

File No. 7-92-514-SA

ENVIRONMENTAL
PROTECTION
SOILS-9 PM 2:19

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

JANUARY 12, 1996

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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SOIL TECH ENGINEERING, INC.

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SOIL TECH ENGINEERING, INC.

January 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 January 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 wells STMW-1, STMW-2, STMW-3, STMW-4, STMW-5, STMW-6, STMW-7 and STMW-8 for presence of any free floating product (FFP) and measured the depth-to-water table.
- Purge the monitoring wells prior to sampling.

- Sample monitoring wells STMW-1, STMW-2, STMW-3, STMW-4, STMW-5, STMW-6, STMW-7 and STMW-8.
- Submit water samples to a state-certified laboratory for chemical analyses of Total Petroleum Hydrocarbons as gasoline (TPHg), Benzene, Toluene, Ethylbenzene and Total Xylenes (BTEX).
- Review results and prepared a report of the investigation.

CURRENT FIELD WORK:

GROUNDWATER MONITORING:

On January 12, 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 FFP and/or petroleum 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 9.57 to 10.55 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, Benzene, Toluene, Ethylbenzene and Total Xylenes (BTEX) per EPA Method 602. Water sample from monitoring well STMW-6 was also analyzed for Total Oil & Grease (TOG).

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 southerly direction as of January 3, 1996 (Figure 2).

ANALYTICAL RESULTS:

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

line (TPHg) ranging from 0.83 mg/L to 190 mg/L; Benzene levels ranged from non-detectable to 0.29 mg/L; Toluene levels ranged from non-detectable to 0.27 mg/L; Ethylbenzene levels ranged from 0.0009 mg/L to 0.097 mg/L, and Total Xylenes ranged from 0.0022 mg/L to 0.89 mg/L, respectively. Total Oil & Grease level is 1.4 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. No Benzene or Toluene levels were detected monitoring well STMW-5. 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.

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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.

**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

**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	0.0059	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)

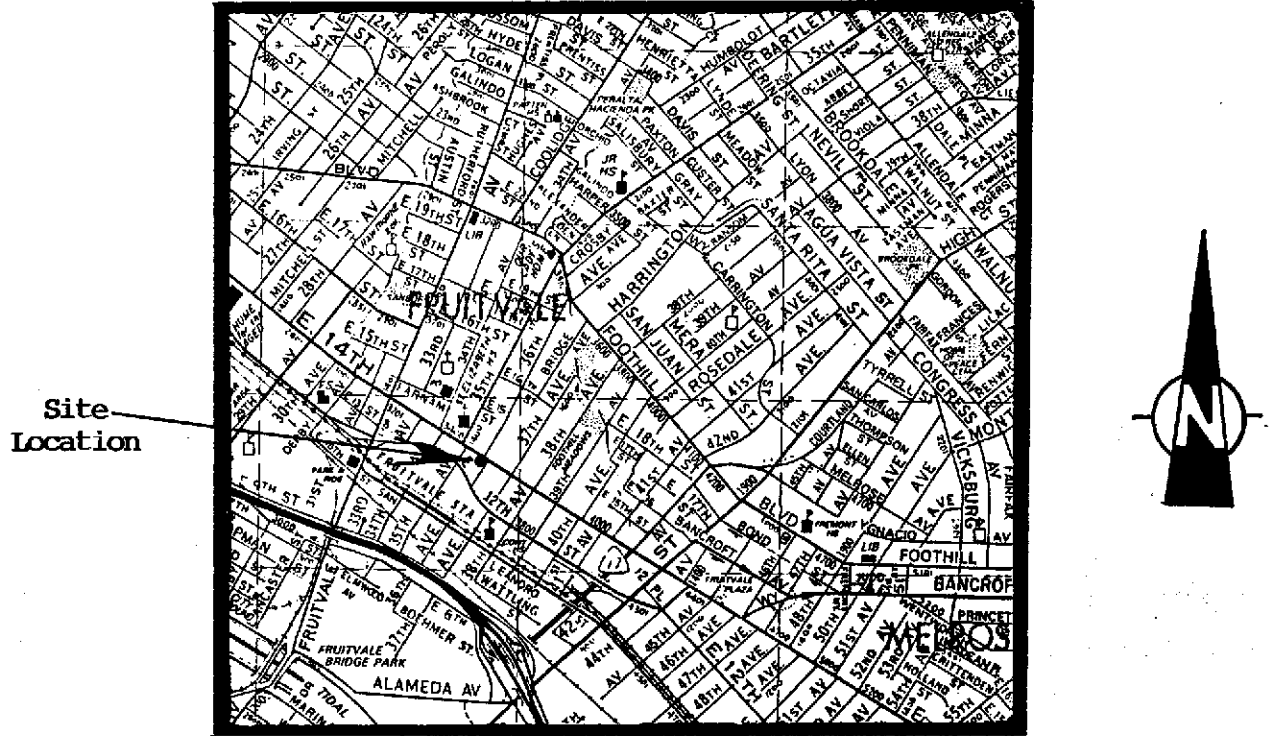
Date	Sample No.	TPHg	B	T	E	X	TOG
1/03/96	STMW-6	68	0.06	0.061	0.027	0.18	1.4
	STMW-7	1.5	0.0015	0.0009	0.003	0.0041	NA
	STMW-8	23	0.019	0.012	0.0088	0.047	NA

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.



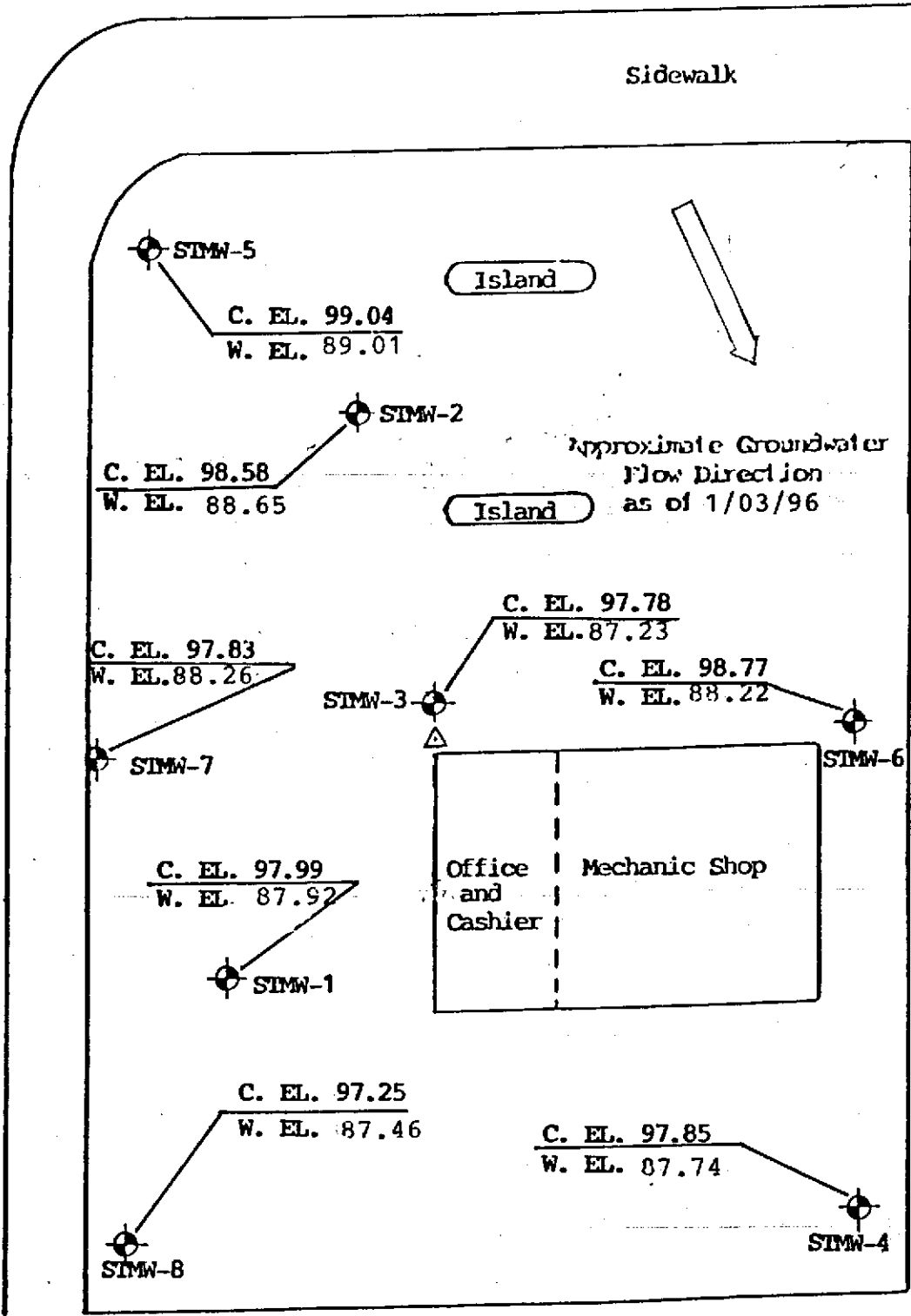
Thomas Brothers Map 1993 Edition
San Francisco, Alameda
and Contra Costa Counties

EAST 14TH STREET



36TH AVENUE

Sidewalk



C. EL. Casing Elevation
 W. EL. Water Elevation

STMW-3: Unusual Groundwater elevation.

△ Assumed 100 Elevation
 ⊕ Monitoring Well

SCALE: 1"=20'

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.

The groundwater sample was collected when the first groundwater level was encountered in the boring.

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.

CHAIN OF CUSTODY RECORD

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

SAMPLERS: (Signature) N. Amador

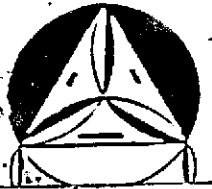
CON-TAINER

ANALYSES REQUESTED (2) TPHG/BTE&X TO 4G

PEL # 9601015
INV # 26706
REMARKS

NO.	DATE	TIME	SOIL	WATER	LOCATION	CON-TAINER	ANALYSES REQUESTED (2)	TPHG/BTE&X	TO 4G
1	4/3/96	14 ³⁵		✓	STMW-1	1	✓		
2	4/3/96	14 ²⁵		✓	STMW-2	1	✓		
3	4/3/96	16 ¹⁰		✓	STMW-3	1	✓		
4	4/3/96	13 ²³		✓	STMW-4	1	✓		
5	4/3/96	11 ⁰⁵		✓	STMW-5	1	✓		
6	4/3/96	15 ³²		✓	STMW-6	2	✓	✓	
7	4/3/96	11 ⁵²		✓	STMW-7	1	✓		
8	4/3/96	15 ¹⁰		✓	STMW-8	1	✓		

Relinquished by: (Signature) N. Amador	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) D. Anderson	Date / Time 4/05/96	Remarks 11:05 AM	



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

January 08, 1996

PEL # 9601015

SOIL TECH ENGINEERING

Attn: Noori Ameli

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

Project name: 3609 E. 14th St., - Oakland

Project number: 7-92-514-SA

Date sampled: Jan 03, 1996

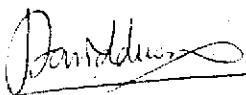
Date submitted: Jan 05, 1996

Date extracted: Jan 05-08, 1996

Date analyzed: Jan 05-08, 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	30000	71	73	50	120	---
STMW-2	3400	7.6	13	7.4	26	---
STMW-3	190000	290	270	97	890	---
STMW-4	1100	4.0	1.3	0.9	3.3	---
STMW-5	830	N.D.	N.D.	1.3	2.2	---
STMW-6	68000	60	61	27	180	1.4
STMW-7	1500	1.5	0.9	3.0	4.1	---
STMW-8	23000	19	12	8.8	47	---
Blank	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Spiked Recovery	91.6%	94.7%	95.7%	98.7%	107.8%	---
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

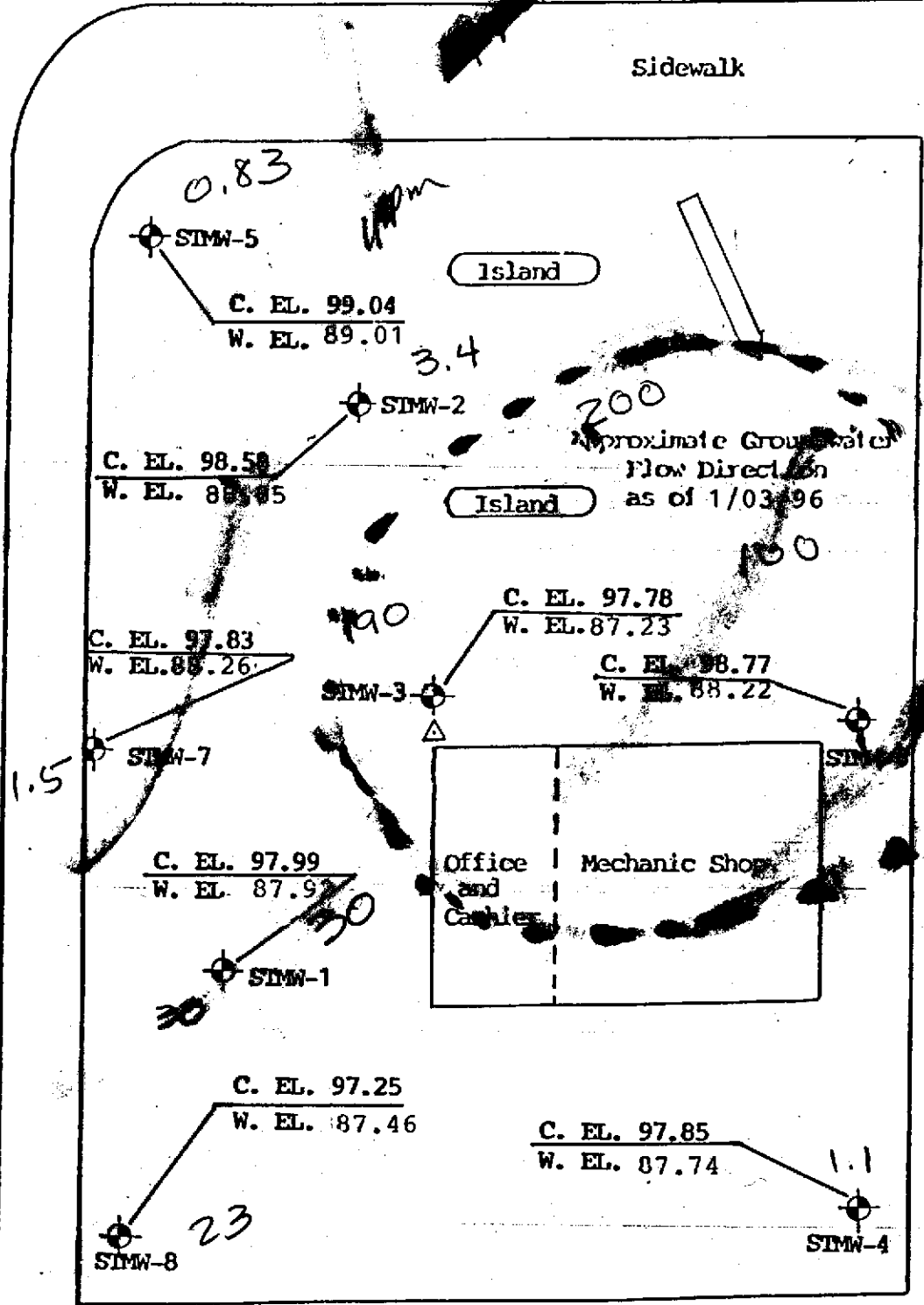

David Duong
Laboratory Director

EAST 14TH STREET

Sidewalk

36TH AVENUE

1/2/96
mg/r gas



C. EL. Casing Elevation
W. EL. Water Elevation

STMW-3: Unusual Groundwater elevation.

△ Assumed 100 Elevation

SCALE: 1"=20'