A REPORT DOCUMENTING THE
EXCAVATION OF CONTAMINATED
SOIL AND THE INSTALLATION
OF THREE GROUNDWATER MONITORING
WELLS WITH SUBSEQUENT DEVELOPMENT
AND SAMPLING AT:

ALAMEDA GOLF COURSE
ONE MEMORIAL CLUBHOUSE DR.
ALAMEDA, CALIFORNIA

prepared for

City of Alameda
Santa Clara St. @ Oak.
Parks and Recreation
Alameda, CA 94501

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A Report Documenting the
Installation of Three
Groundwater Monitoring Wells,
and One Exploratory Soil Boring

at

ALAMEDA GOLF COURSE
1 MEMORIAL CLUB HOUSE DRIVE
ALAMEDA, CALIFORNIA

by

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ENVIRONMENTAL TECHNICAL SERVICES
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CA R.G. #3011

REGISTERED GEOLOGIST
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No. 003011
STATE OF CALIFORNIA

September 28, 1992

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Groundwater Analytical Results

1.0 INTRODUCTION

The following report documents the installation of three (3) groundwater monitoring wells, and one exploratory soil boring by S & G Drilling and Environmental Technical Services on August 20, 1992 at, Alameda Golf Course, One Memorial Clubhouse Drive Alameda, California.

2.0 PREVIOUS ENVIRONMENTAL INVESTIGATIONS

2.1 TANK REMOVAL

On July 10, 1991, two underground storage tanks (USTs) were removed from the above referenced site. These were one (1) 500-gallon and one (1) 125-gallon gasoline UST. Groundwater was encountered at 5-feet within the tank pit excavation. Soil samples were collected from the tank pit wall vadose/saturated capillary zone and analyzed for total petroleum hydrocarbons as gasoline with benzene, toluene, ethylbenzene, and total xylenes (TPHg and 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 #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
7/10/91

Results reported in mg/kg

Sample#	TPHg	B	T	E	X
2	960	3.5	0.10	3.0	13
4	ND	0.011	ND	ND	0.005
5	ND	ND	ND	ND	ND
6	3.0	0.030	0.006	0.023	0.059
7	ND	ND	ND	ND	ND
8	ND	ND	ND	ND	ND

TABLE 1B
STOCKPILE ANALYTICAL RESULTS
7/10/91

Results reported in mg/kg

Composite Sample#	TPHg	B	T	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
7/10/91

Results in kg/L

Sample #	TPHg	B	T	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

S & G Drilling and Environmental Technical Services installed three 2" groundwater monitoring wells and one exploratory soil boring. The soil boring was advanced to define the lateral migration of fuel constituents because of the "hit" at sample #6 (see Table 1A). The wells were installed to determine the impact, if any, of contamination upon the first encountered aquifer beneath the site. Soil samples were collected within each soil boring. Soil was classified according to the Unified Soil Classification System. The wells were developed and a water sample collected from each well for analysis.

Construction, development and sampling of the wells was performed in accordance with guidelines set forth by the Regional Water Quality Control Board (RWQCB) San Francisco Bay Region and the Alameda County Department of Environmental Health Hazardous Materials Division.

The work was performed to comply with State and County Regulations in response to the presence of petroleum hydrocarbons discovered at the time of the UST removal.

3.1 SOIL BORING ADVANCEMENT

Four soil borings were advanced using a hydraulically driven truck/trailer mounted drill rig equipped with 8-1/4 inch O.D. hollow-stem augers. Three of the soil borings were completed as two-inch diameter monitoring wells. The augers were cleaned prior to arriving on site and decontaminated subsequent to drilling and before leaving the site.

The augers were decontaminated between borings using a hot high pressure wash.

3.2 MONITORING WELL INSTALLATION

Three monitoring wells were constructed within the soil borings. For the well locations, construction details, and boring logs for the wells, refer to Appendix C.

3.3 SOIL SAMPLE COLLECTION

Soil samples were collected using a California Modified Split Spoon Sampler driven by the drill rig. Immediately upon opening the sampler a brass sleeve was removed. Each end of the brass sleeve was covered with teflon, fitted with plastic caps, sealed with duct tape, labeled, and placed on blue ice under chain of custody to be transported to a certified hazardous waste analytical laboratory. The split spoon sampler was decontaminated between samples using an Alconox wash and tap water rinse.

3.4 SOIL SAMPLE LOCATIONS

MW-1
Soil samples were collected at 4.0′ - 4.5′.

MW-2
Soil samples were collected at 4.0′- 4.5′.

MW-3
Soil samples were collected at 4.5′- 5.0′.

SB-1
Soil samples were collected at 4.5′ - 5.0′.

3.5 SOIL SAMPLE ANALYSIS

Soil samples were analyzed for total petroleum hydrocarbons as gasoline with benzene, toluene, ethylbenzene, and xylenes (TPHg with BTEX) using EPA Method 5030/8020.

3.6 SOIL SAMPLE ANALYTICAL RESULTS

TABLE II
MONITORING WELL SOIL SAMPLE RESULTS
Total Petroleum Hydrocarbons as Gasoline
with Benzene, Toluene, Ethylbenzene, and Xylenes
8/31/92

Results reported in mg/kg

Sample#	Depth	TPHg	B	T	E	X
MW-1	4.0'-4.5'	ND	ND	ND	ND	ND
MW-2	4.0'-4.5'	ND	ND	ND	ND	ND
MW-3	4.5'-5.0'	ND	ND	ND	ND	ND
SB-1	4.5'-5.0'	1.8	ND	ND	ND	ND

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

3.7 WELL DEVELOPMENT

Development and sampling of the wells was performed on August 20, 1992. All well effluent was contained in Department of Transportation approved 17-H, 55-gallon drums pending analysis of water samples. MW-1 was developed by evacuating water using a clean stainless steel bailer 1.5 inch by 3 feet. Approximately 10 gallons of water were evacuated during development. The well yield was low. Prior to development, the total depth of MW-1 was 9.77' and depth to water was 4.91'. MW-2 was developed by evacuating water using a clean stainless steel bailer 1.5 inch by 3 feet. Approximately 10 gallons of water were evacuated during development. The well yield was low. Prior to development, the total depth of MW-2 was 9.77' and depth to water was 1.89'. MW-3 was developed by evacuating water using a clean stainless steel bailer 1.5 inch by 3 feet. Approximately 10 gallons of water were evacuated during development. The well yield was low. Prior to development, the total depth of MW-3 was 9.71' and depth to water was 2.28'.

Refer to Appendix D for Well Development Report.

3.8 WELL SAMPLING

On September 3, 1992 following development, each of the three wells was sampled. Sampling was performed using a stainless steel bailer which was decontaminated between wells using an Alconox wash and tap water rinse followed by a de-ionized water rinse. At consistent intervals throughout the well purging pH, conductivity, and temperature were monitored to evaluate stabilization of the wells prior to sampling.

Water was decanted into two one-liter amber bottles and three 40-ml Volatile Organics Analysis vials to a positive meniscus eliminating headspace. An HCL preservative was added to the VOA's prior to sampling.

3.9 GROUNDWATER ANALYTICAL RESULTS

TABLE III
GROUNDWATER ANALYTICAL RESULTS
Total Petroleum Hydrocarbons as Gasoline
with Benzene, Toluene, Ethylbenzene, and Xylenes
9/5/92

All results are reported in kg/L ppt ?

Sample#	TPHg	B	T	E	X	Total Lead
MW-1	ND	ND	ND	ND	ND	ND
MW-2	ND	ND	ND	ND	ND	6.3
MW-3	ND	ND	ND	ND	ND	ND

ND = Not detected at lower detection limit for this compound

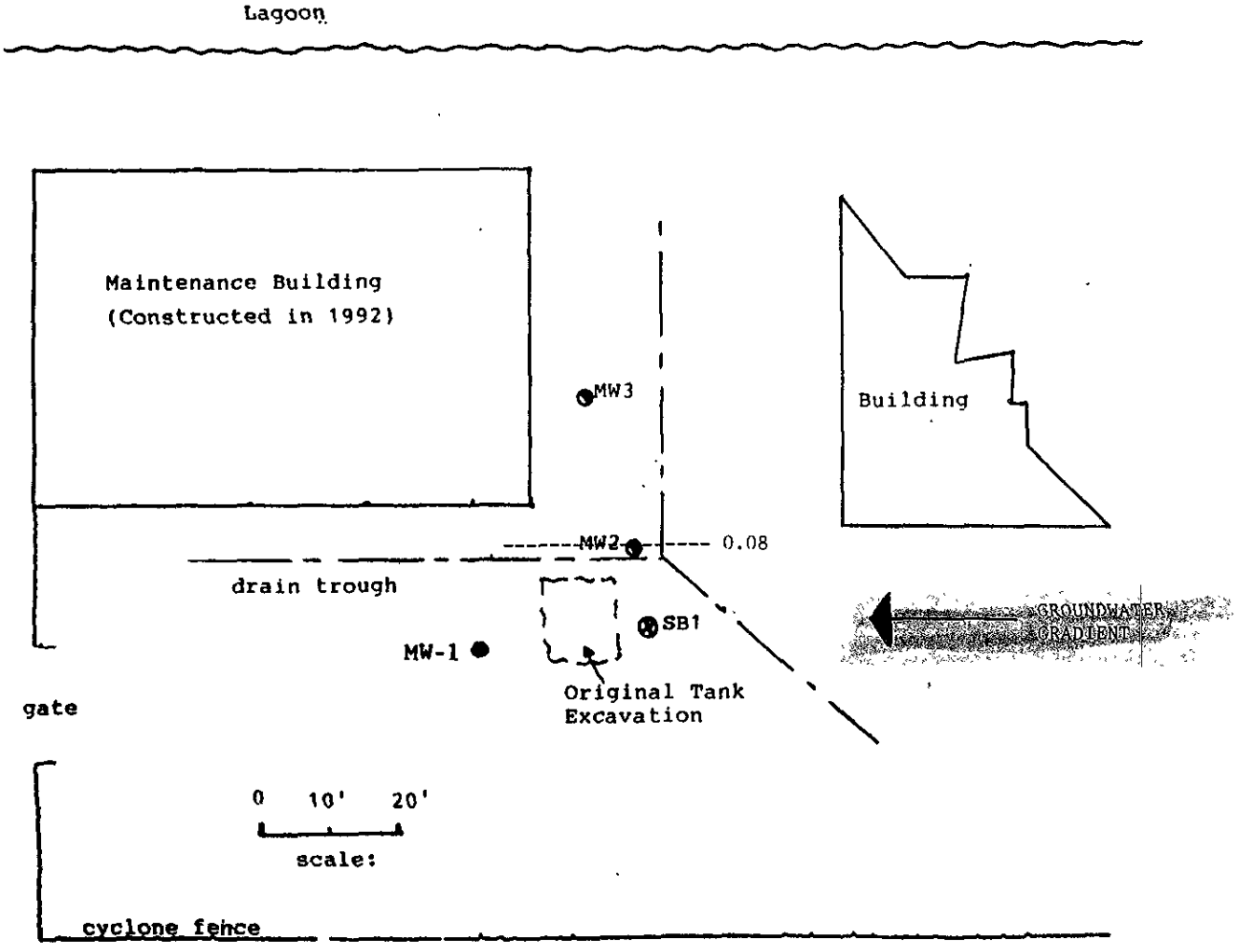
For Groundwater Analytical Report refer to Appendix F.

3.10 GROUNDWATER GRADIENT

TABLE IV
DEPTH AND ELEVATION TO GROUNDWATER

MW	TOC ELEV.	DATE	WATER DEPTH	WATER ELEV.
1	95.38	10/14/91	3.23	92.15
2	94.67	10/14/92	2.20	92.47
3	95.06	10/14/92	2.33	92.73

DATUM = Mean sea level surveyed from maintenance building floor.



4.0 RECOMMENDATIONS AND CONCLUSIONS

No detectable amount of total petroleum hydrocarbons as gasoline, benzene, toluene, ethylbenzene or total xylenes were present in the capillary zone soil samples collected within monitoring well MW-1, MW-2, or MW-3.

Total petroleum hydrocarbons as gasoline was present in the capillary zone soil sample collected within soil boring SB-1 at 1.8 ppm. Benzene, toluene, ethylbenzene and total xylenes were not detected.

A groundwater sample was collected within monitoring well MW-1, MW-2, and MW-3. TPHg and BTEX were not detected within these groundwater samples.

It appears that benzene, toluene, ethylbenzene and total xylenes are not present within the soil or groundwater and that groundwater has not been impacted by the release of total petroleum hydrocarbons from the former gasoline underground storage tanks. Therefore we are recommending clean closure for this site.

5.0 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
1800 Harrison Street
Room 700
Oakland, CA 94612

Alameda County Department
of Environmental Health
Hazardous Materials Division
80 Swan Way, Room 200
Oakland, CA 94621

APPENDIX A

Maps

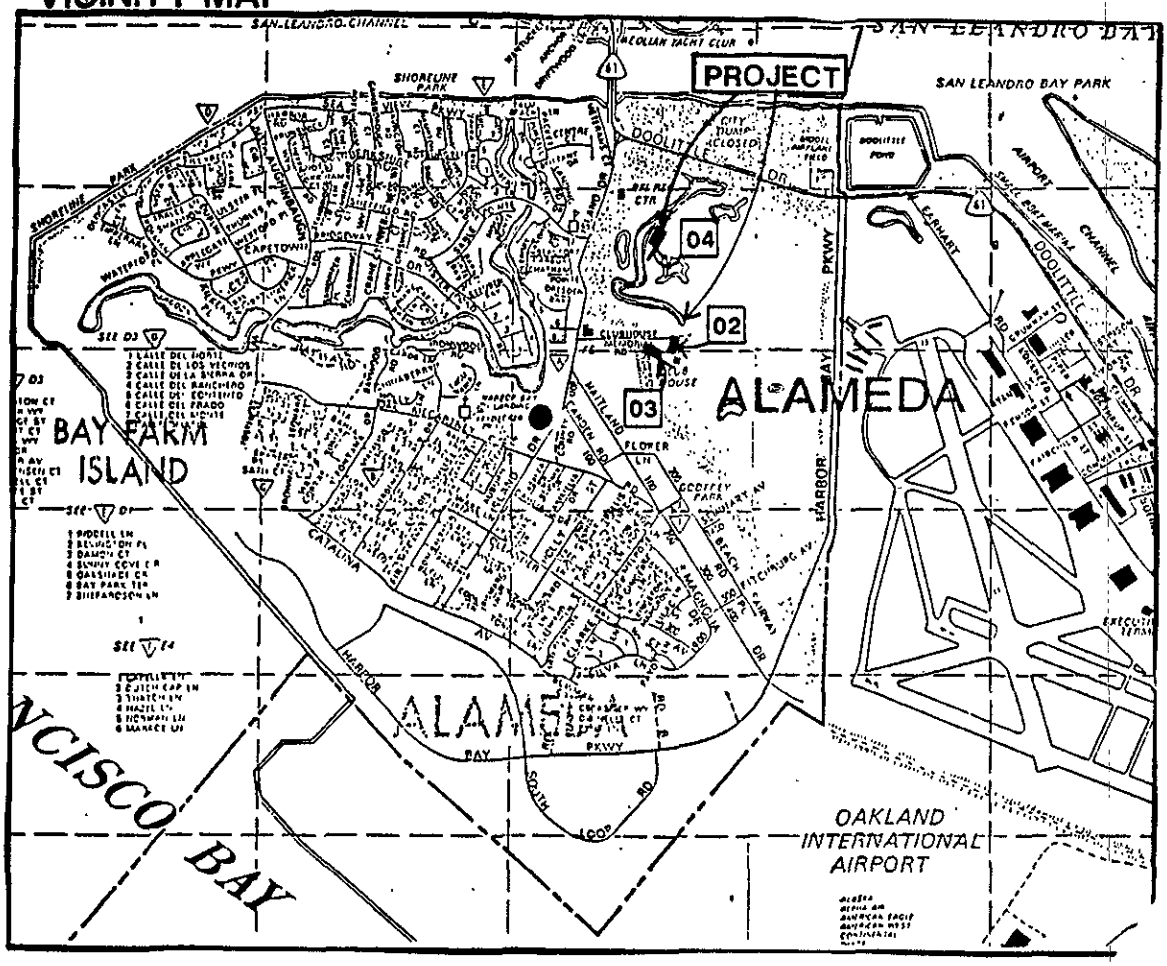
Figure 1. Site Location Map

Figure 2. Tank Location Map

Figure 3. Excavation & Sampling Map

Figure 4. Monitoring Well Location Map

VICINITY MAP

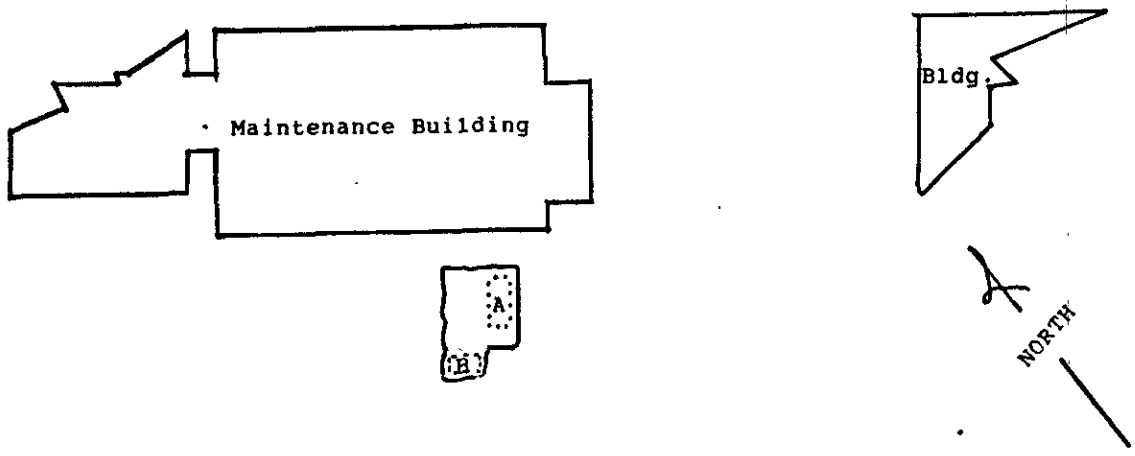


ENVIRONMENTAL TECHNICAL SERVICES	Site: **ALAMEDA GOLF COURSE** **1 MEMORIAL CLUB HOUSE DRIVE** **ALAMEDA, CALIFORNIA**	
Figure 1.	Site Location Map	

ENVIRONMENTAL
TECHNICAL
SERVICES

at: Alameda Golf Course, 1 Memorial Club House Drive, Alameda CA.

7/10/91



KEY

(A) 500 gal gasoline tank

(B) 125 gal gasoline tank

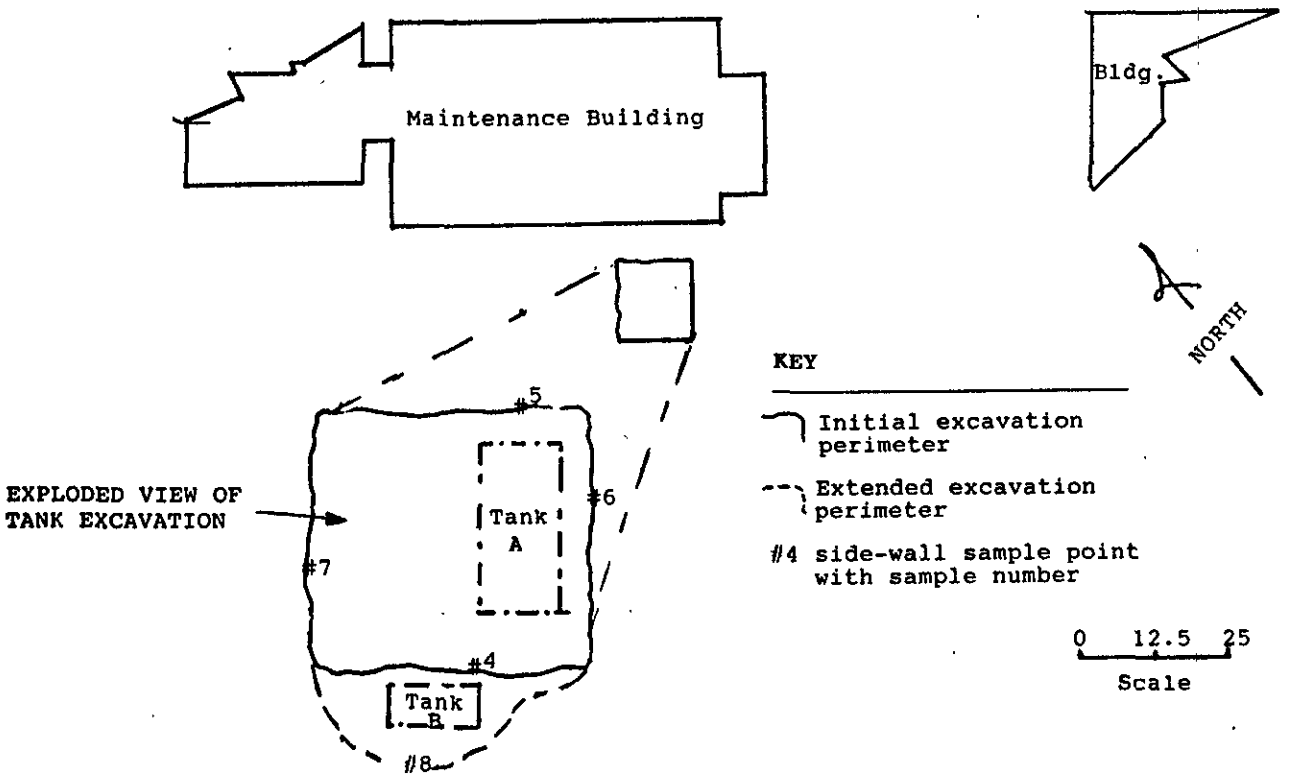
0 12.5 25
Scale

ENVIRONMENTAL TECHNICAL SERVICES	Site: **ALAMEDA GOLF COURSE** **1 MEMORIAL CLUB HOUSE DRIVE** **ALAMEDA, CALIFORNIA**	
Figure 2.	Tank Location Map	

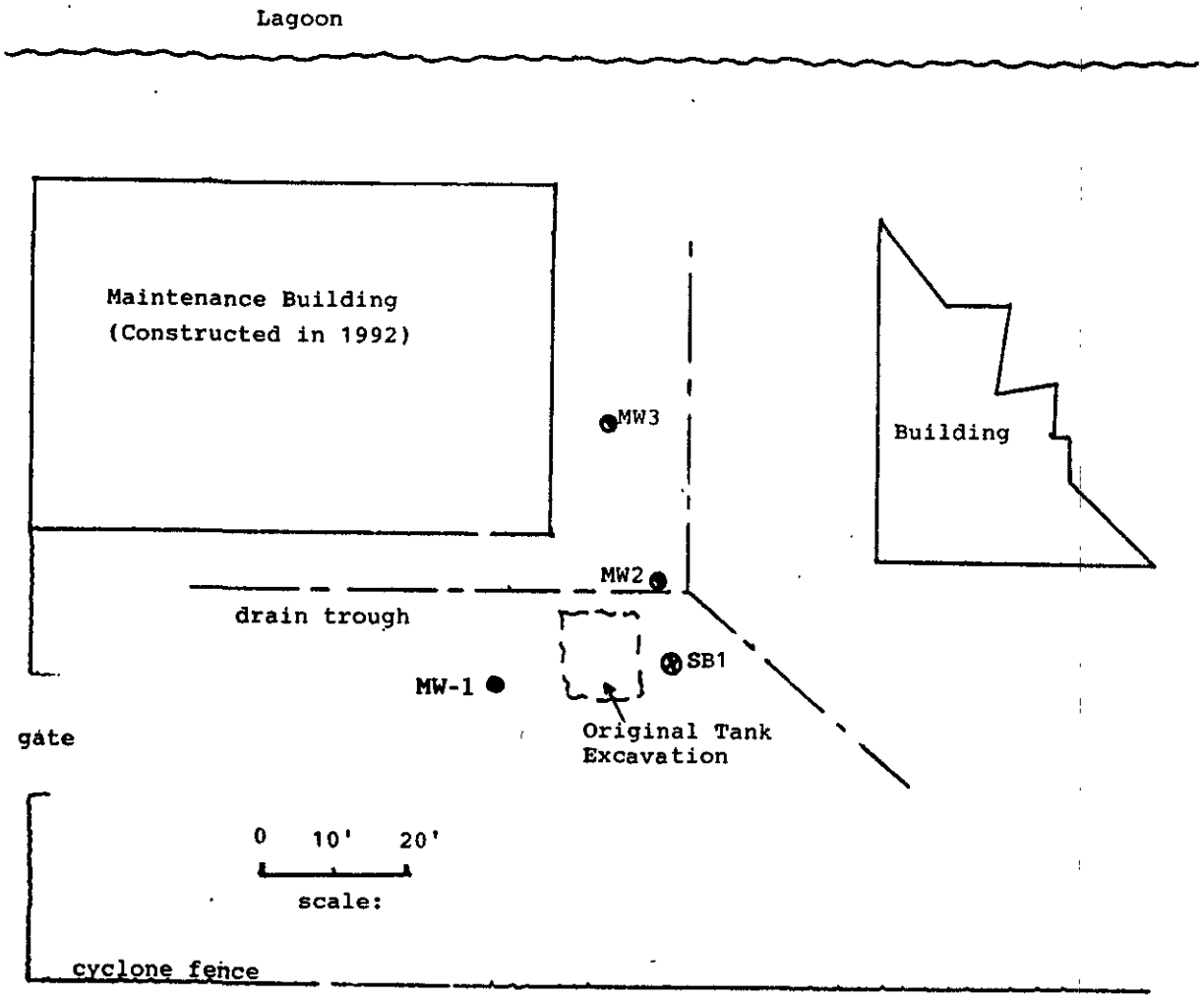
ENVIRONMENTAL
TECHNICAL
SERVICES

at: Alameda Golf Course, 1 Memorial Club House Drive, Alameda CA.

7/10/91



ENVIRONMENTAL TECHNICAL SERVICES	Site: **ALAMEDA GOLF COURSE** **1 MEMORIAL CLUBHOUSE DRIVE** **ALAMEDA, CALIFORNIA**	
Figure 3.	Excavation/Sampling Map	



ENVIRONMENTAL TECHNICAL SERVICES	Site: **ALAMEDA GOLF COURSE** **1 MEMORIAL CLUB HOUSE DRIVE** **ALAMEDA, CALIFORNIA**	Drawn by: Mawhinney 9/21/92

Figure 4. Monitoring Well Location Map 8/20/92

APPENDIX B

Original Tank Removal,
Initial Sampling Report

August 4, 1991

Parks and Recreation
Oak Street at Santa Clara Street
Alameda, California 94501

Attention: Mr. Fred Framsted

The following documentation concerns the initial tank removal, excavation of contaminated soil, and stockpile sampling performed by Zaccor Corporation at:

ALAMEDA GOLF COURSE
1 MEMORIAL CLUB HOUSE DRIVE
ALAMEDA, CALIFORNIA

Field Sampling was performed in accordance with state and local agency approved methodology, in the presence of Pamela Evans, Hazardous Materials Specialist for the Alameda County Environmental Health Department.

See accompanying site diagram for the location of tanks, field sampling designations, and sampling depths.

TANK REMOVAL

On July 10, 1991, two underground storage tanks (UST's) were removed from the above mentioned address. These were one 500 gallon gasoline tank and one 125 gallon tank.

Upon tank removal the following observations were noted;

Tank A was a 500 gallon single wall steel gasoline UST. The tank was covered with an intact tar wrap. An anode was attached properly to the tank.

Tank B was a 125 gallon single wall steel UST. The tank was uncovered unexpectedly during the excavation of contaminated soil. The tanks existence was unknown. The tank had corroded to a thin shell with multiple holes and had been partially crushed by the pressure of native backfill. A GasTech model 1314 Hydrocarbon Survey Instrument was used to monitor vapors in soil present within the tank interior. Vapor concentrations within the tank exceeded the instruments maximum vapor detection capacity of 10,000 ppm. Three bungs were noted on the tank. It is assumed these were the fill pipe, vent pipe and product line bung.

SAMPLING

Soil samples were collected from the tank pit wall vadose/saturated capillary zone as groundwater was encountered at 5' within the excavation. This was accomplished by the clearing of fill material and slough from the designated sample area. A backhoe bucket then obtained a sample from 12" to 18" into the native soil. The surface three inches of soil was removed from the backhoe bucket and a clean brass sleeve driven into the remaining soil. Soil was packed into the sleeve, then covered with aluminum foil, fitted with plastic caps, sealed with duct tape, labeled, and placed under chain of custody, in a refrigerator within the mobile lab analytical facility, for immediate analysis.

EXCAVATION OF CONTAMINATION

The excavation of contaminated soil was implemented using heavy earth moving equipment.

As the excavation proceeded soil samples were obtained and monitored for odor and hydrocarbon vapors using a GasTech model 1314 hydrocarbon survey instrument.

Upon collection, soil samples were analyzed immediately using an on-site Certified Hazardous Waste Analytical Laboratory.

Where hydrocarbon contamination was detected the excavation of soil was implemented using heavy earth moving equipment. A soil sample was collected and analyzed for TPH-G & BTEX. This process was repeated until soil samples representing each wall contained no detectable concentrations for TPH-G & BTEX.

STOCKPILE SAMPLING

Composite soil samples were collected in accordance with the Bay Area Air Quality Management District (BAAQMD) guidelines.

Approximately 80 cubic yards of contaminated soil was generated throughout the original tank pull and excavation.

Soil samples were obtained from four points within each 50 cubic yards of soil to be composited at a certified laboratory for one analysis.

STOCKPILE SAMPLING-continued

The composite soil samples were designated as sample AGC #1A-D, AGC #3A-D, AGC #7A-D, AGC #9A-D and sample AGC #10A-D.

Each sample was analyzed for total petroleum hydrocarbons as gasoline, benzene, toluene, ethylbenzene and total xylenes.

GROUNDWATER SAMPLING

Groundwater was present within the tank pit at a depth of five feet.

Twice the water was evacuated from the tank pit and allowed to recharge. Following the second recharge, on July 16, 1991, a sample of the groundwater was collected by lowering a closed one liter amber bottle beneath the groundwater surface, the bottle was then opened, allowed to fill, closed, and removed from the tank pit excavation. This process was repeated until three one-liter amber bottles and three 40-ml VOA vials were filled to a positive meniscus and capped. The bottles were placed on blue ice under chain of custody and transported to a Certified Hazardous Waste Analytical Laboratory. The groundwater sample was analyzed for Total Petroleum Hydrocarbons as Gasoline, benzene, toluene, ethylbenzene, and xylene.

The tank pit was then backfilled with clean imported fill material.

SAMPLE DATA

Matrix	AGC Sample #	Location	Depth
Soil	1A-C	Stockpile	2′
Soil	2	South Wall Capillary Beneath 125 gal. tank	4.5′
Soil	3A-C	Stockpile	2′
Soil	4	South Wall Capillary	4.5′

SAMPLE DATA-continued

Soil	5	North Wall Capillary	4.5′
Soil	6	East Wall Capillary	4.5′
Soil	7	West Wall Capillary	4.5′
Soil	8	South Wall Capillary	4.5′
Soil	9A-D	Stockpile	2′
Soil	10A-D	Stockpile	2′
Water	TPW-1	Tank Pit Water	8′

SAMPLE ANALYSIS

Sample AGC #1A-C to #10A-D and #TPW-1 were analyzed for Total Petroleum Hydrocarbons as Gasoline with benzene, toluene, ethylbenzene, and total xylenes (TPH-G, BTEX, EPA Method 5030/8020)

SOIL ANALYTICAL RESULTS

all AGC soil results are reported in ppm

Sample#	TPH-G	B	T	E	X
#1A-C	2,000	1.2	2.8	2.6	26
#2	960	3.5	0.10	3.0	13
#3A-C	250	0.52	0.45	0.65	5.4
#4	ND	0.011	ND	ND	0.005
#5	ND	ND	ND	ND	ND

SOIL ANALYTICAL RESULTS-continued

Sample#	TPH-G	B	T	E	X
all AGC soil results are reported in ppm					
#6	3.0	0.030	0.006	0.023	0.059
#7	ND	ND	ND	ND	ND
#8	ND	ND	ND	ND	ND
#9A-D	ND	ND	ND	ND	ND
#10A-D	11	0.13	0.48	0.29	1.9

GROUNDWATER ANALYTICAL RESULT
result reported in ppb

Sample#	TPH-G	B	T	E	X
#TPW-1	8,200	210	ND	270	1,200

ND = Not detectable amount at the lower detection limit

RECOMMENDATIONS

The State Water Resources Control Board Document, Leaking Underground Fuel Tank Field Manual (LUFT), supported by the San Francisco Regional Water Quality Control Board (SFRWQCB), defines acceptable limits and appropriate actions for addressing UST contamination.

The results of soil samples collected within the vadose/ saturated wall capillary zone representing each wall, indicate soil contamination has been removed and further excavation is not warranted at this time.

A monitoring well is present within two feet of the tank pit excavation. It is our recommendation that this well be used for future monitoring should an investigation of the well installation reports and local groundwater gradient prove the wells integrity and placement is sufficient.

REPORTAGE

Copies of the sampling report, chain of custody, and certified analytical report should be submitted to both the SFRWQCB and the Alameda County Department of Environmental Health.

The following addresses have been listed for your convenience:

Water Quality Control Board
San Francisco Bay Region
2101 Webster St. Rm. 500
Oakland Ca. 94612
ATTN: Fuel Leaks Division

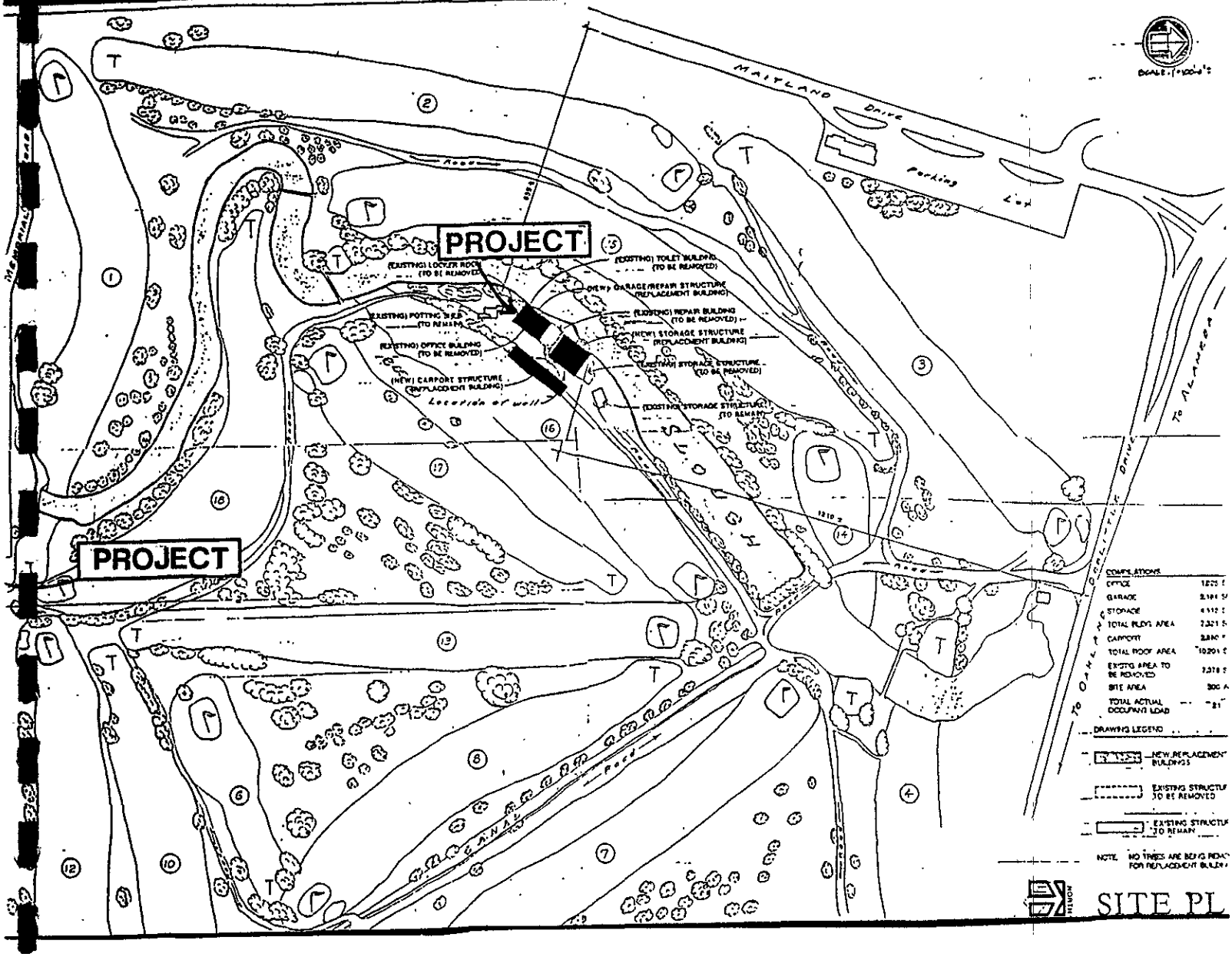
Alameda County Department of Environmental Health
Hazardous Materials Unit
80 Swan Way Rm.200
Oakland Ca. 94612
ATTN: Pamela Evans

It has been a pleasure working with you. If I may be of further assistance please contact me at (415) 363-2181.

Sincerely,
ZACCOR CORPORATION

Gary Zaccor
Project Manager

JILDING LOCATOR MAP SEE SHEET T1 & T4 FOR OTHER LOCATIONS



ENVIRONMENTAL
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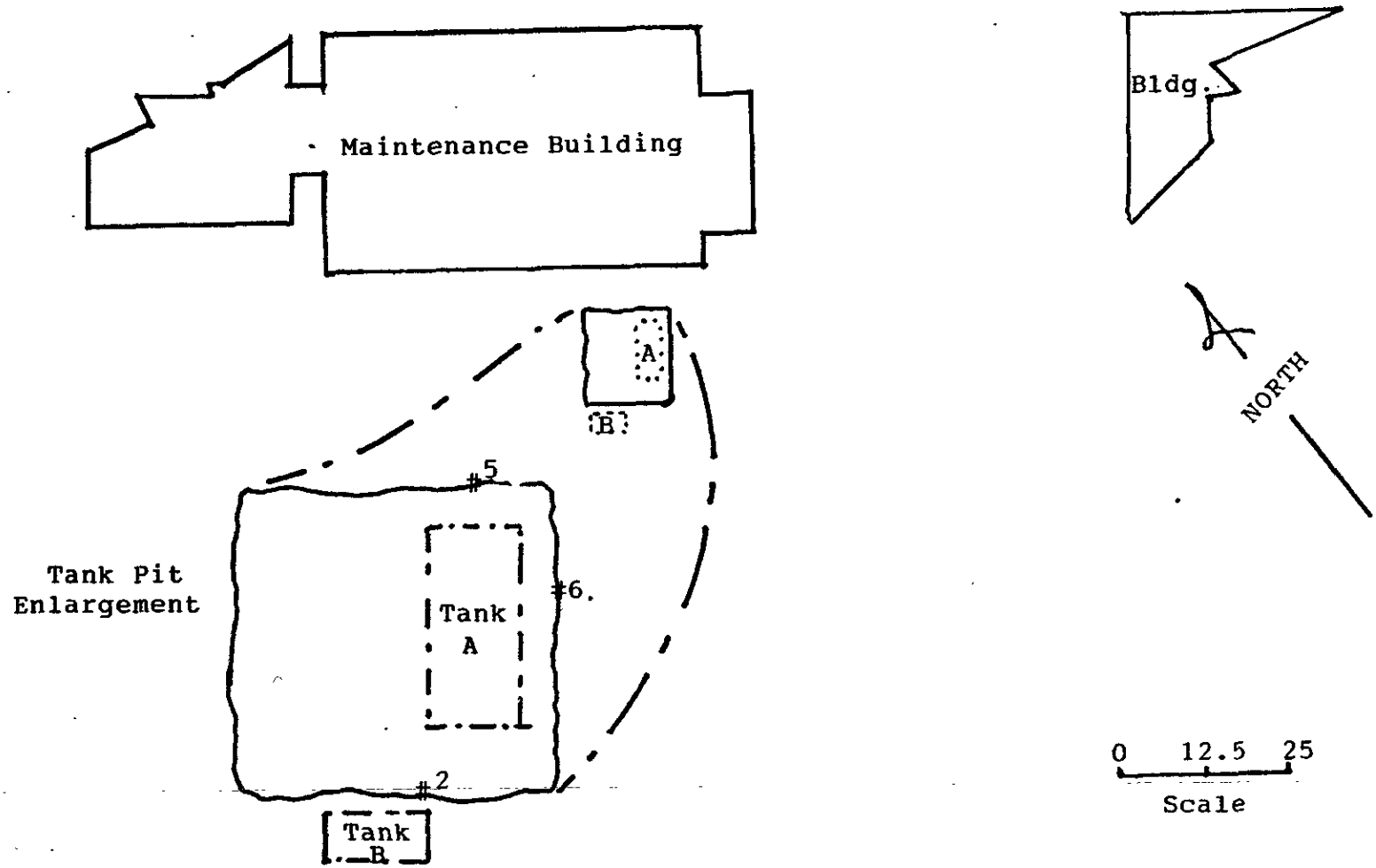
at: Alameda Golf Course, 1 Memorial Club House Drive, Alameda CA.

7/10/91



ENVIRONMENTAL
TECHNICAL
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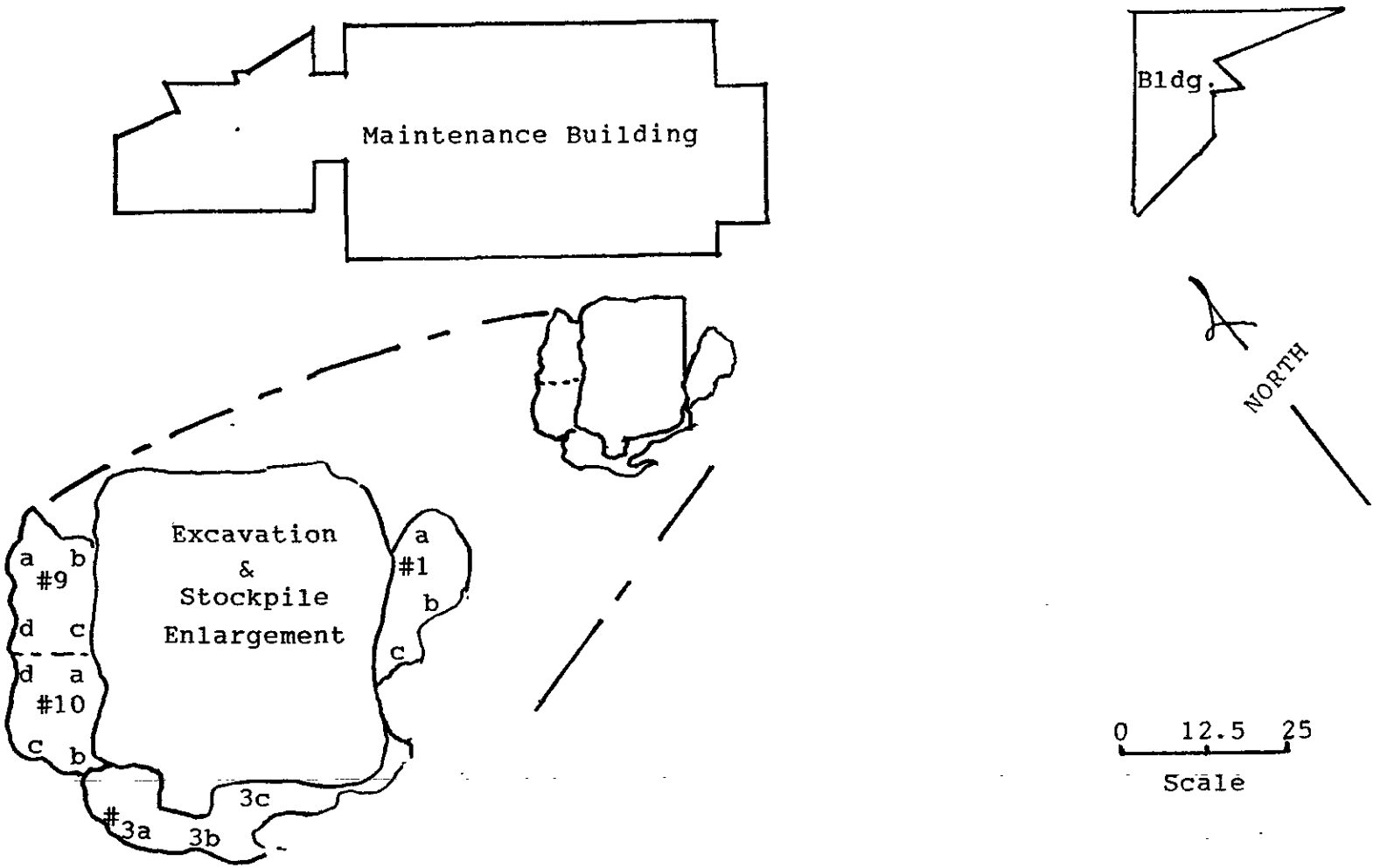
at: Alameda Golf Course, 1 Memorial Club House Drive, Alameda CA.

7/10/91



MOBILE CHEM LABS INC.

5021 Blum Road, Suite 3 • Martinez, CA 94553
Phone (415) 372-3700 • Fax (415) 372-6955

#1 Clubhouse Dr.\011780

Zaccor Corporation
791 Hamilton Avenue
Menlo Park, CA 94025
Attn: Gary Zaccor
Project Manager

Date Sampled: 07-10-91
Date Received: 07-10-91
Date Reported: 07-10-91

Sample Number	Sample Description
V071001	Alameda Golf Course #1 Clubhouse Drive Alameda, CA #1A-#1C SOIL

ANALYSIS

	Detection Limit	Sample Results
	ppm	ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	2,000
Benzene	0.005	1.2
Toluene	0.005	2.8
Xylenes	0.005	26
Ethylbenzene	0.005	2.6

QA/QC: Sample blank is none detected
Duplicate Deviation is 6.7%

Note: Analysis was performed using EPA methods 5030 and TPH LUFT with method 8020 used for BTX distinction.
(ppm) = (mg/kg)

MOBILE CHEM LABS

Ronald G. Evans
Lab Director

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#1 Clubhouse Dr.\011780

Zaccor Corporation
791 Hamilton Avenue
Menlo Park, CA 94025
Attn: Gary Zaccor
Project Manager

Date Sampled: 07-10-91
Date Received: 07-10-91
Date Reported: 07-10-91

Sample Number	Sample Description
V071002	Alameda Golf Course #1 Clubhouse Drive Alameda, CA #2 SOIL

ANALYSIS

	Detection Limit	Sample Results
	ppm	ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	960
Benzene	0.005	3.5
Toluene	0.005	0.10
Xylenes	0.005	13
Ethylbenzene	0.005	3.0

QA/QC: Sample blank is none detected

Note: Analysis was performed using EPA methods 5030 and TPH LUFT with method 8020 used for BTX distinction.
(ppm) = (mg/kg)

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Lab Director

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#1 Clubhouse Dr.\011780

Zaccor Corporation
791 Hamilton Avenue
Menlo Park, CA 94025
Attn: Gary Zaccor
Project Manager

Date Sampled: 07-10-91
Date Received: 07-10-91
Date Reported: 07-10-91

Sample Number	Sample Description
V071003	Alameda Golf Course #1 Clubhouse Drive Alameda, CA #3A,3B,3C SOIL

ANALYSIS

	Detection Limit	Sample Results
	ppm	ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	250
Benzene	0.005	0.52
Toluene	0.005	0.45
Xylenes	0.005	5.4
Ethylbenzene	0.005	0.65

QA/QC: Sample blank is none detected

Note: Analysis was performed using EPA methods 5030 and TPH LUFT with method 8020 used for BTX distinction.
(ppm) = (mg/kg)

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Ronald G. Evans
Lab Director

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#1 Clubhouse Dr.\011780

Zaccor Corporation
791 Hamilton Avenue
Menlo Park, CA 94025
Attn: Gary Zaccor
Project Manager

Date Sampled: 07-10-91
Date Received: 07-10-91
Date Reported: 07-10-91

Sample Number	Sample Description
V071004	Alameda Golf Course #1 Clubhouse Drive Alameda, CA #4 SOIL

ANALYSIS

	Detection Limit	Sample Results
	ppm	ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	<1.0
Benzene	0.005	0.011
Toluene	0.005	<0.005
Xylenes	0.005	0.005
Ethylbenzene	0.005	<0.005

QA/QC: Sample blank is none detected

Note: Analysis was performed using EPA methods 5030 and TPH LUFT with method 8020 used for BTX distinction.
(ppm) = (mg/kg)

MOBILE CHEM LABS

Ronald G. Evans
Lab Director

MOBILE CHEM LABS INC.

5021 Blum Road, Suite 3 • Martinez, CA 94553
Phone (415) 372-3700 • Fax (415) 372-6955

#1 Clubhouse Dr.\011780

Zaccor Corporation
791 Hamilton Avenue
Menlo Park, CA 94025
Attn: Gary Zaccor
Project Manager

Date Sampled: 07-10-91
Date Received: 07-10-91
Date Reported: 07-10-91

Sample Number	Sample Description
V071005	Alameda Golf Course #1 Clubhouse Drive Alameda, CA #5 SOIL

ANALYSIS

	Detection Limit	Sample Results
	ppm	ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	<1.0
Benzene	0.005	<0.005
Toluene	0.005	<0.005
Xylenes	0.005	<0.005
Ethylbenzene	0.005	<0.005

QA/QC: Sample blank is none detected

Note: Analysis was performed using EPA methods 5030 and TPH LUFT with method 8020 used for BTX distinction.
(ppm) = (mg/kg)

MOBILE CHEM LABS

Ronald G. Evans
Lab Director

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#1 Clubhouse Dr.\011780

Zaccor Corporation
791 Hamilton Avenue
Menlo Park, CA 94025
Attn: Gary Zaccor
Project Manager

Date Sampled: 07-10-91
Date Received: 07-10-91
Date Reported: 07-10-91

Sample Number	Sample Description
V071006	Alameda Golf Course #1 Clubhouse Drive Alameda, CA #6 SOIL

ANALYSIS

	Detection Limit	Sample Results
	ppm	ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	3.0
Benzene	0.005	0.030
Toluene	0.005	0.006
Xylenes	0.005	0.059
Ethylbenzene	0.005	0.023

QA/QC: Sample blank is none detected

Note: Analysis was performed using EPA methods 5030 and TPH LUFT with method 8020 used for BTX distinction.
(ppm) = (mg/kg)

MOBILE CHEM LABS

Ronald G. Evans
Lab Director

MOBILE CHEM LABS INC.

5021 Blum Road, Suite 3 • Martinez, CA 94553
Phone (415) 372-3700 • Fax (415) 372-6955

#1 Clubhouse Dr.\011780

Zaccor Corporation
791 Hamilton Avenue
Menlo Park, CA 94025
Attn: Gary Zaccor
Project Manager

Date Sampled: 07-10-91
Date Received: 07-10-91
Date Reported: 07-10-91

Sample Number	Sample Description
V071007	Alameda Golf Course #1 Clubhouse Drive Alameda, CA #7 SOIL

ANALYSIS

	Detection Limit	Sample Results
	ppm	ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	<1.0
Benzene	0.005	<0.005
Toluene	0.005	<0.005
Xylenes	0.005	<0.005
Ethylbenzene	0.005	<0.005

QA/QC: Sample blank is none detected
Spike Recovery is 90%

Note: Analysis was performed using EPA methods 5030 and TPH LUFT with method 8020 used for BTX distinction.
(ppm) = (mg/kg)

MOBILE CHEM LABS

Ronald G. Evans
Lab Director

MOBILE CHEM LABS INC.

5021 Blum Road, Suite 3 • Martinez, CA 94553
Phone (415) 372-3700 • Fax (415) 372-6955

#1 Clubhouse Dr.\011780

Zaccor Corporation
791 Hamilton Avenue
Menlo Park, CA 94025
Attn: Gary Zaccor
Project Manager

Date Sampled: 07-10-91
Date Received: 07-10-91
Date Reported: 07-10-91

Sample Number	Sample Description
V071008	Alameda Golf Course #1 Clubhouse Drive Alameda, CA #8 SOIL

ANALYSIS

	Detection Limit	Sample Results
	ppm	ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	<1.0
Benzene	0.005	<0.005
Toluene	0.005	<0.005
Xylenes	0.005	<0.005
Ethylbenzene	0.005	<0.005

QA/QC: Sample blank is none detected

Note: Analysis was performed using EPA methods 5030 and TPH LUFT with method 8020 used for BTX distinction.
(ppm) = (mg/kg)

MOBILE CHEM LABS

Ronald G. Evans
Lab Director

MOBILE CHEM LABS INC.

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Phone (415) 372-3700 • Fax (415) 372-6955

#1 Clubhouse Dr.\011780

Zaccor Corporation
791 Hamilton Avenue
Menlo Park, CA 94025
Attn: Gary Zaccor
Project Manager

Date Sampled: 07-10-91
Date Received: 07-10-91
Date Reported: 07-10-91

Sample Number	Sample Description
V071009	Alameda Golf Course #1 Clubhouse Drive Alameda, CA #9A-9D SOIL

ANALYSIS

	Detection Limit	Sample Results
	ppm	ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	<1.0
Benzene	0.005	<0.005
Toluene	0.005	<0.005
Xylenes	0.005	<0.005
Ethylbenzene	0.005	<0.005

QA/QC: Sample blank is none detected

Note: Analysis was performed using EPA methods 5030 and TPH LUFT with method 8020 used for BTX distinction.
(ppm) = (mg/kg)

MOBILE CHEM LABS

Ronald G. Evans
Lab Director

MOBILE CHEM LABS INC.

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Phone (415) 372-3700 • Fax (415) 372-6955

#1 Clubhouse Dr.\011780

Zaccor Corporation
791 Hamilton Avenue
Menlo Park, CA 94025
Attn: Gary Zaccor
Project Manager

Date Sampled: 07-10-91
Date Received: 07-10-91
Date Reported: 07-11-91

Sample Number	Sample Description
V071011	Alameda Golf Course #1 Clubhouse Drive Alameda, CA #10A-10D SOIL

ANALYSIS

	Detection Limit	Sample Results
	ppm	ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	11
Benzene	0.005	0.13
Toluene	0.005	0.48
Xylenes	0.005	1.9
Ethylbenzene	0.005	0.29

QA/QC: Sample blank is none detected
Duplicate Deviation is 0.7%

Note: Analysis was performed using EPA methods 5030 and TPH LUFT with method 8020 used for BTX distinction.
(ppm) = (mg/kg)

MOBILE CHEM LABS

Ronald G. Evans
Lab Director

ANAMETRIX INC
Environmental & Analytical Chemistry
1961 Concourse Drive Suite E San Jose CA 95131
(408) 432-8192 • Fax (408) 432-8198

REPORT

MR. GARY ZACCOR
ZACCOR CORP.
791 HAMILTON AVE.
MENLO PARK, CA 94025

Workorder # : 9107150
Date Received : 07/16/91
Project ID : AG COURSE
Purchase Order: N/A

The following samples were received at Anametrix, Inc. for analysis :

ANAMETRIX ID	CLIENT SAMPLE ID
9107150- 1	TPW-1

This report consists of 3 pages not including the cover letter, and is organized in sections according to the specific Anametrix laboratory group or section which performed the analysis(es) and generated the data. The Report Summary that precedes each section will help you determine which Anametrix group is responsible for those test results, and will bear the signatures of the department supervisor and the chemist who have reviewed the analytical data. Please refer all questions to the department supervisor who signed the form.

Anametrix is certified by the California Department of Health Services (DHS) to perform environmental testing under Certificate Number 1234. A detailed list of the approved fields of testing can be obtained by calling our office, or the DHS Environmental Laboratory Accreditation Program at (415)540-2800.

If you have any further questions or comments on this report, please give us a call as soon as possible. Thank you for using Anametrix.

Sarah Schoen, Ph.D.
Laboratory Manager

7-30-91
Date

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MR. GARY ZACCOR
ZACCOR CORP.
791 HAMILTON AVE.
MENLO PARK, CA 94025

Workorder # : 9107150
Date Received : 07/16/91
Project ID : AG COURSE
Purchase Order: N/A
Department : GC
Sub-Department: TPH

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9107150- 1	TPW-1	WATER	07/16/91	TPHg/BTEX

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MR. GARY ZACCOR
ZACCOR CORP.
791 HAMILTON AVE.
MENLO PARK, CA 94025

Workorder # : 9107150
Date Received : 07/16/91
Project ID : AG COURSE
Purchase Order: N/A
Department : GC
Sub-Department: TPH

QA/QC SUMMARY :

- No QA/QC problems encountered for this sample.

Department Supervisor — Date 7/24/91

Chemist — Date 7/29/91

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS
(GASOLINE WITH BTEX)
ANAMETRIX, INC. - (408) 432-8192

Anametrix W.O.: 9107150
Matrix : WATER
Date Sampled : 07/16/91

Project Number : AG COURSE
Date Released : 07/29/91

COMPOUNDS	Reporting Limit (ug/L)	Sample I.D.# TPW-1 -01	Sample I.D.# 04B0723A BLANK
Benzene	0.5	210	ND
Toluene	0.5	ND	ND
Ethylbenzene	0.5	270	ND
Total Xylenes	0.5	1200	ND
TPH as Gasoline	50	8200	ND
% Surrogate Recovery		100%	91%
Instrument I.D.		HP4	HP4
Date Analyzed		07/23/91	07/23/91
RLMF		50	1

ND - Not detected at or above the practical quantitation limit for the method.
TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using EPA Method 5030.
BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA Method 8020.
RLMF - Reporting Limit Multiplication Factor.
Anametrix control limits for surrogate p-Bromofluorobenzene recovery are 53-147%.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Analyst — Date 7/25/91

Supervisor — Date 7/29/91

MOBILE CHEM LABS INC.
1678 Reliez Valley Road
Lafayette, CA 94549 • (415) 945-1266

CHAIN OF CUSTODY

SAMPLER: Helen Mawhinney (signature)
DATE/TIME OF COLLECTION: July 10-91
TURNAROUND TIME: IMMEDIATE

SAMPLE DESCRIPTION AND PROJECT NUMBER: ALAMEDA Golf Course (AGC) Maintainance Yard

V071

SAMPLE #	ANALYSIS		GRAB OR COMP.	NUMBER OF CONTAINERS	SOIL/ WATER
A GC-001 #1A - #1C	TPH-G + BTEX	10:40	Comp	3	Soil
AGC-002 #2	"	11:02	Grab	1	Soil
003 #3A 3B 3C	"	11:55	Comp	3	Soil
004 #4	"	11:55	Grab	1	Soil
005 #5	"	12:55	Grab	1	Soil
006 #6	"	2:25	Grab	1	Soil
007 #7	"	2:35	Grab	1	Soil
008 #8	"	2:47	Grab	1	Soil

RELINQUISHED BY*	TIME/DATE	RECEIVED BY*	TIME/DATE
1. Helen Mawhinney	16:04 July 10, 91		
2.			
3.			
4.			

* STATE AFFILIATION NEXT TO SIGNATURE

REMARKS:

MOBILE CHEM LABS INC.
5011 BLUM ROAD, Suite #1
MARTINEZ, CA. 94553
Phone: 415-372-3700

CHAIN OF CUSTODY

SAMPLER: Helen Mawhinney (signature)
DATE/TIME OF COLLECTION: July 10-91 4:03
TURNAROUND TIME: Immediate
SAMPLE DESCRIPTION AND PROJECT NUMBER: Alameda Golf Course

SAMPLE #	ANALYSIS	GRAB OR COMP.	NUMBER OF CONTAINERS	SOIL/ WATER
1071-004 AGC #9A-9D	TPH-G, BTEX 16:00	Comp	4	Soil
AGC #10A-10D 011	"	Comp	4	Soil (48HR)

RELINQUISHED BY*	TIME/DATE	RECEIVED BY*	TIME/DATE
1. Helen Mawhinney	16:04 July 10-91	Jochavoice	July 10 1500
2.			
3.			
4.			

* STATE AFFILIATION NEXT TO SIGNATURE

REMARKS:

10/39 (2) 10/7 1515

CLIENT CHAIN-OF-CUSTODY RECORD

9107150

PROJECT NUMBER	PROJECT NAME
AGCourse	Golf Course

Send Report Attention of:	Report Due	Verbal Due
GARY ZACCOR	7/30/91	/ /

Sample Number	Date	Time	Comp	Grab	Station Location	Number of Cntnrs	Type of Containers	Type of Analysis: TPH-G BTEX	Condition of Samples	Initial
TPW-1	7/16/91	1235		X	Water in Trench Pit and Excavation	3 VOAs 1 Sterile	—	✓		
						1	→	HOLD	(a) 3 VOAs HCl preserved	
									(b) 9mm (c) 6mm (d) 4mm	
									(e) Drum Sample from Sample	

Relinquished by:(Signature)	Date/Time	Received by: (Signature)	Date/Time
Kelly Montevirgen	13:25 7/16/91	Ron Scanlon	7/16/91 10:18
Relinquished by:(Signature)	Date/Time	Received by: (Signature)	Date/Time
Relinquished by:(Signature)	Date/Time	Received by: (Signature)	Date/Time

Remarks: Routine
May call for additional analysis

SAMPLE DISPOSAL:
Return to Client [____]
Soil Disposal by Anametrix ($5.00 per container) [____]

COMPANY: ZACCOR CORPORATION
ADDRESS: 791 [illegible] Creek, Menlo Park, Ca
PHONE : 415 363-2191 FAX :

5025

APPENDIX C

Soil Boring Logs

MONITORING WELL BORING LOGS

ENVIRONMENTAL TECHNICAL SERVICES
for: ZACCOR CORPORATION

AT:
ALAMEDA GOLF COURSE
1 MEMORIAL CLUB HOUSE
ALAMEDA, CALIFORNIA

MW-1

Drilling Method : Augers

Sample Method : Split Spoon

Project Manager: Gary Zaccor

8/20/92

DEPTH	SAMPLE COLLECTED: INT. SAMPLE#	Soil Description	USCS	LOG	BLOW COUNTS	WELL CONSTRUCTION	
		A/C & Baserock				Grout& 3% bentonite	Locked Christy Box
	MW-4 4'-4.5'	BAY MUD, dark grey strong H2S odor. Cuttings mioist at 3', saturated at 5' and below. No fuel odor	OH		4, 2, 2	1'-2.5' Bentonite pellet	0-2.5' 2"Blank PVC
5'							
					4, 6, 6	2.5'-10' Lonestar # 2/12 sand	2.5'-10' 2" Slot 0.010" PVC
10'		Mussel Shells Total Depth 10'					
15'							
20'							
25'							
30'							

MONITORING WELL BORING LOGS

ENVIRONMENTAL TECHNICAL SERVICES
for: ZACCOR CORPORATION

Roger Greensfelder PhD. CA.RG3011

AT:
ALAMEDA GOLF COURSE
1 MEMORIAL CLUB HOUSE
ALAMEDA, CALIFORNIA

MW-2

Drilling Method : Augers

Sample Method : Split Spoon

Project Manager: Gary Zaccor

8/20/92

DEPTH	SAMPLE COLLECTED: INT. SAMPLE#	Soil Description	USCS	LOG	BLOW COUNTS	WELL CONSTRUCTION
--		A/C & baserock				0-1' Grout 1'-2.5 Bento-nite Pellet 2.5-10 Lone-star #2/12 sand
		BAY MUD, mixed with sand and gravel fill, moist. No fuel odor.	OH & GC			Locked Well Cap 0-2.5' 2" PVC 0.020" Slot
5'	MW-3 4'-4.5'	BAY MUD, saturated. No fuel odor.	OH		3, 3, 3	
10'	MW-3	Total Depth 10'			4, 3, 4	
15'						
20'						
25'						
30'						

MONITORING WELL BORING LOGS

ENVIRONMENTAL TECHNICAL SERVICES
for: ZACCOR CORPORATION

Roger Greensfelder PhD. CA.RG3011

AT:
ALAMEDA GOLF COURSE
1 MEMORIAL CLUB HOUSE
ALAMEDA, CALIFORNIA

MW-3

Drilling Method : Augers

Sample Method : Split Spoon

Project Manager: Gary Zaccor

8/20/92

DEPTH	SAMPLE COLLECTED: INT. SAMPLE#	Soil Description	USCS	LOG	BLOW COUNTS	WELL CONSTRUCTION
--		A/C & baserock				0-1' Grout 1'-2.5 Bentonite Pellet 2.5-10 Lonestar #2/12 sand
-		BAY MUD,mixed with sand and gravel fill, moist. No fuel odor.	OH & GC			Locked Well Cap 0-2.5' 2" PVC 0.020" Slot
5'	MW-3 4'-4.5'	BAY MUD, saturated. No fuel odor.	OH		3, 3, 3	
10'	MW-3	Total Depth 10'			4, 3, 4	
15'						
20'						
25'						
30'						

MONITORING WELL BORING LOGS

ENVIRONMENTAL TECHNICAL SERVICES
for: ZACCOR CORPORATION

Roger Greensfelder PhD. CA.RG3011

AT:
ALAMEDA GOLF COURSE
1 MEMORIAL CLUB HOUSE
ALAMEDA, CALIFORNIA

MW-3

Drilling Method : Augers

Sample Method : Split Spoon

Project Manager: Gary Zaccor

8/20/92

DEPTH	SAMPLE COLLECTED: INT. SAMPLE#	Soil Description	USCS	LOG	BLOW COUNTS	WELL CONSTRUCTION
--		A/C & baserock				0-1' Grout 1'-2.5 Bento-nite Pellet 2.5-10 Lone-star #2/12 sand
-		BAY MUD,mixed with sand and gravel fill, moist. No fuel odor.	OH & GC			Locked Well Cap 0-2.5' 2" PVC 0.020" Slot
5'	MW-3 4'-4.5'	BAY MUD, saturated. No fuel odor.	OH		3, 3, 3	
10'	MW-3	Total Depth 10'			4, 3, 4	
15'						
20'						
25'						
30'						

APPENDIX D

Groundwater Development Report

MONITORING WELL SAMPLING DATA/ MW-1

Project Name:	Well#
ALAMEDA GOLF COURSE	MW-1

Date: September 18, 1992

Name:	Time Began:
Mawhinney	11:27

DEPTH OF WELL(ft.)	DEPTH TO WATER(ft.)	WELL DIAM.
9.77	5.36	2"

Time	Gallons	Salinity	pH	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	Purging Equip.	Sampling Equip.
10 gallons	Stainless Steel Bailer	Stainless Steel Bailer

Depth to Water Upon Completion of Sampling

Not measured. Slow Recharge

Sheen	Floating Product	Sample Color	Odor
no	no	grey	no

Sediment/Foreign Matter: very little silt

Sample ID#	Analysis	Laboratory
MW-1	TPHg, BTEX, Total Lead	S & W Lab.

Sample Containers
3/ 40-ml VOAs, 2 Liters

MONITORING WELL SAMPLING DATA/ MW-2

Project Name:	Well#
ALAMEDA GOLF COURSE	MW-2

Date: September 18, 1992

Name:	Time Began:
Mawhinney	12:19

DEPTH OF WELL(ft.)	DEPTH TO WATER(ft.)	WELL DIAM.
9.77	1.89	2"

Time	Gallons	Salinity	pH	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	Purging Equip.	Sampling Equip.
10 gallons	Stainless Steel Bailer	Stainless Steel Bailer

Depth to Water Upon Completion of Sampling

Not measure. Slow Recharge

Sheen	Floating Product	Sample Color	Odor
no	no	grey	no

Sediment/Foreign Matter: silt

Sample ID#	Analysis	Laboratory
MW-2	TPHg, BTEX & Total Lead	S & W Lab.

Sample Containers
3/ 40-ml VOAs, 2 Liters

MONITORING WELL SAMPLING DATA/ MW-3

Project Name:	Well#
ALAMEDA GOLF COURSE	MW-3

Date: September 18, 1992

Name:	Time Began:
Mawhinney	1:29

DEPTH OF WELL(ft.)	DEPTH TO WATER(ft.)	WELL DIAM.
9.71	2.28	2"

Time	Gallons	Salinity	pH	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 Evacuated	Purging Equip.	Sampling Equip.
10 gallons	Stainless Steel Bailer	Stainless Steel Bailer

Depth to Water Upon Completion of Sampling

Not measure. Slow Recharge

Sheen	Floating Product	Sample Color	Odor
no	no	grey	no

Sediment/Foreign Matter: silt

Sample ID#	Analysis	Laboratory
MW-3	TPHg, BTEX, TOTAL LEAD	S & W Lab.

Sample Containers
3/ 40-ml VOAs

APPENDIX E

Soil Analytical Results

MOBILE CHEM LABS INC.

5021 Blum Road, Suite 3 • Martinez, CA 94553
Phone (415) 372-3700 • Fax (415) 372-6955

AGC-MW\1428\012028

Zaccor Corporation
791 Hamilton Avenue
Menlo Park, CA 94025
Attn: Gary Zaccor
Project Manager

Date Sampled: 08-20-92
Date Received: 08-20-92
Date Analyzed: 08-31-92

Sample Number	Sample Description
082150	Project # AGC-MW Alameda Golf Course Club House Drive MW-1 4'-4.5' SOIL

ANALYSIS

	Detection Limit	Sample Results
	ppm	ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	<1.0
Benzene	0.005	<0.005
Toluene	0.005	<0.005
Xylenes	0.005	<0.005
Ethylbenzene	0.005	<0.005

QA/QC: Sample blank is none detected

Note: Analysis was performed using EPA methods 5030 and TPH LUFT with method 8020 used for BTX distinction.
(ppm) = (mg/kg)

MOBILE CHEM LABS

Ronald G. Evans
Lab Director

MOBILE CHEM LABS INC.

5021 Blum Road, Suite 3 • Martinez, CA 94553
Phone (415) 372-3700 • Fax (415) 372-6955

AGC-MW\1428\012020

Zaccor Corporation
791 Hamilton Avenue
Menlo Park, CA 94025
Attn: Gary Zaccor
Project Manager

Date Sampled: 08-20-92
Date Received: 08-20-92
Date Analyzed: 08-31-92

Sample Number	Sample Description
082151	Project # AGC-MW Alameda Golf Course Club House Drive MW-2 4'-4.5' - SOIL

ANALYSIS

	Detection Limit	Sample Results
	ppm	ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	<1.0
Benzene	0.005	<0.005
Toluene	0.005	<0.005
Xylenes	0.005	<0.005
Ethylbenzene	0.005	<0.005

QA/QC: Sample blank is none detected

Note: Analysis was performed using EPA methods 5030 and TPH LUFT with method 8020 used for BTX distinction.
(ppm) = (mg/kg)

MOBILE CHEM LABS

Ronald G. Evans
Lab Director

MOBILE CHEM LABS INC.

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Phone (415) 372-3700 • Fax (415) 372-6955

AGC-MW\1428\012028

Zaccor Corporation
791 Hamilton Avenue
Menlo Park, CA 94025
Attn: Gary Zaccor
Project Manager

Date Sampled: 08-20-92
Date Received: 08-20-92
Date Analyzed: 08-31-92

Sample Number	Sample Description
082152	Project # AGC-MW Alameda Golf Course Club House Drive MW-3 4.5'-5.0' SOIL

ANALYSIS

	Detection Limit	Sample Results
	ppm	ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	<1.0
Benzene	0.005	<0.005
Toluene	0.005	<0.005
Xylenes	0.005	<0.005
Ethylbenzene	0.005	<0.005

QA/QC: Sample blank is none detected

Note: Analysis was performed using EPA methods 5030 and TPH LUFT with method 8020 used for BTX distinction.
(ppm) = (mg/kg)

MOBILE CHEM LABS

Ronald G. Evans
Lab Director

MOBILE CHEM LABS INC.

5021 Blum Road, Suite 3 • Martinez, CA 94553
Phone (415) 372-3700 • Fax (415) 372-6955

AGC-MW\1428\012028

Zaccor Corporation
791 Hamilton Avenue
Menlo Park, CA 94025
Attn: Gary Zaccor
Project Manager

Date Sampled: 08-20-92
Date Received: 08-20-92
Date Analyzed: 08-31-92

Sample Number	Sample Description
082153	Project # AGC-MW Alameda Golf Course Club House Drive SB-1 4.5'-5.0' SOIL

ANALYSIS

	Detection Limit	Sample Results
	ppm	ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	1.8
Benzene	0.005	<0.005
Toluene	0.005	<0.005
Xylenes	0.005	0.077
Ethylbenzene	0.005	0.023

QA/QC: Sample blank is none detected

Note: Analysis was performed using EPA methods 5030 and TPH LUFT with method 8020 used for BTX distinction.
(ppm) = (mg/kg)

MOBILE CHEM LABS

Ronald G. Evans
Lab Director

082150 ENVIRONMENTAL TECHNICAL SERVICES. CUTY

CHAIN OF CUSTODY RECORD 2 week

PROJECT NO.: ACC-MW | SITE NAME & ADDRESS: Alameda Golf Course, Club House Dr. Alameda, Ca.

WITNESSING AGENCY / INSPECTOR NAME / DATE: Juliett Shuey / Alameda Co. Env. Health Dept.

ID NO.	DATE	TIME	SOIL	WATER	SAMPLING LOCATION	TPH (Gasoline) & B, T, X & E	TPH (Diesel) T	Total Oil & Grease	Halogenated HC's	B, T, X & E	Heavy Metals		REMARKS
50 MW-1	8/20/92	9:21	✓		4'-4.5'	✓							
51 MW-2	8/20/92	10:50	✓		4'-4.5'	✓							
52 MW-3	8/20/92	1:47			4.5'-5.0'	✓							
53 SB-1	8/20/92	1:14	✓		4.5'-5.0'	✓							

ANALYSES REQUESTED (1)

(1) See attached "Table 2" for specific analysis method.

Relinquished by: (Signature) Kelley Manderscheid	Date/Time 8/20/92 5:42	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Rec'd for Laboratory by: (Signature)

The following MUST BE completed by the laboratory accepting samples for analysis:

1. Have all samples received for analysis been stored in ice? _____
2. Will samples remain refrigerated until analyzed? _____
3. Did any samples received for analysis have head space? _____
4. Were samples in appropriate containers and properly packaged? _____

Signature _____ Title _____ Date _____

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P.05

APPENDIX F

Groundwater Analytical Results

S&W
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

Client: Environmental Tech. Services
1548 Jacob Ave.
San Jose CA 95118

Report Date: 09/23/92

Sample Site: Alameda Golf Course
Alameda, CA

MW ALAM Golf

Date Received: 09/05/92

Analysis Requested: Total Hydrocarbons - Gas
BTEX

Procedure: EPA 5030
EPA 602

Date Analyzed: 09/05/92

S&W Ref. #	Client Ref. #	Matrix/Analysis	Concentration	Detection Limit
2492-ET2-C	MW-1	Water/TPH-G	*	50 ppb
2492-ET2-C	MW-1	Water/BTEX		
		Benzene	*	0.5 ppb
		Toluene	*	0.5 ppb
		Ethylbenzene	*	0.5 ppb
		Xylenes	*	0.5 ppb
2492-ET2-D	MW-2	Water/TPH-G	*	50 ppb
2492-ET2-D	MW-2	Water/BTEX		
		Benzene	*	0.5 ppb
		Toluene	*	0.5 ppb
		Ethylbenzene	*	0.5 ppb
		Xylenes	*	0.5 ppb
2492-ET2-E	MW-3	Water/TPH-G	*	50 ppb
2492-ET2-E	MW-3	Water/BTEX		
		Benzene	*	0.5 ppb
		Toluene	*	0.5 ppb
		Ethylbenzene	*	0.5 ppb
		Xylenes	*	0.5 ppb

* No detectable amount @ detection limit

Analyst Signature

S&W
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

Client
Environmental Tech. Services
1548 Jacob Ave. e. Rd.
San Jose, CA 95118

Report Date
10-01-92

Sample Site
Alameda Golf Course
Alameda, CA

Date Received
9-17-92

Analysis Requested
Heavy Metals

Procedure
EPA-6010/7000

Date Analyzed
9-21-92

S&W Ref. #	Client Ref. #	Matrix/Analysis	Concentration	Detection Limit
2492-ET2 C	MW-1	Total Lead	< 5.0	ppb
D	MW-2	Total Lead	6.3	ppb
E	MW-3	Total Lead	< 5.0	ppb

MDL- 5.00 ppb

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

Analyst Signature

1/87

S&W
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

Client	Report Date
Environmental Tech. Services 1548 Jacob Ave. e. Rd. San Jose, CA 95118	10-01-92

Sample Site	Date Received
Alameda Golf Course Alameda, CA	9-17-92

Analysis Requested	Procedure	Date Analyzed
Heavy Metals	EPA-6010/7000	9-21-92

S&W Ref. #	Client Ref. #	Matrix/Analysis	Concentration	Detection Limit
2432-ET2	C	MW-1	Total Lead	< 5.0 ppb
	D	MW-2	Total Lead	6.3 ppb
	E	MW-3	Total Lead	< 5.0 ppb

MDL- 5.00 ppb

This analysis performed for S & W Laboratory by West Laboratory

Davis, California

Analyst Signature

1/87

ENVIRONMENTAL TECHNICAL SERVICES

CHAIN OF CUSTODY RECORD

PROJECT NO. MW AIC018 | SITE NAME & ADDRESS Alameda Golf Course, Clubhouse Drive, Alameda, Ca

WITNESSING AGENCY / INSPECTOR NAME / DATE Juliette Shin/Alameda Co Env Hlth Dept

ID.NO.	DATE	TIME	SOIL	WATER	SAMPLING LOCATION	TPH (Gasoline) & B,T,X,& E	TPH (Diesel) & B,T,X, & E	Total Oil & Grease	Halogenated HC's	B,T,X & E	Heavy Metals	TOTAL LEAD	REMARKS
MW-1				✓		✓						✓	
MW-2				✓		✓						✓	
MW-3				✓		✓						✓	

ANALYSES REQUESTED (1)

(1) See attached "Table 2" for specific analysis method.

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Kelley Mawhinney	9-2-92 1:42	
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Rec'd for Laboratory by: (Signature)

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Signature | Title | Date

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