THE MARK GROUP, INC.
ENGINEERS & GEOLOGISTS

May 16, 1995
93-1185002.80

Mr. Gregory Baum
Vice President/General Counsel
Harsch Investment Corp.
P.O. Box 2708
1121 S. W. Salmon Street
Portland, Oregon 97208

Subject: REPORT - Quarterly Groundwater Monitoring Program
February 1995
South Shore Shopping Center
2375 Shoreline Drive
Alameda, California

Dear Mr. Baum:

The MARK Group, Inc. is pleased to submit the enclosed Quarterly Groundwater Monitoring Program Report for work conducted at the South Shore Shopping Center. This work was conducted pursuant to the requirements of the Alameda County Health Agency.

We appreciate the opportunity to be of continued service. Should you have any questions or comments regarding this report, please contact Mr. Alan D. Gibbs, R.G. or the undersigned at (510) 946-1055.

Sincerely,

The MARK Group, Inc.

David K. Rogers, P.E., C.E.G.
Principal

DKR:RSS:scd
QTLYFEB LTR

Enclosure(s)

cc: Mr. Tom Hargett, Texaco
Mr. Murray Stevens, Kamur
Ms. Madhulla Logan, ACHA
Mr. Frank Hamedi, Soil Tech

QUARTERLY GROUNDWATER MONITORING PROGRAM
FEBRUARY 1995
SOUTH SHORE SHOPPING CENTER
2375 SHORELINE DRIVE
ALAMEDA, CALIFORNIA

93-1185002.80
May 16, 1995

QTLYFEB COV

PROFESSIONAL CERTIFICATION

QUARTERLY GROUNDWATER MONITORING PROGRAM
FEBRUARY 1995
SOUTH SHORE SHOPPING CENTER
2375 SHORELINE DRIVE
ALAMEDA, CALIFORNIA

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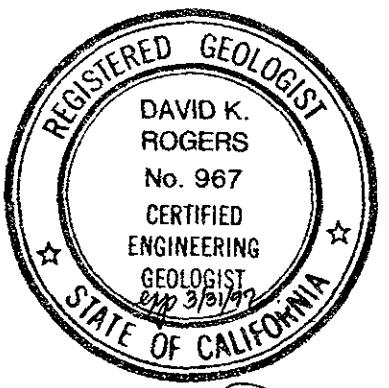
This report has been prepared by the staff of The MARK Group, Inc. under the professional supervision of the Principal and senior staff whose seal(s) and signature(s) appear hereon.

The findings, recommendations, specifications or professional opinions are presented, within the limits prescribed by the client, after being prepared in accordance with generally accepted professional engineering and geologic practice. There is no other warranty, either expressed or implied.



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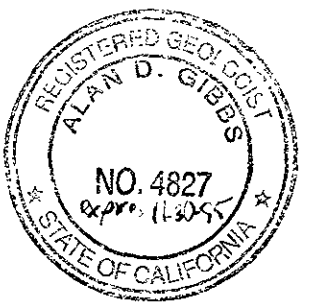
Principal



Alan D Gibbs, R G
Associate

TABLE OF CONTENTS

List of Tables

TABLE OF CONTENTS (Continued)

List of Drawings

Appendices

1.0 INTRODUCTION

1.1 Objective

This Quarterly Monitoring Program Report for groundwater samples collected February 14 and 15, 1995 was prepared by The MARK Group, Inc. (MARK) and summarizes the results of the groundwater sampling and analysis conducted at the South Shore Shopping Center, Alameda, California (Drawing 1-1). This work being conducted is pursuant to the requirements established by the Alameda County Health Agency (ACHA).

This report satisfies the quarterly groundwater monitoring requirements for the following parties:

- Kamur Industries, Inc. (Southshore Car Wash);
- Texaco Refining and Marketing, Inc. (former Texaco Service Station, currently Lyons Restaurant); and
- Harsch Investment Corp. (former Dry Cleaner site and current Southshore Shopping Center property owner).

1.2 Scope of Work

The scope of the work for this Quarterly Monitoring Program consisted of conducting groundwater monitoring and sampling for February 1995. The work was performed utilizing sampling methods and procedures specified in the Quality Assurance Project Plan [QAPP, (MARK, 1994)] which was included as Appendix A in the report entitled "Quarterly Groundwater Monitoring Program, April, 1994, Southshore Shopping Center" (MARK, August 2, 1994). The scope of work included the following:

- Measuring static water levels in 21 monitoring wells (Appendix A);
- Recording groundwater field parameters (pH, temperature, specific conductance and turbidity) from five Monitoring Wells (MW-16, MW-17, MW-19, MW-22, and MW-23);
- Purging and sampling each of the five monitoring wells associated with Harsch and Texaco. Monitoring Wells MW-12 and MW-24 were purged and sampled by Soil Tech Engineering (STE);

- Analyzing groundwater samples from these seven wells for the monitoring constituents indicated on Table 1-1 and discussed in Section 2 of this report; and

- Reporting the results of the groundwater samples collected from the five monitoring wells associated with Harsch and Texaco, and also the results of two monitoring wells (MW-12 and MW-24) associated with Kamur.

TABLE 1-1: Monitoring Program For First Quarter 1995
South Shore Shopping Center
Alameda, California

Well No.	Water Level	pH, EC, Temp	TPH as Gasoline	BTEX	TPH as Diesel	O&G	VOCs
MW-1	Closed						
MW-2	X						
MW-3	X						
MW-4	Damaged						
MW-5B	X						
MW-6	Closed						
MW-7B	X						
MW-8B	X						
MW-9	X						
MW-10	X						
MW-11	X						
MW-12(a)	X		X(b)	X(b)		X(b,c)	X
MW-13	Closed						
MW-14	X						
MW-15	X						
MW-16	X	X	X	X			X
MW-17	X	X	X	X			X
MW-18	X						
MW-19	X	X	X	X			X
MW-20	X						
MW-21	X						
MW-22	X	X	X	X	X		X
MW-23	X	X	X	X			X
MW-24(a)	X		X(b)	X(b)			X
MW-25	X						

Notes:

(a) - Samples collected by Soil Tech Engineers

(b) - With the exception of TPH Oil and Grease Analysis (MW-12) all samples were analyzed by McCampbell Analytical Laboratory

(c) - Samples analyzed by Priority Environmental Laboratory

Explanation.

EC = Electrical Conductivity
Temp = Temperature
BTEX = Benzene, Toluene, Ethylbenzene, and Xylenes
TPH = Total Petroleum Hydrocarbons
O&G = Oil and Grease
VOCs = Volatile Organic Compounds

2.0 IMPLEMENTATION OF FIELD ACTIVITIES

2.1 Field Activities and Procedures

2.1.1 Groundwater Elevations

Static water levels in 21 wells were measured to within 0.01 foot on February 14, 1995 in accordance with the procedures described in the Quality Assurance Project Plan [(QAPP) MARK, 1994]. Note that Monitoring Well MW-4 is damaged and needs to be closed and sealed. Secondly, according to Kamur, Monitoring Well MW-13 was recently closed and sealed. Therefore, water levels were not monitored in these two wells. Groundwater elevation measurements are summarized on Table 2-1. Water level measurement field logs are included in Appendix A. A groundwater elevation contour map (Drawing 2-1) was constructed using linear interpolation between wells. Groundwater elevation monitoring results are discussed in Section 3.0.

2.1.2 Groundwater Sampling

On February 15, 1995, groundwater was sampled from seven wells which are a part of the Harsch, Kamur, and Texaco monitoring network. These groundwater samples were collected in accordance with procedures outlined by the California Regional Water Quality Control Board (RWQCB) and the QAPP. Field forms documenting sampling and purging activities are included in Appendix B. Five monitoring wells were sampled by MARK (MW-16, MW-17, MW-19, MW-22, and MW-23). Laboratory analytical reports are provided in Appendix C. In addition, two of the Kamur Monitoring Wells (MW-12 and MW-24) were sampled by STE. STE's laboratory analytical reports are provided in Appendix D. The historical analytical results for groundwater samples collected from the site are summarized in Tables 2-2 and 2-3, and in Appendix E.

Groundwater sampling and water level measurements for the Harsch and Texaco monitoring network were conducted by Mr Michael S. Caravetto, and Mr. Geoffery Fiedler, Senior Staff Geologists, under the direct supervision of Mr. Robert S. Spare, Project Environmental Scientist. Mr. Spare has a Bachelor degree in Environmental Science and has over nine years experience. Messrs Caravetto and Fiedler have combined experience of over 13 years in groundwater sampling techniques All employees involved

in this project have completed 40 hours of health and safety training in accordance with 29 CFR 1910.120, and are experienced with the general sampling protocols used.

2.2 Analytical Methods

Groundwater samples collected by MARK from the Harsch and Texaco monitoring wells were submitted to McCampbell Analytical, Inc. (McCampbell), which is certified by the State of California Department of Health Services to conduct the required analyses. The groundwater samples were analyzed by McCampbell in accordance with the following Environmental Protection Agency (EPA) methods:

- EPA Method 8015/8020, for total petroleum hydrocarbons as gasoline (TPH-g) and benzene, toluene, ethylbenzene, and xylenes (BTEX);
- EPA Method 8015 (modified) for total petroleum hydrocarbons as diesel (TPH-d); and
- EPA Method 601, for chlorinated hydrocarbons (VOCs).

Groundwater samples from monitoring wells MW-12 and MW-24 were collected by STE and given to MARK for VOCs, TPH-g, and BTEX analyses. These samples were analyzed by McCampbell laboratory also.

STE submitted groundwater samples from Kamur's wells MW-12 and MW-24 to Priority Environmental Laboratory (PEL). Samples from these wells were analyzed by Priority Envirnomental Laboratory (PEL) for TPH-g, and BTEX. The groundwater sample from Monitoring Well MW-12 was additionally analyzed for the presence of oil and grease by EPA Method 5520. The laboratory analytical test results for this monitoring period are summarized in Tables 2-2 and 2-3. McCampbell's analytical report is presented in Appendix C. PEL's analytical report is presented in STE's report which is included in Appendix D.

2.3 Quality Assurance/Quality Control

The Quality Assurance and Quality Control (QA/QC) program utilized during this monitoring program reporting period incorporated the following field and laboratory QA/QC methods:

- Chain-of-custody control of samples;

- Laboratory methods:
  - matrix spikes;
  - matrix spike duplicates;
  - method blanks;
  - QC spikes; and
  - QC spike duplicates.

QA/QC laboratory reports are presented in Appendix C.

Table 2-1: Groundwater Elevations
South Shore Shopping Center
Alameda, California

Well ID	Date Measured	Well Elevation (feet)	Depth to Water	Groundwater Elevations (feet) City of Alameda Datum
MW-1	(Destroyed)			
MW-2	04/26/94 10/18/94 02/14/95	7.44	5.77 7.27 5.15	1.67 0.17 2.29
MW-3	04/26/94 10/18/94 02/14/95	6.78	5.39 6.68 4.62	1.39 0.10 2.16
MW-4	(Damaged)			
MW-5B	04/26/94 10/18/94 02/14/95	5.08	4.00 5.07 3.00	1.08 0.01 2.08
MW-6B	(Destroyed)			
MW-7B	04/26/94 10/18/94 02/14/95	5.52	4.43 5.44 3.70	1.09 0.08 1.82
MW-8B	04/26/94 10/18/94 02/14/95	6.15	6.33 6.54 5.57	-0.18 -0.39 0.58
MW-9B	04/26/94 10/18/94 02/14/95	5.65	NR NR 4.98	-- -- 0.67
MW-10	04/26/94 10/18/94 02/14/95	7.97	6.58 7.69 6.13	1.39 0.28 1.84
MW-11	04/26/94 10/18/94 02/14/95	6.96	5.54 6.68 4.93	1.42 0.28 2.03
MW-12	04/26/94 10/18/94 02/14/95	8.31	6.41 8.00 5.64	1.9 0.31 2.67
MW-13	(Damaged)			
MW-14	04/26/94 10/18/94 02/14/94	5.76	5.07 5.89 4.08	0.69 -0.13 1.68
MW-15	04/26/94 10/18/94 02/14/95	4.47	3.46 8.85 3.09	1.01 -0.38 1.38
MW-16	04/26/94 10/18/94 02/14/95	3.52	2.93 3.85 3.78	0.59 -0.33 -0.26

Table 2-1: Groundwater Elevations
South Shore Shopping Center
Alameda, California

Well ID	Date Measured	Well Elevation (feet)	Depth to Water	Groundwater Elevations (feet) City of Alameda Datum
MW-17	04/26/94	3.32	3.38	-0.06
	10/18/94		3.76	-0.44
	02/14/95		2.90	0.42
MW-18	04/26/94	4.72	4.84	-0.12
	11/04/94		4.65	0.07
	02/14/95		4.42	0.30
MW-19	04/26/94	5.28	5.09	0.19
	10/18/94		5.58	-0.30
	02/14/95		4.55	0.73
MW-20	04/26/94	6.66	7.11	-0.45
	10/18/94		7.61	-0.95
	02/14/95		5.80	0.86
MW-21	04/26/94	6.48	6.6	-0.12
	10/18/94		7.11	-0.63
	02/14/95		5.90	0.58
MW-22	04/26/94	7.81	7.57	0.24
	10/18/94		8.16	-0.35
	02/14/95		6.52	1.29
MW-23	04/26/94	7.09	4.45	2.64
	10/18/94		6.54	0.55
	02/14/95		4.76	2.33
MW-24	04/26/94	9.19	8.49	0.70
	10/18/94		9.10	0.09
	02/14/95		7.87	1.32
MW-25	04/26/94	9.41	9.15	0.26
	10/18/94		9.55	-0.14
	02/14/95		8.75	0.66

Notes:

1. Groundwater levels measured from the top of the PVC well casing.
2. Well elevations surveyed with reference to the City of Alameda datum (+3.41 feet msl).

NR = Not recorded.

Table 2-2: Groundwater Analytical Results - Total Petroleum Hydrocarbons and BTEX
South Shore Shopping Center
Alameda, California

Well No.	Date Sample	TPH as Diesel	TPH as Gasoline	Oil\Grease	Benzene	Toluene	Xylenes	Ethylbenzene
Texaco Wells								
MW-22	04/28/94	<0.05	<0.05	NT	<0.0005	<0.0005	<0.0005	<0.0005
	10/18/94	<0.05	<0.05	NT	<0.0005	<0.0005	<0.0005	<0.0005
	02/15/95	<0.05	<0.05	NT	<0.0005	<0.0005	<0.0005	<0.0005
Harsch Wells								
MW-16	05/2/94	<0.05	<0.05	NT	<0.0005	<0.0005	<0.0005	<0.0005
	10/18/94	NT	<0.05	NT	<0.0005	<0.0005	<0.0005	<0.0005
	02/15/95	NT	<0.05	NT	<0.0005	<0.0005	<0.0005	<0.0005
MW-17	04/29/94	<0.05	<0.05	NT	<0.0005	<0.0005	<0.0005	<0.0005
	10/18/94	NT	<0.05	NT	<0.0005	<0.0005	<0.0005	<0.0005
	02/15/95	NT	<0.05	NT	<0.0005	<0.0005	<0.0005	<0.0005
MW-19	04/29/94	<0.05	<0.05	NT	<0.0005	<0.0005	<0.0005	<0.0005
	10/18/94	NT	<0.05	NT	<0.0005	<0.0005	<0.0005	<0.0005
	02/15/95	NT	<0.05	NT	<0.0005	<0.0005	<0.0005	<0.0005
MW-23	05/2/94	<0.05	<0.05	NT	<0.0005	<0.0005	<0.0005	<0.0005
	10/18/94	NT	<0.05	NT	<0.0005	<0.0005	<0.0005	<0.0005
	02/15/95	NT	<0.05	NT	<0.0005	<0.0005	<0.0005	<0.0005
Kamur Wells								
MW-12	04/27/94	NT	**160**	NT	**1.3**	**6.3**	**12.0**	**1.4**
	10/18/94	NT	**77.0**	NT	**5.2**	**6.2**	**22.0**	**13.0**
	02/15/95	NT	**68.0**	NT	**1.1**	**6.2**	**15.0**	**2.0**
	02/14/95(ST)	NT	**68.0**	**2.3**	**0.12**	**0.2**	**0.71**	**0.18**
MW-24	02/15/95	NT	**29.0**	NT	**7.7**	**1.6**	**2.1**	**1.2**
	02/14/95(ST)	NT	**4.1**	NT	**0.053**	**0.021**	**0.046**	**0.02**
MW-25	04/27/94	NT	<0.05	NT	<0.0005	<0.0005	<0.0005	<0.0005
	10/18/94	NT	<0.05	NT	<0.0005	0.0005	0.0005	<0.0005
	02/14/95	NT	NT	NT	NT	NT	NT	NT
PMCL		NA	NA	NA	0.001	1.0	1.75	0.68

Explanation:

All results are in milligrams per liter
BTEX = Benzene, toluene, ethylbenzene, and xylenes
NT = Not tested
NR = Analytical results not reported by laboratory
NA = Not Available
PMCL = Primary Maximum Contaminant Level
ST = Analytical Results Provided by Soil Tech Engineering
TPH = Total Petroleum Hydrocarbons

Table 2-3: Groundwater Analytical Results - Volatile Organic Compounds
South Shore Shopping Center
Alameda, California

Well No.	Date Sample	Chloro-benzene	1,2-DCA	1,1-DCE	Trans 1,2-DCE	PCE	TCE	Chloroform	Cis 1,2-DCE
Texaco Wells									
MW-22	04/28/94	**<0.001**	**0.015**	<0.002	<0.001	<0.001	<0.002	<0.001	NR
	10/18/94	**<0.0005**	**0.014**	<0.0005	<0.0005	<0.0005	<0.0005	**0.00065**	<0.0005
	02/15/95	**<0.0005**	**0.0082**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Harsch Wells									
MW-16	05/2/94	<0.001	**0.002**	<0.002	<0.001	<0.001	<0.002	<0.001	NR
	10/18/94	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0061**	<0.0005
	02/15/95	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
MW-17	04/29/94	<0.001	<0.002	<0.002	<0.001	**0.0024**	<0.002	<0.001	NR
	10/18/94	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.004**	<0.0005
	02/15/95	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
MW-19	04/29/94	<0.001	<0.002	<0.002	<0.001	**0.0011**	<0.002	<0.001	NR
	10/18/94	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0046**	<0.0005
	02/15/95	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
MW-23	05/2/94	<0.001	<0.002	<0.002	<0.001	<0.001	<0.002	<0.001	NR
	10/18/94	<0.0005	**0.00053**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	02/15/95	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Kamur Wells									
MW-12	04/27/94	<0.001	<0.002	<0.002	<0.001	**0.0039**	<0.002	<0.001	NR
	10/18/94	NT	NT	NT	NT	NT	NT	NT	<0.0005
	02/15/95	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
MW-24	02/15/95	<0.0005	**0.0066**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
MW-25	04/27/94	<0.001	**0.0093**	<0.002	<0.001	**0.0039**	<0.002	<0.001	NR
	10/18/94	<0.0005	**0.0052**	<0.0005	<0.0005	<0.0005	<0.0005	**0.0013**	<0.0005
	02/15/95	NT	NT	NT	NT	NT	NT	NT	NT
PMCL		0.03	0.0005	0.006	0.01	0.005	0.005	0.1	0.006

Explanation:

All results are in milligrams per liter
DCA = Dichloroethane
DCE = Dichloroethene
PCE = Tetrachloroethene
TCE = Trichloroethene
BTEX = Benzene, toluene, ethylbenzene, and xylenes
NS = Not sampled
NT = Not tested
NR = Analytical results not reported by laboratory
NA = Not Available
PMCL = Primary Maximum Contaminant Level
ST = Analytical Results Provided by Soil Tech Engineering

3.0 RESULTS OF THE SELF-MONITORING PROGRAM

3.1 Groundwater Gradient

There are presently 22 monitoring wells located within the South Shore Shopping Center and south of the site along Shoreline Drive. Because one of these wells is damaged (MW-4), 21 wells were utilized to evaluate the site groundwater flow conditions. Based on the most recent water elevation data collected during February 1995 (see Table 1-1), groundwater generally flows ~~northwest, west, and southwest.~~ However, the measured groundwater elevations indicate localized steep gradients, groundwater low and high areas, and varied groundwater flow directions. Groundwater elevations and flow direction are illustrated in Drawing 2-1. The groundwater elevations are referenced to City of Alameda datum which is 3.41 feet above mean sea level (MSL).

3.2 Analytical Results

The analytical results for Monitoring Wells MW-12, MW-16, MW-17, MW-19, MW-22, MW-23, and MW-24 are presented in Tables 2-2 and 2-3 and are discussed herein. The laboratory analytical reports are included in Appendices C and D. Historical groundwater quality analytical results are summarized in Appendix E.

- TPH-g was not detected above the method detection limit of 0.05 milligrams per liter (mg/l) in Monitoring Wells MW-16, MW-17, MW-19, MW-22, and MW-23. In Monitoring Well MW-12, the concentration of TPH-g was 68 mg/l. In Monitoring Well MW-24, the concentration of TPH-g was 29 mg/l. Drawing 3-1 shows the distribution of gasoline detected in these wells;

- The TPH-g concentrations reported by STE for Monitoring Wells MW-12 and MW-24 were: MW-12 - 68 mg/l; MW-24 - 4.1 mg/l;

- The concentration of oil and grease reported by STE for Monitoring Well MW-12 was 2.3 mg/l;

- TPH-d was not detected in Monitoring Well MW-22;

- The concentration of benzene in Monitoring Well MW-12 was 1 1 mg/l. The concentration of benzene in Monitoring Well MW-24 was 7 7 mg/l. STE reported concentrations of benzene in Monitoring Wells MW-12 (0.12 mg/l) and MW-24 (0.053 mg/l). Drawing 3-2 shows the distribution of benzene detected in groundwater samples collected during this quarter:

- The reported concentration of toluene in Monitoring Well MW-12 was 6.2 mg/l. The concentration of toluene in Monitoring Well MW-24 was 1.6 mg/l. STE reported the toluene concentrations of 0.2 mg/l in Monitoring Well MW-12 and 0.021 mg/l in Monitoring Well MW-24. Toluene was not detected in the remaining wells;

- The reported concentrations of xylene in Monitoring Well MW-12 were 15 mg/l (McCampbell) and 0.71 mg/l (PEL). The xylene concentrations reported for samples from Monitoring Well MW-24 were 2.1 mg/l (McCampbell) and 0.046 mg/l (PEL). Xylenes were not detected in the remaining wells;

- The reported concentrations of ethylbenzene in samples from Monitoring Well MW-12 were 2.0 mg/l (McCampbell) and 0.18 mg/l (PEL). The concentration of ethylbenzene in Monitoring Well MW-24 was 1.2 mg/l (McCampbell) and 0.02 mg/l (PEL). Ethylbenzene was not detected in the remaining wells;

- 1,2-dichloroethane (1,2 DCA) was not detected above the method detection limit of 0.0005 mg/l in Monitoring Wells MW-23, MW-16, MW-17, MW-19, and MW-12. 1,2 DCA was detected in the samples collected from MW-24 (0.006 mg/l) and MW-22 (0.008 mg/l). The California Primary Maximum Contaminant Level (PMCL) for 1,2 DCA is 0.0005 mg/l. Drawing 3-3 shows the distribution of 1,2 DCA detected in groundwater samples collected during this quarter; and

- Chlorobenzene, chloroform, cis 1,2-dichloroethene, 1,1-dichloroethene, trans 1,2-dichloroethene, tetrachloroethene, and trichloroethene were not detected in any of the well samples analyzed during this quarter.

3.3 Quality Assurance/Quality Control

The QA/QC program was designed to:

- Establish the necessary activities to control the quality of sample collection, analysis, and data validations; and

- Guide assessment of the precision, accuracy, and completeness of the data.

The sampling methods and protocols have been specified in the QAPP. Relevant sections of the QAPP specify the methods and protocols for the groundwater sample collection, handling, and shipment; water level measurements; purging; and analytical methods.

Laboratory in-house QA/QC results were reported by McCampbell and PEL to

indicate that all matrix spikes, matrix spike duplicates, method blanks, QC spike, and QC spike duplicate results are within acceptable laboratory limits.

4.0 CONCLUSIONS

4.1 Groundwater Quality

During this monitoring period, seven monitoring wells were sampled. The results indicate that groundwater continues to flow generally north, west, or southerly towards the bay (Drawing 2-1). However, the data suggests that surface watering of landscaped areas may be influencing recognized groundwater flow directions and gradients. Several other factors that commonly alter groundwater flow patterns are:

- Variation in thicknesses and type of fill material used;
- Total Dissolved Solids (TDS) and locations of saltwater interface;
- Depth to well screen; and
- Leaking pipes, buried utility trenches, etc.

1,2 DCA was detected in groundwater samples from Monitoring Wells MW-22 (0.0082 mg/l) and MW-24 (0.0066 mg/l) located along the southeastern and northern perimeters of the site, respectively. These concentrations are similar in magnitude to concentrations reported during the previous quarter.

1,2 DCA was detected in Monitoring Well MW-23 during the previous quarter at a concentration of 0.00053 mg/l. 1,2 DCA was not detected in MW-23 during this quarter. Chloroform, detected during the previous quarter in samples from Monitoring Wells MW-16, MW-17, MW-19 and MW-22 was not detected in any of the samples during this quarter.

Groundwater samples collected by STE from Monitoring Wells MW-12 and MW-24 were analyzed by McCampbell and PEL for TPH-g and BTEX. The reported TPH-g concentrations for Monitoring Well MW-12 were consistent (both laboratories reported 68 mg/l). The TPH-g concentrations reported for MW-24 were not as consistent (PEL - 4.1 mg/l - McCampbell - 29.0 mg/l). BTEX concentrations reported by PEL were generally one to two orders of magnitude less than the concentrations reported by McCampbell (i.e., benzene reported in MW-12: McCampbell - 1.1 mg/l, PEL - 0.12 mg/l) MARK contacted McCampbell and PEL to inquire about possible laboratory errors that may have produced this discrepancy in BTEX concentrations. McCampbell reported having reviewed their

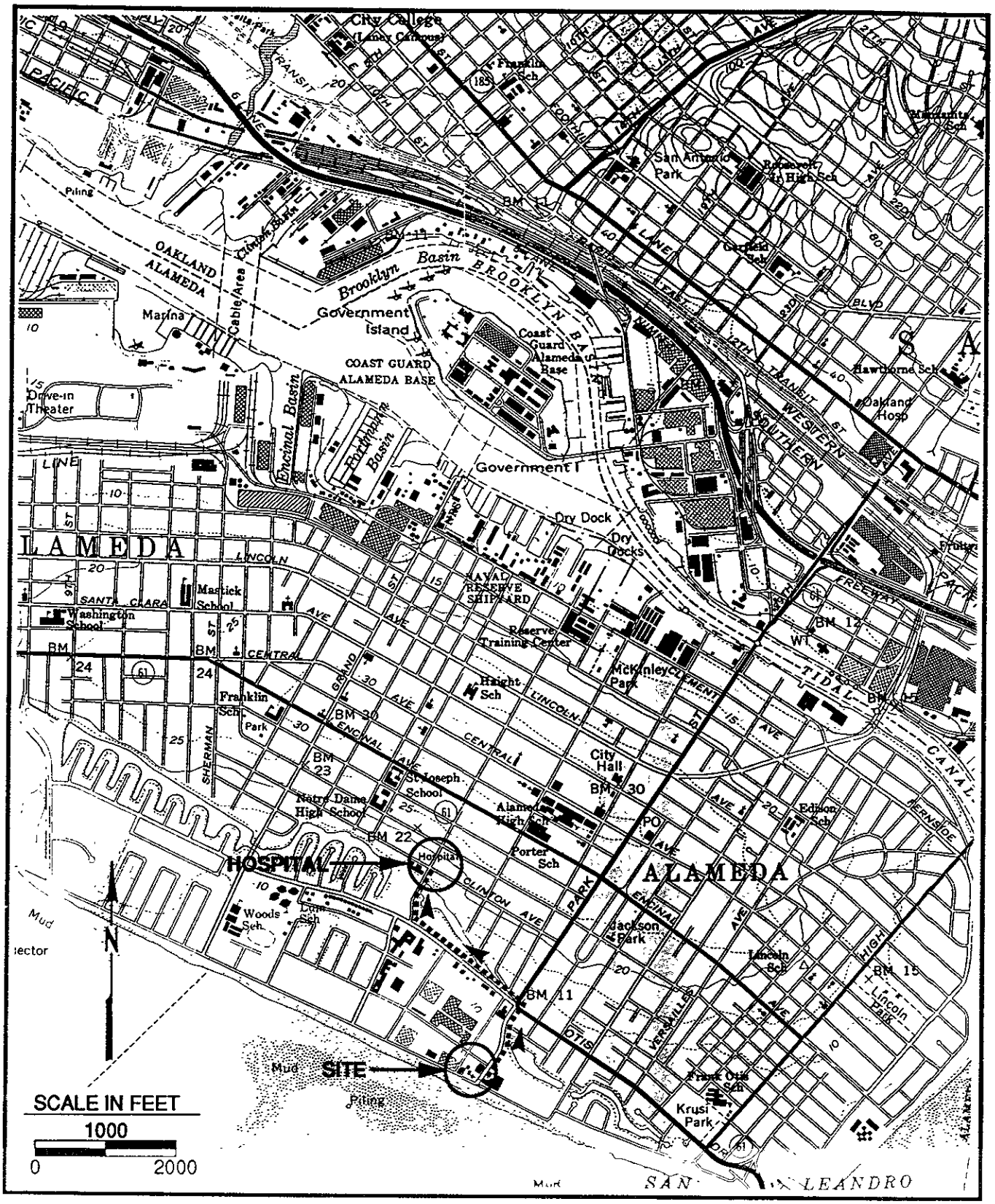
laboratory quality control data and expressed their confidence in the reported BTEX concentrations. As of this date, PEL has not commented on their reported BTEX concentrations.

5.0 RECOMMENDATIONS

Monitoring Well MW-4 is damaged and no longer operable as a Monitoring Well. This well should be destroyed and sealed. The well was originally installed to define the horizontal extent of chemical impacts to groundwater. MARK sees no need at this time to replace this monitoring well.

The next quarterly groundwater sampling event should be scheduled for May 1995.

Drawings



SITE LOCATION MAP

PREPARED BY RSS REVIEWED BY ADG DATE 6/22/94

THE MARK GROUP, INC.
ENGINEERS & GEOLOGISTS

Quarterly Groundwater Monitoring Program
Southshore Shopping Center
Corner of Shoreline Drive & Park Avenue
Alameda, California

PROJECT NO
93-1175306

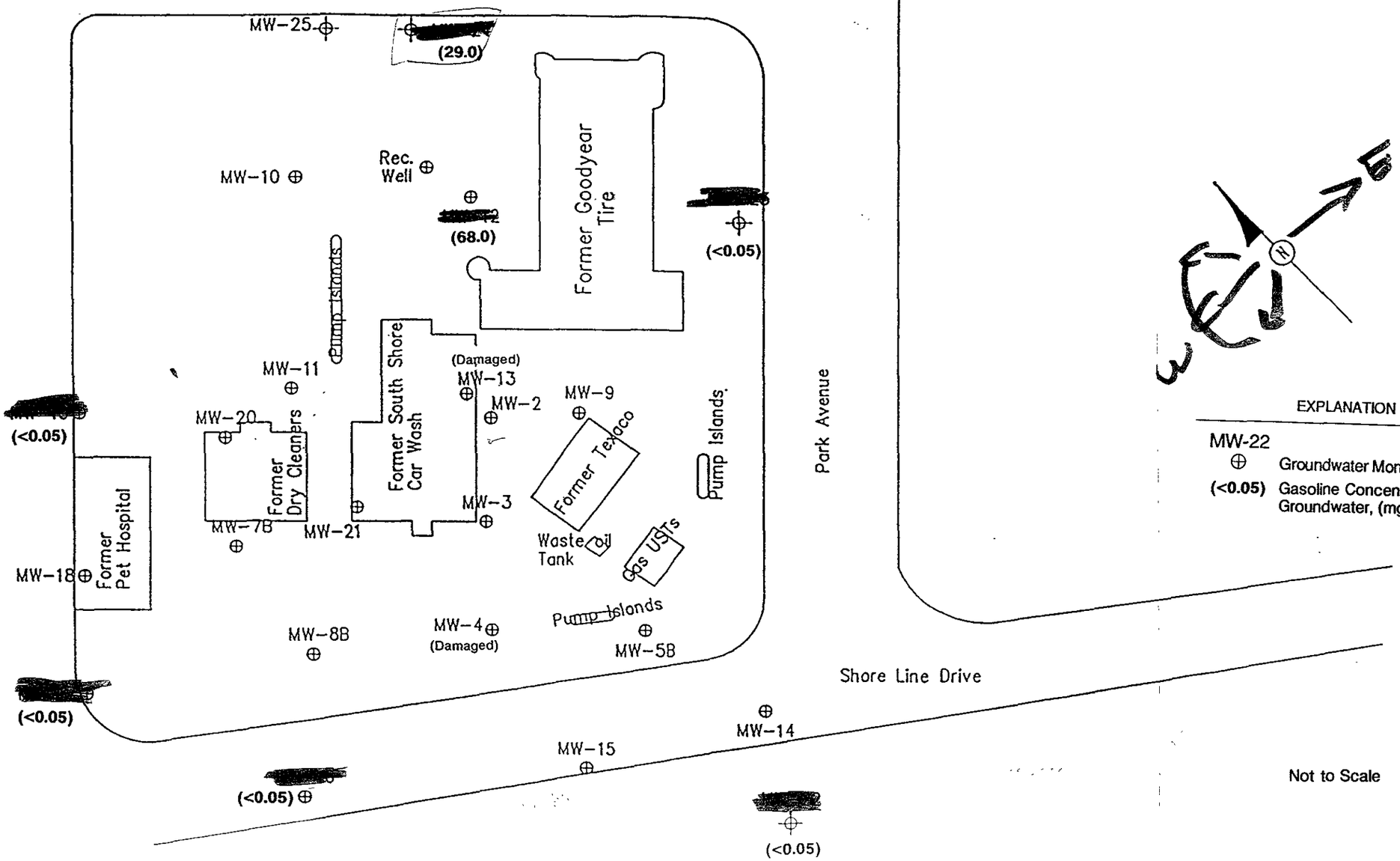
DRAWING NO
1-1

T8LCK (5/26/92)

Date 5-15-95

Approved By ADG

Prepared By GAF



EXPLANATION

MW-22 ⊕ Groundwater Monitoring Well

(<0.05) Gasoline Concentration in Groundwater, (mg/L)

Not to Scale

GASOLINE CONCENTRATION FOR SAMPLED WELLS 2/15/95

THE MARK GROUP, INC.
ENGINEERS & GEOLOGISTS

Quarterly Groundwater Monitoring Program
South Shore Shopping Center
Corner of Shoreline Drive & Park Avenue
Alameda, California

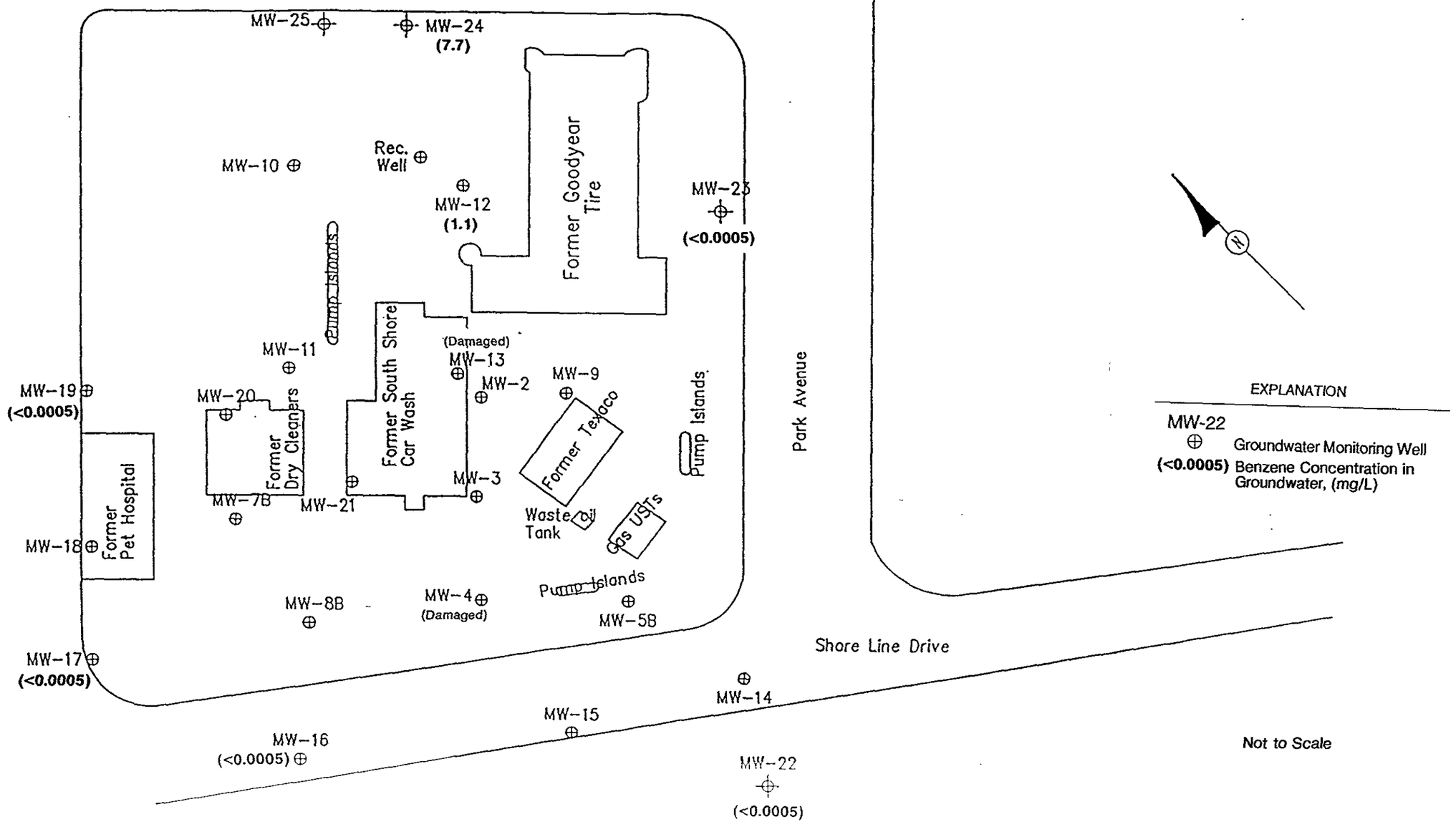
PROJECT NO.
92-1175306.

DRAWING NO
3-1

Date 5-15-95

Approved By ADG

Prepared By GAf



EXPLANATION

MW-22 ⊕ Groundwater Monitoring Well

(<0.0005) Benzene Concentration in Groundwater, (mg/L)

Not to Scale

BENZENE CONCENTRATION FOR SAMPLED WELLS 2/15/95

THE MARK GROUP, INC.
ENGINEERS & GEOLOGISTS

Quarterly Groundwater Monitoring Program
South Shore Shopping Center
Corner of Shoreline Drive & Park Avenue
Alameda, California

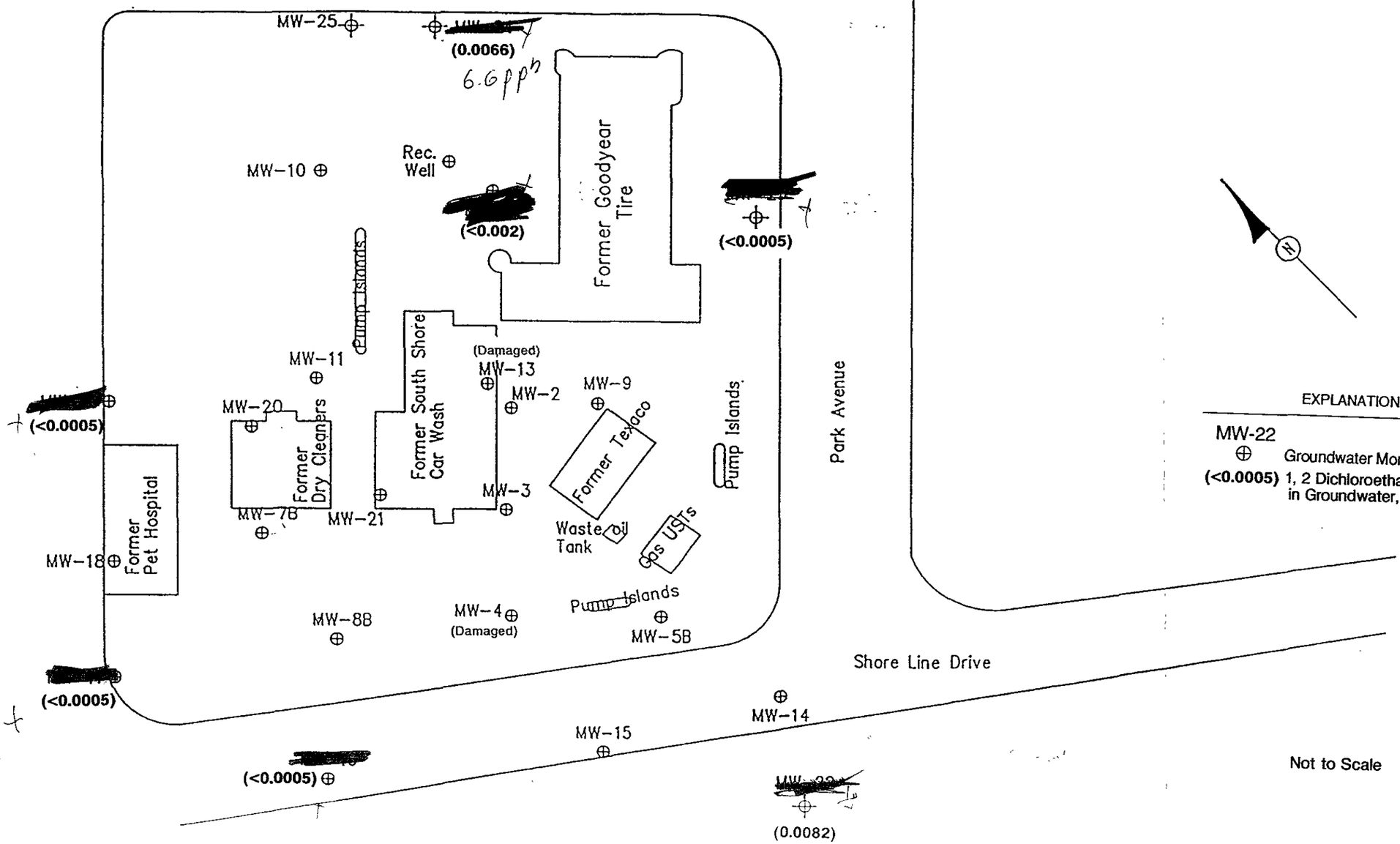
PROJECT NO
92-1175306

DRAWING NO
3-2

Date 5-15-95

Approved By ADG

Prepared By GAF



EXPLANATION

MW-22 ⊕ Groundwater Monitoring Well

(<0.0005) 1, 2 Dichloroethane Concentration in Groundwater, (mg/L)

Not to Scale

1, 2 DICHLOROETHANE CONCENTRATION FOR SAMPLED WELLS 2/15/95

THE MARK GROUP, INC.
ENGINEERS & GEOLOGISTS

Quarterly Groundwater Monitoring Program
South Shore Shopping Center
Corner of Shoreline Drive & Park Avenue
Alameda, California

PROJECT NO
92-1175306.

DRAWING NO
3-3

Appendix A

THE MARK GROUP
ENGINEERS & GEOLOGISTS, INC.

Field Water Level Measurements

DATE: 2/14/95

PERSONNEL: G. FIGUEROA

WEATHER: CLEAR COOL CALM

PROJECT No.: 92-1185003.30

HOW MEASURED/DEVICE: ELECTRONIC SOUNDER

LAST CALIBRATION DATE: FACTORY

COMMENTS:

Time	Well No.	Predicted or Measured Tide Level*	Top of Casing Elevation (Measuring Point)	Depth Below Top of PVC Casing (MP)	Water Level Elevation
1320	MW-12		8.31	5.64	2.73
1330	MW-24		9.19	7.87	1.32
1340	MW-25		9.41	8.75	0.66
1425	MW-10		7.97	~~7.60~~ 6.13	1.84
1458	MW-11		6.96	4.93	2.03
1503	MW-13		DAMAGED	5.11 (1)	~~2.29~~
1505	MW-2		7.44	5.15	~~2.16~~ 2.29
1509	MW-3		6.78	4.62	2.16
1511	MW-4		DAMAGED	4.52	
1518	MW-9B		5.65	4.98	0.67
1522	MW-5B		5.08	3.00	2.08
1526	MW-7B		5.52	3.70	1.82
1539	MW-19		5.28	4.55	0.73
1541	MW-20		6.66	5.80	0.86
1546	MW-21		6.48	5.90	0.58
1614	MW-15		4.47	3.09	1.38
1618	MW-16		3.52	3.78	-0.26
1623	MW-23		7.09	4.76	2.33
1631	MW-22		7.81	6.52	1.29
1644	MW-14		5.76	4.08	1.68
1648	MW-18		4.72	4.42	0.30
1654	MW-17		3.32	2.90	0.42
1656	MW-8B		6.15	5.57	0.58

* TIDE TABLE REFERENCE:

(1) CASING PINCHED OR CLOGGED AT ~~5.44~~ 5.4'.

Appendix B

THE MARK GROUP
ENGINEERS & GEOLOGISTS, INC.

Water Purging & Sampling Log

Date 2-15-94 Sample Location MW-22

Project Name South Shore Project No. 921175306

Weather Conditions Sunny - clear - Cool (50-60°)

Observations/Comments

Samples Collected By JF - MSC

QUALITY CONTROL

Purging/Sampling Method Teflon Bailer - Teflon Bailer

Method to Measure Water Level E-Tape

Pump Lines or Bailer Ropes: (new) cleaned dedicated

Method of Cleaning Bailer/Pump Liquinox Wash / DI Rinse

pH Meter No. DSPH-1 Date Calibrated 2-15-95

Sp Conductance Meter No. ~~DSPH-1~~ 45103 Date Calibrated 2-15-95

TD - 24.135

PURGING AND SAMPLING DATA

Water Level (below MP) Start 6.52 End 6.95 ~~6.98~~

W. Level

W. Volume 3 gallons

Measuring Point (MP)

Time	Pump Rate (gpm)	Discharge (gallons)	pH	Temp (°C)	Sp Cond (µmhos/cm)	Color	Odor	Turbidity
Start								
~~Start~~ 1:25	Hyd	- 3 gallons -	7.81	16	1990	Milky Tan	None	Cloudy
1:30	"	- 6 gallons -	7.77	15	2110	Orng Tan	None	Cloudy
1:35	"	9 Gallons -	7.80	16	2150	"	"	"
Sampled @	1:40	12 g	7.80	16	2040	"	"	"

Total Discharge 12 GALLONS Casing Volumes 3 & 4 GALLONS

Method of Disposal of Discharge Water onsite 55 gal. drums

Sheet 1 of 1

THE MARK GROUP
ENGINEERS & GEOLOGISTS, INC.

Water Purging & Sampling Log

Date 2/15/95 Sample Location MW-23

Project Name SOUTHSHORE Project No. 92-1175306

Weather Conditions CLEAR, COOL, CALM

Observations/Comments

Samples Collected By GAF

QUALITY CONTROL

Purging/Sampling Method TEFLON BAILER

Method to Measure Water Level E-TAPE

Pump Lines or Bailer Ropes: (new) cleaned dedicated

Method of Cleaning Bailer/Pump LIQUINOX WASH - D.I. RINSE

pH Meter No. DSPH1-1 Date Calibrated 2/15/95

Sp Conductance Meter No. YS103 Date Calibrated 2/15/95

PURGING AND SAMPLING DATA

Water Level (below MP) TD=18.55' Start 4.79 End 5.30

~~18~~ CK=2.39

Measuring Point (MP) TOP OF PVC CASING

Time	Pump Rate (gpm)	Discharge (gallons)	pH	Temp (°C)	Sp. Cond. (µmhos/cm)	Color	Odor	Turbidity
1235		0				LT GRAY	NONE	SLIGHT
1240		2	7.6	17	440	"	"	"
1245		4	7.6	15	470	"	"	"
1255 (SAMPLED)		7	7.6	14.7	400	"	"	"
1305		10	7.6	15.5	360	"	"	"

Total Discharge 10 GALLONS Casing Volumes 4+

Method of Disposal of Discharge Water TO DRUMS

Sheet 1 of 1

THE MARK GROUP
ENGINEERS & GEOLOGISTS, INC.

Water Purging & Sampling Log

Date 2/15/95 Sample Location MW-~~8~~/19

Project Name South Shore Project No. 921175306

Weather Conditions Sunny, Clear, Cold (50°-60°)

Observations/Comments

Samples Collected By MSC + JF

QUALITY CONTROL

Purging/Sampling Method Teflon Bailer / Teflon Bailer

Method to Measure Water Level E Tape

Pump Lines or Bailer Ropes: (new) cleaned dedicated

Method of Cleaning Bailer/Pump Liquinox Wash / DI Rinse

pH Meter No. DSPH-1 Date Calibrated 2-15-95

Sp Conductance Meter No. " Date Calibrated 2-15-95

PURGING AND SAMPLING DATA

Water Level (below MP) Start ~~4:39~~ 4:57 End 6.98

DTB: 24.92
W Level: 20.25
W Vol: 3.30

Measuring Point (MP)

Time	Pump Rate (gpm)	Discharge (gallons)	pH	Temp. (°C)	Sp. Cond. (umhos/cm)	Color	Odor	Turbidity
1105 Begin Purging MW-19								
11:25	HB	3.5	7.46	18	<20,000	Slight Yellow	H_2S	low
11:30	HB	7.0	7.4	19	<20,000	"	H_2S	"
11:35	HB	10.5	7.4	19	<20,000	"	"	"
Sample @ 11								
11:40		13.5	7.4	19	<10000	"	"	"

Total Discharge 13.5 Casing Volumes 3 4

Method of Disposal of Discharge Water Onsite 55 gallon Drum

Sheet 1 of 1

THE MARK GROUP
ENGINEERS & GEOLOGISTS, INC.

Water Purging & Sampling Log

Date FEB. 15, 1995 Sample Location ~~92-1175306~~ MW-17

Project Name SOUTHSHORE Project No. 92-1175306

Weather Conditions CLEAR COOL CALM

Observations/Comments

Samples Collected By GAF

QUALITY CONTROL

Purging/Sampling Method TEFLON BAILER/TEFLON BAILER

Method to Measure Water Level E-TAPE

Pump Lines or Bailer Ropes: (new) cleaned dedicated

Method of Cleaning Bailer/Pump LIQUINOX WASH

pH Meter No. DSPH1-1 Date Calibrated 2/15/95

Sp Conductance Meter No. YSI03 Date Calibrated 2/15/95

PURGING AND SAMPLING DATA

Water Level (below MP) Start 2.91 End 5.87

TD 24.8

24.8 - 2.9 = 21.9

CV = 3.79

Measuring Point (MP) TOP OF PVC WELL CASING

Time	Pump Rate (gpm)	Discharge (gallons)	pH	Temp (°C)	Sp Cond (umhos/cm)	Color	Odor	Turbidity
1030	BEGIN SAMPLING WELLS					LT. YELLOW	SLIGHT H2S	V. SLIGHT
1035		4	7.6	18.8	>20,000	"	"	"
1040		8	7.5	19.5	"	"	"	"
1045		12	7.5	19.7	"	"	"	"
1050	SAMPLED		~~7.6~~	~~19.7~~	"	"	"	"
1056		16	7.6	19.7	"	"	"	"

Total Discharge 16 GALLONS Casing Volumes 4

Method of Disposal of Discharge Water TO DRUMS ON SITE.

Sheet 1 of 1

THE MARK GROUP
ENGINEERS & GEOLOGISTS, INC.

Water Purging & Sampling Log

Date 2-15-95 Sample Location MW-16

Project Name South Shore Project No. 921175 306

Weather Conditions Sunny

Observations/Comments Cool (50-60), Sunny

Samples Collected By F. + C.

QUALITY CONTROL

Purging/Sampling Method Hand Bailed – Teflon bailer / Teflon Bailer

Method to Measure Water Level E-Tape

Pump Lines or Bailer Ropes: (new, circled) cleaned dedicated

Method of Cleaning Bailer/Pump Liquinox Wash / DI Rinse

pH Meter No. DSPH1-1 Date Calibrated 2-15-95

Sp Conductance Meter No. 45103 Date Calibrated 2/15/95

PURGING AND SAMPLING DATA

TD: 30.12

Water Level (below MP) Start 3.57 End 6.1

w level: 26.55'

w volume: 4.33 gallons

Measuring Point (MP) TOP OF PVC WELL CASING

Time	Pump Rate (gpm)	Discharge (gallons)	pH	Temp. (°C)	Sp. Cond. (umhos/cm)	Color	Odor	Turbidity
Start 9:30	HB	5.00	7.11	19	≥ 20,000	Slight yellow/clear	H_2S	low
9:50	HB	10.00	7.13	19	≥ 20,000	Slight yellow/clear	"	low
10:00	HB	15.00	7.12	20	≥ 20,000	Slight yellow	"	low
~~1010 Sample~~	~~HB~~	~~[illegible]~~	~~7.13~~	~~20~~	~~≥ 20,000~~	~~slight yellow – clear~~	~~"~~	~~low~~
1020		20	7.13	20	≥ 20,000	"	"	"

Total Discharge 20 gallons Casing Volumes ~~3~~ 4

Method of Disposal of Discharge Water On Site 55 Gallon Drums

Sheet 1 of 1

THE MARK GROUP
ENGINEERS & GEOLOGISTS, INC.

pH Meter Calibration Log
Meter No. PH 3

Date	Temp (°C)	Standard/Actual	Standard/Actual	Standard/Actual	Project No.	Operator	Comments
10-18	18°	— / —	7.00 / 7.05	10.00 / 10.07	921175306	TB	Recalib. noted to 7 & 10
2/15/95	16	— / —	7.00 / 6.95	10.00 / 9.96	"	GAF	

THE MARK GROUP
ENGINEERS & GEOLOGISTS, INC.

Conductivity Meter Calibration Log

Meter No. 45104

Date	Temp (°C)	Standard/Actual	Standard/Actual	Standard/Actual	Project No.	Operator	Comments
10-18		1K / 800	10K / 9,500	— / —	921175706	TF	45104
2/15/95	16	1,000 / 780	10,000 / 9,000	— / —	〃	GAF	45103

Appendix C

McCAMPBELL ANALYTICAL INC.

110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

02/27/95

Dear Jeff:

Enclosed are:

1). the results of 7 samples from your # **92-1175306; South Shore** project,

2). a QC report for the above samples

3). a copy of the chain of custody, and

4). a bill for analytical services.

If you have any questions please contact me. McCampbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Yours truly,

Edward Hamilton

McCAMPBELL ANALYTICAL INC. | 110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

The Mark Group Hookston Square, # 120 3480 Buskirk Avenue Pleasant Hill, CA 94523	Client Project ID: # 92-1175306; South Shore	Date Sampled: 02/15/95
		Date Received: 02/15/95
	Client Contact: Jeff Fiedler	Date Extracted: 02/18-02/19/95
	Client P.O:	Date Analyzed: 02/18-02/19/95

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with BTEX*

EPA methods 5030, modified 8015, and 8020 or 602; California RWQCB (SF Bay Region) method GCFID(5030)

Lab ID	Client ID	Matrix	TPH(g)+	Benzene	Toluene	Ethylben-zene	Xylenes	% Rec. Surrogate
50250	MW-24	W	29,000,a	7700	1600	1200	2100	98
50251	MW-12	W	68,000,a,h	1100	6200	2000	15,000	96
50252	MW-16	W	ND	ND	ND	ND	ND	100
50253	MW-17	W	ND	ND	ND	ND	ND	101
50254	MW-19	W	ND	ND	ND	ND	ND	105
50255	MW-23	W	ND	ND	ND	ND	ND	106
50256	MW-22	W	ND	ND	ND	ND	ND	98
Detection Limit unless other-wise stated; ND means Not Detected		W	50 ug/L	0.5	0.5	0.5	0.5	
		S	1.0 mg/kg	0.005	0.005	0.005	0.005	

*water samples are reported in ug/L, soil samples in mg/kg, and all TCLP extracts in mg/L

cluttered chromatogram, sample peak co-elutes with surrogate peak

+ The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation. a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?), c) lighter gasoline range compounds (the most mobile fraction) are significant, d) gasoline range compounds are significant, no recognizable pattern, e) TPH pattern that does not appear to be derived from gasoline (?); f) one to a few isolated peaks present, g) strongly aged gasoline or diesel range compounds are significant, h) lighter than water immiscible phase is present

DHS Certification No. 1644 Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC. | 110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

The Mark Group Hookston Square, # 120 3480 Buskirk Avenue Pleasant Hill, CA 94523	Client Project ID: # 92-1175306; South Shore	Date Sampled: 02/15/95
		Date Received: 02/15/95
	Client Contact: Jeff Fiedler	Date Extracted: 02/16/95
	Client P.O:	Date Analyzed: 02/16/95

Diesel Range (C10-C23) Extractable Hydrocarbons as Diesel *

EPA methods modified 8015, and 3550 or 3510; California RWQCB (SF Bay Region) method GCFID(3550) or GCFID(3510)

Lab ID	Client ID	Matrix	TPH(d)+	% Recovery Surrogate
50256	MW-22	W	ND	100
Detection Limit unless otherwise stated; ND means Not Detected		W	50 ug/L	
		S	10 mg/kg	

*water samples are reported in ug/L, soil samples in mg/kg, and all TCLP extracts in mg/L

cluttered chromatogram: surrogate and sample peaks co-elute or surrogate peak is on elevated baseline

+ The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified diesel is significant, b) diesel range compounds are significant, no recognizable pattern, c) modified diesel?, light(C_L) or heavy(C_H) diesel compounds are significant), d) gasoline range compounds are significant, e) medium boiling point pattern that does not match diesel(?); f) one to a few isolated peaks present, g) oil range compounds are significant, h) lighter than water immiscible phase is present

DHS Certification No 1644

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC. | 110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

The Mark Group Hookston Square, # 120 3480 Buskirk Avenue Pleasant Hill, CA 94523	Client Project ID: # 92-1175306; South Shore	Date Sampled: 02/15/95
		Date Received: 02/15/95
	Client Contact: Jeff Fiedler	Date Extracted: 02/16/95
	Client P.O:	Date Analyzed: 02/16/95

Volatile Halocarbons

EPA method 601 or 8010

Lab ID	50250	50251	50252	50253
Client ID	MW-24	MW-12	MW-16	MW-17
Matrix	W	W	W	W
Compound[1]	Concentration*	Concentration*	Concentration*	Concentration*
Bromodichloromethane	ND	ND< 2	ND	ND
Bromoform[2]	ND	ND< 2	ND	ND
Bromomethane	ND	ND< 2	ND	ND
Carbon Tetrachloride[3]	ND	ND< 2	ND	ND
Chlorobenzene	ND	ND< 2	ND	ND
Chloroethane	ND	ND< 2	ND	ND
2-Chloroethyl Vinyl Ether[4]	ND	ND< 2	ND	ND
Chloroform[5]	ND	ND< 2	ND	ND
Chloromethane	ND	ND< 2	ND	ND
Dibromochloromethane	ND	ND< 2	ND	ND
1,2-Dichlorobenzene	ND	ND< 2	ND	ND
1,3-Dichlorobenzene	ND	ND< 2	ND	ND
1,4-Dichlorobenzene	ND	ND< 2	ND	ND
1,1-Dichloroethane	ND	ND< 2	ND	ND
1,2-Dichloroethane	6.6	ND< 2	ND	ND
1,1-Dichloroethene	ND	ND< 2	ND	ND
cis 1,2-Dichloroethene	ND	ND< 2	ND	ND
trans 1,2-Dichloroethene	ND	ND< 2	ND	ND
1,2-Dichloropropane	ND	ND< 2	ND	ND
cis 1,3-Dichloropropene	ND	ND< 2	ND	ND
trans 1,3-Dichloropropene	ND	ND< 2	ND	ND
Methylene Chloride[6]	ND	ND< 2	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND< 2	ND	ND
Tetrachloroethene[7]	ND	ND< 2	ND	ND
1,1,1-Trichloroethane	ND< 2	ND< 2	ND< 2	ND< 2
1,1,2-Trichloroethane	ND	ND< 2	ND	ND
Trichloroethene	ND	ND< 2	ND	ND
Trichlorofluoromethane	ND	ND< 2	ND	ND
Vinyl Chloride[8]	ND	ND< 2	ND	ND
% Recovery Surrogate	107	98	103	103
Comments		high TPH		

Detection limit unless otherwise stated: water ND< 0.5ug/L, soil, ND< 10ug/kg

* water samples are reported in ug/L, soil samples in ug/kg and all TCLP extracts in ug/L

(1) IUPAC allows "ylene" or "ene" ex. ethylene or ethene (2) tribromomethane, (3) tetrachloromethane (4) (2-chloroethoxy) ethene (5) trichlormethane, (6) dichloromethane, (7) perchlorethylene, PCE or perclor, (8) chloroethene (9) unidentified peak(s) present

DHS Certification No. 1644

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC. | 110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

The Mark Group	Client Project ID: # 92-1175306; South Shore	Date Sampled: 02/15/95
Hookston Square, # 120		Date Received: 02/15/95
3480 Buskirk Avenue	Client Contact: Jeff Fiedler	Date Extracted: 02/16/95
Pleasant Hill, CA 94523	Client P.O:	Date Analyzed: 02/16/95

Volatile Halocarbons

EPA method 601 or 8010

Lab ID	50254	50255	50256	
Client ID	MW-19	MW-23	MW-22	
Matrix	W	W	W	
Compound[1]	Concentration*	Concentration*	Concentration*	Concentration*
Bromodichloromethane	ND	ND	ND	
Bromoform[2]	ND	ND	ND	
Bromomethane	ND	ND	ND	
Carbon Tetrachloride[3]	ND	ND	ND	
Chlorobenzene	ND	ND	ND	
Chloroethane	ND	ND	ND	
2-Chloroethyl Vinyl Ether[4]	ND	ND	ND	
Chloroform[5]	ND	ND	ND	
Chloromethane	ND	ND	ND	
Dibromochloromethane	ND	ND	ND	
1,2-Dichlorobenzene	ND	ND	ND	
1,3-Dichlorobenzene	ND	ND	ND	
1,4-Dichlorobenzene	ND	ND	ND	
1,1-Dichloroethane	ND	ND	ND	
1,2-Dichloroethane	ND	ND	8.2	
1,1-Dichloroethene	ND	ND	ND	
cis 1,2-Dichloroethene	ND	ND	ND	
trans 1,2-Dichloroethene	ND	ND	ND	
1,2-Dichloropropane	ND	ND	ND	
cis 1,3-Dichloropropene	ND	ND	ND	
trans 1,3-Dichloropropene	ND	ND	ND	
Methylene Chloride[6]	ND	ND	ND	
1,1,2,2-Tetrachloroethane	ND	ND	ND	
Tetrachloroethene[7]	ND	ND	ND	
1,1,1-Trichloroethane	ND< 2	ND< 2	ND< 2	
1,1,2-Trichloroethane	ND	ND	ND	
Trichloroethene	ND	ND	ND	
Trichlorofluoromethane	ND	ND	ND	
Vinyl Chloride[8]	ND	ND	ND	
% Recovery Surrogate	102	104	105	
Comments				

Detection limit unless otherwise stated water, ND< 0.5ug/L, soil, ND< 10ug/kg

* water samples are reported in ug/L, soil samples in ug/kg and all TCLP extracts in ug/L

(1) IUPAC allows "ylene" or "ene" ex. ethylene or ethene, (2) tribromomethane, (3) tetrachloromethane, (4) (2-chloroethoxy) ethene (5) trichlormethane, (6) dichloromethane, (7) perchlorethylene, PCE or perclor, (8) chloroethene, (9) unidentified peak(s) present

DHS Certification No. 1644

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

QC REPORT FOR HYDROCARBON ANALYSES

Date: 02/18-02/19/95 Matrix: Water

Analyte	Concentration (ug/L)			Amount Spiked	% Recovery		RPD
	Sample	MS	MSD		MS	MSD	
TPH (gas)	0.0	104.6	93.5	100	104.6	93.5	11.2
Benzene	0	9.4	9.3	10	94.0	93.0	1.1
Toluene	0	9.7	9.5	10	97.0	95.0	2.1
Ethyl Benzene	0	9.9	9.7	10	99.0	97.0	2.0
Xylenes	0	30.5	30	30	101.7	100.0	1.7
TPH (diesel)	0	156	160	150	104	107	2.1
TRPH (oil & grease)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

% Rec. = (MS - Sample) / amount spiked x 100

RPD = (MS - MSD) / (MS + MSD) x 2 x 100

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

QC REPORT FOR HYDROCARBON ANALYSES

Date: 02/16-02/17/95 Matrix: Water/TCLP

Analyte	Concentration (ug/L)			Amount Spiked	% Recovery		RPD
	Sample	MS	MSD		MS	MSD	
TPH (gas)	0.0	94.4	96.8	100	94.4	96.8	2.6
Benzene	0	10.5	9.7	10	105.0	97.0	7.9
Toluene	0	11	10	10	110.0	100.0	9.5
Ethyl Benzene	0	10.3	9.8	10	103.0	98.0	5.0
Xylenes	0	31.8	30.1	30	106.0	100.3	5.5
TPH (diesel)	0	162	172	150	108	115	6.0
TRPH (oil & grease)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

% Rec. = (MS - Sample) / amount spiked x 100

RPD = (MS - MSD) / (MS + MSD) x 2 x 100

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

QC REPORT FOR EPA 8010/8020/EDB

Date: 02/16/95 Matrix: Water

Analyte	Concentration (ug/L)				% Recovery		
	Sample	MS	MSD	Amount Spiked	MS	MSD	RPD
1,1-DCE	0.0	11.1	11.2	10.0	111	112	0.9
Trichloroethene	0.0	9.5	9.6	10.0	95	96	1.0
EDB	0.0	9.6	9.5	10.0	96	95	1.0
Chlorobenzene	0.0	10.3	10.2	10.0	103	102	1.0
Benzene	0.0	10.7	11.1	10.0	107	111	3.7
Toluene	0.0	10.2	9.6	10.0	102	96	6.1
Chlorobz (PID)	0.0	9.9	9.6	10.0	99	96	3.1

% Rec. = (MS - Sample) / amount spiked x 100

RPD = (MS - MSD) / (MS + MSD) x 2 x 100

THE MARK GROUP
ENGINEERS & GEOLOGISTS, INC.

Chain of Custody Record

3670 AMG84

Project No. 92-1175306	Sample Point: SANTASHORE
Date 2/15/95	

	TIME	SAMPLE NUMBER	CONTAINER SIZE	ANALYZE FOR	PRESERVATIVE		HOLDING TIME	REMARKS
2/14	0800	TB	1x40ml	HOLD	HCl	ICE		50249
	1400	MW-24	3x40ml	TPH-GAS/BTEX 8015/8020 VOCs - EPA 601				50250
5V	1430	MW-12	"	OFF Hold 2-17-95 HOLD TPH-GAS BTEX VOCs EPA 601				50251
	~~1430~~	~~MW-12~~	~~1xL~~	~~—~~				
2	1010	MW-16	3 x 40ml	TPH GAS/BTEX - 8015/8020 VOCs - EPA 601				50252
3	1050	MW-17	"	"				50253
4	1140	MW-19	"	"				50254
5	1255	MW-23	"	"				50255
6	1340	MW-22	"	"				50256
6	1340	MW-22	1xL	TPH-DIESEL EPA 8015	NONE			

ICE/T° ✓
GOOD CONDITION ✓
HEAD SPACE ABSENT ✓

	VOAS	O&G	METALS	OTHER
PRESERVATIVE APPROPRIATE	✓			

CONTAINERS ✓

Relinquished by (signature)	Date/Time	Received by (signature)	Receiver represents
[signature]	2/15/95 1545	[signature]	McCampbell
Relinquished by (signature)	Date/Time	Received by (signature)	Receiver represents
Relinquished by (signature)	Date/Time	Received by (signature)	Receiver represents

Hookston Square, Suite 120 3480 Buskirk Avenue Pleasant Hill, CA 94523 (510) 946-1055

Shipping copy (White) File Copy (Yellow) Field Copy (Pink)

FID 8 (9/91)

Appendix D

File No. 8-90-418-SI

GROUNDWATER MONITORING AND SAMPLING AT THE PROPERTY LOCATED AT 2351 SHORELINE DRIVE ALAMEDA, CALIFORNIA

FEBRUARY 22, 1995

PREPARED FOR:

MR. MURRAY STEVENS

KAMUR INDUSTRIES, INC.

2351 SHORELINE DRIVE

ALAMEDA, CALIFORNIA 94501

BY:

SOIL TECH ENGINEERING, INC.

298 BROKAW ROAD

SANTA CLARA, CALIFORNIA 95050

SOIL TECH ENGINEERING, INC.

File No. 8-90-418-SI

TABLE OF CONTENTS

File No. 8-90-418-SI

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

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

February 22, 1995

File No. 8-90-418-SI

Mr. Murray Stevens
Kamur Industries, Inc.
2351 Shoreline Drive
Alameda, California 94501

SUBJECT: QUARTERLY GROUNDWATER MONITORING AND SAMPLING AT THE PROPERTY Located at 2351 Shoreline Drive, in Alameda, California

Dear Mr. Stevens:

This report presents the results of quarterly groundwater monitoring and sampling conducted by Soil Tech Engineering, Inc. (STE), on February 14, 1995, at the subject site (Figure 1).

Five monitoring wells (STMW-1, STMW-2, STMW-3, STMW-5 and STMW-6) are located on-site. The location of the wells are shown on Figure 2. This quarterly monitoring and sampling were conducted in accordance with STE's recommendations made in "Preliminary Subsurface Environmental Assessment", dated July 2, 1991, and "Installation of Two Additional Monitoring Wells for Southshore Car Wash Property", dated March 15, 1993.

BACKGROUND:

The site is located at 2351 Shoreline Drive, Alameda, California (Figure 1). The site was formerly used as a gasoline service station and a car wash. In July 1990, three underground gasoline tanks (10,000 gallons each) were removed by Zacor Corporation. Soil sampling was conducted by Environmental Bio-Systems, Inc. (EBS). The soil sample analytical results taken beneath the underground tank showed high concentrations of Total Petroleum Hydrocarbons as gasoline (TPHg) which ranged from 360 parts per million (ppm) to a maximum of 9,500 ppm.

In addition to tank removal, EBS Consultants used a hand auger to conduct additional shallow soil sampling from the undisturbed area surrounding the former tank excavation. The depth of the soil sampling ranged from 5.1 to 7.1 feet below ground surface. The undisturbed soil analytical results showed moderate levels of TPHg and BTEX. No groundwater investigation was conducted by EBS.

Alameda County Health Care Services Agency--Department of Environmental Health (ACHCSA--DEH) requested a preliminary soil/groundwater investigation including the removal of contaminated soil and the further delineation of the extent of petroleum hydrocarbons in the soil and groundwater.

In August 1990, Kamur Industries, Inc., retained STE to conduct further investigations as requested by the ACHCSA--DEH. STE prepared a work plan (dated August 30, 1990) to conduct further

investigation for local agency approval. STE performed a preliminary subsurface investigation in February and March 1991 which were as follows:

Task 1: Removed contaminated Soil to the depth feasible and arranged for its proper disposal.

Task 2: Drilled ten exploratory borings.

Task 3: Installed four monitoring wells.

The preliminary subsurface investigation is described in STE's report, dated July 2, 1991, entitled "Preliminary Subsurface Environmental Assessment at Kamur Industries, Inc., Car Wash..." The report recommended quarterly monitoring and sampling of the four on-site wells.

In July 1991, quarterly groundwater monitoring and sampling of the four wells (STMW-1 to STMW-4) were initiated. The results of the first quarterly sampling are summarized in STE's report, dated July 30, 1991. The second quarterly sampling was conducted in October 1991, and the results are summarized in STE's report dated November 12, 1991. The third quarterly sampling was conducted in January 17, 1992, and the results are summarized in STE's report dated February 5, 1992. The fourth quarterly sampling was conducted in April 27, 1992, and the results are summarized STE's report dated May 8, 1992.

In January 26, 1993, STE installed two additional monitoring wells (STMW-5 and STMW-6). The details of newly installed wells are described in STE's report entitled "Installation of Two Additional Monitoring Wells for Southshore Car Wash Property" dated March 15, 1993.

The site is currently used as car washing facility surrounded by a paved parking lot.

SCOPE OF PRESENT WORK:

- Measured depth-to-water table in on-site wells STMW-3 (MW-12) and STMW-6 (MW-24) and monitored for presence of any floating product.
- Purged each monitoring well prior to sampling.
- Sampled monitoring wells STMW-3 (MW-12) and STMW-6 (MW-24) for laboratory analyses.
- Submitted water samples to a State-Certified laboratory for analyses of Total Petroleum Hydrocarbons as gasoline (TPHg), Benzene, Toluene, Ethylbenzene, Total Xylenes (BTEX), and Total Oil & Grease (TOG).
- Reviewed results and prepared a report of the investigation.

Based on the newly monitoring and sampling program approved by the Alameda County Health Care Services Agency (ACHCSA), only two monitoring wells STMW-3 (MW-12) and STMW-6 (MW-24) were monitored and sampled.

FIELD ACTIVITIES:

GROUNDWATER MONITORING:

On February 14, 1995, the STE staff monitored two on-site wells to measure water depth and check for the presence of FFP and/or petroleum odor. During monitoring of the wells, no sheen was noted in well STMW-6 (MW-24); however, light sewerage odor was detected. Brown non-measurable floating product and strong petroleum odor were noted in well STMW-3 (MW-12).

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 (see Appendix "C"), which contain State and Local guidelines for sampling monitoring wells. The samples were submitted to a California State-Certified laboratory for analyses, accompanied by chain-of-custody. The water samples from wells STMW-3 (MW-12) and STMW-6 (MW-24) were analyzed for Total Petroleum Hydrocarbons as gasoline (TPHg), Benzene, Toluene, Ethylbenzene, Total Xylenes (BTEX). However, water sample from monitoring well STMW-3 (MW-12) was also analyzed for TOG.

ANALYTICAL RESULTS:

Monitoring well STMW-3 (MW-12) detected TPHg at 68 milligram per liter (mg/L); Benzene at 0.12 mg/L; Toluene at 0.2 mg/L; Ethylbenzene at 0.18 mg/L; Total Xylenes at 0.71 mg/L and TOG at 2.3 mg/L. Monitoring well STMW-6 (MW-24) detected TPHg 4.1 mg/L; Benzene at 0.053 mg/L; Toluene at 0.021; Ethylbenzene at 0.02 mg/L and Total Xylenes 0.046 mg/L. The laboratory results are summarized in Table 2, and the laboratory report is attached in Appendix "D".

SUMMARY:

No sheen was noted in well STMW-6 (MW-24), but light sewerage odor was detected. Brown non-measurable floating product and strong petroleum odor were noted in well STMW-3 (MW-12). Monitoring well STMW-3 (MW-12) detected low concentrations of TPHg, BTEX and TOG, and well STMW-6 (MW-24) detected low concentrations of TPHg and BTEX.

LIMITATIONS:

This report and the associated work has 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 reports 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.

This report is issued with the understanding that it is the responsibility of the owner or his/her representative to ensure that the information and recommendations contained herein are called to the attention of the Local Environmental Agency.

Services performed by STE 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 is not meant to represent a legal opinion. No other warranty, express or implied, is made.

File No. 8-90-418-SI

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

File No. 8-90-418-SI

A P P E N D I X "A"

File No. 8-90-418-SI

TABLE 1
GROUNDWATER MONITORING DATA
(Measured in Feet)

Date	Well #	Well Head Elevation	Depth-to Water	Water Elevation	Petroleum Thickness	Odor
7/08/91	STMW-1	99.46	7.54	91.92	Sheen	Strong Petroleum
	STMW-2	98.12	6.23	91.89	None	None
	STMW-3	99.90	7.96	91.94	None	Mild Petroleum
	STMW-4	98.78	6.90	91.88	None	None
10/21/91	STMW-1	99.46	7.63	91.83	L. Sheen	Strong Petroleum
	STMW-2	98.12	6.33	91.79	None	None
	STMW-3	99.90	7.83	92.07	Sheen	Strong Petroleum
	STMW-4	98.78	6.54	92.24	None	None
1/17/92*	STMW-1	8.10	6.96	1.14	Sheen	Strong Petroleum
	STMW-2	7.01	5.69	1.32	None	None
	STMW-3	8.33	6.71	1.62	Sheen	Strong Petroleum
	STMW-4	7.45	6.00	1.45	None	None

* Well casing elevation surveyed by the other consultant.

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

Date	Well No.	Well Head Elevation	Depth-to-Water	Water Elevation	Petroleum Thickness	Odor
4/27/92	STMW-1	8.10	6.69	1.41	Sheen	Mild Petroleum
	STMW-2	7.01	5.52	1.49	None	None
	STMW-3	8.33	6.86	1.47	Sheen	Strong Petroleum
	STMW-4	7.45	5.84	1.61	None	None
7/30/92	STMW-1	8.10	7.40	0.70	Sheen	Mild Petroleum
	STMW-2	7.01	6.20	0.81	None	None
	STMW-3	8.33	7.71	0.62	Sheen	Strong Petroleum
	STMW-4	7.45	6.64	0.81	None	None
2/08/93	STMW-1	8.10	6.23	1.87	Rainbow Sheen	Strong Petroleum
	STMW-2	7.01	4.90	2.11	None	None

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

Date	Well No.	Well Head Elevation	Depth-to-Water	Water Elevation	Petroleum Thickness	Odor
2/08/93	STMW-3	8.33	5.96	2.37	Brown Non-Measurable	Strong Petroleum
	STMW-4	7.45	4.93	2.52	None	None
	STMW-5	NA	8.67	NA	None	None
	STMW-6	NA	7.88	NA	None	Light Sewage
4/27/94	STMW-1	8.10	6.55	1.55	None	Strong Petroleum
	STMW-2	7.01	5.52	1.49	None	None
	STMW-3	8.33	6.96	1.37	Sheen	Strong Petroleum
	STMW-4	NA	NA	NA	NA	NA
	STMW-5	NA	8.88	NA	None	None
	STMW-6	NA	8.13	NA	None	Moderate Petroleum

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

Date	Well No.	Well Head Elevation	Depth-to-Water	Water Elevation	Petroleum Thickness	Odor
10/18/94	STMW-3	8.33	8.00	0.33	Brown Oily Sheen	Strong Petroleum
	STMW-5	NA	9.51	NA	None	None
2/14/95	STMW-3	8.33	5.64	2.69	Brown Non Measurable	Strong Petroleum
	STMW-6	NA	7.87	NA	None	Light Sewerage

NA - Not Applicable

File No. 8-90-418-SI

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

I. TPHd, TPHg, BTEX and TOG Analytical Results

Date	Well #	TPHd	TPHg	B	T	E	X	TOG
4/05/91	STMW-1	NA	180	11	20	3.2	18	NA
	STMW-2	NA	ND	ND	ND	ND	ND	NA
	STMW-3	NA	260	20	34	3.6	19	NA
	STMW-4	NA	ND	0.3	0.3	ND	0.7	NA
7/04/91	STMW-1	NA	58	14	7	2.7	8.3	NA
	STMW-2	NA	ND	ND	ND	ND	ND	NA
	STMW-3	11	66	11	17	1.9	8.9	ND
	STMW-4	NA	ND	ND	ND	ND	ND	NA
10/21/91	STMW-1	NA	112.6	19.6	19	ND	16.4	NA
	STMW-2	NA	ND	0.004	ND	ND	ND	NA
	STMW-3	ND	165	48.5	19	ND	46	20
	STMW-4	NA	0.186	0.011	0.005	ND	0.037	NA

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

I. TPHd, TPHg, BTEX and TOG Analytical Results

Date	Well #	TPHd	TPHg	B	T	E	X	TOG
1/17/91	STMW-1	NA	160	16	6.8	2.6	16	NA
	STMW-2	NA	ND	ND	ND	ND	ND	NA
	STMW-3	ND	390	21	41	6.4	4.7	7.9
	STMW-4	NA	0.06	0.0008	0.0024	0.0005	0.004	NA
4/27/92	STMW-1	NA	54	0.72	0.2	0.5	1.3	NA
	STMW-2	NA	ND	ND	ND	ND	ND	NA
	STMW-3	3	120	0.66	0.9	0.48	1.8	4.7
	STMW-4	NA	ND	ND	ND	ND	ND	NA
7/30/92	STMW-1	NA	73	1.2	0.77	1.1	2.74	NA
	STMW-2	NA	0.05	ND	0.0025	0.0009	0.011	NA
	STMW-3	1.5	340	1.2	2.2	1.4	9.3	6
	STMW-4	NA	ND	ND	ND	ND	ND	NA

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

I. TPHd, TPHg, BTEX and TOG Analytical Results

Date	Well #	TPHd	TPHg	B	T	E	X	TOG
2/08/93	STMW-1	NA	66	0.21	0.48	0.51	1.2	NA
	STMW-2	NA	NA	NA	NA	NA	NA	NA
	STMW-3	ND	330	0.62	1.9	2.2	6.0	3.9
	STMW-4	NA	NA	NA	NA	NA	NA	NA
	STMW-5	NA	ND	ND	ND	ND	ND	NA
	STMW-6	NA	33	0.1	0.23	0.27	0.5	NA
4/27/94	STMW-1	NA	90	3.6	3.2	1.2	5.3	NA
	STMW-2	NA	ND	ND	ND	ND	ND	NA
	STMW-3	NA	160	1.3	6.3	1.4	12	NA
	STMW-4	NA	NA	NA	NA	NA	NA	NA
	STMW-5	NA	ND	ND	ND	ND	ND	NA
	STMW-6	NA	38	3.0	1.2	0.71	2.0	NA

File No. 8-90-418-SI

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

I. TPHd, TPHg, BTEX and TOG Analytical Results

Date	Well #	TPHd	TPHg	B	T	E	X	TOG
10/18/94	STMW-1	NA	NA	NA	NA	NA	NA	NA
	STMW-2	NA	NA	NA	NA	NA	NA	NA
	STMW-3	NA	77	5.2	6.2	2.2	13	ND
	STMW-4	NA	NA	NA	NA	NA	NA	NA
	STMW-5	NA	ND	ND	ND	ND	ND	NA
	STMW-6	NA	NA	NA	NA	NA	NA	NA
2/14/95	STMW-1	NA	NA	NA	NA	NA	NA	NA
	STMW-2	NA	NA	NA	NA	NA	NA	NA
	STMW-3	NA	68	0.12	0.2	0.18	0.71	2.3
	STMW-4	NA	NA	NA	NA	NA	NA	NA
	STMW-5	NA	NA	NA	NA	NA	NA	NA
	STMW-6	NA	4.1	0.053	0.021	0.02	0.046	NA

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

TABLE 2 CONT'D
GROUNDWATER ANALYTICAL RESULTS

II. VOLATILE ORGANIC COMPOUNDS (VOC's) RESULTS

Date	Monitoring Well No.	VOC Compounds Detected Per EPA Method 601 Results in Parts Per Billion (ppb)		DHS-DWS (ppb)
4/05/91	STMW-1	1,2-Dichloroethane Trichloroethylene 1,1,2-Trichloroethane (PEC) Tetrachloroethene cis-1,2-Dichloroethene	350 4 0.5 0.9 1	0.5 5 32 5 6
	STMW-2	1,2-Dichloroethane Trichloroethylene Tetrachloroethene	8 4 27	0.5 5 5
	STMW-3	1,2-Dichloroethane	450	0.5
	STMW-4	None Detected		
7/04/91	STMW-1	1,2-Dichloroethane	290	
	STMW-2	Trichloroethene (Trichloroethylene) Tetrachloroethene	1.3 18	
	STMW-3	Methylene Chloride Trichloroethene	9 230	
	STMW-4	None Detected		
10/21/91	STMW-1	Carbon Tetrachloride	48	
	STMW-2	None Detected		
	STMW-3	Carbon Tetrachloride	40	
	STMW-4	None Detected		

TABLE 2 CONT'D
GROUNDWATER ANALYTICAL RESULTS

II. VOLATILE ORGANIC COMPOUNDS (VOC's) RESULTS

Date	Monitoring Well No.	VOC Compounds Detected Per EPA Method 601 Results in Parts Per Billion (ppb)		DHS-DWS (ppb)
1/17/92	STMW-1	None Detected		
	STMW-2	Trichloroethene Tretrachloroethene	0.0028 0.011	
	STMW-3	None Detected		
	STMW-4	None Detected		
4/27/92	STMW-1	None Detected		
	STMW-2	None Detected		
	STMW-3	None Detected		
	STMW-4	None Detected		
7/30/92	STMW-1	Trichloroethene Tetrachloroethene	1.7 9.2	
	STMW-2	None Detected		
	STMW-3	Trichloroethene Tetrachloroethene	9.8 24	
	STMW-4	None Detected		

DHS-DWS - Department of Health Services--Drinking Water Standards

TABLE 2 CONT'D
GROUNDWATER ANALYTICAL RESULTS

II. VOLATILE ORGANIC COMPOUNDS (VOC's) RESULTS

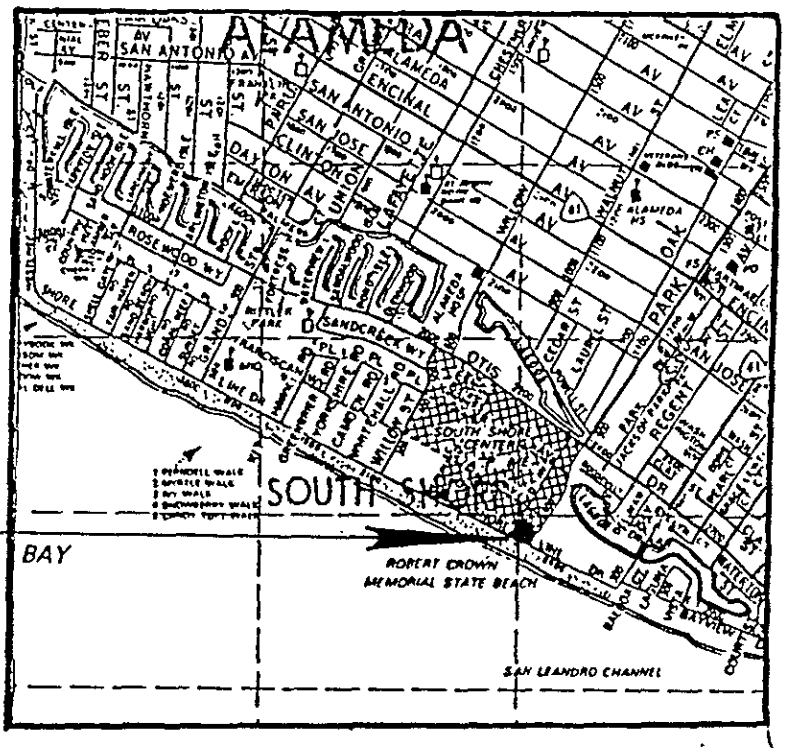
Date	Monitoring Well No.	VOC Compounds Detected Per EPA Method 601 Results in Parts Per Billion (ppb)		DHS-DWS (ppb)
2/08/93	STMW-1	Trichloroethene	0.0095	
	STMW-2	Not Analyzed		
	STMW-3	Trichloroethene	0.0024	
	STMW-4	Not Analyzed		
	STMW-5	None Detected		
	STMW-6	Trichloroethene	0.011	

III. TOTAL DISSOLVED SOLIDS (TDS) RESULTS

Date	Well Number	Total Dissolved Solids
4/27/94	STMW-1	2,570
	STMW-2	1,230
	STMW-3	510
	STMW-5	560
	STMW-6	2,550

DHS-DWS - Department of Health Services--Drinking Water Standards

A P P E N D I X "B"



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

Page 11 D7

Figure 1

A P P E N D I X "C"

File No. 8-90-418-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.

A P P E N D I X "D"

PRIORITY ENVIRONMENTAL LABS
Precision Environmental Analytical Laboratory

February 17, 1995 PEL # 9502050

SOIL TECH ENGINEERING

Attn: Noori Ameli
Re: Two water samples for Gasoline/BTEX and Oil & Grease analyses.

Project name: 2351 Shoreline Dr., - Alameda
Project number: 8-90-418-SI

Date sampled: Feb 14, 1995 Date submitted: Feb 15, 1995
Date extracted: Feb 15-17, 1995 Date analyzed: Feb 15-17, 1995

RESULTS:

SAMPLE I.D.	Gasoline (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl Benzene (ug/L)	Total Xylenes (ug/L)	Oil & Grease (mg/L)
STMW-3 (MW-12)	68000	120	200	180	710	2.3
STMW-6 (MW-24)	4100	53	21	20	46	---
Blank	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Spiked Recovery	106.2%	82.0%	103.2%	92.3%	103.1%	---
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

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

CHAIN OF CUSTODY RECORD

PROJ. NO.	NAME
8-90-48-SI	2351 Shoreline Dr. ALAMEDA

SAMPLERS. *(Signature)*

N. Amelio

NO.	DATE	TIME	SOIL	WATER	LOCATION	CONTAINER	ANALYSES REQUESTED (2) TPHG/BTEX	TOG					REMARKS
1	2/14/95	14^{55}		✓	STMW-3 (MW-12)		✓	✓					
2	2/14/95	14^{20}		✓	STMW-6 (MW-24)		✓						

Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date / Time	Receive by *(Signature)*
N. Amelio	2/15/95 9^{40}				
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	
			2/15/95 9:40 am		

SOIL TECH ENGINEERING

Soil, Foundation and Geological Engineers

2[redacted] 95050 ■ (408) 866-0919 ■ (415) 791-6406

CHAIN OF CUSTODY RECORD

PROJ. NO.	NAME
8-90-48-51	2351 Shorline Dr. ALAMEDA

SAMPLERS. (Signature)

N. A.

PEL # 9502050

INV # 25677

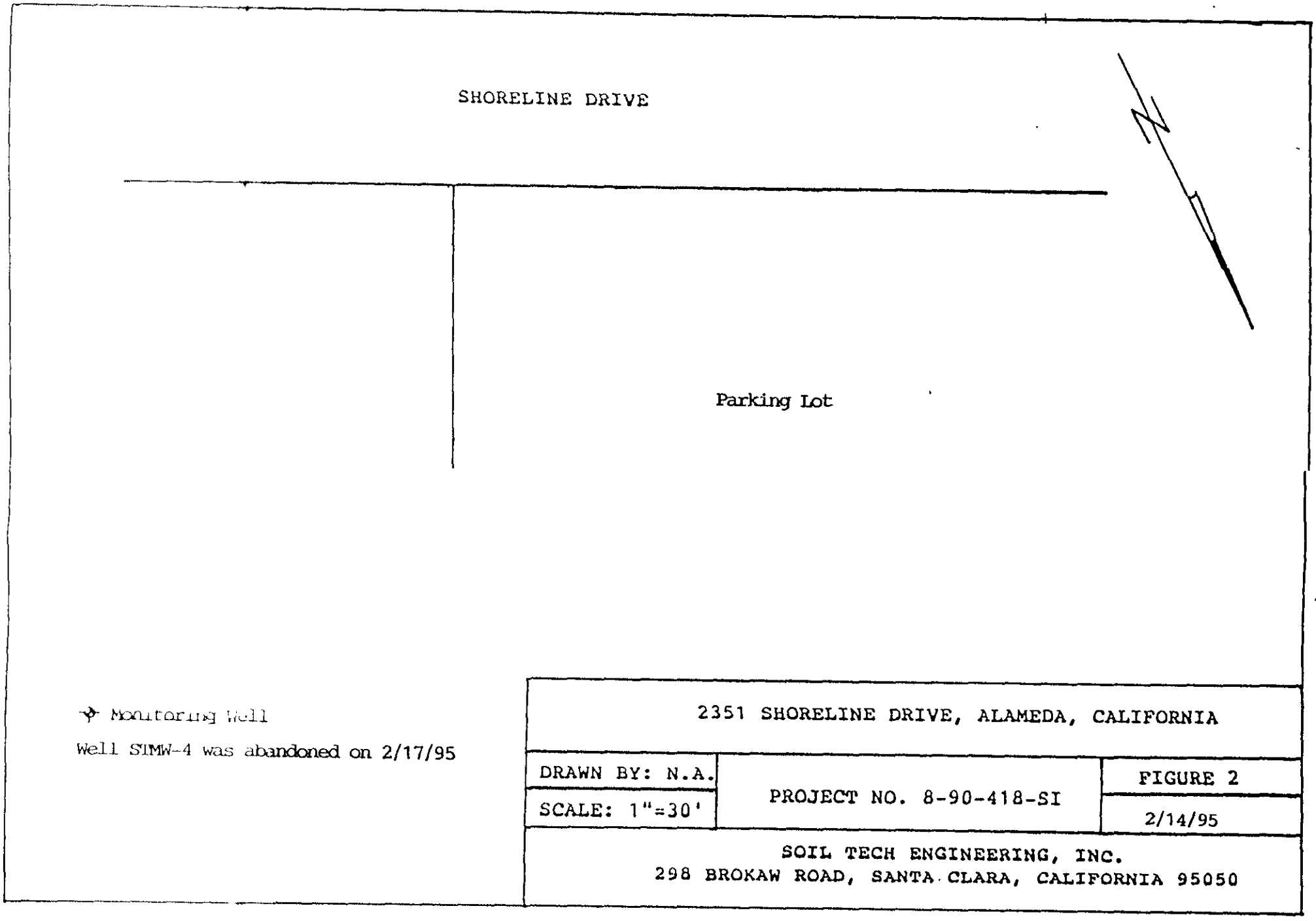
NO.	DATE	TIME	SOIL	WATER	LOCATION	CONTAINER	Analyses Requested (2) TPHG/BTEX TO&G						
1	2/14/95	14^{55}		✓	STMW-3 (MW-12)		✓	✓					
2	2/14/95	14^{20}		✓	STMW-6 (MW-24)		✓						

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Receive by (Signature)
N. A.	2/15/95 9:40				
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	
			2/15/95 1:40 pm		

SOIL TECH ENGINEERING

Soil, Foundation and Geological Engineers

[redacted] BROWN ROAD SANTA CLARA CA 95050 (408) 866-0919 (415) 791-6406



✈ Monitoring Well

Well SIMW-4 was abandoned on 2/17/95

2351 SHORELINE DRIVE, ALAMEDA, CALIFORNIA

DRAWN BY: N.A.	PROJECT NO. 8-90-418-SI	FIGURE 2
SCALE: 1"=30'		2/14/95

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

M2

Appendix E

Table 3-2: Groundwater Analytical Results - April 1994
South Shore Shopping Center
Texaco, Harsch, and Kamur

Well No	Date Sampled	TDS	TPH as Diesel	TPH as Gasoline	Benzene	Toluene	Xylenes	Ethyl-benzene	Chloro-benzene	1,2-Dichloro-ethane	1,1-Dichloro-ethene	trans-1,2-Di-chloroethene	Tetra-chloroethene	Trichloro-ethene
Texaco Wells														
MW-2	04/27/94	650	<0.05	<0.05	<0 0005	<0.0005	<0.0005	<0.0005	<0 001	<0.002	<0 002	<0.001	<0.001	<0.002
MW-3	04/27/94	850	<0.05	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0 002	<0.002	<0.001	0.0082	0.0014
MW-6B	04/28/94	2 700	<0.05	<0.05	<0 0005	<0.0005	<0.0005	<0.0005	<0 001	<0.002	<0.002	0.014	0 0012	0 01
MW 9	04/28/94	920	<0.05	1 9	0 52	0.0028	<0.0005	0 035	<0.001	<0.002	<0.002	<0.001	<0.001	<0.002
MW-14	04/27/94	840	<0 05	0.053	0 00095	<0 0005	0 015	0.0033	<0 001	0 0084	<0 002	<0 001	<0 001	<0 002
MW-14B	04/27/94	1 800	<0 05	0.054	0.00096	<0 0005	0.015	0 0034	<0 001	0 0097	<0.002	<0 001	<0.001	<0.002
MW-15	04/27/94	1 500	<0 05	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0 002	<0 002	<0.001	<0.001	<0.002
MW-22	04/28/94	2 000	<0.05	<0.05	<0 0005	<0.0005	<0.0005	<0.0005	<0.001	0.015	<0.002	<0.001	<0.001	<0 002
Harsch Wells														
MW-7B	04/29/94	1,300	<0.05	5.6	0 19	<0.0005	0.027	<0.0005	0 031	<0.002	0.0058	0 013	0.19	0.012
MW-8B	05/02/94	2 900	<0.05	0 14	0.0092	<0.0005	<0.0005	<0.0005	<0 001	<0.002	<0.002	0 023	0.07	0.057
MW-16	05/02/94	25,000	<0.05	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0 001	<0.002	<0.002	<0.001	<0.001	<0.002
MW-17	04/29/94	18,000	<0.05	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.002	<0.002	<0.001	0.0024	<0.002
MW-18	04/29/94	19,000	<0 05	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.002	<0.002	<0.001	0.0014	<0.002
MW-19	04/29/94	20,000	<0.05	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.002	<0.002	<0.001	0.0011	<0.002
MW-20	04/29/94	13,000	<0.05	0.057	0.021	<0.0005	<0.0005	<0.0005	<0.001	<0.002	<0.002	0 058	0.057	0.032
MW-21	04/29/94	20,000	<0.05	<0.05	<0 0005	<0.0005	<0.0005	<0 0005	<0.001	<0.002	<0.002	<0.001	<0.001	<0.002
MW-23	05/02/94	54	<0 05	<0 05	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.002	<0.002	<0.001	<0.001	<0.002
Kamur Wells														
MW-10	04/27/94	2,570	NT	90	3.6	3.2	5.3	1.2	<0 001	0.013	<0.002	0 002	0.0039	<0.002
MW-11	04/27/94	1 230	NT	<0 050	<0.0005	<0.0005	<0.0005	<0 0005	<0 001	<0.002	<0.002	0.0015	0.0025	0.0042
MW-12	04/27/94	510	NT	160	1.3	6.3	12	1.4	<0 001	<0.002	<0 002	<0 001	0.0039	<0.002
MW-24 *	04/27/94	560	NT	<0.050	<0.0005	<0 0005	<0.0005	<0.0005	<0.001	0.0065	<0.002	0.0018	0 0039	<0.002
MW-25 *	04/27/94	2 550	NT	38	3.0	1.2	2.0	0.71	<0 001	0 0093	<0.002	<0.001	0.0039	<0.002
Regulatory Limits														
PMCL		NA	NA	NA	0.001	1.0	1.75	0 68	0.03	0.0005	0.006	0 07	0.005	0 005

Explanation
All results are in milligrams per liter.
NT = Not tested
NA = Not available
TDS = Total Dissolved Solids Method 160.1.
TPH as Gasoline = Total Petroleum Hydrocarbons as Gasoline analyzed using EPA methods 5030 and TPH LUFT
Benzene, Toluene, Xylenes and Ethylbenzene analyzed using method 602.
TPH as Diesel = Total Petroleum Hydrocarbons as Diesel analyzed using EPA method 3510 and TPH LUFT
Priority Pollutants analyzed using EPA methods 5030 and 601
PMCL = Primary Maximum Contaminant Level
MW-14B = Duplicate sample of MW-14

* Note Analytical shown for Monitoring Wells MW-24 and MW-25 appears to be reversed, based on October 1994 field notes and historical results of analyses.

Table 3-3

Analytical Summary for Groundwater Samples Collected in February 1993
All Concentrations in Micrograms per Liter (µg/l)

Sample I.D.	PCE	TCE	1,2-DCA	1,2-DCE	Benzene	Toluene	Xylenes	Ethylbenzene	Gas	Diesel	Oil & Grease	TDS	DTW	W.E.	C.E.
MW-5B	ND	3.4	0.4	5.0	210	4.2	2.0	1.9	640	2,400	NA	1,400	2.42	+2.66	5.08
MW-7B	5,800	540	ND	150	NA	NA	NA	NA	NA	NA	NA	1,100	3.33	+2.19	5.52
MW-8B	5.0	14	ND	9.0	NA	NA	NA	NA	NA	NA	NA	930	4.92	+1.23	6.15
MW-10	ND	9.5	ND	ND	210	480	1,200	510	66,000	NA	NA	NA	6.04	+2.06	8.10
MW-11	5.8	2.0	ND	ND	NA	NA	NA	NA	NA	NA	NA	630	4.95	+2.26	7.01
MW-12	ND	2.4	ND	ND	620	1,900	6,000	2,200	330,000	NA	3,900	NA	5.92	+2.41	8.33
MW-13	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.75	+2.70	7.45
MW-14	ND	ND	3.4	ND	ND	ND	ND	ND	ND	660	NA	2,000	3.42	+2.35	5.77
MW-15	ND	ND	ND	ND	ND	ND	ND	ND	ND	200	NA	880	3.50	+0.96	4.46
MW-16	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	24,000	0.42	+3.10	3.52
MW-17	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	18,000	2.50	+0.82	3.32
MW-18	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	19,000	4.38	+0.34	4.72
MW-19	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.46	+0.82	5.28
MW-20	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.71	+0.95	6.66
MW-21	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.48
MW-22	ND	ND	22	ND	ND	ND	ND	ND	ND	120	NA	2,100	6.33	NA	NA
MW-23	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	160	3.42	NA	NA
MW-24 *	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA
MW-25 *	ND	11	ND	ND	100	230	500	270	33,000	NA	NA	NA	NA	NA	NA
MCL	5	5	0.5	6.0	1.0	NP	1,750	680	NP	NP	NP	---	---	---	---

- ND Not detected at or above analytical detection limits
- NA Not analyzed
- DTW Depth to water
- W.E. Water elevation

* Note Analytical shown for Monitoring Wells MW-24 and MW-25 appears to be reversed, based on October 1994 field notes and historical results of analyses.