File No. 8-90-421-SI

QUARTERLY GROUNDWATER MONITORING AND SAMPLING FOR KAMUR INDUSTRIES AT PLAZA CAR WASH LOCATED AT 400 SAN PABLO AVENUE ALBANY, CALIFORNIA JANUARY 4, 1993

PREPARED FOR:
KAMUR INDUSTRIES
2351 SHORELINE DRIVE
ALAMEDA, CALIFORNIA 94501

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

SOIL TECH ENGINEERING, INC.

File No. 8-90-421-SI

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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

January 4, 1993

File No. 8-90-421-SI

Kamur Industries
2351 Shoreline Drive
Alameda, California 94501

ATTENTION: MR. MURRAY STEVENS

SUBJECT: QUARTERLY GROUNDWATER MONITORING AND SAMPLING FOR KAMUR INDUSTRIES AT PLAZA CAR WASH
Located at 400 San Pablo Avenue, in
Albany, California

Dear Mr. Stevens:

This report presents the results of the sixth quarterly groundwater monitoring and sampling conducted by Soil Tech Engineering, Inc. (STE), on December 10, 1992, at the subject site (Figure 1).

BACKGROUND:

Currently there are four monitoring wells (MW-2, MW-3, STMW-1 and STMW-2) located on-site, and two wells OTMW-5 and OTMW-6 are off-site (See Figure 2). Wells STMW-1 and STMW-2 were installed by STE, on-site wells MW-2, MW-3 and off-site wells OTMW-5 and OTMW-6 were installed by other consultant. This quarterly well monitoring and sampling was conducted in accordance with STE's recommendations

made in the report entitled "Report of Supplemental Subsurface Investigations", dated May 14, 1991. During this quarter's reporting period, the following field activities were performed:

- Monitored the depth-to-static groundwater for all on-site wells and one off-site well OTMW-5.
- Purged all on-site monitoring wells including well OTMW-5 prior to sampling.
- Submitted water samples to a state-certified laboratory to be analyzed for Total Petroleum Hydrocarbons as gasoline (TPHg) and for aromatic hydrocarbons: Benzene, Toluene, Ethylbenzene, and Total Xylenes (BTEX).
- Reviewed results and prepared a report of the investigation.

GROUNDWATER MONITORING:

On December 10, 1992, STE staff monitored the four on-site wells and two off-site wells to measure water depth and check for the presence of free floating petroleum product (FFP) and/or petroleum odor. During monitoring of the wells, a mild petroleum odors were noted in wells STMW-1, STMW-2, MW-2 and MW-3 only. Light petroleum sheen were noted in purged water in wells STMW-1, STMW-2, and MW-3. After purging the wells STMW-1, STMW-2, and MW-3, no sheen were observed. Table 1 summarizes the depth-to-groundwater measurements and observations made. Static groundwater levels ranged from 4.42 to 7.30 feet below ground surface during the recent sampling event.

Well OTMW-6 (off-site) was not monitored during this quarterly sampling.

GROUNDWATER SAMPLING:

Following groundwater monitoring, the wells were purged at least four well volumes and sampled in accordance with STE's Standard Operating Procedures (see Appendix "B"), which follows state and local guidelines for sampling and monitoring wells. The samples were submitted for analysis to a California State-Certified laboratory, accompanied by chain-of-custody. The samples were analyzed for TPHg and for BTEX per modified EPA Methods 5030/8025 and 602.

GROUNDWATER FLOW:

The water elevation data were used to determine groundwater direction. Table 1 summarize the groundwater elevations. The local groundwater flow direction was in northeasterly direction as of December 10, 1992 (Figure 2).

ANALYTICAL RESULTS:

All sampled wells continued to show the presence of low levels of petroleum hydrocarbon constituents analyzed. TPHg ranged from 0.54 milligrams per liter (mg/L) in the off-site well OTMW-5 to a maximum of 94 mg/L in on-site well MW-3; Benzene ranged from

0.0047 mg/L in well OTMW-5 to a maximum 0.4 mg/L in well MW-3; Toluene concentration ranged from 0.0045 to 0.41 mg/L; Ethylbenzene ranged from 0.0064 to 0.43 mg/L; and Total Xylenes ranged from 0.019 to 1.1 mg/L, respectively.

The analytical results are presented in Table 2. The chain-of-custody records and certified analytical report are included in Appendix "C".

DISCUSSION:

A comparison of the recent analytical results with the August 24, 1992 results showed an increase in TPHg concentrations in wells STMW-1 (from 2.7 to 35 mg/L); STMW-2 (from 16 to 44 mg/L); MW-2 (from 6 to 7.2 mg/L) and OTMW-5 (from 0.087 to 0.54 mg/L). TPHg concentrations decreased in well MW-3 (from 140 to 94 mg/L).

Benzene concentrations decreased substantially in this quarter in wells STMW-2, MW-2, MW-3 and OTMW-5, and slightly increased in wells STMW-1 (from 0.18 to 0.054 mg/L). Toluene levels showed an increased in wells STMW-1, but decreased in wells STMW-2 (from 0.22 to 0.096 mg/L), MW-2 (from 0.027 to 0.023 mg/L), MW-3 (from 2.4 to 0.41 mg/L) and OTMW-5 (from 0.0098 to 0.0045 mg/L). Ethylbenzene levels showed a minor increase in well STMW-1, and decreased in wells STMW-2, MW-2, MW-3 and OTMW-5. Total Xylenes showed an increase in well STMW-1, where as wells STMW-2, MW-2, MW-3 and OTMW-5 showed a moderate decrease.

RECOMMENDATION:

Quarterly monitoring of on-site and off-site wells should continue for two more quarters, until interim groundwater treatment is initiated. This quarterly report should be submitted to Alameda County Health Department (ACHD) and the Regional Water Quality Control Board (RWQCB).

LIMITATIONS:

This report and the associated work have been provided in accordance with the general principles and practices currently employed in the environmental consulting profession. The contents of this report reflect the conditions of the site at this particular time. The findings of this report are based on:

1) The observations of field personnel.

2) The results of laboratory analyses performed by a state-certified laboratory.

It is possible that variations in the soil and groundwater could exist beyond the points explored in this investigation. Also, changes in groundwater conditions of a property can occur with the passage of time due to variations in rainfall, temperature, regional water usage and other natural processes or the works of man on this property or adjacent properties.

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The services that STE provided have been in accordance with generally accepted environmental professional practices for the nature and conditions of the work completed in the same or similar localities, at the time the work was performed.

This report will be submitted to ACEHD and RWQCB with your approval.

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

Sincerely,

SOIL TECH ENGINEERING, INC.

NOORODDIN AMELI
STAFF ENGINEER

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

FRANK HAMEDI-FARD
GENERAL MANAGER

TABLE 1
GROUNDWATER MONITORING DATA
(Measured in Feet)

Well No./ Elevation	Date	Depth-to-Water	Groundwater Elevation	FFP Thickness	Petroleum Odor
STMW-1 (100.62)	3/11/91	5.29	95.33	None	None
	7/03/91	5.83	94.79	None	Mild
	11/04/91	5.83	94.79	None	Mild
	1/20/92	5.79	94.84	Light Sheen	Mild
	5/07/92	5.80	94.82	None	Mild
	8/17/92	5.77	94.85	None	Mild
	12/10/92	6.61	94.01	Light Sheen	Mild
STMW-2 (100.63)	3/11/91	5.25	95.38	None	Mild
	7/03/91	4.75	95.88	None	Mild
	11/04/92	5.92	94.71	None	Mild
	1/20/92	5.88	94.75	None	Mild
	5/07/92	5.70	94.92	None	Mild
	8/17/92	5.71	94.92	None	None
	12/10/92	6.39	94.24	Light Sheen	Mild

FFP - Free Floating Product

TABLE 1 CONT'D
GROUNDWATER MONITORING DATA
(Measured in Feet)

Well No./ Elevation	Date	Depth-to-Water	Groundwater Elevation	FFP Thickness	Petroleum Odor
MW-2 (99.39)	3/11/91	4.29	95.07	None	Mild
	7/03/91	5.83	93.53	None	Strong
	11/04/91	4.79	94.57	None	Mild
	1/20/92	4.60	94.76	None	Mild
	5/07/92	4.42	94.94	None	Mild
	8/17/92	4.43	94.96	None	Mild
	12/10/92	4.94	94.45	None	Mild
MW-3 (100.09)	3/11/91	4.67	95.42	Trace	Moderate
	7/03/91	5.75	94.55	Light Sheen	Strong
	11/04/91	5.67	94.42	Trace	Strong
	1/20/92	5.54	94.55	Light Sheen	Strong
	5/07/92	5.18	94.91	Rainbow Sheen	Strong
	8/17/92	5.24	94.85	Rainbow Sheen	Mild
	12/10/92	4.42	95.67	Light Sheen	Mild

FFP - Free Floating Product

TABLE 1 CONT'D
GROUNDWATER MONITORING DATA
(Measured in Feet)

Well No./ Elevation	Date	Depth-to-Water	Groundwater Elevation	FFP Thickness	Petroleum Odor
OTMW-5 (100.87)	3/11/91	5.02	95.85	None	Mild
	7/03/91	5.75	95.12	None	Mild
	11/04/91	5.77	95.10	None	Mild
	1/20/92	5.58	95.29	None	Mild
	5/07/92	5.43	95.44	None	Mild
	8/17/92	5.45	95.42	None	None
	12/10/92	7.30	93.57	None	Mild
OTMW-6	8/17/92	4.88	NA	None	None

FFP - Free Floating Product
NA - Not Applicable

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

Well No.	Date	TPHg	B	T	E	X
STMW-1	3/13/91	0.85	0.1	0.007	ND	0.15
	7/03/91	5.1	1.8	0.5	0.095	0.56
	11/04/91	2.05	0.76	0.054	ND	0.056
	1/20/92	4.6	0.59	0.036	ND	0.19
	5/07/92	4.4	0.066	0.053	0.004	0.16
	8/17/92	2.7	0.031	0.018	0.019	0.067
	12/10/92	35	0.054	0.079	0.083	0.22
STMW-2	3/13/91	0.17	0.001	0.0017	ND	0.028
	7/03/91	1.8	0.64	0.048	0.044	0.094
	11/04/92	2.14	1.00	0.057	0.003	0.019
	1/20/92	14	0.12	0.0006	0.0006	0.08
	5/07/92	1.7	0.032	0.017	0.0086	0.048
	8/17/92	16	0.18	0.22	0.21	0.62
	12/10/92	44	0.084	0.096	0.12	0.35

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

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

Well No.	Date	TPHg	B	T	E	X
MW-2	3/13/91	25	2.6	4.4	ND	5.8
	7/03/91	21	2.8	3.2	ND	4.3
	11/04/91	3.58	1.7	0.119	0.009	0.056
	1/20/92	0.38	0.38	0.0013	ND	0.034
	5/07/92	10	0.062	0.032	0.044	0.16
	8/17/92	6	0.048	0.027	0.065	0.18
	12/10/92	7.2	0.015	0.023	0.032	0.082
MW-3	3/13/91	47	9.1	9.9	0.27	8.11
	7/03/91	40	12	4.5	1.2	4.0
	11/04/91	102.7	38.87	19.1	3.2	8.3
	1/20/92	510	27	27	5.8	46
	5/07/92	43	0.25	0.23	0.12	0.47
	8/17/92	140	2.5	2.4	1.7	5.5
	12/10/92	94	0.4	0.41	0.43	1.1

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

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TABLE 2 CONT'D
WATER ANALYTICAL RESULTS
IN
MILLIGRAM PER LITER (mg/L)

Well No.	Date	TPHg	B	T	E	X
OTMW-5	3/13/91	0.12	0.046	0.012	0.001	0.004
	7/03/91	0.81	0.32	0.043	0.016	0.043
	11/04/91	0.97	0.1	0.019	0.005	0.013
	1/20/92	0.09	0.0007	0.0007	ND	0.011
	5/07/92	0.18	0.027	0.014	0.0082	0.035
	8/17/92	0.087	0.012	0.0098	0.004	0.042
	12/10/92	0.54	0.0047	0.0045	0.0064	0.019
OTMW-6	8/17/92	ND	ND	ND	ND	ND

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

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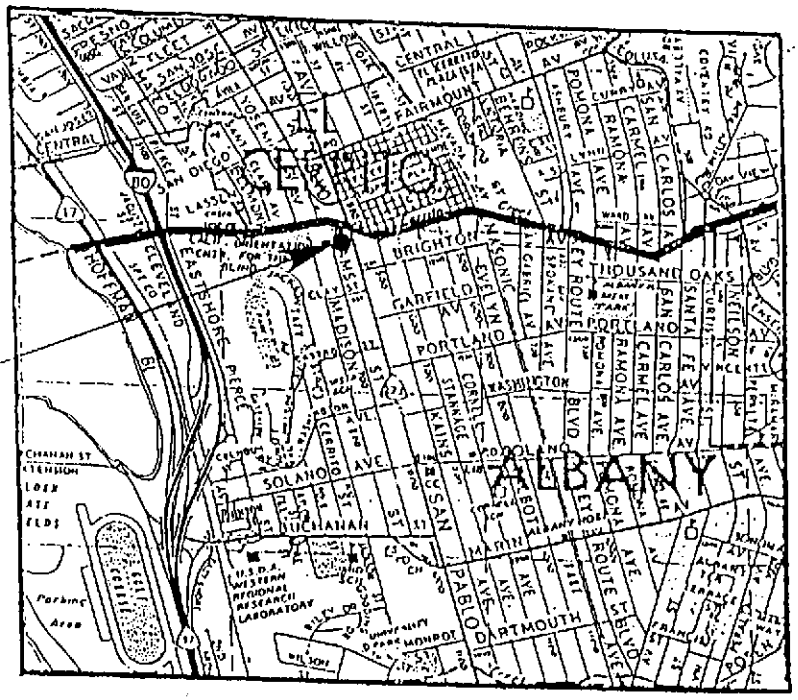

Site Location

THOMAS BROS. MAP 1982 EDITION
ALAMEDA COUNTY

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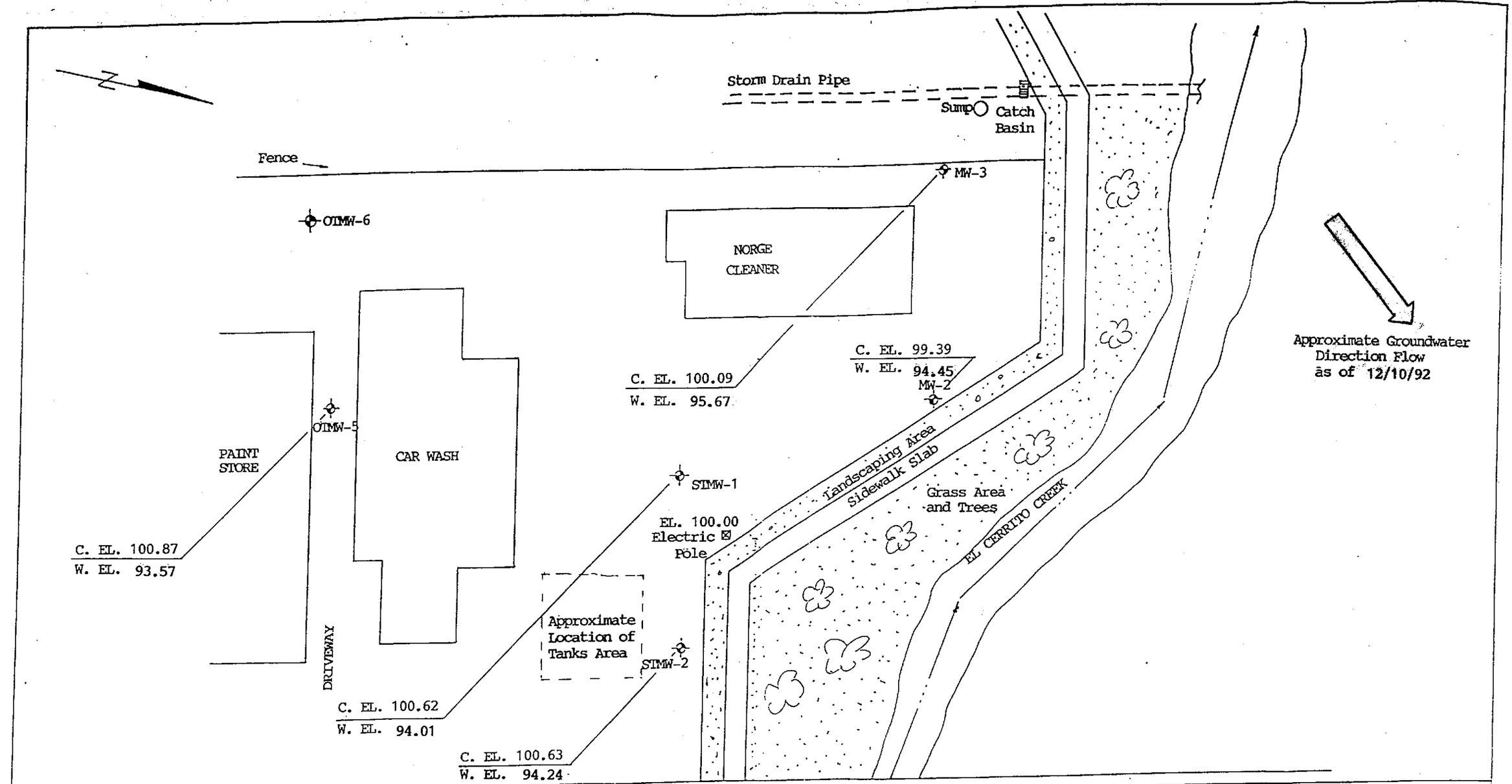
Figure 1

SOIL TECH ENGINEERING, INC.

M1



DIRECTION OF GROUNDWATER FLOW

400 SAN PABLO AVENUE, ALBANY, CALIFONRIA

1" = 30'	PROJECT NO. 8-90-421-SI	FIGURE - 2
DRAWN BY N.A.		12/10/92

SOIL TECH ENGINEERING, INC.
298 BROKAW ROAD, SANTA CLARA, CA 95050

File No. 8-90-421-SI

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.

PRIORITY ENVIRONMENTAL LABS

Precision Environmental Analytical Laboratory

December 12, 1992

PEL # 9212028

SOIL TECH ENGINEERING

Attn: Noori Ameli
Re: Five water samples for Gasoline/BTEX analysis.

Project name: 400 San Pablo Ave.,- Albany
Project number: 8-90-421-SI

Date sampled: Dec 10 1992
Date extracted: Dec 11-12, 1992

Date submitted: Dec 11, 1992
Date analyzed: Dec 11-12, 1992

RESULTS:

SAMPLE I.D.	Gasoline (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl Benzene (ug/L)	Total Xylenes (ug/L)
STMW-1	35000	54	79	83	220
STMW-2	44000	84	96	120	350
MW-2	7200	15	23	32	82
MW-3	94000	400	410	430	1100
OTMW-5	540	4.7	4.5	6.4	19
Blank	N.D.	N.D.	N.D.	N.D.	N.D.
Spiked Recovery	89.8%	93.5%	89.9%	95.6%	98.2%
Duplicate Spiked Recovery	102.1%	100.5%	97.6%	104.2%	105.3%
Detection limit	50	0.5	0.5	0.5	0.5
Method of Analysis	5030 / 8015	602	602	602	602

David Duong
Laboratory Director

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

CHAIN OF CUSTODY RECORD

PEL

PROJ. NO.	NAME
8-90-424-SI	400 San Pablo Av. ALBANY

SAMPLERS: (Signature)

N. Amato

NO.	DATE	TIME	SOIL	WATER	LOCATION	CONTAINER	ANALYSES REQUESTED (2) TPHG/BTE&X	REMARKS
1	12/10/92	10:55		✓	STMW-1	2	✓	
2	12/10/92	11:22		✓	STMW-2	2	✓	
3	12/10/92	11:47		✓	MW-2	2	✓	
4	12/10/92	12:15		✓	MW-3	2	✓	
5	12/10/92	10:35		✓	OTMW-5	2	✓	

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Receive by: (Signature)
N. Amato	12/11/92 9:40				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
		THANH LAM			
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	
	12/11/92 9:40	PEL			

SOIL TECH ENGINEERING

Soil, Foundation and Geological Engineers

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

PEL

CHAIN OF CUSTODY RECORD

PEL # 9212028

INV # 23262

PROJ. NO.	NAME
8-90-424-SI	400 San Pablo Av. ALBANY

SAMPLERS: *(Signature)* N. Amato

NO.	DATE	TIME	SOIL	WATER	LOCATION	CONTAINER	ANALYSES REQUESTED (2) TPHG/BTE&X	REMARKS
1	12/10/92	10^{55}		✓	STMW-1	2	✓	
2	12/10/92	11^{22}		✓	STMW-2	2	✓	
3	12/10/92	11^{47}		✓	MW-2	2	✓	
4	12/10/92	12^{15}		✓	MW-3	2	✓	
5	12/10/92	10^{35}		✓	OTMW-5	2	✓	

Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date / Time	Receive by: *(Signature)*
N. Amato	12/1/92 9^{45}				
Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)* THANH LAM	Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*
Relinquished by: *(Signature)*	Date / Time 12/11/92 9^{40}	Received for Laboratory by: *(Signature)* PEL	Date / Time	Remarks	

SOIL TECH ENGINEERING

Soil, Foundation and Geological Engineers

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