



**GROUNDWATER  
TECHNOLOGY®**

Groundwater Technology, Inc.

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**OFF-SITE SOIL ASSESSMENT REPORT  
SEARS STORE 1058  
2633 TELEGRAPH AVENUE  
OAKLAND, CALIFORNIA**

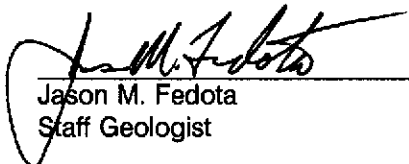
GTI Project 020204554


March 27, 1995

Prepared for:


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Manager of Environmental Engineering  
**Sears Merchandise Group**  
Department 824C, Bldg. A2-160B  
3333 Beverly Road  
Hoffman Estates, IL 60179

Groundwater Technology, Inc.  
Submitted by:

  
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Groundwater Technology, Inc.  
Approved by:

  
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## EXECUTIVE SUMMARY

The site is an inactive Sears Store at 2633 Telegraph Avenue in Oakland, California. On January 11, 1995, Groundwater Technology, on behalf of Sears Merchandise Group, conducted an off-site soil assessment, which included collecting grab groundwater samples.

This assessment was conducted to further define the downgradient limits of hydrocarbon-impacted soil and groundwater related to the former underground storage tanks. Results of the previous investigation indicated a minor amount of hydrocarbon-impacted soil on the southern edge of the Sears project and hydrocarbon-impacted groundwater along the southern and western edges of the Sears property.

The assessment was conducted using an EnviroCore sampler and an on-site mobile laboratory. Samples were obtained by hydraulically pushing a conventional 2-inch-diameter, split-spoon sampler at each sampling location. Three off-site locations (SB-5 south, SB-6 west, and SB-7 south of the Sears property) were probed to depths of 13 to 16 feet below grade. A 1.5-foot-long section of soil was sampled every 5 feet as the EnviroCore was advanced.

Analytical results of the soil samples collected from the three boreholes and groundwater samples collected from two of the three boreholes were not above laboratory detection limits for benzene, toluene, ethylbenzene, total xylenes (BTEX), and total petroleum hydrocarbons as gasoline (TPH-g). The groundwater sample collected from SB-5 was reported to contain 85 micrograms per liter ( $\mu\text{g}/\text{L}$ ) TPH-g, but no detectable BTEX compounds.

Based on the results of this investigation, the downgradient and crossgradient limits of the hydrocarbon plume appear to have been defined. Groundwater Technology recommends that two monitoring wells be installed to complete a soil and groundwater assessment at this site.

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## 1.0 INTRODUCTION

### 1.1 Site Location and Description

Sears Merchandise Group contracted Groundwater Technology to perform an off-site environmental investigation at Sears Store 1058 located at 2633 Telegraph Avenue in Oakland, California. The site is located in a predominantly commercial area along Telegraph Avenue. Residential properties are located behind the Sears store. The site location is illustrated in **figure 1**.

This site is an inactive Sears Automotive Center from which the gasoline and used-oil underground storage tank (UST) system was removed. Laboratory results from the UST system removal indicates the presence of hydrocarbon-impacted soil and groundwater. Previous assessments consisted of installation of eight monitoring wells and four soil boreholes (**figure 2**). Adsorbed-phase hydrocarbons were detected in the UST basins and in boreholes MW-1 through MW-5, B-1, and B-2. Liquid-phase hydrocarbons were detected in well MW-3; dissolved-phase hydrocarbons were detected in wells MW-1 through MW-5, MW-7, and MW-8. Sears elected to initiate this soil assessment to define the downgradient extent of hydrocarbon impact. This report documents the findings of an assessment that was conducted using an EnviroCore direct-push sampler.

### 1.2 Objective and Scope of Work

The objective of the soil assessment was to characterize the downgradient extent of petroleum products in soil and groundwater. The objective was accomplished through the following tasks:

- collection of soil samples from three EnviroCore probe holes located south and southwest of the site (**figure 2**)
- field-screening of all soil samples to identify the relative distribution of petroleum product
- installation of a temporary 1-inch polyvinyl chloride (PVC) well screen into each borehole to collect groundwater samples
- on-site chemical analysis of soil and groundwater samples by mobile laboratory

## 2.0 METHODS

The following sections describe methods used to conduct the assessment.

### 2.1 Safety Considerations

Groundwater Technology developed a Site Safety Plan to comply with Occupational Safety and Health Administration (OSHA) Regulation 29 CFR 1910.120. This plan addressed specific environmental work-site hazards and presented contingency plans for site personnel. All Groundwater Technology and subcontractor personnel working at the site reviewed the plan and followed the guidelines.

### 2.2 Decontamination

Before each insertion of the EnviroCore and the collection of soil samples, all downhole equipment was cleaned with a high-pressure hot-water washer to prevent cross-contamination. Sample barrels were washed with trisodium phosphate and double-rinsed with deionized water between sampling runs.

### 2.3 Sampling

The probing locations shown on **figure 2** were selected based on the results of a site assessment conducted in December 1993, and from quarterly groundwater monitoring results from 1994.

At each selected location, the EnviroCore sampler was advanced to a maximum depth of 19 feet, or to approximately 5–7 feet beneath the soil–groundwater interface. Soil samples were collected at 5-foot intervals and were visually inspected by a Groundwater Technology field geologist who prepared drilling logs following the Unified Soil Classification System.

Soil samples were collected and immediately placed in appropriate containers. The containers were properly labeled and preserved as required by EPA protocol. Samples were collected for field-screening and for analysis by the mobile laboratory.

Groundwater was encountered at approximately 10 feet below grade while advancing each sampling probe. Groundwater samples were collected by raising the outer drive casing in the borehole and installing a temporary monitoring well constructed of 1-inch diameter PVC well screen (0.010-inch slot) and blank casing. Groundwater samples were collected by lowering a small-diameter Teflon bailer inside the temporary well. Each water sample was placed in a container for analysis by a mobile laboratory.

## 2.4 Field-Screening

After each set of soil samples had approximately equilibrated to ambient temperature, the headspace was tested for total ionizable vapors using a photoionization detector (PID). Before testing, each sample container was shaken to facilitate the partitioning of vapors from the soil into the headspace. The detector probe was inserted into the headspace of the container, and the headspace vapors were tested for approximately 5 seconds.

These readings were used only as relative indications of petroleum hydrocarbons in the soil and to identify the sample most representative of site conditions. Laboratory analysis was used to supplement field-screening data, thereby accurately identifying petroleum hydrocarbons and quantifying their concentrations.

## 2.5 Laboratory Analysis

All soil and groundwater samples collected during drilling were submitted to the mobile laboratory for analysis. The identifications of samples collected, targeted analytes, and analytical methods used are presented in **table 1**.

## 3.0 RESULTS

### 3.1 Soil Samples

#### 3.1.1 Field-Screening

Sample locations and identifications, depths at which samples were collected, and results of the field-screening are presented in **table 1**.

### 3.1.2 Analysis by Mobile Laboratory

Results for soil samples analyzed by the mobile laboratory are summarized in **table 1**. Copies of the laboratory analytical reports and chain-of-custody manifests are included in appendix A.

## 3.2 Groundwater Samples

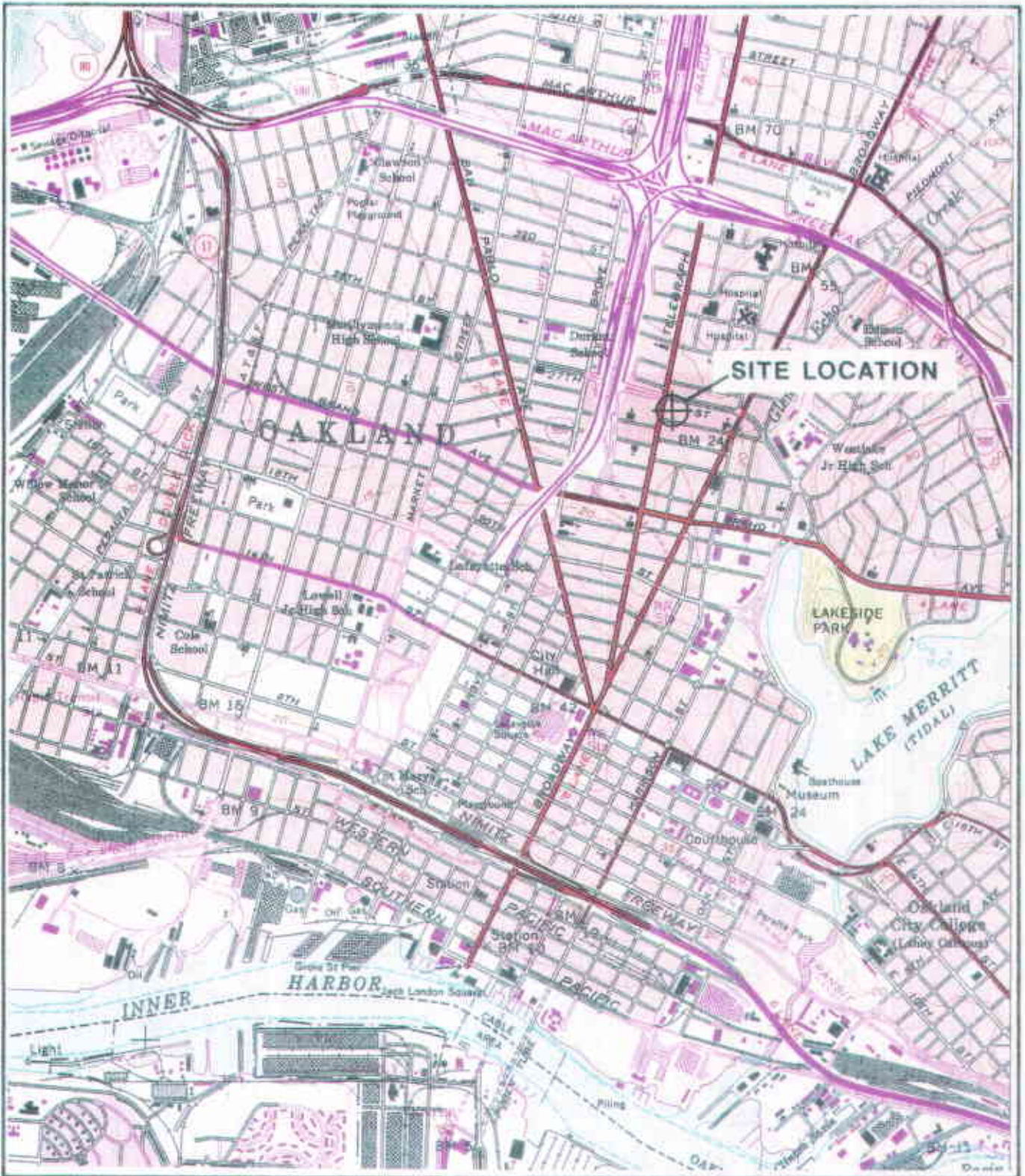
Results for groundwater samples analyzed by the mobile laboratory are summarized in **table 2**. Copies of the laboratory analytical reports and chain-of-custody manifests are included in appendix A.

## 4.0 ASSESSMENT SUMMARY

The subsurface material encountered during drilling of the off-site probe holes (soil boreholes SB-5 through SB-7) consists of 1 to 4 feet of fill beneath the pavement and silty clay with thin interbeds of silty sand and silt. The lithology noted in the off-site boreholes is similar to that in the upper 15 to 20 feet logged in boreholes completed on-site (appendix B). Blue-green and blue-gray mottled silt, silty sand, and silty clay units were logged in each borehole at approximately 15 feet below grade. No hydrocarbon vapors were detected by the PID during sampling. Analytical results of soil samples collected from approximately 5, 10, and 15 feet below grade from each borehole were not above laboratory detection limits for benzene, toluene, ethylbenzene, and total xylenes (BTEX), and total petroleum hydrocarbons as gasoline (TPH-g). These results provide definition of the adsorbed hydrocarbons in the downgradient and crossgradient directions (**figure 2**).

The analytical results of the groundwater samples collected from SB-6 and SB-7 were not above detection limits for BTEX and TPH-g. Results of the groundwater sample collected from SB-5 were not above detection limits for BTEX. TPH-g was detected at 85  $\mu\text{g/L}$ , slightly above the detection limit of 50  $\mu\text{g/L}$ .

Groundwater Technology recommends the installation of off-site groundwater monitoring wells near the locations of SB-5 and SB-6 to provide groundwater monitoring points that will help define the limits of the dissolved groundwater plume in the crossgradient and downgradient directions. Hydrocarbon concentrations in a monitoring well installed at the location of SB-5 are slightly above detection limits. However, based on analytical results from SB-7, and from boreholes across 26th Street on the Sears property, dissolved hydrocarbons are anticipated to be low. Installing a monitoring well downgradient of SB-5 is not possible because of structures on the adjacent property. Therefore, SB-5 will be used to monitor and ensure that elevated hydrocarbon concentrations do not migrate further downgradient.



**GROUNDWATER  
TECHNOLOGY**

4057 PORT CHICAGO HWY  
CONCORD, CA 94520  
(510) 671-2387



SCALE:  
0 FEET 2000

**SITE LOCATION MAP**

CLIENT: SEARS, ROEBUCK AND CO.  
SITE No. 1058

DATE: 8/18/92

LOCATION: 2633 TELEGRAPH AVE.  
OAKLAND, CALIFORNIA

FIGURE: 1



**FORMAT FOR TABLE 1**  
**Summary of Soil Sampling, Screening, and Analysis (Mobile Laboratory)**

Field data and laboratory results are summarized in the following table. Because the table is oriented to data only, we have provided the following explanations of each column and the relationship to other items in the table.

**Sample Description**

**LOCATION:** This column describes where the sample was collected. The location can be correlated with sample locations on the Site Map. Commonly used abbreviations and terms for the soil boreholes and probing locations are:

PP = probe point

BH = borehole

SB = soil borehole

MW = monitoring well

**ID:** The sample ID is assigned by Groundwater Technology field personnel when the sample is collected and typically corresponds to the sample location, type, or depth.

**DEPTH:** The depth at which the sample was collected.

**Total Ionizable Vapors**

This column contains the field-screening results for air or soil vapor samples. Results are expressed as parts per million, based on a volume-to-volume ratio of total ionizable vapors to air (ppmv). The readings were obtained using a photoionization detector (PID).

**Laboratory Analysis Results**

The samples were analyzed by Transglobal Environmental Chemistry (TEG), the on-site mobile laboratory. These columns provide results of laboratory analysis. The targeted analytes and the analytical methods used are as follows.

**BENZENE, TOLUENE, ETHYLBENZENE, TOTAL XYLENES:** Samples were analyzed according to EPA Method 8020.

**TPH-g (TOTAL PETROLEUM HYDROCARBONS AS GASOLINE):** Samples were analyzed according to modified EPA Method 8015.

Concentration values preceded by "<" indicate results are below the practical quantitation limit or method detection limit for that sample. "NA" indicates the sample was not submitted to the mobile laboratory for analysis. "-" indicates there is no datum for the cell.

TABLE 1  
 Summary of Soil Sampling, Screening, and Analysis (Mobile Laboratory), January 11, 1995  
 (All Results Expressed as Milligrams per Kilogram Unless Otherwise Noted)

Sears Store 1058  
 Oakland, California

Sample Description			Total Ionizable Vapors (ppmv)	Laboratory Analysis Results				
Location	ID	Depth (feet)		Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPH-g
SB-5	SB-5/5	5	0	<0.005	<0.005	<0.005	<0.015	<10
	SB-5/10	10	0	<0.005	<0.005	<0.005	<0.015	<10
	SB-5/16	16	0	<0.005	<0.005	<0.005	<0.015	<10
SB-6	SB-6/5	5	0	<0.005	<0.005	<0.005	<0.015	<10
	SB-6/11	11	0	<0.005	<0.005	<0.005	<0.015	<10
	SB-6/16	16	0	<0.005	<0.005	<0.005	<0.015	<10
SB-7	SB-7/5	5	0	<0.005	<0.005	<0.005	<0.015	<10
	SB-7/10	10	0	<0.005	<0.005	<0.005	<0.015	<10
	SB-7/13	13	0	<0.005	<0.005	<0.005	<0.015	<10

**FORMAT FOR TABLE 2**  
**Summary of Groundwater Sampling and Analysis (Mobile Laboratory)**

Laboratory results for groundwater samples are summarized in the following table. Because the table is oriented to data only, we have provided the following explanations of each column and the relationship to other items in the table.

**Sample Description**

**LOCATION:** This column describes where the sample was collected. The location can be correlated with sample locations on the Site Map. Commonly used abbreviations and terms for soil boreholes and probing locations are:

PP = probe point

SB = soil borehole

BH = borehole

MW = monitoring well

**ID:** The sample ID is assigned by Groundwater Technology field personnel when the sample is collected and typically corresponds to the sample location, type, or depth.

**Laboratory Analysis Results**

The samples were analyzed by Transglobal Environmental Chemistry (TEG), the on-site mobile laboratory. These columns provide results of laboratory analysis. The targeted analytes and analytical methods used are as follows.

**BENZENE, TOLUENE, ETHYLBENZENE, TOTAL XYLENES:** Samples were analyzed according to EPA Method 8020.

**TPH-g (TOTAL PETROLEUM HYDROCARBONS AS GASOLINE):** Samples were analyzed according to modified EPA Method 8015.

Concentration values preceded by "<" indicate results are below the practical quantitation limit or method detection limit for that sample. "—" indicates there is no datum for the cell.

TABLE 2  
 Summary of Groundwater Sampling and Analysis (Mobile Laboratory), January 11 and 13, 1995  
 (All Results Expressed as Micrograms per Liter Unless Otherwise Noted)

Sears Store 1058  
 Oakland, California

Sample Description		Laboratory Analysis Results				
Location	ID	Benzene	Toluene	Ethylbenzene	Total Xylenes	TPH-g
SB-5	B-5	<0.5	<0.5	<0.5	<1.5	85
SB-6	B-6	<0.5	<0.5	<0.5	<1.5	<50
SB-7	B-7	<0.5	<0.5	<0.5	<1.5	<50

**APPENDIX A**  
**ANALYTICAL REPORTS FROM MOBILE LABORATORY**

20204554.SAR



January 31, 1995

Mr. Jason Fedota  
Groundwater Technology, Inc.  
1401 Halyard Dr., Suite 140  
West Sacramento, CA 95691

**SUBJECT: DATA REPORT - Groundwater Technology Job # 02020 4554**  
**Sears Reference #1058011195 - Oakland, California**

TEG Project # 50111C

Mr. Fedota:

Please find enclosed a data report for the samples analyzed from the above referenced project for Groundwater Technology. The samples were analyzed on site in TEG's DHS certified mobile laboratory (Cert. #1671). TEG conducted a total of 26 analyses on 3 water and 9 soil samples.

- 4 analyses on waters for aromatic volatile hydrocarbons by EPA method 8020.
- 4 analyses on waters for total petroleum hydrocarbons by EPA method modified 8015.
- 9 analyses on soils for aromatic volatile hydrocarbons by EPA method 8020.
- 9 analyses on soils for total petroleum hydrocarbons by EPA method modified 8015.

The results of the analyses are summarized in the enclosed tables. Applicable detection limits and QA/QC data are included in the tables.

TEG appreciates the opportunity to have provided analytical services to Groundwater Technology on this project. If you have any further questions relating to these data or report, please do not hesitate to contact us.

Sincerely,

Mark Jerpbak  
Director, TEG-Northern California



GROUNDWATER TECHNOLOGY # 02020 4554  
Sears Reference # 1058011195  
Oakland, California

TEG PROJECT #50111C

BTEX (EPA 8020) & TPH (EPA mod8015) ANALYSES OF SOILS

SAMPLE NUMBER	DATE SAMPLED	DATE ANALYZED	GASOLINE mg/kg	BENZENE mg/kg	TOLUENE mg/kg	ETHYLBZ mg/kg	XYLENES mg/kg
BLANK	1/11/95	1/11/95	nd	nd	nd	nd	nd
SB-5/5	1/11/95	1/11/95	nd	nd	nd	nd	nd
SB-5/10	1/11/95	1/11/95	nd	nd	nd	nd	nd
SB-5/16	1/11/95	1/11/95	nd	nd	nd	nd	nd
SB-6/5	1/11/95	1/11/95	nd	nd	nd	nd	nd
SB-6/11	1/11/95	1/11/95	nd	nd	nd	nd	nd
SB-6/16	1/11/95	1/11/95	nd	nd	nd	nd	nd
SB-7/5	1/11/95	1/11/95	nd	nd	nd	nd	nd
SB-7/10	1/11/95	1/11/95	nd	nd	nd	nd	nd
SB-7/13	1/11/95	1/11/95	nd	nd	nd	nd	nd

REPORTING LIMITS	10	0.005	0.005	0.005	0.015
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'nd' INDICATES NOT DETECTED AT LISTED REPORTING LIMITS.

ANALYSES PERFORMED IN TEG's DHS CERTIFIED MOBILE LAB (#1671)

ANALYSES PERFORMED BY: Mr. Henry Wilkinson

DATA REVIEWED BY: Mr. Mark Jerpak

*Mark Jerpak* 1-31-95

Transglobal Environmental Geochemistry

PO Box 162580, Sacramento, CA 95816 Phone: (916) 736-3233 Fax: (916) 452-5806



GROUNDWATER TECHNOLOGY # 02020 4554  
Sears Reference # 1058011195  
Oakland, California

TEG PROJECT #50111C

QA/QC DATA - MATRIX SPIKE ANALYSES - SOIL

SAMPLE NUMBER	DATE ANALYZED	GASOLINE mg/kg	BENZENE mg/kg	TOLUENE mg/kg	ETHYLBENZ mg/kg	XYLENES mg/kg
SB-6/5						
Spiked Conc.	1/11/95	20.0	0.0100	0.0100	0.0100	0.0300
Measured Conc.		21.5	0.0080	0.0082	0.0093	0.0275
% Recovery		107.5%	80.0%	82.0%	93.0%	91.7%
Spiked Conc.	1/11/95	20.0	0.0100	0.0100	0.0100	0.0300
Measured Conc.		20.7	0.0077	0.0079	0.0087	0.0264
% Recovery		103.5%	77.0%	79.0%	87.0%	88.0%
RPD		3.8%	3.8%	3.7%	6.7%	4.1%

ACCEPTABLE RPD LIMIT = 15%

ANALYSES PERFORMED IN TEG's DHS CERTIFIED MOBILE LAB (#1671)

ANALYSES PERFORMED BY: Mr. Henry Wilkinson

DATA REVIEWED BY: Mr. Mark Jerpbak

*Mark Jerpbak* 1-31-95

Transglobal Environmental Geochemistry

PO Box 162580, Sacramento, CA 95816 Phone: (916) 736-3233 Fax: (916) 452-5806





GROUNDWATER TECHNOLOGY # 02020 4554  
Sears Reference # 1058011195  
Oakland, California

TEG PROJECT #50111C

BTEX (EPA 8020) & TPH (EPA mod8015) ANALYSES OF WATERS

SAMPLE NUMBER	DATE SAMPLED	DATE ANALYZED	GASOLINE ug/l	BENZENE ug/l	TOLUENE ug/l	ETHYLBENZ ug/l	XYLENES ug/l
BLANK	1/11/95	1/11/95	nd	nd	nd	nd	nd
BLANK	1/26/95	1/26/95	nd	nd	nd	nd	nd
B-5	1/11/95	1/11/95	85 **	nd	nd	nd	nd
B-6	1/11/95	1/11/95	nd	nd	nd	nd	nd
B-6 DUP	1/11/95	1/11/95	nd	nd	nd	nd	nd
B-7	1/13/95	1/26/95	nd	nd	nd	nd	nd

REPORTING LIMITS	50	0.5	0.5	0.5	1.5
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'nd' INDICATES NOT DETECTED AT LISTED REPORTING LIMITS.

'GASOLINE' INDICATES GASOLINE RANGE C5 - C11.

'\*\*' INDICATES GASOLINE RANGE COMPOUNDS, BUT MAY NOT BE GASOLINE.

ANALYSES PERFORMED IN TEG's DHS CERTIFIED MOBILE LAB (#1671)

ANALYSES PERFORMED BY: Mr. Henry Wilkinson

DATA REVIEWED BY: Mr. Mark Jerpbak

*Mark Jerpbak* 1-31-95

Transglobal Environmental Geochemistry

PO Box 162580, Sacramento, CA 95816 Phone: (916) 736-3233 Fax: (916) 452-5806



GROUNDWATER TECHNOLOGY # 02020 4554  
Sears Reference # 1058011195  
Oakland, California

TEG PROJECT #50111C

QA/QC DATA - MATRIX SPIKE ANALYSES - WATERS

	DATE	GASOLINE	BENZENE	TOLUENE	ETHYLBENZ	XYLENES
	ANALYZED	ug/l	ug/l	ug/l	ug/l	ug/l
Spiked Conc.	1/11/95	2000	10.00	10.00	10.00	30.00
Measured Conc.		1786	7.67	9.61	8.74	25.27
% Recovery		89.3%	76.7%	96.1%	87.4%	84.2%
Spiked Conc.	1/11/95	2000	10.00	10.00	10.00	30.00
Measured Conc.		2011	7.95	9.18	8.93	26.05
% Recovery		100.6%	79.5%	91.8%	89.3%	86.8%
RPD		11.9%	3.6%	4.6%	2.2%	3.0%
Spiked Conc.	1/26/95	2000	10.00	10.00	10.00	30.00
Measured Conc.		1979	10.56	10.47	10.24	27.78
% Recovery		99.0%	105.6%	104.7%	102.4%	92.6%
Spiked Conc.	1/26/95	2000	10.00	10.00	10.00	30.00
Measured Conc.		1864	10.93	11.15	10.21	28.97
% Recovery		93.2%	109.3%	111.5%	102.1%	96.6%
RPD		6.0%	3.4%	6.3%	0.3%	4.2%

ACCEPTABLE RPD LIMIT = 15%

ANALYSES PERFORMED IN TEG's DHS CERTIFIED MOBILE LAB (#1671)

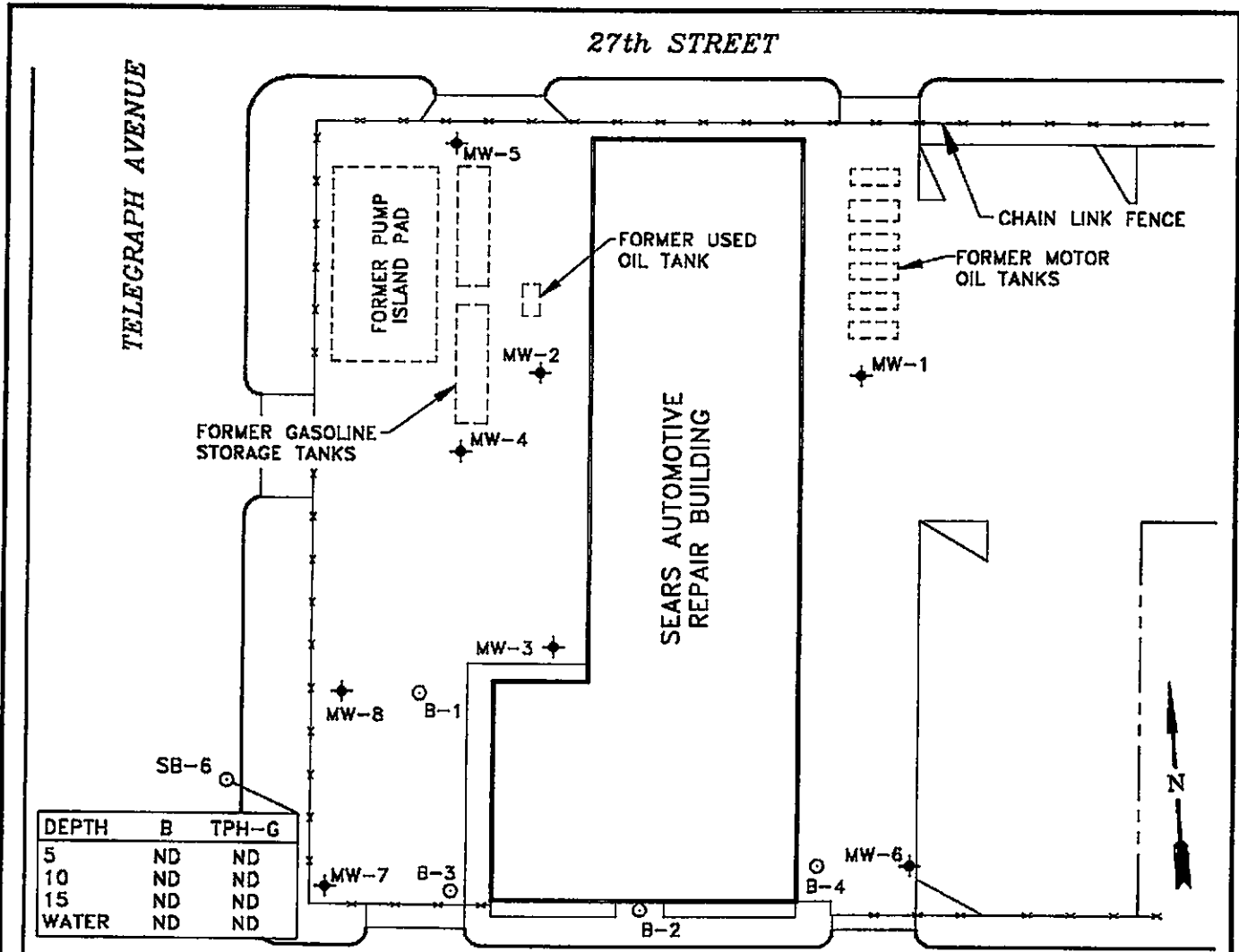
ANALYSES PERFORMED BY: Mr. Henry Wilkinson

DATA REVIEWED BY: Mr. Mark Jerpbak

*Mark Jerpbak* 1-31-95

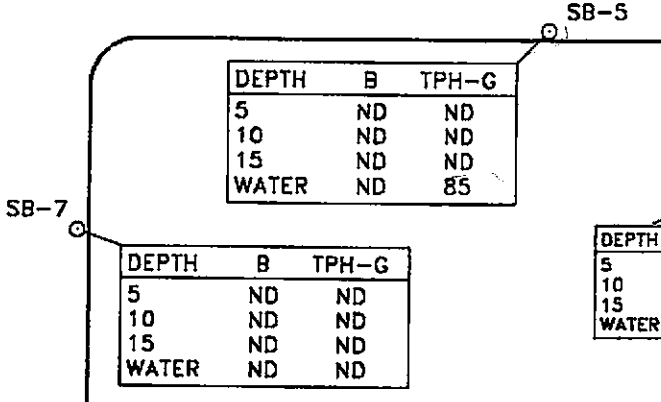
Transglobal Environmental Geochemistry

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DEPTH	B	TPH-G
5	ND	ND
10	ND	ND
15	ND	ND
WATER	ND	ND

26th STREET



DEPTH	B	TPH-G
5	ND	ND
10	ND	ND
15	ND	ND
WATER	ND	85

DEPTH	B	TPH-G
5	ND	ND
10	ND	ND
15	ND	ND
WATER	ND	ND

**LEGEND**

- ◆ MONITORING WELL
- SOIL BORING
- DEPTH OF SAMPLE (FT BGS)
- BENZENE CONCENTRATION (ppm)
- TPH-G CONCENTRATION (ppm)
- GRAB WATER ANALYTICAL RESULTS (ppb)
- ND CONCENTRATIONS BELOW DETECTION LIMITS



**GROUNDWATER TECHNOLOGY**



**HYDROCARBON DISTRIBUTIONS IN SOIL AND GROUNDWATER (1/11/95)**

CLIENT: SEARS, ROEBUCK AND CO. SITE No. 1058		FILE: HDM395	PROJECT NO: 020204554	PM	RG/PE
LOCATION: 2633 TELEGRAPH AVENUE OAKLAND, CALIFORNIA		REV: 1	FIGURE: 2		
DES: JF	DET: CY	DATE: 3/10/95			







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# Drilling Log

Soil Boring SB-5

Project Sears 1058 Owner Sears  
 Location 2633 Telegraph Avenue, Oakland, Ca. Proj. No. 02020 4554, 030503  
 Surface Elev. \_\_\_\_\_ Total Hole Depth 16 ft. Diameter 2.5 in.  
 Top of Casing \_\_\_\_\_ Water Level Initial 10 ft. Static 10.1 ft.  
 Screen: Dia 1 in. Length 5 ft. Type/Size .020 in.  
 Casing: Dia 1 in. Length 12 ft. Type PVC Riser  
 Fill Material none Rig/Core XD-1  
 Drill Co. Precision Sampling Inc. Method Direct Penetration Technology  
 Driller Mike Polkinghorn Log By Terry James Date 1/11/95 Permit # 94727  
 Checked By Ed Simonis License No. RG 4422

See Site Map  
For Boring Location

**COMMENTS:**

Temporary piezometers were installed for water level and sampling. The boreholes were backfilled with compacted cuttings, then filled to 6 in. below grade with neat cement, and topped to grade with concrete.

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0				ASP CONC		6" Asphalt
2				GM		Bluish-gray gravelly clayey sand (50,30,20), weak slightly moist.
4	0					Light-brown with yellowish-orange mottling. Silty CLAY, medium density, high plasticity, moist.
6	0	SB-5/5				
8	0					
10	0	SB-5/10			CL	Encountered water 1/11/95 at 13:15
12	0					
14	0					
16	0	SB-5/15			CL	Bluish-green Sandy Clay (35,55) with trace sub-rounded gravel, weak non-plastic, moist.
18						Boring terminated
20						
22						
24						



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# Drilling Log

Soil Boring SB-6

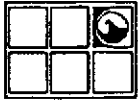
Project Sears 1058 Owner Sears  
 Location 2633 Telegraph Avenue, Oakland, Ca. Proj. No. 02020 4554  
 Surface Elev. \_\_\_\_\_ Total Hole Depth 19 ft. Diameter 2.5 in.  
 Top of Casing \_\_\_\_\_ Water Level Initial 13 ft. Static 10.1 ft.  
 Screen: Dia 1 in. Length 5 ft. Type/Size .020 in.  
 Casing: Dia 1 in. Length 15 ft. Type PVC Riser  
 Fill Material none Rig/Core XD-1  
 Drill Co. Precision Sampling Inc. Method Direct Penetration Technology  
 Driller Mike Polkinghorn Log By Terry James Date 1/11/95 Permit # 94727  
 Checked By Ed Simonis License No. RG 4422

See Site Map  
For Boring Location

**COMMENTS:**

Temporary piezometers were installed for water level and sampling. The boreholes were backfilled with compacted cuttings, then filled to 6 in. below grade with neat cement, and topped to grade with concrete.

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description
						(Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0				ASP CONC		6" Asphalt
2						
4	0					Light-brown with brownish red mottling, Silty CLAY, medium dense high plasticity, slightly moist.
6	0	SB-6/5				
8	0					
10	0				CL	grading into a Sandy Clay (20,80) with an increase in and a darkening of mottling, medium plasticity, increased moisture, less dense.
12	0	SB-6/11				
14	0					Encountered water 1/11/95 at 9:39
16	0	SB-6/10				Mottling becoming bluish-gray with trace medium to coarse graded sand, low plasticity, moist
18	0					Light brown with grayish mottling Clayey fine sand (40,60), with low plasticity, weak, moist.
20	0	SB-6/19				
22						
24						



GROUNDWATER  
TECHNOLOGY

# Drilling Log

Soil Boring SB-7

Project Sears 1058 Owner Sears  
 Location 2633 Telegraph Avenue, Oakland, Ca Proj. No. 02020 4554  
 Surface Elev. \_\_\_\_\_ Total Hole Depth 18 ft. Diameter 2.5 in.  
 Top of Casing \_\_\_\_\_ Water Level Initial \_\_\_\_\_ Static \_\_\_\_\_  
 Screen: Dia 1 in. Length 10 ft. Type/Size .020 in.  
 Casing: Dia 1 in. Length 5 ft. Type PVC Riser  
 Fill Material none Rig/Core XD-1  
 Drill Co. Precision Sampling Inc. Method Direct Penetration Technology  
 Driller Mike Polkinghorn Log By Terry James Date 1/11/95 Permit # 94727  
 Checked By Ed Simonis License No. RG 4422

See Site Map  
For Boring Location

**COMMENTS:**

Temporary piezometers were installed for water level and sampling. The boreholes were backfilled with compacted cuttings, then filled to 6 in. below grade with neat cement, and topped to grade with concrete.

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
						Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						6" Asphalt
2						Dark-brown Silty Clay (10,90) with trace angular gravel, medium plasticity, soft, slight moisture.
4	0					Light-brown with slight brownish-red mottling Silty CLAY ( , ) medium dense, medium plasticity, slightly moist. high plasticity, slightly moist.
6	0	SB-7/5				
8	0					
10	0	SB-7/10			CL	an increase in brownish red mottling Encountered water 1/11/95 at 14:30
12						
14	0	SB-7/13				
16						Mottling becoming bluish-gray with trace medium to coarse grained sand, low plasticity, moist
18						End of boring
20						
22						
24						