

File No. 7-92-514-SA

QUARTERLY GROUNDWATER MONITORING
AND SAMPLING FOR THE PROPERTY
LOCATED AT 3609 EAST 14TH STREET
OAKLAND, CALIFORNIA
APRIL 12, 1996

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

BY:
SOIL TECH ENGINEERING, INC.
1761 JUNCTION AVENUE
SAN JOSE, CALIFORNIA 95112

SOIL TECH ENGINEERING, INC.

LIST OF TABLES

- TABLE 1 ... GROUNDWATER MONITORING DATA.
- TABLE 2 ... GROUNDWATER ANALYTICAL RESULTS.

LIST OF FIGURES

- FIGURE 1 ... SITE VICINITY MAP SHOWING 3609 EAST 14TH STREET,
OAKLAND, CALIFORNIA.
- FIGURE 2 ... SITE PLAN SHOWING LOCATIONS OF BUILDING, EXISTING
UNDERGROUND STORAGE TANKS AREA, MONITORING WELLS AND
GROUNDWATER FLOW DIRECTION.

File No. 7-92-514-SA

LIST OF APPENDICES

APPENDIX "A" ... TABLE 1 AND TABLE 2.

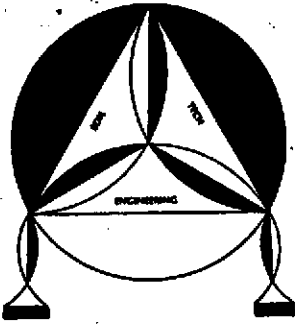
APPENDIX "B" ... FIGURE 1 AND FIGURE 2.

APPENDIX "C" ... STE'S STANDARD OPERATION PROCEDURE.

APPENDIX "D" ... LABORATORY ANALYTICAL REPORTS AND CHAIN-OF-CUSTODY RECORDS.

SOIL TECH ENGINEERING, INC.

TABLE OF CONTENTS	<u>Page No.</u>
LETTER OF TRANSMITTAL	1
SITE DESCRIPTION	1
BACKGROUND	1-3
SCOPE OF PRESENT WORK	3-4
CURRENT FIELD WORK	
GROUNDWATER MONITORING	4
GROUNDWATER SAMPLING	5
GROUNDWATER FLOW	5
ANALYTICAL RESULTS	5-6
SUMMARY	6
RECOMMENDATION	6-7
LIMITATIONS	7
<u>APPENDIX "A"</u>	
TABLE 1 - GROUNDWATER MONITORING DATA	T1-T4
TABLE 2 - GROUNDWATER ANALYTICAL RESULTS	T5-t7
<u>APPENDIX "B"</u>	
FIGURE 1 - SITE VICINITY MAP	M1
FIGURE 2 - SITE PLAN	M2
<u>APPENDIX "C"</u>	
GROUNDWATER SAMPLING	SOP1
<u>APPENDIX "D"</u>	
PRIORITY ENVIRONMENTAL LABS REPORT AND CHAIN-OF-CUSTODY	



SOIL TECH ENGINEERING

Environmental and Geological Engineers

1761 JUNCTION AVENUE, SAN JOSE, CA 95112 (408) 441-1881

April 12, 1996

File No. 7-92-514-SA

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

**SUBJECT: QUARTERLY GROUNDWATER MONITORING
AND SAMPLING FOR THE PROPERTY**
Located at 3609 East 14th Street, in
Oakland, California

Dear Mr. Razi:

This report presents the results of quarterly groundwater monitoring and sampling conducted by Soil Tech Engineering, Inc. (STE), on April 3, 1996, at the subject site (Figure 1).

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 primary commercial businesses and residential housing.

BACKGROUND:

In July 1993, three fuel tanks and a waste oil tank were removed by Alpha Geo Services (AGS). 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 to determine whether or not the shallow groundwater beneath the site has been impacted.

In August 1993, STE conducted an interim corrective action and preliminary soil & groundwater investigation by drilling thirteen soil borings and converted three into monitoring wells. Monitoring wells STMW-1, STMW-2 and STMW-3 were drilled in the vicinity of the former underground fuel tanks. Groundwater was first encountered at the depth of 16 feet below grade during drilling operation. STE recommended quarterly monitoring for at least one year to further assess the site as required by Alameda County Health Department.

The detail of preliminary soil and groundwater investigation is described in STE's report entitled "Interim Corrective Action & Preliminary Soil & Groundwater Investigation for Tony's Express Service Station" dated November 8, 1993.

SCOPE OF PRESENT WORK:

The scope of present work consist of:

- Monitor the wells STMW-1 through STMW-8 for presence of sheen and/or odor, and measured the depth-to-water table.
- Purge the monitoring wells prior to sampling.

- Sample monitoring wells STMW-1 through STMW-8.
- Submit water samples to a state-certified laboratory for chemical analyses of Total Petroleum Hydrocarbons as gasoline (TPHg), Benzene, Toluene, Ethylbenzene, Total Xylenes (BTEX) and Total Oil & Grease (TOG).
- Review results and prepared a report of the investigation.

CURRENT FIELD WORK:

GROUNDWATER MONITORING:

On April 3, 1996, STE staff monitored eight monitoring wells (STMW-1, STMW-2, STMW-3, STMW-4, STMW-5, STMW-6, STMW-7 and STMW-8) to measure water depth and check for the presence of sheen and/or odor. During monitoring of the wells, wells STMW-1 and STMW-6 detected rainbow sheen and mild petroleum odor. Monitoring wells STMW-2 and STMW-7 detected very light sewerage odor. Monitoring well STMW-3 detected rainbow sheen and strong petroleum odor. Monitoring well STMW-8 detected rainbow sheen and light petroleum odor. Monitoring wells STMW-4 and STMW-5 detected no sheen or odor. The shallow groundwater table depths ranged from 7.75 to 8.76 feet below ground surface. Table 1 summarizes the depth of groundwater measurements and the field observations made.

GROUNDWATER SAMPLING:

Following groundwater monitoring, the on-site wells were purged at least five well volumes and sampled in accordance with STE's Standard Operation Procedures (Appendix "C"), which contains State and Local guidelines for sampling of monitoring wells.

Water samples were decanted into clean VOA vials and were sealed with Teflon lined screw caps, labeled and placed in a cool ice chest and submitted to Priority Environmental Labs, a state-certified laboratory with a chain-of-custody.

The water samples from wells STMW-1, STMW-2, STMW-3, STMW-4, STMW-5, STMW-6, STMW-7 and STMW-8 were analyzed for Total Petroleum Hydrocarbons as gasoline (TPHg) per EPA Method 5030/8015, Benzene, Toluene, Ethylbenzene and Total Xylenes (BTEX) per EPA Method 602. In addition, water sample from monitoring well STMW-6 was also analyzed for Total Oil & Grease (TOG) per EPA Method 5520.

GROUNDWATER FLOW:

Water elevation data were used to determine groundwater flow direction. Table 1 summarizes the groundwater elevations. The groundwater flow direction beneath the site was in a southwesterly direction as of April 3, 1996 (Figure 2).

ANALYTICAL RESULTS:

Water samples from the eight monitoring wells detected low to moderate levels of dissolved Total Petroleum Hydrocarbons as gaso-

File No. 7-92-514-SA

line (TPHg) ranging from 0.78 mg/L to 70 mg/L; Benzene levels ranged from 0.0013 mg/L to 0.31 mg/L; Toluene levels ranged from 0.001 mg/L to 0.26 mg/L; Ethylbenzene levels ranged from 0.0048 mg/L to 0.14 mg/L, and Total Xylenes ranged from 0.0038 mg/L to 0.33 mg/L, respectively. Total Oil & Grease level is 1.1 mg/L.

The groundwater analytical results are summarized in Table 1. Copy of the analytical results and chain-of-custody documentation are attached in Appendix "D".

SUMMARY:

This quarterly monitoring detected rainbow sheen and mild petroleum odor in STMW-1 and STMW-6; very light sewerage odor in Monitoring wells STMW-2 and STMW-7; rainbow sheen and strong petroleum odor in monitoring well STMW-3; rainbow sheen and light petroleum odor in monitoring well STMW-8. Only monitoring wells STMW-4 and STMW-5 detected no sheen or odor. Low to moderate levels of TPHg and BTEX were detected in all eight wells. Low level of TOG was detected in monitoring well STMW-6.

RECOMMENDATION:

STE recommends the continuation of quarterly monitoring for one more quarters. The proposed program should then be re-evaluated at the end of the year.

File No. 7-92-514-SA

A copy of this report should be sent to Alameda County Health Department (ACHD) and California Regional Water Quality Control Board--San Francisco Bay Region (CRWQCB--SFBR).

LIMITATIONS:

This report was prepared in accordance with the currently accepted standards for environmental investigations. The contents of this report reflect the conditions of the subject site at this particular time. No other warranties, expressed or implied, as to the professional advice provided are made.

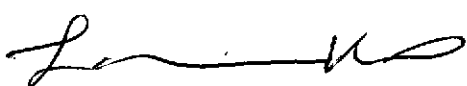
The findings of this report are based on the results of the independent laboratory analyses and are valid at the present date and conditions. However, changes in the conditions of a property can occur with the passage of time, whether they are due to natural processes or the works of man, on this property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

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

SOIL TECH ENGINEERING, INC.

File No. 7-92-514-SA

A P P E N D I X "A"

SOIL TECH ENGINEERING, INC.

**TABLE 1
GROUNDWATER MONITORING DATA
MEASUREMENT IN FEET**

Date	Well No./ Elevation	Depth-to- Water	Groundwater Elevation	Sheen	Odor
10/05/93	STMW-1 (97.99)	15.39	82.60	Brown	Mild Petroleum
	STMW-2 (98.58)	15.36	83.22	None	None
	STMW-3 (97.78)	15.79	80.99	Sheen	Strong Petroleum
12/02/94	STMW-1 (97.99)	9.32	88.67	Rainbow	Light Petroleum
	STMW-2 (98.58)	8.60	89.98	None	Mild Sewerage
	STMW-3 (97.78)	9.79	87.99	Non- Measurable	Strong Petroleum
3/06/95	STMW-1 (97.99)	8.07	89.92	None	None
	STMW-2 (98.58)	7.68	90.90	None	None
	STMW-3 (97.78)	8.69	89.09	None	None

**TABLE 1 CONT'D
GROUNDWATER MONITORING DATA
MEASUREMENT IN FEET**

Date	Well No./ Elevation	Depth-to- Water	Groundwater Elevation	Sheen	Odor
6/05/95	STMW-1 (97.99)	9.53	88.46	Brown	Mild Petroleum
	STMW-2 (98.58)	9.59	88.99	None	Light Petroleum
	STMW-3 (97.78)	10.25	87.53	Brown	Strong Petroleum
10/02/95	STMW-1 (97.99)	13.29	84.70	Rainbow	Mild Petroleum
	STMW-2 (98.58)	13.42	85.16	None	Very Light Petroleum
	STMW-3 (97.78)	12.91	84.87	Rainbow	Strong Petroleum
	STMW-4 (97.85)	13.34	84.51	None	Very Light Petroleum
	STMW-5 (99.04)	13.57	85.47	None	Very Light Petroleum
	STMW-6 (98.77)	13.94	84.83	None	Light Petroleum
	STMW-7 (97.83)	12.95	84.88	Rainbow Spots	Mild Petroleum
	STMW-8 (97.25)	12.86	84.39	Rainbow Spots	Mild Petroleum

**TABLE 1 CONT'D
GROUNDWATER MONITORING DATA
MEASUREMENT IN FEET**

Date	Well No./ Elevation	Depth-to- Water	Groundwater Elevation	Sheen	Odor
1/03/96	STMW-1 (97.99)	10.07	87.92	Rainbow	Mild Petroleum
	STMW-2 (98.58)	9.93	88.65	None	Very Light Sewerage
	STMW-3 (97.78)	10.55	87.23	Rainbow	Strong Petroleum
	STMW-4 (97.85)	10.11	87.74	None	None
	STMW-5 (99.04)	10.03	89.01	None	None
	STMW-6 (98.77)	10.55	88.22	Rainbow	Mild Petroleum
	STMW-7 (97.83)	9.57	88.26	None	Very Light Sewerage
	STMW-8 (97.25)	9.79	87.46	Rainbow	Light Petroleum
4/03/96	STMW-1 (97.99)	8.26	89.73	Rainbow	Mild Petroleum
	STMW-2 (98.58)	8.13	90.45	None	Very Light Sewerage
	STMW-3 (97.78)	8.76	89.02	Rainbow	Strong Petroleum

TABLE 1 CONT'D
 GROUNDWATER MONITORING DATA
 MEASUREMENT IN FEET

Date	Well No./ Elevation	Depth-to- Water	Groundwater Elevation	Sheen	Odor
4/03/96	STMW-4 (97.85)	8.35	89.50	None	None
	STMW-5 (99.04)	8.24	90.80	None	None
	STMW-6 (98.77)	8.76	90.01	Rainbow	Mild Petroleum
	STMW-7 (97.83)	7.75	90.08	None	Very Light Sewerage
	STMW-8 (97.25)	7.98	89.27	Rainbow	Light Petroleum

**TABLE 2
GROUNDWATER ANALYTICAL RESULTS
IN
MILLIGRAMS PER LITER (mg/L)**

Date	Sample No.	TPHg	B	T	E	X	TOG
10/05/94	STMW-1	320	24	21	2.6	15	NA
	STMW-2	260	17	19	0.57	10	NA
	STMW-3	30,000	190	740	310	1,300	NA
12/02/94	STMW-1	80	3.8	6.6	2.3	11	NA
	STMW-2	42	1.7	2.2	1.2	3.6	NA
	STMW-3	250	19	22	4.4	28	NA
3/06/95	STMW-1	32	0.19	0.16	0.15	0.49	NA
	STMW-2	0.49	0.0032	0.0026	0.0016	0.005 9	NA
	STMW-3	21	0.08	0.073	0.035	0.13	NA
6/05/95	STMW-1	21	0.95	0.65	0.57	1.5	NA
	STMW-2	8	0.22	0.33	0.35	0.66	NA
	STMW-3	350	20	42	5.8	36	NA

TABLE 2 CONT'D
GROUNDWATER ANALYTICAL RESULTS
IN
MILLIGRAMS PER LITER (mg/L)

Date	Sample No.	TPHg	B	T	E	X	TOG
10/02/95	STMW-1	59	0.14	0.13	0.14	0.39	NA
	STMW-2	46	0.16	0.13	0.093	0.24	NA
	STMW-3	150	0.51	0.41	0.21	0.65	NA
	STMW-4	9.3	0.023	0.011	0.0099	0.029	NA
	STMW-5	1.5	0.0011	0.0013	0.0039	0.0053	NA
	STMW-6	120	0.35	0.31	0.2	0.61	0.6
	STMW-7	3.3	0.0089	0.012	0.017	0.045	NA
	STMW-8	94	0.31	0.25	0.18	0.48	NA
1/03/96	STMW-1	30	0.071	0.073	0.05	0.12	NA
	STMW-2	3.4	0.0076	0.013	0.0074	0.026	NA
	STMW-3	190	0.29	0.27	0.097	0.89	NA
	STMW-4	1.1	0.004	0.0013	0.0009	0.0033	NA
	STMW-5	0.83	ND	ND	0.0013	0.0022	NA

TABLE 2 CONT'D
GROUNDWATER ANALYTICAL RESULTS
IN
MILLIGRAMS PER LITER (mg/L)

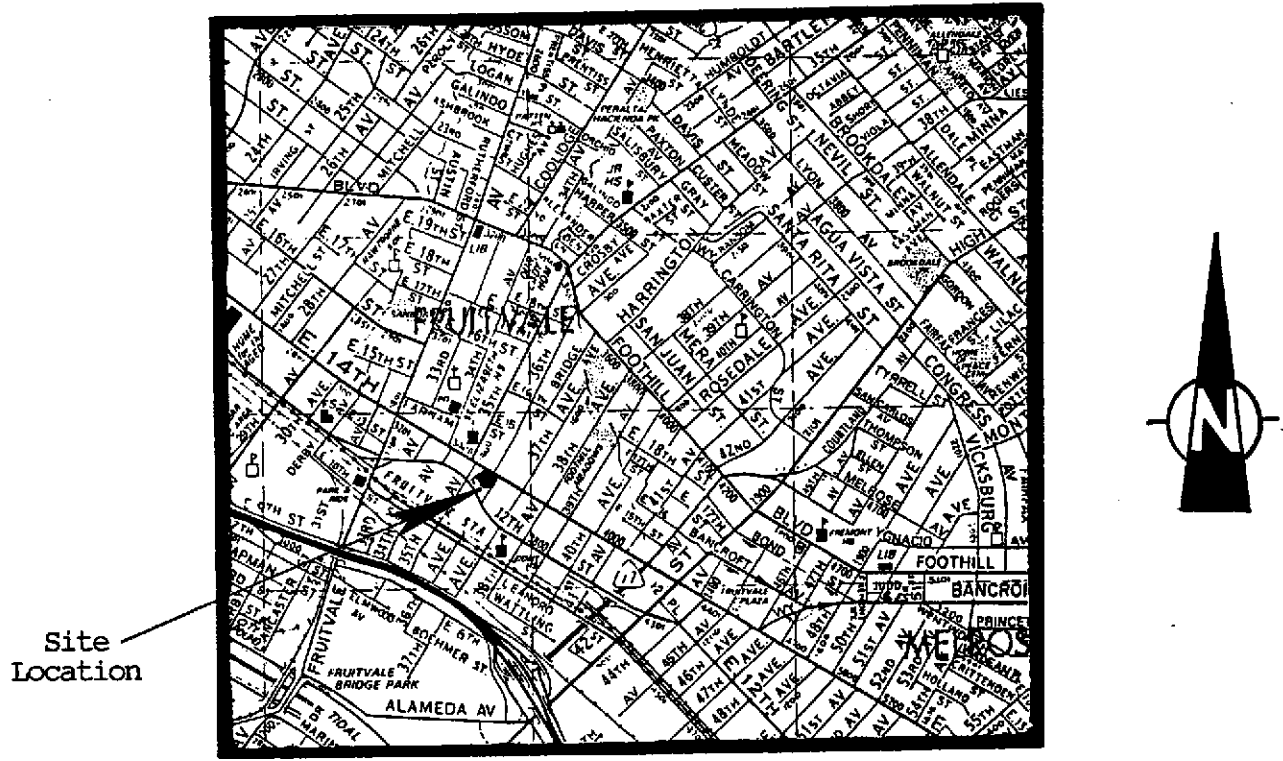
Date	Sample No.	TPHg	B	T	E	X	TOG
1/03/96	STMW-6	68	0.06	0.061	0.027	0.18	1.4
	STMW-7	1.5	0.0015	0.0009	0.003	0.0041	NA
	STMW-8	23	0.019	0.012	0.0088	0.047	NA
4/03/96	STMW-1	31	0.098	0.12	0.063	0.17	NA
	STMW-2	27	0.1	0.092	0.044	0.13	NA
	STMW-3	70	0.31	0.26	0.089	0.28	NA
	STMW-4	1.9	0.012	0.0075	0.0052	0.014	NA
	STMW-5	0.78	0.0013	0.001	0.0048	0.0038	NA
	STMW-6	48	0.14	0.11	0.062	0.17	1.1
	STMW-7	1.9	0.0021	0.0026	0.0051	0.0069	NA
	STMW-8	58	0.25	0.17	0.14	0.33	NA

TPHg - Total Petroleum Hydrocarbons as gasoline
 BTEX - Benzene, Toluene, Ethylbenzene, Total Xylenes
 TOG - Total Oil & Grease
 ND - Not Detected (Below Laboratory Detection Limit)
 NA - Not Analyze

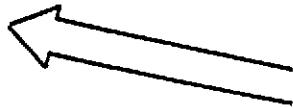
File No. 7-92-514-SA

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



Approximate Direc.
of Groundwater F
as of 12/9/96



RESS AUTO SERVICES

DRAWN BY NA

7-92-514-SA

REVISED

TH STREET OAKLAND CA, 94601

ENGINEERING INC

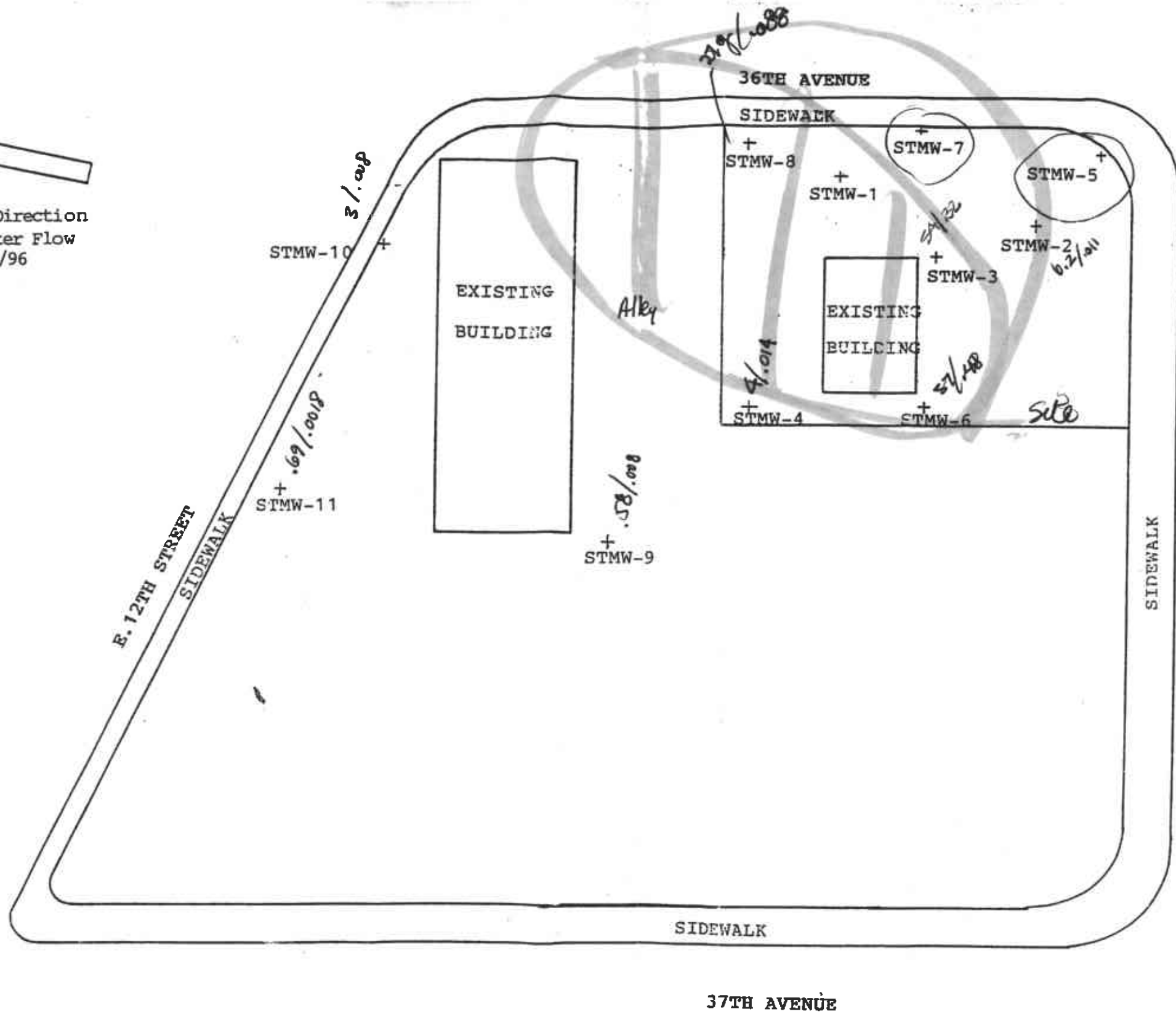
DRAWING NUMBER

LEGEND

+ MONITORING WELL



Approximate Direction
of Groundwater Flow
as of 12/9/96



LEGEND
 + MONITORING WELL

TONY'S EXPRESS AUTO SERVICES		
SCALE: 1"=40'	7-92-514-SA	DRAWN BY: N7
DATE: 12/9/96		REVISED:
3609 E. 14TH STREET OAKLAND CA, 94601		
SOIL TECH ENGINEERING INC		DRAWING NUMBER:

File No. 7-92-514-SA

A P P E N D I X "C"

SOIL TECH ENGINEERING, INC.

GROUNDWATER SAMPLING

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

Prior to purging, the well "Water Sampling Field Survey Forms" were 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.

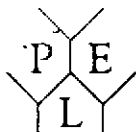
The groundwater sample was collected when the water level in the well recovered to 80% of its static level.

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 "D"

SOIL TECH ENGINEERING, INC.



PRIORITY ENVIRONMENTAL LABS

Precision Environmental Analytical Laboratory

April 08, 1996

PEL # 9604004

SOIL TECH ENGINEERING

Attn: Noori Ameli

Re: Eight water samples for Gasoline/BTEX and Oil & Grease analyses.

Project name: 3609 E. 14th Oakland

Project number: 7-92-514-SA

Date sampled: Apr 03, 1996

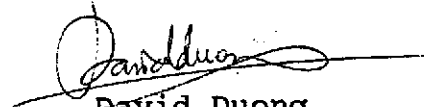
Date submitted: Apr 04, 1996

Date extracted: Apr 04-06, 1996

Date analyzed: Apr 04-06, 1996

RESULTS:

SAMPLE I.D.	Gasoline (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl Benzene (ug/L)	Total Xylene (ug/L)	Oil & Grease (mg/L)
STMW-1	31000	98	120	63	170	---
STMW-2	27000	100	92	44	130	---
STMW-3	70000	310	260	89	280	---
STMW-4	1900	12	7.5	5.2	14	---
STMW-5	780	1.3	1.0	4.8	3.8	---
STMW-6	48000	140	110	62	170	1.1
STMW-7	1900	2.1	2.6	5.1	6.9	---
STMW-8	58000	250	170	140	330	---
Blank	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Spiked Recovery	107.7%	112.3%	108.3%	100.1%	97.4%	---
Detection limit	50	0.5	0.5	0.5	0.5	0.5
Method of Analysis	5030 / 8015	602	602	602	602	5520 C & F


 David Duong
 Laboratory Director

CHAIN OF CUSTODY RECORD

PEL

PROJ. NO.		NAME				CON-TAINER	ANALYSES REQUESTED (2)										REMARKS			
7-92-514-SA		3609 E. 14th. st. OAKLAND					TPHG/BTEX TOXG													
SAMPLERS: (Signature)																				
NO.	DATE	TIME	SOIL	WATER	LOCATION															
1	4/3/96	14 ⁵³	✓		STMW-1	1	✓													
2	4/3/96	11 ⁵⁵	✓		STMW-2	1	✓													
3	4/3/96	15 ¹⁵	✓		STMW-3	1	✓													
4	4/3/96	10 ⁵⁰	✓		STMW-4	1	✓													
5	4/3/96	10 ²⁵	✓		STMW-5	1	✓													
6	4/3/96	14 ³⁵	✓		STMW-6	2	✓	✓												
7	4/3/96	11 ²⁰	✓		STMW-7	1	✓													
8	4/3/96	13 ³⁵	✓		STMW-8	1	✓													
Relinquished by: (Signature)		Date / Time		Received by: (Signature)		Relinquished by: (Signature)		Date / Time		Receive by: (Signature)										
A. Ameli		04/04/96 9:16		[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												
				PEL																



SOIL TECH ENGINEERING
Soil, Foundation and Geological Engineers

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