



GROUNDWATER TECHNOLOGY, INC.

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January 28, 1994

Project No. 020204554

Ms. Bernadine Palka
Sears, Roebuck and Company
3333 Beverly Road, Building A2-281A
Department 824C
Hoffman Estates, IL 60179

SUBJECT: *Additional Soil and Groundwater Assessment Report*
Former Sears Automotive Center
2633 Telegraph Avenue, Oakland, California

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Dear Ms. Palka:

Groundwater Technology, Inc. is pleased to present this *Additional Soil and Groundwater Assessment Report* for soil borings and groundwater monitoring well installation activities at the above-referenced site (Attachment 1, Figure 1). The work was completed in accordance with the *Work Plan for Additional Soil and Groundwater Assessment* submitted to the Alameda County Health Care Services Agency (ACHCSA) on October 6, 1993. Soil sampling and monitoring well installations were conducted at the facility in December 1993.

The purpose of this investigation was to assess downgradient on-site, extent of petroleum hydrocarbons in the vadose zone soil and shallow groundwater. The groundwater gradient direction beneath the site is to the south, towards 26th Street (Figure 2), which has been determined during several quarterly monitoring and sampling events (see *"Quarterly Monitoring and Sampling Report - August through October 1993"* dated November 12, 1993).

This report provides:

- A description of methods used during the subsurface investigation in December 1993 including soil and groundwater sampling, monitoring well construction, and monitoring well development;
- A summary of the results of the subsurface investigation;
- A site plan showing the soil boring and groundwater monitoring well locations, and maps showing gasoline hydrocarbons concentrations in soil and groundwater. (Attachment 1);
- Soil boring logs and groundwater monitoring well log/construction details (Attachment 2);

4554R014.020

- Summary tables of laboratory analysis of soil and groundwater samples collected during the investigation (Attachment 3); and
- Certified laboratory reports and chain-of-custody records for soil and groundwater samples collected during the investigation (Attachment 4).

SUMMARY OF WORK COMPLETED

Soil Borings and Soil Sampling

On December 13, 1993, four soil borings (B1, B2, B3, and B4) were advanced at the site using a 2-inch-diameter pneumatic hammer soil probe. Prior to the subsurface work, an underground utility survey was conducted to locate subsurface structures. The soil borings were advanced and soil samples were collected and analyzed to assist in determining locations for the placement of proposed monitoring wells. One soil boring was drilled at the south end of the Sears repair building, one at the southeast corner, and two on the southwest side of the building. To further evaluate the extent of petroleum hydrocarbon impacted soil and groundwater, the soil borings were located hydraulically down gradient from the former underground storage tank pits. The soil boring locations are illustrated in Figure 2. Prior to the subsurface exploration, all down-hole equipment was cleaned using high-pressure steam to prevent cross contamination between borings. The pneumatic hammer soil probe used a 2-inch-diameter hollow sampler for the collection of soil samples. The sampler was lined with three 6-inch-long brass liners to allow for collecting an undisturbed intact sample. The sampler was washed with Alconox® and water and double rinsed with water before each sample was collected.

The drilling was supervised by a Groundwater Technology geologist who logged the materials encountered according to the Unified Soil Classification System. Soil samples were continuously collected from approximately 4 feet below grade to the total depth of the boring. Headspace analysis was conducted on the soil samples using a photo-ionization detector (PID). Soil samples at 5-foot intervals were sealed with aluminum foil, plastic caps, and duct tape. The samples were stored on ice and analyzed on-site by a mobile California-certified laboratory for volatile organics in soil by U.S. Environmental Protection Agency (EPA) Methods 8020 and modified EPA Method 8015, and for total recoverable petroleum hydrocarbons (TRPH) by modified EPA Method 3550/EPA Method 418.1. A total of 11 soil samples collected from soil borings B1, B2, B3, and B4 were analyzed in the mobile laboratory. Three soil samples were collected from each B1, B2, and B4, and two samples were collected from B3 for laboratory analysis.

A grab groundwater sample was also collected from each boring using a Teflon® bailer lowered to the water table inside temporary polyvinylchloride (PVC) well screen casing installed in each of the borings. The groundwater samples were analyzed on site for aromatic volatile organics using

EPA Methods 5030 and 8020, total petroleum hydrocarbons (TPH)-as-gasoline using modified EPA Method 8015, and TRPH by EPA Method 418.1.

Monitoring Well Installation

Following laboratory analysis of soil samples collected on December 13, 1993, three additional soil borings were drilled for the purpose of installing groundwater monitoring wells. The monitoring well borings were drilled using a B-53 drill rig using 8-inch-outside-diameter hollow-stem augers. The soil boring and monitoring well locations are illustrated in Figure 2. Soil samples were collected at 5-foot intervals starting from approximately 5 feet below grade to the total depth of the boring. A modified California split-spoon sampler was used for sample collection. Soil samples were screened using a PID. Collected soil samples were sealed with aluminum foil, plastic caps, and duct tape. A total of four soil samples were collected for laboratory analysis from the soil borings that were converted to monitoring wells. Because the wells were being installed in the vicinity of the soil borings, one soil sample each from MW-6 and MW-7 and two samples from MW-8 were retained for laboratory analysis. The samples with the highest PID readings were chosen for analysis. The samples were stored on ice and transported, accompanied by a chain-of-custody record, to GTEL Environmental Laboratories, Inc. (GTEL), a California-certified laboratory in Concord, California, for analysis. Selected soil samples were analyzed for volatile organics in soil by EPA Methods 8020 and modified EPA Method 8015, lead in soil using EPA Method 7420, and TPH-as-lubricating oil by gas chromatograph flame-ionization detector (GC-FID).

Following the drilling of the soil borings, three groundwater monitoring wells (MW-6, MW-7, and MW-8) were constructed. The monitoring wells were completed with 2-inch-diameter PVC 0.020-inch slotted screen from the total depth to 7 feet below grade. The wells were finished to the surface with 2-inch-diameter PVC casing. The annular space between the borehole and casing was backfilled with No. 3 sand from the well completion depth to approximately 1 foot above the well screen. A sanitary seal consisting of hydrated bentonite pellets was installed above the sand followed by cement grout to the surface. The wells were finished with a water-tight locking cap inside a traffic-rated street box. Well construction diagrams are presented in Attachment 2. Soil cuttings generated during the drilling were placed in 55-gallon steel drums and stored on site pending laboratory analysis.

Monitoring Well Development

The monitoring wells were developed on December 21, 1993, to improve the hydraulic communication with the surrounding aquifer. Suspended sediment was removed from the wells using a surge and bail technique until the extracted groundwater was relatively free of fine particles.

Development water was placed in 55-gallon steel drums, labeled, and stored on site pending laboratory analysis to determine a proper disposal method.

Monitoring Well Sampling and Results

On December 27, 1993, groundwater samples were collected from the three monitoring wells installed on December 14, 1993, and analyzed for hydrocarbon constituents and dissolved lead. Groundwater samples were collected from wells MW-6, MW-7, and MW-8 using a Teflon™ bailer and placed in appropriate containers. The sample containers were labeled and placed in an ice-chilled, insulated cooler for transport under chain-of-custody protocol to a California-certified laboratory for the analyses described below. A summary of the groundwater analytical results is presented in Table 2. Groundwater samples were analyzed for:

- Benzene, toluene, ethylbenzene, and total xylenes (BTEX) using Environmental Protection Agency (EPA) Methods 5030/8020;
- Total petroleum hydrocarbons-as-motor-oil (TPH-M) using a gas chromatograph flame-ionization detector (GC-FID) hydrocarbon scan method of detection;
- TPH-as-gasoline (TPH-G) using modified EPA Method 8015;
- TPH in water using EPA Method 418.1; and
- Dissolved lead using EPA Method 7421.

The laboratory reports and chain-of-custody records are included in Attachment 4.

RESULTS OF ASSESSMENT WORK

Lithology

Soil borings B1 and B2 were advanced to 25 feet below grade. Soil borings B3 and B4 were advanced to 22 feet below grade. The subsurface material encountered during the advancement of the soil boring B1 consisted of silty and sandy clay, overlain by approximately 3 feet of clayey gravel fill which was capped with asphalt. During the advancement of B2 the subsurface material encountered consisted of approximately 3.5 feet of clayey gravel fill, underlain by silty clay which extended to approximately 21 feet below grade. A 2-foot-thick layer of clayey sand was encountered at approximately 22 feet below grade with a clayey gravel present from 24 feet below grade to the end of the boring at 25 feet below grade. The subsurface material encountered during the drilling of B3 consisted of approximately 2.5 feet of gravel fill, underlain by silty clay that

extended to approximately 14.5 feet below grade. The silty clay was underlain by clayey gravel which was present to approximately 19 feet below grade. A sandy silt was present from approximately 19 feet below grade to the end of the boring at 22 feet below grade. The subsurface material encountered during the drilling of boring B4 consisted of silty clay from 1.5 feet below grade to 11.5 feet below grade, underlain by a 1-foot-thick clayey gravel layer. Beneath the clayey gravel a clayey sand/gravel extended to approximately 20.5 feet below grade. A silty sand was present from the clayey sand/gravel to the bottom of the boring at 22 feet below grade.

The material encountered during the drilling of the boring for monitoring well MW-6 consisted of clayey gravel fill which extended to approximately 1 to 3 feet below grade. The clayey gravel fill was underlain by silty clay which extended to 21 feet below grade with a 0.5-foot-thick clayey gravel lens encountered at 4 feet below grade. Clayey gravel was encountered at 21 feet below grade and was present to the end of the boring (22 feet below grade). The boring for MW-7 consisted of a thin (less than 1 foot) clayey gravel fill, underlain by silty clay to a depth of 12.5 feet below grade. A layer of clayey gravel was encountered between 12.5 and approximately 15.5 feet below grade. The clayey gravel was underlain by silty clay to the bottom of the boring (22 feet below grade). The material encountered during the drilling of the boring for monitoring well MW-8 consisted of clayey gravel fill underlain by clay from 3 feet below grade to the total depth of the boring (22 feet below grade). The soil boring logs and monitoring well construction diagrams are presented in Attachment 2.

The lithology encountered during the advancement of soil borings B1, B2, B3, and B4 and the drilling of the borings for monitoring wells MW-6, MW-7, and MW-8 is consistent with the lithologies encountered during the previous subsurface investigation at the site.

Headspace Analysis of Soil Samples

Soil samples were collected at 5-foot intervals from the soil borings and monitoring well borings for headspace analysis of organic vapors using a PID. Field screening headspace analysis reported the following concentrations of organic vapors:

- Headspace from boring B1 soil samples contained organic vapor concentrations ranging from less than 0.1 to 500 parts per million (ppm);
- Headspace from boring B2 soil samples contained organic vapor concentrations ranging from less than 0.1 to 6,000 ppm;
- Headspace from boring B3 soil samples contained organic vapor concentrations ranging from less than 0.1 to 280 ppm;
- Headspace from boring B4 soil samples contained organic vapor concentrations ranging from 0.5 to 6.0 ppm;

- Headspace from the boring soil samples for MW-6 contained organic vapor concentrations ranging from less than 0.1 to 3.5 ppm;
- Headspace from the boring soil samples for MW-7 contained organic vapor concentrations ranging from 9.0 to 100 ppm;
- Headspace from the boring soil samples for MW-8 contained organic vapor concentrations ranging from 1.0 to 65 ppm.

Results of the headspace analysis for the soil borings and monitoring well borings are contained on the soil boring/monitoring well construction diagrams in Attachment 2.

Laboratory Analysis of Soil Samples

Laboratory analysis of the soil samples collected from the four soil borings were analyzed on site by GTEL's mobile laboratory on December 13, 1993. The samples were analyzed for BTEX, TPH-as-gasoline, and TRPH. Four soil samples were collected from the borings that were converted to monitoring wells MW-6, MW-7, and MW-8. One sample each were analyzed from MW-6 and MW-7, and two samples were analyzed from the boring for MW-8. The samples were analyzed for BTEX, TPH-as-gasoline, lead, and TPH-as-lubricating oil. Copies of the certified laboratory reports for the soil analysis are presented in Attachment 4 and the results are summarized in Table 2.

The analytical results of soil samples from borings B1 through B4 and wells MW-6 through MW-8 indicate that the hydrocarbons have not migrated substantially from the source area. Of the 15 soil samples that were analyzed from the soil and well borings, one sample had detectable concentrations of benzene, ethylbenzene, xylenes, and TRPH. Two samples had detectable concentrations of toluene and TPH-as-gasoline (Table 1). The samples from 15 feet below grade in borings B1 and B2 were the only soil samples that reported detectable concentrations of petroleum hydrocarbons. The remaining samples from the soil borings and well borings had nondetectable concentrations of the analytes tested. Sample B2-15 (from 15 feet below grade in boring B2) reported a benzene concentration of 0.14 mg/kg, a TPH-as-gasoline concentration of 190 mg/kg, and a TRPH concentration of 92 mg/kg. Sample B1-15 reported a nondetectable concentration of benzene, a TPH-as-gasoline concentration of 1.7 mg/kg, and a nondetectable concentration of TRPH (Table 1). The 6.5-foot sample from well MW-8 reported a total lead concentration of 40 mg/kg.

A summary table of the laboratory results for soil samples is presented in Table 1. A Total Petroleum Hydrocarbon-as-Gasoline Concentrations in Soil Map (Figure 3) was constructed using data collected during the subsurface investigations at the site. Figure 3 was constructed using the highest TPH-as-gasoline concentration from any soil sample from a given boring.

Laboratory Analysis of Groundwater Samples from Soil Borings

Groundwater samples were collected from the four soil borings and three new monitoring wells during this investigation. The analytical results of the groundwater sample analyses are summarized in Table 2.

The four grab groundwater samples collected from the soil borings on December 13, 1993, were analyzed on site by GTEL's mobile laboratory. The laboratory analysis reported that benzene concentrations were below the laboratory detection limit in the groundwater samples collected from borings B1 and B4. A benzene concentration of 0.4 micrograms per liter ($\mu\text{g/l}$) was reported in the groundwater sample collected from B2 and a benzene concentration of 0.6 $\mu\text{g/l}$ was reported in the groundwater sample from boring B3. The laboratory reported toluene concentrations of 0.5 $\mu\text{g/l}$ in the samples from boring B1 and at or below the detection limit in the sample from borings B2, B3, and B4. Ethylbenzene concentrations of 5 $\mu\text{g/l}$ and 7 $\mu\text{g/l}$ were reported in borings B2 and B3. Total xylene concentrations of 12 $\mu\text{g/l}$, 16 $\mu\text{g/l}$, and 0.8 $\mu\text{g/l}$ were reported for the samples from borings B2, B3, and B4, respectively. Concentrations of TPH-G were reported at 11 $\mu\text{g/l}$, 140 $\mu\text{g/l}$, 160 $\mu\text{g/l}$, and 29 $\mu\text{g/l}$ in the samples from borings B1 through B4, respectively. Concentrations of TRPH were below the laboratory detection limit in the groundwater samples collected from soil borings B2, B3, and B4.

The groundwater sample from well MW-6 had reported concentrations of BTEX, TPH-G, TRPH, and TPH-M below the method detection limits. The sample from MW-7 had reported BTEX concentrations of less than detection limits for benzene and toluene, 1 $\mu\text{g/l}$ for ethylbenzene, and 2 $\mu\text{g/l}$ for total xylenes. The TPH-G concentration in the sample from MW-7 was reported at 140 $\mu\text{g/l}$, and the TRPH and TPH-M concentrations were reported at less than detection limits. The analytical results for the sample from well MW-8 were reported at 0.4 $\mu\text{g/l}$, 4 $\mu\text{g/l}$, 0.4 $\mu\text{g/l}$, and 1 $\mu\text{g/l}$, respectively, for BTEX, 390 $\mu\text{g/l}$ for TPH-G, and less than detection limits for TRPH and TPH-M. The analytical results for total lead were reported at 70 $\mu\text{g/l}$, 40 $\mu\text{g/l}$, and 18 $\mu\text{g/l}$ for the samples from wells MW-6, MW-7, and MW-8, respectively.

Copies of the laboratory reports for the groundwater analysis are presented in Attachment 4. A TPH-as-Gasoline Concentrations in Groundwater Map (Figure 4) was constructed using data collected during this investigation and an earlier sampling event (for wells MW-1 through MW-5).

CONCLUSIONS AND RECOMMENDATIONS

Based on data collected from this and the previous phase of the subsurface investigation, the following conclusions are made for the site:

- Downgradient monitoring wells indicate that the extent of the separate-phase hydrocarbons is limited to the project site;
- Groundwater samples analyzed for TPH-as-gasoline from borings B2 and B3, which are located approximately 60 feet downgradient from the monitoring well that contains separate-phase hydrocarbons (MW-3), were reported at concentrations of 140 $\mu\text{g/l}$ and 160 $\mu\text{g/l}$, respectively. This suggests that concentrations of petroleum hydrocarbons in groundwater decrease substantially within a short lateral distance. Based on the available site data, it is reasonable to expect that the possibility of the off-site migration of the hydrocarbon plume extending a significant distance is unlikely; and
- The analytical results of soil samples collected during this investigation indicate that the adsorbed hydrocarbon plume has not substantially moved downgradient of the source.

Groundwater Technology believes that sufficient analytical data has been collected to develop a remedial action plan to address the impacted soil and groundwater at the site. Groundwater Technology proposes that a work plan be developed and submitted to the ACHCSA detailing a program to conduct remediation at the site.

If you have any questions or comments concerning this report, please call our Concord office at (510) 671-2387.

Sincerely,
Groundwater Technology, Inc.
Prepared/Submitted by


Robert Fehr
Staff Geologist


Michael J. Wray
Project Manager

- Attachment 1 Figures
- Attachment 2 Soil Boring Logs/Monitoring Well Construction Diagrams
- Attachment 3 Tables
- Attachment 4 Laboratory Reports

Groundwater Technology, Inc.
Reviewed/Approved by


Kevin M. Sullivan
Professional Engineer
No. C46253

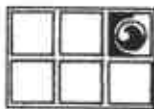
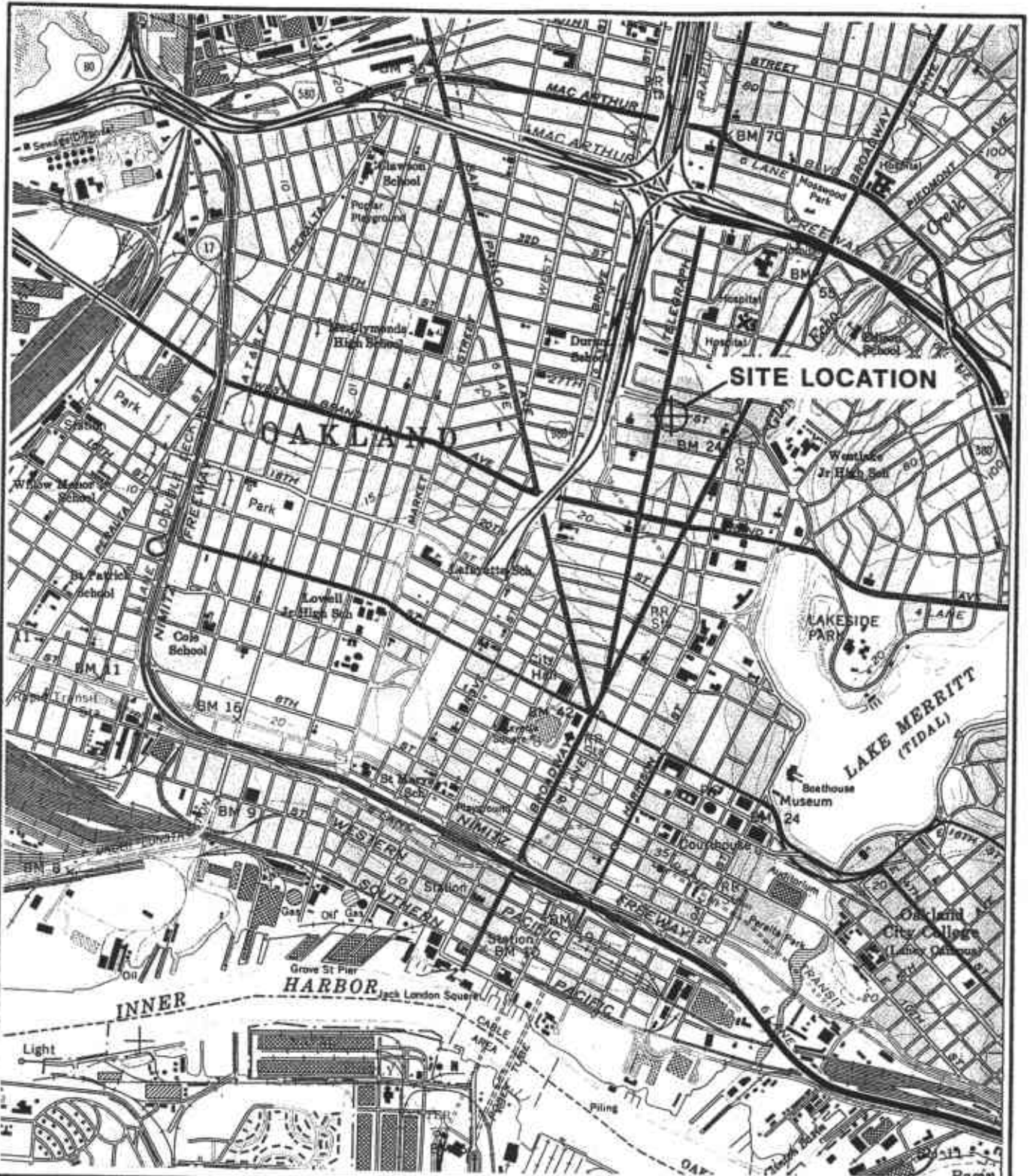
For:
Wendell W. Lantz
Vice President, General Manager
West Region



ATTACHMENT 1

Figures

- Figure 1 Site Location Map
- Figure 2 Site Plan
- Figure 3 TPH-as-Gasoline Concentrations in Soil Map
- Figure 4 TPH-as-Gasoline Concentrations in Groundwater Map



**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:

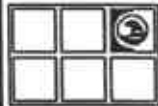
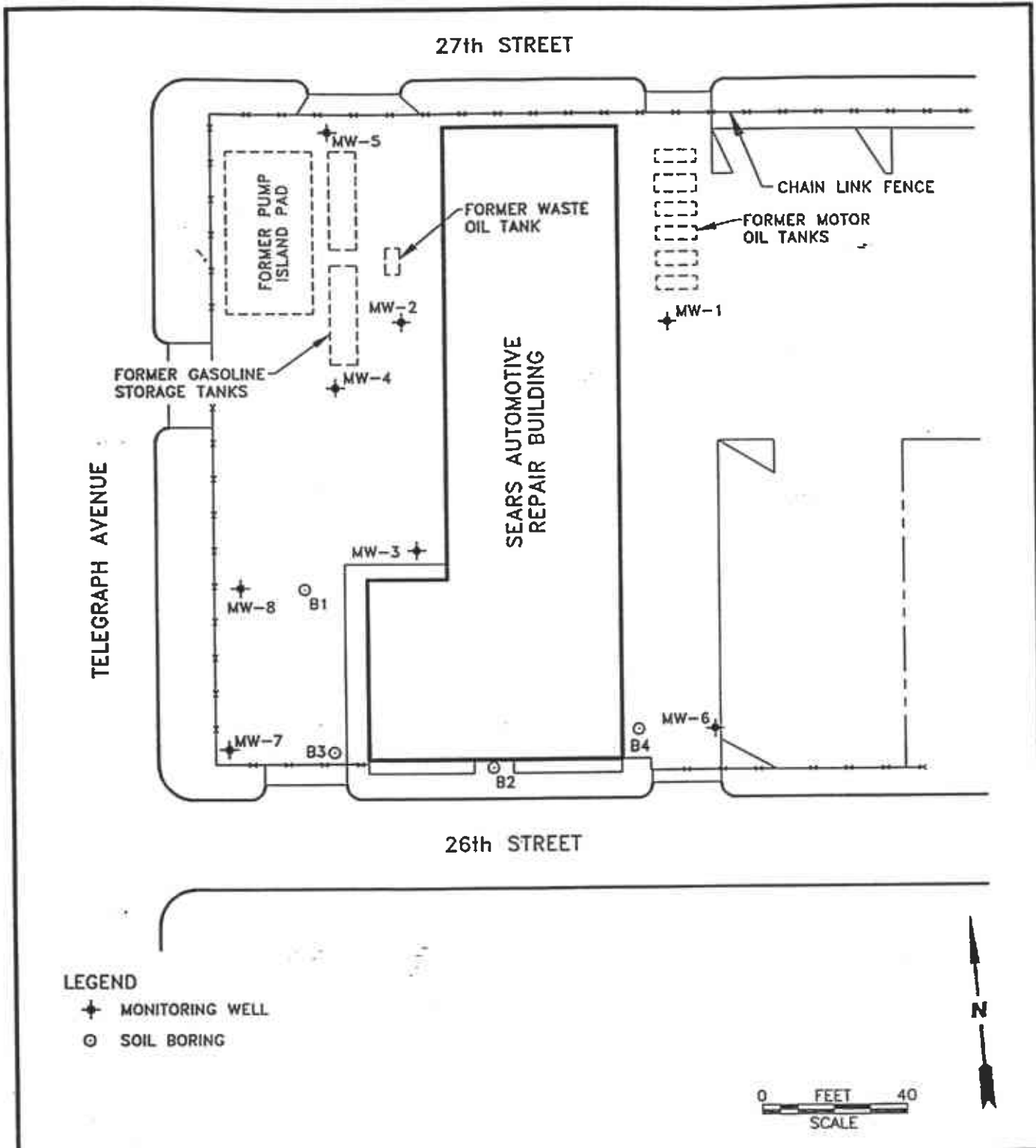
8/18/92

LOCATION:

2633 TELEGRAPH AVE.
OAKLAND, CALIFORNIA

FIGURE:

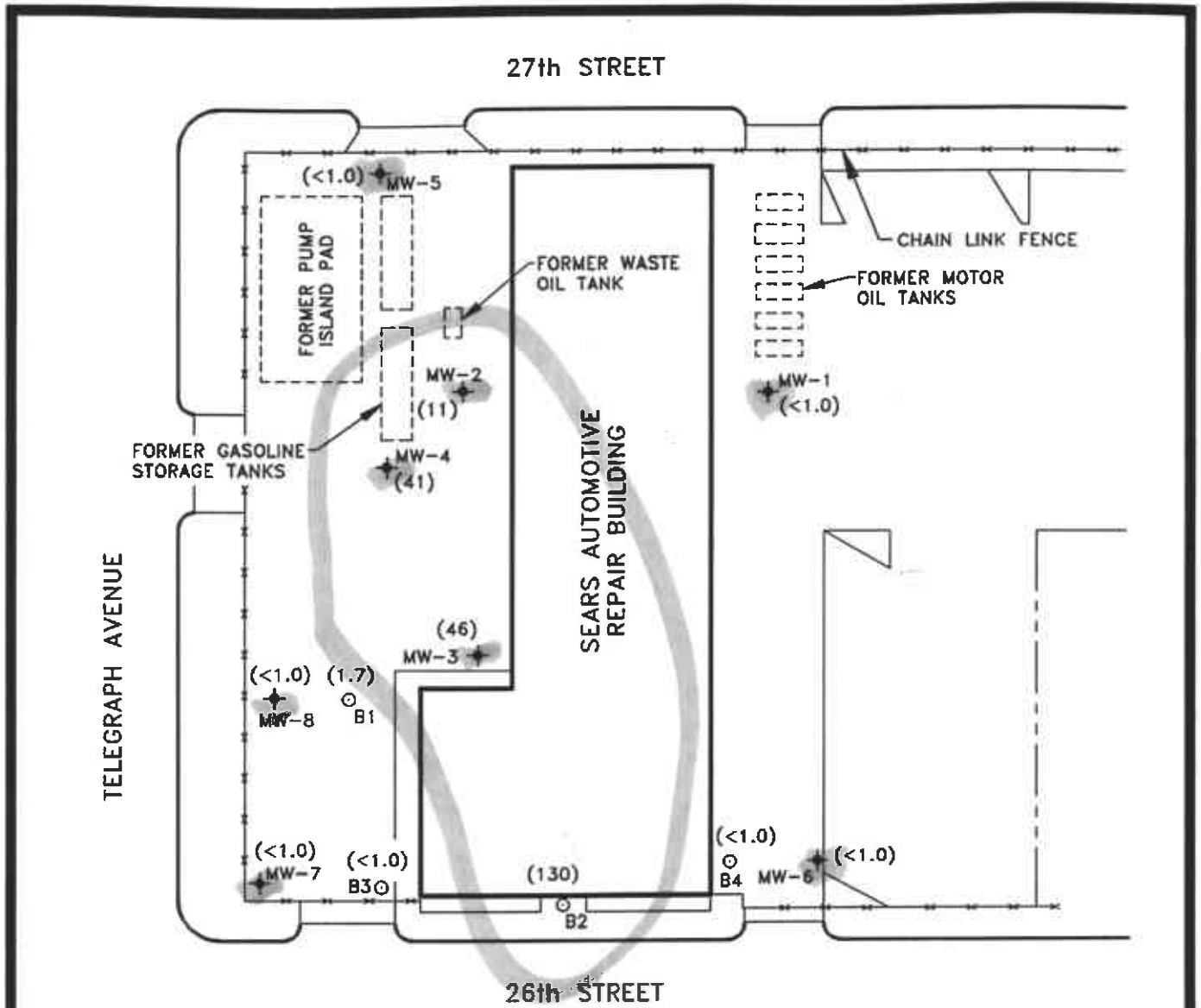
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GROUNDWATER TECHNOLOGY 4057 PORT CHICAGO HWY.
CONCORD, CA 94520
(510) 671-2387

SITE PLAN

CLIENT: SEARS, ROEBUCK AND CO. SITE No. 1058				LOCATION: 2633 TELEGRAPH AVE. OAKLAND, CALIFORNIA		REV. NO.: 0	DATE: 12/29/93
PM	PE/RG	DESIGNED EW	DETAILED ML	ACAD FILE: SPD93	PROJECT NO.: 020204554	FIGURE: 2	



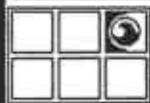
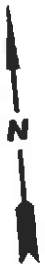
LEGEND

- ◆ MONITORING WELL
- SOIL BORING
- () TPH-AS-GASOLINE CONCENTRATION (ppm)
HIGHEST REPORTED CONCENTRATION IN
EACH BORING IS PRESENTED

SOIL SAMPLES FROM MW-1, MW-2, MW-3, MW-4, AND MW-5
COLLECTED ON 12/7-8/92

SOIL SAMPLES FROM SB-1, SB-2, SB-3, AND SB-4
COLLECTED ON 12/13/93

SOIL SAMPLES FROM MW-6, MW-7, AND MW-8
COLLECTED ON 12/14/93

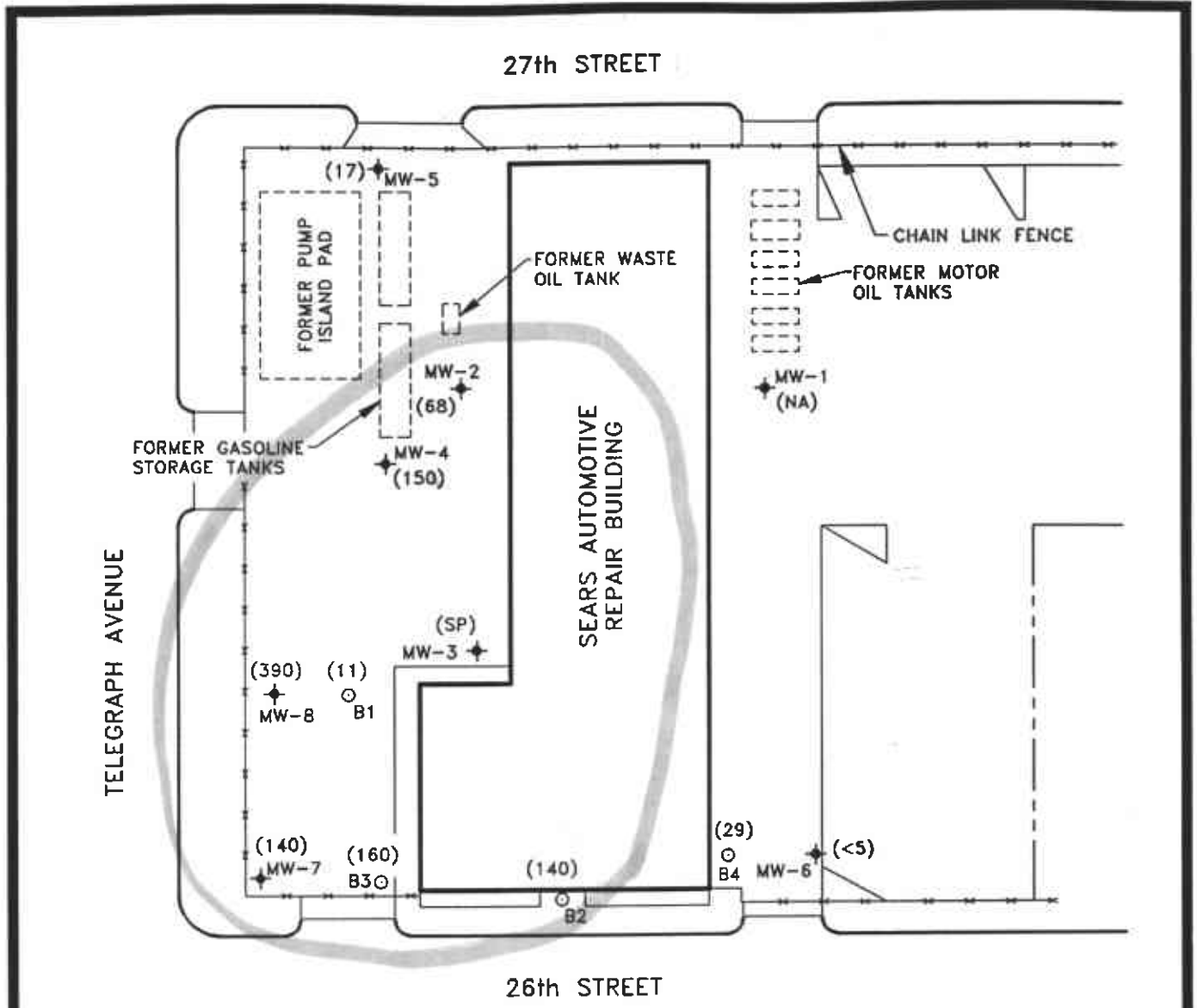


**GROUNDWATER
TECHNOLOGY**



**TOTAL PETROLEUM HYDROCARBONS
(TPH)-AS-GASOLINE
CONCENTRATIONS IN SOIL**

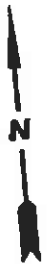
CLIENT: SEARS, ROEBUCK AND CO. SITE No. 1058			LOCATION: 2633 TELEGRAPH AVENUE OAKLAND, CALIFORNIA		REV. NO.: 1	DATE: 1/24/94
PM	PE/RG	DESIGNED BF	DETAILED ML	ACAD FILE: TPHINSL/SPD93	PROJECT NO.: 020204554	FIGURE: 3



LEGEND

- ◆ MONITORING WELL
- SOIL BORING
- () TPH-AS-GASOLINE CONCENTRATION (ppb)
- (SP) SEPARATE-PHASE HYDROCARBONS
- (NA) NOT ANALYZED

GROUNDWATER SAMPLES FROM MW-2, MW-4, AND MW-5
 COLLECTED ON 12/1/93
 GROUNDWATER SAMPLES FROM SOIL BORINGS
 COLLECTED ON 12/13/93
 GROUNDWATER SAMPLES FROM MW-6, MW-7, AND MW-8
 COLLECTED ON 12/27/93



				TOTAL PETROLEUM HYDROCARBONS (TPH)-AS-GASOLINE CONCENTRATIONS IN GROUNDWATER			
CLIENT: SEARS, ROEBUCK AND CO. SITE No. 1058			LOCATION: 2633 TELEGRAPH AVENUE OAKLAND, CALIFORNIA		REV. NO.: 1	DATE: 1/24/94	
PM	PE/RG	DESIGNED BF	DETAILED ML	ACAD FILE: TPHINGW/SPD93	PROJECT NO.: 020204554	FIGURE: 4	

ATTACHMENT 2

Soil Boring Logs/Well Construction Diagrams



Drilling Log

Soil Boring B1

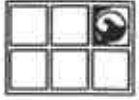
Project 2633 Telegraph Ave. Owner Sears
 Location Oakland, CA Proj. No. 020204554
 Surface Elev. 25.5 ft. Total Hole Depth 25 ft. Diameter 2 in.
 Top of Casing N/A ft. Water Level Initial 19.5 ft. Static N/A ft.
 Screen: Dia N/A in. Length N/A ft. Type/Size N/A in.
 Casing: Dia N/A in. Length N/A ft. Type N/A
 Fill Material N/A Rig/Core Custom/Hollow Sampler
 Drill Co. Precision Sampling Method Hydraulic Hammer
 Driller Mike Casey Log By S.C. Hurley Date 12-13-93 Permit # 93668
 Checked By David Kleesattel License No. RG# 5136

See Site Map
For Boring Location

COMMENTS:

The boring was drilled to about 25 feet below grade. The soil cuttings and decontamination water were placed and stored in 55-gallon drums until they could be properly analyzed for disposal. Groundwater was encountered at approximately 19.5 feet below grade.

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				GC	Asphalt underlain by Clayey GRAVEL.
2					
4	0	B1 (5)			Silty CLAY, gray/reddish brown mottling, about 60% clay, about 40% silt, (moist, no hydrocarbon odor).
6					
8					
10	0	B1 (10)			(Olive green, no hydrocarbon odor)
12					(12 to 13 feet below grade, hydrocarbon odor)
14	500	B1 (15)		CL	
16					
18					
20	1.0	B1 (20)			(Brown, very soft, no hydrocarbon odor) (Stiff)
22					Sandy CLAY, brown, about 45% clay, about 30% fine sand, about 25% silt (saturated, no hydrocarbon odor).
24		B1 (25)			
26					End of boring at 25 feet below grade.



Drilling Log

Soil Boring **B2**

Project 2633 Telegraph Ave. Owner Sears
 Location Oakland, CA Proj. No. 020204554
 Surface Elev. 25 ft. Total Hole Depth 25 ft. Diameter 2 in.
 Top of Casing N/A ft. Water Level Initial 17 ft. Static N/A ft.
 Screen: Dia N/A in. Length N/A ft. Type/Size N/A in.
 Casing: Dia N/A in. Length N/A ft. Type N/A
 Fill Material N/A Rig/Core Custom/Hollow Sampler
 Drill Co. Precision Sampling Method Hydraulic Hammer
 Driller Mike Casey Log By S.C. Hurley Date 12-13-93 Permit # 93668
 Checked By David Kleesattel License No. RG# 5136

See Site Map
For Boring Location

COMMENTS:

The boring was drilled to about 25 feet below grade. The soil cuttings and decontamination water were placed and stored in 55-gallon drums until they could be properly analyzed for disposal. Groundwater was encountered at approximately 17 feet below grade.

Depth (ft.)	PIID (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					Concrete underlain by Clayey GRAVEL.
2				GC	
4	0	B2 (5)		CL	Silty CLAY, brown, about 60% clay, about 40% silt, (moist, no hydrocarbon odor).
6					
8					
10	1.0	B2 (10)		CL	(13 to 17.5 below grade, olive green, no hydrocarbon odor)
12					
14	8,000	B2 (15)		SC	
16					
18					
20	2.0	B2 (20)		SC	Clayey SAND, brown, about 50% sand, about 30% clay, about 20% silt, (moist, no hydrocarbon odor).
22					
24	1.0	B2 (25)		GC	Clayey GRAVEL
26					End of boring at 25 feet below grade.



Drilling Log

Soil Boring **B3**

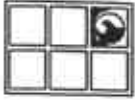
Project 2633 Telegraph Ave. Owner Sears
 Location Oakland, CA Proj. No. 020204554
 Surface Elev. 25.5 ft. Total Hole Depth 22 ft. Diameter 2 in.
 Top of Casing N/A ft. Water Level Initial 16.5 ft. Static N/A ft.
 Screen: Dia N/A in. Length N/A ft. Type/Size N/A in.
 Casing: Dia N/A in. Length N/A ft. Type N/A
 Fill Material N/A Rig/Core Custom/Hollow Sampler
 Drill Co. Precision Sampling Method Hydraulic Hammer
 Driller Mike Casey Log By S.C. Hurley Date 12-13-93 Permit # 93668
 Checked By David Kleesattel License No. RG# 5136

See Site Map
For Boring Location

COMMENTS:

The boring was drilled to about 22 feet below grade. The soil cuttings and decontamination water were placed and stored in 55-gallon drums until they could be properly analyzed for disposal. Groundwater was encountered at approximately 16.5 feet below grade.

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					Asphalt underlain by Clayey GRAVEL.
2				GC	
4	0	B3 (5)			Silty CLAY, reddish brown, about 60% clay, about 40% silt, (slightly moist, no hydrocarbon odor).
6					(moist)
8				CL	
10	0.5	B3 (10)			(Olive/brown mottling, no hydrocarbon odor)
12					
14					
16	120	B3 (15)		GC	Clayey GRAVEL, olive, about 40% gravel, about 30% clay, about 15% silt about 15% sand, (moist, no hydrocarbon odor) (saturated)
18					
20	280	B3 (20)		ML	Sandy Silt, brown, about 50% silt, about 30% sand, about 20% clay (saturated, no hydrocarbon odor).
22	6.0	B3 (25)			End of boring at 22 feet below grade.
24					
26					



Drilling Log

Soil Boring **B4**

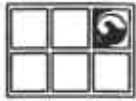
Project 2633 Telegraph Ave. Owner Sears
 Location Oakland, CA Proj. No. 020204554
 Surface Elev. 25 ft. Total Hole Depth 22 ft. Diameter 2 in.
 Top of Casing N/A ft. Water Level Initial 18 ft. Static N/A ft.
 Screen: Dia N/A in. Length N/A ft. Type/Size N/A in.
 Casing: Dia N/A in. Length N/A ft. Type N/A
 Fill Material N/A Rig/Core Custom/Hollow Sampler
 Drill Co. Precision Sampling Method Hydraulic Hammer
 Driller Mike Casey Log By S.C. Hurley Date 12-13-93 Permit # 93668
 Checked By David Kleesattel License No. RG# 5136

See Site Map
For Boring Location

COMMENTS:

The boring was drilled to about 22 feet below grade. The soil cuttings and decontamination water were placed and stored in 55-gallon drums until they could be properly analyzed for disposal. Groundwater was encountered at approximately 18 feet below grade.

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				GC	Asphalt underlain by Clayey GRAVEL.
2				GC	
4	1.0	B4 (5)		CL	Silty CLAY, brown, about 60% clay, about 40% silt, (moist, no hydrocarbon odor).
6				CL	
8				CL	
10	0.5	B4 (10)		CL	
12				GC	Clayey GRAVEL, brown, about 40% fine gravel, about 30% clay, about 15% sand; about 15% silt, (wet, no hydrocarbon odor).
14	0.5	B4 (15)		CL	Silty CLAY (Same as above)
16				CL	
18				SC	Clayey SAND/GRAVEL, brown, about 50% fine gravel/coarse sand, about 35% clay, about 15% silt, (saturated, no hydrocarbon odor).
20	6.0	B4 (20)		SM	Grading to Silty SAND, brown, about 40% medium sand, about 30% silt, about 15% clay, about 15% fine gravel, (wet, no hydrocarbon odor)
22				SM	End of boring at 22 feet below grade.
24					
26					

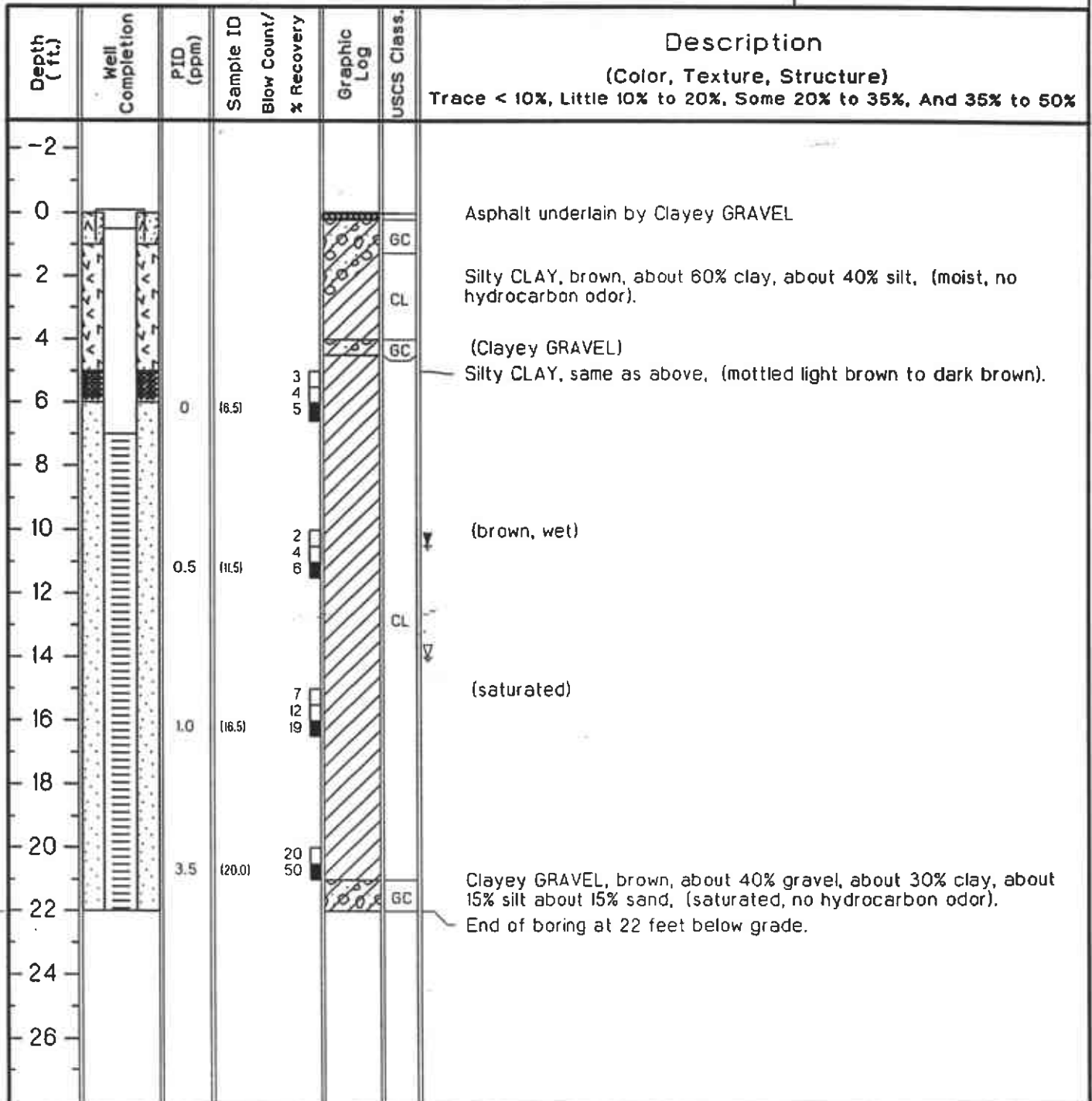


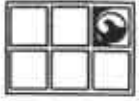
Project 2633 Telegraph Ave. Owner Sears
 Location Oakland, CA Proj. No. 020204554
 Surface Elev. 25 ft. Total Hole Depth 22 ft. Diameter 8 in.
 Top of Casing 24.32 ft. Water Level Initial 14 ft. Static 10.47 ft.
 Screen: Dia 2.0 in. Length 15 ft. Type/Size 0.020 in.
 Casing: Dia 2 in. Length 7 ft. Type PVC SCH 40
 Fill Material #3 sand Rig/Core B-53/Mod. Cal. Split Spoon
 Drill Co. Kvilhaug Drilling Method Hollow Stem Auger
 Driller Mike Crocker Log By S.C. Hurley Date 12-14-93 Permit # 93668
 Checked By David Kleesattel License No. RG# 5136

See Site Map
For Boring Location

COMMENTS:

The well was set at approximately 22 feet below grade. The soil cuttings and decontamination water were placed in 55-gallon drums until they could be properly analyzed for disposal. Groundwater was encountered at approximately 14 feet below grade.





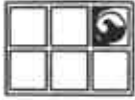
Project 2633 Telegraph Ave. Owner Sears
 Location Oakland, CA Proj. No. 020204554
 Surface Elev. 25.5 ft. Total Hole Depth 22 ft. Diameter 8 in.
 Top of Casing 24.88 ft. Water Level Initial 14 ft. Static 12.15 ft.
 Screen: Dia 2.0 in. Length 15 ft. Type/Size 0.020 in.
 Casing: Dia 2 in. Length 7 ft. Type PVC SCH 40
 Fill Material #3 sand Rig/Core B-53/Mod. Cal. Split Spoon
 Drill Co. Kvilhaug Drilling Method Hollow Stem Auger
 Driller Mike Crocker Log By S.C. Hurley Date 12-14-93 Permit # 93668
 Checked By David Kleesattel License No. RG# 5136

See Site Map
For Boring Location

COMMENTS:

The well was set at approximately 22 feet below grade. The soil cuttings and the decontamination water were placed in 55-gallon drums until they could be properly analyzed for disposal. Groundwater was encountered at approximately 14 feet below grade.

Depth (ft.)	Well Completion	PTD (ppm)	Sample ID	Blow Count/ X 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						GC	Asphalt underlain by Clayey GRAVEL
2							
4							
6		9.0	(6.5)	3 7 12		CL	Silty CLAY, brown, about 60% clay, about 40% silt, (moist, no hydrocarbon odor).
8							
10		9.0	(11.5)	3 4 7			(gray/brown mottling)
12							
14						GC	Clayey GRAVEL, brown, about 40% gravel, about 30% clay, about 15% silt about 15% sand, (saturated, no hydrocarbon odor).
16		100	(16.5)	3 4 5			Silty CLAY, same as above, (saturated).
18							
20						CL	
22		20	(21.5)	3 5 9			End of boring at 22 feet below grade.
24							
26							



Project 2633 Telegraph Ave. Owner Sears
 Location Oakland, CA Proj. No. 020204554
 Surface Elev. 26.12 ft. Total Hole Depth 22 ft. Diameter 8 in.
 Top of Casing 26.00 ft. Water Level Initial 13.5 ft. Static 11.13 ft.
 Screen: Dia 2.0 in. Length 15 ft. Type/Size 0.020 in.
 Casing: Dia 2 in. Length 7 ft. Type PVC SCH 40
 Fill Material #3 sand Rig/Core B-53/Mod. Cal. Split Spoon
 Drill Co. Kvilhaug Drilling Method Hollow Stem Auger
 Driller Mike Crocker Log By S.C. Hurley Date 12-14-93 Permit # 93668
 Checked By David Kleesattel License No. RG# 5136

See Site Map
For Boring Location

COMMENTS:

The well was set at approximately 22 feet below grade. The soil cuttings and the decontamination water were placed in 55-gallon drums until they could be properly analyzed for disposal. Groundwater was encountered at approximately 13.5 feet below grade.

Depth (ft.)	Well Completion	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description
							(Color, Texture, Structure)
-2							Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 60%
0							Asphalt underlain by Clayey GRAVEL
2						GC	
4							CLAY, brown, about 75% clay, about 25% silt, (moist, no hydrocarbon odor).
6		65	(6.5)	15 10 21			
8							
10		1.0	(11.5)	3 4 7			
12						CL	
14							(gray/brown mottling, saturated)
16		15	(16.5)	4 5 8			
18							
20							(brown)
22		3.0	(21.5)	3 4 5			End of boring at 22 feet below grade.
24							
26							

ATTACHMENT 3

Tables

Table 1 Analytical Results for Soil Samples

Table 2 Analytical Results of Groundwater Samples from Soil Borings

TABLE 1
ANALYTICAL RESULTS OF SOIL SAMPLES
Former Sears Automotive Center
2633 Telegraph Avenue, Oakland, California
(Results in mg/kg)

Sample ID	Date Sampled	Benzene	Toluene	Ethylbenzene	Xylenes	TPH-G	Lead	TPH-L	TRPH
B1 (10')	12/13/93	<0.005	<0.005	<0.005	<0.015	<1.0	NA	NA	<5
B1 (15')		<0.005	0.01	<0.005	<0.015	1.7	NA	NA	<5
B1 (20')		<0.005	<0.005	<0.005	<0.015	<1.0	NA	NA	<5
B2 (10')	12/13/93	<0.005	<0.005	<0.005	<0.015	<1.0	NA	NA	<5
B2 (15')		0.14	0.44	3.5	8.1	130	NA	NA	92
B2 (20')		<0.005	<0.005	<0.005	<0.015	<1.0	NA	NA	<5
B3 (10')	12/13/93	<0.005	<0.005	<0.005	<0.015	<1.0	NA	NA	<5
B3 (20')		<0.005	<0.005	<0.005	<0.015	<1.0	NA	NA	<5
B3 (22')		<0.005	<0.005	<0.005	<0.015	<1.0	NA	NA	<5
B4 (10')	12/13/93	<0.005	<0.005	<0.005	<0.015	<1.0	NA	NA	<5
B4 (20')		<0.005	<0.005	<0.005	<0.015	<1.0	NA	NA	<5
MW-6 (21.5')	12/14/93	<0.005	<0.005	<0.005	<0.015	<1	<5	<100	NA
MW-7 (16.5')	12/14/93	<0.005	<0.005	<0.005	<0.015	<1	<5	<100	NA
MW-8 (6.5')	12/14/93	<0.005	<0.005	<0.005	<0.015	<1	40	<100	NA
MW-8 (16.5')	12/14/93	<0.005	<0.005	<0.005	<0.015	<1	<5	<100	NA

mg/kg = milligrams per kilogram
TRPH = Total recoverable petroleum hydrocarbons
TPH-G = Total petroleum hydrocarbon - as - gasoline
TPH-L = Total petroleum hydrocarbon - as - lubricating oil
NA = Not analyzed

TABLE 2
ANALYTICAL RESULTS OF GROUNDWATER SAMPLES FROM SOIL BORINGS AND MONITORING WELLS
Former Sears Automotive Center
2633 Telegraph Avenue, Oakland, California
(Results in $\mu\text{g/L}$)

Sample ID	Date Sampled	Benzene	Toluene	Ethylbenzene	Xylenes	TPH-G	TRPH	TPH-M	Total Lead
B1	12/13/93	<0.3	0.5	<0.3	<0.5	11	NA	NA	NA
B2	12/13/93	0.4	<0.3	5	12	140	<1	NA	NA
B3	12/13/93	0.6	<0.3	7	16	160	<1	NA	NA
B4	12/13/93	<0.3	<0.3	<0.3	0.8	29	<1	NA	NA
MW-6	12/27/93	<0.3	<0.3	<0.3	<0.5	<10	<1	<100	70
MW-7	12/27/93	<0.3	<0.3	1	2	140	<1	<100	40
MW-8	12/27/93	0.4	4	0.4	1	390	<1	<100	18

$\mu\text{g/L}$ = Micrograms per liter
 TRPH = Total recoverable petroleum hydrocarbons
 TPH-G = Total Petroleum hydrocarbons-as-gasoline
 TPH-M = Total petroleum hydrocarbons-as-motor oil
 NA = Not analyzed

ATTACHMENT 4
Laboratory Reports



Northwest Region

4080-C Pike Lane
Concord, CA 94520
(510) 685-7852
(800) 544-3422 from inside California
(800) 423-7143 from outside California
(510) 825-0720 (FAX)

Client Number: 020204554
Project ID: 2633 Telegraph Ave.
Oakland
Work Order Number: C3-12-0247

December 22, 1993

Mike Wray

Groundwater Technology, Inc.
4057 Port Chicago Hwy.
Concord, CA 94520

Enclosed please find the analytical results for samples received by GTEL Environmental Laboratories, Inc. on 12/15/93, under chain of custody record 30836.

A formal Quality Assurance/Quality Control (QA/QC) program is maintained by GTEL, which is designed to meet or exceed the EPA requirements. Analytical work for this project met QA/QC criteria, unless otherwise stated in the footnotes.

GTEL is certified by the California State Department of Health Services, Laboratory certification number E1075, to perform analyses for drinking water, wastewater, and hazardous waste materials according to EPA protocols.

If you have any questions concerning this analysis or if we can be of further assistance, please call our Customer Service Representative.

Sincerely,

GTEL Environmental Laboratories, Inc.

Rashmi Shah
Laboratory Director

Client Number: 020204554
 Project ID: 2633 Telegraph Ave.
 Oakland
 Work Order Number: C3-12-0247

Table 1
ANALYTICAL RESULTS
Lead in Soil
EPA Method 7420^a

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986. Sample preparation by EPA Method 3050.
 NA = Not Applicable.

GTEL Sample Number		01	02	03	04
Client Identification		MW-6 (21.5)	MW-7 (16.5)	MW-8 (6.5)	MW-8 (16.5)
Date Sampled		12/14/93	12/14/93	12/14/93	12/14/93
Date Prepared		12/17/93	12/17/93	12/17/93	12/17/93
Date Analyzed		12/17/93	12/17/93	12/17/93	12/17/93
Analyte	Detection Limit, mg/Kg	Concentration, mg/Kg			
Lead, total	5	<5	<5	40	<5
Detection Limit Multiplier		1	1	1	1
Percent solids		92.1	78.1	85.8	77.7

GTEL Sample Number		121793 MET			
Client Identification		METHOD BLANK			
Date Sampled		-			
Date Prepared		12/17/93			
Date Analyzed		12/17/93			
Analyte	Detection Limit, mg/Kg	Concentration, mg/Kg			
Lead, total	5	<5			
Detection Limit Multiplier		1			
Percent solids		NA			

Client Number: 020204554
 Project ID: 2633 Telegraph Ave.
 Oakland
 Work Order Number: C3-12-0247

Table 1
ANALYTICAL RESULTS
Volatile Organics in Soil

EPA Methods 8020 and Modified 8015^a

GTEL Sample Number		01	02	03	04
Client Identification		MW-6 (21.5)	MW-7 (16.5)	MW-8 (6.5)	MW-8 (16.5)
Date Sampled		12/14/93	12/14/93	12/14/93	12/14/93
Date Extracted		12/17/93	12/17/93	12/17/93	12/17/93
Date Analyzed		12/17/93	12/17/93	12/17/93	12/17/93
Analyte	Detection Limit, mg/kg	Concentration, mg/kg			
Benzene	0.005	<0.005	<0.005	<0.005	<0.005
Toluene	0.005	<0.005	<0.005	<0.005	<0.005
Ethylbenzene	0.005	<0.005	<0.005	<0.005	<0.005
Xylene, total	0.015	<0.015	<0.015	<0.015	<0.015
TPH as Gasoline	1	<1	<1	<1	<1
Detection Limit Multiplier		1	1	1	1
Percent solids		92.1	78.1	85.8	77.7
BFB surrogate, % recovery		87.3	87.3	74.3	79.1

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986. Modification for TPH as gasoline as per California State Water Resources Board LUFT Manual procedures. Bromofluorobenzene surrogate recovery acceptability limits are 60-140%

Client Number: 020204554
 Project ID: 2633 Telegraph Ave.
 Oakland
 Work Order Number: C3-12-0247

Table 1 (continued)
ANALYTICAL RESULTS
 Volatile Organics in Soil

EPA Methods 8020 and Modified 8015^a

GTEL Sample Number		A121793			
Client Identification		METHOD BLANK			
Date Sampled		--			
Date Extracted		12/17/93			
Date Analyzed		12/17/93			
Analyte	Detection Limit, mg/kg	Concentration, mg/kg			
Benzene	0.005	<0.005			
Toluene	0.005	<0.005			
Ethylbenzene	0.005	<0.005			
Xylene, total	0.015	<0.015			
TPH as Gasoline	1	<1			
Detection Limit Multiplier		1			
Percent solids		NA			
BFB surrogate, % recovery		95.0			

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986. Modification for TPH as gasoline as per California State Water Resources Board LUFT Manual procedures. Bromofluorobenzene surrogate recovery acceptability limits are 60-140%. NA = Not Applicable.

Client Number: 020204554
 Project ID: 2633 Telegraph Ave.
 Oakland
 Work Order Number: C3-12-0247

ANALYTICAL RESULTS

TPH as Lubricating Oil in Soil

Method: GC-FID^a

GTEL Sample Number		01	02	03	04
Client Identification		MW-6 (21.5)	MW-7 (16.5)	MW-8 (6.5)	MW-8 (16.5)
Date Sampled		12/14/93	12/14/93	12/14/93	12/14/93
Date Extracted		12/16/93	12/16/93	12/16/93	12/16/93
Date Analyzed		12/19/93	12/19/93	12/21/93	12/19/93
Analyte	Detection Limit, mg/Kg	Concentration, mg/Kg			
TPH as lubricating oil	100	<100	<100	<100	<100
Detection Limit Multiplier		1	1	1	1
Percent Solids		92.1	78.1	85.8	77.7
OTP surrogate, % recovery		98.1	82.4	72.2	77.1

a. ND = not detected. o-Terphenyl surrogate recovery acceptability limits of 50-150% are derived from the 99% confidence interval of all samples during the previous quarter.

Client Number: 020204554
 Project ID: 2633 Telegraph Ave.
 Oakland
 Work Order Number: C3-12-0247

ANALYTICAL RESULTS

TPH as Lubricating Oil in Soil

Method: GC-FID^a

GTEL Sample Number		GCK 121993			
Client Identification		METHOD BLANK			
Date Sampled		--			
Date Extracted		12/16/93			
Date Analyzed		12/19/93			
Analyte	Detection Limit, mg/Kg	Concentration, mg/Kg			
TPH as lubricating oil	100	<100			
Detection Limit Multiplier		1			
Percent Solids		NA			
OTP surrogate, % recovery		138			

a. ND = not detected. o-Terphenyl surrogate recovery acceptability limits of 50-150% are derived from the 99% confidence interval of all samples during the previous quarter. NA = Not Applicable.



4080 Pike Lane
Concord, CA 94520
(510) 685-7852
(800) 544-3422 Inside CA
(800) 423-7143 Outside CA
(510) 825-0720 FAX

Client Number: 020204554
Project ID: 2633 Telegraph Ave.
Oakland
Work Order Number: C3-12-0253

December 16, 1993

Mike Wray
Groundwater Technology, Inc.
4057 Port Chicago Hwy.
Concord, CA 94520

Enclosed please find the analytical results for samples received by GTEL Environmental Laboratories, Inc. on 12/13/93, under chain of custody record 19839 and 19840.

A formal Quality Assurance/Quality Control (QA/QC) program is maintained by GTEL, which is designed to meet or exceed the EPA requirements. Analytical work for this project met QA/QC criteria, unless otherwise stated in the footnotes.

GTEL is certified by the California State Department of Health Services, Laboratory certification number E1075, to perform analyses for drinking water, wastewater, and hazardous waste materials according to EPA protocols.

If you have any questions concerning this analysis or if we can be of further assistance, please call our Customer Service Representative.

Sincerely,
GTEL Environmental Laboratories, Inc.

Rashmi Shah
Laboratory Director

Client Number: 020204554
 Project ID: 2633 Telegraph Ave.
 Oakland
 Work Order Number: C3-12-0253

Table 1
ANALYTICAL RESULTS
Volatile Organics in Soil

EPA Methods 8020 and Modified 8015^a

GTEL Sample Number		01	02	03	05
Client Identification		B1-10'	B1-15'	B1-20'	B3-10'
Date Sampled		12/13/93	12/13/93	12/13/93	12/13/93
Date Extracted		12/13/93	12/13/93	12/13/93	12/13/93
Date Analyzed		12/13/93	12/13/93	12/13/93	12/13/93
Analyte	Detection Limit, mg/kg	Concentration, mg/kg			
Benzene	0.005	<0.005	<0.005	<0.005	<0.005
Toluene	0.005	<0.005	0.01	<0.005	<0.005
Ethylbenzene	0.005	<0.005	<0.005	<0.005	<0.005
Xylene, total	0.015	<0.015	<0.015	<0.015	<0.015
TPH as Gasoline	1	<1.0	1.7	<1.0	<1.0
Detection Limit Multiplier		1	1	1	1
BFB surrogate, % recovery		85.2	85.0	77.1	80.5

- a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986. Modification for TPH as gasoline as per California State Water Resources Board LUFT Manual procedures. Bromofluorobenzene surrogate recovery acceptability limits are 60-140%

Client Number: 020204554
 Project ID: 2633 Telegraph Ave.
 Oakland
 Work Order Number: C3-12-0253

Table 1 (continued)
ANALYTICAL RESULTS
Volatile Organics in Soil

EPA Methods 8020 and Modified 8015^a

GTEL Sample Number		06	07	09	10
Client Identification		B3-20'	B3-22'	B4-10'	B4-20'
Date Sampled		12/13/93	12/13/93	12/13/93	12/13/93
Date Extracted		12/13/93	12/13/93	12/13/93	12/13/93
Date Analyzed		12/13/93	12/14/93	12/13/93	12/13/93
Analyte	Detection Limit, mg/kg	Concentration, mg/kg			
Benzene	0.005	<0.005	<0.005	<0.005	<0.005
Toluene	0.005	<0.005	<0.005	<0.005	<0.005
Ethylbenzene	0.005	<0.005	<0.005	<0.005	<0.005
Xylene, total	0.015	<0.015	<0.015	<0.015	<0.015
TPH as Gasoline	1	<1.0	<1.0	<1.0	<1.0
Detection Limit Multiplier		1	1	1	1
BFB surrogate, % recovery		64.8	75.5	70.5	54.0

- a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986. Modification for TPH as gasoline as per California State Water Resources Board LUFT Manual procedures. Bromofluorobenzene surrogate recovery acceptability limits are 60-140%.

Client Number: 020204554
 Project ID: 2633 Telegraph Ave.
 Oakland
 Work Order Number: C3-12-0253

Table 1 (continued)
ANALYTICAL RESULTS
 Volatile Organics in Soil

EPA Methods 8020 and Modified 8015a

GTEL Sample Number		11	12	13	121393
Client Identification		B2-10'	B2-15'	B2-20'	METHOD BLANK
Date Sampled		12/13/93	12/13/93	12/13/93	--
Date Extracted		12/13/93	12/13/93	12/13/93	12/13/93
Date Analyzed		12/13/93	12/14/93	12/13/93	12/14/93
Analyte	Detection Limit, mg/kg	Concentration, mg/kg			
Benzene	0.005	<0.005	0.14	<0.005	<0.005
Toluene	0.005	<0.005	0.44	<0.005	<0.005
Ethylbenzene	0.005	<0.005	3.5	<0.005	<0.005
Xylene, total	0.015	<0.015	8.1	<0.015	<0.015
TPH as Gasoline	1	<1.0	130	<1.0	<1.0
Detection Limit Multiplier		1	100	1	1
BFB surrogate, % recovery		71.3	108	83.4	93.1

- a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986. Modification for TPH as gasoline as per California State Water Resources Board LUFT Manual procedures. Bromofluorobenzene surrogate recovery acceptability limits are 60-140%.

Client Number: 020204554
 Project ID: 2633 Telegraph Ave.
 Oakland
 Work Order Number: C3-12-0253

Table 1

ANALYTICAL RESULTS

**Aromatic Volatile Organics and
 Total Petroleum Hydrocarbons as Gasoline in Water**

EPA Methods 5030, 8020, and Modified 8015^a

GTEL Sample Number		04	15	8	14
Client Identification		B1	B2	B3	B4
Date Sampled		12/13/93	12/13/93	12/13/93	12/13/93
Date Analyzed		12/13/93	12/14/93	12/13/93	12/13/93
Analyte	Detection Limit, ug/L	Concentration, ug/L			
Benzene	0.3	<0.3	0.4	0.6	<0.3
Toluene	0.3	0.5	<0.3	<0.3	<0.3
Ethylbenzene	0.3	<0.3	5	7	<0.3
Xylene, total	0.5	<0.5	12	16	0.8
TPH as Gasoline	10	11	140	160	29
Detection Limit Multiplier		1	2	1	1
BFB surrogate, % recovery		105	68.5	101	96.4

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986. Modification for TPH as gasoline as per California State Water Resources Control Board LUFT Manual protocols, May 1988 revision. Bromofluorobenzene surrogate recovery acceptability limits are 70-130%.

Client Number: 020204554
 Project ID: 2633 Telegraph Ave.
 Oakland
 Work Order Number: C3-12-0253

Table 1(continued)

ANALYTICAL RESULTS

**Aromatic Volatile Organics and
 Total Petroleum Hydrocarbons as Gasoline in Water**

EPA Methods 5030, 8020, and Modified 8015^a

GTEL Sample Number		121393			
Client Identification		METHOD BLANK			
Date Sampled		--			
Date Analyzed		12/13/93			
Analyte	Detection Limit, ug/L	Concentration, ug/L			
Benzene	0.3	<0.3			
Toluene	0.3	<0.3			
Ethylbenzene	0.3	<0.3			
Xylene, total	0.5	<0.5			
TPH as Gasoline	10	<10			
Detection Limit Multiplier		1			
BFB surrogate, % recovery		89.8			

- a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986. Modification for TPH as gasoline as per California State Water Resources Control Board LUFT Manual protocols, May 1988 revision. Bromofluorobenzene surrogate recovery acceptability limits are 70-130%.

Client Number: 020204554
 Project ID: 2633 Telegraph Ave.
 Oakland
 Work Order Number: C3-12-0253

Table 1

ANALYTICAL RESULTS

**Total Petroleum Hydrocarbons in Soil
 by Infrared Spectrometry¹**

EPA 3550 (Mod.)/EPA 418.1 (SM 5520 FC)²

GTEL Sample Number		01	02	03	05
Client Identification		B1-10'	B1-15'	B1-20'	B3-10'
Date Sampled		12/13/93	12/13/93	12/13/93	12/13/93
Date Prepared		12/13/93	12/13/93	12/13/93	12/13/93
Date Analyzed		12/13/93	12/13/93	12/13/93	12/13/93
Analyte	Detection Limit, mg/Kg	Concentration, mg/Kg			
Total Petroleum Hydrocarbons	5	<5	<5	<5	<5
Detection Limit Multiplier		1	1	1	1

1. The sample is sonication extracted using a modification of EPA 3550. The extract is analyzed, as in EPA 418.1 (SM 5520 CF), to yield results reported as Total Petroleum Hydrocarbons. Results are reported on a wet weight basis.
2. Standard Methods for the Examination of Water and Wastewater, 17th ed., American Public Health Association, 1989.

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Table 1 (Continued)

ANALYTICAL RESULTS

**Total Petroleum Hydrocarbons in Soil
 by Infrared Spectrometry¹**

EPA 3550 (Mod.)/EPA 418.1 (SM 5520 FC)²

GTEL Sample Number		06	07	09	10
Client Identification		B3-20'	B3-22'	B4-10'	B4-20'
Date Sampled		12/13/93	12/13/93	12/13/93	12/13/93
Date Prepared		12/13/93	12/13/93	12/13/93	12/13/93
Date Analyzed		12/13/93	12/13/93	12/13/93	12/13/93
Analyte	Detection Limit, mg/Kg	Concentration, mg/Kg			
Total Petroleum Hydrocarbons	5	<5	<5	<5	<5
Detection Limit Multiplier		1	1	1	1

1. The sample is sonication extracted using a modification of EPA 3550. The extract is analyzed, as in EPA 418.1 (SM 5520 CF), to yield results reported as Total Petroleum Hydrocarbons. Results are reported on a wet weight basis.
2. Standard Methods for the Examination of Water and Wastewater, 17th ed., American Public Health Association, 1989.

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Table 1 (Continued)

ANALYTICAL RESULTS

**Total Petroleum Hydrocarbons in Soil
 by Infrared Spectrometry¹**

EPA 3550 (Mod.)/EPA 418.1 (SM 5520 FC)²

GTEL Sample Number		11	12	13	121393
Client Identification		B2-10'	B2-15'	B2-20'	METHOD BLANK
Date Sampled		12/13/93	12/13/93	12/13/93	--
Date Prepared		12/13/93	12/13/93	12/13/93	12/13/93
Date Analyzed		12/13/93	12/13/93	12/13/93	12/13/93
Analyte	Detection Limit, mg/Kg	Concentration, mg/Kg			
Total Petroleum Hydrocarbons	5	<5	92	<5	<5
Detection Limit Multiplier		1	1	1	1

1. The sample is sonication extracted using a modification of EPA 3550. The extract is analyzed, as in EPA 418.1 (SM 5520 CF), to yield results reported as Total Petroleum Hydrocarbons. Results are reported on a wet weight basis.
2. Standard Methods for the Examination of Water and Wastewater, 17th ed., American Public Health Association, 1989.

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Table 1

ANALYTICAL RESULTS

**Total Petroleum Hydrocarbons in Water
 by Infrared Spectrometry**

EPA Method 418.1¹(SM 5520 FC²)

1. Methods for Chemical Analysis of Water and Wastes, EPA 600/4-79-202, Revised March 1983, U.S. Environmental Protection Agency.
2. Standard Methods for the Examination of Water and Wastewater, 17th ed., 1989, American Public Health Association.

GTEL Sample Number		15	8	14	121393
Client Identification		B2	B3	B4	METHOD BLANK
Date Sampled		12/13/93	12/13/93	12/13/93	12/13/93
Date Prepared		12/13/93	12/13/93	12/13/93	12/13/93
Date Analyzed		12/13/93	12/13/93	12/13/93	12/13/93
Analyte	Detection Limit, mg/L	Concentration, mg/L			
Total Petroleum Hydrocarbons	1	<1	<1	<1	<1
Detection Limit Multiplier		1	1	1	1

