

Greg Zentner

8767



1001 GALAXY WAY  
SUITE 107  
CONCORD, CA 94520  
PHONE (415) 682-7960



25 February 1987

Mr. Jim Halladay  
ABF Freight System, Inc.  
301 South 11th Street  
Fort Smith, AR 72902



Re: Removal of Underground Storage  
Tank at Oakland Terminal

Dear Mr. Halladay:

Enclosed is our report discussing excavation of one of the 10,000 gallon tanks from the above-referenced facility. Soil contamination of total petroleum hydrocarbons (TPH) under the tank ranged from over 100 mg/kg to almost 700 mg/kg. These concentrations were less than the 1000 mg/kg levels of TPH that trigger off-site disposal of excavated soils, however, they are above the 100 mg/kg concentrations of TPH which require periodic groundwater monitoring. The tank's tar coating had several small corroded areas which may be suggestive of previous leakage. Based on the levels of TPH in the soil it does not appear that contamination was widespread. The tank was sent to a scrap yard which has provided a "certificate-of-scrap" as evidence of destruction.

It is recommended that bi-annual monitoring of the two wells be performed to check levels of contamination.

If I can be of any further assistance, please call me.

Sincerely,

ROY F. WESTON, INC.

Steven P. Viani, P.E.  
Project Engineer

SPV:ed

Enclosure

cc: Fritz Kohler  
Ted Gerow, ALCO, Department of Environmental Health  
Dale Boyer, RWQCB, San Francisco Bay Region



**ABF FREIGHT SYSTEMS**

**OAKLAND TERMINAL**

February 1987

Charles Comstock, P.G.  
Project Manager

Steven P. Viani, P.E.  
Project Engineer

A handwritten signature in black ink, appearing to be "S. Viani". The signature is written in a cursive, slanted style with a horizontal line at the end.



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## SECTION 1.0

### INTRODUCTION

#### 1.0 INTRODUCTION

In December 1986, Roy F. Weston, Inc. (WESTON) was retained by ABF Freight Systems to monitor the removal of a 10,000 gallon underground diesel tank from their Oakland Freight Terminal, located at 4575 Tidewater Avenue. Previous work at the site, conducted by other consulting firms, showed petroleum hydrocarbon and BTX present in low concentrations in the soil and shallow groundwater at the site. ABF had exposed the top of the tank to inspect the piping after tank testing yielded inconclusive results. ABF directed Weston to secure a removal permit from the City of Oakland, observe the tank removal process, take both soil and water samples from the excavation and submit a final report with results, conclusions and recommendations.

#### 1.1 Site Description

The ABF Freight Terminal is located on San Francisco Bay adjacent to an estuary (Figure 1). The Terminal facility that this report focuses on consists of a maintenance garage and fueling station. Initially four tanks were located on site:

- o Two 10,000 gallon diesel tanks
- o One 800 gallon waste oil tank
- o One 800 gallon new oil tank

At this point, all tanks have been removed except one diesel tank. This tank has not shown signs of leakage, however, it may be removed after an aboveground tank is installed.

The geologic materials at the site consist of up to 10 feet of compacted fill underlaid by tidal marsh deposits and then Bay mud. At the location of the tanks, the Bay mud is overlain with gray, sand clay and clay tidal deposits.

#### 1.2 Site History

In June 1986 ABF instituted a tank testing and monitoring program which included a field investigation segment. Previously, the only leakage noted by ABF was the result of piping leaks from the diesel tank which had previously contained gasoline. The first phase of the work was performed

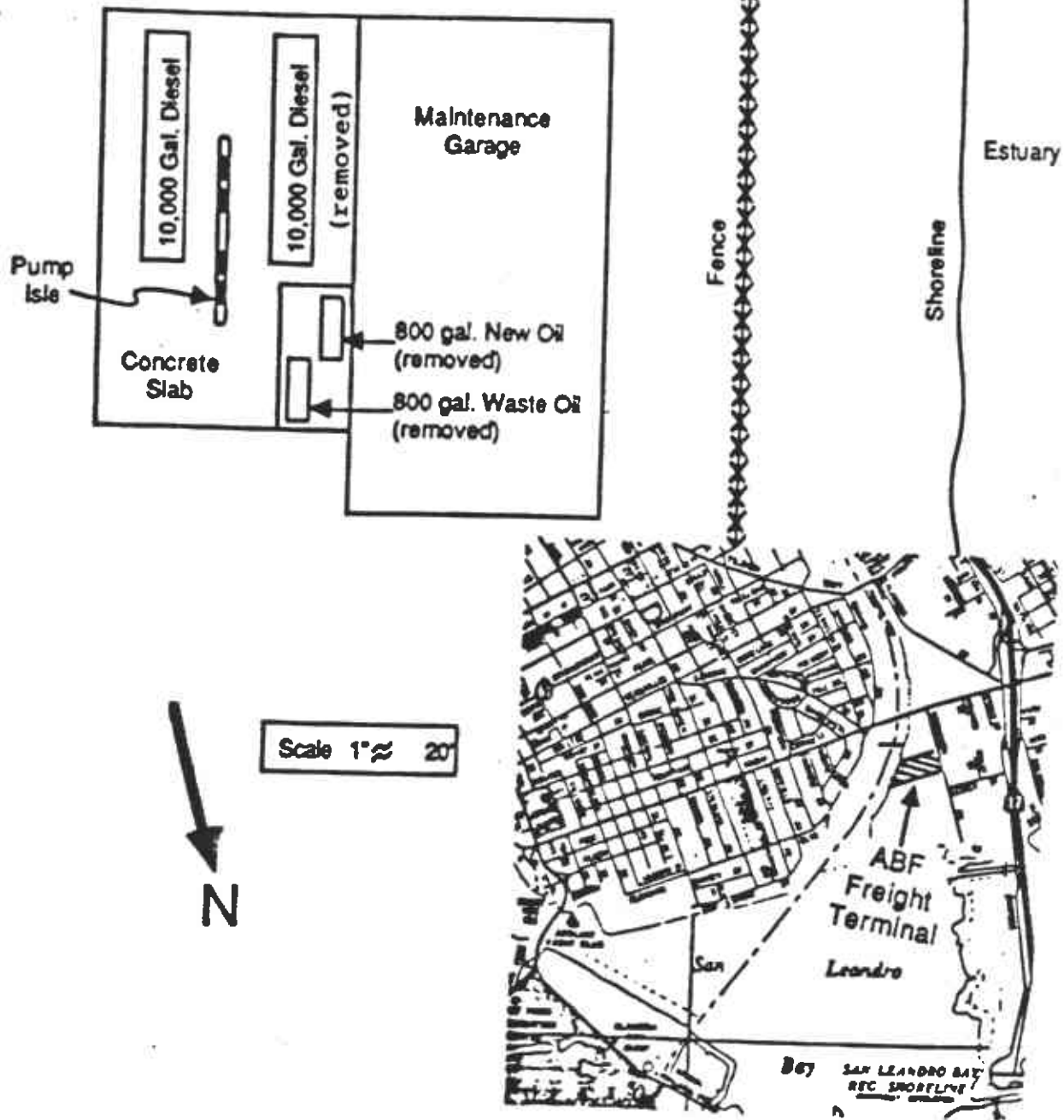


Figure 1. Location of Tanks at ABF Freight Terminal

by Azonic and included tank testing, tank removal, soil sampling and groundwater monitoring. All tanks were tested and the two oil tanks were removed. The second phase consisted of additional soil borings, soil sampling, monitoring well installation and groundwater sampling. (See Figure 2.)

Soil boring S-3 contained the highest level of total petroleum hydrocarbons (TPH), 34 mg/kg. TPH levels in the remaining soil samples were less than 1 mg/kg and benzene, toluene, xylene (BTX) levels were less than 0.1 mg/kg for all soil samples. Previous soil sampling by Azonic in four boring locations (A1-A4) showed TPH ranging from 10 mg/kg to 14 mg/kg.

Groundwater samples were collected and analyzed in October 1986 from monitoring wells MW-1 and MW-2. Concentrations in the groundwater at MW-1 were TPH at 4.5 mg/l, benzene at 1.6 mg/l and xylene at 1.0 mg/l. Concentrations in MW-2 only showed benzene at .009 mg/l and no TPH was detected.

The above results show that hydrocarbon levels in the soils and groundwater are quite low. Based on this information, the hydrocarbon contamination appears localized and has not migrated. This is probably due to tidal action which causes a reversing of the hydraulic gradient. As stated previously, all leaking tanks or tanks suspected of leaking have been removed. Thus, no continuous sources of leaked gasoline, diesel or oil remain on site.

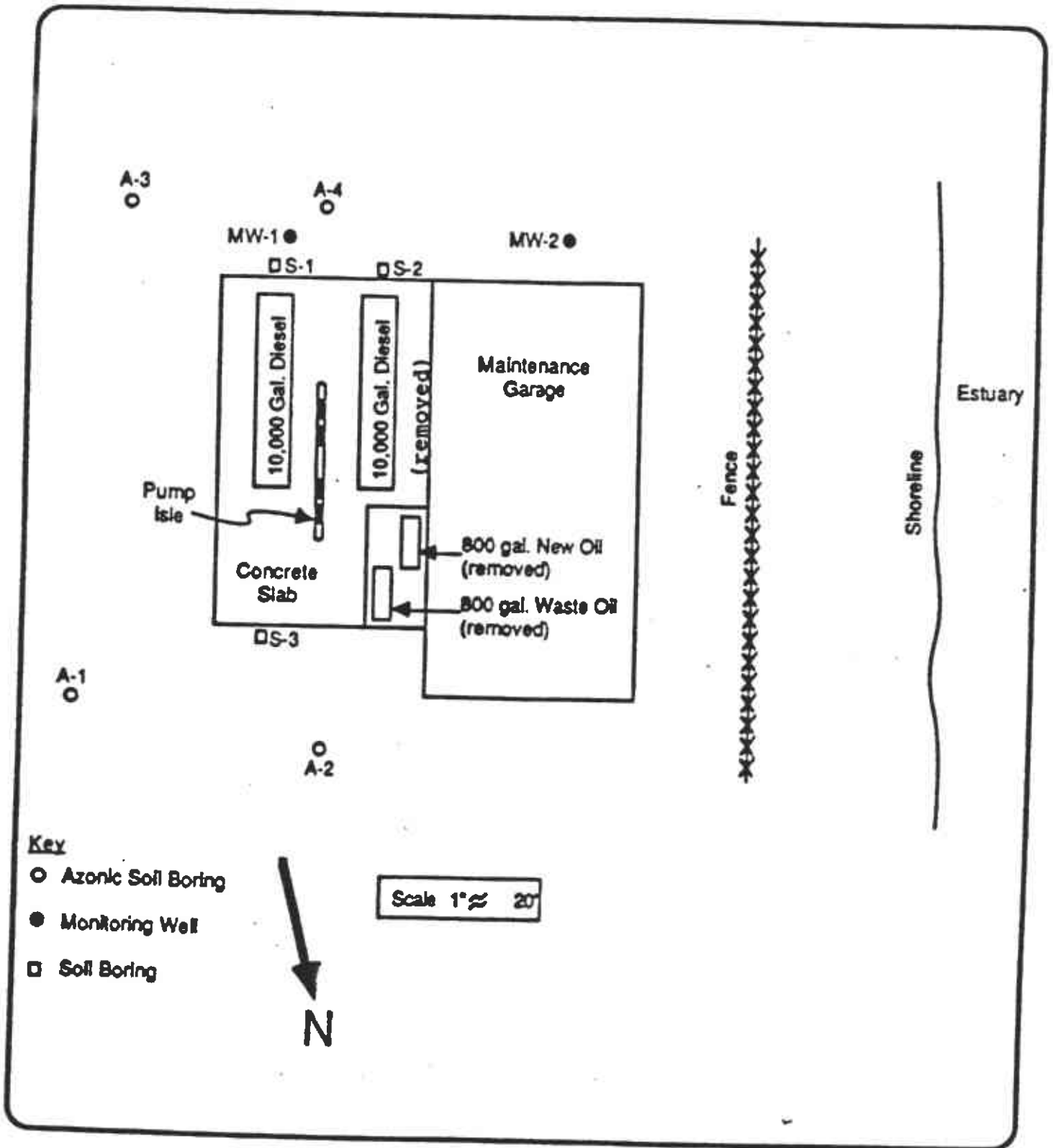


Figure 2. Location of Monitoring Wells and Soil Borings



## SECTION 2.0

### TANK REMOVAL WORK

ABF decided to remove one of the 10,000 gallon diesel tanks because previous testing provided inconclusive results. ABF wanted to prevent any possibility of leakage by immediately removing the suspected tank.

WESTON contacted the Alameda County Environmental Health Department and Oakland City Fire Department for specific directives related to underground tank removal. The following instructions were received:

- o A tank removal permit was required.
- o The tank must be made inert with the addition of dry ice.
- o A registered engineer is required to take soil and water samples.
- o Contaminated soils with levels above 1000 mg/kg total petroleum hydrocarbons must be removed and disposed of in a Class I disposal site. Contaminated soils with levels between 100 mg/kg and 1000 mg/kg can remain but monitoring wells must be installed.
- o At least two soil samples and one water sample should be taken from each tank excavation.
- o A report documenting activities is needed.

A tank removal permit was obtained from the Oakland City Fire Department on January 6 and the Fire Department was contacted approximately 24 hours before removal occurred on January 8, 1987.

ABF had completely exposed the tank two months earlier and had stockpiled excavation spoils on-site. Prior to tank removal, all electrical connections and piping were removed or disconnected and 200 pounds of dry ice were added to the tank in order to render a non-explosive atmosphere. The lifting eyes on the tank were examined prior to attachment of the slings and found to be sound and not rusted. The tank was pulled and placed on the asphalt parking area in





the vicinity of the excavation and blocked to prevent rolling. A representative of the Fire Department was on hand during the removal process.

The removed tank was installed approximately 12-15 years ago and was tar coated to inhibit corrosion. Overall the appearance of the tank showed it to be in good condition, however, there were several areas on the southern end of the tank bottom approximately 6 inches by 6 inches where the tar coating had lost adhesion. The steel surface of the tank underneath these areas was badly corroded especially on the southerly end of the tank. No holes were found, however, dry ice vapors were seen escaping from two of these areas. Due to the variances in tank levels and groundwater levels it was impossible to estimate amounts of leakage.

Under the direction of WESTON, ABF removed several yards of soils after sampling from under the tank. These soils were placed on a layer of visqueen and covered with visqueen pending a decision on a disposal method. Further, ABF removed approximately 500 gallons of water from the excavation which appeared to have a surface film of hydrocarbons.

The water removed from the excavation will be sent to a licensed oil recycler when ABF's next used oil pickup is made. The covered soil pile will remain on-site pending a decision regarding removal of the remaining tank.

The tank was removed from the site by Crosby and Overton, a registered hazardous waste hauler, who in turn disposed of the tank at H and H Shipyards in San Francisco. Crosby and Overton has forwarded a "certificate of scrap" as evidence of the tank's destruction.

At ABF's direction, WESTON has requested approval from the City of Oakland Fire Department to allow an aboveground tank. The City has approved conceptual design of the aboveground tank and ABF will be issuing design drawings and starting construction shortly.



## SECTION 3.0

### SAMPLING AND ANALYSIS

#### 3.1 Sampling

Prior to excavation cleaning efforts, two soil samples were taken by a registered civil engineer above the water table. These two samples were taken from each side of the tank approximately three feet from the corroded southerly end of the tank. Soil was placed directly into the container without utilizing a sampling trowel. In addition one set of VOA vials were taken for water analysis also at the southerly end of the tank. Both soil and water were examined for total petroleum hydrocarbons (EPA Method 418.7) and BTX (EPA Method 8020). The samples were immediately placed into an ice chest and were shipped to WESTON's Stockton, California Laboratory as recorded on the chain-of-custody form.

#### 3.2 Analysis

Laboratory analysis results are summarized below:

<u>Parameter</u>	<u>Sample ID</u>		
	<u>SPU-01/02</u>	<u>SPU-03</u>	<u>SPU-04</u>
Matrix	Water	Soil	Soil
Total Petroleum Hydrocarbon (TPH)	721 mg/l	681 mg/kg	108 mg/kg
Benzene	2ND	10ND	10ND
Toluene	2ND	10ND	10ND
Ethylbenzene	2ND	10ND	10ND
o - xylene	2ND	10ND	10ND
m - xylene	2ND	10ND	10ND
p - xylene	2ND	10ND	10ND

ND: Not detected at detection limit preceding ND in ug/l.

Additional testing was performed by WESTON's laboratory and found that the sediments within the water sample were the source of TPH contamination. Therefore, while petroleum hydrocarbons are present in the water, their source appears to be aged sources; probably oil and aged gas from previous leakage.

# WESTON

Based on the above results with soil contamination less than 1000 mg/kg, WESTON advised ABF on January 27 to backfill the excavation with both excavated and clean materials in order to prevent hazards to ABF personnel and equipment.

No water samples were taken from either of the previously installed monitoring wells. However, WESTON recommends sampling these wells and will monitor the groundwater on a bi-annual basis (twice yearly).



## SECTION 4.0

### CONCLUSIONS

- o The removed tank showed evidence of leakage, however, the amount of leakage and duration of leakage cannot be determined.
- o Diesel leakage had probably occurred shortly before tank removal as the BTX components were indicative of oil or aged gas.
- o The levels of water and soil contamination are low enough to be adsorbed by the soil and thus remain on-site.
- o The reversing hydraulic gradient will aid in keeping any contamination on-site.
- o Water samples should be taken from each of the monitoring wells on a bi-annual basis and analyzed for BTX and TPH.
- o The remaining tank should be periodically tested and removed after the aboveground facility is in operation.

TETRA TECH INC  
LAFAYETTE CALIF

Date: September 23, 1986  
 Client: Groundwater Technology  
 Submitted by: Eric  
 Report to: Chuck Constock  
 WESCO Job #: GWT 8616

Client Job/P.O. #: 20-8154/0586  
 Date collected: 9-15-86  
 Date submitted: 9-15-86  
 # & type of sample(s): 2 Water  
 6 Soil

Lab No.	Client ID	Motor Fuel (mg/l)	Benzene (mg/l)	Toluene (mg/l)	Xylene (mg/l)	Fuel Type
5408	Water Monitor Well #1 - 9/15 @ 11:30	4.52	1.59	0.012	1.0	Gasoline
5409	Water Monitor Well #2 - 9/15 @ 11:45	< 0.05	0.009	< 0.001	< 0.001	Gasoline
Lab No.	Client ID	Motor Fuel (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Xylene (mg/kg)	Fuel Type
5410	Soil MW1-1 @ 4-1/2-5 feet	< 0.05	< 0.001	< 0.001	< 0.001	Gasoline
5411	Soil MW2-1 @ 4-1/2-5 feet	< 0.05	< 0.001	< 0.001	< 0.001	Gasoline
5412	Soil MW2-2 @ 9-1/2-10 feet	< 0.05	< 0.001	< 0.001	< 0.001	Gasoline
5413	Soil S1-1 @ 4-1/2-5 feet	< 0.05	< 0.001	< 0.001	0.022	Gasoline
5414	Soil S2-1 @ 4-1/2-5 feet	< 0.44	< 0.001	< 0.001	< 0.001	Aged Gas
5415	Soil S3-1 @ 4-1/2-5 feet	34	0.012	0.010	0.058	Aged Gas
	Detection Limit	0.050	0.001	0.001	0.001	Gasoline
	METHOD(S): Note 1					

NOTES:  
 Note 1 - EPA Methods 5020/8015/8020.

*m.l.l. will*  
 Analytical Supervisor

Excavation Permit Granted No. 8849

# CITY OF OAKLAND

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

Oakland, California, JANUARY 6, 1987 19\_\_

PERMISSION IS HEREBY GRANTED TO install .. remove .. repair .. Gasoline tank and concrete surrounding \_\_\_\_\_ foot inside \_\_\_\_\_ feet

on the EAST side of the TIDEWATER AVENUE Street \_\_\_\_\_ Street \_\_\_\_\_

Address 4575 TIDEWATER AVENUE Street \_\_\_\_\_ Avenue \_\_\_\_\_ foot \_\_\_\_\_ of \_\_\_\_\_ Street \_\_\_\_\_ Avenue \_\_\_\_\_

Present Storage DIESEL FUEL

Address 4575 TIDEWATER AVENUE Phone 533-8575

Address 1001 GALAXY WAY Phone \_\_\_\_\_

Number of Tanks 2 Capacity 10,000 Gallons each

Number of \_\_\_\_\_ to be disturbed 0 \_\_\_\_\_ 0

This Permit is granted in accordance with existing City Ordinances. I, \_\_\_\_\_, Owner hereby agree 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

Drainage Division - Engineering Dept.

## EXCAVATING PERMIT

Issued in accordance with Ord. No. 278 CML Sec. 6-2.64

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

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

GENERAL DEPOSIT

BUREAU OF PERMITS AND LICENSES

Inspection Fee Paid \$0.00 REC #110123

Received by B. LANGOSCH

## CERTIFICATE OF TANK AND EQUIPMENT INSPECTION

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

By \_\_\_\_\_

Fire Marshal

## NOTICE

Before Covering Tanks, Above Certificate Must Be Signed.

When ready for inspection notify Fire Prevention Bureau, 278-2851

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



# CROSBY AND OVERTON

Environmental Management Inc.

8430 Amelia Street • Oakland, California 94621  
(415) 633-0336

February 25, 1987

Roy Weston  
1001 Galaxy Way  
Concord, Calif 94520

ATTN: Mr. Steve Viani

Dear Mr. Viani,

Here is the Certificate of Scrap for the 10,000  
gallon diesel storage tank that was located at  
4575 Tidewater, Oakland, California.

If you should have any other questions, please  
feel free to call me at (415) 633-0336.

Sincerely,

CROSBY & OVERTON, E.M.I.

  
Kevin M. Pucillo  
Field Supervisor

KMP/mer

Enclosure



W. J. HARRIS

CERTIFICATE OF DISPOSAL

28 February 1987

H & H Ship Service Company hereby certifies to CROSBY & OVERTON that:

1. The storage tank(s) removed from the A. B. F. TRUCKING facility at 4575 Tidewater, Oakland, California

(address)

were transported to H & H Ship Service Company, 220 China Basin Street, San Francisco, California 94107.


2. The following tank(s), H & H Job Number: 4499, have been steam cleaned, cut with approximately 2' x 2' holes, rendered harmless and disposed of as scrap metal.

3. Disposal site: LEVIN METALS CORPORATION

4. The foregoing method of destruction/disposal is suitable for the materials involved, and fully complies with all applicable regulatory and permit requirements.

5. Should you require further information, please call (415) 543-4835.

Very Truly Yours,

  
CLEVELAND VELREY  
Q.A. & Safety Coordinator

220 CHINA BASIN, P.O. BOX 77363 · SAN FRANCISCO, CA 94107 · DAY AND NIGHT: 543-4835









ABF FREIGHT

February 12, 1987

Analysis of Soils and Water for  
Total Petroleum Hydrocarbons and  
Volatile Aromatic Hydrocarbons

Lab No. 87-01-13

Two water samples and two soil samples, collected on January 8, 1987, were received in the laboratory on January 12, 1987 for analysis for total petroleum hydrocarbons and BTX. The results are summarized below:

Total Petroleum Hydrocarbons (TPH)

<u>Sample ID</u>	<u>Matrix</u>	<u>TPH</u>
SPU-02	Water	721 mg/L
SPU-03	Soil	681 mg/kg (wet weight)
SPU-04	Soil	108 mg/kg (wet weight)

The analysis was performed in accordance with EPA Method 418.1. The samples were extracted on January 23, 1987 and the extracts analyzed on January 27, 1987.

BTX

<u>Compound</u>	<u>Sample SPU-01</u> <u>ug/L</u>	<u>Sample SPU-03</u> <u>ug/L</u>	<u>Sample SPU-04</u> <u>ug/L</u>
Benzene	2 U	10 U	10 U
Toluene	2 U	10 U	10 U
Ethylbenzene	2 U	10 U	10 U
o-Xylene	2 U	10 U	10 U
m-Xylene	2 U	10 U	10 U
p-Xylene	2 U	10 U	10 U

U = Not detected at the detection limit preceding the "u".

Initial analysis of these samples displayed a large number of peaks. Confirmatory analysis, however, showed these peaks to be compounds other than the BTX compounds. In the case of the water sample, the compounds that were initially observed in the chromatogram are not due to BTX compounds but to some hydrocarbons other than BTX. Also these compounds are associated with the sediment, not with the water fraction.

**WESTON**

Analysis for the BTX was performed during the period January 19-22, 1987 using EPA Method 8020.

The high levels of total petroleum hydrocarbons, coupled with the absence of the most volatile aromatic hydrocarbons, implies that a petroleum product is present; but it is probably aged, and consists principally of oils.

Reviewed and approved

  
David Ben-Hur, Ph.D.

DB/vk