File No. 7-92-514-SA

QUARTERLY GROUNDWATER MONITORING AND SAMPLING AT THE PROPERTY LOCATED AT 3609 EAST 14TH STREET OAKLAND, CALIFORNIA JUNE 13, 1995

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

June 13, 1995

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 June 5, 1995, 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 and STMW-3 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 and STMW-3.

- 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 June 5, 1995, STE staff monitored three monitoring wells (STMW-1, STMW-2 and STMW-3) to measure water depth and check for the presence of FFP and/or petroleum odor. During monitoring of the wells, well STMW-1 detected brown sheen and mild petroleum odor. Monitoring well STMW-3 detected brown sheen and strong petroleum odor, and well STMW-2 detected light petroleum odor only. The shallow groundwater table depths ranged from 9.53 to 10.25 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 North State Environmental Laboratory, a state-certified laboratory with a chain-of-custody.

The water samples from wells STMW-1, STMW-2 and STMW-3 were analyzed for Total Petroleum Hydrocarbons as gasoline (TPHg) per EPA Method 5030, Benzene, Toluene, Ethylbenzene and Total Xylenes (BTEX) per EPA Method 602.

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 southeasterly direction as of June 5, 1995 (Figure 2).

ANALYTICAL RESULTS:

Water samples from the three monitoring wells detected low to moderate levels of dissolved Total Petroleum Hydrocarbons as gasoline (TPHg) ranging from 8 mg/L to 350 mg/L; Benzene levels ranged from 0.22 mg/L to 20 mg/L; Toluene levels ranged from 0.33 mg/L to 42 mg/L; Ethylbenzene levels ranged from 0.35 mg/L to 5.8 mg/L, and Total Xylenes ranged from 0.66 mg/L to 36 mg/L, respectively.

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 brown sheen and mild petroleum odor in well STMW-1; light petroleum odor in well STMW-2, and brown sheen & strong petroleum odor in well STMW-3. Low to moderate levels of TPHg and BTEX were detected in all three wells.

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.

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

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A P P E N D I X "A"

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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 Sheen	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 Sheen	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 Sheen	Mild Petroleum
	STMW-2 (98.58)	9.59	88.99	None	Light Petroleum
	STMW-3 (97.78)	10.25	87.53	Brown Sheen	Strong Petroleum

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

Date	Sample No.	TPHg	B	T	E	X
10/05/94	STMW-1	320	24	21	2.6	15
	STMW-2	260	17	19	0.57	10
	STMW-3	30,000	190	740	310	1,300
12/02/94	STMW-1	80	3.8	6.6	2.3	11
	STMW-2	42	1.7	2.2	1.2	3.6
	STMW-3	250	19	22	4.4	28
3/06/95	STMW-1	32	0.19	0.16	0.15	0.49
	STMW-2	0.49	0.0032	0.0026	0.0016	0.0059
	STMW-3	21	0.08	0.073	0.035	0.13
6/05/95	STMW-1	21	0.95	0.65	0.57	1.5
	STMW-2	8	0.22	0.33	0.35	0.66
	STMW-3	350	20	42	5.8	36

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

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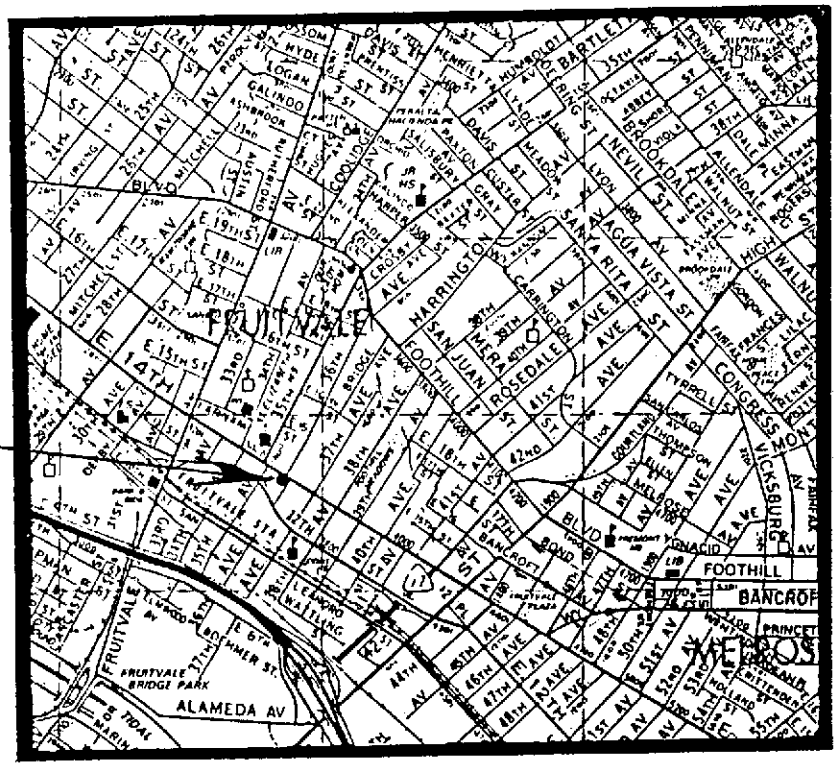
A P P E N D I X "B"

SOIL TECH ENGINEERING, INC.



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

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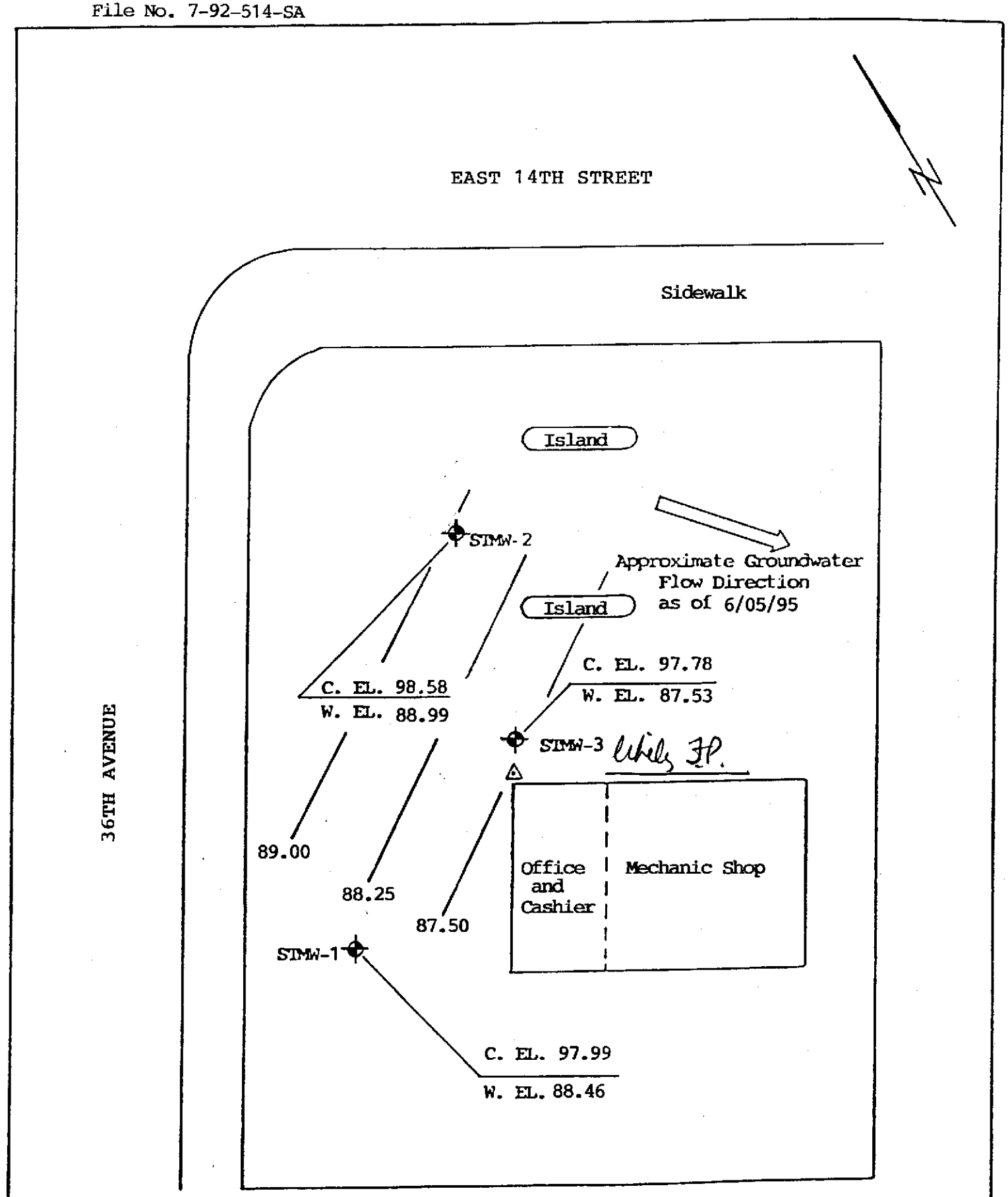
M1

Figure 1



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

SCALE: 1"=20'

Figure 2

SOIL TECH ENGINEERING, INC.

M2

A P P E N D I X "C"

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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.

A P P E N D I X "B"

North State Environmental
Chemical Waste Disposal - Trucking - Consulting

C E R T I F I C A T E O F A N A L Y S I S

JOB NO: 95-244
CLIENT: SOIL TECH ENGINEERING
PROJECT NAME: 3609 E.14th St Oakland
PROJECT NO: 7-92-514-SA

DATE SAMPLED: 06-05-95
DATE EXTRACTED: 06-06-95
DATE ANALYZED: 06-06-95

BTXE AND GASOLINE RANGE ORGANICS BY EPA METHOD 8020/5030 AND 8015 M

Sample No.	Client ID	Analyte	Result	
95-244-01	STMW-1	Benzene	950	ug/L
		Toluene	650	ug/L
		Ethylbenzene	570	ug/L
		Xylenes	1500	ug/L
		Gasoline	21	mg/L
95-244-02	STMW-2	Benzene	220	ug/L
		Toluene	330	ug/L
		Ethylbenzene	350	ug/L
		Xylenes	660	ug/L
		Gasoline	8	mg/L
95-244-03	STMW-3	Benzene	20000	ug/L
		Toluene	42000	ug/L
		Ethylbenzene	5800	ug/L
		Xylenes	36000	ug/L
		Gasoline	350	mg/L

Quality Control Quality Assurance Summary:Water

Analyte	Method	Reporting limit		Blank	MS/MSD Recovery	RPD
Benzene	8020	0.5	ug/L	ND	AVG 96%	5
Toluene	8020	0.5	ug/L	ND		
Ethylbenzene	8020	0.5	ug/L	ND		
Xylenes	8020	1	ug/L	ND		
Gasoline	8015/5030	50	ug/L	ND	AVG 114%	5

ELAP CERTIFICATION NUMBER 1753

Reviewed and Approved by

John Murphy
Laboratory Director

CHAIN OF CUSTODY RECORD

NSE

PROJ. NO.: 7-92-514-SA

NAME: 3609 E. 14th. st. OAKLAND

SAMPLERS: (Signature) N. Amel

NO.	DATE	TIME	SOIL	WATER	LOCATION	CONTAINER	Analyses Requested (2) TPHG/BTEX	REMARKS
1	6/5/95	14:20		✓	STMW-1	2	✓	
2	6/5/95	13:40		✓	STMW-2	2	✓	
3	6/5/95	15:10		✓	STMW-3	2	✓	

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Receive by: (Signature)
N. Amel	6/6/95 15:55	WSR			
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	
			6/6/95 15:55	COC, BROS agree	

SOIL TECH ENGINEERING

Soil, Foundation and Geological Engineers

[redacted] (415) [redacted]-6488