

Mr. H. Gomez
Oakland Fire Prevention Bureau
Oakland, CA

Re : Auto-Mechanic / Car Wash
905 W. Grand Avenue
Oakland CA.,

June 9, 1999


Dear Mr. Gomez:

Please find attached a copy of the final laboratory report and the recommended required action for determining whether monitoring wells are necessary or not.

The recommendation is based on the results of grab water samples collected from the bottom of the pit (the location of the second tank). You may decide that the contamination level is such that no further investigation is necessary. Please advise Mr. William Perrie, the owner of the property about your final decision.

Sincerely,

Hossein Khosh Khoo, Ph.D./ Senior Scientist
Delta Environmental Laboratories


Owner's Address:
128 Dartmouth Pl,
Benicia, CA 94510

Final Laboratory Report

Auto Mechanic /Car wash

905 West Grand Avenue

Oakland, CA

Prepared for:

Mr. William Perrie

128 Dartmouth PL.

Benicia, CA 94510

By :

Delta Environmental Laboratories

Consulting Division

685 stone Road, #12

Benicia, CA 94510

June 9, 1990

Mr. H. Gomez /Inspector
Oakland Fire Prevention Bureau
Oakland, CA

Re: 905 W. Grand Ave
Oakland, CA

1.0 INTRODUCTION

Delta Environmental Laboratories on behalf of Mr. William Perrie, the owner of the property, has prepared this report. The property is being used as a car wash / mechanic shop. Three underground storage tanks have been removed from the south end of the site. The tanks contained water contaminated with hydrocarbons.

1.1 SITE INVESTIGATION

On February 2, 1999, American Construction requested Delta Environmental Laboratories to collect water samples from 905 West Grand Avenue and analyze the water content of the three tanks located on the south end of the site. Sampling was conducted under the supervision of Delta's personnel. Following the instruction received from the Oakland Fire Prevention Bureau Inspector (Mr. H. Gomez); one sample from each tank was collected. All the activities were recorded in Delta's sampling logbook and a chain of custody was completed. Samples were transferred to an ice chest with blue ice to keep the samples at 4 degrees Celsius. The samples were then delivered to Delta Environmental Laboratories along with the chain of custody. Delta analyzed the samples for BTEX, MTBE, TPH-gas, TPH-diesel, and TPH-motor oil.

2.0 ANALYTICAL RESULTS

The final laboratory report is given as an attachment. The review of the laboratory report indicates that the contamination level of each BTEX, TPH-gas and diesel are as follows:

2.1 TANK #1 (WATER)

A) BTEX

Benzene: 2680ug/L; Toluene: 33700ug/L; Ethlybenzene: 2260ug/L;
Total Xylene: 2770ug/L;

B) TPH

TPH-gas:130000ug/L; TPH-diesel/kerosene: 18300ug/L; motor oil: 460ug/L.

2.2 TANK #2 (WATER)

A) BTEX

Benzene: 9430ug/L; Toluene: 4210ug/L; Ethlybenzene: 1580ug/L; Total Xylene: 23600ug/L;

B) TPH

TPH-gas:170000ug/L; TPH-diesel/kerosene: 18300ug/L; motor oil: 460ug/L.

2.3 TANK #3 (WATER)

A) BTEX

Benzene: 9030ug/L; Toluene: 47300ug/L; Ethlybenzene: 2890ug/L; Total Xylene: 26200ug/L;

B) TPH

TPH-gas:160000ug/L; TPH-diesel/kerosene: 2630ug/L; motor oil: 586ug/L.

3.0 SOIL ANALYSIS

After the results of the water analysis was reported on 2/4/99, American Construction Company requested Delta to collect soil samples after the removal of the tanks. Five soil samples were collected at the north, west, and east walls of the tank locations. The location of samples was determined by Mr. H. Gomez/Inspector (see fig.1). One soil sample from the center of pit #4 and one water sample from the center of the excavated pit, below tank #2 was collected (see fig.1). After completing the chain of custody, the samples were transferred to an ice chest and delivered to Delta for analysis. Soil samples were analyzed for BTEX, MTBE, and TPH-g.

The laboratory report indicates that all the soil samples collected from the walls of the excavated pit were free from contamination and all analytes were reported as not detected, except for the north wall of tank #1. The north wall of tank #1 showed 0.021mg/Kg Total xylene, which is not significant.

3.1 STOCKPILE SOIL SAMPLES

The excavated soil during the tank removal were stock piled. Four samples from the stockpile were collected and analyzed for BTEX, MTBE, and TPH-g. No benzene or MTBE were detected in all samples. Sample A collected from the east side of tank #1 shows 0.053mg/Kg Toluene and 0.017mg/Kg xylene, which is not considered to be significant. The other three samples were reported as not detected for BTEX and MTBE constituents.

3.2 TANK #4 (SOIL)

One soil sample was collected from the bottom of tank #4 and analyzed for oil and grease (see fig.1). The laboratory report is given in attachment . The review of the report indicates that no contamination has been observed.

4.0 WATER ANALYSIS (EXCAVATED PIT)

One water sample was taken from a standing water pool below tank #2 and was analyzed for BTEX, MTBE, and TPH-g. The laboratory report is given in the attachment section . Review of the report indicates that the water is contaminated with the following pollutants:

Benzene: 1280ug/L; Toluene: 3360ug/L; Ethlybenzene: 1180ug/L; Total Xylene: 8470ug/L; TPH-gas:46000ug/L

As it is shown on the report, no MTBE has been detected in this sample.

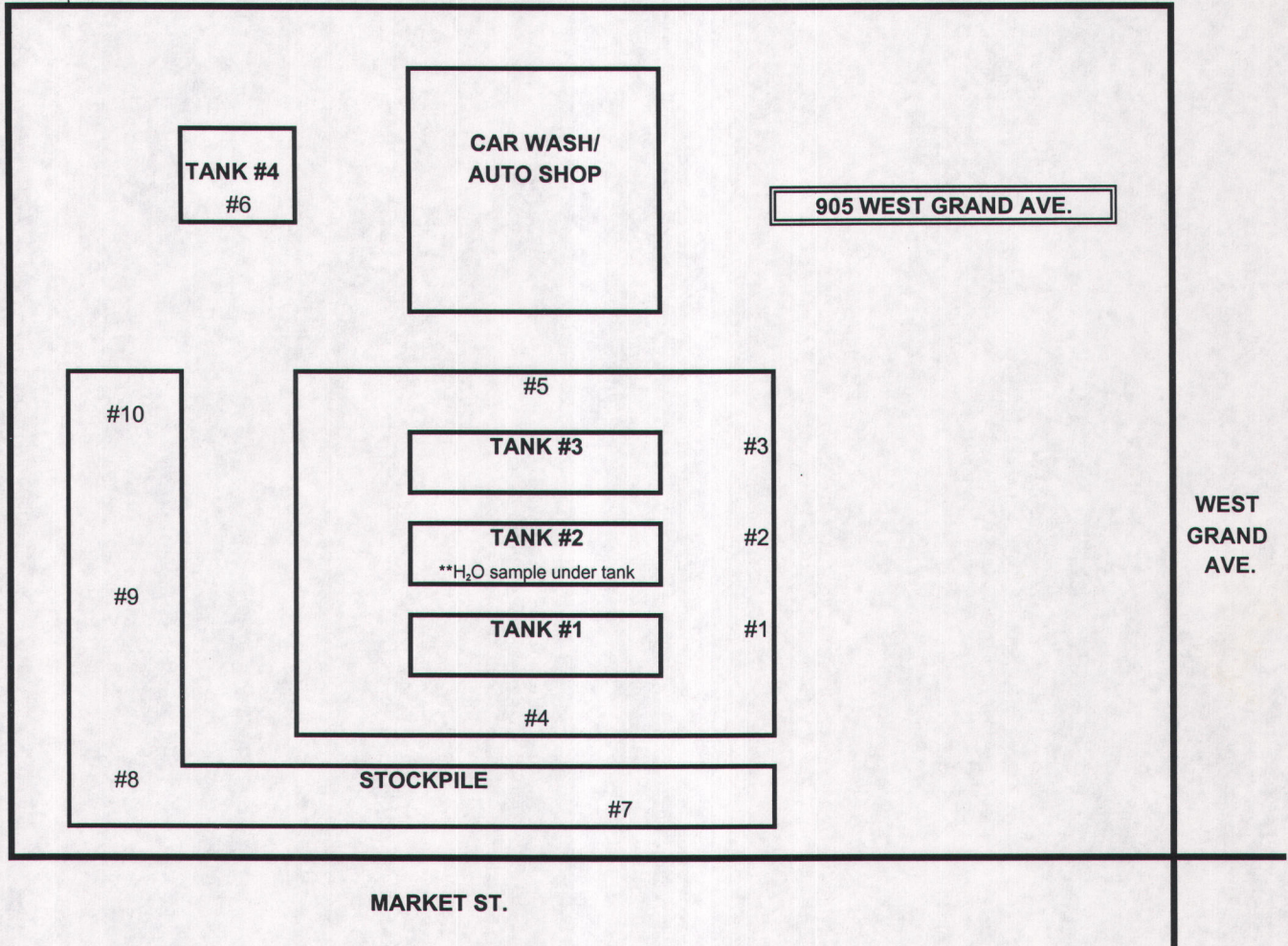
5.0 SUMMARY AND RECOMMENDATIONS

The analytical reports for the underground tank removal on 2/2/99 at 905 West Grand Avenue; Oakland, CA were reviewed and the data indicates very low to non-detectable levels of hydrocarbon constituents in the soil. However, the grab ground water sample shows elevated levels of BTEX and TPH-g, which may require a ground water investigation.

To determine if monitoring wells are necessary it is recommended four hydropunches to be employed in order to define the vertical and horizontal extent of the hydrocarbon pollution within the soil and ground water.

Delta Environmental Laboratories
Hossein Khosh Khoo, Ph.D.

FIGURE NO. 1



* Soil samples are listed in numerical order according to the chain of custody.

** One water sample was collected under the middle of tank #2.

→ North

ATTACHMENTS

American Construction &
Environmental Services/
905 West Grand
Oakland, CA

Client Project ID:
905 West Grand
CAR WASH

Ref.: R3946400s
Method: 5030 GCFID/
8020
Sampled: 2/4/99
Received: 2/4/99
Matrix: Soil
Analyzed: 2/5/99
Reported: 2/5/99
Units: mg/kg

Attention: Bailey Neff

4 hour Rush

Laboratory Results for BTEX , MTBE& TPH-G Analysis

| Analyte | Detection Limit mg/kg | Results | | | | | |
|----------------|-----------------------|-------------------|-------------------|--------------------|-------------------|-------------------|------------|
| | | Sample ID | | | | | |
| | | North Wall Tank#1 | NorthWall Tank #2 | North Wall Tank #3 | East Wall Tank #1 | West Wall Tank #3 | Method |
| BTEX | | | | | | | |
| Benzene | 0.005 | ND | ND | ND | ND | ND | 8020 |
| Toluene | 0.005 | ND | ND | ND | ND | ND | 8020 |
| Ethylbenzene | 0.005 | ND | ND | ND | ND | ND | 8020 |
| Total-Xylene | 0.005 | 0.021 | ND | ND | ND | ND | 8020 |
| MTBE | | | | | | | |
| MTBE | 0.01 | ND | ND | ND | ND | ND | 8020 |
| TPH-Gas | | | | | | | |
| TPH-Gas | 0.050 | ND | ND | ND | ND | ND | 5030/GCFID |

ND:Not Detected(<MDL)

Delta Environmental Laboratories

Hossein Khosh Khoo, Ph.D.



American Construction &
Environmental Services/
905 West Grand
Oakland, CA

Client Project ID:
905 West Grand
CAR WASH

Ref.: R3946402s
Method 5030 GCFID/
8020
Sampled: 2/4/99
Received: 2/4/99
Matrix: Soil
Analyzed: 2/5/99
Reported: 2/5/99
Units: mg/kg

Attention: Bailey Neff

24 hour Rush

Laboratory Results for BTEX , MTBE & TPH-G Analysis

| Analyte | Detection Limit mg/kg | Results |
|--------------|-----------------------|----------------|
| | | Sample ID |
| | | Center Tank #4 |
| BTEX | | |
| Benzene | 0.005 | ND |
| Toluene | 0.005 | ND |
| Ethylbenzene | 0.005 | ND |
| Total-Xylene | 0.005 | ND |
| | | |
| MTBE | 0.01 | ND |
| | | |
| TPH-Gas | 0.05 | ND |

ND: Not Detected (<MDL)

Delta Environmental Laboratories

Hossein Khosh Khoo, Ph.D.



American Construction &
Environmental Services/
905 West Grand
Oakland, CA

Client Project ID:
905 West Grand
CAR WASH

Ref.: R3946401s
Method: 5030 GCFID/
8020
Sampled: 2/4/99
Received: 2/4/99
Matrix: Soil
Analyzed: 2/5/99
Reported: 2/5/99
Units: mg/kg

Attention: Bailey Neff

24h

Laboratory Results for BTEX , MTBE& TPH-G Analysis

| Analyte | Detection Limit mg/kg | Results | | | | |
|----------------|-----------------------|-------------|-------------|-------------|-------------|------------|
| | | Sample ID | | | | |
| | | Stockpile A | Stockpile B | Stockpile C | Stockpile D | Method |
| BTEX | | | | | | |
| Benzene | 0.005 | ND | ND | ND | ND | 8020 |
| Toluene | 0.005 | 0.0086 | 0.053 | ND | ND | 8020 |
| Ethylbenzene | 0.005 | ND | ND | ND | ND | 8020 |
| Total-Xylene | 0.005 | 0.014 | 0.017 | ND | ND | 8020 |
| MTBE | 0.01 | ND | ND | ND | ND | 8020 |
| TPH-Gas | 0.050 | 0.3 | 1.8 | ND | ND | 5030/GCFID |

ND:Not Detected(<MDL)

Delta Environmental Laboratories

Hossein Khosh Khoo, Ph.D.



Client:
American Construction &
Environmental Services
905 West Grand
Oakland CA

Client Project #:
905 West Grand
Car Wash

Ref: R3946WetChem
Unit mg/Kg
Matrix Soil
Sampled: 2/4/99
Received: 2/4/99
Analyzed: 2/8/99
Reported: 2/8/99

Attention: Bailey Neff

Analytical Results

Rush

Sample ID:

| Analyte | Detection Limit | Center Tank #4 | Method |
|--------------|-----------------|----------------|-----------|
| Oil & Grease | 10 mg/Kg | ND | SM 5520 C |

ND: Not Detected

H.Khosh Khoo, Ph.D.
Laboratory Director/President

Homen Khoshkhoo

Quality Control Report

American Construction &
Environmental Services/
905 West Grand
Oakland, CA

Client Project ID:
905 West Grand
CAR WASH

Ref.: Q3946400s
Method: 5030/8020/ GCFID
Sampled: 2/4/99
Received: 2/4/99
Matrix: Soil
Analyzed: 2/5/99
Analyst: DS
Reported: 2/5/99
Units: mg/kg
Sample Spiked: Blank

Attention: Bailey Neff

24 hour Rush

Quality Control Report for BTEX & MTBE

| Analyte | Detection Limit mg/kg | Sample Result mg/kg | Spike Added mg/kg | % MS Recovery | % MSD Recovery | Relative % Difference RPD | Method |
|--------------|-----------------------|---------------------|-------------------|---------------|----------------|---------------------------|--------|
| Benzene | 0.005 | ND | 0.020 | 85 | 89 | 4.6 | 8020 |
| Toulene | 0.005 | ND | 0.020 | 87 | 91 | 4.5 | 8020 |
| Ethylbenzene | 0.005 | ND | 0.020 | 85 | 88 | 3.5 | 8020 |
| Total-Xylene | 0.005 | ND | 0.040 | 90 | 93 | 3.3 | 8020 |
| MTBE | 0.01 | ND | 0.020 | 78 | 70 | 10.8 | 8020 |

Delta Environmental Laboratories

H.Khosh Khoo, PhD.,
Laboratory Director/President



Client:
 American Construction &
 Environmental Services
 905 West Grand
 Oakland CA

Quality Control Report

Client Project #:
 Car Wash

Ref. Q3946Wet

Matrix: Soil
Analyzed: 2/8/99
Reported: 2/8/99
Unit mg/kg

Attention: Bailey Neff

Sample ID: Blank spiked sample

| Analyte | Detection Limit mg/kg | Method | Spike Added mg/L | MS Spike Recovery | MSD Spike Recovery | Relative Percent Difference |
|--------------|-----------------------|-----------|------------------|-------------------|--------------------|-----------------------------|
| Oil & Grease | 10 mg/kg | SM 5520 C | 20 | 97 | 98 | 1.0 |

Delta Environmental Laboratories

Hossein Khosh Khoo, Ph.D.

Hossein Khoshkhoo

American Construction &
Environmental Services/
905 West Grand
Oakland, CA

Attention: Bailey Neff

24h

Client Project ID:
905 West Grand
CAR WASH

Tank Contents

Ref.: R3942400w
Method: 5030 GCFID/
8020/8015M
Sampled: 2/2/99
Received: 2/2/99
Matrix: Water
Analyzed: 2/2,3/99
Reported: 2/3/99
Units: mg/L

Laboratory Results for TPH + BTEX Analysis

| Analyte | Detection Limit mg/L | Results | | | |
|----------------------|-------------------------|-----------|------|-------|------------|
| | | Sample ID | | | |
| | | #1 | #2 | #3 | Method |
| BTEX | | | | | |
| Benzene | 0.005 | 2.68 | 9.43 | 9.03 | 8020 |
| Toluene | 0.005 | 33.7 | 42.1 | 47.3 | 8020 |
| Ethylbenzene | 0.005 | 2.26 | 1.58 | 2.89 | 8020 |
| Total-Xylene | 0.005 | 27.7 | 23.6 | 26.2 | 8020 |
| TPH-Gas | 0.050 | 130 | 170 | 160 | 5030/GCFID |
| *TPH-Diesel,Kerosene | 0.100 | 18.3 | 6.99 | 2.63 | 8015M |
| TPH-M.O. | 0.200 | 0.460 | 1.61 | 0.586 | 8015M |

ND: Not Detected (<MDL)

*The reported results represent the light end hydrocarbon fuels in Diesel and Kerosene range. The chromatograms do not match the patterns of the standard Kerosene or Diesel.

Delta Environmental Laboratories

Hossein Khosh Khoo, Ph.D.

Hossein Khoshkhoo

American Construction &
Environmental Services/
905 West Grand
Oakland, CA

Client Project ID:
905 West Grand
CAR WASH

Ref.: R3958400w
Method 5030 GCFID/
8020
Sampled: 2/4/99
Received: 2/4/99
Matrix: Water
Analyzed: 2/5/99
Reported: 2/5/99
Units: ug/L (ppb)

Attention: Bailey Neff

24h

Laboratory Results for BTEX , MTBE & TPH-G Analysis

| Analyte | Detection Limit ug/L (ppb) | Results |
|--------------|-------------------------------|--------------------|
| | | Sample ID |
| | | Tank #2 H2O Sample |
| BTEX | | |
| Benzene | 5 | 1280 |
| Toluene | 5 | 3360 |
| Ethylbenzene | 5 | 1180 |
| Total-Xylene | 5 | 8470 |
| | | |
| MTBE | 10 | ND |
| | | |
| TPH-Gas | 50 | 46,000 |

ND: Not Detected (<MDL)

Delta Environmental Laboratories

Hossein Khosh Khoo, Ph.D.



Quality Control Report

American Construction &
Environmental Services/
905 West Grand
Oakland, CA

Client Project ID:
905 West Grand
CAR WASH

Ref.: Q 3942400w
Method 5030/8020/ GCFID
Sampled: 2/2/99
Received: 2/2/99
Matrix: Water
Analyzed: 2/3/99
Analyst DS
Reported: 2/3/99
Units: ug/L
Sample spiked: Blank

Attention: Bailey Neff

24h

Quality Control Report for TPH & BTEX

| Analyte | Detection Limit ug/L | Sample Result ug/L | Spike Added ug/L | % MS Recovery | % MSD ug/L | Relative % Difference RPD | Method |
|-----------------|----------------------|--------------------|------------------|---------------|------------|---------------------------|--------|
| Benzene | 5 | ND | 20 | 85 | 89 | 4.6 | 8020.0 |
| Toulene | 5 | ND | 20 | 86 | 91 | 5.6 | 8020.0 |
| Ethylbenzene | 5 | ND | 20 | 89 | 88 | 1.1 | 8020.0 |
| T-Xylene | 5 | ND | 40 | 89 | 93 | 4.4 | 8020.0 |
| TPH-Gas, GC/FID | 50 | ND | 400 | 88 | 73 | 18.6 | 5030 |
| TPH-Diesel | 100 | ND | 0.5 | 95 | 83 | 13.5 | 8015M |
| TPH-M.O. | 200 | ND | 0.5 | 105 | 100 | 4.9 | 8015M |

Delta Environmental Laboratories

H.Khosh Khoo, PhD.,
Laboratory Director/President

