File No. 8-93-558-ST

95 AUG -4

PRELIMINARY SITE ASSESSMENT
FOR THE PROPERTY
LOCATED AT 2951 HIGH STREET
OAKLAND, CALIFORNIA
MARCH 8, 1995

PREPARED FOR:
MR. MOHAMMAD A. MASHHOON
ZIMA CENTER CORPORATION
2951 HIGH STREET
OAKLAND, CALIFORNIA 94619

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

SOIL TECH ENGINEERING, INC.

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SOIL TECH ENGINEERING
Soil, Foundation and Geological Engineers
298 BROKAW ROAD, SANTA CLARA, CA 95050 ■ (408) 496-0265 OR (408) 496-0266

March 8, 1995

File No. 8-93-558-ST

Mr. Mohammad A. Mashhoon
Zima Center Corporation
2951 High Street
Oakland, California 94619

SUBJECT: PRELIMINARY SOIL AND GROUNDWATER ASSESSMENT FOR THE PROPERTY Located at 2951 High Street, in Oakland, California

Dear Mr. Mashhoon:

Enclosed is a copy of the preliminary soil and groundwater assessment report, dated March 8, 1995, for the section of your property located at 2951 High Street, in Oakland, California.

The report describes the results of field activities conducted to evaluate the concentrations and the extent of dissolved hydrocarbons, Volatile Organic Compounds (VOC's) and Total Oil & Grease (TOG) in the soil and groundwater in the vicinity of the former location of an underground waste oil storage tank.

Soil samples collected by STE during the removal of the waste oil tank and during the subsequent remedial excavation activities at the site indicated that the soil had been impacted by inadvertent spillage and a leak in the tank.

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The preliminary site assessment was initiated at the request of Ms. Juliet Shin, Hazardous Materials Specialist, Alameda County Health Care Services Agency, in her letters dated December 29, 1993 and January 13, 1994, regarding required investigations at 2951 High Street, in Oakland, California.

This report presents the results of the preliminary site assessment which involved the installation, development, sampling and laboratory analysis of three groundwater monitoring wells and one soil boring at the site.

Recommendations are made to conduct a quarterly monitoring and sampling program of the on-site wells for at least one year. When we have gathered that information, we can develop a program of soil borings, grab water sampling, and monitoring well installation and analysis to attempt to define the limits of the soil and groundwater contamination plume.

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

Sincerely,

SOIL TECH ENGINEERING, INC.

Robert Baker
ROBERT BAKER
PROJECT GEOLOGIST

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

N. Ameli
NOORI AMELI
PROJECT ENGINEER

FRANK HAMEDI-FARD
GENERAL MANAGER

File No. 8-93-558-ST

PRELIMINARY SITE ASSESSMENT FOR THE PROPERTY LOCATED AT 2951 HIGH STREET OAKLAND, CALIFORNIA MARCH 8, 1995

INTRODUCTION:

This document presents a preliminary site assessment conducted by Soil Tech Engineering, Inc. (STE) for Zima Center Corporation, located at 2951 High Street, in Oakland, California (Figure 1). The purpose of this investigation was to assess the extent of sub-surface petroleum hydrocarbon contamination at the subject site.

The preliminary site assessment was conducted in accordance with STE's revised work plan dated September 1994. In addition, the site assessment was conducted per Alameda County Health Care Services Agency (ACHCSA) to Mr. Mohammad A. Mashhoon in letters dated January 1994, and August 1994.

SITE LOCATION AND BACKGROUND:

The site is located at the intersection of Penniman Avenue and High Street, in Oakland, California. The site is currently used as a mini market and gasoline service station. In September 1993, Alpha Geo Services removed one 300 gallon waste oil tank which was properly manifested and transported to H&H Environmental Services Company in San Francisco. Soil Tech Engineering, Inc. (STE) was

retained by Zima Center Corporation to conduct soil sampling below the former waste oil tank area. Two soil samples were collected, one from tank excavation at approximately 9 feet below grade, and the other from the excavated stockpiled soil. All sampling was conducted under the supervision of Alameda County Health Department inspector Mr. Barney Chan. Soil samples from the waste oil tank excavation did detect moderate levels of Total Petroleum Hydrocarbons and very low levels of Trichloroethane and Tetrachloroethane. The detail of the soil sampling is described in the STE's report dated September 30, 1993.

In October 1993, STE excavated grossly contaminated soil from the former waste oil tank area and conducted additional soil sampling. The detail of the soil excavation is described in the STE's report dated December 15, 1993.

The excavated soil was segregated into clean and contaminated stockpiles. The contaminated soil was treated on-site in accordance with Bay Area Air Quality Control Management District Regulation (BAAQCMDR). The treated soil (approximately 40 cubic yards) was disposed to an approved facility in Stockton, known as Forward Inc.

PRESENT FIELD ACTIVITIES:

SOIL BORING AND INSTALLATION OF MONITORING WELLS:

Permits to install groundwater monitoring wells were obtained from the Alameda County Flood Control and Water Conservation

District--Zone 7 Water Agency (ACFCWCD-Zone 7) prior to drilling. Copies of the well permits are included in the Appendix "G" of this report. all utility lines were located prior to drilling.

STE initiated the field work for this phase of investigation between February 15, 1995, and February 23, 1995. Field work included the advancement of four soil borings STMW-1, STMW-2, STMW-3 and STMW-4 (B-4), soil sampling, installation of three monitoring wells (STMW-1, STMW-2 and STMW-3), development of the wells, water sampling and chemical analyses of soil and groundwater samples. The approximate locations of the soil borings and monitoring wells, and the former location of the underground waste oil storage tank are shown in Figure 2.

The exploratory borings were advanced on February 15 and 16, 1995. Three of the borings (STMW-1, STMW-2 and STMW-3) were converted to groundwater monitoring wells. The drilling, soil sampling and construction of the on-site wells were conducted in accordance with STMW's Standard Operating Procedures (SOP) included in Appendix "C" in this report.

Borings STMW-1 and STMW-3 were drilled to a depth of approximately 25 feet below grade, boring STMW-2 to a depth of approximately 20 feet below grade, and boring STMW-4 (B-4) to a depth of approximately 16½ feet below grade. During drilling operations, soil samples were collected at approximately 6 feet and 11 feet below grade in borings STMW-1 and STMW-2, and at approximately 6

feet, 11 feet and 16 feet below grade in borings STMW-3 and STMW-4 (B-4). Soil samples were classified in the field according to the Unified Soil Classification System by STE's geologist and were retained for chemical analysis. Soil boring STMW-4 (B-4) was back-filled with portland cement on February 16, 1995.

During drilling, a slight gasoline odor was detected in boring STMW-2 in the sample collected from a depth of 11 feet below grade. A strong gasoline odor was also detected in boring STMW-4 (B-4) in the soil samples collected from the depths of 6 feet and 11 feet below grade.

Each soil sample was labeled with an identification number, sealed and stored in a chilled ice chest until delivery to a certified analytical laboratory. The completed exploratory boring logs are included in Appendix "D" of this report.

The well heads of STMW-1, STMW-2 and STMW-3 monitoring wells were protected by traffic rated vaults placed flush with grade.

After the wells were completed, they were developed by hand bailer, pumping and surging to clean the soil around the well screens. Each well was developed by a surface bailer until at least 6 to 8 well casing volumes were removed and the pH, conductivity and temperature were stabilized.

SOIL AND GROUNDWATER SAMPLING:

Soil Sampling:

A total of 10 soil samples were collected from the four exploratory borings. All the soil samples were submitted to a certified analytical laboratory. Proper chain-of-custody documentation was retained with the soil samples during transport to the laboratory. All the soil samples were analyzed for Total Petroleum Hydrocarbons as diesel and gasoline (TPHd and TPHg), Benzene, Toluene, Ethylbenzene, Total Xylenes (BTEX), Total Oil & Grease (TOG), Chlorinated Hydrocarbons (EPA 8010), and metals (Cadmium, Chromium, Lead, Nickel and Zinc).

Groundwater Sampling:

After the three wells were constructed and developed, groundwater samples were collected. Prior to sample collection, wells were purged by removing five well casing volumes of water. The water generated through well development and purging was stored on-site in approved 55-gallon drums pending laboratory analysis to determine a proper disposal method. Prior to purging and sampling the three new wells (STMW-1 to STMW-3) and existing 4-inch well were monitored for presence of floating product, odor and water elevation. A slight rainbow sheen and a strong odor was detected during monitoring of the existing well MW-4.

The groundwater samples were submitted to state certified laboratory for analysis of TPHd, TPHg, BTEX, TOG, EPA 8010 and Metals (Cadmium, Chromium, Lead, Nickel and Zinc). Proper chain-of-custody documentation was retained with the samples during transport to the laboratory. The existing well MW-4 was not sampled.

GROUNDWATER DEPTH SURVEY:

A water level and depth survey was conducted to estimate groundwater gradient and flow direction. To estimate the gradient and flow direction, depths to groundwater were measured relative to an arbitrarily established datum (assumed to be 100 feet above sea level) in the three new wells and the existing 4-inch diameter well is located on the northeast side of the mini market building. Well casing and ground surface elevations are summarized on Table 1. The groundwater flow direction beneath the site was in a northerly direction on February 3, 1995. A groundwater flow direction is shown on Figure 2.

SITE STRATIGRAPHY AND HYDROGEOLOGY:

The site is situated on the southeast edge of a gently south to southwest sloping geomorphic surface in the hilly area between the San Francisco Bay and the steep front of the Berkeley Hills.

The active Hayward fault is approximately 4,000 feet northeast of the site at the base of the steep front of the Berkeley Hills as shown on D.H. Radbruch's 1969 U.S. Geological Survey Map GQ-769, Areal and Engineering Geology of the Oakland East Quadrangle, California. Her map indicates the site is underlain by the lower member of the San Antonio Formation which she describes as gravel weathered, dense with silty clay matrix.

Our soil boring information indicates the site is underlain by 2½ to 5½ feet of very dark brown or yellowish-brown to dark greenish-grey fat clay to fat clay with sand that is damp to moist and stiff. Dark yellowish-brown to olive and olive-grey clayey sands underlie the surficial fat clays in borings STMW-1, STMW-2 and STMW-4 (B-4). These clayey sands are damp to moist and medium dense to very dense. A brownish-yellow lean clay with sand that is damp to hard underlies the surficial fat clay in soil boring STMW-3. At a depth of 10 to 22 feet below grade, the soils contain fewer fine grained materials.

A yellowish-brown to dark yellowish-brown sandy fat clay to fat clay with sand was encountered at 17 to 22 feet below grade in STMW-2 and STMW-3 and at approximately 11 feet below grade in STMW-4 (B-4).

Groundwater was encountered at approximately 10 to 17 feet below grade during drilling and had risen to approximately 5 feet below grade in STMW-1 and STMW-2 the following day. It appears

groundwater is confined in the cleaner materials at approximately 10 to 22 feet below grade by the clayey dense overlying materials. The water elevation in the three wells ranged from 4.2 feet to a maximum of 6.90 feet below grade.

As shown in Figure 2, the gradient of the potentiometric surface (the elevation on that water rises to in a well) is towards the northeast. Figure 2 shows an approximation of the localized groundwater flow direction and the location of the monitoring wells.

ANALYTICAL RESULTS:

SOIL RESULTS:

Soil analytical results are summarized in Table 2. TPHd, TPHg, BTEX and TOG were not detected in wells STMW-1 or STMW-3. Both borings are south to southwest of the location of the former waste oil tank. Low concentrations of TPHg, Benzene, Toluene, Ethylbenzene and Total Xylenes were detected in the sample collected at 11 feet below grade in STMW-2. Elevated concentrations of TPHg and BTEX were detected in the sample collected at 6 feet below grade in STMW-4 (B-4), and moderate concentration of TPHd was detected only in STMW-4 (B-4) at 6 feet below grade. Low levels of TPHg and BTEX were also detected in boring STMW-4 (B-4) at 11 feet below grade. A low to moderate concentration of TOG was detected in wells STMW-2 [21 milligrams per kilogram (mg/Kg)] and STMW-4 (B-4) (200 mg/Kg) at 6 feet below grade.

No Chlorinated Hydrocarbons were detected in the soil samples collected from the four soil borings.

Low concentrations of Cadmium and low to moderate concentrations of Lead were detected in the soil in all four soil borings at the site. Moderate concentrations of Chromium were detected in all four soil borings. Low to moderate concentrations of Nickel were detected in all soil samples and moderate to relatively high concentrations of Zinc were detected in all soil samples.

GROUNDWATER RESULTS:

Groundwater analytical results are summarized in Table 3. No TPHd, TPHg or BTEX were detected in STMW-3. TPHg and BTEX were not detected in STMW-1. A low concentration of TPHg and moderate concentrations of BTEX were detected in the well STMW-2. A low concentrations of TPHd were detected in STMW-1 and STMW-2. Low to moderate concentrations of TOG were detected in STMW-1 and STMW-2. No Chlorinated Hydrocarbons or metals were detected in any of the wells.

SUMMARY:

The data collected during our preliminary investigation indicated the following:

1. The soils beneath the site consist of 2½ to 5½ feet of fat clay. Clayey sands and lean clays underlie the surficial fat

clay. clayey gravel and sands that contain less fine grained material underlie the clayey sands. A stiff to hard sandy fat clay underlies the sands and gravel. The fat clay occurs at approximately 11 feet below grade on the northeast of the site to approximately 22 feet below grade in the center of the site.

2. TPHd, TPHg, BTEX and TOG were not detected in soil samples collected in STMW-1 and STMW-3. Low concentrations of TPHg (3.5 mg/Kg) and TEX were detected in soil samples from well STMW-2. Low to high concentrations of TPHg and BTEX were detected in soil samples at six feet depth from boring STMW-4 (B-4). A moderate concentration of TPHd was detected in soil samples collected from STMW-4 (B-4). Low to high concentrations of TOG were detected in soil samples collected from STMW-2 and STMW-4 (B-4). No Chlorinated Hydrocarbons were detected in any of soil. Low to moderate concentrations of metals were detected in soil samples collected from all four soil borings.

3. No contaminants were detected in the groundwater sample collected from STMW-3. A low concentration of TPHd, TPHg and moderate concentrations of BTEX were detected in the well STMW-2. Low concentrations of TPHd was detected in the well STMW-1. Low concentrations of TOG were detected in the wells STMW-1 and STMW-2 only.

4. Groundwater was encountered at approximately 10 to 17 feet below grade during drilling. It stabilized to approximately

4.2 to 6.9 feet below grade. Groundwater appears to be confined by the layer of clayey sands. The groundwater gradient is toward the north.

5. Groundwater has been impacted due to the past inadvertent spillage either leak from the former waste oil tank area or the existing gasoline tank area.

6. No measurable floating product was detected in any of the three new wells, except minor sheen was noted in the existing 4-inch well MW-4.

RECOMMENDATION:

Initiate a quarterly monitoring and sampling program of the four on-site monitoring wells for a year. The next quarterly sampling event will be in late May 1995. Per State and Local Regulatory Agencies requirements, additional investigation may be necessary to define the extent of the dissolved plume.

This report must be submitted to the Alameda County Health Care Services Agency (ACHCSA) and the Regional Water Quality Control Board (RWQCB).

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 fuel leak regulations.

This service does not make Soil Tech Engineering, Inc. liable for future maintenance, repairs, damage, injury to 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 State and 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.

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A P P E N D I X "A"

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TABLE 1
GROUNDWATER MONITORING DATA

Date	Well No./ Elevation	Water Level Elevation	Water Depth in feet	FFP Thickness	Odor
2/23/95	STMW-1 (97.62)	91.73	5.89	None	None
	STMW-2 (97.87)	91.06	6.81	None	None
	STMW-3 (97.03)	92.82	4.21	None	None
	MW-4 (96.77)	89.87	6.90	Rainbow Sheen	Strong Petroleum

FFP - Free Floating Product

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TABLE 2
SUMMARY OF SOIL SAMPLES RESULTS
IN
MILLIGRAMS PER KILOGRAM (mg/Kg)

1. TPHd, TPHg and BTEX Results

Date	Sample #	Depth Feet	TPHd	TPHg	B	T	E	X
2/15/95	STMW-1-6	6	ND	ND	ND	ND	ND	ND
	STMW-1-11	11	ND	ND	ND	ND	ND	ND
	STMW-2-6	6	ND	ND	ND	ND	ND	ND
	STMW-2-11	11	ND	3.5	ND	0.005	0.0058	0.054
2/16/95	STMW-3-6	6	ND	ND	ND	ND	ND	ND
	STMW-3-11	11	ND	ND	ND	ND	ND	ND
	STMW-3-16	16	ND	ND	ND	ND	ND	ND
	STMW-4-6	6	110	1,900	3.5	4.7	3.9	11
	STMW-4-11	11	ND	4.6	0.048	0.026	0.037	0.06
	STMW-4-16	16	ND	ND	ND	ND	ND	ND

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

TABLE 2 CONT'D
SUMMARY OF SOIL SAMPLES RESULTS
IN
MILLIGRAMS PER KILOGRAM (mg/Kg)

2. TOG, EPA 8010, Cadmium, Chromium, Lead, Nickel and Zinc Results

Date	Sample #	Depth Feet	TOG	EPA 8010	Cd	Cr	Pb	Ni	Zn
2/15/95	STMW-1-6	6	ND	ND	1.1	70	2.7	40	250
	STMW-1-11	11	ND	ND	2.2	74	6.1	110	300
	STMW-2-6	6	21	ND	3.7	57	9.2	230	48
	STMW-2-11	11	ND	ND	9.5	81	23	150	340
2/16/95	STMW-3-6	6	ND	ND	1.3	58	3.0	69	290
	STMW-3-11	11	ND	ND	ND	54	ND	5.5	350
	STMW-3-16	16	ND	ND	1.4	43	2.5	8.2	47
	STMW-4-6	6	200	ND	2.4	65	6.2	180	380
	STMW-4-11	11	ND	ND	1.7	55	5.7	490	380
	STMW-4-16	16	ND	ND	4.1	61	11	20	120

EPA 8010 - Chlorinated Hydrocarbon
TOG - Total Oil and Grease
Cd - Cadmium
Cr - Chromium
Pb - Lead
Ni - Nickel
Zn - Zinc
ND - Not Detected (Below Laboratory Detection Limit)

File No. 8-93-558-ST

Logged By: Robert Baker	Exploratory Boring Log	Boring No.: STMW-1
Date Drilled: 2/15/95	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					With 10% angular gravel clasts to 1-inch diameter.
18					
19					
20					
21					
22				SP-SM	Dark yellowish-brown poorly graded sand with silt, wet, medium dense, 10% silty fines, 90% fine to medium grained poorly sorted angular sand.
23					Munsell Soil Color: 10YR 3/6
24					
25					Boring terminated at 25 feet.
26					
27					
28					
29					
30					
31					
32					

Remarks

File No. 8-93-558-ST

Logged By: Robert Baker	Exploratory Boring Log	Boring No. STMW-2
Date Drilled. 2/15/95	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				CH	2-inch asphalt on 4-inch aggerate baserock. Very dark greyish-brown fat clay with sand, moist, stiff, 20% medium grained sand.
2					
3				SC	Olive-grey clayey sand with gravel, moist, medium dense, 45% fat clay fines, 15% angular gravel clasts to 1-inch diameter, 40% poorly sorted fine to coarse grained sand.
4					
5					Munsell Soil Color: 5Y 4/2 ▼ Static groundwater encountered at 5 feet.
6	STMW-2-6		30/8"		
7					
8					
9					
10					▽ First groundwater encountered at 10 feet.
11	STMW-2-11			SP-SC	Becomes poorly graded sand with clay, wet with free water in fractures, 10% clayey fines, slight gasoline odor in sample.
12					
13					
14					
15					
16					

Remarks

File No. 8-93-558-ST

Logged By: Robert Baker	Exploratory Boring Log	Boring No.: STMW-2
Date Drilled: 2/15/95	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				CH	Yellowish-brown sandy fat clay, moist to wet, stiff, 25% poorly sorted fine to medium grained sand. Munsell Soil Color: 10YR 5/4
18					
19					
20					Boring terminated at 20 feet.
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					

Remarks

File No. 8-93-558-ST

Logged By: Robert Baker	Exploratory Boring Log	Boring No. STMW-3
Date Drilled: 2/16/95	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				CH	2-inch asphalt on 2-inch aggerate baserock. Yellowish-brown fat clay, moist, stiff, with 5% coarse grained sand and angular gravel clasts to $\frac{1}{2}$-inch diameter. Munsell Soil Color: 10YR 5/6
2					
3				CL	Brownish-yellow lean clay with sand, damp, hard, 20% fine to medium grained sand. Munsell Soil Color: 10YR 6/6
4					
5					
6	STMW-3-6		300 psi		
7					
8					
9					
10					Brownish-yellow lean clay with sand, damp, hard, 20% fine to medium grained sand with light grey mottles at 10 feet. Munsell Soil Color: 10YR 7/2
11	STMW-3-11		300 psi		
12					
13					
14					
15				GC	Brown clayey gravel with sand, moist, medium dense, 15% clayey fines, 45% subangular gravel clasts to 1-inch diameter, 40% poorly sorted fine to coarse grained sand. Munsell Soil Color: 10YR 4/3
16	STMW-3-16		275 psi		

Remarks

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Logged By: Robert Baker	Exploratory Boring Log	Boring No.: STMW-3
Date Drilled: 2/16/95	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					▽ First groundwater encountered at 17 feet.
18					
19					
20					
21					
22				CH	Dark yellowish-brown sandy fat clay, moist, stiff, 30% fine to medium grained angular sand. Munsell Soil Color: 10YR 4/4
23					
24					
25					Boring terminated at 25 feet.
26					
27					
28					
29					
30					
31					
32					

Remarks

File No. 8-93-558-ST

Logged By: Robert Baker	Exploratory Boring Log	Boring No. STMW-4 (B-4)
Date Drilled. 2/16/95	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				CH	2-inch asphalt on 3-inch aggerate baserock. Dark greenish-grey fat clay with sand, damp, stiff, 20% fine to coarse grained sand, strong gasoline odor. Munsell Soil Color: 5GY 4/1
2					
3					
4				SC	Olive clayey sand, damp to moist, medium dense, 15% clayey fines, 5% angular gravel clasts to 1-inch diameter, 80% poorly sorted fine to coarse grained sand, strong gasoline odor. Munsell Soil Color: 5Y 4/3
5					
6	STMW-4-6		30/18"		
7					
8					
9					
10					▽ First groundwater encountered at 10½ feet.
11	STMW-4-11			SP-SM	Dark greenish-grey poorly graded sand with silt, wet, medium dense, 10% silty fines, strong gasoline odor. Munsell Soil Color: 5GY 4/1
12					
13					Dark yellowish-brown fat clay with sand, damp, very stiff to hard, 20% medium grained sand, slight gasoline odor. Munsell Soil Color: 10YR 4/4
14					
15					No apparent odor at 15 feet.
16	STMW-4-16				Borig terminated at 16½ feet.

Remarks

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TABLE 3
SUMMARY OF GROUNDWATER SAMPLES RESULTS
IN
MILLIGRAMS PER LITER (mg/L)

1. TPHd, TPHg, BTEX and TOG Results

Date	Sample No.	TPHd	TPHg	B	T	E	X	TOG
2/23/95	STMW-1	0.28	ND	ND	ND	ND	ND	0.6
	STMW-2	0.47	3.3	0.0096	0.013	0.008	0.028	18
	STMW-3	ND	ND	ND	ND	ND	ND	ND

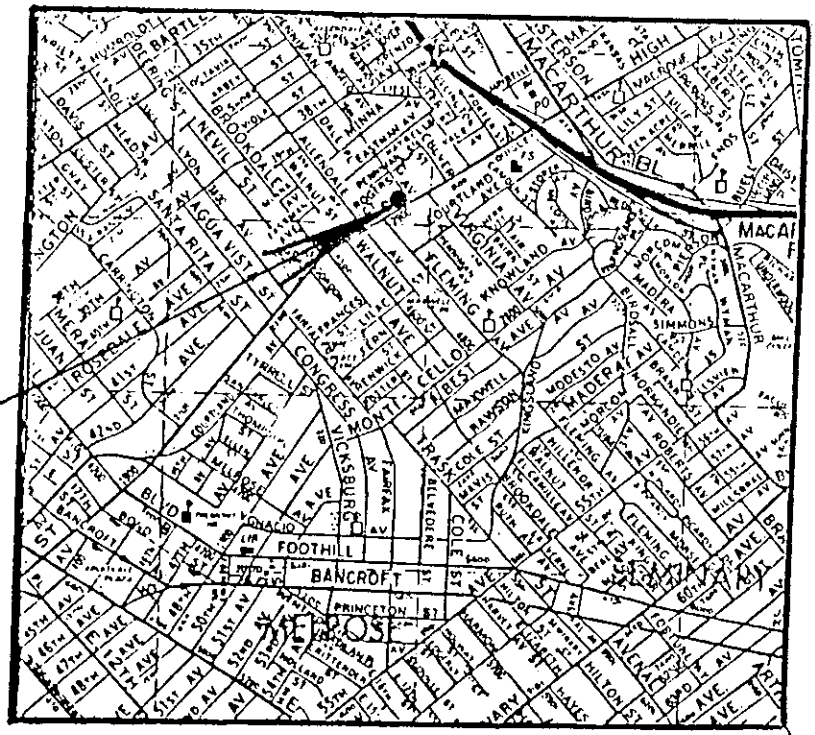
2. EPA 8010, Cadmium, Chromium, Lead, Nickel and Zinc Results

Date	Sample No.	EPA 8010	Cd	Cr	Pb	Ni	Zn
2/23/95	STMW-1	ND	ND	ND	ND	ND	ND
	STMW-2	ND	ND	ND	ND	ND	ND
	STMW-3	ND	ND	ND	ND	ND	ND

EPA 8010 - Chlorinated Hydrocarbons
TPHd - Total Petroleum Hydrocarbons as diesel
TPHg - Total Petroleum Hydrocarbons as gasoline
BTEX - Benzene, Toluene, Ethylbenzene, Total Xylenes
Cd - Cadmium
Cr - Chromium
Pb - Lead
Ni - Nickel
Zn - Zinc
ND - Not Detected (Below Laboratory Detection Limit)

File No. 8-93-558-ST

A P P E N D I X "B"



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

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Figure 1

File No. 8-93-558-ST

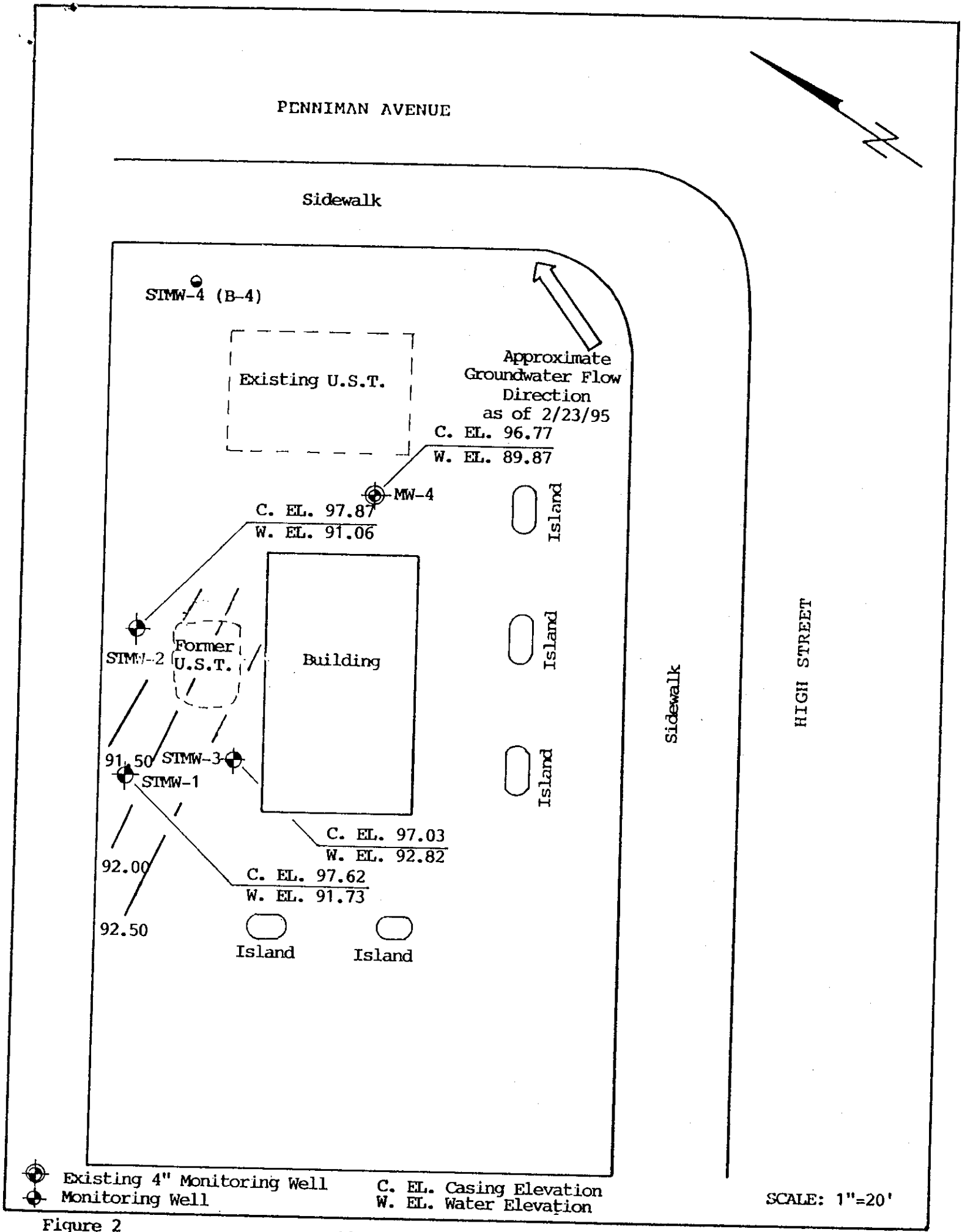


Figure 2

SOIL TECH ENGINEERING, INC.

M2

File No. 8-93-558-ST

A P P E N D I X "C"

SOIL TECH ENGINEERING, INC.

File No. 8-93-558-ST

DRILLING AND SOIL SAMPLING PROCEDURE

A truck-mounted drill rig, using a continuous flight hollow stem or solid 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.

File No. 8-93-558-ST

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 one foot 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 (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.

File No. 8-93-558-ST

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.

File No. 8-93-558-ST

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. 8-93-558-ST

A P P E N D I X "D"

SOIL TECH ENGINEERING, INC.

File No. 8-93-558-ST

Logged By: Robert Baker	Exploratory Boring Log	Boring No. STMW-1
Date Drilled: 2/15/95	Approx. Elevation	Boring Diameter: 8-inch
Drilling Method: Mobile drill rig B-40L	Sampling Method	

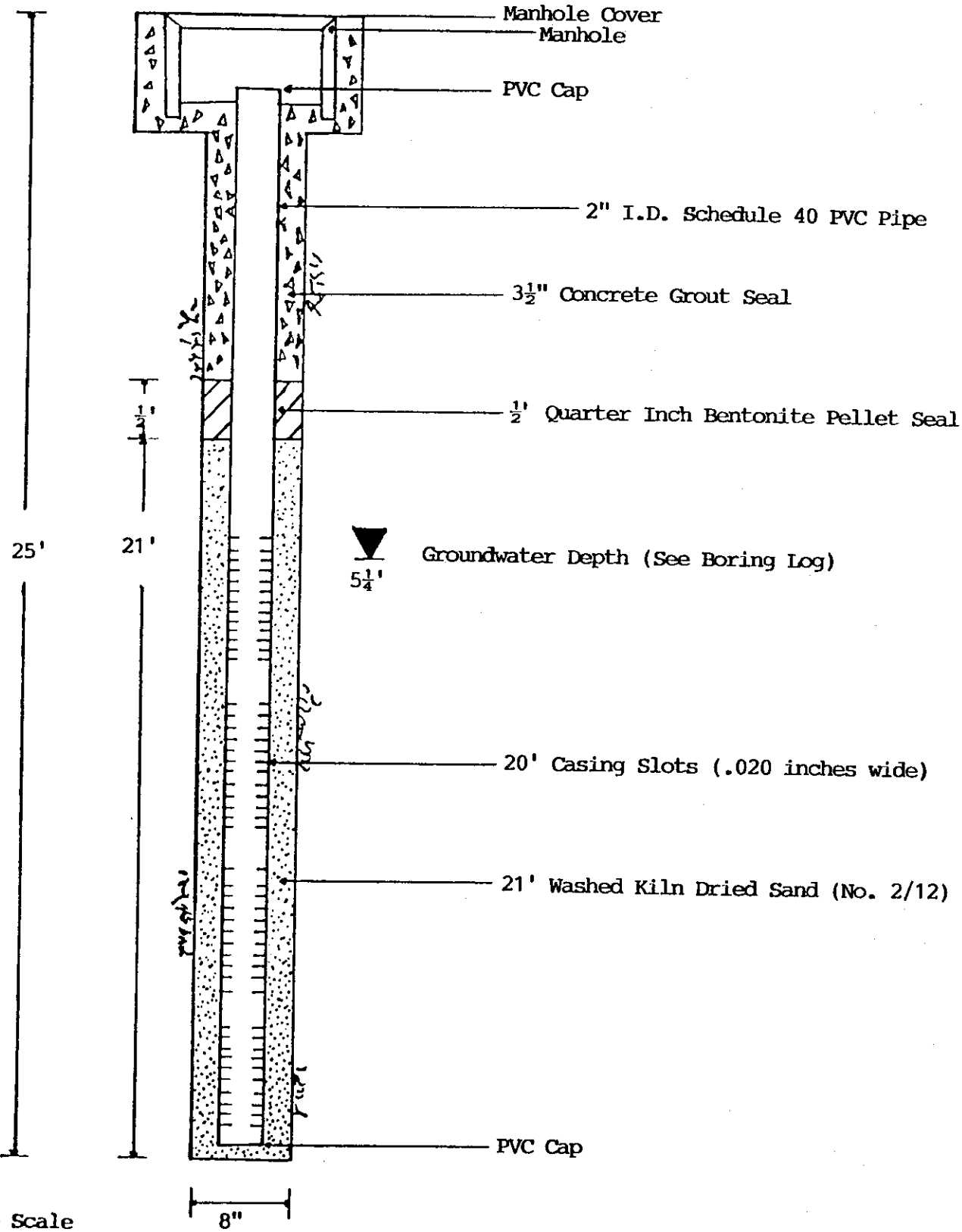
Depth, Ft.	Sample No.	Field Test for Total Ionization	Penetration Resistance Blows/6"	Unified Soil Classification	DESCRIPTION
1				CH	2-inch asphalt, 4-inch aggerate baserock. Very dark brown fat clay with sand, moist, firm, 15% subangular medium grained sand. Munsell Soil Color: 10YR 2/2
2					
3				CH	Brownish-yellow fat clay with sand, moist, firm to stiff, 15% subangular medium grained sand. Munsell Soil Color: 10YR 6/6
4					Becomes very stiff to hard at approximately 4 feet.
5					▼ Static groundwater encountered at 5¼ feet.
6	STMW-1-6		300 psi	SC	Dark yellowish-brown clayey sand, moist, very dense, 15% clayey fines, 85% poorly sorted angular fine to medium grained sand. Munsell Soil Color: 10YR 3/6
7					
8					
9					
10					
11	STMW-1-11		300 psi		With 10% angular gravel clasts to 1-inch diameter at approximately 11 feet.
12					
13					
14					▽ First groundwater encountered at 14 feet.
15					
16					

Remarks

File No. 8-93-558-ST

A P P E N D I X "E"

File No. 8-93-558-ST

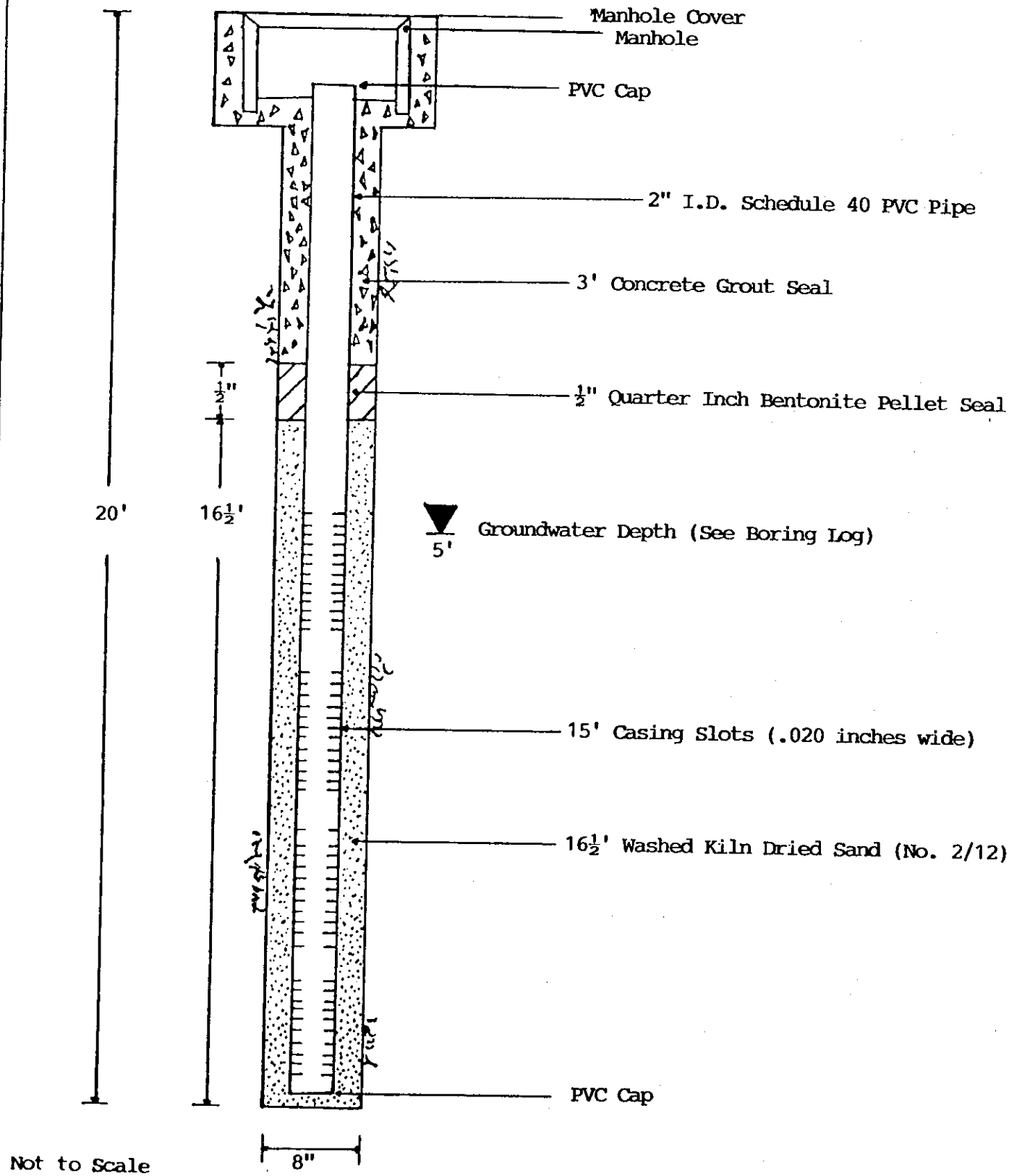


STMW-1

Piezometer Schematic

SOIL TECH ENGINEERING, INC.

PS1



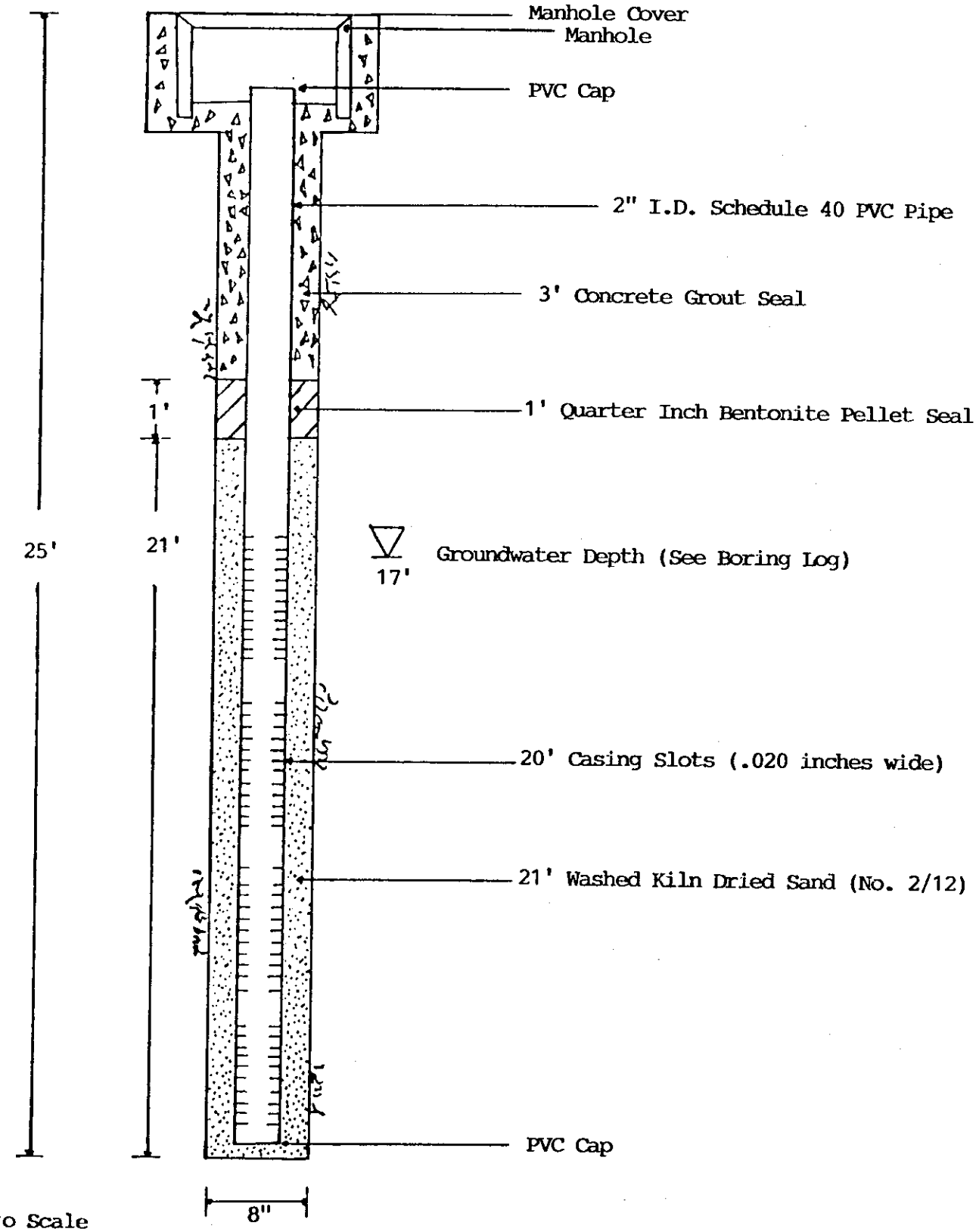
STMW-2

Piezometer Schematic

SOIL TECH ENGINEERING, INC.

PS2

File No. 8-93-558-ST



STMW-3

Piezometer Schematic

PS3

SOIL TECH ENGINEERING, INC.

File No. 8-93-558-ST

A P P E N D I X "F"

SOIL TECH ENGINEERING, INC.

PRIORITY ENVIRONMENTAL LABS
Precision Environmental Analytical Laboratory

February 20, 1995

PEL # 9502061

SOIL TECH ENGINEERING

Attn: Robert Baker

Re: Ten soil samples for Gasoline/BTEX , Diesel , and Oil & Grease analyses.

Project name: High Street ARCO
Project number: 558

Date sampled: Feb 15-16, 1995
Date extracted: Feb 17-20, 1995

Date submitted: Feb 17, 1995
Date analyzed: Feb 17-20, 1995

RESULTS:

SAMPLE I.D.	Gasoline (mg/Kg)	Diesel (mg/Kg)	Benzene (ug/Kg)	Toluene (ug/Kg)	Ethyl Benzene (ug/Kg)	Total Xylene (ug/Kg)	Oil & Grease (mg/Kg)
STMW-1-6	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
STMW-1-11	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
STMW-2-6	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
STMW-2-11	3.5	N.D.	N.D.	5.0	5.8	54	N.D.
STMW-3-6	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
STMW-3-11	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
STMW-3-16	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
STMW-4-6	1900	110	3500	4700	3900	11000	200
STMW-4-11	4.6	N.D.	48	26	37	60	N.D.
STMW-4-16	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Blank	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Spiked Recovery	80.6%	91.7%	82.0%	103.2%	92.3%	103.1%	---
Detection limit	1.0	1.0	5.0	5.0	5.0	5.0	10
Method of Analysis	5030 / 8015	3550 / 8015	8020	8020	8020	8020	5520 D & F

David Duong
Laboratory Director

1764 Houret Court Milpitas, CA. 95035 Tel: 408-946-9636 Fax: 408-946-9663

PRIORITY ENVIRONMENTAL LABS

Precision Environmental Analytical Laboratory

February 20, 1995 PEL # 9502061

SOIL TECH ENGINEERING Attn: Robert Baker

Project name: High Street ARCO Project number: 558

Sample I.D.: STMW-1-6

Date Sampled: Feb 15, 1995 Date Submitted: Feb 17, 1995
Date Analyzed: Feb 17-20, 1995

Method of Analysis: EPA 8010 Detection limit: 5.0 ug/Kg

COMPOUND NAME	CONCENTRATION (ug/Kg)	SPIKE RECOVERY (%)
Chloromethane	N.D.	-----
Vinyl Chloride	N.D.	-----
Bromomethane	N.D.	-----
Chloroethane	N.D.	85.5
Trichlorofluoromethane	N.D.	-----
1,1-Dichloroethene	N.D.	-----
Methylene Chloride	N.D.	-----
1,2-Dichloroethene (TOTAL)	N.D.	-----
1,1-Dichloroethane	N.D.	-----
Chloroform	N.D.	88.1
1,1,1-Trichloroethane	N.D.	-----
Carbon Tetrachloride	N.D.	-----
1,2-Dichloroethane	N.D.	-----
Trichloroethene	N.D.	86.6
1,2-Dichloropropane	N.D.	-----
Bromodichloromethane	N.D.	-----
2-Chloroethylvinylether	N.D.	-----
Trans-1,3-Dichloropropene	N.D.	-----
Cis-1,3-Dichloropropene	N.D.	-----
1,1,2-Trichloroethane	N.D.	-----
Tetrachloroethene	N.D.	89.5
Dibromochloromethane	N.D.	-----
Chlorobenzene	N.D.	90.8
Bromoform	N.D.	-----
1,1,2,2-Tetrachloroethane	N.D.	-----
1,3-Dichlorobenzene	N.D.	-----
1,4-Dichlorobenzene	N.D.	-----
1,2-Dichlorobenzene	N.D.	-----

David Duong
Laboratory Director

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PRIORITY ENVIRONMENTAL LABS

Precision Environmental Analytical Laboratory

February 20, 1995 PEL # 9502061

SOIL TECH ENGINEERING Attn: Robert Baker

Project name: High Street ARCO Project number: 558

Sample I.D.: STMW-1-11

Date Sampled: Feb 15, 1995 Date Submitted: Feb 17, 1995
Date Analyzed: Feb 17-20, 1995

Method of Analysis: EPA 8010 Detection limit: 5.0 ug/Kg

COMPOUND NAME	CONCENTRATION (ug/Kg)	SPIKE RECOVERY (%)
Chloromethane	N.D.	-----
Vinyl Chloride	N.D.	-----
Bromomethane	N.D.	-----
Chloroethane	N.D.	85.5
Trichlorofluoromethane	N.D.	-----
1,1-Dichloroethene	N.D.	-----
Methylene Chloride	N.D.	-----
1,2-Dichloroethene (TOTAL)	N.D.	-----
1,1-Dichloroethane	N.D.	-----
Chloroform	N.D.	88.1
1,1,1-Trichloroethane	N.D.	-----
Carbon Tetrachloride	N.D.	-----
1,2-Dichloroethane	N.D.	-----
Trichloroethene	N.D.	86.6
1,2-Dichloropropane	N.D.	-----
Bromodichloromethane	N.D.	-----
2-Chloroethylvinylether	N.D.	-----
Trans-1,3-Dichloropropene	N.D.	-----
Cis-1,3-Dichloropropene	N.D.	-----
1,1,2-Trichloroethane	N.D.	-----
Tetrachloroethene	N.D.	89.5
Dibromochloromethane	N.D.	-----
Chlorobenzene	N.D.	90.8
Bromoform	N.D.	-----
1,1,2,2-Tetrachloroethane	N.D.	-----
1,3-Dichlorobenzene	N.D.	-----
1,4-Dichlorobenzene	N.D.	-----
1,2-Dichlorobenzene	N.D.	-----

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PRIORITY ENVIRONMENTAL LABS
Precision Environmental Analytical Laboratory

February 20, 1995 PEL # 9502061

SOIL TECH ENGINEERING Attn: Robert Baker

Project name: High Street ARCO Project number: 558

Sample I.D.: STMW-2-6

Date Sampled: Feb 15, 1995 Date Submitted: Feb 17, 1995
Date Analyzed: Feb 17-20, 1995

Method of Analysis: EPA 8010 Detection limit: 5.0 ug/Kg

COMPOUND NAME	CONCENTRATION (ug/Kg)	SPIKE RECOVERY (%)
Chloromethane	N.D.	-----
Vinyl Chloride	N.D.	-----
Bromomethane	N.D.	-----
Chloroethane	N.D.	85.5
Trichlorofluoromethane	N.D.	-----
1,1-Dichloroethene	N.D.	-----
Methylene Chloride	N.D.	-----
1,2-Dichloroethene (TOTAL)	N.D.	-----
1,1-Dichloroethane	N.D.	-----
Chloroform	N.D.	88.1
1,1,1-Trichloroethane	N.D.	-----
Carbon Tetrachloride	N.D.	-----
1,2-Dichloroethane	N.D.	-----
Trichloroethene	N.D.	86.6
1,2-Dichloropropane	N.D.	-----
Bromodichloromethane	N.D.	-----
2-Chloroethylvinylether	N.D.	-----
Trans-1,3-Dichloropropene	N.D.	-----
Cis-1,3-Dichloropropene	N.D.	-----
1,1,2-Trichloroethane	N.D.	-----
Tetrachloroethene	N.D.	89.5
Dibromochloromethane	N.D.	-----
Chlorobenzene	N.D.	90.8
Bromoform	N.D.	-----
1,1,2,2-Tetrachloroethane	N.D.	-----
1,3-Dichlorobenzene	N.D.	-----
1,4-Dichlorobenzene	N.D.	-----
1,2-Dichlorobenzene	N.D.	-----

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PRIORITY ENVIRONMENTAL LABS
Precision Environmental Analytical Laboratory

February 20, 1995 PEL # 9502061

SOIL TECH ENGINEERING Attn: Robert Baker

Project name: High Street ARCO Project number: 558

Sample I.D.: STMW-2-11

Date Sampled: Feb 15, 1995 Date Submitted: Feb 17, 1995
Date Analyzed: Feb 17-20, 1995

Method of Analysis: EPA 8010 Detection limit: 5.0 ug/Kg

COMPOUND NAME	CONCENTRATION (ug/Kg)	SPIKE RECOVERY (%)
Chloromethane	N.D.	-----
Vinyl Chloride	N.D.	-----
Bromomethane	N.D.	-----
Chloroethane	N.D.	85.5
Trichlorofluoromethane	N.D.	-----
1,1-Dichloroethene	N.D.	-----
Methylene Chloride	N.D.	-----
1,2-Dichloroethene (TOTAL)	N.D.	-----
1,1-Dichloroethane	N.D.	-----
Chloroform	N.D.	88.1
1,1,1-Trichloroethane	N.D.	-----
Carbon Tetrachloride	N.D.	-----
1,2-Dichloroethane	N.D.	-----
Trichloroethene	N.D.	86.6
1,2-Dichloropropane	N.D.	-----
Bromodichloromethane	N.D.	-----
2-Chloroethylvinylether	N.D.	-----
Trans-1,3-Dichloropropene	N.D.	-----
Cis-1,3-Dichloropropene	N.D.	-----
1,1,2-Trichloroethane	N.D.	-----
Tetrachloroethene	N.D.	89.5
Dibromochloromethane	N.D.	-----
Chlorobenzene	N.D.	90.8
Bromoform	N.D.	-----
1,1,2,2-Tetrachloroethane	N.D.	-----
1,3-Dichlorobenzene	N.D.	-----
1,4-Dichlorobenzene	N.D.	-----
1,2-Dichlorobenzene	N.D.	-----

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PRIORITY ENVIRONMENTAL LABS
Precision Environmental Analytical Laboratory

February 20, 1995 PEL # 9502061

SOIL TECH ENGINEERING Attn: Robert Baker

Project name: High Street ARCO Project number: 558

Sample I.D.: STMW-3-6

Date Sampled: Feb 16, 1995 Date Submitted: Feb 17, 1995
Date Analyzed: Feb 17-20, 1995

Method of Analysis: EPA 8010 Detection limit: 5.0 ug/Kg

COMPOUND NAME	CONCENTRATION (ug/Kg)	SPIKE RECOVERY (%)
Chloromethane	N.D.	-----
Vinyl Chloride	N.D.	-----
Bromomethane	N.D.	-----
Chloroethane	N.D.	85.5
Trichlorofluoromethane	N.D.	-----
1,1-Dichloroethene	N.D.	-----
Methylene Chloride	N.D.	-----
1,2-Dichloroethene (TOTAL)	N.D.	-----
1,1-Dichloroethane	N.D.	-----
Chloroform	N.D.	88.1
1,1,1-Trichloroethane	N.D.	-----
Carbon Tetrachloride	N.D.	-----
1,2-Dichloroethane	N.D.	-----
Trichloroethene	N.D.	86.6
1,2-Dichloropropane	N.D.	-----
Bromodichloromethane	N.D.	-----
2-Chloroethylvinylether	N.D.	-----
Trans-1,3-Dichloropropene	N.D.	-----
Cis-1,3-Dichloropropene	N.D.	-----
1,1,2-Trichloroethane	N.D.	-----
Tetrachloroethene	N.D.	89.5
Dibromochloromethane	N.D.	-----
Chlorobenzene	N.D.	90.8
Bromoform	N.D.	-----
1,1,2,2-Tetrachloroethane	N.D.	-----
1,3-Dichlorobenzene	N.D.	-----
1,4-Dichlorobenzene	N.D.	-----
1,2-Dichlorobenzene	N.D.	-----

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PRIORITY ENVIRONMENTAL LABS

Precision Environmental Analytical Laboratory

February 20, 1995 PEL # 9502061

SOIL TECH ENGINEERING Attn: Robert Baker

Project name: High Street ARCO Project number: 558

Sample I.D.: STMW-3-11

Date Sampled: Feb 16, 1995 Date Submitted: Feb 17, 1995
Date Analyzed: Feb 17-20, 1995

Method of Analysis: EPA 8010 Detection limit: 5.0 ug/Kg

COMPOUND NAME	CONCENTRATION (ug/Kg)	SPIKE RECOVERY (%)
Chloromethane	N.D.	-----
Vinyl Chloride	N.D.	-----
Bromomethane	N.D.	-----
Chloroethane	N.D.	85.5
Trichlorofluoromethane	N.D.	-----
1,1-Dichloroethene	N.D.	-----
Methylene Chloride	N.D.	-----
1,2-Dichloroethene (TOTAL)	N.D.	-----
1,1-Dichloroethane	N.D.	-----
Chloroform	N.D.	88.1
1,1,1-Trichloroethane	N.D.	-----
Carbon Tetrachloride	N.D.	-----
1,2-Dichloroethane	N.D.	-----
Trichloroethene	N.D.	86.6
1,2-Dichloropropane	N.D.	-----
Bromodichloromethane	N.D.	-----
2-Chloroethylvinylether	N.D.	-----
Trans-1,3-Dichloropropene	N.D.	-----
Cis-1,3-Dichloropropene	N.D.	-----
1,1,2-Trichloroethane	N.D.	-----
Tetrachloroethene	N.D.	89.5
Dibromochloromethane	N.D.	-----
Chlorobenzene	N.D.	90.8
Bromoform	N.D.	-----
1,1,2,2-Tetrachloroethane	N.D.	-----
1,3-Dichlorobenzene	N.D.	-----
1,4-Dichlorobenzene	N.D.	-----
1,2-Dichlorobenzene	N.D.	-----

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PRIORITY ENVIRONMENTAL LABS
Precision Environmental Analytical Laboratory

February 20, 1995 PEL # 9502061

SOIL TECH ENGINEERING Attn: Robert Baker

Project name: High Street ARCO Project number: 558

Sample I.D.: STMW-3-16

Date Sampled: Feb 16, 1995 Date Submitted: Feb 17, 1995
Date Analyzed: Feb 17-20, 1995

Method of Analysis: EPA 8010 Detection limit: 5.0 ug/Kg

COMPOUND NAME	CONCENTRATION (ug/Kg)	SPIKE RECOVERY (%)
Chloromethane	N.D.	-----
Vinyl Chloride	N.D.	-----
Bromomethane	N.D.	-----
Chloroethane	N.D.	85.5
Trichlorofluoromethane	N.D.	-----
1,1-Dichloroethene	N.D.	-----
Methylene Chloride	N.D.	-----
1,2-Dichloroethene (TOTAL)	N.D.	-----
1,1-Dichloroethane	N.D.	-----
Chloroform	N.D.	88.1
1,1,1-Trichloroethane	N.D.	-----
Carbon Tetrachloride	N.D.	-----
1,2-Dichloroethane	N.D.	-----
Trichloroethene	N.D.	86.6
1,2-Dichloropropane	N.D.	-----
Bromodichloromethane	N.D.	-----
2-Chloroethylvinylether	N.D.	-----
Trans-1,3-Dichloropropene	N.D.	-----
Cis-1,3-Dichloropropene	N.D.	-----
1,1,2-Trichloroethane	N.D.	-----
Tetrachloroethene	N.D.	89.5
Dibromochloromethane	N.D.	-----
Chlorobenzene	N.D.	90.8
Bromoform	N.D.	-----
1,1,2,2-Tetrachloroethane	N.D.	-----
1,3-Dichlorobenzene	N.D.	-----
1,4-Dichlorobenzene	N.D.	-----
1,2-Dichlorobenzene	N.D.	-----

David Duong
Laboratory Director

1764 Houret Court Milpitas, CA. 95035 Tel: 408-946-9636 Fax: 408-946-9663

PRIORITY ENVIRONMENTAL LABS

Precision Environmental Analytical Laboratory

February 20, 1995

PEL # 9502061

SOIL TECH ENGINEERING

Attn: Robert Baker

Project name: High Street ARCO

Project number: 558

Sample I.D.: STMW-4-6

Date Sampled: Feb 16, 1995
Date Analyzed: Feb 17-20, 1995

Date Submitted: Feb 17, 1995

Method of Analysis: EPA 8010

Detection limit: 5.0 ug/Kg

COMPOUND NAME	CONCENTRATION (ug/Kg)	SPIKE RECOVERY (%)
Chloromethane	N.D.	-----
Vinyl Chloride	N.D.	-----
Bromomethane	N.D.	-----
Chloroethane	N.D.	85.5
Trichlorofluoromethane	N.D.	-----
1,1-Dichloroethene	N.D.	-----
Methylene Chloride	N.D.	-----
1,2-Dichloroethene (TOTAL)	N.D.	-----
1,1-Dichloroethane	N.D.	-----
Chloroform	N.D.	88.1
1,1,1-Trichloroethane	N.D.	-----
Carbon Tetrachloride	N.D.	-----
1,2-Dichloroethane	N.D.	-----
Trichloroethene	N.D.	86.6
1,2-Dichloropropane	N.D.	-----
Bromodichloromethane	N.D.	-----
2-Chloroethylvinylether	N.D.	-----
Trans-1,3-Dichloropropene	N.D.	-----
Cis-1,3-Dichloropropene	N.D.	-----
1,1,2-Trichloroethane	N.D.	-----
Tetrachloroethene	N.D.	89.5
Dibromochloromethane	N.D.	-----
Chlorobenzene	N.D.	90.8
Bromoform	N.D.	-----
1,1,2,2-Tetrachloroethane	N.D.	-----
1,3-Dichlorobenzene	N.D.	-----
1,4-Dichlorobenzene	N.D.	-----
1,2-Dichlorobenzene	N.D.	-----

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PRIORITY ENVIRONMENTAL LABS

Precision Environmental Analytical Laboratory

February 20, 1995

PEL # 9502061

SOIL TECH ENGINEERING

Attn: Robert Baker

Project name: High Street ARCO

Project number: 558

Sample I.D.: STMW-4-11

Date Sampled: Feb 16, 1995
Date Analyzed: Feb 17-20, 1995

Date Submitted: Feb 17, 1995

Method of Analysis: EPA 8010

Detection limit: 5.0 ug/Kg

COMPOUND NAME	CONCENTRATION (ug/Kg)	SPIKE RECOVERY (%)
Chloromethane	N.D.	-----
Vinyl Chloride	N.D.	-----
Bromomethane	N.D.	-----
Chloroethane	N.D.	85.5
Trichlorofluoromethane	N.D.	-----
1,1-Dichloroethene	N.D.	-----
Methylene Chloride	N.D.	-----
1,2-Dichloroethene (TOTAL)	N.D.	-----
1,1-Dichloroethane	N.D.	-----
Chloroform	N.D.	88.1
1,1,1-Trichloroethane	N.D.	-----
Carbon Tetrachloride	N.D.	-----
1,2-Dichloroethane	N.D.	-----
Trichloroethene	N.D.	86.6
1,2-Dichloropropane	N.D.	-----
Bromodichloromethane	N.D.	-----
2-Chloroethylvinylether	N.D.	-----
Trans-1,3-Dichloropropene	N.D.	-----
Cis-1,3-Dichloropropene	N.D.	-----
1,1,2-Trichloroethane	N.D.	-----
Tetrachloroethene	N.D.	89.5
Dibromochloromethane	N.D.	-----
Chlorobenzene	N.D.	90.8
Bromoform	N.D.	-----
1,1,2,2-Tetrachloroethane	N.D.	-----
1,3-Dichlorobenzene	N.D.	-----
1,4-Dichlorobenzene	N.D.	-----
1,2-Dichlorobenzene	N.D.	-----

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PRIORITY ENVIRONMENTAL LABS

Precision Environmental Analytical Laboratory

February 20, 1995 PEL # 9502061

SOIL TECH ENGINEERING Attn: Robert Baker

Project name: High Street ARCO Project number: 558

Sample I.D.: STMW-4-16

Date Sampled: Feb 16, 1995 Date Submitted: Feb 17, 1995
Date Analyzed: Feb 17-20, 1995

Method of Analysis: EPA 8010 Detection limit: 5.0 ug/Kg

COMPOUND NAME	CONCENTRATION (ug/Kg)	SPIKE RECOVERY (%)
Chloromethane	N.D.	-----
Vinyl Chloride	N.D.	-----
Bromomethane	N.D.	-----
Chloroethane	N.D.	85.5
Trichlorofluoromethane	N.D.	-----
1,1-Dichloroethene	N.D.	-----
Methylene Chloride	N.D.	-----
1,2-Dichloroethene (TOTAL)	N.D.	-----
1,1-Dichloroethane	N.D.	-----
Chloroform	N.D.	88.1
1,1,1-Trichloroethane	N.D.	-----
Carbon Tetrachloride	N.D.	-----
1,2-Dichloroethane	N.D.	-----
Trichloroethene	N.D.	86.6
1,2-Dichloropropane	N.D.	-----
Bromodichloromethane	N.D.	-----
2-Chloroethylvinylether	N.D.	-----
Trans-1,3-Dichloropropene	N.D.	-----
Cis-1,3-Dichloropropene	N.D.	-----
1,1,2-Trichloroethane	N.D.	-----
Tetrachloroethene	N.D.	89.5
Dibromochloromethane	N.D.	-----
Chlorobenzene	N.D.	90.8
Bromoform	N.D.	-----
1,1,2,2-Tetrachloroethane	N.D.	-----
1,3-Dichlorobenzene	N.D.	-----
1,4-Dichlorobenzene	N.D.	-----
1,2-Dichlorobenzene	N.D.	-----

David Duong
Laboratory Director

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PRIORITY ENVIRONMENTAL LABS
Precision Environmental Analytical Laboratory

February 21, 1995 PEL # 9502061

SOIL TECH ENGINEERING

Attn: Robert Baker

Re: Ten soil samples for Cadmium, Chromium, Lead, Nikel, and Zinc analyses.

Project name: High Street ARCO
Project number: 558

Date sampled: Feb 15-16, 1995 Date submitted: Feb 17, 1995
Date extracted: Feb 17-21, 1995 Date analyzed: Feb 17-21, 1995

RESULTS:

SAMPLE I.D.	Cadmium (mg/Kg)	Chromium (mg/Kg)	Lead (mg/Kg)	Nikel (mg/Kg)	Zinc (mg/Kg)
STMW-1-6	1.1	70	2.7	40	250
STMW-1-11	2.2	74	6.1	110	300
STMW-2-6	3.7	57	9.2	230	48
STMW-2-11	9.5	81	23	150	340
STMW-3-6	1.3	58	3.0	69	290
STMW-3-11	N.D.	54	N.D.	5.5	350
STMW-3-16	1.4	43	2.5	8.2	47
STMW-4-6	2.4	65	6.2	180	380
STMW-4-11	1.7	55	5.7	490	380
STMW-4-16	4.1	61	11	20	120
Blank	N.D.	N.D.	N.D.	N.D.	N.D.
Detection limit	1.0	1.0	1.0	1.0	1.0
Method of Analysis	7130	7190	7420	7520	7950

David Duong
Laboratory Director

1764 Houret Court Milpitas, CA. 95035 Tel: 408-946-9636 Fax: 408-946-9663

CHAIN OF CUSTODY RECORD

PROJ. NO. 556 | NAME High Street Area

SAMPLERS (Signature) Robert E. Baker

NO.	DATE 1995	TIME	SOIL	WATER	LOCATION	CONTAINER	TPH-D	TPH-G	BTEX	Metals (Cd, Cr, Pb, Ni, Zn)	T.D.G.	8010 (Chlorinated)	NC	REMARKS
1	2/15	10:30	X		STMW-1-6	1	X	X	X	X	X			
2	2/15	10:40	X		STMW-1-11	1	/	/	X	X	X			
3	2/15	14:05			STMW-2-6	1	/	/	X	X	X			
4	2/15	14:15			STMW-2-11	1	/	/	X	X	X			
5	2/16	10:00			STMW-3-6	1	/	/	X	X	X			
6	2/16	10:05			STMW-3-11	1	/	/	X	X	X			
7	2/16	10:10			STMW-3-16	1	/	/	X	X	X			
8	2/16	12:45			STMW-4-6	1	/	X	X	X	X			
9	2/16	12:55			STMW-4-11	1	/	X	X	X	X			
10	2/16	14:25			STMW-4-16	1	/	X	X	X	X			

C-P

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Robert Baker	12/17 09:45				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
		TRAFFIC LAB			
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	
	12/17 14:46	PEL			

SOIL TECH ENGINEERING
Soil, Foundation and Geological Engineers
298 BROKAW ROAD, SANTA CLARA, CA 95050 ■ (408) 866-0919 ■ (415) 791-6406

CHAIN OF CUSTODY RECORD

PROJ. NO.	NAME
558	High Street Area

SAMPLERS: *(Signature)* Robert E. Baker

PEL # 9502061

INV # 25688

NO.	DATE 1995	TIME	SOIL	WATER	LOCATION	CONTAINER	Analyses Requested (2): TPH-G	TPH-D	BTEX	Metals (Cd, Cr, Pb, Ni, Zn)	T.O.G.	8010 (chlorinated)	
1	2/15	10:30	X		STMW-1-6	1	X	X	X	X	X		
2	2/15	10:40	X		STMW-1-11	1	/	/	X	X	X		
3	2/15	14:05			STMW-2-6	1	/	/	X	X	X		
4	2/15	14:15			STMW-2-11	1	/	/	X	X	X		
5	2/16	10:00			STMW-3-6	1	/	/	X	X	X		
6	2/16	10:05			STMW-3-11	1	/	/	X	X	X		
7	2/16	10:10			STMW-3-16	1	/	/	X	X	X		
8	2/16	12:45			STMW-4-6	1	/	X	X	X	X		
9	2/16	12:55			STMW-4-11	1	/	X	X	X	X		
10	2/16	14:25			STMW-4-16	1	/	X	X	X	X		

Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date / Time	Receive by: *(Signature)*
Robert Baker	12/17 09:45				
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	
	12/17 14:16	PEL			

SOIL TECH ENGINEERING

Soil, Foundation and Geological Engineers

298 BROKAW ROAD, SANTA CLARA, CA 95050 ■ (408) 866-0919 ■ (415) 791-6406

PRIORITY ENVIRONMENTAL LABS
Precision Environmental Analytical laboratory

March 03, 1995 PEL # 9502089

SOIL TECH ENGINEERING

Attn: Noori Ameli

Re: Three water samples for Gasoline/BTEX, Diesel, and Oil & Grease analyses.

Project name: 2951 High St., - Oakland
Project number: 8-93-558-ST

Date sampled: Feb 23, 1995 Date submitted: Feb 27, 1995
Date extracted: Feb 27-Mar 02,1995 Date analyzed: Feb 27-Mar 02,1995

RESULTS:

SAMPLE I.D.	Gasoline (ug/L)	Diesel (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl Benzene (ug/L)	Total Xylene (ug/L)	Oil & Grease (mg/L)
STMW-1	N.D.	280	N.D.	N.D.	N.D.	N.D.	0.6
STMW-2	3300	470	9.6	13	8.0	28	18
STMW-3	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Blank	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Spiked Recovery	80.1%	91.7%	82.0%	103.2%	92.3%	103.1%	---
Detection limit	50	50	0.5	0.5	0.5	0.5	0.5
Method of Analysis	5030 / 8015	3510 / 8015	602	602	602	602	5520 C & F

David Duong
Laboratory Director

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PRIORITY ENVIRONMENTAL LABS

Precision Environmental Analytical Laboratory

March 02, 1995 PEL # 9502089

SOIL TECH ENGINEERING Attn: Noori Ameli

Project name: 2951 High St-Oakland Project number: 8-93-558-ST

Sample I.D.: STMW-1

Date Sampled: Feb 23, 1995
Date Analyzed: Feb 27-28, 1995
Date Submitted: Feb 27, 1995

Method of Analysis: EPA 601 Detection limit: 0.5 ug/L

COMPOUND NAME	CONCENTRATION (ug/L)	SPIKE RECOVERY (%)
Chloromethane	N.D.	-----
Vinyl Chloride	N.D.	-----
Bromomethane	N.D.	-----
Chloroethane	N.D.	85.5
Trichlorofluoromethane	N.D.	-----
1,1-Dichloroethene	N.D.	-----
Methylene Chloride	N.D.	-----
1,2-Dichloroethene (TOTAL)	N.D.	-----
1,1-Dichloroethane	N.D.	-----
Chloroform	N.D.	80.1
1,1,1-Trichloroethane	N.D.	-----
Carbon Tetrachloride	N.D.	-----
1,2-Dichloroethane	N.D.	-----
Trichloroethene	N.D.	86.6
1,2-Dichloropropane	N.D.	-----
Bromodichloromethane	N.D.	-----
2-Chloroethylvinylether	N.D.	-----
Trans-1,3-Dichloropropene	N.D.	-----
Cis-1,3-Dichloropropene	N.D.	-----
1,1,2-Trichloroethane	N.D.	-----
Tetrachloroethene	N.D.	89.5
Dibromochloromethane	N.D.	-----
Chlorobenzene	N.D.	90.8
Bromoform	N.D.	-----
1,1,2,2-Tetrachloroethane	N.D.	-----
1,3-Dichlorobenzene	N.D.	-----
1,4-Dichlorobenzene	N.D.	-----
1,2-Dichlorobenzene	N.D.	-----

David Duong
Laboratory Director

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PRIORITY ENVIRONMENTAL LABS

Precision Environmental Analytical Laboratory

March 02, 1995 PEL # 9502089

SOIL TECH ENGINEERING Attn: Noori Ameli

Project name: 2951 High St-Oakland Project number: 8-93-558-ST

Sample I.D.: STMW-2

Date Sampled: Feb 23, 1995
Date Analyzed: Feb 27-28, 1995

Date Submitted: Feb 27, 1995

Method of Analysis: EPA 601 Detection limit: 0.5 ug/L

COMPOUND NAME	CONCENTRATION (ug/L)	SPIKE RECOVERY (%)
Chloromethane	N.D.	-----
Vinyl Chloride	N.D.	-----
Bromomethane	N.D.	-----
Chloroethane	N.D.	85.5
Trichlorofluoromethane	N.D.	-----
1,1-Dichloroethene	N.D.	-----
Methylene Chloride	N.D.	-----
1,2-Dichloroethene (TOTAL)	N.D.	-----
1,1-Dichloroethane	N.D.	-----
Chloroform	N.D.	80.1
1,1,1-Trichloroethane	N.D.	-----
Carbon Tetrachloride	N.D.	-----
1,2-Dichloroethane	N.D.	-----
Trichloroethene	N.D.	86.6
1,2-Dichloropropane	N.D.	-----
Bromodichloromethane	N.D.	-----
2-Chloroethylvinylether	N.D.	-----
Trans-1,3-Dichloropropene	N.D.	-----
Cis-1,3-Dichloropropene	N.D.	-----
1,1,2-Trichloroethane	N.D.	-----
Tetrachloroethene	N.D.	89.5
Dibromochloromethane	N.D.	-----
Chlorobenzene	N.D.	90.8
Bromoform	N.D.	-----
1,1,2,2-Tetrachloroethane	N.D.	-----
1,3-Dichlorobenzene	N.D.	-----
1,4-Dichlorobenzene	N.D.	-----
1,2-Dichlorobenzene	N.D.	-----

David Duong
Laboratory Director

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PRIORITY ENVIRONMENTAL LABS

Precision Environmental Analytical Laboratory

March 02, 1995 PEL # 9502089

SOIL TECH ENGINEERING Attn: Noori Ameli

Project name: 2951 High St-Oakland Project number: 8-93-558-ST

Sample I.D.: STMW-3

Date Sampled: Feb 23, 1995 Date Submitted: Feb 27, 1995
Date Analyzed: Feb 27-28, 1995

Method of Analysis: EPA 601 Detection limit: 0.5 ug/L

COMPOUND NAME	CONCENTRATION (ug/L)	SPIKE RECOVERY (%)
Chloromethane	N.D.	-----
Vinyl Chloride	N.D.	-----
Bromomethane	N.D.	-----
Chloroethane	N.D.	85.5
Trichlorofluoromethane	N.D.	-----
1,1-Dichloroethene	N.D.	-----
Methylene Chloride	N.D.	-----
1,2-Dichloroethene (TOTAL)	N.D.	-----
1,1-Dichloroethane	N.D.	-----
Chloroform	N.D.	80.1
1,1,1-Trichloroethane	N.D.	-----
Carbon Tetrachloride	N.D.	-----
1,2-Dichloroethane	N.D.	-----
Trichloroethene	N.D.	86.6
1,2-Dichloropropane	N.D.	-----
Bromodichloromethane	N.D.	-----
2-Chloroethylvinylether	N.D.	-----
Trans-1,3-Dichloropropene	N.D.	-----
Cis-1,3-Dichloropropene	N.D.	-----
1,1,2-Trichloroethane	N.D.	-----
Tetrachloroethene	N.D.	89.5
Dibromochloromethane	N.D.	-----
Chlorobenzene	N.D.	90.8
Bromoform	N.D.	-----
1,1,2,2-Tetrachloroethane	N.D.	-----
1,3-Dichlorobenzene	N.D.	-----
1,4-Dichlorobenzene	N.D.	-----
1,2-Dichlorobenzene	N.D.	-----

David Duong
Laboratory Director

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PRIORITY ENVIRONMENTAL LABS
Precision Environmental Analytical Laboratory

March 03, 1995

PEL # 9502089

SOIL TECH ENGINEERING

Attn: Noori Ameli

Re: Three water samples for Cadmium, Chromium, Lead, Nikel, and Zinc analyses.

Project name: 2951 High St., - Oakland
Project number: 8-93-558-ST

Date sampled: Feb 23, 1995
Date extracted: Feb 27-Mar 03,1995
Date submitted: Feb 27, 1995
Date analyzed: Feb 27-Mar 03,1995

RESULTS:

SAMPLE I.D.	Cadmium (mg/L)	Chromium (mg/L)	Lead (mg/L)	Nikel (mg/L)	Zinc (mg/L)
STMW-1	N.D.	N.D.	N.D.	N.D.	N.D.
STMW-2	N.D.	N.D.	N.D.	N.D.	N.D.
STMW-3	N.D.	N.D.	N.D.	N.D.	N.D.
Blank	N.D.	N.D.	N.D.	N.D.	N.D.
Detection limit	0.05	0.1	0.05	0.1	0.1
Method of Analysis	7130	7190	7420	7520	7950

David Duong
Laboratory Director

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CHAIN OF CUSTODY RECORD

PEL

PROJ. NO.	NAME
8-93-558-ST	2951 High St. OAKLAND

SAMPLERS. *(Signature)* N. Amelio

NO.	DATE	TIME	SOIL	WATER	LOCATION	CONTAINER	Analyses Requested (2) TPH G/BTEX	TPHD	TOG	Cd, Cr, Pb, Ni, Zn	8010	REMARKS
1	2/23/95	10:55		✓	STMW-1	6	✓	✓	✓	✓	✓	
2	2/23/95	11:25		✓	STMW-2	6	✓	✓	—	—	—	
3	2/23/95	11:50		✓	STMW-3	6	✓	✓	✓	✓	✓	

Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date / Time	Receive by: *(Signature)*
N. Amelio		Hayden			
Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*
		TERRY CAM			
Relinquished by: *(Signature)*	Date / Time	Received for Laboratory by: *(Signature)*	Date / Time	Remarks	
	02/27/95 10:23	PEL			

SOIL TECH ENGINEERING
Soil, Foundation and Geological Engineers
298 BROKAW ROAD, SANTA CLARA, CA 95050 ■ (408) 866-0919 ■ (415) 791-6406

CHAIN OF CUSTODY RECORD

PEL

PROJ. NO. 8-33-558-ST

NAME 2951 High st. OAKLAND

SAMPLERS. (Signature)

PEL # 9502089

INV # 25716

NO.	DATE	TIME	SOIL	WATER	LOCATION	CON-TAINER	Analyses Requested (2) TPHG/BTEAX	TPHD	TOG	Cd, Cr, Pb, Ni, Zn	8010
1	2/23/95	10:55		✓	STMW-1	6	✓	✓	✓	✓	✓
2	2/23/95	11:25		✓	STMW-2	6	✓	✓	✓	✓	✓
3	2/23/95	11:50		✓	STMW-3	6	✓	✓	✓	✓	✓

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	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	
	02/27/95 13:23	PEL			

SOIL TECH ENGINEERING

Soil, Foundation and Geological Engineers

298 BROKAW ROAD, SANTA CLARA, CA 95050 ■ (408) 866-0919 ■ (415) 791-6406

File No. 8-93-558-ST

A P P E N D I X "G"

ZONE 7 WATER AGENCY

5997 PARKSIDE DRIVE PLEASANTON, CALIFORNIA 94588 VOICE (510) 484-2600
FAX (510) 462-3914

RECEIVED
SEP 26 1994
ZONE 7, ACFC&WCD

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 2951 High St.
OAKLAND CA 94619

CLIENT
Name ZIMA CENTER CORPORATION
Address 2951 HIGH ST. Voice —
City OAKLAND Zip 94619

APPLICANT
Name ALPHA GEO SERVICES
Fax (408) 988-3343
Address 238 Brokaw Rd. Voice —
City SANTA CLARA Zip 95050

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection	—	General	—
Water Supply	—	Contamination	—
Monitoring	✓	Well Destruction	—

PROPOSED WATER SUPPLY WELL USE
Domestic — Industrial — Other ✓
Municipal — Irrigation —

DRILLING METHOD:
Mud Rotary — Air Rotary — Auger ✓
Cable — Other —

DRILLER'S LICENSE NO. 507520

WELL PROJECTS
Drill Hole Diameter 8 in. Maximum
Casing Diameter 2 in. Depth 25 ft.
Surface Seal Depth 12 ft. Number 3

GEOTECHNICAL PROJECTS
Number of Borings — Maximum
Hole Diameter — in. Depth — ft.

ESTIMATED STARTING DATE 10/10/94
ESTIMATED COMPLETION DATE 10/11/94

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

APPLICANT'S SIGNATURE [signature] Date 9/26/94

FOR OFFICE USE

PERMIT NUMBER 94615
LOCATION NUMBER —

PERMIT CONDITIONS

Circled Permit Requirements Apply

(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 wells 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 27 Sep 94
Wyman Hong

91892

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED