

HAGEMAN-AGUIAR, INC.

*Underground Contamination Investigations
Groundwater Consultants, Environmental Engineering*

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REPORT OF SUBSURFACE INVESTIGATION

Willow Park Golf Course
17007 Redwood Road
Castro Valley, CA

June 21, 1991

61-11111 93 NOV 16

I. INTRODUCTION

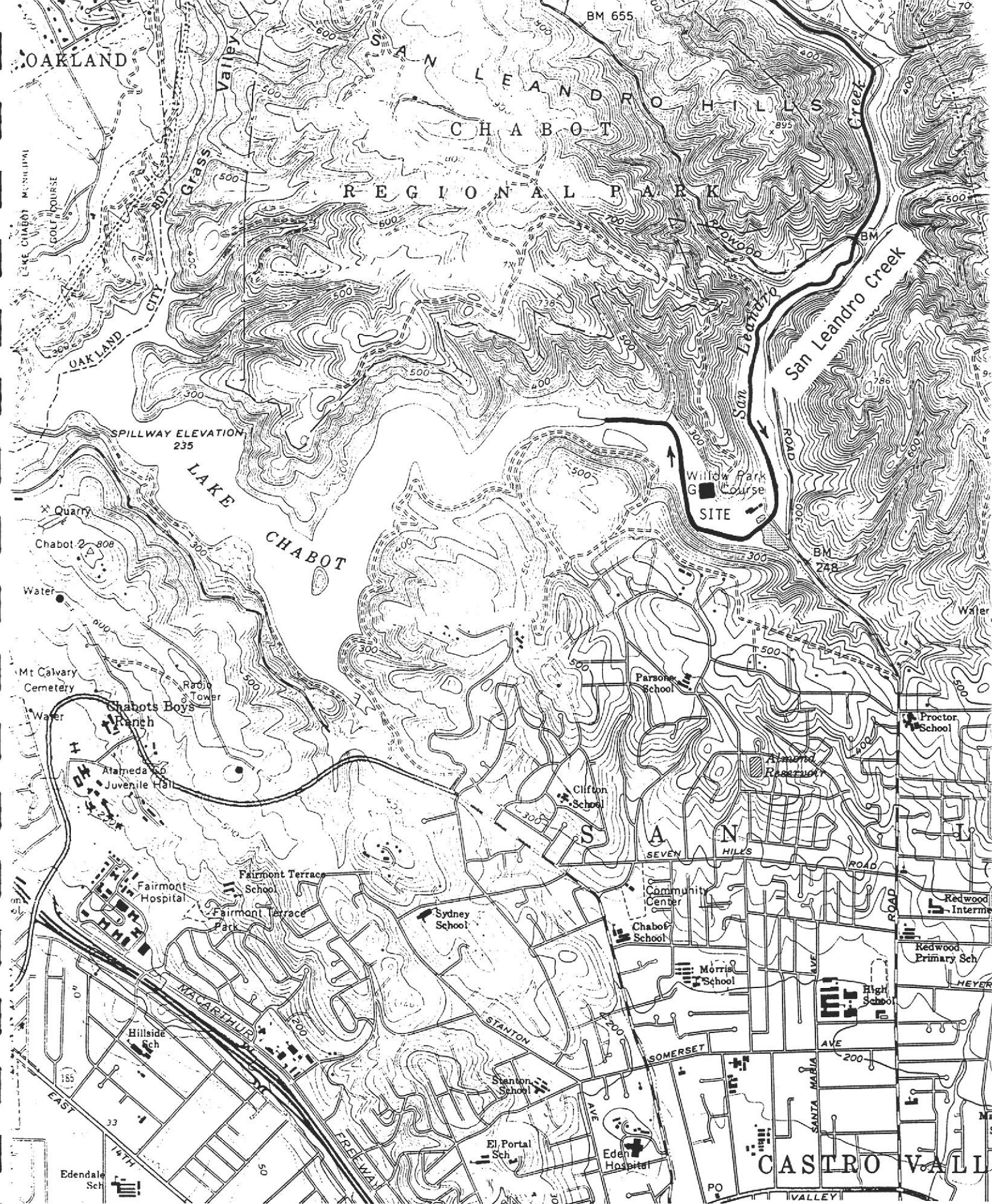
The site location is the maintenance area at the Willow Park Golf Course in Castro Valley, California. The location of the site is shown in Figure 1. In conjunction with this operation, the site has historically operated one underground 1,000-gallon Gasoline storage tank for a number of years.

On August 28, 1990, the underground storage tank was removed. The tank removal was conducted by K.T.W. & Associates, Fremont, California, under permit from the Alameda County Environmental Health Department and the City of Castro Valley Fire Department.

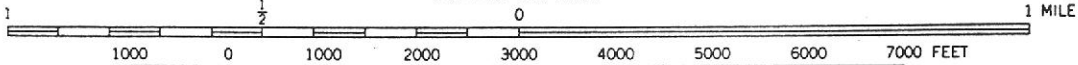
The tank closure report by K.T.W. & Associates is included in Attachment A. The closure report documents the fact that upon removal, the structural integrity of the tank was found to be sound. The tank was wrapped, and was observed to contain no corrosion holes. Very slight hydrocarbon odor was observed while removing the overburden surrounding the fill pipe, and the overburden material contained some discoloration. The backfill material consisted of native soil with large quantities of shale.

The current subsurface investigation involved the installation of one groundwater monitoring well as the result of very minor subsurface Gasoline contamination (up to 35 ppm) found at the time the one underground storage tank was removed from this site.

Following the closure of the underground storage tank, representatives from the Alameda County Health Department, the East Bay Municipal Utilities District, and the Regional



SCALE 1:24000



CONTOUR INTERVAL 20 FEET

FIGURE 1.
 Site Location Map.

Water Quality Control Board met on February 20, 1991, in order to reach an agreement as to the scope of a subsurface investigation at the site. Included in Attachment A is the letter from the law offices of Randick and O'Dea, dated February 22, 1991, which summarizes the agreed upon plan.

The plan is as follows:

Willow Park's management will engage the service of an environmental consulting firm which will determine the optimal location for the installation of one groundwater monitoring well in the assumed down-gradient location from the previous underground storage tank location. The well is to be sited where its installation will be the least impeded by the bedrock formations that underlie the area. The well will be drilled to whatever depth is necessary to reach groundwater or to a maximum of fifty (50) feet if no groundwater is encountered. Soil samples will be taken every 5 feet, if possible. If groundwater is not encountered and the soil samples are either totally devoid of petroleum hydrocarbons or contain such low levels as to make migration to groundwater implausible, it will be assumed that, due to the low level of source contamination initially discovered and the fact that the alleged source has been removed, groundwater contamination is extremely unlikely and no further work will be required at the site by Alameda County or the Board.

If groundwater is encountered within fifty (50) feet of ground surface, the well will be developed and sampled. Regardless of the result of the initial analysis, the well will be retested in ninety (90) days.

If the results of the two groundwater analyses reveal no actionable levels of petroleum hydrocarbons and no potential source of later contamination is suggested by the soil samples taken during the well installation, no further work will be required and the well will be destroyed in the prescribed manner.

A map of the site is shown in Figure 2. This map shows the layout of the facility, along with the location of the previous tank excavation.

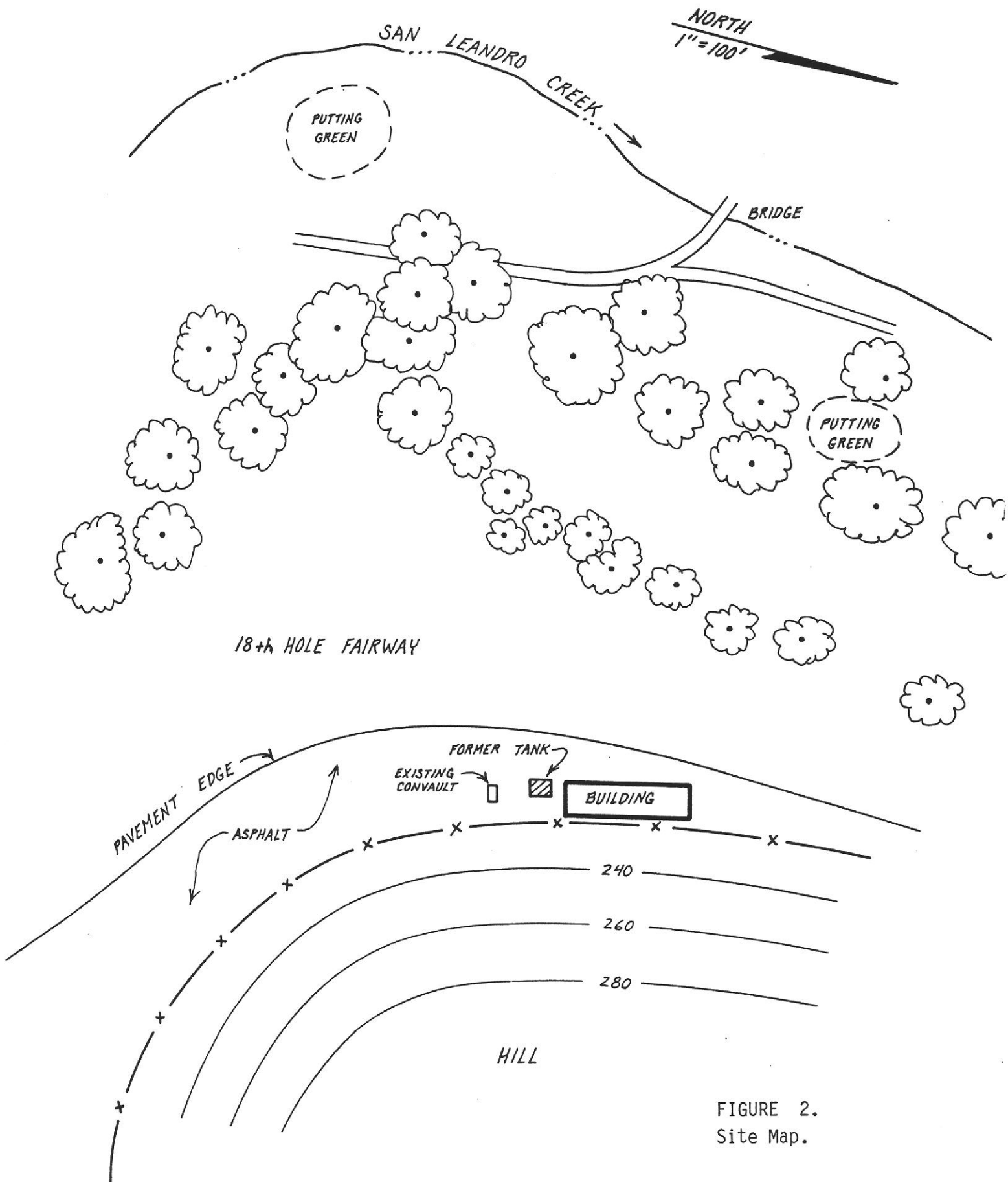


FIGURE 2.
Site Map.

II. SITE DESCRIPTION

Vicinity Description and Hydrogeologic Setting

The location of the site is shown on the site vicinity map (Figure 1). The soils directly beneath the site consist of Quaternary Alluvium deposits that have filled in a portion of a relatively steep and narrow valley located within Cretaceous Marine deposits that comprise the surrounding San Leandro Hills (Geologic Map of California, San Francisco Sheet, State of California Division of Mines and Geology, 1980). During the boring for the well installation, varying amounts of clay, silt and sand were encountered.

The major hydrologic feature with respect to the site appears to be San Leandro Creek. This creek cuts through the alluvial valley (golf course) to the west of the site, and provides a drainage path for various surface waters to flow into Lake Chabot to the north.

Based upon the surface topography, as well as the various hydrologic features shown on the site location map, the shallow groundwater beneath the site can be expected to flow from the location of the steep hillside behind the former underground storage tank location (area of recharge) and move toward San Leandro Creek to the west (area of discharge). It should be noted that the placement the single monitoring well will not allow the **exact** determination of the flow direction of the shallow groundwater beneath the site.

Site Description

A map of the site is shown in Figure 2. This map shows the layout of the facility, along with the location of the previous tank excavation. The ground surface in the immediate vicinity of the maintenance area has been graded flat, and is covered by asphalt pavement. The unpaved area to the west is a golf course that is covered by regularly mowed grass and various trees. The golf course appears to be irrigated on a regular basis.

III. FIELD WORK

Monitoring Well Installation

The location of the monitoring well is shown in Figure 3. On May 16, 1991, the shallow monitoring well was installed on the site (well MW-1). The well was installed with a truck-mounted drill rig using 8-inch hollow-stem augers. The borings were drilled by Gregg Drilling, Concord. During the drilling for the monitoring wells, soil samples for chemical analyses were collected at 5-foot intervals until saturated soil was encountered at a depth of approximately 10 feet. The ends of one brass liner from each drive were sealed with teflon film, over which was placed a plastic end-cap. The end-cap was then sealed onto the brass tube with clean plastic adhesive tape. All samples were immediately placed on ice, then transported under chain-of-custody to the laboratory upon completion of the field work.

Well MW-1 was cased with 15 feet of 2-inch PVC slotted screen pipe (0.02" slots), and was completed to a depth of 25 feet below the ground surface. The annular space of each well was packed with #3 Monterey sand to approximately one foot above the top of the screened section. Approximately one foot of wetted bentonite pellets were placed upon the sand pack, followed by a neat cement seal up to the ground surface. Each well was fitted with a water-tight locking cap and a water-tight steel traffic lid. Well construction diagrams for the monitoring wells are shown in Attachment B.

Prior to the installation of the well, all drilling equipment, including augers, drill stem, and split barrel samplers, was steam-cleaned.

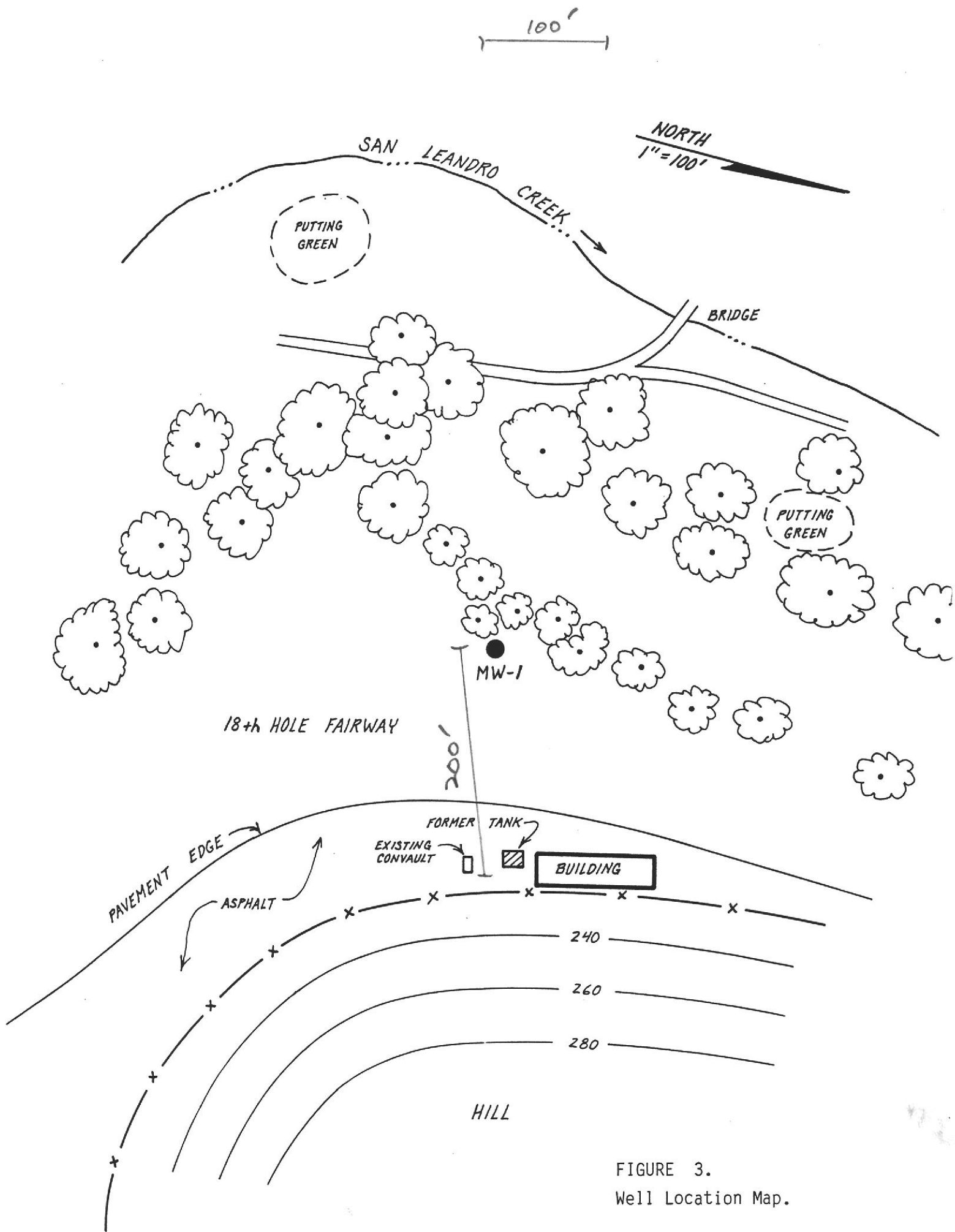


FIGURE 3.
 Well Location Map.

All drill cuttings were stockpiled on-site until the results of laboratory analyses were obtained.

Boring Log

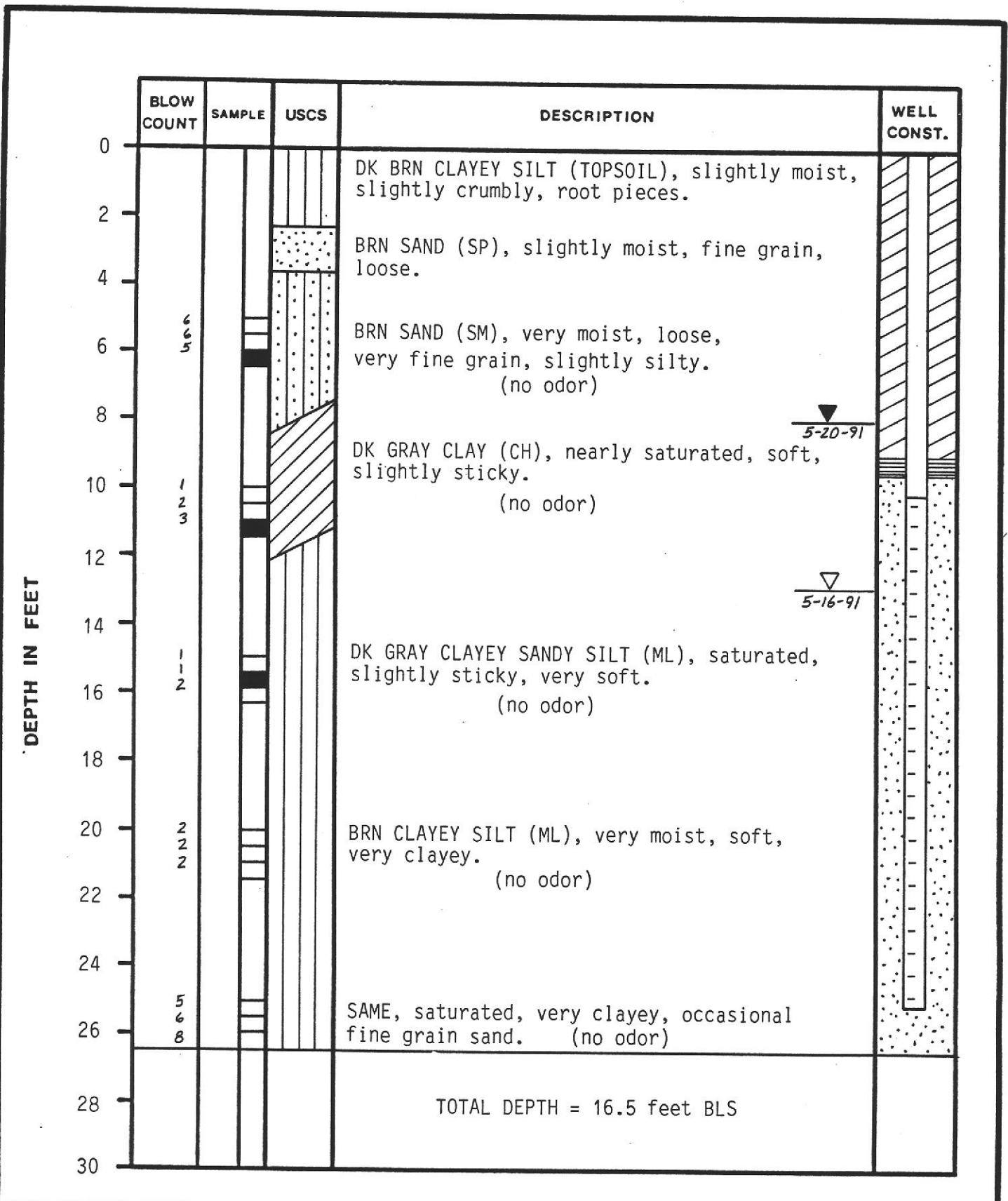
The monitoring well boring was logged in the field by Gary Aguiar, Registered Civil Engineer #34262. The boring log for the monitoring well is shown as Figure 4.

Included in Attachment B is a copy of the permit issued by Zone-7, Alameda County Flood Control and Water Conservation District.

Monitoring Well Sampling

On May 20, 1991, the newly installed monitoring well was developed. During the development of the well, approximately 7 casing volumes of water were removed by bailing. During the well development, minimal amounts of silt were produced initially, and at the end of the well development, the rate of silt production appeared to have tapered off almost completely. Further well development by surging and/or mechanical pumping appeared to be unwarranted at the time.

Prior to groundwater sampling on May 22, 1991, the well was purged by bailing approximately 5 casing volumes of water. Field conductivity, temperature, and pH meters were present on-site during the monitoring well sampling. As the purging process proceeded, the three parameters were monitored. Purging continued until readings appeared to have reasonably stabilized. After the water level in the well had attained



HAGEMAN-AGUIAR, INC.		LOG OF MONITORING WELL MW-1		FIGURE 4
		Willow Park Golf Course		
DATE	5-16-91	PROJECT NO.		
TOC ELEVATION	224.38 MSL	EQUIPMENT	8" Hollow Stem Auger	

80% or more of the original static water level, a groundwater sample was collected using a clean teflon bailer. The water samples were placed inside appropriate 40 mL VOA vials free of any headspace. The samples were immediately placed on crushed ice, then transported under chain-of-custody to Chromalab Laboratory in San Ramon by the end of the work day.

At the time the monitoring well was sampled, the following information was recorded in the field: 1) depth-to-water prior to purging, using an electrical well sounding tape, 2) identification of any floating product, sheen, or odor prior to purging, using a clear teflon bailer, 3) sample pH, 4) sample temperature, and 5) specific conductance of the sample.

All analyses were conducted by a California State DOHS certified laboratory in accordance with EPA recommended procedures. All soil and groundwater samples were analyzed for Total Petroleum Hydrocarbons as Gasoline and Benzene, Toluene, Ethylbenzene and Total Xylenes (BTXE).

All water removed from the well during development and purging was drummed and stored on-site until the results of laboratory analyses were obtained.

Copies of the monitoring well development and sampling logs are included as Attachment C.

Water Level Measurements.

Shallow water table elevations were measured on May 20, 1991. These measurements are shown in Table 1. Shallow groundwater was found to be at a depth of Approximately 8 feet below the ground surface.

TABLE 1.

**Shallow Water Table Elevations
May 20, 1991**

Well	Top of Casing Elevation (feet)	Depth to Water (feet)	Water Table Elevation (feet)
MW-1	224.38	8.05	216.33

Based upon original Willow Park Golf Course grading plans by Bob Baldock & Son, Architects, dated February 2, 1966.

Elevation at northwest corner of clubhouse = 236 feet MSL.

IV. ANALYTICAL RESULTS

All analyses were conducted by a California State DOHS certified laboratory in accordance with EPA recommended procedures. All soil samples were analyzed for Total Petroleum Hydrocarbons as Gasoline and Benzene, Toluene, Ethylbenzene, and Total Xylenes (EPA methods 8015 and 8020). The groundwater sample was analyzed for Total Petroleum Hydrocarbons as Gasoline, Benzene, Toluene, Ethylbenzene, and Total Xylenes (EPA methods 8015 and 602).

Analytical Results: Soil

Table 2 presents the results of the laboratory analysis of the soil samples collected during the monitoring well installations. A copy of the laboratory certificate for the soil sample analyses is included in Attachment D.

As shown in Table 2, no detectable concentrations of Gasoline, Benzene, Toluene, Ethylbenzene, or Total Xylenes were detected in any of the soil samples.

Analytical Results: Groundwater

Table 3 presents the results of the laboratory analysis of the groundwater sample collected from monitoring well MW-1. A copy of the laboratory certificate for the water sample analysis is included in Attachment E.

As shown in Table 3, no detectable concentrations of

TABLE 2.

Soil Sampling Results

Boring	Depth (feet)	TPH as Gasoline (mg/kg)	Benzene (ug/kg)	Toluene (ug/kg)	Ethyl- benzene (ug/kg)	Total Xylenes (ug/kg)
MW-1	05	ND	ND	ND	ND	ND
	10	ND	ND	ND	ND	ND
	15	ND	ND	ND	ND	ND
Detection Limit		1.0	5.0	5.0	5.0	5.0

TABLE 3.

Shallow Groundwater Sampling Results

Well	Date	TPH as Gasoline (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)
MW-1	05-22-91	ND	ND	ND	ND	ND
Detection Limit		50	0.5	0.5	0.5	0.5

Gasoline, Benzene, Toluene, Ethyl Benzene, or Total Xylenes were found in the groundwater sample collected from monitoring well MW-1.

V. CONCLUSIONS

1. Shallow groundwater is present beneath the site at a depth of approximately 8 feet below the ground surface.
2. No detectable concentrations of Gasoline, Benzene, Toluene, Ethyl Benzene, or Total Xylenes were found in any of the soil samples collected during the installation of monitoring well MW-1.
3. No detectable concentrations of dissolved Gasoline, Benzene, Toluene, Ethyl Benzene, or Total Xylenes were found in the groundwater sample collected from monitoring well MW-1.

VI. RECOMMENDATIONS

The results of the initial groundwater sample analysis has revealed no detectable concentrations of petroleum hydrocarbons in the shallow groundwater. In addition, the results of soil sample analyses have revealed no detectable concentrations of petroleum hydrocarbons in the soil at the location of the monitoring well.

Monitoring well MW-1 will be sampled again, on or near August 20, 1991 (ninety days after initial sampling). If the results of this future sampling reveal no detectable concentrations of petroleum hydrocarbons in the shallow groundwater, it is recommended that no further work be required and the well be destroyed in accordance with state and local regulations. This recommendation is made in accordance with the previously agreed-upon plan, discussed in Section I of this report.



Gary Aguiar RCE 34262

Bruce Hageman

ATTACHMENT A

DATA PERTAINING TO PREVIOUS TANK REMOVAL

WILLOW PARK GOLF COURSE
17007 Redwood Road
Castro Valley, California

Closure Report

Mr. Renee Viviani
17007 Redwood Road
Castro Valley, California 94546

Mr. Viviani:

K.T.W. & Associates is pleased to submit this report describing closure activities associated with removal of one 1000 gallon underground fuel tank located in Castro Valley, California. This report provides a description of site activities and observations, the condition of excavated tanks, the condition of tank backfill and other subsurface materials, sampling procedures and locations, laboratory analytical procedures and certified analytical results, chain of custody documentation, and hazardous waste manifest.

Site Description

The site is located at 17007 Redwood Road, Castro Valley, California. A site location map is presented in Plate 1. One 1000 gallon underground gasoline tank was formerly located at the subject site. A site map showing the location of the site structure, former underground tank and dispensing island is presented in Plate 2.

Closure Plan and Permitting

A closure plan and permit application for removal of underground tanks was completed and submitted to the Alameda County Health Care Services Agency (ACHCSA), and the City of Castro Valley Fire Department (CVFD). Closure activities proceeded under ACHCSA permit No.U5689888.

Mr. Renee Viviani
Willow Park Golf Course
September 25, 1990
Page 2

Underground Tank Closure

Tank removal activities occurred on August 28, 1990. Inspector Scott Seery of the ACHCSA was present to observe the tank removal and sampling activities. Construction services associated with closure were performed by K.T.W. & Associates. A K.T.W. & Associates California Registered Geologist provided environmental sampling and documentation services.

Closure activities were documented in the Hazardous Material Inspection Form prepared by Scott Seery. Upon removal the structural integrity of the one 500 gallon tank was observed to be sound. The tank was wrapped, and was observed to contain no corrosion holes. The tank was removed and transported from the site by a permitted hazardous waste transporter under hazardous waste manifest. Copies of the hazardous waste manifest are presented in Attachment A.

General Observations, Underground Tank Closure

The tank, which had been used to store gasoline prior to its removal, contained no trim other than a riser assembly for filling, a product line and a vent line.

The condition of the lines prior to removal were sound, however, they were unwrapped. All the fittings were properly installed. The riser assemblies that constituted the fill pipe for the tank was sound and free of defects, however, some of the wrap at the fill end had deteriorated. Very slight hydrocarbon odor was observed while removing the overburden surrounding the fill, and the overburden material contained some discoloration. The backfill material consisted of native soil with large quantities of shale.

Soil Sampling

Two (2) soil samples were collected from the gasoline tank excavation below the tank and one (1) composite soil sample was collected from the stockpiled material. Soil sampling of the tank occurred on August 28, 1990.

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Willow Park Golf Course
September 25, 1990
Page 3

These samples were obtained by excavating to the native soil/interface and driving a brass tube into the native soil; some difficulty in obtaining samples was due to the high percentage of shale in the native soil.

Samples were collected in brass tubes, sealed in teflon and plastic caps, and promptly stored in a cooler. Following completion of field work, samples were submitted to Anametrix Laboratory, San Jose, CA (DOHS #151) certified analytical laboratory for analyses under appropriate chain of custody protocol.

Two (2) soil samples were taken from beneath the former tank (TX1-S1) and (TX1-S2). Their locations are noted in Plate 2. The samples were taken from the fill end (S-2) and the vent end (S-1) of the excavation. The results of that analysis is shown in attachment B.

Certified Analytical Results

Samples collected for minimum verification analyses (MVA) were analyzed in accordance with appropriate regulatory guidelines contained within Regional Board Staff Recommendations for Initial Evaluation and Investigation of Underground Tanks (RWQCB, 1988). Copies of soil analytical results are presented in Attachment B.

MVA for Underground Fuel Tank Excavation

The soil samples collected from the fill-natural materials interface below the fuel tank contained concentrations of the constituents sought 35 parts per million (ppm), total petroleum hydrocarbons as gasoline (TPH-G) (S-2) and not detected (N.D.) (S-1).

Regulatory Guidelines

The RWQCB - San Francisco Bay Region has established a level of 100 ppm TPH concentrations in soil as a general decision value for requiring further definition of site soil and groundwater contamination where shallow groundwater conditions are known to exist.

Mr. Renee Viviani
Willow Park Golf Course
September 25, 1990
Page 4

The origin of the 100 ppm level was to "develop a method to prioritize the case load and indicate whether a significant volume of fuel had been released or discharged" (RWQCB, June, 1988). In the interest of prudence and caution, the stockpiled material should not be re-introduced as fill, but should be disposed of at a Class III Landfill.

Copies of this report should be submitted to:

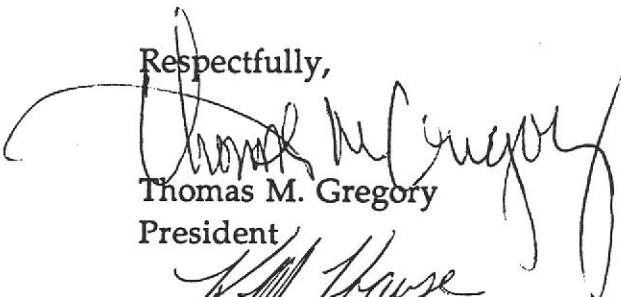
Regional Water Quality Control Board
1111 Jackson Street, Rm. 6000
Oakland, CA 94607
Attn: Dyan Whyte

Alameda County Health Care Services Agency
80 Swan Way, Room 200
Oakland, CA 94621


Additional copies of this report have been provided for the purpose of regulatory submittal.

Should you have any questions or comments regarding the evaluations presented in this report, please call.

Respectfully,

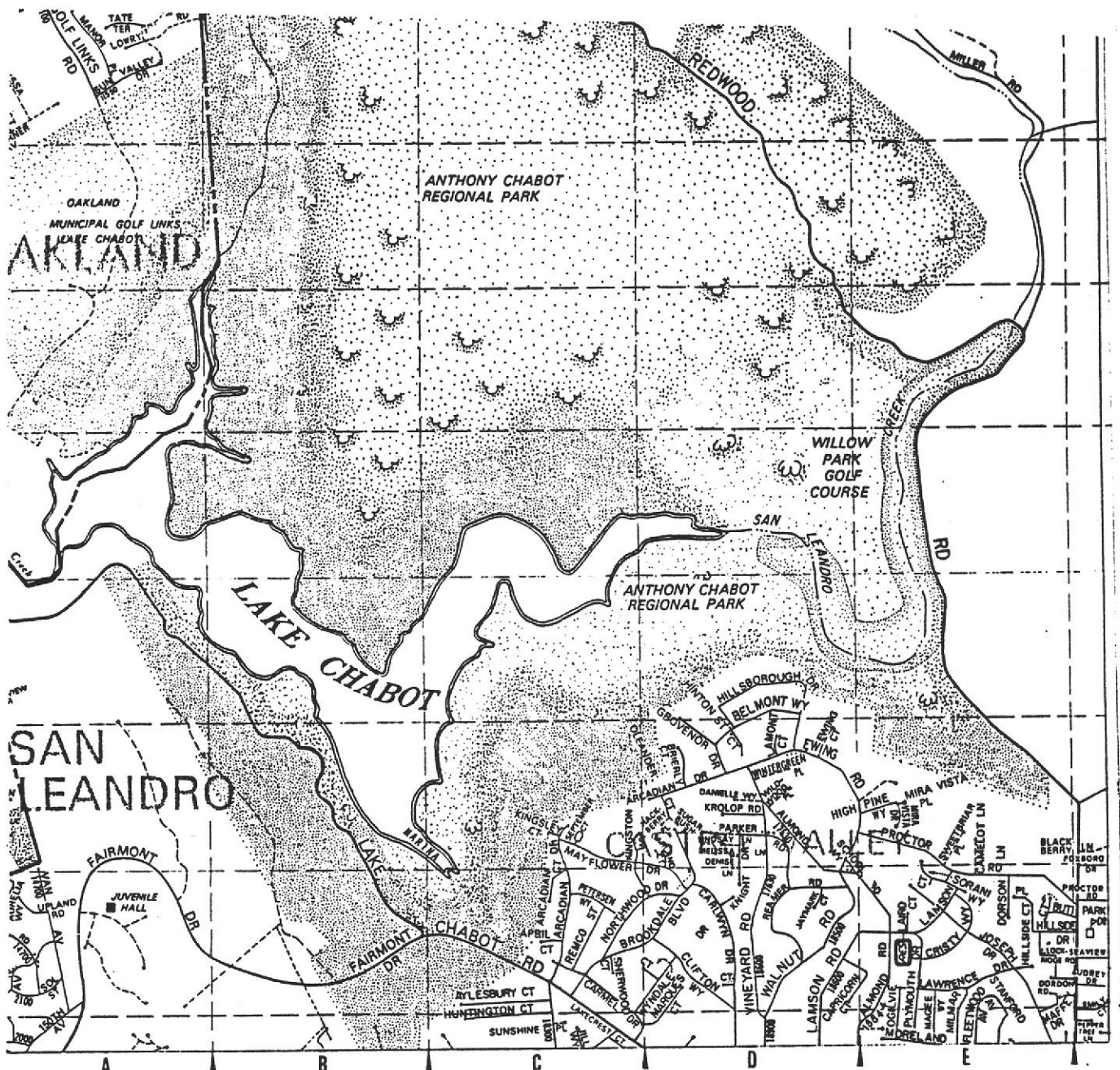


Thomas M. Gregory
President



Kevin M. Krause
Vice President
KK/emm

Attachments



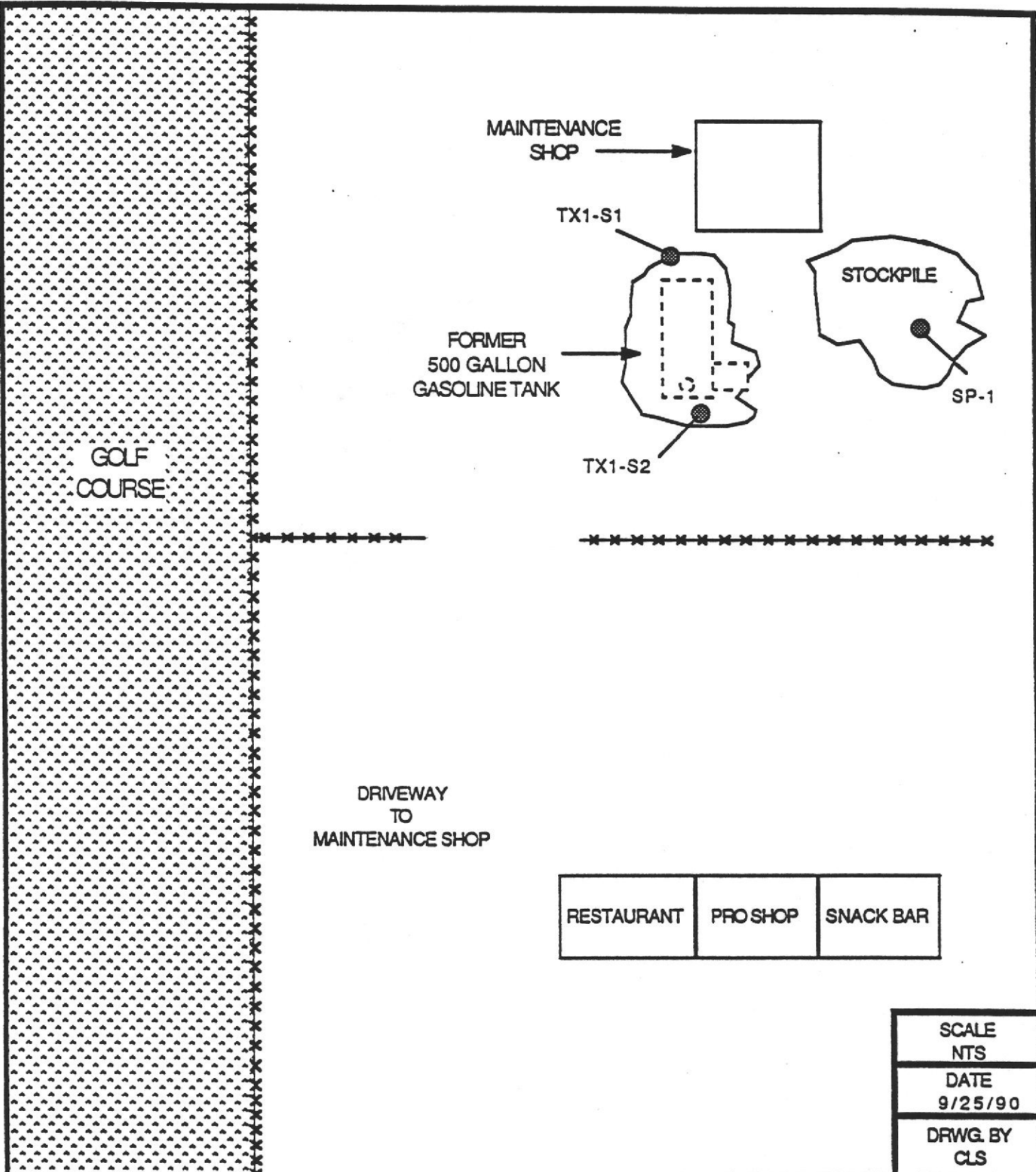
SCALE NTS
DATE 9/25/90
DRWG. BY CLS

KTW
& ASSOCIATES

PROJECT:

SITE LOCATION
 Willow Park Golf Course
 17007 Redwood Road
 Castro Valley, California

PLATE
 1



SCALE NTS
DATE 9/25/90
DRWG. BY CLS



PROJECT:

GENERALIZED SITE PLAN

Willow Park Golf Course
17007 Redwood Road
Castro Valley, California

PLATE

2

ATTACHMENT A

Hazardous Waste Manifests

Please print or type: (Form designed for use on elite (12-pitch typewriter))

IN CASE OF AN EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA CALL 1-800-852-7550

GENERATOR

TRANSPORTER

FACILITY

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No. CA200050338		Manifest Document No. 100077		2. Page 1 of 1		Information in the shaded areas is not required by Federal law.	
3. Generator's Name and Mailing Address WILLOW PARK COURSE 1707 REDWOOD RD CASANOVA, CA				A. State Manifest Document No. 188735793		B. State Generator's ID No.			
4. Generator's Phone (415) 537-9979				6. US EPA ID Number CA0009466392		C. State Transporter's ID No. 100077		D. Transporter's Phone (415) 235-1393	
5. Transporter 1 Company Name Erickson Trucking, Inc.				8. US EPA ID Number		B. State Transporter's ID No.		E. Transporter's Phone	
7. Transporter 2 Company Name				10. US EPA ID Number		G. State Facility's ID No.		H. Facility's Phone	
9. Designated Facility Name and Site Address Erickson, Inc. 255 Parr Blvd. Richmond, CA 94801				12. Containers No. Type 001 TP 490 P		13. Total Quantity		14. Unit Wt/Vol	
11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number) a. Waste empty storage tank Non-RCRA Hazardous Waste Solid				15. Special Handling Instructions and Additional Information Keep away from sources of ignition. Always wear hardhats when working around U.S.T.'s		16. Generator's Certification I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations. If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.		17. Transporter 1 Acknowledgement of Receipt of Materials Printed/Typed Name: MAURINE SHAGLEY Signature: <i>Maurine Shagley</i> Month Day Year: 08 28 90	
12. Containers (continued)				18. Transporter 2 Acknowledgement of Receipt of Materials Printed/Typed Name: _____ Signature: _____ Month Day Year: _____		19. Discrepancy Indication Space		20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in item 19. Printed/Typed Name: _____ Signature: _____ Month Day Year: _____	

white -env.health
 yellow -facility
 pink -files

ALAMEDA COUNTY, DEPARTMENT OF ENVIRONMENTAL HEALTH

80 Swann Way #200
 Oakland, CA 94621
 (415) 271-4320

Hazardous Materials Inspection Form

II, III

Site ID # _____ Site Name Willow Park G.C. Today's Date 8/28/90

Site Address 17007 Redwood Rd.

City Castro Valley Zip 94546 Phone _____

MAX AMT stored > 500 lbs, 55 gal., 200 cft.?

Inspection Categories:

- I. Haz. Mat/Waste GENERATOR/TRANSPORTER
- II. Business Plans, Acute Hazardous Materials
- III. Underground Tanks

* Calif. Administration Code (CAC) or the Health & Safety Code (HS&C)

Comments: Arrived 1:00 PM
 On-site to witness closure of one (1) UST. David Glick of David C. Glick & Assoc (geologist) and Tom Gregory of KTW & Assoc on site coordinating activities. Tank was uncovered and overburden stockpiled on Visqueen upon my arrival. Once Bob Bohman of CVFD arrived and verified O₂/LEL, the tank was spalled. The tank was in excellent shape, still retaining most of its former tar paper wrapping. No holes were evident. The wrap at the fill end of the tank was partially dissolved in some areas. The soil beneath the tank was discolored, with a slight odor of gasoline evident coming from the hole. Samples were collected from either end of the tank pit. Native material was composed of fractured shale. The sample collected from the fill end was very difficult to collect; native material was all rock. Therefore, material just above the bedrock interface was collected for analyses.

II.A. BUSINESS PLANS (Title 19)

- 1. Immediate Reporting 2703
- 2. Bus. Plan Stds. 25503(b)
- 3. RR Cars > 30 days 25503.7
- 4. Inventory Information 25504(a)
- 5. Inventory Complete 2730
- 6. Emergency Response 25504(b)
- 7. Training 25504(c)
- 8. Deficiency 25505(a)
- 9. Modification 25505(b)

II.B. ACUTELY HAZ. MATLS

- 10. Registration Form Filed 25533(a)
- 11. Form Complete 25533(b)
- 12. RMPP Contents 25534(c)
- 13. Implement Sch. Req'd? (Y/N)
- 14. OffSite Conseq. Assess. 25524(c)
- 15. Probable Risk Assessment 25534(d)
- 16. Persons Responsible 25534(a)
- 17. Certification 25534(f)
- 18. Exemption Request? (Y/N) 25536(b)
- 19. Trade Secret Requested? 25538

III. UNDERGROUND TANKS (Title 23)

- 1. Permit Application 25284 (H&S)
- 2. Pipeline Leak Detection 25292 (H&S)
- 3. Records Maintenance 2712
- 4. Release Report 2651
- 5. Closure Plans 2670
- 6. Method
 - 1) Monthly Test
 - 2) Daily Vadose Semi-annual groundwater One time soil
 - 3) Daily Vadose One time soil Annual tank test
 - 4) Monthly Gndwater One time soil
 - 5) Daily Inventory Annual tank testing Cont pipe leak det Vadose/gndwater mon.
 - 6) Daily Inventory Annual tank testing Cont pipe leak det
 - 7) Weekly Tank Gauge Annual tank testing
 - 8) Annual Tank Testing Daily Inventory
 - 9) Other _____
- 7. Precs Tank Test Date: 2643
- 8. Inventory Rec. 2644
- 9. Soil Testing 2646
- 10. Ground Water. 2647
- 11. Monitor Plan 2632
- 12. Access. Secure 2634
- 13. Plans Submit Date: 2711
- 14. As Built Date: 2635

Rev 6/88

Contact: Tom Gregory
 Title: Project Manager
 Signature: [Signature]

Inspector: S. Seena
 Signature: [Signature]

II, III

ATTACHMENT B

**Certified Analytical
Reports**

ANAMETRIX INC

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

**REPORT**

MR. KEVIN KRAUSE
KTW & ASSOCIATES
43289 OSGOOD ROAD
FREMONT, CA 94539

Workorder # : 9008295
Date Received : 08/28/90
Project ID : AC26E5
Purchase Order: N/A

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

ANAMETRIX ID	CLIENT SAMPLE ID
9008295- 1	TX1-S1
9008295- 2	TX1-S2
9008295- 3	SP-1-S1

This report is paginated for your convenience and ease of review. It contains 3 pages excluding the cover letter. The report is organized into sections. Each section contains all analytical results and quality assurance data related to a specific group or section within Anamatrix. The Report Summary that precedes each section will help you determine which group at Anamatrix generated the data. The Report Summary will contain the signatures of the department supervisor and a chemist, both of whom reviewed the analytical data. Please refer all questions to the department supervisor that signed the form.

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

Burt Sutherland
Laboratory Director

09-12-90
Date

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

MR. KEVIN KRAUSE
KTW & ASSOCIATES
43289 OSGOOD ROAD
FREMONT, CA 94539

Workorder # : 9008295
Date Received : 08/28/90
Project ID : AC26E5
Purchase Order: N/A
Department : GC
Sub-Department: TPH

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9008295- 1	TX1-S1	SOIL	08/28/90	TPHg/BTEX
9008295- 2	TX1-S2	SOIL	08/28/90	TPHg/BTEX
9008295- 3	SP-1-S1	SOIL	08/28/90	TPHg/BTEX

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

MR. KEVIN KRAUSE
KTW & ASSOCIATES
43289 OSGOOD ROAD
FREMONT, CA 94539

Workorder # : 9008295
Date Received : 08/28/90
Project ID : AC26E5
Purchase Order: N/A
Department : GC
Sub-Department: TPH

QA/QC SUMMARY :

- No QA/QC problems encountered for samples.

Cheryl Balmer
Department Supervisor

9/11/90
Date

Scott Vogt 9/11/90
Chemist Date

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

Anamatrix W.O.#: 9008295
Matrix : SOIL
Date Sampled : 08/28/90

Project Number : AC26E5
Date Released : 09/11/90

	Reporting Limit	Sample I.D.# TX1-S1	Sample I.D.# TX1-S2	Sample I.D.# SP-1-S1	Sample I.D.# 04B0910A
COMPOUNDS	(mg/Kg)	-01	-02	-03	BLANK
Benzene	0.005	ND	ND	0.22	ND
Toluene	0.005	ND	ND	0.43	ND
Ethylbenzene	0.005	ND	0.14	0.45	ND
Total Xylenes	0.005	ND	2.2	1.3	ND
TPH as Gasoline	0.5	ND	35	25	ND
% Surrogate Rec.		60%	111%	112%	89%
Instrument #		HP4	HP4	HP4	HP4
Date Analyzed		09/10/90	09/10/90	09/10/90	09/10/90
RLMF		1	25	5	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 8020.
 RLMF - Reporting Limit Multiplication Factor.

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

C. J. [Signature] 12 Sept 90
Analyst Date

Cheryl Balmer [Signature]
Supervisor Date

ATTACHMENT B

PERMIT

SURVEY DATA

CORRESPONDENCE



ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

5997 PARKSIDE DRIVE PLEASANTON, CALIFORNIA 94588 (415) 484-2600

23 April 1991

Hageman-Aguiar, Inc.
3732 Mt. Diablo Boulevard, Suite 372
Lafayette, CA 94549

Gentlemen:

Enclosed is Groundwater Protection Ordinance permit 91221 for a monitoring well construction project at 17007 Redwood Road in Castro Valley for the Willow Park Golf Course.

Please note that permit condition A-2 requires that a well construction report be submitted after completion of the work. The report should include drilling and completion logs, location sketch, and permit number.

If you have any questions, please contact Wyman Hong or me at 484-2600.

Very truly yours,

Craig A. Mayfield
Water Resources Engineer

WH:mm
Enc.



ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
5997 PARKSIDE DRIVE PLEASANTON, CALIFORNIA 94566 (415) 484-2600

GROUNDWATER PROTECTION ORDINANCE PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

FOR OFFICE USE

(1) LOCATION OF PROJECT Willow Park Golf Course
17007 Redwood Road
Castro Valley, CA

PERMIT NUMBER 91221
LOCATION NUMBER _____

(2) CLIENT Rene Viviani, Jr.
Name Willow Park Golf Course
Address 17007 Redwood Road Phone (415) 537-8989
City Castro Valley Zip 94546

Approved Wyman Hong Date 19 Apr 91
Wyman Hong

(3) APPLICANT
Name Hageman-Aguiar, Inc. (Gary Aguiar)
3732 Mt. Diablo Blvd
Address Suite 372 Phone (415) 284-1661
City Lafayette Zip 94549

PERMIT CONDITIONS

Circled Permit Requirements Apply

(4) DESCRIPTION OF PROJECT
Water Well Construction Geotechnical _____
Cathodic Protection _____ Well Destruction _____

A. GENERAL

1. A permit application should be submitted so as to arrive at the Zone 7 office five days prior to proposed starting date.
2. Notify this office (484-2600) at least one day prior to starting work on permitted work and before placing well seals.
3. Submit to Zone 7 within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well projects, or bore hole logs and location sketch for geotechnical projects. Permitted work is completed when the last surface seal is placed or the last boring is completed.
4. Permit is void if project not begun within 90 days of approval date.

(5) PROPOSED WATER WELL USE
Domestic _____ Industrial _____ Irrigation _____
Municipal _____ Monitoring Other _____

B. WATER WELLS, INCLUDING PIEZOMETERS

1. Minimum surface seal thickness is two inches of cement grout placed by tremie, or equivalent.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic, irrigation, and monitoring wells unless a lesser depth is specially approved.

(6) PROPOSED CONSTRUCTION
Drilling Method:
Mud Rotary _____ Air Rotary _____ Auger
Cable _____ Other _____

C. GEOTECHNICAL. Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material.

D. CATHODIC. Fill hole above anode zone with concrete placed by tremie, or equivalent.

E. WELL DESTRUCTION. See attached.

WELL PROJECTS
Drill Hole Diameter 8 In. Depth(s) 50 ft.
Casing Diameter 2 In. Number _____
Surface Seal Depth 10 ft. of Wells 1
Driller's License No. C-57 # 485165

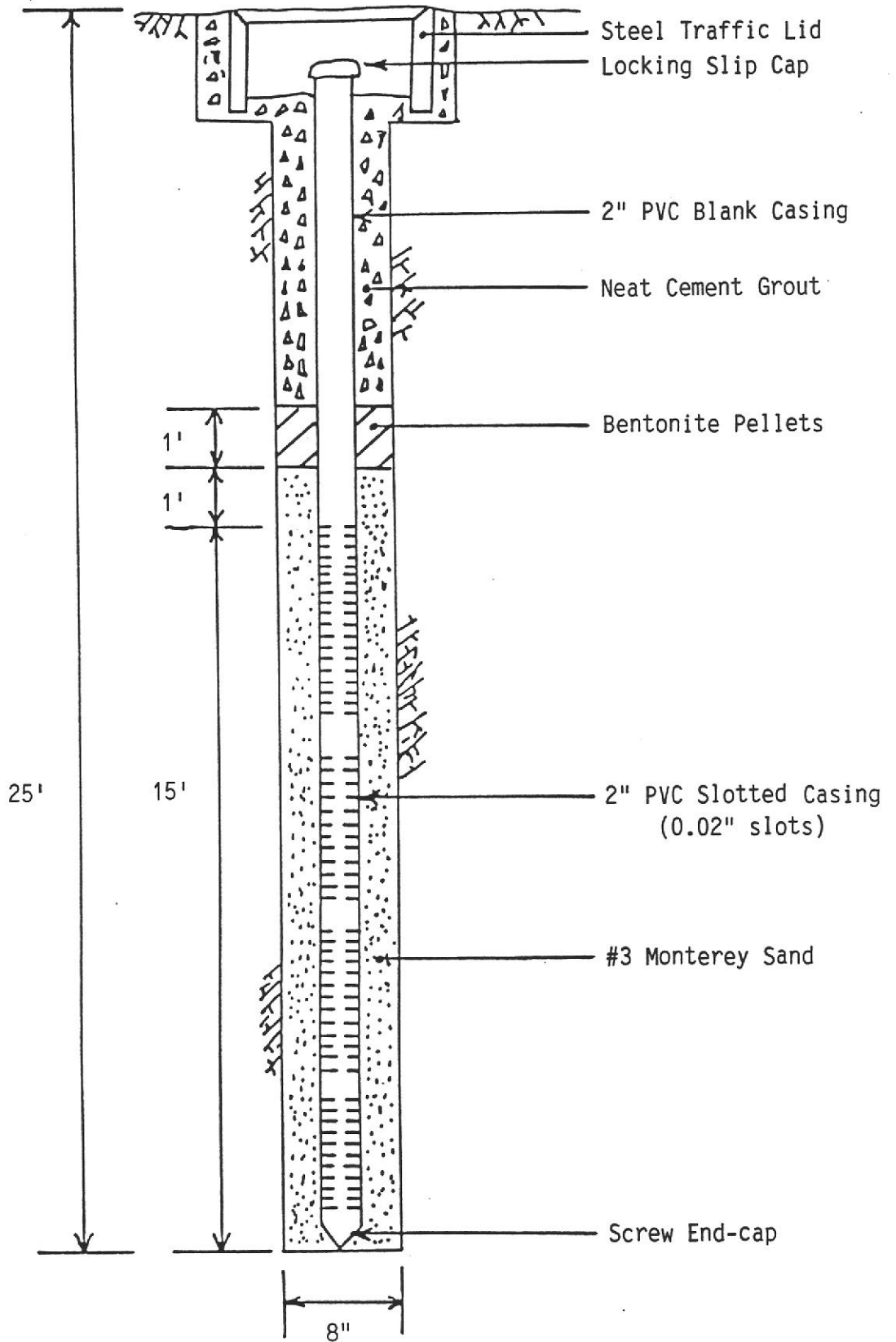
GEOTECHNICAL PROJECTS (Gregg Drilling)
Number _____
Diameter _____ In. Maximum Depth _____ ft.

(7) ESTIMATED STARTING DATE 4-25-91
ESTIMATED COMPLETION DATE 4-25-91

(8) I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE Gary Aguiar Date 4/18/91
Gary Aguiar, RCE 34262

MONITORING WELL MW-1



JUNE 13, 1991

GARY AGUIAR

KEITH JAY

SOKKIA C3₂ AUTO LEVEL
TOPO ROD

60° CLEAR

WILLOW PARK GOLF COURSE
17007 REDWOOD ROAD
CASTRO VALLEY, CA

MONITORING WELL ELEVATION

STN	BS	HI	FS	EL
BM				236
	0.92	236.92		
T.P.			11.60	225.32
	4.42	229.74		
MW-1			5.36	224.38
	10.49	234.87		
T.P.			3.16	231.71
	8.16	239.87		
BM			3.83	236

NORTHWEST CORNER CLUBHOUSE
(GRADING PLANS, FEB 2, 1966)

WELL BOX RIM

NORTHWEST CORNER CLUBHOUSE

ALAMEDA COUNTY
HEALTH CARE SERVICES

AGENCY

DAVID J. KEARS, Agency Director



DEPARTMENT OF ENVIRONMENTAL HEALTH
Hazardous Materials Program
80 Swan Way, Rm. 200
Oakland, CA 94621
(415)

April 25, 1991

Mr. Gary Aguiar
Hageman-Aguiar, Inc.
3732 Mt. Diablo Boulevard, Ste. 372
Lafayette, CA 94549

RE: WILLOW PARK GOLF COURSE, 17007 REDWOOD ROAD, CASTRO VALLEY;
PRELIMINARY SITE ASSESSMENT PROPOSAL

Dear Mr. Aguiar:

Thank you for your recent submittal of the April 12, 1991 Hageman-Aguiar, Inc. work plan proposal entitled, Proposal for Subsurface Investigation, Willow Park Golf Course, 17007 Redwood Road, Castro Valley, CA, and the project oversight deposit totalling \$432.00.

The noted work plan, outlining proposed actions to assess the extent of potential subsurface contamination in the area perceived as downgradient of the former site of an underground storage tank, has been approved for implementation with the following conditions:

- 1) Please be certain that a minimum period of 24 hours passes between well development and sampling to allow time for the well to properly stabilize and to reduce the potential loss of volatiles compounds. Allowing a period of 72 hours to pass is preferable;
- 2) A sampling quality assurance/quality control (QA/QC) plan must be in effect. Please reference Appendix D (pgs. A30-A35) of the State Water Resources Control Board LUFT Field Manual, as revised October 1989, for the required elements. It is recommended that the QA/QC sampling protocol include such elements as duplicate samples, and trip and equipment blanks. The analyses results of QA/QC samples are to appear on the laboratory report sheets;
- 3) The completed well must be surveyed to an established benchmark to the accuracy of 0.01 foot, relative to MSL. All subsequent water level measurements are to be referenced to MSL;
- 4) Please be certain that the Site Safety Plan adheres to guidelines specified under Part 1910.120(i)(2) of 29CFR.

Mr. Gary Aguiar
RE: Willow Park Golf Course, 17007 Redwood Road
April 25, 1991
Page 2 of 2

This Department will expect to receive a report documenting the results of the initial field and sampling activities within 45 days of the completion of these activities. This report is to present, among other elements, a summary of field activities, the results of all laboratory analyses (including copies of the original lab reports and chain-of-custody forms), well boring logs, etc. Recommendations for additional work are to be included.

Please call me at 415/271-4320 when you have scheduled your drilling date or if you should have any questions.

Sincerely,



Scott O. Seery, CHMM
Hazardous Materials Specialist

cc: Rafat A. Shahid, Assistant Agency Director, Environmental Health
Edgar Howell, Chief, Hazardous Materials Division
Gil Jensen, Alameda County District Attorney's Office
Lester Feldman, RWQCB
Howard Hatayama, DHS
Bob Bohman, Castro Valley Fire Department
Jerry Kent, EBRPD
Steve Abhors, EDMUD
Bernard F. Rose, Randick & O'Dea
Rene Viviani
files

LAW OFFICES

RANDICK & O'DEA

1800 HARRISON, SUITE 1771
OAKLAND, CALIFORNIA 94612

ROBERT A. RANDICK, JR.
BRIAN M. O'DEA
SUSAN M. TEEL
ROBERT W. DRANE
BERNARD F. ROSE, Ph.D.
REBECCA T. DIXON
JULIE M. ROSE
WILLIAM J. TRINKLE

TELEPHONE
(415) 836-3555

TELECOPIER
(415) 834-4748

COPY

February 22, 1991

Mr. Scott Seery
ALAMEDA COUNTY HEALTH AGENCY
Division of Hazardous Materials
Department of Environmental
Health
80 Swan Way, Rm. 200
Oakland, CA 94621

Mr. Steven Abbors
EAST BAY MUNICIPALITY UTILITY
DISTRICT
P.O. Box 24055
Oakland, CA 94623

Mr. Ted Krebs
EAST BAY REGIONAL PARKS
DISTRICT
11500 Skyline Boulevard
Oakland, CA 94619

Mr. Lester Feldman
REGIONAL WATER QUALITY CONTROL
BOARD
San Francisco Bay Region
1800 Harrison, Ste. 700
Oakland, CA 94612

Mr. Joe Damas
EAST BAY MUNICIPALITY UTILITY
DISTRICT
P.O. Box 24055
Oakland, CA 94623

Mr. Thomas Paulson
EAST BAY MUNICIPALITY UTILITY
DISTRICT
P.O. Box 24055
Oakland, CA 94623

Re: Site Investigation Plan For Willow Park Golf
Course
Location: 17007 Redwood Road, Castro Valley, California

Gentlemen:

On behalf of my clients, Willow Park Golf Course, Rene Viviani Sr. and Rene Viviani, Jr., I thank you for your attendance at the February 20, 1991, meeting at the offices of Mr. Feldman where we discussed the future site assessment requirements at the golf course in light of discovery of low level petroleum hydrocarbon contamination subsequent to the removal of an underground storage tank. I believe that the rapid involvement of a reasonable site investigation plan at the meeting was possible only because of the understanding and commitment of all concerned.

February 22, 1991
Page 2

In order to be absolutely sure that we all are in agreement as to what is to be done, I offer the following synopsis of what we agreed on for your consideration and comment:

Willow Park's management will engage the services of an environmental consulting firm which will determine the optimal location for the installation of a one (1) groundwater monitoring well in the assumed (although quite accurately, I believe) down gradient direction from the removed underground storage tank. The well will be sited where it's installation will be the least impeded by the bedrock formations that underlay the area. The well will be drilled to whatever depth is necessary to reach ground water or to a maximum of fifty (50) feet if no ground water is encountered. Soil samples will be taken every five (5) feet, if possible. If ground water is not encountered and the soil samples are either totally devoid of petroleum hydrocarbons or contain such low levels as to make migration to ground water implausible, it will be assumed that, due to the low level of source contamination initially discovered and the fact that the alleged source has been removed, ground water contamination is extremely unlikely and no further work will be required at the site by Alameda County or the Board.

If ground water is encountered within fifty (50) feet of ground surface, the well will be developed and sampled. Regardless of the result of the initial analysis, the well will be retested in ninety (90) days.

The well siting and testing protocol will be submitted to Alameda County and the Board for approval before work commences. It was agreed that there was no need for a formal target date for the submission of the work plan, but the Vivianis offered their projection that it should not take more than ninety (90) days from the date of the meeting.

If the results of the two ground water analyses reveal no actionable levels of petroleum hydrocarbon and no potential source of later contamination is suggested by the soil samples taken during the well installation, no further work will be required and the well will be destroyed in the prescribed manner.

If actionable hydrocarbon contamination is found in the ground water or petroleum hydrocarbons are found in the soil above ground water level at concentrations suggesting possible later ground water involvement, the Vivianis will meet and confer with the county and the Board to evaluate the results of the study and determine how best to proceed.

February 22, 1991
Page 3

If any of the above does not comport with your understanding of the outcome of the meeting, please contact me at your earliest convenience with your thoughts and comments so that we might embark on this project with a crystal clear and uniform perception of what is to be done.

The patience, courtesy and cooperation of each of you is greatly appreciated.

Yours truly,

RANDICK & O'DEA

Bernard F. Rose by p.k.

Bernard F. Rose
by P.A. Karella, Secretary

BFR/pak
Dictated but not read.

ATTACHMENT C

WELL SAMPLING LOGS

WELL DEVELOPMENT LOG

Project/No. WILLOW PARK GOLF COURSE Page 1 of 1

Site Location CASTRO VALLEY, CA

Date 5-20-91

Well No. MW-1

Time Began 10:00
Completed 10:40

Weather SUNNY, 65°F

EVACUATION DATA

Description of Measuring Point (MP) WELL BOX (AT GRADE)

Total Sounded Depth of Well Below MP 24.20

Depth to Water Below MP 8.05 Diameter of Casing 2"

Water Column in Well 16.15

Gallons in Well 2.7 Gallons Pumped During Development 15

Evacuation Method TEFLON BAILER

DEVELOPMENT / FIELD PARAMETERS

Color CLEAR Odor NONE

Appearance NO SHEEN

Time	Gallons	Temperature	Conductivity	pH	Clarity / Silt Content
<u>10:15</u>	<u>3</u>	<u>19</u>	<u>1600</u>	<u>6.63</u>	<u>SILTY</u>
<u>10:20</u>	<u>3</u>	<u>20</u>	<u>1625</u>	<u>6.66</u>	<u>VERY SILTY</u>
<u>10:25</u>	<u>3</u>	<u>19</u>	<u>1400</u>	<u>6.55</u>	<u>VERY SILTY</u>
<u>10:30</u>	<u>3</u>	<u>19</u>	<u>1225</u>	<u>6.56</u>	<u>CLOUDY</u>
<u>10:35</u>	<u>3</u>	<u>19</u>	<u>1250</u>	<u>6.55</u>	<u>CLEAR</u>

Field Personnel Keith Jay

WELL SAMPLING LOG

Project/No. WILLOW PARK GOLF COURSE Page 1 of 1
Site Location CASTRO VALLEY, CA Date 5-23-91
Well No. MW-1
Weather SUNNY, 70°F Time Sampling Began 16:25
Completed 17:00

EVACUATION DATA

Description of Measuring Point (MP) WELL BOX (LID)
Total Sounded Depth of Well Below MP 23.80
Depth to Water Below MP 8.42 Diameter of Casing 2"
Water Column in Well 15.38
Gallons in Well 2.5 Gallons Pumped/Bailed
Prior to Sampling 10
Evacuation Method TEFLON BAITER

SAMPLING DATA / FIELD PARAMETERS

Color CLEAR Odor NONE
Appearance NO SHEEN Temperature 22° F / 10° C
Specific Conductance (umhos/cm) 1400 pH 6.45
Sampling Method and Material TEFLON BAITER

FIELD ANALYSES:	Start	Mid	End
Time	<u>16:30</u>	<u>16:40</u>	<u>16:50</u>
Temperature	<u>22°C</u>	<u>22°</u>	<u>22°</u>
Conductivity	<u>1600</u>	<u>1400</u>	<u>1400</u>
pH	<u>6.44</u>	<u>6.45</u>	<u>6.45</u>

Sampling Personnel Keith Jay

ATTACHMENT D

ANALYTICAL RESULTS: SOIL

CHROMALAB, INC.

5 DAYS TURNAROUND

Analytical Laboratory (E694)

May 29, 1991

ChromaLab File No.: 0591099

HAGEMAN-AGUIAR, INC.

Attn: Keith Jay

RE: Three soil samples for Gasoline/BTEX analysis

Project Name: WILLOW CREEK GOLF COURSE

Date Sampled: May 16, 1991

Date Submitted: May 16, 1991

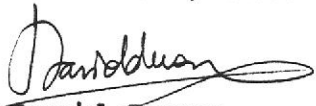
Date Extracted: May 24-28, 1991


Date Analyzed: May 24-28, 1991

RESULTS:

Sample No.	Gasoline (mg/kg)	Benzene (μ g/kg)	Toluene (μ g/kg)	Ethyl Benzene (μ g/Kg)	Total Xylenes (μ g/kg)
MW-1-5'	N.D.	N.D.	N.D.	N.D.	N.D.
MW-1-10'	N.D.	N.D.	N.D.	N.D.	N.D.
MW-1-15'	N.D.	N.D.	N.D.	N.D.	N.D.
BLANK	N.D.	N.D.	N.D.	N.D.	N.D.
SPIKE RECOVERY	94.8%	92.8%	102.0%	98.9%	105.7%
DUP SPIKE REC.	90.3%	82.3%	95.1%	90.8%	92.0%
DETECTION LIMIT	1.0	5.0	5.0	5.0	5.0
METHOD OF ANALYSIS	5030/ 8015	8020	8020	8020	8020

ChromaLab, Inc.


David Duong
Chief Chemist


Eric Tam
Laboratory Director

ATTACHMENT E

ANALYTICAL RESULTS: GROUNDWATER

CHROMALAB, INC.

5 DAYS TURNAROUND

June 6, 1991 Analytical Laboratory (E694)

ChromaLab File No.: 0591163

HAGEMAN-AGUIAR, INC.

Attn: Keith Jay

RE: One water sample for Gasoline/BTEX analysis

Project Name: WILLOW PARK GOLF

Date Sampled: May 22, 1991

Date Submitted: May 23, 1991

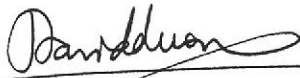
Date Extracted: June 3, 1991

Date Analyzed: June 3, 1991

RESULTS:

Sample No.	Gasoline ($\mu\text{g/L}$)	Benzene ($\mu\text{g/L}$)	Toluene ($\mu\text{g/L}$)	Ethyl Benzene ($\mu\text{g/L}$)	Total Xylenes ($\mu\text{g/L}$)
MW-1	N.D.	N.D.	N.D.	N.D.	N.D.
BLANK	N.D.	N.D.	N.D.	N.D.	N.D.
SPIKE RECOVERY	92.9%	89.3%	93.6%	91.4%	90.1%
DETECTION LIMIT	50	0.5	0.5	0.5	0.5
METHOD OF ANALYSIS	5030/ 8015	602	602	602	602

ChromaLab, Inc.



David Duong
Chief Chemist



Eric Tam
Laboratory Director

