

December 11, 1989

PROPOSAL  
FOR  
SUBSURFACE INVESTIGATION

DOUGHERTY FIRE STATION #1  
7494 DONOHUE DRIVE  
DUBLIN, CA

DOUGHERTY REGIONAL FIRE AUTHORITY

I. INTRODUCTION

The proposed scope of work involves the installation of three groundwater monitoring wells as the result of subsurface contamination found at the time three (3) underground storage tanks were removed from this site.

The site location is 7494 Donohue Drive, Dublin, CA. The Dougherty Regional Fire Authority maintains a fire station on the property. In conjunction with this operation, the site has historically operated two underground gasoline storage tanks and one underground diesel tank for a number of years.

On November 11, 1989, three underground storage tanks were removed. These tanks were:

- one 4,000 gallon gasoline tank
- one 550 gallon diesel tank
- one 550 gallon gasoline tank

The tank removals were conducted by Hageman-Shank, Inc. under permit from the Alameda County Environmental Health Department. Analytical results and other data pertaining to the previous tank removals are included as Attachment A. The 550 gallon gasoline tank was discovered during the removals of the other two tanks. This tank was filled with concrete, and obviously had been abandoned due to product loss and/or infiltration of groundwater into the tank. During the tank removals, the steel was peeled away, and the cylinder of concrete was allowed to remain in the excavation.

## II. SITE DESCRIPTION

### Vicinity Description and Hydrogeologic Setting

The location of the site is shown on the vicinity map (Figure 1). The soils beneath the site consist of Quaternary Alluvium overlying a bedrock consisting of Middle and/or Lower Pliocene nonmarine deposits as found in the Dougherty and San Ramon Hills, or else Upper Miocene marine deposits found in portions of the San Ramon Hills (Geologic Map of California, San Francisco Sheet, State of California Division of Mines and Geology, 1980). Bedrock is likely to occur at a depth of thirty or more feet beneath the site. During the borings for the well installations, varying amounts of clay, sand, gravel can be expected to be encountered.

Based upon the surface topography, as well as the various hydrologic features shown on the vicinity map, the general regional shallow groundwater can be expected to flow from the Dougherty and San Ramon Hills (areas of groundwater recharge), into the aquifer system of the San Ramon Valley, then move southward toward the Livermore Valley. Although the placement of the proposed monitoring wells are based upon this assumption of groundwater flow direction, water level data from the three wells will determine the exact flow direction of the shallow groundwater beneath the site. The close proximity of the site to the nearby creek, as shown in Figure 1, may influence the groundwater flow direction 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.

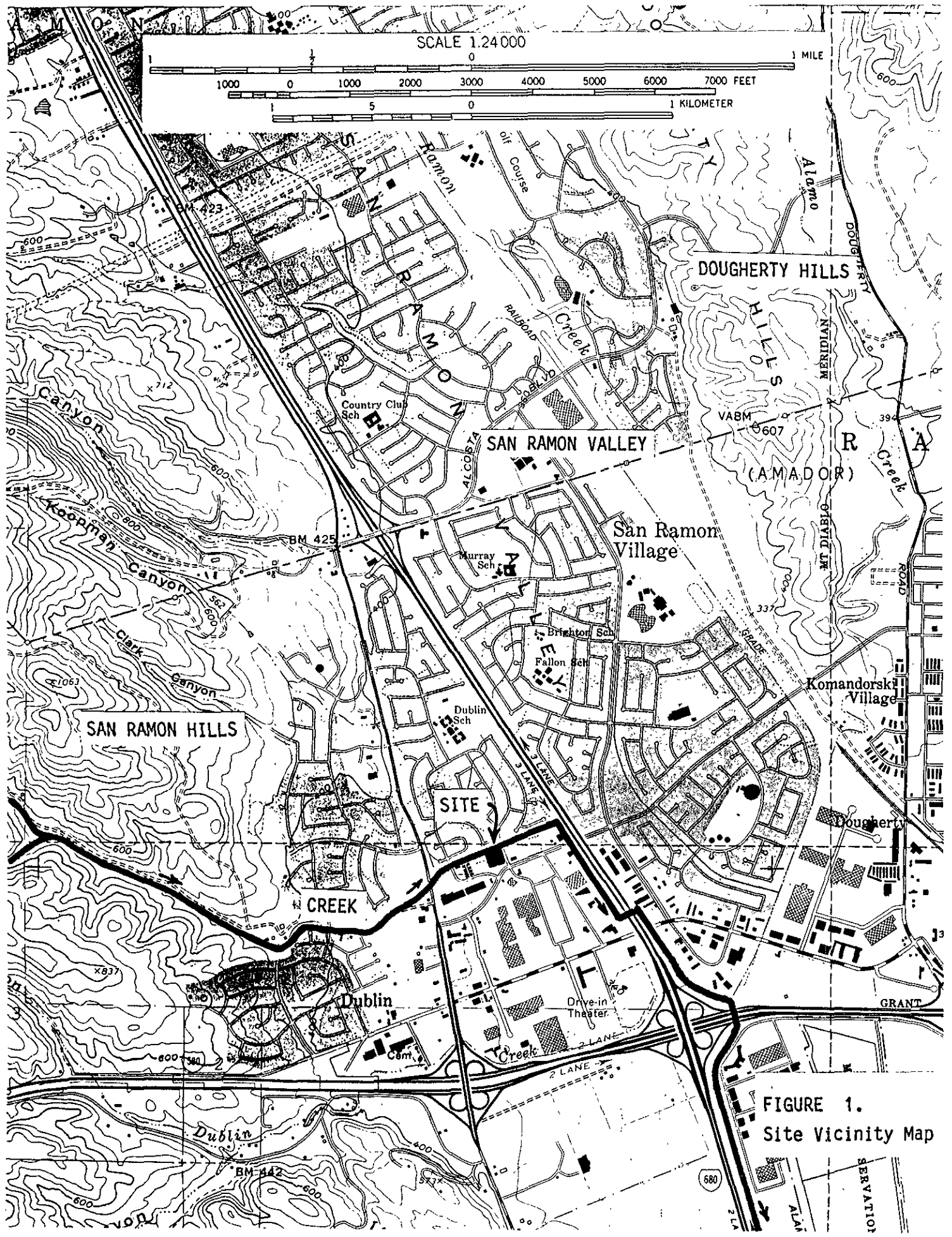
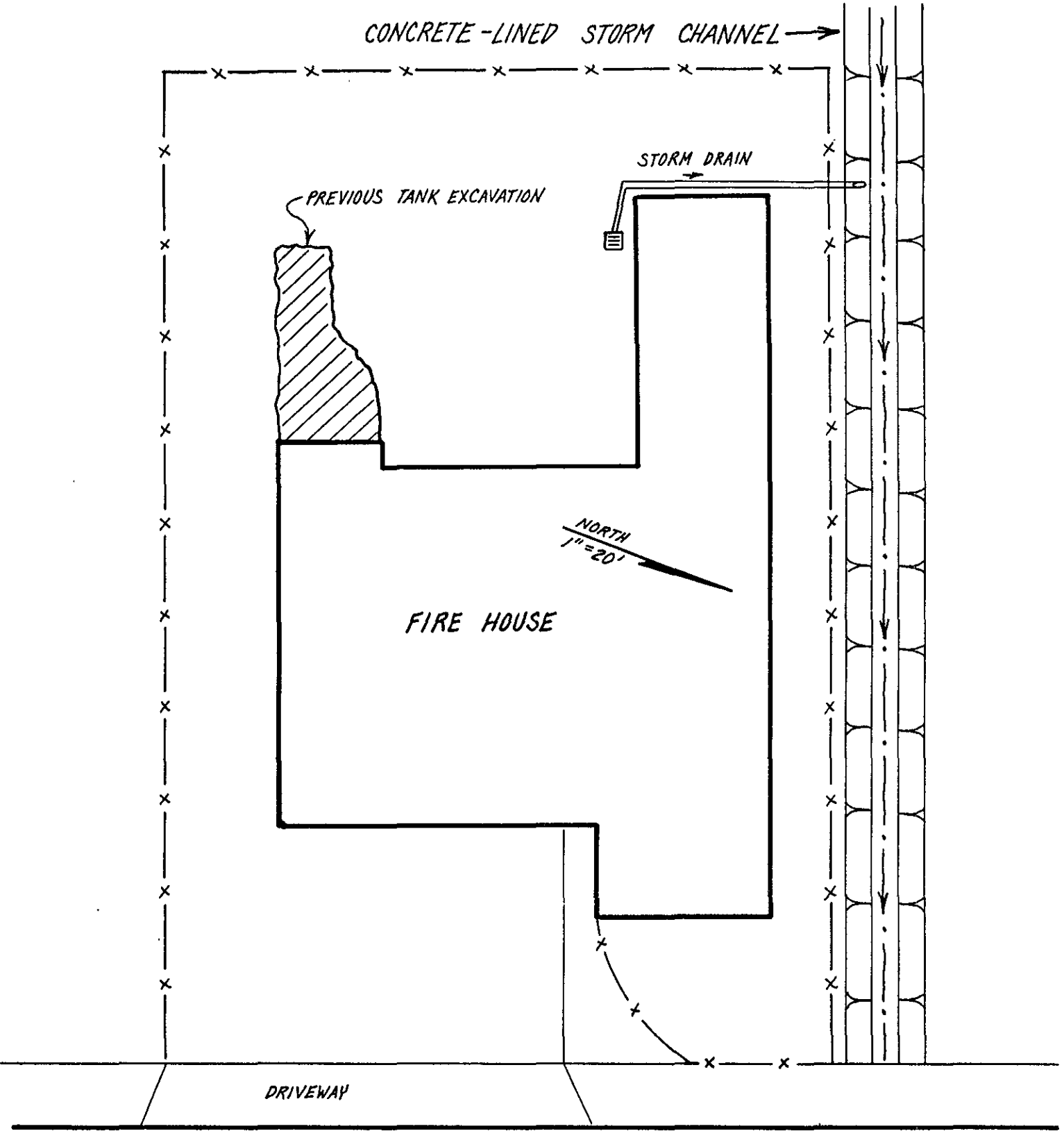


FIGURE 1.  
Site Vicinity Map



DONOHUE DRIVE

FIGURE 2.  
Site Map.

### III. EXTENT OF SOIL CONTAMINATION ON SITE

The results of the analyses performed on soil samples collected during the tank excavations are presented in Attachment A. These results indicated the presence of Gasoline in the soil at levels up to 1,500 mg/kg (ppm).

After approval by Alameda County Environmental Health Department, soil removed during the previous tank excavations was spread and aerated on-site under permit by the Bay Area Air Quality Management District (BAAQMD). The analytical results of composite sampling of the aerated soil is included in Attachment A. The Alameda County Environmental Health Department has approved the backfilling of the tank excavation with this aerated soil.

The plan for determining groundwater contamination, as discussed in Section IV of this proposal, provides for the analysis of all soil and groundwater samples for 1) total petroleum hydrocarbons as gasoline, and 2) Benzene, Toluene, Xylenes, and Ethylbenzene (BTXE). An attempt will be made to determine the concentrations and extent of these petroleum hydrocarbons that may be present in the soil and shallow groundwater beneath the site.

#### IV. PLAN FOR DETERMINING GROUNDWATER CONTAMINATION

##### Placement of Monitoring Wells

The purpose of the proposed groundwater investigation is to install and sample three on-site monitoring wells in order to 1) determine the direction of shallow groundwater flow beneath the site, and 2) define the extent of any petroleum constituents that may be present in the shallow groundwater beneath the site.

The proposed locations of the wells are shown in Figure 3. The locations have been selected based upon 1) known locations of soil contamination during previous tank removals, 2) the expected shallow groundwater flow direction, and 3) what is believed to be good spacing between data points in order to achieve reasonable plume definitions of any contaminants that may be present in the shallow groundwater beneath the site.

##### Monitoring Well Installations

Well installation will begin as soon as possible, following approval by the appropriate regulatory agencies. Each well will be installed with a truck-mounted drill rig using 8-inch hollow-stem augers. During the drilling, soil samples for chemical analyses will be collected at 5-foot intervals until the shallow water table is encountered at a depth of approximately 5 to 10 feet below the ground surface. Each soil sample will be collected by driving a split-barrel sampler fitted with clean brass liners. All samples will be immediately placed on ice, then transported under chain-of-custody to the laboratory by the end of the work day.

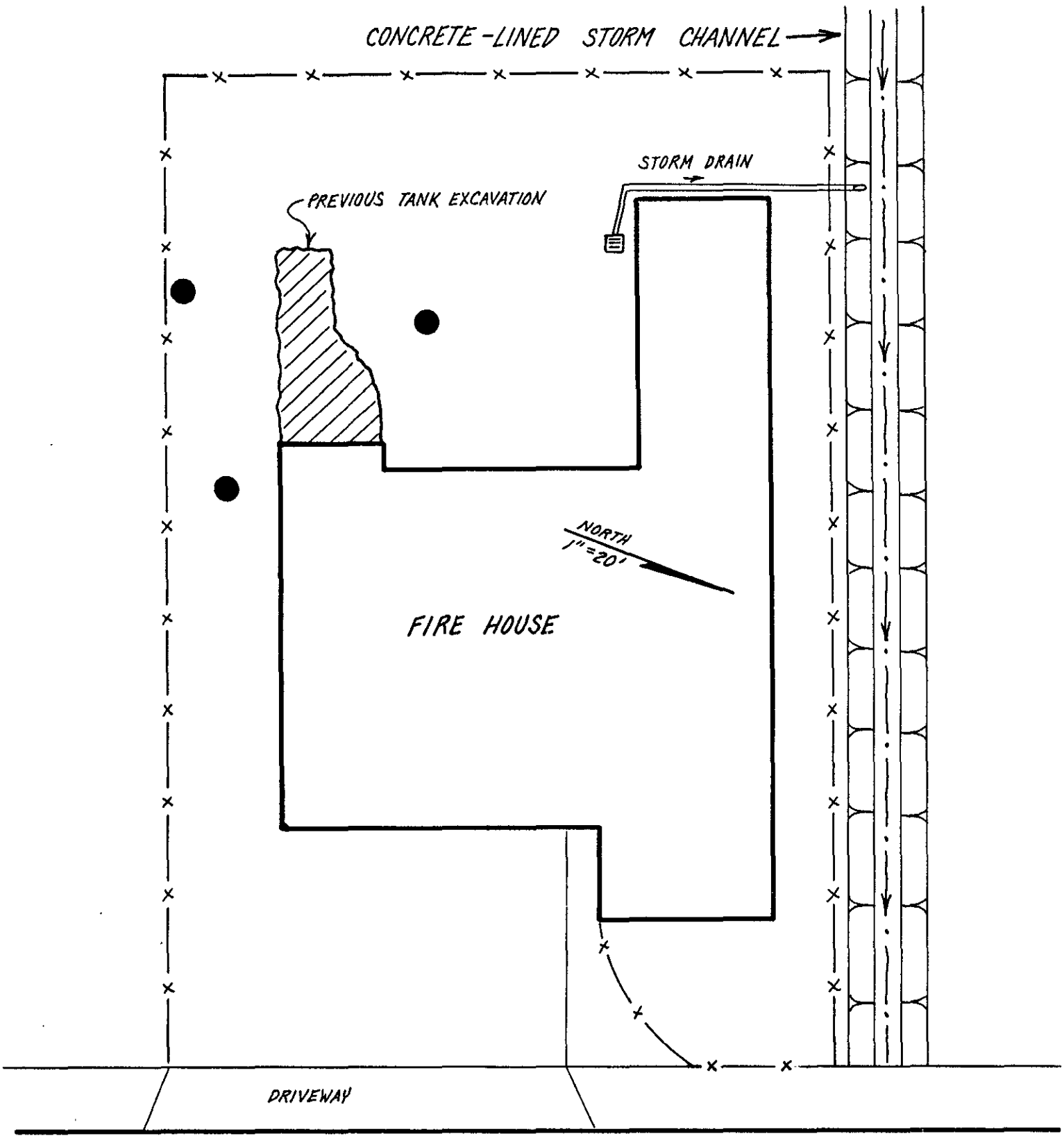


Figure 3.  
Proposed Locations of  
Shallow Monitoring Wells.



The well borings will extend to approximately 10 feet below the shallow water table or until a competent clay layer is encountered (a thickness greater than 5 feet). Each well will be cased to approximately five feet above the shallow water table with 2-inch PVC slotted screen pipe (0.02" slots). The annular space of each well will be packed to one foot above the slotted section with #3 Monterey Sand. At least one foot of wetted bentonite pellets will be placed upon the sand pack, followed by a neat cement/bentonite seal up to the ground surface. Each well will be fitted with a locking steel traffic lid. The borings will be logged in the field by Gary Aguiar, registered civil engineer #34262 (a statement of qualifications is included as Attachment B). A typical well construction diagram is shown in Figure 4.

Prior to the installation of each well, all drilling equipment, including augers, drill stem, and split barrel samplers, will be steam-cleaned on-site.

All drill cuttings will be drummed and stored on-site until the results of laboratory analyses are obtained. Depending upon these results, the cuttings will be disposed of as either a non-hazardous waste, or else as a hazardous waste under proper manifest to an appropriate TSD facility.

In order to determine groundwater flow direction, the top-of-casing elevation at each monitoring well will be surveyed to within 0.01 foot of an established on-site benchmark.

#### Groundwater Sampling Plan

Within three days of installation, each well will be developed by removing water with a teflon bailer until the water is relatively clear, or until the apparent turbidity of the water being removed has stabilized.

Prior to sampling, each well will be purged by bailing at least 5 casing

TYPICAL MONITORING WELL CONSTRUCTION

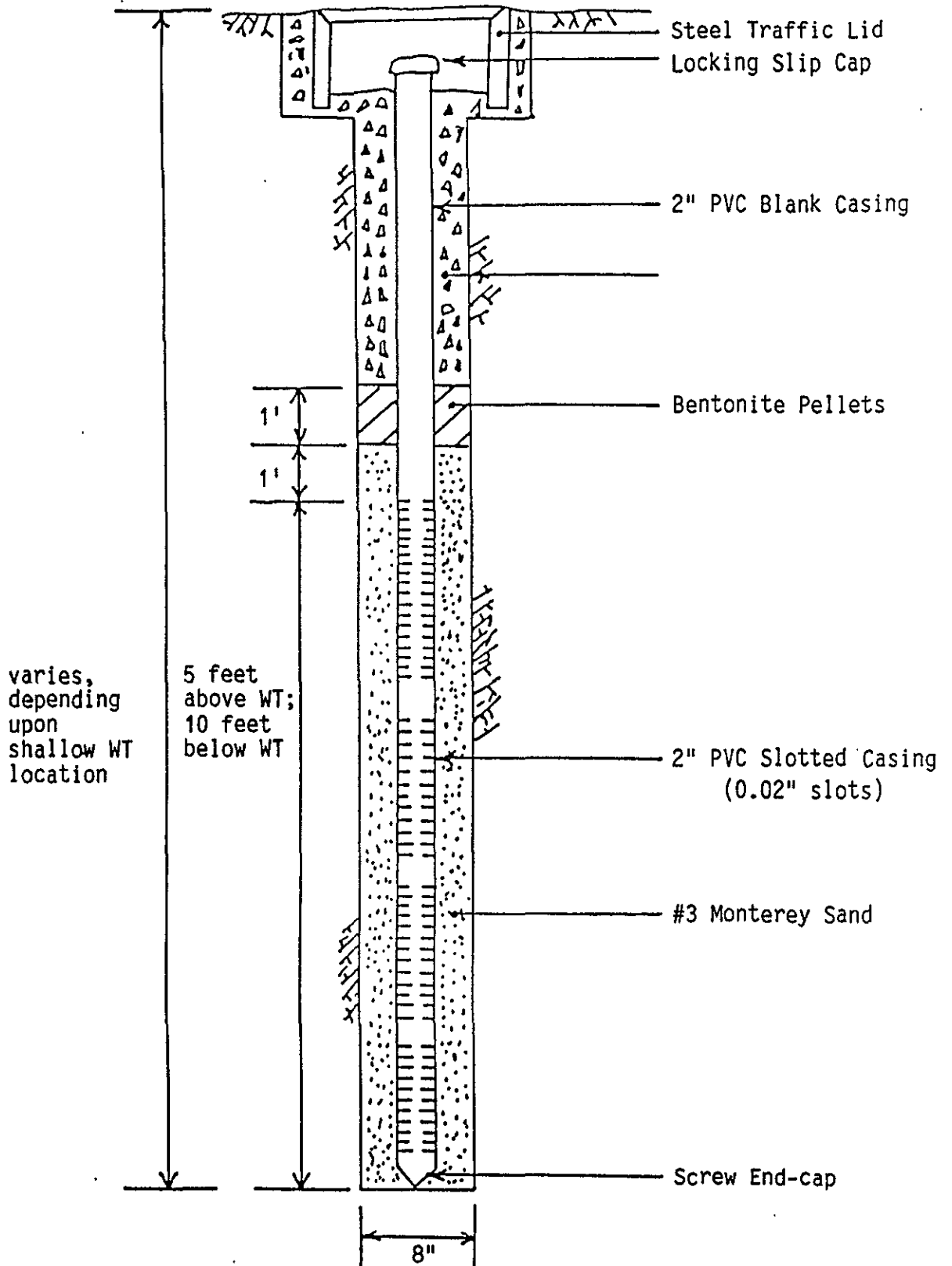


FIGURE 4.  
Typical Monitoring Well Construction.

volumes of water. After a well has been adequately purged, a groundwater sample will be bailed and placed in the appropriate containers, as required by the particular laboratory method protocols. All samples will then be immediately placed on ice, then transported under chain-of-custody to the laboratory by the end of each work day.

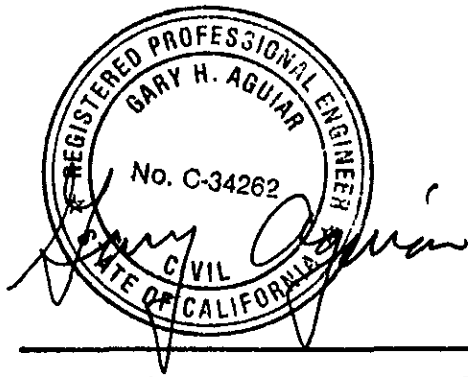
At the time each monitoring well is sampled, the following information will be recorded in the field: 1) depth-to-water prior to purging, using an electrical well sounding tape, 2) identification of any floating product, sheen, or odor prior to purging, using a clear teflon bailer, 3) sample pH, 4) sample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

All analyses will be conducted by a California State DOHS certified laboratory in accordance with EPA recommended procedures. All soil and groundwater samples will be analyzed for 1) total petroleum hydrocarbons as gasoline, and 2) Benzene, Toluene, Xylenes, and Ethylbenzene (BTXE).

All water removed from the well during development and purging will be drummed and stored on-site until the results of laboratory analyses are obtained. Depending upon these results, the water will be sewered as a non-hazardous liquid waste, or else it will be transported as a hazardous liquid waste under proper manifest to an appropriate TSD facility for treatment and disposal.

## V. SITE SAFETY PLAN

A set of health and safety operating procedures for field investigations of underground spills of motor oil and petroleum distillate fuel is provided in Attachment C. In order to maintain a safe working environment for field personnel, a copy of these operating procedures will be kept on-site during the field operations, and will be followed in accordance with the magnitude of petroleum contamination encountered.



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Gary Aguiar

RCE 34262

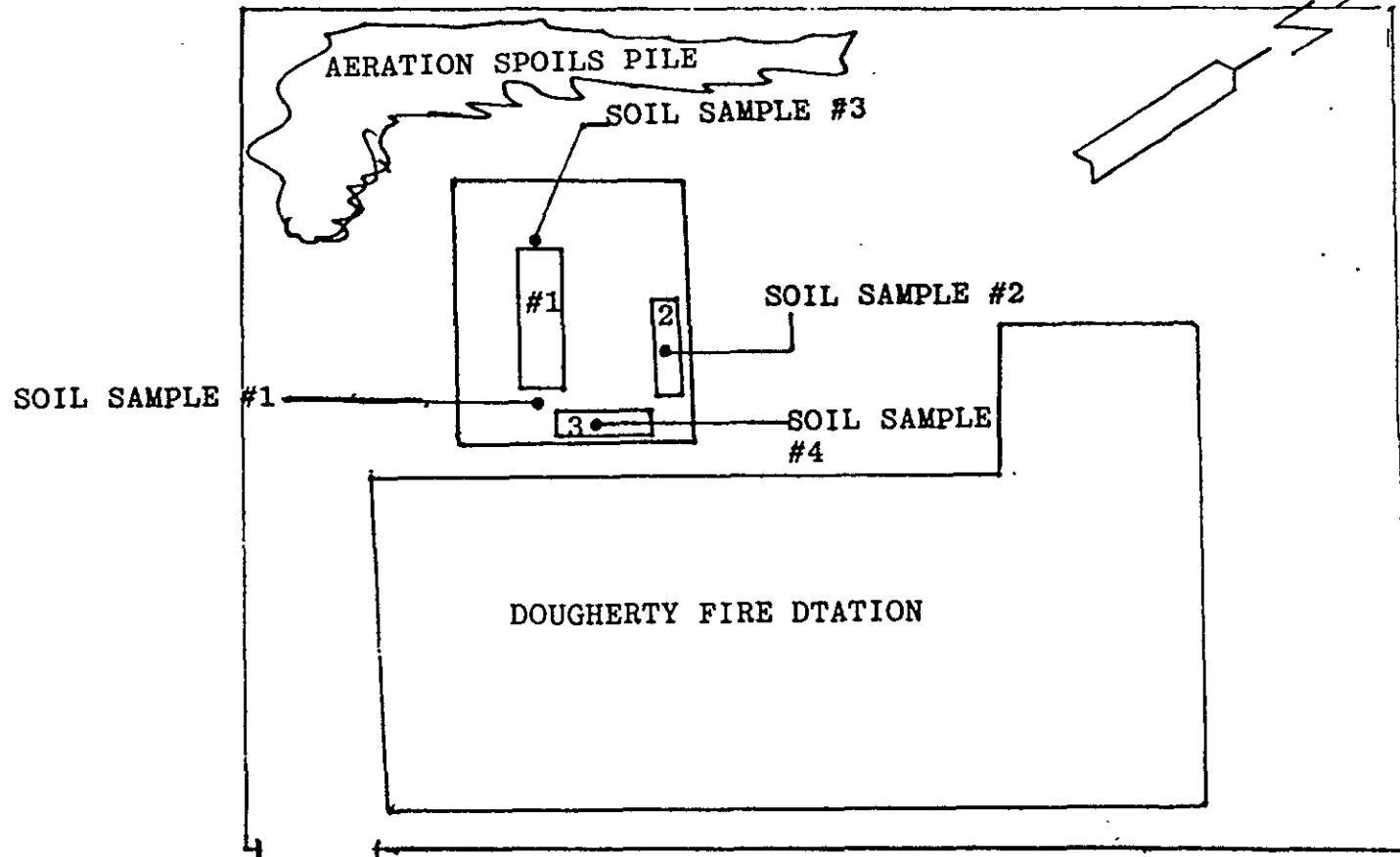
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Bruce Hageman

ATTACHMENT A

Analytical Results and Other Data  
Pertaining to  
Previous Tank Removals

AMADOR VALLEY BLVD



DONOHUE DRIVE

**SAMPLE DEPTH**

SAMPLE # 1 at 11'  
 SAMPLE # 2 " 11'  
 SAMPLE # 3 " 11'  
 SAMPLE # 4 " 9'

**LEGEND**

- - SAMPLE LOCATIONS
- #1 4000 GASOLINE
- #2 550 DIESEL
- #3 550 GASOLINE

**TANK REMOVAL - DOUGHERTY FIRE STATION #**

SCALE: N/A  
 DATE: 11-2-89

APPROVED BY:

DRAWN BY:

PLAN VIEW

**HAGEMAN-SCHANK, INC**

DRAWING NUMBER



# CHROMALAB, INC.

Analytical Laboratory  
Specializing in GC-GC/MS

- Environmental Analysis
- Hazardous Waste
- Drinking Water
- Waste Water
- Research and Method Development
- Consultation

November 3, 1989

ChromaLab File # 1189009

Hageman-Schank, Inc.

Attn: Bruce Hageman

Re: Four RUSH soil samples for Gasoline/BTEX and Diesel

Project Name: N/A


Duration of Analysis: Nov. 2-3, 1989

Results:

Sample No.	Gasoline (mg/Kg)	Benzene (µg/Kg)	Toluene (µg/Kg)	Ethyl Benzene (µg/Kg)	Total Xylenes (µg/Kg)
DFD SS#1	980	2400	540	2500	2760
DFD SS#2	810	1100	290	4400	4500
DFD SS#3	130	N.D.	170	180	51
DFD SS#4	1500	2500	2800	10000	20000
BLANK	N.D.	N.D.	N.D.	N.D.	N.D.
SPIKE RECOVERY	95.9%	86.6%	87.9%	100.6%	95.1%
DETECTION LIMIT	2.5	5.0	5.0	5.0	5.0
METHOD OF ANALYSIS	MOD.8015	8020	8020	8020	8020

Sample No.	Diesel (mg/Kg)
DFD SS#2	N.D.
BLANK	N.D.
SPIKE RECOVERY	99.1%
DETECTION LIMIT	5.0
METHOD OF ANALYSIS	MOD.8015

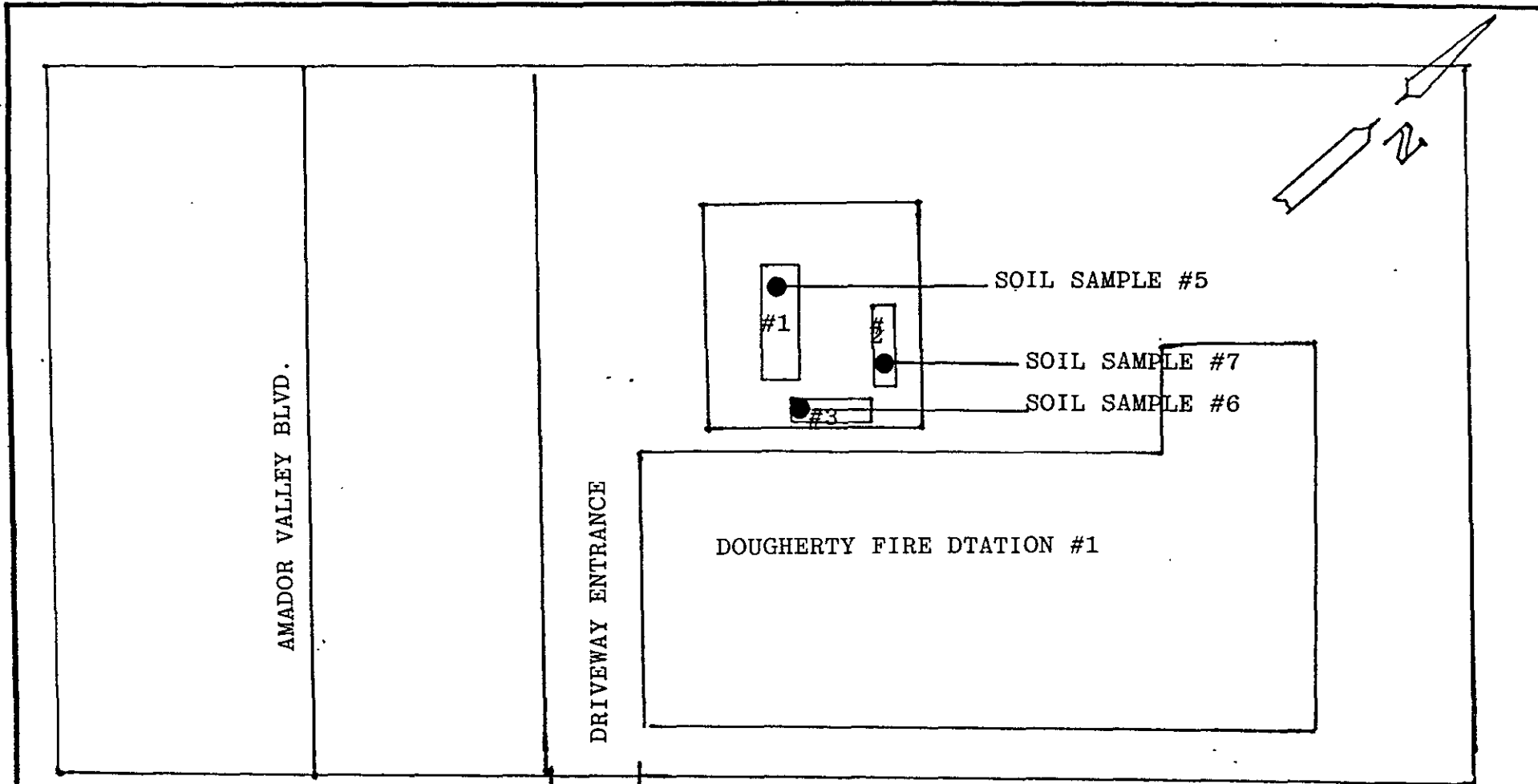
ChromaLab, Inc.

  
David Duong  
Senior Chemist

  
Eric Tam  
Laboratory Director







DONOHUE DRIVE

SAMPLE DEPTH	LEGEND			
SAMPLE # 5 at 13' SAMPLE # 7 at 12.5' SAMPLE # 6 at 13'	<p>● SAMPLE LOCATIONS</p> <p>#1 4000gal GASOLINE</p> <p>#2 550 GAL DIESEL</p> <p>#3 550 GAL GASOLINE</p>	SCALE: <i>N/A</i>	APPROVED BY:	DRAWN BY: <i>[Signature]</i>
		DATE: <i>11-7-89</i>	<b>PLAN VIEW</b>	
		TANK REMOVAL -DOUGHTERY FIRE STATION # 1		
		<b>HAGEMAN-SCHANK, INC</b>		DRAWING NUMBER

# CHROMALAB, INC.

Analytical Laboratory  
Specializing in GC-GC/MS

- Environmental Analysis
- Hazardous Waste (#238)
- Drinking Water (#955)
- Waste Water
- Consultation

November 15, 1989

ChromaLab File # 1189037

Hageman-Schank, Inc.

Attn: Bruce Hageman

RE: Three soil samples for BTEX and Gasoline analysis

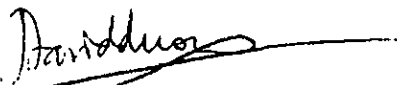
Project Name: DOUGHAERTY FIRE DEPARTMENT

Duration of Analysis: November 10-14, 1989

RESULTS:

Sample No.	Gasoline (mg/Kg)	Benzene (µg/Kg)	Toluene (µg/Kg)	Ethyl Benzene (µg/Kg)	Total Xylenes (µg/Kg)
DFD #5	N.D.	8.1	N.D.	N.D.	N.D.
DFD #6	560	2200	1700	3300	6500
DFD #7	220	280	930	1200	230
BLANK	N.D.	N.D.	N.D.	N.D.	N.D.
SPIKE RECOVERY	94.9%	82.8%	85.7%	96.3%	104.8%
DETECTION LIMIT	2.5	5.0	5.0	5.0	5.0
METHOD OF ANALYSIS	MOD.8015	8020	8020	8020	8020

ChromaLab, Inc.

  
David Duong  
Senior Chemist

  
Eric Tam  
Laboratory Director



**BAY AREA AIR QUALITY MANAGEMENT DISTRICT**

209 ELLIS STREET  
SAN FRANCISCO, CALIFORNIA 94109  
415-777-8000

**REGULATION 8, RULE 40**  
Aeration of Contaminated Soil and  
Removal of Underground Storage Tanks

NOTIFICATION FORM

- Removal or Replacement of Tanks
- Excavation of Contaminated Soil

**SITE INFORMATION**

SITE ADDRESS 7494 DONOHUE DRIVE

CITY, STATE, ZIP DUBLIN, CA 94568

OWNER NAME DOUGHERTY REGIONAL FIRE AUTHORITY

SPECIFIC LOCATION OF PROJECT DRIECTLY BEHIND MAIN FIRE STATION BUILDING

<u>TANK REMOVAL</u>	<u>CONTAMINATED SOIL EXCAVATION</u>
SCHEDULED STARTUP DATE _____	SCHEDULED STARTUP DATE <u>11/8/89</u>
VAPORS REMOVED BY:	STOCKPILES WILL BE COVERED? YES <u>X</u> NO _____
<input type="checkbox"/> WATER WASH	ALTERNATIVE METHOD OF AERATION (DESCRIBE BELOW):
<input type="checkbox"/> VAPOR FREEING (CO <sup>2</sup> )	<u>AERATION OF APPROX 40 CUBIC YARDS OF</u>
<input type="checkbox"/> VENTILATION	<small>(MAY REQUIRE PERMIT)</small>
	<u>SOIL FROM GASOLINE TANK EXCAVATION, AVG.</u>
	<u>CONTAMINATION LEVEL LESS THAN 1000 ppm</u>

**CONTRACTOR INFORMATION**

NAME \_\_\_\_\_ CONTACT \_\_\_\_\_

ADDRESS \_\_\_\_\_ PHONE ( ) \_\_\_\_\_

CITY, STATE, ZIP \_\_\_\_\_

**CONSULTANT INFORMATION**

(IF APPLICABLE)

NAME HAGEMAN-SCHANK, INC. CONTACT BRUCE HAGEMAN - GARY AGUIAR

ADDRESS 2321 CROW CANYON ROAD PHONE (415) 837-2926

CITY, STATE, ZIP SAN RAMON, CA 94583

**FOR OFFICE USE ONLY**

DATE RECEIVED \_\_\_\_\_ BY \_\_\_\_\_ (INIT.) \_\_\_\_\_

CC: INSPECTOR NO. \_\_\_\_\_ DATE \_\_\_\_\_ BY \_\_\_\_\_ (INIT.) \_\_\_\_\_

TELEPHONE UPDATE: CALLER \_\_\_\_\_ CHANGE MADE \_\_\_\_\_

BAAQMD N # \_\_\_\_\_

HAGEMAN-SCHANK, INCORPORATED  
 2723 CROW CANYON ROAD, SUITE 210  
 SAN RAMON, CALIFORNIA 94583  
 415/837-2926

BTXE / AS GASOLINE  
 TPH

NORMAL TURN AROUND

PROJECT NO.

DAUGHERTY FIRE  
 STA #1  
 SOIL AERATION

COMPOSITE CSS #1 THRU CSS #5  
 AS ONE SAMPLE

CHAIN OF CUSTODY RECORD

COMPOSITE 6 & THRU #10  
 AS ONE SAMPLE

Field Record

Sample Type SOIL

Container Type BRASS LINER

Laboratory Record  
 Lab No. \_\_\_\_\_

Contract Laboratory Record  
 Laboratory Name \_\_\_\_\_

Sample ID	Sampled By	Date	Received By	Date	Condition	Received By	Date	Condition
DFD CSS #1	BH	4/24/89						
DFD CSS #2	BH	"						
DFD CSS #3	BH	"						
DFD CSS #4	BH	"						
DFD CSS #5	BH	"						
DFD CSS #6								
DFD CSS #7	DFD #1				COMPOSITE AS ONE			
DFD CSS #8	DFD #2				BTXE & TPH AS GASOLINE			
DFD CSS #9								
DFD CSS #10								

Released to Courier By Field Personnel

*Dennis Hageman*

Received by Courier \_\_\_\_\_

Released To Lab by Courier

Received by Lab \_\_\_\_\_

Released to Lab by Courier

Received by Lab \_\_\_\_\_

**CHROMALAB, INC.**

Analytical Laboratory  
Specializing in GC-GC/MS

- Environmental Analysis
- Hazardous Waste (#238)
- Drinking Water (#955)
- Waste Water
- Consultation

December 4, 1989

ChromaLab File # 1189127

Hageman-Schank, Inc.


Attn: Bruce HagemanRe: Two composited soil samples for Gasoline/BTEX analyses


Project Name: Doughery Fire Station #1, soil aeration  
Duration of Analysis: Nov. 28, Dec. 4, 1989

Results:

Sample No.	Gasoline (mg/Kg)	Benzene (µg/Kg)	Toluene (µg/Kg)	Ethyl Benzene (µg/Kg)	Total Xylenes (µg/Kg)
DFD CSS #1-5	5.6	N.D.	N.D.	N.D.	N.D.
DFD CSS #6-10	2.9	N.D.	N.D.	N.D.	N.D.
BLANK	N.D.	N.D.	N.D.	N.D.	N.D.
SPIKE RECOVERY	102.2%	103.1%	94.7%	81.9%	96.8%
DETECTION LIMIT	2.5	5.0	5.0	5.0	5.0
METHOD OF ANALYSIS	MOD.8015	8020	8020	8020	8020

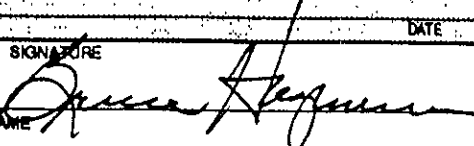
ChromaLab, Inc.

  
David Duong  
Senior Chemist

  
Eric Tam  
Laboratory Director

*Lockpile sample  
result following aeration*

# UNDERGROUND STORAGE TANK UNAUTHORIZED RELEASE (LEAK) / CONTAMINATION SITE REPORT

EMERGENCY <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		HAS STATE OFFICE OF EMERGENCY SERVICES REPORT BEEN FILED? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		FOR LOCAL AGENCY USE ONLY I HEREBY CERTIFY THAT I AM A DESIGNATED GOVERNMENT EMPLOYEE AND THAT I HAVE REPORTED THIS INFORMATION TO LOCAL OFFICIALS PURSUANT TO SECTION 25180.7 OF THE HEALTH AND SAFETY CODE.		
REPORT DATE 1 <u>1</u> <u>1</u> 0 <u>5</u> 8 <u>8</u>		CASE #		SIGNED _____ DATE _____		
REPORTED BY	NAME OF INDIVIDUAL FILING REPORT BRUCE HAGEMAN		PHONE (415) 837-2926		SIGNATURE 	
	REPRESENTING <input checked="" type="checkbox"/> OWNER/OPERATOR <input type="checkbox"/> REGIONAL BOARD <input type="checkbox"/> LOCAL AGENCY <input type="checkbox"/> OTHER		COMPANY OR AGENCY NAME HAGEMAN-SCHANK, INC			
	ADDRESS 7494 DONOHUE DRIVE STREET CITY DUBLIN STATE CA 94568					
RESPONSIBLE PARTY	NAME DOUGHERTY REGIONAL FIRE AUTHORITY		CONTACT PERSON TOM HATHCOX, FIRE MARSHAL		PHONE 415-829-2333	
	ADDRESS 9399 STREET FIRCREST LANE CITY SAN RAMON STATE CA 94582					
SITE LOCATION	FACILITY NAME (IF APPLICABLE) DOUGHERTY FIRE STATION # 1		OPERATOR F. M. TOM HATHCOX		PHONE (415) 829-2333	
	ADDRESS 7494 DONOHUE DRIVE STREET CITY DUBLIN ALAMEDA 94568					
	CROSS STREET NR. AMADOR VALLEY BLVD.		TYPE OF AREA <input checked="" type="checkbox"/> COMMERCIAL <input type="checkbox"/> INDUSTRIAL <input type="checkbox"/> RURAL <input checked="" type="checkbox"/> RESIDENTIAL <input type="checkbox"/> OTHER		TYPE OF BUSINESS <input type="checkbox"/> RETAIL FUEL STATION <input type="checkbox"/> FARM <input type="checkbox"/> OTHER FIRE STA.	
IMPLEMENTING AGENCIES	LOCAL AGENCY ALAMEDA COUNTY HEALTH		CONTACT PERSON MR. GIL WISTAR		PHONE (415) 271-4320	
	REGIONAL BOARD SAN FRANCISCO BAY		CONTACT PERSON LES FELDMAN		PHONE ( )	
SUBSTANCES INVOLVED	(1) NAME GASOLINE REGULAR				QUANTITY LOST (GALLONS) <input checked="" type="checkbox"/> UNKNOWN	
	(2)				<input type="checkbox"/> UNKNOWN	
DISCOVERY/ABATEMENT	DATE DISCOVERED 1 <u>1</u> <u>1</u> 0 <u>2</u> 8 <u>9</u>		HOW DISCOVERED <input type="checkbox"/> INVENTORY CONTROL <input type="checkbox"/> SUBSURFACE MONITORING <input type="checkbox"/> NUISANCE CONDITIONS <input type="checkbox"/> TANK TEST <input checked="" type="checkbox"/> TANK REMOVAL <input type="checkbox"/> OTHER			
	DATE DISCHARGE BEGAN <input checked="" type="checkbox"/> UNKNOWN		METHOD USED TO STOP DISCHARGE (CHECK ALL THAT APPLY) <input type="checkbox"/> REMOVE CONTENTS <input type="checkbox"/> REPLACE TANK <input checked="" type="checkbox"/> CLOSE TANK <input type="checkbox"/> REPAIR TANK <input type="checkbox"/> REPAIR PIPING <input type="checkbox"/> CHANGE PROCEDURE <input type="checkbox"/> OTHER			
	HAS DISCHARGE BEEN STOPPED? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO IF YES, DATE 1 <u>1</u> <u>1</u> 0 <u>2</u> 8 <u>9</u>					
SOURCE/CAUSE	SOURCE OF DISCHARGE <input checked="" type="checkbox"/> TANK LEAK <input type="checkbox"/> UNKNOWN <input type="checkbox"/> PIPING LEAK <input type="checkbox"/> OTHER		TANKS ONLY/CAPACITY _____ GAL. AGE _____ YRS <input type="checkbox"/> UNKNOWN		MATERIAL <input type="checkbox"/> FIBERGLASS <input checked="" type="checkbox"/> STEEL <input type="checkbox"/> OTHER	
	CAUSE(S) <input type="checkbox"/> OVERFILL <input type="checkbox"/> RUPTURE/FAILURE <input checked="" type="checkbox"/> CORROSION <input type="checkbox"/> UNKNOWN <input type="checkbox"/> SPILL <input type="checkbox"/> OTHER					
CASE TYPE	CHECK ONE ONLY <input checked="" type="checkbox"/> UNDETERMINED <input type="checkbox"/> SOIL ONLY <input type="checkbox"/> GROUNDWATER <input type="checkbox"/> DRINKING WATER - (CHECK ONLY IF WATER WELLS HAVE ACTUALLY BEEN AFFECTED)					
CURRENT STATUS	CHECK ONE ONLY <input checked="" type="checkbox"/> SITE INVESTIGATION IN PROGRESS (DEFINING EXTENT OF PROBLEM) <input type="checkbox"/> CLEANUP IN PROGRESS <input type="checkbox"/> SIGNED OFF (CLEANUP COMPLETED OR UNNECESSARY) <input type="checkbox"/> NO ACTION TAKEN <input type="checkbox"/> POST CLEANUP MONITORING IN PROGRESS <input type="checkbox"/> NO FUNDS AVAILABLE TO PROCEED <input type="checkbox"/> EVALUATING CLEANUP ALTERNATIVES					
REMEDIAL ACTION	CHECK APPROPRIATE ACTION(S) (SEE BACK FOR DETAILS) <input type="checkbox"/> CAP SITE (CD) <input type="checkbox"/> EXCAVATE & DISPOSE (ED) <input type="checkbox"/> REMOVE FREE PRODUCT (FP) <input type="checkbox"/> ENHANCED BIO DEGRADATION (IT) <input checked="" type="checkbox"/> CONTAINMENT BARRIER (CB) <input type="checkbox"/> EXCAVATE & TREAT (ET) <input type="checkbox"/> PUMP & TREAT GROUNDWATER (GT) <input type="checkbox"/> REPLACE SUPPLY (RS) <input type="checkbox"/> TREATMENT AT HOOKUP (HU) <input type="checkbox"/> NO ACTION REQUIRED (NA) <input type="checkbox"/> OTHER (OT) <u>TO BE DETERMINED</u>					
COMMENTS	_____					

ATTACHMENT B

Statement of Qualifications



## STATEMENT OF QUALIFICATIONS

Gary Aguiar:

- o B.S., Chemical Engineering, University of California, Berkeley, 1977  
M.S., Sanitary Engineering, University of California, Berkeley, 1981
- o Registered Civil Engineer, California, C.E. 34262  
Registered Civil Engineer, Oregon, C.E. 13353  
Registered Civil Engineer, Alaska, C.E. 7769
- o Over the past ten years, has participated in all aspects of hydrogeological investigations, groundwater pollution investigations, water resource studies, and hazardous waste management.
- o His extensive teaching experience includes the following:

UNIVERSITY OF CALIFORNIA

1/82 - present                      EXTENSION, Berkeley, Ca.  
Instructor: Develop and teach courses on the principles of groundwater hydrology, groundwater pollution, and hazardous waste management.

Advisory Committee member: Member of advisory committee for U.C. Berkeley Hazardous Materials Management Certificate Program.

CALIFORNIA STATE UNIVERSITY  
9/83 - 12/83 CONSORTIUM, Hayward, Ca.  
Assistant Professor: Developed and taught a course on the engineering aspects of environmental planning.

RESOURCE SEMINARS,  
1/81 - 9/83 Berkeley, Ca.  
Lecturer: Lectured on the principles of groundwater hydrology at seminars given in various U.S. cities.

o Other Qualifications:

Water Treatment Plant Operator Grade III Certificate, California State Department of Health.

Basic Qualified Earth Shorer Certificate, American Society of Safety Engineers.

Radiation Safety / Nuclear Soils Gauge Operator Certificate, Campbell Pacific Nuclear Corp.

o Professional Affiliations:

Member, American Chemical Society  
Member, American Water Works Association  
Member, National Water Well Association

Gary Aguiar began a private consulting practice in 1984. The first project was the installation of three deep monitoring wells within the drinking water aquifer beneath McKesson Chemical Company's Union City chemical packaging facility. This project involved casing a highly contaminated upper zone prior to drilling through the Newark aquitard. After supervising the drilling operations, properly disposing of the drilling spoils, and sampling the wells, a detailed report was prepared that presented an analysis of the data, as well as an assessment of the impact that shallow groundwater contamination has had upon the quality of the drinking water in the area.

To date, Gary Aguiar has provided services for a total of fifteen clients. Typical work has included:

- o Assessment of local hydrogeology around solvent recycling sites located in Denver, Co. and Azusa, Ca., prior to purchase by a national chemical recycler.
- o Consultation to a local geologic firm concerning the design of a dewatering and contaminant removal system in tight clays at an electronics factory site located in Santa Clara County.
- o Design of a pump test to determine aquifer characteristics prior to design of an extraction system for the removal of gasoline from an underground tank site in Morgan Hill, Ca.
- o Hydrogeologic analysis and design of a recovery system for the remediation of gasoline contamination that threatened a drinking water supply in Woodside, Ca.
- o Data analysis and professional representation in negotiations with the Regional Water Quality Control Board for a commercial property owner in Santa Clara County. Solvent contamination had been discovered beneath the site.

- o In association with a local hydrogeologic consulting firm, a site assessment of a laser manufacturing plant in Palo Alto, Ca. is currently in progress. This project involved assessing the local hydrogeology, sampling surface and groundwaters, formulating a risk assessment in terms of contaminants that may enter the groundwater due to factory processes, and removing hazardous wastes that have been left from past operations.
- o Consultation to a local geologic firm concerning the results of soil and groundwater sampling at a large oil refinery in Hanford, Ca. This project has involved assessing the local hydrogeology, relating the presence of subsurface contaminants to specific above-ground refinery processes, and recommending specific chemical analyses to be performed. An assessment of the impact of subsurface contamination was made in terms of the potential for deep migration. In addition, an assessment of the legal impact was made in terms of applicable hazardous waste laws (Title 22 and 40CFR).
- o Analysis of hydrogeologic/groundwater quality data for a chemical facility in Freeport, Grand Bahama Island. This project currently involves an assessment of potential contaminant migration, as well as remedial action plan development. The assessment is complicated by karst geology, a strong tidal influence and the occurrence of groundwater in a freshwater lens.
- o Project management of a soil and groundwater study in and around the chrome plating shop at Mare Island Naval Base, Vallejo, CA. This project has included the installation of a number of monitoring wells, collection of soil samples, and determining the influence of nearby tidal action. The study is complicated by hard-rock geology, a significant tidal influence, the occurrence of groundwater in confined gravel lenses, and the heterogeneity of soils within fill areas.

- o Analysis of hydrogeologic/groundwater quality data for production facilities in Clarecastle, Ireland, and in Cuernavaca, Mexico. The work is part of an in-house program of environmental auditing and regulatory compliance being conducted by a large pharmaceuticals company at all of their facilities.

By providing education for the professional community, Gary Aguiar has maintained close contact with the University of California. Through this contact, experts in particular fields can be easily networked, while maintaining low operating overhead costs. In addition, the latest technologies in sampling and contamination remediation are continually evaluated and made available to the client.

DEPARTMENT OF CONSUMER AFFAIRS

BOARD OF REGISTRATION FOR  
PROFESSIONAL ENGINEERS  
AND LAND SURVEYORS

CIVIL ENGINEER  
LICENSE NO. C 034262  
AGUIAR GARY HENRY  
280 HOWLAND ST #308  
REDWOOD CITY

CA 94063  
Expiration Date

REFERENCE #  
N 097297

09/30/91

ATTACHMENT C

Site Safety Plan

HEALTH AND SAFETY PROCEDURES  
FOR  
FIELD INVESTIGATION OF UNDERGROUND SPILLS OF  
MOTOR OIL AND PETROLEUM DISTILLATE FUEL

1.0 PURPOSE

This operating procedure established minimum procedures for protecting personnel against the hazardous properties of motor oil and petroleum distillate fuels during the performance of field investigations of known and suspected underground releases of such materials. The procedure was developed to enable health and safety personnel and project managers to quickly prepare and issue site safety plans for investigations of such releases.

2.0 APPLICABILITY

This procedure is applicable to field investigations of underground releases of the substances listed below and involving one or more of the activities listed below.

Substances

- Motor oil (used and unused)
- Leaded and unleaded gasoline
- No. 1 Fuel oil (kerosene, JP-1)
- No. 1-D Fuel oil (light diesel)
- No. 2 Fuel oil (home heating oil)
- No. 2-D Fuel oil (medium diesel)
- No. 4 Fuel oil (residual fuel oil)
- No. 5 Fuel oil (residual fuel oil)
- No. 6 Fuel oil (Bunker C fuel oil)
- JP-3, 4 & 5 (jet fuels)
- Gasahol



## Activities

Collection of samples of subsurface soil with aid of truck-mounted drill rig, hand-held power auger or hand auger.

Construction, completion and testing of groundwater monitoring wells.

Collection of groundwater samples from new and existing wells.

Observing removal of underground fuel pipes and storage tanks.

This procedure must not be used for confined space entry (including trench entry) or for installing or operating pilot and full-scale fuel recovery systems.

No safety plans needed for non-intrusive geophysical surveys, reconnaissance surveys and collection of surface soil, surface water and biota.

## 3.0 RESPONSIBILITY AND AUTHORITY

Personnel responsible for project safety are the Business Unit Health and Safety Officer (HSO), the Project Manager (PM) and the Site Safety Officer (SSO).

The HSO is responsible for reviewing and approving site safety plans and any addenda and for advising both PM and SSO on health and safety matters. The HSO has the authority to audit compliance with the provisions of site safety plans. suspend work or modify work practices for safety reasons, and to dismiss from the site any individual whose conduct on site endangers the health and safety of others.

The PM is responsible for having site safety plans prepared and distributing them to all field personnel and to an authorized representative of each firm contracted to assist with on-site work. The PM is also responsible for ensuring that the provisions of safety plans and their addenda are carried out.

The SSO is responsible for assisting the PM with on site implementation of site safety plans. Responsibilities include:

1. Maintaining safety equipment supplies.
2. Performing or supervising air quality measurements.
3. Directing decontamination operations and emergency response operations.
4. Setting up work zone markers and signs if such zones are specified in the site safety plan.
5. Reporting all accidents, incidents and infractions of safety rules and requirements.
6. Directing other personnel to wear protective equipment when use conditions described in Section 5.0 are met.

The SSO may suspend work anytime he/she determines that the provisions of the site safety plan are inadequate to ensure worker safety and inform the PM and HSO of individuals who on-site behavior jeopardizes their health and safety or the health and safety of others.

#### 4.0 HAZARD EVALUATION

Motor oil and petroleum distillate fuels are mixtures of aliphatic and aromatic hydrocarbons. The predominant classes of compounds in motor oil, gasoline, kerosene and jet fuels are the paraffins (e.g., benzene, toluene). Gasoline contains about 80 percent paraffins, 6 percent naphthenes, and 14 percent aromatic. Kerosene and jet fuels contain 42-48 percent paraffins, 36-38 percent naphthenes, and 16-20 percent aromatic. Diesel fuels and heating oils contain less than 10 percent paraffins, 14-23 percent naphthenes, and 68-78 percent non-volatile aromatic. These heavier fuels contain almost no volatile aromatic compounds. Chemicals are usually added to automotive and aviation fuels to improve their burning properties. Examples are tetraethyl-lead and ethylene dibromide. Most additives are proprietary materials.

##### Flammability

Crude oil and petroleum distillate fuels possess two intrinsic hazardous properties, namely, flammability and toxicity. The flammable property of the oil and fuels presents a far greater hazard to field personnel than toxicity because it is difficult to protect against and can result in catastrophic consequences. Being

flammable, the vapors of volatile components of crude oil and the fuels can be explosive when confined.

The lower flammable or explosive limits (LFL or LEL) of the fuels listed in Section 508.2 range from 0.6 percent for JP-5 to 1.4 percent for gasolines. LFL and LEL are synonyms. Flash points range from -36°F for gasoline to greater than 150°F for No. 6 fuel oil. JP-5 has a flash point of 140°F. Although it has a lower LEL than gasoline, it can be considered less hazardous because its vapors must be heated to a higher temperature to ignite.

Crude oil and petroleum distillate fuels will not burn in the liquid form; only the vapors will burn and only if the vapor concentration is between the upper and lower flammable limits, sufficient oxygen is present, and an ignition source is present. If these conditions occur in a confined area an explosion may result.

The probability of fire and explosion can be minimized by eliminating any one of the three factors needed to produce combustion. Two of the factors -- ignition source and vapor concentration -- can be controlled in many cases. Ignition can be controlled by prohibiting open fires and smoking on site, installing spark arrestors on drill rig engines, and turning the engines off when LELs are approached. Vapor concentrations can be reduced by using fans. In fuel tanks, vapor concentrations in the head space can be reduced by introducing dry ice (solid carbon dioxide) into the tank; the carbon dioxide gas will displace the combustible vapors.

### Toxicity

Crude oil and petroleum distillate fuels exhibit relatively low acute inhalation and dermal toxicity. Concentrations of 160 to 270 ppm gasoline vapor have been reported to cause eye, nose and throat irritation after several hours of exposure. Levels of 500 to 900 ppm can cause irritation and dizziness in one hour, and 2000 ppm produces mild anesthesia in 30 minutes. Headaches have been reported with exposure to 25 ppm or more of gasoline vapors measured with a photoionization meter. Most fuels, particularly gasoline, kerosene and jet fuels are capable of causing skin irritation after several hours contact with the skin.

Petroleum fuels exhibit moderate oral toxicity. The lethal dose of gasoline in children has been reported to be as low as 10-15 grams (2-3 teaspoons). In adults, ingestion of 20-50 grams of gasoline may produce severe symptoms of poisoning. If liquid fuel aspirated (passed in to the lungs) gasoline and other petroleum distillate fuels may cause secondary pneumonia.

Some of the additives to gasoline, such as ethylene dichloride, ethylene dibromide, and tetraethyl and tetramethyl lead, are highly toxic; however, they are present in such low concentrations that their contribution to the overall toxicity of gasoline and other fuels is negligible in most instances.

OSHA has not developed permissible workplace exposure limits for crude oil and petroleum distillate fuels. It recommends using permissible exposure limits for individual components, such as benzene. ACGIH has established a permissible exposure limit of 300 ppm for gasoline. The limit took into consideration the average concentration of benzene in gasoline (one percent) as well as its common additives. Exposure limits established by other countries range from 250 to 500 ppm. Chemical data sheets, prepared for the U.S. Coast Guard's Chemical Hazard Information System (CHRIS), list 200 ppm as the permissible exposure limit for kerosene and jet fuels. This limit was not developed by NIOSH/OSHA or ACGIH.

## 5.0 HEALTH AND SAFETY DIRECTIVES

### 5.1 Site-Specific Safety Briefing

Before field work begins, all field personnel, including subcontractor employees, must be briefed on their work assignments and safety procedures contained in this document.

### 5.2 Personal Protective Equipment

The following equipment should be available on-site to each member of the field team:

- NIOSH-approved full or half-face respirator with organic vapor cartridges (color coded black)
- Saranex or polyethylene-coated Tyvek coveralls
- Splash-proof safety goggles
- Nitrile or neoprene gloves
- Neoprene or butyl boots, calf-length with steel toe and shank
- Hardhat

### Equipment Usage

Chemical-resistant safety boots must be worn during the performance of work where surface soil is obviously contaminated with oil or fuel, when product quantities of oil or fuel are likely to be encountered, and within 10 feet of operating heavy equipment.

Respirators must be worn whenever total airborne hydrocarbons levels in the breathing zone of field personnel reach or exceed a 15-minute average of 25 ppm. If total airborne hydrocarbons in the breathing zone exceeds 100 ppm, work must be suspended, personnel directed to move a safe distance from the source, and the HSO or designee consulted.

Chemical resistant gloves must be worn whenever soil or water known or suspected of containing petroleum hydrocarbons is collected or otherwise handled.

Chemical resistant coveralls must be worn whenever product quantities of fuel are actually encountered and when oil or fuel-saturated soil is handled.

Safety goggles must be worn when working within 10 feet of any operating heavy equipment (e.g., drill rig, backhoe). Splash-proof goggles or face shields must be worn whenever product quantities of oil or fuel are encountered.

Hardhats must be worn when working within 10 feet of an operating drill rig, backhoe or other heavy equipment.

Operators of some facilities, such as refineries, often require all personnel working within facility boundaries to wear certain specified safety equipment. Such requirements shall be strictly observed

### 5.3 Vapor Monitoring

#### Required Equipment

- Organic vapor meter with flame or photoionization detector
- Combustible gas meter

#### Monitoring Requirements and Guidelines

Vapor monitoring shall be performed as often as necessary and whenever necessary to protect field personnel from hazardous vapors. Monitoring must be performed by individuals trained in the use and care of the monitoring equipment.

During drilling operations, vapor emissions from boreholes must be measured whenever the auger is removed from the boring and whenever flights are added or removed from hollow-stem augers. This requirement does not apply to borings less than five feet deep and borings of any depth made to install monitoring wells in uncontaminated soils. Measurements should be made initially with an organic vapor meter, followed with a combustible gas meter if vapor levels exceed the highest concentration measurable with the organic vapor meter.

Initially measurements shall be made about 12 inches from the bore hole, both upwind and downwind positions. If the total hydrocarbon concentrations exceed the respirator use action level (See Section 508.5.2), measurements must be made in the breathing zone of the individual(s) working closest to the borehole. Decisions regarding respiratory protection should be made using vapor concentrations in the breathing zone.

Organic vapor meters capable of being operated continuously without attention may be operated in that fashion if desired. However, the instrument must be equipped with an alarm set to sound when vapor concentrations reach 25 ppm and must be protected against physical damage and soilage.

If total organic vapor concentrations within 12 inches of the borehole exceed the capacity of the organic vapor meter, a combustible gas meter (CGM) must be used to determine if explosive conditions exist. Operations must be suspended, the drill rig motor shut down, and corrective action taken if combustible gas concentrations reach 40 percent of LEL within a 12-inch radius of

the borehole or 10 percent of LEL at a distance greater than 24 inches from the borehole. This procedure must also be followed whenever the organic vapor meter goes offscale at its highest range and no CGM is available. If corrective action cannot be taken, field personnel and all other individuals in the vicinity of the borehole must be directed to move to a safe area and the local fire department and facility management must be alerted.

Organic vapor meters with flame ionization detectors (FID) are much more sensitive to paraffins, with the major component of gasoline, kerosene, and jet fuels, than are meters with 10.0 or 10.2 eV photoionization detectors. As the data in Table 1 show, an FID instrument, such as the Century Systems OVA (Foxboro Analytical), will detect 70-90 percent of actual paraffin concentrations, whereas PID instruments, such as the HNU Model PI-101, AID Model 580, and Photovac TIP with 10.0 to 10.2 eV lamp will detect only 17-25 percent of actual paraffin concentrations when calibrated with benzene and only 24-35 percent when calibrated with isobutylene. Both types of meters are equally sensitive to most aromatic, including benzene, toluene, xylene and ethylbenzene. For these compounds, meter readings equal or exceed 100 percent of actual concentrations. PIDs with 11.7 eV lamps are extremely sensitive to paraffins and aromatic. When calibrated to isobutylene, an 11.7 eV PID will register about twice actual paraffin concentrations and 100 percent or more of actual concentrations of benzene, toluene, and xylene.

An FID meter, recently calibrated with methane and in good working condition, can be expected to provide readings close enough to actual petroleum hydrocarbon concentrations to make corrections unnecessary. Value obtained with a PID must be corrected when measuring for paraffins. For 10.0 and 10.2 eV PIDs, the meter reading should be multiplied by 5 if the instrument is calibrated with benzene. If the instrument is calibrated with isobutylene, the meter readings should be multiplied by 3. If the instrument is equipped with an 11.7 eV probe and is calibrated with isobutylene, the meter reading should be divided by 2.

#### 5.4 Area Control

Access to hazardous and potential hazardous areas of spill sites must be controlled to reduce the probability of occurrence of physical injury and chemical exposure of field personnel, visitors and the public. A hazardous or potentially hazardous area includes any area where

1. Field personnel are required to wear respirators.
2. Borings are being drilled with powered augers.

### 3. Excavating operations with heavy equipment are being performed.

The boundaries of hazardous and potentially hazardous areas must be identified by cordons, barricades, or emergency traffic cones or posts, depending on conditions. If such areas are left unattended, signs warning of the danger and forbidding entry must be placed around the perimeter if the areas are accessible to the public. Trenches and other large holes must be guarded with wooded or metal barricades spaced no further than 20 feet apart and connected with yellow or yellow and black nylon tape not less and 3/4-inches wide. The barricades must be placed no less than two feet from the edge of the excavation or hole.

Entry to hazardous areas shall be limited to individuals who must work in those areas. Unofficial visitors must not be permitted to enter hazardous areas while work in those areas is in progress. Official visitors should be discouraged from entering hazardous areas, but may be allowed to enter only if they agree to abide by the provisions of this document, follow orders issued by the site safety officer and are informed of the potential dangers that could be encountered in the areas.

#### 5.5 Decontamination

Field decontamination of personnel and equipment is not required except when contamination is obvious (visually or by odor). Recommended decontamination procedures follow:

##### Personnel

Gasoline, kerosene, jet fuel, heating oil, gasahol and diesel oil should be removed from skin using a mild detergent and water. Hot water is more effective than cold. Liquid dishwashing detergent is more effective than hand soap. Motor oil and the heavier fuel oils (No. 4-6) can be removed with dishwashing detergent and hot ware also; however, if weathered to an asphaltic condition, mechanic's waterless hand cleaner is recommended for initial cleaning followed by detergent and water.

##### Equipment

Gloves, respirators, hardhats, boots and goggles should be cleaned as described under personnel; however, if boots do not become clean after washing with detergent and water, wash them with a strong solution of trisodium phosphate and hot water and, if this fails, clean them with diesel oil followed by detergent and water to remove diesel oil.



Sampling equipment, augers, vehicle undercarriages and tires should be steam cleaned. The steam cleaner is a convenient source of hot water for personnel and protective equipment cleaning.

#### 5.6 Smoking

Smoking and open flames are strictly prohibited at sites under investigation.

TABLE 1  
RELATIVE SENSITIVITIES OF FID AND PID INSTRUMENTS TO  
SELECTED COMPONENTS OF OILS AND PETROLEUM DISTILLATE FUELS

Component	Sensitivity in Percent of Standard		
	FID	PID	
		10.2 eV <sup>a</sup>	11.7 eV <sup>b</sup>
<u>Paraffins</u>			
Pentane	65	--	141
Hexane	70	22 (31)	189
Heptane	75	17 (24)	221
Octane	80	25 (35)	--
Nonane	90	--	--
Decane	75	--	--
<u>Napthenes</u>			
Cyclopentane	--	--	--
Methylcyclopentane	80	--	--
Cyclohexane	85	34 (40)	--
Methylcyclohexane	100	--	--
<u>Aromatic</u>			
Benzene	150	100 (143)	122
Toluene	110	100 (143)	100
Ethylbenzene	100	--	--
p-Xylene	116	114 (60)	--
Cumene	100	--	--
n-Propylbenzene	--	--	--
Napthaeine	--	--	--

<sup>a</sup> Values are relative to benzene standard. Values in parentheses are relative to isobutylene standard and were calculated.

<sup>b</sup> Values are relative to isobutylene standard.

# UNDERGROUND STORAGE TANK UNAUTHORIZED RELEASE (LEAK) / CONTAMINATION SITE REPORT

EMERGENCY <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		HAS STATE OFFICE OF EMERGENCY SERVICES REPORT BEEN FILED? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		FOR LOCAL AGENCY USE ONLY I HEREBY CERTIFY THAT I AM A DESIGNATED GOVERNMENT EMPLOYEE AND THAT I HAVE REPORTED THIS INFORMATION TO LOCAL OFFICIALS PURSUANT TO SECTION 25100.7 OF THE HEALTH AND SAFETY CODE.		
REPORT DATE 1 <u>1</u> / 1 <u>1</u> / 0 <u>5</u> / 8 <u>9</u>		CASE #		SIGNED _____ DATE _____		
REPORTED BY	NAME OF INDIVIDUAL FILING REPORT <b>BRUCE HAGEMAN</b>		PHONE (415) 837-2926		SIGNATURE <i>Bruce Hageman</i>	
	REPRESENTING <input checked="" type="checkbox"/> OWNER/OPERATOR <input type="checkbox"/> REGIONAL BOARD <input type="checkbox"/> LOCAL AGENCY <input type="checkbox"/> OTHER		COMPANY OR AGENCY NAME <b>HAGEMAN-SCHANK, INC</b>			
	ADDRESS <b>7494 DONOHUE DRIVE</b> CITY <b>DUBLIN</b> STATE <b>CA</b> ZIP <b>94568</b>					
RESPONSIBLE PARTY	NAME <b>DOUGHERTY REGIONAL FIRE AUTHORITY</b>		CONTACT PERSON <b>TOM HATHCOX, FIRE MARSHAL</b>		PHONE <b>415-829-2333</b>	
	ADDRESS <b>9399 FIRCREST LANE</b> CITY <b>SAN RAMON</b> STATE <b>CA</b> ZIP <b>94583</b>					
SITE LOCATION	FACILITY NAME (IF APPLICABLE) <b>DOUGHERTY FIRE STATION # 1</b>		OPERATOR <b>F. M. TOM HATHCOX</b>		PHONE <b>(415) 829-2333</b>	
	ADDRESS <b>7494 DONOHUE DRIVE</b> CITY <b>DUBLIN</b> STATE <b>CA</b> ZIP <b>94568</b>					
	CROSS STREET <b>NR. AMADOR VALLEY BLVD.</b>		TYPE OF AREA <input checked="" type="checkbox"/> COMMERCIAL <input type="checkbox"/> INDUSTRIAL <input type="checkbox"/> RURAL <input checked="" type="checkbox"/> RESIDENTIAL <input type="checkbox"/> OTHER		TYPE OF BUSINESS <input type="checkbox"/> RETAIL FUEL STATION <input type="checkbox"/> FARM <input checked="" type="checkbox"/> OTHER <b>FIRE STA.</b>	
IMPLEMENTING AGENCIES	LOCAL AGENCY <b>ALAMEDA COUNTY HEALTH</b>		CONTACT PERSON <b>MR. GIL WISTAR</b>		PHONE <b>(415) 271-4320</b>	
	REGIONAL BOARD <b>SAN FRANCISCO BAY</b>		CONTACT PERSON <b>LES FELDMAN</b>		PHONE <b>( )</b>	
SUBSTANCES INVOLVED	(1) NAME <b>GASOLINE REGULAR</b>		QUANTITY LOST (GALLONS) <input checked="" type="checkbox"/> UNKNOWN			
	(2)		<input type="checkbox"/> UNKNOWN			
DISCOVERY/ABATEMENT	DATE DISCOVERED 1 <u>1</u> / 1 <u>1</u> / 0 <u>2</u> / 8 <u>9</u>		HOW DISCOVERED <input type="checkbox"/> INVENTORY CONTROL <input type="checkbox"/> SUBSURFACE MONITORING <input type="checkbox"/> NUISANCE CONDITIONS <input type="checkbox"/> TANK TEST <input checked="" type="checkbox"/> TANK REMOVAL <input type="checkbox"/> OTHER			
	DATE DISCHARGE BEGAN ____ / ____ / ____		METHOD USED TO STOP DISCHARGE (CHECK ALL THAT APPLY) <input type="checkbox"/> REMOVE CONTENTS <input type="checkbox"/> REPLACE TANK <input checked="" type="checkbox"/> CLOSE TANK <input type="checkbox"/> REPAIR TANK <input type="checkbox"/> REPAIR PIPING <input type="checkbox"/> CHANGE PROCEDURE <input type="checkbox"/> OTHER			
	HAS DISCHARGE BEEN STOPPED? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO IF YES, DATE 1 <u>1</u> / 1 <u>1</u> / 0 <u>2</u> / 8 <u>9</u>					
SOURCE/CAUSE	SOURCE OF DISCHARGE <input checked="" type="checkbox"/> TANK LEAK <input type="checkbox"/> UNKNOWN <input type="checkbox"/> PIPING LEAK <input type="checkbox"/> OTHER		TANKS ONLY/CAPACITY ____ GAL. AGE ____ YRS <input type="checkbox"/> UNKNOWN		MATERIAL <input type="checkbox"/> FIBERGLASS <input checked="" type="checkbox"/> STEEL <input type="checkbox"/> OTHER CAUSE(S) <input type="checkbox"/> OVERFILL <input type="checkbox"/> RUPTURE/FAILURE <input checked="" type="checkbox"/> CORROSION <input type="checkbox"/> UNKNOWN <input type="checkbox"/> SPILL <input type="checkbox"/> OTHER	
	CHECK ONE ONLY <input checked="" type="checkbox"/> UNDETERMINED <input type="checkbox"/> SOIL ONLY <input type="checkbox"/> GROUNDWATER <input type="checkbox"/> DRINKING WATER - (CHECK ONLY IF WATER WELLS HAVE ACTUALLY BEEN AFFECTED)					
CURRENT STATUS	CHECK ONE ONLY <input checked="" type="checkbox"/> SITE INVESTIGATION IN PROGRESS (DEFINING EXTENT OF PROBLEM) <input type="checkbox"/> CLEANUP IN PROGRESS <input type="checkbox"/> SIGNED OFF (CLEANUP COMPLETED OR UNNECESSARY) <input type="checkbox"/> NO ACTION TAKEN <input type="checkbox"/> POST CLEANUP MONITORING IN PROGRESS <input type="checkbox"/> NO FUNDS AVAILABLE TO PROCEED <input type="checkbox"/> EVALUATING CLEANUP ALTERNATIVES					
	CHECK APPROPRIATE ACTION(S) (SEE BACK FOR DETAILS) <input type="checkbox"/> CAP SITE (CD) <input type="checkbox"/> EXCAVATE & DISPOSE (ED) <input type="checkbox"/> REMOVE FREE PRODUCT (FP) <input type="checkbox"/> ENHANCED BIO DEGRADATION (IT) <input type="checkbox"/> CONTAINMENT BARRIER (CB) <input type="checkbox"/> EXCAVATE & TREAT (ET) <input type="checkbox"/> PUMP & TREAT GROUNDWATER (GT) <input type="checkbox"/> REPLACE SUPPLY (RS) <input type="checkbox"/> TREATMENT AT HOOKUP (HU) <input type="checkbox"/> NO ACTION REQUIRED (NA) <input type="checkbox"/> OTHER (OT) <b>TO BE DETERMINED</b>					
COMMENTS						