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INTERIM CORRECTIVE ACTION & PRELIMINARY
SOIL & GROUNDWATER INVESTIGATION
FOR TONY'S EXPRESS SERVICE STATION
LOCATED AT 3609 EAST 14TH STREET
OAKLAND, CALIFORNIA
NOVEMBER 8, 1993

PREPARED FOR:
MR. ABOLGHASSEM RAZI
TONY'S EXPRESS AUTO SERVICES
3609 EAST 14TH STREET
OAKLAND, CALIFORNIA 94601

BY:
SOIL TECH ENGINEERING, INC.
298 BROKAW ROAD
SANTA CLARA, CALIFORNIA 95050

SOIL TECH ENGINEERING, INC.

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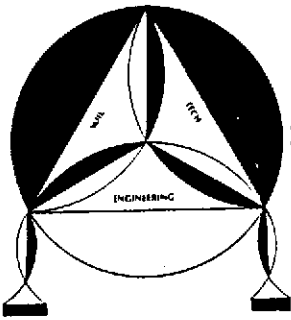
ALAMEDA COUNTY-ZONE 7 WATER AGENCY
DRILLING PERMIT APPLICATION

WELL COMPLETION REPORT

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STE'S REQUEST LETTER TO REDWOOD LANDFILL FOR
DISPOSAL OF TREATED PETROLEUM IMPACTED SOIL

SOIL TECH ENGINEERING, INC.



SOIL TECH ENGINEERING

Soil, Foundation and Geological Engineers

298 BROKAW ROAD, SANTA CLARA, CA 95050 ■ (408) 496-0265 OR (408) 496-0266

November 8, 1993

File No. 7-92-514-SA

Mr. Abolghassem Razi
Tony's Express Auto Services
3609 East 14th Street
Oakland, California 94601

SUBJECT: INTERIM CORRECTIVE ACTION AND PRELIMINARY SOIL AND
GROUNDWATER INVESTIGATION FOR TONY'S EXPRESS STATION
Located at 3609 East 14th Street, in
Oakland, California

Dear Mr. Razi:

This report summarizes the results of soil and groundwater investigation and interim corrective action for the subject property located at 3609 East 14th Street, in Oakland, California. Our investigation was conducted in the vicinity of the former underground storage tanks and piping areas. Our investigation and interim corrective action included limited excavation of contaminated soil for former tank and piping areas, backfilling of excavation, drilling 13 exploratory borings, groundwater monitoring wells, soil and water sampling, chemical analyses, installation of vapor probes, data review and report. Our investigation revealed elevated levels of TPHg contamination in the soil and groundwater.

File No. 7-92-514-SA

We recommend a quarterly monitoring and sampling of the on-site wells for one year, once approved by local regulatory agency.

Upon your authorization and local regulatory agencies approval, we will initiate the proposed monitoring and sampling.

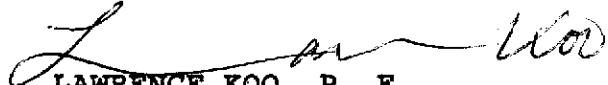
If you have any questions or require additional information, please feel free to contact our office at your convenience.

Sincerely,

SOIL TECH ENGINEERING, INC.



NOORI AMELI
PROJECT ENGINEER



LAWRENCE KOO, P. E.
C. E. #34928



FRANK HAMEDI-FARD
GENERAL MANAGER

**INTERIM CORRECTIVE ACTION AND PRELIMINARY
SOIL AND GROUNDWATER INVESTIGATION
FOR TONY'S EXPRESS SERVICE STATION
LOCATED AT 3609 EAST 14TH STREET
OAKLAND, CALIFORNIA
NOVEMBER 8, 1993**

INTRODUCTION:

Soil Tech Engineering, Inc. (STE) was retained by Mr. Abolghassem Razi, Owner of Tony's Express Service Station, to conduct a preliminary subsurface environmental investigation in conjunction with the removal of three fuel gasoline tanks located at 3609 East 14th Street, in Oakland, California.

The purpose of the investigation was to supervise soil excavation and to collect and analyze soil samples for the presence of hydrocarbon contamination in the soil in the vicinity of the fuel tank system. This report describes the work associated with soil excavation, treatment, disposal, drilling 13 shallow soil borings, soil sampling, installation of three monitoring wells, laboratory analyses of selected soil samples and water samples from the newly installed monitoring wells, and installation of vapor extraction for further remediation.

GENERAL SITE DESCRIPTION:

The site is located at the intersection of 36th Avenue and East 14th Street, in Oakland, California (Figure 1). The site is

relatively flat, and the properties surrounding are preliminary commercial businesses and residential housing. The site is currently used as a gasoline service station, and is in the process of installing new tanks and associated piping. Figure 2 shows the locations of the building and fuel storage tanks.

PREVIOUS SUBSURFACE INVESTIGATION:

In July 1993, the three fuel tanks and a waste oil tank were removed by Alpha Geo Services. STE was retained to conduct soil sampling from the tanks excavation and the old piping associated with the fuel tanks. All soil sampling was conducted under the supervision of Alameda County Health Department staff Mr. Barney Chan.

The soil samples from the tank areas were taken at approximately 12 feet depth, waste oil soil samples were taken at approximately 7 feet, and the piping areas ranged from 2 to 5 feet below grade, respectively. The soil analyses from the tank excavation detected low to moderate levels of Total Petroleum Hydrocarbons as gasoline (TPHg) and ranged from 2.1 to a maximum of 640 milligrams per kilogram (mg/Kg). Soil samples from the old piping areas showed elevated TPHg ranging from 75 to a maximum of 4,100 mg/Kg. No hydrocarbons nor Volatile Organic Compounds (VOC's) were detected in the waste oil tank excavation area. The details of the soil sampling event are described in STE's report entitled "Soil Sampling Below Removed Underground Tanks at Tony's Express Station ...", dated July 27, 1993.

Due to the elevated TPHg, Alameda County Health Department requested a work plan for subsurface investigation on the letter, dated August 6, 1993. Therefore, STE prepared a preliminary site assessment work plan, dated August 15, 1993. The work plan was submitted to the Alameda County Health Department for approval. The county did approve the plan in a letter, dated August 18, 1993.

The objective of the proposed work plan was to assess the extent of dissolved petroleum hydrocarbons beneath the site and to determine whether or not the shallow groundwater beneath the site has been impacted. The scope of work consisted of the following tasks:

- A. Prepare a site safety plan.
- B. Obtain the necessary drilling permit.
- C. Drill 7 to 10 exploratory borings around the piping and tank area in accordance with State and Local Regulatory Agency requirements.
- D. Install three groundwater monitoring wells.
- E. Develop, sample and survey monitoring wells.
- F. Analyze the soil and groundwater for Total Petroleum Hydrocarbons as gasoline (TPHg), Benzene, Toluene, Ethylbenzene, Total Xylenes (BTEX).

- G. Conduct on-site a remediation of stockpiled soil for proper disposal.
- H. Analyze the field data and laboratory analytical results.
- I. Prepare a technical report.

FIELD ACTIVITIES:

- 1) Limited excavation of contaminated soil.
- 2) Treatment of contaminated stockpile soil and disposal.
- 3) Drilling exploratory borings and soil sampling.
- 4) Installation of monitoring wells, in conjunction with soil and groundwater sampling.
- 5) Installation of vapor extraction system.

1) LIMITED EXCAVATION OF CONTAMINATED SOIL:

Initially the existing fuel tank area was over excavated during installation of the new underground fuel tanks. Since the excavation was minimum^{al} and additional subsurface investigation was scheduled immediately after the installation of the new fuel tanks, no soil samples were taken from the over excavated area.

In addition, soil was excavated to the depth of 4 feet in the vicinity of old piping adjacent to the island area. Three soil samples were collected from these location at the depth of 4 feet below surface and labeled as ISL-1-4, ISL-2-4 and ISL-3-4.

2) TREATMENT OF CONTAMINATED STOCKPILED SOIL AND DISPOSAL:

The excavated contaminated soil from tanks and piping areas were stockpiled on a plastic liner at north and northeast of the property (Figure 2). To characterize the stockpiled soil, prior to on-site bio-treatment, Soil Tech Engineering, Inc. (STE), collected 20 discrete samples. The soil samples were taken randomly from 1 to 4 feet depth below the stockpiled soil. Soil samples were collected by driving 2 x 6 inch brass sleeves into the soil using a stainless steel hand-driven sampler with a 20-pound slip hammer. The undisturbed soil samples were retained in the brass liners. The ends of the sleeves were covered with foil, sealed with plastic caps and tape, then immediately placed in a cold ice chest for transport to a state-certified laboratory for analysis following proper chain-of-custody procedures. Prior to sampling, all sampling tools and liners were triple washed in TSP and rinsed with deionized water to prevent cross-contamination during sampling. The location of the soil samples shown in Figure 3, reported on August 9, 1993. The samples were composited in the laboratory into 5 composite samples, which were analyzed for Total Petroleum Hydrocarbons as gasoline (TPHg), Benzene, Toluene, Ethylbenzene and Total Xylenes (BTEX). A summary of the soil analytical results prior to bio-treatment is presented in report, dated July 27, 1993.

500, 1.3, 2.9, 10 & 81 ppm g in composite

The analytical results of soil samples taken from the stockpile indicated low to moderate level of TPHg.

~~There were no other samples taken from the stockpile.~~
The stockpiled soil with high contamination of TPHg (A) was mixed thoroughly and spread. A dilute mixture of nutrient elements (Nitrogen and Phosphorous) were sprayed to the soil surface on a weekly basis. In order to maintain soil moisture and to stimulate bacterial growth. The pile was covered with plastic except during mixing, fertilizer application and sampling.

On August 6, 1993, the stockpiled soil were sampled to determine the level of the contamination. The verification samples and analyses showed that the treatment was successful in reducing the elevated level of hydrocarbons. ~~There were no other samples taken from the stockpile.~~

A copy of stockpiled soil characterization, laboratory testing during treatment, and request for disposal of contaminated soil are attached in Appendix "G". *Soils disposed not reused.*

3) DRILLING EXPLORATORY BORINGS AND SOIL SAMPLING:

On August 19, 20 and 25, 1993, STE drilled thirteen (13) shallow exploratory borings (B-1 to B-13) at the site using a hollow stem auger in order to determine the extent dissolved hydrocarbons in the subsurface soil. The locations of the soil borings are shown in Figure 3. Soil encountered in the borings were predominately silty clay. Groundwater was encountered at approximately 16 to 19 feet below grade. ~~The boring logs which describe the soil encountered are included in Appendix "C".~~

Three soil samples were collected from each borings at 5 feet interval during field investigation. Soil sampling were conducted in accordance with the state and local regulatory agencies requirements and our Standard Operating Procedures (SOP) (Appendix "D").

4) INSTALLATION OF MONITORING WELLS IN CONJUNCTION WITH THE SOIL & GROUNDWATER SAMPLING:

Three of the thirteen exploratory borings (B-2, B-7 and B-11) were converted into three monitoring wells (STMW-1, STMW-2 and STMW-3). Well installation permit was obtained from the Alameda County-Zone 7 Water Agency prior to drilling. A copy of the well permit is included in the report (Appendix "F").

The three wells were installed in accordance with the existing requirements of the Zone 7 Water Agency. The detail of the well construction schematic are attached in Appendix "C". The location of the wells are shown in Figure 3.

The wells were developed on October 1, 1993. The purging and water sampling was conducted on October 4, 1993. Petroleum odor were detected in wells STMW-1 and STMW-3 only. In addition, a minor sheen was detected in the purged water in wells STMW-1 and STMW-3. All development, purging and sampling were conducted in accordance with State and Local Agency requirements. On October 11, 1993, the wells were surveyed, and water elevations were measured to determine the direction of the groundwater beneath the site.

LABORATORY SOIL ANALYSIS:

Selected soil samples from each borings were analyzed for TPHg and BTEX using EPA Methods 5030, 8015 and 8020. The chemical results are summarized in Table 1. The analytical reports and STE's chain-of-custody documents are included in Appendix "E".

As shown in Table 1, elevated levels of TPHg were detected in soil borings B-1-10, B-3-15, B-6-14 and B-11-14 at approximate depths ranging from 10 to 15 feet below grade. The TPHg levels in these borings ranged from 500 mg/Kg to a maximum of 1,800 mg/Kg. Low levels of BTEX were detected in most of soil samples.

LABORATORY WATER ANALYSES:

The water samples were analyzed for TPHg and BTEX, and the chemical results are summarized in Table 3. Elevated levels of TPHg were detected in wells STMW-1 and STMW-3, ranging from 320 parts per million (ppm) to 30,000 ppm. All three wells detected moderate levels of BTEX.

5) INSTALLATION OF VAPOR EXTRACTION SYSTEM:

Due to the high levels of TPHg contamination, Alameda County Health Department (ACHD) requested that the contaminated soil must be remediated. The request was made in a letter, dated August 18, 1993. The first alternative was removal of contaminated soil by excavation. Due to limited space for excavation, on-site soil

treatment, potential damage to the building and island canopy foundation, the high residual dissolved hydrocarbons contamination in the soil was not excavated in the vicinity of the borings B-1, B-3, B-6 and B-11.

The other feasible method for soil remediation was vapor extraction. Hence, to minimize further loss to business due to the shut down for remediation work, STE installed four 6-inches vapor extraction probes in the boring holes B-3, B-6, B-8 and B-11. In addition, two horizontal perforated pipes were installed at 4 feet depth in the island area for collecting soil vapor from these areas. All the vapor and collector probes were piped and brought to the christy box in front of shop for future hook-up for soil vapor extraction pilot test to determine the feasibility of full scale soil vapor extraction system.

Prior to installation of soil vapor extraction probes in the vicinity of the service island, three soil samples were taken from the trenches at approximately four feet below grade. The results are tabulated in Table 2. Elevated levels of TPH as gasoline were detected in two of the three samples.

The location of the extraction probes including the lateral probes are shown in Figure 4.

GROUNDWATER FLOW DIRECTION:

On October 11, 1993, the water levels for the three on-site monitoring wells were measured using a fixed datum base line. Table 4 tabulated the water levels and observation made during the survey.

Based on October 4 and 11, 1993, measurements, the estimated groundwater flow were to the southeasterly direction. The groundwater flow direction is shown in Figure 5.

SUMMARY:

Based on the preliminary assessment of the site, and the analytical results the shallow groundwater has been impacted due to past inadvertent spillage or leaks. Residual elevated dissolved hydrocarbons are present in the vicinity of borings B-3, B-6 and B-11.

RECOMMENDATIONS:

STE recommend the followings as required by the Alameda County Health Department (ACHD) and the Regional Water Quality Control Board (RWQCB):

- Further investigation is necessary to define the extent of contamination by drilling 4 to 6 exploration boring (one up-gradient and three to five down-gradient), and converting two to three borings into monitoring wells.

- Initiate the quarterly monitoring and sampling program after approved of proposed additional investigation.
- Conduct a pilot study of soil-vapor extraction for 12 hours to assess the feasibility of the full scale of treatment.
- Submit this report to the Alameda County Health Department and the Regional Water Quality Control Board.

LIMITATIONS AND UNIFORMITY OF CONDITIONS:

The monitoring well installation services or soil and water sampling for pollution on this project was a direct request by Soil Tech Engineering, Inc.'s client. These installations were performed to meet the existing requirements for near-surface groundwater monitoring.

This service does not make Soil Tech Engineering, Inc., liable for future maintenance, repairs, damages, injury to a third party or any other elements causing future problems.

The locations of these monitoring wells are approximate and should not be used for any reference point, surveying, or any other uses except studying groundwater.

Any recommendations that were made in this report are based upon the assumption that the soil conditions do not deviate from those disclosed in the borings.

This report is issued with the understanding that it is the responsibility of the owner or his representative to ensure that the information and recommendations contained herein are called to the attention of the Local Environmental Agency.

The findings of this report are based on the results of an independent laboratory and are valid as of the present date. However, changes in the conditions of a property can occur with the passage of time, whether they are due to natural processes or the works of man, on this property or adjacent properties.

File No. 7-92-514-SA

A P P E N D I X "A"

SOIL TECH ENGINEERING, INC.

TABLE 1
 SUMMARY OF SOIL ANALYTICAL RESULTS
 FROM EXPLORATORY BORINGS
 IN
 MILLIGRAMS PER KILOGRAM (mg/Kg)

Date	Sample No.	Depth Feet	TPHg	B	T	E	X
8/19/93	B-1-5	5	4.0	0.024	0.076	0.25	0.18
	B-1-10	10		1.8	5.0	6.0	31
	B-1-15	15	110	0.77	1.6	3.1	0.52
	B-2-6	6	ND	ND	0.007	0.02	ND
	B-2-12	12	110	0.67	1.4	3.7	0.64
	B-3-5	5	ND	ND	ND	ND	ND
	B-3-10	10	91	0.39	0.84	3.1	0.56
	B-3-15	15	500	2.4	8.2	3.4	17
	B-4-5	5	ND	ND	ND	ND	ND
	B-4-10	10	1.4	0.024	0.006	0.015	0.19
	B-4-15	15	ND	0.02	ND	0.018	ND
	B-5-5	5	ND	ND	ND	ND	ND
	B-5-10	10	ND	0.007	ND	ND	ND
	B-5-15	15	ND	0.053	0.016	0.008	0.018

TABLE 1 CONT'D
SUMMARY OF SOIL ANALYTICAL RESULTS
FROM EXPLORATORY BORINGS
IN
MILLIGRAMS PER KILOGRAM (mg/Kg)

Date	Sample No.	Depth Feet	TPHg	B	T	E	X
8/20/93	B-6-5	5	160	1.0	2.8	5.0	0.95
	B-6-10	10	220	1.7	3.7	1.4	6.9
	B-6-14	14	1,800	11	36	15	73
	B-7-5	5	ND	ND	ND	ND	ND
	B-7-10	10	18	0.37	0.51	0.21	0.95
	B-7-14	14	250	3.2	6.8	2.9	14
	B-8-5	5	ND	0.011	ND	0.005	0.014
	B-8-10	10	1.4	0.016	0.015	0.013	0.021
	B-8-14	14	150	0.52	0.28	0.85	2.4
	B-9-5	5	ND	ND	ND	ND	ND
	B-9-10	10	ND	ND	ND	ND	ND
	B-9-14	14	ND	ND	ND	ND	ND
	B-10-5	5	ND	ND	ND	ND	ND
	B-10-10	10	ND	0.021	ND	ND	ND
	B-10-14	14	1.6	0.009	ND	ND	ND

TABLE 1 CONT'D
 SUMMARY OF SOIL ANALYTICAL RESULTS
 FROM EXPLORATORY BORINGS
 IN
 MILLIGRAMS PER KILOGRAM (mg/Kg)

Date	Sample No.	Depth Feet	TPHg	B	T	E	X
8/20/93	B-11-5	5	ND	ND	ND	ND	ND
	B-11-10	10	ND	0.064	0.012	0.1	0.016
	B-11-14	14	0.30	2.0	6.3	4.5	2.4
	B-12-5	5	ND	0.052	0.015	0.043	0.009
	B-12-10	10	ND	0.007	ND	ND	ND
	B-12-14	14	ND	0.008	ND	ND	ND
8/24/95	B-13-5	5	ND	ND	ND	ND	ND
	B-13-10	10	ND	0.036	ND	ND	ND
	B-13-14	14	17	0.051	0.028	0.14	0.046

TPHg - Total Petroleum Hydrocarbons
 BTEX - Benzene, Toluene, Ethylbenzene, Total Xylenes
 ND - Not Detected (Below Laboratory Detection Limit)

TABLE 2
SUMMARY OF SOIL ANALYTICAL RESULTS
FROM ISLAND TRENCHES
IN
MILLIGRAMS PER KILOGRAM (mg/Kg)

Date	Sample No.	Depth Feet	TPHg	B	T	E	X
8/25/93	ISL-1-4	4	1,300	4.6	12	5.1	43
	ISL-2-4	4	20	0.19	0.27	0.092	1.2
	ISL-3-4	4	460	1.4	6.2	3.3	22

TPHg - Total Petroleum Hydrocarbons as gasoline

BTEX - Benzene, Toluene, Ethylbenzene and Total Xylenes

TABLE 3
GROUNDWATER ANALYTICAL RESULTS
IN
PARTS PER MILLION (ppm)

Date	Well No.	TPHg	B	T	E	X
10/05/93	STMW-1	320	24	21	2.6	15
	STMW-2	260	17	19	0.57	10
	STMW-3	30,000	190	740	310	1,300

↓
likely Free Product

TPHg - Total Petroleum Hydrocarbons as gasoline
BTEX - Benzene, Toluene, Ethylbenzene, Total Xylenes
ND - Not Detected (Below Laboratory Detection Limit)

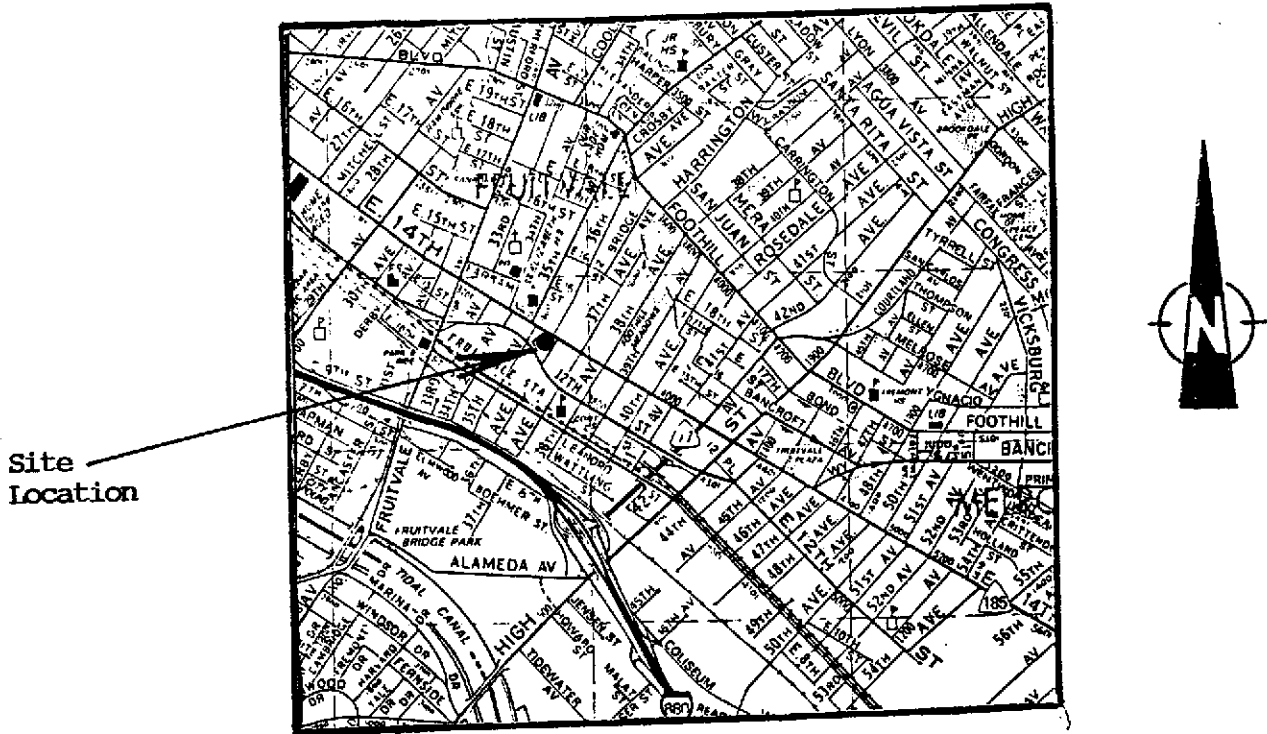
TABLE 4
GROUNDWATER MONITORING DATA
Measured in Feet

Date	Well No.	Casing Elevation	Water Level	Groundwater Elevation	Floating Product	Odor
10/04/93	STMW-1	97.99	15.39	82.60	Brown Sheen	Mild Petroleum
	STMW-2	98.58	15.36	83.22	None	None
	STMW-3	97.78	15.79	8099	Sheen	Strong Petroleum

File No. 7-92-514-SA

A P P E N D I X "B"

SOIL TECH ENGINEERING, INC.



Thomas Brothers Map 1993 Edition
San Francisco, Alameda
and Contra Costa Counties

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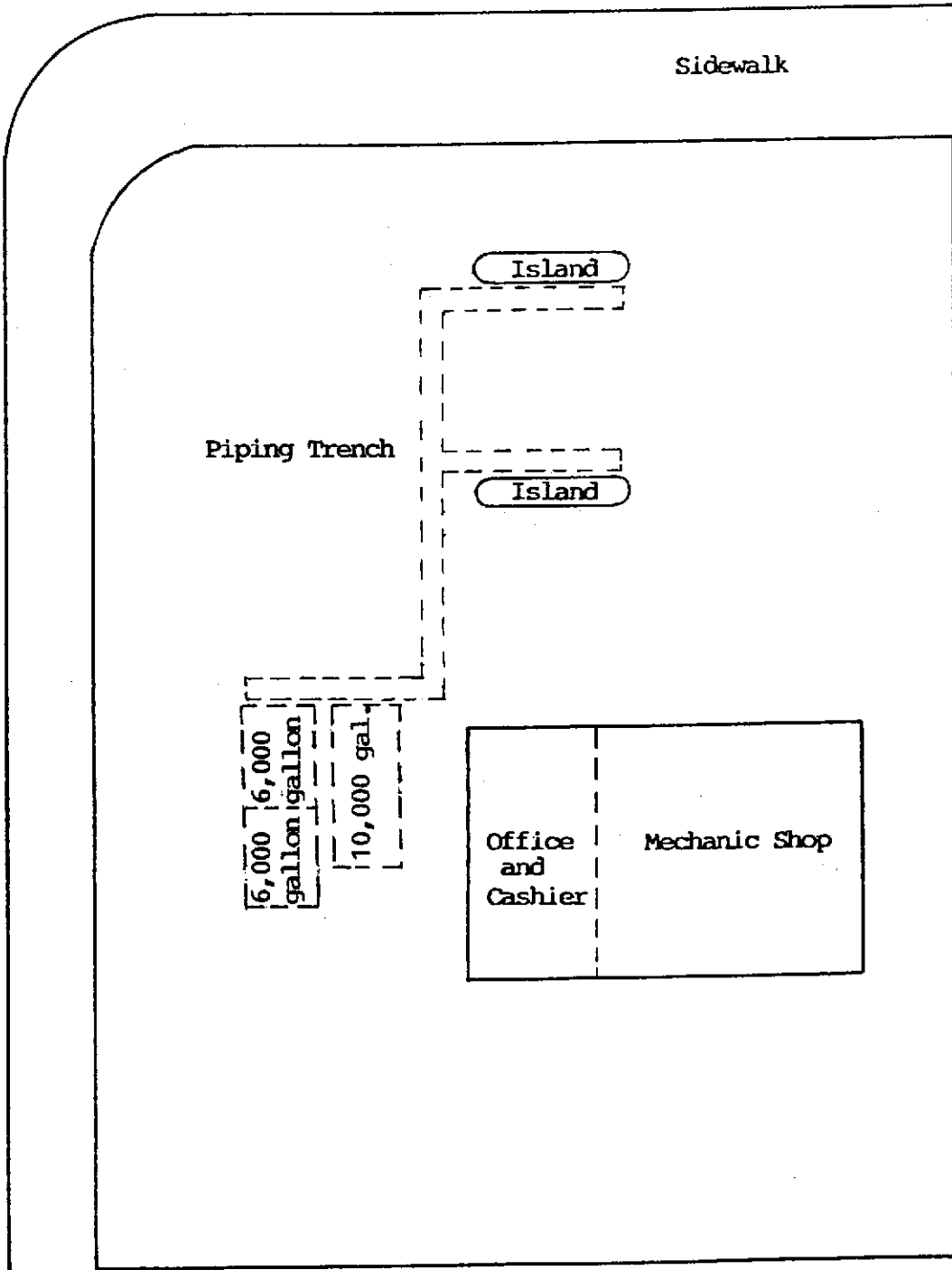
Figure 1

EAST 14TH STREET



Sidewalk

36TH AVENUE



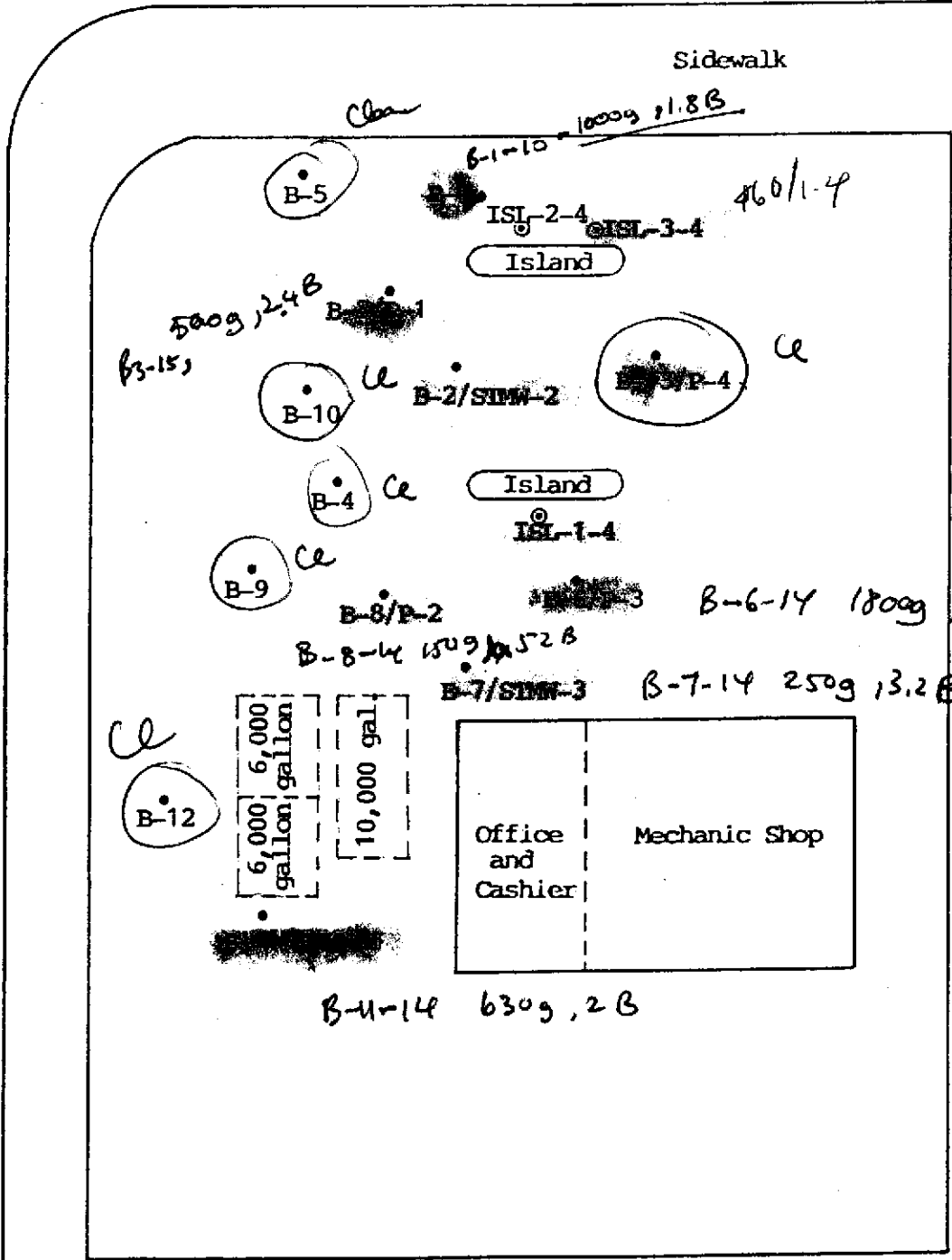
SCALE: 1"=20'

Figure 2

EAST 14TH STREET



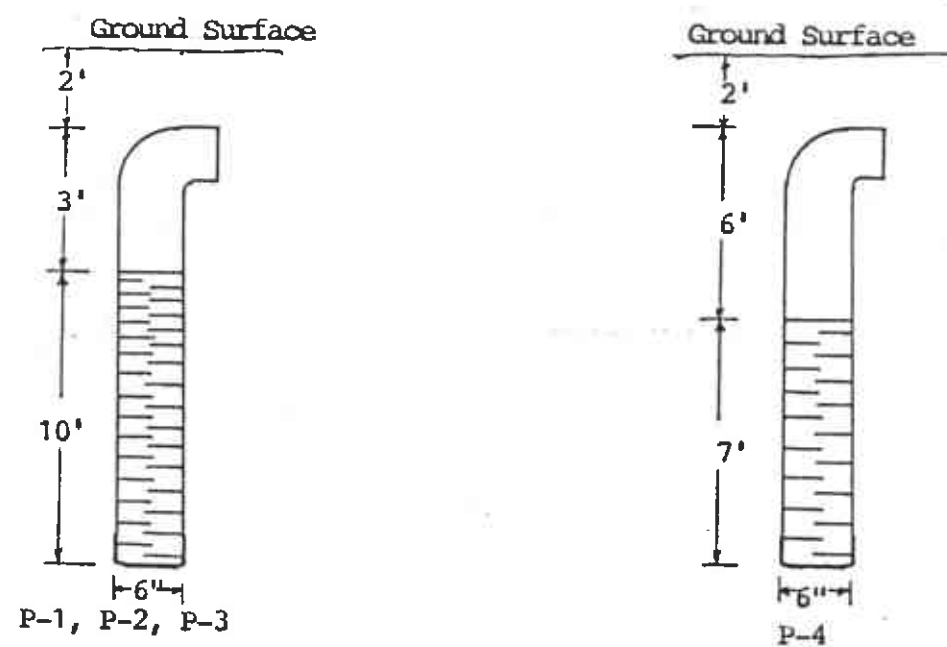
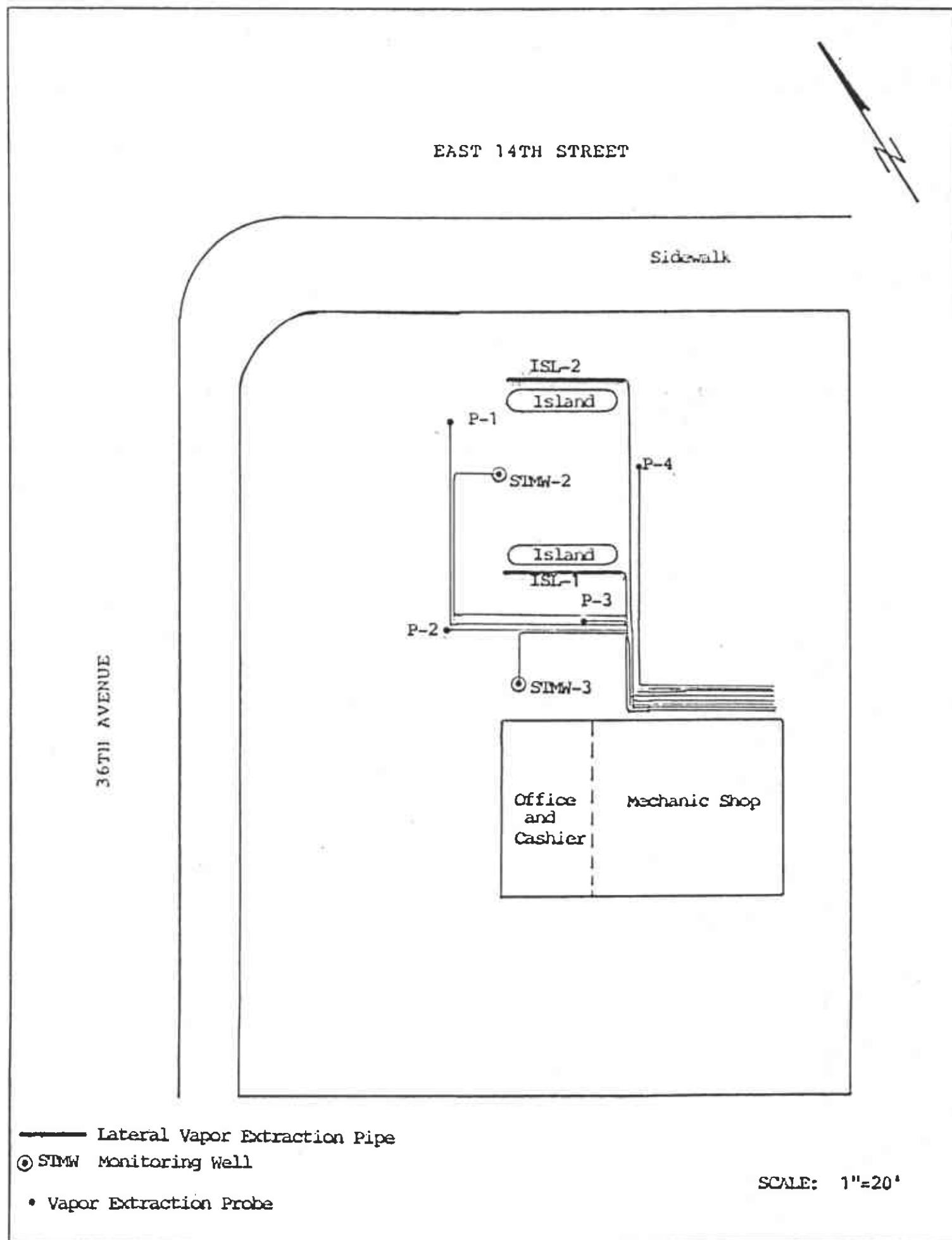
36TH AVENUE



- Exploratory Boring Locations
- ⊙ Soil Sample Locations

SCALE: 1"=20'

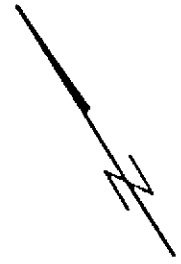
Figure 3



Profile of Vapor Extraction Probes

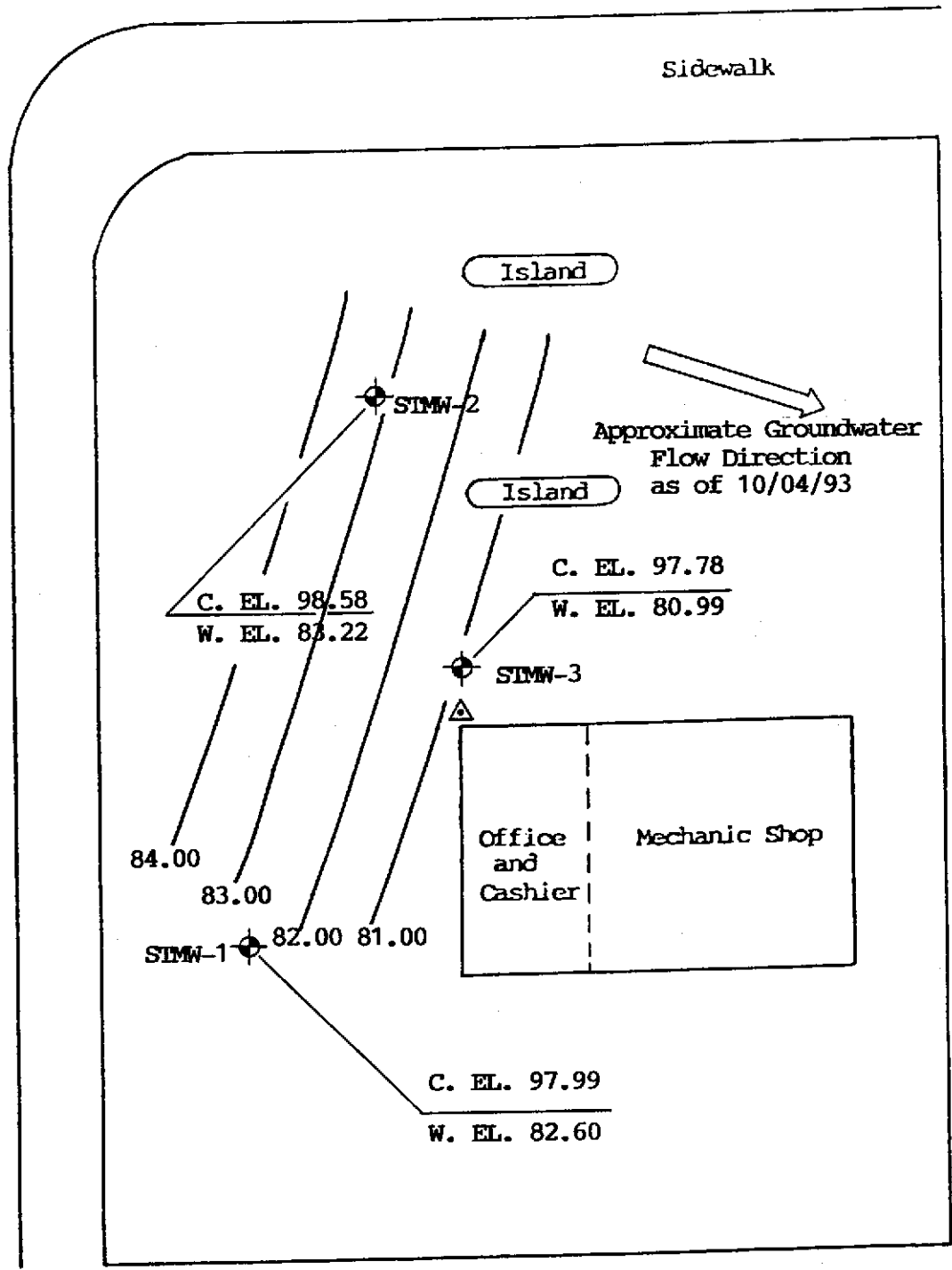
Figure 4

EAST 14TH STREET



36TH AVENUE

Sidewalk



- C. EL. Casing Elevation
- W. EL. Water Elevation
- △ Assumed 100 Elevation
- ⊕ Monitoring Well

SCALE: 1"=20'

Figure 5

File No. 7-92-514-SA

A P P E N D I X "C"

SOIL TECH ENGINEERING, INC.

Logged By: Noori Ameli	Exploratory Boring Log	Boring No. B-1
Date Drilled: 8/19/93	Approx. Elevation	Boring Diameter 8-inch

Drilling Method Mobile drill rig B-40L	Sampling Method
---	-----------------

Depth, Ft.	Sample No.	Field Test for Total Ionization	Penetration Resistance Blows/6"	Unified Soil Classification	DESCRIPTION
1				CL	6-inches dark yellowish-brown baserock. Munsell Color: HUE 10YR 3/4 Very dark grey silty pea gravelly clay, hard, mild petroleum odor.
2					Munsell Color: HUE 5Y 3/1
3				CL	Color gets lighter to dark olive-grey silty clay, stiff.
4					Munsell Color: HUE 5Y 3/2
5	B-1-5			CL	Dark olive-grey silty clay, stiff. Munsell Color: HUE 5Y 3/2
6					
7					
8				CL	Dark olive-grey silty gravelly clay, stiff, light petroleum odor.
9					Munsell Color: HUE 5Y 3/2
10	B-1-10			CL	Color gets lighter to olive-grey silty clay, stiff, mild petroleum odor.
11					Munsell Color: HUE 5Y 4/2
12					
13					
14					
15	B-1-15			CL	Olive-grey silty clay, mild petroleum odor. Munsell Color: HUE 5Y 4/2
16					

Remarks

Logged By: Noori Ameli	Exploratory Boring Log	Boring No. B-1
Date Drilled: 8/19/93	Approx. Elevation	Boring Diameter 8-inch

Drilling Method Mobile drill rig B-40L	Sampling Method
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Depth, Ft.	Sample No.	Field Test for Total Ionization	Penetration Resistance Blows/Ft.	Unified Soil Classification	DESCRIPTION
17				CL	Color changes to olive-brown silty clay, very light petroleum odor, damp. Munsell Color: HUE 2.5 Y 4/4
18					
19					▽ First groundwater encountered at 19 feet.
20				CL	Olive-brown silty clay, mild petroleum odor, wet. Munsell Color: HUE 2.5Y 4/4 Boring terminated at 20 feet.
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					

Remarks

Logged By: Noori Ameli		Exploratory Boring Log		Boring No. B-2/STMW-2	
Date Drilled: 8/19/93		Approx. Elevation		Boring Diameter 8-inch	
Drilling Method Mobile drill rig B-40L			Sampling Method		
Depth, Ft.	Sample No.	Field Test for Total Ionization	Penetration Resistance Blows/6"	Unified Soil Classification	DESCRIPTION
1				CL	6-inches dark yellowish-brown baserock. Munsell Color: HUE 10YR 3/4 Very dark grey silty pea gravelly clay, hard. Munsell Color: HUE 5Y 3/1
2					
3				CL	Color gets lighter to dark olive-grey silty clay, stiff. Munsell Color: HUE 5Y 3/2
4					
5	B-2-6			CL	Dark olive-grey silty clay, stiff. Munsell Color: HUE 5Y 3/2
6					
7					
8					
9				CL	Color changes to olive-brown silty clay, stiff, mild petroleum odor. Munsell Color: HUE 2.5Y 4/4
10					
11					
12	B-2-12			CL	Olive-brown silty clay, stiff, stronger petroleum odor. Munsell Color: HUE 2.5Y 4/4
13					
14					
15					
16					▽ First groundwater encountered at 16 feet.
Remarks					

Logged By: Noori Ameli		Exploratory Boring Log		Boring No. B-2/STMW-2	
Date Drilled: 8/19/93		Approx. Elevation		Boring Diameter 8-inch	
Drilling Method Mobile dirll rig B-40L			Sampling Method		
Depth, Ft.	Sample No.	Field Test for Total Ionization	Penetration Resistance Blows/Ft.	Unified Soil Classification	DESCRIPTION
17				CL	Olive-brown silty clay, stiff, strong petroleum odor, wet. Munsell Color: HUE 2.5Y 4/4
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30				CL	Olive-brown silty clay, stiff, strong petroleum odor, wet, yellowish-brown sheen on the water. Munsell Color: HUE 2.5Y 4/4
31					Boring terminated at 30 feet.
32					
Remarks					

Logged By: Noori Ameli	Exploratory Boring Log	Boring No. B-3/P-1
Date Drilled: 8/19/93	Approx. Elevation	Boring Diameter 8-inch

Drilling Method Mobile drill rig B-40L	Sampling Method
---	-----------------

Depth, Ft.	Sample No.	Field Test for Total Ionization	Penetration Resistance Blows/6"	Unified Soil Classification	DESCRIPTION
1				cl	6-inches dark yellowish-brown baserock. Munsell Color: HUE 10YR 3/4 Very dark grey silty pea gravelly clay, hard. Munsell Color: HUE 5Y 3/1
2					
3					
4					
5	B-3-5			cl	Color gets lighter to dark olive-grey silty clay, stiff. Munsell Color: HUE 5Y 3/2
6					
7					
8				cl	Color changes to olive-brown silty clay, stiff, very light petroleum odor. Munsell Color: HUE 5Y 3/2
9					
10	B-3-10			cl	Color changes to olive silty clay, stiff, light petroleum odor. Munsell Color: HUE 5Y 4/3
11					
12					
13					
14					
15	B-3-15			CL	Olive silty clay, stiff, mild petroleum odor, damp. Munsell Color: HUE 5Y 4/3 Boring terminated at 15 feet.
16					

Remarks

Logged By: Noori Ameli	Exploratory Boring Log	Boring No. B-4
Date Drilled: 8/19/93	Approx. Elevation	Boring Diameter 8-inch
Drilling Method Mobile drill rig B-40L		Sampling Method

Depth, Ft.	Sample No.	Field Test for Total Ionization	Penetration Resistance Blows/6"	Unified Soil Classification	DESCRIPTION
1				CL	6-inches dark yellowish-brown baserock. Munsell Color: HUE 10YR 3/4 Very dark grey silty pea gravell clay, hard. Munsell Color: HUE 5Y 3/1
2					
3					
4					
5	B-4-5			CL	Color gets lighter to dark olive-grey silty clay, stiff. Munsell Color: HUE 5Y 3/2
6					
7					
8					
9					
10	B-4-10			CL	Color changes to olive silty clay, stiff, very light petroleum odor. Munsell Color: HUE 5Y 4/3
11					
12					
13					
14					
15	B-4-15			CL	Olive silty clay, stiff, very light petroleum odor. Munsell Color: HUE 5Y 4/3 Boring terminated at 15 feet.
16					

Remarks

Logged By: Noori Ameli

Exploratory Boring Log

Boring No. B-5

Date Drilled: 8/19/93

Approx. Elevation

Boring Diameter 8-inch

Drilling Method

Mobile drill rig B-40L

Sampling Method

Depth, Ft.	Sample No.	Field Test for Total Ionization	Penetration Resistance Blows/6"	Unified Soil Classification	DESCRIPTION
1				CL	6-inches dark yellowish-brown baserock. Munsell Color: HUE 10YR 3/4
2					Very dark grey silty pea gravelly clay, hard. Munsell color: HUE 5Y 3/1
3					
4					
5	B-5-5			CL	Color gets lighter to dark olive-grey silty clay, stiff. Munsell Color: HUE 5Y 3/2
6					
7					
8					
9					
10	B-5-10			CL	Color changes to olive silty clay, stiff. Munsell Color: HUE 5Y 4/3
11					
12					
13					
14					
15	5B-5-15			CL	Olive silty clay, stiff, damp. Munsell Color: HUE 5Y 4/3 Boring terminated at 15 feet.
16					

Remarks

Logged By: Noori Ameli	Exploratory Boring Log	Boring No. B-5
Date Drilled: 8/19/93	Approx. Elevation	Boring Diameter 8-inch

Drilling Method Mobile drill rig B-40L	Sampling Method
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Depth, Ft.	Sample No.	Field Test for Total Ionization	Penetration Resistance Blows/6"	Unified Soil Classification	DESCRIPTION
1				CL	6-inches dark yellowish-brown baserock. Munsell Color: HUE 10YR 4/3 Very dark grey silty pea gravelly clay, hard. Munsell Color: HUE 5Y 3/1
2					
3					
4					
5	B-5-5			CL	Color gets lighter to dark olive-grey silty clay, silty. Munsell Color: HUE 5Y 3/2
6					
7					
8					
9					
10	B-5-10			CL	Color changes to olive silty clay, stiff. Munsell Color: HUE 5Y 4/5
11					
12					
13					
14					
15	B-5-15			CL	Olive silty clay, stiff, damp. Munsell Color: HUE 5Y 4/3 Boring terminated at 15 feet.
16					

Remarks

Logged By: Noori Ameli	Exploratory Boring Log	Boring No. B-6/P-3
Date Drilled: 8/20/93	Approx. Elevation	Boring Diameter 8-inch
Drilling Method Mobile drill rig B-40L		Sampling Method

Depth, Ft.	Sample No.	Field Test for Total Ionization	Penetration Resistance Blows/6"	Unified Soil Classification	DESCRIPTION
1				CL	6-inches dark yellowish-brown baserock. Munsell Color: HUE 10YR 3/4 Very dark grey silty pea gravelly clay, hard. Munsell Color: HUE 5Y 3/1 Mild petroleum odor.
2					
3					
4					
5	B-6-5			CL	Color changes to dark olive-grey silty clay, stiff, mild petroleum odor. Munsell Color: HUE 5Y 3/2
6					
7					
8					
9					
10	B-6-10			CL	Color changes to very dark greyish-brown silty clay, stiff, strong petroleum odor. Munsell Color: HUE 2.5Y 3/2
11				CL	Very dark greyish-brown silty clay, stiff, strong petroleum odor. Munsell Color: HUE 2.5Y 3/2
12				CL	Color gets lighter to dark greyish-brown silty clay, strong petroleum odor, stiff. Munsell Color: HUE 2.5Y 4/2
13					
14	B-6-14			CL	Dark greyish-brown silty clay, stiff, mild petroleum odor, damp. Munsell Color: HUE 2.5Y 4/2
15					
16					∇ First groundwater encountered at 16 feet. Boring terminated at 16 feet.

Remarks

Logged By: Noori Ameli	Exploratory Boring Log	Boring No. B-7/SIMW-3
Date Drilled: 8/20/93	Approx. Elevation	Boring Diameter 8-inches
Drilling Method Mobile drill rig B-40L		Sampling Method

Depth, Ft.	Sample No.	Field Test for Total Ionization	Penetration Resistance Blows/6"	Unified Soil Classification	DESCRIPTION
1				CL	6-inches dark yellowish-brown baserock. Munsell Color: HUE 10YR 3/4 Very dark grey silty pea gravelly clay, hard, light sewage odor. Munsell Color: HUE 5Y 3/1
2					
3					
4					
5	B-7-5			CL	Color changes to dark olive-grey silty clay, stiff. Munsell Color: HUE 5Y 3/2
6					
7					
8					
9					
10	B-7-10			CL	Color gets lighter to olive-grey silty clay, stiff, light petroleum odor. Munsell Color: HUE 5Y 4/2
11					
12					
13					
14	B-7-14			CL	Olive-brown silty clay, stiff, light petroleum odor. Munsell Color: HUE 2.5Y 4/4
15					
16					▽ First groundwater encountered at 16 feet.

Remarks

Logged By: Noori Ameli	Exploratory Boring Log	Boring No. B-7/SIMW-3
Date Drilled: 8/23/93	Approx. Elevation	Boring Diameter 8-inch
Drilling Method Mobile drill rig B-40L		Sampling Method

Depth, Ft.	Sample No.	Field Test for Total Ionization	Penetration Resistance Blows/Ft.	Unified Soil Classification	DESCRIPTION
17				CL	Olive-brown silty clay, stiff, light petroleum odor. Munsell Color: HUE 2.5Y 4/4
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30				CL	Olive-brown silty clay, stiff, strong petroleum odor, wet, yellowish sheen on the water. Munsell Color: HUE 2.5Y 4/4
31					Boring terminated at 30 feet.
32					

Remarks

Logged By: Noori Ameli		Exploratory Boring Log		Boring No. B-8/P-2	
Date Drilled: 8/20/93		Approx. Elevation		Boring Diameter 8-inch	
Drilling Method Mobile drill rig B-40L			Sampling Method		
Depth, Ft.	Sample No.	Field Test for Total Ignization	Penetration Resistance Blows/Ft.	Unified Soil Classification	DESCRIPTION
1				CL	6-inches dark yellowish-brown baserock. Munsell Color: HUE 10YR 3/4 Very dark grey silty pea gravelly clay, hard. Munsell Color: HUE 5Y 3/1
2					
3					
4					
5	B-8-5			CL	Color changes to dark olive-grey silty clay, stiff. Munsell Color: HUE 5Y 3/2
6					
7					
8					
9					
10	B-8-10			CL	Color changes to olive-grey silty clay, stiff, light petroleum odor. Munsell Color: HUE 5Y 4/2
11					
12					
13					
14	B-8-14			CL	Olive-grey silty clay, stiff, light petroleum odor, damp. Munsell Color: HUE 5Y 4/2
15					
16				CL	Olive-grey silty clay, stiff, mild petroleum odor, moist. Munsell Color: HUE 5Y 4/2 ∇ First groundwater encountered at 16 feet. Boring terminated at 16 feet.
Remarks					

Logged By: Noori Ameli		Exploratory Boring Log		Boring No. B-9	
Date Drilled: 8/20/93		Approx. Elevation		Boring Diameter 8-inch	
Drilling Method Mobile drill rig B-40L			Sampling Method		
Depth, Ft.	Sample No.	Field Test for Total Ionization	Penetration Resistance Blows/Ft.	Unified Soil Classification	DESCRIPTION
1				CL	6-inch dark yellowish-brown baserock. Munsell Color: HUE 10YR 3/4 Very dark grey silty pea gravelly clay, hard. Munsell Color: HUE 5Y 3/1
2					
3					
4					
5	B-9-5			CL	Color changes to dark olive-grey silty clay, stiff. Munsell Color: HUE 5Y 3/2
6					
7					
8				CL	Color changes to olive-grey silty clay, stiff, light petroleum odor. Munsell Color: HUE 5Y 4/2
9					
10	B-9-10			CL	Olive-grey silty clay, stiff, light petroleum odor. Munsell Color: HUE 5Y 4/2
11					
12					
13					
14	B-9-14			CL	Olive-grey silty clay, stiff, light petroleum odor, damp. Munsell Color: HUE 5Y 4/2
15				CL	Olive-grey silty clay, stiff, mild petroleum odor, moist. Munsell Color: HUE 5Y 4/2
16					▽ First groundwater encountered at 16 feet. Boring terminated at 16 feet.
Remarks					

Logged By: Noori Ameli	Exploratory Boring Log	Boring No. B-10
Date Drilled 8/20/93	Approx. Elevation	Boring Diameter 8-inch
Drilling Method Mobile drill rig B-40L		Sampling Method

Depth, Ft.	Sample No.	Field Test for Total Ionization	Penetration Resistance Blows/Ft.	Unified Soil Classification	DESCRIPTION
1				CL	6-inches dark yellowish-brown baserock. Munsell Color: HUE 10YR 3/4 Very dark grey silty pea gravelly clay, hard. Munsell Color: HUE 5Y 3/1
2					
3					
4					
5	B-10-5			CL	Color changes to dark olive-grey silty clay, stiff. Munsell Color: HUE 5Y 3/2
6					
7				CL	Color changes to olive-grey silty clay, stiff. Munsell Color: HUE 5Y 4/2
8					
9					
10	B-10-10			CL	Olive-grey Silty clay, stiff. Munsell Color: HUE 5Y 4/2
11					
12					
13					
14	B-10-14			CL	Color changes to olive-brown silty clay, stiff, light petroleum odor. Munsell Color: HUE 2.5Y 4/4
15				CL	Olive-brown silty clay, stiff, light petroleum odor. Munsell Color: HUE 2.5Y 4/4
16					∇ First groundwater encountered at 16 feet. Boring terminated at 16 feet.

Remarks

Logged By Noori Ameli		Exploratory Boring Log		Boring No. B-11/SIMW-1	
Date Drilled. 8/20/93		Approx. Elevation		Boring Diameter 8-inch	
Drilling Method Mobile drill rig B-40L			Sampling Method		
Depth, Ft.	Sample No.	Field Test for Total Ionization	Penetration Resistance Blows/Ft.	Unified Soil Classification	DESCRIPTION
1				CL	6-inches dark yellowish-brown baserock. Munsell Color: HUE 10YR 3/4 Very dark grey silty pea gravelly clay, hard. Munsell Color: HUE 5y 3/1
2					
3					
4					
5	B-1	-5		CL	Color changes to dark olive-grey silty clay, stiff. Munsell Color: HUE 5Y 3/2
6				CL	Color changes to olive-grey silty clay, stiff. Munsell Color: HUE 5Y 4/2
7					
8					
9					
10	B-1	-10		CL	Olive-grey silty clay, stiff, very light petroleum odor. Munsell Color: HUE 5Y 4/2
11					
12					Mild petroleum odor.
13					
14	B-1	-14		CL	Olive-grey silty clay, stiff, strong petroleum odor, damp. Munsell Color: HUE 5Y 4/2
15				CL	Olive-grey silty clay, stiff, strong petroleum odor, moist. Munsell Color: HUE 5Y 4/2
16					▽ First groundwater encountered at 16 feet.
Remarks					

Logged By: Noori Ameli	Exploratory Boring Log	Boring No. B-11/STMW-1
Date Drilled: 8/23/93	Approx. Elevation	Boring Diameter 8-inch
Drilling Method Mobile drill rig B-40L		Sampling Method

Depth, Ft.	Sample No.	Field Test for Total Ionization	Penetration Resistance Blows/Ft.	Unified Soil Classification	DESCRIPTION
17				CL	Olive-grey silty clay, stiff, strong petroleum odor, moist. Munsell Color: HUE 5Y 4/2
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30				CL	Olive-grey silty clay, stiff, strong petroleum odor, wet, yellowish-brown sheen on the water. Munsell Color: HUE 5Y 4/2
31					Boring terminated at 30 feet.
32					

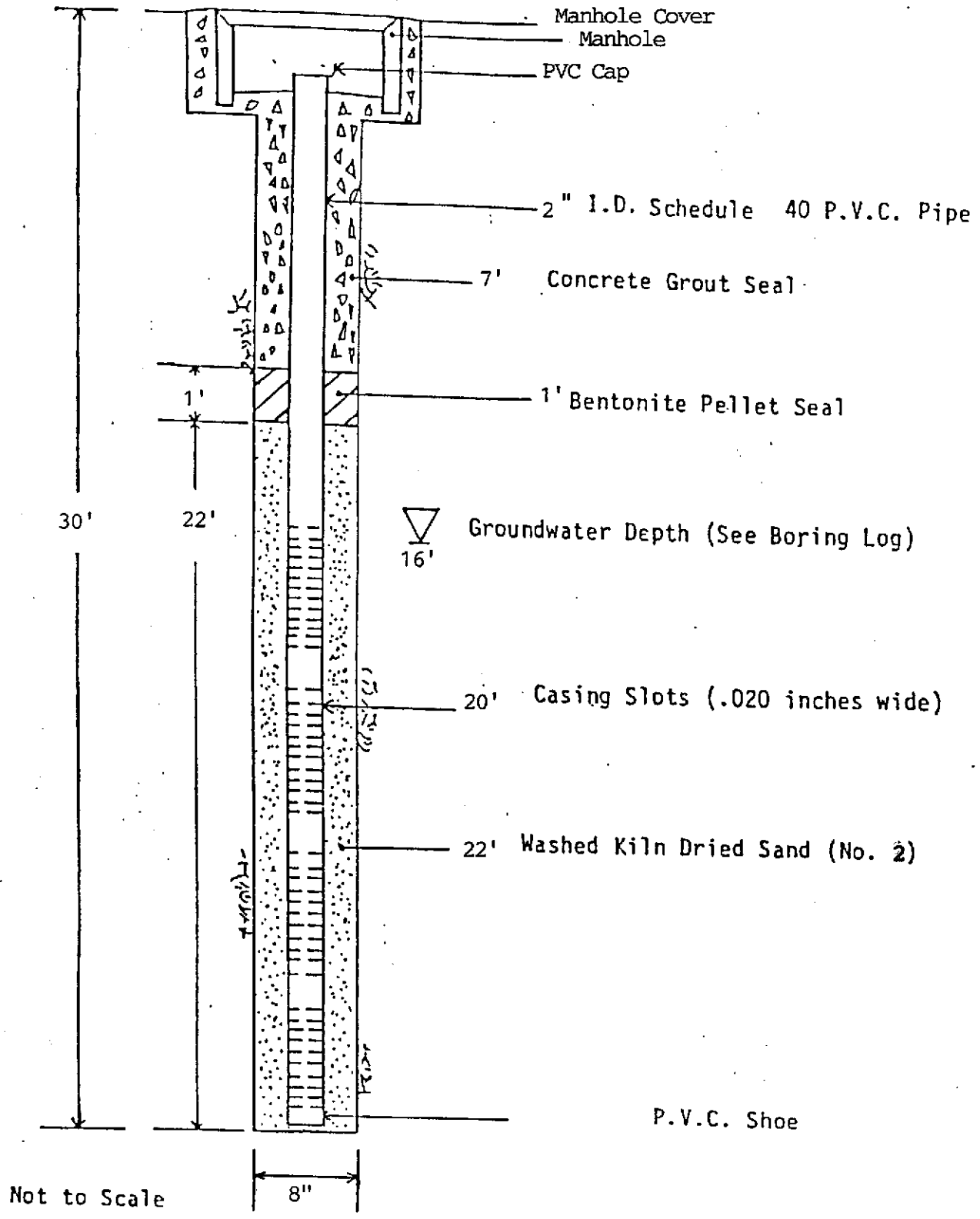
Remarks

Logged By Noori Ameli		Exploratory Boring Log		Boring No. B-12	
Date Drilled. 8/20/93		Approx. Elevation		Boring Diameter 8-inch	
Drilling Method Mobile drill rig B-40L			Sampling Method		
Depth, Ft.	Sample No.	Field Test for Total Ionization	Penetration Resistance Blows/Ft.	Unified Soil Classification	DESCRIPTION
1				CL	6-inches dark yellowish-brown baserock. Munsell Color: HUE 10YR 3/4 Very dark grey silty pea gravelly clay, hard. Munsell Color: HUE 5Y 3/1
2					
3					
4					
5	B-12-5			CL	Color changes to dark grey silty pea gravelly clay, stiff. Munsell Color: HUE 5Y 3/2
6					
7					
8				CL	Color changes to olive-grey silty clay, stiff. Munsell Color: HUE 5Y 4/2
9					
10	B-12-10			CL	Olive-grey silty clay, stiff, very light petroleum odor. Munsell Color: HUE 5Y 4/2
11					
12					
13					
14	B-12-14			CL	Olive-grey silty clay, stiff, light petroleum odor. Munsell Color: HUE 5Y 4/2 Boring terminated at 14 feet.
15					
16					
Remarks					

Logged By: Noori Ameli	Exploratory Boring Log	Boring No. B-13/P4
Date Drilled: 8/24/93	Approx. Elevation	Boring Diameter 8-inch
Drilling Method Mobile drill rig B-40L		Sampling Method

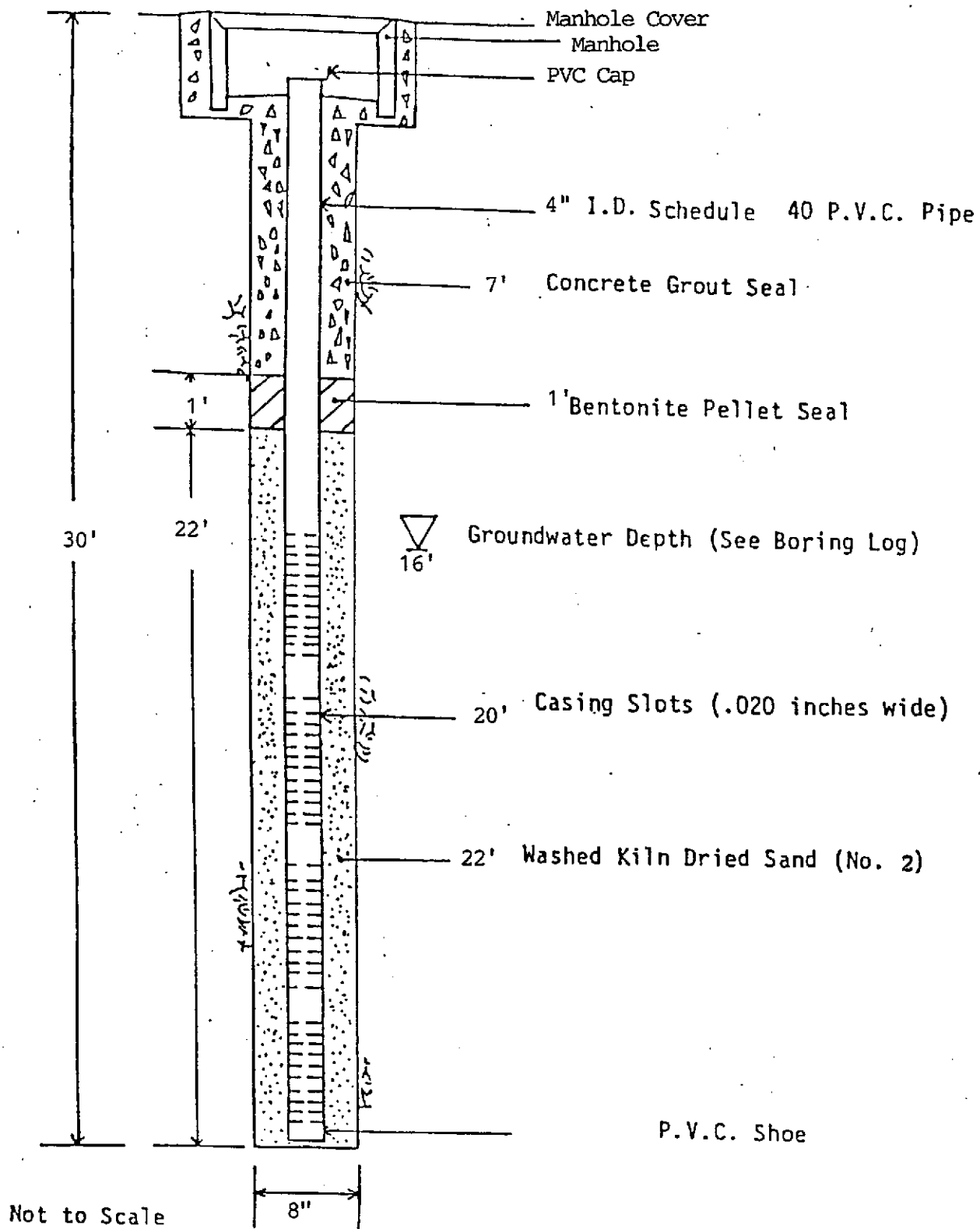
Depth, Ft.	Sample No.	Field Test for Total Ionization	Penetration Resistance Blows/6"	Unified Soil Classification	DESCRIPTION
1				CL	6-inches dark yellowish-brown baserock. Munsell Color: HUE 10YR 3/4
2					Very dark grey silty pea gravelly clay, hard. Munsell Color: HUE 5Y 3/1
3					
4					
5	B-13-5			CL	Color gets lighter to dark olive-grey silty clay, hard. Munsell Color: HUE 5Y 3/2
6					
7				CL	Color changes to dark greyish-brown silty clay, stiff. Munsell Color: HUE 2.5Y 4/2
8					
9					
10	B-13-10			CL	Dark greyish-brown silty clay, stiff. Munsell Color: HUE 2.5Y 4/2
11					
12				CL	Color changes to olive silty clay, stiff, light petroleum odor.
13					Munsell Color: HUE 5Y 4/3
14	B-13-14			CL	Olive silty clay, stiff, mild petroleum odor. Munsell Color: HUE 5Y 4/3
15				CL	Olive silty pea gravelly clay, stiff, mild petroleum odor. Munsell Color: HUE 5Y 4/3
16					Boring terminated at 15 feet.

Remarks



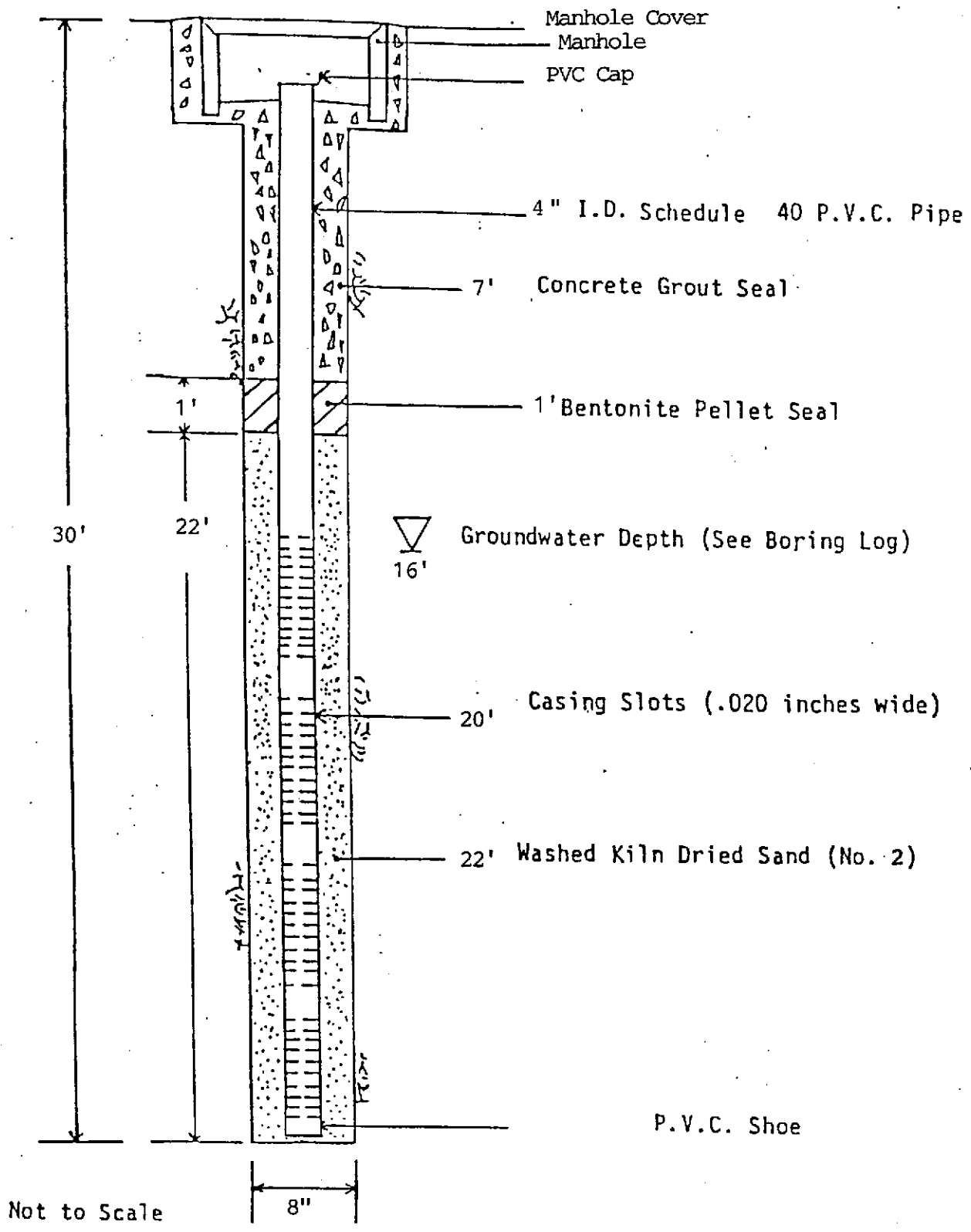
SIMW-1

Piezometer Schematic



SIMW-2

Piezometer Schematic



SIMW-3

Piezometer Schematic

File No. 7-92-514-SA

A P P E N D I X "D"

SOIL TECH ENGINEERING, INC.

DRILLING AND SOIL SAMPLING PROCEDURE

A truck-mounted drill rig, using a continuous, solid-flight, hollow stem auger was used in drilling the soil borings to the desired depths.

Prior to drilling, all drilling equipment (auger, pin, drilling head) were thoroughly steam-cleaned to minimize the possibility of cross-contamination and/or vertical migration of possible contaminants.

In addition, prior to obtaining each individual soil sample, all sampling tools, including the split-spoon sampler and brass liners were thoroughly washed in a Trisodium Phosphate (TSP) solution followed by a rinse in distilled water.

During the drilling operation, relatively undisturbed soil samples were taken from the required depth by forcing a 2-inch I.D. split-spoon sampler insert with a brass liner into the ground at various depths by means of a 140-lb. hammer falling 30-inches or by hydraulic forces.

The samplers were contained relatively undisturbed soil. In general, the first section of soil from the sampler (shoe) was used in the field for lithologic inspection and evidence of contamination. The selected brass liner was immediately trimmed, the ends of the brass liner were covered tightly with aluminum foil and

plastic caps, sealed with tape, labelled, placed in a plastic bag and stored in a cold ice chest in order to minimize the escape of any volatiles present in the samples. Soil samples for analysis were then sent to a state-certified hazardous waste laboratory accompanied by a chain-of-custody record.

Soil samples collected at each sampling interval were inspected for possible contamination (odor or peculiar colors). Soil vapor concentrations was measured in the field by using a Photoionization Detector (PID), PhotoVac Tip Air Analyzer. The soil sample was sealed in a Zip-Loc plastic bag and placed in the sun to enhance volatilization of the hydrocarbons from the sample. The purpose of this field analysis is to qualitatively determine the presence or absence of hydrocarbons and to establish which soil samples will be analyzed at the laboratory. The data was recorded on the drilling log at the depth corresponding to the sampling point.

Other soil samples may be collected to document the stratigraphy and estimate relative permeability of the subsurface materials.

Soil tailings that are obtained during drilling are stored at the site, pending the analytical test results to determine proper disposal.

MONITORING WELL INSTALLATION

The boreholes for the monitoring wells were hand augered with a diameter of at least two inches larger than the casing outside diameter (O.D.).

The monitoring wells were cased with threaded, factory-perforated and blank, schedule 40 P.V.C. The perforated interval consisted of slotted casing, generally 0.010 to 0.040 inch wide by 1.5 inch long slot size, with 42 slots per foot (slots which match formation grain size as determined by field grain-size distribution analysis). A P.V.C. cap was fastened to the bottom of the casing (no solvents, adhesive, or cements were used), the well casing was thoroughly washed and steam-cleaned.

After setting the casing inside the borehole, kiln-dried sand or gravel-filter material was poured into the annular space to fill from the bottom of the boring to two feet above the perforated interval. A one to two feet thick bentonite plug was placed above this filter material to prevent grout from infiltrating down into the filter material. Approximately one to two gallons of distilled water were added to hydrate the bentonite pellets. Then the well was sealed from the top of the bentonite seal to the surface with concrete or neat cement containing about 5% bentonite (see Well Construction Detail).

To protect the well from vandalism and surface water contamination, Christy boxes with a special type of Allen screw were installed around the well head, (for wells in parking lots, driveways and building areas). Steel stove pipes with padlocks were usually set over well-heads in landscaped areas.

In general, groundwater monitoring wells extend to the base of the upper aquifer, as defined by the consistent (less than 5 feet thick) clay layer below the upper aquifer, or at least 10 to 15 feet below the top of the upper aquifer, whichever is shallower. The wells do not extend through the laterally extensive clay layer below the upper aquifer. The wells are terminated one to two feet into such a clay layer.

WELL DEVELOPMENT

For all newly installed groundwater monitoring wells, the well casing, filter pack and adjacent formations were cleared of disturbed sediment and water.

Well development techniques included pumping, bailing, surging, swabbing, jetting, flushing or air lifting by using a stainless steel or Teflon bailer, a submersible stainless steel pump, or air lift pump. The well development continued until the discharged water appeared to be relatively free of all turbidity.

All water and sediment generated by well development were collected in 55-gallon steel drums (Department of Transportation approved), closed-head (17-H) for temporarily storage, and were then disposed of properly, depending on analytical results.

To assure that cross-contamination did not occur between wells, all well development tools were steam-cleaned or thoroughly washed in a Trisodium Phosphate (TSP) solution followed by a rinse in distilled water before each well development.

GROUNDWATER SAMPLING

Prior to collection of groundwater samples, all of the sampling equipment (i.e. bailer, cables, bladder pump, discharge lines and etc...) were cleaned by pumping TSP water solution followed by distilled water.

Prior to purging, the well "Water Sampling Field Survey Forms" was filled out (depth to water and total depth of water column were measured and recorded). The well was then bailed or pumped to remove four to ten well volumes or until the discharged water temperature, conductivity and pH stabilized. "Stabilized" is defined as three consecutive readings within 15% of one another.

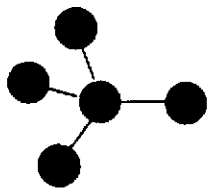
The groundwater sample was collected when the water level in the well recovered to 80% of its static level.

Forty milliliter (ml.), glass volatile organic analysis (VOA) vials with Teflon septa were used as sample containers. The groundwater sample was decanted into each VOA vial in such a manner that there was a meniscus at the top. The cap was quickly placed over the top of the vial and securely tightened. The VOA vial was then inverted and tapped to see if air bubbles were present. If none were present, the sample was labeled and refrigerated for delivery under chain-of-custody to the laboratory. The label information would include a sample identification number, job identification number, date, time, type of analysis requested, and the sampler's name.

File No. 7-92-514-SA

A P P E N D I X "E"

SOIL TECH ENGINEERING, INC.



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SOIL TECH ENGINEERING, INC.
298 Brokaw Rd
Santa Clara, CA 95050

Date Sampled: 08/19/93
Date Received: 08/26/93
Date Reported: 08/30/93

Project ID: 7-92-514-SA
Sample ID: B-1-5

Lab Number: T308111
Matrix: Soil

TPH-gas/BTXE

ANALYTE	Detection Limit ppm	Sample Results ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	4.0
Benzene	0.005	0.024
Toluene	0.005	0.076
Xylenes	0.005	0.18
Ethylbenzene	0.005	0.025

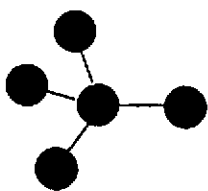
QA/QC: Blank is none detected
120% Surrogate Spike Recovery

Note: Analysis was performed using EPA methods 5030/8015/8020
ppm = mg/Kg

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Santa Clara, CA 95050

Date Sampled: 08/19/93
Date Received: 08/26/93
Date Reported: 08/30/93

Project ID: 7-92-514-SA
Sample ID: B-1-10

Lab Number: T308112
Matrix: Soil

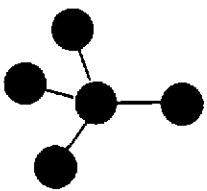
TPH-gas/BTXE

ANALYTE	Detection Limit ppm	Sample Results ppm
Total Petroleum Hydrocarbons as Gasoline	40	1,000
Benzene	0.20	1.8
Toluene	0.20	5.0
Xylenes	0.20	31
Ethylbenzene	0.20	6.0

Note: Analysis was performed using EPA methods 5030/8015/8020
ppm = mg/Kg

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Hiram Cueto
Lab Director



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298 Brokaw Rd
Santa Clara, CA 95050

Date Sampled: 08/19/93
Date Received: 08/26/93
Date Reported: 08/30/93

Project ID: 7-92-514-SA
Sample ID: B-1-15

Lab Number: T308113
Matrix: Soil

TPH-gas/BTXE

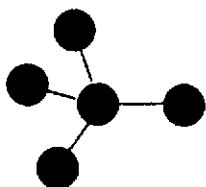
ANALYTE	Detection Limit ppm	Sample Results ppm
Total Petroleum Hydrocarbons as Gasoline	20	110
Benzene	0.10	0.77
Toluene	0.10	1.6
Xylenes	0.10	3.1
Ethylbenzene	0.10	0.52

QA/QC: 6.3% Duplicate Deviation
98% Surrogate Spike Recovery

Note: Analysis was performed using EPA methods 5030/8015/8020
ppm = mg/Kg

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Date Sampled: 08/19/93
Date Received: 08/26/93
Date Reported: 08/30/93

Project ID: 7-92-514-SA
Sample ID: B-2-6

Lab Number: T308114
Matrix: Soil

TPH-gas/BTXE

ANALYTE	Detection Limit ppm	Sample Results ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	<1.0
Benzene	0.005	<0.005
Toluene	0.005	0.007
Xylenes	0.005	0.020
Ethylbenzene	0.005	<0.005

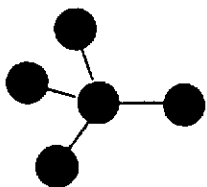
QA/QC: 111% Surrogate Spike Recovery

Note: Analysis was performed using EPA methods 5030/8015/8020
ppm = mg/Kg

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Date Sampled: 08/19/93
Date Received: 08/26/93
Date Reported: 08/30/93

Project ID: 7-92-514-SA
Sample ID: B-2-12

Lab Number: T308115
Matrix: Soil

TPH-gas/BTXE

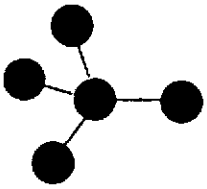
ANALYTE	Detection Limit ppm	Sample Results ppm
Total Petroleum Hydrocarbons as Gasoline	20	110
Benzene	0.10	0.67
Toluene	0.10	1.4
Xylenes	0.10	3.7
Ethylbenzene	0.10	0.64

QA/QC: 106% Surrogate Spike Recovery

Note: Analysis was performed using EPA methods 5030/8015/8020
ppm = mg/Kg

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Date Sampled: 08/19/93
Date Received: 08/26/93
Date Reported: 08/30/93

Project ID: 7-92-514-SA
Sample ID: B-3-5

Lab Number: T308116
Matrix: Soil

TPH-gas/BTXE

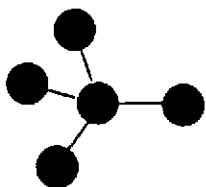
ANALYTE	Detection Limit ppm	Sample Results ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	<1.0
Benzene	0.005	<0.005
Toluene	0.005	<0.005
Xylenes	0.005	<0.005
Ethylbenzene	0.005	<0.005

Note: Analysis was performed using EPA methods 5030/8015/8020
ppm = mg/Kg

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Date Sampled: 08/19/93
Date Received: 08/26/93
Date Reported: 08/30/93

Project ID: 7-92-514-SA
Sample ID: B-3-10

Lab Number: T308117
Matrix: Soil

TPH-gas/BTXE

ANALYTE	Detection Limit ppm	Sample Results ppm
Total Petroleum Hydrocarbons as Gasoline	20	91
Benzene	0.10	0.39
Toluene	0.10	0.84
Xylenes	0.10	3.1
Ethylbenzene	0.10	0.56

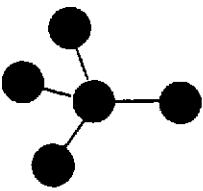
QA/QC: 3.7% Duplicate Deviation

Note: Analysis was performed using EPA methods 5030/8015/8020
ppm = mg/Kg

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Date Sampled: 08/19/93
Date Received: 08/26/93
Date Reported: 08/30/93

Project ID: 7-92-514-SA
Sample ID: B-3-15

Lab Number: T308118
Matrix: Soil

TPH-gas/BTXE

ANALYTE	Detection Limit ppm	Sample Results ppm
Total Petroleum Hydrocarbons as Gasoline	20	500
Benzene	0.10	2.4
Toluene	0.10	8.2
Xylenes	0.10	17
Ethylbenzene	0.10	3.4

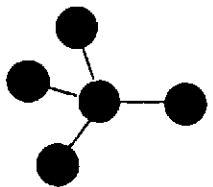
QA/QC: 71% Surrogate Spike Recovery

Note: Analysis was performed using EPA methods 5030/8015/8020
ppm = mg/Kg

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Santa Clara, CA 95050

Date Sampled: 08/19/93
Date Received: 08/26/93
Date Reported: 08/30/93

Project ID: 7-92-514-SA
Sample ID: B-4-5

Lab Number: T308119
Matrix: Soil

TPH-gas/BTXE

ANALYTE	Detection Limit ppm	Sample Results ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	<1.0
Benzene	0.005	<0.005
Toluene	0.005	<0.005
Xylenes	0.005	<0.005
Ethylbenzene	0.005	<0.005

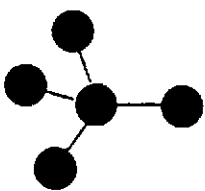
QA/QC: 97% Surrogate Spike Recovery

Note: Analysis was performed using EPA methods 5030/8015/8020
ppm = mg/Kg

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Date Sampled: 08/19/93
Date Received: 08/26/93
Date Reported: 08/30/93

Project ID: 7-92-514-SA
Sample ID: B-4-10

Lab Number: T308120
Matrix: Soil

TPH-gas/BTXE

ANALYTE	Detection Limit ppm	Sample Results ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	1.4
Benzene	0.005	0.024
Toluene	0.005	0.006
Xylenes	0.005	0.019
Ethylbenzene	0.005	0.015

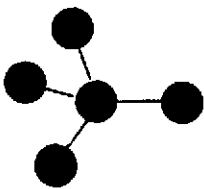
QA/QC: 106% Surrogate Spike Recovery

Note: Analysis was performed using EPA methods 5030/8015/8020
ppm = mg/Kg

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Date Sampled: 08/19/93
Date Received: 08/26/93
Date Reported: 08/30/93

Project ID: 7-92-514-SA
Sample ID: B-4-15

Lab Number: T308121
Matrix: Soil

TPH-gas/BTXE

ANALYTE	Detection Limit ppm	Sample Results ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	<1.0
Benzene	0.005	0.020
Toluene	0.005	<0.005
Xylenes	0.005	<0.005
Ethylbenzene	0.005	0.018

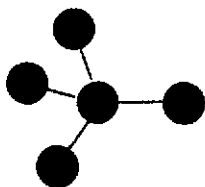
QA/QC: 89% Surrogate Spike Recovery

Note: Analysis was performed using EPA methods 5030/8015/8020
ppm = mg/Kg

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Date Sampled: 08/19/93
Date Received: 08/26/93
Date Reported: 08/30/93

Project ID: 7-92-514-SA
Sample ID: B-5-5

Lab Number: T308122
Matrix: Soil

TPH-gas/BTEX

ANALYTE	Detection Limit ppm	Sample Results ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	<1.0
Benzene	0.005	<0.005
Toluene	0.005	<0.005
Xylenes	0.005	<0.005
Ethylbenzene	0.005	<0.005

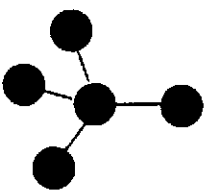
QA/QC: 88% Spike Recovery
83% Surrogate Spike Recovery

Note: Analysis was performed using EPA methods 5030/8015/8020
ppm = mg/Kg

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Date Sampled: 08/19/93
Date Received: 08/26/93
Date Reported: 08/30/93

Project ID: 7-92-514-SA
Sample ID: B-5-10

Lab Number: T308123
Matrix: Soil

TPH-gas/BTXE

ANALYTE	Detection Limit ppm	Sample Results ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	<1.0
Benzene	0.005	0.007
Toluene	0.005	<0.005
Xylenes	0.005	<0.005
Ethylbenzene	0.005	<0.005

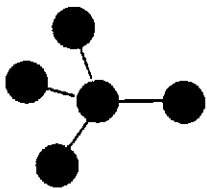
QA/QC: 76% Surrogate Spike Recovery

Note: Analysis was performed using EPA methods 5030/8015/8020
ppm = mg/Kg

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Date Sampled: 08/19/93
Date Received: 08/26/93
Date Reported: 08/30/93

Project ID: 7-92-514-SA
Sample ID: B-5-15

Lab Number: T308124
Matrix: Soil

TPH-gas/BTXE

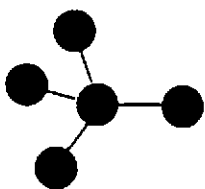
ANALYTE	Detection Limit ppm	Sample Results ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	<1.0
Benzene	0.005	0.053
Toluene	0.005	0.016
Xylenes	0.005	0.018
Ethylbenzene	0.005	0.008

Note: Analysis was performed using EPA methods 5030/8015/8020
ppm = mg/Kg

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SOIL TECH ENGINEERING, INC.
298 Brokaw Rd
Santa Clara, CA 95050

Date Sampled: 08/20/93
Date Received: 08/26/93
Date Reported: 08/30/93

Project ID: 7-92-514-SA
Sample ID: B-6-5

Lab Number: T308125
Matrix: Soil

TPH-gas/BTXE

ANALYTE	Detection Limit ppm	Sample Results ppm
Total Petroleum Hydrocarbons as Gasoline	20	160
Benzene	0.10	1.0
Toluene	0.10	2.8
Xylenes	0.10	5.0
Ethylbenzene	0.10	0.95

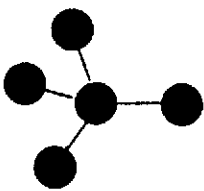
QA/QC: 92% Surrogate Spike Recovery

Note: Analysis was performed using EPA methods 5030/8015/8020
ppm = mg/Kg

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Date Sampled: 08/20/93
Date Received: 08/26/93
Date Reported: 08/30/93

Project ID: 7-92-514-SA
Sample ID: B-6-10

Lab Number: T308126
Matrix: Soil

TPH-gas/BTXE

ANALYTE	Detection Limit ppm	Sample Results ppm
Total Petroleum Hydrocarbons as Gasoline	20	220
Benzene	0.10	1.7
Toluene	0.10	3.7
Xylenes	0.10	6.9
Ethylbenzene	0.10	1.4

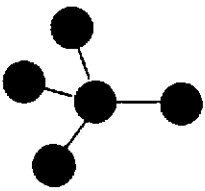
QA/QC: 84% Surrogate Spike Recovery

Note: Analysis was performed using EPA methods 5030/8015/8020
ppm = mg/Kg

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Santa Clara, CA 95050

Date Sampled: 08/20/93
Date Received: 08/26/93
Date Reported: 08/30/93

Project ID: 7-92-514-SA
Sample ID: B-6-14

Lab Number: T308127
Matrix: Soil

TPH-gas/BTXE

ANALYTE	Detection Limit ppm	Sample Results ppm
Total Petroleum Hydrocarbons as Gasoline	40	1,800
Benzene	0.20	11
Toluene	0.20	36
Xylenes	0.20	73
Ethylbenzene	0.20	15

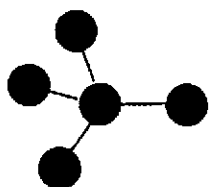
QA/QC: 11.1% Duplicate Deviation

Note: Analysis was performed using EPA methods 5030/8015/8020
ppm = mg/Kg

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Santa Clara, CA 95050

Date Sampled: 08/20/93
Date Received: 08/26/93
Date Reported: 08/30/93

Project ID: 7-92-514-SA
Sample ID: B-7-5

Lab Number: T308128
Matrix: Soil

TPH-gas/BTXE

ANALYTE	Detection Limit ppm	Sample Results ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	<1.0
Benzene	0.005	<0.005
Toluene	0.005	<0.005
Xylenes	0.005	<0.005
Ethylbenzene	0.005	<0.005

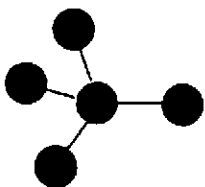
QA/QC: 77% Surrogate Spike Recovery

Note: Analysis was performed using EPA methods 5030/8015/8020
ppm = mg/Kg

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298 Brokaw Rd
Santa Clara, CA 95050

Date Sampled: 08/20/93
Date Received: 08/26/93
Date Reported: 08/30/93

Project ID: 7-92-514-SA
Sample ID: B-7-10

Lab Number: T308129
Matrix: Soil

TPH-gas/BTXE

ANALYTE	Detection Limit ppm	Sample Results ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	18
Benzene	0.005	0.37
Toluene	0.005	0.51
Xylenes	0.005	0.95
Ethylbenzene	0.005	0.21

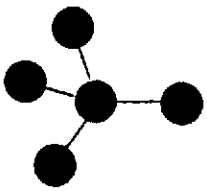
QA/QC: 8.1% Duplicate Deviation

Note: Analysis was performed using EPA methods 5030/8015/8020
ppm = mg/Kg

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Santa Clara, CA 95050

Date Sampled: 08/20/93
Date Received: 08/26/93
Date Reported: 08/30/93

Project ID: 7-92-514-SA
Sample ID: B-7-14

Lab Number: T308130
Matrix: Soil

TPH-gas/BTXE

ANALYTE	Detection Limit ppm	Sample Results ppm
Total Petroleum Hydrocarbons as Gasoline	20	250
Benzene	0.10	3.2
Toluene	0.10	6.8
Xylenes	0.10	14
Ethylbenzene	0.10	2.9

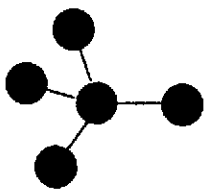
QA/QC: 90% Surrogate Spike Recovery

Note: Analysis was performed using EPA methods 5030/8015/8020
ppm = mg/Kg

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Santa Clara, CA 95050

Date Sampled: 08/20/93
Date Received: 08/26/93
Date Reported: 08/31/93

Project ID: 7-92-514-SA
Sample ID: B-8-5

Lab Number: T308131
Matrix: Soil

TPH-gas/BTXE

ANALYTE	Detection Limit ppm	Sample Results ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	<1.0
Benzene	0.005	0.011
Toluene	0.005	<0.005
Xylenes	0.005	0.014
Ethylbenzene	0.005	0.005

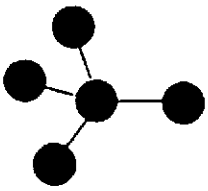
QA/QC: 115% Surrogate Spike Recovery

Note: Analysis was performed using EPA methods 5030/8015/8020
ppm = mg/Kg

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Date Sampled: 08/20/93
Date Received: 08/26/93
Date Reported: 08/31/93

Project ID: 7-92-514-SA
Sample ID: B-8-10

Lab Number: T308132
Matrix: Soil

TPH-gas/BTXE

ANALYTE	Detection Limit ppm	Sample Results ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	1.4
Benzene	0.005	0.016
Toluene	0.005	0.015
Xylenes	0.005	0.021
Ethylbenzene	0.005	0.013

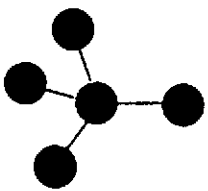
QA/QC: 101% Surrogate Spike Recovery

Note: Analysis was performed using EPA methods 5030/8015/8020
ppm = mg/Kg

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Hiram Cueto

Hiram Cueto
Lab Director



Argon Mobile Labs

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SOIL TECH ENGINEERING, INC.
298 Brokaw Rd
Santa Clara, CA 95050

Date Sampled: 08/20/93
Date Received: 08/26/93
Date Reported: 08/31/93

Project ID: 7-92-514-SA
Sample ID: B-8-14

Lab Number: T308133
Matrix: Soil

TPH-gas/BTXE

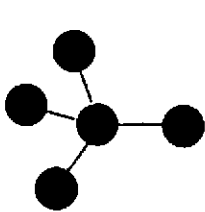
ANALYTE	Detection Limit ppm	Sample Results ppm
Total Petroleum Hydrocarbons as Gasoline	20	150
Benzene	0.10	0.52
Toluene	0.10	0.28
Xylenes	0.10	2.4
Ethylbenzene	0.10	0.85

Note: Analysis was performed using EPA methods 5030/8015/8020
ppm = mg/Kg

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298 Brokaw Rd
Santa Clara, CA 95050

Date Sampled: 08/20/93
Date Received: 08/26/93
Date Reported: 08/31/93

Project ID: 7-92-514-SA
Sample ID: B-9-5

Lab Number: T308134
Matrix: Soil

TPH-gas/BTXE

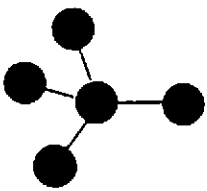
ANALYTE	Detection Limit ppm	Sample Results ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	<1.0
Benzene	0.005	<0.005
Toluene	0.005	<0.005
Xylenes	0.005	<0.005
Ethylbenzene	0.005	<0.005

QA/QC: 85% Surrogate Spike Recovery

Note: Analysis was performed using EPA methods 5030/8015/8020
ppm = mg/Kg

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298 Brokaw Rd
Santa Clara, CA 95050

Date Sampled: 08/20/93
Date Received: 08/26/93
Date Reported: 08/31/93

Project ID: 7-92-514-SA
Sample ID: B-9-10

Lab Number: T308135
Matrix: Soil

TPH-gas/BTXE

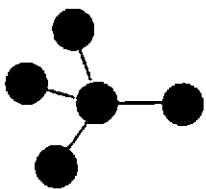
ANALYTE	Detection Limit ppm	Sample Results ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	<1.0
Benzene	0.005	<0.005
Toluene	0.005	<0.005
Xylenes	0.005	<0.005
Ethylbenzene	0.005	<0.005

QA/QC: 82% Surrogate Spike Recovery

Note: Analysis was performed using EPA methods 5030/8015/8020
ppm = mg/Kg

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Date Sampled: 08/20/93
Date Received: 08/26/93
Date Reported: 08/31/93

Project ID: 7-92-514-SA
Sample ID: B-9-14

Lab Number: T308136
Matrix: Soil

TPH-gas/BTXE

ANALYTE	Detection Limit ppm	Sample Results ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	<1.0
Benzene	0.005	<0.005
Toluene	0.005	<0.005
Xylenes	0.005	<0.005
Ethylbenzene	0.005	<0.005

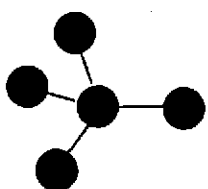
QA/QC: 117% Surrogate Spike Recovery

Note: Analysis was performed using EPA methods 5030/8015/8020
ppm = mg/Kg

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298 Brokaw Rd
Santa Clara, CA 95050

Date Sampled: 08/20/93
Date Received: 08/26/93
Date Reported: 08/31/93

Project ID: 7-92-514-SA
Sample ID: B-10-5

Lab Number: T308137
Matrix: Soil

TPH-gas/BTXE

ANALYTE	Detection Limit ppm	Sample Results ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	<1.0
Benzene	0.005	<0.005
Toluene	0.005	<0.005
Xylenes	0.005	<0.005
Ethylbenzene	0.005	<0.005

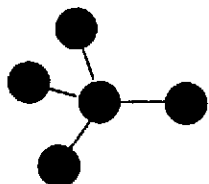
QA/QC: 94% Surrogate Spike Recovery
105% Matrix Spike Recovery

Note: Analysis was performed using EPA methods 5030/8015/8020
ppm = mg/Kg

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298 Brokaw Rd
Santa Clara, CA 95050

Date Sampled: 08/20/93
Date Received: 08/26/93
Date Reported: 08/31/93

Project ID: 7-92-514-SA
Sample ID: B-10-10

Lab Number: T308138
Matrix: Soil

TPH-gas/BTXE

ANALYTE	Detection Limit ppm	Sample Results ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	<1.0
Benzene	0.005	0.021
Toluene	0.005	<0.005
Xylenes	0.005	<0.005
Ethylbenzene	0.005	<0.005

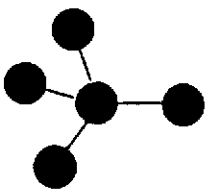
QA/QC: 87% Surrogate Spike Recovery

Note: Analysis was performed using EPA methods 5030/8015/8020
ppm = mg/Kg

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298 Brokaw Rd
Santa Clara, CA 95050

Date Sampled: 08/20/93
Date Received: 08/26/93
Date Reported: 08/31/93

Project ID: 7-92-514-SA
Sample ID: B-10-14

Lab Number: T308139
Matrix: Soil

TPH-gas/BTXE

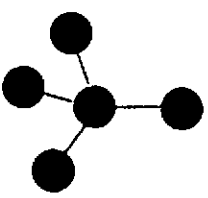
ANALYTE	Detection Limit ppm	Sample Results ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	1.6
Benzene	0.005	0.009
Toluene	0.005	<0.005
Xylenes	0.005	<0.005
Ethylbenzene	0.005	<0.005

Note: Analysis was performed using EPA methods 5030/8015/8020
ppm = mg/Kg

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Santa Clara, CA 95050

Date Sampled: 08/20/93
Date Received: 08/26/93
Date Reported: 08/31/93

Project ID: 7-92-514-SA
Sample ID: B-11-5

Lab Number: T308140
Matrix: Soil

TPH-gas/BTXE

ANALYTE	Detection Limit ppm	Sample Results ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	<1.0
Benzene	0.005	<0.005
Toluene	0.005	<0.005
Xylenes	0.005	<0.005
Ethylbenzene	0.005	<0.005

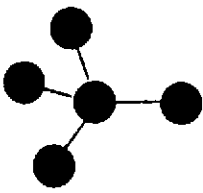
QA/QC: 84% Surrogate Spike Recovery

Note: Analysis was performed using EPA methods 5030/8015/8020
ppm = mg/Kg

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Santa Clara, CA 95050

Date Sampled: 08/20/93
Date Received: 08/26/93
Date Reported: 08/31/93

Project ID: 7-92-514-SA
Sample ID: B-11-10

Lab Number: T308141
Matrix: Soil

TPH-gas/BTXE

ANALYTE	Detection Limit ppm	Sample Results ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	<1.0
Benzene	0.005	0.064
Toluene	0.005	0.012
Xylenes	0.005	0.016
Ethylbenzene	0.005	0.010

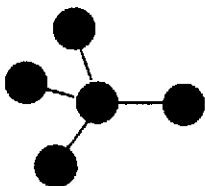
QA/QC: 108% Surrogate Spike Recovery

Note: Analysis was performed using EPA methods 5030/8015/8020
ppm = mg/Kg

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Date Sampled: 08/20/93
Date Received: 08/26/93
Date Reported: 08/31/93

Project ID: 7-92-514-SA
Sample ID: B-11-14

Lab Number: T308142
Matrix: Soil

TPH-gas/BTXE

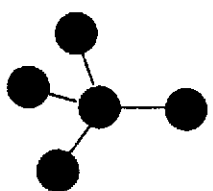
ANALYTE	Detection Limit ppm	Sample Results ppm
Total Petroleum Hydrocarbons as Gasoline	20	630
Benzene	0.10	2.0
Toluene	0.10	6.3
Xylenes	0.10	24
Ethylbenzene	0.10	4.5

Note: Analysis was performed using EPA methods 5030/8015/8020
ppm = mg/Kg

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Date Sampled: 08/20/93
Date Received: 08/26/93
Date Reported: 08/31/93

Project ID: 7-92-514-SA
Sample ID: B-12-5

Lab Number: T308143
Matrix: Soil

TPH-gas/BTXE

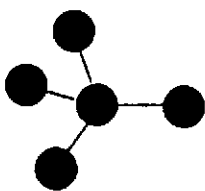
ANALYTE	Detection Limit ppm	Sample Results ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	<1.0
Benzene	0.005	0.052
Toluene	0.005	0.015
Xylenes	0.005	0.043
Ethylbenzene	0.005	0.009

QA/QC: 101% Surrogate Spike Recovery

Note: Analysis was performed using EPA methods 5030/8015/8020
ppm = mg/Kg

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SOIL TECH ENGINEERING, INC.
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Santa Clara, CA 95050

Date Sampled: 08/20/93
Date Received: 08/26/93
Date Reported: 08/31/93

Project ID: 7-92-514-SA
Sample ID: B-12-10

Lab Number: T308144
Matrix: Soil

TPH-gas/BTXE

ANALYTE	Detection Limit ppm	Sample Results ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	<1.0
Benzene	0.005	0.007
Toluene	0.005	<0.005
Xylenes	0.005	<0.005
Ethylbenzene	0.005	<0.005

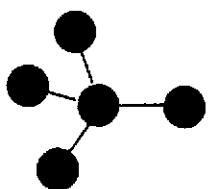
QA/QC: 102% Surrogate Spike Recovery
96% Matrix Spike Recovery

Note: Analysis was performed using EPA methods 5030/8015/8020
ppm = mg/Kg

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298 Brokaw Rd
Santa Clara, CA 95050

Date Sampled: 08/20/93
Date Received: 08/26/93
Date Reported: 08/31/93

Project ID: 7-92-514-SA
Sample ID: B-12-14

Lab Number: T308145
Matrix: Soil

TPH-gas/BTXE

ANALYTE	Detection Limit ppm	Sample Results ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	<1.0
Benzene	0.005	0.008
Toluene	0.005	<0.005
Xylenes	0.005	<0.005
Ethylbenzene	0.005	<0.005

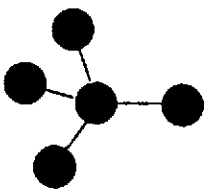
QA/QC: 93% Surrogate Spike Recovery

Note: Analysis was performed using EPA methods 5030/8015/8020
ppm = mg/Kg

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SOIL TECH ENGINEERING, INC.
298 Brokaw Rd
Santa Clara, CA 95050

Date Sampled: 08/24/93
Date Received: 08/26/93
Date Reported: 08/31/93

Project ID: 7-92-514-SA
Sample ID: B-13-5

Lab Number: T308146
Matrix: Soil

TPH-gas/BTXE

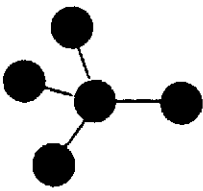
ANALYTE	Detection Limit ppm	Sample Results ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	<1.0
Benzene	0.005	<0.005
Toluene	0.005	<0.005
Xylenes	0.005	<0.005
Ethylbenzene	0.005	<0.005

QA/QC: 81% Surrogate Spike Recovery

Note: Analysis was performed using EPA methods 5030/8015/8020
ppm = mg/Kg

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SOIL TECH ENGINEERING, INC.
298 Brokaw Rd
Santa Clara, CA 95050

Date Sampled: 08/24/93
Date Received: 08/26/93
Date Reported: 08/31/93

Project ID: 7-92-514-SA
Sample ID: B-13-10

Lab Number: T308147
Matrix: Soil

TPH-gas/BTXE

ANALYTE	Detection Limit ppm	Sample Results ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	<1.0
Benzene	0.005	0.036
Toluene	0.005	<0.005
Xylenes	0.005	<0.005
Ethylbenzene	0.005	<0.005

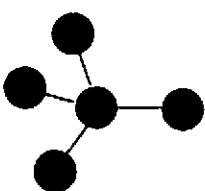
QA/QC: 72% Surrogate Spike Recovery

Note: Analysis was performed using EPA methods 5030/8015/8020
ppm = mg/Kg

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Santa Clara, CA 95050

Date Sampled: 08/24/93
Date Received: 08/26/93
Date Reported: 08/31/93

Project ID: 7-92-514-SA
Sample ID: B-13-14

Lab Number: T308148
Matrix: Soil

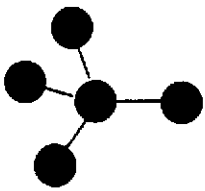
TPH-gas/BTXE

ANALYTE	Detection Limit ppm	Sample Results ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	17
Benzene	0.005	0.051
Toluene	0.005	0.028
Xylenes	0.005	0.14
Ethylbenzene	0.005	0.046

Note: Analysis was performed using EPA methods 5030/8015/8020
ppm = mg/Kg

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298 Brokaw Rd
Santa Clara, CA 95050

Date Sampled: 08/25/93
Date Received: 08/26/93
Date Reported: 08/31/93

Project ID: 7-92-514-SA
Sample ID: ISL-1-4

Lab Number: T308149
Matrix: Soil

TPH-gas/BTXE

ANALYTE	Detection Limit ppm	Sample Results ppm
Total Petroleum Hydrocarbons as Gasoline	40	1,300
Benzene	0.20	4.6
Toluene	0.20	12
Xylenes	0.20	43
Ethylbenzene	0.20	5.1

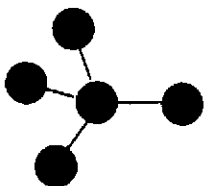
QA/QC: 7.1% Duplicate Deviation

Note: Analysis was performed using EPA methods 5030/8015/8020
ppm = mg/Kg

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298 Brokaw Rd
Santa Clara, CA 95050

Date Sampled: 08/25/93
Date Received: 08/26/93
Date Reported: 08/31/93

Project ID: 7-92-514-SA
Sample ID: ISL-2-4

Lab Number: T308150
Matrix: Soil

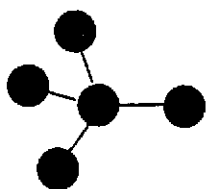
TPH-gas/BTXE

ANALYTE	Detection Limit ppm	Sample Results ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	20
Benzene	0.005	0.19
Toluene	0.005	0.27
Xylenes	0.005	1.2
Ethylbenzene	0.005	0.092

Note: Analysis was performed using EPA methods 5030/8015/8020
ppm = mg/Kg

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SOIL TECH ENGINEERING, INC.
298 Brokaw Rd
Santa Clara, CA 95050

Date Sampled: 08/25/93
Date Received: 08/26/93
Date Reported: 08/31/93

Project ID: 7-92-514-SA
Sample ID: ISL-3-4

Lab Number: T308151
Matrix: Soil

TPH-gas/BTXE

ANALYTE	Detection Limit ppm	Sample Results ppm
Total Petroleum Hydrocarbons as Gasoline	20	460
Benzene	0.10	1.4
Toluene	0.10	6.2
Xylenes	0.10	22
Ethylbenzene	0.10	3.3

Note: Analysis was performed using EPA methods 5030/8015/8020
ppm = mg/Kg

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Hiram Cueto
Hiram Cueto
Lab Director

1/3

CHAIN OF CUSTODY RECORD

7/11

PROJ. NO.		NAME		CON-TAINER	ANALYSES REQUESTED TPHS/BTEX	REMARKS
7-92-514-SA		3609 E. 14 th. st. OAKLAND				
SAMPLERS: (Signature) N-Annal						
NO.	DATE	TIME	SOIL	WATER	LOCATION	
1	8/19/93	10 ⁰⁵	✓		B-1-5	✓
2	8/19/93	10 ¹⁷	✓		B-1-10	✓
3	8/19/93	10 ³²	✓		B-1-15	✓
4	8/19/93	10 ⁴⁸	✓		B-2-6	✓
5	8/19/93	11 ⁰⁵	✓		B-2-12	✓
6	8/19/93	11 ¹⁸	✓		B-3-5	✓
7	8/19/93	11 ³⁰	✓		B-3-10	✓
8	8/19/93	11 ⁴⁵	✓		B-3-15	✓
9	8/19/93	13 ¹⁵	✓		B-4-5	✓
10	8/19/93	13 ³⁰	✓		B-4-10	✓
11	8/19/93	13 ⁴⁵	✓		B-4-15	✓
12	8/19/93	14 ⁰⁵	✓		B-5-5	✓
13	8/19/93	14 ²⁰	✓		B-5-10	✓
14	8/19/93	14 ³²	✓		B-5-15	✓
15	8/20/93	9 ⁴⁵	✓		B-6-5	✓

Relinquished by: (Signature) N-Annal	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature) Viram Ueto	Date / Time 8/26/93 12:20	Remarks	



SOIL TECH ENGINEERING

Soil, Foundation and Geological Engineers

298 BROKAW ROAD, SANTA CLARA, CA 95050 ■ (408) 496-0265 OR (408) 496-0266

2/3

CHAIN OF CUSTODY RECORD

PROJ. NO.		NAME		CON-TAINER	ANALYSES REQUESTED TPHG / BTEX	REMARKS
7-92-514-SA		3009 E. 14th. St. OAKLAND				
SAMPLERS: (Signature) N. Amel						
NO.	DATE	TIME	SOIL	WATER	LOCATION	
16	8/20/93	9:55	✓		B-6-10	✓
17	8/20/93	10:10	✓		B-6-14	✓
18	8/20/93	10:25	✓		B-7-5	✓
19	8/20/93	10:40	✓		B-7-10	✓
20	8/20/93	11:00	✓		B-7-14	✓
21	8/20/93	11:14	✓		B-8-5	✓
22	8/20/93	11:30	✓		B-8-10	✓
23	8/20/93	11:45	✓		B-8-14	✓
24	8/20/93	12:02	✓		B-9-5	✓
25	8/20/93	13:17	✓		B-9-10	✓
26	8/20/93	13:42	✓		B-9-14	✓
27	8/20/93	13:58	✓		B-10-5	✓
28	8/20/93	14:14	✓		B-10-10	✓
29	8/20/93	14:28	✓		B-10-14	✓
30	8/20/93	14:37	✓		B-11-5	✓

Relinquished by: (Signature) N. Amel	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature) Marian Cueto	Date / Time 8/20/93 12:20	Remarks	



SOIL TECH ENGINEERING

Soil, Foundation and Geological Engineers

298 BROOKAW ROAD, SANTA CLARA, CA 95050 ■ (408) 496-0265 OR (408) 496-0266

3/3

CHAIN OF CUSTODY RECORD

AML

PROJ. NO.		NAME				CON-TAINER	ANALYSES REQUESTED (2)						REMARKS
7-92-514-5A		3609 E. 14. ST. OAKLAND					TPHG / BTEX						
SAMPLERS: (Signature)													
N. Ameli													
NO.	DATE	TIME	SOIL	WATER	LOCATION								
31	8/20/93	14 ⁵⁰			B-11-10	1	✓						
32	8/20/93	15 ¹⁰			B-11-14	1	✓						
33	8/20/93	15 ²⁵			B-12-5	1	✓						
34	8/20/93	15 ⁴⁰			B-12-10	1	✓						
35	8/20/93	15 ⁵¹			B-12-14	1	✓						
36	8/24/93	10 ⁴⁴			B-13-5	1	✓						
37	8/24/93	10 ⁵⁸			B-13-10	1	✓						
38	8/24/93	11 ¹⁵			B-13-14	1	✓						
39	8/25/93	11 ¹⁰			ISL-1-4	1	✓						
40	8/25/93	11 ¹⁸			ISL-2-4	1	✓						
41	8/25/93	11 ⁴⁰			ISL-3-4	1	✓						
Relinquished by: (Signature)		Date / Time		Received by: (Signature)		Relinquished by: (Signature)		Date / Time		Received by: (Signature)			
N. Ameli													
Relinquished by: (Signature)		Date / Time		Received by: (Signature)		Relinquished by: (Signature)		Date / Time		Received by: (Signature)			
Relinquished by: (Signature)		Date / Time		Received for Laboratory by: (Signature)		Date / Time		Remarks					
				William Cretto		8/26/93 12:20							



SOIL TECH ENGINEERING

Soil, Foundation and Geological Engineers

298 BROOKAW ROAD, SANTA CLARA, CA 95050 (408) 496-0265 OR (408) 496-0266

1/3

CHAIN OF CUSTODY

PROJ. NO. 700-514-SN	NAME 3500 E. 14th St. OAKLAND	CON- TAINER	ANALYSES REQUESTED TPHC/BTEX	REMARKS
SAMPLERS: (Signature) <i>N. Am...</i>				

NO.	DATE	TIME	SOIL	WATER	LOCATION	CON- TAINER	ANALYSES REQUESTED TPHC/BTEX	REMARKS
1	9/17/93	10 ²²	✓		B-1-5	1	✓	T 308111 112
2	9/17/93	10 ⁴¹	✓		B-1-10	1	✓	113
3	9/17/93	10 ⁴²	✓		B-1-15	1	✓	114
4	9/17/93	10 ⁵²	✓		B-2-6	1	✓	115
5	9/17/93	11 ⁰²	✓		B-2-12	1	✓	116
6	9/17/93	11 ¹²	✓		B-3-5	1	✓	117
7	9/17/93	11 ¹⁵	✓		B-3-10	1	✓	118
8	9/17/93	11 ⁴²	✓		B-3-15	1	✓	119
9	9/17/93	13 ¹⁵	✓		B-4-5	1	✓	120
10	9/17/93	13 ³²	✓		B-4-10	1	✓	121
11	9/17/93	13 ⁵²	✓		B-4-15	1	✓	122
12	9/17/93	14 ²²	✓		B-5-5	1	✓	123
13	9/17/93	14 ⁴²	✓		B-5-10	1	✓	124
14	9/17/93	14 ⁴²	✓		B-5-15	1	✓	125
15	8/27/93	9 ⁴²	✓		B-6-5	1	✓	

Relinquished by: (Signature) <i>N. Am...</i>	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature) <i>Aram Wate</i>	Date / Time 8/26/93 12:20	Remarks	



SOIL TECH ENGINEERING
Soil, Foundation and Geological Engineers

1700 BROADWAY, SANTA CLARA, CA 95050 (408) 496-0265 OR (408) 496-0266

73

PROJ. NO.		NAME		CONTAINER	ANALYSES REQUESTED TPHG / STEEL	REMARKS
PE 914-3A		3000 E. 14TH ST. OAKLAND				
SAMPLERS: (Signature)						
N. A. [Signature]						
NO.	DATE	TIME	SOIL	WATER	LOCATION	
16	8/2/93	9:50	✓		B-6-10	1
17	8/2/93	10:10	✓		B-6-14	1
18	8/2/93	10:25	✓		B-7-5	1
19	8/2/93	10:40	✓		B-7-10	1
20	8/2/93	11:20	✓		B-7-14	1
21	8/2/93	11:45	✓		B-8-5	1
22	8/2/93	11:50	✓		B-8-10	1
23	8/2/93	11:45	✓		B-8-14	1
24	8/2/93	12:22	✓		B-9-5	1
25	8/2/93	13:17	✓		B-9-10	1
26	8/2/93	13:45	✓		B-9-14	1
27	8/2/93	13:25	✓		B-10-5	1
28	8/2/93	14:14	✓		B-10-10	1
29	8/2/93	14:20	✓		B-10-14	1
30	8/2/93	14:31	✓		B-11-5	1

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
N. A. [Signature]					
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	
		Niran Cueto	8/26/93 12:20		



SOIL TECH ENGINEERING

Soil, Foundation and Geological Engineers

298 BROOKAW ROAD, SANTA CLARA, CA 95050 ■ (408) 496-0265 OR (408) 496-0266

3/3

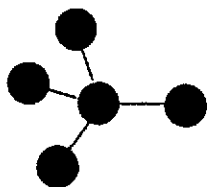
PROJ. NO.		NAME		CON. TAINER	ANALYSES REQUESTED (TPHG / BTEX)	REMARKS		
7-92-514-3A		3609 E, 14- ST. OAKLAND						
SAMPLERS: (Signature) N. A...								
NO.	DATE	TIME	SOIL	WATER	LOCATION			
31	8/2/93	14 ⁵⁰			B-11-10	1 ✓ 142		
32	8/2/93	15 ¹⁰			B-11-14	1 ✓ 143		
33	8/20/93	15 ²²			B-12-5	1 ✓ 144		
34	8/20/93	15 ⁴⁰			B-12-10	1 ✓ 145		
35	8/20/93	15 ⁵⁷			B-12-14	1 ✓ 146		
36	8/24/93	10 ⁴⁴			B-13-5	1 ✓ 147		
37	8/24/93	10 ⁵⁰			B-13-10	1 ✓ 148		
38	8/24/93	11 ¹²			B-13-14	1 ✓ 149		
39	8/25/93	11 ¹⁰			DL-1-4	1 ✓ 150		
40	8/25/93	11 ¹²			DL-2-4	1 ✓ 151		
41	8/25/93	11 ²⁰			DL-3-4	1 ✓		
Relinquished by: (Signature) N. A...		Date / Time	Received by: (Signature)		Relinquished by: (Signature)		Date / Time	Received by: (Signature)
Relinquished by: (Signature)		Date / Time	Received by: (Signature)		Relinquished by: (Signature)		Date / Time	Received by: (Signature)
Relinquished by: (Signature)		Date / Time	Received for Laboratory by: (Signature) William Curtis		Date / Time	Remarks		
					8/26/93	12:30		



SOIL TECH ENGINEERING

Soil, Foundation and Geological Engineers

298 BROCKAW ROAD, SANTA CLARA, CA 95050 ■ (408) 496-0265 OR (408) 496-0266



Argon Mobile Labs

3008 McKittrick Ct., Suite N • Ceres, CA 95307 • (209) 537-7836

SOIL TECH ENGINEERING, INC.
298 Brokaw Rd
Santa Clara, CA 95050

Date Sampled: 10/05/93
Date Received: 10/07/93
Date Reported: 10/13/93

Project ID: 7-92-514-SA
Sample ID: STMW-1

Lab Number: T310101
Matrix: Water

TPH-gas/BTXE

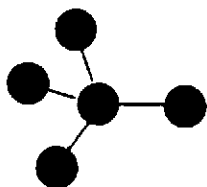
ANALYTE	Detection Limit ppb	Sample Results ppb
Total Petroleum Hydrocarbons as Gasoline	20,000	320,000
Benzene	200	24,000
Toluene	200	21,000
Xylenes	200	15,000
Ethylbenzene	200	2,600

QA/QC: Blank is none detected.
5.9% Duplicate Deviation
104% Matrix Spike Recovery (T310080)

Note: Analysis was performed using EPA methods 5030/8015/602
Higher detection limits are due to dilution factors.
ppb = ug/L

ARGON MOBILE LABS

Hiram Cueto
Hiram Cueto
Lab Director



Argon Mobile Labs

3008 McKittrick Ct., Suite N • Ceres, CA 95307 • (209) 537-7836

SOIL TECH ENGINEERING, INC.
298 Brokaw Rd
Santa Clara, CA 95050

Date Sampled: 10/05/93
Date Received: 10/07/93
Date Reported: 10/13/93

Project ID: 7-92-514-SA
Sample ID: ~~STW-2~~

Lab Number: T310102
Matrix: Water

TPH-gas/BTXE

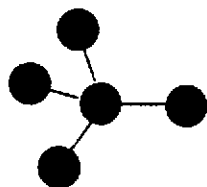
ANALYTE	Detection Limit ppb	Sample Results ppb
Total Petroleum Hydrocarbons as Gasoline	20,000	260,000
Benzene	200	17,000
Toluene	200	19,000
Xylenes	200	10,000
Ethylbenzene	200	570

QA/QC: 8.8% Duplicate Deviation

Note: Analysis was performed using EPA methods 5030/8015/602
Higher detection limits are due to dilution factors.
ppb = ug/L

ARGON MOBILE LABS

Hiram Cueto
Lab Director



Argon Mobile Labs

3008 McKittrick Ct., Suite N • Ceres, CA 95307 • (209) 537-7836

SOIL TECH ENGINEERING, INC.
298 Brokaw Rd
Santa Clara, CA 95050

Date Sampled: 10/05/93
Date Received: 10/07/93
Date Reported: 10/13/93

Project ID: 7-92-514-SA
Sample ID: STMW-3

Lab Number: T310103
Matrix: Water

TPH-gas/BTEX

ANALYTE	Detection Limit ppb	Sample Results ppb
Total Petroleum Hydrocarbons as Gasoline	200,000	30,000,000
Benzene	2,000	190,000
Toluene	2,000	740,000
Xylenes	2,000	1,300,000
Ethylbenzene	2,000	310,000

QA/QC: 7.5% Duplicate Deviation

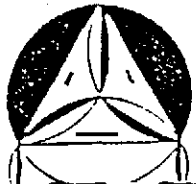
Note: Analysis was performed using EPA methods 5030/8015/602
Higher detection limits are due to dilution factors.
ppb = ug/L

ARGON MOBILE LABS

Hiram Cueto
Lab Director

CHAIN OF CUSTODY RECORD

PROJ. NO. 7-92-514-SA			NAME 3609 E. 14th St. OAKLAND			CON-TAINER	ANALYSES REQUESTED TPHG/BTE&X	REMARKS				
SAMPLERS: (Signature) <i>N.A. [Signature]</i>												
NO.	DATE	TIME	SOIL	WATER	LOCATION							
1	10/5/93	12 ⁰⁵		✓	STMW-1	1	✓					
2	10/5/93	11 ³⁶		✓	STMW-2	1	✓					
3	10/5/93	11 ⁰⁷		✓	STMW-3	1	✓					
Relinquished by: (Signature) <i>A. Amel</i>						Date / Time 10/7/93 11 ⁵⁴	Received by: (Signature) <i>Felipe Vallejo</i>			Relinquished by: (Signature)	Date / Time 10/7/93 11:54	Received by: (Signature)
Relinquished by: (Signature)						Date / Time	Received by: (Signature)			Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)						Date / Time	Received for Laboratory by: (Signature)			Date / Time	Remarks	



SOIL TECH ENGINEERING

Soil, Foundation and Geological Engineers

298 BROKAW ROAD, SANTA CLARA, CA 95050 ■ (408) 496-0265 OR (408) 496-0266

CHAIN OF CUSTODY RECORD

GK03190

PROJ. NO. 7-92-514-SA NAME 3609 E. 14th St. OAKLAND

SAMPLERS: (Signature) *N. A.*

CON-TAINER

ANALYSES REQUESTED BY
TPHG/BTE&X

REMARKS

NO.	DATE	TIME	SOIL	WATER	LOCATION	CON-TAINER	ANALYSES REQUESTED BY	REMARKS
1	10/5/93	12 ⁰³		✓	STMW-1	1	✓	T310101
2	10/5/93	11 ³⁶		✓	STMW-2	1	✓	102
3	10/5/93	11 ⁰⁷		✓	STMW-3	1	✓	103

Relinquished by: (Signature) <i>N. A.</i>	Date / Time 10/7/93 11 ³⁴	Received by: (Signature) <i>Felipe Vallejo</i>	Relinquished by: (Signature)	Date / Time 10/7/93 11:51	Receive by: (Signature)
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	



SOIL TECH ENGINEERING

Soil Foundation and Geological Engineers

200 BUCKLEY ROAD, SANTA CLARA, CA 95050 408-6-0065 OR (408) 496-0266

File No. 7-92-514-SA

A P P E N D I X "F"

SOIL TECH ENGINEERING, INC.

08-10-1993 12:12PM FROM

TO

5104623914 P. 02



ZONE 7 WATER AGENCY

5997 PARKSIDE DRIVE

PLEASANTON, CALIFORNIA 94588

VOICE (510) 464-2600

FAX (510) 462-3914

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

FOR OFFICE USE

LOCATION OF PROJECT 3609 East 14th Street
Oakland, CA 94601

PERMIT NUMBER 93446
LOCATION NUMBER _____

CLIENT

Name Abolchasse m Razi
Address 3609 East 14th St Phone 510-261-4444
City Oakland, CA Zip 94601

PERMIT CONDITIONS

Cited Permit Requirements Apply

APPLICANT

Name Soil Tech Engineering, Inc
Address 278 Brinkley Road Phone 408-496-0265
City Santa Clara, CA Zip 95050

TYPE OF PROJECT

Well Construction	Geotechnical Investigation
Cathodic Protection _____	General _____
Water Supply _____	Contamination _____
Monitoring <u>X</u>	Well Destruction _____

PROPOSED WATER SUPPLY WELL USE

Domestic _____	Industrial _____	Other _____
Municipal _____	Irrigation _____	

DRILLING METHOD:

Mud Rotary _____	Air Rotary _____	Auger <u>X</u>
Cable _____	Other _____	

DRILLER'S LICENSE NO. 507520

WELL PROJECTS

Drill Hole Diameter <u>8</u> in.	Maximum _____
Casing Diameter <u>2</u> in.	Depth <u>25</u> ft.
Surface Seal Depth _____ ft.	Number <u>3</u>

GEOTECHNICAL PROJECTS

Number of Borings _____	Maximum _____
Hole Diameter _____ in.	Depth _____ ft.

ESTIMATED STARTING DATE 8/17/93
ESTIMATED COMPLETION DATE 8/19/93

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S

SIGNATURE Frank Han Date 8/10/93

A. GENERAL

1. A permit application should be submitted so as to arrive at the Zone 7 office five days prior to proposed starting date.
2. Submit to Zone 7 within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well Projects, or drilling logs and location sketch for geotechnical projects.
3. Permit is void if project not begun within 90 days of approval date.

B. WATER WELLS, INCLUDING PIEZOMETERS

1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial well or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

C. GEOTECHNICAL. Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used in place of compacted cuttings.

D. CATHODIC. Fill hole above anode zone with concrete placed by tremie.

E. WELL DESTRUCTION. See attached.

Approved Wyman Hong Date 10 Aug 9
Wyman Hong

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

CONFIDENTIAL

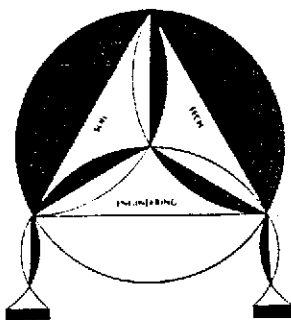
STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

File No. 7-92-514-SA

A P P E N D I X "G"

SOIL TECH ENGINEERING, INC.



SOIL TECH ENGINEERING

Soil, Foundation and Geological Engineers

298 BROKAW ROAD, SANTA CLARA, CA 95050 ■ (408) 496-0265 OR (408) 496-0266

August 9, 1993

File No. 7-92-514-SA

Ms. Karen Ditulano
Redwood Sanitary Landfill, Inc.
8950 Redwood Highway
P.O. Box 793
Novato, California 94948

Subject: Request for Disposal of Treated Petroleum
Impacted Soil from the Property
Located at 3609 East 14th Street, in
Oakland, California

Dear Ms. Ditulano:

The following is the information regarding the treated petroleum impacted soil generated at the subject site for disposal at your facility.

The stockpiled soil was generated at the existing fuel service station during removal of the three fuel tanks and one waste oil tanks. The volume of the excavated soil is approximately 350 to 400 yards.

The samples taken from the waste oil tank excavation detected no petroleum hydrocarbons nor Volatile Organic Compounds (VOC's).

The source of stockpiled soil stored on-site cause mainly from fuel tank excavation and the associated piping area. No soil from the waste oil tank excavation was added to the two segregated piles A and B as shown in Figure 1.

The characterization of the two stockpiled soil A and B showed pile B Total Petroleum Hydrocarbons (TPH) concentrations ranged from 1.3 milligrams per kilogram (mg/Kg) to a maximum of 10 mg/Kg, and pile A TPH levels was fairly high ranging from 81 mg/Kg to a maximum of 500 mg/Kg. The volume of pile B is approximately 150 to 200 cubic yards. Table 1 summarizes the initial characterization of the stockpiled soil.

The pile A was treated on-site by aeration for couple of weeks and was resampled on August 6, 1993. All sampling was conducted in accordance with Bay Area Air Quality Management District Regulation 8, Rule 4. The grab samples were taken randomly from 1 to 3 feet below the stockpiled soil surface with the aide of a hand auger in a brass tube. The ends of the tube were capped and sealed, and the tube was labeled and placed in an ice chest for delivery to Priority Environmental Labs, in Milpitas, accompanied by the proper chain-of-custody form. Eight grab samples were taken from the stockpiled and were composited into two samples in the laboratory.

The samples were analyzed for Total Petroleum Hydrocarbons as gasoline (TPHg), Benzene, Toluene, Ethylbenzene, and Total Xylenes (BTEX). One composite soil sample was tested for Organic Lead. The confirmation samples results are summarized in Table 2.

File No. 7-92-514-SA

Please review the results of the treated soil and inform us at your earliest convenience for disposal.

The total volume of the treated soil in both piles is approximately 350 to 400 yards. Upon your approval, we would immediately initiate transporting to your facility.

Thank you for prompt response. If you have any questions or require additional information, please feel free to contact our office at your convenience.

Sincerely,

SOIL TECH ENGINEERING, INC.


FRANK HAMEDI-FARD
GENERAL MANAGER

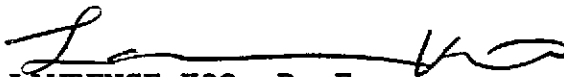

LAWRENCE KOO, P. E.
C. E. #34928

TABLE 1
SUMMARY OF SOIL ANALYSIS RESULTS
FROM STOCKPILED SOIL
IN
MILLIGRAMS PER KILOGRAM (mg/Kg)

Date	Sample Number	TPHg	D	T	E	X	Lead
7/13/93	ST-1,2,3,4	500	ND	ND	ND	4.1	ND
	ST-5,6,7,8	1.3	ND	ND	ND	ND	NA
	ST-9,10,11,12	2.9	ND	0.009	ND	0.032	NA
	ST-13,14,15,16	10	ND	ND	ND	0.12	NA
	ST-17,18,19,20	81	ND	0.075	ND	0.26	NA

TPHg - Total Petroleum Hydrocarbons as gasoline
 BTEX - Benzene, Toluene, Ethylbenzene, Total Xylenes
 NA - Not Analyzed
 ND - Not Detected (Below Laboratory Detection Limit)

Stockpile A - consist of ST-1 to ST-4 and ST-17 to ST-20
 Stockpile B - consist of ST-5 to ST-8, ST-9 to ST-12 and ST-13 to ST-16

TABLE 2
SOIL ANALYSES FROM STOCKPILED B
AFTER TREATMENT
IN
MILLIGRAMS PER KILOGRAM (mg/Kg)

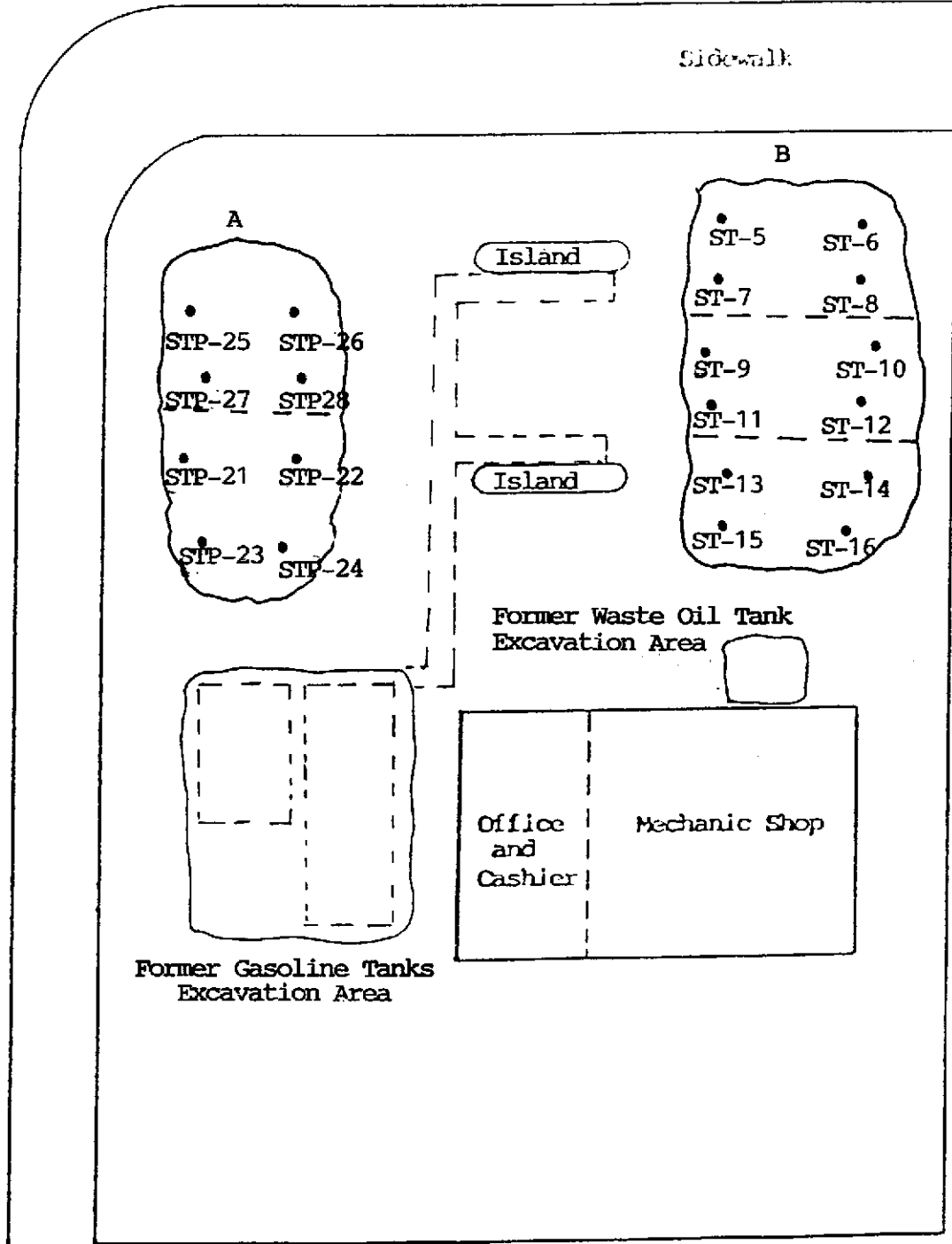
Date	Sample Number	TPHg	B	T	E	X
8/06/93	STP-21,22,23,24	ND	ND	ND	ND	ND
	STP-25,26,27,28	ND	ND	ND	ND	ND

TPHg - Total Petroleum Hydrocarbons as gasoline
BTEX - Benzene, Toluene, Ethylbenzene, Total Xylenes
ND - Not Detected (Below Laboratory Detection Limit)

EAST 14TH STREET

36TH AVENUE

Sidewalk



SCALE: 1"=20'

Location of Stockpile Soil Sampling

Figure 1



PRIORITY ENVIRONMENTAL LABS

Precision Environmental Analytical Laboratory

August 09, 1993

PEL # 9308031

SOIL TECH ENGINEERING, INC.

Attn: Noori Ameli

Re: Two composited soil samples for Gasoline/BTEX analysis.

Date sampled: Aug 06, 1993

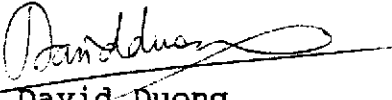
Date submitted: Aug 06, 1993

Date extracted: Aug 07, 1993

Date analyzed: Aug 07, 1993

RESULTS:

SAMPLE I.D.	Gasoline	Benzene	Toluene	Ethyl	Total
	(mg/Kg)	(ug/Kg)	(ug/Kg)	Benzene	Xylenes
				(ug/Kg)	(ug/Kg)
STP-21,22,23,24	N.D.	N.D.	N.D.	N.D.	N.D.
STP-25,26,27,28	N.D.	N.D.	N.D.	N.D.	N.D.
Blank	N.D.	N.D.	N.D.	N.D.	N.D.
Spiked Recovery	83.2%	80.9%	84.1%	82.8%	91.5%
Detection limit	1.0	5.0	5.0	5.0	5.0
Method of Analysis	5030/ 8015	8020	8020	8020	8020


David Duong
Laboratory Director

CHAIN OF CUSTODY RECORD

PEL # 9308031

INV # 23871

PROJ. NO.		NAME			CON-TAINER	ANALYSES REQUESTED TPHG BTEX	REMARKS				
SAMPLERS: (Signature) <i>Richard Menden</i>											
NO.	DATE	TIME	SOIL	WATER	LOCATION						
	8/6/93	2:15	✓		STP-21	X					
	8/6/93	2:20	✓		STP-22					}	Comp
		2:25	✓		STP-23						
		2:35	✓		STP-24						
		2:45	✓		STP-25					}	Comp
		2:50	✓		STP-26						
		2:55	✓		STP-27						
		3:05	✓		STP-28	✓					
Relinquished by: (Signature) <i>Richard Menden</i>		Date / Time 8/6/93 4:28		Received by: (Signature) <i>Ungam</i>		Relinquished by: (Signature)		Date / Time		Received by: (Signature)	
Relinquished by: (Signature)		Date / Time		Received by: (Signature) THANH LAM		Relinquished by: (Signature)		Date / Time		Received by: (Signature)	
Relinquished by: (Signature)		Date / Time 8/6/93 4:28		Received for Laboratory by: (Signature) PEL		Date / Time		Remarks			



SOIL TECH ENGINEERING

Soil, Foundation and Geological Engineers

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CHAIN OF CUSTODY RECORD

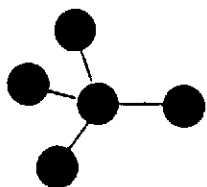
PROJ. NO.		NAME				CON-TAINER	ANALYSES REQUESTED TP H ₆ RTPX	REMARKS	
SAMPLERS: (Signature) Richard Mander									
NO.	DATE	TIME	SOIL	WATER	LOCATION				
	8/6/93	2:15	✓		STP-21	X	}		
	8/6/93	2:20	✓		STP-22				Comp
		2:25	✓		STP-23				
		2:35	✓		STP-24	}	}		
		2:45	✓		STP-25				
		2:50	✓		STP-26				Comp
		2:55	✓		STP-27	}	}		
		3:05	✓		STP-28				
Relinquished by: (Signature) Richard Mander		Date / Time 8/6/93 4:28	Received by: (Signature) [Signature]		Relinquished by: (Signature)		Date / Time	Received by: (Signature)	
Relinquished by: (Signature)		Date / Time	Received by: (Signature) THANH LAM		Relinquished by: (Signature)		Date / Time	Received by: (Signature)	
Relinquished by: (Signature)		Date / Time 8/6/93 4:28	Received for Laboratory by: (Signature) PEL		Date / Time	Remarks			



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Argon Mobile Labs

3008 McKittrick Ct., Suite N • Ceres, CA 95307 • (209) 537-7836

SOIL TECH ENGINEERING, INC.
298 Brokaw Rd.
Santa Clara, CA 95050

Date Sampled: 07/13/93
Date Received: 07/14/93
Date Reported: 08/09/93

Project ID: 7-92-514-SA

Matrix: Soil

Organic Lead DOHS LUFT Analysis Report

Sample Number	Sample Description	Detection Limit	Results
-----	-----	-----	-----
		ppm	ppm
T307091	ST(1,2,3,4)	1.0	<1.0

QA/QC: 22% Matrix Spike Recovery (*)
21% Duplicate Spike Recovery (*)

ppm = mg/Kg
(*) = Matrix interference.

ARGON MOBILE LABS

Hiram Cueto
Hiram Cueto
Lab Director

CHAIN OF CUSTODY RECORD

6-1- (2)

PROJ. NO. 7-92-514-5A		NAME 3609 E. 14th St. OAKLAND				CON-TAINER	ANALYSES REQUESTED TPHG/STE&X				REMARKS
SAMPLERS: (Signature) <i>N. Amato</i>											
NO.	DATE	TIME	SOIL	WATER	LOCATION						
1	7/13/93	16 ³⁵	✓		ST-1	1	✓				
2	7/13/93	16 ⁴¹	✓		ST-2	1	✓				COMP.
3	7/13/93	16 ⁴⁵	✓		ST-3	1	✓				
4	7/13/93	16 ⁵⁰	✓		ST-4	1	✓				
5	7/13/93	16 ⁵²	✓		ST-5	1	✓				
6	7/13/93	17 ⁰⁰	✓		ST-6	1	✓				COMP.
7	7/13/93	17 ⁰³	✓		ST-7	1	✓				
8	7/13/93	17 ¹⁰	✓		ST-8	1	✓				
9	7/13/93	17 ¹⁵	✓		ST-9	1	✓				
10	7/13/93	17 ²⁰	✓		ST-10	1	✓				COMP.
11	7/13/93	17 ²⁵	✓		ST-11	1	✓				
12	7/13/93	17 ³⁰	✓		ST-12	1	✓				

Relinquished by: (Signature) <i>N. Amato</i>	Date / Time 7/14/93 2:12	Received by: (Signature) <i>Felix Vallejo</i>	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	



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PROJ. NO. 7-92-514-3A NAME 3609 E. 14th St. CALLAND

SAMPLERS: (Signature) *W. Amick*

ANALYSES REQUESTED:
 TP HG / BTC & X
 Organic Lead (X)

REMARKS

NO.	DATE	TIME	SOIL	WATER	LOCATION	CON-TAINER	ANALYSES REQUESTED				REMARKS
1	7/3/93	16 ³³	✓		ST-1	1	✓	✓			
2	7/3/93	16 ⁴²	✓		ST-2	1	✓	✓			COMP. <i>Per Frank's request on 8-02-93</i>
3	7/3/93	16 ⁴⁵	✓		ST-3	1	✓	✓			
4	7/3/93	16 ⁵⁰	✓		ST-4	1	✓	✓			
5	7/3/93	16 ⁵³	✓		ST-5	1	✓				
6	7/3/93	17 ⁰⁰	✓		ST-6	1	✓				COMP.
7	7/3/93	17 ⁰³	✓		ST-7	1	✓				
8	7/3/93	17 ¹⁰	✓		ST-8	1	✓				
9	7/3/93	17 ¹⁵	✓		ST-9	1	✓				
10	7/3/93	17 ²⁰	✓		ST-10	1	✓				COMP.
11	7/3/93	17 ²⁵	✓		ST-11	1	✓				
12	7/3/93	17 ³⁰	✓		ST-12	1	✓				

7307091
 COMP.
 7307092
 COMP.
 7307093

Relinquished by: (Signature) <i>W. Amick</i>	Date / Time 7/14/93 2:12	Received by: (Signature) <i>Felia Queiroz</i>	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	



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