01-1563

SAFETY SPECIALISTS, Inc.
The Full Service Environmental, Health & Safety Corporation

P.O. Box 4420, Santa Clara, CA 95054
Telephone (408) 988-1111
Contractor's License No. 460905

NEW

File

December 2, 1988

DEC 06 1988

QUALITY CONTROL

Mr. Bob Smith
Tank Excavators
PO Box 8402
Santa Cruz, CA 95061

4543 Horton St. Emeryville

Reference: Safety Specialists, Inc., Project No. 530050

Dear Mr. Smith:

Safety Specialists, Inc., is pleased to submit this report documenting the collection and analysis of soil and water samples and the installation of one monitoring well in Emeryville, California.

Soil samples from monitoring well MW-1 at the 9 to 9 1/2 foot sample interval proved to have 370 parts per million (ppm), total petroleum hydrocarbons (TPH) as diesel. Water samples from monitoring well MW-1 proved to have 7400 parts per billion (ppb) TPH as diesel. Therefore, as of the date of this submittal, it is the opinion of this office that the above mentioned site should be considered to have contaminated groundwater. We suggest notification of the Regional Water Quality Control Board and recommend that the existing well be monitored on a quarterly basis to gather data upon which further decisions may be based. For details and complete laboratory results, refer to the text of this report and Appendix D.

If you have any questions or require further data, please contact our office at your convenience.

Sincerely,

SAFETY SPECIALISTS, INC.

Curtis Payton
Staff Geologist
Environmental Engineering Services

Kenneth L. Meleen
Kenneth L. Meleen, P.E.
Civil Engineer C17487
Environmental Engineering Services

CP/KLM:mw

Enclosure

REGISTERED PROFESSIONAL ENGINEER
KENNETH LEROY MELEEN
C017487
Exp. 6/30/89
CIVIL
STATE OF CALIFORNIA

SAFETY SPECIALISTS, Inc.
The Full Service Environmental, Health & Safety Corporation

P.O. Box 4420, Santa Clara, CA 95054
Telephone (408) 988-1111
Contractor's License No. 460905

December 2, 1988

Mr. Bob Smith
Tank Excavators
PO Box 8402
Santa Cruz, CA 95061

Reference: Safety Specialists, Inc., Project No. 530050

Dear Mr. Smith:

Safety Specialists, Inc., is pleased to submit this report documenting the collection and analysis of soil and water samples and the installation of one monitoring well in Emeryville, California.

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CP/KLM:mw

Enclosure

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INTRODUCTION

This report documents the installation and sampling of one groundwater monitoring well for the purpose of collecting soil and water samples for petroleum hydrocarbon analysis, at 4543 Horton Street in Emeryville, California. A vicinity map is presented as Figure 1, and a site plan is presented as Figure 2.

SITE HISTORY

As described in Safety Specialists, Inc., Reports, Nos. 530020 and 530039, dated August 5 and October 31, 1988 respectively (Appendix A), a 1000-gallon gasoline underground storage tank and a 550-gallon gasoline tank were excavated from the front (Horton Street side) of the subject site. Soil samples obtained from beneath the tanks proved to be sufficiently contaminated to raise concern regarding the groundwater. A monitoring well was installed to establish whether any hydrocarbon contamination had impacted the groundwater.

MONITORING WELL CONSTRUCTION

Before drilling operations began, Safety Specialists, Inc., secured all necessary permits and had underground utilities located in the vicinity of the monitoring well. All work was performed under the direct supervision of Kenneth L. Meleen, Professional Engineer, C 17487.

The borehole for the monitoring well was drilled on November 14, 1988, under the supervision of Safety Specialists, Inc.'s, Staff Geologist, Mr. Curtis Payton (See Figure 2 for monitoring well location.) The drilling firm Hew Drilling of East Palo Alto, California was subcontracted to drill the boreholes using 8-inch outside diameter hollow stem augers with a truck-mounted auger rig. The borehole was extended 15 feet below the first encountered water level. For logging purposes, soil samples were collected every five feet using a modified California split-spoon sampler driven into the bottom of the borehole with an automatic 140 pound hammer falling 30 inches. One soil sample for chemical analysis was collected at each of the first three sampling intervals using a modified California split-spoon sampler lined with six-inch long brass sleeves. The sample intervals were at 5 to 5 1/2 feet, 9 to 9 1/2 feet and 15 to 15 1/2 feet below the surface.

The ends of the brass sleeves containing the soil samples were wrapped in aluminum foil and sealed with plastic end caps. The samples were labeled, placed in a cooler with ice and transported by courier to Fireman's Fund

Laboratories in Petaluma, California, a State-certified hazardous waste waste testing laboratory. Chain of custody procedures were observed. The soil samples from boring MW-1 were separately analyzed for total petroleum hydrocarbons (TPH) as diesel and for benzene, toluene, ethylbenzene and xylene using EPA methods 3550, 8015 and 8020.

Drill cuttings were stored in sealed 55-gallon open-head, DOT approved drums until soil analysis results were available to determine the proper method of disposal. Upon completion of drilling, the borehole was converted to a monitoring well by the installation of a two-inch diameter Schedule 40, factory threaded and factory slotted, PVC casing and screen. Monitoring Well MW-1 was constructed with 0.010 inch slot. The slotted interval extended to 4 1/2 feet above groundwater to allow for collection of floating product, and in anticipation of seasonal fluctuations of groundwater levels. The filter sand extended to one foot above the top of the slotted interval, and 1/4 foot of bentonite pellets was placed above the sand. The pellets were hydrated with clean water and allowed to set up. The remaining annulus was filled with neat cement and 5% bentonite powder mixture poured from the surface. The top of the monitoring well was enclosed in locking field cover with the top set slightly above grade to prevent surface water infiltration, contamination or vandalism. Copies of the exploratory boring logs and monitoring well construction as-built diagrams are presented in Appendix B.

The monitoring well was developed on November 22, 1988 by overpumping until the discharged water was clear. Water discharged from the monitoring

well was stored in a 30-gallon open head DOT-approved drum. The water was kept in the drum until water quality analysis results were available to determine the proper method of disposal.

GROUNDWATER SAMPLE COLLECTION

Prior to sampling, the monitoring well was purged. Care was taken during purging not to lower the water level in the monitoring wells more than two to three feet in order to minimize potential aeration of the sand pack or aquifer. The field parameters of pH, electrical conductivity, and temperature were monitored and recorded during purging. After the field parameters had been observed to stabilize and a minimum of three casing volumes of water had been removed, the monitoring wells were sampled. Water discharged during purging operations was stored in a 30-gallon open head DOT-approved drum until it could be disposed of properly. A copy of the monitoring well purge data sheet is presented in Appendix C.

A water sample was collected on November 22, 1988, using a clean Teflon bailer and cotton cord. The water sample was placed in a 40 ml volatile organic analysis container (VOA) sample bottle which was provided by the laboratory, placed in a cooler with ice, and transported by the field technician to Sequoia Analytical Laboratory in Redwood City, California, a State-certified hazardous waste testing laboratory. Chain of custody procedures were observed. The bailer was decontaminated before use by washing in a trisodium phosphate solution followed by a distilled water rinse.

Laboratory analysis was performed on the water sample using EPA methods 3510 and 8015 for total petroleum hydrocarbons as diesel and method 602 for petroleum hydrocarbons as benzene, toluene, ethylbenzene and xylene (BTEX) constituents.

LABORATORY ANALYTICAL RESULTS

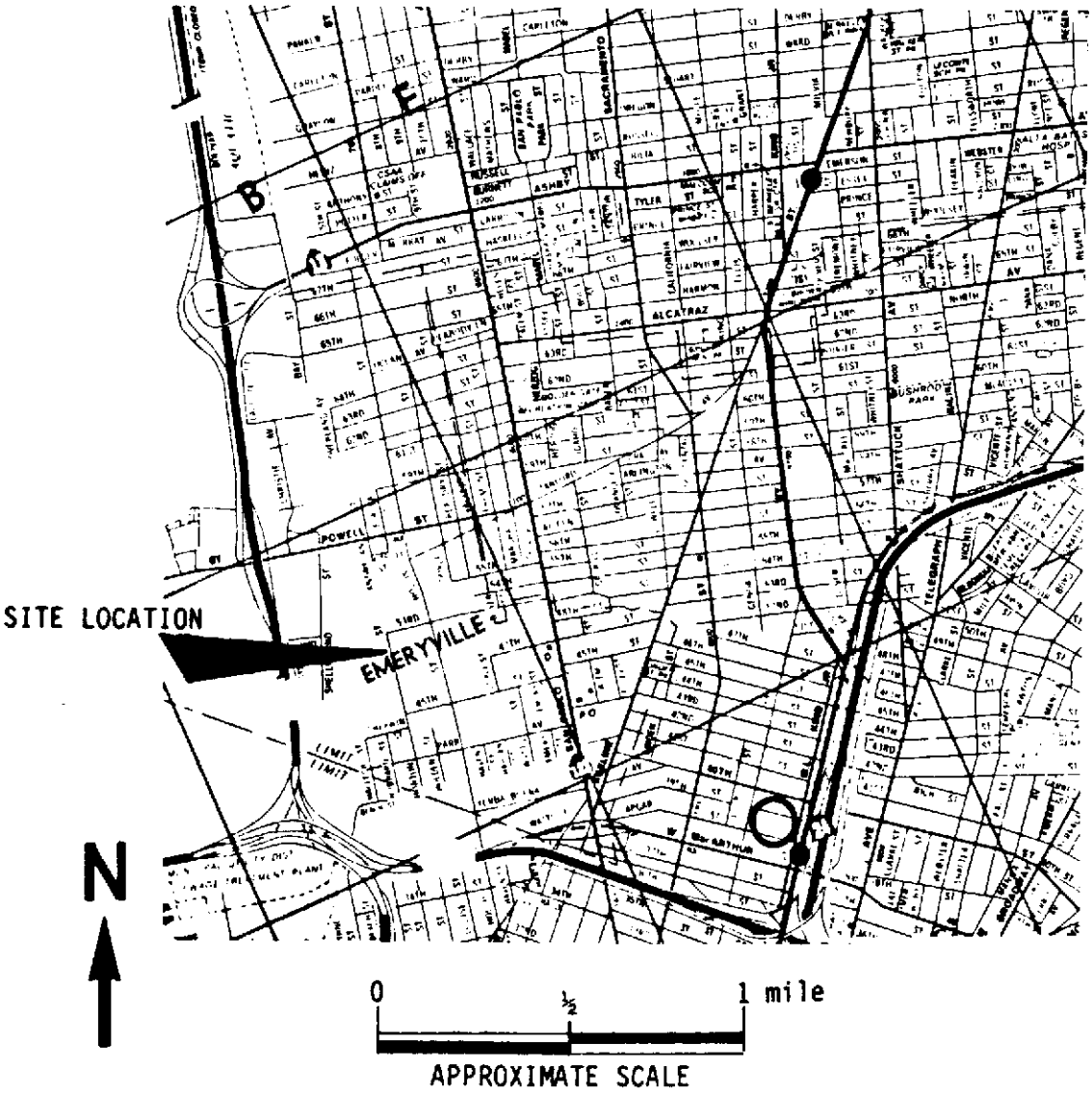
Copies of the laboratory analytical results and the chain of custody documentation are provided in Appendix D. TPH as diesel registered in soil sample MW-1-9-9 1/2' at 370 ppm. Soil sample MW-1-9-9 1/2' also proved to have 13 ppm and 22 ppm of toluene and xylene respectively. The water sample from MW-1 proved to have 7400 ppb of TPH as diesel and between 11 ppb and 53 ppb for BTEX constituents. Table 1 summarizes the laboratory analytical results for soil and water.

CONCLUSIONS AND RECOMMENDATIONS

Laboratory results confirm contamination in both the soil and water immediately downgradient of the tank excavation. It is likely that the Regional Water Quality Control Board may require the implementation of a groundwater cleanup program. A quarterly groundwater monitoring program should be established to observe any changes and gather data upon which further decisions can be made.

SOIL AND WATER DISPOSAL

Soil cuttings, and groundwater from well construction, development and purging were contained on site. They will be disposed of properly within the next two weeks.



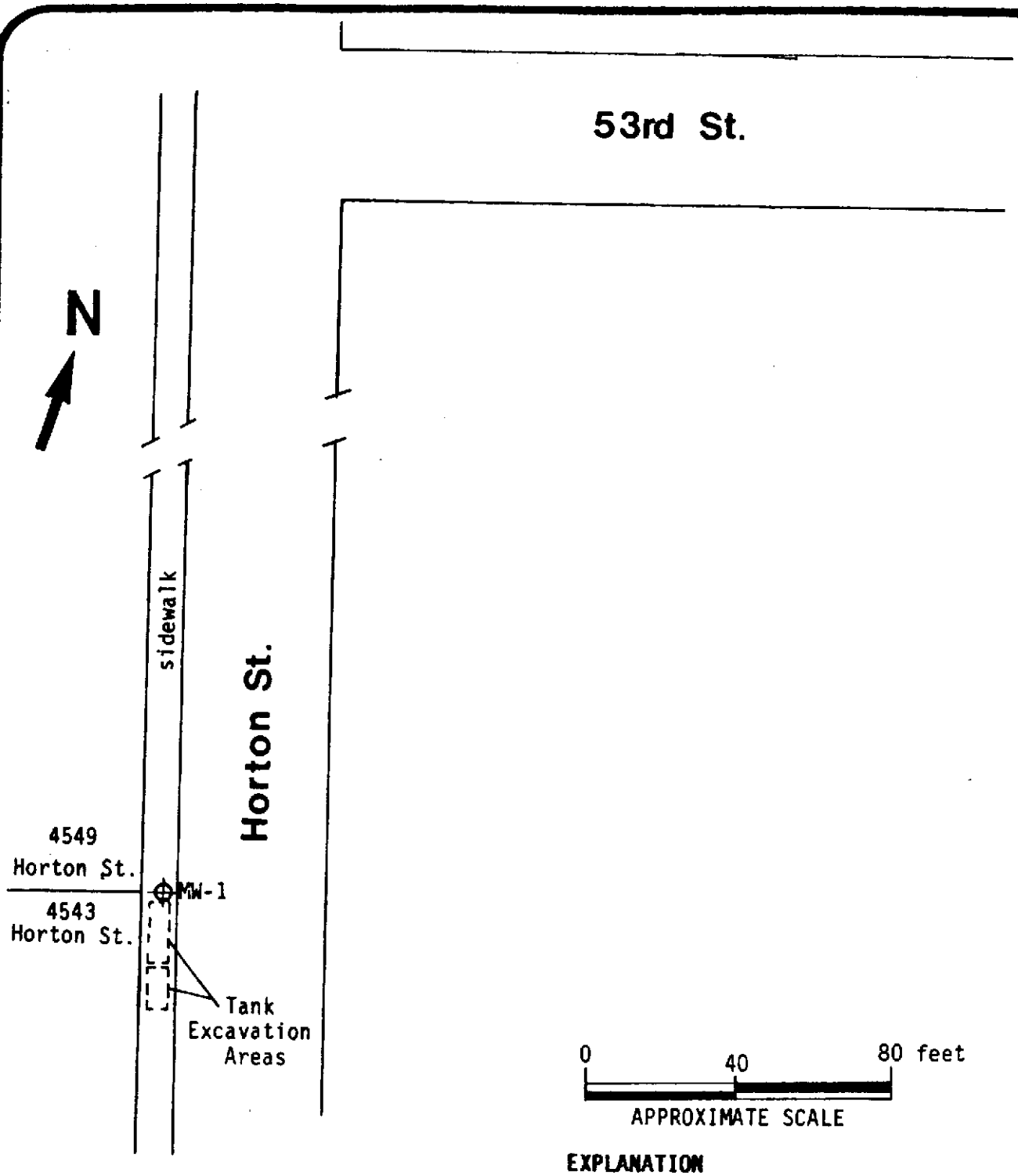
SAFETY SPECIALISTS INC.
SANTA CLARA, CA.

VICINITY MAP
4543 Horton Street
Emeryville, California

Bob Smith, Tank Excavators

Figure No. 1

530050
Project No.



SAFETY SPECIALISTS INC.
SANTA CLARA, CA.

SITE PLAN
4543 Horton Street
Emeryville, California

Bob Smith, Tank Excavators

Figure No. 2

530050
Project No.

SAFETY SPECIALISTS, Inc.
The Full Service Environmental, Health & Safety Corporation

P.O. Box 4420, Santa Clara, CA 95054
Telephone (408) 988-1111
Contractor's License No. 460905

August 5, 1988

Mr. Bob Smith
Tank Excavators
P.O. Box 8402
Santa Cruz, CA 95061

Reference: Safety Specialists, Inc. Project No. 530020
4549 Horton Street, Emeryville, California

Dear Mr. Smith:

Safety Specialists, Inc. is pleased to present this report documenting soil sample collection performed on July 8, 1988 at 4549 Horton Street, Emeryville, California. Also enclosed are laboratory analytical results for the soil samples. A site map is presented as Figure 1.

On July 8, 1988, Tank Excavators excavated and removed a 1,000 gallon gasoline underground storage tank at 4549 Horton Street, in Emeryville, California. The tank was visually inspected at the time of removal, and no holes were noted in the tank. The tank was loaded onto a H&H trailer for disposal. H&H is a registered waste hauler. Dennis Byrne of the Alameda County Health Agency specified depth and location of soil sample collection. Soil samples were collected by Safety Specialists, Inc., Hydrogeologist Paul King. Soil sample collection locations are shown in Figure 1.

Soil for Soil Sample S-1 was excavated into the bucket of a backhoe from the south end of the excavation at a depth of 9 1/2 feet. The soil was then collected into a 6" long, 2" diameter brass sleeve. Before use, the brass sleeve and plastic end caps were washed in a trisodium phosphate solution followed by a distilled water rinse. The ends of the brass sleeve were capped with aluminum foil followed by plastic caps. The brass sleeve was then labeled, and placed in a cooler with ice.

Soil for Soil Sample S-2 was excavated into the bucket of a backhoe from the north end of the excavation at a depth of 9 feet. Soil Sample S-2 was collected in a manner identical to the collection of Soil Sample S-1. Gasoline petroleum hydrocarbon odors were noted in both samples.

The soil samples were transported to Fireman's Fund Laboratories in Petaluma, California, a State-certified hazardous waste testing laboratory. Chain of custody procedures were followed.

Laboratory analysis was performed on both soil samples for low boiling point Total Petroleum Hydrocarbons (TPH), and benzene, toluene, ethylbenzene and xylene using EPA Methods 5020, 8015, and 8020.

Laboratory analysis of Soil Sample S-1 detected 86.0 milligrams per kilogram (mg/kg) TPH as gasoline, 1.0 mg/kg toluene, 1.7 mg/kg xylene and 1.0 mg/kg ethylbenzene. Laboratory analysis of Soil Sample S-2 detected 616.0 mg/kg TPH as gasoline, 0.35 mg/kg benzene, 1.6 mg/kg toluene, 158 mg/kg xylenes and 23 mg/kg ethylbenzene.

The chain of custody record and laboratory analytical results are presented with this report.

If you have any questions, please do not hesitate to contact us.

Sincerely,

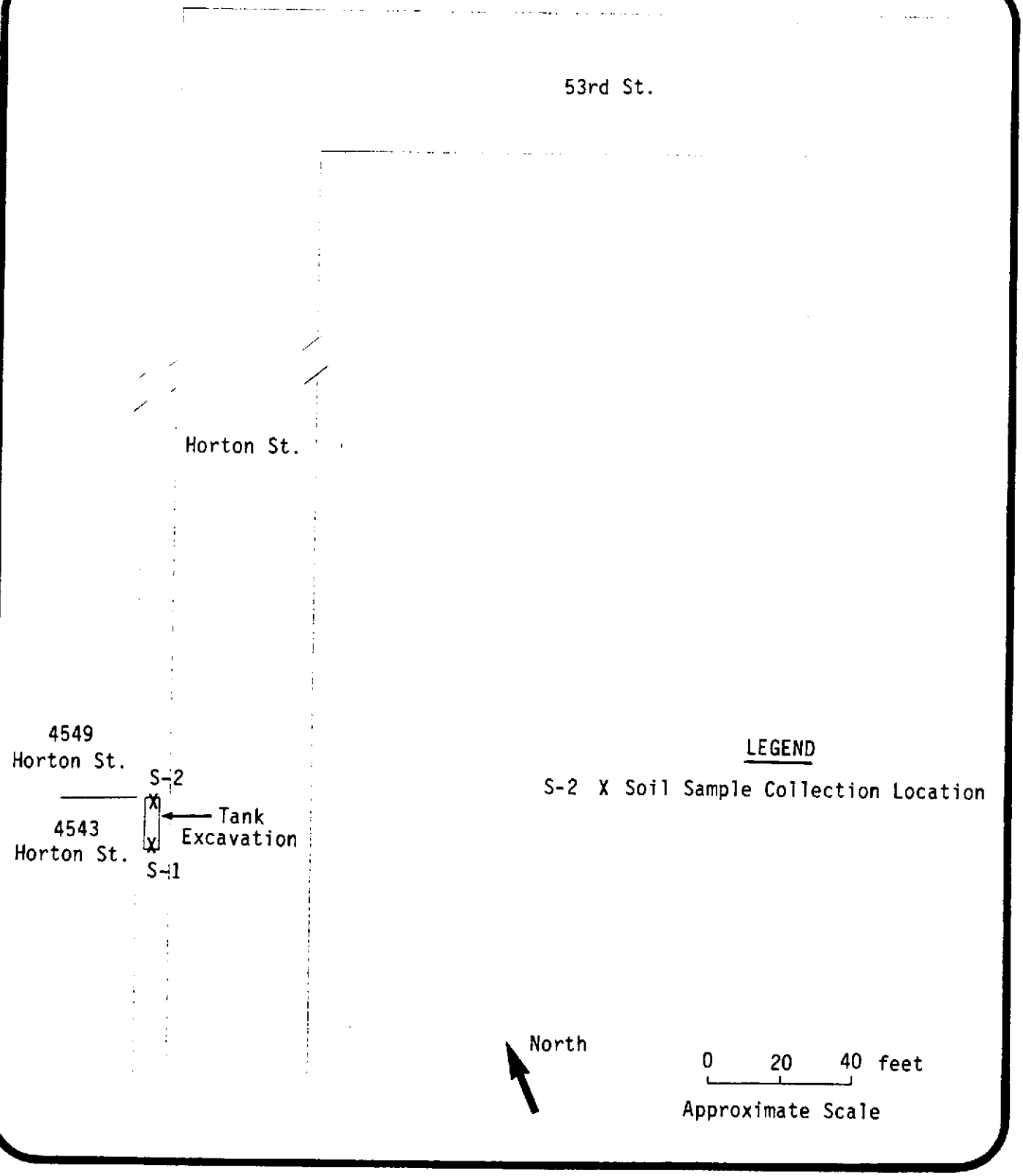
SAFETY SPECIALISTS, INC.

Paul King

Paul King
Hydrogeologist
Environmental Engineering Services

PK:mt

Enclosures



SAFETY SPECIALISTS INC.
SANTA CLARA, CA.

SITE PLAN
Soil Sample Collection
4549 Horton St.
Emeryville, California

Figure No. 1

530020
Project No.

Job # 3075-8

SAFETY SPECIALISTS, Inc.
The Full Service Environmental, Health & Safety Corporation

P.O. Box 4420, Santa Clara, CA 95054
Telephone (408) 988-1111
Contractor's License No. 460905

CHAIN OF SAMPLE CUSTODY RECORD

Collector: Paul King Date Sampled: 7/8/88 Time: 1010

Location of Sampling: 45th & Horton St.
Emeryville, CA

Project Number: 530020 Survey Number: TE-2141-88

Sample Type:

Container Type and Condition:

Contract Laboratory Record/Name: Fireman's Fund, Petaluma

Sample ID	Field Information		
S-1	6" brass sleeve	7/8/88	1010
S-2	6" brass sleeve	7/8/88	1010

Analysis Requested:

S-1	Low boil TPH (gasoline) & BTEX	5020/8015/8020
S-2	Low boil TPH (gasoline) & BTEX	5020/8015/8020

Results Needed By: Normal turnaround

Travel Blank:	☐ Yes ☒ No	Travel Blank to be Analyzed Separately:	☐ Yes ☒ No
Duplicate Samples:	☐ Yes ☒ No	Duplicates to be Analyzed Separately:	☐ Yes ☒ No
Field Blank:	☐ Yes ☒ No	Field Blank to be Analyzed Separately:	☐ Yes ☒ No
Background Soil Sample:	☐ Yes ☒ No	Background Soil Sample to be Analyzed Separately:	☐ Yes ☒ No

Chain of Custody:

1. Paul King (Field Personnel)	7/11/88 (Date)	
2. (Courier)	(Date)	
3. (Lab)	7-12-88 (Date)	

TABLE 1

Summary of Laboratory Analytical Results

	Total Petroleum Hydrocarbons as Diesel	Benzene	Toluene	Ethylbenzene	Xylene
Soil MW-1 (5-5 1/2')	ND*	ND	ND	ND	ND
Soil MW-1 (9-9 1/2')	370 ppm**	ND	13 ppm	ND	22 ppm
Soil MW-1 (15-15 1/2')	ND	ND	ND	ND	ND
Water MW-1	7400 ppb+	53 ppb	27 ppb	11 ppb	46 ppb

* ND = below laboratory detection limit

** ppm = parts per million

+ ppb = parts per billion

FIREMAN'S FUND
INSURANCE COMPANIES
Environmental Laboratory
3700 Lakeville Highway
Petaluma, CA 94952
800-FFIC-LAB

ENVIRONMENTAL LABORATORY

Paul King
Safety Specialists, Inc.
Environmental Department
3060 Raymond Street
Santa Clara, CA 95054

L A B O R A T O R Y R E S U L T S

Supply/Order No.:
Laboratory Job No.: 883275
Client's Survey No.: E214-88
Date Received: 07/12/88
Contract/PO No.: 4549 WARTON ST. EMERYVILLE CA.
Date Reported: 07/29/88
Release No.: 530020
Client Code: SSPE18

ASSAY:TPH/GASOLINE & BTEX EPA/5020/8015/8020
MATRIX:SOIL

LABNO	SMPLNO-ID	RESULTS	DET.LIM
38387	S1		
	GASOLINE	86.0 mg/kg	2.0 mg/kg
38388	S2		
	GASOLINE	616.0 mg/kg	10.0 mg/kg

ANALYST:JEAN M.BONITE

FIREMAN'S FUND
INSURANCE COMPANIES
Environmental Laboratory
3700 Lakeville Highway
Petaluma, CA 94952
800-FFIC-LAB

ENVIRONMENTAL LABORATORY

L A B O R A T O R Y R E S U L T S

Laboratory Job No.: 883275

ASSAY:
MATRIX:

LABNO SMPLNO-ID	RESULTS		DET.LIM	
38387 S1				
BENZENE	<0.02	mg/kg	0.02	mg/kg
TOLUENE	1.0	mg/kg	0.02	mg/kg
XYLENE	1.7	mg/kg	0.02	mg/kg
ETHYLBENZENE	1.0	mg/kg	0.02	mg/kg
38388 S2				
BENZENE	0.35	mg/kg	0.10	mg/kg
TOLUENE	1.6	mg/kg	0.10	mg/kg
XYLENE	158	mg/kg	0.10	mg/kg
ETHYLBENZENE	23	mg/kg	0.10	mg/kg

ANALYST:JEAN M.BONITE

SAFETY SPECIALISTS, Inc.
The Full Service Environmental Health & Safety Corporation

P.O. Box 4420, Santa Clara, CA 95054
Telephone (408) 988-1111
Contractor's License No. 460905

October 31, 1988

Mr. Bob Smith
Tank Excavators
P.O. Box 8402
Santa Cruz, CA 95061

Reference: Safety Specialists, Inc., Project No. 530039
4549 Horton Street, Emeryville, California

Dear Mr. Smith:

Safety Specialists, Inc. is pleased to present this report documenting soil sample collection performed on September 30, 1988 at 4549 Horton Street, Emeryville, California. Also enclosed are laboratory analytical results and chain-of-custody documentation for the soil samples. A site map is presented as Figure 1.

On July 8, 1988, Tank Excavators excavated and removed a 1,000 gallon gasoline underground storage tank at 4549 Horton Street, in Emeryville, California. The results of the analysis performed on soil collected from the excavation were presented in Safety Specialists, Inc. report Number 53020 dated August 5, 1988.

On September 30, 1988 Tank Excavators excavated and removed a 550 gallon gasoline tank adjacent to the location of the 1,000 gallon tank that was excavated on July 8, 1988. The tank was visually inspected at the time of removal, and no holes were noted in the tank. The tank was loaded onto a H&H trailer for disposal. H&H is a registered waste hauler. Dennis Byrne of the Alameda County Health Agency specified depth and location of soil sample collection. Soil samples were collected by Safety Specialists, Inc.'s personnel. Soil sample collection locations are shown in Figure 1.

Soil for Soil Sample X-1 was excavated into the bucket of a backhoe from the south end of the excavation at a depth of 12 feet. The soil was then collected into a 6" long, 2" diameter brass sleeve. Before use, the brass sleeve and plastic end caps were washed in a trisodium phosphate solution followed by a distilled water rinse. The ends of the brass sleeve were capped with aluminum foil followed by plastic caps. The brass sleeve was then labeled, and placed in a cooler with ice.

Soil for Soil Sample X-2 was excavated into the bucket of a backhoe from the north end of the excavation at a depth of 12 feet. Soil Sample X-2 was collected in a manner identical to the collection of Soil Sample X-1. Gasoline petroleum hydrocarbon odors were noted in both samples.

The soil samples were transported to Sequoia Laboratories in Redwood City, California, a State-certified hazardous waste testing laboratory. Chain-of-Custody procedures were followed.

Laboratory analysis was performed on both soil samples for low boiling point Total Petroleum Hydrocarbons (TPH) as gasoline, and benzene, toluene, ethylbenzene and xylene, using EPA Methods 5020, 8015, and 8020 and total lead using EPA Method 7421.

Laboratory analysis of Soil Sample X-1 detected 4.9 milligrams per kilogram (mg/kg) TPH as gasoline, and 9.5 mg/kg lead. Laboratory analysis of Soil Sample X-2 detected 41 mg/kg TPH as gasoline, 1.0 mg/kg xylenes, 0.20 mg/kg ethylbenzene, and 8.1 mg/kg lead.

The chain-of-custody record and laboratory analytical results are presented with this report.

If you have any questions, please do not hesitate to contact us.

Sincerely,

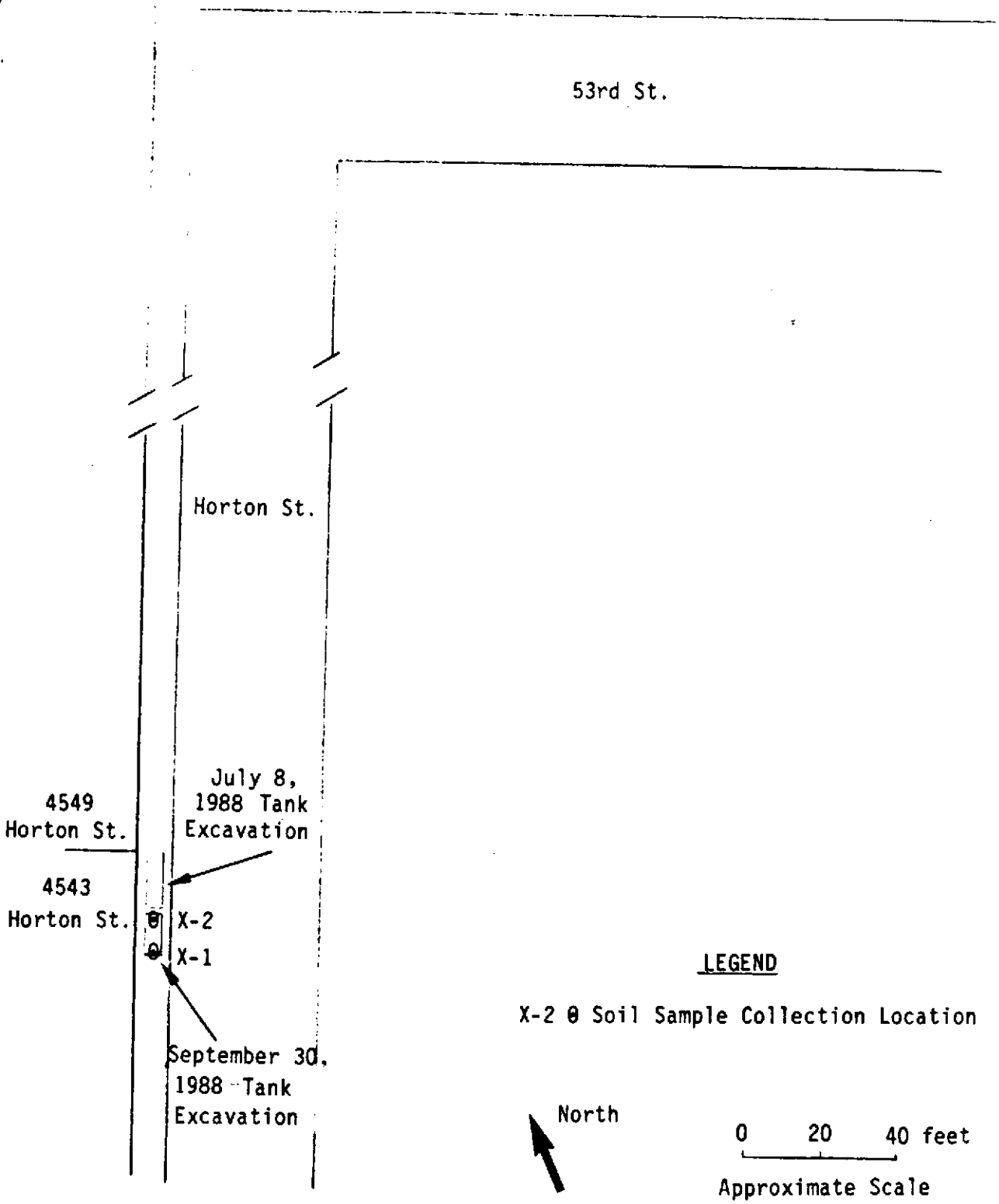
SAFETY SPECIALISTS, INC.

Paul King

Paul H. King
Hydrogeologist
Environmental Engineering Services

PHK:mw

Enclosures



SAFETY SPECIALISTS INC.
SANTA CLARA, CA.

SITE PLAN
Soil Sample Collection
4549 Horton St.
Emeryville, California

Figure No. 1

530039
Project No.

SAFETY SPECIALISTS, Inc.
The Full Service Environmental, Health & Safety Corporation

P.O. Box 4420, Santa Clara, CA 95054
Telephone (408) 988-1111
Contractor's License No. 460905

CHAIN OF SAMPLE CUSTODY RECORD

Collector: Youssef Date Sampled: 9/30/88 Time: 4:00

Location of Sampling: - Emeryville -

Project Number: 530039 Survey Number: 283-88

Sample Type: soil

Container Type and Condition: brass sleeve

Contract Laboratory Record/Name:

Sample ID	Field Information
X-1	sample from beneath the tank away from gate
X-2	sample from beneath the tank close to gate

Analysis Requested: Analyse each sample for TPH (gasoline + BTEX) using EPA 5030/8015/8020 + Lead (Total)

Results Needed By: Normal

Travel Blank:	☐ Yes	☒ No	Travel Blank to be Analyzed Separately:	☐ Yes	☒ No
Duplicate Samples:	☐ Yes	☒ No	Duplicates to be Analyzed Separately:	☐ Yes	☐ No
Field Blank:	☐ Yes	☒ No	Field Blank to be Analyzed Separately:	☐ Yes	☒ No
Background Soil Sample:	☐ Yes	☒ No	Background Soil Sample to be Analyzed Separately:	☐ Yes	☒ No

Chain of Custody:

1. Field Personnel	Y. Shandy	9/30/88 Date
2. Courier	Y. Shandy	10/3/88 Date
3. Lab	Ken Hall	10/3/88 Date 1:35 PM

SEQUOIA ANALYTICAL

680 Chesapeake Drive · Redwood City, CA 94063
(415) 364-9222 · FAX (415) 364-9233

Safety Specialists, Inc.
P.O. Box 4420
Santa Clara, CA 95054
Attn: Youssef

Date Sampled: 09/30/88
Date Received: 10/03/88
Date Analyzed: 10/14/88
Date Reported: 10/20/88

Project: #530039, Survey #283-88

TOTAL PETROLEUM FUEL HYDROCARBONS WITH BTEX DISTINCTION

Sample Number	Sample Description Soil	Low to Medium Boiling Point Hydrocarbons ppm	Benzene ppm	Toluene ppm	Ethyl Benzene ppm	Xylenes ppm
8100010	X-1	4.9	N.D.	N.D.	N.D.	N.D.
8100011	X-2	41	N.D.	N.D.	0.20	1.0
Detection Limits:		1.0	0.05	0.1	0.1	0.1

Method of Analysis: EPA 5030 or 3810/8015/8020

SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton
Laboratory Director

SEQUOIA ANALYTICAL

680 Chesapeake Drive · Redwood City, CA 94063
(415) 364-9222 · FAX (415) 364-9233

Safety Specialists, Inc.
P.O. Box 4420
Santa Clara, CA 95054
Attn: Youssef

Date Sampled: 09/30/88
Date Received: 10/03/88
Date Reported: 10/20/88
Project #530039, Survey #283-88

LABORATORY ANALYSIS

Analyte: Lead

Sample Number	Sample Description Soil	Detection Limit mg/kg	Sample Result mg/kg
8100010	X-1	0.05	9.5
8100011	X-2	0.05	8.1

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton
Laboratory Director

LOG OF EXPLORATORY BORING

Project No. 530050
Client: Bob Smith
By: RCP Date: 11/14/88

Boring No. MW-1
Page 1 of 2

TORVANE (TSF)	POCKET PENETROMETER (TSF)	PENETRATION (Blows/Ft.)	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHOGRAPHIC COLUMN	DESCRIPTION
				1		CL	0-4½ ORANGE BROWN CLAY (CL); 15-20% fine gravel and coarse sand, damp to moist, stiff, no petroleum hydrocarbon (PHC) odor
				2			
				3			
				4			
		14		5		CL	4½-6½ DARK BROWN TO BLACK CLAY (CL); trace to 5% fine to coarse sand, moist, stiff, moderate PHC odor
		8					
		8		6			
				7		CL	6½-8½ BLUISH GREY CLAY (CL); some silt, wet, very stiff, strong PHC odor
				8			
			▼	9		GC	8½-11 BLUISH GREY CLAYEY GRAVEL (GC); fine grained gravel, 10-15% fine to coarse sand, saturated, medium dense, strong PHC odor
		11	13:50				
		15	11/14	10			
		14	1988				
			@9½'	11		CL	11-13 BLUISH GREY CLAY (CL); 5-10% medium sand, saturated, very stiff, no PHC odor
				12			
				13		CL	13-17 BROWN CLAY (CL); some silt, trace coarse sand and fine gravel, wet, hard, no PHC odor
		5		14			
		7		15			
		14					
				16			
				17		ML	17-23 OLIVE BROWN SILT (ML); some clay, wet, very stiff, no PHC odor
				18			
				19			
		7					
		12		20			

KHM

REMARKS Boreholes constructed using a truck mounted CME-75 drilling rig with 8-inch outer diameter (O.D.) hollow-stem augers. Samples collected by driving a 2½-inch O.D. California modified split-spoon sampler using a 140 lb. hammer with a 30-inch drop.

SAFETY SPECIALISTS, INC.

PLATE A

LOG OF EXPLORATORY BORING

Project No. 530050
Client: Bob Smith
By: RCP Date: 11/14/88

Boring No. MW-1
Page 2 of 2

TORVANE (TSF)	POCKET PENETROMETER (TSF)	PENETRATION (Blows/Ft.)	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHOGRAPHIC COLUMN	DESCRIPTION
		10		21		ML	as above
				22			23-25½ LIGHT OLIVE BROWN CLAY (CL); some silt, wet, very stiff, no PHC odor
				23		CL	
				24			
		9		25			Sample hole backfilled with bentonite pellets from 24 to 25½ feet. Borehole terminated at 24 feet. Groundwater first encountered at 9½ feet; stabilized at 9½ feet. Borehole converted to monitoring well 11/14/88 by installing a 2-inch schedule 40 PVC casing.
		12					
		16		26			
				27			
				28			
				29			
				30			

KAM

REMARKS

SAFETY SPECIALISTS, Inc.

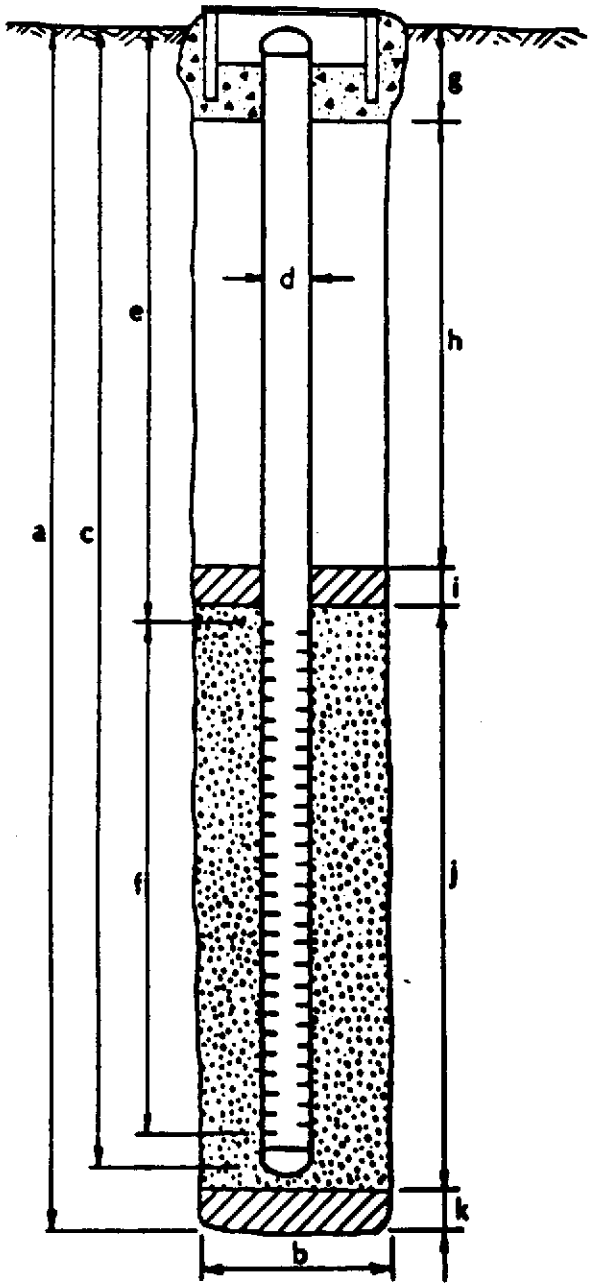
PLATE A (cont)

WELL DETAILS

PROJECT NUMBER 530050
PROJECT NAME Bob Smith/Emeryville
COUNTY Alameda
WELL PERMIT NO. not applicable

BORING / WELL NO. MW-1
TOP OF CASING ELEV. _____
GROUND SURFACE ELEV. _____
DATUM _____

G-5 vault box (Std.)



EXPLORATORY BORING

a. Total depth 25.5 ft.
b. Diameter 8.0 in.
Drilling method Hollow stem auger

WELL CONSTRUCTION

c. Casing length 22.0 ft.
Material Schedule # 40 PVC
d. Diameter 2.0 in.
e. Depth to top perforations 5.0 ft.
f. Perforated length 17.0 ft.
Perforated interval from 5.0 to 22.0 ft.
Perforation type Factory slot
Perforation size 0.010 inches
g. Surface seal 3.75 ft.
Seal material Type I-II Portland ~~Cement with 5% bentonite~~ powder
h. Backfill 0 ft.
Backfill material _____
i. Seal 0.25 ft.
Seal material Bentonite pellets 4 to 24 ft.
j. Gravel pack 20.0 ft.
Pack material Lonestar #3 sand
k. Bottom seal 1.5 ft.
Seal material Bentonite pellets

KLM

PLATE B

SAMPLING LOCATION 4543 Horton EMERYVILLE / MW-1
WATER LEVEL - INITIAL 9.33
WATER LEVEL - FINAL
WELL DEPTH 22.0
WELL CASING VOLUME
WELL CASING VOLUMES PURGED
PURGE RATE
WEATHER CONDITIONS Raining

DATE(S) PURGED 11/22/88
PURGE METHOD Bladder Pump
DATE & TIME SAMPLED 11/22/88 -
SAMPLING METHOD Teflon Bailer
SAMPLE TYPE - ( )GRAB ( )COMPOSITE
CONTAINERS 40ml voa & 1L amber
PRESERVATIVES none
BY C. Payton

TIME	VOLUME REMOVED (gal)	ELECTRICAL CONDUCTIVITY (µmhos/cm)	pH	TEMPERATURE (°C)	TURBIDITY (NTU)
8:45		1490	5.78	20.0	
8:55		1490	5.30	19.8	
9:05		1410	6.11	20.0	
9:10		1420	6.23	20.0	
9:15		1410	6.25	19.9	
9:20		1420	6.28	20.0	
9:25		1420	6.28	19.9	

NOTES

project # 530050

SAFETY SPECIALISTS INC.
SANTA CLARA, CA.

PURGING/SAMPLING DATA SHEET

FIGURE

SAFETY SPECIALISTS, Inc.
The Full Service Environmental, Health & Safety Corporation

P.O. Box 4420, Santa Clara, CA 95054
Telephone (408) 988-1111
Contractor's License No. 460905

CHAIN OF SAMPLE CUSTODY RECORD

Collector: C. Payton Date Sampled: 11/14/88 Time: 12 - 3 pm
Location of Sampling: 4549 Horton St. Emeryville

Project Number: 530050 Survey Number: E314 - 88
Sample Type: SOIL
Container Type and Condition: BRASS LINER / sealed w/ aluminum foil & plastic ends /
Contract Laboratory Record/Name: Firemans Fund / Petaluma

Sample ID	Field Information
MW-1 5-5½	Soil Sample from boring of Monitoring Well MW-1 at 5-5½ feet
MW-1 9-9½	" " " " " " " " 9-9½ "
MW-1 15-15½	" " " " " " " " 15-15½ "

Analysis Requested: All 3 samples analyzed separately using EPA methods ~~5030/8015/8020~~ 3550/8015/8020 TPH Diesel plus BTEX

Results Needed By: 5 DAY RUSH 11/23/88

Travel Blank:	☐ Yes ☒ No	Travel Blank to be Analyzed Separately:	☐ Yes ☒ No
Duplicate Samples:	☐ Yes ☒ No	Duplicates to be Analyzed Separately:	☐ Yes ☒ No
Field Blank:	☐ Yes ☒ No	Field Blank to be Analyzed Separately:	☐ Yes ☒ No
Background Soil Sample:	☐ Yes ☒ No	Background Soil Sample to be Analyzed Separately:	☐ Yes ☒ No

Chain of Custody:

1. Field Personnel	Custer Payton	11/16/88 Date
2. Courier	Bill [illegible]	11/16/88 Date
3. Lab		Date

FIREMAN'S FUND
INSURANCE COMPANIES
Environmental Laboratory
3700 Lakeville Highway
Petaluma, CA 94952
800-FFIC-LAB

ENVIRONMENTAL LABORATORY

Curtis Payton
Safety Specialists, Inc.
Environmental Department
3060 Raymond Street
Santa Clara, CA 95054

Client Code: SSPE23
Survey # E314-88
Project/Release # PROJ. 530050

L A B O R A T O R Y R E S U L T S

Date Extracted: 11/17/88
Date Analyzed: 11/17/88

Laboratory Job No.: 885439
Date Received: 11/17/88
Date Reported: 11/22/88

ASSAY:TPH/DIESEL EPA 3550/8015
MATRIX:SOIL

LABNO SMPLNO-ID	RESULTS	DET.LIM
80388 MW5		
DIESEL	ND	10 mg/kg
80389 MW9		
DIESEL	370 mg/kg	30 mg/kg
80390 MW15		
DIESEL	ND	10 mg/kg

#=Detected below accurate method quantitation limit(below 3.3-det.lim.).
ANALYST:JEAN M.BONITE

THIS REPORT HAS BEEN REVIEWED
AND APPROVED FOR RELEASE.

FIREMAN'S FUND
INSURANCE COMPANIES
Environmental Laboratory
3700 Lakeville Highway
Petaluma, CA 94952
800-FFIC-LAB

ENVIRONMENTAL LABORATORY

L A B O R A T O R Y R E S U L T S

Date Extracted: 11/18/88
Date Analyzed: 11/19/88

Laboratory Job No.: 885439
Date Received: 11/17/88
Date Reported: 11/22/88

ASSAY:BTEX EPA 5020/8020
MATRIX:SOIL

LABNO SMPLNO-ID	RESULTS	DET.LIM
80388 MW-1-5-5.5		
BENZENE	ND	0.040 mg/kg
TOLUENE	ND	0.040 mg/kg
ETHYLBENZENE	ND	0.040 mg/kg
XYLENE	ND	0.040 mg/kg
80389 MW-1-9-9.5		
BENZENE	ND	0.39 mg/kg
TOLUENE	13 mg/kg	0.39 mg/kg
ETHYLBENZENE	ND	0.39 mg/kg
XYLENE	22 mg/kg	0.39 mg/kg
80390 MW-1-15-15.5		
BENZENE	ND	0.040 mg/kg
TOLUENE	ND	0.040 mg/kg
ETHYLBENZENE	ND	0.040 mg/kg
XYLENE	ND	0.040 mg/kg

#=Detected below accurate method quantitation limit(below 3.3-det.lim.).
ANALYST:ROBERT REMLINGER

SAFETY SPECIALISTS, Inc.
The Full Service Environmental, Health & Safety Corporation

P.O. Box 4420, Santa Clara, CA 95054
Telephone (408) 988-1111
Contractor's License No. 460905

CHAIN OF SAMPLE CUSTODY RECORD

Collector: C Payton Date Sampled: 11/22/88 Time: 10:30AM
Location of Sampling: 4543 Horton Ave, EMERYVILLE

Project Number: 5300550 Survey Number: E-328-88
Sample Type: WATER
Container Type and Condition: 2 40ml voa / 1 L amber – both cold –
Contract Laboratory Record/Name:

Sample ID	Field Information
MW-1 40ml	WATER SAMPLE FROM MONITORING WELL MW-1
MW-1 1L amber	" " " " " "

Analysis Requested: For 40ml voa EPA 602 (BTEX)
For 1L amber EPA 3510/8015 (TPH DIESEL)

Results Needed By: 5 DAY RUSH

Travel Blank:	☐ Yes ☑ No	Travel Blank to be Analyzed Separately:	☐ Yes ☑ No
Duplicate Samples:	☑ Yes ☐ No	Duplicates to be Analyzed Separately:	☑ Yes ☐ No
Field Blank:	☐ Yes ☑ No	Field Blank to be Analyzed Separately:	☐ Yes ☑ No
Background Soil Sample:	☐ Yes ☑ No	Background Soil Sample to be Analyzed Separately:	☐ Yes ☑ No

Chain of Custody:

1. C Payton (Field Personnel) — 11/22/88 15:59 (Date)
2. n/a (Courier) — (Date)
3. [illegible] (Lab) — 11/22/88 (Date) 4:10 PM

SEQUOIA ANALYTICAL

680 Chesapeake Drive · Redwood City, CA 94063
(415) 364-9222 · FAX (415) 364-9233

Safety Specialists, Inc.	Client Project ID:	#530060, Survey #E320-88	Sampled: November 22, 1988
P.O. Box 4420	Matrix Description:	Water	Received: November 22, 1988
Santa Clara, CA 95054	Method of Analysis:	EPA 3510/8015	Analyzed: December 2, 1988
Attention: Curtis Payton	First Sample Number:	811-2719	Reported: December 2, 1988

TOTAL PETROLEUM FUEL HYDROCARBONS (EPA 8015)

Sample Number	Sample Description	High B.P. Hydrocarbons ug/L (ppb)
811-2719	MW-1	7,400

Detection Limits:	50.0

High Boiling Point Hydrocarbons are quantitated against a diesel fuel standard.
Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Arthur G. Burton
Laboratory Director

SEQUOIA ANALYTICAL

680 Chesapeake Drive · Redwood City, CA 94063
(415) 364-9222 · FAX (415) 364-9233

Safety Specialists, Inc.	Client Project ID:	#530080, Survey #E320-88	Sampled:	November 22, 1988
P.O. Box 4480	Sample Description:	Water, MW-1	Received:	November 22, 1988
Santa Clara, CA 95054	Method of Analysis:	EPA 8030/8020	Analyzed:	November 30, 1988
Attention: Curtis Payton	Lab Sample Number:	811-2718	Reported:	December 2, 1988

BTEX DISTINCTION (EPA 8020)

Analyte	Detection Limit ug/L (ppb)	Sample Results ug/L (ppb)
Benzene	0.5	53
Toluene	0.5	27
Ethyl Benzene	0.5	11
Xylenes	0.5	48

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Arthur G. Burton
Laboratory Director