ATT

Aqua Terra Technologies
Consulting Engineers
& Scientists

2950 Buskirk Avenue
Suite 120
Walnut Creek, CA
94596
415 934-4884

June 15, 1989

Mr. Harvey Rifkin
Rifkin Realty Partners
81 Lansing Street
San Francisco, CA 94105-1611

Subject: Preliminary Environmental Site Assessment
4525 - 4561 Horton Street
Emeryville, CA
[ATT Project #9036]

Dear Mr. Rifkin:

Aqua Terra Technologies, Inc. (ATT) is pleased to submit the results of the preliminary environmental site assessment for the property between 4525 and 4561 Horton Street, Emeryville, California. The objective of the environmental site assessment is to determine if previous or current activities at the site and surrounding areas may have contributed to environmental degradation of the soils and/or groundwater on the property. As part of the site assessment, ATT contacted the San Francisco Bay Region of the California Regional Water Quality Control Board (RWQCB), California Department of Health Services (DHS), Alameda County Health Care Services Agency (ACHCSA), and the Emeryville Fire Department (EFD). Aerial photographs and Sanborn Insurance Company Maps were also reviewed.

SITE SETTING

Site Geography

The Horton Street property is located in a commercial/industrial area of Emeryville. Directly across Horton Street to the east is the Emeryville Research Building which is occupied by laboratories and offices of Chiron, Cetus Corporation, Aquanautics, and Expresso Inc. The surrounding area consists mainly of light industrial buildings are warehouses. There are several auto repair shops, and an electro-coating business south of the property along Park Avenue. Two blocks east of the site is the municipal bus maintenance and storage yard on the corner of Doyle and 47th Street. Behind the property, to the west, is a large drum storage facility for Sherwin-Williams Corporation.

A large brick warehouse occupies the property between 45th and 53rd Streets along the west side of Horton Street (Plate 1, Attachment A). The building is currently occupied by 12 to 15 tenants.

Geologic Setting

According to the generalized geologic map in Geohydrology and Groundwater - Quality Overview, East Bay Plain Area, Alameda County, California 205 (j) Report, the Horton Street property overlies interfluvial basin deposits and older alluvium. The interfluvial basin deposits are generally less than 10 feet thick and consist of unconsolidated, plastic, moderately to poorly sorted silt and clay, rich in organic material. The older alluvium is approximately 200 feet thick beneath the site. It is primarily a layered unit of poorly consolidated to unconsolidated clay, silt, sand, and gravel. This formation is the major groundwater reservoir in the East Bay Plain Area.

Regional groundwater flow direction is predominately [redacted]. Hydrogeologic information from sites in the Emeryville area have confirmed this. The Temescal Creek flows west under the 4561 Horton Street premises.

SITE RECONNAISSANCE

On May 10, 1989, ATT personnel conducted a site reconnaissance of the surrounding area. On May 18, 1989, ATT made a visual inspection of the building. The large brick warehouse is divided into numerous small and large units. A large parking garage and empty office space occupies 4525 Horton Street. There were no underground storage tanks or evidence of spilled material in the garage during the inspection. A large truck scale was noted in the back of the garage. There are also several small loading bays. The Weaving Shop at 4529 Horton Street was inaccessible. The tenant indicated to Rifkin Realty that several looms and a small amount of paint and varnish were stored in the unit. The largest unit in the building is occupied by San Francisco Herbs and Natural Foods. This space is approximately 300 feet long. Operations include packaging and distribution of tea, spices, and various other bulk foods. Several small machines are used including those used for grinding and bagging tea. There is a ventilation system with filters to collect the fine tea dust and spice powders from the air.

The 4543 Horton Street premises was previously occupied by Improved Piping Products; however, the current tenant is Voila, a fresh juice distributor. A small furniture

refinisher is located in the upstairs suite of this address. Because the tenant also resides there, no inspection was made. New pavement was observed outside this premises and a tenant indicated that an underground storage tank was removed in December 1988. A monitoring well exists in the sidewalk. A sealed drum with unidentified contents, possibly borehole cuttings or well development water, is sitting on the sidewalk in front of the Voila premises. If the drum contains soil cuttings or groundwater from the borehole, the analytical results of these samples should be reviewed to determine appropriate handling/disposal protocol.

Cetus Corporation stores surplus and obsolete office furniture and laboratory equipment at 4549 Horton Street. The 4561 premises is divided into several small shops including a custom cabinet shop, a small carpet distributor, and a foreign auto parts distribution center. The last unit inspected was empty and formerly occupied by Lavin Industries - Berkeley Design Group.

No liquid transformers were observed on the property. Fiber insulation which may contain asbestos occurs around air ducts in the San Francisco Herb and Natural Foods unit; however, it was inaccessible for sample collection.

UNDERGROUND TANK REMOVAL

On July 8, 1988, Tank Excavators excavated and removed a 1,000 gallon gasoline underground storage tank at 4549 Horton Street. According to their report, no holes were noted in the tank at the time of removal; however, two soil samples were collected and contained 86 mg/Kg and 616 mg/Kg total petroleum hydrocarbons (TPH) as gasoline. Detectable concentrations of benzene, toluene, ethylbenzene, and xylene (BTEX) were also detected in the soil samples. On September 30, 1988, Safety Specialists removed a 550 gallon underground gasoline tank. Soils collected from the bottom of the tank excavation contained 41 mg/Kg and 4.9 mg/Kg TPH as gasoline. Lead was also detected in each sample at concentrations of 9.5 mg/Kg and 8.1 mg/Kg.

On November 14, 1988, Safety Specialists installed a two-inch monitoring well to a depth of 24 feet below grade. Soil samples within the saturated zone of the boring at a depth of nine to 9-1/2 feet contained 370 mg/Kg TPH as diesel. The groundwater sample contained

7400 ug/Kg TPH as diesel and between 11 ug/Kg and 53 ug/Kg BTEX constituents.

All available reports documenting tank removal, soil sampling, and groundwater sampling are included in Attachment B.

HISTORICAL BACKGROUND SURVEY

Sanborn Insurance Company Maps

Sanborn Insurance Company maps were reviewed for 1889, 1902, 1911/1912, and 1911/1912 revised 1951. The Sanborn maps indicate that the site was occupied by the Oakland Trotting Park and North California Jockey Club Race Track until at least 1911/1912. The 1911/1912 map revised in 1951 shows the Sherwin Williams Paint Factory on Horton Street between Sherwin Avenue and 4535 Horton Street (Site 59, Plate 5, Attachment A). The northern most portion of the facility was a lacquer plant with five above ground tanks. The remaining property, currently owned by Rifkin Realty, was occupied by California Container Corporation. From the building descriptions on the maps, the company produced cardboard boxes and operated a wholesale paper and cardboard distribution center.

Sites which may have contributed to degradation of soil and/or groundwater quality in the area are shown on Plates 2, 3, 4, and 5 in Attachment A. Tables 1, 2, 3, and 4 in Attachment C list sites and the potential source of soil or groundwater contamination. The sites are numbered on the tables to match their locations on the plates.

Directly across Horton Street between 45th and 53rd Streets was the Shell Development Company (Site 60, Plate 5, Attachment A). There appears to be many small laboratories, and a machine shop and welding facility close to 45th Street.

Pacific Gas & Electric Company (PG&E) operated a storage yard at 4525 Hollis Street (Site 45, Plate 5, Attachment A) due east of the site in 1951. The Gardener Electric Manufacturing Company and Transformer Factory was located at 4227 Hollis Street in the 1951 revised Sanborn Map (Site 48, Plate 5, Attachment A). The Shell Development Company Asbestos Products warehouse was

located at the northwest corner of 53rd Street and Horton Avenue.

Aerial Photographs

Aerial photographs for the years 1947, 1953, 1959, 1969, 1975, 1983, 1985, and 1988 were reviewed at Pacific Aerial Surveys. The larger building directly east of the property, now called the Emeryville Research Building was apparently constructed between 1947 and 1953. In 1953, the block between 45th and 53rd Streets and Holden and Hollis Streets was occupied by many above ground vertical tanks and drum storage. Aerial photographs through 1969 provide evidence of the tank and drum storage. Several large tanks and drums were noted on the Sherwin Williams property between 1969 and 1985.

REGULATORY AGENCY FILE REVIEW

The Emeryville Fire Department (EFD), RWQCB, DHS, ACHCSA, and the City of Emeryville were contacted in an effort to identify any potential sources of hazardous materials or hydrocarbon releases in the vicinity of the property on Horton Street.

According to the Fire Marshall, Mr. James Eversole, two underground tanks were removed at 4543 - 4549 Horton Street during the summer of 1988. The tanks had 550 gallons and 1,000 gallon capacities and contained gasoline and diesel fuel.

The RWQCB was contacted to review files on their Leaking Underground Fuel Tank List and Toxic Substance Release List. Thirteen leaking underground fuel tank sites were identified within a one-half mile radius of the site. Table 5 lists the leaking underground storage tank sites identified at the RWQCB, the media impacted, and contaminants identified. The sites are located on Plate 6, Attachment A.

The closest upgradient leak, not including the tanks removed from the Rifkin property, is Shell at 4250 Horton Street (Site 8, Plate 6, Attachment A). No information was available on this site at the RWQCB.

The AC Transit Facility, Site 2 (Plate 6, Attachment A) at 47th Street and San Pablo Avenue reported diesel

contamination of the soil and groundwater. Extensive soil excavation was proposed by Kaiser Engineers and groundwater is monitored every six months.

Toxic substance release sites were also reviewed at the RWQCB and DHS. Plate 7, Attachment A and Table 6, Attachment C list the sites and their locations. The closest upgradient site identified was the PG&E Materials Distribution Center at 4525 Hollis Street (Site 4, Plate 7, Attachment A). Soils were contaminated with PCBs, lead, and mercury. The site overlies approximately six feet of imported fill, and alluvial clays with thin interbeds of silty and sandy clays to a depth of at least 32 feet. Shallow groundwater was documented at six to eight feet above sea level and flows west. Groundwater contained arsenic, cadmium, chromium, and lead in excess of regulatory limits.

The ACHCSA was contacted; however, their typical response time has been four to eight weeks. Information from the ACHCSA will be forwarded to Rifkin Realty Partners when receive by ATT.

SUMMARY AND CONCLUSION

ATT has reviewed historical data and information in regulatory agency files within a one-half mile radius of the Horton Street property. Land use in the area is historically industrial. The property was formerly occupied by the California Container Corporation. Details on the building occupants between 1951 and the mid to late seventies was not determined. Aerial photographs indicated that the structure on the Horton Street property did not change significantly between 1947 and 1988.

Soil and groundwater at 4549 Horton Street contains hydrocarbons. Leaking underground tanks were removed during the summer and fall of 1988. Concentrations of TPH as gasoline and diesel were detected in the soil samples. The groundwater monitoring well contained detectable concentrations of TPH as diesel, TPH as gasoline, and BTEX constituents. The source of the TPH as diesel contamination in the groundwater at the site has not been verified. Quarterly monitoring of the well has been maintained since the well was installed. The well was most recently sampled by ATT on April 25, 1989.

well was most recently sampled by ATT on April 25, 1989. Concentrations of TPH as gasoline, and benzene, toluene, ethylbenzene and xylene were 2.3 mg/L, 120 ug/L, 11 ug/L 10 ug/L, and 10 ug/L, respectively. Drinking water action levels for benzene, toluene, ethylbenzene, and xylene are 1.0 ug/L, 100 ug/L, 690 ug/L, 1,750 ug/L, respectively. This data was provided to Mr. Harvey Rifkin in ATT's May 18, 1989 report.

The contents of the drum on the sidewalk at the property should be characterized and disposed of properly.

The closest offsite leaking tank site identified in the RWQCB files is Shell at 4250 Horton Street. No detailed information on this site was available at the RWQCB to allow ATT to make any determination of its possible impact on the Rifkin property.

ATT did not observe any evidence that current tenants at the Horton Street property are contributing to degradation of the soil and/or groundwater on the property.

If you have any questions, or need further information, please contact us at your convenience.

Sincerely,

AQUA TERRA TECHNOLOGIES, INC.

B. J. Bennett

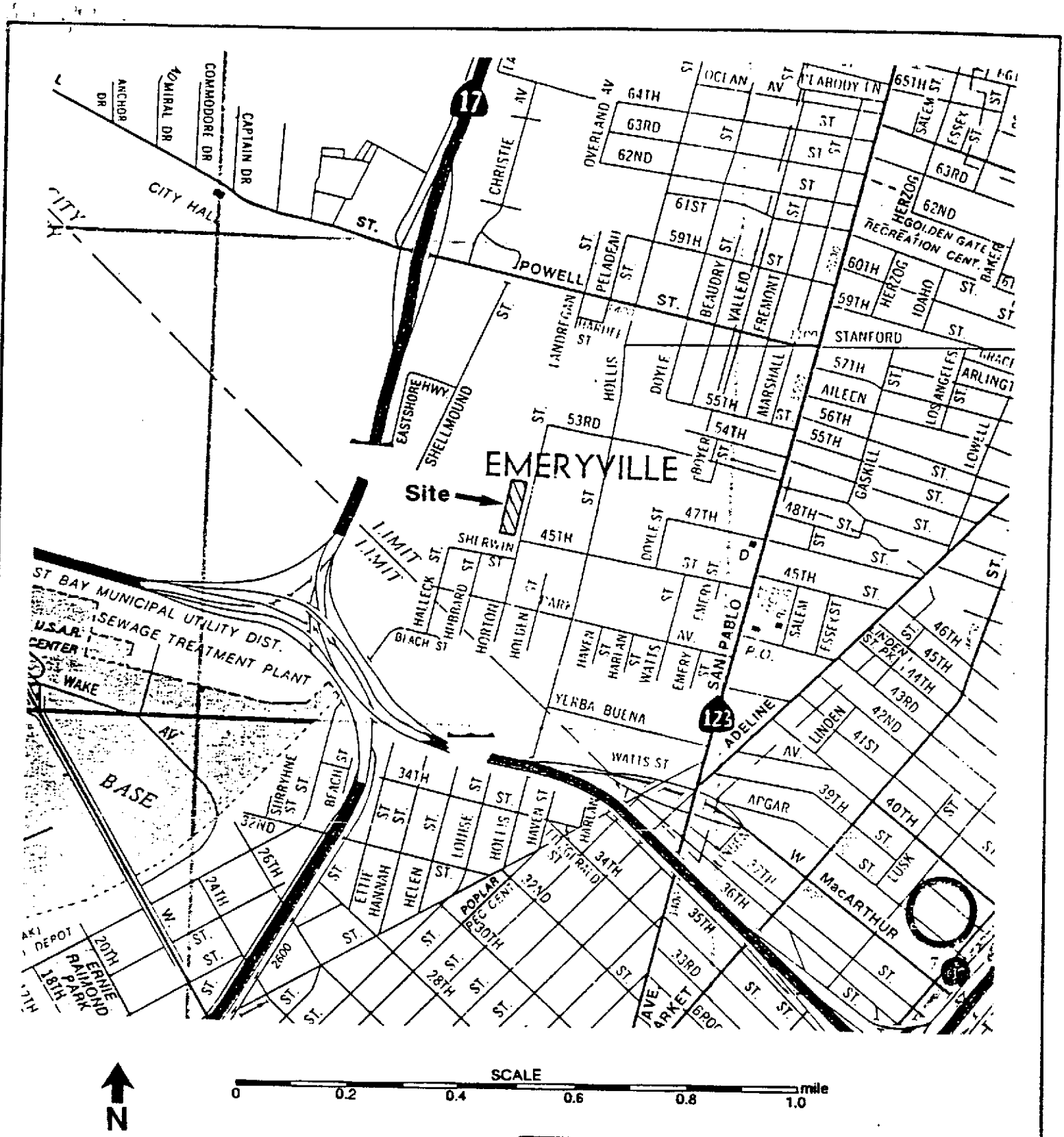
Bradley J. Bennett
Project Manager

William S. Hutton, REA #00954 (exp 6/30/89)

for Karen M. Singer
Registered Environmental Assessor No. 00778
(Expires 6/30/89)

BJB/KMS:bjk

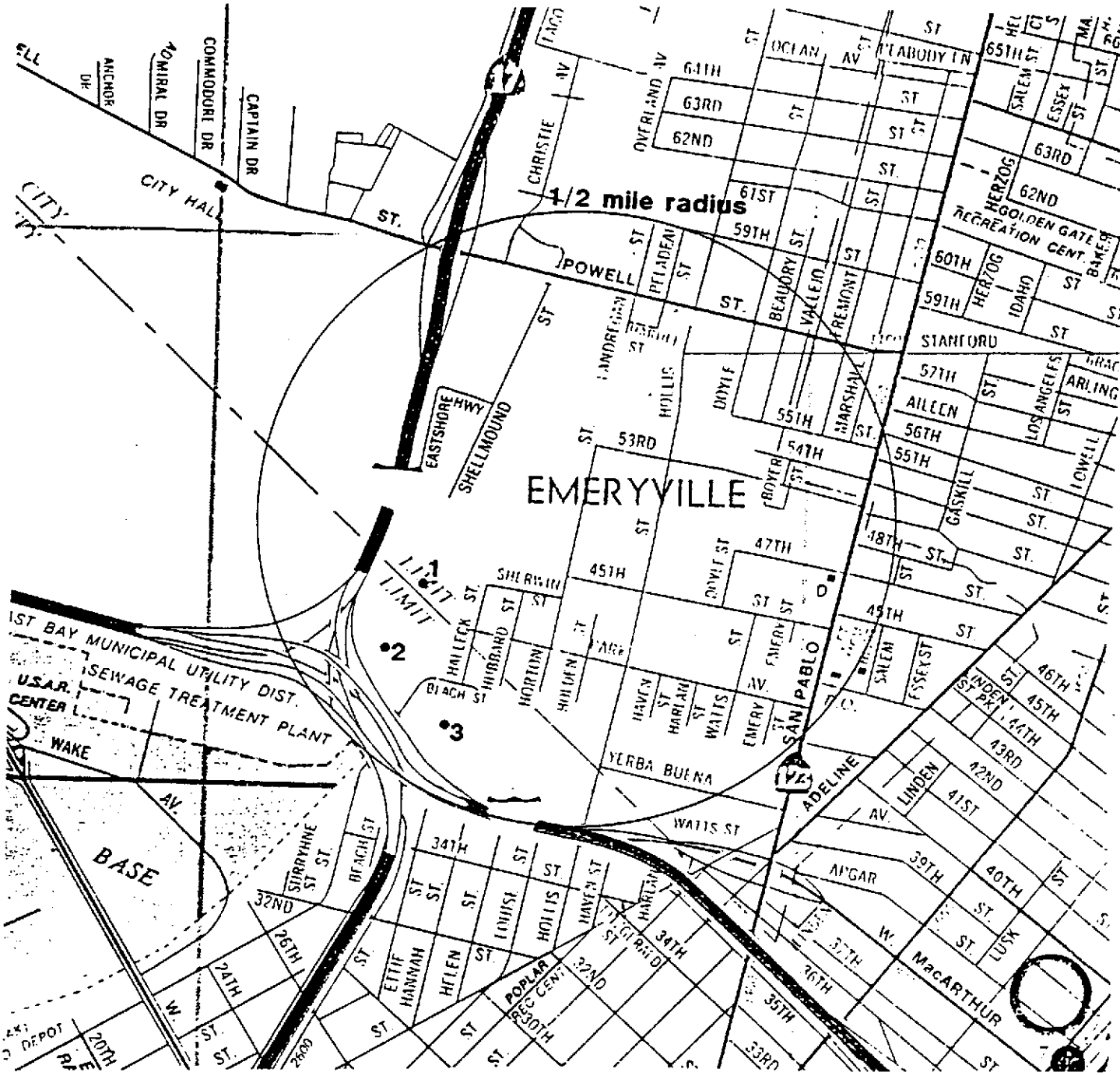
Attachments



Site Location Map

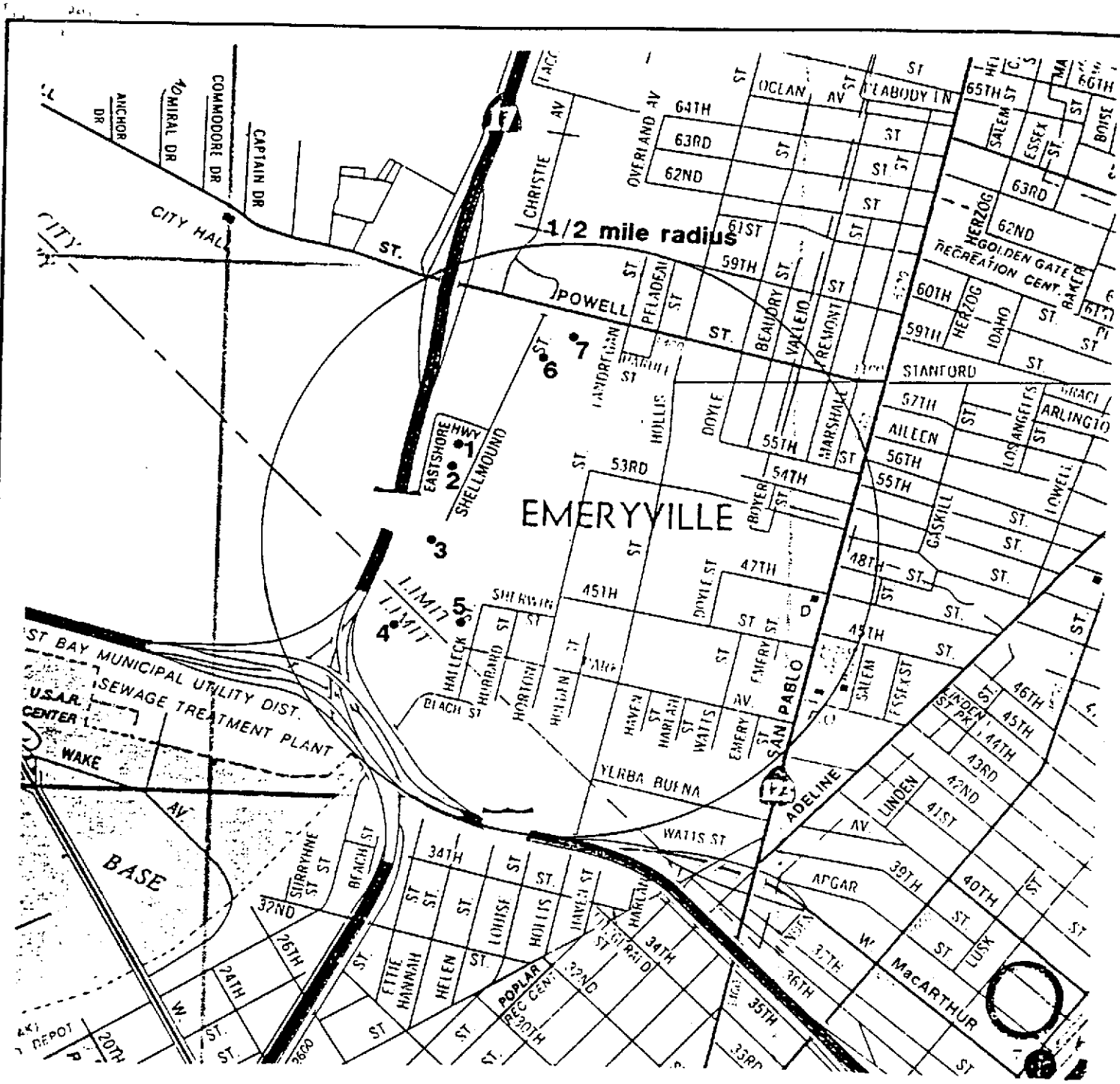
ATT Aqua Terra Technologies
Consulting Engineers
& Scientists

Harvey Rifkin Realty		PLATE
JOB NUMBER	DATE	1
9036	6/89	



Historic Land Use 1889

ATT Aqua Terra Technologies Consulting Engineers & Scientists	Harvey Rifkin Realty	PLATE 2
	JOB NUMBER 9036	DATE 6/89



SCALE

0 0.2 0.4 0.6 0.8 1.0 mile

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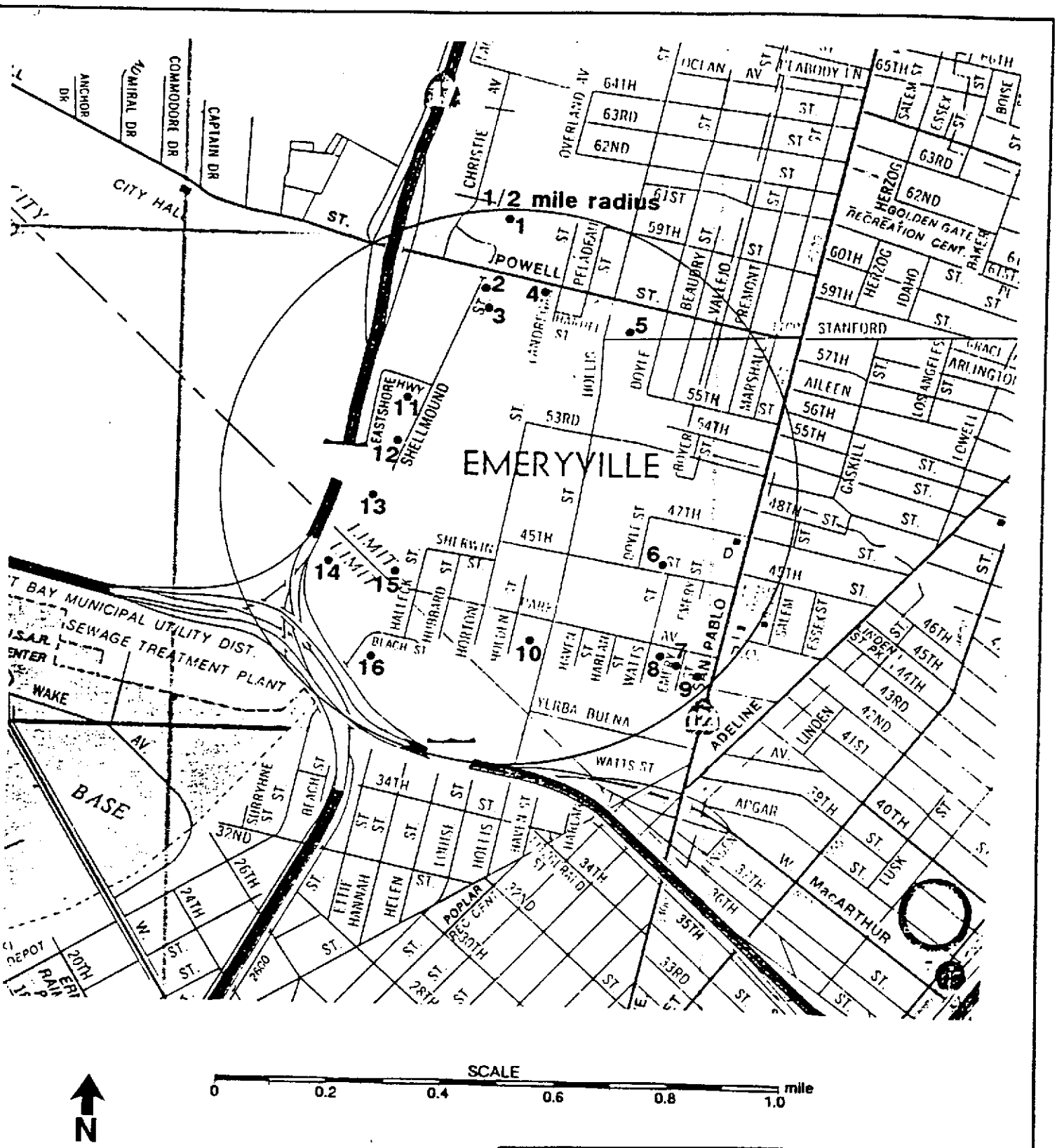
Historic Land Use 1902

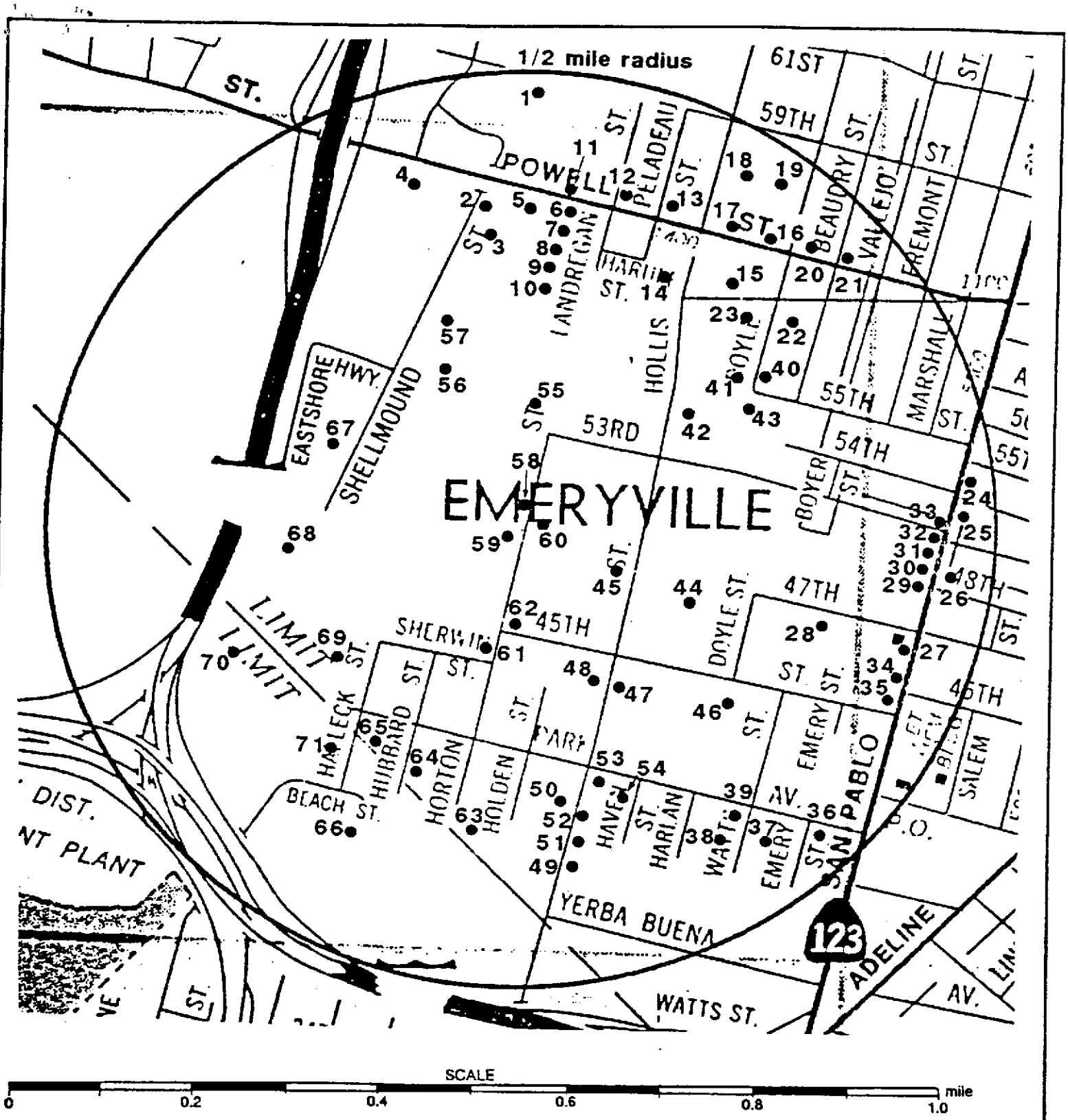
ATT Aqua Terra Technologies Consulting Engineers & Scientists	Harvey Rifkin Realty	PLATE 3
	JOB NUMBER 9036	DATE 6/89



Historic Land Use 1911/1912

ATT Aqua Terra Technologies Consulting Engineers & Scientists

Harvey Rifkin Realty		PLATE
JOB NUMBER	DATE	4
9036	6/89	



Historic Land Use 1911/1912
Revised 1951

ATT Aqua Terra Technologies
Consulting Engineers
& Scientists

Harvey Rifkin Realty		PLATE
JOB NUMBER	DATE	5
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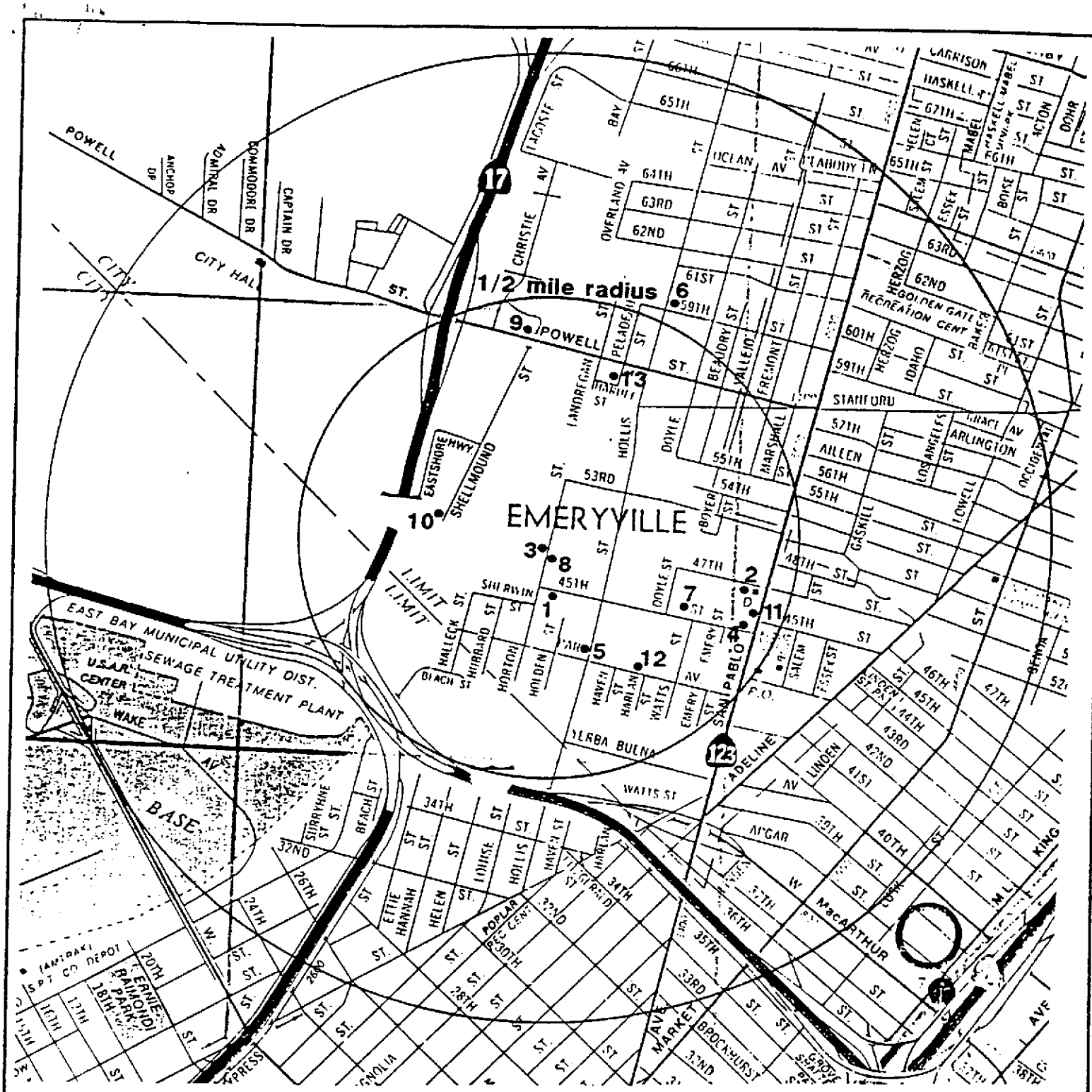

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SCALE

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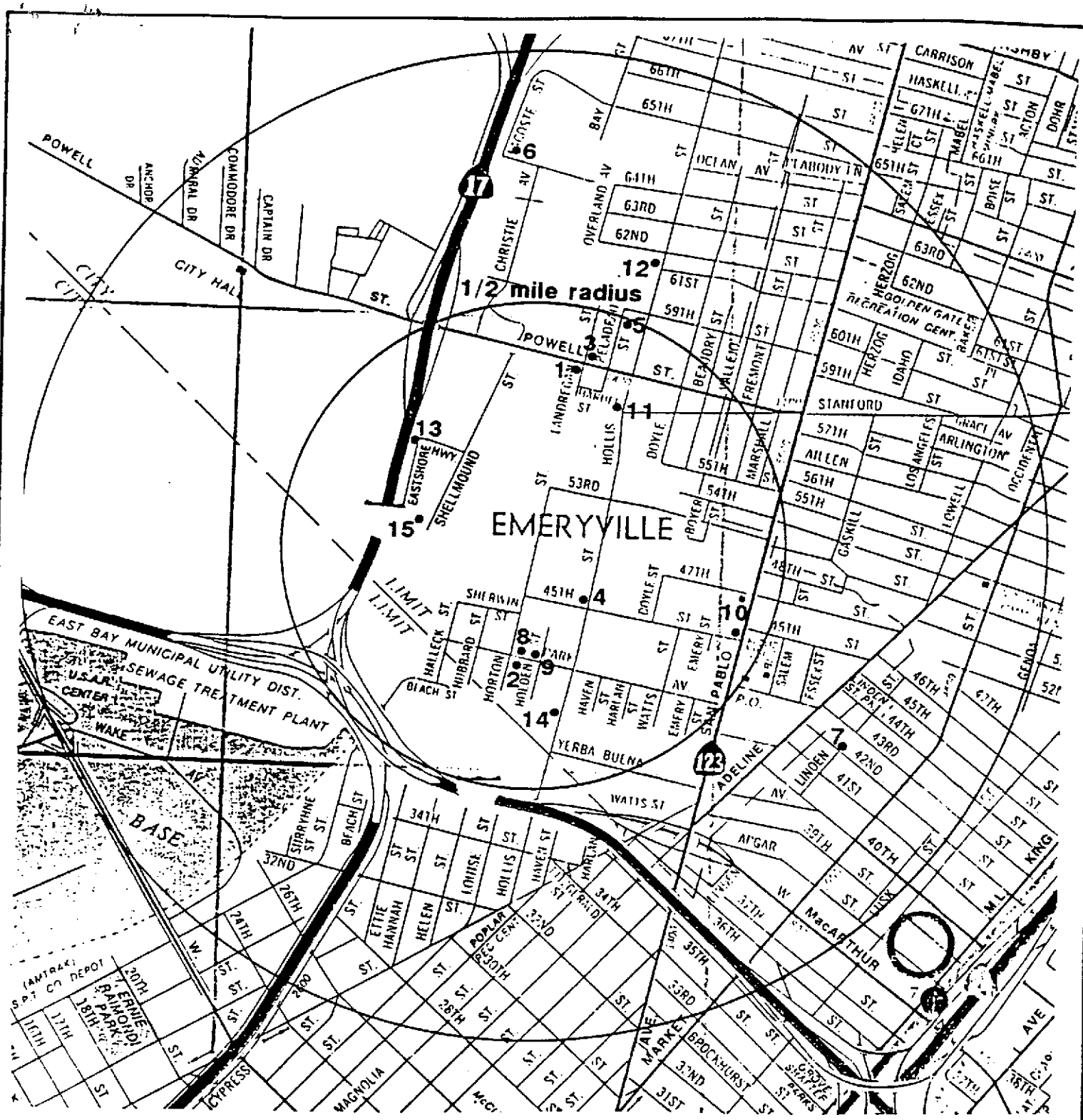
Fuel Tank Leaks

ATT Aqua Terra Technologies
Consulting Engineers
& Scientists

Harvey Rifkin Realty

JOB NUMBER	DATE	PLATE
9036	6/89	6



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SCALE

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Toxic Substance Release Sites

ATT Aqua Terra Technologies Consulting Engineers & Scientists

Harvey Rifkin Realty

JOB NUMBER	DATE	PLATE
9036	6/89	7

ATTACHMENT B

Safety Specialists, Inc.
Underground Tank Reports

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.

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, P.E.
Civil Engineer C17487
Environmental Engineering Services

CP/KLM:mw

Enclosure

REGISTERED PROFESSIONAL ENGINEER
KENNETH LEROY MELEEN
C017487
Exp. 6/30/90
CIVIL
STATE OF CALIFORNIA

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FIGURES

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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.

TABLE 1

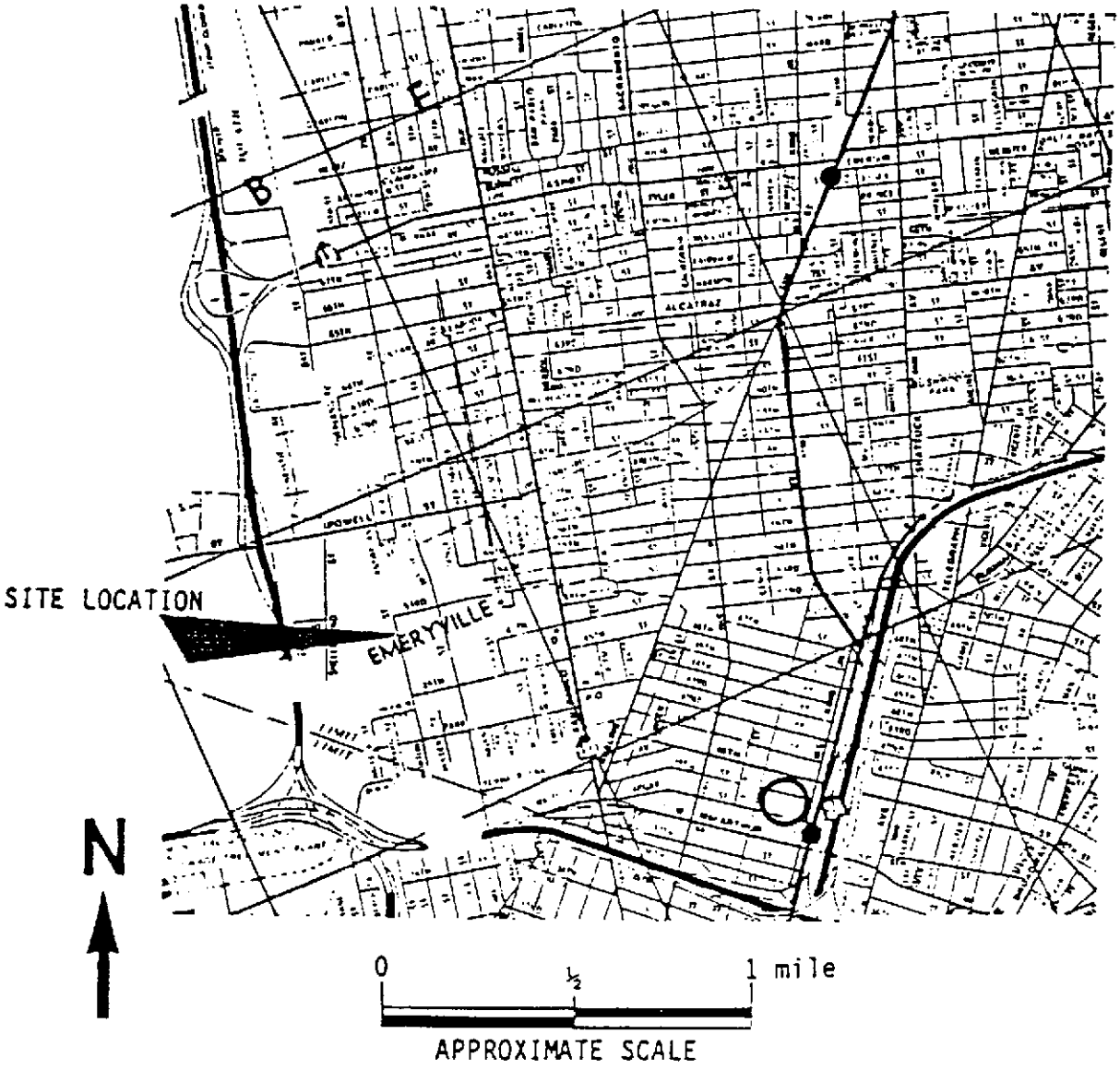
Summary of Laboratory Analytical Results

	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



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.
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,

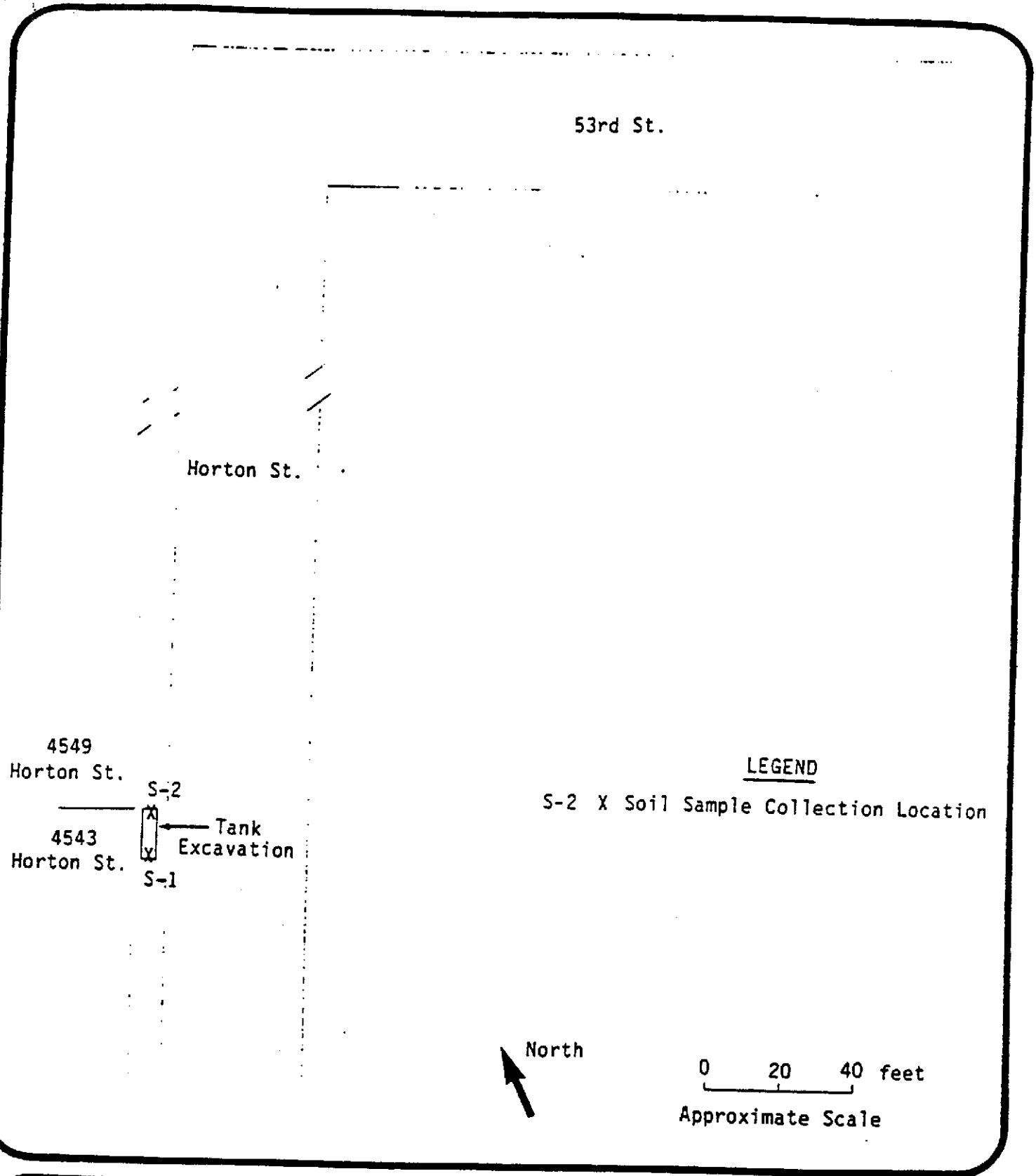
SAFETY SPECIALISTS, INC.

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-

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: 4545 Horton St.
Emeryville, CA

Project Number: 5300210 Survey Number: TE-2141-88

Sample Type:

Container Type and Condition:

Contract Laboratory Record/Name: Fireside Food, 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. Fitz Env. (Lab)	7-12-88 (Date)	

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.:
Client's Survey No.: E214-88
Contract/PO No.: 4549 WARTON ST. EMERYVILLE CA.
Release No.: 530020

Laboratory Job No.: 883275
Date Received: 07/12/88
Date Reported: 07/29/88
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.
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: 1:00
Location of Sampling: Emeryville

Project Number: 530039 Survey Number: 333-88
Sample Type: soil
Container Type and Condition: brass sleeve
Contract Laboratory Record/Name:

Sample ID	Field Information
X-1	Sample from beneath the tank excavation
X-2	Sample from beneath the tank excavation

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. Y. Shandy (Field Personnel)	9/30/88 (Date)	
2. Courier	10/3/88 (Date)	
3. Lab	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	LITHOLOGIC COLUMN	DESCRIPTION
				1–4		CL	0-4½ ORANGE BROWN CLAY (CL); 15-20% fine gravel and coarse sand, damp to moist, stiff, no petroleum hydrocarbon (PHC) odor
		14 8 8		5–6		CL	4½-6½ DARK BROWN TO BLACK CLAY (CL); trace to 5% fine to coarse sand, moist, stiff, moderate PHC odor
				7–8		CL	6½-8½ BLUISH GREY CLAY (CL); some silt, wet, very stiff, strong PHC odor
		11 15 14	13:50 11/14 1988 @9½'	9–10		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		CL	11-13 BLUISH GREY CLAY (CL); 5-10% medium sand, saturated, very stiff, no PHC odor
		5 7 14		14–16		CL	13-17 BROWN CLAY (CL); some silt, trace coarse sand and fine gravel, wet, hard, no PHC odor
		7 12		17–20		ML	17-23 OLIVE BROWN SILT (ML); some clay, wet, very stiff, no PHC odor

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			23-25½ LIGHT OLIVE BROWN CLAY (CL); some silt, wet, very stiff, no PHC odor
				24		CL	
		9 12 16		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.
				26			
				27			
				28			
				29			
				30			

REMARKS

SAFETY SPECIALISTS, Inc.

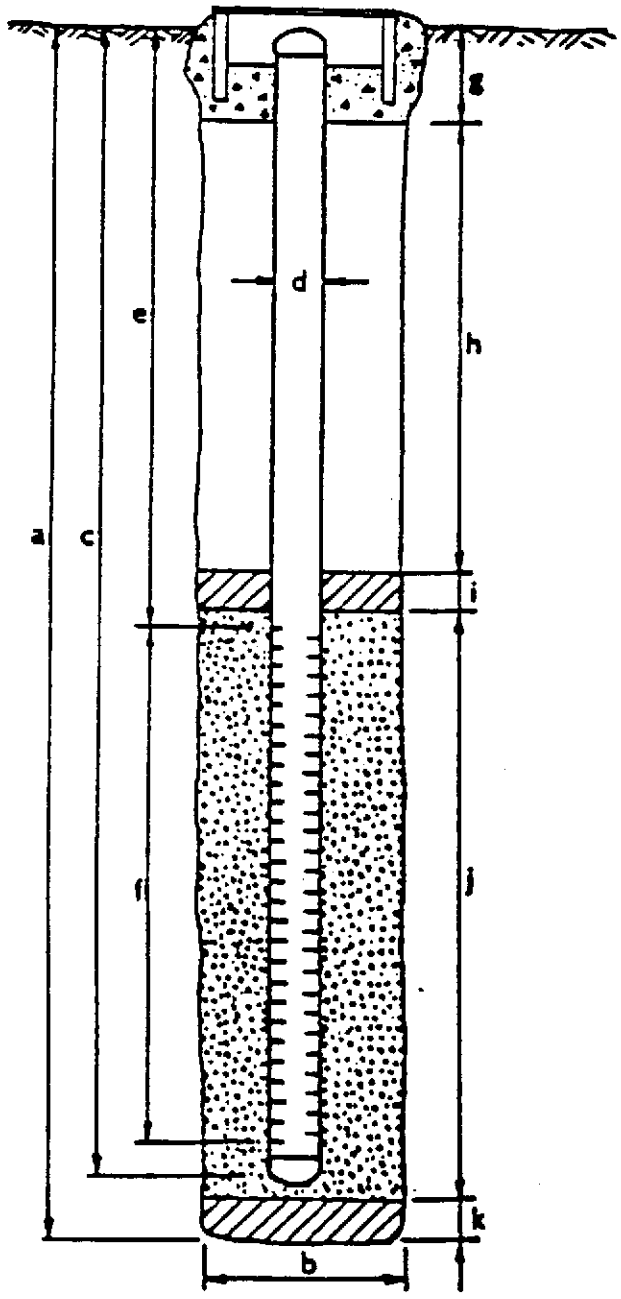
PLATE A (cont)

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 _____

C-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
j. Gravel pack 4 to 24 ft. 20.0 ft.
Pack material Lonestar #3 sand
k. Bottom seal 1.5 ft.
Seal material Bentonite pellets

K/61

PLATE B

SAMPLING LOCATION 4547 Horton EMERYVILLE / MW-1
DATE(S) PURGED 11/22/88
WATER LEVEL - INITIAL 9.33
PURGE METHOD Bladder Pump
WATER LEVEL - FINAL
DATE & TIME SAMPLED 11/22/88 -
WELL DEPTH 22.0
SAMPLING METHOD Teflon Bailer
WELL CASING VOLUME
SAMPLE TYPE - ( )GRAB ( )COMPOSITE
WELL CASING VOLUMES PURGED
CONTAINERS 40ml voa & 1L amber
PURGE RATE
PRESERVATIVES none
WEATHER CONDITIONS Raining
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		1440	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 + 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
MW-1 9-9½	" " " " " " " " 9-9½ "
MW-1 15-15½	" " " " " " " " 15-15½ "

Analysis Requested: All 3 samples analyzed separately using EPA methods ~~5030 Low-Boils~~ 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	Curtis Payton	11/16/88 Date
2. Courier	Bill Taylor	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

Laboratory Job No.: 885439
Date Extracted: 11/18/88
Date Received: 11/17/88
Date Analyzed: 11/19/88
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 Paxton Date Sampled: 11/22/88 Time: 10:30AM
Location of Sampling: 4543 Horton Ave EMERYVILLE

Project Number: 5300.50 Survey Number: E - 320-88
Sample Type: WATER
Container Type and Condition: - 40ml VOA / 1L amber - both cold -
Contract Laboratory Record/Name:

Sample ID	Field Information
MW-1 40ml	WATER SAMPLE FROM MONITORING WELL MW
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 Paxton (Field Personnel) — 11/22/88 15:54 (Date)
2. N/A (Courier) — (Date)
3. Analytical (Lab) — 11/22/88 4:10 PM (Date)

SEQUOIA ANALYTICAL

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

Safety Specialists, Inc.	Client Project ID:	#330060, Survey #E320-66	Sampled: November 22, 1988
P.O. Box 4480	Matrix Description:	Water	Received: November 22, 1988
Santa Clara, CA 95054	Method of Analysis:	EPA 3510/8015	Analyzed: December 2, 1988
Attention: Curtis Peyton	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:	#530060, 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 8030/8090	Analyzed:	November 30, 1988
Attention: Curtis Payton	Lab Sample Number:	811-2718	Reported:	December 2, 1988

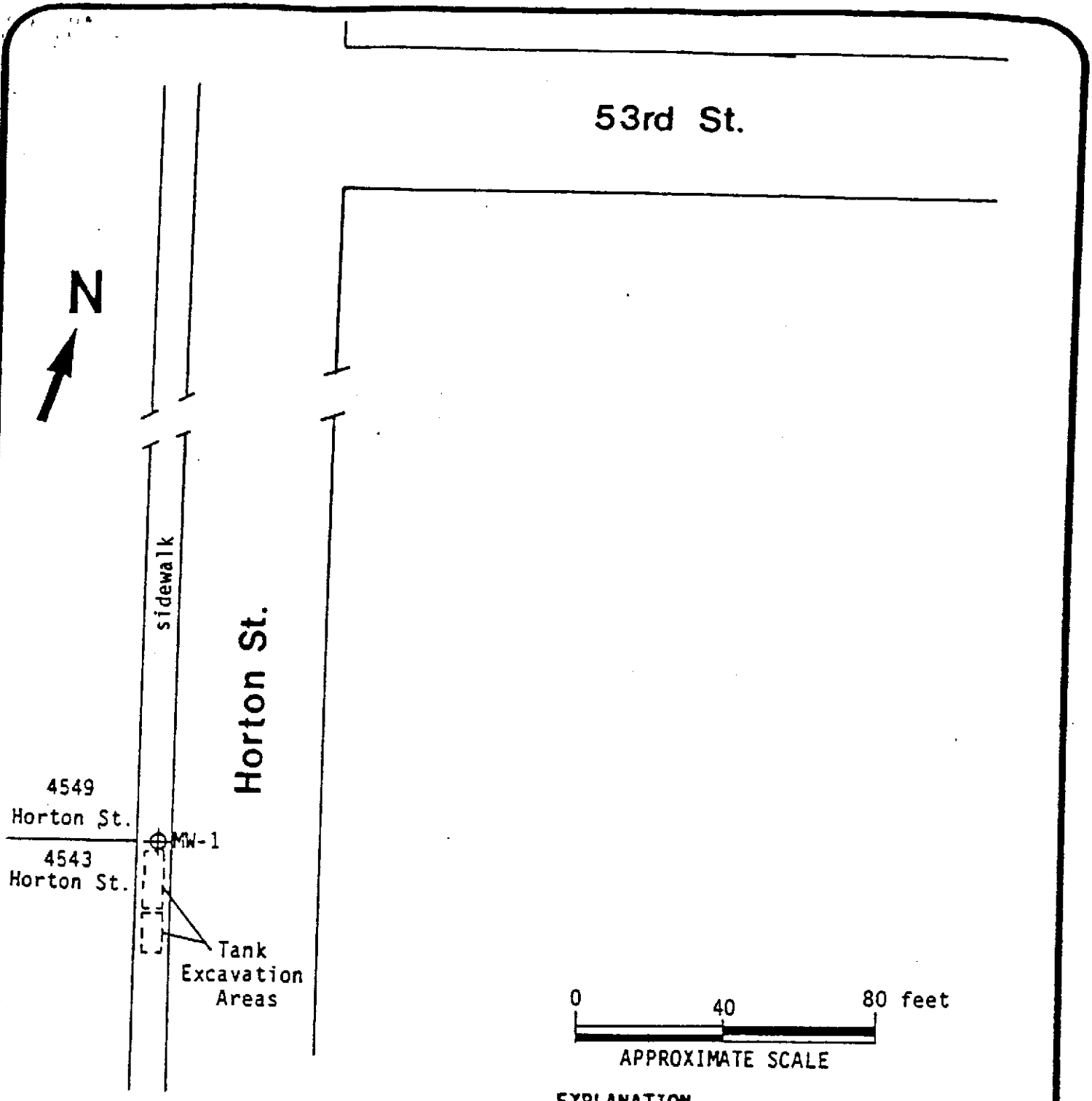
BTEX DISTINCTION (EPA 8020)

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	46

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

SEQUOIA ANALYTICAL

Arthur G. Burton
Laboratory Director



SAFETY SPECIALISTS INC.
SANTA CLARA, CA.

SITE PLAN
4543 Horton Street
Emeryville, California

Bob Smith, Tank Excavators

Figure No. 2

530050 Project No.

Table 1. Sanborn Insurance Company Maps, Oakland-Emeryville 1889, Historical Uses Within a One-Half Mile Radius of 4549 Horton Street

Map Number	Site Name	Address	Potential Hazardous Substances
1	Judson Manufacturing Foundary Company	Shellmound Street & Eastshore Highway Emeryville, CA	Heavy Metals, Grease, Coal
2	Judson Manufacturing Company Rolling Mill	Shellmound Street & Park Avenue Emeryville, CA	Heavy Metals, Coal
3	California and Nevada Railroad Company Car Building Shop	Halleck Street & Yerba Buena Avenue Emeryville, CA	Heavy Metals, Solvents

Table 2. Sanborn Insurance Company Maps, Oakland-Emeryville 1902, Historical Uses Within a One-Half Mile Radius of 4549 Horton Street

Map Number	Site Name	Address	Potential Hazardous Substances
1	Shellmound Shooting Gallery	Shellmound Street & Eastshore Highway Emeryville, CA	Heavy Metals
2	Central California Canneries	Shellmound Street & Eastshore Highway Emeryville, CA	Kerosene, Carbide, Heavy Metals, Solvents
3	Judson Manufacturing Company Machine Shop, Blast Furnace	Shellmound Street & Eastshore Highway Emeryville, CA	Heavy Metals, Grease, Coal
4	Judson Manufacturing Company Rolling Mill	Shellmound Street & Park Avenue Emeryville, CA	Heavy Metals, Oil
5	Umphred Brothers Furniture Mfg.	Park Avenue & Halleck Street Emeryville, CA	Varnishes, Lacquers, Solvents, Gasoline
6	Western Carbonic Acid Gas Company	Powell Street & Overland Avenue Emeryville, CA	Calcium Carbonate, Acids
7	Railroad Pump House	Powell Street & Overland Avenue Emeryville, CA	Grease, Oil

Table 3. Sanborn Insurance Company Maps, Oakland-Emeryville 1911-1912, Historical Uses Within a One-Half Mile Radius of 4549 Horton Street

Map Number	Site Name	Address	Potential Hazardous Substances
1	Paraffin Paint Company	59th Street & Overland Avenue Emeryville, CA	Oil, Tar, Heavy Metals
2	Union Oil Company Distributing Plant	Powell Street & Overland Avenue Emeryville, CA	Oil
3	Western Carbonic Acid Gas Company	Powell Street & Overland Avenue Emeryville, CA	Calcium Carbonate, Acids
4	Wright Tanning Company	1649 Powell Street Emeryville, CA	Chromium, Acids
5	Pacific Manifolding Book Company	5760 Stanford Avenue Emeryville, CA	Inks, Solvents
6	Prest-O-Lite Company	605 Watts Avenue Emeryville, CA	Natural Gas
7	Emeryville Planing Mill Company	489 Emery Street Emeryville, CA	Tannin
8	American Rubber Manufacturing Co.	1199 Park Avenue Emeryville, CA	Rubber, Solvents
9	Terminal Lumber Company	4077 San Pablo Avenue Emeryville, CA	Tannin
10	American Fuel Company	407 Hollis Street Emeryville, CA	Coal
11	Shooting Range	Shellmound Street & Eastshore Highway Emeryville, CA	Heavy Metals
12	Griffin & Skelley Company's Cannery	Shellmound Street & Eastshore Highway Emeryville, CA	Heavy Metals, Oil
13	Judson Manufacturing Company Machine Shop, Blast Furnace	Shellmound Street & Eastshore Highway Emeryville, CA	Heavy Metals, Grease, Coal

Table 3. Sanborn Insurance Company Maps, Oakland-Emeryville 1911-1912, Historical Uses Within a One-Half Mile Radius of 4559 Horton Street (continued)

Map Number	Site Name	Address	Potential Hazardous Substances
14	Judson Manufacturing Company Rolling Mill	Shellmound Street & Park Avenue Emeryville, CA	Heavy Metals, Oil
15	Waterhouse & Lester Company	475 Halleck Street Emeryville, CA	Tannin, Heavy Metals, Solvents
16	Griffin Skelley Cannery	1603 Western Avenue Emeryville, CA	Oil

Table 4. Sanborn Insurance Company Maps, Oakland-Emeryville 1911-1912 (Revised 1951) Historical Uses Within a One-Half Mile Radius of 4549 Horton Street

Map Number	Site Name	Address	Potential Hazardous Substances
1	Paraffin Paint Company	59th Street & Overland Avenue Emeryville, CA	Oil, Tar, Heavy Metals, Varnish, Solvents
2	Metal Rustproofing	Powell Street & Shellmound Street Emeryville, CA	Polynuclear Aromatic Hydrocarbons
3	Western Pine Supply Company	Powell Street & Shellmound Street Emeryville, CA	Tannic Acid
4	Butler Brothers Paints & Floor Coverings	Powell Street & Shellmound Street Emeryville, CA	Oil, Heavy Metals
5	Radiator Hose Factory	Powell Street & Shellmound Street Emeryville, CA	Rubber, Solvents
6	Apex Manufacturing Company	1515 Powell Street Emeryville, CA	Heavy Metals, Solvents
7	Maryland Pacific Cone Company Factory	5788 Third Street Emeryville, CA	Heavy Metals
8	Sheet Metal Shop	5749 Landregan Street Emeryville, CA	Heavy Metals
9	Soap & Disinfectant Factory	5743 Landregan Street Emeryville, CA	Alkali Alcohols
10	Marchant Calculating Machine Company	5701 Landregan Street Emeryville, CA	Heavy Metals, Paints, Solvents
11	Standard Oil Company	1520 Powell Street Emeryville, CA	Oil, Grease, Gasoline
12	Westinghouse Electric Assembly Plant	5840 Landregan Street Emeryville, CA	Heavy Metals
13	Union Oil Company Distribution Plant	5876 Peladeau Street Emeryville, CA	Oil, Grease, Gasoline

Table 4. Sanborn Insurance Company Maps, Oakland-Emeryville 1911-1912 (Revised 1951), Historical Uses Within a One-Half Mile Radius of 4549 Horton Street (continued)

Map Number	Site Name	Address	Potential Hazardous Substances
14	Plating Works	1500 Stanford Avenue Emeryville, CA	Heavy Metals
15	Moore Business Forms Pacific Manifolding Book Division	5760 Stanford Avenue Emeryville, CA	Inks, Solvents, Heavy Metals
16	The Pennzoil Company	1326 Powell Street Emeryville, CA	Oil, Heavy Metals
17	Cooks Oil Company	1350 Powell Street Emeryville, CA	Oil
18	Machine Shop	5850 Green Street Emeryville, CA	Heavy Metals, Grease, Solvents
19	Henry J. Kaiser Motors	1301 59th Street Emeryville, CA	Heavy Metals, Grease, Solvents
20	Steel Fabricating	1290 Powell Street Emeryville, CA	Heavy Metals
21	Golden Gate Manufacturing Co.	1250 Powell Street Emeryville, CA	Heavy Metals, Plastics
22	Moore Business Forms	5540 Doyle Street Emeryville, CA	Heavy Metals
23	E.J. Chubbuck, Company, Inc.	1335 Stanford Avenue Emeryville, CA	Heavy Metals
24	Machine Shop	5426 San Pablo Avenue Emeryville, CA	Heavy Metals, Grease
25	Machine Shop	5318 San Pablo Avenue Emeryville, CA	Heavy Metals, Grease
26	Gas Station	4800 San Pablo Avenue Emeryville, CA	Gasoline, Oil
27	Auto Service	4585 San Pablo Avenue Emeryville, CA	Gasoline, Oil

Table 4. Sanborn Insurance Company Maps, Oakland-Emeryville 1911-1912 (Revised 1951), Historical Uses Within a One-Half Mile Radius of 4549 Horton Street (continued)

Map Number	Site Name	Address	Potential Hazardous Substances
28	Key Systems Transit Lines	1101 47th Street Emeryville, CA	Gasoline, Oil
29	Auto Repair Shop	4807 47th Street Emeryville, CA	Grease, Oil
30	Gas Station	4809 47th Street Emeryville, CA	Gasoline
31	Rubber Material Manufacturing	4811 47th Street Emeryville, CA	Rubber, Solvents
32	Plastic Molding Works	5233 San Pablo Avenue Emeryville, CA	Plastics
33	Auto Repairing & Spray Painting	5235 San Pablo Avenue Emeryville, CA	Grease, Solvents, Heavy Metals
34	Key Systems Transit Lines	4501 San Pablo Avenue Emeryville, CA	Gasoline, Oil, Grease
35	Oliver Tire & Rubber Company	4347 San Pablo Avenue Emeryville, CA	Rubber, Solvents, Gasoline, Oil
36	American Rubber Manufacturing Co.	4038 Emery Avenue Emeryville, CA	Rubber, Solvents, Grease, Heavy Metals
37	American Rubber Manufacturing Co.	4098 Watts Avenue Emeryville, CA	Rubber, Solvents, Grease, Heavy Metals
38	Inlaid Floor Company	4051 Watts Avenue Emeryville, CA	Tannin, Varnishes, Solvents
39	Paper Box Factory	1201 Park Avenue Emeryville, CA	Inks, Solvents
40	Machine Shop	5514 Doyle Street Emeryville, CA	Heavy Metals, Grease
41	Electro-Motive Division of General Motors Corporation	5515 Doyle Street Emeryville, CA	Oil, Grease

Table 4. Sanborn Insurance Company Maps, Oakland-Emeryville 1911-1912 (Revised 1951), Historical Uses Within a One-Half Mile Radius of 4549 Horton Street (continued)

Map Number	Site Name	Address	Potential Hazardous Substances
42	General Motors Supply Corporation	5400 Hollis Street Emeryville, CA	Heavy Metals, Solvents
43	Frigidaire Sales Corp. Service Shop	1250 53rd Street Emeryville, CA	Heavy Metals, Solvents, Grease, Freon
44	Hubbard Iron Works	53rd Street & Hollis Street Emeryville, CA	Heavy Metals, Oil
45	P.G.& E. Storage Yard	4525 Hollis Street Emeryville, CA	PCB's, Creasote
46	California Packing Works	1250 Park Avenue Emeryville, CA	Heavy Metals, Solvents Tannin
47	California Packers Machine Shop	4228 Hollis Street Emeryville, CA	Heavy Metals, Grease
48	Gardner Electric Manufacturing Co. Transformer Factory	4227 Hollis Street Emeryville, CA	Heavy Metals, Oil, PCB's
49	Ransome Company Asphalt Plant	4030 Hollis Street Emeryville, CA	Oil, Polynuclear Aromatic Hydrocarbons
50	Western Die Company	4039 Hollis Street Emeryville, CA	Heavy Metals, Oil, Grease
51	Service Station	4080 Hollis Street Emeryville, CA	Gasoline, Oil
52	Albert Wrights Screw & Machine Products Factory	4062 Hollis Street Emeryville, CA	Heavy Metals
53	Tecumsen Products Company Refrigation Repair	1301 Park Avenue Emeryville, CA	Freon, Grease
54	Besler Corporation	4053 Harlan Street Emeryville, CA	Heavy Metals, Grease

Table 4. Sanborn Insurance Company Maps, Oakland-Emeryville 1911-1912, (Revised 1951), Historical Uses Within a One-Half Mile Radius of 4549 Horton Street (continued)

Map Number	Site Name	Address	Potential Hazardous Substances
55	Shell Development Co. Asbestos Products Warehouse	5309-5313 Horton Street Emeryville, CA	Asbestos
56	C.K. Willimas Co. Precipitation Plant	5301 Third Street Emeryville, CA	Heavy Metals, Oil
57	Sherwin Williams Insecticide Spray Plant	5699 Third Street Emeryville, CA	Oil, Carbamate, Organochlorine, & Organophosphate Insecticides
58	California Container Corporation	4541 Horton Street Emeryville, CA	Inks, Solvents
59	Sherwin Williams Co.	4535 Horton Street Emeryville, CA	Laquer, Solvents
60	Shell Development Co. Laboratories & Distilling Tower	4560 Horton Street Emeryville, CA	Petroleum Hydrocarbons
61	Sherwin Williams Co. Paint Factory	1450 Sherwin Avenue Emeryville, CA	Lacquers, Solvents, Oils Heavy Metals
62	Shell Development Co.	1430 45th Avenue Emeryville, CA	Oil
63	Holden Die Castings Company	4050 Horton Street Emeryville, CA	Lead
64	Air Reduction Pacific Company	1483 Park Avenue Emeryville, CA	Carbide Storage
65	Westinghouse Pacific Coast Brake Company	1549 Park Avenue Emeryville, CA	Heavy Metals, Grease Coal
66	California Packing Company, Box Printing	Halleck Street & Beach Street Emeryville, CA	Inks, Solvents
67	Consolidated Drum Co.	Shellmound Street & Eastshore Highway Emeryville, CA	Paints, Heavy Metals, Oil, Solvents

Table 4. Sanborn Insurance Company Maps, Oakland-Emeryville 1911-1912, (Revised 1951), Historical Uses Within a One-Half Mile Radius of 4549 Norton Street (continued)

Map Number	Site Name	Address	Potential Hazardous Substances
68	Judson-Pacific Murphy Company Machine Shop & Blast Furnace	Shellmound Street & Eastshore Highway Emeryville, CA	Heavy Metals, Grease, Coal
69	Air Reduction Pacific Company (Oxygen Plant)	4550 Park Avenue Emeryville, CA	Manganese Oxide, Chlorates
70	Judson-Pacific Murphy Company Rolling Mill	Shellmound Street & Park Avenue Emeryville, CA	Heavy Metals
71	Truck Repair	4079 Halleck Street Emeryville, CA	Grease, Oil

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Table 5. Fuel Tank Leaks Identifed Within a One-Half Mile Radius of 4549 Horton Street

Map Number	Site Name & Address	Source	Contaminants Found	Media Impacted	Status of Remedial Action
1	Artist Cooperative City of Emeryville 1420 45th Street Emeryville, CA	RWQCB	Oil, Grease, TPH, VOC, TOG	Soil	Post Cleanup Monitoring
2	AC Transit 47th Street & San Pablo Avenue Emeryville, CA	RWQCB	Diesel	Soil, Groundwater	Tanks Removed, Propose Soil Excavation
3	Rifkin Realty Partners 4549 Horton Street Emeryville, CA	RWQCB	Gasoline, Diesel	Soil, Groundwater	Monitoring Wells Installed; Planned Tank Removal
4	AC Transit 45th Street & San Pablo Avenue Emeryville, CA	RWQCB	Gasoline	Soil	Planned Tank Removal
5	Ransome Company 4030 Hollis Street Emeryville, CA	RWQCB	Information Not Available	Soil	Information Not Available
6	Hollis Street Project 6050 Hollis Street Emeryville, CA	RWQCB	Gasoline, Benzene, Toluene, Xylene	Soil	Monitoring Well
7	Kaiser Engineers 1140 45th Street Emeryville, CA	RWQCB	Information Not Available	Soil	Tanks Removed
8	Shell 4250 Horton Street Emeryville, CA	RWQCB	Information Not Available	Information Not Available	No Action Taken
9	Nielsen Property 5800 Shellmound Street Emeryville, CA	RWQCB	Gasoline, Diesel	Soil	Tanks removed
10	Pfizer Pigments, Inc. 4650 Shellmound Street Emeryville, CA	RWQCB	Waste Oil	Soil, Groundwater	Tank Removed, Monitoring Wells Installed

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Table 5. Fuel Tank Leaks Identified Within One-Half Mile Radius of 4549 Horton Street (continued)

Map Number	Site Name & Address	Source	Contaminants Found	Media Impacted	Status of Remedial Action
11	Berkeley Farms 4550 San Pablo Avenue Emeryville, CA	RWQCB	Petroleum Hydrocarbons	Soil	Information Not Available
12	Del Monte Plant 35 1250 Park Avenue Emeryville, CA	RWQCB	Fuel Oil, Gasoline	Soil, Groundwater	Tanks Removed
13	Schwabacker-Frey 5733 Pelladeau Emeryville, CA	RWQCB	Diesel	Soil	Tanks Removed

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Table 6. Toxic Subsurface Release Sites Within a One-Mile Radius of 4549 Horton Street

Map Number	Site Name & Address	Source	Contaminants Found	Media Impacted	Status of Remedial Action
1	Chevron Emeryville Terminal Landregon Street & Powell Street Emeryville, CA	RWQCB DHS Facility & Abandoned Site Lists	Information Not Available	Information Not Available	Abandoned Site
2	Electrical Coatings 1421 Park Avenue Emeryville, CA	RWQCB DHS Facility & Abandoned Site Lists	Trichloroethylene, Tetrachloroethylene Chromium	Soil, Groundwater	RI/FS
3	Michel & Pelton 5743 Landregon Street Emeryville, CA	RWQCB	Heavy Metals, PAH's	Soil	Information Not Available
4	P.G. & E. Materials Distribution Center 4525 Hollis Street Emeryville, CA	RWQCB DHS Facility, Abandoned Site & Superfund Lists	PCB's, Heavy Metals	Surface Soils	Excavation of Soils
5	Westinghouse Electrical Corp. 5899 Peladeau Street Emeryville, CA	RWQCB, DHS Facility, Abandoned Site, & Superfund	PCB's, Chlorobenzene, Dichlorobenzene, Trans-dichloroethylene	Soil, Groundwater	Information Not Available
6	Garrett Freight Lines 64th Street & Lacoste Street Emeryville, CA	RWQCB	Heavy Metals	Soil	Information Not Available
7	Oakland National Engraving 1001 42nd Street Oakland, CA	RWQCB	Information Not Available	Information Not Available	Information Not Available
8	Electrical Coatings 4050 Horton Street Emeryville, CA	RWQCB	Chromium	Surface Soil	Cesation of Discharge of Wastewater
9	Chromex 1400 Park Avenue Emeryville, CA	DHS Facility, Abandoned Site & Superfund Lists	Nickel, Chromium, Zinc, Cyanide	Soil, Groundwater	Low Priority, No Further Action

Table 6. Toxic Subsurface Sites Within a One-Mile Radius of 4549 Horton Street (continued)

Map Number	Site Name & Address	Source	Contaminants Found	Media Impacted	Status of Remedial Action
10	AC Transit 45th Street & San Pablo Avenue Emeryville, CA	DHS Facility, & Abandoned Site Lists	Petroleum Hydrocarbons Benzene	Soil, Groundwater	Monitoring Well Installed
11	Industrial Hard Chrome 5701-5705 Hollis St. Emeryville, CA	DHS Facility & & Abandoned Site Lists	Chromium, Heavy Metals, Sulfuric Acid	Soil	Low Priority, No Further Action
12	ITT Grinell Property 6121 Hollis Street Emeryville, CA	DHS Facility & Abandoned Site Lists	PCB's, Trichlorobenzene	Soil	DHS Site Investigation
13	PIE National Trucking Facility 5500 Eastshore Fwy. Emeryville, CA	DHS Facility & Abandoned Site Lists	Petroleum Hydrocarbons Benzene	Soil, Groundwater	Tanks Removed, Soil Excavated
14	Ransome Company 4030 Hollis Street Emeryville, CA	DHS Facility & Abandoned Site Lists	Asphalt, Tar Benzene	Surface Soil	No Further Action
15	Pfizer, Inc. 4650 Shellmound St. Emeryville, CA	DHS Superfund List	Ferrous Sulfate, Sulfuric Acid	Surface Soil	Declassified as a Hazardous Site