

COPY

**REPORT ON  
UNDERGROUND TANK REMOVAL AND REMEDIAL ACTIVITIES**  
2700 7th Street  
Oakland, CA

11/29/88

*Prepared for*

**PORT OF OAKLAND**  
Oakland, California

March 1989

*Prepared by*

**BASELINE ENVIRONMENTAL CONSULTING**  
5900 Hollis Street, Suite D  
Emeryville, California 94608  
415/420-8686

S8-172

# BASELINE

## ENVIRONMENTAL CONSULTING

7 March 1989  
S8-172

Ms. Michele Heffes  
Port of Oakland  
77 Jack London Square  
Oakland, CA 94608

**Subject: Documentation for Underground Tank Removal at 2700 7th Street, Oakland**

Dear Michele:

Enclosed please find documentation for tank closure at 2700 7th Street, in accordance with the requirements of Alameda County Health Agency and the Regional Water Quality Control Board.

Sincerely,



Yane Nordhav  
Principal  
Reg. Geologist No. 4009

YN/mb/S17

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# REPORT ON UNDERGROUND TANK REMOVAL AND REMEDIAL ACTIVITIES

2700 7th Street, Oakland, CA

## INTRODUCTION

In November 1988, a 15,000-gallon underground storage tank was removed by Aqua Science Engineers (ASE) from a site owned by the Port of Oakland located at 2700 7th Street in Oakland, California (Figure 1). BASELINE Environmental Consulting was retained by the Port of Oakland to direct soil remediation activities in response to identification of an unauthorized release of total petroleum hydrocarbon compounds based on the analytical results from soil samples collected beneath the tank during tank removal.

This report describes underground tank removal activities and recommended remedial actions as required by the Alameda County Department of Environmental Health, Hazardous Materials Program (Health Department). The first section of this report contains a site description and summary of the underground tank removal activities conducted by ASE, followed by a description of remedial activities undertaken at the site, including soil and groundwater sampling and analytical results; waste removal and disposal activities; and recommendations of further actions.

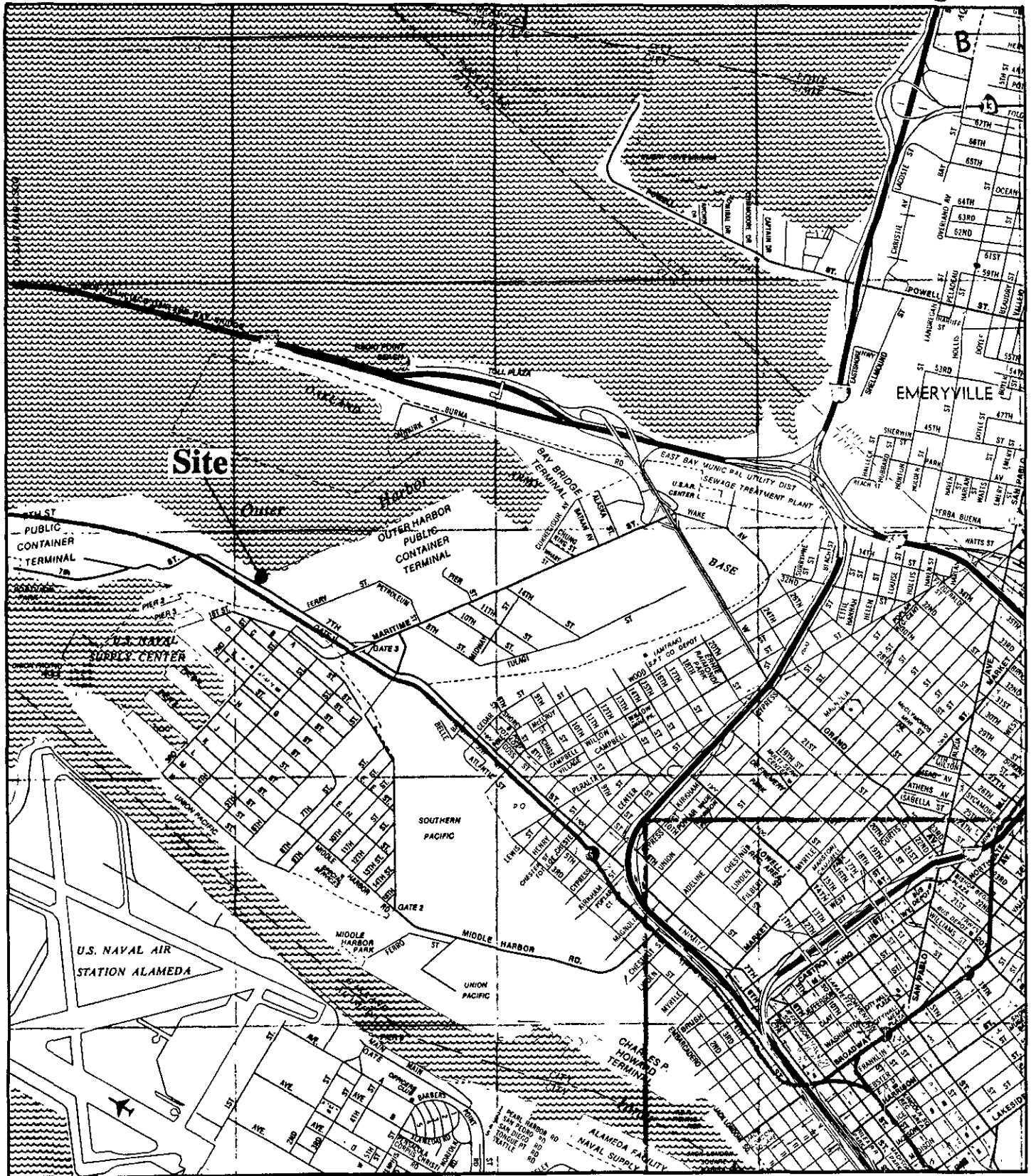
## SITE DESCRIPTION

The site is located in the northwestern portion of the City of Oakland immediately adjacent to the Oakland Outer Harbor (Figure 1). Historical and current land use in the vicinity of the site is exclusively commercial and industrial. Port of Oakland shipping terminals are located along the adjacent waterfront to the north, west, and south. A U.S. Navy Supply Center is located southeast of the site.

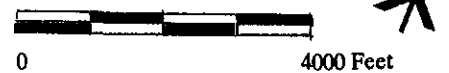
Based on data obtained from interviews with Port of Oakland personnel, the site was initially developed by Albers Milling Company in the 1920s as a grain storage, milling, and shipping facility. The facility was apparently used by Albers until the 1940s when it was purchased by the Carnation Company. In 1984, Carnation ceased operations at the site and it remained vacant until 1988 when the buildings were demolished by the Port of Oakland for a shipping terminal expansion project (Mr. John Stewart, personal communication).

# REGIONAL LOCATION

# Figure 1



2700 7th Street  
Oakland, California



**BASELINE**

The site contained one 15,000-gallon steel underground storage tank located at the eastern end of the facility (Figure 2). In addition, Port of Oakland records indicate that at one time the site may have also contained one 10,000-gallon underground storage tank at the western end of the site. However, exploratory excavations by the Port to a depth of 10 feet in the presumed location of this tank were unsuccessful and it is assumed that the tank was never installed or that it had been previously removed.

The 15,000-gallon tank apparently contained diesel fuel which was used to refuel trucks and heavy equipment. It is not known whether tank tests have been conducted and there are no inventory reconciliation records available.

#### **UNDERGROUND TANK REMOVAL ACTIVITIES**

The 15,000-gallon underground tank was removed on 28 November 1988 by ASE as part of demolition activities at the site. Underground tank removal activities conducted by ASE are described in the "Project Report - Underground Storage Tank Removal Assessment" (Aqua Science Engineers, December 1988) included as Appendix A to this report. Permits were obtained from the Alameda County Department of Public Health, Hazardous Materials Program and the Alameda County Fire Department (Appendix B).

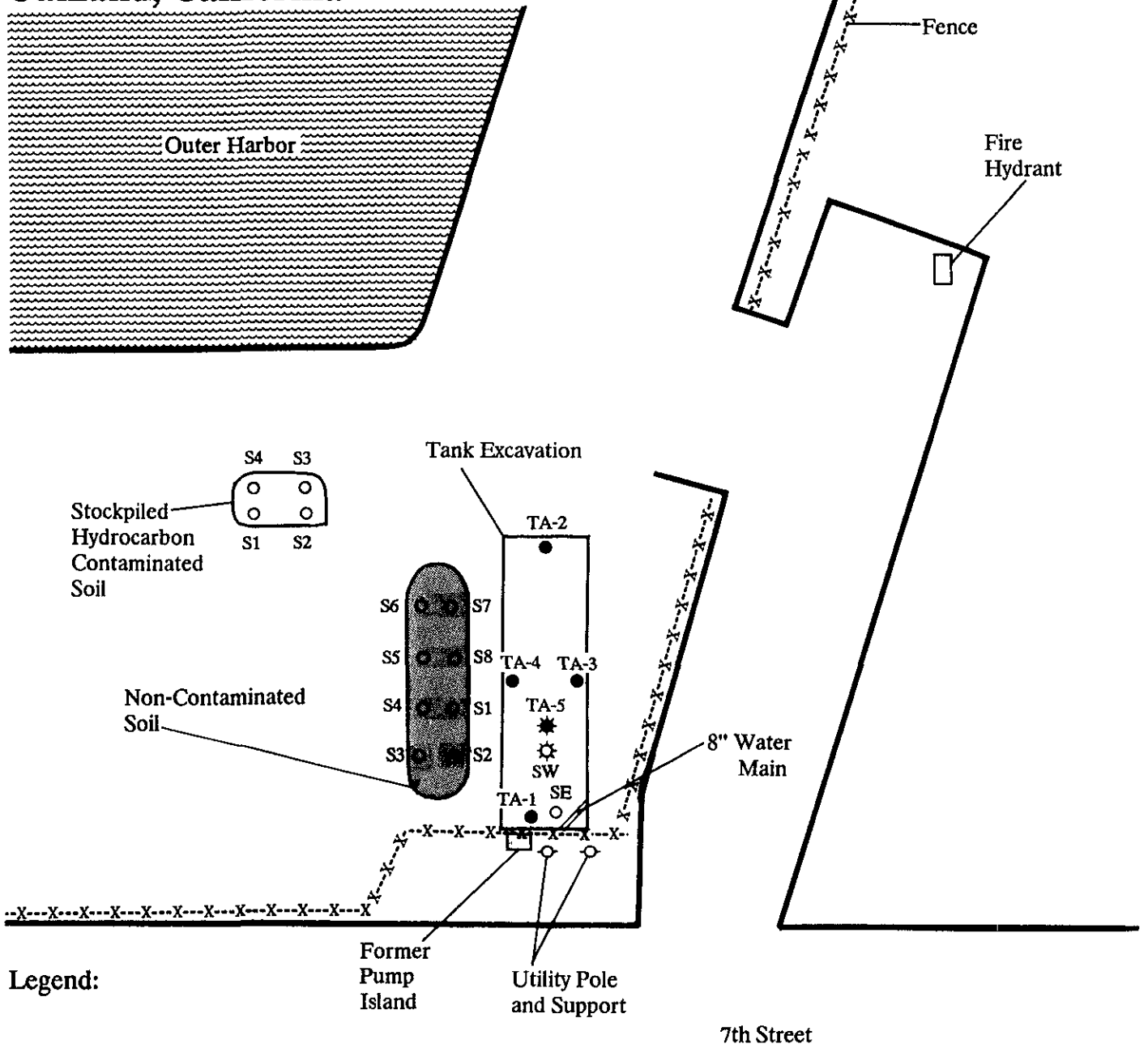
Prior to removing the tank, 3,900 gallons of remaining product was removed and disposed of as hazardous waste. The tank was then purged of explosive vapors, removed from the ground, rinsed and cut into pieces for disposal as scrap metal. The rinsate was sampled on 21 November and analyzed for diesel. The sample did not contain diesel above detection levels, but hydrocarbons in the C12-C24 range were identified at concentrations of 1.7 mg/L (the laboratory report is included in Appendix A). A County representative was on-site observing these tank removal activities.

#### **Field Observations and Air Monitoring Measurements**

Hydrocarbon odors were detected on the southern end of the tank excavation during removal of the tank and air monitoring measurements collected in the same area with a GasTech combustible gas indicator identified 300 ppm organic vapors. Inspection of the tank by Aqua

**SITE PLAN**  
**Underground Tank Removal**  
**2700 7th Street**  
**Oakland, California**

**Figure 2**



**Legend:**

- Soil Sampling Location  
Aqua Science Engineers
- \* Groundwater Sampling Location  
Aqua Science Engineers
- Soil Sampling Location  
Baseline
- ⊗ Groundwater Sampling Location  
Baseline



Not to Scale  
**BASELINE**



ASE staff and the Alameda County Health Department however did not identify any evidence of corrosion, punctures, or leaks in the tank walls.

#### **Soil Sampling Activities and Analytical Results**

A total of four soil samples were collected by Aqua Science Engineers immediately following excavation and removal of the tank; two beneath each end of the tank (TA-1 and TA-2) and two from each sidewall at the center of the excavation (TA-3 and TA-4). All four soil samples were collected in the native soil approximately one foot above groundwater level. Soil sample locations are shown in Figure 2. Soil sample collection procedures are described in the ASE Project Report included in Appendix A.

The soil samples were analyzed at Curtis and Tompkins Laboratory in Berkeley for TPH compounds (EPA Method 8015 - modified) and volatile aromatic hydrocarbons (EPA Method 8020). As summarized in Table 1, laboratory analyses of soil sample TA-1 collected at the southern end of the tank excavation following tank removal identified concentrations of TPH compounds above 1,000 mg/kg (3,800 mg/kg as gasoline and 2,600 mg/kg as unspecified). Soil sample TA-1 also contained elevated concentrations of the volatile organic compounds benzene (1.1 mg/kg), toluene (7.4 mg/kg), ethyl benzene (2.5 mg/kg), and total xylenes (116.0 mg/kg). Elevated concentrations of TPH (49.0 mg/kg) were also identified in the eastern sidewall of the excavation. Laboratory reports are included in the ASE Project Report.

An Unauthorized Release form was filed by BASELINE Environmental Consulting with the Alameda County Department of Environmental Health, Hazardous Materials Program following receipt of these analytical results. A copy of the Unauthorized Release form is included as Appendix C of this report.

#### **Groundwater Sampling Activities and Analytical Results**

During excavation, groundwater was encountered at approximately 11.0 feet below-ground surface. One groundwater sample (TA-5) was collected by ASE from inside the excavation and analyzed for TPH and benzene, toluene, and xylene (BTX). As summarized in Table 2, laboratory analyses of groundwater sample TA-5 identified elevated TPH compounds at a concentration of 2.4 mg/L; no volatile organic compounds were identified.

TABLE 1  
**SOIL SAMPLING RESULTS**  
**UNDERGROUND TANK REMOVAL**  
 2700 7th Street, Oakland, California  
 (mg/kg)

Sample I.D.	Total Petroleum Hydrocarbons <sup>1</sup>				Volatile Aromatic Hydrocarbons <sup>2</sup>			
	Gasoline	Kerosine	Diesel	Other <sup>3</sup>	Benzene	Toluene	Xylenes	Ethylbenzene
<b>Underground Tank Area Sampling</b>								
TA-1 <sup>4</sup>	3,800	ND	ND	2,600	1.1	7.4	116.0	2.5
TA-2	ND	ND	ND	ND	ND	ND	ND	ND
TA-3	ND	ND	ND	49.0	ND	ND	ND	ND
TA-4	ND	ND	ND	ND	ND	ND	ND	ND
South End <sup>5</sup>	ND	ND	ND	220.0	ND	ND	ND	ND
<b>Stockpiled Soil Sampling</b>								
S1, S2, S4 <sup>6</sup>	ND	ND	ND	ND	--	--	--	--
S3 <sup>7</sup>	ND	ND	ND	340.0	--	--	--	--
S5, S6, S7, S8 <sup>6</sup>	ND	ND	ND	ND	--	--	--	--
<b>Waste Characterization Sampling</b>								
S1, S2, S3, S4 <sup>5</sup>	ND	ND	ND	47.0	ND	ND	0.3	ND

<sup>1</sup> Total petroleum hydrocarbon analyses conducted using EPA Method 8015 (modified).

<sup>2</sup> Volatile aromatic compounds analyses conducted using EPA Method 8020.

<sup>3</sup> Fingerprint pattern does not match hydrocarbon standard. Quantitation based on largest peaks within C-12 to C-14 boiling range.

<sup>4</sup> Samples TA-1 through TA-4 were collected by Aqua Science Engineers, 28 November 1988.

<sup>5</sup> Sample collected by BASELINE, 24 January 1989.

<sup>6</sup> Composite sample collected by BASELINE, 30 December 1988.

<sup>7</sup> Sample collected by BASELINE, 30 December 1988.

<sup>8</sup> Composite sample collected by BASELINE, 26 January 1989.

ND = Compound not identified above laboratory detection limit.

-- = Sample not analyzed for specific parameter.

Sample locations shown in Figure 2.

Laboratory reports included in Appendix E and F.

TABLE 2

**GROUNDWATER SAMPLING RESULTS  
UNDERGROUND TANK REMOVAL**  
2700 7th Street, Oakland, CA  
(mg/L, unless otherwise noted)

Sample I.D.	Total Petroleum Hydrocarbons <sup>1</sup>				Volatile Aromatic Hydrocarbons <sup>2</sup>			
	Gasoline	Kerosine	Diesel (ppm)	Other <sup>3</sup>	Benzene	Toluene	Xylenes	Ethylbenzene
#1 <sup>4</sup>	--	ND	ND	1.7	ND	ND	ND	ND
TA-5 <sup>5</sup>	--	ND	ND	2.4	ND	ND	ND	ND
SW <sup>6</sup>	--	ND	ND	ND	ND	ND	ND	ND

<sup>1</sup> Total petroleum hydrocarbons analyzed using EPA Method 8015 (modified).

<sup>2</sup> Volatile aromatic hydrocarbons analyzed using EPA Method 602.

<sup>3</sup> Fingerprint does not match Hydrocarbon Standards Quantitation based on largest peaks C-12 to C-24 boiling range.

<sup>4</sup> Sample collected by Aqua Science Engineers, 21 November 1988 from tank rinsate.

<sup>5</sup> Sample collected by Aqua Science Engineers, 28 November 1988.

<sup>6</sup> Sample collected by BASELINE, 30 December 1988.

Sample locations shown on Figure 2.

Laboratory report included in Appendix E.

## REMEDIAL ACTIONS AND CONFIRMATION SAMPLING

### Sub-Surface Conditions

The soils underlying the site consist primarily of interbedded sands and crushed shells. Groundwater appears to be under tidal influence and ranges in depth from 8 to 10 feet below ground surface. A search for underground utilities conducted by Underground Service Alert (USA) did not locate any buried utilities in the immediate vicinity of the tank excavation. Port of Oakland records also do not indicate the presence of underground utilities. During excavation, however, an 8-inch water line was uncovered at the south end of the excavation. It is not known if this line is active although it appeared to be connected to a fire hydrant adjacent to the site. A PG&E utility pole and support was located at the southern end of the excavation (Figure 2).

### Underground Tank Excavation Remediation

Utilizing air monitoring measurements, visual observations, and analytical results from soil sampling approximately 35 yards of contaminated soil was excavated from the southern end of the excavation and stockpiled on the site (Figure 2). Plastic sheeting was placed under and over the pile to prevent release of contaminants to the environment. A confirmation soil sample (Sample No. "South End") was collected in the native soil in the southern wall of the tank excavation and submitted to the laboratory for analyses following excavation of contaminated soil. The sample location is shown in Figure 2 and soil sampling procedures are described in Appendix D.

Confirmation soil sample "South End" was analyzed in the laboratory for TPH (EPA Method 8015-modified) and total volatile hydrocarbons (EPA Method 8015-modified and 8020). As summarized in Table 1, 220 mg/kg of an unspecified petroleum hydrocarbon was identified in this confirmation sample; no volatile hydrocarbons were identified above the laboratory detection limit. The confirmation sample laboratory report and chain-of-custody form are included in Appendix E.

### Stockpiled Soil and Groundwater Confirmation Sampling

Overburden soils were stockpiled adjacent to the excavation during removal of the underground tank (Figure 2). In order to characterize these stockpiled soils prior to refilling the excavation, the pile was divided into eight sections and a soil sample was collected from each section. The samples were collected using a hand driven soil sampler fitted with 2-inch brass sleeves using the procedures outlined in Appendix D.

The eight soil samples were transported to Curtis and Tompkins Laboratory for analysis. Seven of the samples were composited into two samples in the laboratory. Composite Sample 1 consisted of samples S1, S2, and S4. Composite Sample 2 consisted of samples S5, S6, S7, and S8. The remaining sample (S3) was analyzed individually based on field observations indicating the potential presence of hydrocarbon contamination. In addition, a confirmation groundwater sample was collected from the bottom of the excavation. Groundwater sample collection procedures are described in Appendix D.

The soil samples were analyzed in the laboratory for total petroleum hydrocarbons (EPA Method 8015 - modified). As shown in Table 1, analytical results identified the presence of 340 mg/kg TPH in soil sample S3. The two other composite samples did not contain TPH above the laboratory detection limit.

The contaminated soil in the vicinity of soil sample S3 was subsequently removed from the pile and placed with the contaminated soil previously excavated and stockpiled on the site. The remaining clean stockpiled soils were used to backfill the tank excavation.

The confirmation groundwater sample was analyzed in the laboratory for TPH and volatile organics (EPA Method 624). As summarized in Table 1, TPH or volatile organic compounds were not identified above the laboratory detection limit. Laboratory reports and chain-of-custody forms are included in Appendix E.

#### Waste Characterization Soil Sampling and Disposal

Approximately 35 yards of contaminated soil was generated during tank removal and remedial excavation activities at this site. To characterize this waste material for disposal purposes, four soil samples were collected from the stockpiled soil (Figure 2). The soil samples were collected with a hand-driven soil sampler fitted with 2-inch brass sleeves using soil sampling procedures outlined in Appendix D.

The four waste characterization soil samples were transported to Curtis and Tompkins Laboratory where they were composited into one sample and analyzed for total petroleum hydrocarbon compounds (EPA 8015 modified) and total volatile hydrocarbons (EPA Methods 8015-modified and 8020). Analytical results identified elevated concentrations of TPH at 47 mg/kg and total xylenes at 0.3 mg/kg. Copies of the analytical reports and chain-of-custody forms are included in Appendix F.

The concentration of TPH in soil samples collected in the stockpiled soil was below the 1,000 mg/kg limit considered by the California Department of Health Services as hazardous waste; therefore, the soil will be transported and disposed of as non-hazardous at a Class II or III landfill upon receipt of approval from the landfill.

## **REGULATORY FRAMEWORK**

The Alameda County Health Department of Environmental Health, Hazardous Materials Program is the local enforcement agency for the underground tank regulations contained in the California Code of Regulations, Title 23, Chapter 3, Subchapter 16. In the event of an unauthorized release from an underground tank, the Health Department requires that the tank owner: 1) notify the Health Department by submitting an Unauthorized Release Form; 2) take appropriate measures to stop the discharge; and 3) retain a consulting firm to conduct appropriate remedial investigations.

The Regional Water Quality Control Board, San Francisco Bay Region (RWQCB) is responsible for the protection of surface water and groundwater in Alameda County under the Porter-Cologne Water Quality Control Act. Although by agreement, the Health Department is the lead agency for supervising appropriate clean-up and remediation activities at sites where soils and groundwater have been affected by leakage of hazardous materials from underground tanks, the RWQCB serves in an oversight capacity for these projects to ensure that the RWQCB remediation requirements are met.

## **CONCLUSIONS AND RECOMMENDATIONS**

Based on field observations and the analytical results from soil and groundwater sampling, the following conclusions can be drawn:

- Soil samples collected during and after tank removal activities at this site indicate that an unauthorized release of fuel product to near-surface soils has occurred through the operation of the 15,000-gallon underground storage tank removed from this site.
- Field observations indicate that the tank walls were free of obvious punctures, holes, or corrosion indicating that the fuel release probably resulted from spillage.
- Soil samples collected in the native soil following tank removal indicate that the major release was limited to the southern end of the tank.

- No floating product was observed in the tank excavation and laboratory analyses did not identify elevated concentrations of total petroleum hydrocarbons or volatile organic compounds in confirmation groundwater samples.
- Shallow groundwater at the project site is under tidal influence and is not used for drinking water purposes.
- Contaminated soils were removed from the tank excavation to reduce future sources of contamination to the environment.

*What about soils left in place*

*What about 3600 PPM impacted soil*

The source of potential groundwater contamination has been removed from the site. It does not appear that the shallow groundwater underlying the site has been affected by the past unauthorized release. Groundwater samples collected during tank removal activities indicated the presence of petroleum hydrocarbons in the water contained in the excavation; this may have been a result of the tank removal activities, since the water sample collected on 30 December 1988 did not contain organic compounds above detection limits. Therefore, the beneficial uses of the waters of the state do not appear to have been affected by the former underground tank.

The confirmation sample collected at the south end of the former tank location indicates that soils containing petroleum hydrocarbons remain on the site; however, the groundwater appears not to be affected. Installation of a groundwater monitoring well between the former tank location and the Bay is not recommended since the groundwater does not appear to be affected, the Bay waters are within about 50 feet of the former tank, and the site is under tidal influence.

APPENDIX A

PROJECT REPORT - UNDERGROUND STORAGE TANK REMOVAL ASSESSMENT,  
AQUA SCIENCE ENGINEERS, DECEMBER 1988



December 20, 1988

PROJECT REPORT

UNDERGROUND STORAGE TANK REMOVAL ASSESSMENT  
AT 2700 SEVENTH STREET, OAKLAND, CALIFORNIA

Prepared for:

John Stewart  
Port of Oakland  
66 Jack London Square  
Oakland, Ca. 94607

Submitted by:

Aqua Science Engineers  
2500 Old Crow Canyon Rd. # 121  
San Ramon, CA 94583

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## 1. INTRODUCTION

This report documents activities related to removal of the underground storage tank located at 2700 Seventh Street, Oakland, California.

Our scope of work consisted of the following:

1. Collecting soil samples at each end of the tank to be removed and submit the samples to a state-certified laboratory for analysis of total petroleum hydrocarbons (TPH) and BTX using approved EPA Methods.
2. Submit a report to the client presenting results.

## 2. INVESTIGATIVE METHODS AND FIELD EXPLORATION

On November 28, 1988, Aqua Science Engineers obtained soil samples from the tank pit of one (1) 15,000 gallon tank removed from the site located at 2700 Seventh Street, Oakland, California. The tank was cleaned on-site and disposed of as scrap metal at Schnitzer Steel, Oakland. The rinsate was analyzed for TPH as required by Alameda County Health Hazardous Materials. A copy of the rinsate analyses is in Appendix B. The rinsate was disposed of under hazardous waste manifest by Refinery Services, Patterson. A copy of the rinsate manifest is in Appendix A. Immediately following excavation and removal, one soil sample was collected from beneath each end of the underground tank and from each sidewall at the center of the pit. Each sample was taken from native material approximately one foot above groundwater level, approximately 10 feet below grade. See site plan for location of samples. Samples were collected from a backhoe scoop of soil by driving a 4-inch by 2-inch brass tube into the soil using a wooden mallet. The samples were secured using aluminum foil, teflon caps, and sealed with duct tape.

The native soil was classified as a sand.

Groundwater was encountered during the excavation at about 11 feet below grade. One water sample was collected from the pit.

The samples were refrigerated and shipped to Curtis & Tompkins, Ltd. in Berkeley, CA. The samples were prepared and analyzed for Total Petroleum Hydrocarbons and BTX.

### 3. DISCUSSION AND CONCLUSIONS

The results of laboratory analysis show contamination is present around the tank pit. TPH (Total Petroleum Hydrocarbons) concentrations at the south end of the pit are 3,800 ppm as gasoline and 2,600 ppm as diesel. A copy of the certified laboratory results are in Appendix B.

All soil above 1,000 ppm is required to be removed and treated as hazardous waste per Alameda County Hazardous Materials and Regional Water Quality Control Board. Additional excavation under the direction of a qualified engineer should be done and additional samples collected to show that all contamination above 1,000 ppm was removed. Also, an investigation into the vertical and lateral extent of contamination below 1,000 ppm may be required depending on the results of the additional samples collected.

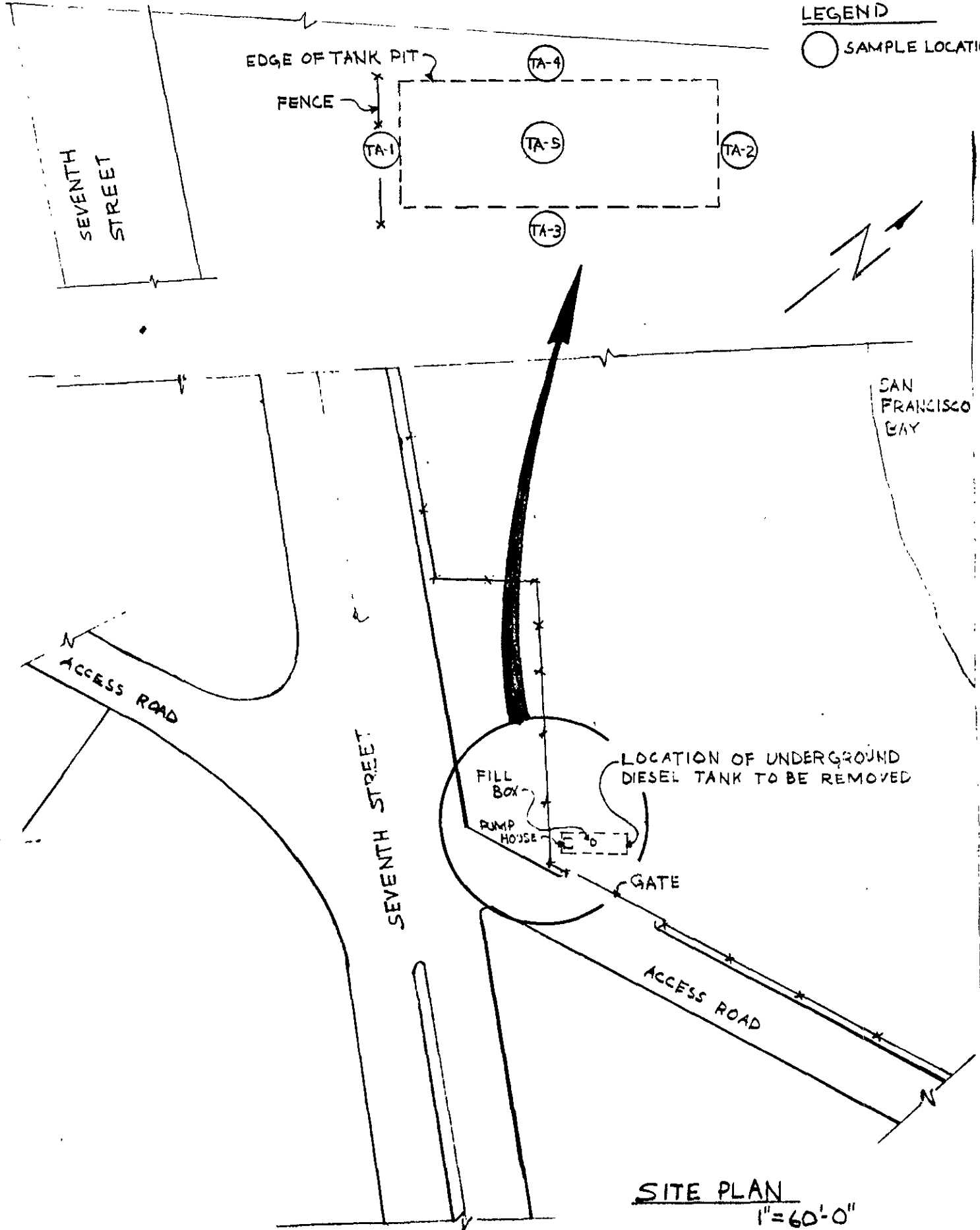
The results of this investigation represents conditions at the time and location at which samples were collected and for the parameters analyzed in the laboratory. It does not fully characterize the site for contamination resulting from other sources or parameters not analyzed.

TABLE 1

Sample Id Chemical Compound	TA-1 (ppm)	TA-2 (ppm)	TA-3 (ppm)	TA-4 (ppm)	TA-5 (ppm)
TPH as Gasoline	3,800.0	ND	ND	ND	ND
TPH as Other *	2,600.0	ND	49.0	ND	2.4
Benzene	1.1	ND	ND	ND	ND
Toluene	7.4	ND	ND	ND	ND
Xylenes	116.0	ND	ND	ND	ND
Ethyl Benzene	2.5	ND	ND	ND	ND

4. Site Plan at 2700 Seventh Street, Oakland

LEGEND  
○ SAMPLE LOCATION



SITE PLAN  
1" = 60'-0"

APPENDIX A  
HAZARDOUS WASTE MANIFEST FORM

UNIFORM HAZARDOUS WASTE MANIFEST

Manifest Document No. CA 000010015

Manifest Document No.

Generator's Name and Mailing Address: Port of Baltimore, 59

Generator's EPA ID Number: CA 00003166728

Transporter's Name: Baltimore Service

Transporter's EPA ID Number: CA 00003166728

Receiver's Name and Site Address: Baltimore Service, 1151 E. My St, Baltimore, MD 21243

Receiver's EPA ID Number: CA 00003166728

Waste Description: Waste Oil, Commercial Liquid (SA 297)

12. Containers	13. Total Quantity	14. Unit (WT/Vol)
12	3900	g

Shipping Codes for Waste Listed Above

Additional Information

Generator's Certification: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name, and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable Federal, State, and national government regulations.

Signature: Stewart, Date: 11/17/84

Signature: [Signature], Date: 11/17/84

Signature: [Signature], Date: 11/17/84

Signature: [Signature], Date: 11/17/84

Signature: [Signature], Date: 11/17/84

Signature: [Signature], Date: 11/17/84

Signature: [Signature], Date: 11/17/84

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

# UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. **0 A I C I 0 1 0 1 0 1 0 1 7 1 4 1 0 1 4 1 5**  
Manifest Document No. **9792321**

2. Page 1 of 1  
Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address  
**Port of Oakland 66 JACK LONDON SQ, OAKLAND, CA  
2700 7th St. Oakland, Ca.**

A. State Manifest Document Number  
**87907233**  
B. State Generator's ID  
**C A P P P P P P P P P P P P P P P P**

4. Generator's Phone (415) **444-3188**

C. State Transporter's ID **903-83**

5. Transporter 1 Company Name  
**Refineries Service**

D. Transporter's Phone **800 874 4444**

6. US EPA ID Number  
**C A D 0 8 3 1 6 6 7 2 8**  
7. Transporter 2 Company Name  
8. US EPA ID Number  
9. Designated Facility Name and Site Address  
**Refineries Service  
13331 N.Hwy 33  
Patterson, Ca 95363**

E. State Transporter's ID  
F. Transporter's Phone  
G. State Facility's ID  
**C A D 0 8 3 1 6 6 7 2 8**  
H. Facility's Phone  
**800 874 4444**

11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID Number)

12. Containers No. Type  
13. Total Quantity  
14. Unit Wt/Vol  
1. Waste No.

a. **WASTE COMBUSTIBLE LIQUID N.O.S.  
NA 1993**

**0011 TT 112010 G**  
State **241**  
EPA/Other

b.

State  
EPA/Other

c.

State  
EPA/Other

d.

State  
EPA/Other

J. Additional Descriptions for Materials Listed Above  
**FUEL OIL 55% 30% WATER  
SLUDGE 15%**

K. Handling Codes for Wastes Listed Above  
a. **01**  
b.  
c.  
d.

15. Special Handling Instructions and Additional Information  
**GLOVES**

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.  
If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name **Steve DeLore** Signature *[Signature]* Month Day Year **11 21 88**

17. Transporter 1 Acknowledgement of Receipt of Materials  
Printed/Typed Name **Jerry Voss** Signature *[Signature]* Month Day Year **11 21 88**

18. Transporter 2 Acknowledgement of Receipt of Materials  
Printed/Typed Name  
Signature  
Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.  
Printed/Typed Name **JAMES F WESSY** Signature *[Signature]* Month Day Year **11 21 88**

IN CASE OF AN EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802. WITHIN CALIFORNIA CALL 1-800-666-6850

GENERATOR

TRANSPORTER

FACILITY



APPENDIX B  
LABORATORY ANALYSIS AND CHAIN-OF-CUSTODY FORM

000251

\* P.O. Box 535, San Ramon, CA 94583-0535



(415) 820-9391

Project Name: EVANS BRO. Site: PORT OF OAKLAND Date: 11/21/98 Laboratory: CURTIS TOMPKINS

Sample ID	Sample/Container Type	Analyze/ Hold	Analyze For:	Method - Detection Limit	Notes/Remarks
<u># 1</u>	<u>G</u>		<u>TPH as Diesel</u>		<u>24 hr Turn Around</u>

S = Soil W = Water O = Other  
G = Glass BT = Brass Tube P = Plastic V = Vial Q = Other

Chain of Custody

1. Sampled by: Steve DeHove  
 2. Courier: Steve DeHove  
 3. Received by Lab: [Signature]  
 Date: 11/21/98 Time: 1525  
 4. Received in Office: Date: \_\_\_\_\_

- = Collate all samples for single analysis.
- = Collate and analyze two top samples and if clean, do not analyze other sample.
- = Call ASE for instructions.
- = See attached protocol.



Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710. Phone (415) 486-0900

LABORATORY NUMBER: 16262  
CLIENT: AQUA SCIENCE ENGINEERS INC.  
PROJECT NAME: EVANS BRO./PORT OF OAKLAND  
JOB #: CC0251

DATE RECEIVED: 11-21-88  
DATE ANALYZED: 11-22-88  
DATE REPORTED: 11-22-88

Total Heavy Petroleum Hydrocarbons in Aqueous Solutions  
EPA 8015 (Modified)  
Extraction Method: EPA 3510

LAB ID	CLIENT ID	KEROSINE (mg/L)	DIESEL (mg/L)	OTHER (mg/L)
16262-1	#1	ND(0.05)	ND(0.05)	1.7 *


\* Fingerprint pattern does not match Hydrocarbon Standards. Quantitation based on largest peaks C12-C24 boiling range.

ND = Not Detected; Limit of detection in parentheses.

QA/QC SUMMARY

Duplicate: Relative % Difference	8
Spike: % Recovery	100

RECEIVED  
DEC 6 1988  
AQUA SCIENCE ENG.

  
LABORATORY DIRECTOR

Berkeley

Wilmington

Los Angeles

CCO258

P.O. Box 535, San Ramon, CA 94583-0535



(415) 820-9391

Project Name: PORT OF OAKLAND Site: 2700 7<sup>th</sup> Street Date: 11/28/88 Laboratory: Curtis Tomkins

Sample ID	Sample/Container Type	Analyze/ Hold	Analyze For:	Method - Detection Limit	Notes/Remarks
TA-1	S/BT	A	TPH/D/BTXE		
TA-2	↓	A	↓		
TA-3	↓	A	↓		
TA-4	S/BT	A	↓		
TA-5	W/G 1 liter	A	TPH/D/BTXE		

S = Soil W = Water O = Other  
G = Glass BT = Brass Tube P = Plastic V = Vial Q = Other

Chain of Custody

1. Sampled by: Gregory P. King

2. Courier: Gregory P. King

3. Received by Lab: [Signature]  
Date: 11/28/88 Time: 10:45

4. Received in Office: Date: \_\_\_\_\_

- = Collate all samples for single analysis.
- = Collate and analyze two top samples and if clean, do not analyze other sample.
- = Call ASE for instructions.
- = See attached protocol.



Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710, Phone (415) 486-0900

LABORATORY NUMBER: 16285  
 CLIENT: AQUA SCIENCE ENGINEERS INC.  
 PROJECT: PORT OF OAKLAND  
 JOB #: CC0258

DATE RECEIVED: 11-28-88  
 DATE ANALYZED: 12-09-88  
 DATE REPORTED: 12-20-88  
 PAGE 1 OF 7

Total Heavy Petroleum Hydrocarbons in Aqueous Solutions  
 EPA 8015 (Modified)  
 Extraction Method: EPA 3510

LAB ID	CLIENT ID	KEROSENE (mg/L)	DIESEL (mg/L)	OTHER (mg/L)
16285-1	TA - 5	ND(0.05)	ND(0.05)	2.4 *

\* Fingerprint pattern does not match Hydrocarbon Standards. Quantitation based on largest peaks within C12-C24 boiling range.

ND - Not Detected; Limit of detection in parentheses.

  
 LABORATORY DIRECTOR



Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710, Phone (415) 486-0900

LABORATORY NUMBER: 16285  
 CLIENT: AQUA SCIENCE ENGINEERS, INC.  
 PROJECT: PORT OF OAKLAND  
 JOB #: CC0258

DATE RECEIVED: 11-28-88  
 DATE ANALYZED: 12-09-88  
 DATE REPORTED: 12-20-88  
 PAGE 2 OF 7

Total Heavy Petroleum Hydrocarbons in Soils & Wastes  
 EPA 8015 (Modified)  
 Extraction Method: EPA 3550

LAB ID	CLIENT ID	KEROSENE (mg/Kg)	DIESEL (mg/Kg)	OTHER (mg/Kg)
16285-1	TA - 1 **	ND(10)	ND(10)	2,600 *
16285-2	TA - 2	ND(10)	ND(10)	ND(10)
16285-3	TA - 3	ND(10)	ND(10)	49 *
16285-4	TA - 4	ND(10)	ND(10)	ND(10)

\* Fingerprint pattern does not match hydrocarbon standards; Quantitati based on largest peaks within C12-C24 boiling range.

\*\* Sample TA-1 also contains 3,800 mg/Kg gasoline.

ND = Not Detected; Limit of detection in parentheses.



**Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878**

2323 Fifth Street, Berkeley, CA 94710, Phone (415) 486-0900

LABORATORY NUMBER: 16285-1  
 CLIENT: AQUA SCIENCE ENGINEERS, INC.  
 JOB #: CC0258/PORT OF OAKLAND  
 SAMPLE ID: TA - 1

DATE RECEIVED: 11-28-88  
 DATE ANALYZED: 12-09-88  
 DATE REPORTED: 12-20-88  
 PAGE 3 OF 7

EPA 8020: Volatile Aromatic Hydrocarbons in Soils & Wastes  
 Extraction Method: EPA 5030 - Purge & Trap

COMPOUND	Result ug/Kg	LOD ug/Kg
Benzene.....	1,100	1000
Toluene.....	7,400	1000
Ethyl Benzene.....	2,500	1000
Total Xylenes.....	116,000	1000
Chlorobenzene.....	ND	1000
1,4-Dichlorobenzene.....	ND	1000
1,3-Dichlorobenzene.....	ND	1000
1,2-Dichlorobenzene.....	ND	1000

ND = None Detected. Limit of detection (LOD) in last column.

QA/QC:

Duplicate: Relative % Difference  
 Average Spike Recovery %

3  
104



**Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878**

2323 Fifth Street, Berkeley, CA 94710. Phone (415) 486-0900

LABORATORY NUMBER: 16285-2  
 CLIENT: AQUA SCIENCE ENGINEERS, INC.  
 JOB #: CC0258/PORT OF OAKLAND  
 SAMPLE ID: TA - 2

DATE RECEIVED: 11-28-88  
 DATE ANALYZED: 12-09-88  
 DATE REPORTED: 12-20-88  
 PAGE 4 OF 7

EPA 8020: Volatile Aromatic Hydrocarbons in Soils & Wastes  
 Extraction Method: EPA 5030 - Purge & Trap

COMPOUND	Result ug/Kg	LOD ug/Kg
Benzene.....	ND	5
Toluene.....	ND	5
Ethyl Benzene.....	ND	5
Total Xylenes.....	ND	5
Chlorobenzene.....	ND	5
1,4-Dichlorobenzene.....	ND	5
1,3-Dichlorobenzene.....	ND	5
1,2-Dichlorobenzene.....	ND	5

ND = None Detected. Limit of detection (LOD) in last column.

**QA/QC:**

Duplicate: Relative % Difference  
 Average Spike Recovery %

3  
 104





**Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878**

2323 Fifth Street, Berkeley, CA 94710. Phone (415) 486-0900

LABORATORY NUMBER: 16285-3  
 CLIENT: AQUA SCIENCE ENGINEERS, INC.  
 JOB #: CC0258/PORT OF OAKLAND  
 SAMPLE ID: TA - 3

DATE RECEIVED: 11-28-88  
 DATE ANALYZED: 12-09-88  
 DATE REPORTED: 12-20-88  
 PAGE 5 OF 7

EPA 8020: Volatile Aromatic Hydrocarbons in Soils & Wastes  
 Extraction Method: EPA 5030 - Purge & Trap

COMPOUND	Result ug/Kg	LOD ug/Kg
Benzene.....	ND	5
Toluene.....	ND	5
Ethyl Benzene.....	ND	5
Total Xylenes.....	ND	5
Chlorobenzene.....	ND	5
1,4-Dichlorobenzene.....	ND	5
1,3-Dichlorobenzene.....	ND	5
1,2-Dichlorobenzene.....	ND	5

ND = None Detected. Limit of detection (LOD) in last column.

**QA/QC:**

Duplicate: Relative % Difference  
 Average Spike Recovery %

3  
 104



**Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878**  
2323 Fifth Street, Berkeley, CA 94710, Phone (415) 486-0900

LABORATORY NUMBER: 16285-4  
CLIENT: AQUA SCIENCE ENGINEERS, INC.  
JOB #: CC0258/PORT OF OAKLAND  
SAMPLE ID: TA - 4

DATE RECEIVED: 11-28-88  
DATE ANALYZED: 12-09-88  
DATE REPORTED: 12-20-88  
PAGE 6 OF 7

EPA 8020: Volatile Aromatic Hydrocarbons in Soils & Wastes  
Extraction Method: EPA 5030 - Purge & Trap

COMPOUND	Result ug/Kg	LOD ug/Kg
Benzene.....	ND	5
Toluene.....	ND	5
Ethyl Benzene.....	ND	5
Total Xylenes.....	ND	5
Chlorobenzene.....	ND	5
1,4-Dichlorobenzene.....	ND	5
1,3-Dichlorobenzene.....	ND	5
1,2-Dichlorobenzene.....	ND	5

ND = None Detected. Limit of detection (LOD) in last column.

QA/QC:

Duplicate: Relative % Difference  
Average Spike Recovery %

3  
104



**Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878**

2323 Fifth Street, Berkeley, CA 94710. Phone (415) 486-0900

LABORATORY NUMBER: 16285-5  
 CLIENT: AQUA SCIENCE ENGINEERS, INC.  
 JOB #: CC0258/PORT OF OAKLAND  
 SAMPLE ID: TA - 5

DATE RECEIVED: 12-09-88  
 DATE ANALYZED: 12-09-88  
 DATE REPORTED: 12-20-88  
 PAGE 7 OF 7

**EPA 602: Volatile Aromatic Hydrocarbons in Water**

COMPOUND	RESULT ug/L	DETECTION LIMIT ug/L
Benzene.....	ND	1
Toluene.....	ND	1
Ethyl Benzene.....	ND	1
Total Xylenes.....	ND	1
Chlorobenzene.....	ND	1
1,4-Dichlorobenzene.....	ND	1
1,3-Dichlorobenzene.....	ND	1
1,2-Dichlorobenzene.....	ND	1

ND = None Detected

**QA/QC SUMMARY**

RPD %	3
SPIKE RECOVERY %	104

APPENDIX B

CITY OF OAKLAND PERMIT TO EXCAVATE AND INSTALL, REPAIR,  
OR REMOVE INFLAMMABLE LIQUID TANKS

RECEIVED

FEB 15 1989

BASELINE

Excavation Permit Granted \_\_\_\_\_ No. \_\_\_\_\_

# CITY OF OAKLAND

Tank Permit

Permit to Excavate and Install, Repair, or Remove Inflammable Liquid Tanks. No. 9175

Oakland, California, November 23, 1988

PERMISSION IS HEREBY GRANTED TO install replace repair Gasoline tank and excavate commencing \_\_\_\_\_ feet inside property line

on the North \_\_\_\_\_ Seventh Street \_\_\_\_\_ Street \_\_\_\_\_ Avenue \_\_\_\_\_ feet \_\_\_\_\_ of \_\_\_\_\_ Street \_\_\_\_\_ Avenue

Home No. 2700 Seventh Street \_\_\_\_\_ Street \_\_\_\_\_ Avenue \_\_\_\_\_ Present Storage \_\_\_\_\_

Owner Port of Oakland \_\_\_\_\_ Address 66 Jack London Square \_\_\_\_\_ Phone 444-3188

Applicant \_\_\_\_\_ Eng. \_\_\_\_\_ Address 2500 Old Crow Canyon Rd., #121 \_\_\_\_\_ Phone 820-9391

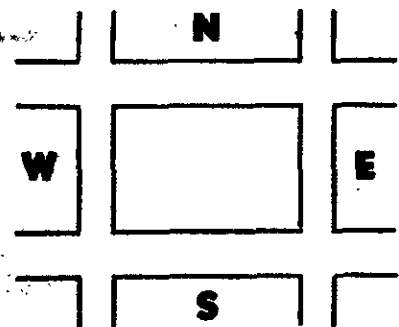
Excavation of street (minimum) surface to be disturbed 22 \_\_\_\_\_ X \_\_\_\_\_ Number of Tanks 1 \_\_\_\_\_ Capacity 10,000 \_\_\_\_\_ Gallons, each.

Remarks \_\_\_\_\_

This Permit is granted in accordance with existing City Ordinances.  
Owner hereby agrees to remove tanks on discontinuance of use or when notified by the City Authorities.  
When installing, removing or repairing tanks, no open flame to be on or near premises.

Approved \_\_\_\_\_ Fire Marshal

Approved \_\_\_\_\_ Drainage Division Engineering Dept.



## EXCAVATING PERMIT

Subject to ordinances with Ord. No. 275 8125, Sec. 4-2.04

\_\_\_\_\_ square feet of digging or removal granted.

The receipt of \_\_\_\_\_ special deposit is hereby acknowledged.

GENERAL DEPOSIT

BUREAU OF PERMITS AND LICENSES

## CERTIFICATE OF TANK AND EQUIPMENT INSPECTION

Inspected and passed on \_\_\_\_\_ 19\_\_\_\_

By \_\_\_\_\_ Fire Marshal

Inspection Fee Paid \_\_\_\_\_ \$ 50.00, Gk#3519, Rec#607229

Received by Gloria Johnson  
FIRE PREVENTION BUREAU

## NOTICE

Before Covering Tanks, Above Certificate Must Be Signed.

When ready for inspection notify Fire Prevention Bureau, 273-3851

**THIS PERMIT MUST BE LEFT ON THE WORK AS AUTHORITY THEREFOR.**

APPENDIX C

UNDERGROUND STORAGE TANK UNAUTHORIZED RELEASE/CONTAMINATION SITE REPORT

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

EMERGENCY <input type="checkbox"/> YES <input type="checkbox"/> NO	HAS STATE OFFICE OF EMERGENCY SERVICES REPORT BEEN FILED? <input type="checkbox"/> YES <input type="checkbox"/> NO	FOR LOCAL AGENCY USE ONLY I HEREBY CERTIFY THAT I AM A DESIGNATED GOVERNMENT EMPLOYEE AND THAT I HAVE REPORTED THIS INFORMATION TO LOCAL OFFICIALS PURSUANT TO SECTION 25180.7 OF THE HEALTH AND SAFETY CODE.
REPORT DATE 1 <u>2</u> <u>2</u> <u>9</u> <u>8</u> <u>8</u>	CASE #	SIGNED _____ DATE _____

REPORTED BY	NAME OF INDIVIDUAL FILING REPORT YANE NORRHAU	PHONE (415) 763-7037	SIGNATURE 	
	REPRESENTING <input type="checkbox"/> LOCAL AGENCY <input checked="" type="checkbox"/> OWNER/OPERATOR <input type="checkbox"/> REGIONAL BOARD <input type="checkbox"/> OTHER	COMPANY OR AGENCY NAME BASELINE		
	ADDRESS 315 Washington Street    Oakland    CA    94607			

RESPONSIBLE PARTY	NAME Part of Oakland <input type="checkbox"/> UNKNOWN	CONTACT PERSON Michele Heffes	PHONE (415) 839-2282
	ADDRESS 66 Jack London Square    Oakland    CA		

SITE LOCATION	FACILITY NAME (IF APPLICABLE) C-103 Yard	OPERATOR Unknown	PHONE ( )	
	ADDRESS 2700 7th Street    Oakland    Alameda			
	CROSS STREET		TYPE OF AREA <input type="checkbox"/> COMMERCIAL <input type="checkbox"/> INDUSTRIAL <input type="checkbox"/> RURAL <input type="checkbox"/> RESIDENTIAL <input checked="" type="checkbox"/> OTHER <u>Port Activities</u>	TYPE OF BUSINESS <input type="checkbox"/> FARM <input checked="" type="checkbox"/> OTHER <u>fuel station</u>

IMPLEMENTING AGENCIES	LOCAL AGENCY AGENCY NAME Alameda County	CONTACT PERSON Mary Jo Meyers	PHONE (415) 271-4320
	REGIONAL BOARD San Francisco Bay		PHONE (415) 464-1255

SUBSTANCES INVOLVED	(1) Gasoline	QUANTITY LOST (GALLONS) <input checked="" type="checkbox"/> UNKNOWN
	(2) Diesel	<input checked="" type="checkbox"/> UNKNOWN

DISCOVERY/ABATEMENT	DATE DISCOVERED 1 <u>2</u> <u>2</u> <u>3</u> <u>8</u> <u>8</u>	HOW DISCOVERED <input type="checkbox"/> INVENTORY CONTROL <input type="checkbox"/> SUBSURFACE MONITORING <input type="checkbox"/> NUISANCE CONDITIONS <input type="checkbox"/> TANK TEST <input checked="" type="checkbox"/> TANK REMOVAL <input type="checkbox"/> OTHER
	DATE DISCHARGE BEGAN <input checked="" type="checkbox"/> UNKNOWN	
	METHOD USED TO STOP DISCHARGE (CHECK ALL THAT APPLY) <input type="checkbox"/> REMOVE CONTENTS <input type="checkbox"/> REPLACE TANK <input checked="" type="checkbox"/> CLOSE TANK <input type="checkbox"/> REPAIR TANK <input type="checkbox"/> REPAIR PIPING <input type="checkbox"/> CHANGE PROCEDURE <input type="checkbox"/> OTHER	

SOURCE/CAUSE	SOURCE OF DISCHARGE <input type="checkbox"/> TANK LEAK <input checked="" type="checkbox"/> UNKNOWN	TANKS ONLY/CAPACITY 15,000 GAL.	MATERIAL <input type="checkbox"/> FIBERGLASS <input checked="" type="checkbox"/> STEEL	CAUSE(S) <input type="checkbox"/> OVERFILL <input type="checkbox"/> RUPTURE/FAILURE <input type="checkbox"/> CORROSION <input checked="" type="checkbox"/> UNKNOWN
	<input type="checkbox"/> PIPING LEAK <input type="checkbox"/> OTHER	AGE <u>23</u> YRS <input type="checkbox"/> UNKNOWN	<input type="checkbox"/> SPILL <input type="checkbox"/> OTHER	

CASE TYPE	CHECK ONE ONLY <input checked="" type="checkbox"/> UNDETERMINED <input type="checkbox"/> SOIL ONLY <input type="checkbox"/> GROUNDWATER <input type="checkbox"/> DRINKING WATER - (CHECK ONLY IF WATER WELLS HAVE ACTUALLY BEEN AFFECTED)
-----------	--

CURRENT STATUS	CHECK ONE ONLY <input type="checkbox"/> SITE INVESTIGATION IN PROGRESS (DEFINING EXTENT OF PROBLEM) <input type="checkbox"/> CLEANUP IN PROGRESS <input type="checkbox"/> SIGNED OFF (CLEANUP COMPLETED OR UNNECESSARY) <input checked="" type="checkbox"/> NO ACTION TAKEN <input type="checkbox"/> POST CLEANUP MONITORING IN PROGRESS <input type="checkbox"/> NO FUNDS AVAILABLE TO PROCEED <input type="checkbox"/> EVALUATING CLEANUP ALTERNATIVES
----------------	--

REMEDIAL ACTION	CHECK APPROPRIATE ACTION(S) (SEE BACK FOR DETAILS)			
<input type="checkbox"/> CAP SITE (CD) <input checked="" type="checkbox"/> EXCAVATE & DISPOSE (ED) <input type="checkbox"/> REMOVE FREE PRODUCT (FP) <input type="checkbox"/> ENHANCED BIO DEGRADATION (IT)		<input type="checkbox"/> CONTAINMENT BARRIER (CB) <input checked="" type="checkbox"/> EXCAVATE & TREAT (ET) <input type="checkbox"/> PUMP & TREAT GROUNDWATER (GT) <input type="checkbox"/> REPLACE SUPPLY (RS)		
<input type="checkbox"/> TREATMENT AT HOOKUP (HU) <input type="checkbox"/> NO ACTION REQUIRED (NA) <input type="checkbox"/> OTHER (OT)				

COMMENTS  
 Tank not in use for about 10 years.  
 Laboratory Results to follow.

APPENDIX D

SOIL AND GROUNDWATER SAMPLING PROCEDURES



## SAMPLING PROCEDURES

### SOILS

1. In-place soil samples are collected with a stainless steel corer, fitted with a 6-inch brass liner. The corer is driven into the ground by a slide hammer. The brass liner is removed from the steel corer, capped with aluminum foil and a plastic cap, taped, placed in a zip-lock bag, and iced prior to being brought to the laboratory for analysis. Proper chain-of-custody and sample labeling procedures are followed.

All sampling equipment is decontaminated with tri-sodium phosphate (TSP) and deionized water prior to collection of each sample.

2. In-place soil samples may also be collected during drilling activities. The samples are collected with a California Modified sampler (2-inch diameter) fitted with 6-inch brass sleeves. The sampler is driven into the ground by a 140-lb. hammer falling 30 inches. The samples are handled similarly to the procedures described above and the equipment is decontaminated in the same fashion.

3. During tank removal activities, soil samples are collected from a backhoe bucket having extracted material from a specific depth. The soil brought to the surface in a bucket is sampled after about 6 inches of the surface is discarded. The sample is collected with a stainless steel cover fitted with a brass tube. The sample is handled in the same manner as described above, and decontamination procedures are similar.

### GROUNDWATER

The well is checked for floating product with a dual interface probe. A water level measurement is then made with an electrical probe, calibrated to the nearest 1/10th of a foot.

The well is then evacuated of five well volumes of water prior to sampling. The evacuation is performed with a PVC 1.7-inch hand pump and the sampling is accomplished by bottom-valve, teflon bailer. The sample is transferred directly into glass vials, iced, and brought to the laboratory. Proper chain-of-custody and sample labeling procedures are followed.

All sampling equipment is decontaminated with TSP and deionized water prior to collection of each sample.

(In the case of sampling from dewatering, wells, manholes, or in tank excavations, no evacuation occurs, but the sample is collected immediately after a check has been made for floating product. The sample is immediately transferred from the teflon bailer to the sample vials, iced, and brought to the laboratory for analysis).

APPENDIX E

LABORATORY REPORTS AND CHAIN-OF-CUSTODY FORMS,  
CONFIRMATION SOIL AND GROUNDWATER SAMPLE ANALYSES



LABORATORY NUMBER: 16509  
CLIENT: BASELINE  
JOB #: S8-172  
LOCATION: 2700 7th STREET

DATE RECEIVED: 12/30/88  
DATE ANALYZED: 01/04/89  
DATE REPORTED: 01/06/88  
PAGE 1 OF 5

Total Volatile Hydrocarbons as Gasoline in Soils & Wastes  
EPA 8015 (Modified)  
Extraction Method: EPA 5030 (Purge & Trap)

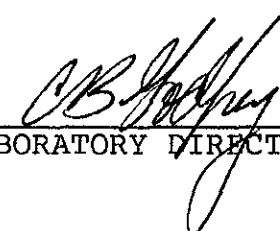
LAB ID	CLIENT ID	GASOLINE (mg/Kg)
16509- 1,2,4	COMPOSITE: S1,S2,S4	ND(10)
16509- 5,6,7,8	COMPOSITE: S5,S6,S7,S8	ND(10)
16509-3	S3	ND(10)

ND = Not Detected; Limit of detection in parentheses.

QA/QC:

=====

RPD, %	5
RECOVERY, %	112

  
LABORATORY DIRECTOR

LABORATORY NUMBER: 16509  
 CLIENT: BASELINE  
 JOB #: S8-172  
 LOCATION: 2700 7th STREET

DATE RECEIVED: 12/30/88  
 DATE ANALYZED: 01/04/89  
 DATE REPORTED: 01/06/88  
 PAGE 2 OF 5

Total Volatile Hydrocarbons as Gasoline in Aqueous Solutions  
 EPA 8015 (Modified)  
 Extraction Method: EPA 5030 (Purge & Trap)

LAB ID	CLIENT ID	GASOLINE (mg/L)
16509-9	SW	ND(0.05)

ND = Not Detected; Limit of detection in parentheses.

QA/QC SUMMARY

Duplicate: Relative % Difference	8
Spike: % Recovery	90



LABORATORY NUMBER: 16509  
CLIENT: BASELINE  
JOB #: S8-172  
LOCATION: 2700 7th STREET

12/30/88  
1/4/89  
1/6/88  
BASELINE

DATE RECEIVED: 12/30/88  
DATE ANALYZED: 01/04/89  
DATE REPORTED: 01/06/88  
PAGE 3 OF 5

Total Heavy Petroleum Hydrocarbons in Soils & Wastes  
EPA 8015 (Modified)  
Extraction Method: EPA 3550

LAB ID	CLIENT ID	KEROSINE (mg/Kg)	DIESEL (mg/Kg)	OTHER (mg/Kg)
16509-1,2,4	COMPOSITE: S1,S2,S4	ND(10)	ND(10)	ND(10)
16509-5,6,7,8	COMPOSITE: S5,S6,S7,S8	ND(10)	ND(10)	ND(10)
16509-3	S3	ND(10)	ND(10)	340*

ND = Not Detected; Limit of detection in parentheses.

QA/QC SUMMARY

Duplicate: Relative % Difference	5
Spike: % Recovery	112

LABORATORY NUMBER: 16509  
 CLIENT: BASELINE  
 JOB #: S8-172  
 LOCATION: 2700 7th STREET

DATE RECEIVED: 12/30/88  
 DATE ANALYZED: 01/04/89  
 DATE REPORTED: 01/06/89  
 PAGE 4 OF 5

Total Heavy Petroleum Hydrocarbons in Aqueous Solutions  
 EPA 8015 (Modified)  
 Extraction Method: EPA 3510

LAB ID	CLIENT ID	Kerosine (mg/L)	Diesel (mg/L)	Other (mg/L)
16509-9	SW	ND(0.05)	ND(0.05)	ND(0.05)

ND = Not Detected; Limit of detection in parentheses.

QA/QC SUMMARY

Duplicate: Relative % Difference	8
Spike: % Recovery	90

LABORATORY NUMBER: 16509-9  
 CLIENT: BASELINE  
 JOB #: S8-172, 2700 7th STREET  
 SAMPLE ID: SW

DATE RECEIVED: 12/30/88  
 DATE ANALYZED: 01/03/89  
 DATE REPORTED: 01/06/89  
 PAGE 5 OF 5

EPA METHOD 624: VOLATILE ORGANICS IN WATER

COMPOUND	Result ug/L	Detection Limit ug/L
chloromethane	ND	10
bromomethane	ND	10
vinyl chloride	ND	10
chloroethane	ND	10
methylene chloride	ND	5
trichlorofluoromethane	ND	5
1,1-dichloroethene	ND	5
1,1-dichloroethane	ND	5
trans-1,2-dichloroethene	ND	5
chloroform	ND	5
1,2-dichloroethane	ND	5
1,1,1-trichloroethane	ND	5
carbon tetrachloride	ND	5
bromodichloromethane	ND	5
1,2-dichloropropane	ND	5
cis-1,3-dichloropropene	ND	5
trichloroethylene	ND	5
dibromochloromethane	ND	5
1,1,2-trichloroethane	ND	5
benzene	ND	5
trans-1,3-dichloropropene	ND	5
2-chloroethylvinyl ether	ND	10
bromoform	ND	5
1,1,2,2-tetrachloroethane	ND	5
tetrachloroethene	ND	5
toluene	ND	5
chlorobenzene	ND	5
ethyl benzene	ND	5

Non-Priority Hazardous Pollutant Substances List Compounds

acetone	ND	10
carbon disulfide	ND	5
2-butanone	ND	10
vinyl acetate	ND	10
2-hexanone	ND	10
4-methyl-2-pentanone	ND	10
styrene	ND	5
total xylenes	ND	5

QA/QC SUMMARY: SURROGATE RECOVERIES

1,2-Dichloroethane-d4	92
Toluene-d8	107
Bromofluorobenzene	112

315 Washington Street  
Oakland, CA 94607  
(415) 763-7037

CHAIN OF CUSTODY RECORD

Turn-Around Time 48 hrs

Lab CUTS & Tom Knit

Contact Person \_\_\_\_\_

Project No.		Project Name and Location						Analysis										Remarks	Detection Limits
S8-172		2700 7th Street						<div style="display: flex; justify-content: space-between;"> <span>Gasoline</span> <span>Diesel</span> <span><del>BBT</del> 8240</span> </div>											
Samplers: (Signature)																			
<i>William K. Scott</i>																			
No. Station	Date	Time	Media	Depth	Compo-sites	No. of Con-tainers	Station Location												
S1	12-30-88	9:04	Soil	2.0-2.5	Yes	1		X	X										
S2	12-30-88	9:11	Soil	1.5-2.0	Yes	1		X	X								Composite		
S3	12-30-88	9:30	Soil	2.0-2.5	Yes	1		X	X										
S4	12-30-88	9:35	Soil	2.0-2.5	Yes	1		X	X										
S5	12-30-88	9:49	Soil	1.5-2.0	Yes	1		X	X										
S6	12-30-88	9:55	Soil	1.5-2.0	Yes	1		X	X								Composite		
S7	12-30-88	10:07	Soil	1.0-1.5	Yes	1		X	X										
S8	12-30-88	10:12	Soil	1.0-1.5	Yes	1		X	X										
SW	12-30-88	10:27	Water	—		5		X	X	X									

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
_____	_____	_____	_____	_____	_____
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
_____	_____	_____	_____	_____	_____
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks:	
<i>William K. Scott</i>	12-30-88 11 a.m.	<i>Epimella Stephan</i>	12/30 11 a.m.	Composite ① S1, S2 and S4 ② S5, S6, S7, and S8 ③ S3	YN





Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710, Phone (415) 486-0900

LABORATORY NUMBER: 16671  
CLIENT: BASELINE  
JOB NUMBER: S8-172  
JOB LOCATION: 2700 7TH STREET

DATE RECEIVED: 01/24/89  
DATE ANALYZED: 02/07/89  
DATE REPORTED: 02/14/89  
PAGE 1 OF 2

Total Volatile Hydrocarbons (TVH) by EPA 8015  
Benzene, Toluene, Ethyl Benzene, Xylenes by EPA 602/8020  
Extraction by EPA 5030 Purge and Trap

LAB ID	CLIENT ID	TVH AS GASOLINE (mg/Kg)	BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL BENZENE (mg/Kg)	TOTAL XYLENES (mg/Kg)
16671-1	SOUTH END	ND(10)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)

ND = None Detected; Limit of detection is indicated in parentheses.

QA/QC SUMMARY

%RPD	<1
%RECOVERY	104

RECEIVED

FEB 22 1989

BASELINE

LABORATORY DIRECTOR

LABORATORY NUMBER: 16671  
 CLIENT: BASELINE  
 JOB #: S8-172  
 LOCATION: 2700 7TH STREET

DATE RECEIVED: 01/24/89  
 DATE ANALYZED: 01/30/89  
 DATE REPORTED: 02/14/89  
 PAGE 2 OF 2

Total Heavy Petroleum Hydrocarbons in Soils & Wastes  
 EPA 8015 (Modified)  
 Extraction Method: EPA 3550

LAB ID	CLIENT ID	KEROSENE (mg/Kg)	DIESEL (mg/Kg)	OTHER (mg/Kg)
16671-1	SOUTH END	ND(10)	ND(10)	220 *

\* Fingerprint pattern does not match hydrocarbon standards; Quantitation based on largest peaks within C12-C24 boiling range.

ND = Not Detected; Limit of detection in parentheses.

QA/QC SUMMARY

Duplicate: Relative % Difference	3
Spike: % Recovery	130

**B**ASELINE

315 Washington Street  
Oakland, CA 94607  
(415) 763-7037

**CHAIN OF CUSTODY RECORD**

**16671**

Turn-Around Time Normal  
Lab Curtis Tompkins  
Contact Person Yane

Project No.		Project Name and Location					Analysis												Remarks	Detection Limits
58-172		2700 7 <sup>th</sup> Street					<i>See 8015- Bessel 8015- BTX r/c</i>													
Samplers: (Signature)																				
<i>Yane Handlon</i>																				
No. Station	Date	Time	Media	Depth	Compo- sites	No. of Con- tainers	Station Location												Remarks	Detection Limits
South End	1/24/89	10:15	soil	8'	No	1														

Relinquished by: (Signature) <i>Yane Handlon</i>	Date / Time 1/24/89 1305	Received by: (Signature) <i>William K. Hart</i>	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature) <i>William K. Hart</i>	Date / Time 1/24/89 140 pm	Received for Laboratory by: (Signature) <i>Gabriel Stephens</i>	Date / Time 1/24/89 140 pm	Remarks:	

**APPENDIX F**

**LABORATORY REPORTS AND CHAIN-OF-CUSTODY FORMS,  
WASTE CHARACTERIZATION SAMPLE ANALYSES**



Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710, Phone (415) 486-0900

LABORATORY NUMBER: 16687  
 CLIENT: BASELINE  
 JOB NUMBER: S8-172  
 JOB LOCATION: 2700 7TH STREET

DATE RECEIVED: 01-26-89  
 DATE ANALYZED: 02-12-89  
 DATE REPORTED: 02-23-89  
 PAGE 2 OF 2

Total Volatile Hydrocarbons (TVH) by EPA 8015  
 Benzene, Toluene, Ethyl Benzene, Xylenes by EPA 602/8020  
 Extraction by EPA 5030 Purge and Trap

LAB ID	CLIENT ID	TVH AS GASOLINE (mg/Kg)	BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL BENZENE (mg/Kg)	TOTAL XYLENES (mg/Kg)
16687- 1/2/3/4	COMPOSTE S1/S2/S3/S4	ND(10)	ND(0.1)	ND(0.1)	ND(0.1)	0.3

ND = None Detected; Limit of detection is indicated in parentheses.

QA/QC SUMMARY

%RPD	4	1	2	2	9
%RECOVERY	100	113	109	96	109



Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710, Phone (415) 486-0900

RECEIVED

DATE RECEIVED: 01-26-89  
DATE ANALYZED: 02-02-89  
DATE REPORTED: 02-13-89  
PAGE 1 OF 2

LABORATORY NUMBER: 16687  
CLIENT: BASELINE  
JOB #: S8-172  
LOCATION: 2700 7TH STREET

FEB 24 1989

BASELINE

Total Heavy Petroleum Hydrocarbons in Soils & Wastes  
EPA 8015 (Modified)  
Extraction Method: EPA 3550

LAB ID	CLIENT ID	KEROSINE (mg/Kg)	DIESEL (mg/Kg)	OTHER (mg/Kg)
16687- 1/2/3/4	COMPOSITE S1/S2/S3/S4	ND(10)	ND(10)	47 *

\* Fingerprint pattern does not match hydrocarbon standards; Quantitati based on largest peaks within C12-C24 boiling range.

ND = Not Detected; Limit of detection in parentheses.

QA/QC SUMMARY

Duplicate: Relative % Difference	15
Spike: % Recovery	83

*Stephen L. Jones Jr*  
LABORATORY DIRECTOR

**BASELINE**

315 Washington Street  
Oakland, CA 94607  
(415) 763-7037

**CHAIN OF CUSTODY RECORD**

Turn-Around Time Normal  
Lab Curtis-Tompkins  
Contact Person \_\_\_\_\_

Project No. 58-172		Project Name and Location 2700 7th Street					Analysis <i>TPH 905 (8015)</i> <i>TPH 906 (8015)</i> <i>BTX&amp;E (602)</i>										Remarks		Detection Limits	
Samplers: (Signature) <i>Jensen Amaya</i>																				
No. Station	Date	Time	Media	Depth	Compo- sites	No. of Con- tainers	Station Location										Remarks	Detection Limits		
S1	1/26/89	9:30	soil	surface	X		} 1 composite													
S2	1/26/89	9:35	"	"	X															
S3	1/26/89	9:45	"	"	X															
S4	1/26/89	9:50	"	"	X															

Relinquished by: (Signature) <i>Jensen Amaya</i>	Date / Time 1/26/89 10:15	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature) <i>[Signature]</i>	Date / Time 1/26 10:15	Remarks:	