

A REPORT DOCUMENTING THE PURGING AND SAMPLING OF THREE GROUNDWATER MONITORING WELLS ON THREE CONSECUTIVE QUARTERS AND THE DETERMINATION OF GROUNDWATER GRADIENT FOR NINE CONSECUTIVE MONTHS:

AT:

ALAMEDA GOLF COURSE ONE MEMORIAL CLUBHOUSE DRIVE ALAMEDA, CALIFORNIA

prepared by:

ENVIRONMENTAL TECHNICAL SERVICES Helen A. Mawhinney

Senior Environmental Specialist

Dilli Date

TABLE OF CONTENTS

1.0	INTRODUCTION
2.0	PREVIOUS ENVIRONMENTAL INVESTIGATIONS
2.1	TANK REMOVAL
2.2	EXCAVATION OF CONTAMINATED SOIL
2.3	ORIGINAL TANK REMOVAL, ANALYTICAL RESULTS
	TABLE 1A, ORIGINAL EXCAVATION, TANK PIT SOIL ANALYTICAL RESULTS, 7/10/91
	TABLE 1B, STOCKPILE ANALYTICAL RESULTS, 7/10/91
	TABLE 1C, GROUNDWATER ANALYTICAL RESULTS, 7/10/91
3.0	SCOPE OF SERVICES
3.1	GROUNDWATER PURGING & SAMPLING
3.2	GROUNDWATER ANALYSIS
3.3	GROUNDWATER ANALYTICAL RESULTS
	TABLE II, GROUNDWATER ANALYTICAL RESULTS 1ST QUARTER SAMPLING, 9/5/923
	TABLE III, GROUNDWATER ANALYTICAL RESULTS 2ND QUARTER SAMPLING, 1/11/934
	TABLE IV, GROUNDWATER ANALYTICAL RESULTS 3RD QUARTER SAMPLING, 5/4/934
3.4	GROUNDWATER GRADIENT5
4.0	REPORT6

1.0 INTRODUCTION

The following report documents the sampling of three groundwater monitoring wells and the determination of groundwater gradient at the Alameda Golf Course, One Memorial Clubhouse Drive, Alameda, California.

Groundwater was sampled on three consecutive quarters and groundwater gradient determined for nine consecutive months.

The work was performed in reponse to the discovery of petroleum hydrocarbons beneath the site and has been requested by the Alameda County Environmental Health Department, Hazardous Materials Division.

2.0 PREVIOUS ENVIRONMENTAL INVESTIGATIONS

2.1 TANK REMOVAL

On July 10, 1991, one 500- gallon and one 125-gallon gasoline underground storage tanks (USTs) were removed from the subject site. Groundwater was encountered at 5 feet within the tank pit excavation. Therefore, soil samples were collected from the tank pit wall vadose/saturated capillary zone and were analyzed for total petroleum hydrocarbons as gasoline with benzene, toluene, ethylbenzene, and total xylenes (TPH-G, BTEX, using EPA Method 5030/8020).

2.2 EXCAVATION OF CONTAMINATED SOIL

The excavation and stockpiling of contaminated soils was performed the same day by Zaccor Corporation. Confirmatory soil samples were collected subsequent to the excavation and were found to be without detectable concentrations of previously noted contaminants, with the exception of sample no. 6. The excavation of soil within this area was limited by the presence of an existing monitoring well.

Results of these analyses are located in Table 1A, 1B, and 1C.

2.3 ORIGINAL TANK REMOVAL, ANALYTICAL RESULTS

TABLE 1A

TANK PIT SOIL ANALYTICAL RESULTS
Total Petroleum Hydrocarbons as Gasoline
with Benzene, Toluene, Ethylbenzene, and Xylenes
July 10, 1991

TPHg and BTEX results reported in ppm

Sample #	TPH-G	<u>B</u>	Ţ	E	X
2	960	3.5	0.10	3.0	13
4	ND	0.011	ND	ND	0.005
5	ND	ND	ND	ИD	ИD
6	3.0	0.030	0.006	0.023	0.059
7	ND	ND	ND	ND	ND
8	ND	ND	ND	ИD	ИД

TABLE 1B STOCKPILE ANALYTICAL RESULTS JULY 10, 1991

TPHg and BTEX results reported in ppm

Composite Sample #	TPH-G	В	Ţ	E	X
1A, 1B, 1C	2000	1.2	2.8	2.6	26
3A-3C	250	0.52	0.45	0.65	5.4
9A-9D	ND	ND	ND	ND	ND
10A-10D	11	0.13	0.48	0.29	1.9

TABLE 1C GROUNDWATER ANALYTICAL RESULTS JULY 10, 1991

Results reported in ug/L

Sample #	TPH-G	В	$\overline{\mathbf{r}}$	E	X
TPW-1	8,200	210	ND	270	1,200

ND= Not detected at lower detection limit for this compound

3.0 SCOPE OF SERVICES

3.1 Groundwater Purging & Sampling

The three existing groundwater monitoring wells were purged and sampled on September 5, 1992, January 11, 1993, and May 4, 1993. The wells were purged using a clean stainless steel bailer (1.5" diameter by 3' length). Subsequent to purging each well was sampled using a clean stainless steel bailer. A separate bailer was dedicated to each well for the sampling event. At consistent intervals throughout sampling groundwater parameters (conductivity and temperature) were monitored to evaluate stabilization of the wells.

A water sample was decanted from the sampling bailer into two one-liter amber bottles and two 40-ml volatile organics analysis vials (VOAs) to a positive meniscus eliminating headspace.

The samples were transported to a certified analytical laboratory under chain of custody for analysis.

Refer to Appendix E, Groundwater Development Report.

3.2 Groundwater Analysis

Each groundwater sample was analyzed for total petroleum hydrocarbons as gasoline, benzene, toluene, ethylbenzene, and total xylenes (TPHg & BTEX, using EPA Method 5030/602).

3.3 Groundwater Analytical Results

TABLE II GROUNDWATER ANALYTICAL RESULTS FIRST QUARTER SAMPLING September 5, 1992 Results for TPHq & BTEX reported in ug/L

Sample #	TPH-G	В	T	E	X	Lead
MW-1	ND	ND	ND	ND	ND	ND
MW-2	ND	ND	ND	ND	ND	6.3
MW-3	ND	ИD	ИD	ND	ND	ND

ND=Not detected at lower detection limit for this compound

3.3 Groundwater Analytical Results (cont.)

TABLE III

GROUNDWATER ANALYTICAL RESULTS

SECOND QUARTER

JANUARY 11, 1993

Results for TPHg & BTEX reported in ug/L

Sample #	TPH-G	<u>B</u>	Ţ	E	X	Lead
MW-1	ND	ИД	ND	ND	ND	NA
MW-2	ND	ND	ИD	ND	ND	NA
MW-3	ND	ND	ND	ND	ND	NA

ND=Not detected at lower detection limit for this compound NA=Not analyzed for this compound

TABLE IV

GROUNDWATER ANALYTICAL RESULTS THIRD QUARTER

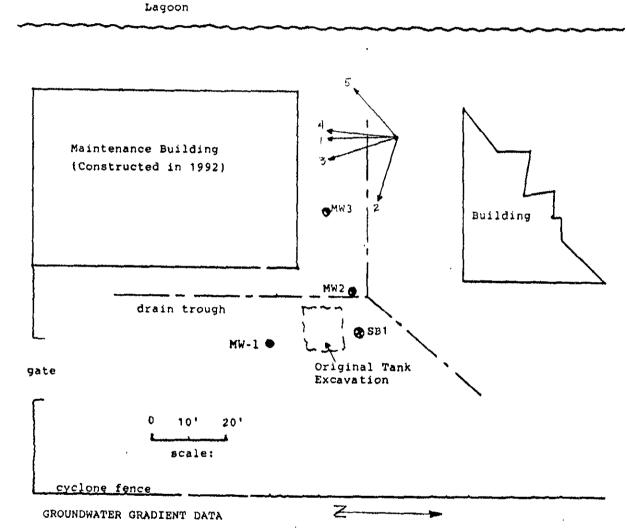
MAY 4, 1993

Results for TPHg & BTEX reported in ug/L

Sample #	TPH-G	В	T	E	<u>X</u>	Lead
MW-1	ND	ND	ND	ND	ND	NA
MW-2	ND	ND	ND	ND	ND	NA
MW-3	ND	ND	ND	ND	ND	NA

ND=Not detected at lower detection limit for this compound NA=Not analyzed for this compound

3.4 Groundwater Gradient



Map No.	Date	E1(1)	Flow(2)	Grad(3)
1	10/14/92	**	181	.080
2	11/10/92	92,18	107	.015
3	12/11/92	92.17	164	.016
4	01/11/93	92.18	184	.004
5	05/03/93	93.07	226	056

NOTES

- (1) Water elev. in MWl
 (2) Flow azimuth (E of N)
 (3) Gradient (ft/ft)

4.0 REPORT

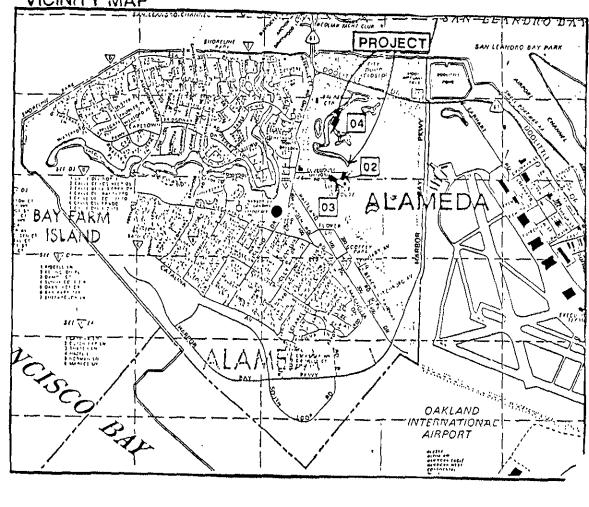
Please forward copies of this report, chain of custody documentation, and laboratory analytical reports to the San Francisco Regional Water Quality Control Board, and the Alameda County Department of Environmental Health Hazardous Materials Division.

The following addresses have been included for your convenience:

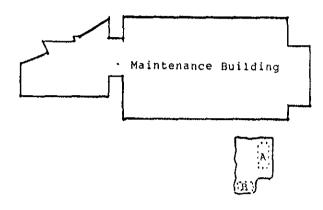
Water Quality Control Board San Francisco Bay Region 2101 Webster Street Room 500 Oakland, CA 94621

Alameda County Department of Environmental Health Hazardous Materials Division 80 Swan Way, Room 200 Oakland, CA 94612 APPENDIX A

VICINITY MAP



	Environmental	ALAMEDA GOLF COURSE	Figure	1	:
21	Technical	1 MEMORIAL CLUBHOUSE	SITE	LOCATION	MAP
	S ervices	ALAMEDA, CALIF			
<u> </u>			!		







KEY

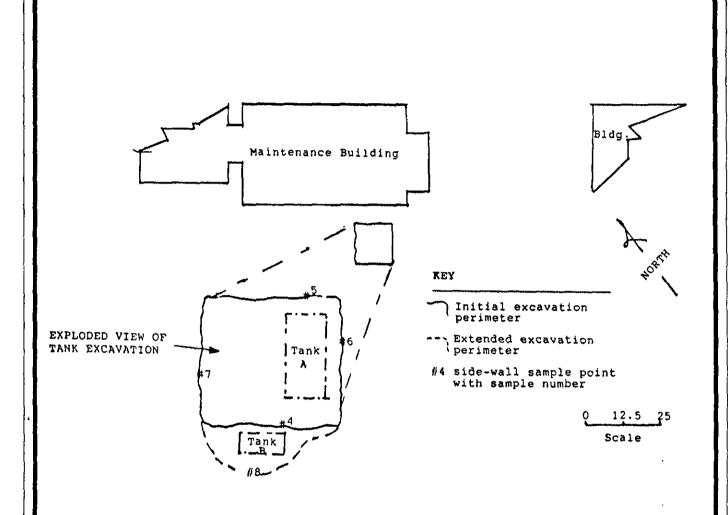
A) 500 gal gasoline tank

(B) 125 gal gasoline tank

12.5 25 Scale

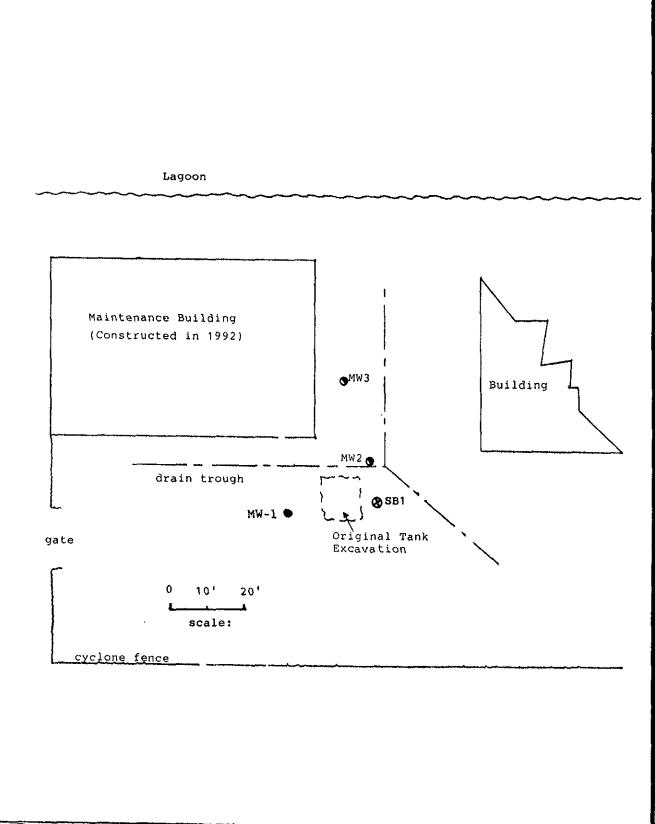
Environmental
Technical
S ervices

ALAMEDA GOLF COURSE	Figure 2
1 MEMORIAL CLUBHOUSE	FORMER TANK LOCATION
ALAMDEA, CALIF.	





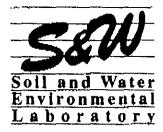
ALAMEDA GOLF COURSE	Figure 3
1 MEMORIAL CLUBHOUSE	EXCAVATION AND
 ALAMEDA, CALIF	SAMPLING MAP



Environmental	ALAMEDA GOLF COURSE	Figure 4
T echnical	1 MEMORIAL CLUBHOUSE	MONITORING WELL
S ervices	ALAMEDA, CALIF	LOCATION MAP

APPENDIX B

GROUNDWATER ANALYTICAL RESULTS FIRST QUARTER



Drinking Water Waste Water Asbestos Hazardous Waste - Soil Calderon Testing - Air

14072 W. Park Avenue Boulder Creek, CA 95006 (408) 338-3053

Laboratory Report

Client

Envioremental Tech. Services

1548 Jacob Ave.

San Jose CA 95118

Sample Site

Alemede Golf Course

Alameda, CA

Date Received

Report Date 09/29/98

MH ALAM Golf

Analysis Requested

Total Hydrocarbons - Gas RTEX

Procedure

EPA 5030 EFYA 602 Date Analyzed 09/05/92

S&W Ref, #	Client Ref. #	Matrix/Analysis	Concentration	Detection Limit
2492-ET2-C	MW-1	Water/TPH-0	*	50 ppb
2492-ET2-C	MW-1	Waitem/於丁尼X		• •
		Barizerie	*	O.5 ppb
		Tolumne	₩.	O.S ppb
		Ethylbenzene	*	O.S ppb
		Xylenes	*	0.5 ppb
4 - 4 - 4 - 4 - 4 - 4 - 4 - 4 - 4 - 4 -	the state and the contract of			
2492-ET2-D	MM-5	Haten/TPH-0	*	50 ppb
2492-ET2-D	MM5	Mater/BTEX		
		Berizerie	#	0.5 ppb
		Taluene	#	O.S ppb
		Ethylberizerie	*	0.5 ppb
		Xylenes	*	O.5 ppb
		A A		
2492-ET2-E	MW~3	Weter/TRH-G	#	50 ppb
2492-ET2-E	E-HM	Water/BTEX		
		Berizerie	*	O.5 ppb
		Tolumne	*	O. 5 ppb
		Ethylbenzene	*	O.S ppb
		Xylenes	*	O.E ppb

No detectable amount & detection limit

Analyst Signature

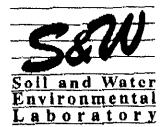
Soil and Water Environmental Laboratory

14072 West Park Avenue Boulder Creek, CA 95006

CHAIN - OF - CUSTODY

(408) 338-3053/4466

Project Number		Site Na	me and Ad	ddress Clubk	loux DK	Type and Number of	A	nalys	sis Required		Laboratory ID		Comments
Sample ID	Date	Time	Media le and Date Matrix	ddress Club A Soff Co. Enw Sample Location	THEIR HE	Containers	TPH-G+BTEX	TPH-D + BTEX	TOS TOTAL LEAD		Condition of Samples 1 - Good 2 - See Reverse		
$m\omega_l$	9/5/92	2	H20	2-40ml	V045 V	rials	/		1		/		Motenough
ľ							/		/				Mot enough Hot for long
MW2 MW3	V										,		
												-	
Religiquished by	7: (Signat	ure) [KU	Date/Time, 42	Received by	: (Signature)			Date/Time		Remarks:		
Relinquished b	y: (Signa	ture)		Date/Time	Received by:	(Signature)		-	Date/Time		COMPANY: E	73	
Relinquished b	y: (Signa	ture)		Date/Time	Received by	Lab: (Signature	₽)	I	Date/Time (19	PHONE:)	FAX:
				·	7110			,	/ [ABORA	TORY REQUIR		(2) COPIES OF THIS FORM.



Drinking Water
Waste Water • Asbestos
Hazardous Waste — Soil
Calderon Testing — Air

14072 W. Park Avenue Boulder Creek, CA 95006 (408) 338-3053

Laboratory Report

Client Eyr, icrymeratal Tech. Services

1546 Jacob Ave.e. Rd. San Jose, CA 95116 10-01-92

Report Date

Sample Site

Date Received

Alameda Golf Course

ター17~90

Alameda, CA

Analysis Requested

Heavy Metals

Procedure EPA-6010/7000 Date Analyzed 명~절1~명요

S&W Ref. #	Client F	Pef.#	Matrix/Analysis		Concentration		Detection Limit
2492-ET2	C	MW1	Yesta1	Lead	<	5.0	ppb
	D	MH-E	Total	Lead		6.3	ppb
	E	E-WM	Total	Lead	<	5.0	ppb

MDL- 5,00 ppb

This analysis performed for S & W Laboratory by West Laboratory Davis, California

Analyst Signature

P. W. Lamon

Soil and Water Environmental Laboratory

14072 West Park Avenue Boulder Creek, CA 95006

CHAIN - OF - CUSTODY

(408) 338-3053/4466

Project Number		Site Nar	ne and Ad	dress ! Memu	ial Club	Type and	Α	nalys	is Rec	quired		Laboratory ID		Comments
Project Number NIWALCOI Witnessing Agency Sample ID	F 0	lan	· Mi	1 Course	Alanedo	Number of Containers								
Witnessing Agency	y/inspec	tor Nam	e and Date		ulul	Contamers	MEX.	STEX				Condition		
Sample ID	5 Es	ωZ	battk	Dept !	their		TPH-G + BTEX	TPH-D + BTEX	<u>8</u>	E		of Samples 1 - Good		
oumple 15	Date	Time	Matrix	Sample Location			Ē	Ē	ğΙ	97		2 - See Reverse		
MU 1 9	17/92		H20	2 Liter	5 Amb	ver			,					additional war
MW 1 9 MW 2 9 MW 3 9	17/42									4				Additional user
mw 3 9/	17/92		V							$\sqrt{}$				(9-5-92)
		-		**										
										1			, , , , , , , , , , , , , , , , , , ,	
			-						1					
									1					
Relinquished by: (S	Signatur	e) _r	,	Date/Time//02	Received by:	(Signature)		E	ate/7	ime	 L	Remarks:		
Relinquished by: (5	Signatui	re)		Date/Time	Received by:	(Signature)			ate/T			COMPANY: ADDRESS:	 _	
Relinquished by: ((Signatu	re)		Date/Time	6111	I b: Signature)	9	ate/	ime	4.00	PHONE:	I	FAX:

APPENDIX C

GROUNDWATER ANALYTICAL RESULTS
SECOND QUARTER

Soil and Water Environmental Laboratory

Drinking Water Waste Water • Asbestos Hazardous Waste — Soil Calderon Testing — Air

14072 W. Park Avenue Boulder Creek, CA 95006 (408) 338-3053

Laboratory Report

Clent

Clent Report Date
Evroideremental Tech. Services 01/15/93
1546 Jacob Ave.

San Jose CA 95118

Sample Site

Alameda Golf Cource

1 Club House Memorial Dr.

Pate Received 01/12/93

EMHALGLE

Figure F	Analysis Requested		Procedure			te Analyzed
EPA 503e EPA 602 EPA	=		EPA 5030		(1/14/93
Saw Ref # Client Ref. # Matrix/Analysis Concentration Detection Limit	-		el EPA 3510			
Matter/TPH-G		Grease	EPA 503e			
Detection Limit Dig3-ET3-A MW-1 Water/TPH-B # 50 ppb Dig3-ET3-A MW-1 Water/TPH-D # 50 ppb Dig3-ET3-A MW-1 Water/BTEX Dig3-ET3-A MW-1 Water/BTEX Dig3-ET3-A MW-1 Water/BTEX Dig3-ET3-A MW-1 Water/BTEX Dig3-ET3-B MW-2 Water/TPH-B # 50 ppb Dig3-ET3-B MW-2 Water/TPH-D # 50 ppb Dig3-ET3-B MW-2 Water/TPH-D # 50 ppb Dig3-ET3-B MW-2 Water/TPH-B # 50 ppb Dig3-ET3-B MW-2 Water/BTEX Dig3-ET3-C MW-3 Water/TPH-B # 50 ppb Dig3-ET3-C MW-3 Water/TPH-B # 50 ppb Dig3-ET3-C MW-3 Water/TPH-B # 50 ppb Dig3-ET3-C MW-3 Water/TPH-D # 50 ppb Dig3-ET3-C MW-3 Water/TPH-B # 0.5 ppb Dig3-ET3-			EPA 602			
Mater/TPH-D	S&W Ref #	Client Ref. #	Matrix/Analysis	Concentration	De	tection Limit
Matern/TOG	0123-ET3-A	MW-1	Water/TPH-0	*	50	ppb
Mater/BTEX Benzene	0123-ET3-A	MW-1	WaterケノTPH-D	#	50	ppb
Renzene	7123~ET3-A	MW-1	History/TOG	#	5	ppm
Toluene # 0.5 ppb Ethylbenzene # 0.5 ppb Xylenes # 0.5 ppb Xylenes # 0.5 ppb 0123-ET3-R MW-2 Water/TPH-G # 50 ppb 0123-ET3-R MW-2 Water/TPH-D # 5 ppm 0123-ET3-R MW-2 Water/RTEX Benzene # 0.5 ppb Toluene # 0.5 ppb Ethylbenzene # 0.5 ppb Xylenes # 0.5 ppb 0123-ET3-C MW-3 Water/TPH-G # 50 ppb 0123-ET3-C MW-3 Water/TPH-G # 50 ppb 0123-ET3-C MW-3 Water/TPH-D # 5 ppb 0123-ET3-C MW-3 Water/TPH-D # 5 ppb 0123-ET3-C MW-3 Water/TPH-D # 5 ppm	0123-ET3-A	MM1	Wm も命か入野工匠X			
Toluene # 0.5 ppb Ethylbenzene # 0.5 ppb Xylenes # 0.5 ppb Xylenes # 0.5 ppb 0123-ET3-R MW-2 Water/TPH-G # 50 ppb 0123-ET3-R MW-2 Water/TPH-D # 5 ppm 0123-ET3-R MW-2 Water/RTEX Benzene # 0.5 ppb Toluene # 0.5 ppb Ethylbenzene # 0.5 ppb Xylenes # 0.5 ppb 0123-ET3-C MW-3 Water/TPH-G # 50 ppb 0123-ET3-C MW-3 Water/TPH-G # 50 ppb 0123-ET3-C MW-3 Water/TPH-D # 5 ppb 0123-ET3-C MW-3 Water/TPH-D # 5 ppb 0123-ET3-C MW-3 Water/TPH-D # 5 ppm			数据从本本证券	#	0.5	ppb
Xylenes				*		
Dig3-ET3-B MW-2 Water/TPH-G # 50 ppb Dig3-ET3-B MW-2 Water/TPH-D # 50 ppb Dig3-ET3-B MW-2 Water/PTEX Dig3-ET3-B MW-2 Water/PTEX Benzene # 0.5 ppb Toluere # 0.5 ppb Xyleres # 0.5 ppb Oig3-ET3-C MW-3 Water/TPH-B # 50 ppb Dig3-ET3-C MW-3 Water/TPH-D # 50 ppb Dig3-ET3-C MW-3 Water/TPH-D # 50 ppb Dig3-ET3-C MW-3 Water/PDG # 5 ppm Dig3-ET3-C MW-3 Water/PDG # 5 ppm Dig3-ET3-C MW-3 Water/PDEX Dig3-ET3-C WW-3 Dig3-ET3-C Dig3			Ethy1benzene	*	0.5	ppb
Di23-ET3-B MW-2 Water/TPH-D # 50 ppb Di23-ET3-B MW-2 Water/FTEX Di23-ET3-B MW-2 Water/FTEX Di23-ET3-B MW-2 Water/FTEX Di23-ET3-B MW-2 Water/FTEX Di23-ET3-C MW-3 Water/TPH-B # 50 ppb Di23-ET3-C MW-3 Water/TPH-D # 50 ppb Di23-ET3-C MW-3 Water/TPH-D # 50 ppb Di23-ET3-C MW-3 Water/TPH-D # 50 ppb Di23-ET3-C MW-3 Water/FTEX Di23-ET3-C WW-3 Wate			XXIANGE	*	೧. 5	dqq
Di23-ET3-B MW-2 Water/TPH-D # 50 ppb Di23-ET3-B MW-2 Water/FTEX Di23-ET3-B MW-2 Water/FTEX Di23-ET3-B MW-2 Water/FTEX Di23-ET3-B MW-2 Water/FTEX Di23-ET3-C MW-3 Water/TPH-B # 50 ppb Di23-ET3-C MW-3 Water/TPH-D # 50 ppb Di23-ET3-C MW-3 Water/TPH-D # 50 ppb Di23-ET3-C MW-3 Water/TPH-D # 50 ppb Di23-ET3-C MW-3 Water/FTEX Di23-ET3-C WW-3 Wate		ar one pro pro se	Mart 1995. / 丁琛M	#	es es	
Di23-ET3-B MW-2 Water/FTEX			· · · · · · · · · · · · · · · · · · ·			• •
Discrept			· · · · · · · · · · · · · · · · · · ·			• •
Benzene	-				, u	ppm ppm
Tolumen # 0.5 ppb Ethylberszerm # 0.5 ppb Xylerms # 0.5 ppb Xylerms # 0.5 ppb 123-ET3-C MW-3 Watmr/TPH-8 # 50 ppb 0123-ET3-C MW-3 Watmr/TPH-D # 50 ppb 0123-ET3-C MW-3 Watmr/TPH-D # 5 ppm 0123-ET3-C MW-3 Watmr/PHEX Benzeme # 0.5 ppb Tolumen # 0.5 ppb Ethylberszerme # 0.5 ppb				*	O. #6	nnh
Ethylbarizerie # 0.5 ppb Xyleries # 0.5 ppb Xyleries # 0.5 ppb D123-ET3-C MW-3 Water/TPH-B # 50 ppb D123-ET3-C MW-3 Water/TPH-D # 50 ppb D123-ET3-C MW-3 Water/TOB # 5 ppm D123-ET3-C MW-3 Water/PTEX Benizerie # 0.5 ppb Toluerie # 0.5 ppb Ethylbarizerie # 0.5 ppb						
Xyleries * 0.5 ppb 0123-ET3-C MW-3 Water/TPH-G * 50 ppb 0123-ET3-C MW-3 Water/TPH-D * 50 ppb 0123-ET3-C MW-3 Water/TOG * 5 ppm 0123-ET3-C MW-3 Water/PTEX Penzene * 0.5 ppb Toluerie * 0.5 ppb Ethylberzene * 0.5 ppb						
0123-ET3-C MW-3 Water/TPH-D # 50 ppb 0123-ET3-C MW-3 Water/FOG # 5 ppm 0123-ET3-C MW-3 Water/BTEX Benzene # 0.5 ppb Tolugue # 0.5 ppb Ethylbanzene # 0.5 ppb			-			
0123-ET3-C MW-3 Water/TPH-D # 50 ppb 0123-ET3-C MW-3 Water/FOG # 5 ppm 0123-ET3-C MW-3 Water/BTEX Benzene # 0.5 ppb Tolugue # 0.5 ppb Ethylbanzene # 0.5 ppb		 MW-3	Water/TPH-G	*	5 0	nnh
D123-ET3-C MW-3 Water/TOG # 5 ppm D123-ET3-C MW-3 Water/BTEX Benzene # 0.5 ppb Tolugue # 0.5 ppb Ethylbanzene # 0.5 ppb		- 11	· · · · · · · · · · · · · · · · · · ·			• •
D123-ET3-C MW-3 Water/BTEX Benzene # 0.5 ppb Tolugue # 0.5 ppb Ethylbanzene # 0.5 ppb						
Senzene # 0.5 ppb Tolugne # 0.5 ppb Ethylbenzene # 0.5 ppb				₩.	w w	PPIN
Tolugrie # 0.5 ppb Ethylbarizarie # 0.5 ppb		Trry war		<u></u>	A #	m.m.bs
Ethylbanzene * 0.5 ppb			** ** ***	# ±		
- rr-				⊼		
			Xyleyes	**		

^{*} No detectable amount @ detection limit

Arialyst Bignature

R. A. Lamon

APPENDIX D

GROUNDWATER ANALYTICAL RESULTS
THIRD QUARTER

Soil and Water Environmental Laboratory

Drinking Water
Waste Water o Asbestos
Hazardous Waste — Soil
Calderon Testing — Air

14072 W. Park Avenue Boulder Creek, CA 95006 (408) 338-3053

Laboratory Report

Client

Report Date

Envionmental Tech. Services 05/13/93 1548 Jacob Ave.

San Jose CA 95116

Sample Site

Date Received

Alameda Bolf Cource

05/05/93

05/06/93

One Memorial Club House Drive

Alameda

AC-C

Analysis Requested

Total Hydrocarbons - Gas

Procedure

Date Analyzed

EPA 5030

602

\$&W Ref. #	Client Ref. #	Masrix/Analysis	Concentration	Detection	Limit
1253-ET2-A	MW-1	Mater/TPH-G		* 50	dqq
1253-ET2-A	MM 7	Neter/BTEX			
		Benzene		* 0.5	ppb
		Tolumne		* 0.5	ppb
		Ethylbenzene		* Q.5	ppb
		XXIenes			ppb
وي و جور والله والان الله و الله والله	n and the state of				
1253-ET2-B	MM-5	Mater/TPH-G		* 50	ppb
1823-E15-B	またしい	Water/BTEX			
		国體別常體的體			ppb
		Toluene		* 0.5	ppb
		Ethylbenzene		* 0.5	ppb
		Xylenes		* 0.5	ppb
1253-ET2-C	 MW-3	U.A (7511			
1253-ET2-C	MW-3	Nater/TPH-0 Nater/PTEX		* 50	ppb
		Banzana		* O.5	dqq
		Toluene		* 0.5	
		Ethylbenzene		* 0.5	
		Xylenes			ppb

* No detectable amount @ detection limit

Analyst Signature

W. Lemon

Soil and Water Environmental Laboratory

14072 West Park Avenue Boulder Creek, CA 95006

(408) 338-3053/4466

CHAIN - OF - CUSTODY

Project Number		Site Nai ONL //	ne and Ad leynori	al Club House Cold (0	arkedaj (k e Drive	Type and Number of	P	Analys	is Req	uired		Laboratory ID	Comments
Witnessing Age	ncy/Inspe	Ctor Nam	e and Dat	e (1)	UVSE	Containers	TPH-G+BTEX	TPH-D + BTEX				Condition of Samples	
Sample ID	Date	Time	Matrix	Sample Location	1		TPH	ТРH	100			1 - Good 2 - See Reverse	
MW-1	5/4/93		ЊΩ										
ИW-1 ИW-3 ИW-3							/						
MW-3							$\sqrt{}$						
			_										
			: 										
Relinquished by	:(Signatu UNN	re) Uf		Date/Time 15 5/4/93	Received by: 70 ETS	(Signature) FRIDC-4	ب	Ē	ate/T	ime		Remarks:	
Relinquished by	r: (Signaty	(re)		Date/Time	Received by:	\triangle		D	ate/T	ime		COMPANY: ADDRESS:	
Relinquished by	7: (Signati MMC			Date/Time 5/5/43624	Redeived by	Lab: (Signature	·)		ate/T	ime B	1.2	PHONE:	FAX:
<u> </u>		/-/		·	- W W			1	//	Ī	ABOR		TWO (2) COPIES OF THIS FORM.

APPENDIX E GROUNDWATER DEVELOPMENT REPORTS

MONITORING WELL SAMPLING DATA/ MW-1

Project	Name:		Well#		
ALAMEDA	GOLF COURS	E		MW-1	
Date:	Septemb	per 18, 1992			······································
Name:			Time Bec	an:	
Mawhinne	У		11:27		
DEPTH OF	WELL(ft.)	DEPTH TO	WATER(ft.)	WELL [OIAM.
9.77		5.36		21	
Time	Gallons	Salinity	на	Temp.	Cond.
11:27	1	1.2	5.6	20 C	21.0
11:40	3	1.2	*	19 C	21.0
11:52	5	1.2	*	19 C	23.0
12:07	7	1.2	*	19 C	21.0
Volume Evacuated	Purgin d	g Equip.	Samp	ling Equi	p.
10 gallo		ess Steel Ba			el Bailer
		Completion of	of Sampling		
	ured. Slo				
Sheen	Floatin	g Product	Sample	Color	Odor
no	no		grey		no
		tter: very li	ttle silt		
Sample II	Q# An	alysis		Labor	atory
MW-1	TPI	Hg, BTEX, Tot	al Lead	S & W	Lab.
Sample Co 3/ 40-ml	ontainers VOAs, 2 Lit	ters			

MONITORING WELL SAMPLING DATA/ MW-2

Project Na	ne:		Well#		
ALAMEDA GO	LF COURSE	1		MW-2	
Date:	Septemb	er 18, 1992	*************************************	*	
Name:			Time Bec	ıan:	······································
Mawhinney			12:19		
DEPTH OF W	ELL(ft.)	DEPTH TO P	ATER(ft.)	WELL DI	AM.
9.77		1.89		2"	
Time G	allons	Salinity	Hq	Temp.	Cond.
12:25	1	1.8		21 C	31.0
12:36	3	1.7		21 C	29.0
12:49	5	2.0		20 C	34.0
1:03	7	2.2		19 C	36.0
1:15	10	2.2		19 C	36.0
Volume Evacuated	Purgin	g Equip.	Sam	oling Equip	· ·
10 gallons	Stainl	ess Steel Bai	.ler Stai	nless Stee	el Baile
Depth to W	ater Upon	Completion c	of Sampling	J	*************************************
Not measur	e. Slow	Recharge			
Sheen	Floatin	g Product	Sample	Color	Odor
no	no		grey		no
Sediment/F	oreign Ma	tter: silt	,		······································
Sample ID#	An	alysis		Labora	tory
MW-2	מיתי	Hg, BTEX & To	tal Load	S & W	

MONITORING WELL SAMPLING DATA/ MW-3

Project N	lame:		Well#		
ALAMEDA G	OLF COURSE			MW-3	
Date:	Septemb	er 18, 1992	· · · · · · · · · · · · · · · · · · ·	***************************************	
Name:			Time Be	egan:	<u>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</u>
Mawhinney	<i>;</i>		1:29		
DEPTH OF	WELL(ft.)	DEPTH TO	WATER (ft.)) WELL D	AM.
9.71		2.28		2"	
Time	Gallons	Salinity	На	Temp.	Cond.
1:29	1	1.8		21 C	31.0
1:37	3	1.7		21 C	27.0
1:48	5	1.7		19C	29.0
1:59	7	2.0		20 C	30.0
2.15	10	2.2		19 C	30.0
Volume Evacuate		ng Equip.	Sa	mpling Equi	p.
10 gallo	ns Stain]	less Steel Ba	iler St	ainless Ste	el Bailer
Depth to	Water Upor	Completion	of Sampli	ng	
Not meas	ure. Slov	v Recharge			
Sheen	Floatin	ng Product	Sampl	e Color	Odor
no	no	>	gre	у	no
Sediment	/Foreign Ma	atter: silt			
Sample I	D f A	nalysis		Labor	atory
MW-3	T	PHg, BTEX, To	OTAL LEAD	S & W	Lab.
Sample C	ontainers VOAs				

MONITORING WELL SAMPLING DATA MONITORING WELL NO.1

PROJECT	NAME;		WELL	#
ALAMEDA	GOLF COURSE		MW-1	l
DATE:	JANUARY 1	1, 1993		
NAME:			TIME	BEGAN:
Helen Ma	awhinney		12:45	5
DEPTH O	F WELL(FT.)	DEPTH OF	WATER(FT.)	WELL DIAM.
9.8		3.2		2"
TIME	GALLONS	рн	TEMP.	COND.
1:00	1	6.81	59,1	15.40
1:05	2	6.85	59.3	15.40
1:10	3	6.87	59.3	15.38
1:20	4	6.87	59.4	15.37
1:25	5	6.88	59.4	15.37
1:34	7	6.88	59.4	15.37
VOLUME EVACUATE	ED.	PURGING EQUI	P. SAM	IPLING EQUIP.
3 gallon	ıs	Stainless St Bailer	eel Stai Bail	nless Steel er
EPTH TO	WATER UPON	COMPLETION O	F SAMPLING	
Not meas	ured. Recha	arge very slo	w.	
HEEN	FLOATI	NG PRODUCT	SAMPLE COL	OR ODOR
10	no		grey	no
EDIMENT	FOREIGN MAT	TTER: very li	ttle silt	
SAMPLE I	D#	ANALYSIS	LABOR	ATORY
IW-1		TPHg, TOG	S & W	Lab.
	ONTAINERS VOAs, 2 Lit	ers	· · · · · · · · · · · · · · · · · · ·	

MONITORING WE	ELL	SAMPL	ING	DATA
MONITOR	ING	WELL	NO.2	

		ORING WELL S MONITORING W			
PROJECT N	AME:		WELL	#	
ALAMEDA GOLF COURSE			MW-2		
DATE:	JANUARY 11	, 1993			
NAME:		TIME BEGAN:			
Helen Maw	hinney		1:40		
DEPTH OF	WELL(FT.)	DEPTH OF	WATER (FT.)	WELL DIAM.	
9.8		1.7		2"	
CIME	GALLONS	На	TEMP.	COND.	
L:40	1	7.02	60.7	17.70	
L:45	2	7.02	60.7	17.70	
:55	3	7.02	60.8	17.69	
2:00	4	7.02	60.9	17.68	
2:05	5	7.02	60.9	17.68	
2:07	7	7.02	60.9	17.68	
OLUME VACUATED	-	PURGING EQUI	SAM	PLING EQUIP.	
B gallons Stainless Bailer		Stainless Ste Bailer	Steel Stainless St Bailer		
EPTH TO Tot measur	WATER UPON ored.	COMPLETION OF	SAMPLING		
HEEN 10	FLOATING no	G PRODUCT	SAMPLE COL grey		
EDIMENT/I	FOREIGN MAT	<u>l'ER:</u> very li	ttle silt		
AMPLE IDA W-2	-	ANALYSIS TPHg, TOG	LABORATORY S & W Lab		
AMPLE CON	TAINERS OAs, 2 Lite	ers			

MONITORING WELL SAMPLING DATA MONITORING WELL NO.3

PROJECT	PROJECT NAME: WELL #				
ALAMEDA	GOLF COURSE	MW	MW-3		
DATE:	JANUARY 11,	1993			
NAME:		 	TIM	E BEGAN:	
Helen Mawhinney 2:10p				Op	
DEPTH O	F WELL(FT.)	DEPTH OF	WATER(FT.)	WELL DIAM.	
9.7		2.4		2"	
TIME	GALLONS	рH	TEMP.	COND.	
2:10	1	7.26	55.3	12.10	
2:20	2	7.25	55.3	12.09	
2:25	3	7.24	55.3	12.09	
2:35	4	7.23	55.3	12.09	
3:00	5	7.22	55.3	12.08	
3:05	7	7.22	55.3	12.08	
VOLUME EVACUATI	P D	URGING EQUI	P. <u>S</u>	AMPLING EQUIP.	
8 gallons Stainless Stee Bailer			ainless Steel ller		
DEPTH TO	WATER UPON C	OMPLETION O	F SAMPLING		
Not meas	sured. Rechar	ge very slo	W		
SHEEN	FLOATING	PRODUCT	SAMPLE CO	DLOR ODOR	
no no		grey	no		
SEDIMENT	F/FOREIGN MATT	ER:			
SAMPLE I	:D# A	ANALYSIS LABORATORY		PRATORY	
MW-3	T	PHg, BTEX	S &	W Lab.	
SAMPLE C 3/ 40-ml	CONTAINERS VOAs, 2 Lite	rs			

MONITORING WELL SAMPLING DATA MW-1

Project Name:			Wel	11#	
ALAMEDA GOLF COURSE			MW-	-1	
DATE: May 4, 1993				······································	
NAME: Mawhinney		***************************************	Time Be 10:51		
DEPTH OF WELL	DEPTH	TO WATER	:	WEI	L DIAM.
9.8	2.	31		2	91
Time Gallons	Salinity	На	Temp.		Cond.
11:20 1	*	*	56.4 F	,	10.94
11:38 3	*	*	59.3 F	ı	8.56
11:45 5	*	*	44.9 F	י	9.29
12:00 7	*	*	46.3 F	,	9.44
Volume	Purg	ing	**************************************		Sampling
Evacuated	Equi	D .			Equip.
7 gallons	Stainless Steel Bai				inless Bailer
Depth to Water Upon	Completion	of Samp	ling:	**************************************	
9.74' Slow to recha	arge				
Sheen Floa	ating Produ	ıct	Sample	Color	Odor
no	no		đark g	rey	yes
Sediment/Foreign Mat	ter: very	y silty	14		
Sample ID#	Analys	sis	· · · · · · · · · · · · · · · · · · ·	Lab	oratory
MW-1	TPHg, F	3TEX		S &	W Lab
Sample Containers			,		
2/40-ml VOAs 2 amber one liter bo	ottles				

MONITORING WELL SAMPLING DATA MW-2

Project Name:	· · · · · · · · · · · · · · · · · · ·	~-	Well#		
ALAMEDA GOLF COURSE	2		MW-2		
DATE: May 4, 1993	······································				
NAME: Mawhinney	<u>Time Began:</u> 12:19p				
DEPTH OF WELL	DEPTH	TO WAT	er b	ELL DIAM.	
9.8'	1.4	1 ′		2"	
Time Gallons	Salinity	рН	Temp.	Cond.	
12:27 1	*	*	66.4 F	7.92	
12:35 3	*	*	67.4 F	7.94	
1:45 5	*	*	65.4 F	6.47	
1:50 7	*	*	62.1 F	6.48	
<u>Volume</u> Evacuated	Purg Egui			Sampling Equip.	
7 gallons	Stainless Steel Bail			stainless el Bailer	
Depth to Water Upon	Completion	of Sa	mpling:		
9.8' Good Recharge					
Sheen Flo	ating Produ	ict	Sample Colo	r Odor	
no	no		grey/gold	no	
Sediment/Foreign Ma	tter: very	silty	-		
Sample ID#	Analys	is,	L	aboratory	
MW-2	TPHg, E	STEX	s	& W Lab	
Sample Containers					
2/40-ml VOAs 2 amber one liter bottles					

MONITORING WELL SAMPLING DATA MW-3

			· · · · · · · · · · · · · · · · · · ·		
Project	t Name:			Well#	
ALAMEDA	A GOLF COURS	E		MM-3	
DATE:	May 4 , 1993		·		
NAME: Mawhin	ney	***************************************	· · · · · · · · · · · · · · · · · · ·	Time Bega 1:15p	n:
DEPTH C	OF WELL	DEPTH	TO WA	PER	WELL DIAM.
9.72		2.9	9′		2"
Time	Gallons	Salinity	Щ	Temp.	Cond.
1:15	1	*	*	58.3 F	4.62
1:25	3	*	*	47.3 F	4.40
1:35	5	*	*	31.3 F	3.57
1:42	7	*	*	31.2 F	3.37
Volume Evacuat	ted	Purqi Equip		All Parameters (Inc.)	Sampling Equip.
7 gallo	ons	Stainless Steel Bail		s [.]	Stainless teel Bailer
Depth t	o Water Upo	n Completion	of Sa	ampling:	
9.73′ a	at completio	n			
Sheen	Fl	oating Produ	<u>ict</u>	Sample Co	lor Odor
no		no		dark grey	y yes
	nt/Foreign M	atter: very	littl	e silt	
Sample	ID#	Analys	is		Laboratory
MW-3		ТРНд, В	TEX		S & W Lab
Sample	Containers				
2/40-ml 2 amber	VOAs one liter l	oottles			