULTS SUMMARY

QC Batch #: DS980504

Matrix: Soil

Units: mg/Kg

Date analyzed: 05/15/98

Date extracted: 05/12/98

Quality Control Sample: Blank Spike

PARAMETER	Method #	MB mg/Kg	SA mg/Kg	SR mg/Kg	SP mg/Kg	SP %R	SPD mg/Kg	SPD %R	RPD	QC LIMITS	
										RPD	%R
Diesel	8015M	<1.0	25	ND	20	81	25	98	19.2	25	61-121

Note: LCS and LCSD results reported for the following Parameter:

All

Acceptable LCS and LCSD results are reported when matrix interferences cause MS and MSD results to fall outside established QC limits.

Definition of Terms:

MB: Method Blank

na: Not Analyzed in QC batch

SA: Spike Added

SR: Sample Result

RPD(%): Duplicate Analysis - Relative Percent Difference

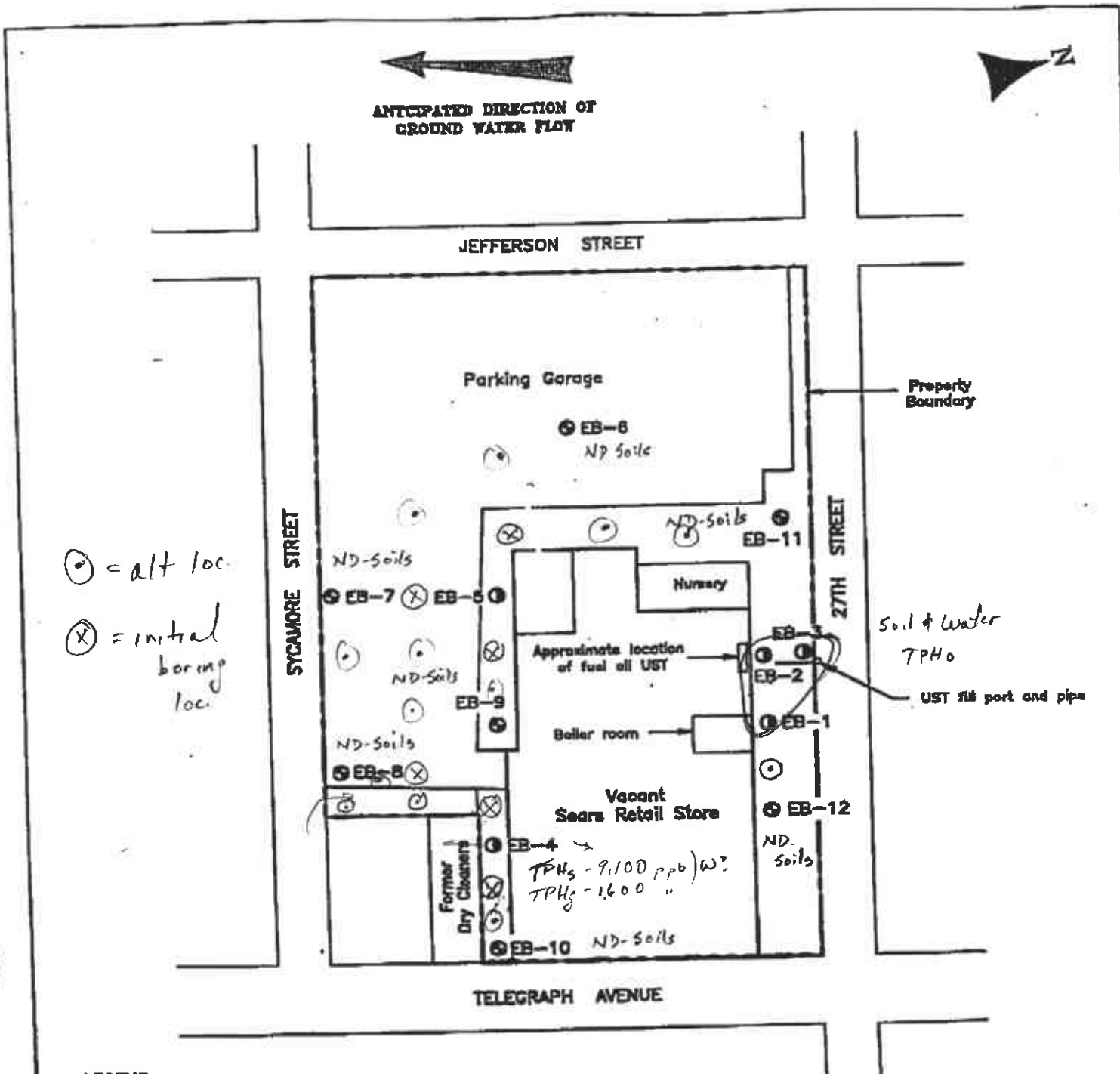
SP: Spike Result

SP (%R): Spike % Recovery

SPD: Spike Duplicate Result

SPD (%R): Spike Duplicate % Recovery

NC: Not Calculated

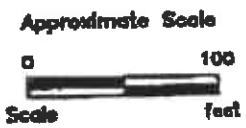


⊙ = alt loc.
 ⊗ = initial boring loc.

LEGEND

- ⊙ - Approximate location of exploratory boring (May 1998)
- ⊗ - Approximate location of exploratory boring (April 1998)

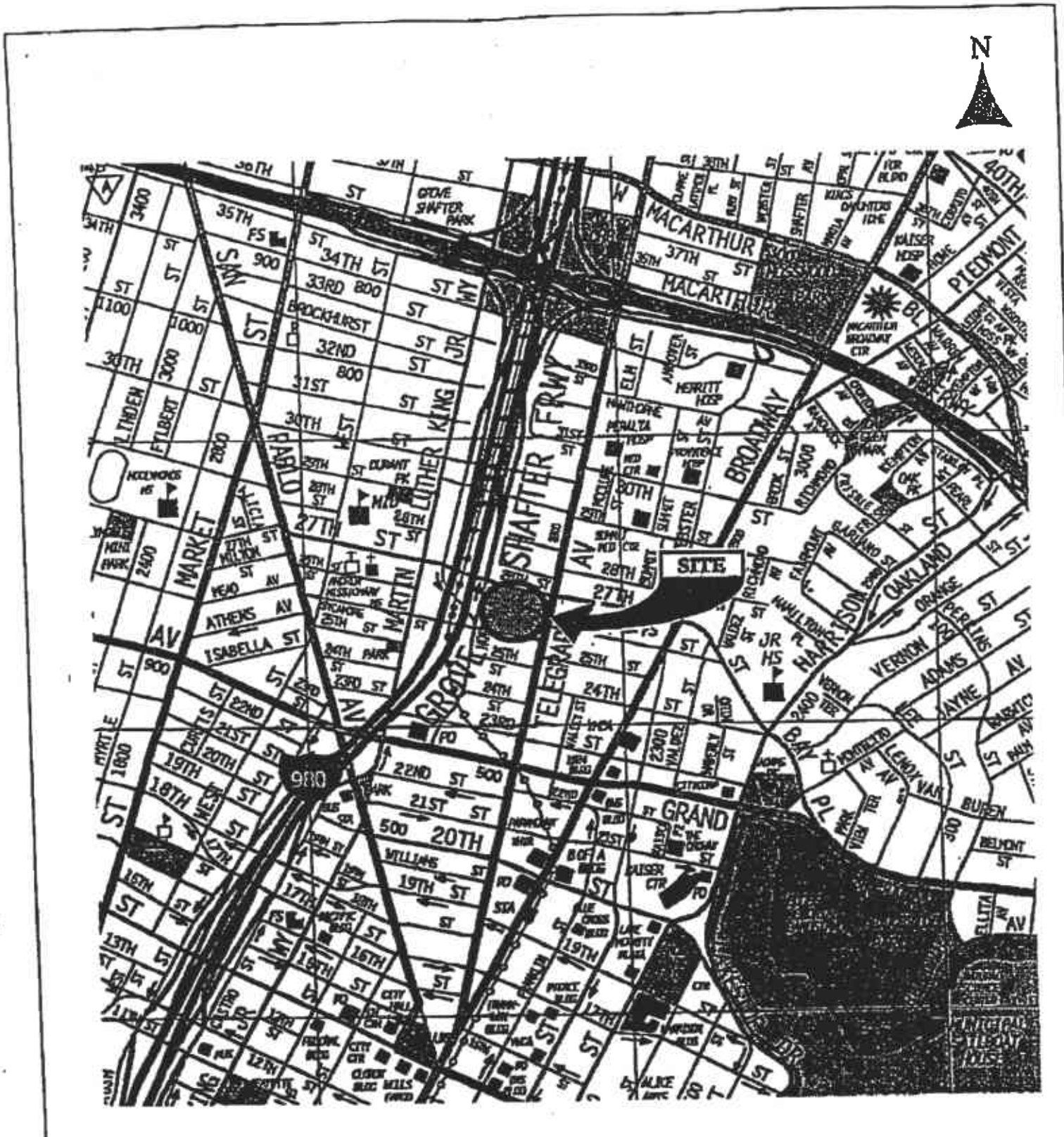
Note: Ground water grab samples at EB-1 to EB-5, EB-8, EB-10, EB-11, and EB-12



Base by Sanborn Map.

SITE PLAN
TELEGRAPH AVENUE PARCEL
Oakland, California

LOVNEY ASSOCIATES
 Environmental/Geotechnical/Engineering Services



"Reproduced with permission granted by THOMAS BROS. MAP."

VICINITY MAP
TELEGRAPH AVENUE PARCEL
Oakland, California

LOVNEY ASSOCIATES
Environmental/Geotechnical/Engineering Services